NEPTUNE®

Waste Management System

stryker®

Training Manual

stryker® INSTRUMENTS
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PRODUCT IDENTIFICATION/ SPECIFICATIONS

GOLD ROVER

Rover

Model:	**0700-001-000**
Width:	18 in. [45.7 cm]
Depth:	25 in. [63.5 cm]
Height:	89 in. [226 cm] with power pole up. 60 in. [152.4 cm] with power pole down
Weight:	230 lbs [104 kg] Collection tank empty 274 lbs [124 kg] Collection tank full
Volume:	20 liters
Electrical:	120V~, 60 Hz, 16 amps, single phase 12V ⎓, 16 amp during the docking sequence 20 amp receptacle connection mandatory Unit is internally powered while docking. Class 1 IPX0 Ordinary Equipment Type CF Applied Part **CSA International** UL 60601-1 IEC 60601-1 C US CAN/CSA-C22.2 No. 601.1-M90

SILVER ROVER

Rover

Model:	**0700-003-000**
Width:	18 in. [45.7 cm]
Depth:	25 in. [63.5 cm]
Height:	51 in. [130 cm]
Weight:	195 lbs [88 kg] Collection tank empty 239 lbs [108 kg] Collection tank full
Volume:	20 liters
Electrical:	120V~, 50-60 Hz, 12 amps, single phase 12V ⎓, 16 amp during the docking sequence 15 amp receptacle connection Unit is internally powered while docking. Class 1 IPX0 Ordinary Equipment Type CF Applied Part **CSA International** UL 60601-1 IEC 60601-1 C US CAN/CSA-C22.2 No. 601.1-M90

NEPTUNE
WASTE MANAGEMENT SYSTEM

BRONZE ROVER

Model:	**Neptune Bronze Rover REF 700-007-000**
Width:	19 in. [48 cm]
Depth:	21 in. [53 cm]
Height:	42 in. [107 cm]
Weight:	110 lbs [50 kg] Collection tank empty 154 lbs [70 kg] Collection tank full
Volume:	20 liters
Electrical:	3V ⎓ Battery powered, two AA alkaline
Equipment Type:	Type CF Applied Part
Enclosure Protection:	IPX0 Ordinary Equipment
Approval:	**CSA International** UL 60601-1 IEC 60601-1 CAN/CSA-C22.2 No. 601.1-M90

DOCKING STATION

Detergent Dispensing Docking Station

Model:	**0700-005-000**
Width:	25 in. [63.5 cm]
Depth:	20 in. [50.8 cm]
Height:	22 in. [55.9 cm]
Weight:	90 lbs [41 Kg]
Electrical:	120V~, 50-60 Hz, 3 amps 15 amp receptacle connection Class 1

Water Requirements

Pressure Range:	45-100 psi [2,327-5,171 mmHg]
Temperature:	40-110°F [4.4-43.3°C]
Connection:	Garden hose fitting
Quality:	Potable tap water
Usage:	.85 - 2.6 gal. [3.2 - 10 liters] maximum depending on selected cycle.

FEATURES

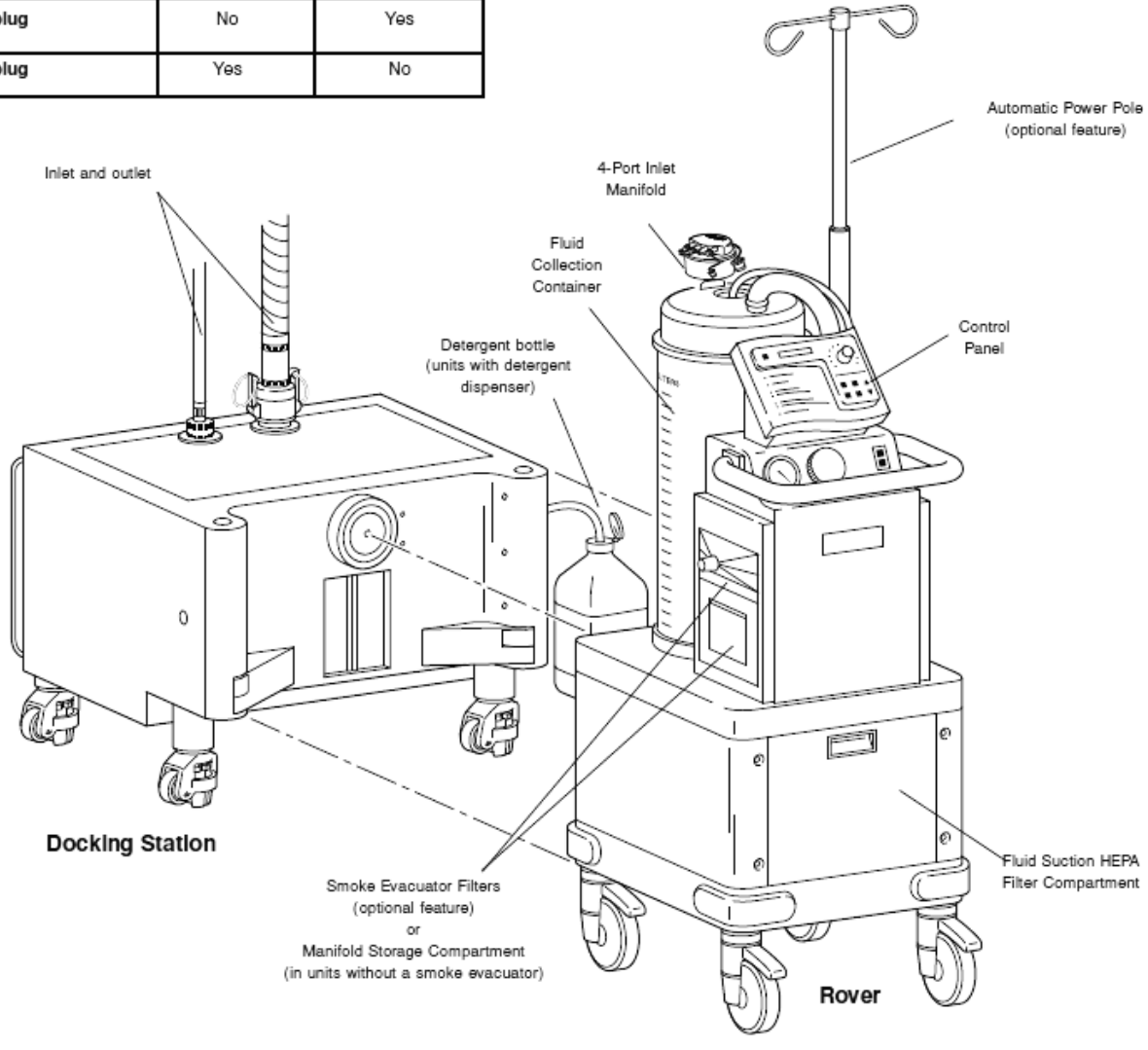
The Neptune Waste Management System consists of the Rover and the Docking Station.

The **Rover** is a mobile unit used in the operating room to suction and collect fluid waste and small debris from the surgical site. Suction tubing is connected to the inlet manifold. Fluid waste is suctioned from the surgical site through the inlet manifold ports and collected in the fluid collection container. The Rover is available with a smoke evacuator which collects smoke generated from cautery or laser surgery and a power pole.

The **Docking Station** is a stationary unit located in a utility area. The unit is plumbed with water inlet and outlet lines. When it is time to empty the Rover's collection container, the Rover is moved to the utility area where it interfaces with the Docking Station. Here the system automatically empties and rinses the collection container placing the surgical fluid waste into the hospital's waste water system. The Docking Station is available with a detergent dispenser which automatically releases liquid detergent into the system.

FEATURES FOR ROVER	Model	
	REF 0700-001-000	REF 0700-003-000
Smoke Evacuator	Yes	No
Power Pole	Yes	No
15 amp plug	No	Yes
20 amp plug	Yes	No

FEATURE FOR DOCKING STATION	Model	
	REF 0700-004-000	REF 0700-005-000
Detergent dispenser	No	Yes



CONTROLS AND FUNCTIONS

FLUID SUCTION ON/OFF - This button is used to activate and deactivate fluid suction. Suction level is regulated with the **fluid suction adjustment knob**. The **fluid suction gauge** indicates the suction level. Maximum vacuum pressure is 19 inHg [482 mmHg].

The fluid container holds 20 liters of fluid which is measured electronically. The volume is indicated on the **fluid volume display** with a maximum accuracy of +/- 175 mL. Depending on the Rover's settings, the fluid volume may be displayed in liters, cubic centimeters or milliliters.

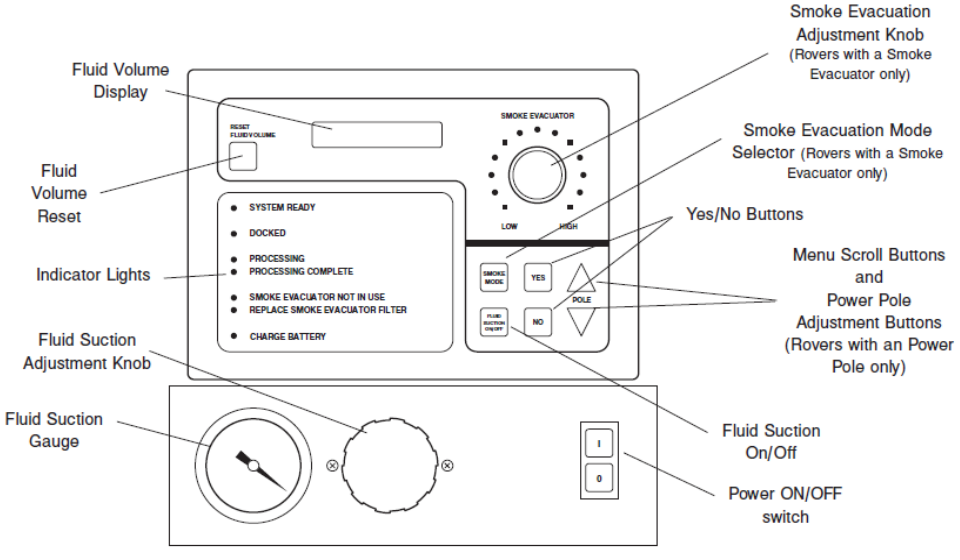
When the container is holding fluid from previous procedure, you can press the RESET FLUID VOLUME to reset the Fluid Volume Display at zero. This allows you to observe the fluid waste collected from individual procedures.

SMOKE MODE (Rovers with a smoke evacuator only.)
The smoke evacuation mode selector is pressed to toggle the smoke evacuator on and off. When turned on, smoke evacuation level is adjusted with the **smoke evacuator adjustment dial**. The lights surrounding the dial indicate vacuum level.

MENU SCROLL
The UP and DOWN arrows are used to scroll through the information displayed on the Fluid Volume Display.

POWER POLE ADJUSTMENT (Rovers with a power pole only.) The UP and DOWN arrows are used to adjust pole height. The power pole holds a maximum of 6 liters.

Label shown includes controls for all optional features.



Indicator lights

SYSTEM READY
Green - The system is plugged in and ready for use in the operating room or ready to interface with the Docking Station. This light flashes when the Rover is unplugged.
Off - The Rover is docked.
NOTE: If this light is off when the Rover is not docked, the internal battery is dead and must be recharged.

DOCKED
Green - The docking sequence is successful and the light remains lit during waste transfer and rinse cycles.
Orange - Docking was not successful. When this occurs, check Fluid Volume Display. Refer to *Error Code Information.*
Off - Rover is separated from the Docking Station.

PROCESSING
Green - Waste transfer and rinse cycles are underway.
Off - Waste transfer and rinse cycles are complete.

PROCESSING COMPLETE
Green - Rinse cycles are complete. Another rinse cycle can be activated or the Rover can be put back into service. The Fluid Volume Display prompts the user to activate additional rinse cycles. Pressing YES activates another rinse cycle. Pressing NO completes the current cycle.
NOTE: Rinse cycles may be repeated as many times as needed.

SMOKE EVACUATOR NOT IN USE - When illuminated, the smoke evacuator is off.

REPLACE SMOKE EVACUATOR FILTER (Rovers with a smoke evacuator only.)
Orange - Smoke evacuator HEPA filter must be replaced.
Off - Smoke evacuator HEPA filter is still usable.

CHARGE BATTERY
Orange - Battery requires recharging. Refer to *Charging the Internal Battery.*
Off - Battery charge is sufficient.
NOTE: This light will flash when the Rover is unplugged to indicate that the battery requires recharging.

Audible Indicator

An audible indicator can be activated to signal an alert when the Rover reaches a specific fluid level. If you want this feature enabled, contact the Stryker Neptune Service Center. Our technician will enable the audible indicator to beep for 10 seconds when the container reaches the fluid level you specify.

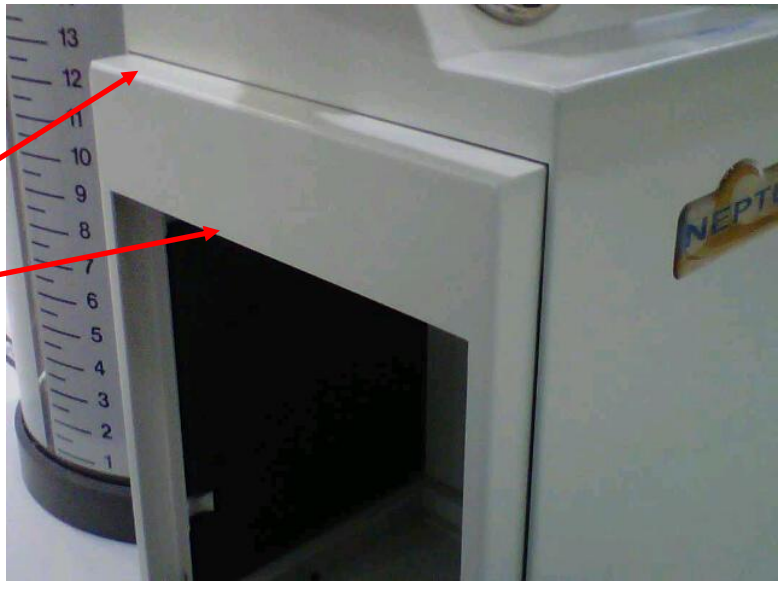
Before use:

Note: If BATTERY SWITCH is on, the screen should be dark and “WAITING TO DOCK” will be displayed. If BATTERY SWITCH is off, the screen will be blank.

1. **Ensure** the BATTERY SWITCH is on. If not, follow directions below:

- **Remove** LEFT SIDE PANEL by **pulling** upper portion outward.

Grab LEFT SIDE PANEL here and pull towards you



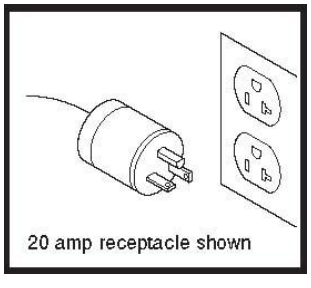
- LEFT SIDE PANEL will slide out

- **Look** inside and **locate** BATTERY DISCONNECT SWITCH in upper right corner. **Depress** switch to the on position.

BATTERY DISCONNECT SWITCH located in upper right corner

2. **Plug** the POWER CORD into a wall receptacle**.** (20 Amp plug for 700-1 Gold Model)

3. **Turn on** MAIN POWER SWITCH. (The power switch will illuminate when energized)



NOTE: When A/C Power is applied, the screen will read VOLUME 0.0L, or whatever unit of measure the system is set to.

4. **Press** FLUID SUCTION ON/OFF button to **activate** suction. **Adjust** maximum suction level with the VACUUM ADJUSTMENT KNOB. The vacuum range is 0 – 19 inHg [0 – 482 mmHg].

NOTE: To reach maximum sustained vacuum levels, a MANIFOLD must be inserted into the manifold port on top of the CANISTER CAP and all ports of the MANIFOLD capped. If ports are left open, vacuum level is reduced.

5. **Press** SMOKE MODE button to **activate** SMOKE EVACUATOR. (Turn the SMOKE EVACUATION ADJUSTMENT KNOB to the desired speed setting.)

6. **Press** POWER POLE ADJUSTMENT button to **activate** IV POLE. (Press the UP arrow to raise and the DOWN arrow to lower the IV POLE)

NOTE: When the Rover is docked with the Docking Station, the delay and drainage cycles activate automatically. During the delay cycle, you select the cleansing cycle: QUICK RINSE - a rinse cycle with liquid detergent followed by a clear water rinse; or STANDARD WASH - a slightly longer cycle with two iterations of liquid detergent and clear water rinse. If no cycle is selected, the STANDARD WASH cycle is performed. Depending on the settings, the QUICK RINSE cycle uses approximately 50 mL of detergent and the Standard Wash cycle uses approximately 60 mL of detergent. After the cleansing cycle is completed, the system prompts you to either activate an additional cleansing cycle or end the docking procedure.

Cycle Times

Drainage: 90-seconds maximum with a full tank.

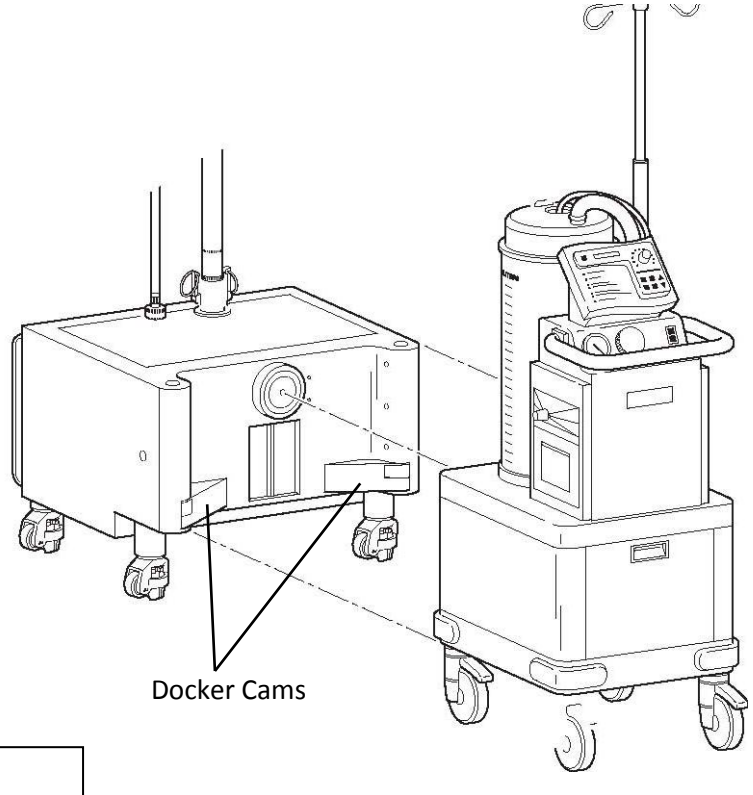
QUICK RINSE: Approximately 2 minutes, 45 seconds after Rover has offloaded.

STANDARD WASH: Approximately 3 minutes, 30 seconds after Rover has offloaded, depending on settings.

1. Prior to docking, **turn** off A/C Power switch and unplug the Rover. The display screen should show WAITING TO DOCK.

2. **Center** the Rover directly in front of the Docking Station. **Press** the Rover against the Docking Station. As the Rover hits the Docking Station's Cams, the doors automatically open to allow engagement of the fluid couplings. Continue pressing until the DOCKED light illuminates. When the delay cycle begins, the PROCESSING light illuminates.

3. The Rover will prompt with "Quick Rinse? Y/N". **Select** a cleaning cycle by using the Yes or No button. If the No button is pressed, the Rover will default to the Standard Wash cycle.



NOTE: Once a cycle is **selected**, the fluid volume display identifies the portion of the cycle that is currently being performed.

NOTE: When the selected cycle is complete, you may **activate** as many extra rinse cycles as desired or end the docking procedure.

4. When satisfied that the fluid container is sufficiently rinsed, **select** NO to end the docking procedure. When NO is pressed, the Docking Station releases the Rover and the PROCESSING COMPLETE indicator illuminates.

5. **Pull** the Rover away from the Docking Station.

Note: While not in use in surgery, the ROVER ***must*** be **plugged** into a wall outlet with the **POWER SWITCH** ***turned on*** to recharge the internal BATTERY.

ERROR MESSAGES

If a problem exists with the Neptune® Waste Management System, the user will be given an error message that corresponds to an identifiable issue. Each error message will be displayed via the User Interface Panel (UIP). The following outlines errors that may occur and possible causes:

> **NOTE:** The table below lists the docking sequence for the Rover in 15 steps. A failure during the docking sequence will generate one of the errors listed below. The current step in the sequence (at the time of failure) will indicate which component caused the failure. Using the table in conjunction with the description of errors should point to the faulty component based on which step the fault was generated.

Docking Error One
This occurs when the prong on the Actuator head does not make contact with the Precision Switch inside the Rover within 10 seconds of commencement of the docking sequence. This may be caused by misalignment between Rover and Docker, insufficient Pneumatic pressure, or a Solenoid Valve on the Pneumatics Panel not exhausting. This is usually caused by a failure at step 8 in the table.

Docking Error Two
The Precision Switch is normally open prior to docking, and closes on contact with the Actuator prong. This is what indicates the Rover and Docker have successfully connected. If the switch is stuck in the shut position an error occurs because the Docker has no way of verifying the connection has been made. This is usually caused by a failure at step 5 in the table.

Docking Error Three
The Rover is powered by the internal battery during the Docking cycle. When power is lost during the docking sequence, Docking Error 3 occurs. Power loss can be caused by an intermittent connection or by a Battery that has been drained of its charge.

Docking Error Four
Only occurs when there is a communication loss between the Docker and the Rover during the docking cycle. This is normally caused for two main reasons; power loss to the Docker, or a malfunction of the LEDs. This is usually caused by a failure at step 5 in the table (if failure occurs near the beginning of the docking cycle). Power loss can be caused by a bad Power Supply or a tripped Circuit Breaker. The Circuit Breaker normally trips when the Offload Pump draws excessive current do to the Impeller in the pump swelling. The increased current draw trips the Circuit Breaker and shuts down the Docker. A malfunction of the LEDs may be caused by physical blockage of the transmission signal. Foreign objects such as dust, lint, and fluids may accumulate on the LEDs and disrupt communications between the Rover and Docker. This may also be caused by a severed transmission line leading to the IR transmitter.

Offload Error
An Offload Error is given when the Rover offloads too slowly. The offloading of the fluid must not exceed a rate of 10 seconds per liter. Generally this is caused by two things; kinks and clogs in the Rover or Docker waste line, or problems with the Volume Sensing components. This is usually caused by a failure at step 11 in the table (if unit offloads completely). Clogs in the waste line can be temporarily dislodged by a procedure known as **“BURPING the Rover”**. ***This procedure is not a “FIX”; it will allow for offloading so that the waste system can be accessed without potential exposure to fluid waste.*** This is done by creating suction in the Canister of about 15” Hg and then depressing the Waste Coupler and releasing. Repeat this process three to four times waiting two

seconds in between each time. This will free any debris that may be blocking the offload of waste fluid. Dock the Rover again to offload remaining fluid. A problem with the Volume Sensing components normally involves the Float Sensor. If the sensor is not permitted to reach the bottom, then there is no way of indicating when the fluid has been
completely offloaded. This may often cause the offload timer to exceed the time allotted per liter and disconnect the Rover giving an Offload Error. (even if the fluid has been completely offloaded)

Incompatibility
There are two causes for this problem. One is when the software versions between the Rover and Docker are actually incompatible. The second, more probable cause is when misalignment or a physical blocking of only one of the IR transceiver board's LEDs has caused a communication error. This causes a failure in such a way that communication is allowed one way but no reply is received, simulating incompatible software. This is usually caused by a failure at step 5 in the table.

Fluid Volume Error
This error message was designed to detect a leak. At the end of the offload cycle the Prefill is injected into the Canister bottom. An insufficient amount during Prefill will cause an Underfill Error. If however the proper amount is distributed (200ml) and for any reason that amount *decreases,* the result will be a fluid volume error.

Underfill
An Underfill Error occurs when the Rover receives less water than expected during the Prefill cycle, or the Volume Sensing indicates that it did. This can be caused by insufficient water pressure which would mean there is physically not enough fluid present. An alternative reason would be a malfunction in Volume Sensing components, or an improper calibration which would indicate an improper reading. (this could occur even if the Prefill is at the proper level) This is usually caused by a failure at step 13 in the table.

Overfill
An Overfill Error occurs when the Rover receives more water than expected during the Prefill cycle, or the Volume Sensing indicates that it did. This can be caused by excessive water pressure which would mean there is physically too much fluid present. An alternative reason would be a malfunction in Volume Sensing components, or an improper calibration which would indicate an improper reading. (this could occur even if the Prefill is at the proper level) This is usually caused by a failure at step 13 in the table.

NOTE: This error represents a higher fluid level than normal. If a foreign object were present and prevented the Float Sensor from resting at its normal level, then this error may also occur. The system does not differentiate from a rise in the Float Sensor due to increased fluid volume or a rise caused by a foreign object.

Volume Sense Error
This is caused when a voltage level at the input to the Analogue to Digital (A to D) conversion circuit on the Main Control Board exceeds 4.1VDC. During the calibration procedure the maximum fluid volume level is set to twenty liters. This is represented electrically by 4.1VDC. Should the volume exceed that amount a volume sense error is generated. This may also occur if the Volume Sensing components malfunction. This error can only be addressed with a re-calibration.

Memory Error
This occurs when the EPROM checksum is lost. To repair this problem, cycle the battery power switch with AC power OFF. If this does not correct the problem, reference the RESET MEMORY function of Diagnostics Mode for the corresponding software version of the rover. Reset the memory and recalibrate the Neptune® Rover.

Sequence	Description of Events
Step 1	Rover contacts docker cams
Step 2	Docker doors open to allow access to actuator head
Step 3	Optical switches activate
Step 4	Electromagnet energizes to hold rover in place
Step 5	I.R. communications commence between rover and docker
Step 6	Docker compressor starts
Step 7	Actuator heads extend to meet rover couplers
Step 8	Prong on actuator contacts precision switch
Step 9	If macerator is in place, macerator runs for 30 seconds
Step 10	Offload cycle begins, offload pump starts
Step 11	Canister empty, rinse cycle starts
Step 12	Offload cycle complete, offload pump stops, rinse cycle stops
Step 13	Pre-fill cycle fills canister with 200ml
Step 14	Actuator head retracts
Step 15	LCD displays “Extra Rinse Y/N”

Table 1

The Docking Sequence is broken down into steps for the purposes of troubleshooting. Each step represents an operation within the process. If there is a step that is not completed, the Docking process will stop, and an Error Message will be generated and displayed on the LCD Screen of the Rover. Referencing the Docking process will help to pinpoint which component is causing the error.

Note: Step 9 refers to the MACERATOR ASSY which is an obsolete part. There may still be functioning MACERATORS in the Field, however, very few. If there is no MACERATOR present, there will be a 30sec delay before Step 10 (Offload Process) begins.

Software Revisions 5.0 – 5.1 Diagnostic Options

NOTE: If a Rover has a software version older than 5.0 the software should be upgraded. Critical software features were introduced with version 5.1 and above. It is highly recommended they upgrade the operational software.

Enter Diagnostic Mode by Performing the Following:
Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time, and turn on either *AC POWER* or *BATTERY POWER*. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS* which is the first menu option. Use the arrow buttons to scroll to additional options. A description of each menu option is provided below.

(FIRST TIER OF MENU)
Review Errors
View the last 5 errors, as well as the docking cycle on which they occurred
Display the current number of successful docking cycles
Reset the error history. This will not affect the current docking cycle count.
Shipping Mode
The Rover is shipped in this state. It will not display fluid volume until it is docked. This ensures the docking station is installed prior to use. To clear this readout and return the Rover to an operational state simply dock the Rover.
External ADC
Selecting this option will display the reading from the external analog to digital converter in the fluid transducer to the user. This information will be updated once every second until the user presses the NO button.
Display Units
This allows the user to view fluid volume in different units of measure. Available choices are Liters, Milliliters, or CC's.
Autodown
Enables/disables the autodown feature. When on, the Autodown feature will automatically lower the IV Pole when the Rover AC POWER switch is turned off.
Exit Menu
Exits the Diagnostics Mode menu completely. The user will be returned to the operational screen of the Neptune.
Calibration Mode

NOTE: Once you scroll to this point, the Rover will display *CALIBRATION MODE* ↑↓ At this point you must press the *YES, UP, DOWN, & YES* buttons in sequence (quickly) to enter the calibration menu. Pressing the NO button will return the rover to the 1st level of the diagnostic mode.

(SECOND TIER OF MENU)
Clear Errors
All current errors are cleared. The Prefill volume is set to 200 ml.
Smoke Mode
When this is selected, Rover displays "*700-3 Rover? Y/N*". If *YES* is selected, the smoke blower is disabled. If *NO* is selected, the smoke blower is enabled, and the HEPA filter time is reset to 120 hours.

Calibrate
This will allow the user to select the type of Transducer, and calibrate the Rover.
Dock Control
This allows the Rover to be manually docked with a Docker. Dock control allows the user to control the following functions:

- Get Revision
- Get Hardware
- Couplings Extend/Retract
- Offload Pump On/Off
- Sprinkler On/Off
- Detergent Pump On/Off
- Undock

Macerator Off (Obselete but may be present)
This function turns the macerator off. (There is a possibility for a unit to have a Macerator. The Macerator is obsolete and should be replaced if found. The Macerator held the Transducer Rod inside the Canister just as the current Transducer Block does).
Macerator On (Obselete but may be present)
This function turns the Macerator on. (There is a possibility for a unit to have a Macerator. The Macerator is obsolete and should be replaced if found. The Macerator held the Transducer Rod inside the Canister just as the current Transducer Block does).
Smoke RF Test
If this option is selected, the Main Controller sends a command to the Smoke Micro, and receives information back from the Smoke Microprocessor. The Rover then displays the corresponding information on the LCD display.
Read Memory
In this option, the user will be able to read individual bytes from EEPROM. This option is reserved for Stryker Instruments Design Engineers only and cannot be accessed by technicians.
Write Memory
In this option, the user will be able to write individual bytes to EEPROM. This option is reserved for Stryker Instruments Design Engineers only and cannot be accessed by technicians.
Reset Memory
Default values are stored in the EEPROM, and checksum is reset.

NOTE: resetting the memory ***WILL*** remove the calibration values stored in the EEPROM on the Main Control Board. When this mode is selected, a message will be displayed that asks the user to confirm this selection. If the user presses no, then the EEPROM will not be reset. If the user presses YES the EEPROM will be reset. This can be useful in clearing the memory prior to a calibration procedure.

Reset FL Filter (Software Ver 5.1 only)
This will allow the user to reset the counter for the fluid suction HEPA filter. The counter counts down from 500 hours.
Battery Override
Overrides the battery.
Exit Menu
This option will return the user from the Calibration menu to the Diagnostic menu.

Software Revision 5.2 Diagnostic Options

NOTE: If a Rover has a software version older than 5.0 the software should be upgraded. Critical software features were introduced with version 5.1 and above. It is highly recommended they upgrade the operational software.

Enter Diagnostic Mode by Performing the Following:
Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time, and turn on either *AC POWER* or *BATTERY POWER*. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS* which is the first menu option. Use the arrow buttons to scroll to additional options. A description of each menu option is provided below.

Docking Cycle
To access the Docking Cycle parameters scroll using the POLE DOWN▼ button to *DOCKING CYCLE* ↑↓, then press *YES*. Next, *PLEASE SELECT CYCLE OPTIONS* will be displayed.
Each of the following options represents one step in the offload cycle. The software allows the user to customize the Docking cycle. (i.e. increasing pretreatment amount and delay to allow the Enzymatic detergent additional time to soak.)

To adjust each of the following options scroll down using
the *DOWN* arrow buttons ▼, press *YES* to select, and use arrow buttons ▲▼ to adjust values. When adjustments are complete press *YES* to continue to next option.

Docking Cycle Options
PRETREAT 0 ML **(default 0ml)** determines how much detergent will be added to the waste fluid in the canister prior to offloading.(Ratio of X amount of detergent per Liter of waste)

DELAY 0 SEC **(default 0sec)** determines the amount of time the detergent will pretreat the waste fluid in the canister.

PRE-RINSE 20 SEC **(default 20sec)** determines the amount of time the Sprinkler will run following the offload of waste.

INJECTION 7 ML **(default 7ml)** determines the amount of detergent that will be distributed into the canister prior to the sprinkler wash cycle.

WASH 30 SEC **(default 30sec)** entry determines the amount of time the sprinkler/wash cycle will run.

OF CYCLES **(default 2)** determines how many times injection and wash cycle will repeat.

MACERATOR ? NO **(default No)** determines if maceration cycle will run or not.
Use arrows to scroll to *EXIT MENU* ↑↓ and press *YES* to exit Diagnostic Mode.

Reset Sm Filter Hours
5.2 Software version also allows the user to reset the smoke HEPA Filter hours. The timer is a countdown timer that counts down from 120hrs. To reset the hours after changing the Smoke HEPA Filter, scroll to *RESET SM FILTER* and press *YES*.

Reset Fl Filter Hours
5.2 Software version also allows the user to reset the Fluid Suction HEPA Filter hours. The timer is a countdown timer that counts down from 500hrs. To reset the hours after changing the Fluid Suction HEPA Filter, scroll to *RESET FL FILTER* and press *YES*.

Software Revision 6.3 Diagnostic Options

> **NOTE**: If a Rover has a software version older than 5.0 the software should be upgraded. Critical software features were introduced with version 5.1 and above. It is highly recommended they upgrade the operational software.

Enter Diagnostic Mode by Performing the Following:
Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time, and turn on either *AC POWER* or *BATTERY POWER*. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS* which is the first menu option. Use the arrow buttons to scroll to additional options. A description of each menu option is provided below.

(FIRST TIER OF MENU)
Review Errors
View the last 5 errors, as well as the docking cycle on which they occurred
Display the current number of successful docking cycles
Reset the error history. This will not affect the current docking cycle count.
Shipping Mode
The Rover is shipped in this state. It will not display fluid volume until it is docked. This ensures the docking station is installed prior to use. To clear this readout and return the Rover to an operational state simply dock the Rover.
External ADC
Selecting this option will display the reading from the external analog to digital converter in the fluid transducer to the user. This information will be updated once every second until the user presses the NO button.
Display Units
This allows the user to view fluid volume in different units of measure. Available choices are Liters, Milliliters, or CC's.
Autodown
Enables/disables the autodown feature. When on, the Autodown feature will automatically lower the IV Pole when the Rover AC POWER switch is turned off.
Reset Fl Filter
6.3 Software version allows the user to reset the Fluid HEPA Filter hours. The timer is a countdown timer that counts down from 1000hrs. To reset the hours after changing the Fluid HEPA Filter, scroll to *RESET FL FILTER* and press *YES*.
Reset Sm Filter
6.3 Software version also allows the user to reset the Smoke HEPA Filter hours. The timer is a countdown timer that counts down from 120hrs. To reset the hours after changing the Smoke HEPA Filter, scroll to *RESET SM FILTER* and press *YES*.
Rover Options
To access the Docking Cycle parameters scroll using the POLE DOWN▼ button to *ROVER OPTIONS* ↑↓, then press *YES*. Next, *PLEASE SELECT CYCLE OPTIONS* will be displayed.
Each of the following options represents one step in the offload cycle. The software allows the user to

customize the Docking cycle. (i.e. increasing pretreatment amount and delay to allow the Enzymatic detergent additional time to soak.)

DIAGNOSTIC OPTIONS CONT.

To adjust each of the following options scroll down using the *DOWN* arrow buttons ▼, press *YES* to select, and use arrow buttons ▲▼ to adjust values. When adjustments are complete, press *YES* to continue to next option.

Docking Cycle Options

PRETREAT 0 ML **(default 0ml)** determines how much detergent will be added to the waste fluid in the canister prior to offloading.(Ratio of X amount of detergent per Liter of waste)

DELAY 0 SEC **(default 0sec)** determines the amount of time the detergent will pretreat the waste fluid in the canister.

PRE-RINSE 20 SEC **(default 20sec)** determines the amount of time the Sprinkler will run following the offload of waste.

INJECTION 7 ML **(default 7ml)** determines the amount of detergent that will be distributed into the canister prior to the sprinkler wash cycle.

WASH 30 SEC **(default 30sec)** entry determines the amount of time the sprinkler/wash cycle will run.

OF CYCLES **(default 2)** determines how many times injection and wash cycle will repeat.

MACERATOR? NO **(default No)** determines if maceration cycle will run or not.
Use arrows to scroll to *EXIT MENU* ↑↓ and press *YES* to exit Diagnostic Mode.

BOT SPRINKLER? NO **(default No)** determines if the Rover has a Bottom Sprinkler or not. The Bottom Sprinkler was to be an Engineering upgrade but never was installed.

PREFILL INJECTION 45 ML **(default 45ml)** determines the amount of detergent that will be distributed into the canister after the *PREFILL* has been added to pretreat the fluid being collected before the next Docking cycle.

INDICATOR OFF **(default OFF)** enables/disables the audible alarm that can be set to alert the user when the fluid collected reaches a certain level

Calibration Mode

NOTE: Once you scroll to this point, the Rover will display *CALIBRATION MODE* ↑↓ At this point you must press the *YES, UP, DOWN, & YES* buttons in sequence (quickly) to enter the calibration menu. Pressing the NO button will return the rover to the 1st level of the diagnostic mode.

Exit Menu

Exits the Diagnostics Mode menu completely. The user will be returned to the operational screen of the Neptune.

(SECOND TIER OF MENU)

Clear Errors

All current errors are cleared. The Prefill volume is set to 200 ml.

Smoke Mode

When this is selected, Rover displays "*700-3 Rover? Y/N*". If *YES* is selected, the smoke blower is disabled. If *NO* is selected, the smoke blower is enabled, and the HEPA filter time is reset to 120 hours.

Calibrate

This will allow the user to calibrate the Rover. This software version is not compatible with any Neptune models before the release of the Level Sensor model, therefore, there will be only one option as far as Transducers are concerned.

Dock Control

This allows the Rover to be manually docked with a Docker. Dock control allows the user to control the following functions:

- Get Revision
- Get Hardware
- Couplings Extend/Retract
- Offload Pump On/Off
- Sprinkler On/Off
- Detergent Pump On/Off
- Undock

Macerator Off (Obselete but may be present)

This function turns the macerator off. (There is a possibility for a unit to have a Macerator. The Macerator is obsolete and should be replaced if found. The Macerator held the Transducer Rod inside the Canister just as the current Transducer Block does).

Macerator On (Obselete but may be present)

This function turns the Macerator on. (There is a possibility for a unit to have a Macerator. The Macerator is obsolete and should be replaced if found. The Macerator held the Transducer Rod inside the Canister just as the current Transducer Block does).

Smoke RF Test

If this option is selected, the Main Controller sends a command to the Smoke Micro, and receives information back from the Smoke Microprocessor. The Rover then displays the corresponding information on the LCD display.

Read Memory

In this option, the user will be able to read individual bytes from EEPROM. This option is reserved for Stryker Instruments Design Engineers only and cannot be accessed by technicians.

Write Memory

In this option, the user will be able to write individual bytes to EEPROM. This option is reserved for Stryker Instruments Design Engineers only and cannot be accessed by technicians.

Reset Memory

Default values are stored in the EEPROM, and checksum is reset.

NOTE: resetting the memory ***WILL*** remove the calibration values stored in the EEPROM on the Main Control Board. When this mode is selected, a message will be displayed that asks the user to confirm this selection. If the user presses no, then the EEPROM will not be reset. If the user presses YES the EEPROM will be reset. This can be useful in clearing the memory prior to a calibration procedure.

Reset FL Filter
This will allow the user to reset the counter for the fluid suction HEPA filter. The counter counts down from 1000 hours.
Battery Override
Overrides the battery.
Exit Menu
This option will return the user from the Calibration menu to the Diagnostic menu.

To perform the Calibration of the Rover, you will need 1) *250ML Graduated Beaker*, 8) 100ML *Graduated Beakers,* and at least 1) *3000ML Graduated Beaker*. The beakers should be filled prior to beginning the process. Fill the *250ML* beaker to *200ML*, fill the eight *100ML* beakers with *100ML* each. Fill the *3000ML* beaker to *3000ML* (this beaker will be filled multiple times during the procedure. During the calibration, you will be asked to utilize the amounts of fluid placed in the beakers. You will also need to obtain a *4 PORT MANIFOLD ASSY* and *SUCTION TUBING* from the facility personnel.

The Calibration instructions below are effective for Rover Software versions **5.0 thru 6.3**. *BEFORE THE CALIBRATION CAN BEGIN*, the Rover must be completely empty (no prefill). There are two ways to accomplish this; **first**, the Rover can be docked with the fresh water input to the Docking Station turned off. If this is done, you will need to follow steps **A-G, AND O** to enter Diagnostic Menu followed by the Calibration Menu from the directions below. **Secondly**, the fluid can be removed via Dock Control in the Diagnostic Menu by following steps **A-G, AND O** below.

Enter Diagnostic Mode by Performing the Following:

a. Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time
b. Turn on either *AC POWER* or *BATTERY POWER*.
c. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS*
d. Use the arrow buttons to scroll to *CALIBRATION*.

Enter Dock Control by Performing the Following:

e. The Rover will display *CALIBRATION MODE* ↑↓
f. At this point you must press the *YES, UP, DOWN, & YES* buttons in sequence (quickly) to enter the calibration menu.
g. If done properly, the Rover will display *CLEAR ERRORS.*
h. Use the arrow buttons to scroll to *DOCK CONTROL* and press *YES*.
i. The Rover will display *READY TO DOCK…*
j. At this point, push Rover up to Docker as if it was a normal Docking Cycle, the magnet will engage and *ROVER DOCKED* will then be momentarily displayed, followed by *GET REVISION.*
k. Use the arrow buttons to scroll to *COUPLING OUT* and press *YES*.
l. The Couplings will extend. Once fully extended, use the arrow buttons to scroll to *PUMP ON* and press *YES*.
m. The pump will run until it is manually turned off. Once the Canister is emptied, use the arrow buttons to scroll to *PUMP OFF* and press *YES*.
n. Use the arrow buttons to scroll to *UNDOCK* and press *YES*.
o. Use the arrow buttons to scroll to *CALIBRATE* and press *YES*.

1. The Rover should momentarily display *LEVEL SENSOR…*then *EMPTY TANK*.

2. If the steps above were performed and the tank is empty, press *YES*.

3. Unit should display *FILL TO 200ML*.

Note: At this point, if the Rover is not plugged into AC POWER, you will need to do this and turn on the MAIN POWER SWITCH as the VACUUM PUMP will need to be turned on **(Apply 10"+/-1 Hg to the canister)**, MANIFOLD inserted into the CANISTER CAP and the SUCTION TUBING applied to one of the Ports on the MANIFOLD to suck the fluid from the beakers into the Canister.

4. Fill Rover to 200mL of water.

5. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

6. With the Vacuum pump running, depress the "YES" button. Display should then read "FILL TO 300mL".

7. Add 100mL of water, **which will fill the canister to a total of 300mL**.

8. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

9. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 400mL".

10. Add 100mL of water, **which will fill the canister to a total of 400mL**.

11. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

12. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 500mL".

13. Add 100mL of water, **which will fill the canister to a total of 500mL**.

14. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

15. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 600mL".

16. Add 100mL of water, **which will fill the canister to a total of 600mL**.

17. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

18. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 700mL".

19. Add 100mL of water, **which will fill the canister to a total of 700mL**.

20. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

21. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 800mL".

22. Add 100mL of water, **which will fill the canister to a total of 800mL**.

23. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

24. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 900mL".

25. Add 100mL of water, **which will fill the canister to a total of 900mL**.

26. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

27. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 1000mL".

28. Add 100mL of water, **which will fill the canister to a total of 1000mL**.

29. Allow for the water height to stabilize and bubbling of excess air from the system to stop.

30. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 20000mL".

Note: At this point, the 3000ML Graduated Beaker will be used to fill the Canister with another 19 Liters of fluid for a total of 20L.

31. Add 19000mL (19 Liters), allow for the water height to stabilize and bubbling of excess air from the system to stop. With the Vacuum pump running, depress the "YES" button. The Display will go back to the menu options and display "CALIBRATE".

32. Scroll the menu until it displays "EXIT MENU".

33. Depress the "YES" button and the Rover will display "CALIBRATION".

35. Scroll the menu until it displays "EXIT MENU".

36. Depress the "YES" button to exit Diagnostic Mode.

Note: The steps below must be completed before the Rover Calibration is done and Fluid Volume readings will be available.

37. Unit will alternately display "UNDERFILL ERROR" and "VOLUME DISABLED". This is normal as the intial steps of the process calls for a totally empty tank which includes the Prefill.

38. Dock the Rover, (this will clear the Error) and remove all the fluid, and add the Prefill amount of fluid.

39. Calibration is complete.

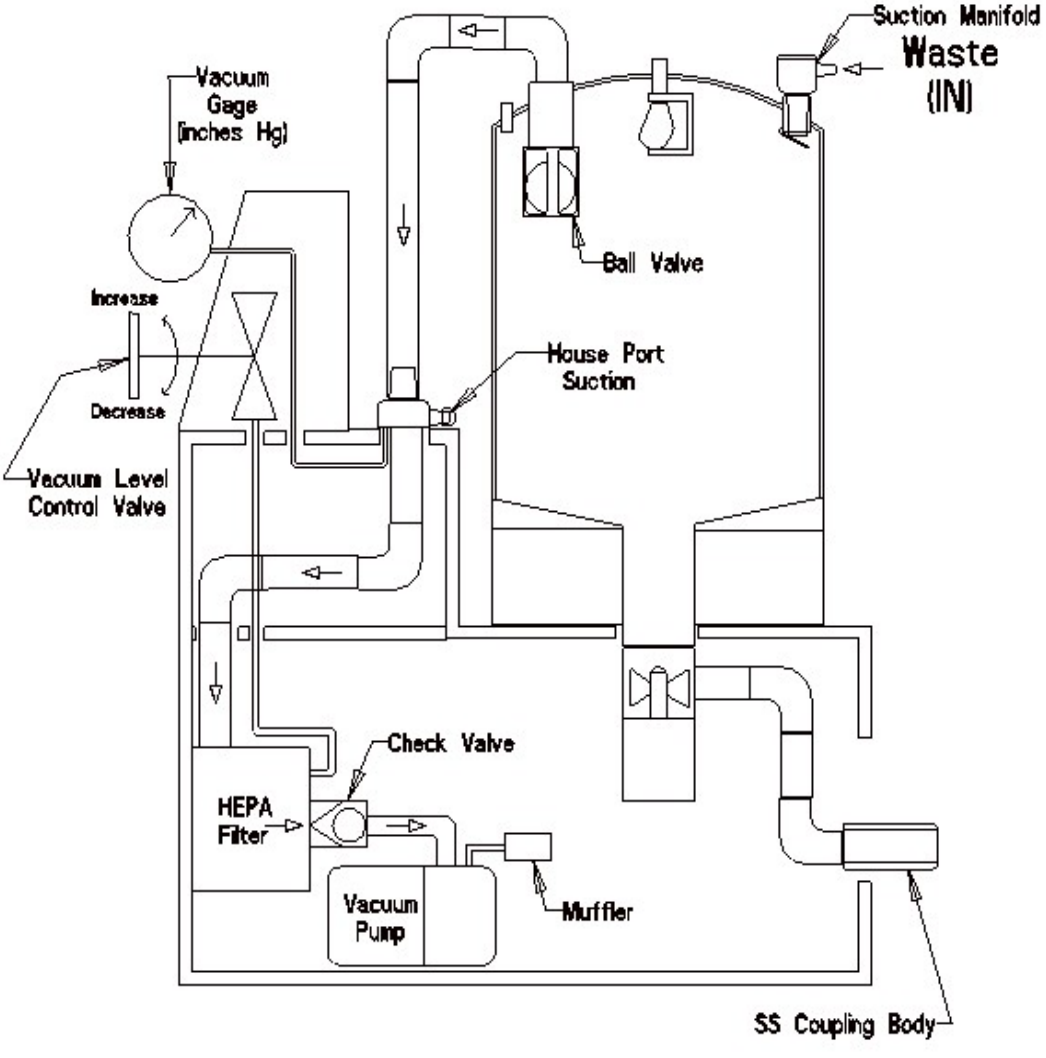
SUBSYSTEM LAYOUTS

VACUUM SUBSYSTEM

The Vacuum Subsystem consists of a **Vacuum Pump Assy (P/N 0700-001-240Q)**, **Muffler/Silencer Manifold Assy (P/N 0700-001-160Q)**, **Check Valve Assy (P/N 0700-001-260Q)**, **Plenum Plate/ Gasket Assy (P/N 0700-001-270Q)**, **Fluid Suction Hepa Filter Assy (P/N 0700-034-000)**, **Lower Vacuum Hose Assy (P/N 0700-001-116)**, **Carbon Hose Assy (P/N 0700-035-000)**, **Canister Assy (P/N 0700-001-320Q)**, **Solid State Relay (P/N 0700-001-033)**, and **Canister Cap Assy (P/N 0700-001-170Q)**.

Function: Vacuum is obtained by pulling the air out of the Canister to create negative pressure inside the Canister. The negative pressure then pulls the fluid from the patient site via SUCTION TUBING and a MANIFOLD ASSY inside the CANISTER.

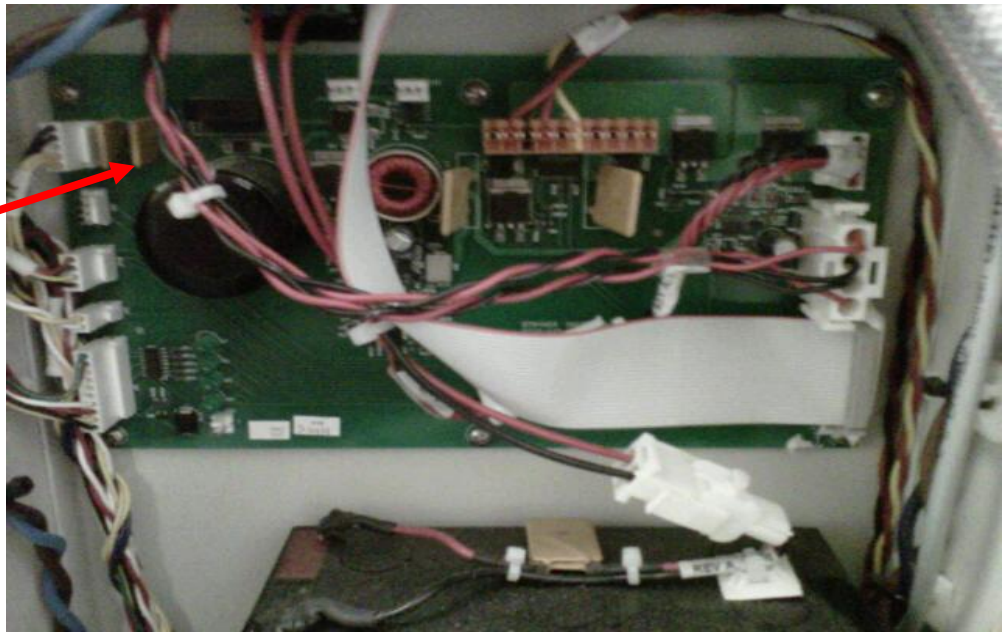
Observe the arrows representing airflow in the diagram. The air is being pulled through the tubing into the FLUID SUCTION HEPA FILTER. The filter cleans the air of any particulates and odors. The air is then pulled into the VACUUM PUMP ASSY and subsequently released through the MUFFLER/ SILENCER MANIFOLD into the chassis of the Rover to the atmosphere.



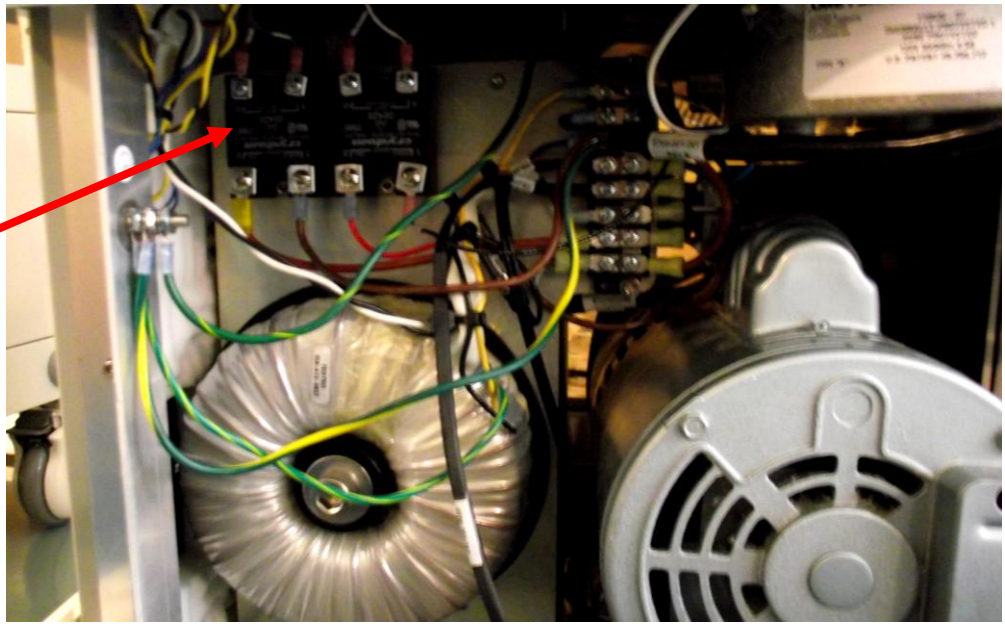
The Vacuum level can be adjusted by rotating the VACUUM ADJUSTMENT KNOB either clockwise/counter-clockwise to obtain the desired level. The level can be monitored via the VACUUM GAUGE ASSY.

Software and Control: The Vacuum Subsystem is activated by pressing FLUID SUCTION ON/OFF button on the User Interface Panel (P/N 0700-001-050Q). Once the FLUID SUCTION ON/OFF button is depressed, the Main Control Board PCBA (P/N 0712-064-001) located behind the UIP sends a signal to the Power Control Board PCBA (P/N 0712-019-001) located just above the Rover Battery (P/N 0700-001-430Q) in the Battery Compartment. The POWER CONTROL BOARD PCBA then applies a voltage to Solid State Relay K2 (P/N 0700-001-033) located on the Transformer Assy (P/N 0700-001-030Q). K2 RELAY then applies a ground to the Vacuum Pump Assy (0700-001-240Q) allowing it to run.

POWER CONTROL BOARD



K2 SOLID STATE RELAY

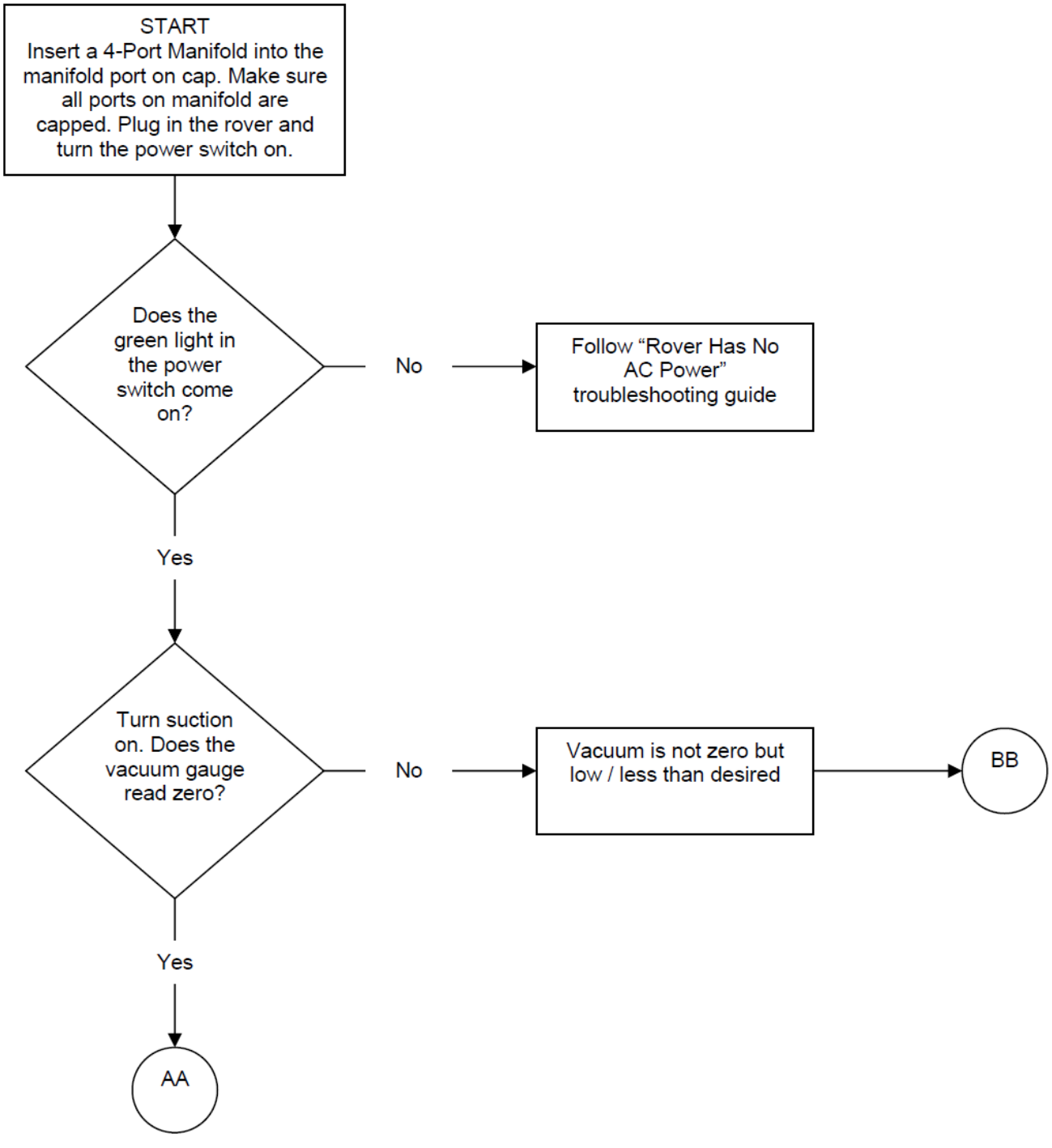


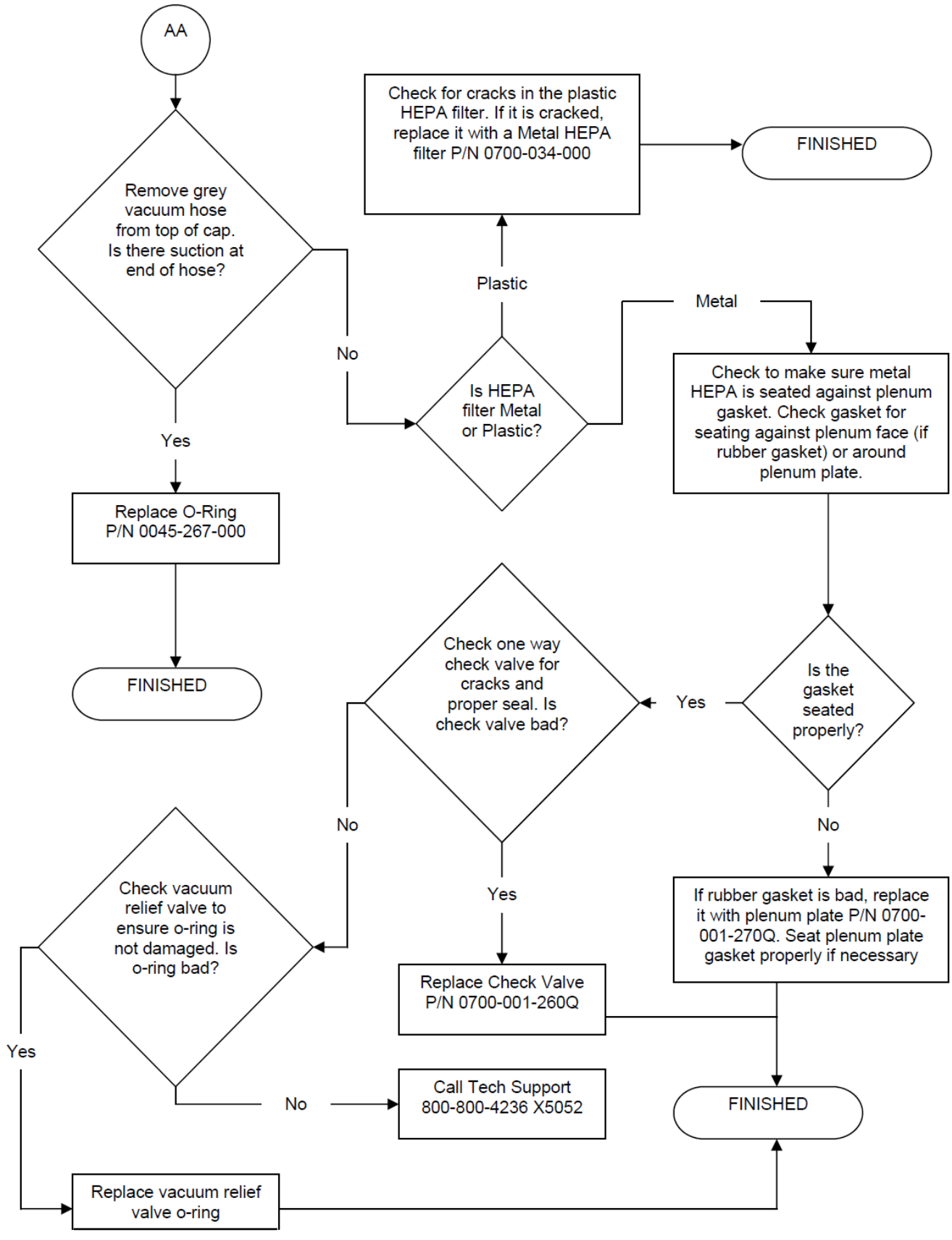
Troubleshooting Vacuum Subsystem: The Vacuum Subsystem has no error messages for failure modes, therefore, the Vacuum Gauge will be the only indicator of a deficiency/failure in this system. When set to maximum, the Vacuum Gauge will either display low or no vacuum depending on the failure. There could also be a complete electrical failure of this system, high current draw which would trip the Power Switch (circuit breaker), and with earlier models, there can be an overheating affect that would shut down the transformer due to the Vacuum Pump being wired through the transformer. When troubleshooting, determine if the problem is electrical or mechanical; then focus on that particular issue.

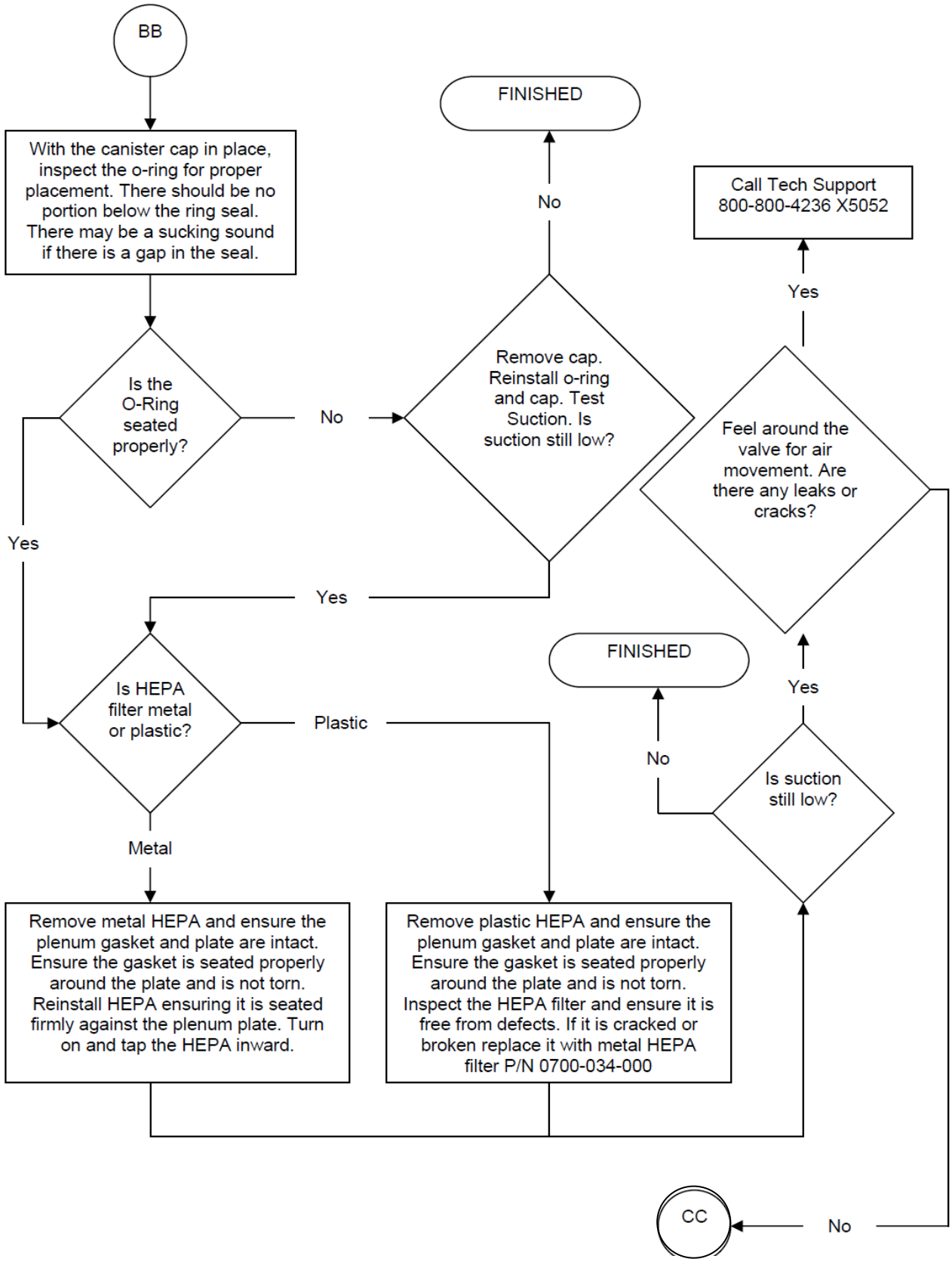
Potential Symptoms/ Resolutions:

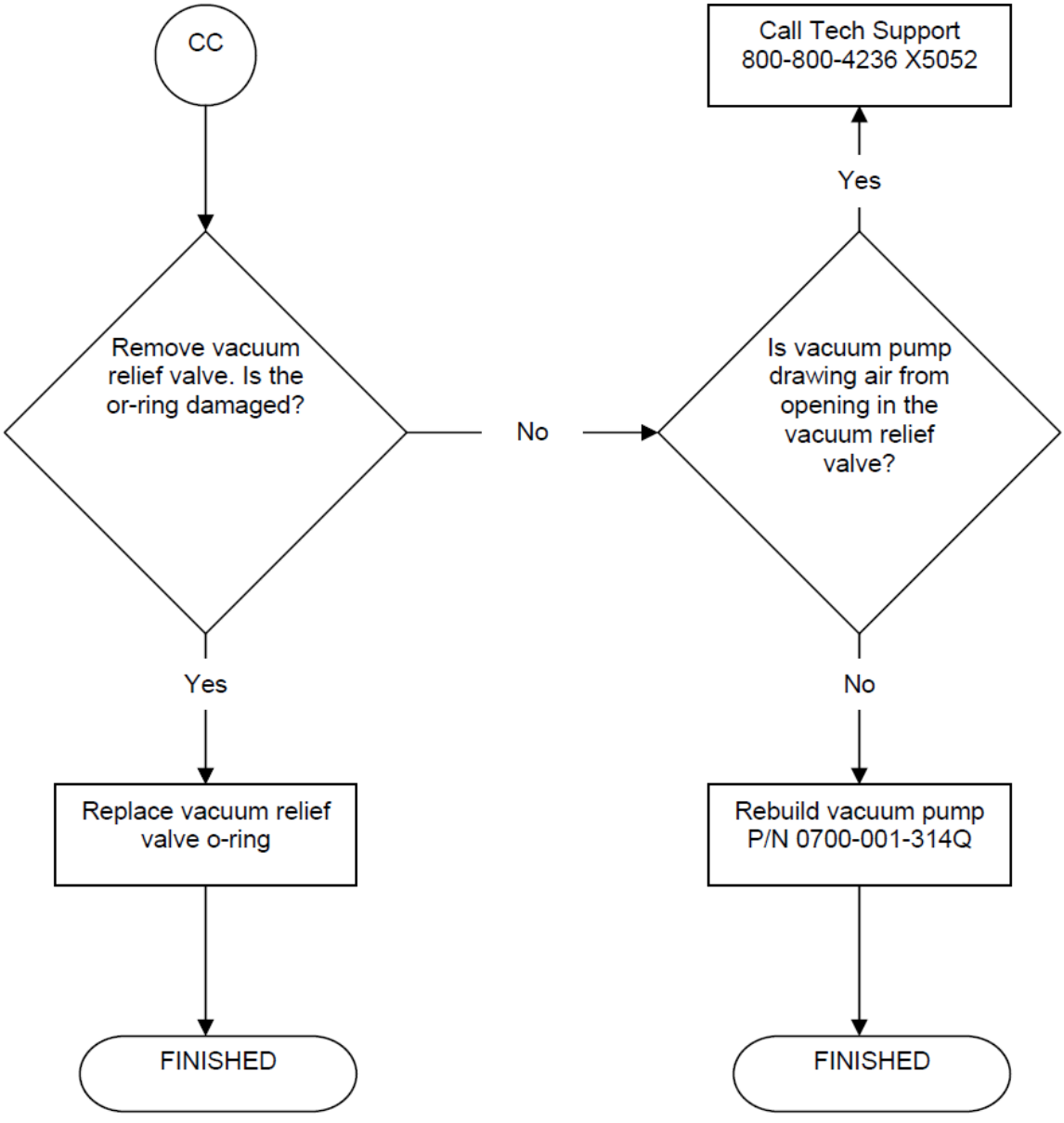
- **Low/ No Suction**- follow associated flow chart
- **Rover shuts off and resets after Pump runs for an extended amount of time**- verify that the Rover (700-1 only) has the older version of the Transformer (typically found in 2000-2006 units). The older version of the Transformer has larger windings as well as the Vacuum Pump being wired through the Transformer. If this is the case, follow procedure for *Rewiring of the Vacuum Pump of 700-1 Rover*.
- **When Vacuum button is depressed, Pump does not turn on**-verify that there is A/C to the unit. If A/C is present, the cooling fans will be running and the LCD Screen on the UIP will be lit and display a volume level. If this is the case, follow procedure for *No Communication in Vacuum System*. If there is no A/C, follow procedure for *Rover has No A/C Power (700-1) or (700-3)*.
- **When Vacuum button is depressed, Pump hums and Main Power Switch trips**- this typically happens when the Vacuum Pump has seized. Use a Safety Analyzer to check individual current draw of components. If the result of testing determines the Vacuum Pump is drawing too much current/ seized, follow procedure for *Removal/Replacement of Vacuum Pump*.
- **When Pump is on, there is a loud noise**- this typically happens when there is a hose within the Vacuum system that is not connected, or there is a hole somewhere in the Vacuum system. Visually go through the Vacuum system to find your open section.
- **Membrane Switch failure** - verify that the Membrane Switch is functioning properly by using another UIP to test. If the known good UIP operates the Vacuum Pump when the Suction On/Off button is depressed, then the Membrane Switch should be replaced. Follow the procedure for *Removal/ Replacement of the Membrane Switch*. If the known good UIP does not operate the Vacuum Pump when the Suction On/Off button is depressed, then the problem is not the Membrane Switch.

ROVER HAS NO/LOW SUCTION




AA
Remove grey vacuum hose from top of cap. Is there suction at end of hose?
Yes
No
Replace O-Ring P/N 0045-267-000
FINISHED
Is HEPA filter Metal or Plastic?
Plastic
Check for cracks in the plastic HEPA filter. If it is cracked, replace it with a Metal HEPA filter P/N 0700-034-000
FINISHED
Metal
Check to make sure metal HEPA is seated against plenum gasket. Check gasket for seating against plenum face (if rubber gasket) or around plenum plate.
Is the gasket seated properly?
Yes
No
If rubber gasket is bad, replace it with plenum plate P/N 0700-001-270Q. Seat plenum plate gasket properly if necessary
FINISHED
Check one way check valve for cracks and proper seal. Is check valve bad?
Yes
No
Replace Check Valve P/N 0700-001-260Q
Check vacuum relief valve to ensure o-ring is not damaged. Is o-ring bad?
Yes
No
Call Tech Support 800-800-4236 X5052
Replace vacuum relief valve o-ring


BB
With the canister cap in place, inspect the o-ring for proper placement. There should be no portion below the ring seal. There may be a sucking sound if there is a gap in the seal.
Is the O-Ring seated properly?
No
Yes
Remove cap. Reinstall o-ring and cap. Test Suction. Is suction still low?
No
FINISHED
Yes
Call Tech Support 800-800-4236 X5052
Feel around the valve for air movement. Are there any leaks or cracks?
Yes
Is HEPA filter metal or plastic?
Plastic
Metal
FINISHED
No
Yes
Is suction still low?
Remove metal HEPA and ensure the plenum gasket and plate are intact. Ensure the gasket is seated properly around the plate and is not torn. Reinstall HEPA ensuring it is seated firmly against the plenum plate. Turn on and tap the HEPA inward.
Remove plastic HEPA and ensure the plenum gasket and plate are intact. Ensure the gasket is seated properly around the plate and is not torn. Inspect the HEPA filter and ensure it is free from defects. If it is cracked or broken replace it with metal HEPA filter P/N 0700-034-000
CC
No

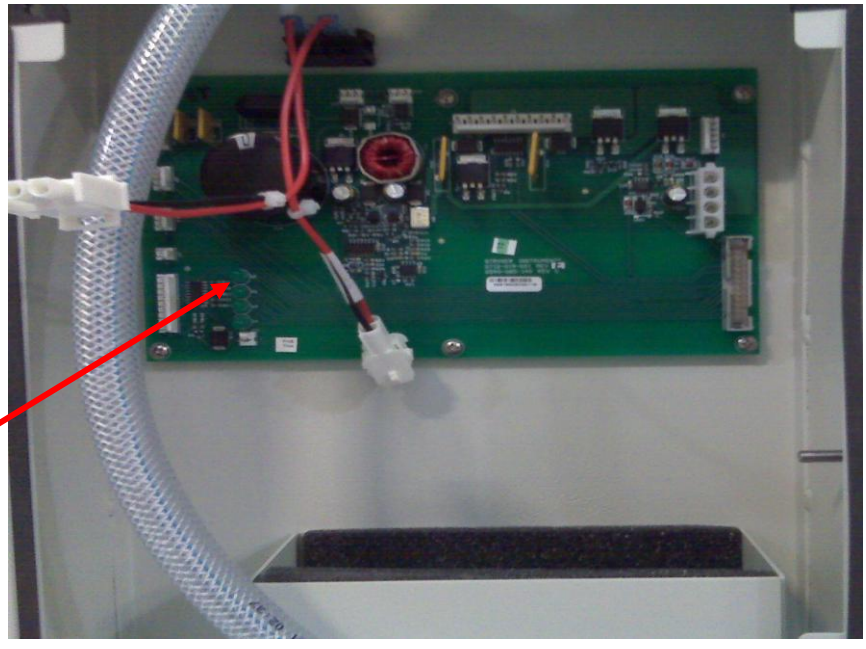

CC
Remove vacuum relief valve. Is the or-ring damaged?
No
Is vacuum pump drawing air from opening in the vacuum relief valve?
Yes
Call Tech Support 800-800-4236 X5052
Yes
Replace vacuum relief valve o-ring
FINISHED
No
Rebuild vacuum pump P/N 0700-001-314Q
FINISHED

NO COMMUNICATION IN VACUUM SYSTEM

In the Vacuum Subsystem, there is communication between the **Main Control Board PCBA (P/N 0712-064-001Q)** to the **Power Control Board PCBA (P/N 0712-019-001)** when the FLUID SUCTION ON/OFF BUTTON on the **Membrane Switch (P/N 0700-001-056 for 700-1 Gold Model/ P/N 700-003-056 for the 700-3 Silver Model)** is depressed. If there is communication between these circuit boards, an LED on the POWER CONTROL BOARD PCBA will light regardless if the VACUUM PUMP comes on or not. If the LED does not light, focus on the MEMBRANE SWITCH or communication between the 2 circuit boards.

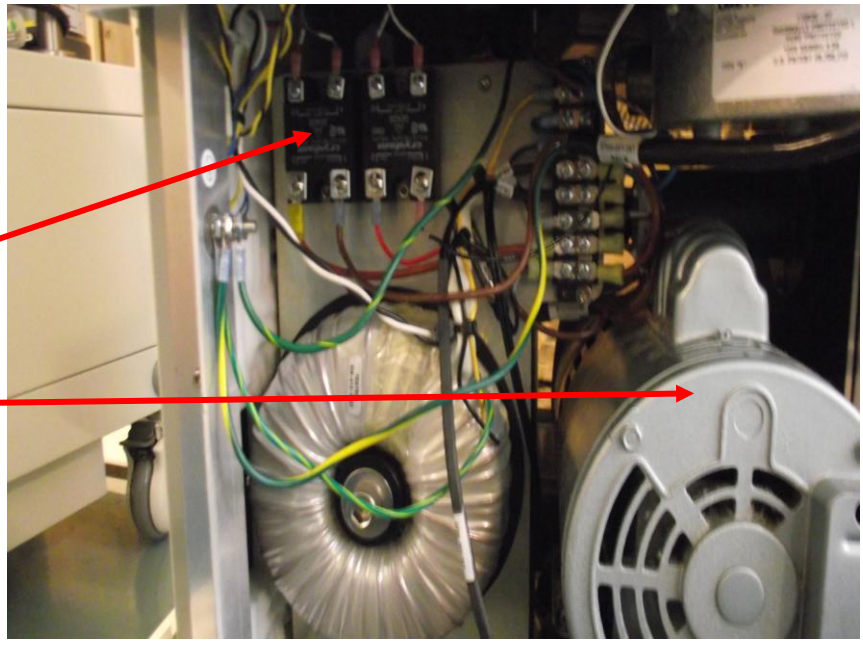
If the LED does light, check **Solid State Relay K2 (P/N 0700-001-033)** at pins 3 & 4 for 15VDC. This is the output of the POWER CONTROL BOARD PCBA. If the input at SOLID STATE RELAY K2 is good check the output of SOLID STATE RELAY K2.

POWER CONTROL BOARD PCBA: Top LED lights when there is communication between Main Controller and Power Controller.



TRANSFORMER: RELAY K2

VACUUM PUMP ASSY



REMOVAL AND REPLACEMENT OF MEMBRANE SWITCH
(P/N 0700-001-056 or 0700-003-056)

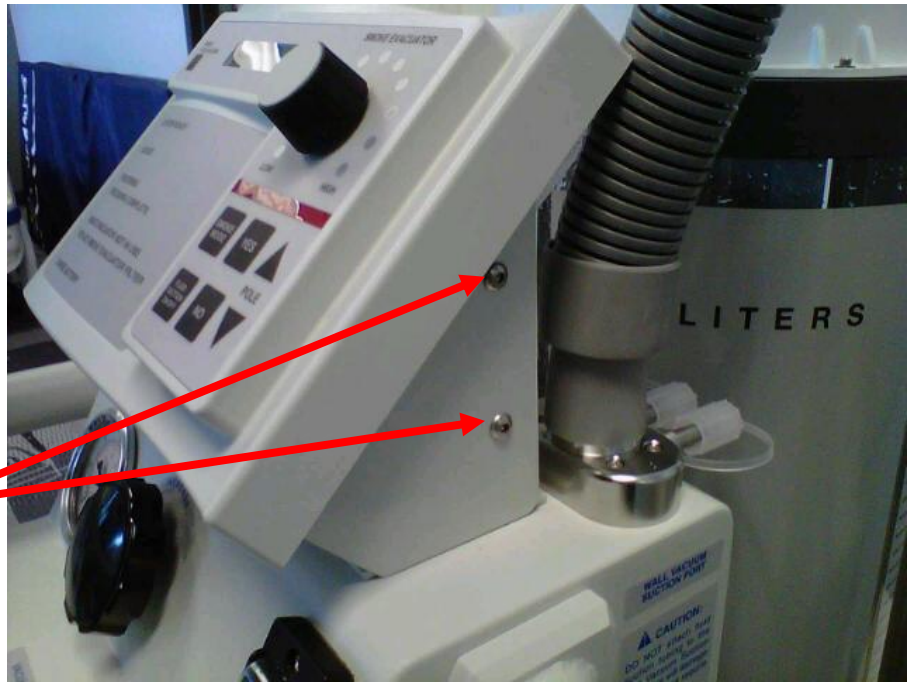
Note: The following parts may be needed before attempting to perform this procedure; 1ea) **Membrane Switch Assy (P/N 0700-001-056 for Gold Rover or 0700-003-056 for Silver Rover)**.

Note: To ensure there is no damage to the Membrane Switch or any other components in the UIP, turn off A/C and D/C Power before proceeding.

Gold Rover Membrane Switch (0700-001-056)

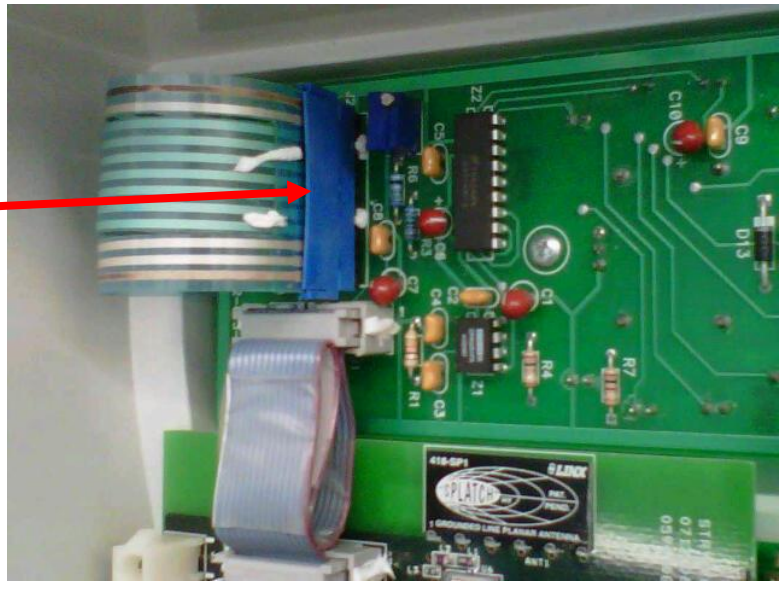
1. Remove the **User Interface Panel (P/N 0700-001-050Q)** by removing 4 BUTTON HEAD SOCKET SCREWS using 1/8 Allen Key or equivalent.

BUTTON HEAD SOCKET SCREWS (2 on each side)



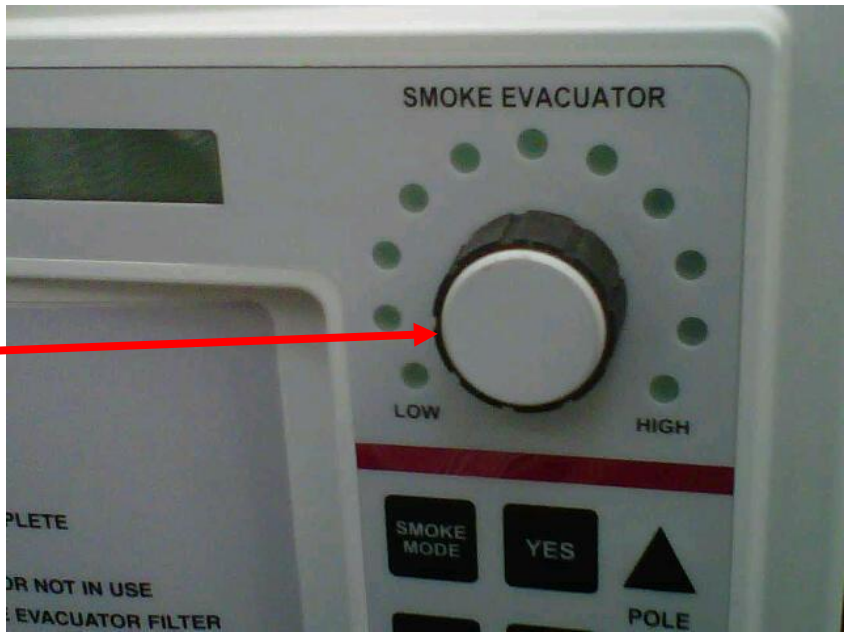
2. On the SMOKE CONTROLLER PCBA, remove connector from J2.

Connector at J2



3. On the UIP of the GOLD ROVER, remove the **Black Knob (P/N 0033-007-000)** by turning counter clockwise and pulling at the same time until BLACK KNOB comes off.

BLACK KNOB



4. On the UIP of the GOLD ROVER, peel up one of the corners of the MEMBRANE SWITCH to remove. Ensure that connector J2 is fed through the UIP to fully remove MEMBRANE SWITCH.

5. Reinstall the new GOLD MEMBRANE SWITCH in reverse order.

6. Reinstall UIP.

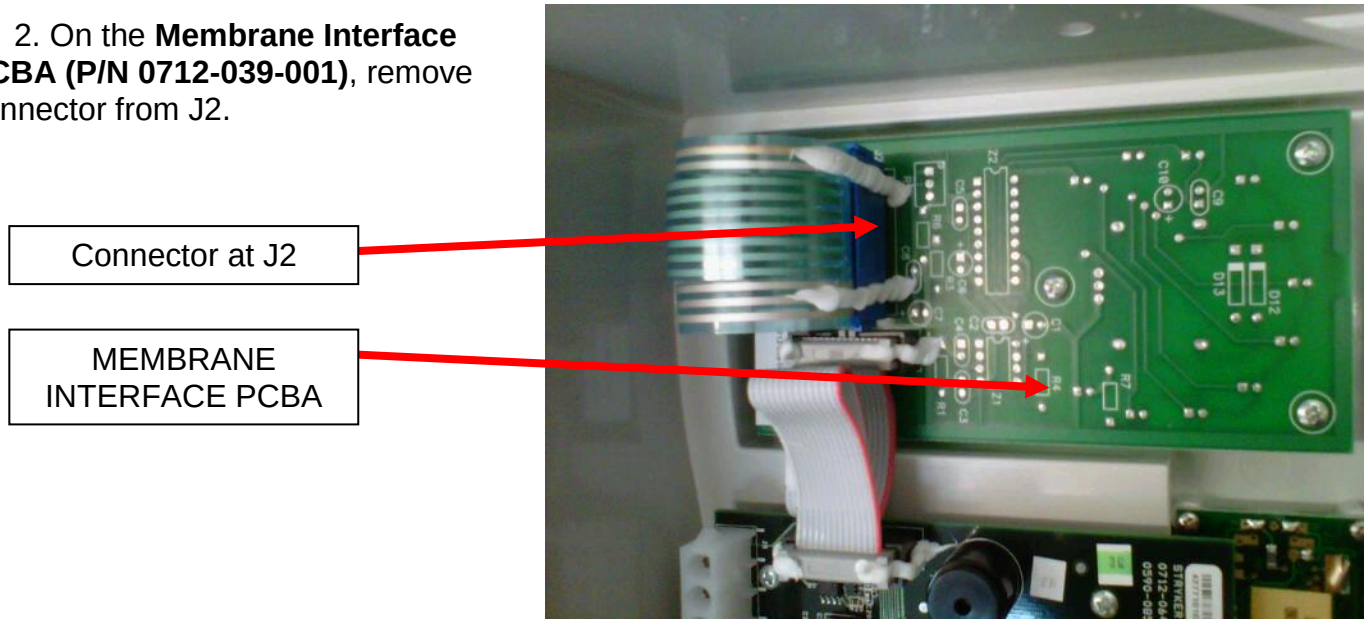
7. Perform all electrical safety and functional tests per procedure for Testing.

8. Return unit to service.

Silver Rover Membrane Switch (0700-003-056)

1. Remove the **User Interface Panel (P/N 0700-003-050Q)** by removing 4 BUTTON HEAD SOCKET SCREWS using 1/8 Allen Key or equivalent.

2. On the **Membrane Interface PCBA (P/N 0712-039-001)**, remove connector from J2.



4. On the UIP of the SILVER ROVER, peel up one of the corners of the MEMBRANE SWITCH to remove. Ensure that connector J2 is fed through the UIP to fully remove MEMBRANE SWITCH.

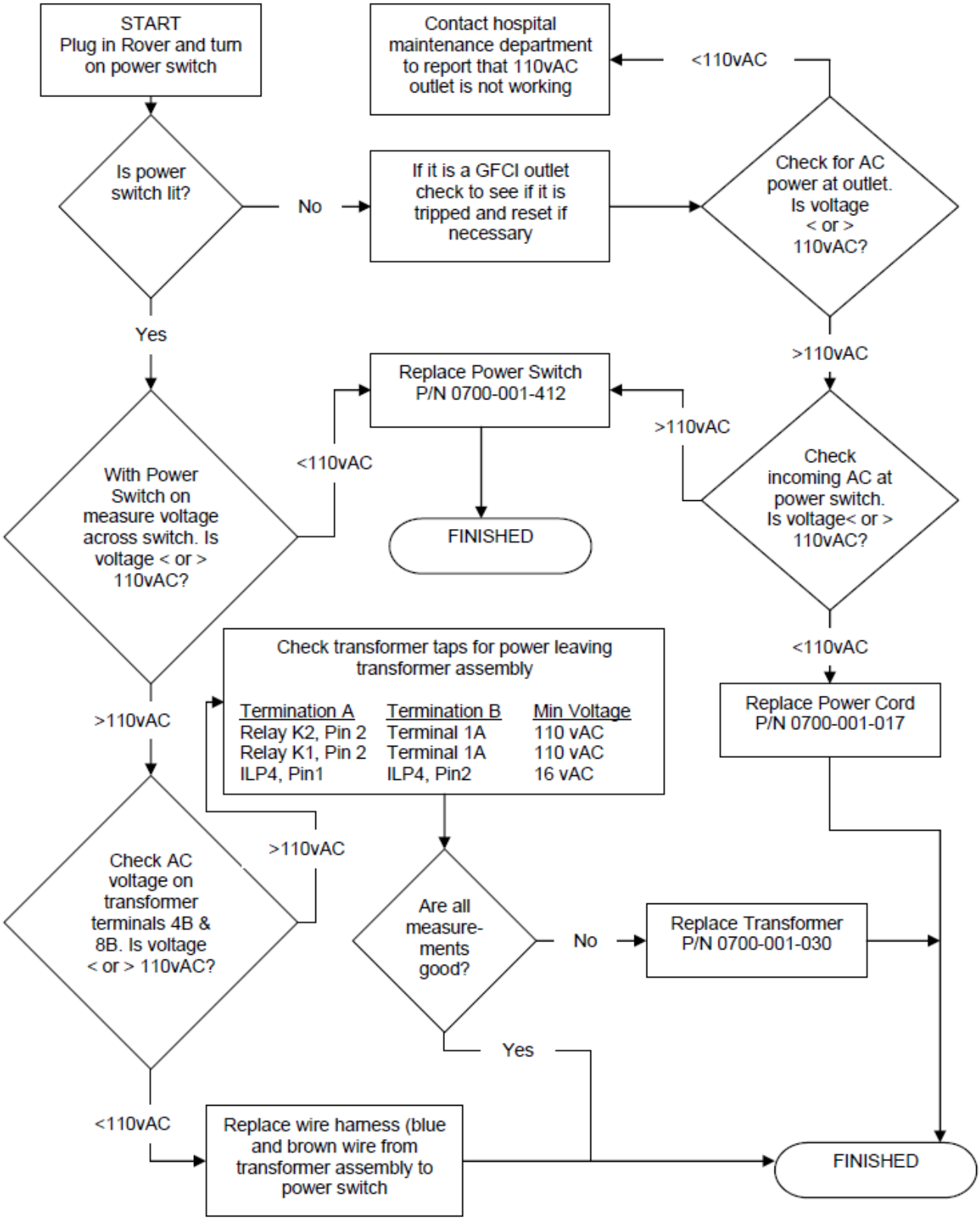
5. Reinstall the new SILVER MEMBRANE SWITCH in reverse order.

6. Reinstall UIP.

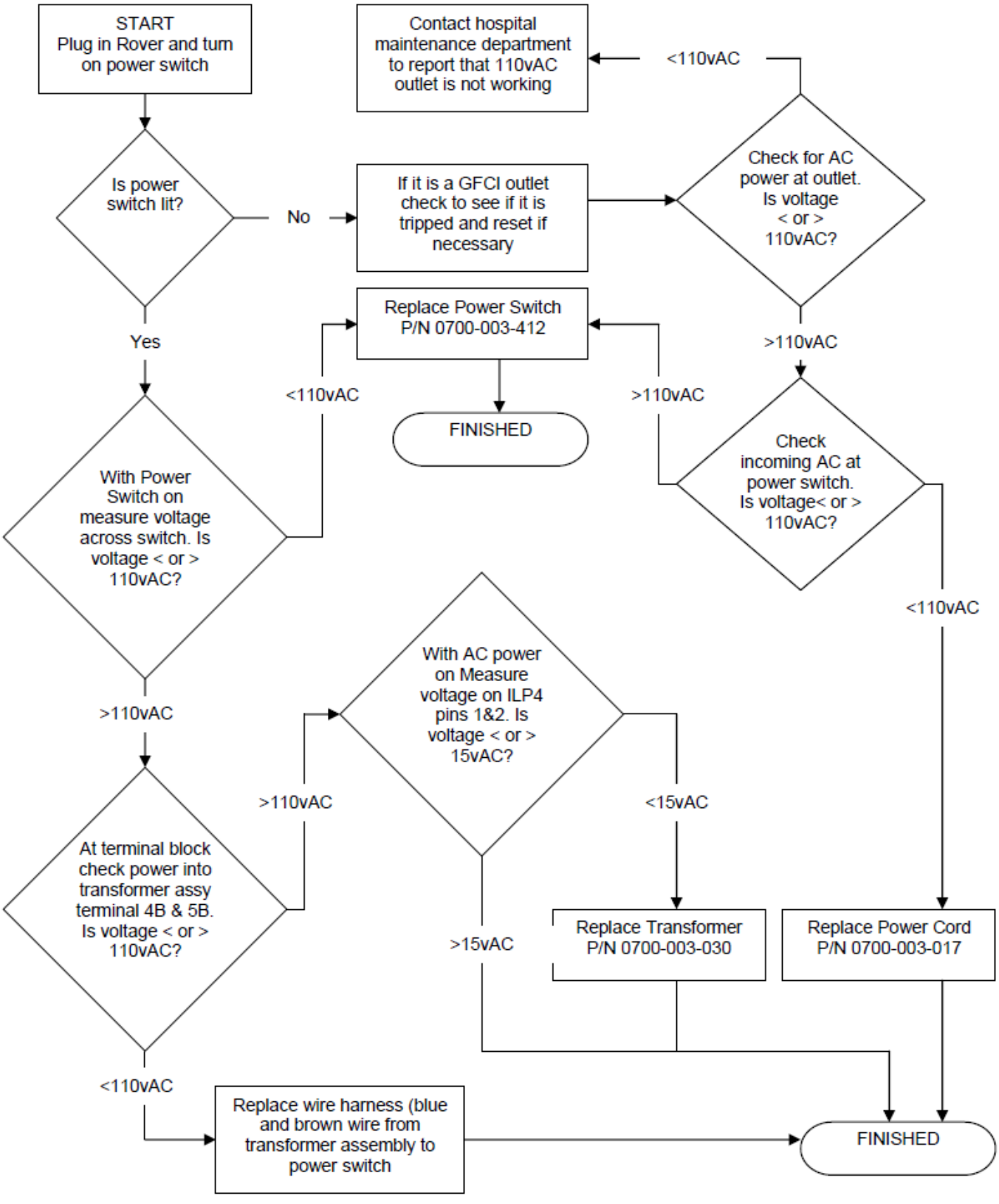
7. Perform all electrical safety and functional tests per procedure for Testing.

8. Return unit to service.

ROVER HAS NO A/C POWER (700-1)



ROVER HAS NO A/C POWER (700-3)

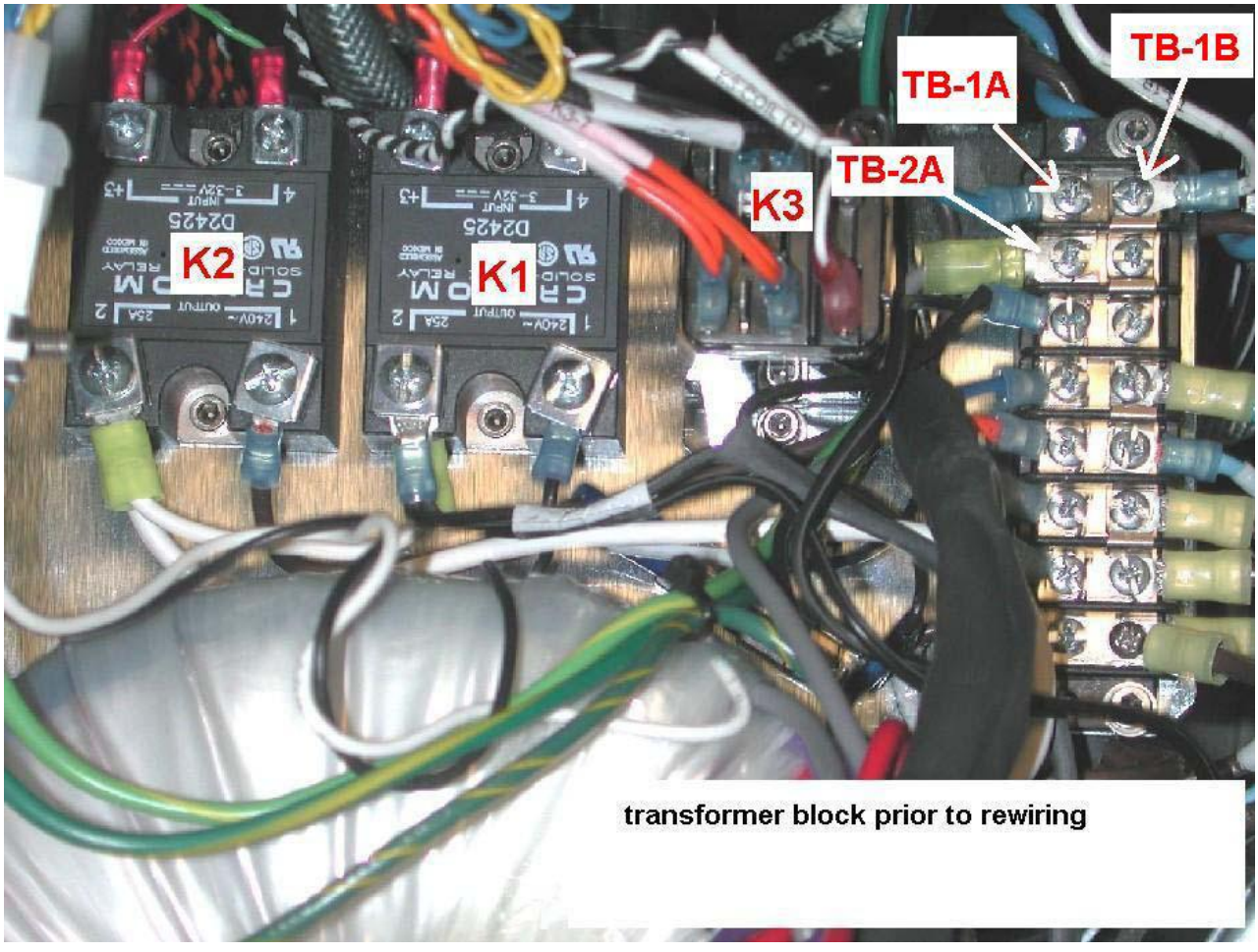


TRANSFORMER REWIRE (700-1 GOLD ROVER ONLY)

In earlier models of the Rover, the **Vacuum Pump (P/N 0700-001-240Q)** originally got its power from the secondary of the **Transformer (P/N 0700-001-030Q)**. Under high temperature conditions, the thermal fuses within the TRANSFORMER windings would open. As a result, the **Power Switch (P/N 0700-001-412)** on the unit remains illuminated, but the rover enters “WAITING TO DOCK” mode, and the VACUUM PUMP turns off. This situation represented NO A/C POWER to the unit. The procedure below describes how to rewire the VACUUM PUMP so that it is powered via 120VAC input into the Rover and not through the TRANSFORMER.

Note: The following parts are needed before attempting to perform this procedure; 1ea) **Pump Relay Harness (P/N 0700-001-245)**, 4ea) **Stainless Steel 6-32 x ¼ Pan Head Screw (P/N 0050-038-000)**

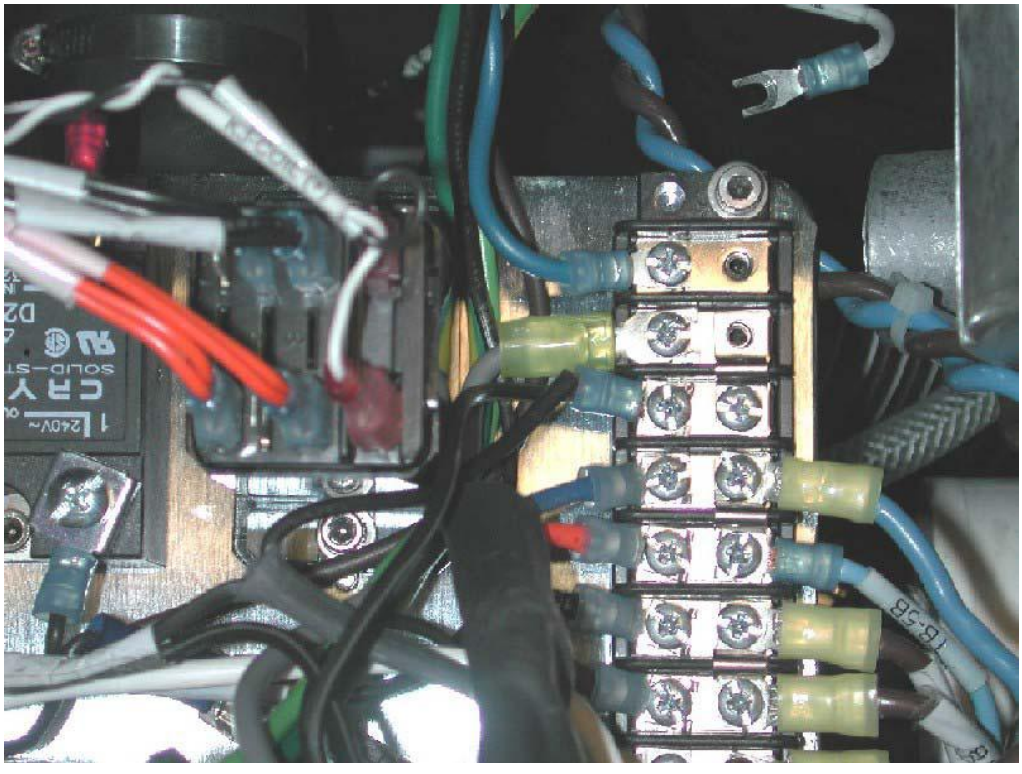
1. Make sure the ROVER is unplugged, with the POWER SWITCH in the OFF position. Remove the **Side Panel (P/N 00700-001-135Q)** from the side opposite the IV POLE in order to gain access to the TRANSFORMER and **Terminal Block (P/N 0700-001-036)**.



transformer block prior to rewiring

2. ***Remove*** screws from terminal block positions ***1B*** and ***2B***.

3. ***Remove*** jumper from terminal block positions ***1B*** and ***2B***.

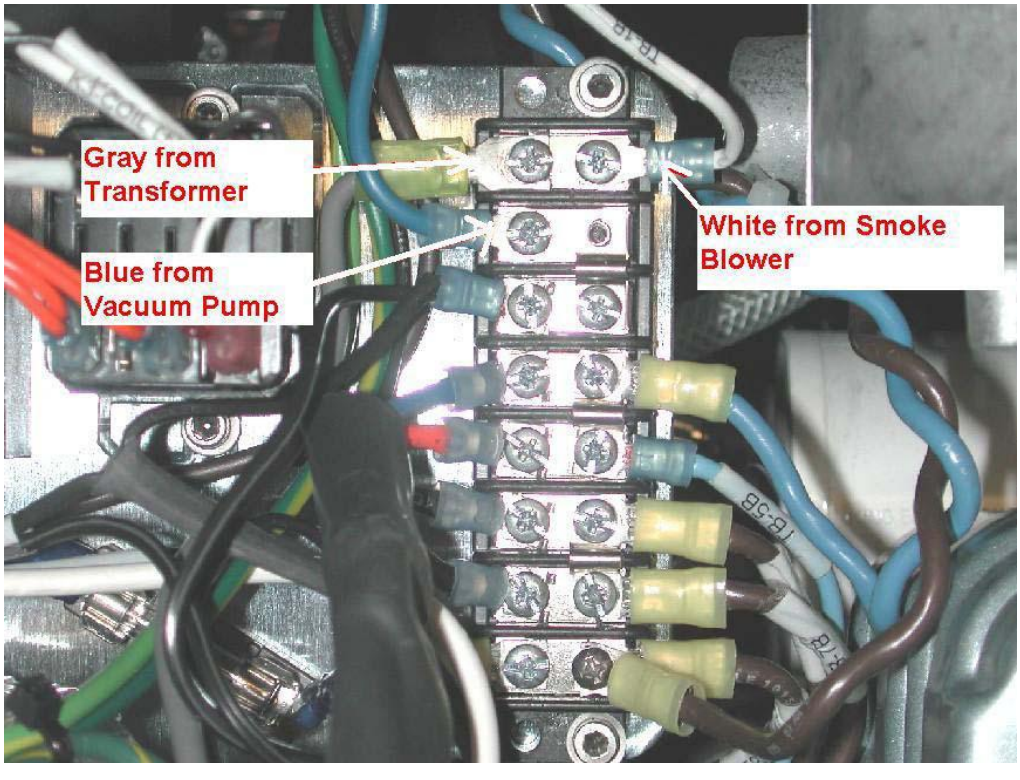


4. ***Replace*** the white wire from the **Smoke Blower (P/N 0700-001-013)** labeled ***TB-1B*** into terminal block position ***1B***. Secure with screw.

5. ***Loosen*** screws from terminal block positions ***1A*** and ***2A***.

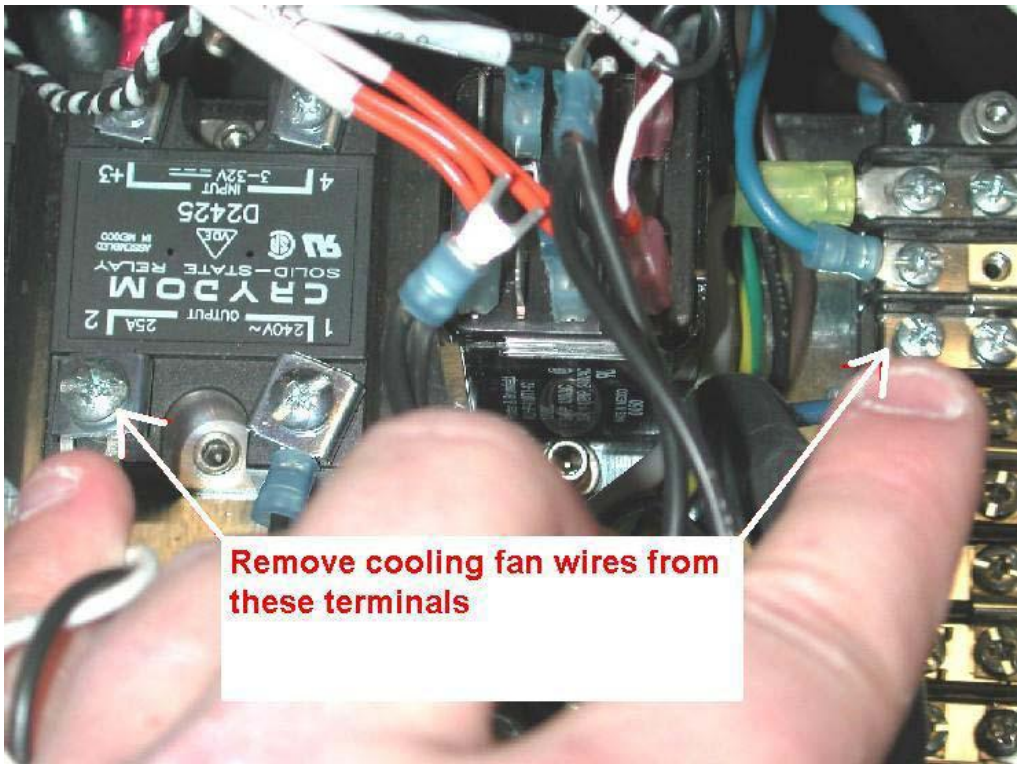
6. ***Place*** the gray wire from the TRANSFORMER into terminal block position ***1A***. Secure with screw.

7. ***Place*** the blue wire from the VACUUM PUMP into terminal block position ***2A.*** Secure with screw.



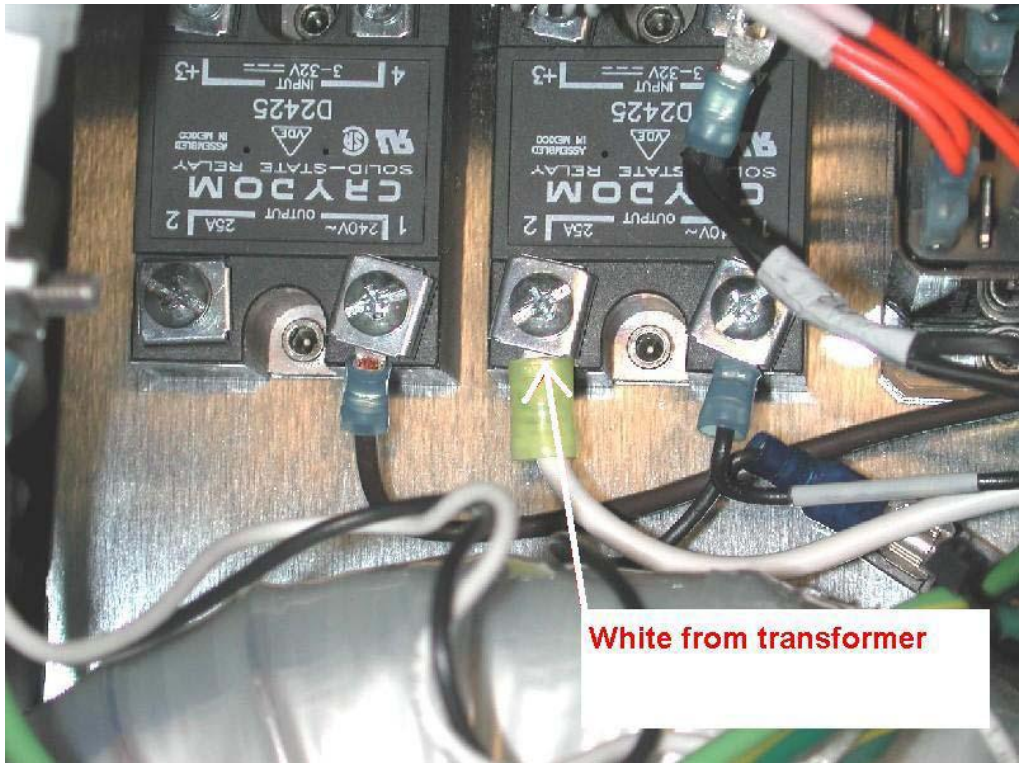
8. ***Loosen*** the screw on terminal block position ***3A***. ***Remove*** the **Cooling Fan (P/N 0700-001-215)** terminal (this terminal has 2 black wires going into 1 terminal) from terminal block position ***3A***.

9. ***Loosen*** the screw on **Solid State Relay K1(P/N 0700-001-033)** pin 2, and remove the other cooling fan terminal.

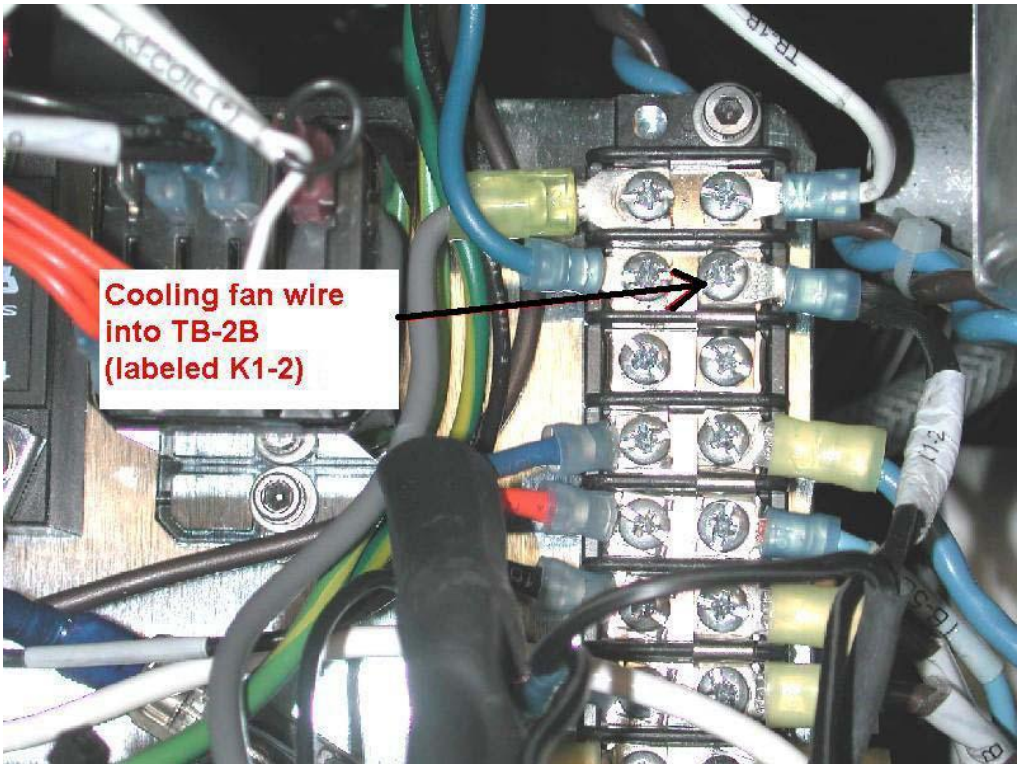


10. **Loosen** the screw on **Solid State Relay K2 (P/N 0700-001-033)** pin 2, and ***remove*** both the white wire from the TRANSFORMER, and the short white jumper wire. ***Remove*** the short white jumper wire from SOLID STATE RELAY K1 pin 2 as well. The short white jumper may be disposed of.

11. ***Secure*** the white wire from the TRANSFORMER to SOLID STATE RELAY K1 pin 2.



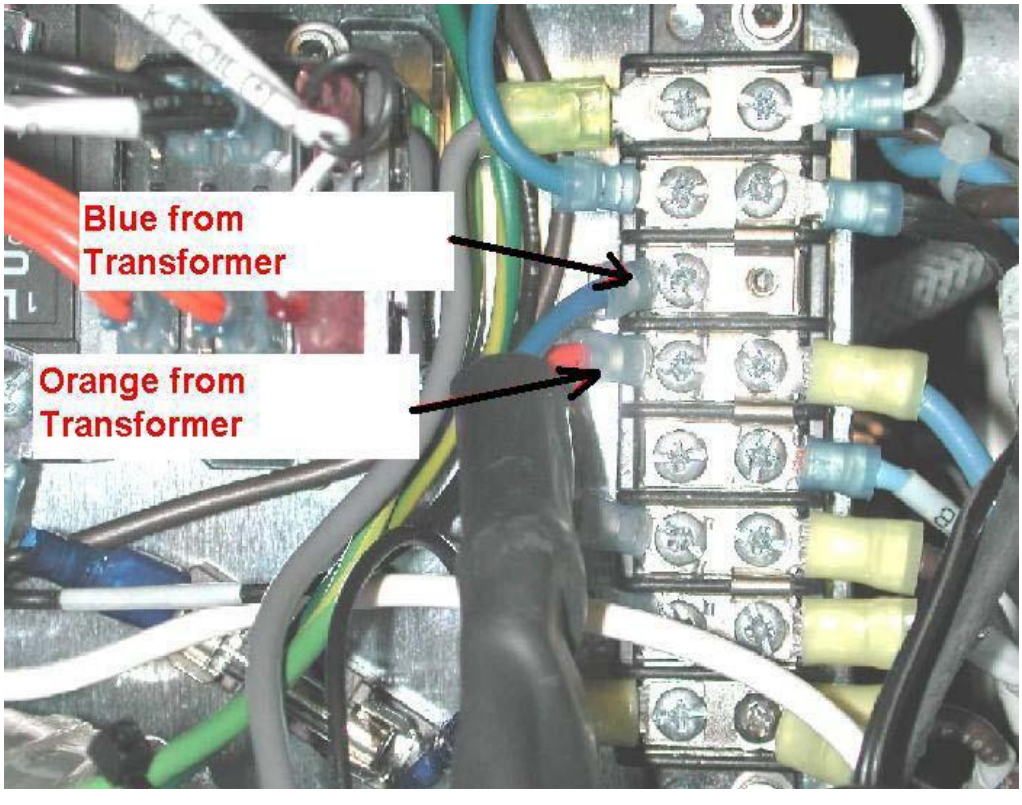
12. ***Place*** the COOLING FAN harness terminal (the one that is labeled K1-2) into terminal block position ***2B***. Secure with screw.



13. ***Remove*** the screw from terminal block position ***3B***.

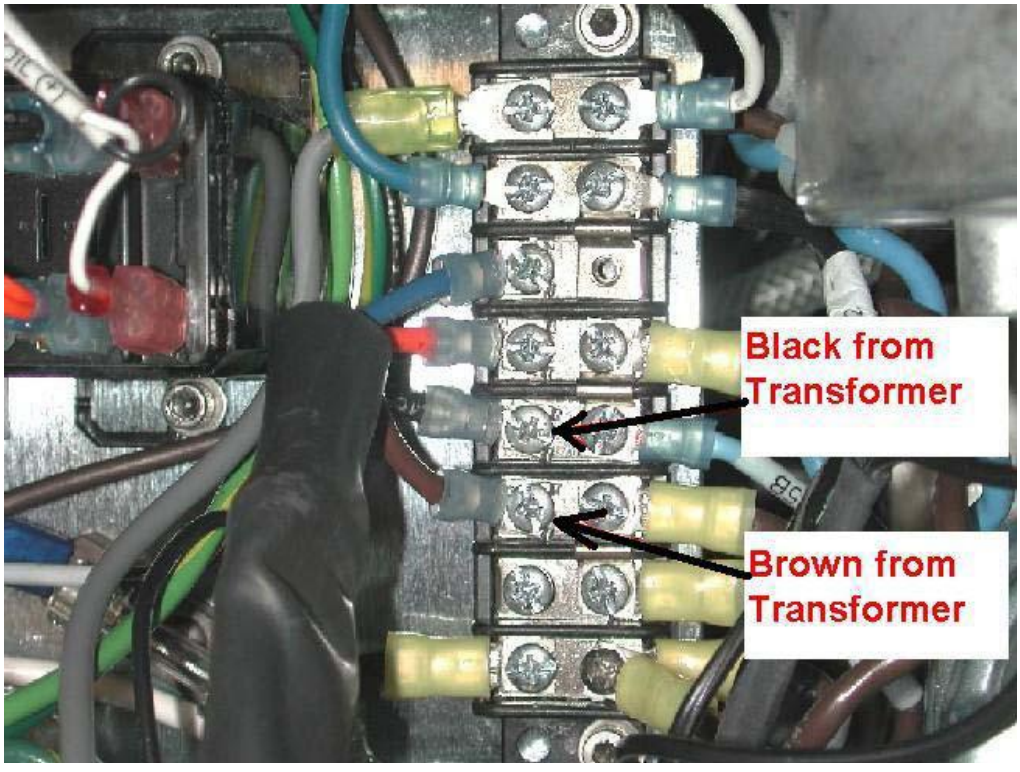
14. ***Loosen*** the screw from terminal block position ***4A***, and ***remove*** the blue wire from the TRANSFORMER. ***Place*** the blue wire from the TRANSFORMER into terminal block position ***3A***. Secure with screw.

15. ***Loosen*** the screw from terminal block position ***5A***, and ***remove*** the orange wire from the TRANSFORMER. ***Place*** the orange wire from the TRANSFORMER into terminal block position ***4A***. Secure with screw.



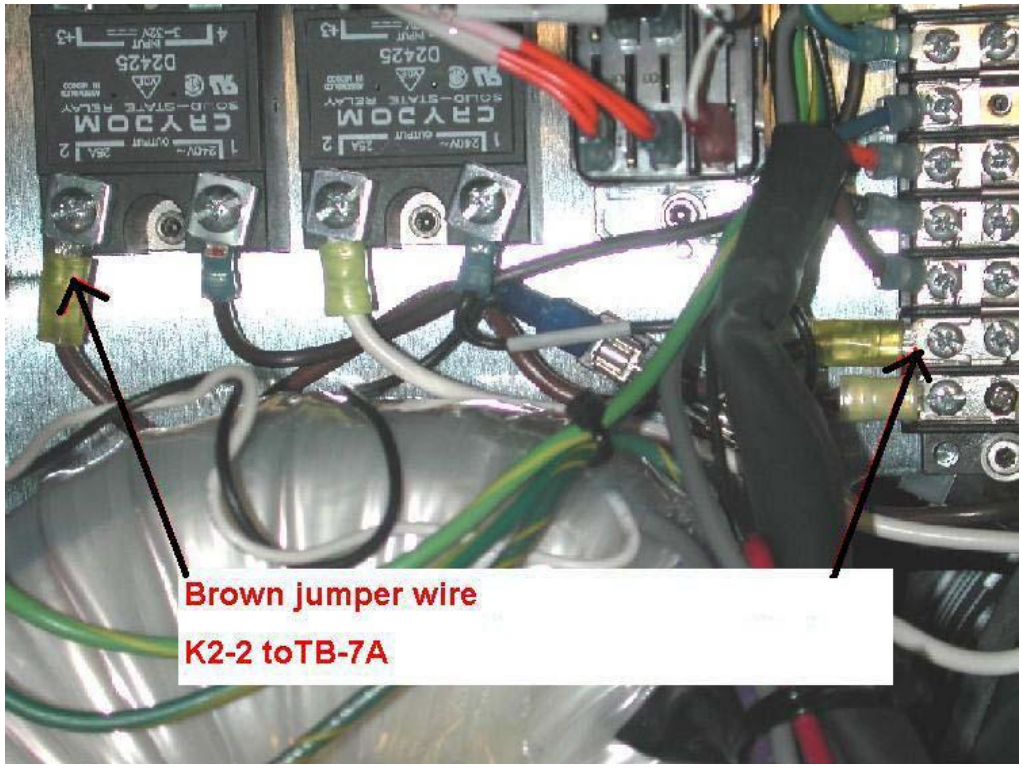
16. ***Loosen*** the screw from TERMINAL BLOCK position 6A, and ***remove*** the black wire from the TRANSFORMER. ***Place*** the black wire from the TRANSFORMER into TERMINAL BLOCK position ***5A***. Secure with screw.

17. ***Loosen*** the screw from TERMINAL BLOCK position ***7A***, and ***remove*** the brown wire from the TRANSFORMER. ***Place*** the brown wire from the TRANSFORMER into TERMINAL BLOCK position ***6A***. Secure with screw.



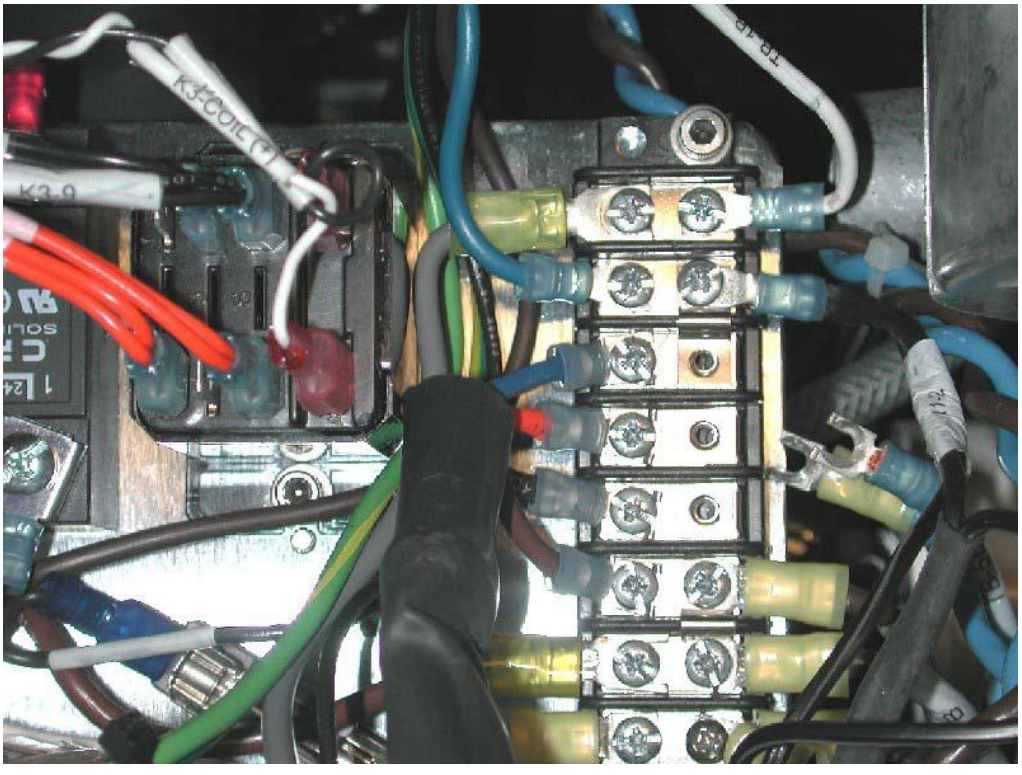
18. ***Place*** one end of the **Pump Relay Harness (P/N 0700-001-245)** into TERMINAL BLOCK position ***7A***, and the other end into SOLID STATE RELAY K2 pin 2.

19. ***Secure*** both screws. The end labeled K2-2 should go to ***K2-2***, and the end labeled TB-7A should go to terminal block position ***7A***.



20. ***Remove*** the screw from TERMINAL BLOCK position ***4B***.

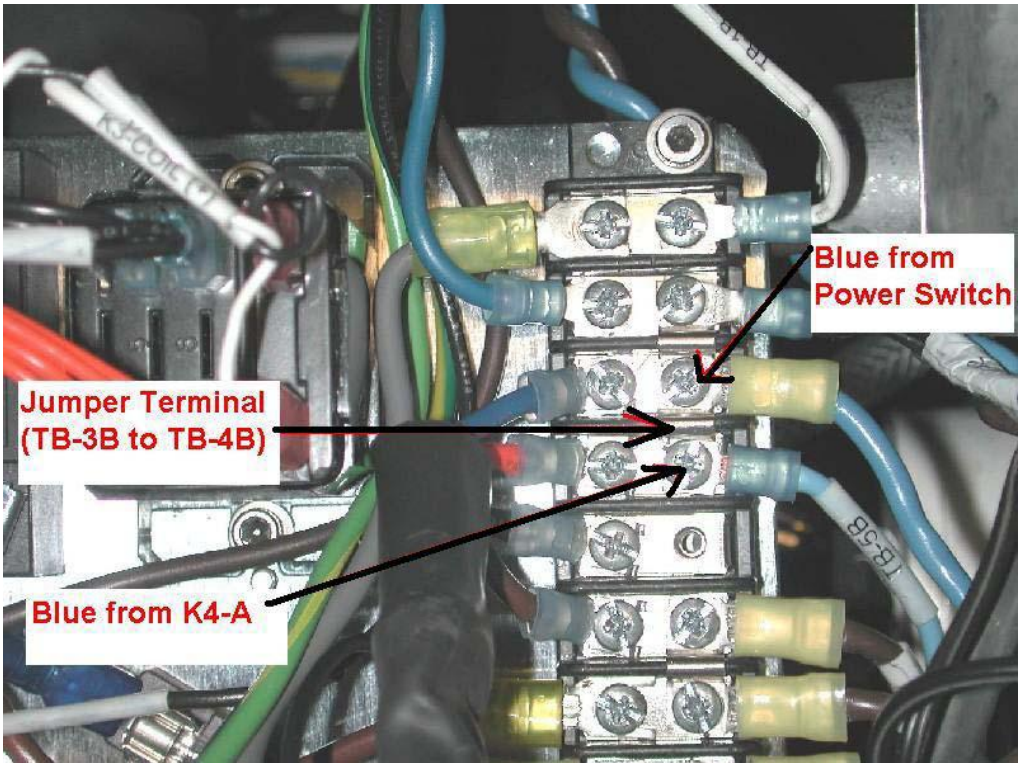
21. ***Remove*** the screw from TERMINAL BLOCK position ***5B***. ***Remove*** the blue wire from TERMINAL BLOCK position ***5B***. ***Remove*** the jumper from TERMINAL BLOCK positions ***4B to 5B***.



22. ***Place*** jumper from TERMINAL BLOCK positions ***3B to 4B***. ***Insert*** screws into TERMINAL BLOCK positions ***3B and 4B***.

23. ***Place*** the blue wire from the POWER SWITCH into TERMINAL BLOCK position ***3B***. Secure with screw.

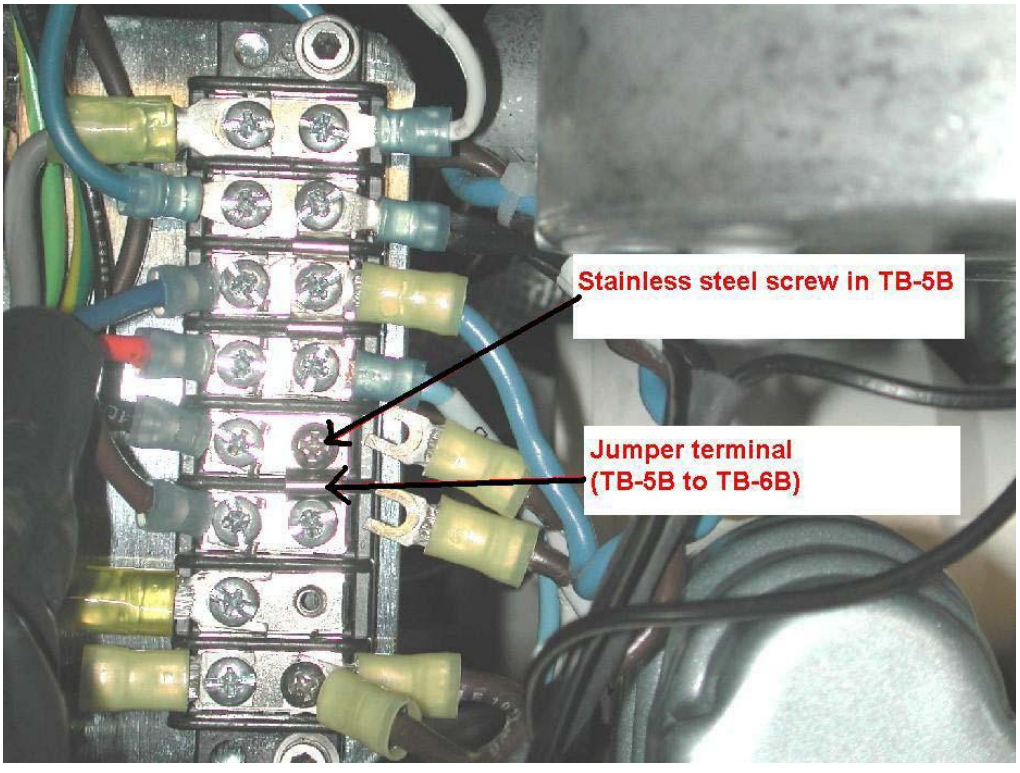
24. ***Insert*** blue wire from **Power Relay K4 (P/N 0700-001-037)** pin A (labeled TB-5B) into terminal block position ***4B***. Secure with screw.



25. ***Remove*** the screws from TERMINAL BLOCK positions ***6B and 7B***.

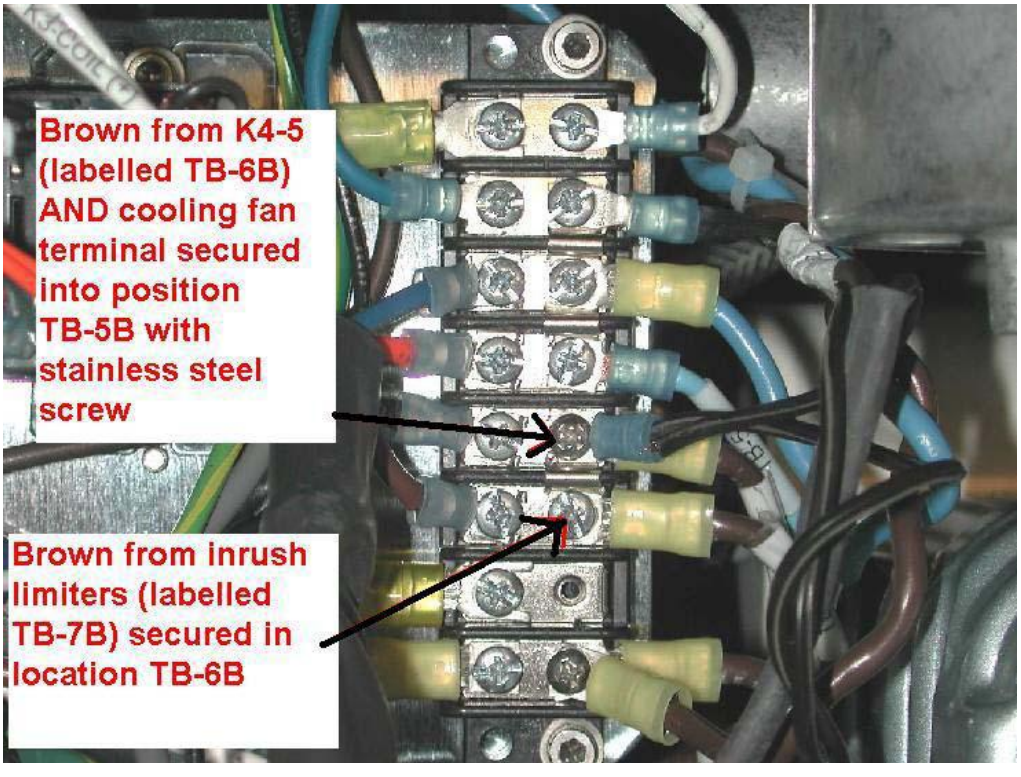
26. ***Remove*** the jumper from TERMINAL BLOCK positions ***6B to 7B***.

27. ***Place*** the jumper from TERMINAL BLOCK positions ***5B to 6B***. ***Insert*** screws into TERMINAL BLOCK positions ***5B and 6B***, but do not tighten them. ***Use*** a stainless steel screw for TERMINAL BLOCK position ***TB-5B***.

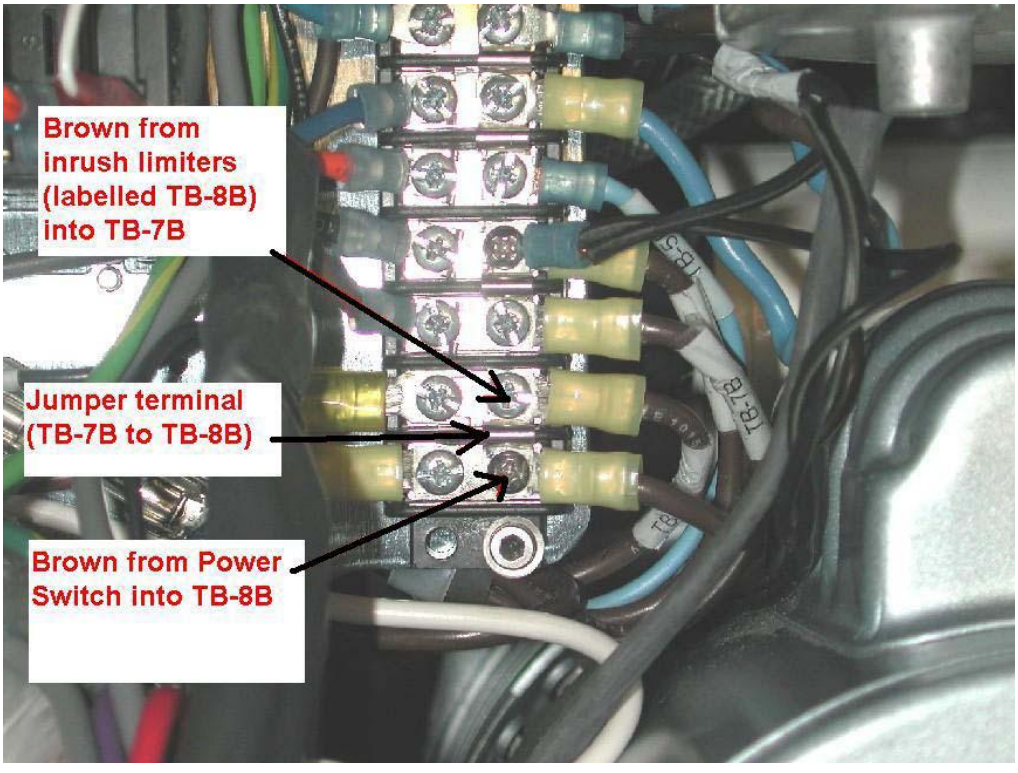


28. ***Place*** the brown wire from POWER RELAY K4 pin 5 (labeled ***TB-6B***) and the cooling fan terminal (***2 black wires***, the one that is NOT labeled K1-2) into terminal block position ***5B***. Secure with a stainless steel screw.

29. ***Place*** the brown wire from the **Rover Relay Cable Assy/In-rush Current Limiters (P/N 0700-001-035)** (labeled TB-7B) into terminal block position ***6B***. Secure with screw.



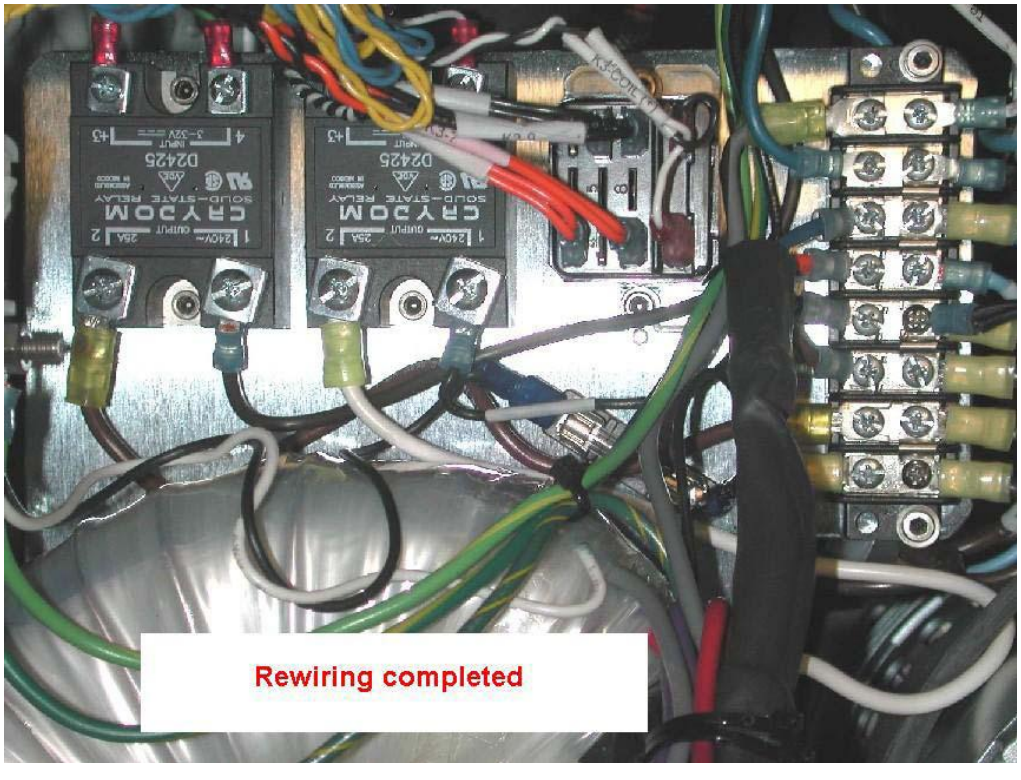
30. ***Remove*** the screw from TERMINAL BLOCK position ***8B***. Place a jumper from TERMINAL BLOCK positions ***7B to 8B***. ***Insert*** screws into TERMINAL BLOCK positions ***7B and 8B***, but do not tighten.



31. ***Place*** the brown wire from POWER RELAY K4 pin 7 (labeled TB-8B) into terminal block position ***7B***. Secure with screw.

32. ***Place*** the brown wire from the POWER SWITCH into TERMINAL BLOCK position ***8B***. Secure with screw.

33. ***Verify*** that all connections are secure by gently pulling on each terminal. Be sure to check all terminals on the TERMINAL BLOCK, as well as on SOLID STATE RELAYS K1 and K2.



34. ***Verify*** that the following locations on the TERMINAL BLOCK have jumpers. These should be the only jumpers on the TERMINAL BLOCK.

a. TB-2B to TB-3B
b. TB-3B to TB-4B
c. TB-5B to TB-6B
d. TB-7B to TB-8B

35. ***Verify*** all terminals are tightened, and verify the following wire colors are attached to the terminal block:

a. K2-2 Brown (jumper wire, labeled K2-2)
b. K2-1 Brown (to vacuum pump)
c. K1-2 White (from transformer)
d. K1-1 Black (to smoke blower)
e. TB-1A Gray (from transformer)
f. TB-1B White (from smoke blower, labeled TB-1B)
g. TB-2A Blue (from vacuum pump)
h. TB-2B Black (cooling fan, labeled K1-2, 2 black wires, 1 terminal)
i. TB-3A Blue (from transformer)
j. TB-3B Blue (from power switch)
k. TB-4A Orange (from transformer)
l. TB-4B Blue (from K4 pin A labeled TB-5B)
m. TB-5A Black (from transformer)
n. TB-5B 1 Brown(to K4 pin 5) and cooling fans (2 black wires, 1 terminal)
o. TB-6A Brown (from transformer)
p. TB-6B Brown (from inrush limiters, labeled TB-7B)
q. TB-7A Brown (jumper wire, labeled TB-7A)
r. TB-7B Brown (to K4 pin 7, labeled TB-8B)
s. TB-8A Brown (to Inrush Limiters, labeled TB-8A)
t. TB-8B Brown (from power switch)

36. Refer to testing procedures to perform electrical safety testing.

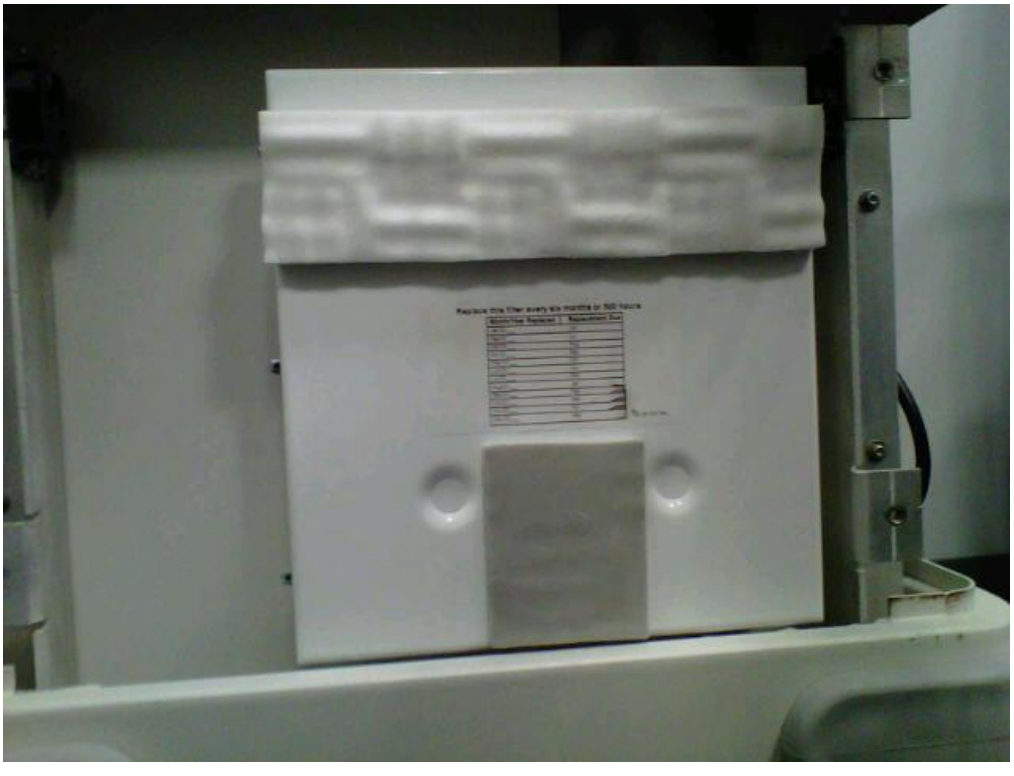
REMOVAL/ REPLACEMENT OF PLENUM PLATE GASKET (P/N 0700-001-270Q)

Reduced suction in a Neptune Rover can result from a loss of vacuum when an air pathway exists between the Plenum Gasket and the Rover Chassis. The previous version of the Plenum Gasket was a complete rubber assembly that was attached to the Rover Chassis with adhesive. Over time with heat exposure due to the Vacuum Pump, the gasket would dis-connect from the Rover Chassis, causing lowered maximum vacuum levels. Proper replacement of the Plenum Gasket with the **Plenum Plate (P/N 0700-001-270Q)** kit will correct the issue of the gasket separating from the Rover Chassis. In order to ensure the seal necessary to maintain vacuum, the gasket should be replaced using the following procedure:

Note: The following parts are needed before attempting to perform this procedure; **Plenum Plate Gasket Repair Kit (P/N 0700-001-270Q)** which includes HEPA GASKET PLATE (P/N 0700-001-269), HEPA FRAME GASKET (P/N 0700-001-268), SOC HD CAP SCR SST 6-32 X 1.0 (P/N 0004-600-000), #6 STAINLESS FLAT WASHER (P/N 0011-491-000), LARGE FLAT WASHER (P/N 0011-600-000), LOCK NUT 6 32 SST (0016-400-000)

1. Remove the **Fluid Suction Hepa Filter Door (P/N 0700-001-190)** of the Rover exposing the **Fluid Suction HEPA Filter (P/N 0700-034-000)**.

2. Remove the FLUID SUCTION HEPA FILTER.



3. Remove the old PLENUM GASKET.

Note: If the original gasket was adhered with RTV or some similar Silicone product, it is critical that the material is removed from the area under the new gasket. This material can be removed by hand or with a putty knife or similar tool. Ensure that the surface under the new gasket is not excessively scratched during removal of the adhesive as this could also create a pathway resulting in loss of vacuum.

4. Remove the **Side Panel (P/N 00700-001-135Q)** on the ROVER.

5. The **Check Valve (P/N 0700-001-160Q)** connecting the **Vacuum Pump (P/N 0700-001-240Q)** and ROVER CHASSIS is fastened with three screws, remove the (SHCS 6-32 X 7/16) screw on the bottom side of check valve <u>using 7/64 Allen Key or equivalent</u>. It is easiest to remove the screw with a long straight driver.

REMOVE (SHCS 6-32 X 7/16) SCREW

6. Take the PLENUM PLATE and insert the side with the boss first into the cavity with the boss aligned and inserted into the CHECK VALVE opening.

7. Carefully place the GASKET around the plate in the recess created by the PLENUM PLATE. Ensure the GASKET is not twisted and seated flat against the PLENUM, this will help align the plate prior to securing into place.

8. Replace the screw that was removed with a (SHCS 6-32 X 1/ LONG SCREW) provided with the kit. Insert through hole **in the CHECK VALVE from the inside of the ROVER**, slide large flat washer followed by the smaller flat washer onto stud and thread the lock nut onto stud to secure PLENUM PLATE.

9. Tighten lock nut only until there is a slight deflection in the large flat washer. This plate will not be subject to much of a load and does not require much torque.

10. Replace the FLUID SUCTION HEPA FILTER and the FLUID SUCTION HEPA FILTER DOOR.

11. Verify suction is working properly, turn **Vacuum Adjustment Knob (P/N 0024-072-000)** to increase suction to maximum level and ensure vacuum level reaches between 17-19 inHg.

12. If suction does not reach desired level, remove HEPA FILTER and ensure GASKET is seated properly.

13. Fasten SIDE PANEL to ROVER.

VACUUM RELIEF VALVE REPLACEMENT

Note: There are 3 versions of the VACUUM RELIEF VALVE and associated brass components.

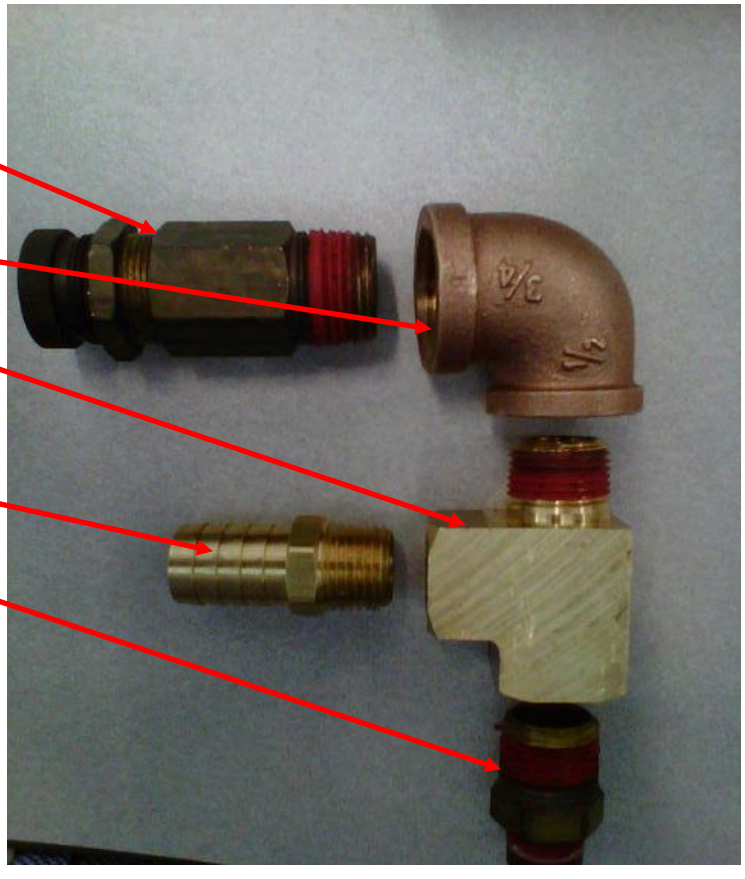
1st Version: If the assembly is defective, i. e., creating high pitch noise, it should be replaced with Version 3.

2nd Version: This assembly was the fix for the high pitch noise Version 1 created; it should not be replaced with Version 3.

Current Version:

Parts to order for assembly of Current Version:

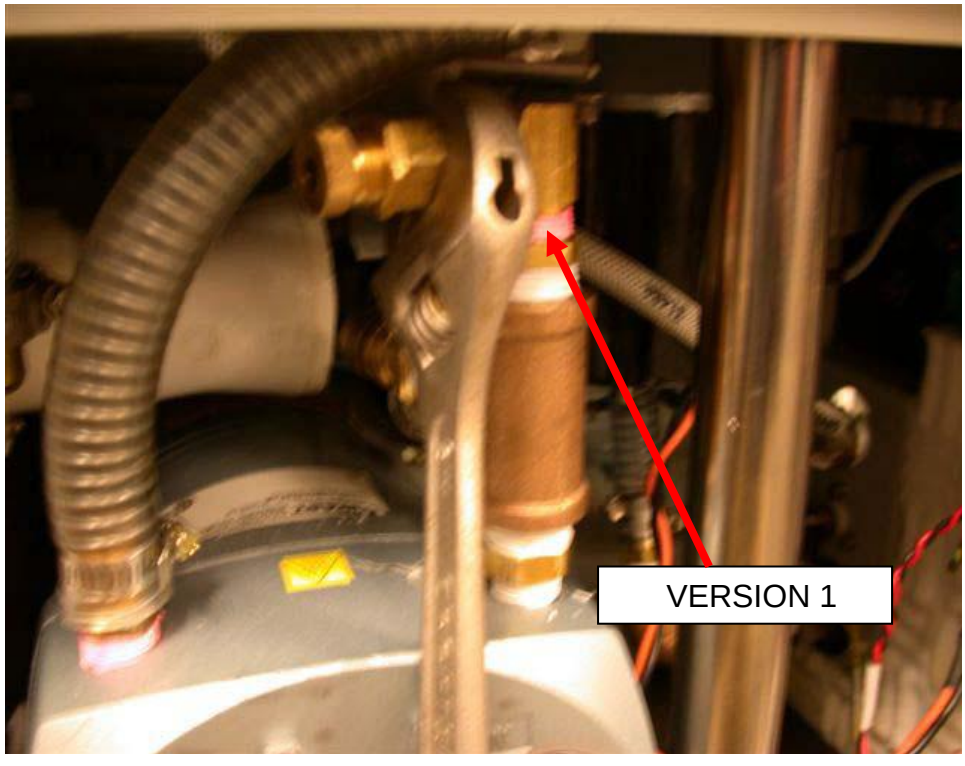
1) VACUUM RELIEF VALVE (P/N 0700-001-131)
2) 90˚ REDUCING ELBOW (P/N 0048-327-000)
3) STREET TEE PIPE FITTING (P/N 0048-328-000)
4) BARBED FITTING (P/N 0048-204-000)
5) BARBED FITTING 3/8 NPT (P/N 0048-209-000)



To replace Version 1 with Current Version, follow procedure below:

1. Remove chassis **Side Panel Assembly (P/N 0700-001-135Q)** located below the battery compartment using 5/32 Allen Key.

2. Loosen hose clamp on BARBED FITTING connected to PIPE TEE coming out of the **Vacuum Pump Assy (P/N 0700-001-240Q)** and connecting to **Check Valve (P/N 0700-001-260Q)**.



3. Pull hose from BARBED FITTING carefully, ensure stress is not applied to CHECK VALVE.

4. Remove **Vacuum Relief Valve (P/N 0700-001-131)** from BARBED FITTING and ELBOW to allow assembly to turn without interference from the IV POLE.

5. Remove BARBED FITTING from PIPE TEE, also to allow for turning without IV POLE interference.

6. Remove assembly from VACUUM PUMP.

7. Assemble Current Version of the VACUUM RELIF VALVE and associated hardware as shown.

8. Thread assembly 90° short of completely tight, thread Teflon wrapped BARBED FITTING into STREET TEE PIPE FITTING.

9. Thread VACUUM RELIEF VALVE into 90˚ REDUCING ELBOW and tighten assembly completely.

10. Feed hose back onto BARBED FITTING, and fasten hose clamp.

11. Turn VACUUM PUMP on, using VACUUM ADJUSTMENT KNOB, adjust vacuum pressure to max vacuum.

12. Loosen the retaining nut on the VACUUM RELIEF VALVE, and adjust the vacuum pressure with the knurled fitting on the VACUUM RELIEF VALVE to a max of 19inHg as indicated by the gauge.

13. Tighten retaining nut, install SIDE PANEL.

14. Procedure complete.

15. Perform functional testing per functional testing procedures.

VACUUM RELIEF VALVE O-RING REPLACEMENT

Note: There are 3 versions of the VACUUM RELIEF VALVE and associated brass components.

1st Version: If the assembly is defective, i. e., creating high pitch noise, it <u>should</u> be replaced with Version 3. **DURING THE PM, THE O-RING IS <u>NOT REPLACED.</u>**

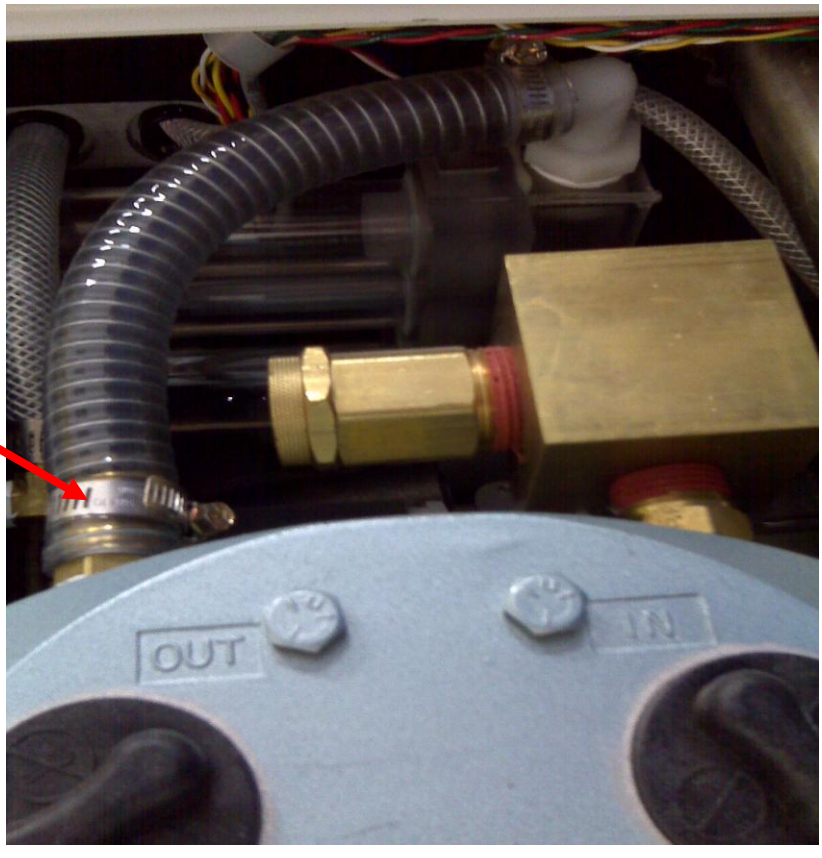
2nd Version: This assembly was the fix for the high pitch noise Version 1 created; it <u>should not</u> be replaced with Version 3. **DURING THE PM, THE O-RING <u>IS REPLACED.</u>**

Current Version: DURING THE PM, THE O-RING <u>IS</u> <u>REPLACED.</u>

1. Remove the **Side Panel Assy (P/N 0700-001-135Q)** below the **IV Pole (P/N 0700-001-455)**.

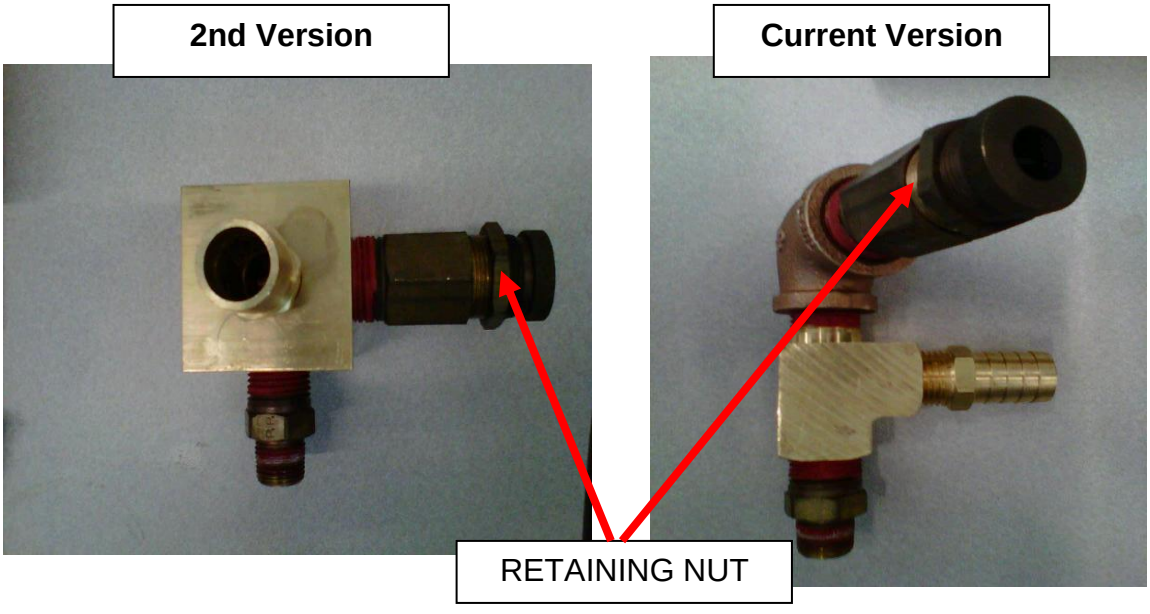
2. Loosen the HOSE CLAMP on the **Wire Reinforced Tubing (P/N 0700-001-457)** connected to the "out" portion of the **Vacuum Pump (P/N 0700-001-240Q)**.

3. Remove the WIRE REINFORCED TUBING from the VACUUM PUMP to allow sufficient room for the **Vacuum Relief Valve (P/N 0700-001-131)** to be removed.



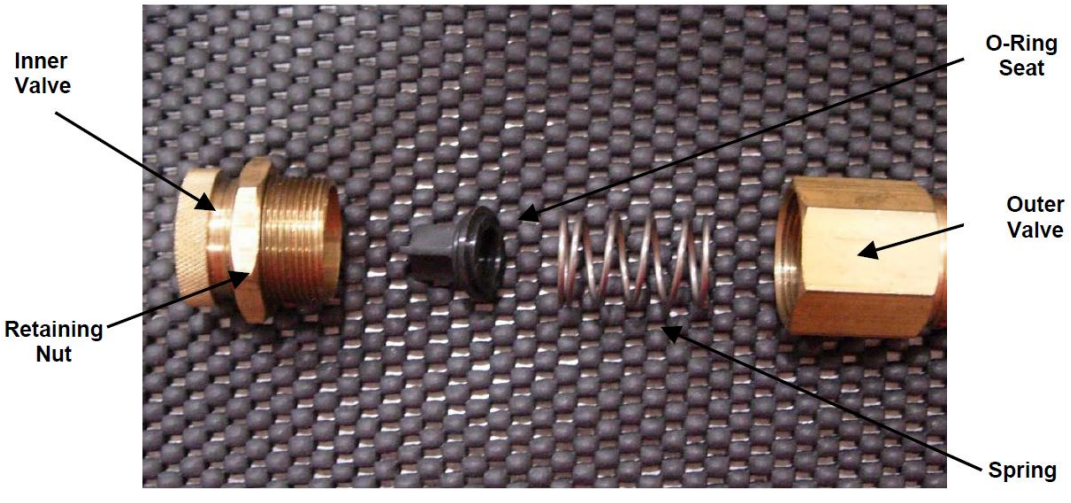
4. Using a Crescent Wrench or equivalent, loosen the RETAINING NUT on the VACUUM RELIEF VALVE to remove the inner portion of the valve.

Note: There are two versions of the VACUUM RELIEF VALVE/ configuration. The O-RING will be replaced in the following two versions:



5. Once the nut has been loosened remove the inner portion of the valve by rotating counterclockwise.

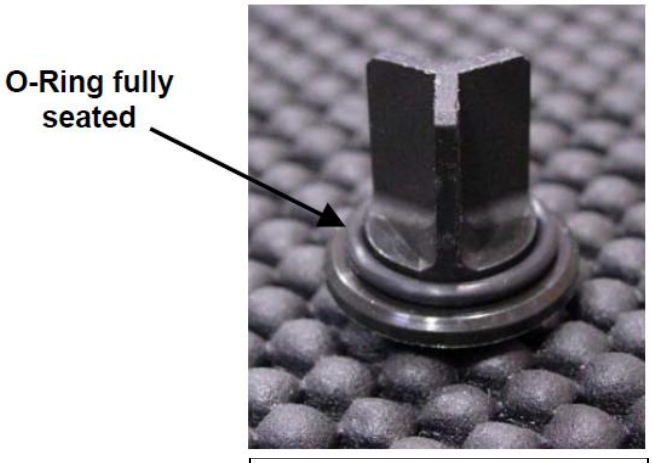
Note: The inner portion of the valve contains a spring and the o-ring seat.Take caution when removing as these parts may fall under the VACUUM PUMP.



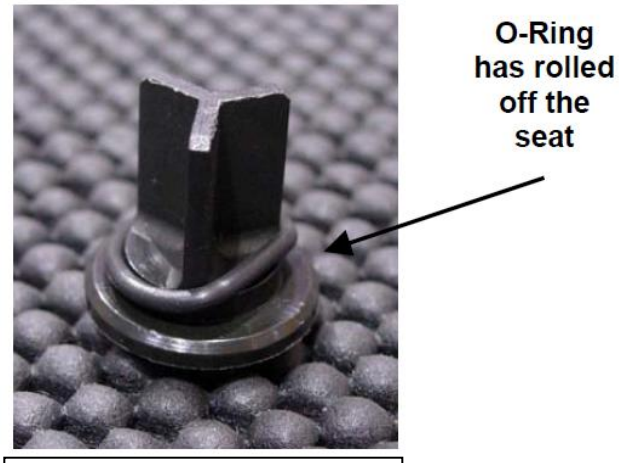
Note: Placement diagram of how the parts should be installed. Note the direction of the o-ring seat. It is important these parts be installed the same way for re-assembly.

6. Remove the old **O-Ring (P/N 0045-141-000)** from the O-RING SEAT. Ensure there is no debris remaining.

7. Place the seat face down on a flat surface and roll the new O-RING onto the seat from the stem side.



CORRECT INSTALLATION



IN-CORRECT INSTALLATION

8. Verify the O-RING does not roll off the O-RING SEAT. The O-RING may twist when placing it over the STEM and on to the SEAT. This will cause an air leak in the system equivalent to that of an O-RING failure.

9. If the O-RING does not seat correctly it may be necessary to remove the twist placed in it during installation.

10. Once the O-RING is installed, place the O-RING SEAT, the INNER VALVE and the SPRING inside the OUTER VACUUM RELIEF VALVE. Thread the INNER VALVE into the OUTER VALVE by rotating clockwise for two full turns. Do not tighten lock nut as this will be done later.

11. Below the **User Interface Panel (P/N 0700-001-050Q)**, rotate the **Vacuum Adjustment Knob (P/N 0024-072-000)** fully towards the increase arrow. (some models rotate clockwise to increase suction while others rotate counterclockwise.) Ensure the knob does not turn any further in the increase direction. The knob must be fully turned to increase in order to properly set the vacuum level.

Vacuum Adjustment Knob

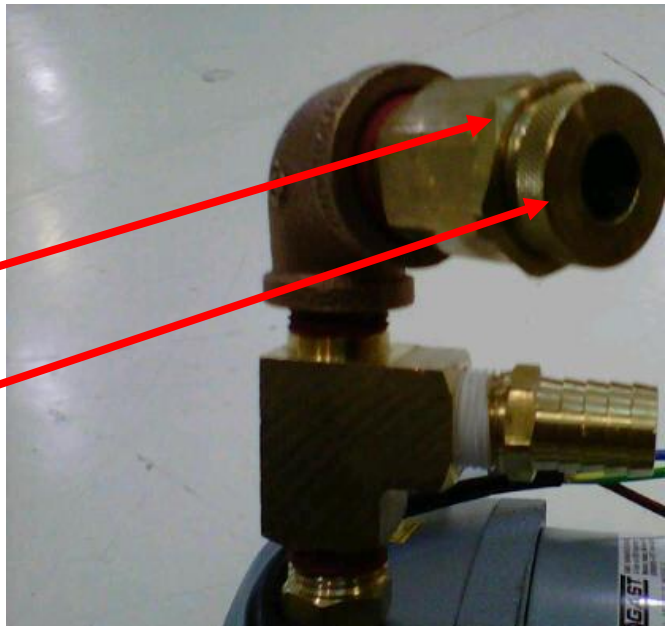
12. Reinstall the WIRE REINFORCED TUBING on the BARBED FITTING on the “out” portion of the VACUUM PUMP. Next, tighten the clamp on the hose.

13. Insert a FOUR-PORT MANIFOLD into the CANISTER CAP, ensuring the caps are on all ports. Plug the rover in, turn it on, and depress the “Fluid Suction On/Off” button.

14. With the LOCKING NUT loose, rotate the INNER VACUUM VALVE until the **Vacuum Pressure Guage (P/N 0700-001-416)**reads 18.5 in/Hg +/- .5 in/Hg and allow pressure level to stabilize.

LOCKING NUT

INNER VACUUM VALVE



15. Once the pressure has stabilized, hold the INNER VALVE and tighten the RETAINING NUT. Once tightened, ensure the vacuum level did not deviate from 18.5 in/Hg +/-.5 in/Hg.

16. Reinstall SIDE PANEL.

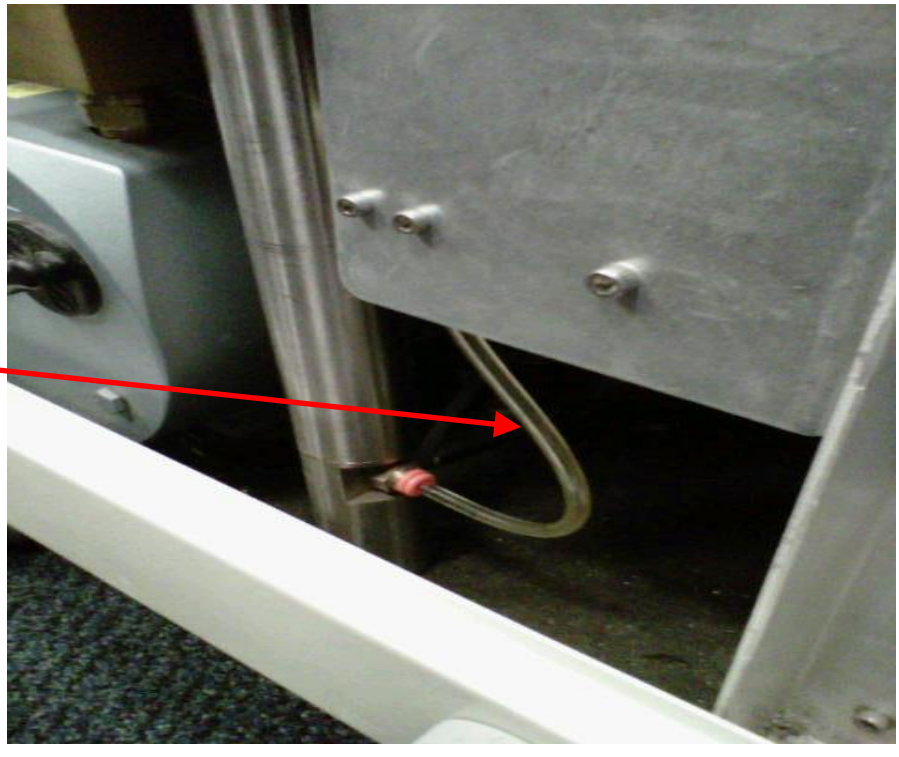
REMOVAL AND REPLACEMENT OF VACUUM PUMP (P/N 0700-001-240Q)

Note: This step is N/A for non I.V. POLE models.

1. Remove both **Side Panels (P/N 0700-001-135Q)** using 5/32 Allen Key.

a. Remove **Pneumatic Tubing** (P/N 0060-008-000 8in) at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



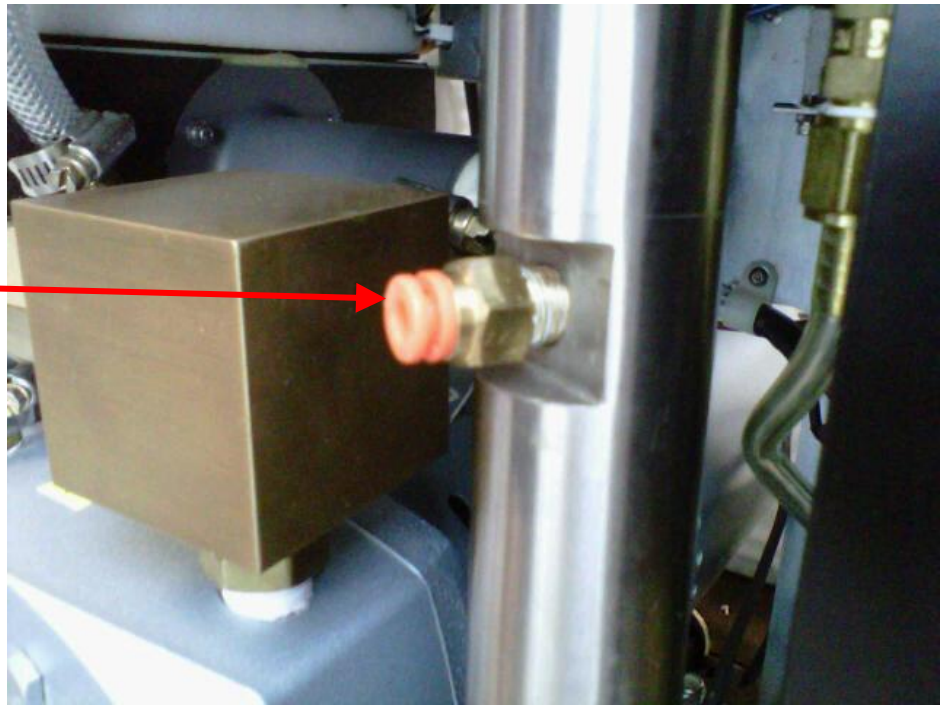
b. Remove **IV Pole Pneumatics Panel (0700-001-070Q)** to the right of IV POLE using 9/64 Allen Key.

SOCKET HEAD CAP SCREW

Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

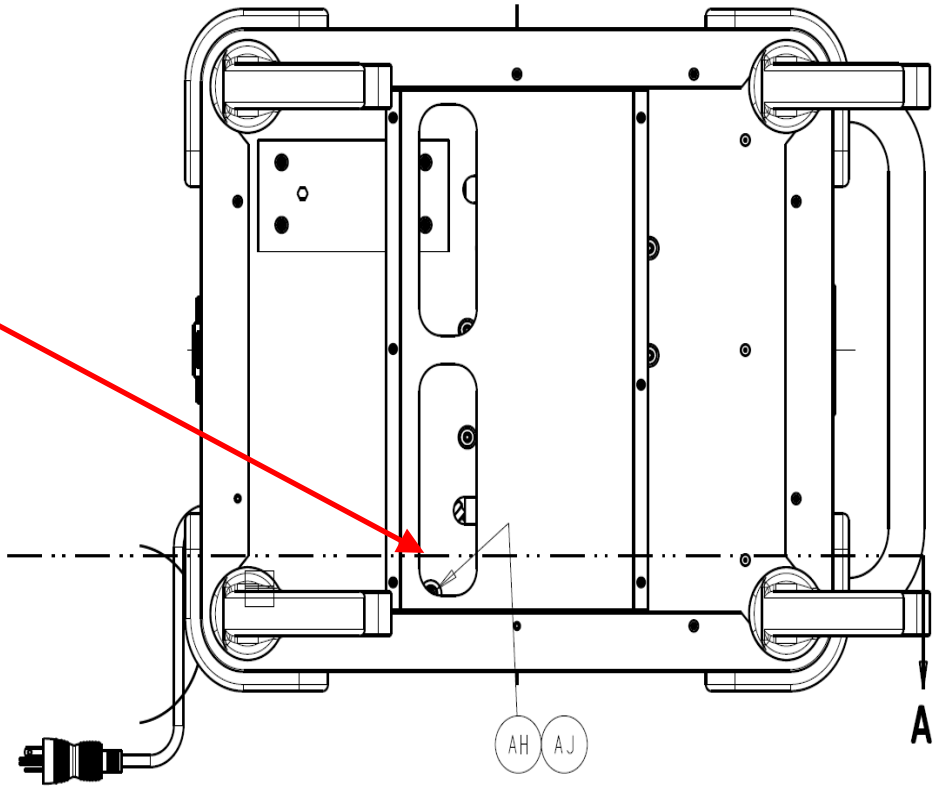
c. Remove brass PNEUMATIC FITTING at base of IV POLE <u>using 1/2in Deep-Well Socket,</u> ensure not to damage the fitting.

PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place <u>using 1/4in Allen Key</u>.

Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.

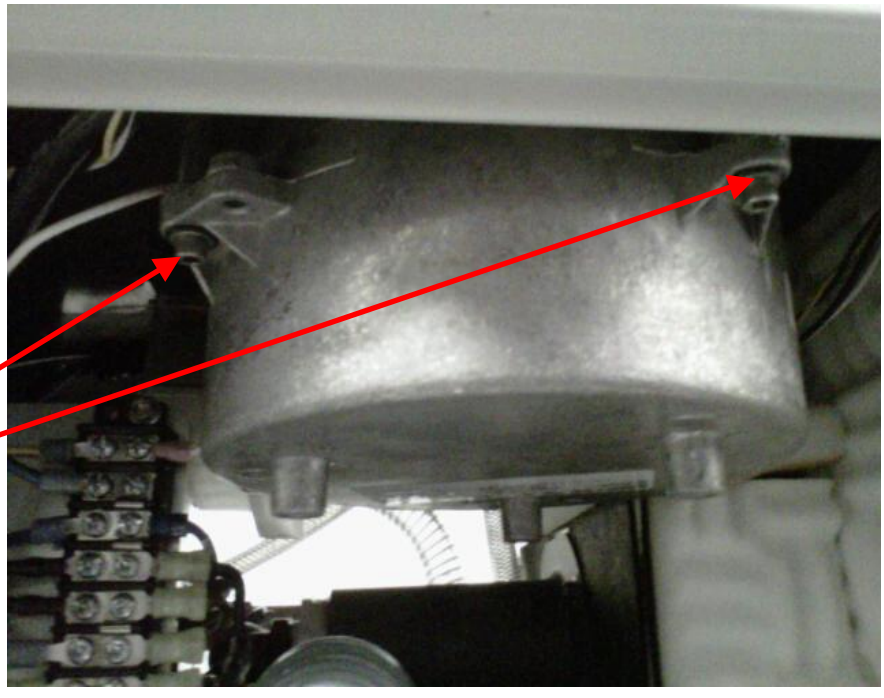


2. Remove **I.V. Pole (P/N 0700-001-455)**

3. Remove **Smoke Blower (P/N 0700-001-013)** by removing two Socket Head Cap Screws using 9/64 Allen Key, that are accessed inside the ROVER.

Note: this step is N/A for non SMOKE BLOWER models.

SOCKET HEAD CAP SCREWS



a. Remove one Flat Head Cap Screw using 3/32 Allen Key.

Note: Here you can see the flat head screw in the smoke filter enclosure area, it is highlighted by the Allen wrench inserted.

b. On the SMOKE BLOWER there is a connector that will become accessible once the set screws have been removed. Remove connector once accessible and place SMOKE BLOWER aside.

4. At the VACUUM PUMP, disconnect **Wire Reinforced Tubing (P/N 0700-001-457)** that goes to the **Silencer Manifold (P/N 0700-001-160Q)**.

WIRE REINFORCED TUBING to SILENCER MANIFOLD

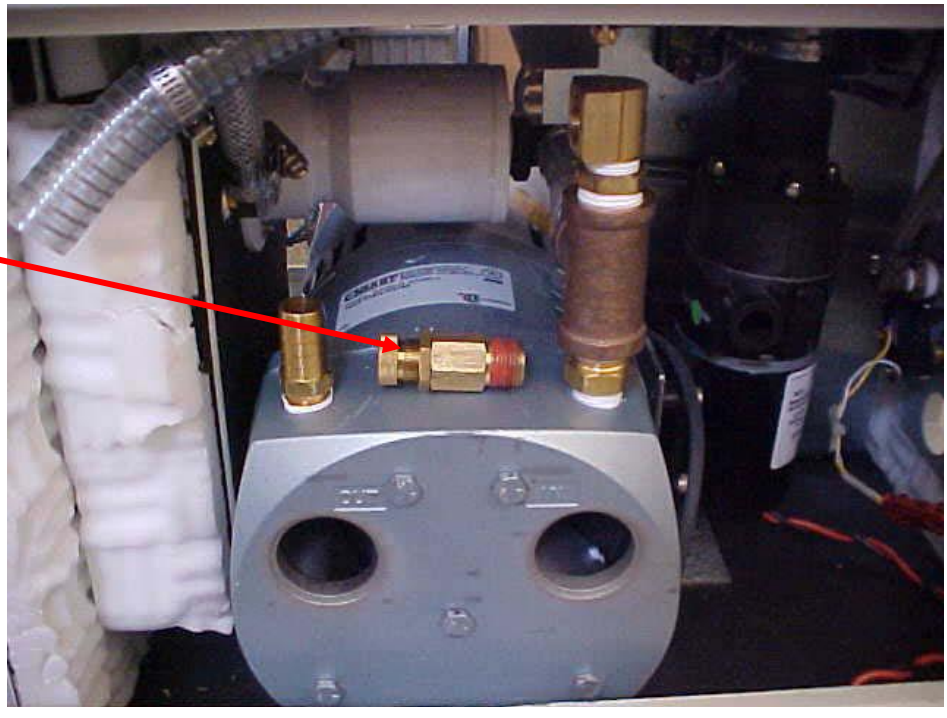
5. Remove the **Endcaps (P/N 0700-001-246)** and **Filters (P/N 0700-001-315Q)**. These filters screw into the motor housing.

ENDCAP and FILTER

connect in the same way as the five

6. Disconnect and remove the **Vacuum Relief Valve (P/N 0700-001-131)**.

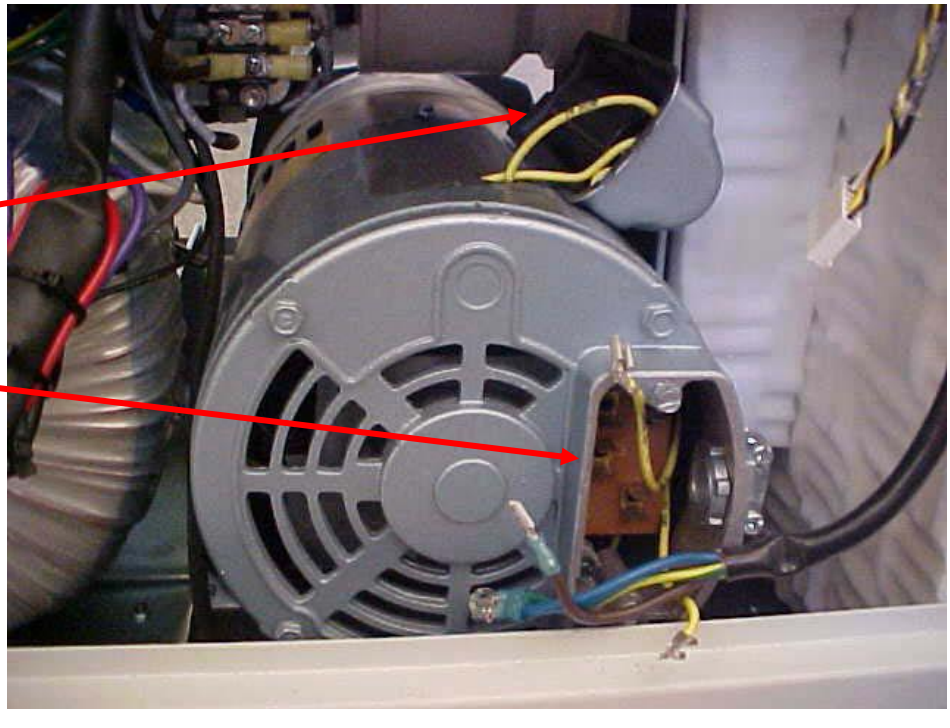
VACUUM RELIEF VALVE (Old Version represented here. Please disassemble subsequent models accordingly).



7. Disconnect DOME COVER and WIRING HARNESS COVER on VACUUM PUMP.

DOME COVER

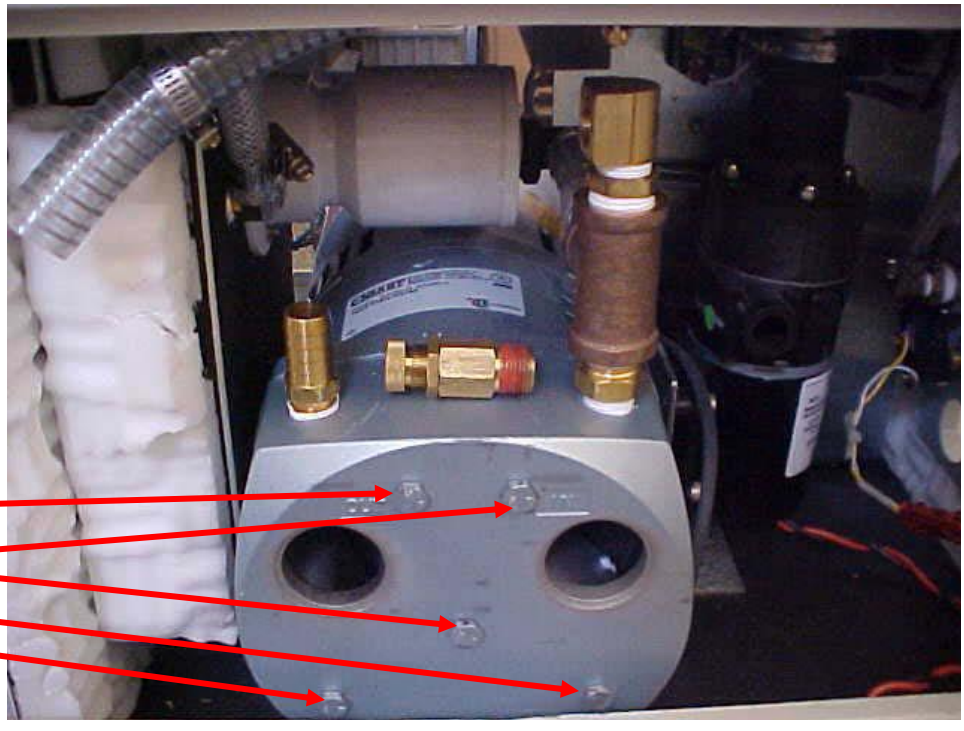
WIRING HARNESS COVER



Note: Once Wiring Harness cover is removed; note brown wire is at top right; T-3 wire is to left and almost at same height as brown wire. T-2 wire is at the lowest connection and the blue wire is just above T-2.

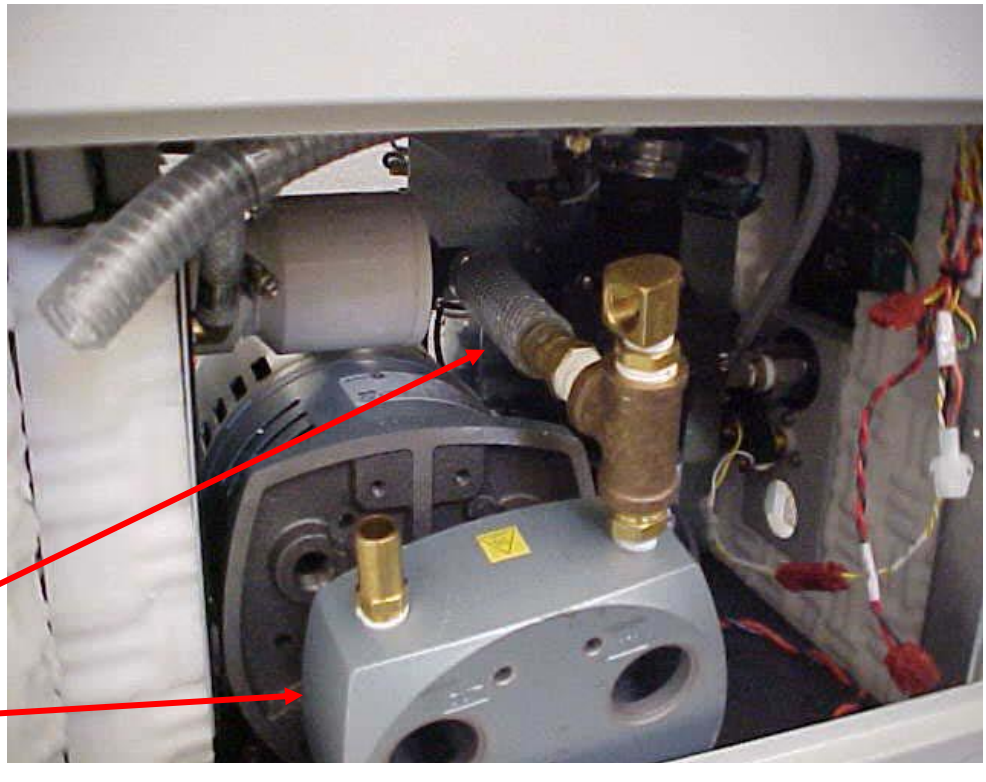
8. To remove END BELL HOUSING; there are five bolts that hold it in place. Ensure not to damage the gasket in between Bell Housing and Pump Body. You will need to lift the Pump to remove the 2 bottom bolts. The pump will give as you lift as it is mounted on rubber vibration mounts.

Five bolts to remove END BELL HOUSING. This sets the stage for disconnecting the pump from the inlet hose.



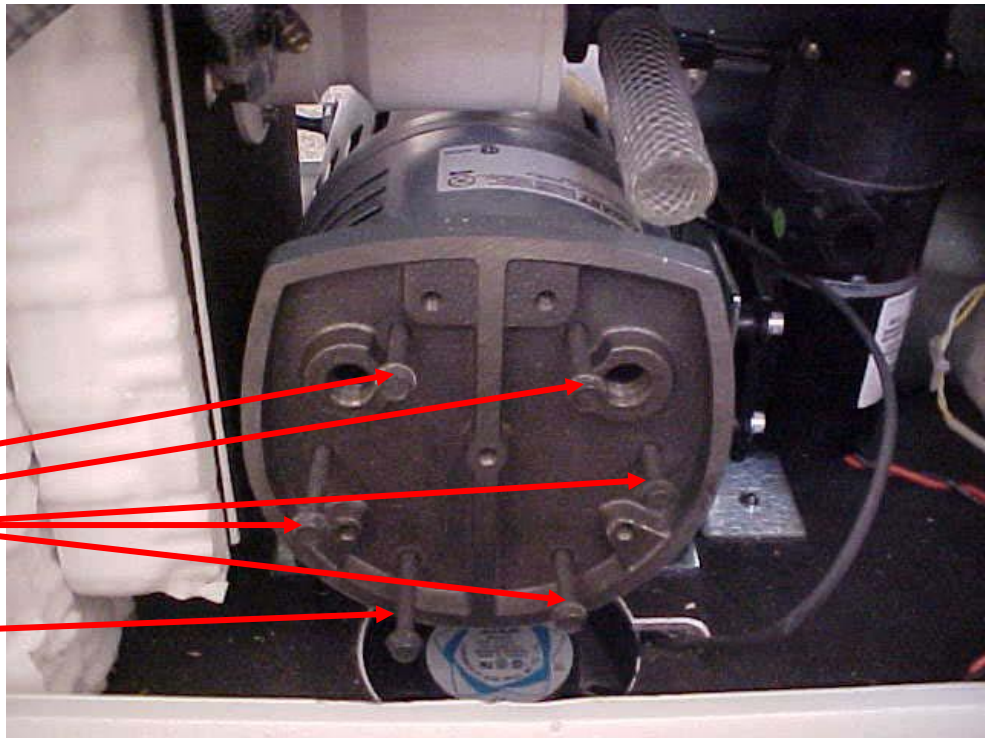
9. To disconnect the MESH/OR VACUFLEX TUBING that connects the VACUUM PUMP'S brass piping from the black plastic elbow (coming off the WHITE/ OR GREY CHECK VALVE), loosen the HOSE CLAMPS on each end of the MESH/OR VACUFLEX TUBING, then pull the entire END BELL HOUSING, thus disconnecting it from the inlet hose.

Pull on the END BELL HOUSING to disconnect the MESH/OR VACUFLEX TUBING at this point.



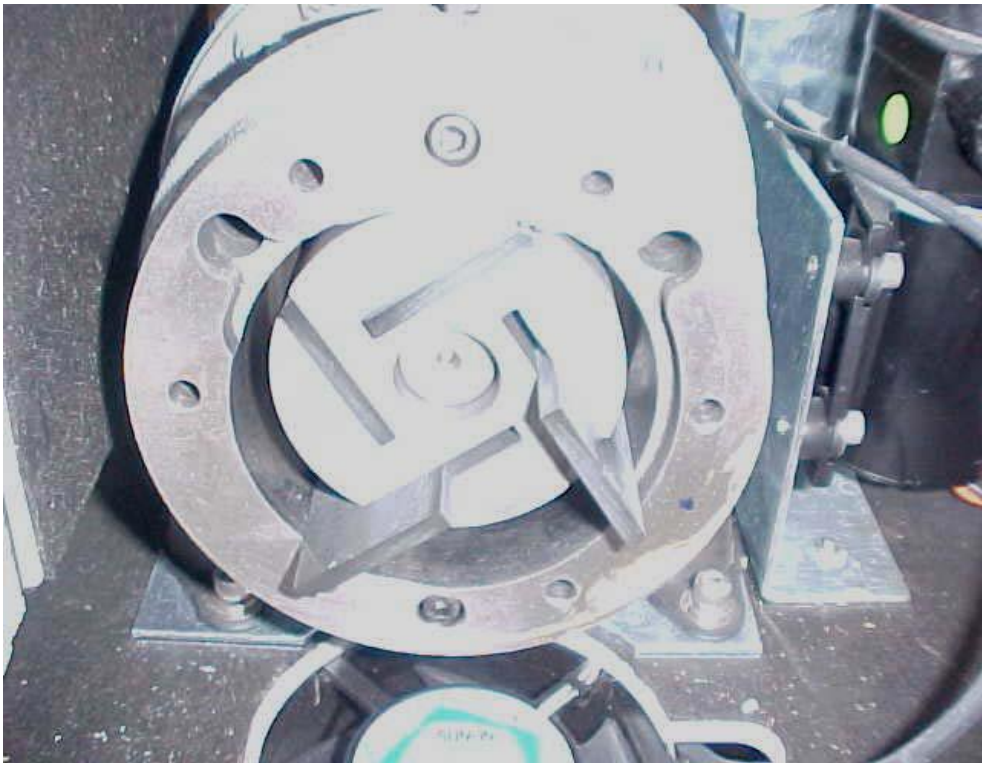
10. **Inspection Step**; the following is done not to facilitate removal/replacement but to inspect the CARBON BLADES and the enclosure to check for possible salvage through thorough cleaning.

Remove these six bolts for access to CARBON BLADES and their enclosure.



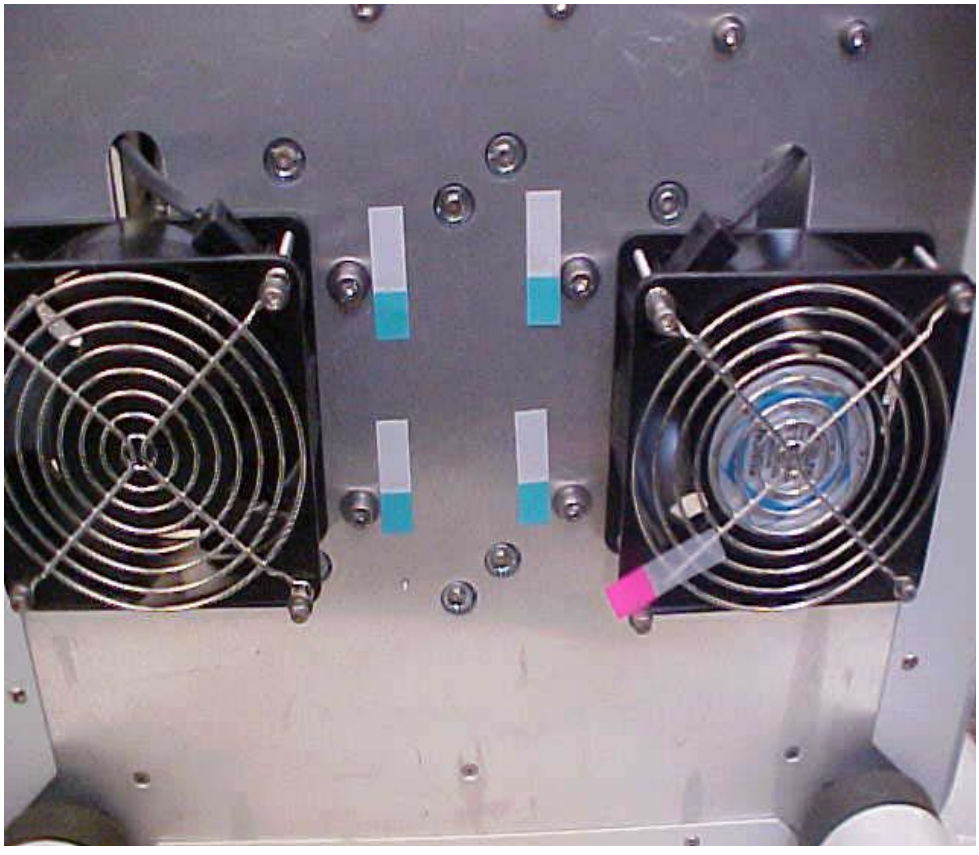
11. This is what the “PUMP” area should look like. It should be absolutely dry. Two of the four CARBON BLADES have been pulled out slightly.

If these blades are shattered then they need to be replaced; if the housing is scored then the entire VACUUM PUMP should be replaced.



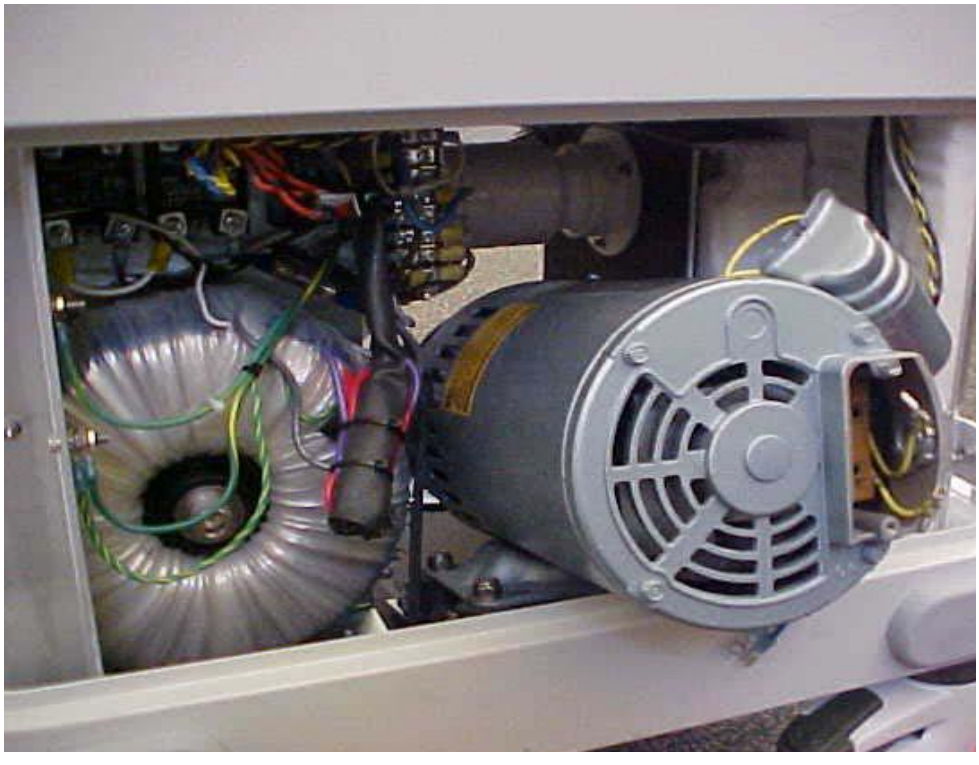
12. To remove the PUMP, first remove the **Plenum Cover (P/N 0700-001-150)** underneath the ROVER that covers the **Intake/Exhaust Fans (P/N 0700-001-215)** by removing the six bolts that hold the cover on. Once the cover is removed, you will see the pic on the right.

In this picture are four pieces of blue tape; each is next to one of the four bolts that hold the VACUUM PUMP in place. These four bolts thread into the base plate of the VACUUM PUMP. Remove the bolts and the pump can be lifted up and out of the chassis.

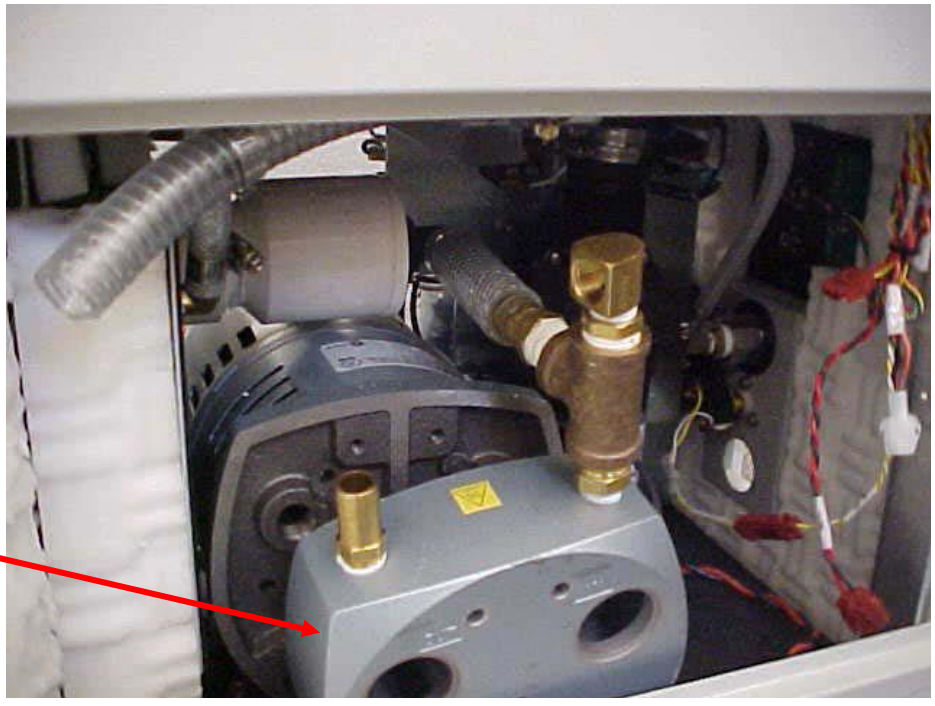


13. From the SMOKE BLOWER side of the ROVER, remove the VACUUM PUMP.

Warning: The VACUUM PUMP is heavy and the surrounding area provides for an awkward lift. Be careful not to pinch your fingers or scrape the back of your hand.



14. Install the new VACUUM PUMP in reverse order. It will be necessary to remove the END BELL HOUSING of the new pump as it is necessary to “shorten” the pump to get it into the Rover.



Shown is the END BELL HOUSING detached from the main body of the new VACUUM PUMP and the entire END BELL HOUSING being pushed forward while attaching the MESH/OR VACUFLEX TUBING to the barbed fitting.

15. Once the VACUUM PUMP is in the ROVER, attach the END BELL HOUSING and the MESH/OR VACUFLEX TUBING (ensuring the HOSE CLAMPS are on the tubing before connecting) simultaneously. Bolt the END BELL HOUSING onto the VACUUM PUMP.

16. Reinstall the VACUUM PUMP POWER CABLE, brown connects at top, T-3 to left and at about the same height, T-2 at the very bottom, blue just above T-2. Also connect ground wire. Replace cover plate over wire connections.

17. Reinstall DOME COVER on the VACUUM PUMP.

18. Reconnect SMOKE BLOWER connector and then reinstall the SMOKE BLOWER by connecting all three bolts. Take care not to strip the flat head set screw that is located in the SMOKE FILTER area.

19. Reconnect the WIRE REINFORCED TUBING from VACUUM PUMP to SILENCER MANIFOLD.

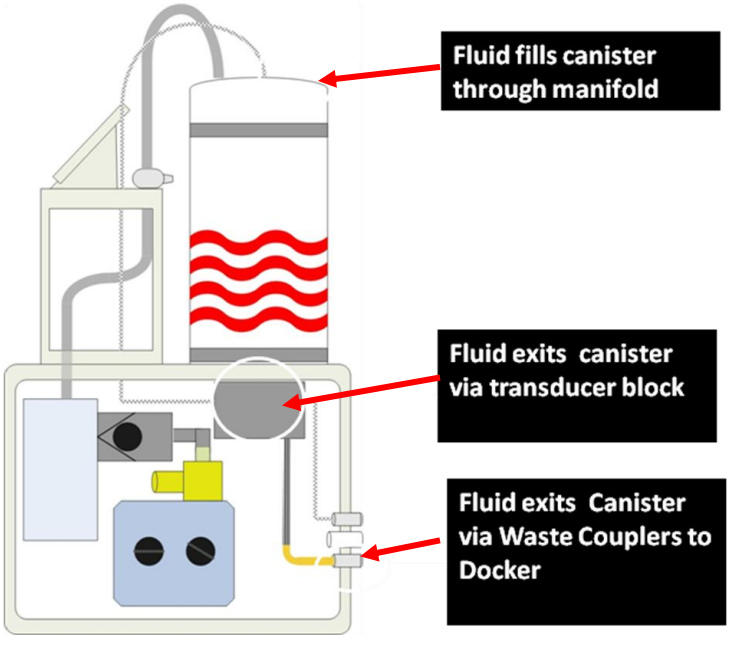
20. Connect the four bolts from the bottom of the ROVER to secure the VACUUM PUMP.

21. Reinstall the PLENUM COVER, leave all socket head cap screws loose until all bolts are started, tighten all six bolts. Reinstall FLUID SUCTION HEPA FILTER and FLUID SUCTION HEPA FILTER DOOR.

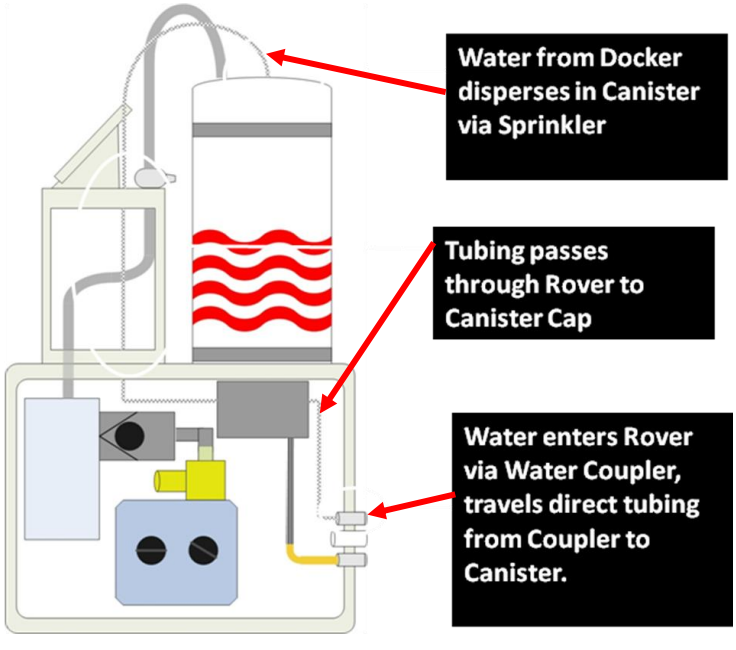
22. Set the VACUUM RELIEF VALVE to obtain maximum suction level of 18.5” Hg.(+/- .5” Hg) per *Vacuum Relief Valve Removal/ Replacement Procedure*. Perform all function and electrical testing. Ensure there are no vacuum leaks. The vacuum gauge should maintain the level set and not decrease or fluctuate. Replace both SIDE PANELS.

The Fluid Subsystems requires interaction from both ROVER and DOCKER. The Fluid Subsystem consists of a **Manifold Assy** (provided by customer), **Canister Cap Assy (P/N 0700-001-170Q)**, **Cap Sprinkler Tubing (P/N 0700-001-456)**, **Canister Assy (P/N 0700-001-320Q)**, **Transducer Block Assy (P/N 0711-112-005Q)**, **Female Quick Disconnect Coupler Assy (P/N 0700-001-223) x 2**, **Actuator Assy (P/N 0700-005-070Q)**, **Male Quick Disconnect Coupler Assy (P/N 0700-004-472) x 2**, **Injector Pump Assy (P/N 0700-005-100Q)**, **Offload Pump Assy (P/N 0700-004-080Q)**, **Drain Hose Assy (P/N 0700-004-005Q)**, and **Braided Stainless Supply Line (P/N 0702-014-004Q)**.

Function: Surgical Fluid Waste is collected inside the CANISTER through the MANIFOLD via SURGICAL SUCTION TUBING. Once the fluid is collected (up to 20L); it must be emptied. The ROVER is then pneumatically mated with a stationary DOCKING STATION to offload the fluid in a completely closed system. The DOCKER'S OFFLOAD PUMP draws the fluid out of the CANISTER. Once all fluid is pulled from the CANISTER, the DOCKER will then provide rinse water and detergent to clean inside the CANISTER. This process is totally automated once the DOCKER couples with the ROVER.



WASTE FUNCTION



WATER FUNCTION

Software and Control: The Fluid Subsystem is activated by physically pushing the ROVER up to the DOCKER. At this point, two **Optical Switches (P/N 0700-004-240)** will activate; signaling the **Docker Main Control PCBA (P/N 0712-005-001)** to provide power to the **Electromagnet (P/N 0700-004-220)** on the DOCKER. Once the magnet is energized, the ROVER and DOCKER will begin to communicate via an **InfraRed (IR) Transceiver Board (P/N 0700-020-001)** inside of each the ROVER and DOCKER. The IR BOARDS will compare software versions within their respective systems; if compatible, the ACTUATOR will be extended from the DOCKER to couple with the ROVER. The **Guide Pin (P/N 0700-004-076)** on the DOCKER ACTUATOR will depress a **Precision Switch (P/N 0700-001-225)** in the ROVER which will indicate the ACTUATOR is fully extended. Once the COUPLINGS are extended, the DOCKER OFFLOAD PUMP will run. The other automated processes will follow. During the docking process, the ROVER which is powered by the **Rover Battery (P/N 0700-001-430Q)**, will be reading fluid volume levels as it must communicate this to the DOCKER to prompt the DOCKER to move on to the next step of the process. The ROVER BATTERY powers the IR BOARD, **Main Control Board (P/N 0712-064-001)** and **Power Control Board (P/N 0712-019-001)** during the docking process.

Troubleshooting Fluid Subsystem: The Fluid Subsystem will generate Error Messages if there is a failure during the Docking process; the errors that can be generated are as follows: ***Fluid Volume Error, Volume Disabled, Underfill Error, Overfill Error, And Offload Error***. Refer to *Error Messages* section of the manual for descriptions.

Potential Symptoms/ Resolutions:

- **Offload Error**- caused by a clog in the waste loop (Rover and Docker). Typically there is some sort of build-up behind the couplers (Rover or Docker). **To determine if the problem is in the Rover or Docker, dock a known good Rover. If the offload error shows in the known good Rover, the clog is behind the Docker Coupler. If the known good Rover completes the docking cycle then the clog is behind the waste coupler in the problem Rover.** Reference associated flow chart for *Offload Error*.
- **Underfill Error**- caused by the Rover detecting that it did not receive 200ml (Prefill amount) of fluid at the end of the docking cycle or. Typically caused by the input water to the Docker being turned off or water pressure to low (min. 45PSI). Check input water supply to Docker. Reference associated flow chart for troubleshooting *Underfill Error*.
- **Overfill Error**- caused by the Rover detecting that it received more than 200ml (Prefill amount) of fluid at the end of the docking cycle. Typically caused by the input water to the Docker high water pressure (max. 100PSI). Check input water supply to Docker, turn down valve if possible and re-dock. Reference associated flow chart for *Overfill Error*.
- **Fluid Volume Error-** caused by the Rover detecting a leak in the system that caused it to lose its Prefill (200ml) after docking. This error message is designed to detect a leak. If in fact there is a leak that generates this message, physically look underneath the chassis area near the Canister for evidence of leaking.
- **Volume Disabled**- this error happens any time there is an error on the LCD. This is an indicator that the fluid volume cannot be read digitally. It is usually accompanied by another error message. If this is the only error display, re-dock unit as this may be a glitch in the system.

BURPING THE ROVER

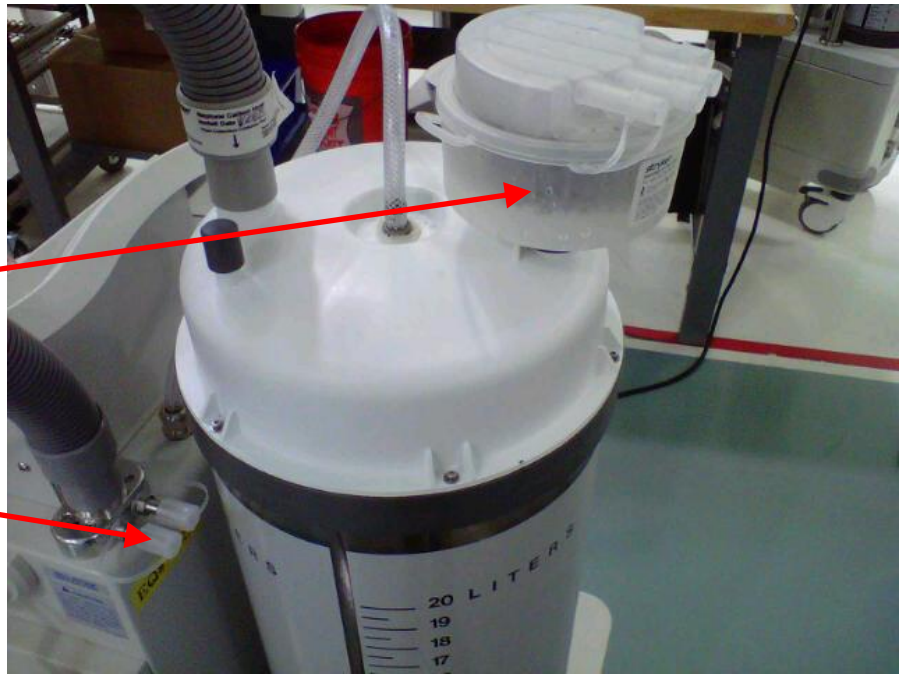
NOTE: THE BELOW LISTED PROCEDURE IS NOT A “FIX”! THIS ONLY ALLOWS FOR THE OFFLOADING OF FLUID IN THE EVENT OF AN OFFLOAD ERROR. ONCE THE FLUID HAS BEEN EMPTIED, THE DEBRIS CAUSING THE CLOG CAN BE LOCATED WITHOUT FLUID EXPOSURE.

In the event of an OFFLOAD ERROR, the conventional way of Docking will not work as the system must be able to detect at least 1 Liter of fluid being offloaded in 10 seconds. With an Offload Error, the time will be exceeded and the Docking process will stop. To offload fluid under this condition is important as the waste loop must be disassembled to find the clog in the system. To empty the fluid with an OFFLOAD ERROR present, follow the procedure below to BURP THE ROVER”, then empty Rover using “DOCK CONTROL”.

1. Place a MANIFOLD in the Canister Cap (P/N 0700-001-170Q) and ensure that all ports to the Vacuum Subsystem are sealed to include the HOUSE SUCTION PORTS.

MANIFOLD

HOUSE SUCTION PORTS



2. Turn on Vacuum and ensure that the Vacuum Level is set to at least 15inhg on **Vacuum Gauge Assy (P/N 0700-001-416)**.

VACUUM GAUGE

Note: Ensure the Vacuum is on and the VACUUM GAUGE reads 15inhg or better before proceeding to the next step.

3. While Vacuum is on depress and quickly release the bottom (Waste) **Female Quick Disconnect Coupler (P/N 0700-001-223)** using a Screwdriver or equivalent so that the Vacuum inside the Canister Assy (P/N 0700-001-320Q) pulls the fluid and debris behind the Coupler back into the CANISTER ASSY.

4. Repeat the above procedure 4-5 times before moving to the next step.

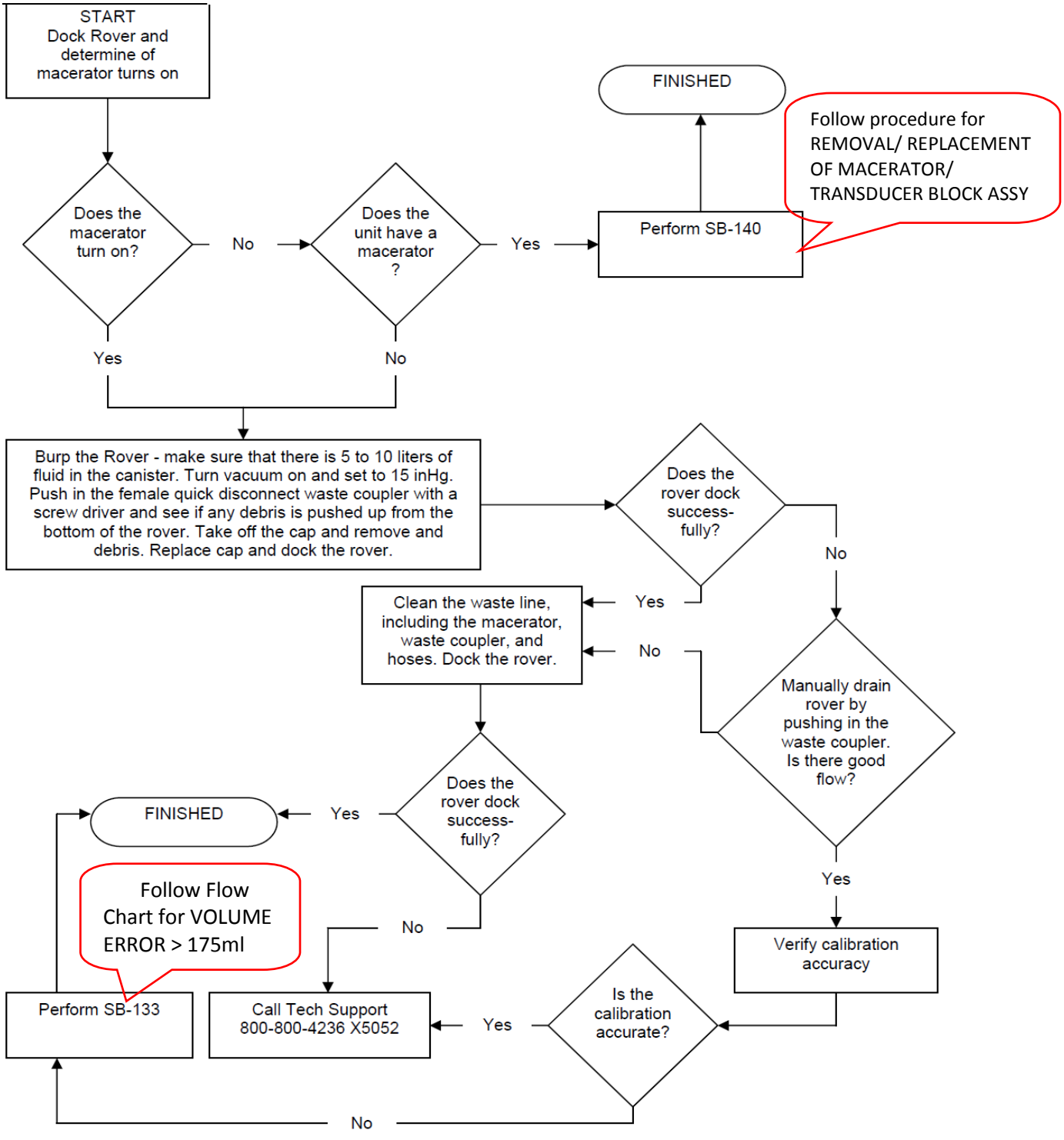
5. Once “BURPING” is complete, enter DIAGNOSTIC MODE and DOC CONTROL to empty CANISTER ASSY so that the Waste Loop can be disassembled and inspected to find the clog in the system.

6. Procedure complete.

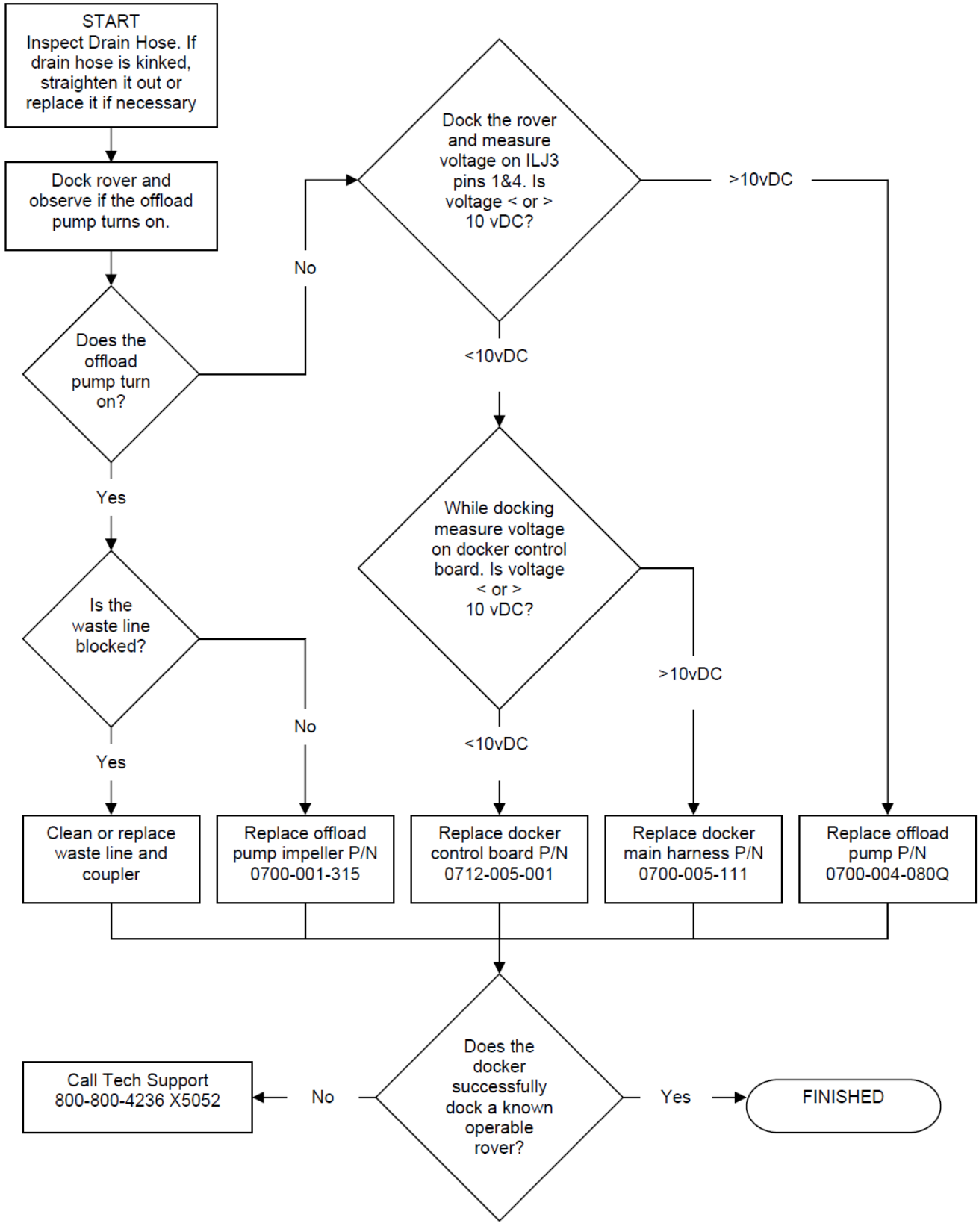
OFFLOAD ERROR (ROVER HAS CLOG)

The MACERATOR mentioned below was made obsolete in 2003. There may be a few still installed in units, therefore, references to the MACERATOR remain. However, if the unit has an OFFLOAD ERROR, follow the procedure to “BURP THE ROVER” first, then empty Rover using “DOCK CONTROL”. Afterwards, remove the WASTE COUPLER and clear any debris remaining.

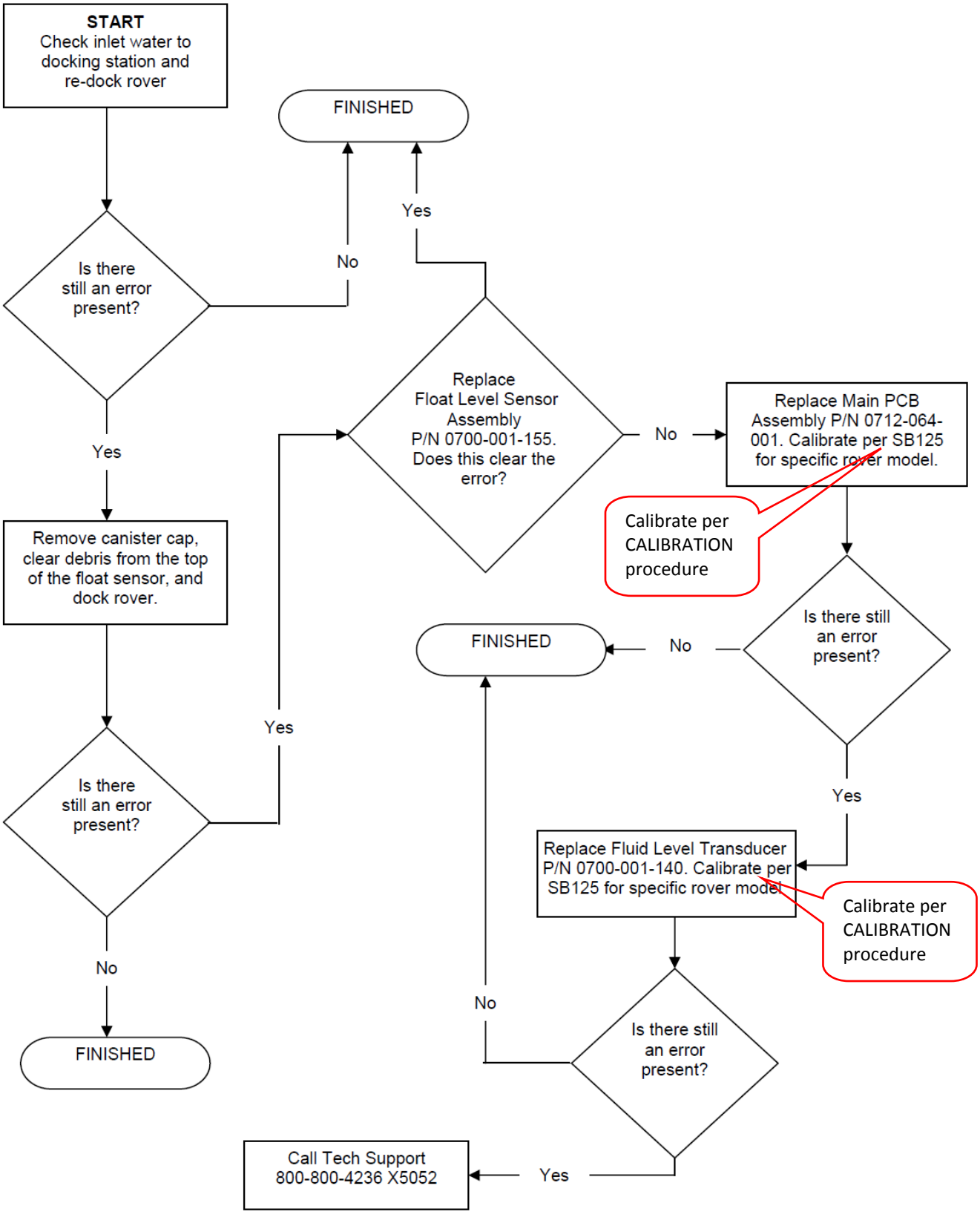
Note: “BURPING THE ROVER” is not a fix, it allows for emptying the fluid to disassemble waste system to remove debris without leaking.



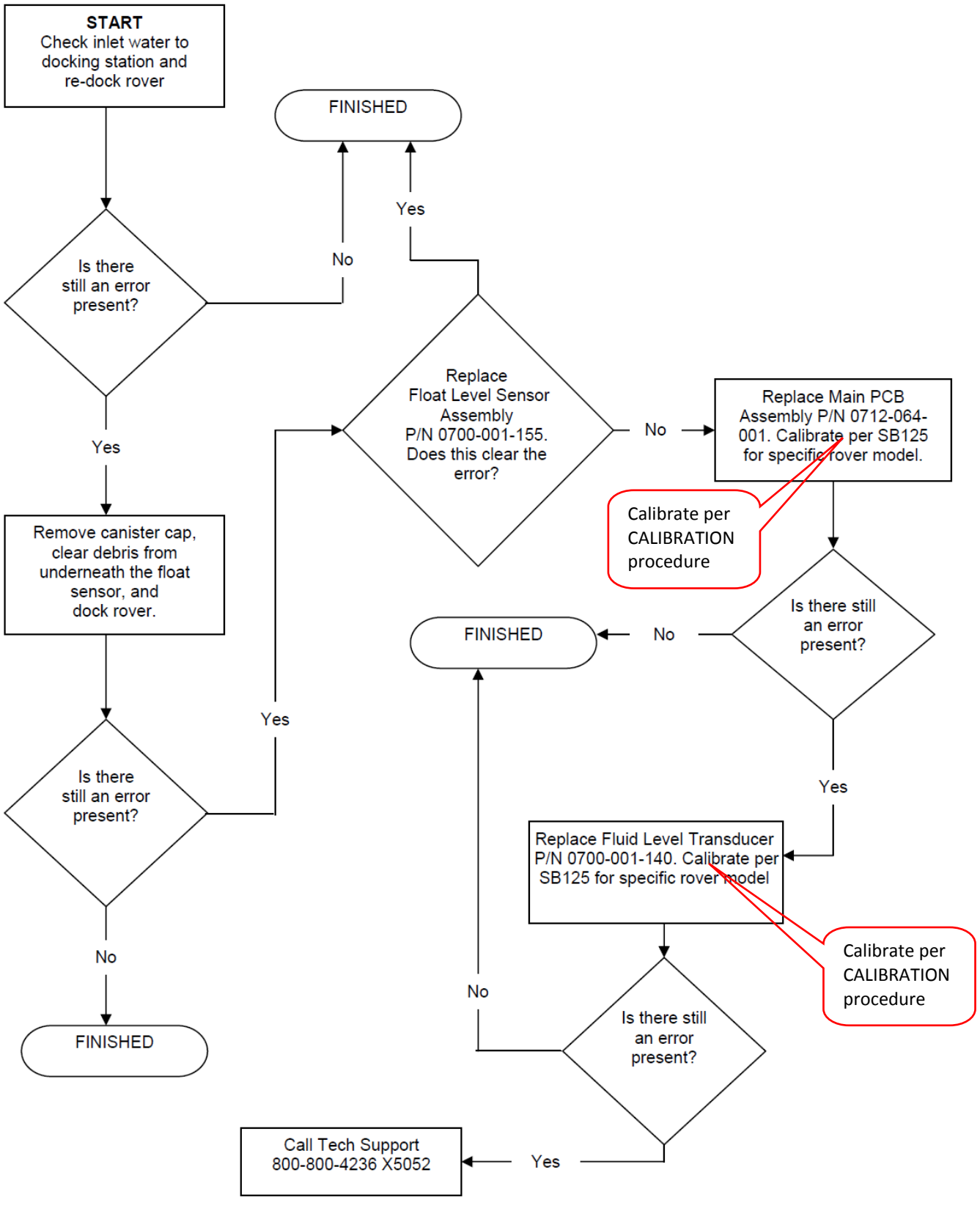
OFFLOAD ERROR (DOCKER HAS CLOG)



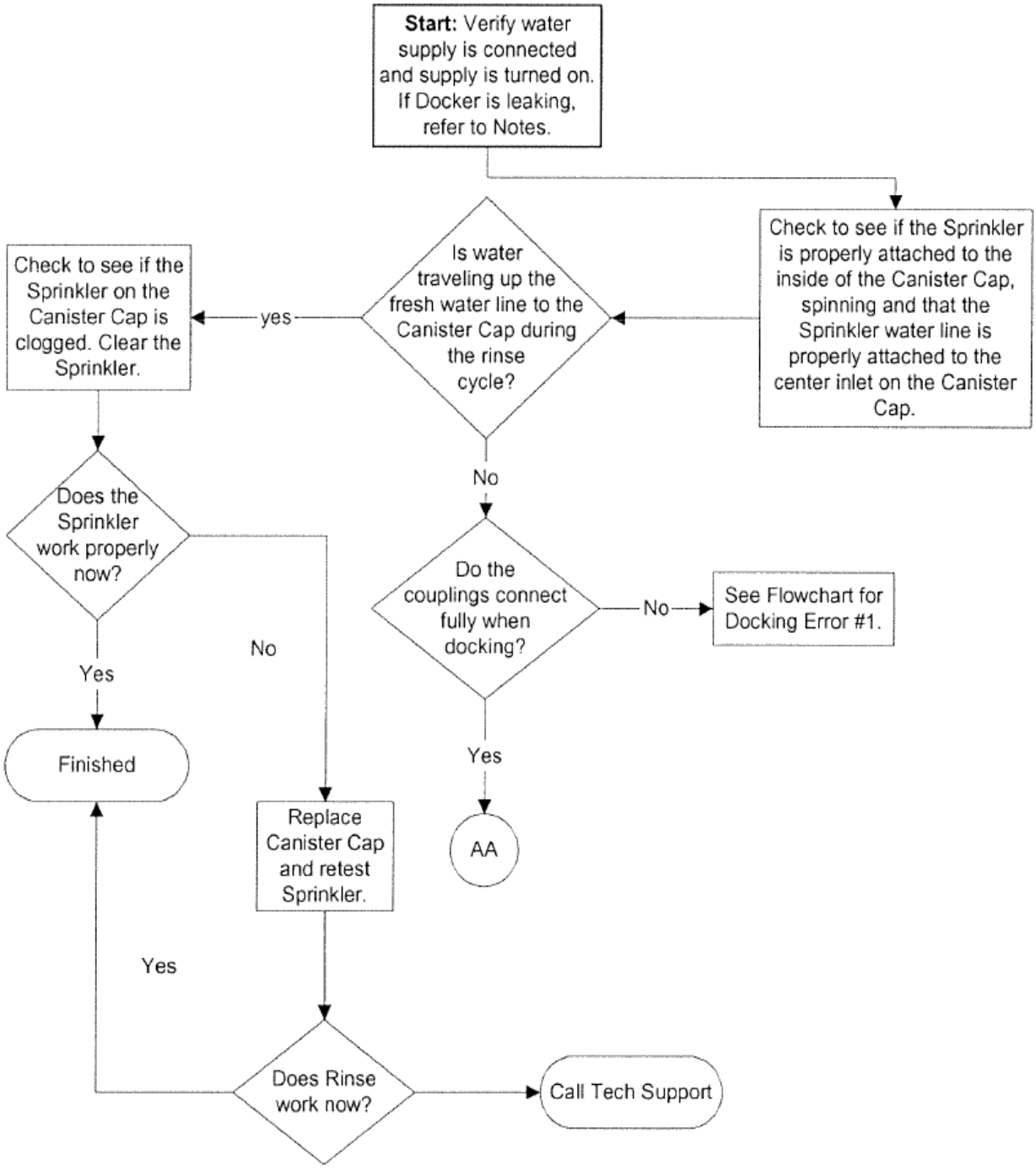
UNDERFILL ERROR

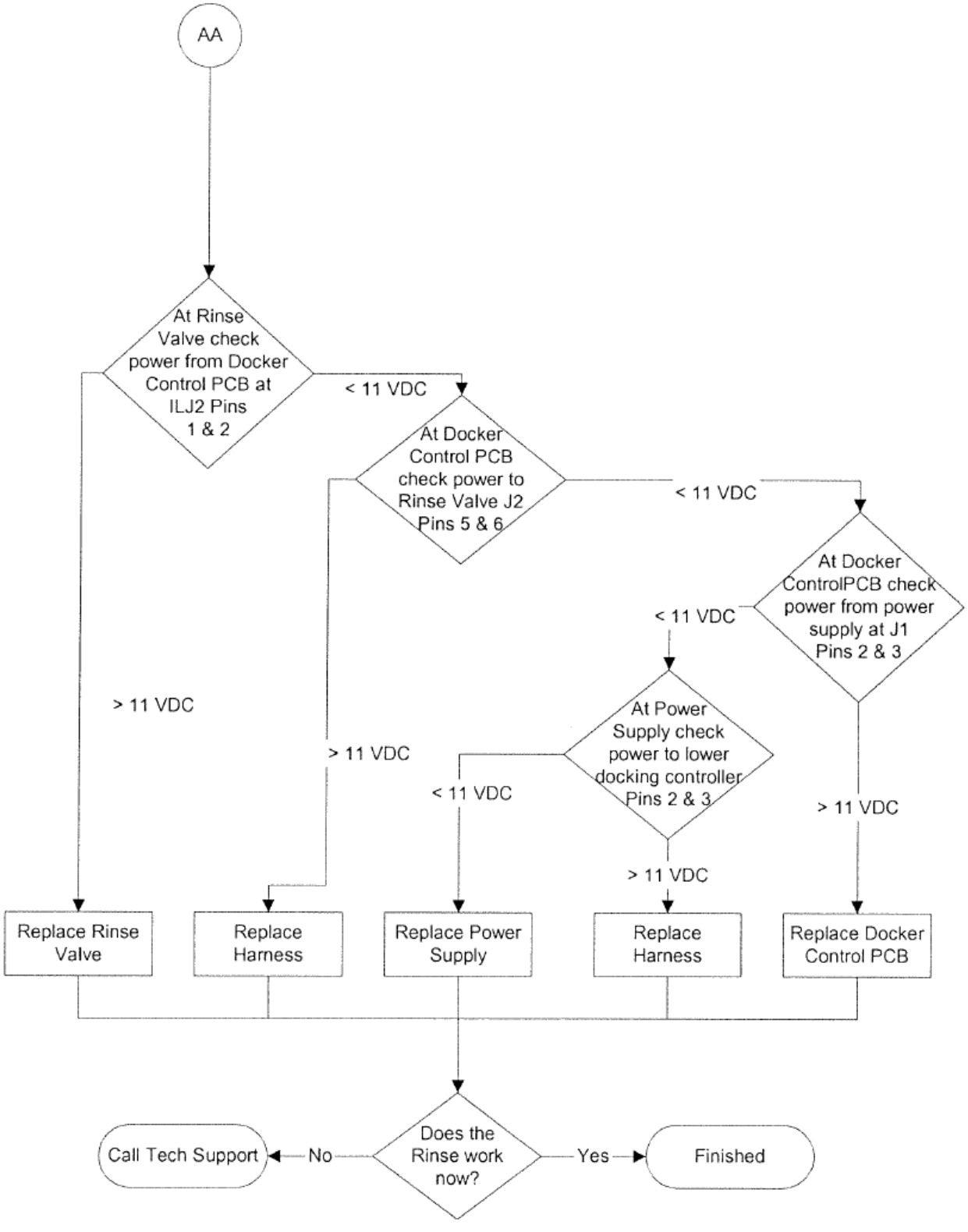


OVERFILL ERROR

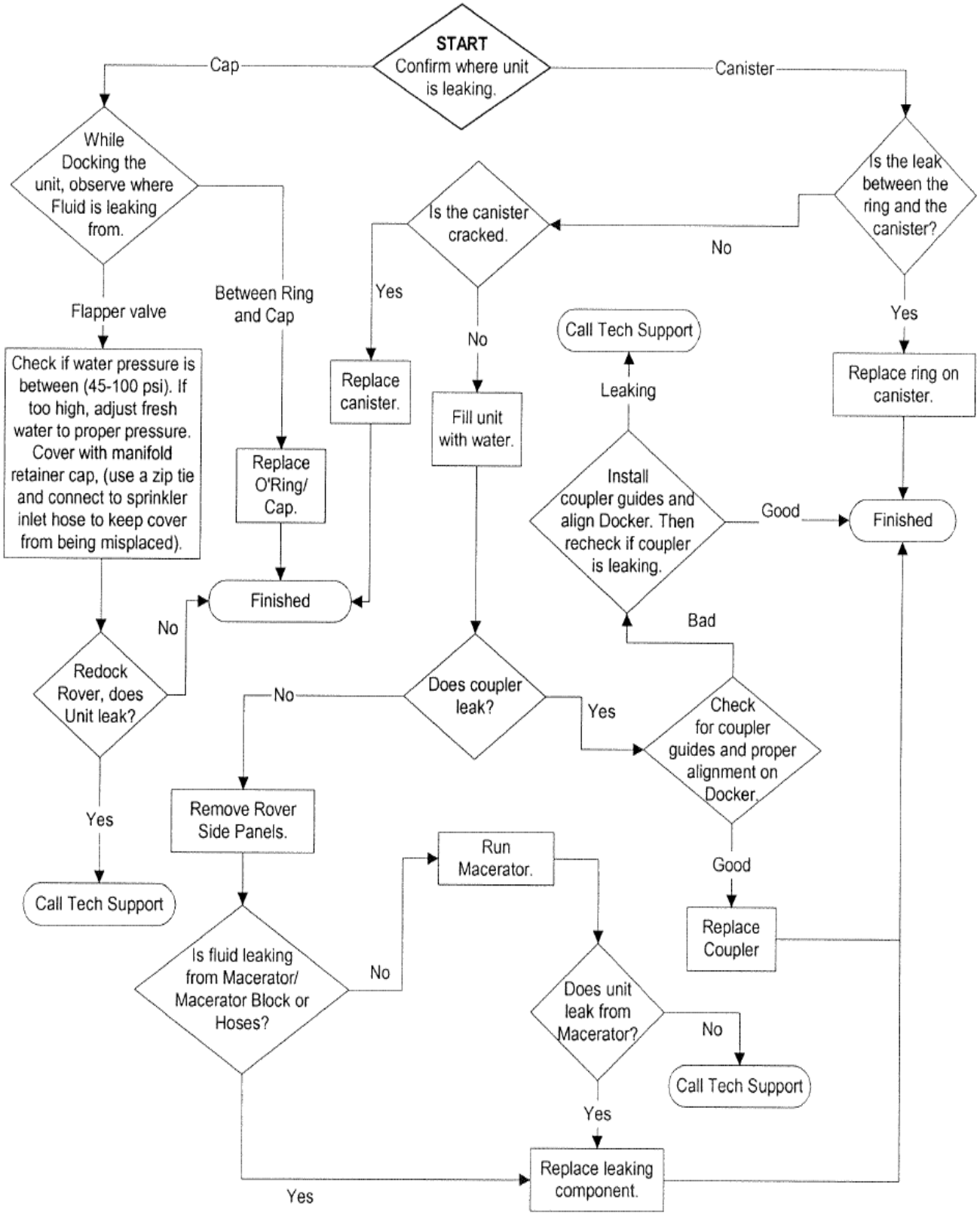


DOCKER/ROVER NOT RINSING

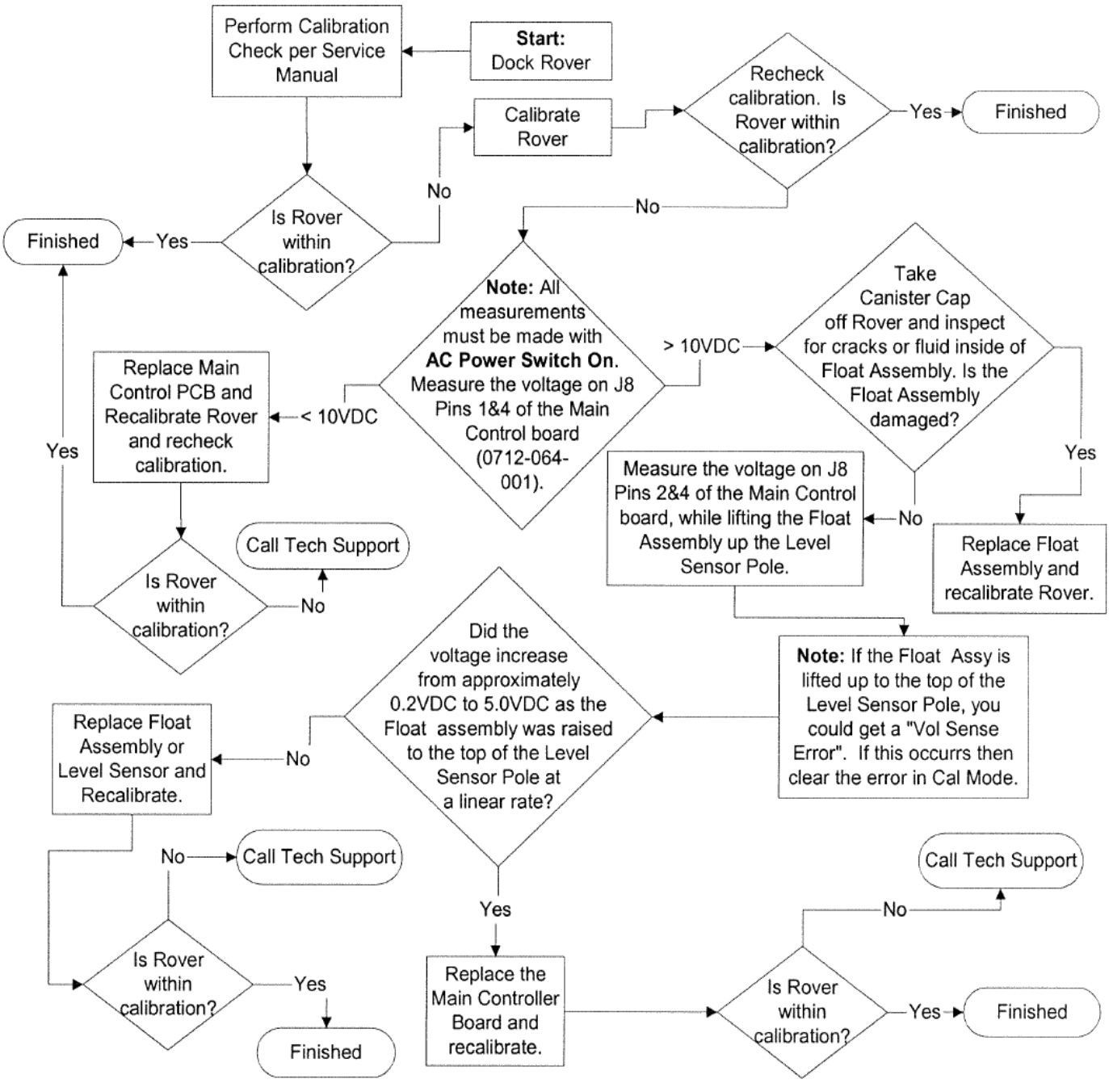



AA
At Rinse Valve check power from Docker Control PCB at ILJ2 Pins 1 & 2
< 11 VDC
> 11 VDC
At Docker Control PCB check power to Rinse Valve J2 Pins 5 & 6
< 11 VDC
> 11 VDC
At Docker ControlPCB check power from power supply at J1 Pins 2 & 3
< 11 VDC
> 11 VDC
At Power Supply check power to lower docking controller Pins 2 & 3
< 11 VDC
> 11 VDC
Replace Rinse Valve
Replace Harness
Replace Power Supply
Replace Harness
Replace Docker Control PCB
Does the Rinse work now?
No
Call Tech Support
Yes
Finished

ROVER LEAKING FLUID

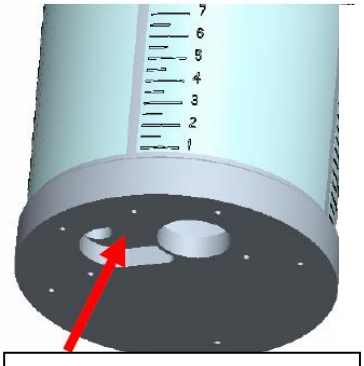


VOLUME ERROR > 175ml

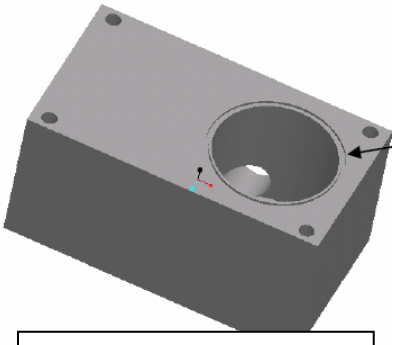


REMOVAL/REPLACEMENT OF MACERATOR/ TRANSDUCER BLOCK ASSY

This procedure outlines replacing the MACERATOR (Obsolete) with the **Transducer Block Assy (P/N 0711-112-005Q)**. There are 2 different models of the TRANSDUCER BLOCK (The previous model is shown below). The current model will not attach to a **Canister Assy (P/N 0700-001-320Q)** that accepts a MACERATOR or the older version of the TRANSDUCER BLOCK. If there is an older model TRANSDUCER BLOCK or MACERATOR that needs to be replaced, a new CANISTER ASSY will need to be installed for use with the new TRANSDUCER BLOCK.



Old Style Canister Assy



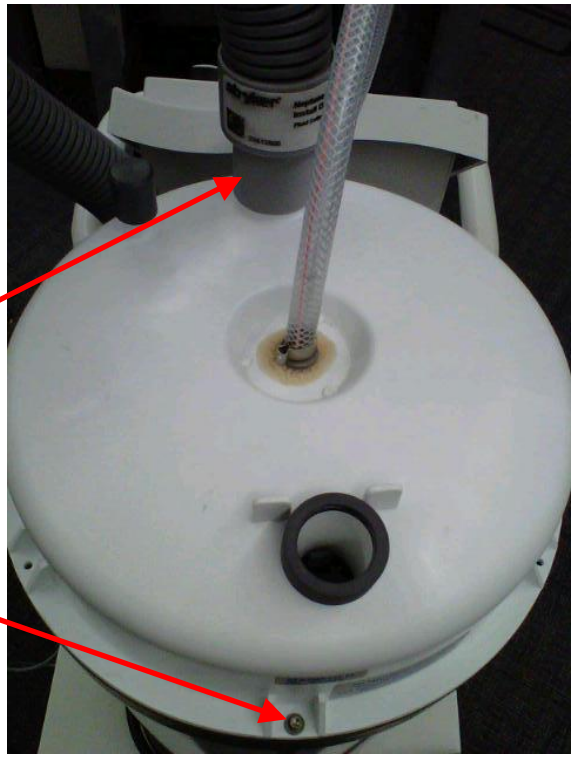
Old Style Transducer Block Assy

Macerator Pump Block Assy **(Obselete)**

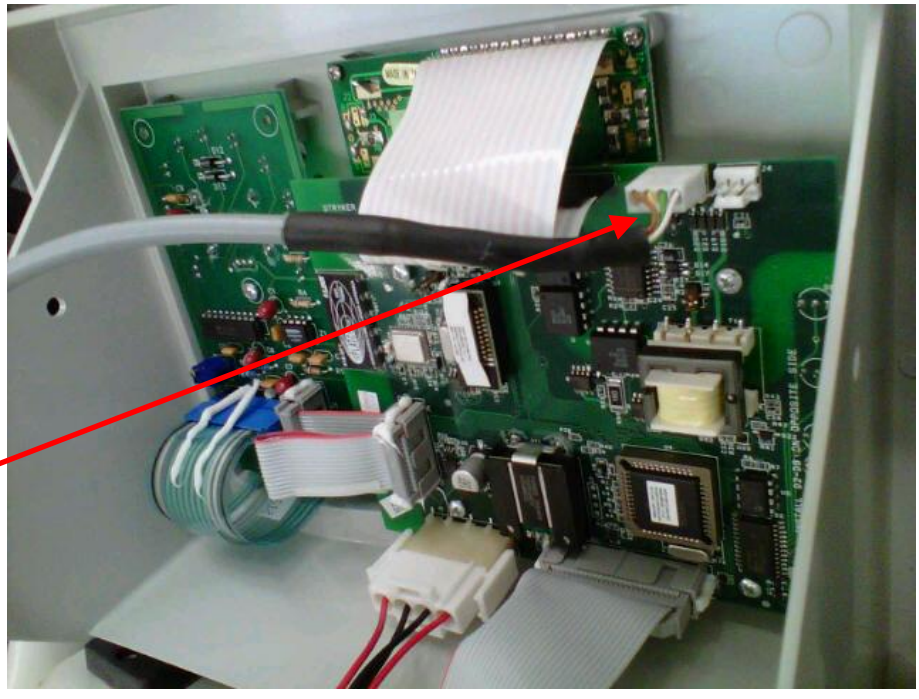
Note: Before attempting to perform this procedure, ensure that there is no fluid inside the CANISTER ASSY by using the "Dock Control" function of the Diagnostic Menu" to offload the fluid. Once fluid has been emptied, exit "Diagnostic Mode" and turn off AC and DC power to the ROVER.

1. Remove **Canister Cap (P/N 0700-001-170Q)** by removing the **Carbon Hose (P/N 0700-035-000)** and the six **Socket Head Cap Screws (P/N 0004-546-000)** and **Flat Washers (P/N 0011-052-000)** securing the CANISTER CAP using 3/32in Allen Key or equivalent.

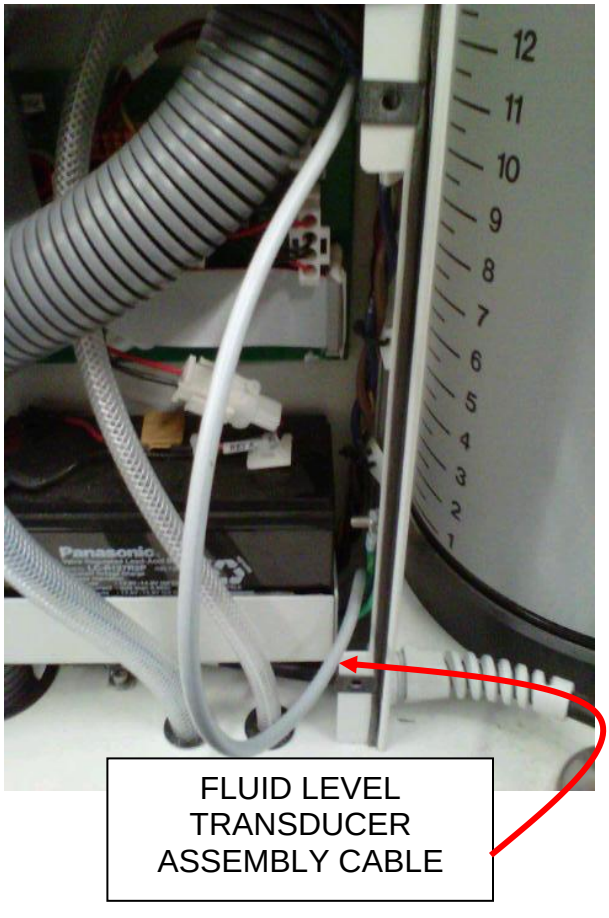
CARBON HOSE
SOCKET HEAD CAP SCREW
FLAT WASHER



2. Remove **User Interface Panel (P/N 0700-001-050Q/Gold Model or 0700-003-050Q/Silver Model)** by removing the four **Button Head Cap Screws (P/N 0004-205-000)** using 1/8in Allen Key and disconnect **Fluid Level Transducer Assembly (P/N 0700-001-140Q)** cable from J8 on **Main Controller PCBA (P/N 0712-064-001)**.



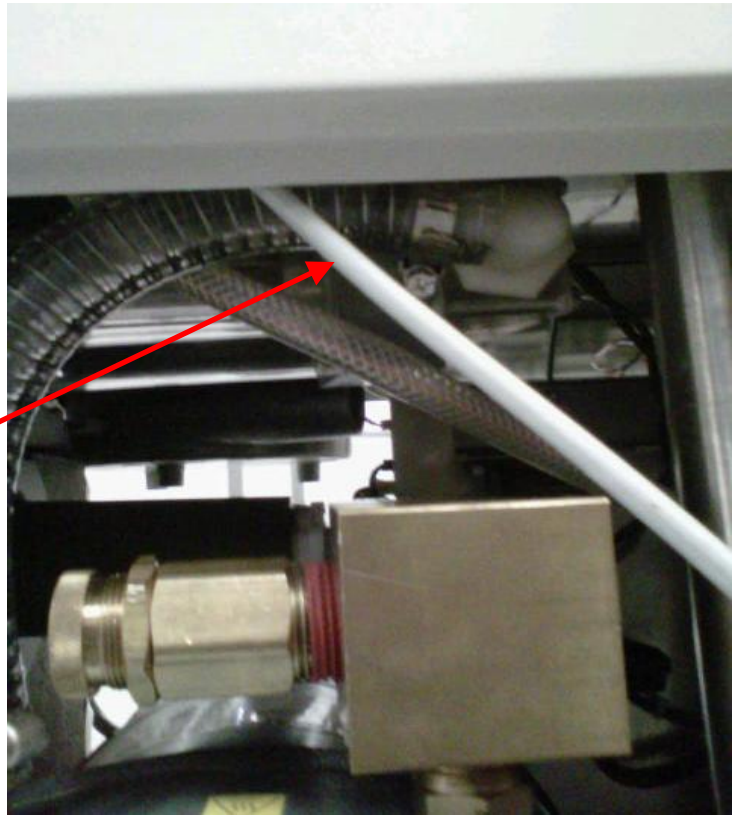
3. Remove **Tower Right Panel Assy (P/N 0700-001-145)** using 1/8in Allen Key or equivalent. Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE running along right side of battery compartment and draw it outside of compartment.



4. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key or equivalent on the side which has the **IV Pole (P/N 0700-001-455)**.

5. Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE underneath ROVER CHASSIS and pull out to allow enough slack at the base of the FLUID LEVEL TRANSDUCER ASSEMBLY to lower assembly.

FLUID LEVEL TRANSDUCER ASSEMBLY CABLE



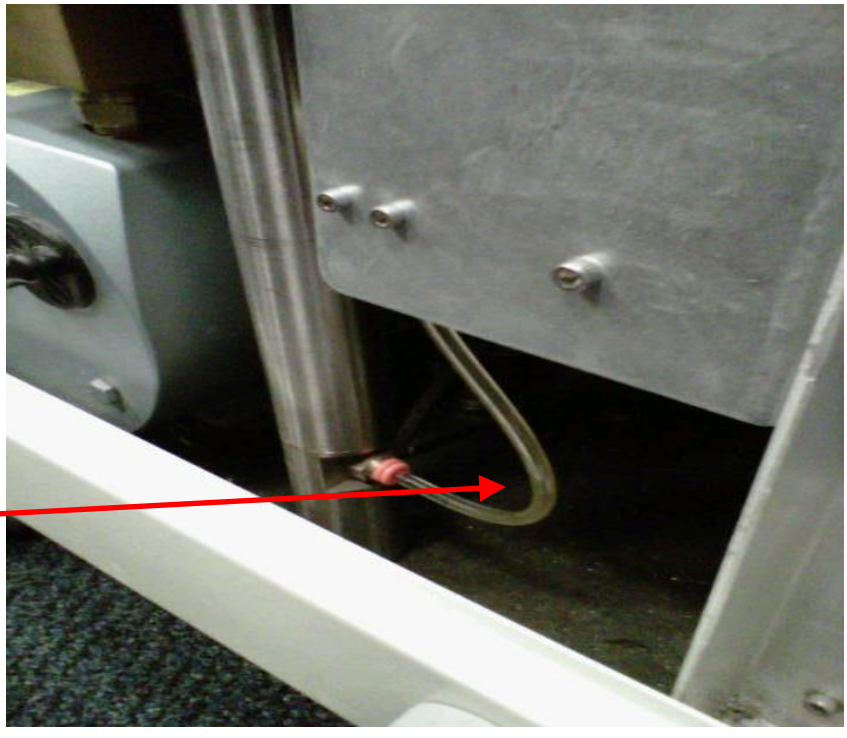
NOTE: Do not draw cable down too far as you need to pull back through once installation is complete. Do not pull on connector to draw back through as this will damage connector/ cable.

Note: This step is N/A for non I.V. POLE models.

6. Remove the IV POLE and **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** to obtain access to Macerator/Transducer Manifold.

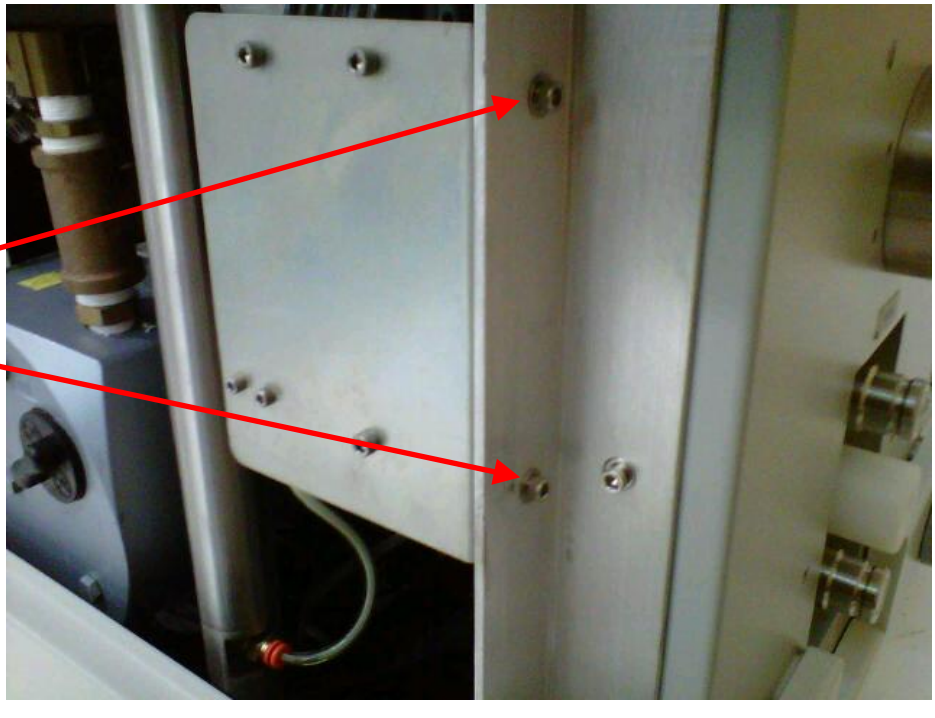
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE <u>using 9/64 Allen Key or equivalent.</u>

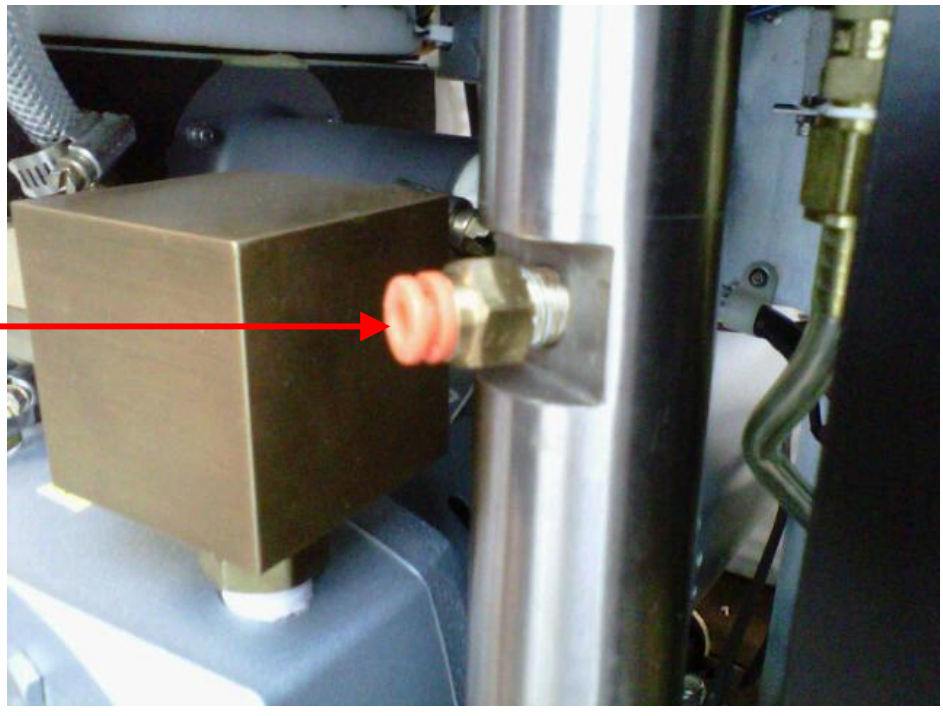
SOCKET HEAD CAP SCREW



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

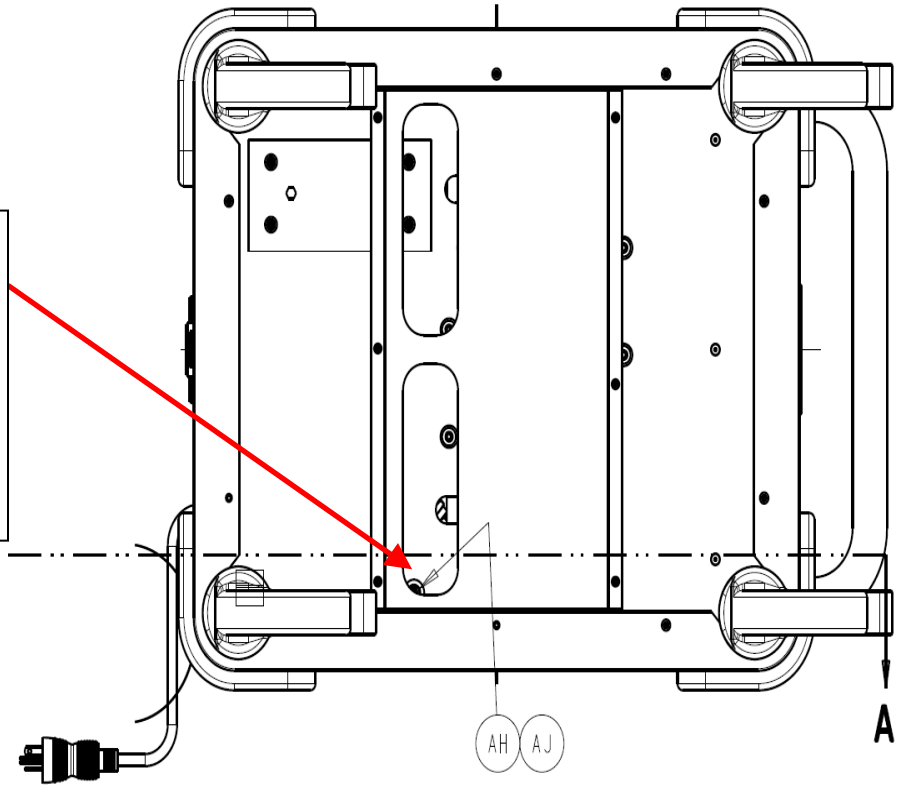
c. Remove brass PNEUMATIC FITTING at base of IV POLE <u>using1/2in Deep-Well Socket,</u> ensure not to damage the fitting.

PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place <u>using 1/4in Allen Key or equivalent</u>.

Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.



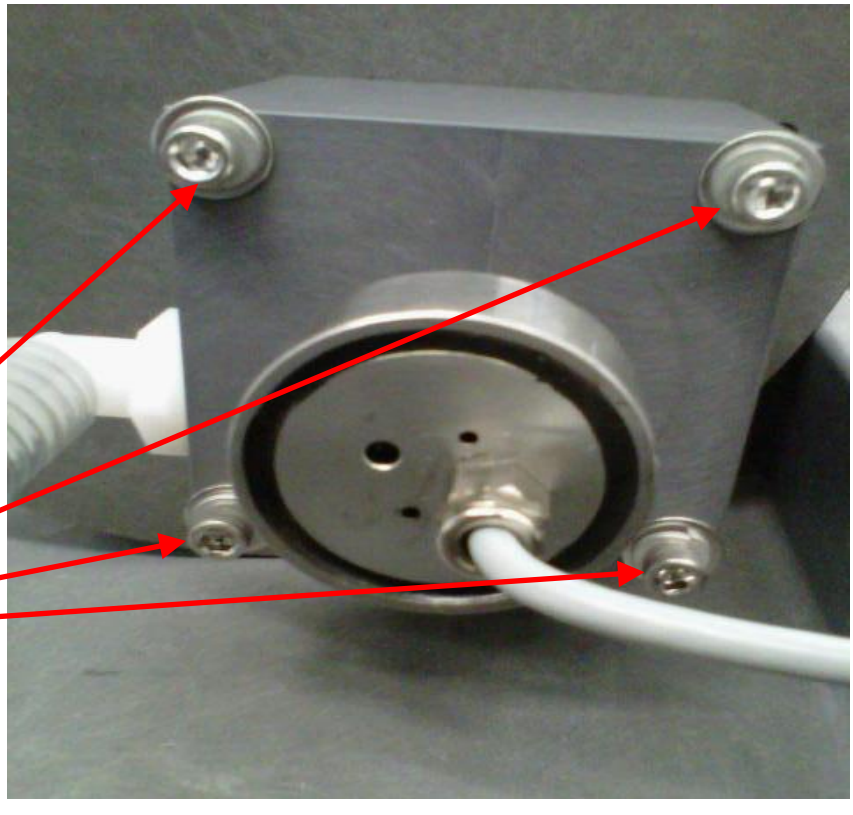
7. Remove **I.V. Pole (P/N 0700-001-455)**

8. Remove both **Female Quick Disconnect Couplings (P/N 0700-001-223)** using ring-clamp pliers from the rear (side opposite the handle) of the ROVER by removing the **Retaining Rings (P/N 0028-313-000)**. Once the rings are removed, the **Coupling Outer Spacers (P/N 0700-001-231)** and the **Wave Springs (P/N 0014-108-000)** will come off and the couplers will push inside the ROVER.

RETAINING RING

9. Remove the MACERATOR/TRANSDUCER BLOCK from the CANISTER ASSY by removing the four **Socket Head Cap Screws (P/N 0004-544-000)** using 3/16 Allen Key or equivalent from the TRANSDUCER BLOCK. Once the screws are removed, the block will drop down away from the CANISTER. Pull the block out at an angle ensuring not to bend the rod.

SOCKET HEAD CAP SCREW



10. Unthread **Fluid Level Transducer Assy (P/N 0700-001-140Q)** from Macerator/Transducer Manifold.

11. Apply Teflon tape to FLUID LEVEL TRANSDUCER ASSY.

NOTE: It is very important you do not over-tighten FLUID LEVEL TRANSDUCER ASSY; this will result in damage to TRANSDUCER BLOCK.

12. Carefully thread FLUID LEVEL TRANSDUCER ASSY into new TRANSDUCER BLOCK and thread to hand tight plus one turn.

13. Ensure **O-Ring** (P/N 0045-142-000) is in the groove on the top of the new Transducer Block and securely attach to the Canister Base.

14. Reassemble unit in reverse order.

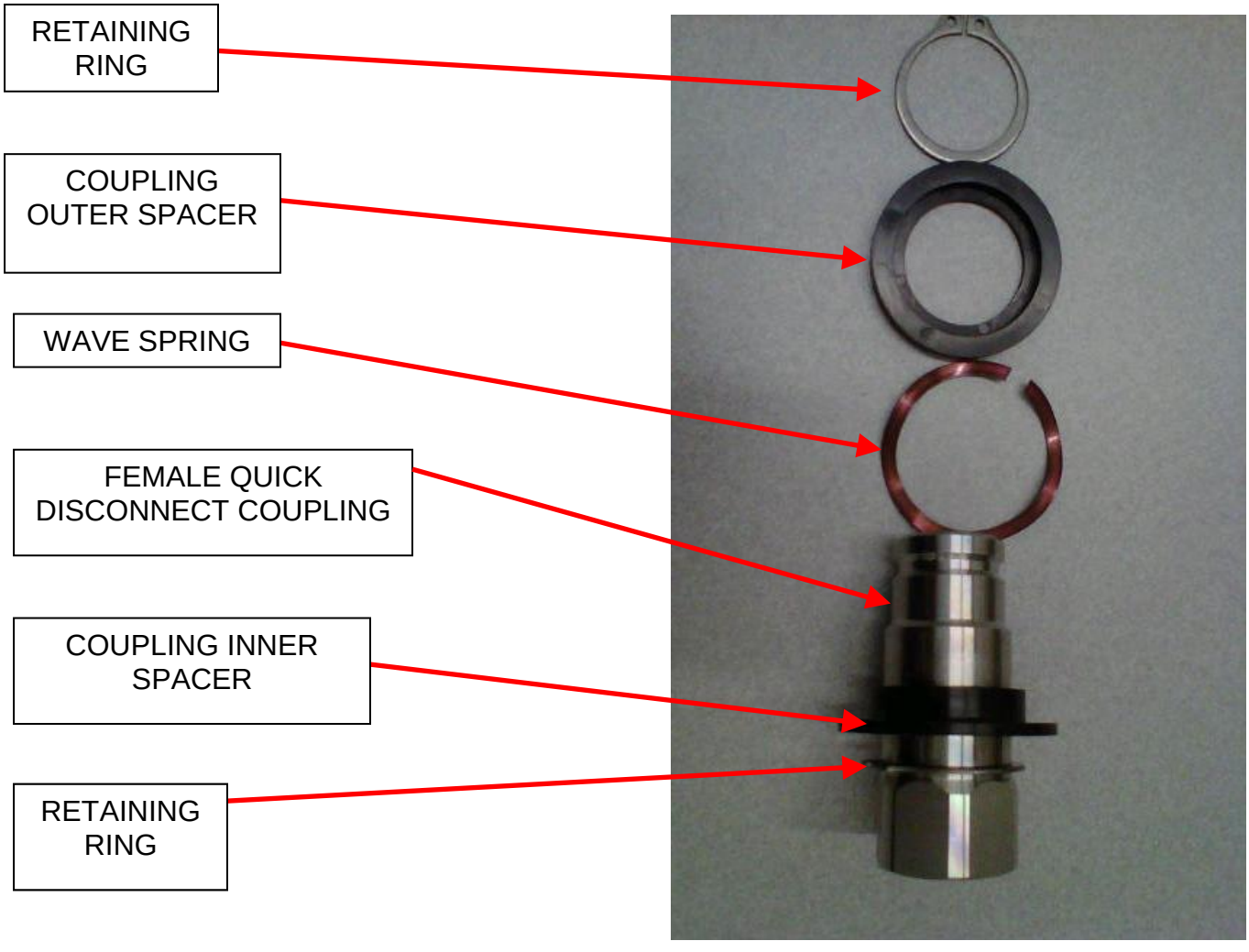
15. Re-calibrate per Calibration procedure.

16. Perform electrical safety tests per Testing procedures.

17. Return to service.

REMOVAL/REPLACEMENT OF ROVER WASTE COUPLER

Note: The following parts are needed before attempting to perform this procedure; 2ea) **Retaining Ring (P/N 0028-313-000)**, 1ea) **Coupling Outer Spacer (P/N 0700-001-231),** 1ea) **Wave Spring (P/N 0014-108-000),** 1ea) **Coupling Inner Spacer (P/N 0700-001-229),** 1ea) **Female Quick Disconnect Coupling (P/N 0700-001-223).**



Note: When a new FEMALE QUICK DISCONNECT COUPLING is ordered, it does not come with the RETAINING RING that is placed on the back of the coupler to allow it to rest up against the COUPLING INNER SPACER; therefore, you must save the old RETAINING RING or replace it with a new one.

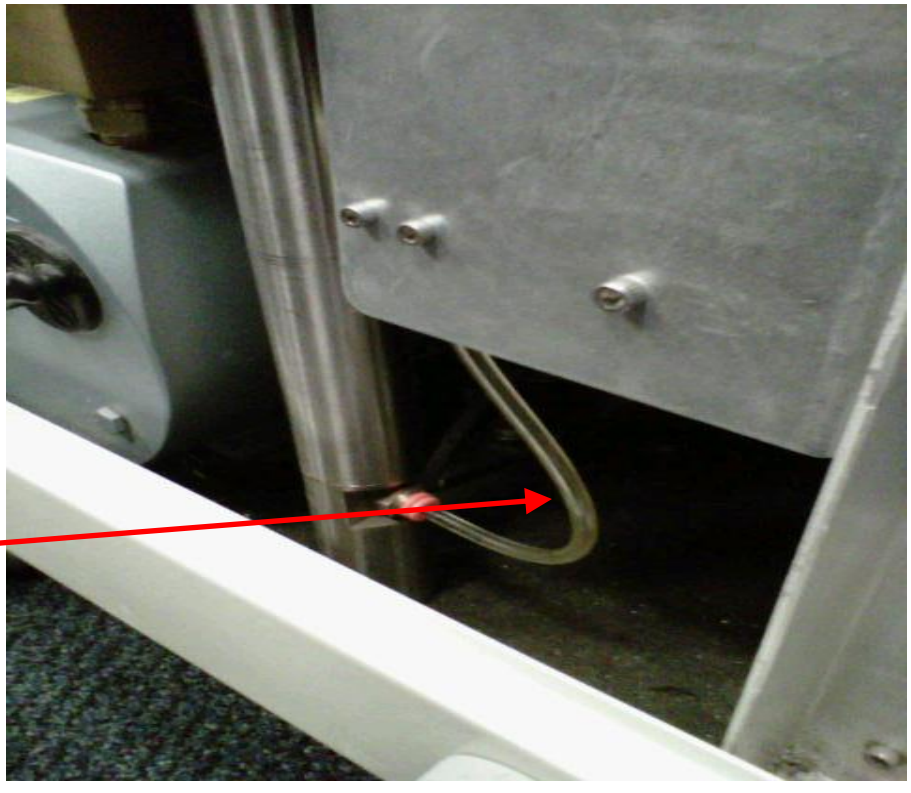
Note: Before attempting to remove the FEMALE QUICK DISCONNECT COUPLING, ensure that there is no fluid inside the CANISTER by using the “Dock Control” function of the Diagnostic Menu” to offload the fluid.

Note: This step is N/A for non I.V. POLE models.

1. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the IV Pole.

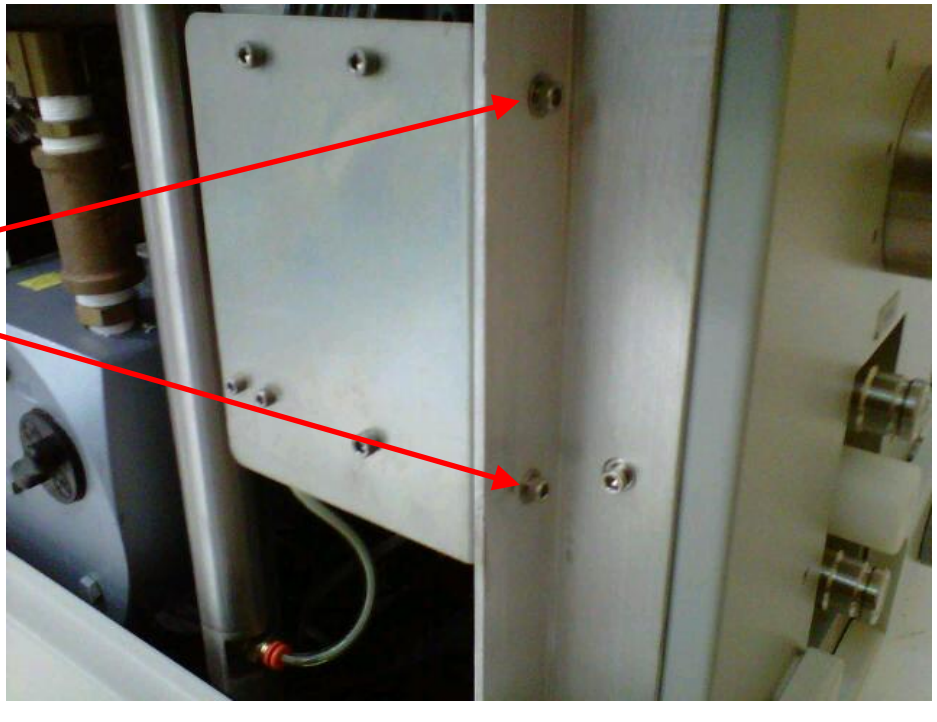
a. Remove **Pneumatic Tubing** (P/N 0060-008-000 8in) at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove **IV Pole Pneumatics Panel (0700-001-070Q)** to the right of IV POLE using 9/64 Allen Key.

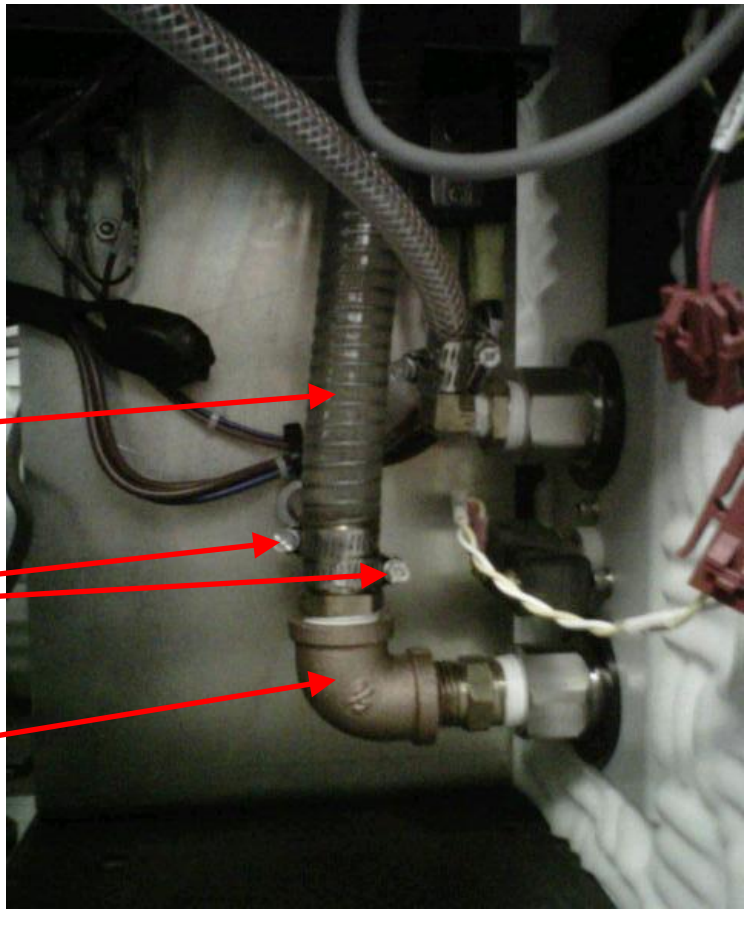
Socket Head Cap Screw



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

2. Remove the RETAINING RING <u>using ring clamp pliers</u>, from the Waste Coupling on the rear (side opposite the handle) of the ROVER. Once the ring is removed, the OUTER SPACER and the WAVE SPRING will come off and the coupler will push inside the ROVER.

3. Loosen the 2 **Hose Clamps (P/N 0058-328-000)** on the **Canister Waste Reinforced Tubing (P/N 0700-001-457)** above the **Pipe Fitting Elbow (P/N 0048-215-000)** connected to the FEMALE QUICK DISCONNECT COUPLING.



4. Separate the entire coupler assembly from the CANISTER WASTE REINFORCED TUBING by wiggling the assembly back and forth.

Note: Although the fluid was removed before the procedure began, there will still be fluid inside the CANISTER WASTE REINFORCED TUBING. Ensure to be careful when separating the assembly from the tubing**.**

5. Separate the FEMALE QUICK DISCONNECT COUPLING from the assembly. Either clean out debris from inside coupler or replace coupler.

6. Re-assemble unit in reverse order.

7. Perform functional testing to ensure there are no leaks and unit is operational.

8. Procedure complete.

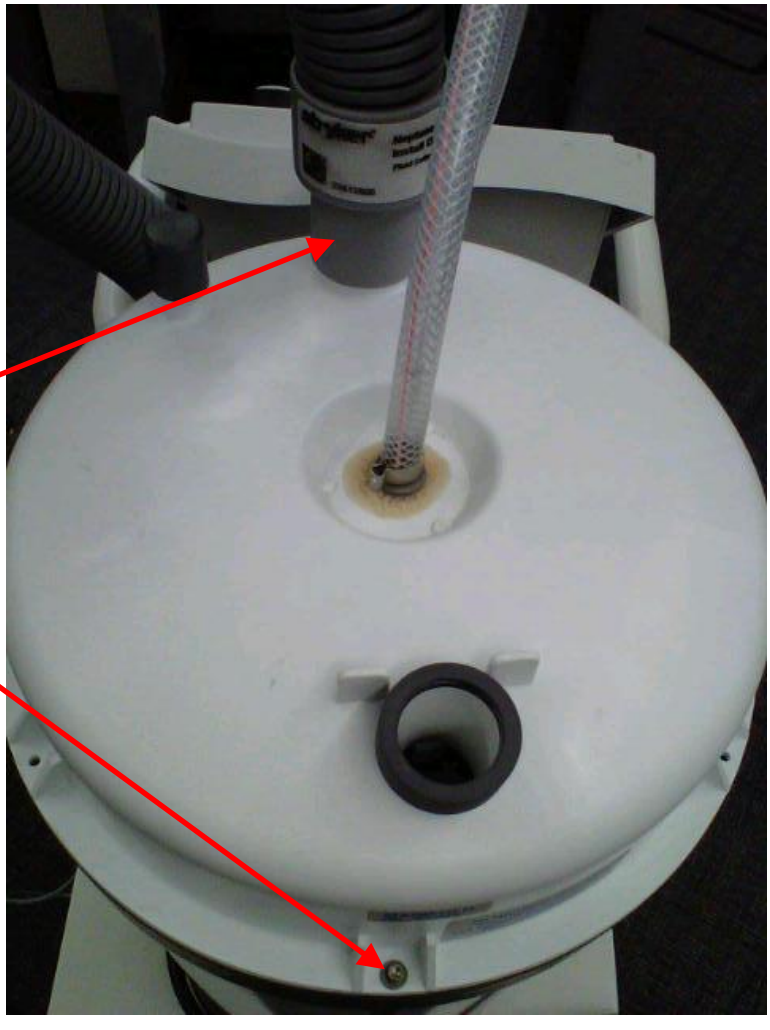
REMOVAL/REPLACEMENT OF ROVER CANISTER

Note: The following parts are needed before attempting to perform this procedure; 1ea) **Rover Canister Assy (P/N 0700-001-320Q)**, 1ea) **Transducer Block w/Oring (P/N 0711-112-005Q).**

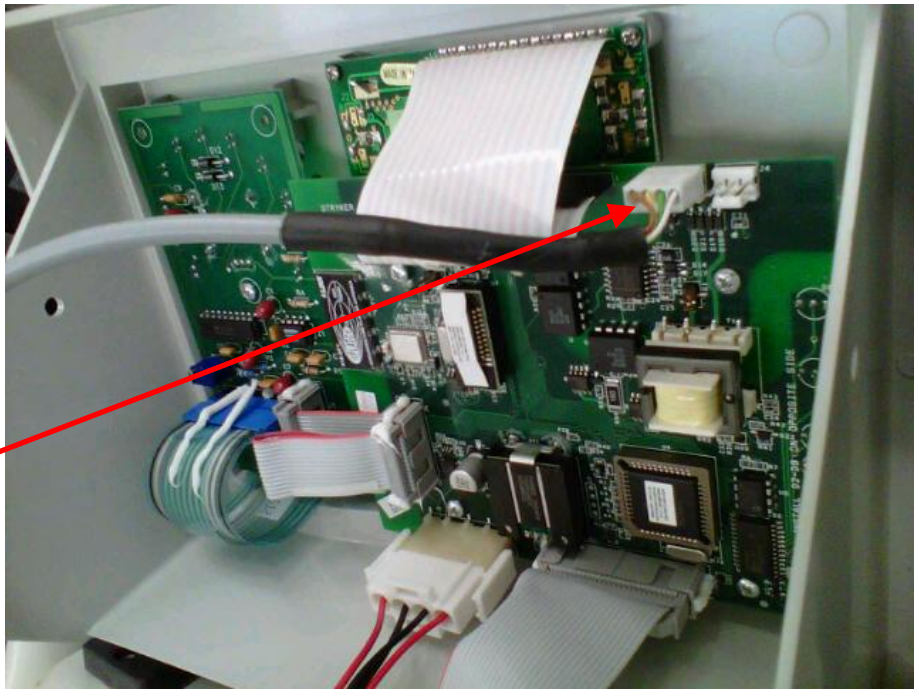
Note: Before attempting to perform this procedure, ensure that there is no fluid inside the CANISTER by using the “Dock Control” function of the Diagnostic Menu” to offload the fluid. Once fluid has been emptied, exit “Diagnostic Mode” and turn off AC and DC power to the ROVER.

1. Remove **Canister Cap (P/N 0700-001-170Q)** by removing the **Carbon Hose (P/N 0700-035-000)** and the six **Socket Head Cap Screws (P/N 0004-546-000)** and **Flat Washers (P/N 0011-052-000)** securing the CANISTER CAP using 3/32 Allen Key or equivalent.

CARBON HOSE
SOCKET HEAD CAP SCREW
FLAT WASHER



2. Remove **User Interface Panel (P/N 0700-001-050Q/Gold Model or 0700-003-050Q/Silver Model)** by removing the four **Button Head Cap Screws (P/N 0004-205-000)** using 1/8in Allen Key and disconnect **Fluid Level Transducer Assembly (P/N 0700-001-140Q)** cable from J8 on **Main Controller PCBA (P/N 0712-064-001)**.

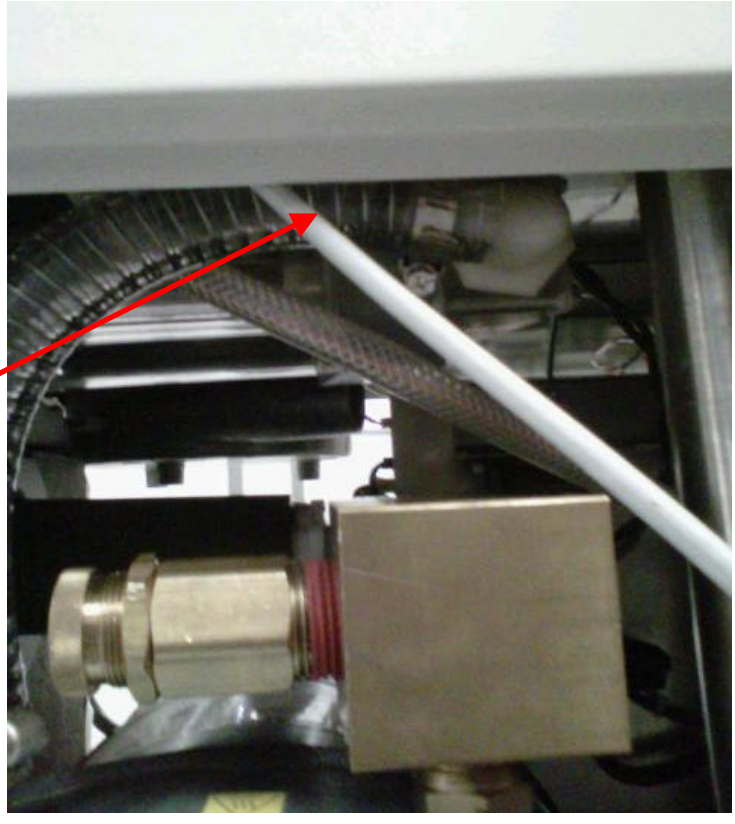


3. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent. Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE running along right side of battery compartment and draw it outside of compartment.

4. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the **IV Pole (P/N 0700-001-455)**.

5. Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE underneath ROVER CHASSIS and pull out to allow enough slack at the base of the FLUID LEVEL TRANSDUCER ASSEMBLY to lower assembly.

FLUID LEVEL TRANSDUCER ASSEMBLY CABLE



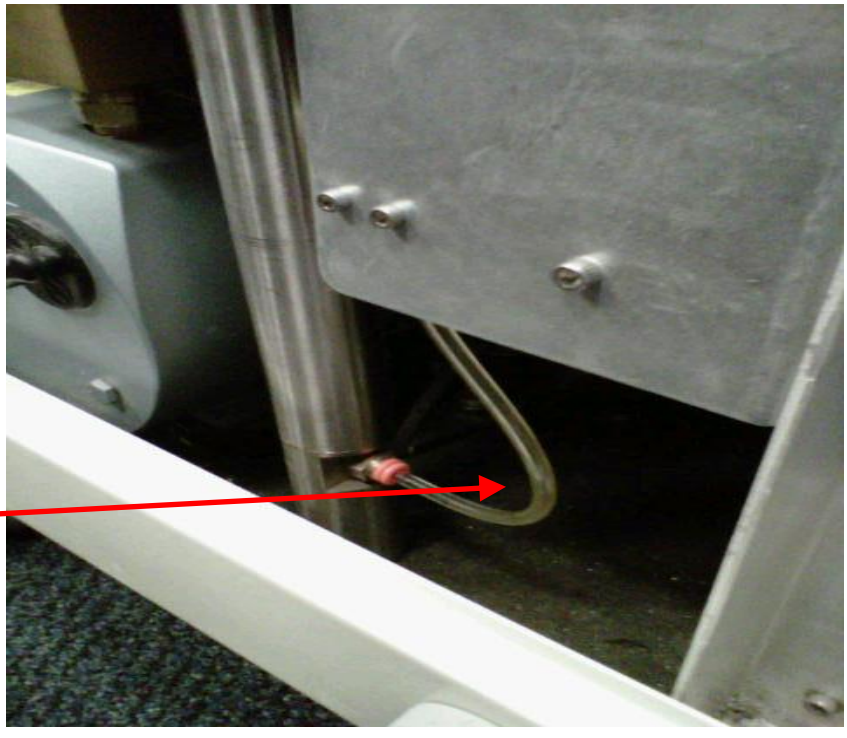
NOTE: Do not draw cable down too far as you need to pull back through once installation is complete. Do not pull on connector to draw back through as this will damage connector/ cable.

Note: This step is N/A for non I.V. POLE models.

6. Remove the IV POLE and **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** to obtain access to Macerator/Transducer Manifold.

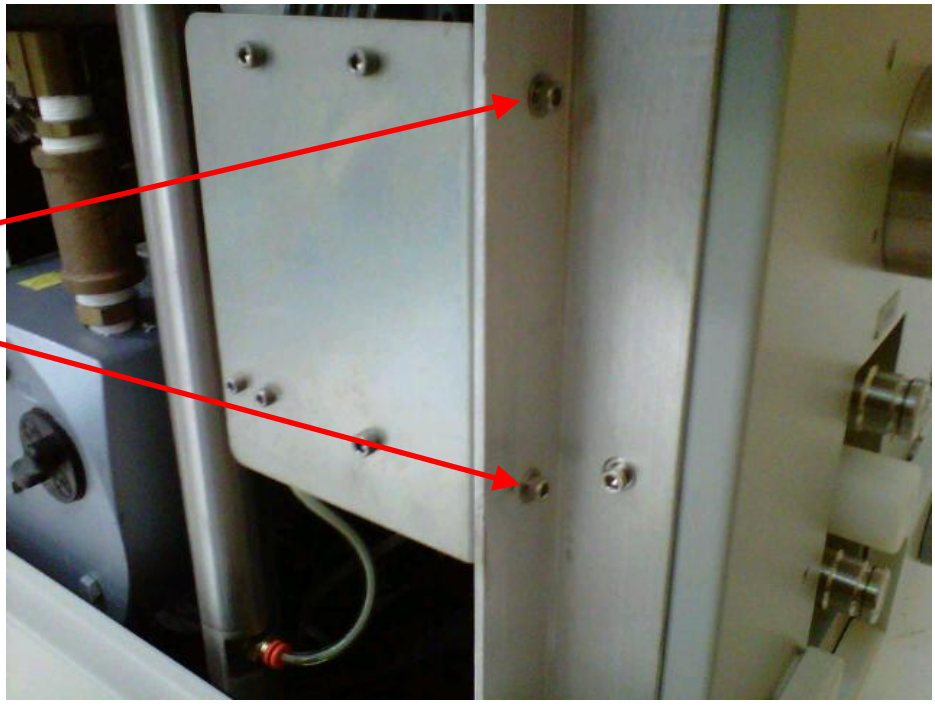
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE <u>using 9/64 Allen Key.</u>

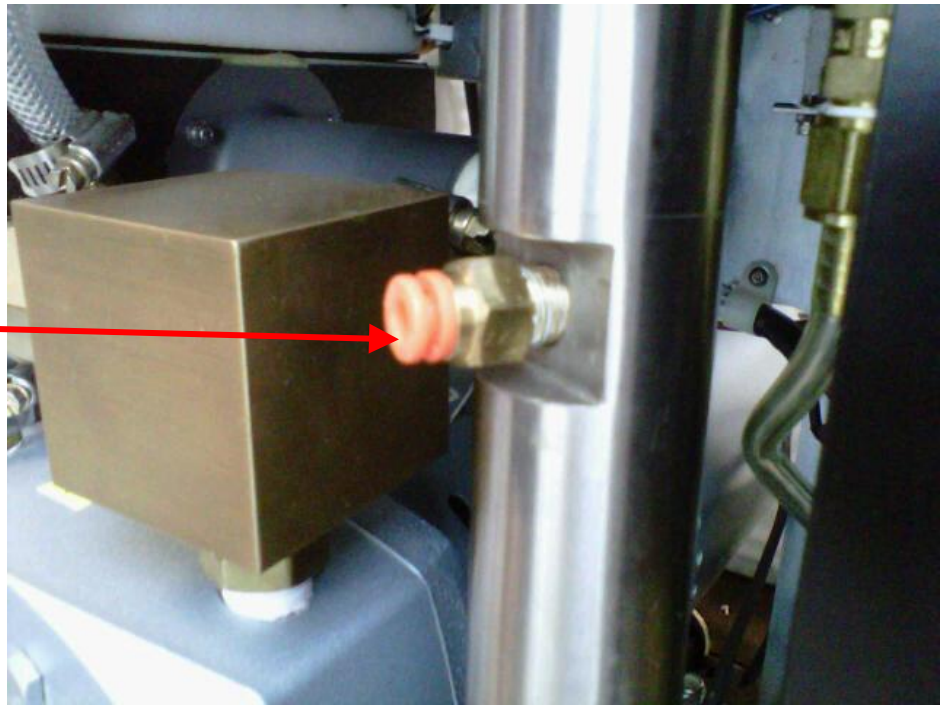
SOCKET HEAD CAP SCREW



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

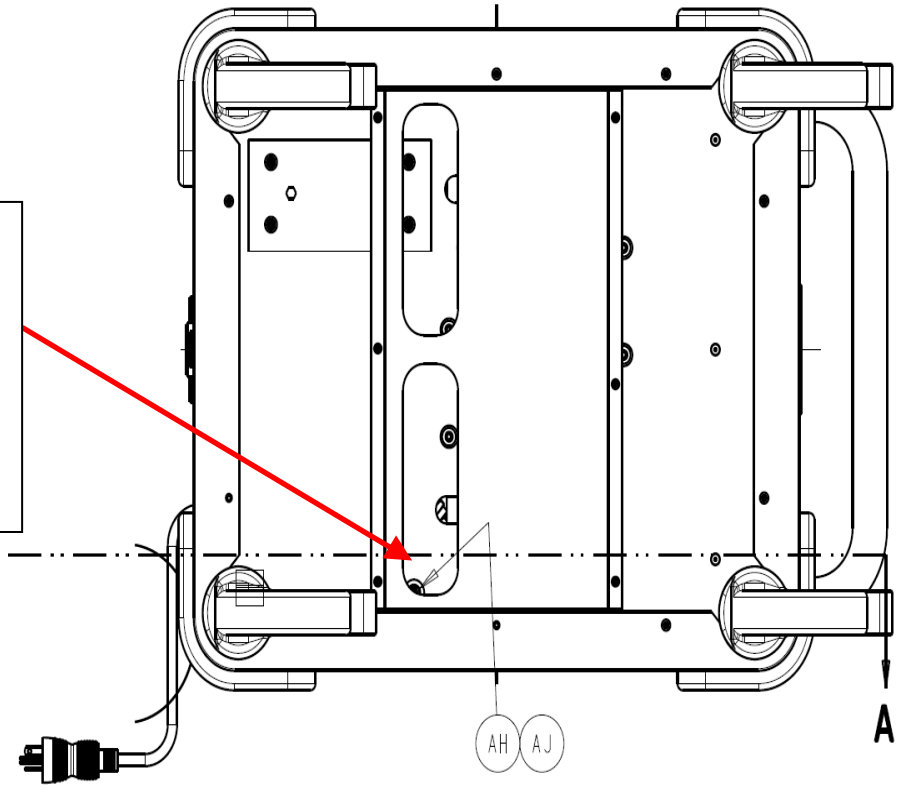
c. Remove brass PNEUMATIC FITTING at base of IV POLE <u>using1/2in Deep-Well Socket,</u> ensure not to damage the fitting.

PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place <u>using 1/4in Allen Key</u>.

Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.



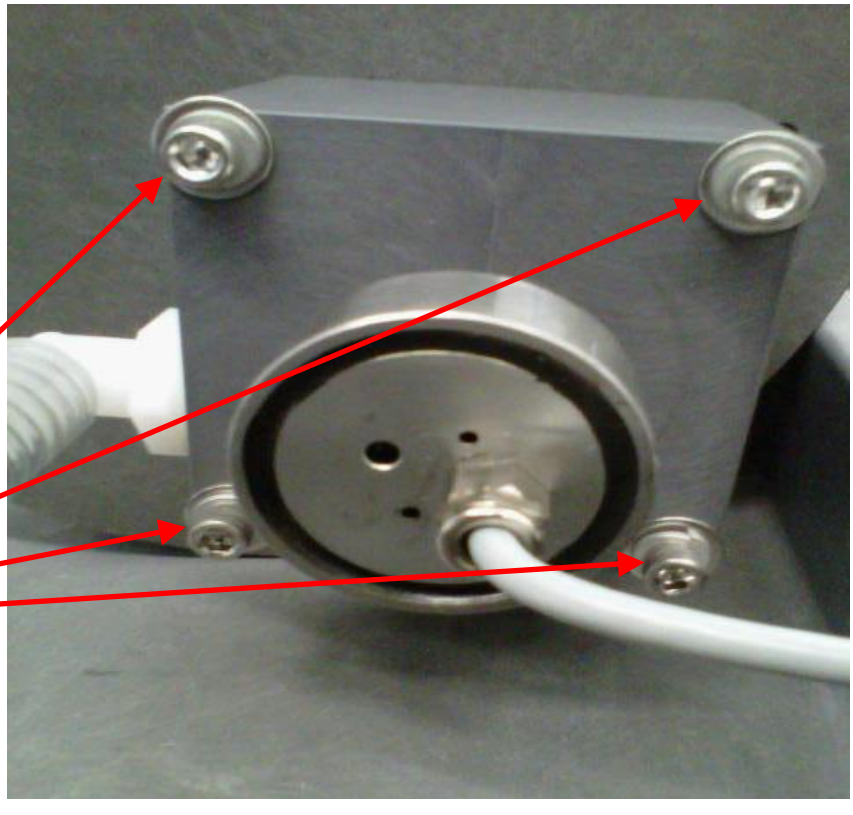
7. Remove **I.V. Pole (P/N 0700-001-455)**

8. Remove both **Female Quick Disconnect Couplings (P/N 0700-001-223)** using ring-clamp pliers from the rear (side opposite the handle) of the ROVER by removing the **Retaining Rings (P/N 0028-313-000)**. Once the rings are removed, the **Coupling Outer Spacers (P/N 0700-001-231)** and the **Wave Springs (P/N 0014-108-000)** will come off and the couplers will push inside the ROVER.

RETAINING RING

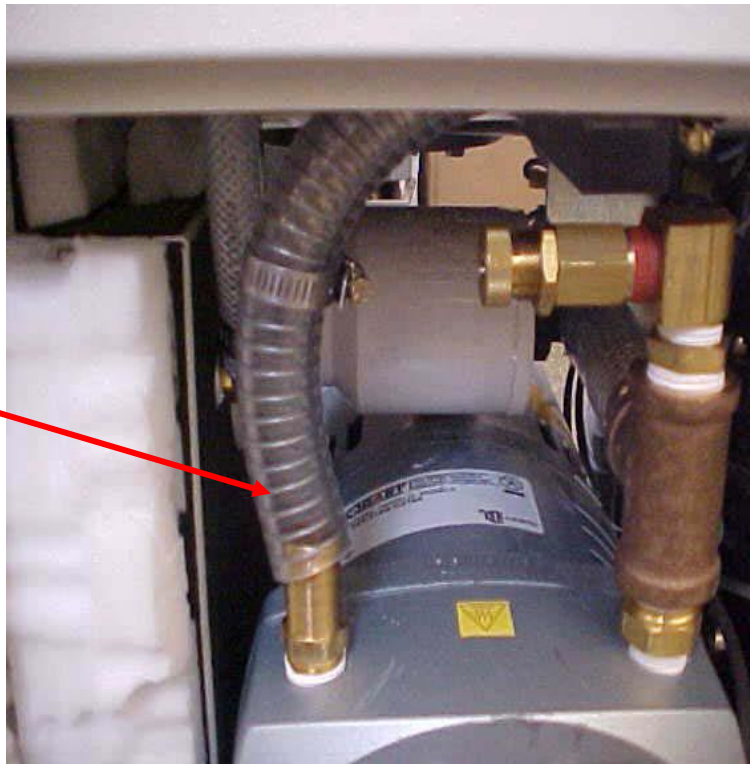
9. Remove the MACERATOR/TRANSDUCER BLOCK from the CANISTER ASSY by removing the four **Socket Head Cap Screws (P/N 0004-544-000)** using 3/16 Allen Key or equivalent from the TRANSDUCER BLOCK. Once the screws are removed, the block will drop down away from the CANISTER. Pull the block out at an angle ensuring not to bend the rod.

SOCKET HEAD CAP SCREW



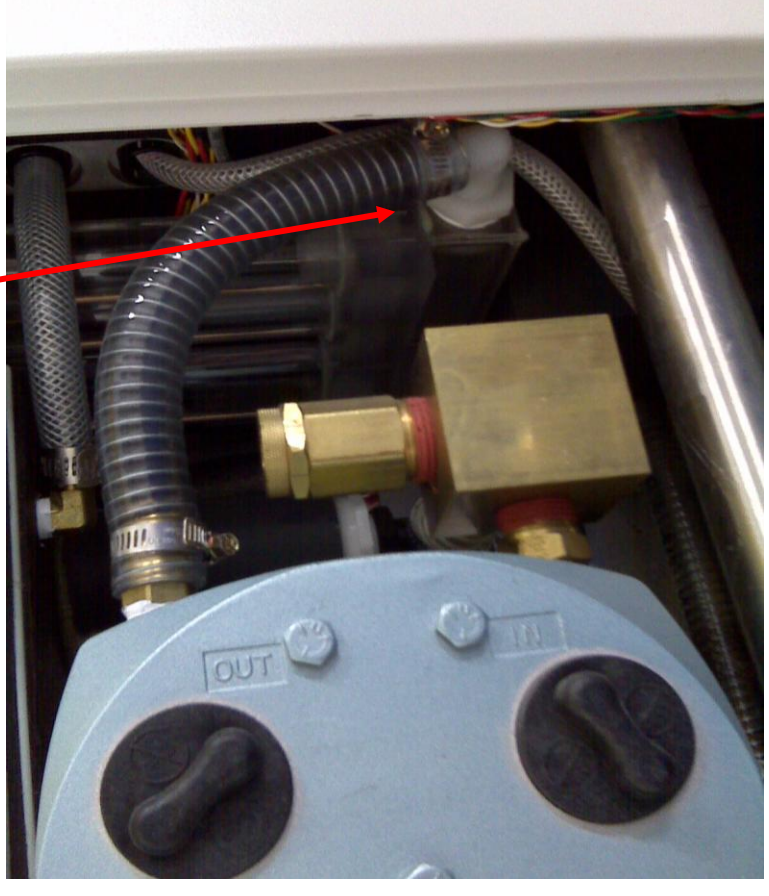
10. At the **Vacuum Pump (P/N 0700-001-240Q)**, disconnect **Wire Reinforced Tubing (P/N 0700-001-457)** that goes to the **Silencer Manifold (P/N 0700-001-160Q)**.

WIRE REINFORCED TUBING



11. Remove the SILENCER MANIFOLD ASSEMBLY by loosening the two screws that secure the SILENCER MANIFOLD ASSEMBLY to the bracket.

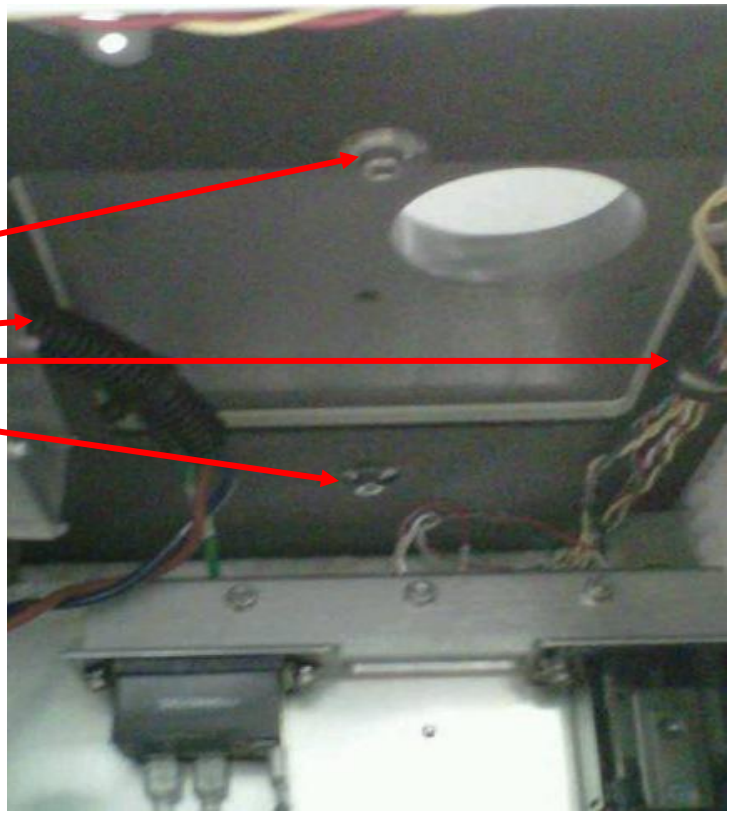
Screw located behind the tubing. The other screw is on the opposite side.



Note: After removing the silencer manifold assembly, the bolt securing the bracket to the assembly will be exposed. This bolt is one of the four that secure the Canister to the chassis.

12. Remove the four **Socket Head Cap Screws (P/N 0004-534-000)** that secure the CANISTER ASSEMBLY to the chassis.

Socket Head Cap Screws securing the CANISTER to the CHASSIS



13. Pull CANISTER ASSY forward to break the RTV seal underneath.

14. Prep surface for new CANISTER ASSEMBLY by removing the old RTV and cleaning the surface where the old canister was.

15. Apply a thin layer of RTV 108 to area where canister is to be placed.

16. Ensuring the orientation on the CANISTER ASSY is correct, install CANISTER ASSY and secure to CHASSIS with the hardware removed previously.

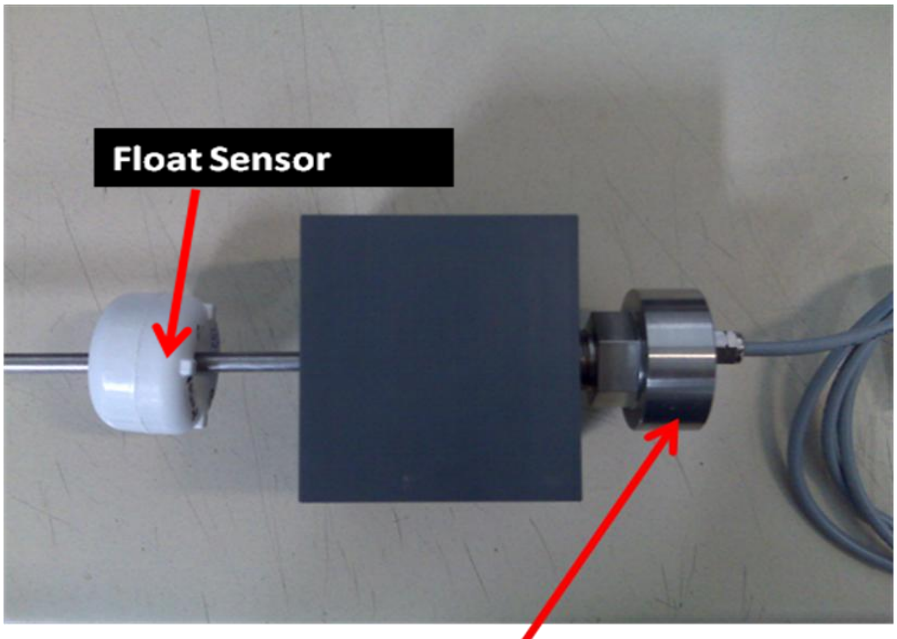
17. Reassembly in reverse order.

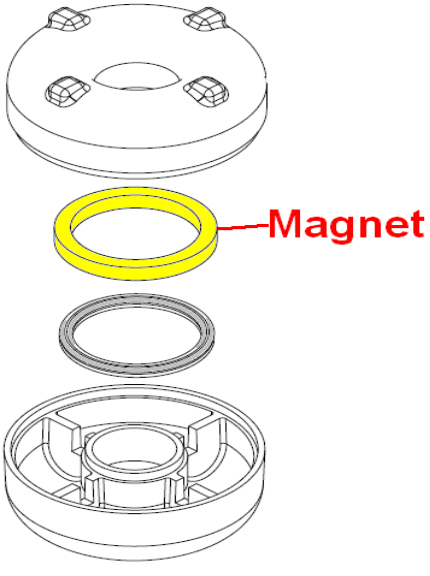
18. Before securing the CANISTER CAP, pour water into the CANISTER to check for leaks. If there are bubbles in the water after it has settled, then there is a leak and all seals should be check. If no leaks, secure CANISTER CAP.

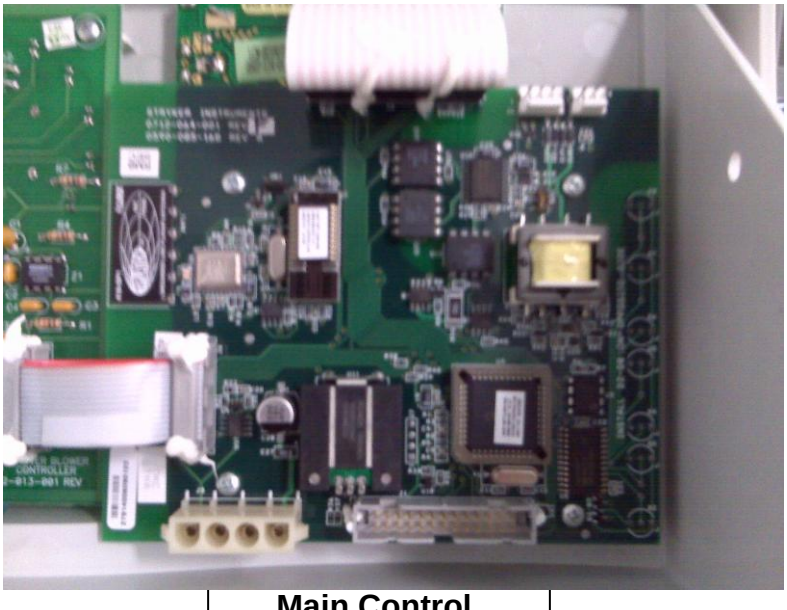
19. Procedure complete.

The Level Sensing Subsystem calculates the amount of fluid in the Canister via calibration, maintains the calibration, provides a digital volume reading on the User Interface Panel, and provides volume information during the Docking process. The Level Sensing Subsystem consists of the **Main Control Board PCBA (P/N 0712-064-001)**, **Level Sensor Transducer Assy (P/N 0700-001-140Q)**, and the **Float Sensor (Magnet) Assy (P/N 0700-001-155)**.

Function: To produce fluid volume readings needed to display the digital numerical value on the **User Interface Panel (P/N 0700-001-050Q or 0700-003-050Q)**, electrical current is sent through the wire internal to the LEVEL SENSOR TRANSDUCER. When the current passes the FLOAT SENSOR (MAGNET), a mechanical return pulse is created. Time of flight (time it takes for the return pulse to get from the MAGNET to the board in the LEVEL SENSOR) determines the FLOAT SENSOR MAGNET position. The magnet floating on top of the fluid (magnet position) will be represented as a voltage and the voltage will correspond to a volume level per the calibration. This level will be displayed on the LCD screen of the USER INTERFACE PANEL**.**







Main Control

Troubleshooting Level Sensing Subsystem: The Level Sensing Subsystem will generate Error Messages if there is a failure during the Docking process or during suction usage. The errors that can be generated are as follows: ***Fluid Volume Error, Volume Disabled, Underfill Error, Overfill Error, Volume Sense Error, and Offload Error***. Refer to *Error Messages* section of the manual for descriptions.

Potential Symptoms/ Resolutions:

- **Offload Error**- caused by a clog in the waste loop (Rover and Docker). Typically there is some sort of build-up behind the couplers (Rover or Docker). **To determine if the problem is in the Rover or Docker, dock a known good Rover. If the offload error shows in the known good Rover, the clog is behind the Docker Coupler. If the known good Rover completes the docking cycle then the clog is behind the waste coupler in the problem Rover.** Reference associated flow chart for *Offload Error*.
- **Underfill Error**- caused by the Rover detecting that it did not receive 200ml (Prefill amount) of fluid at the end of the docking cycle or. Typically caused by the input water to the Docker being turned off or water pressure to low (min. 45PSI). Check input water supply to Docker. Reference associated flow chart for troubleshooting *Underfill Error*.
- **Overfill Error**- caused by the Rover detecting that it received more than 200ml (Prefill amount) of fluid at the end of the docking cycle. Typically caused by the input water to the Docker high water pressure (max. 100PSI). Check input water supply to Docker, turn down valve if possible and re-dock. Reference associated flow chart for *Overfill Error*.
- **Fluid Volume Error-** caused by the Rover detecting a leak in the system that caused it to lose its Prefill (200ml) after docking. This error message is designed to detect a leak. If in fact there is a leak that generates this message, physically look underneath the chassis area near the Canister for evidence of leaking.
- **Volume Disabled**- this error happens any time there is an error on the LCD. This is an indicator that the fluid volume cannot be read digitally. It is usually accompanied by another error message. If this is the only error display, re-dock unit as this may be a glitch in the system.
- **Volume Sense Error**- this error can be caused when the system is in an overflow state, or the unit thinks it has overflowed (calibration issue). Any time the float sensor goes higher than what the calibration designates as 20L, this error will occur. This is caused when a voltage level at the input to the Analogue to Digital (A to D) conversion circuit on the Main Control Board exceeds 4.1VDC (20L). This may also occur if the Volume Sensing components malfunction. This error can only be addressed with a re-calibration.

REMOVAL/ REPLACEMENT OF LEVEL SENSING COMPONENTS

Note: The following parts are needed before attempting to perform this procedure; 1ea) **Float Sensor (Magnet) Assy (P/N 0700-001-155)**, 1ea) **Main Control Board PCBA (P/N 0712-064-001)**, and **Level Sensor Transducer Assy (P/N 0700-001-140Q)**.

Note: Before attempting to perform this procedure, ensure that there is no fluid inside the CANISTER by using the "Dock Control" function of the Diagnostic Menu" to offload the fluid. Once fluid has been emptied, exit "Diagnostic Mode" and turn off AC and DC power to the ROVER.

FLOAT LEVEL SENSOR

1. To Enter Diagnostic Mode, perform the following: Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time, and turn on either *AC POWER* or *BATTERY POWER switch*. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS* which is the first menu option.

2. Press *YES* to *REVIEW ERRORS*. View the errors and note any unusual or concerning errors. Clear errors after reviewing.

3. Scroll to *EXIT MENU* an press *YES* which will bring you out to *REVIEW ERRORS*.

4. Scroll to CALIBRATION. Once you scroll to this point, the Rover will display *CALIBRATION MODE* ↑↓**.** At this point you must press the *YES, UP, DOWN, & YES* buttons in sequence (quickly) to enter the calibration menu. If the sequence is done properly, you should see *CLEAR ERRORS* on the screen.

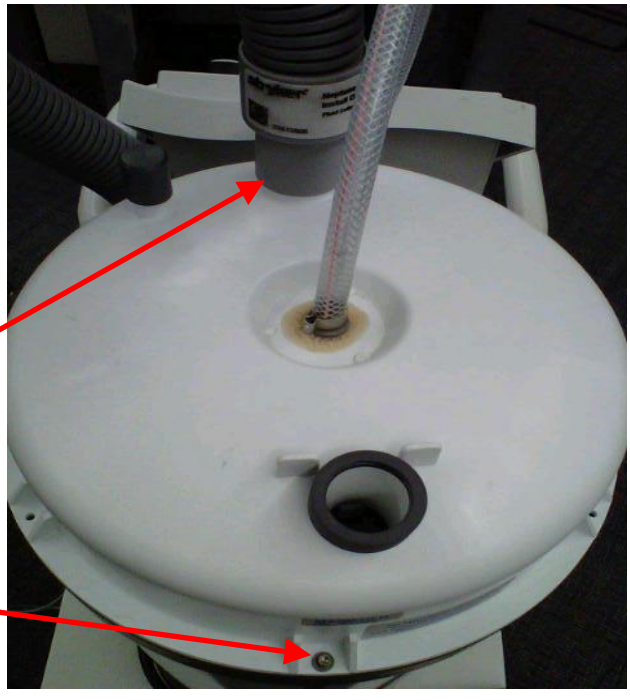
5. Press *YES* to clear the errors.

6. Scroll to *EXIT MENU* and press *YES*. Scroll to *EXIT MENU* again and press "Yes".

Note: Before removing/ replacing FLOAT SENSOR ASSY, **ENSURE THAT THE AC/ DC POWER IS OFF.**

7. Remove **Canister Cap (P/N 0700-001-170Q)** by removing the **Carbon Hose (P/N 0700-035-000)** and the six **Socket Head Cap Screws (P/N 0004-546-000)** and **Flat Washers (P/N 0011-052-000)** using 3/32 Allen Key or equivalent securing the CANISTER CAP.

CARBON HOSE
SOCKET HEAD CAP SCREW
FLAT WASHER



Note: When replacing FLOAT SENSOR ASSY, ensure not to drop new FLOAT SENSOR to the bottom of the CANISTER as this will crack the magnet inside the FLOAT SENSOR causing errors.

8. Remove and replace FLOAT SENSOR ASSY.

9. Replace CANISTER CAP and CARBON HOSE.

10. Dock unit. After Docking, plug-in and turn-on to verify that the LCD displays one of the following, "Volume (Liters) 0.00/ Vol (cc) 000, Vol (mL) 000.

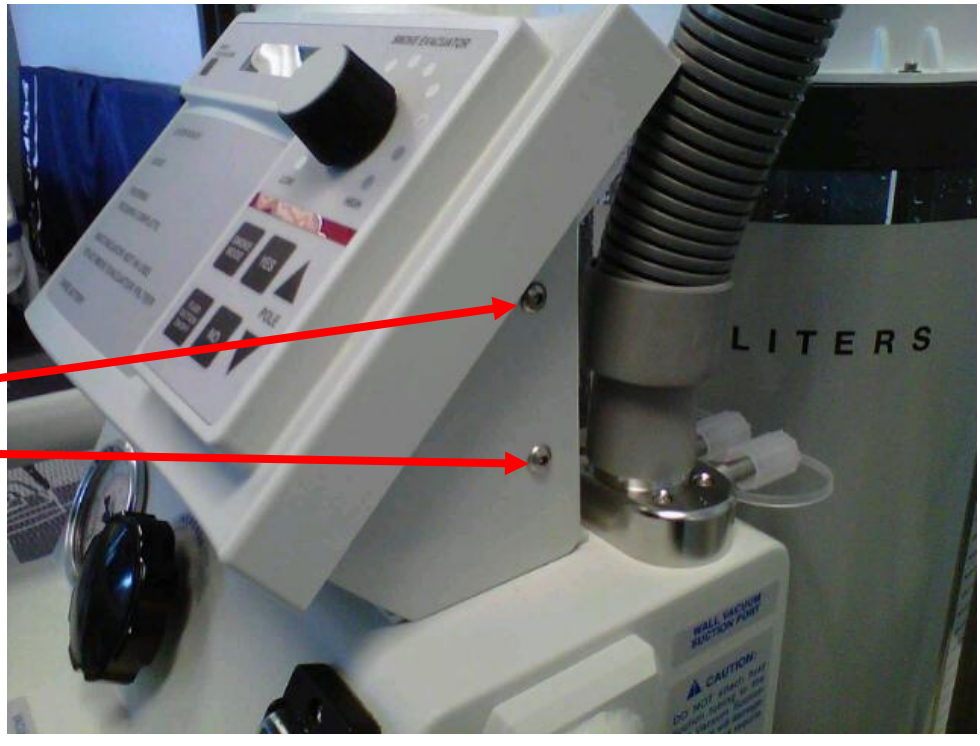
11. Return to service.

Note: Before removing/ replacing MAIN CONTROL BOARD ASSY, **ENSURE THAT THE AC and DC POWER IS OFF.**

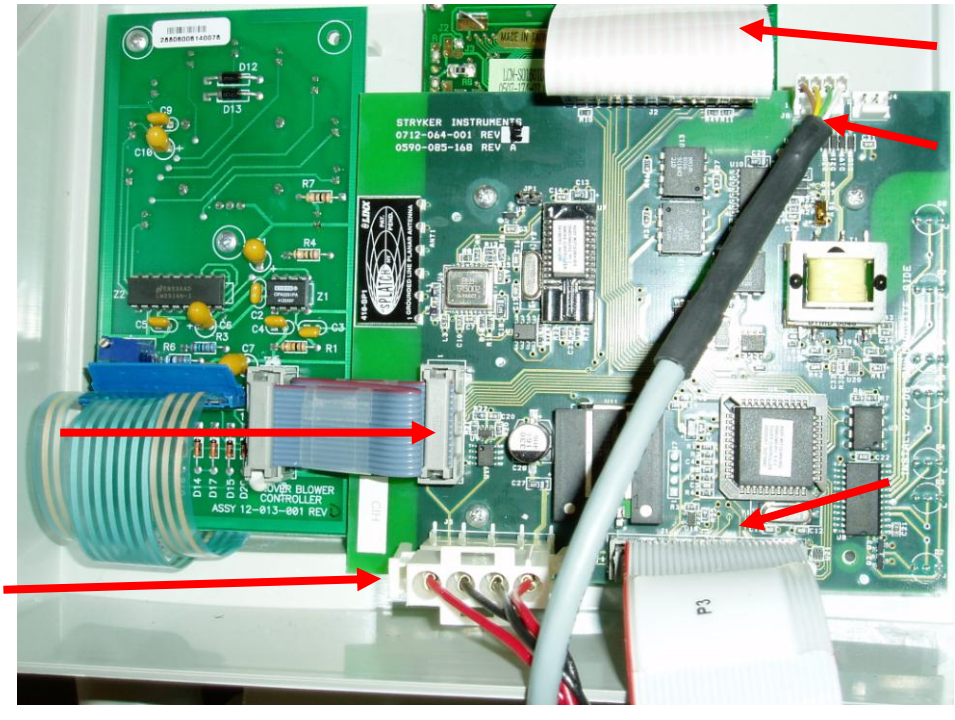
MAIN CONTROL BOARD ASSY

1. Remove the **User Interface Panel (P/N 0700-001-050Q/ 0700-003-050Q)** by removing 4 **Button Head Socket Screws (P/N 0004-205-000)** using 1/8 Allen Key or equivalent.

BUTTON HEAD SOCKET SCREWS (2 on each side)

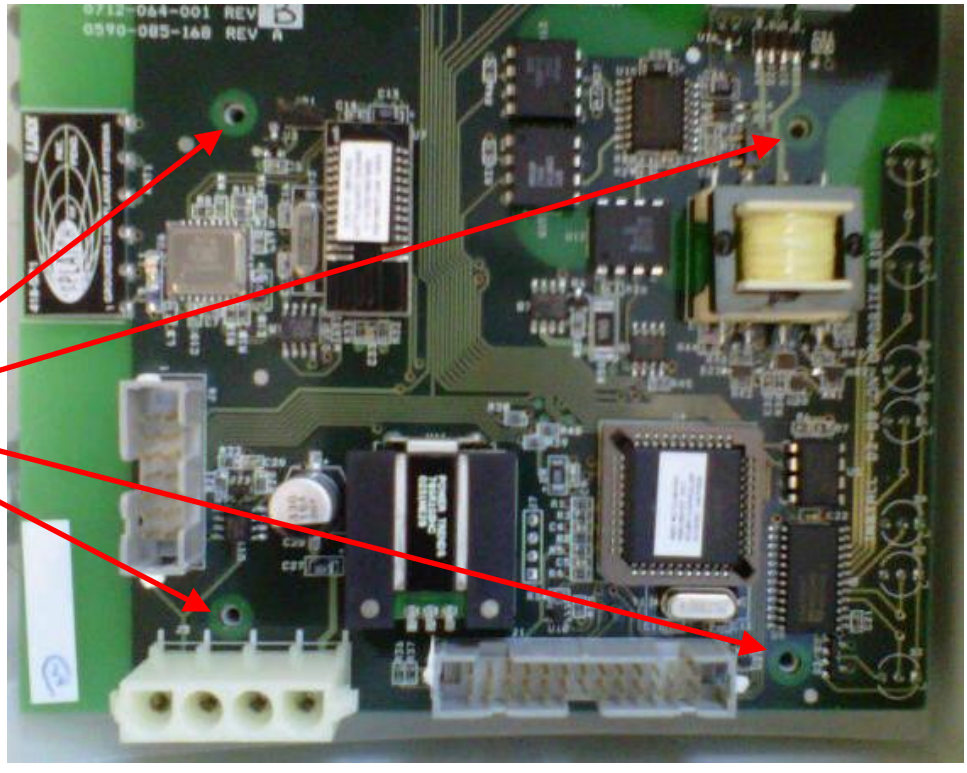


2. Remove MAIN CONTROL BOARD by disconnecting the **Ribbon Cable (P/N 700-001-114)** from **J1**, the LEVEL SENSOR TRANSDUCER cable from **J8**, the/LCD cable from **J2**, the **Ribbon Cable (P/N 0700-001-052)** from **J6**, and the **Controller To Top Panel Cable (P/N 0700-001-113)** from J5.



3. Remove the four **Pan Head #4 X 3/8 Screws (P/N 0050-059-000)** that secure the MAIN CONTROL BOARD to the panel <u>using a small Phillips Screwdriver</u> and remove the board.

FOUR PAN HEAD SCREWS



4. Replace with new board, reconnect all connectors. Turn on ***DC THEN* AC** power.

5. Perform Calibration per procedure for Calibration.

6. Perform electrical safety tests per procedure for Testing.

7. Perform functional tests per procedure for Functional Testing.

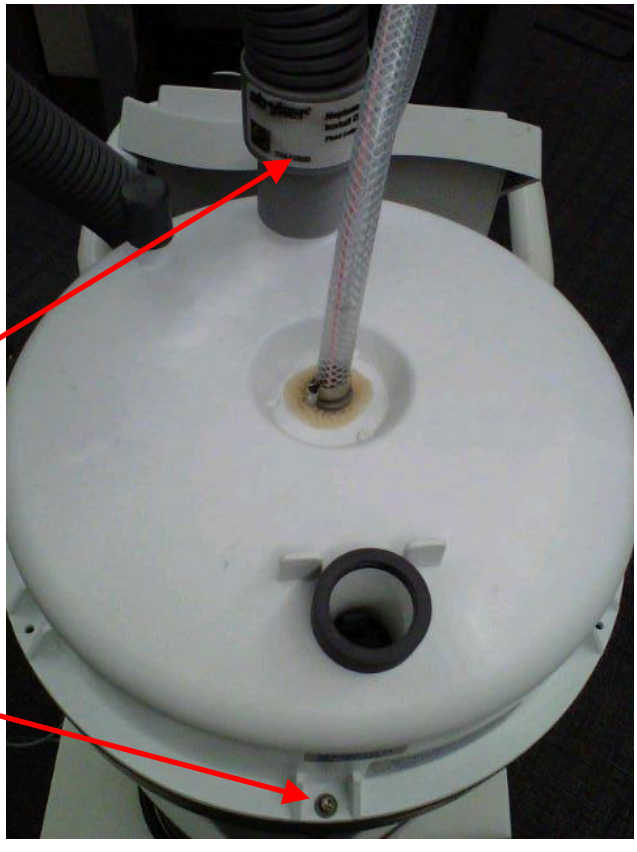
8. Return to service.

Note: Ensure CANISTER is completely empty to include the PREFILL before attempting procedure below.

FLUID LEVEL SENSOR ASSY

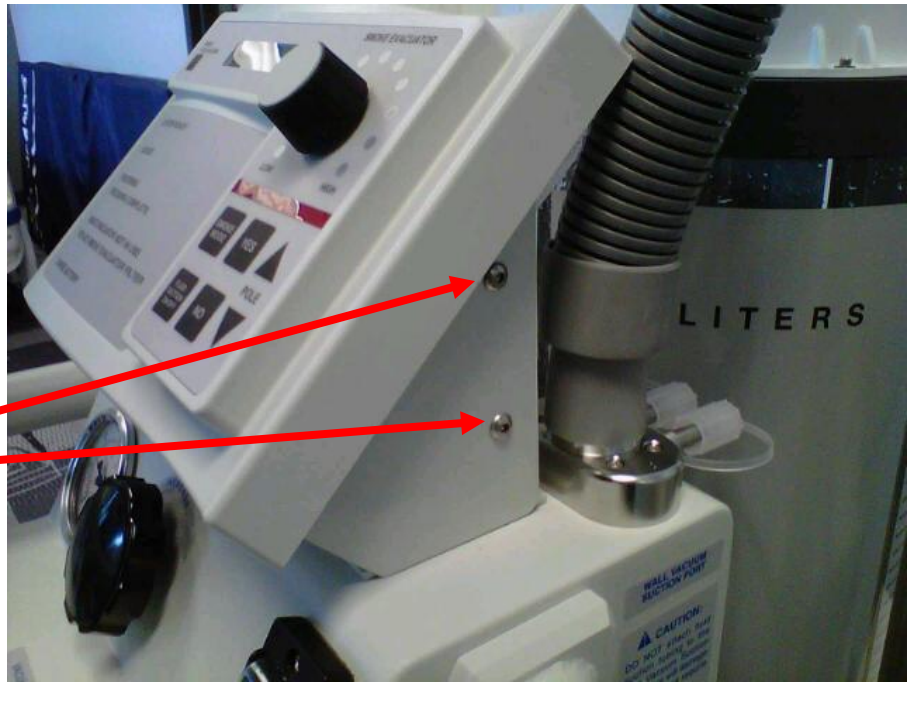
1. Remove CANISTER CAP by removing the CARBON HOSE and the six SOCKET HEAD CAP SCREWS and FLAT WASHERS using 3/32 Allen Key or equivalent securing the CANISTER CAP.

CARBON HOSE
SOCKET HEAD CAP SCREW
FLAT WASHER

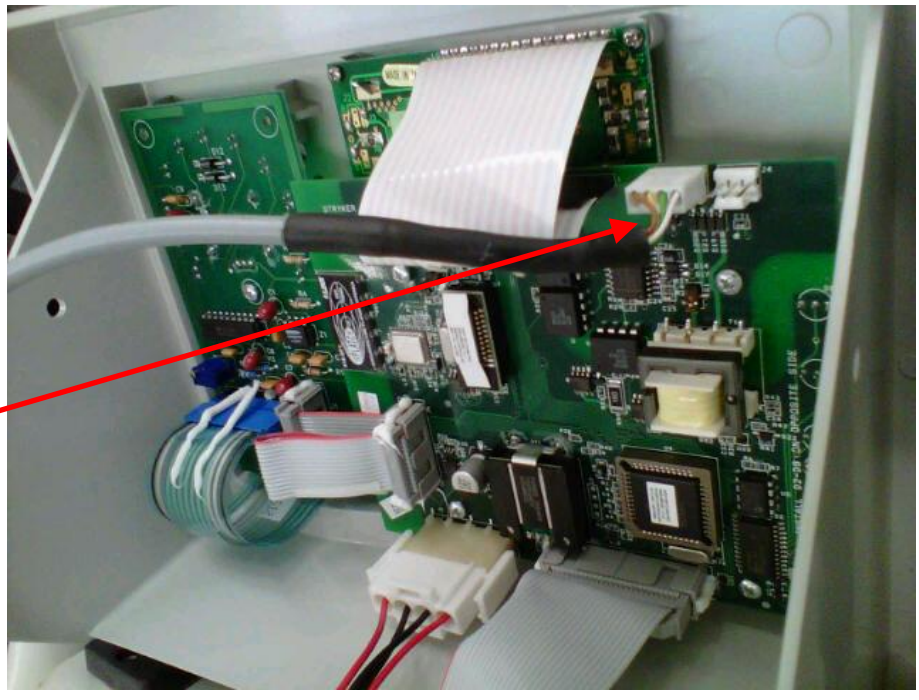


2. Remove the USER INTERFACE PANEL by removing 4 BUTTON HEAD SOCKET SCREWS using 1/8 Allen Key or equivalent.

BUTTON HEAD SOCKET SCREWS
(2 on each side)



3. Remove USER INTERFACE PANEL and disconnect **Fluid Level Transducer Assembly (P/N 0700-001-140Q)** cable from J8 on **Main Controller PCBA (P/N 0712-064-001)**.

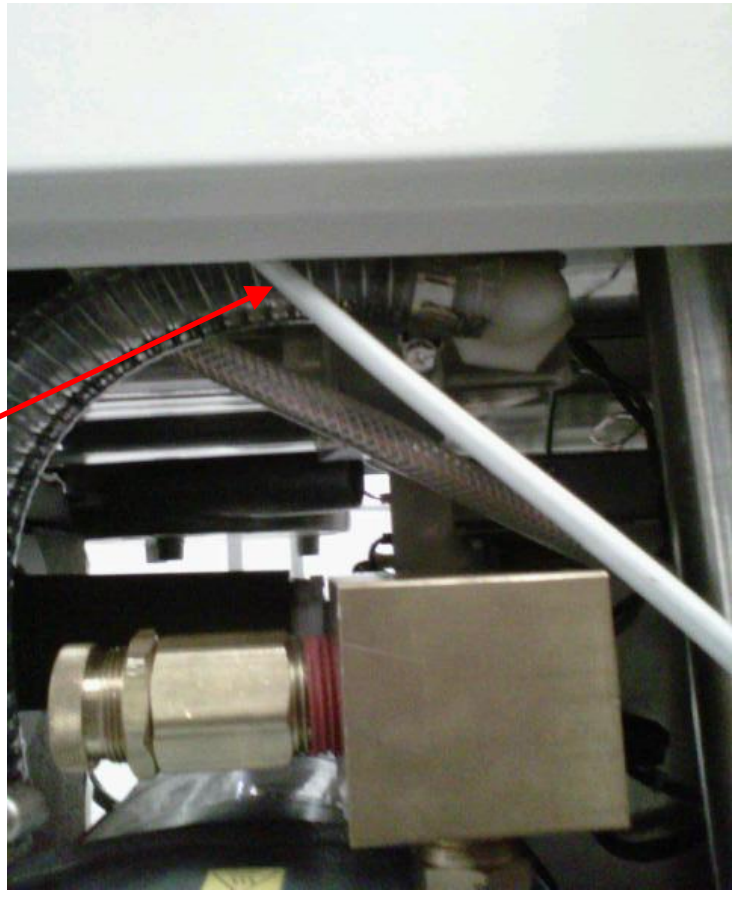


4. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent.
Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE running along right side of battery compartment and draw it outside of compartment.

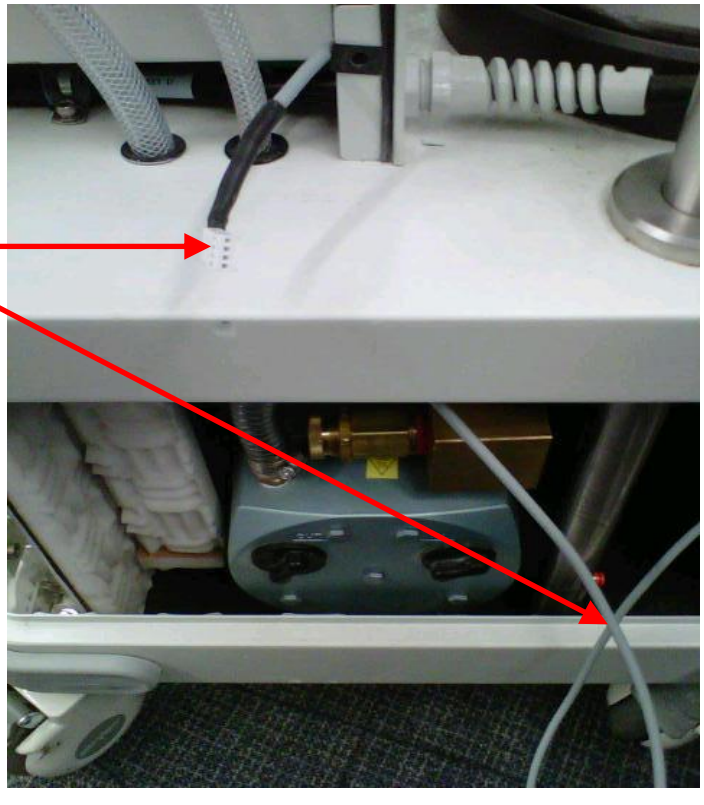
5. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the **IV Pole (P/N 0700-001-455)**.

6. Locate FLUID LEVEL TRANSDUCER ASSEMBLY CABLE underneath ROVER CHASSIS and pull out to allow enough slack at the base of the FLUID LEVEL TRANSDUCER ASSEMBLY to lower assembly.

FLUID LEVEL TRANSDUCER ASSEMBLY CABLE



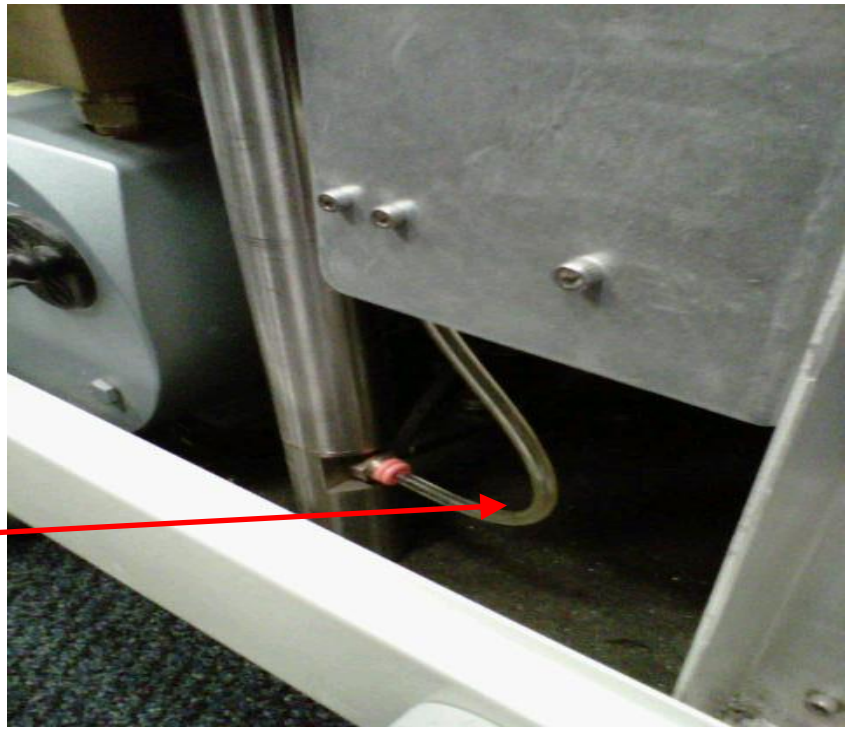
NOTE: Do not draw cable down too far as you need to pull back through once installation is complete. Do not pull on connector to draw back through as this will damage connector/ cable.



7. Remove the IV POLE and **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** to obtain access to Macerator/Transducer Manifold.

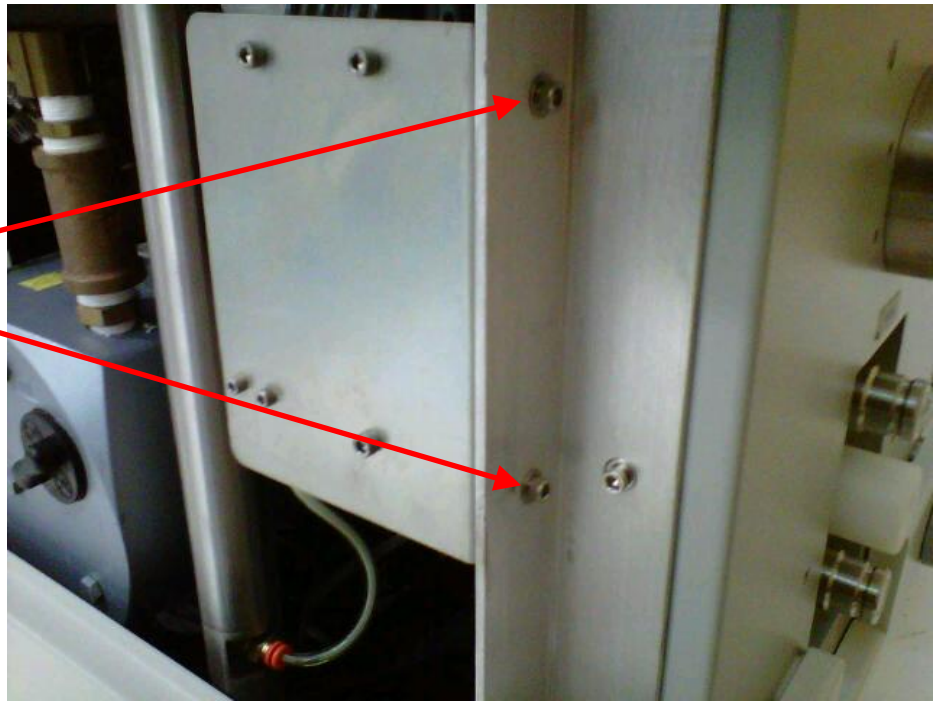
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE <u>using 9/64 Allen Key.</u>

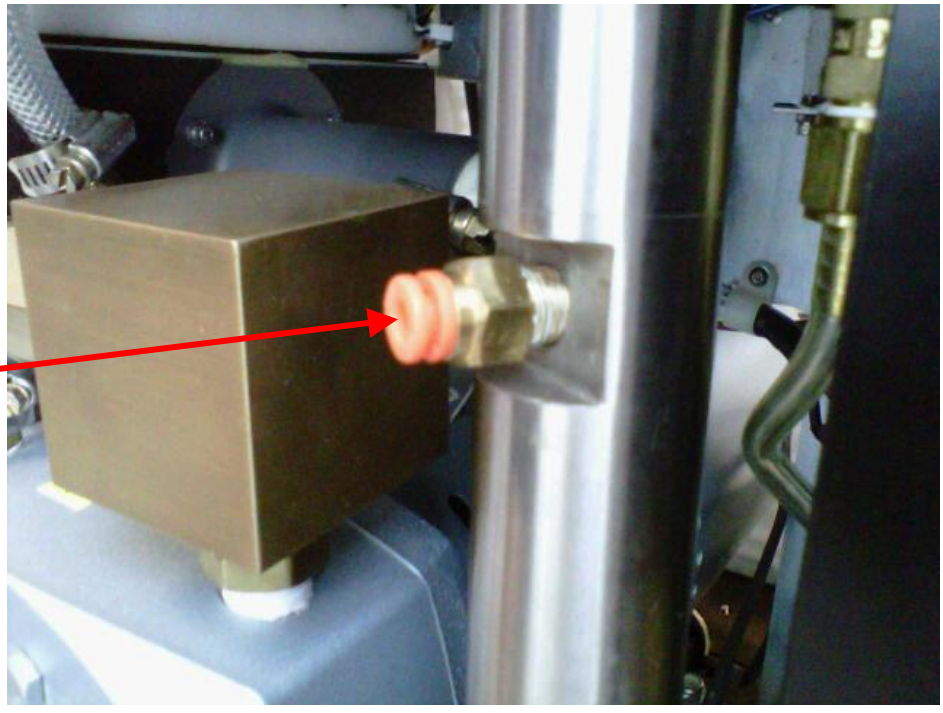
SOCKET HEAD CAP SCREW



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

c. Remove brass PNEUMATIC FITTING at base of IV POLE <u>using 1/2in Deep-Well Socket</u>, ensure not to damage the fitting.

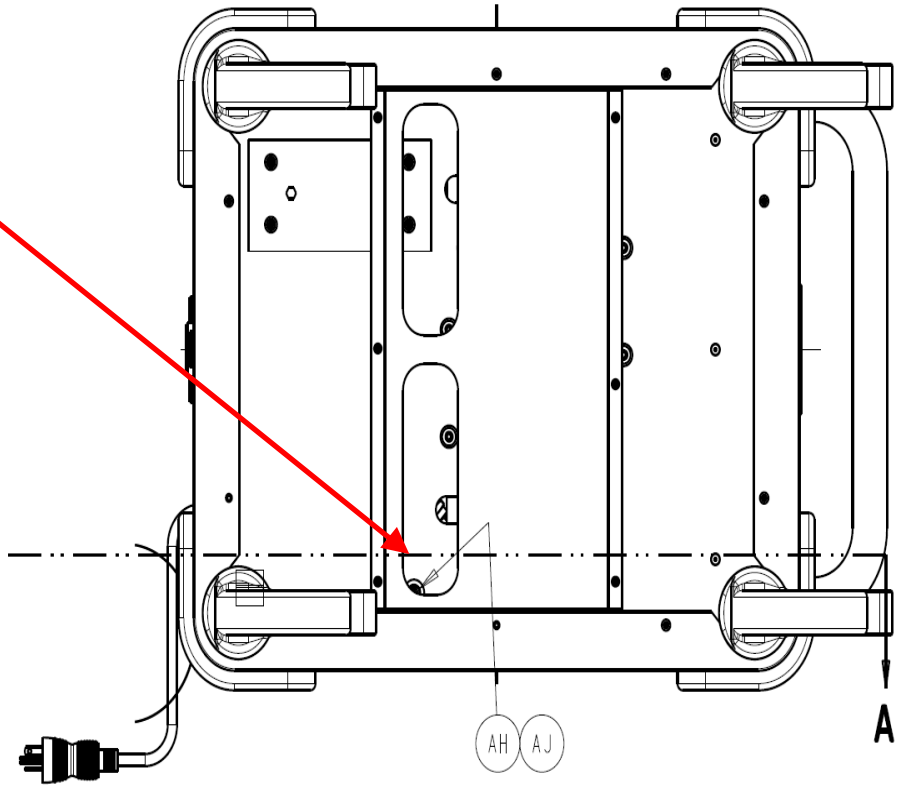
PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place <u>using 1/4in Allen Key</u>.

Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.

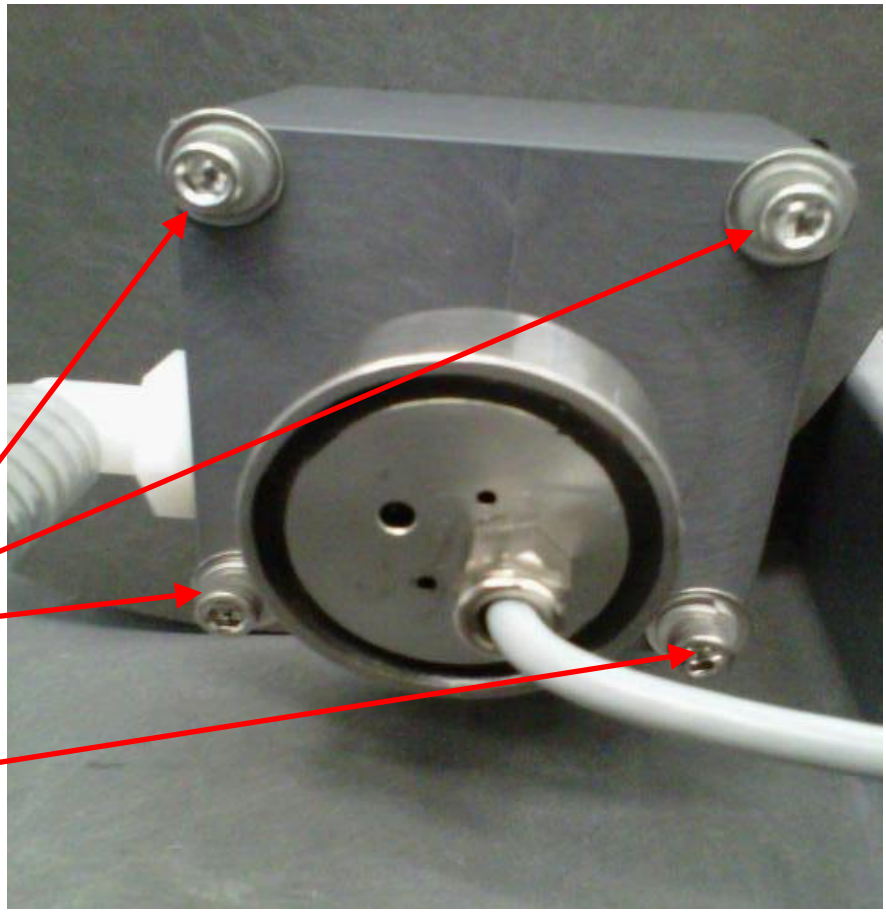
8. Remove **I.V. Pole (P/N 0700-001-455)**



9. Remove both **Female Quick Disconnect Couplings (P/N 0700-001-223)** using ring-clamp pliers from the rear (side opposite the handle) of the ROVER by removing the **Retaining Rings (P/N 0028-313-000)**. Once the rings are removed, the **Coupling Outer Spacers (P/N 0700-001-231)** and the **Wave Springs (P/N 0014-108-000)** will come off and the couplers will push inside the ROVER.

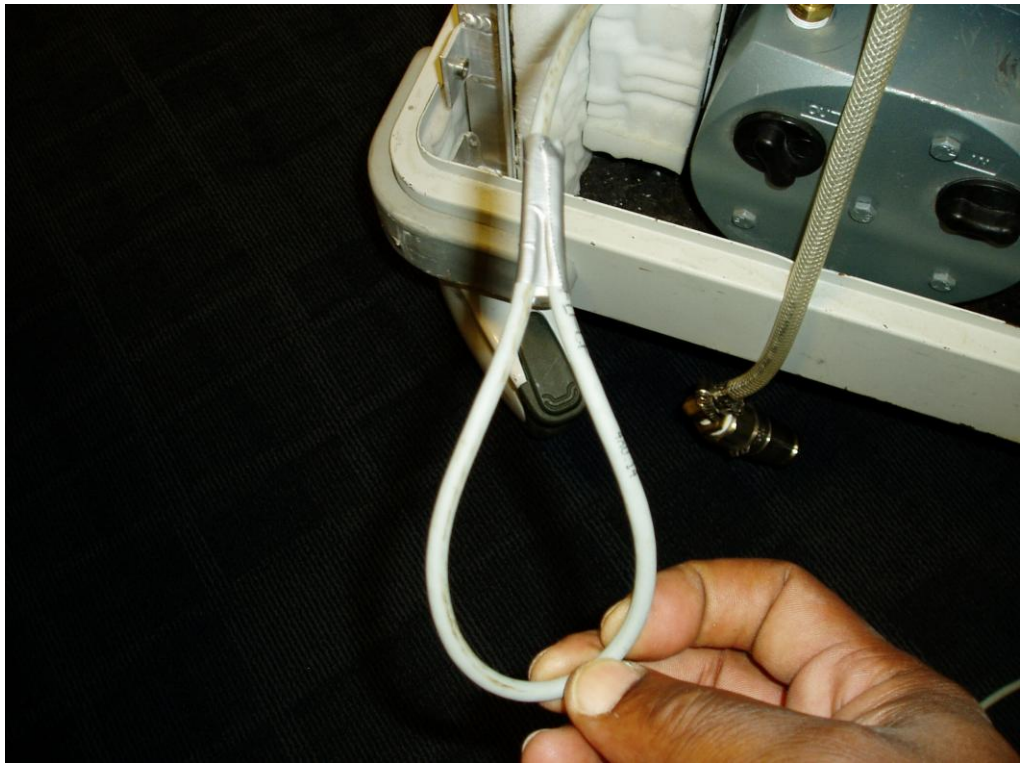
10. Remove the MACERATOR/TRANSDUCER BLOCK from the CANISTER ASSY by removing the four **Socket Head Cap Screws (P/N 0004-544-000)** using 3/16 Allen Key or equivalent from the TRANSDUCER BLOCK. Once the screws are removed, the block will drop down away from the CANISTER. Pull the block out at an angle ensuring not to bend the rod.

Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.



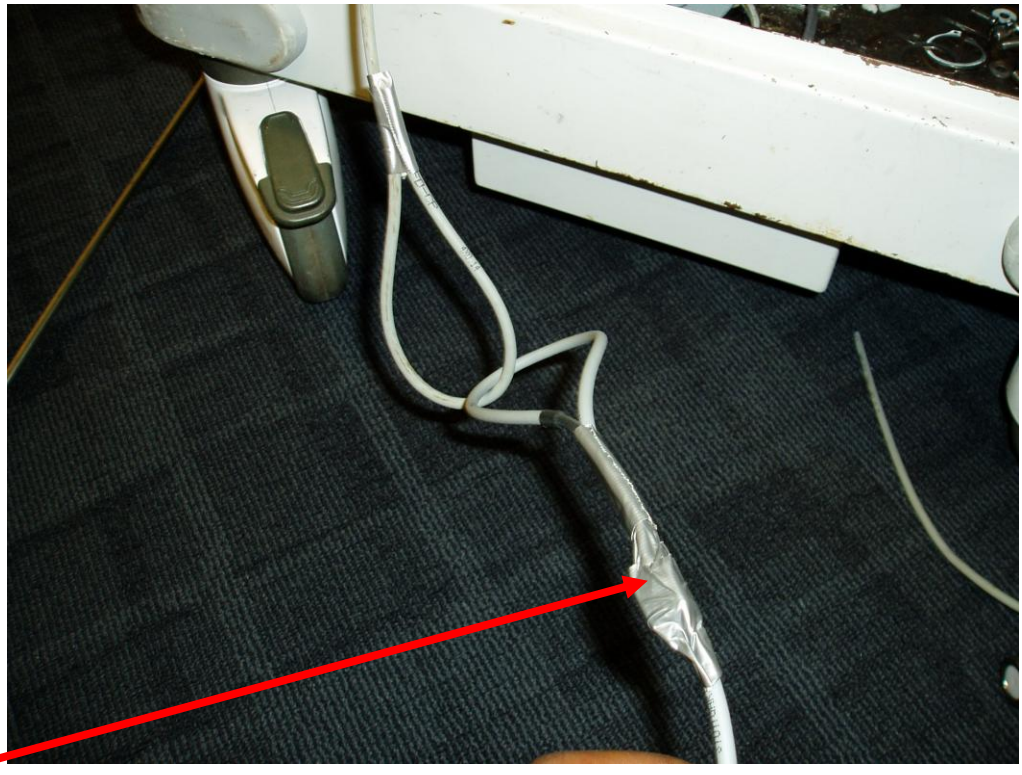
11. Cut old FLUID LEVEL TRANSDUCER cable from underneath chassis.

12. Tape old cable to form a loop.



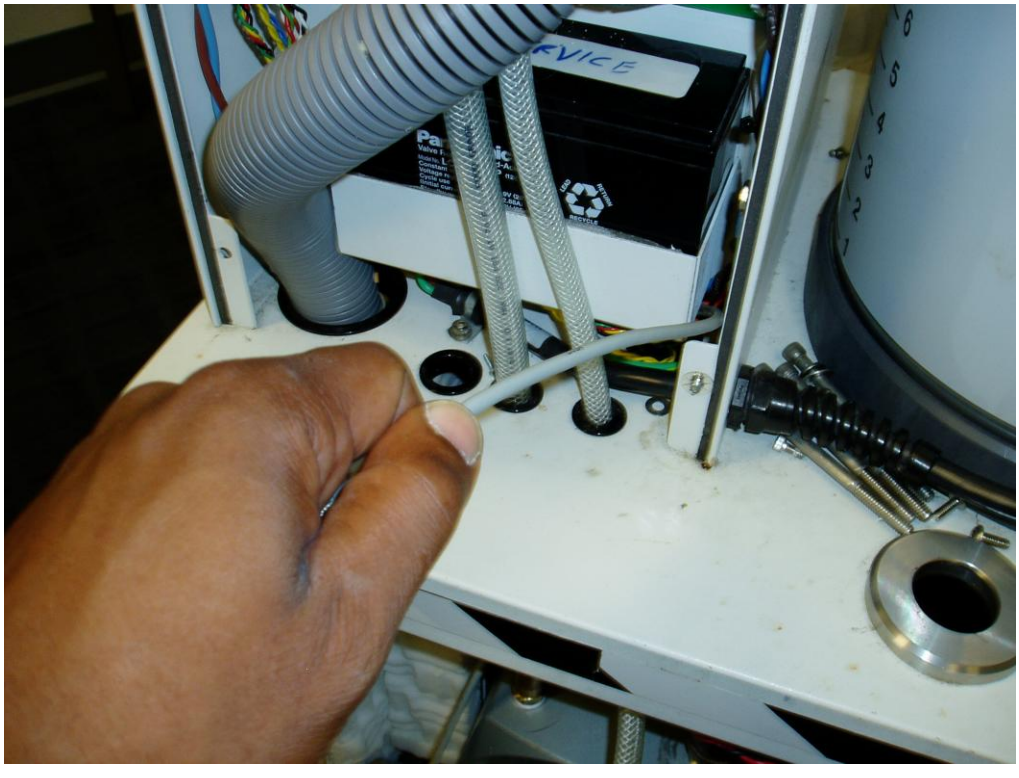
13. Loop the new cable to the old one ensuring that the connector on the new cable is taped properly to avoid destroying the new Fluid Level Sensor.

Note: Ensure that the connector is thoroughly taped so that it is not damaged during the next step.



14. Draw the cable through the bushing beneath the battery tray. Once you have the new cable pulled completely through the bushing, remove the tape and discard the old cable. Draw the new cable out enough to allow slack to reinstall the TRANSDUCER BLOCK.

NOTE: It is very important you do not over-tighten FLUID LEVEL TRANSDUCER; this could result in damage to TRANSDUCER BLOCK ASSEMBLY.



15. Apply three wraps of Teflon tape to the threads of the new FLUID LEVEL TRANSDUCER ASSY. Carefully thread into TRANSDUCER BLOCK, thread to hand tight plus one turn.

16. Reassemble in reverse order.

17. Perform Calibration per procedure for Calibration.

18. Perform electrical safety tests per procedure for Testing.

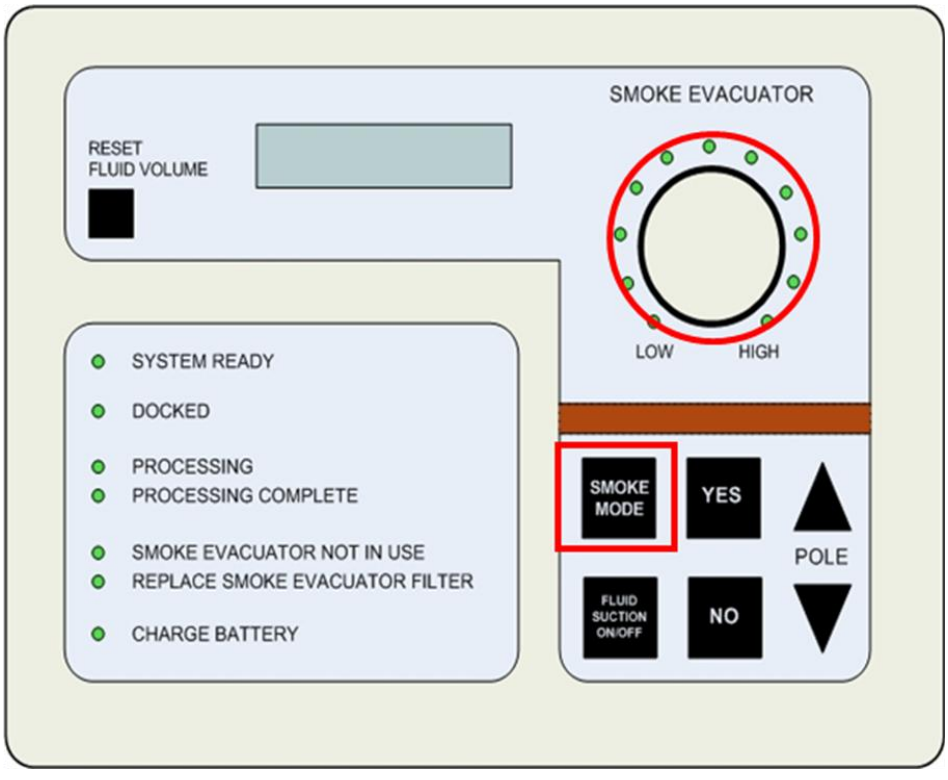
19. Perform functional tests per procedure for Functional Testing.

20. Return to service.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

The Smoke Evacuation Subsystem consists of a **Membrane Switch Assy (P/N 0700-001-056)**, **Smoke Controller Board (P/N 0712-013-001)**, **Power Control Board (P/N 0712-019-001)**, **Solid State Relay (P/N 0700-001-033)**, and **Smoke Blower Assy (P/N 0700-001-013)**.

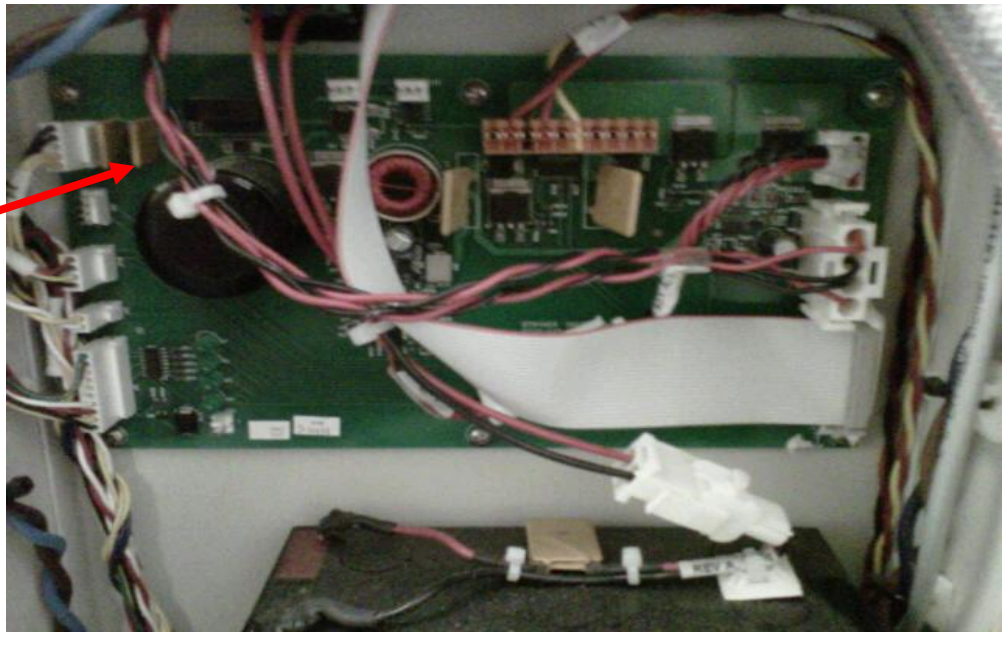
Function: Smoke Evacuation is obtained by activating the Smoke Blower via controls on the User Interface Panel. Once activated, the motor speed can be adjusted by turning the adjustment knob clockwise to draw in smoke through the Pre-filter and Smoke Charcoal Filter. The filters trap particulates and diffuses the smoke as the air is being pulled into the Smoke Blower. The clean air after filtration is then released into the chassis area to be recycled.



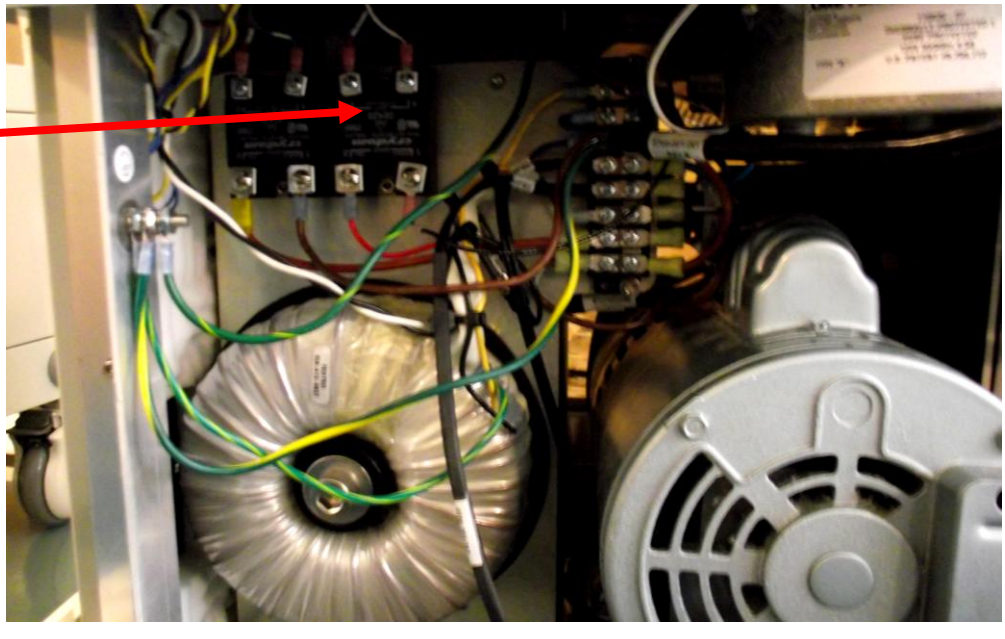
THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

Software and Control: The Smoke Evacuation Subsystem is activated by pressing SMOKE MODE button on the **User Interface Panel (P/N 0700-001-050Q)**. Once the SMOKE MODE button is depressed, the **Main Control Board PCBA (P/N 0712-064-001)** located behind the UIP sends a signal to the **Power Control Board PCBA (P/N 0712-019-001)** located just above the **Rover Battery (P/N 0700-001-430Q)** in the Battery Compartment. The POWER CONTROL BOARD PCBA then applies a voltage to **Solid State Relay K1 (P/N 0700-001-033)** located on the **Transformer Assy (P/N 0700-001-030Q)**. K2 RELAY then applies a ground to the Vacuum Pump Assy **(0700-001-240Q)** allowing it to run.

POWER CONTROL BOARD



K1 SOLID STATE RELAY



Troubleshooting Smoke Evacuator Subsystem: The Smoke Evacuation Subsystem has no error messages for failure modes, therefore, the operation of the Smoke Evacuator or lack thereof will be the only indicator of a deficiency/failure in this system. When set to maximum using the dlal on the User Interface Panel, the LED's on the panel should illuminate. There could also be a complete electrical failure of this system, high current draw or fluid introduced into the system which would cause catastrophic failure. When troubleshooting, determine if the problem is electrical or mechanical; then focus on that particular issue.

Potential Symptoms/ Resolutions:

- **When Smoke Mode button is depressed, Smoke Evac does not turn on**-verify that there is A/C power to the Rover. If A/C is present, the cooling fans will be running and the LCD Screen on the UIP will be lit and display a volume level. If this is the case, follow procedure for *No Communication in Smoke Evac System*. If there is no A/C, follow procedure for *Rover has No A/C Power (700-1)*. If all troubleshooting efforts lead to Smoke Evacuator Motor failure, follow procedure for *Removal/Replacement of Smoke Evacuator Motor.*
- **Membrane Switch failure** - verify that the Membrane Switch is functioning properly by using another UIP to test. If the known good UIP operates the Smoke Evacuator when the Smoke Mode button is depressed, then the Membrane Switch should be replaced. Follow the procedure for *Removal/ Replacement of the Membrane Switch*. If the known good UIP does not operate the Smoke Evacuator when the Smoke Mode button is depressed, then the problem is not the Membrane Switch.
- **Smoke Evacuator speed doesn't adjust properly** – verify there is an issue by adjusting the dial on the UIP from Low to High slowly. Note any unusual jumps in speed as the increase is supposed to be gradual. If there is an issue noted, use a known good UIP if possible to verify. If problem remains, follow procedure to *Remove/Replace Power Control Board PCBA*. If problem does not occur with known good UIP, follow procedure to *Remove/ Replace Smoke Controller PCBA*. Sometimes this issue can occur if the Smoke Evacuator Motor has an issue as well. If this is the case, follow procedure for *Removal/Replacement of the Smoke Evacuator Motor Assy*.

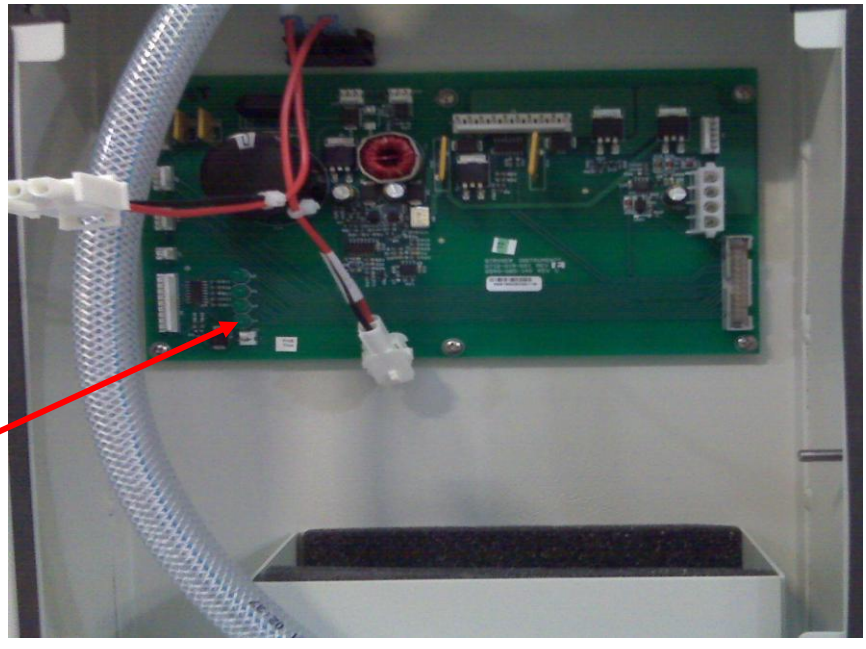
THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

NO COMMUNICATION IN SMOKE EVACUATION SYSTEM

In the Smoke Evacuation Subsystem, there is communication between the **Main Control Board PCBA (P/N 0712-064-001Q)** to the **Power Control Board PCBA (P/N 0712-019-001)** when the SMOKE MODE BUTTON on the **Membrane Switch (P/N 0700-001-056)** is depressed. If there is communication between these circuit boards, an LED on the POWER CONTROL BOARD PCBA will light regardless if the Smoke Evacuator comes on or not. If the LED does not light, focus on the MEMBRANE SWITCH or communication between the 2 circuit boards.

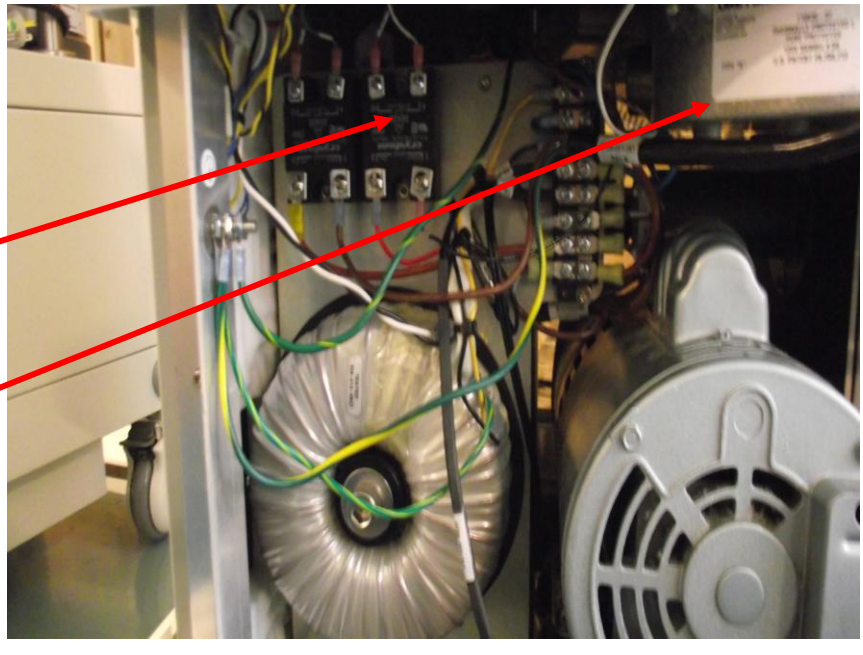
If the LED does light, check **Solid State Relay K1 (P/N 0700-001-033)** at pins 3 & 4 for 15VDC. This is the output of the POWER CONTROL BOARD PCBA. If the input at SOLID STATE RELAY K1 is good, check the output of SOLID STATE RELAY K1.

POWER CONTROL BOARD PCBA: Bottom LED lights when there is communication between Main Controller and Power Controller.



TRANSFORMER RELAY K1

SMOKE EVACUATOR MOTOR



THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

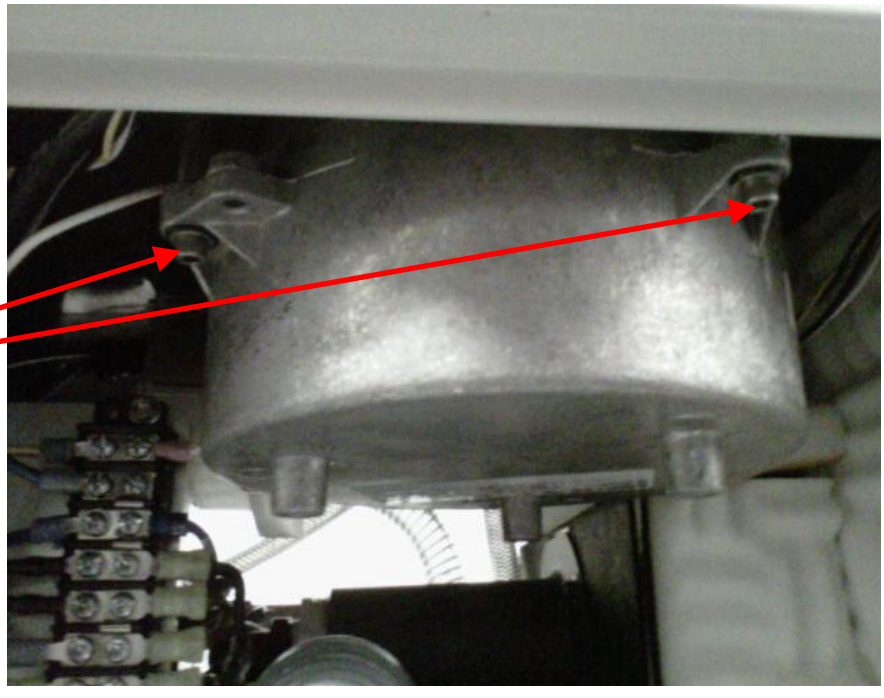
REMOVAL AND REPLACEMENT OF SMOKE EVACUATOR MOTOR (P/N 0700-001-013)

Note: The following parts may be needed before attempting to perform this procedure; 1ea) **Smoke Evacuator Motor (P/N 0700-001-013)**.

1. As you are looking at the Handle of the ROVER, remove the Left **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key.

2. Remove **Smoke Evacuator Motor (P/N 0700-001-013)** by removing two Socket Head Cap Screws using 9/64 Allen Key or equivalent.

SOCKET HEAD CAP SCREWS



3. Inside the Smoke filter compartment, remove one Flat Head Cap Screw using 3/32 Allen Key or equivalent.

Note: Here you can see the flat head screw in the smoke filter enclosure area.

4. On the SMOKE BLOWER there is a connector that will become accessible once the screws have been removed. Remove connector once accessible and remove SMOKE EVACUATOR MOTOR.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

REMOVAL AND REPLACEMENT OF SMOKE EVACUATOR MOTOR (P/N 0700-001-013)

5. Reinstall the new SMOKE EVACUATOR MOTOR in reverse order.
6. Reinstall left SIDE PANEL ASSY.
7. Perform all electrical safety and functional tests per procedure for Testing.
8. Return unit to service.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

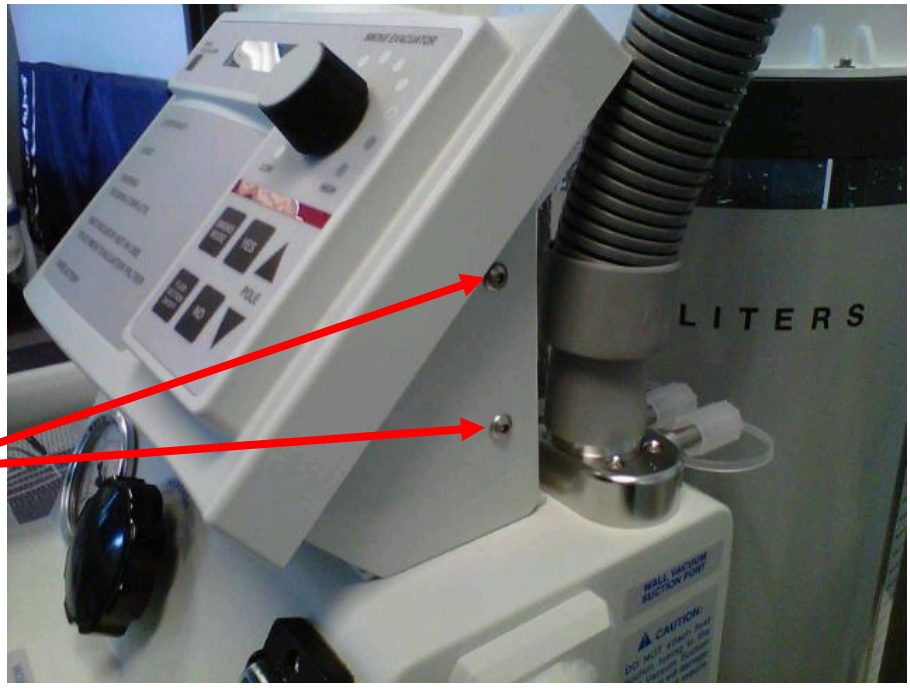
REMOVAL AND REPLACEMENT OF SMOKE CONTROLLER PCBA (P/N 0712-013-001)

Note: The following parts may be needed before attempting to perform this procedure; 1ea) **Smoke Controller PCBA (P/N 0712-013-001)**.

Note: To ensure there is no damage to the SMOKE CONTROLLER PCBA or any other circuit board in the UIP, turn off A/C and D/C Power before proceeding.

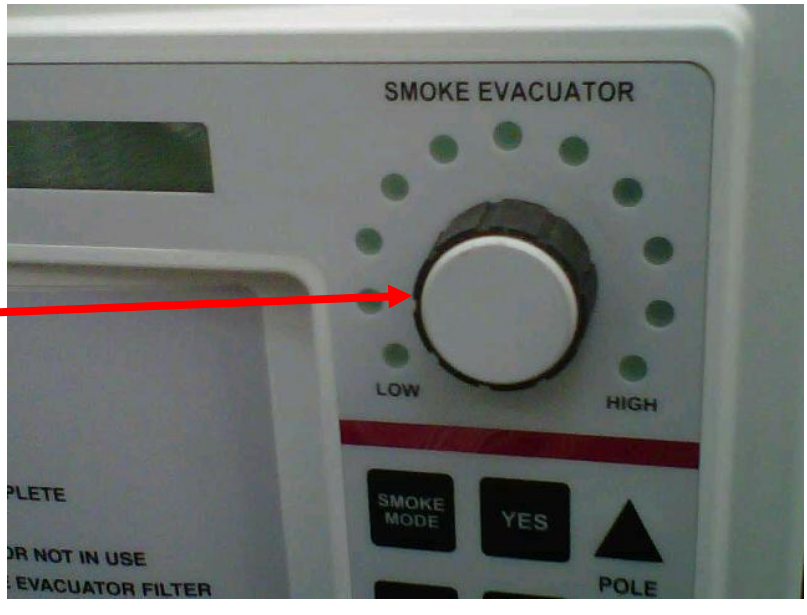
1. Remove the **User Interface Panel (P/N 0700-001-050Q)** by removing 4 BUTTON HEAD SOCKET SCREWS using 1/8 Allen Key or equivalent.

BUTTON HEAD SOCKET SCREWS (2 on each side)



2. On the UIP, remove the **Black Knob (P/N 0033-007-000)** by turning counter clockwise and pulling at the same time until BLACK KNOB comes off.

BLACK KNOB



THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

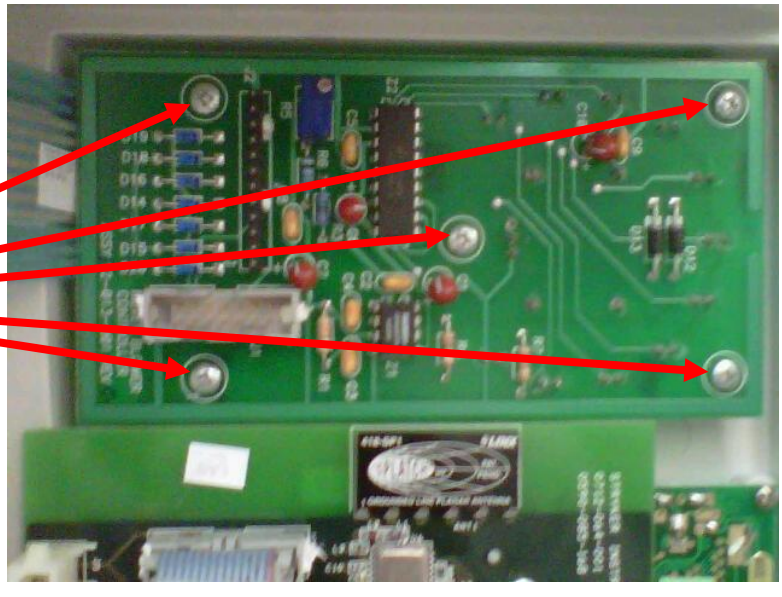
3. On the SMOKE CONTROLLER PCBA, remove connectors from J1 and J2.

Connector at J2

Connector at J1

4. On the SMOKE CONTROLLER PCBA, remove the 5 **Pan Head Screws #4 X 3/8 (P/N 0050-059-000)** securing the board using a small Phillips screwdriver.

5 Pan Head Screws #4 X 3/8



5. Install new SMOKE CONTROLLER PCBA in reverse order to include connectors J1 and J2.

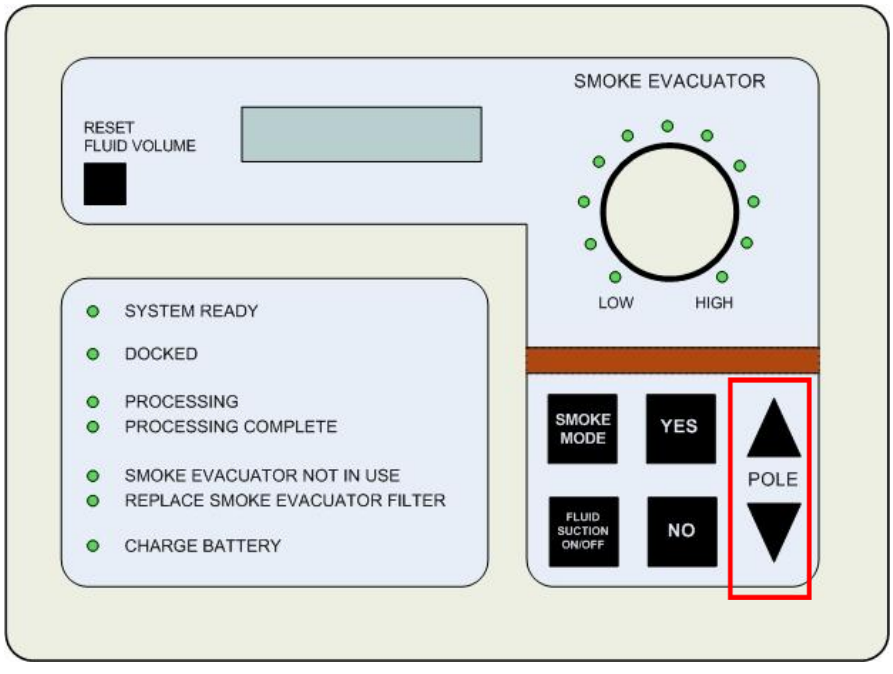
6. Reinstall UIP.

7. Perform all electrical safety and functional tests per procedure for Testing.

8. Return unit to service.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

The IV Pole Subsystem consists of a **Membrane Switch Assy (P/N 0700-001-056)**, **Smoke Controller Board (P/N 0712-013-001)**, **Power Control Board (P/N 0712-019-001)**, and the **IV Pole Pneumatics Panel Assy (P/N 0700-001-070Q)**.



Function: The IV Pole is activated by depressing the Pole "UP" or "DOWN" arrows via controls on the User Interface Panel.

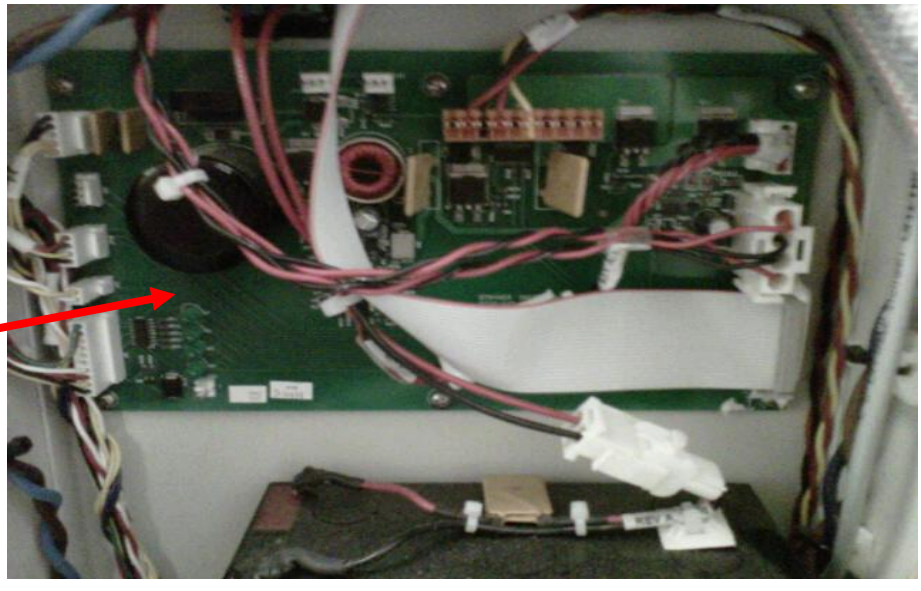
Once the "UP" arrow is depressed, the Compressor on the IV Pole Pneumatics Panel Assy turns on to fill the chamber inside the Outer Pole Assy with air. The pressure created will drive the Inner Pole Assy upwards . The "UP" arrow is a momentary push button; therefore, when released, the Compressor will turn off. The Pole will continue to extend until it reaches its top level height.

Once the "DOWN" arrow is depressed, the Solenoid on the IV Pole Pneumatics Panel will exhaust. A combination of a weight mounted to the Inner Pole and gravity will cause the Inner Pole to come down. The "DOWN" arrow is a momentary push button; therefore, when released, the Solenoid will seal and stop the Pole from coming down.

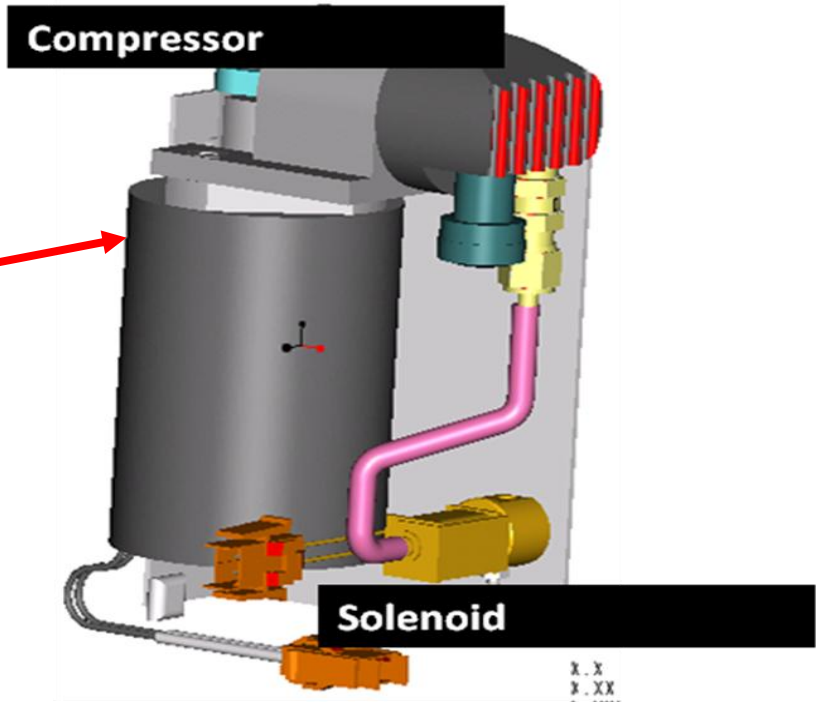
THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

Software and Control: The IV Pole Subsystem is activated by pressing POLE UP or DOWN buttons on the **User Interface Panel (P/N 0700-001-050Q)**. Once the POLE UP or DOWN buttons are depressed, the **Smoke Controller Board (P/N 0712-013-001)** located behind the UIP sends a signal to the **Main Control Board PCBA (P/N 0712-064-001)** also located behind the UIP which then sends a signal to the **Power Control Board PCBA (P/N 0712-019-001)** located just above the **Rover Battery (P/N 0700-001-430Q)** in the Battery Compartment. The POWER CONTROL BOARD PCBA then applies a voltage to **Pneumatic Compressor Assy (P/N 0700-001-055Q)** or the **Pneumatic Solenoid Assy (P/N 0700-001-072Q)** located on the **IV Pole Pneumatics Panel Assy (P/N 0700-001-070Q)**. Once a voltage is applied to the components, the IV Pole will either extend or descend depending on the user's choice.

POWER CONTROL BOARD



IV POLE PNEUMATICS PANEL



Troubleshooting IV Pole Subsystem: The IV Pole Subsystem has no error messages for failure modes, therefore, the operation of the IV Pole or lack thereof will be the only indicator of a deficiency/failure in this system. When depressing the POLE ⬆ or ⬇ arrows on the User Interface Panel, the IV Pole should move accordingly. It must be determined if the issue presented is mechanical or electrical. To check the mechanical function of the Pole, remove the Pneumatic Tubing from the bottom of the Pole. Physically extend the pole and let it fall. If the Pole falls to the bottom, there is no mechanical issue, if it doesn't fall, the Pole is bent and needs to be replaced.

Once the mechanical issue has been eliminated by troubleshooting, it must be determined at what point the communication is lost in the system to determine the failed component. When troubleshooting, determine if the problem is electrical or mechanical; then focus on that particular issue.

Potential Symptoms/ Resolutions:

- **When Pole ⬆ button is depressed, IV Pole doesn't go up**-verify that the Compressor runs when the ⬆ arrow is depressed. If it is running, remove side panel and ensure that the Pneumatic Tubing is connected to the bottom of the Pole. If the Compressor does not run when the ⬆ arrow is depressed, use a known good Membrane Switch or UIP to swap out and try to run again. If the symptom is corrected, follow procedure for *Removal/Replacement of Membrane Switch*. If the symptom remains after the before mentioned process, check the connection to the Compressor for 12VDC when the ⬆ arrow is depressed. If 12VDC is present at that point, follow procedure for *Removal/Replacement of IV Pole Pneumatics Panel Assy* to remove the Compressor. If the 12VDC is not there at this point, follow procedure for *Removal/Replacement of Power Control Board PCBA*.
- **When Pole ⬇ button is depressed, IV Pole doesn't go down**-verify that the Solenoid exhausts when the ⬇ arrow is depressed. If not, remove side panel and inspect Solenoid for physical damage. If the Solenoid is not damaged, use a known good Membrane Switch or UIP to swap out and try to run again. If the symptom is corrected, follow procedure for *Removal/Replacement of Membrane Switch*. If the symptom remains after the before mentioned process, check the connection to the Solenoid for 12VDC when the ⬇ arrow is depressed. If 12VDC is present at that point, follow procedure for *Removal/Replacement of IV Pole Pneumatics Panel Assy* to remove Solenoid. If the 12VDC is not there at this point, follow procedure for *Removal/Replacement of Power Control Board PCBA*.

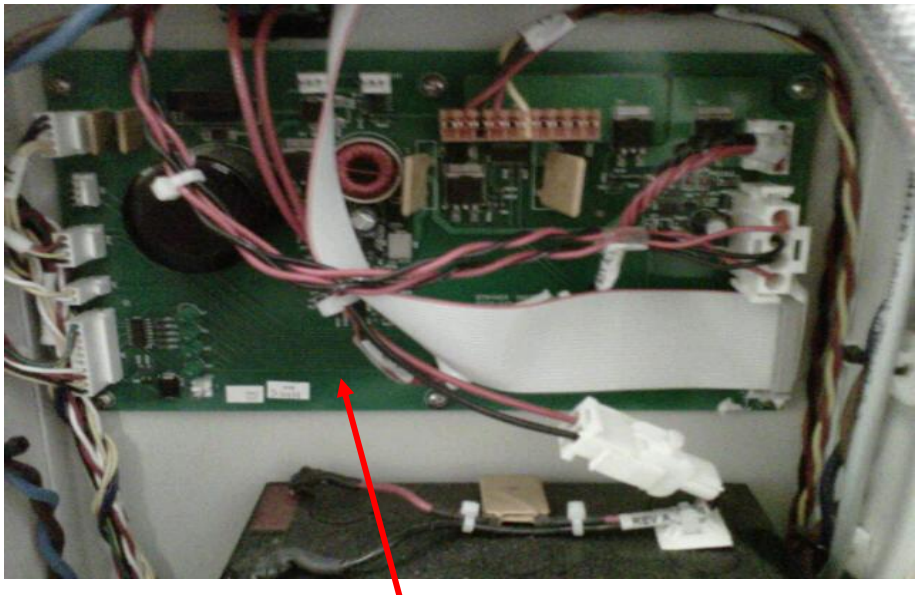
THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

NO COMMUNICATION IN IV POLE SUBSYSTEM

In the IV Pole Subsystem, there is communication between the **User Interface Panel (P/N 0700-001-050Q)** to the **Smoke Controller Board (P/N 0712-013-001)** to the **Main Control Board PCBA (P/N 0712-064-001)** and lastly, to the **Power Control Board PCBA (P/N 0712-019-001)** when the POLE UP or DOWN buttons on the **Membrane Switch (P/N 0700-001-056)** are depressed. If there is communication between these circuit boards, then the POWER CONTROL BOARD PCBA will apply voltage to the appropriate component. If the Pole does not operate when prompted, focus on the MEMBRANE SWITCH or communication between the circuit boards.

Use a known good UIP or Membrane Switch to determine if the Membrane Switch is malfunctioning. If it is determined the the Membrane Switch is bad, follow procedure for *Removal/ Replacement of Membrane Switch*.

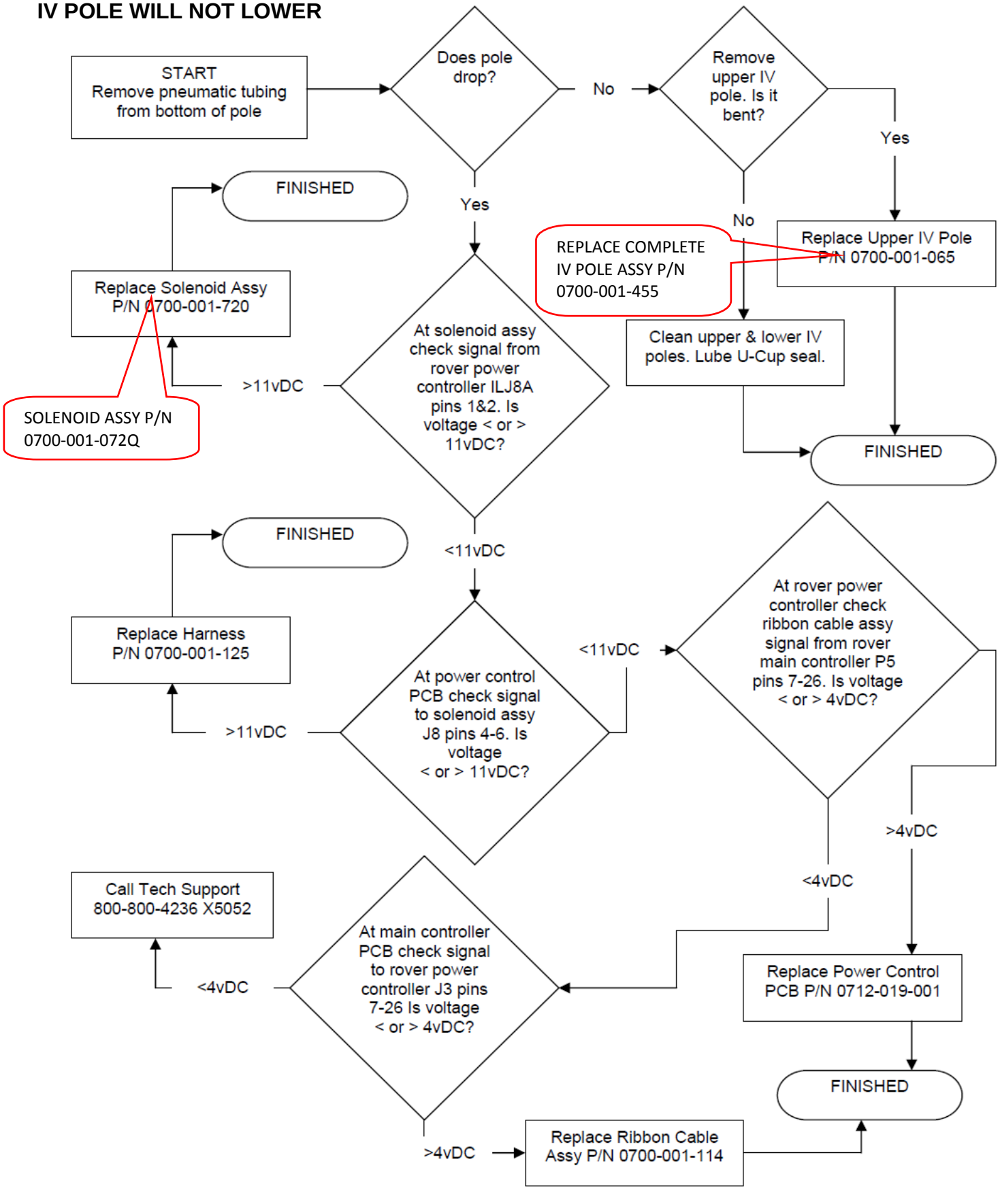
If it is determined the one of the circuit boards is malfunctioning, follow appropriate procedure for replacing board.



POWER CONTROL BOARD PCBA

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

IV POLE WILL NOT LOWER



THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

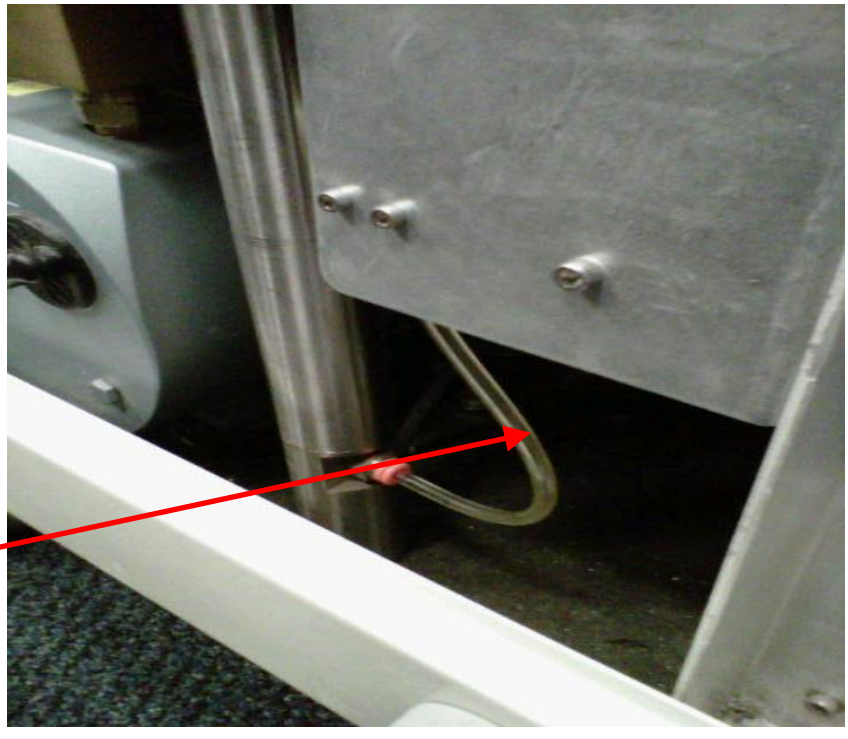
REMOVAL AND REPLACEMENT OF IV POLE PNEUMATICS PANEL

1. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the **IV Pole (P/N 0700-001-455)**.

2. Remove the **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** by following the steps below:

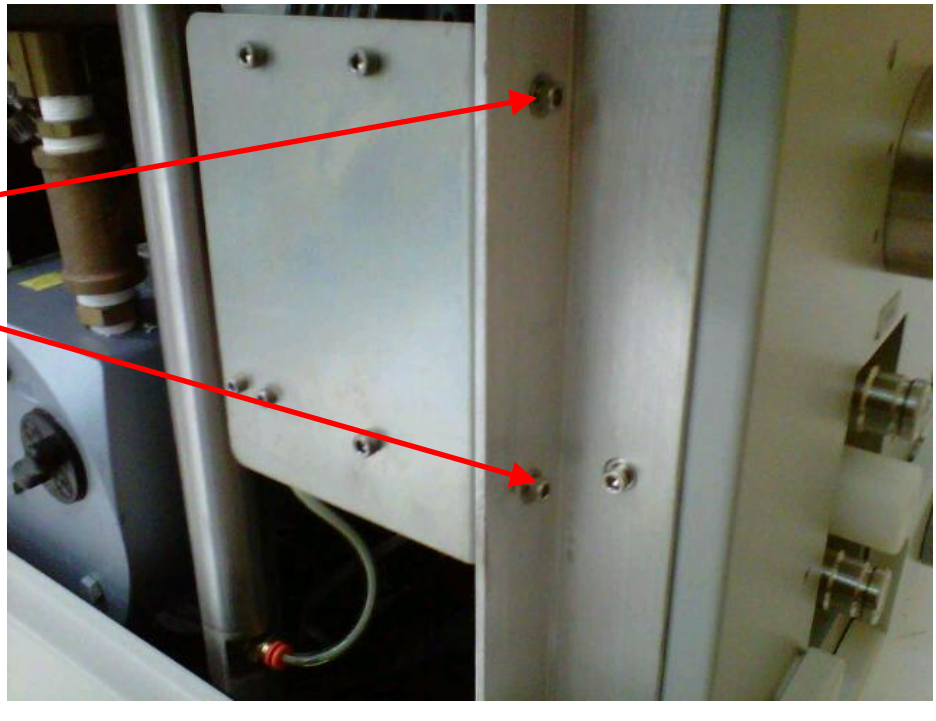
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE using 9/64 Allen Key.

SOCKET HEAD CAP SCREW



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

c. Using new PNEUMATICS PANEL ASSY, reassemble in reverse order.

d. Perform electrical safety tests per procedure for Testing.

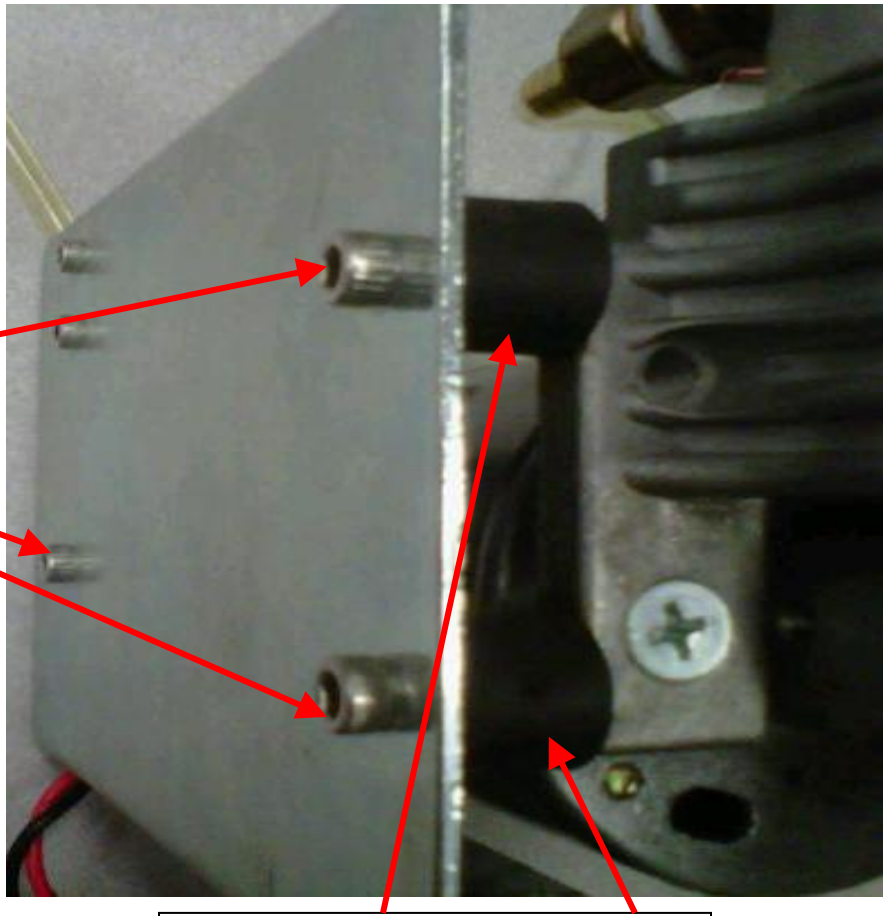
e. Perform functional tests per procedure for Functional Testing.

f. Return to service.

PNEUMATIC COMPRESSOR (P/N 0700-004-055Q)

1. To remove the PNEUMATIC COMPRESSOR ASSY from the IV POLE PNEUMATICs PANEL, remove the three **Socket Head Cap Screws (P/N 0004-525-000)** using 9/64 Allen Key or equivalent, from **Compressor Vibration Mounts (P/N 0052-903-000)** ensuring not to tear the VIBRATION MOUNTS.

SOCKET HEAD CAP SCREWS



COMPRESSOR VIBRATION MOUNTS
(Third at the bottom not shown)

a. Using new COMPRESSOR ASSY, reassemble in reverse order.

b. Perform electrical safety tests per procedure for Testing.

c. Perform functional tests per procedure for Functional Testing.

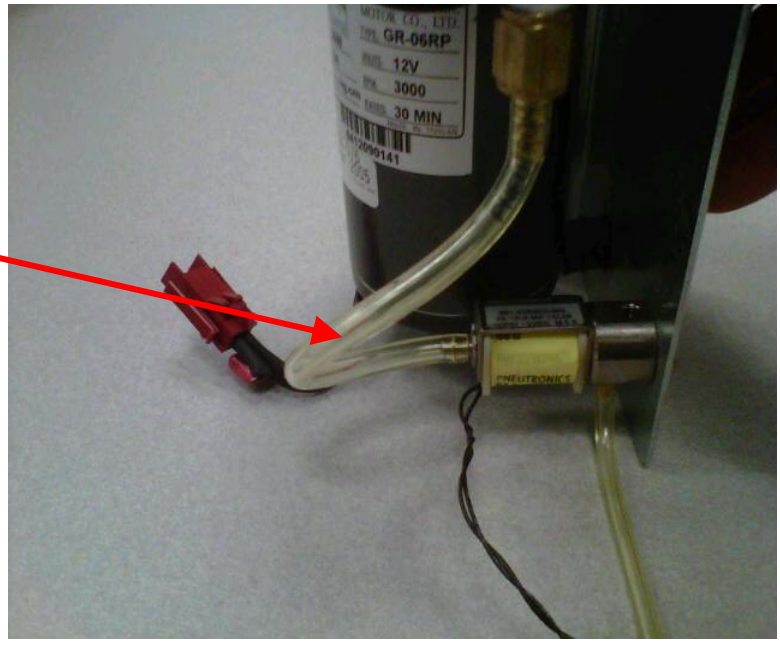
d. Return to service.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

PNEUMATIC SOLENOID (P/N 0700-001-072Q)

1. Remove the Pneumatic Tubing **(P/N 0060-015-000 5in)** from the PNEUMATIC SOLENOID ASSY.

PNEUMATIC TUBING



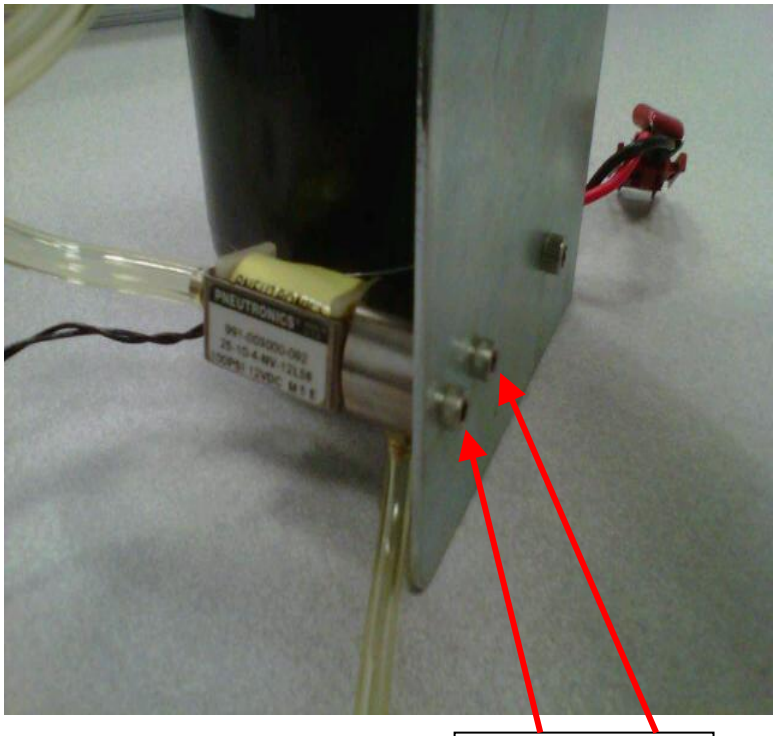
2. Remove the PNEUMATIC SOLENOID ASSY from the IV POLE PNEUMATICs PANEL, remove the two **Socket Head Cap Screws (P/N 0004-529-000)** using 7/64 Allen Key or equivalent.

a. Using new SOLENOID ASSY, reassemble in reverse order.

b. Perform electrical safety tests per procedure for Testing.

c. Perform functional tests per procedure for Functional Testing.

d. Return to service.



SOCKET HEAD CAP SCREWS

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

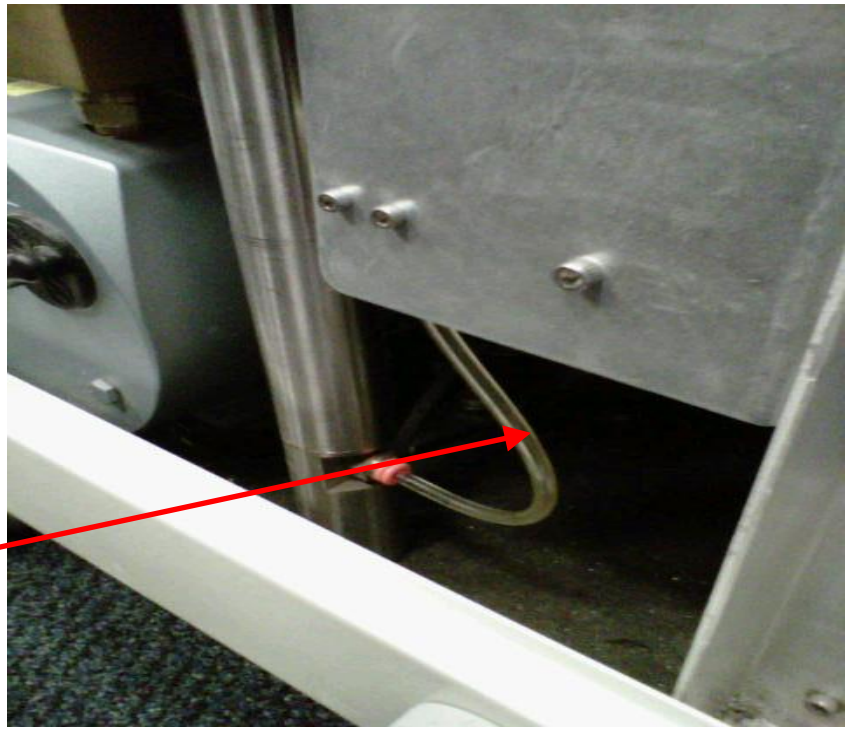
REMOVAL AND REPLACEMENT OF IV POLE ASSY

1. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the **IV Pole (P/N 0700-001-455)**.

2. Remove the **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** by following the steps below:

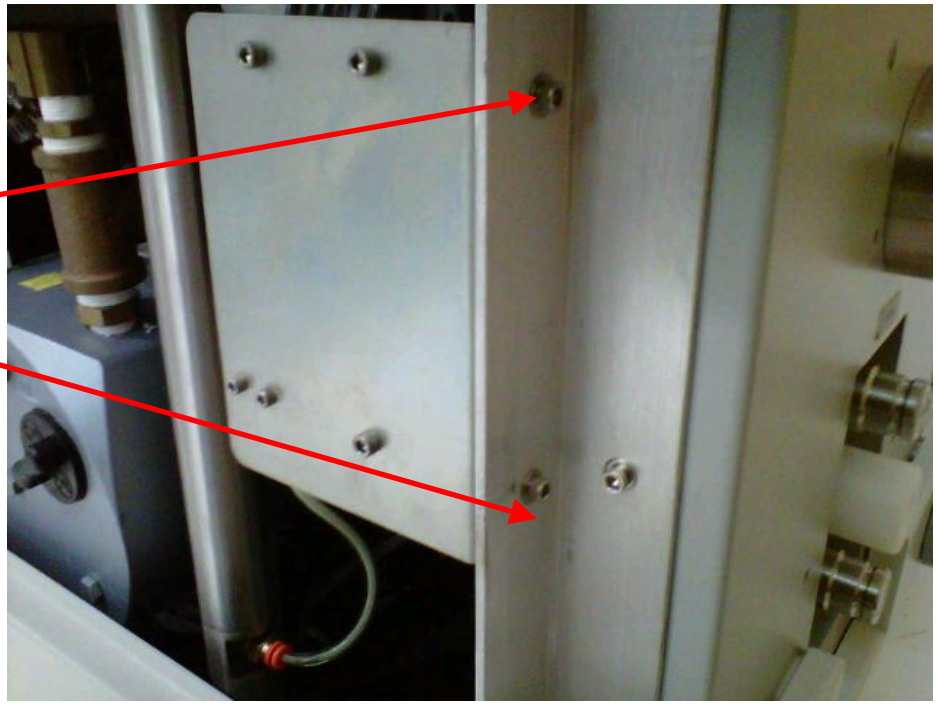
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE by removing two Socket Head Cap Screws (P/N using 9/64 Allen Key.

SOCKET HEAD CAP SCREW

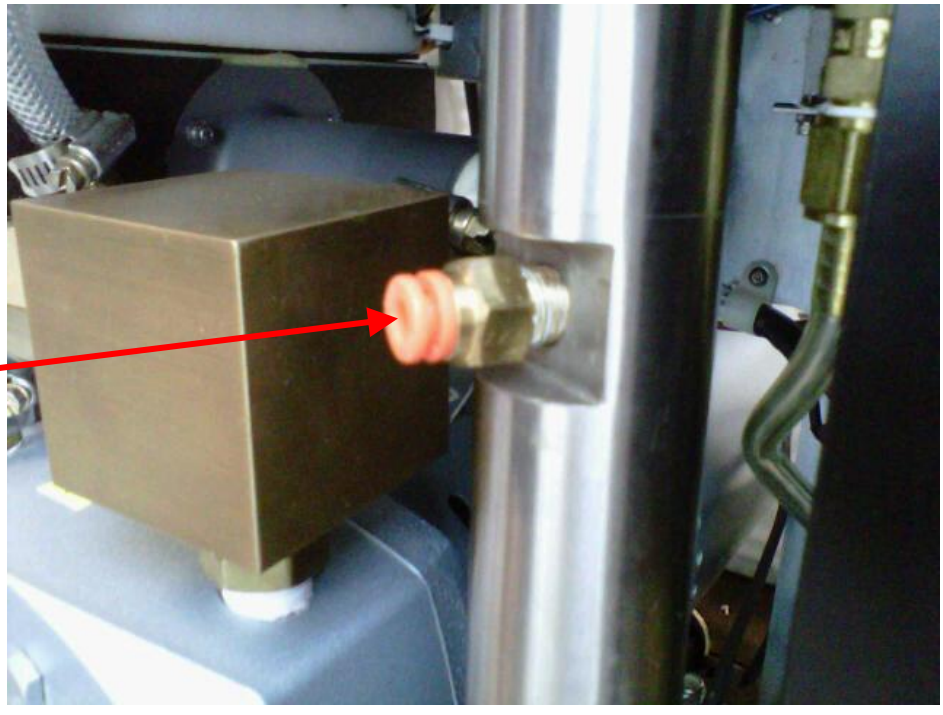


Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

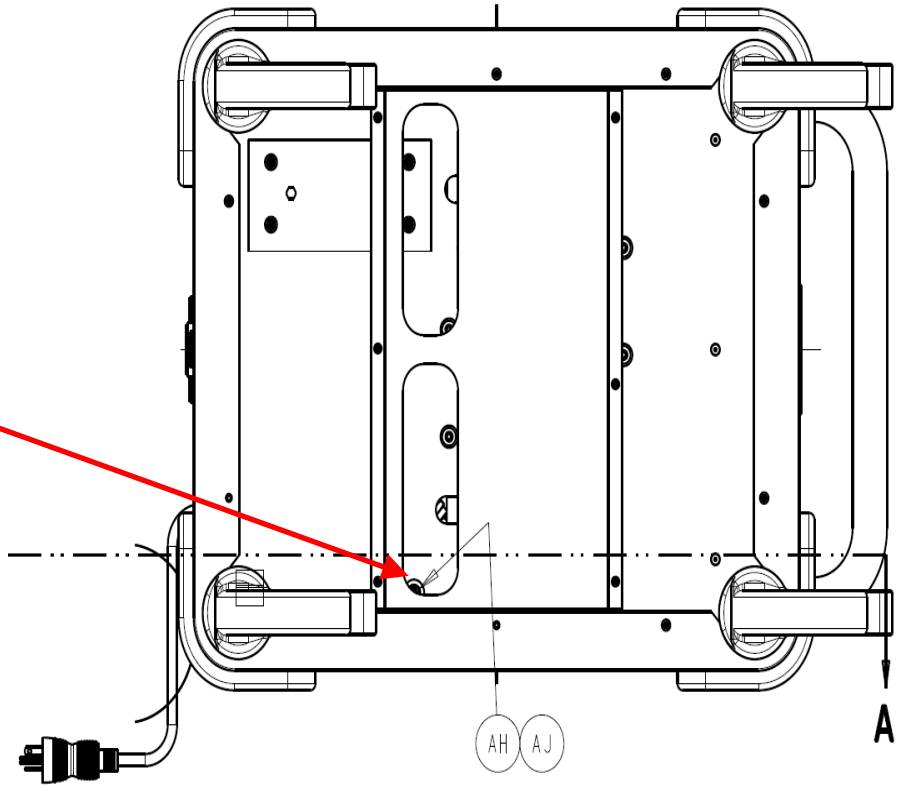
c. Remove brass PNEUMATIC FITTING at base of IV POLE using 1/2in Deep-Well Socket, ensure not to damage the fitting.

PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place using 1/4in Allen Key.

Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.



THIS SUBSYSTEM IS ONLY AVAILABLE ON THE 700-1 GOLD MODEL ROVER.

3. Remove **I.V. Pole (P/N 0700-001-455)**

   a. Using new IV POLE ASSY, reassemble in reverse order.

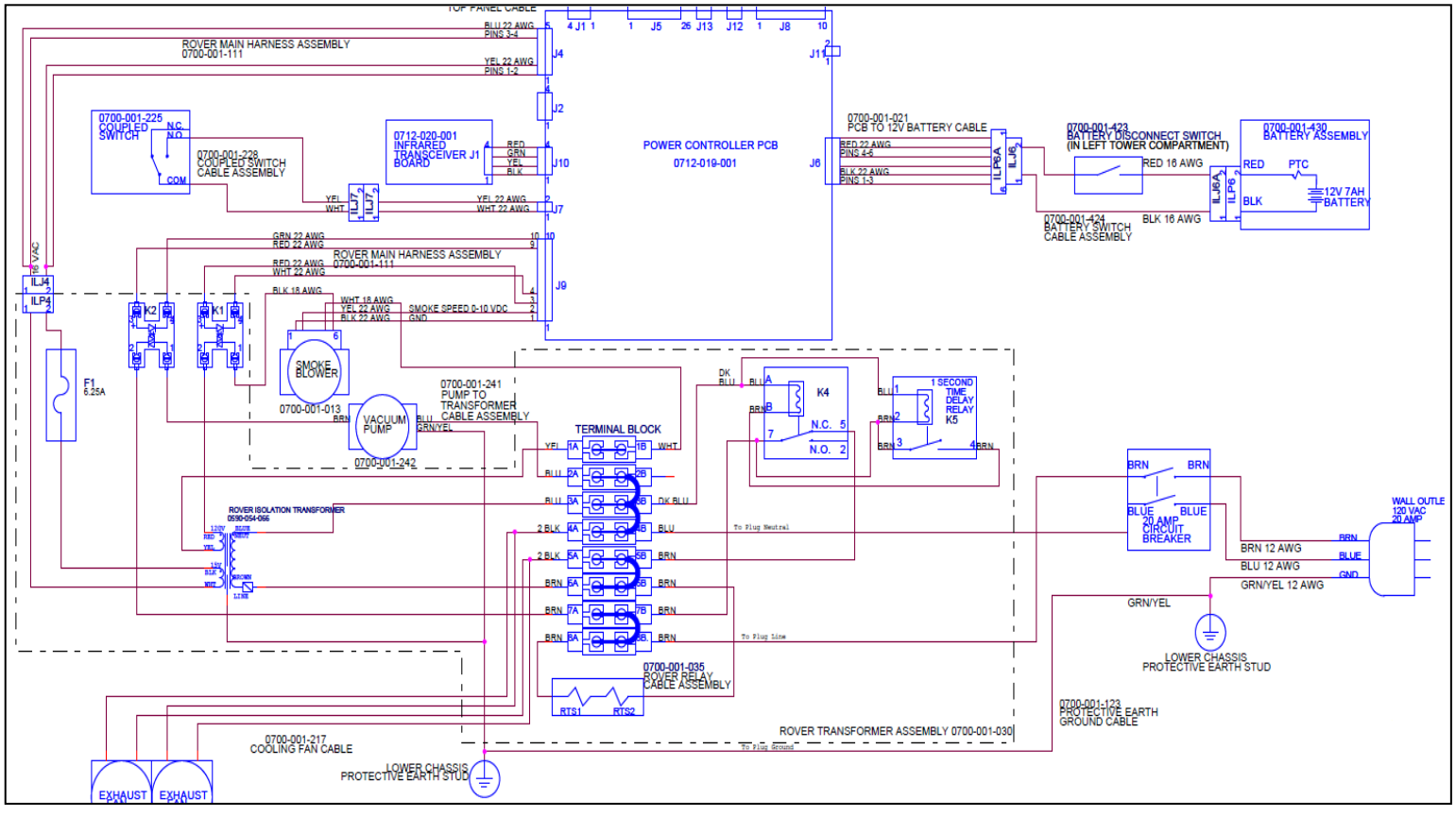
   b. Perform electrical safety tests per procedure for Testing.

   c. Perform functional tests per procedure for Functional Testing.

   d. Return to service.

The Electrical system consists of a **Power Plug 20A (P/N 0700-001-084 Gold Mdl) or Power Plug 15A(P/N 0700-003-018 Silver Mdl)**, **Power Cord (P/N 0700-001-017 Gold Mdl) or Power Cord (P/N 0700-003-017 Silver Mdl), Rover Power Switch (P/N 0700-001-412 Gold Mdl) or Rover Power Switch (P/N 0700-003-412 Silver Mdl), Rover Transformer (P/N 0700-001-030Q Gold Mdl) or Rover Transformer (P/N 0700-003-030Q Silver Mdl),** and the **Power Control Board (P/N 0712-019-001)**.

Function: The Electrical system is going to provide input 120VAC Power for operation of the Rover. The AC Power is routed to the Rover Transformer where it is stepped down with an output from the secondary of 16VAC to the Power Control Board. The Power Control Board will then convert AC Power to DC Power to provide the DC Voltages needed to power the circuit boards and various motors within the Rover.

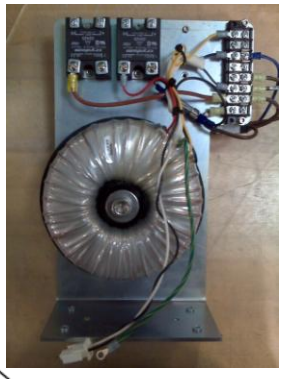


Troubleshooting Rover Electrical System: The Electrical system has no error messages for failure modes, therefore, the operation of the Rover itself, or lack thereof will be the only indicator of a deficiency/failure in this system. When working within the Electrical system, ensure to practice safety as high voltage can harm you or equipment.

Potential Symptoms/ Resolutions:

- **When Power Switch is turned on, system reads "Ready to Dock"**- verify that there is A/C power to the Rover. If A/C is present, the cooling fans will be running. If this is the case, Check output of Transformer Assy at ILJ4 for 16VAC. If voltage is not present, follow procedure to *Remove and Replace Transformer Assy*. If voltage is present, check intput to Main Control Board Black and Red Cable/ White Connector for 12VDC from Battery and 18VDC from Power Control Board. If the 12VDC is not present, replace Battery Assy. If 18VDC is not present, follow procedure to *Remove and Replace Power Control Board.*
- **Rover trips Hospital Circuit Breakers when turned on** – in this situation, there is a component that is drawing too much current. To isolate component, visually inspect connections of Power Control Board, Transformer Terminal Board, Smoke Evacuator Assy, Transformer Assy, Power Cord, Power Plug and Power Switch. If there is no evidence of arching amongst those components, disconnect all high current drawing components. Connect one at a time and turn on Power Switch until the bad device is found. Remove and replace as appropriate.
- **LCD Screen blank with Power Switch turned on** – check intput to Main Control Board Black and Red Cable/ White Connector for 12VDC from Battery and 18VDC from Power Control Board. If the 12VDC is not present, replace Battery Assy. If 18VDC is not present, follow procedure to *Remove and Replace Power Control Board.*
- **Clicking noise on Transformer Assy** – the 700-1 Gold Rover has a Time Delay Relay and a Power Relay to help reduce the in-rush of current into the system when the Power Switch is turned on. The clicking noise is due to a failure of the Power Relay and the Time Delay Relay on the back side of the Transformer Assy. The Time Delay Relay gives a 3 second delay to in-rush current into the Power Relay when the Power Switch is turned on. Once the Time Delay Relay fails, the Power Relay (Mechanical Relay) takes in the high current until the mechanical arm inside the relay sticks. The clicking noise comes from the mechanical arm trying to click into its proper position. Due to the direct relationship of the relays, they must be replaced together in order to prevent subsequent failure. To correct this issue, follow procedure to *Remove and Replace Power Relay and Time Delay Relay.*

700-1 GOLD ROVER HAS NO AC POWER (NEW TRANSFORMER ASSY)



START
Plug in Rover and turn on power switch

Is power switch lit?

No

If it is a GFCI outlet check to see if it is tripped and reset if necessary

Check for AC power at outlet. Is voltage < or > 110vAC?

<110vAC

Contact hospital maintenance department to report that 110vAC outlet is not working

Yes

>110vAC

Check incoming AC at power switch. Is voltage< or > 110vAC?

>110vAC

Replace Power Switch P/N 0700-001-412

<110vAC

With Power Switch on measure voltage across switch. Is voltage < or > 110vAC?

<110vAC

FINISHED

>110vAC

Check transformer taps for power leaving transformer assembly

Termination A	Termination B	Min Voltage
Relay K1, Pin 2	Terminal 1A	110 vAC
ILP4, Pin1	ILP4, Pin2	16 vAC

Check AC voltage on transformer terminals 4B & 8B. Is voltage < or > 110vAC?

>110vAC

Are all measure-ments good?

No

Replace Transformer P/N 0700-001-030

Yes

<110vAC

Replace wire harness (blue and brown wire from transformer assembly to power switch

Replace Power Cord P/N 0700-001-017

FINISHED

700-1 GOLD ROVER HAS NO AC POWER (OLD TRANSFORMER ASSY)

START
Plug in Rover and turn on power switch

Is power switch lit?

No

If it is a GFCI outlet check to see if it is tripped and reset if necessary

Check for AC power at outlet. Is voltage < or > 110vAC?

<110vAC

Contact hospital maintenance department to report that 110vAC outlet is not working

>110vAC

Check incoming AC at power switch. Is voltage< or > 110vAC?

>110vAC

Replace Power Switch P/N 0700-001-412

<110vAC

With Power Switch on measure voltage across switch. Is voltage < or > 110vAC?

Yes

FINISHED

<110vAC

Replace Power Cord P/N 0700-001-017

>110vAC

Check transformer taps for power leaving transformer assembly

Termination A	Termination B	Min Voltage
Relay K2, Pin 2	Terminal 1A	110 vAC
Relay K1, Pin 2	Terminal 1A	110 vAC
ILP4, Pin1	ILP4, Pin2	16 vAC

Are all measure-ments good?

No

Replace Transformer P/N 0700-001-030

Yes

>110vAC

Check AC voltage on transformer terminals 4B & 8B. Is voltage < or > 110vAC?

<110vAC

Replace wire harness (blue and brown wire from transformer assembly to power switch

FINISHED

700-3 SILVER ROVER HAS NO AC POWER

START
Plug in Rover and turn on power switch

Is power switch lit?

No

If it is a GFCI outlet check to see if it is tripped and reset if necessary

Check for AC power at outlet. Is voltage < or > 110vAC?

<110vAC

Contact hospital maintenance department to report that 110vAC outlet is not working

>110vAC

Check incoming AC at power switch. Is voltage< or > 110vAC?

<110vAC

Replace Power Switch P/N 0700-003-412

>110vAC

FINISHED

Yes

With Power Switch on measure voltage across switch. Is voltage < or > 110vAC?

<110vAC

>110vAC

With AC power on Measure voltage on ILP4 pins 1&2. Is voltage < or > 15vAC?

>110vAC

<15vAC

>15vAC

At terminal block check power into transformer assy terminal 4B & 5B. Is voltage < or > 110vAC?

<110vAC

Replace Transformer P/N 0700-003-030

Replace Power Cord P/N 0700-003-017

Replace wire harness (blue and brown wire from transformer assembly to power switch

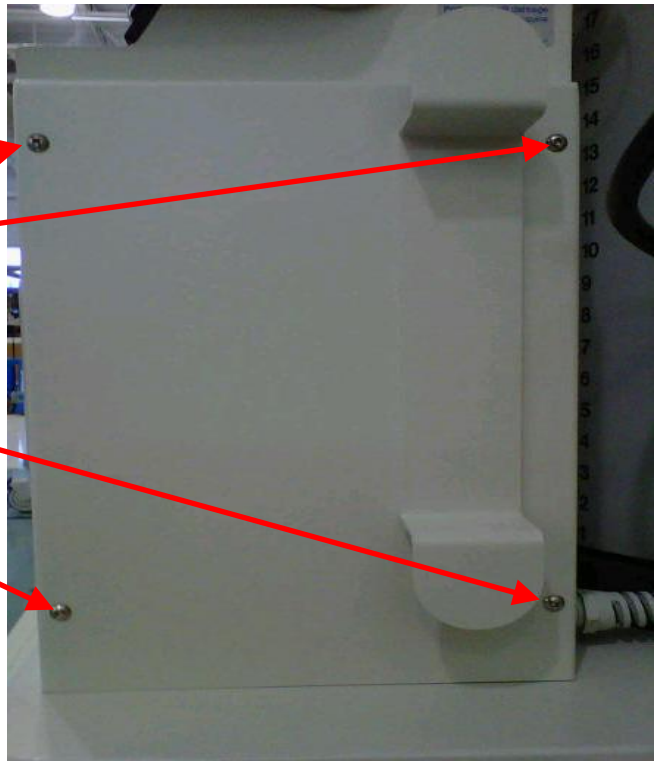
FINISHED

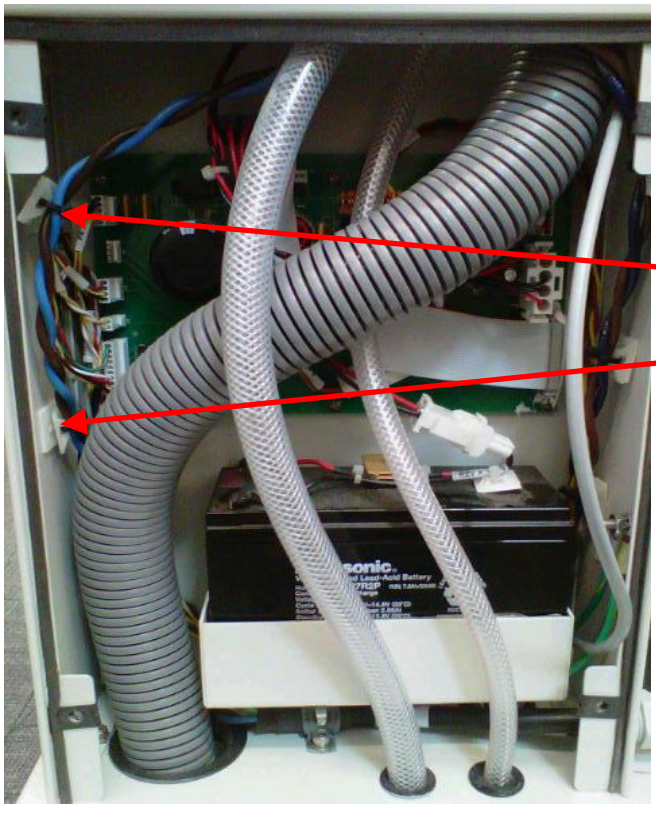
REMOVAL AND REPLACEMENT OF ROVER POWER SWITCH

NOTE: Ensure Power Cord is unplugged before proceeding.

1. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent.

BUTTON HEAD CAP SCREWS



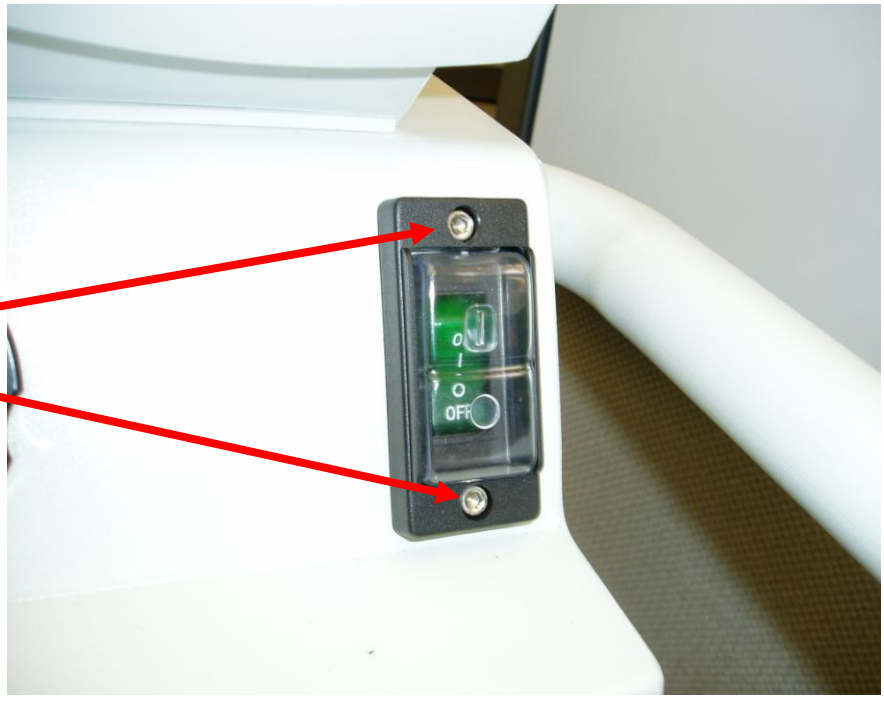


WIRE TIES

2. Remove the WIRE TIES from the Blue and Brown wires of the **Power Cord (P/N 0700-001-017)** using wire cutters or equivalent.

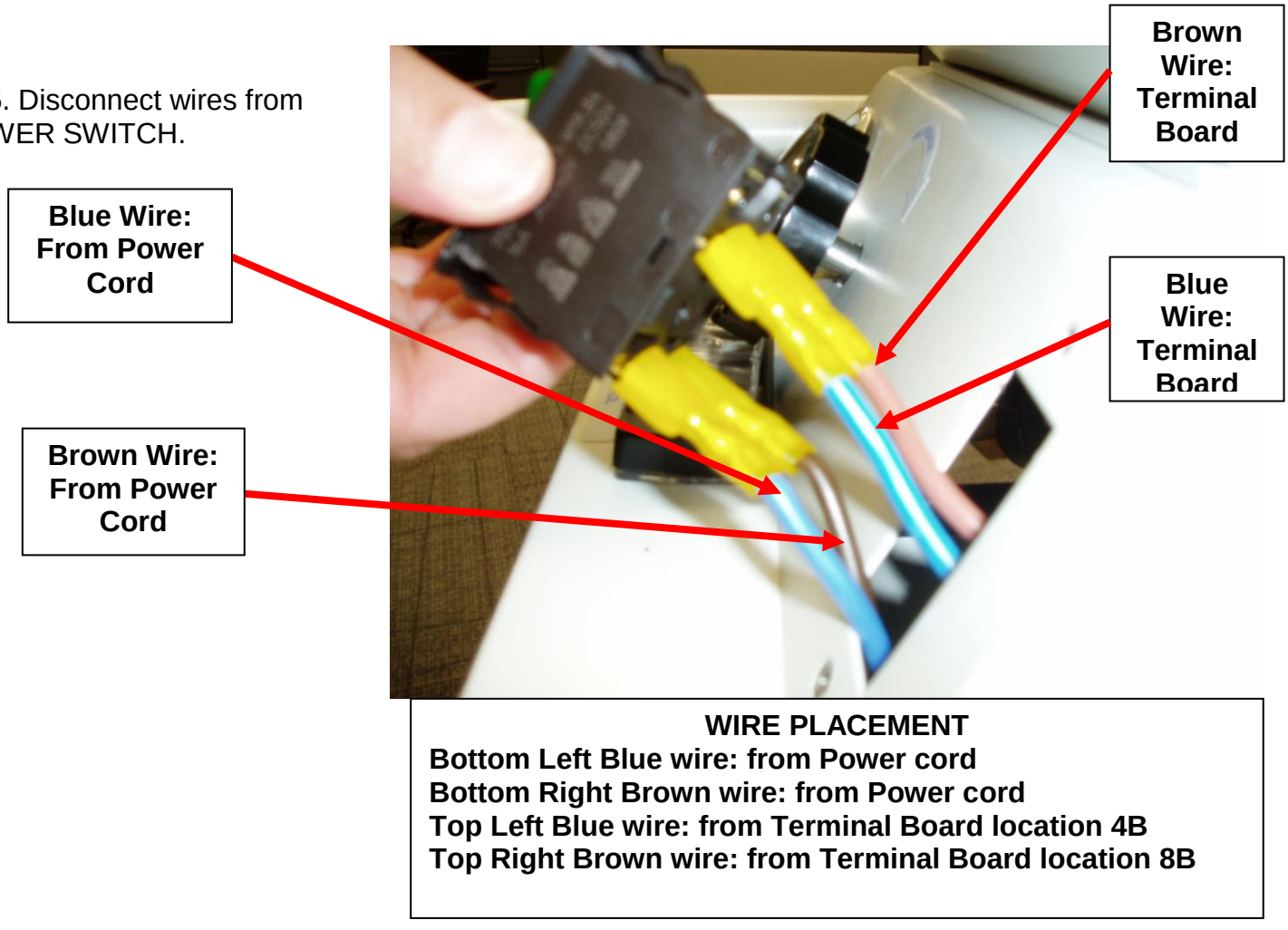
3. Remove the two **Socket Head Cap Screws (P/N 0004-525-000)** securing the **Power Switch Splash Cover (P/N 0700-001-409)** to the Tower Assembly using 9/64 Allen Key or equivalent and remove cover.

SOCKET HEAD CAP SCREWS



4. Remove **Power Switch (P/N 0700-001-412)** for GOLD ROVER or **(P/N 0700-003-412)** for SILVER ROVER using Flat Head Screwdriver to pry out switch.

5. Disconnect wires from POWER SWITCH.



6. Connect wires to new Power Switch as noted above.

7. Re-insert switch into slot in Tower assembly.

8. Re-attach Power Switch cover to Tower assembly.

9. Zip tie Rover Power cord to battery compartment wall.

10. Secure battery compartment door.

11. Perform electrical safety tests per procedure for Testing.

12. Perform functional tests per procedure for Functional Testing.

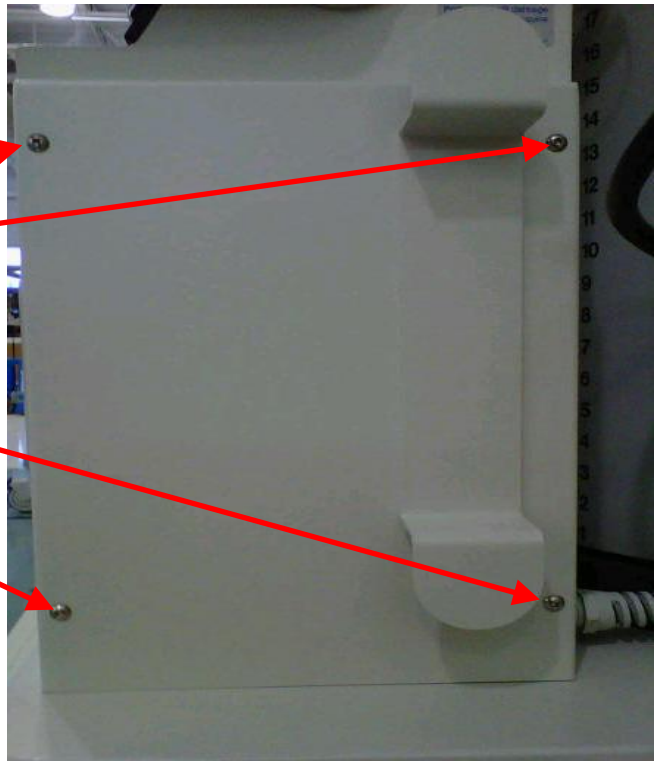
13. Return to service.

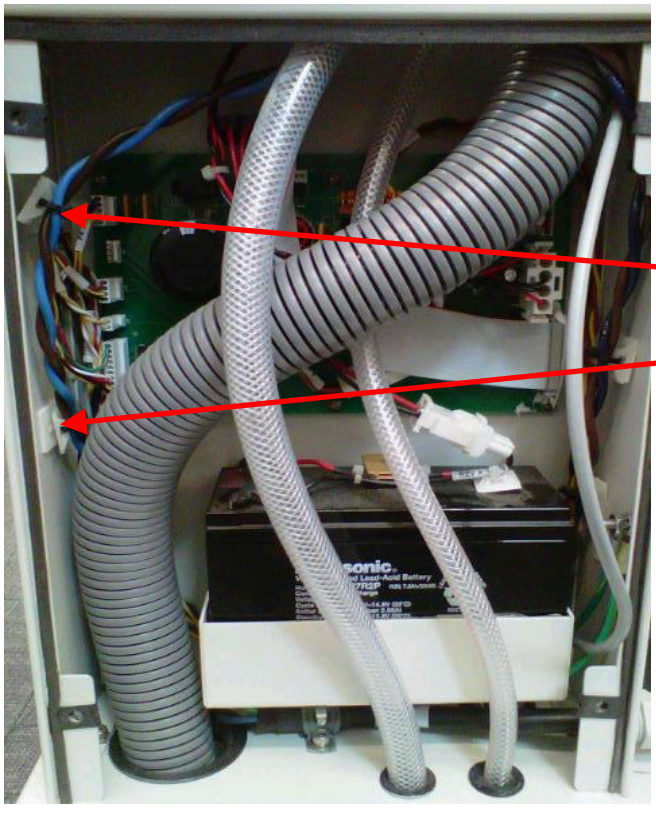
REMOVAL AND REPLACEMENT OF POWER CORD

NOTE: ENSURE THERE IS NO POWER TO THE SYSTEM BY UNPLUGGING POWER CORD BEFORE PROCEEDING.

1. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent.

BUTTON HEAD CAP SCREWS



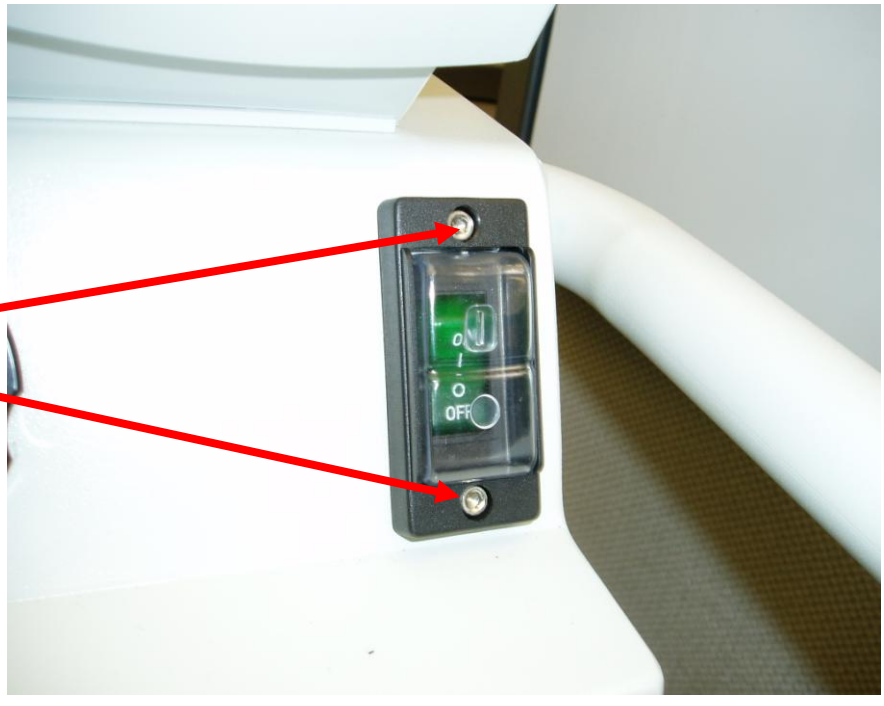


WIRE TIES

2. Remove the WIRE TIES from the Blue and Brown wires of the **Power Cord (P/N 0700-001-017)** using wire cutters or equivalent.

3. Remove the two **Socket Head Cap Screws (P/N 0004-525-000)** securing the **Power Switch Splash Cover (P/N 0700-001-409)** to the Tower Assembly using 9/64 Allen Key or equivalent and remove cover.

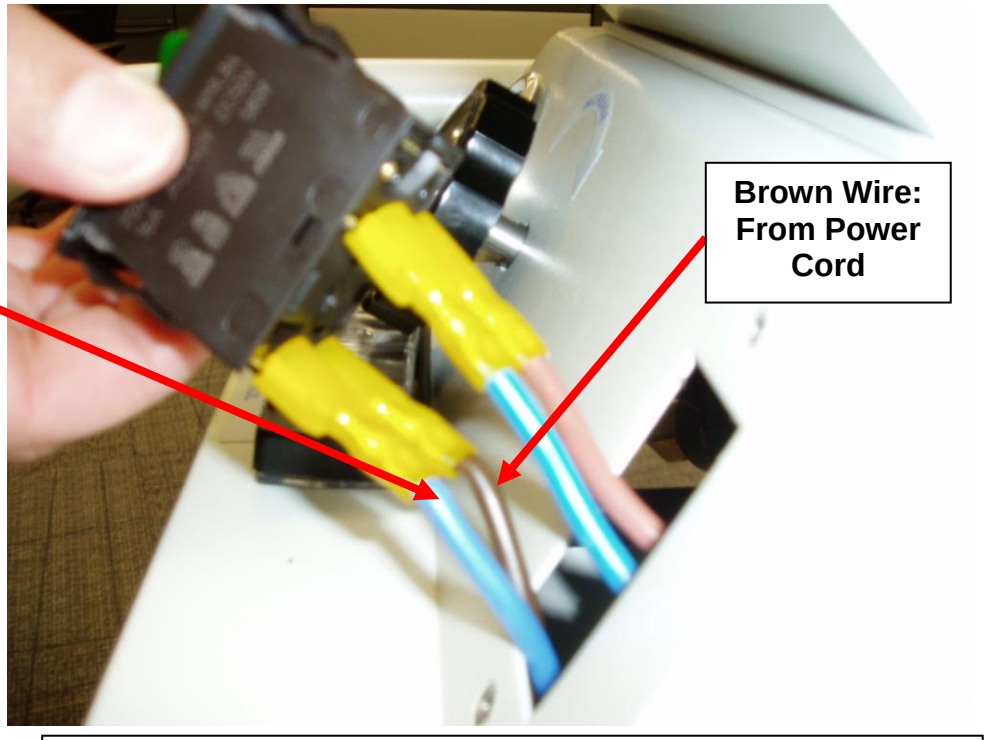
SOCKET HEAD CAP SCREWS



4. Remove **Power Switch (P/N 0700-001-412)** for GOLD ROVER or **(P/N 0700-003-412)** for SILVER ROVER using Flat Head Screwdriver to pry out switch.

5. Disconnect wires from POWER SWITCH.

Blue Wire: From Power Cord

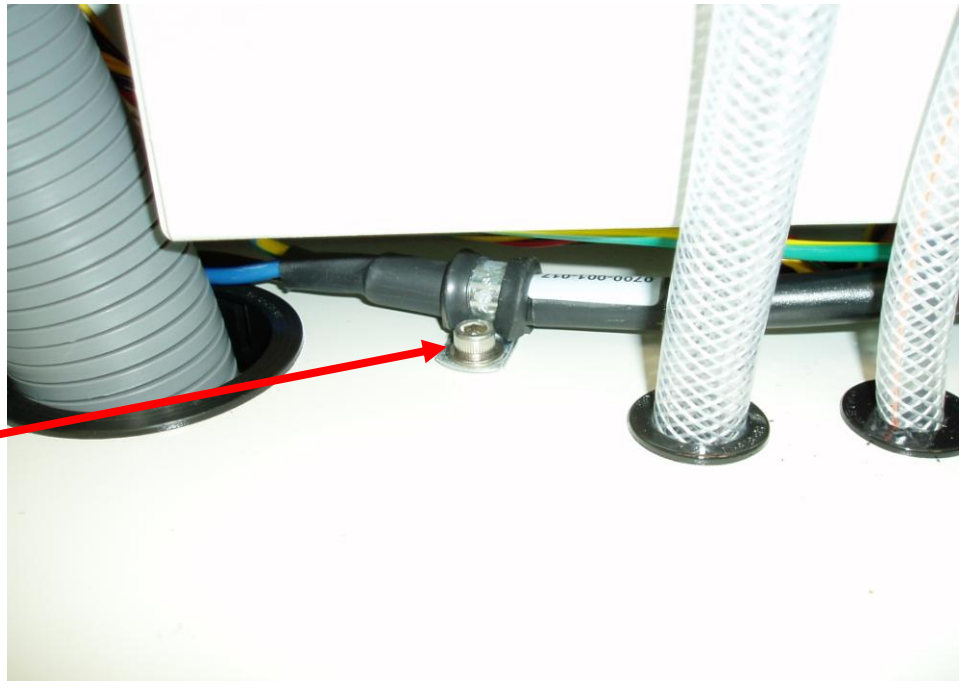


Brown Wire: From Power Cord

WIRE PLACEMENT
Bottom Left Blue wire: from Power cord
Bottom Right Brown wire: from Power cord

6. Loosen Wire harness by unthreading **Socket Head Cap Screw (P/N 0004-521-000)** holding the **Rubber Cushioned Loop Strap (P/N 0058-335-000)** around the portion of the Power Cord where the heat shrink is outside insulation <u>using 5/32 Allen Key or equivalent.</u>

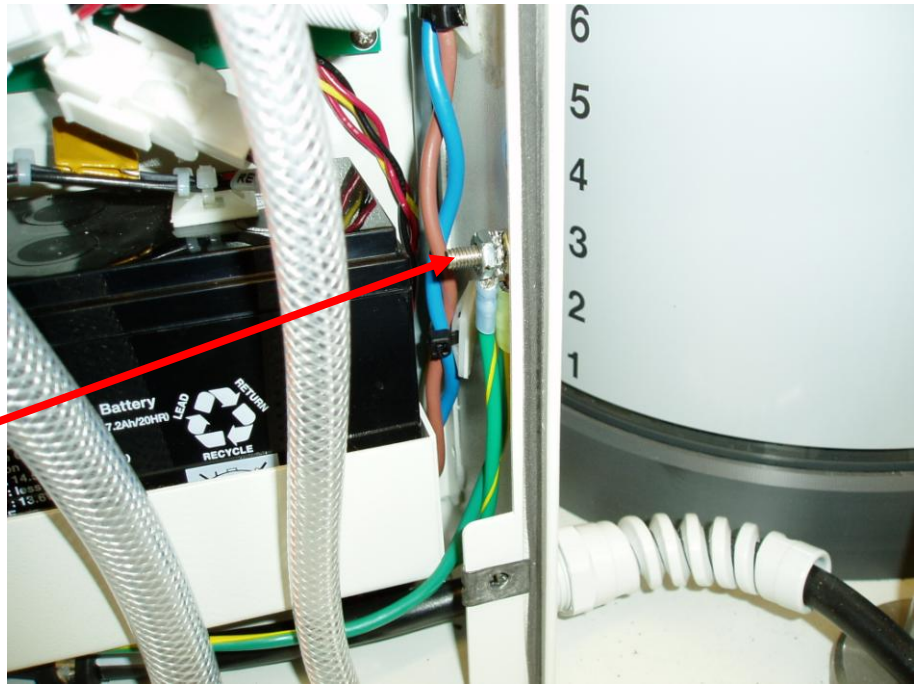
Socket Head Cap Screw



7. Loosen **Hex Nut (P/N 0015-004-000)** on Earth Ground pin and remove **External Lock Washers (P/N 0013-018-000)** from pin taking note of the orientation on the EXTERNAL LOCK WASHERS as they are to be placed in the same order.

8. Remove ground wire of POWER CORD from Earth Ground pin.

Earth Ground Pin



9. Loosen the nut on **Flex Style Strain Relief (P/N 0700-001-415)** and remove Power Cord from the unit. Ensure to retain FLEX STYLE STRAIN RELIEF as it will be used on the new Power Cord.

NUT ON FLEX STYLE STRAIN RELIEF

10. Place FLEX STYLE STRAIN RELIEF on new Power Cord.

11. Re-install Power Cord in reverse order.

NOTE: Place the following sequence of parts onto the GROUND STUD inside the Right side of Tower Assy to the right of the BATTERY TRAY:

External Lock Washer (0013-018-000)
Green/Yellow wire of Power Cord
External Lock Washer (0013-018-000)

12. Perform electrical safety tests per procedure for Testing.

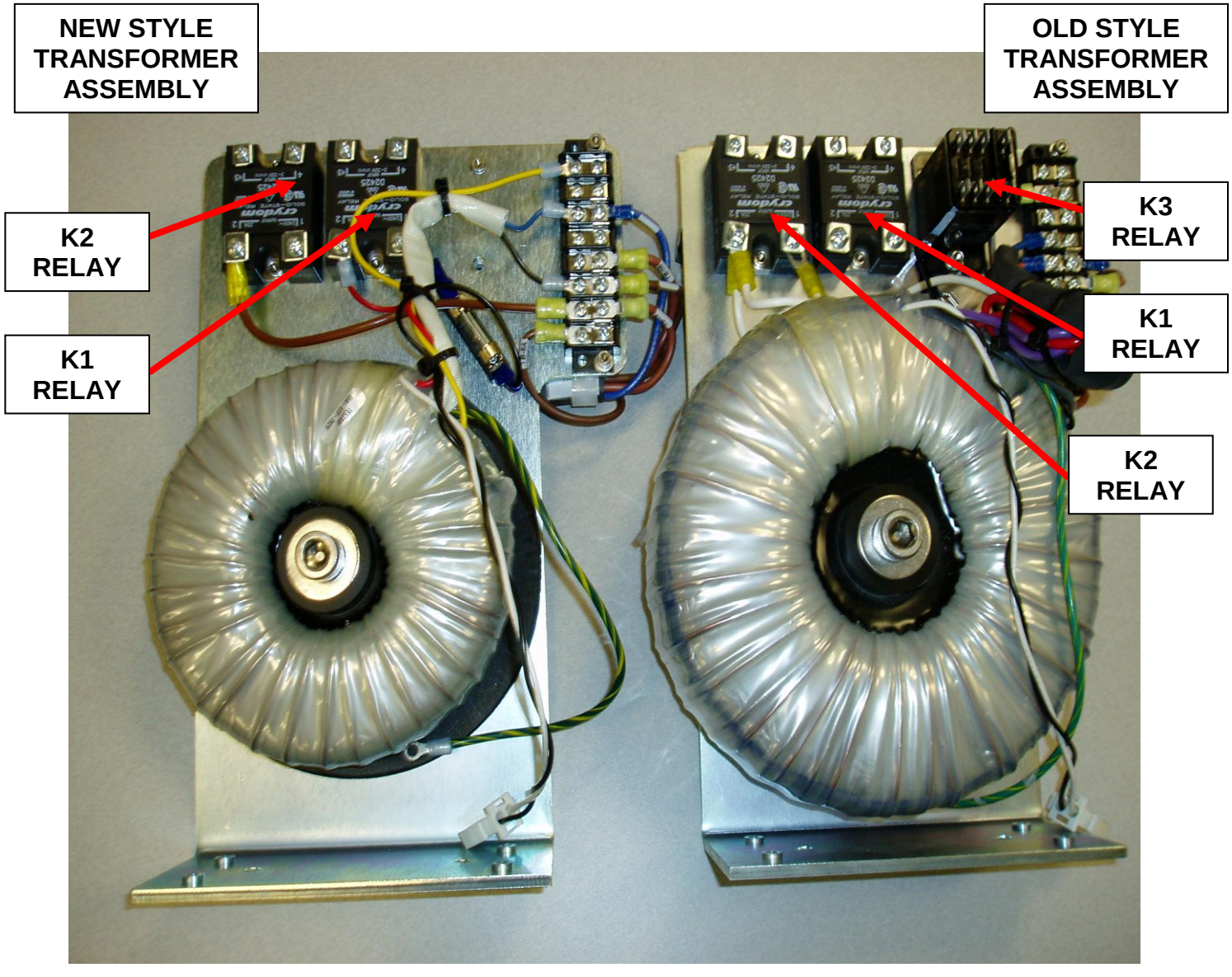
13. Perform functional tests per procedure for Functional Testing.

14. Return to service.

REMOVAL AND REPLACEMENT OF 700-1 GOLD TRANSFORMER ASSY

NOTE: Any Transformer replacement will be done with the newer style Transformer. The new Transformer Assy has smaller windings than the previous one. The new Transformer **DOES NOT HAVE RELAY K3 (which powered the MACERATOR ASSY)**, as the MACERATOR ASSY has been totally removed from all current production units as well as the Service Department. ENSURE THAT ALL POWER IS OFF BEFORE PROCEEDING.

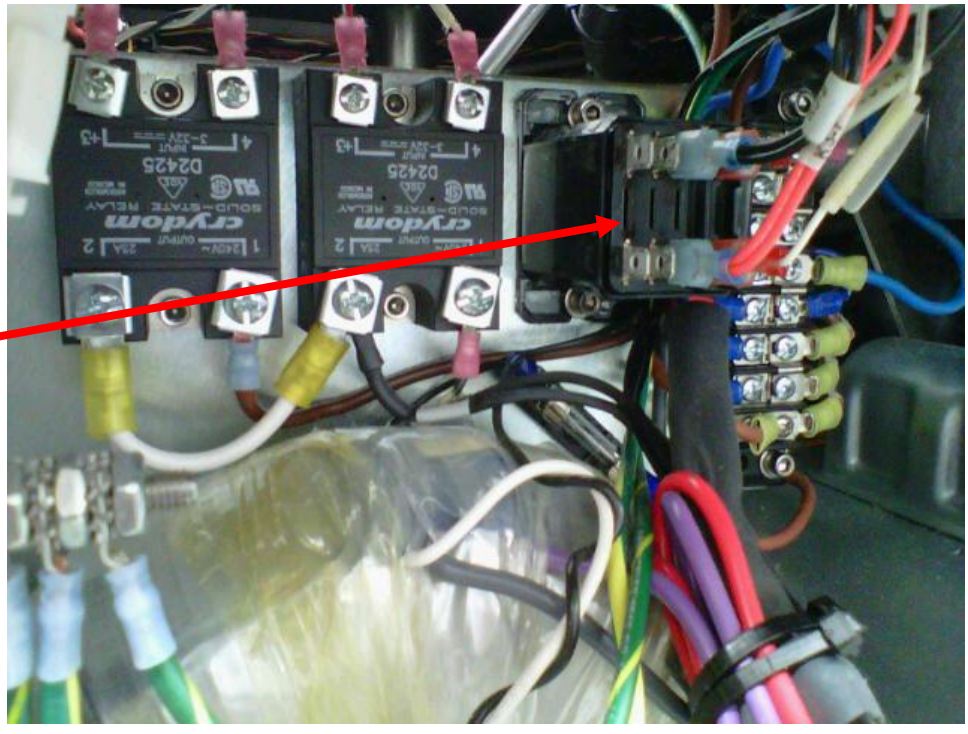
NOTE: ENSURE THERE IS NO POWER TO THE SYSTEM BY UNPLUGGING POWER CORD BEFORE PROCEEDING.



1. Remove Right **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side opposite the **IV Pole (P/N 0700-001-455)**.

2. Locate RELAY K3 on the **Transformer Assy (P/N 0700-001-030Q)** and remove all of the connectors.

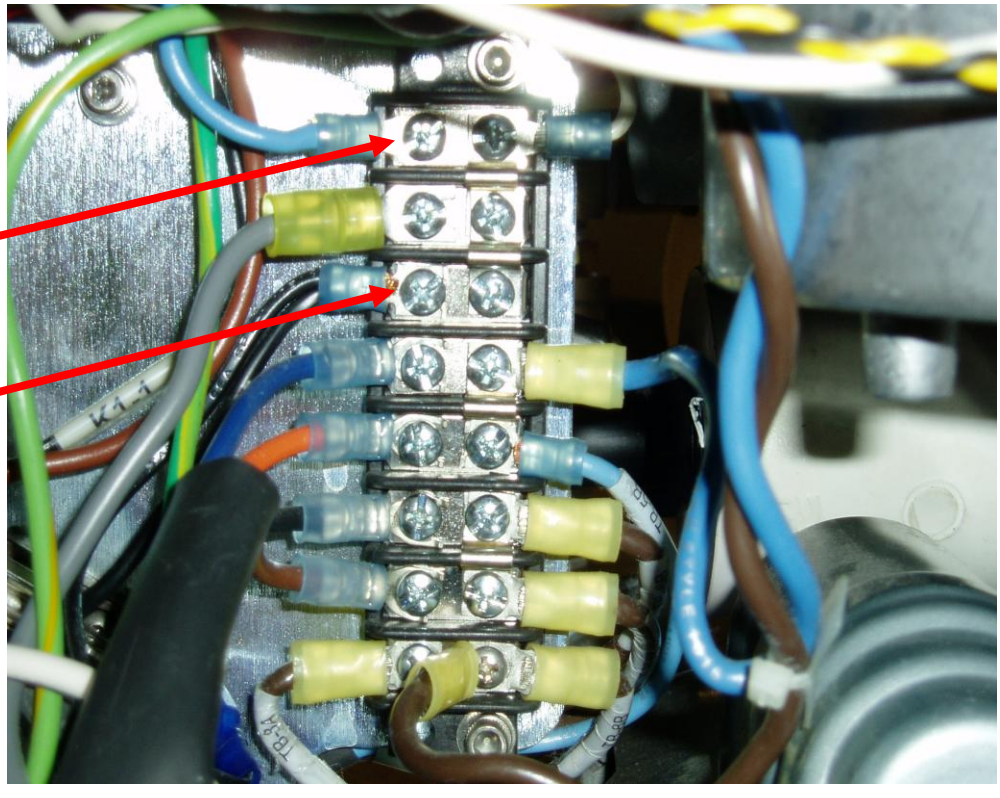
K3 RELAY

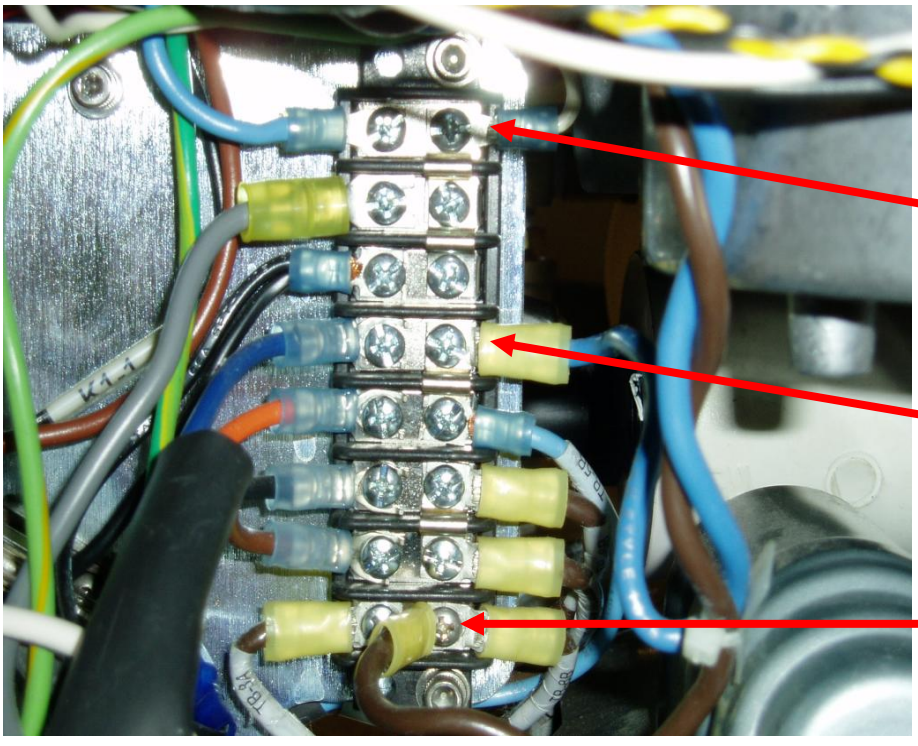


3. Locate **Terminal Board (P/N 0700-001-036)** and remove connections from **TB1A** and **TB3A**.

TB:1A (BLUE WIRE FROM VACUUM PUMP)

TB:3A (BLACK WIRES TO EXHAUST FANS)



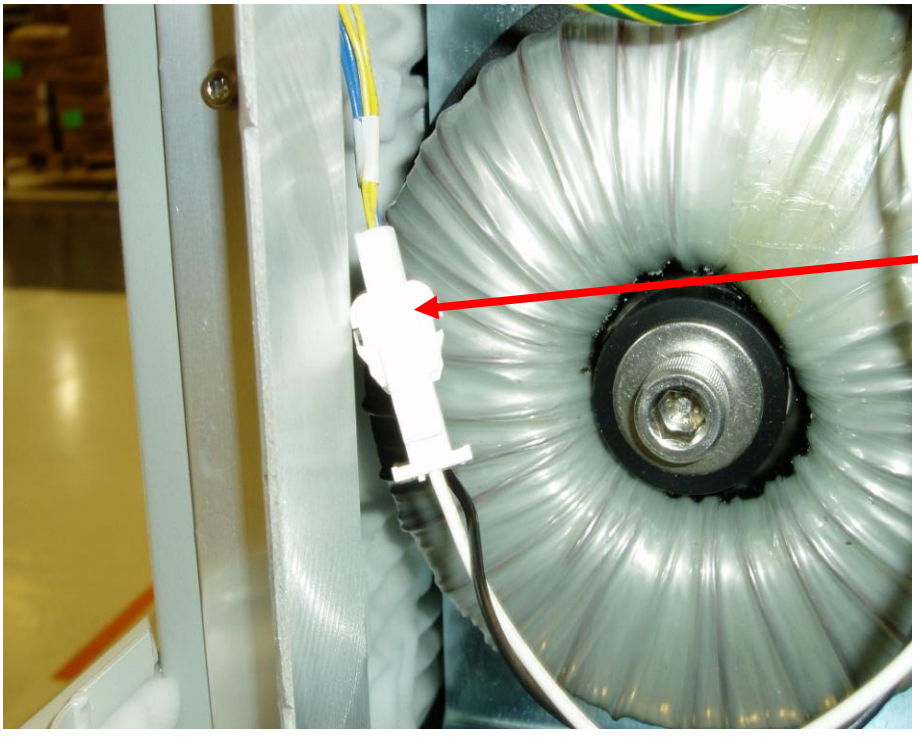


4. On TERMINAL BOARD, remove connections from **TB1B**, **TB4B** and TOP BROWN WIRE from **TB8B**.

TB:1B (WHITE WIRE FROM SMOKE BLOWER)

TB:4B (BLUE WIRE FROM POWER SWITCH)

TB:8B (BROWN WIRE FROM POWER SWITCH)



5. Disconnect connector at **ILJ4**.

ILJ4

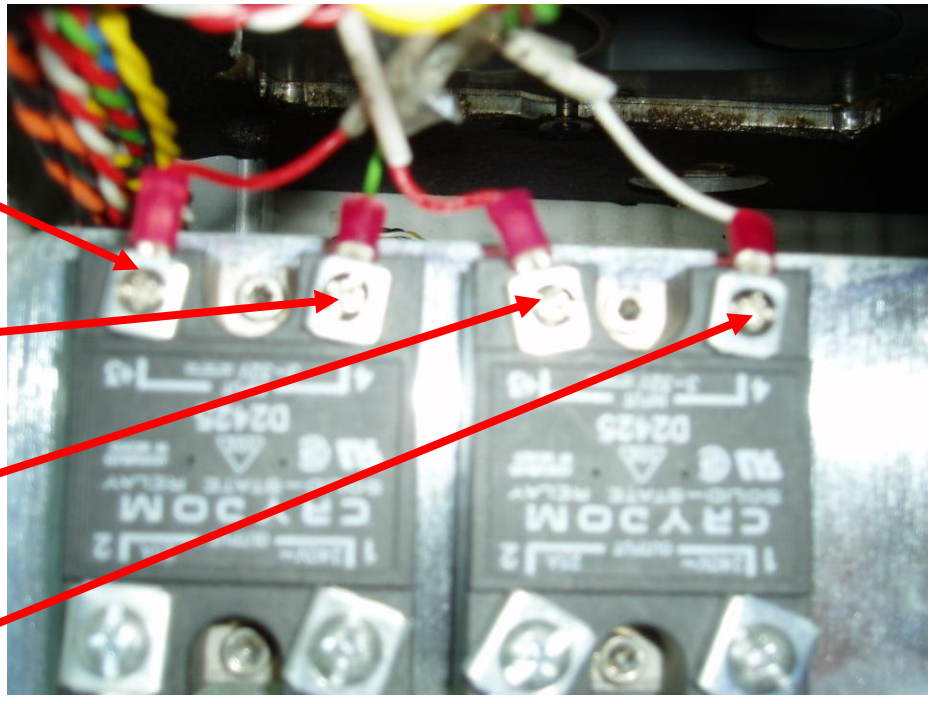
6. Remove connections at **K2** and **K1**, pins **3** and **4**.

K2 PIN 3 TO CONNECTOR J9 ON PWR CNTL BOARD

K2 PIN 4 TO CONNECTOR J9 ON PWR CNTL BOARD

K1 PIN 3 TO CONNECTOR J9 ON PWR CNTL BOARD

K1 PIN 4 TO CONNECTOR J9 ON PWR CNTL BOARD

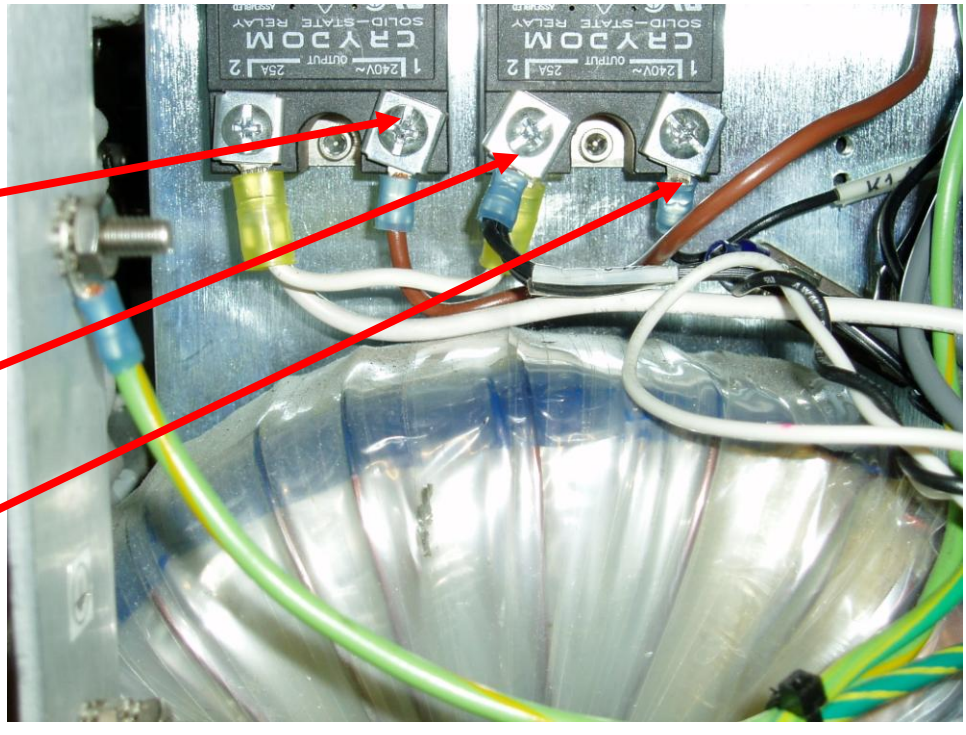


7. Remove connections at **K2** pin **1** and **K1** pins **1** and **2**.

K2 PIN 1 BROWN WIRE TO VACUUM PUMP

K1 PIN 2 BLACK WIRES TO EXHAUST FANS

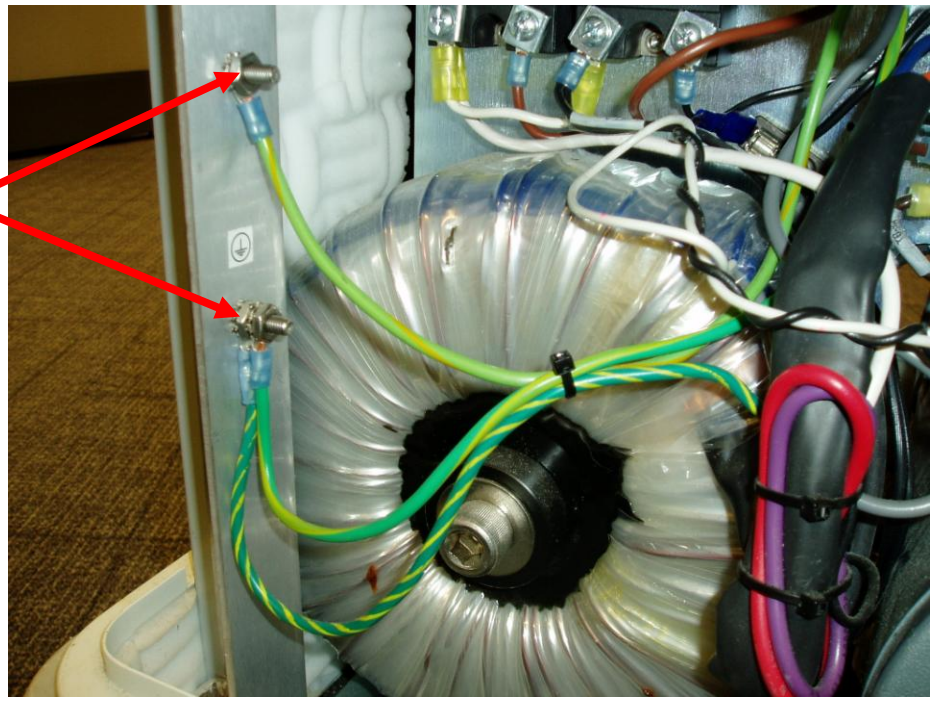
K1 PIN 1 BLACK WIRE TO SMOKE BLOWER



8. Remove ALL wires from Earth ground pin.

GREEN AND YELLOW GROUND WIRE FROM TRANSFORMER ASSY

Note: Some older models have two Earth Ground Pins (represented to the right) while newer models have one pin. Ensure to re-install properly for effective grounding.

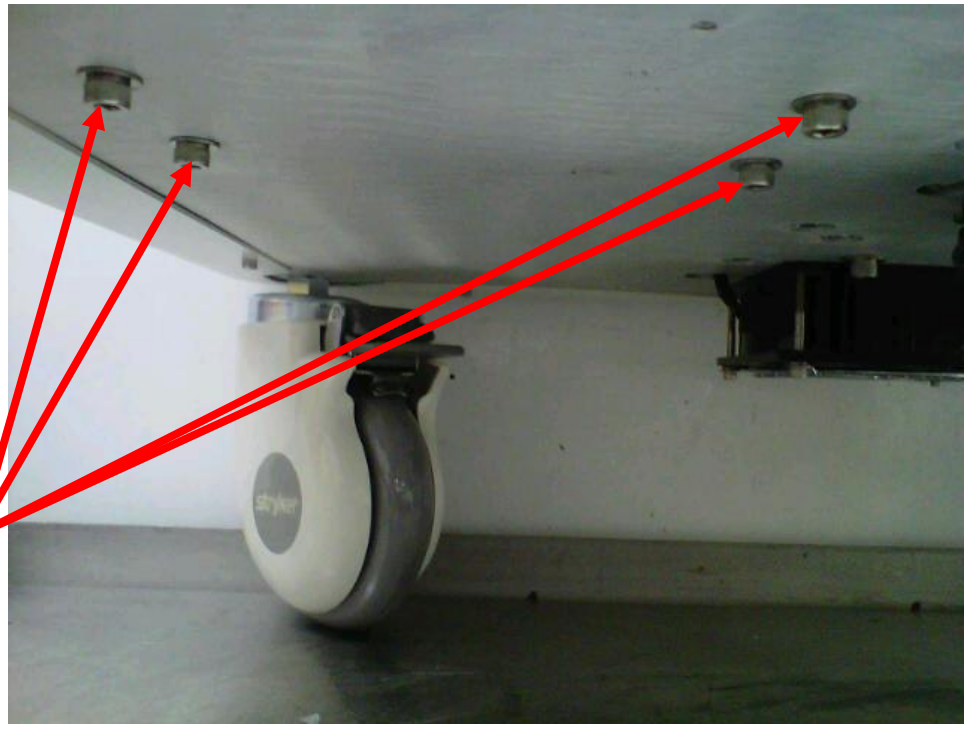


9. Remove **Exhaust Plenum Assy (P/N 0700-001-150)** underneath ROVER by removing the six **Socket Head Cap Screws (P/N 0004-004-000)** using 9/64 Allen Key or equivalent to access TRANSFORMER MOUNTING BRACKET screws.

EXHAUST PLENUM ASSY

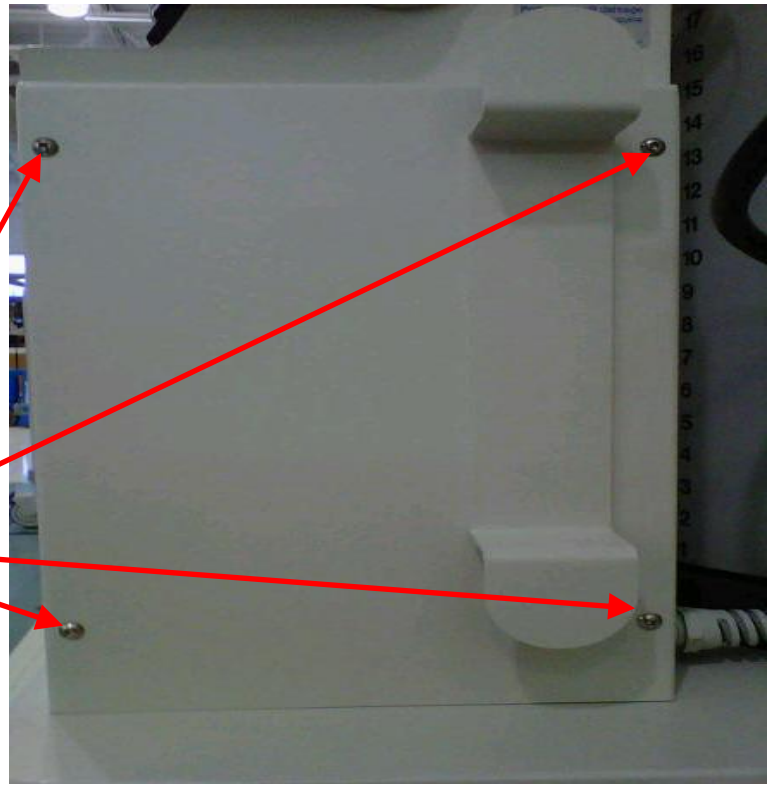
SOCKET HEAD CAP SCREWS (3 on each side)

10. Remove the four **Socket Head Cap Screws (P/N 0004-521-000)** that secure the TRANSFORMER MOUNTING BRACKET to chassis floor using 5/32 Allen Key or equivalent. Retain the screws as they will be needed to secure (new) Transformer Assembly to the chassis floor.

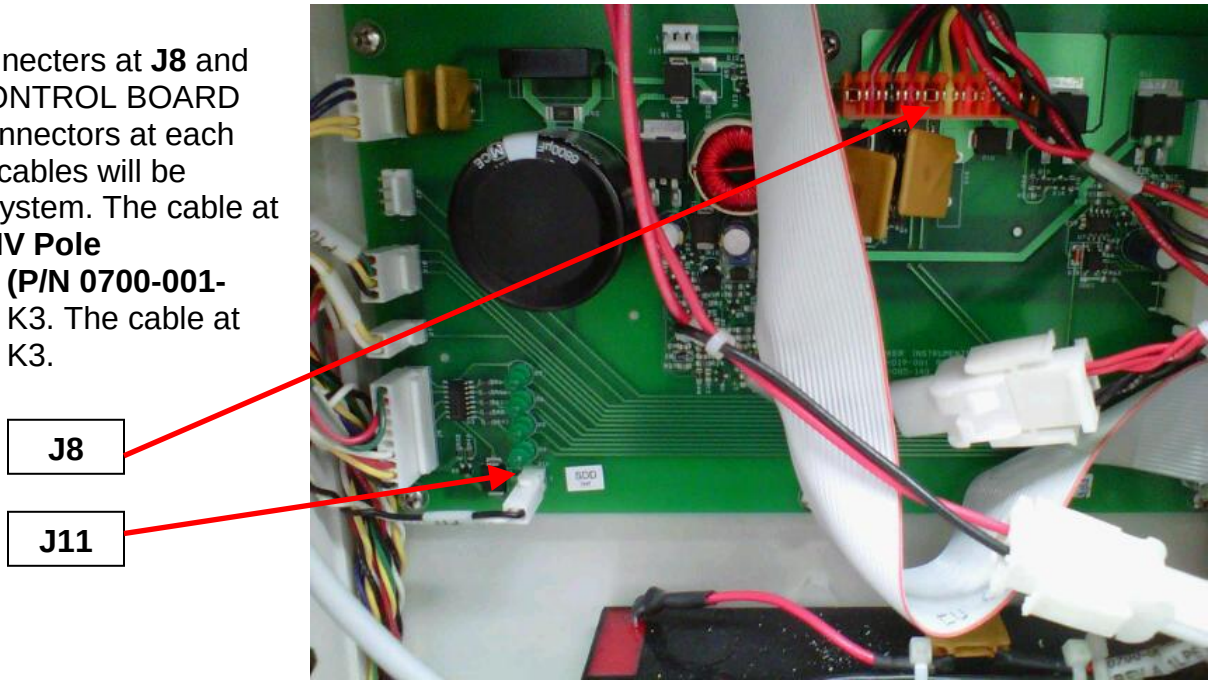


11. Ensuring all loose wires are clear, pull TRANSFORMER ASSY out of chassis.

12. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent to access **Power Control Board PCB (P/N 0712-019-001)**

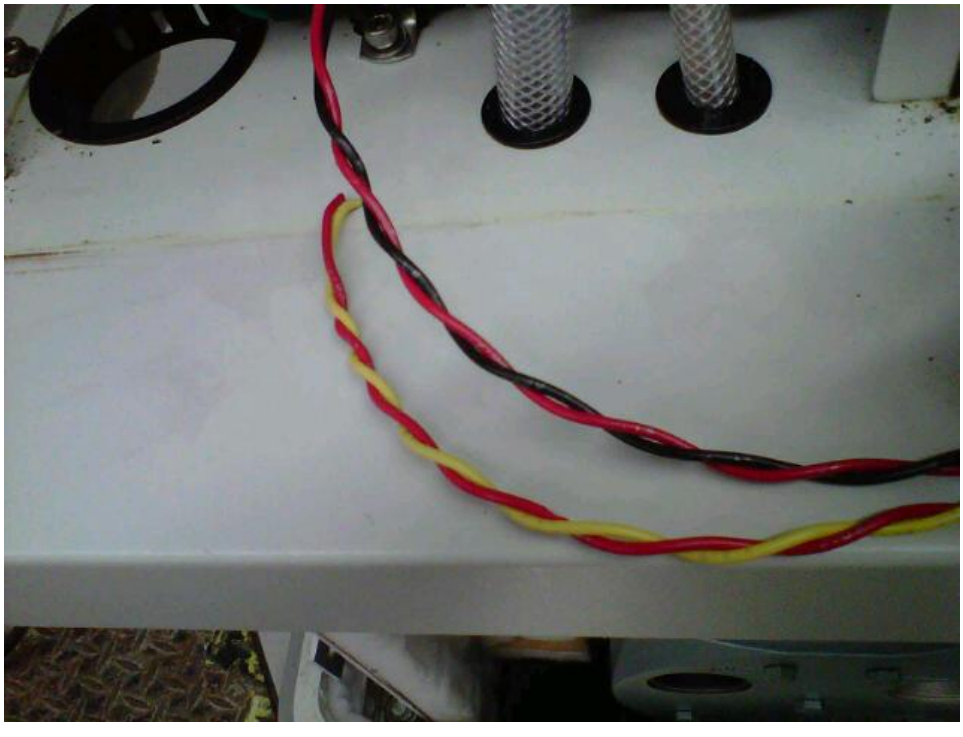


13. Remove connecters at **J8** and **J11** on POWER CONTROL BOARD PCB. Cut off the connectors at each end of **J8** as these cables will be removed from the system. The cable at **J8** connects to the **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** and RELAY K3. The cable at **J11** runs to RELAY K3.

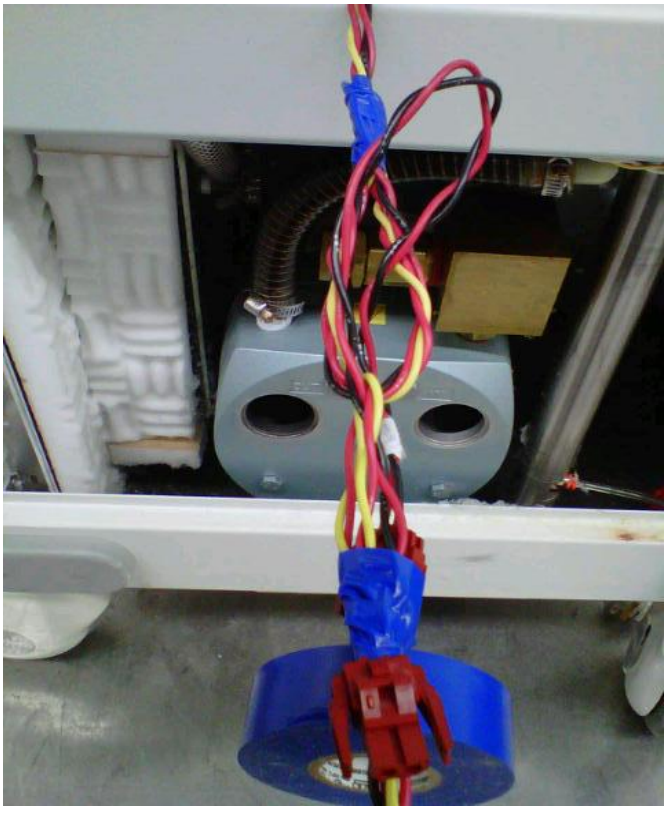


14. After cutting off connector end of **J11**, remove the Black and White wires that were connected at **J11** from the entire Rover Main Wiring harness.

15. After cutting off connector end of **J8**, remove all wires that were connected at **J8** from the system except for the Red and Yellow and Red and Black wires.



16. Install **IV Pole Pneumatics Panel Cable Assy (P/N 0700-001-125)** by taking the Red and Yellow and Red and Black wires that remain from connector that was at **J8** and making a loop out of those two cables. Loop connectors from the IV POLE PNEUMATICS PANEL CABLE ASSY for the IV Pole Compressor/ Solenoid through Red and Yellow and Red and Black wire loop and tape connectors **THOROUGHLY** to protect from damage when pulling through CHASSIS WIRE GROMMET.



17. Pull on Red and Yellow and Red and Black wires underneath Chassis until you have drawn the cables through the grommet with enough slack to attach to the IV Pole Compressor and Solenoid. Once the connectors are inside the chassis, un-tape connectors and discard Red and Yellow and Red and Black wires.

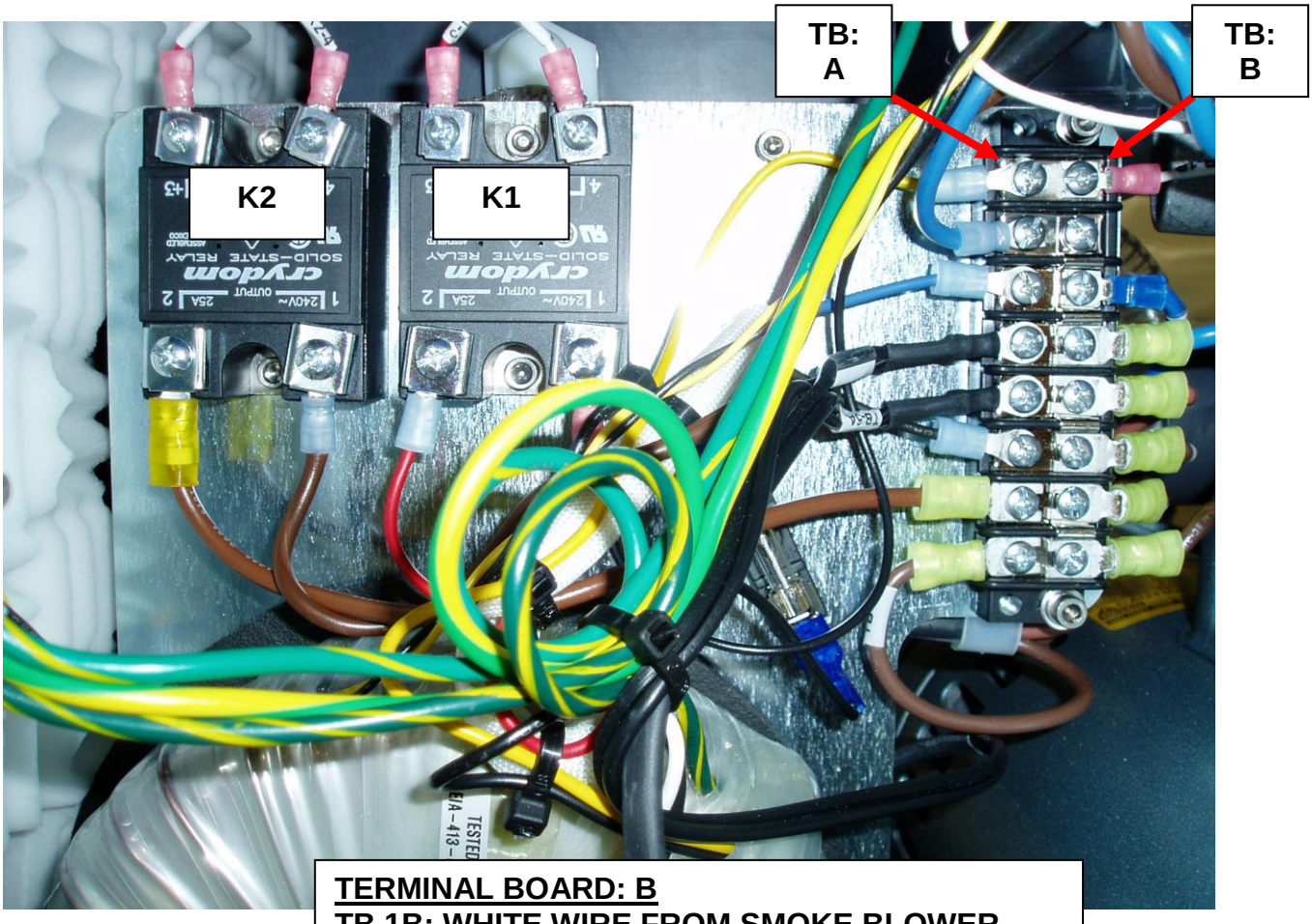
18. Remove Macerator Motor cable from the system (if present).

19. Zip-tie all cabling to present a neat appearance.

20. Reconnect **Pneumatic Compressor Assy (P/N 0700-004-055Q)** connector to **8B** (red/black wire), reconnect **Pneumatic Solenoid Assy (P/N 0700-004-055Q)** connector to **8A** (red/ yellow wire) connections.

21. Place (new) TRANSFORMER ASSY in chassis and secure to chassis floor with the four SOCKET HEAD CAP SCREWS that were removed earlier.

22. Place all connections on Terminal Board as shown below:



TERMINAL BOARD: B
TB 1B: WHITE WIRE FROM SMOKE BLOWER
TB 4B: BLUE WIRE FROM POWER SWITCH
TB 8B: BROWN WIRE FROM POWER SWITCH

TERMINAL BOARD: A
TB 2A: BLUE WIRE FROM VACUUM PUMP
TB 4A: BLACK WIRE (X2) TO EXHAUST FANS
TB 5A: BLACK WIRE (X2) TO EXHAUST FANS

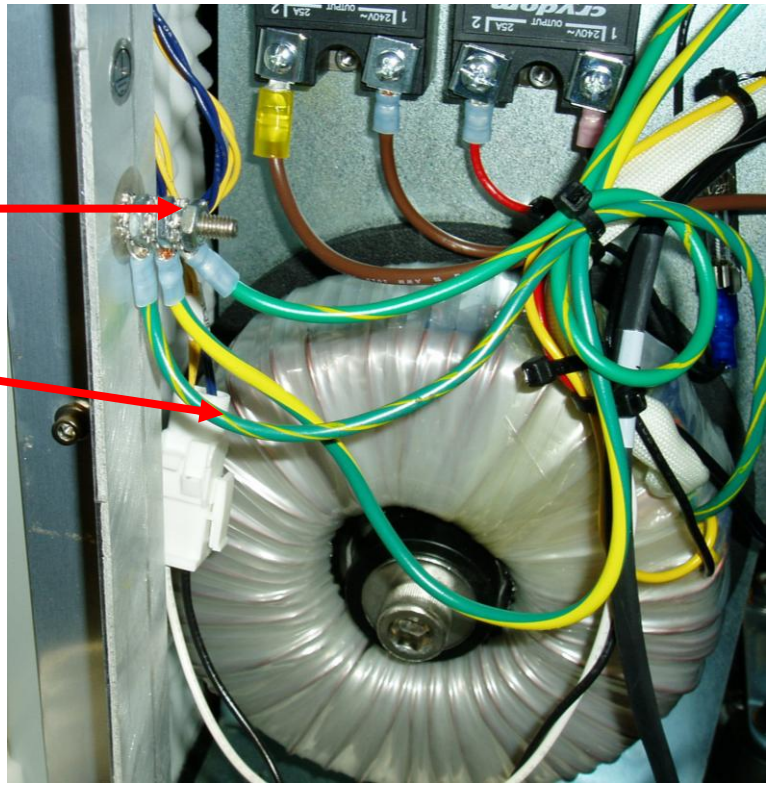
K2 CONNECTIONS
PIN 1: BROWN WIRE FROM VACUUM PUMP
PIN 3: RED WIRE TO J9 AT PWR CNTRL PCB
PIN 4: GREEN WIRE TO J9 AT PWR CNTRL PCB

K1 CONNECTIONS
PIN 1: BLACK WIRE FROM SMOKE BLOWER
PIN 3: RED WIRE TO J9 AT PWR CNTRL PCB
PIN 4: WHITE WIRE TO J9 AT PWR CNTRL PCB

23. Reconnect **ILJ4** and the three ground connections to the Earth Ground pin as shown below.

Earth Ground Pin

ILJ4



24. Secure RIGHT SIDE PANEL ASSY.

25. Perform electrical safety tests per procedure for Testing.

26. Perform functional tests per procedure for Functional Testing.

27. Return to service.

NOTE: Ensure Star Washers are on both sides of each connector and each nut is tightened before starting the next wire.

Wires MUST be in this order:
Star Washer/ Transformer Ground Wire/Star Washer/ Nut
Star Washer/ Vacuum Pump Ground Wire/Star Washer/ Nut
Star Washer/ Ground cable from Conduit/Star Washer/ Nut

REMOVAL AND REPLACEMENT POWER RELAY AND TIME DELAY RELAY

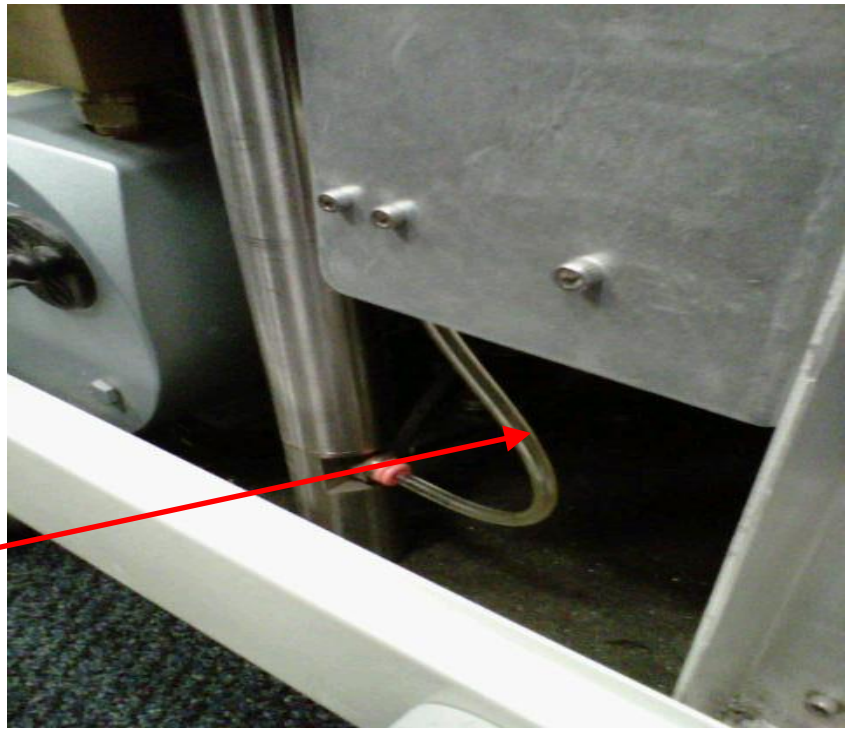
NOTE: ENSURE THERE IS NO POWER TO THE SYSTEM BY UNPLUGGING POWER CORD BEFORE PROCEEDING.

1. Remove **Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side which has the **IV Pole (P/N 0700-001-455)**.

2. Remove the **IV Pole Pneumatics Panel (P/N 0700-001-070Q)** by following the steps below:

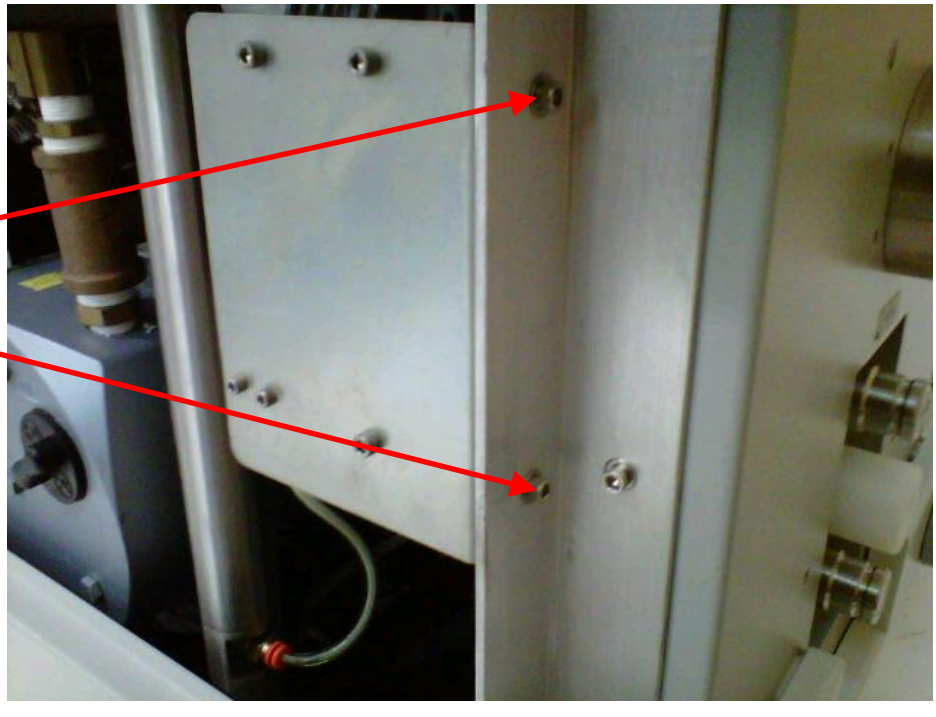
a. Remove **Pneumatic Tubing (P/N 0060-008-000 8in)** at base of IV POLE by depressing the Quick Release button and pulling the tubing out.

PNEUMATIC TUBING



b. Remove IV POLE PNEUMATICS PANEL to the right of IV POLE by removing two Socket Head Cap Screws (P/N using 9/64 Allen Key.

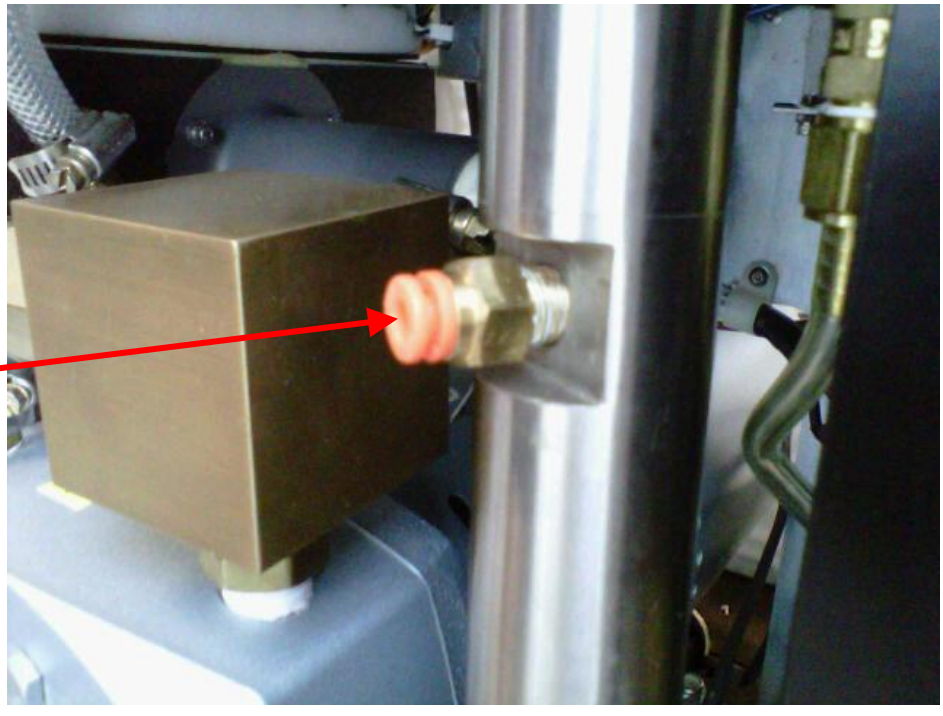
SOCKET HEAD CAP SCREW



Note: Once the Socket Head Cap Screws are removed, ensure the IV POLE PNEUMATICS PANEL doesn't fall to the Chassis floor as there are two Connectors that could be damaged if this happens.

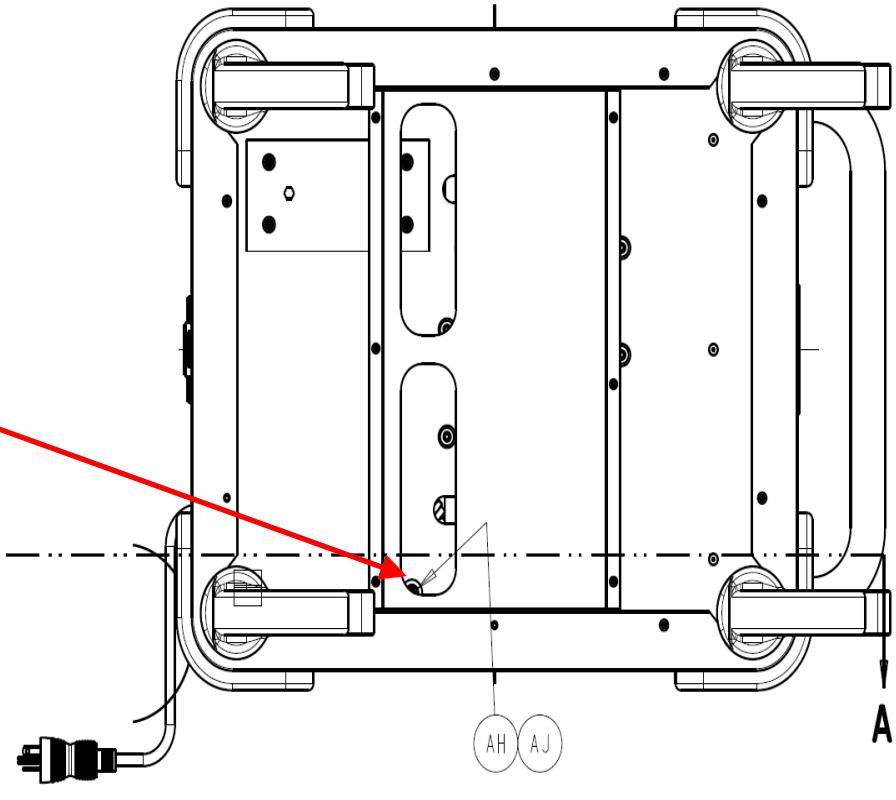
c. Remove brass PNEUMATIC FITTING at base of IV POLE <u>using 1/2in Deep-Well Socket</u>, ensure not to damage the fitting.

PNEUMATIC FITTING



d. Remove Socket Head Bolt from very bottom of ROVER that holds the IV POLE in place <u>using 1/4in Allen Key</u>.

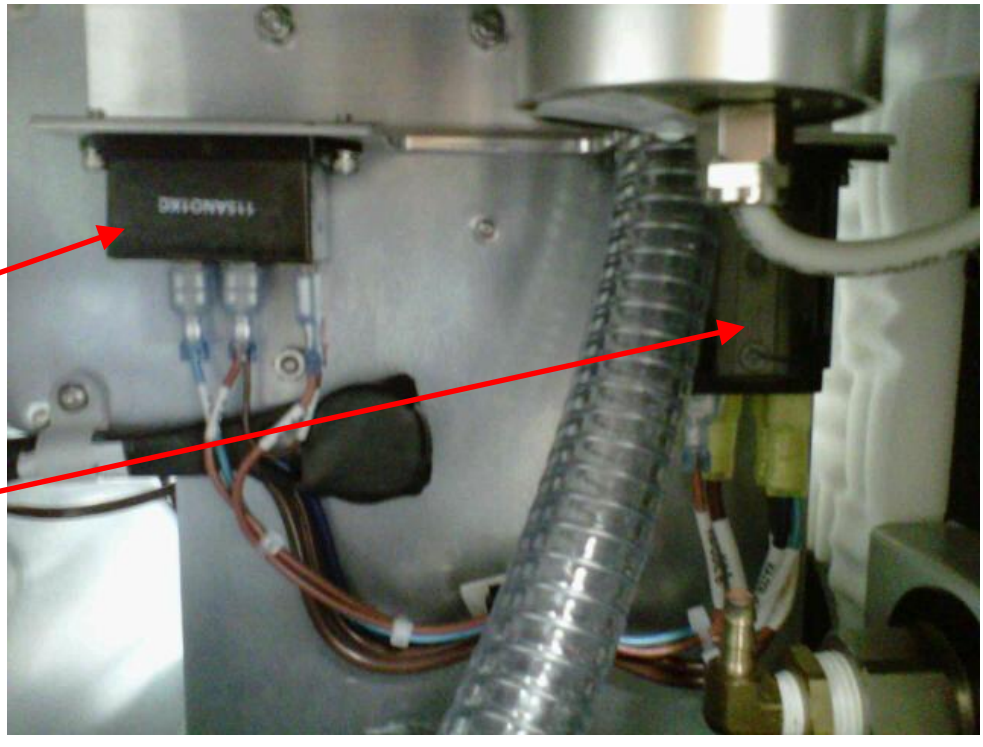
Note: To access 1/4in Bolt underneath Rover, there are openings underneath the PLENUM COVER that covers the COOLING FANS. The bolt can be accessed through opening relative to the IV POLE's placement.



3. Remove **I.V. Pole (P/N 0700-001-455)**

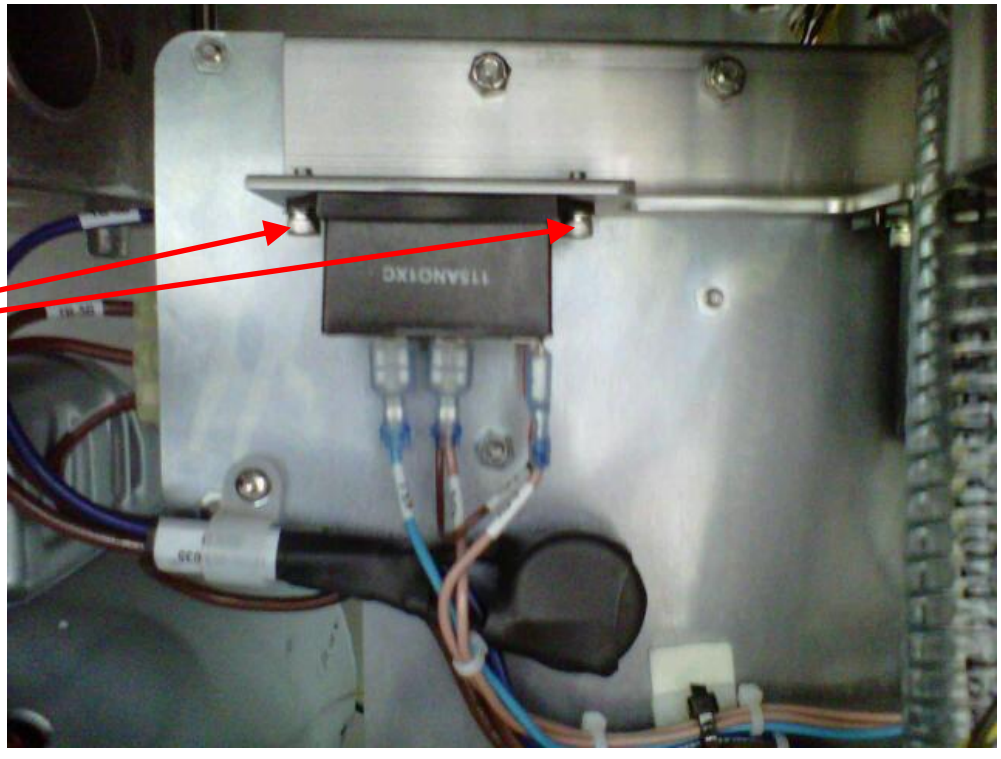
4. Remove both **Female Quick Disconnect Couplings (P/N 0700-001-223)** using ring-clamp pliers from the rear (side opposite the handle) of the ROVER by removing the **Retaining Rings (P/N 0028-313-000)**. Once the rings are removed, the **Coupling Outer Spacers (P/N 0700-001-231)** and the **Wave Springs (P/N 0014-108-000)** will come off and the couplers will push inside the ROVER.

4. Inside Rover, position the FEMALE QUICK DISCONNECT COUPLINGS so that you have access to the **K5 Time Delay Relay (P/N 0700-001-038)** and **K4 Power Relay (P/N 0700-001-037)**.



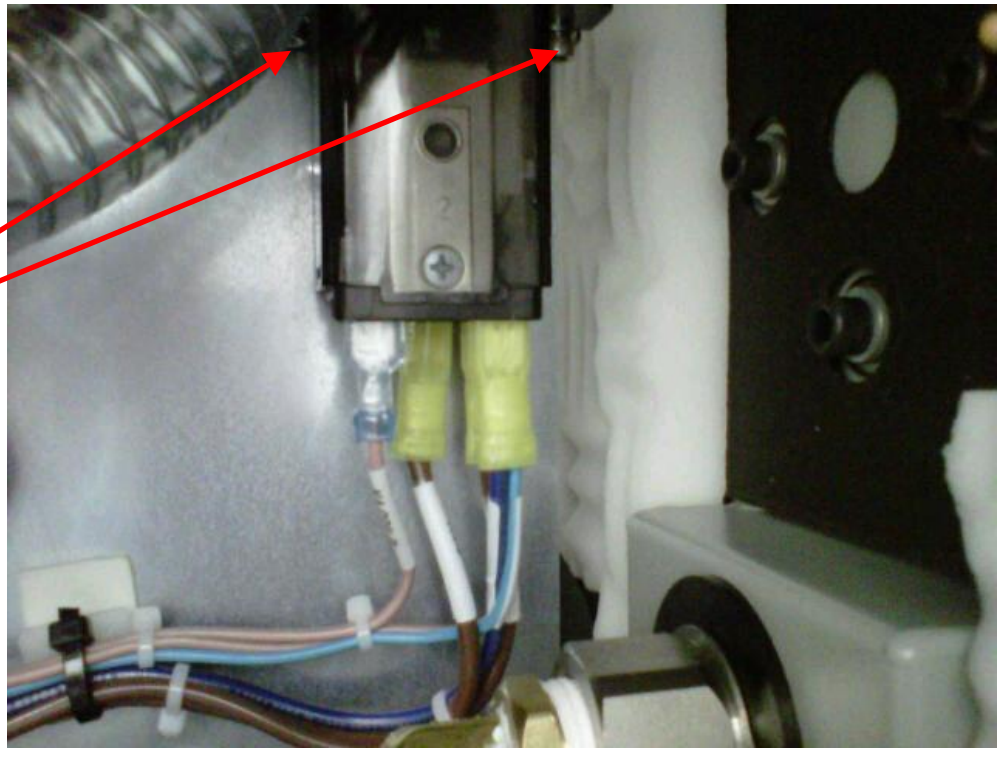
5. Inside Rover, remove the K5 TIME DELAY RELAY by removing the two **Socket Head Cap Screws (P/N 0004-525-000).**

SOCKET HEAD CAP SCREWS

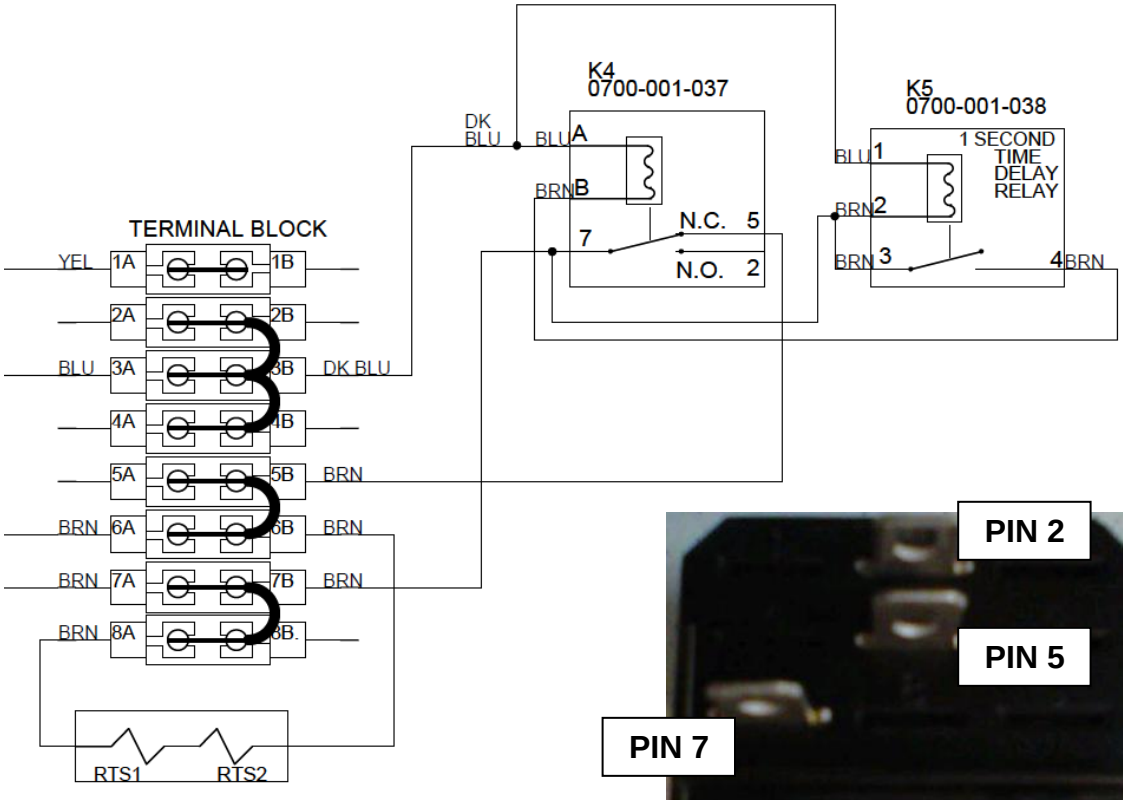


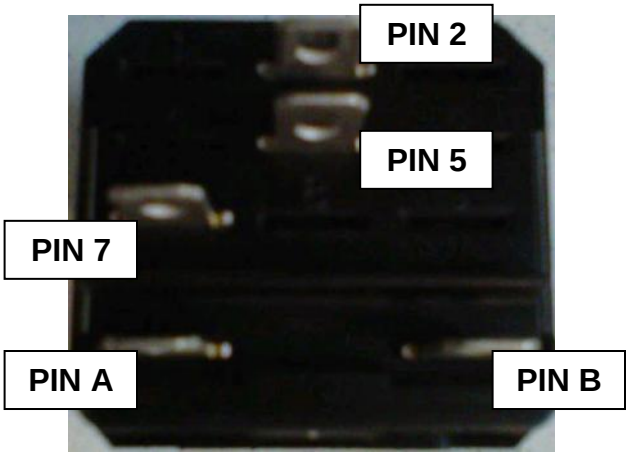
6. Inside Rover, remove the K4 POWER RELAY by removing the two **Socket Head Cap Screws (P/N 0004-525-000).**

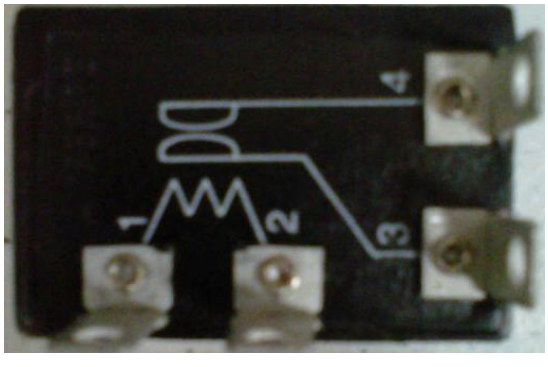
SOCKET HEAD CAP SCREWS



7. Re-install K4 POWER RELAY and K5 TIME DELAY RELAY. To ensure the connections are correct, reference below:







K4 CONNECTIONS

PIN A: DUAL DK BLUE WIRE CONNECTION FROM TB3B/ TIME DELAY RELAY PIN 1

PIN B: BROWN WIRE FROM TIME DELAY RELAY PIN 4

PIN 2: OPEN---

PIN 5: BROWN WIRE FROM TB5B

PIN 7: DUAL BROWN WIRE CONNECTION FROM TB7B/ TIME DELAY RELAY PIN 2

K5 CONNECTIONS

PIN 1: SINGLE DK BLUE WIRE CONNECTION FROM POWER RELAY PIN A

PIN 2: DUAL BROWN WIRE LOOPED FROM PIN 2-3 OF TIME DELAY RELAY AND POWER RELAY PIN 7 TB7B/ TIME DELAY RELAY PIN 2

PIN 3: SINGLE BROWN WIRE FROM TIME DELAY RELAY PIN 2

PIN 4: SINGLE BROWN WIRE FROM POWER RELAY PIN B

8. Reassemble unit in reverse order.

9. Perform electrical safety tests per procedure for Testing.

10. Perform functional tests per procedure for Functional Testing.

11. Return to service.

DOCKING STATION

The Docking Station consists of a **Power Supply Panel Assy (P/N 0700-004-020)**, **Pneumatics Panel Assy (P/N 0700-004-050Q), Sprinkler Valve Assy (P/N 0700-004-475Q), Actuator Assy (P/N 0700-005-070Q), Detergent Injector Pump Assy (P/N 0700-005-100Q), Optical Switch Assy x2 (P/N 0700-004-240), Electromagnet Assy (P/N 0700-004-220) and Male Quick Disconnect Coupling x2 (P/N 0700-004-472).**

Function: The Docking Station is going to provide the Neptune System with the ability to offload surgical fluid via a closed system. The Docker connects to the Rover Pneumatically via an Actuator Assy that feeds to Male Quick Disconnect Couplings into the Rover's 2 Female Quick Disconnect Couplings. Once connected, the Offload Pump in the Docker will begin to operate drawing the fluid from the Rover Canister Assy. Once all fluid has been removed from the Canister, the Docker will begin to rinse the Canister. During the rinse cycle, the Docker will dispense detergent into the water line. The water line will then carry the detergent via flow into the Canister for aid in breaking down the fluid collected inside the Canister. During the rinsing process, the Offload pump continues to run to create a flow-through type effect inside the Canister. Once the rinse and wash cycles have completed, the Offload Pump will shut off and the Prefill cycle begins. A Prefill is required after the Docking sequence for calibration purposes in the Rover.

Troubleshooting Docking Station: There are four Docking Errors that can be displayed on the Rover after an unsuccessful Docking cycle. The errors are related to specific issues listed below:

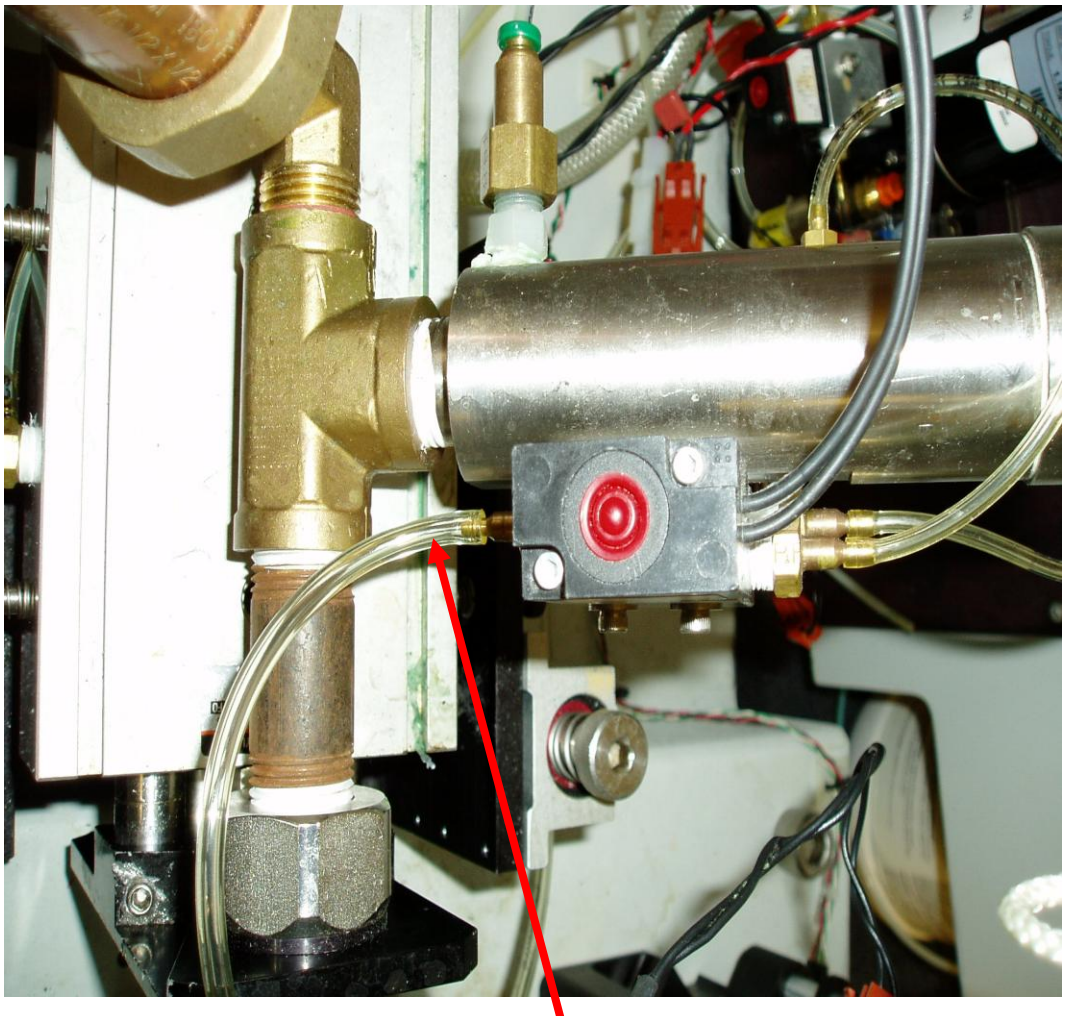
Potential Symptoms/ Resolutions:

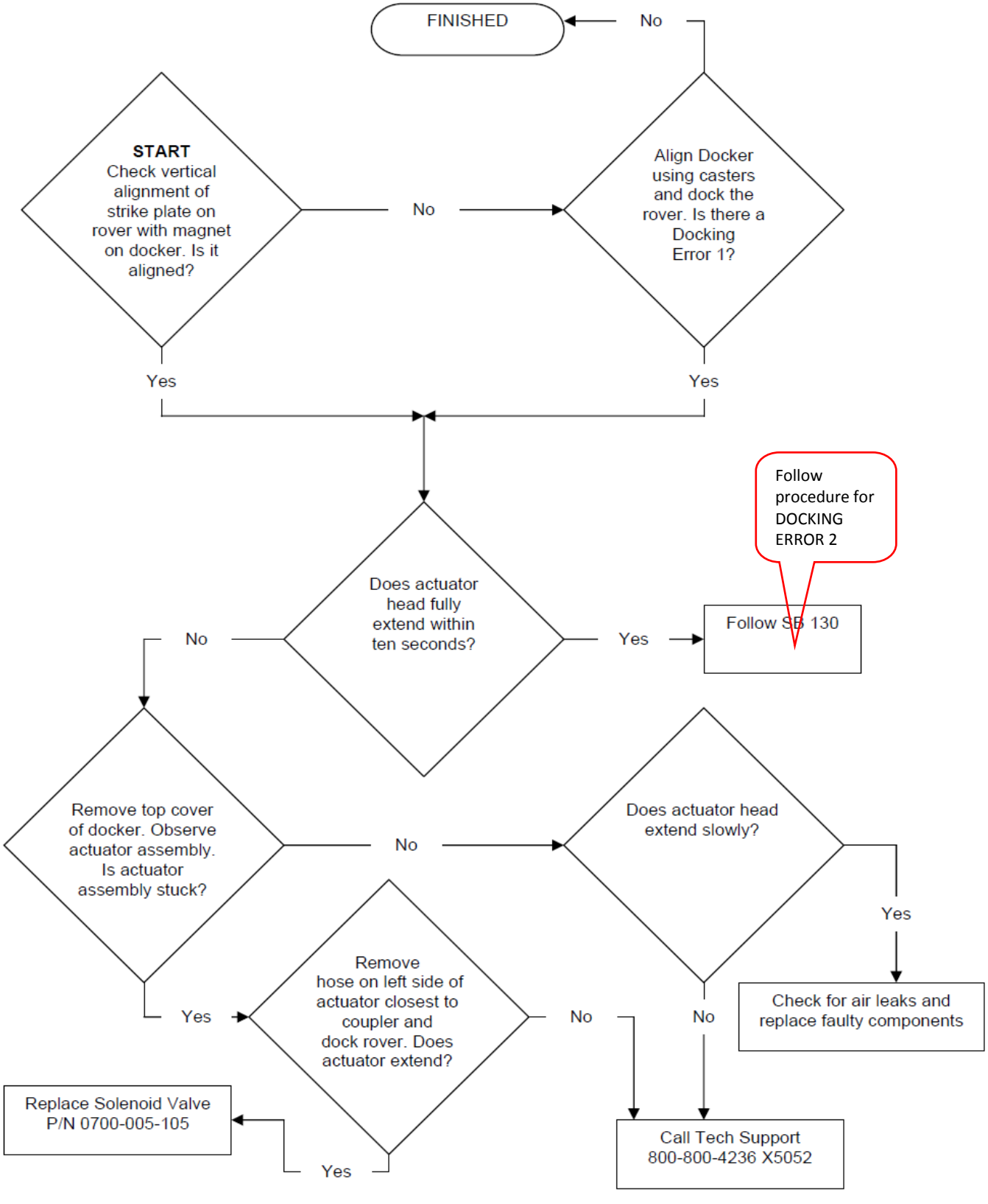
- **Docking Error 1**- This occurs when the prong on the Actuator Assy does not make contact with the Precision Switch in the Rover within 10 seconds of commencement of the docking sequence. This may be caused by misalignment between Rover and Docker, insufficient pneumatic pressure, or the Solenoid Valve on the Detergent Injector Pump Assy not exhausting. If Docking Error 1 is shown on the LCD Screen, reference associated flow chart for *Docking Error 1*.
- **Docking Error 2** – The Precision Switch is normally open prior to docking, and closes on contact with the Actuator Prong. This is what indicates Rover and Docker have successfully connected. If the switch is stuck in the shut position an error occurs because the Docker has no way of verifying the connection has been made. If Docking Error 2 is displayed on the LCD screen of the Rover, follow procedure to *Remove and Replace Rover Precision Switch.*
- **Docking Error 3** – The Rover is powered by the internal battery during the docking cycle. When power is lost during the docking sequence, Docking Error 3 occurs. Power loss to the Rover during Docking can be caused by an intermittent connection or by a battery that has been drained of its charge. To correct situation, plug Rover into wall outlet, turn on main Power Switch and let unit charge for 6 hours. Check battery for maximum charge of 12VDC after charge period. If battery is not charged to capacity, remove and replace.
- **Docking Error 4** – occurs when there is a communication loss between the Docker and Rover during the docking cycle. There are two main reasons for this error message; power loss to the Docker during the process, or a malfunction of the IR Transceiver LEDs. Power loss can be caused by a bad Power Supply or a tripped Docker circuit breaker. The circuit breaker normally trips when the Offload Pump draws excessive current. The Impeller in the pump may swell and cause the motor to seize. The increased current draw trips the circuit breaker and shuts down the Docker. A malfunction of the IR Transceiver LEDs may be caused by physical obstruction of the transmission signal. Foreign objects such as dust, lint, and fluids may accumulate on the LEDs and disrupt communications between Rover and Docker. This may also be caused by a severed transmission line leading to the IR Transceiver Board.
- **Docker not accepting Rovers** – to begin a Docking cycle, the Rover is pushed up to the Docker and the gray bumpers of the Rover contact the Docker Cams (black) which opens the center doors and exposes the Actuator Assy with couplings attached. When the Cams are depressed, they activate Optical Switches on each corner in which they are attached. The activation of the Optical Switches allows the Electromagnet to receive voltage which in turn, attracts the Strike Plate of the Rover in preparation for the Pneumatics in the Docker to extend the couplings. If the Electromagnet doesn't engage and hold the Strike Plate the Rover will be pushed away when the Couplings are extended. If this situation occurs, locate the faulty Optical Switch and replace using procedure for *Removal and Replacement of Optical Switch Assy.*

DOCKING ERROR 1

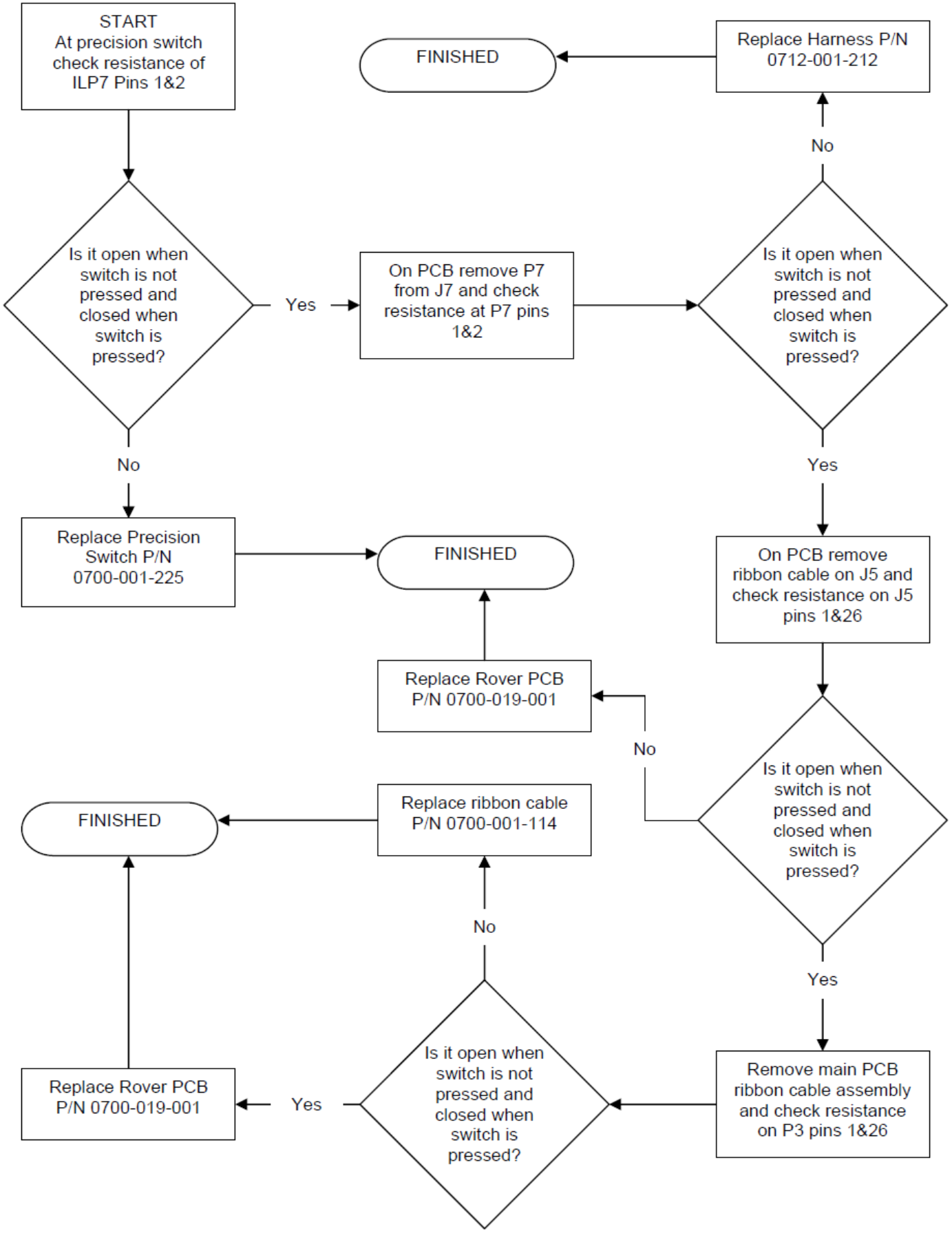
1. In 700-5 Detergent Dockers only, to determine if the problem is caused by the **Detergent Injector Pump Assy (P/N 0700-005-100Q)** or the **Pneumatics Panel Assy (P/N 0700-004-050Q)**, disconnect **Pneumatic Tubing (P/N 0060-008-000)** from input into **Injector Pump Solenoid (P/N 0700-005-105Q)**.

2. Clamp end of tubing and Dock Rover. If the Docking cycle runs with no errors, the DETERGENT INJECTOR PUMP SOLENOID could be the issue. If the Docking cycle did not run completely, the PNEUMATICS PANEL may have an issue.

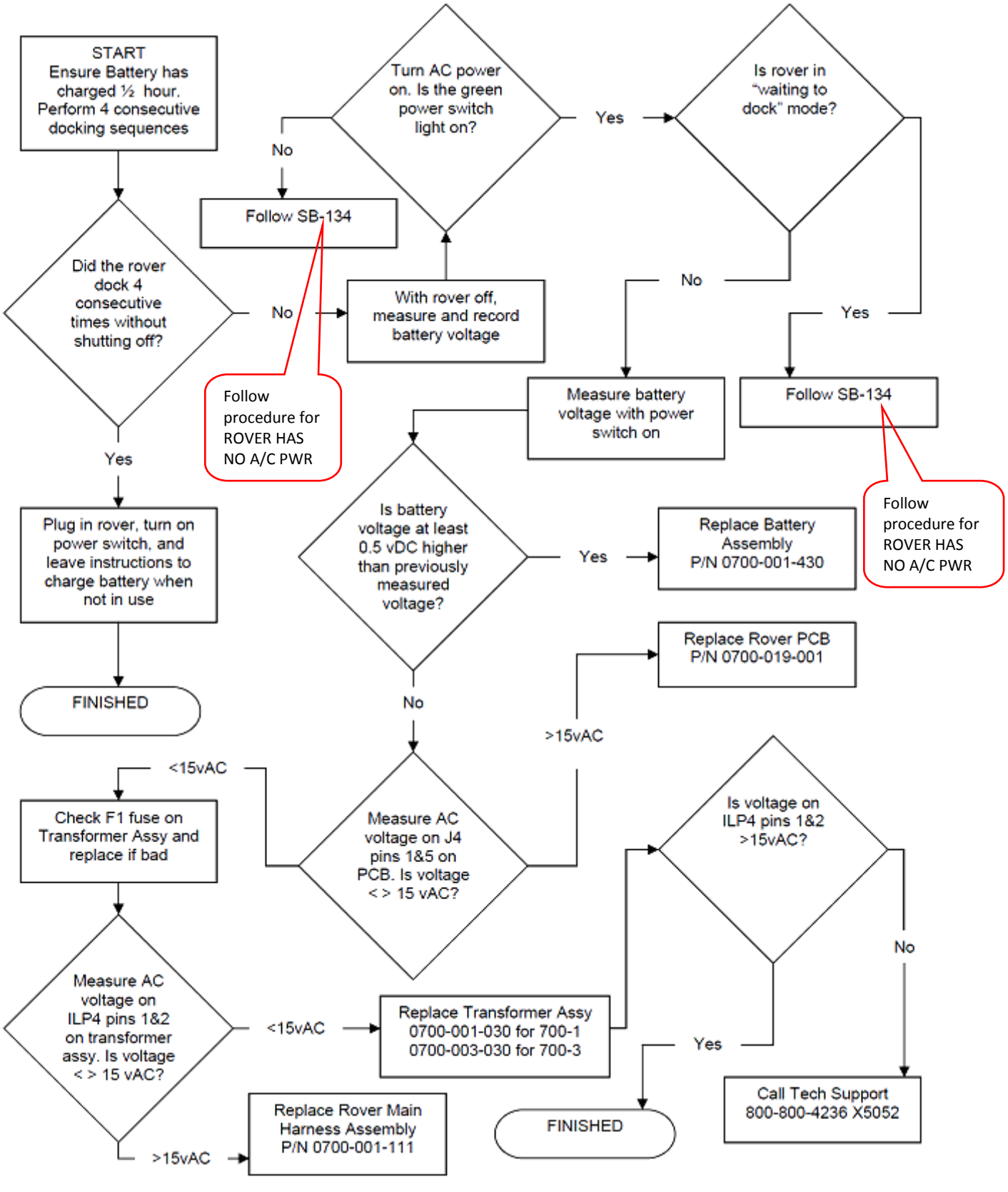



FINISHED
No
START
Check vertical alignment of strike plate on rover with magnet on docker. Is it aligned?
No
Align Docker using casters and dock the rover. Is there a Docking Error 1?
Yes
Yes
Follow procedure for DOCKING ERROR 2
Does actuator head fully extend within ten seconds?
No
Yes
Follow SB 130
Remove top cover of docker. Observe actuator assembly. Is actuator assembly stuck?
No
Does actuator head extend slowly?
Yes
Check for air leaks and replace faulty components
Yes
Remove hose on left side of actuator closest to coupler and dock rover. Does actuator extend?
No
No
Replace Solenoid Valve P/N 0700-005-105
Yes
Call Tech Support 800-800-4236 X5052

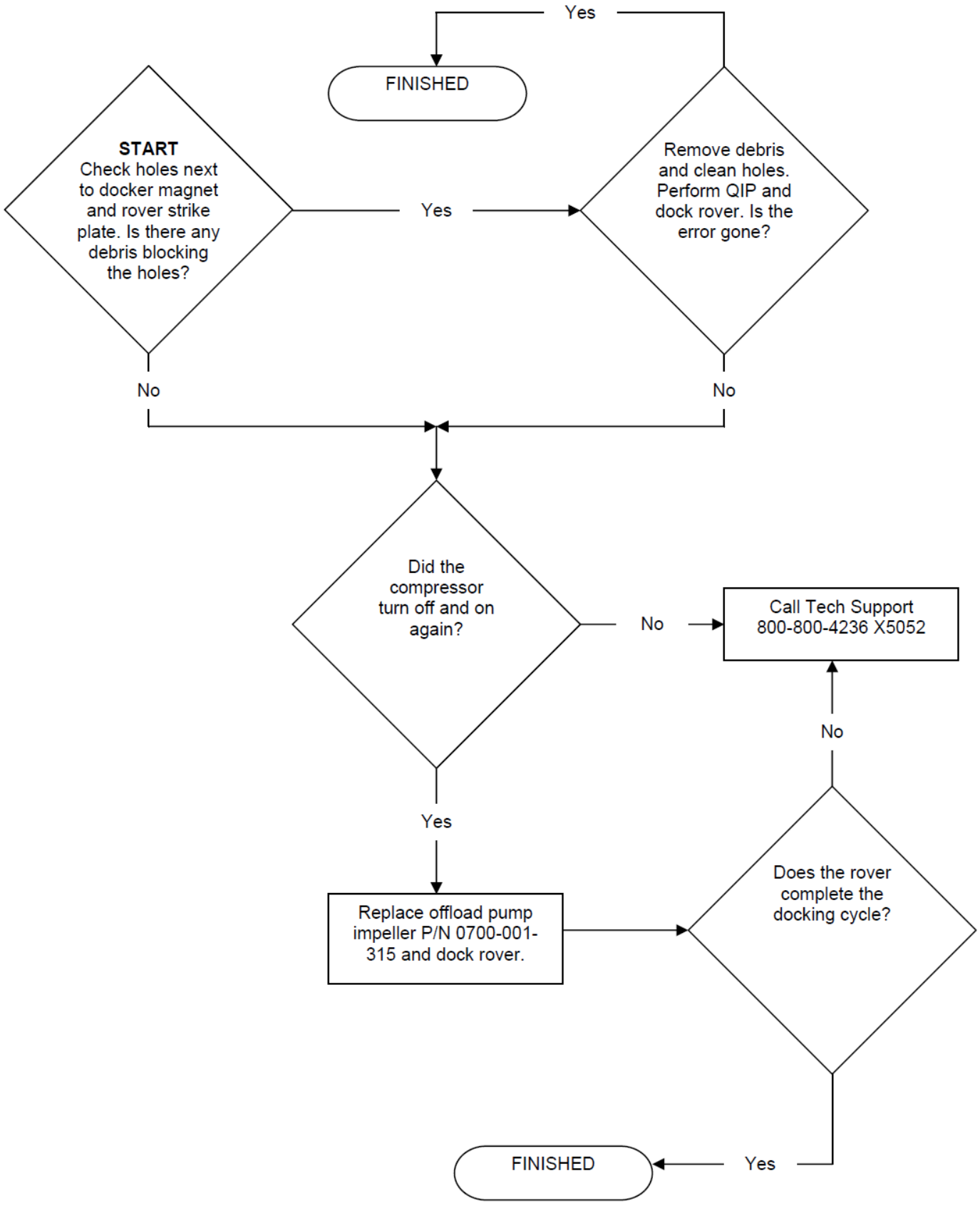
DOCKING ERROR 2 (Coupled Switch is closed before docking cycle begins)



DOCKING ERROR 3



DOCKING ERROR 4

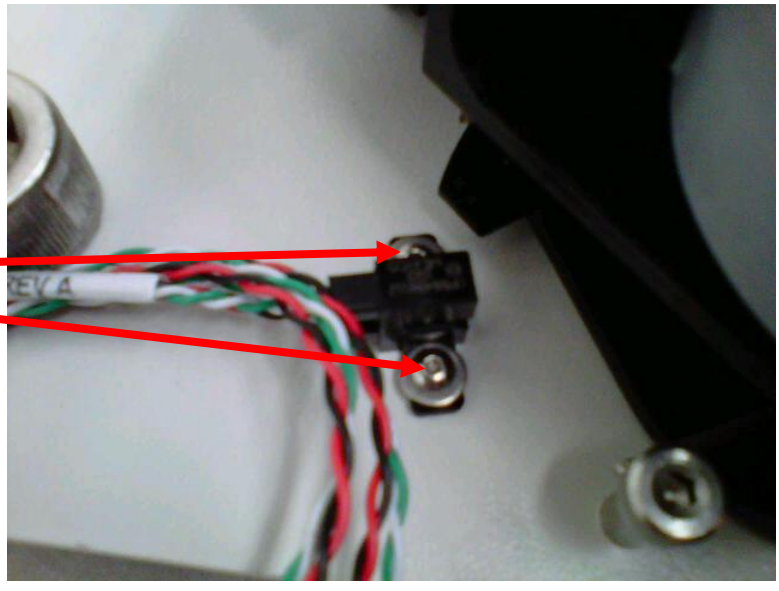


REMOVAL AND REPLACEMENT OF OPTICAL SWITCH ASSY

Note: Ensure A/C Power has been turned off before proceeding.

1. To remove **Optical Switch Assy (P/N 0700-001-240)** from the Left Side Door or Right Side Door area, unthread the two **Button Head Cap Screws (P/N 0004-295-000)** using a 1/16 Allen Key or equivalent.

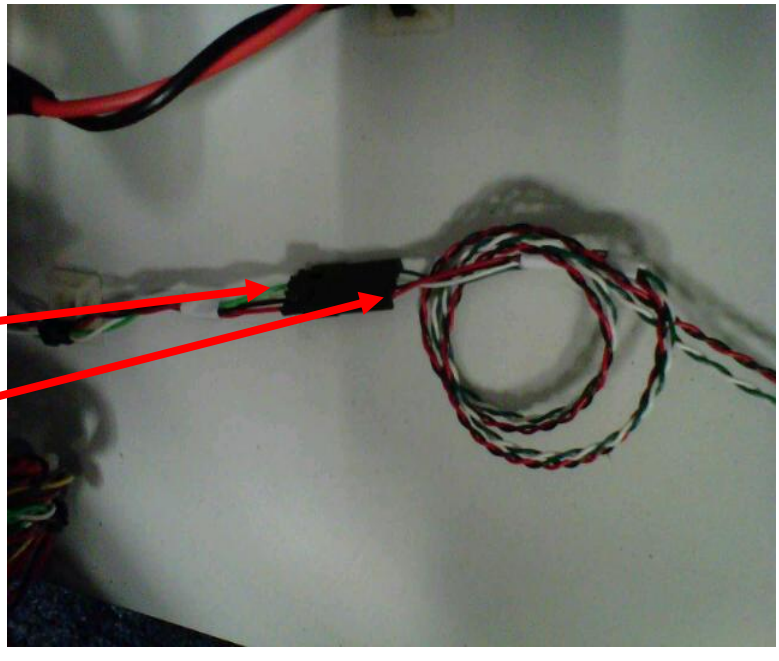
BUTTON HEAD CAP SCREWS



2. Disconnect the OPTICAL SWITCH ASSY from the **Optical Switch Harness Assy (P/N 0700-004-112)**.

OPTICAL SWITCH HARNESS ASSY

OPTICAL SWITCH ASSY



3. Install new OPTICAL SWITCH ASSY.

4. Perform electrical safety tests per procedure for Testing.

5. Perform functional tests per procedure for Functional Testing.

6. Return to service.

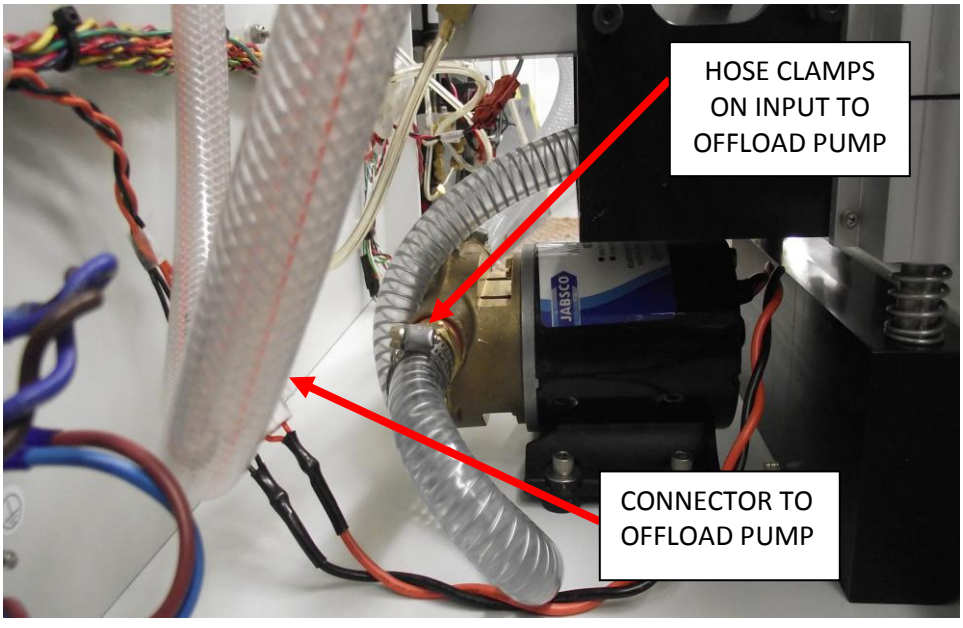
REMOVAL AND REPLACEMENT OF OFFLOAD PUMP ASSY

Note: Ensure A/C Power has been turned off before proceeding.

1. Disconnect connector to **Offload Pump Assy (P/N 0700-004-080Q)**.

2. Place towels underneath OFFLOAD PUMP ASSY before proceeding to the next step.

3. Loosen the four **Hose Clamps (P/N 0058-325-000)** to the input Wire Reinforced tubing and output Mesh Reinforced tubing of the OFFLOAD PUMP ASSY using a Phillips Screwdriver or equivalent and remove both hoses.



4. Remove the four **Socket Head Cap Screws (P/N 0004-542-000)** from the OFFLOAD PUMP ASSY SOUND MOUNTS using 3/16 Allen Key or equivalent and retain bolts for installation of new pump. The nuts underneath retain the screws that secure the pump to the chassis floor.

5. Install new OFFLOAD PUMP ASSY.

6. Reconnect the input Wire Reinforced tubing and output Mesh Reinforced tubing to the Offload Pump.

7. Reconnect connector to the pump and perform electrical safety tests per procedure for Testing.

8. Perform functional tests per procedure for Functional Testing.

9. Return to service.

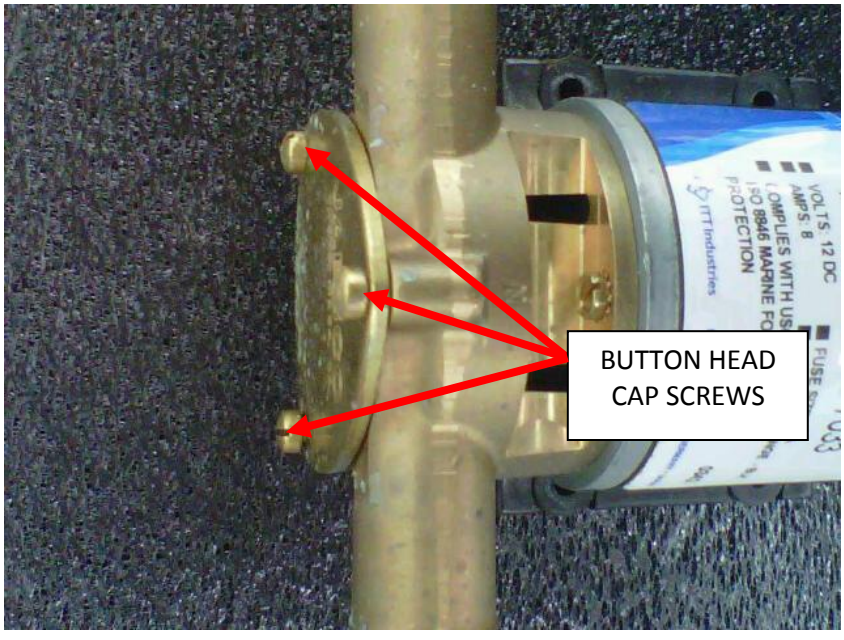
REMOVAL AND REPLACEMENT OF OFFLOAD PUMP IMPELLER ASSY

Note: Ensure A/C Power has been turned off before proceeding.

1. Access **Offload Pump Assy (P/N 0700-004-080Q)** from top of Docker.

2. Place towels underneath OFFLOAD PUMP ASSY before proceeding to the next step.

3. Loosen the three BUTTON HEAD CAP SCREWS using a Slotted Screwdriver or equivalent and remove plate leaving **Impeller (P/N 0700-001-315)** exposed.



4. Remove IMPELLER using Angled Needle Nose Pliers or equivalent. Remove O-Ring as well.

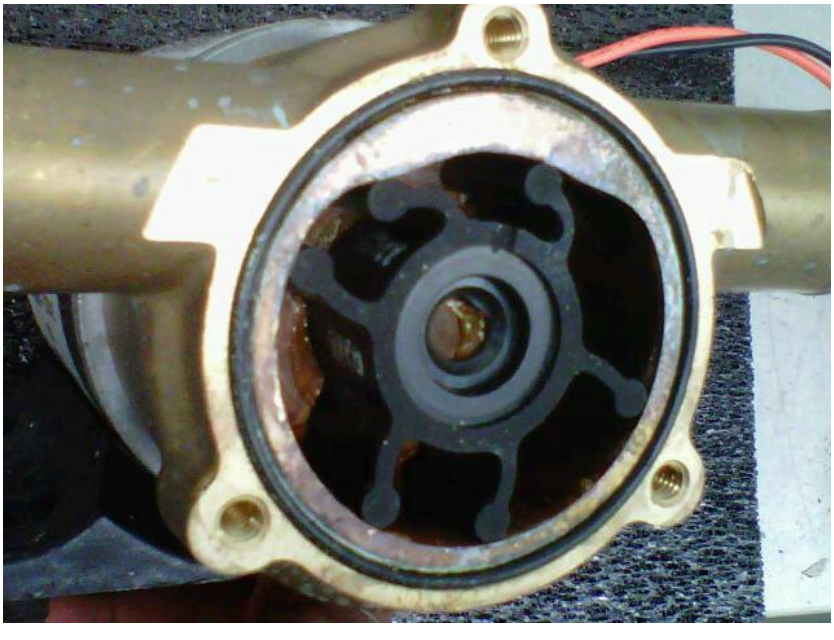
5. Replace IMPELLER and O-RING.

6. Reinstall plate.

7. Perform electrical safety tests per procedure for Testing.

8. Perform functional tests per procedure for Functional Testing.

9. Return to service.



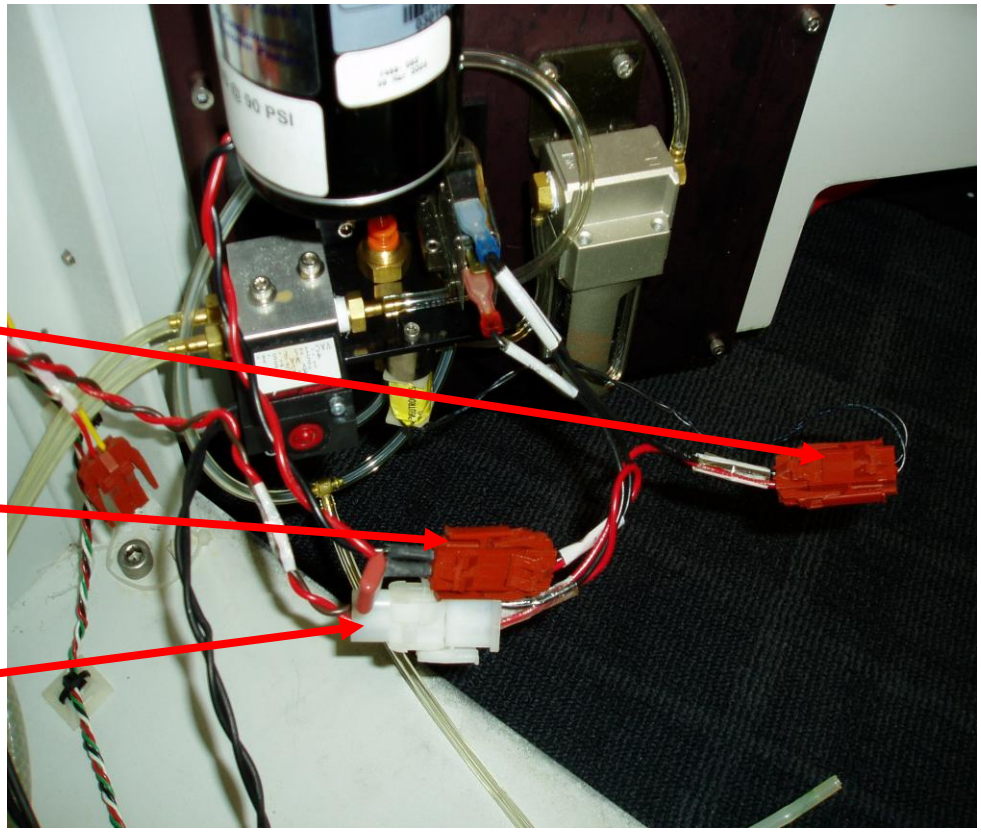
REMOVAL AND REPLACEMENT OF DOCKER PNEUMATICS PANEL ASSY

1. Disconnect all connections from the **Pneumatics Harness Assy (P/N 0700-004-116)** connected to the Pressure Switch on the Pneumatics panel.

Connector from the Unloader Solenoid

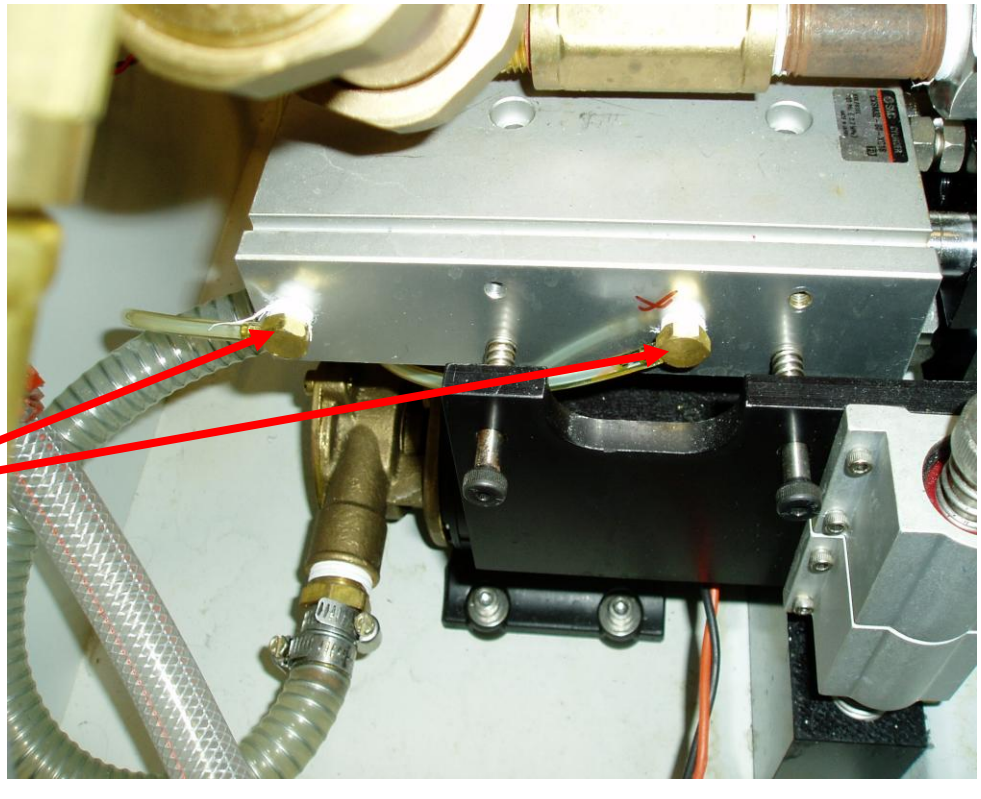
Connector from Compressor

Connector from Pneumatic Harness Assy



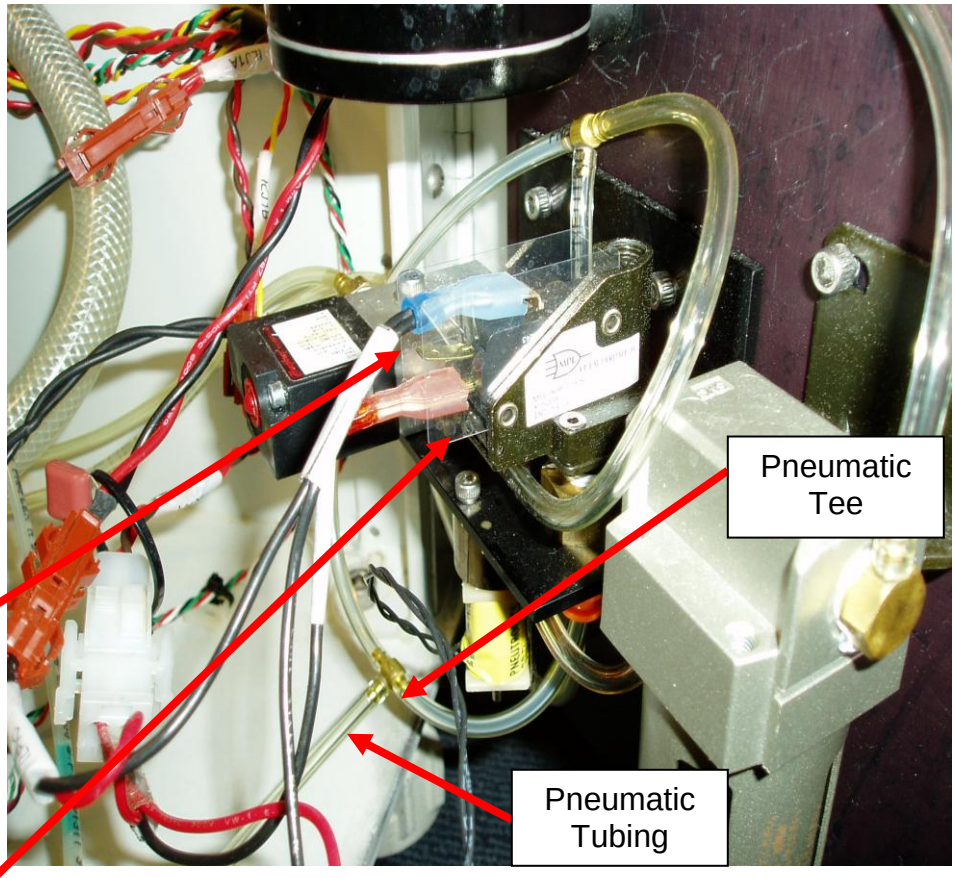
2. Disconnect the two Pneumatic connections originating from the **Pneumatic Valve Assy (P/N 0700-004-105Q)** on the **Pneumatics Panel Assy (P/N 0700-004-050Q)** at the two **Pneumatic Elbow Fittings (P/N 0048-193-000)** on the **Actuator Assy (P/N 0700-005-070Q)**.

PNEUMATIC ELBOW FITTINGS



3. Remove the six **Socket Head Cap Screws (P/N 0004-525-000)** that hold the PNEUMATICS PANEL ASSY to the door using 9/64 Allen Key or equivalent and retain screws for new panel.

4. Remove PNEUMATICS HARNESS ASSY from the **Pressure Switch Assy (P/N 0700-004-053)** and retain as it will be reinstalled on the new Panel.



Blue connector attaches to the top spade terminal on PRESSURE SWITCH ASSY

Red connector attaches to the bottom spade terminal on PRESSURE SWITCH ASSY

5. Retain **Pneumatic Tee (P/N 0048-185-000)** and **Pneumatic Tubing (P/N 0060-008-000 in 1inch increments)** as shown above. **(700-5 only)**

6. Re-install new panel to the door.

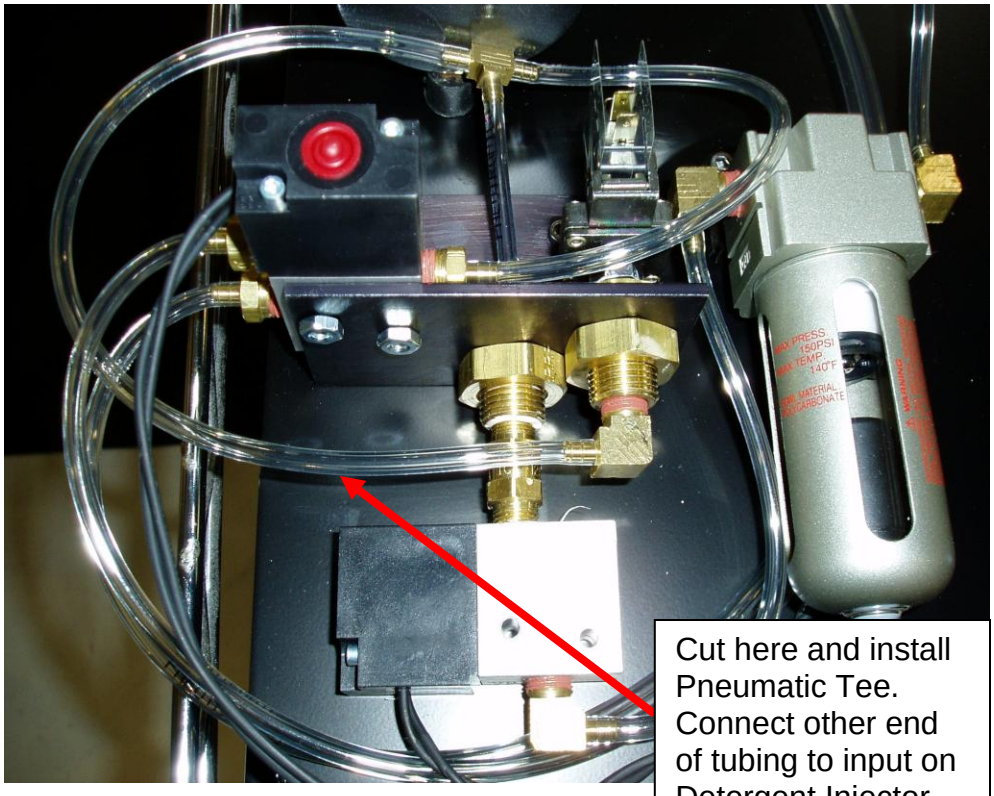
7. Re-install PNEUMATICS HARNESS ASSY as shown above.

8. Reconnect the PNEUMATICS PANEL as follows:

a. **PLUG ILP7A FROM WIRE HARNESS INTO ILJ7A FROM DOCKER.**
b. **CONNECT ILJ1A TO THE BLACK SOLENOID UNDERNEATH THE COMPRESSOR ON PNEUMATICS PANEL.**
c. **PLUG CONNECTOR ILJ7B FROM COMPRESSOR TO CONNECTOR ILP7B OF THE WIRE HARNESS.**
d. **PLUG CONNECTOR ILJ7C FROM THE FROM THE BLACK SOLENOID ON THE BOTTOM OF THE PNEUMATICS PANEL TO ILP7C OF THE HARNESS.**
e. **CONNECTOR ILJ1B WILL NOT BE USED WITH THE INSTALLATION OF THE NEW PNEUMATICS PANEL.**

9. Re-attach PNEUMATIC TUBING from PNEUMATIC SOLENOID below Compressor to the ACTUATOR ASSY at the two PNEUMATIC FITTINGS. The tube closest to the door goes to the rear fitting of the ACTUATOR ASSY. The tube away from the door goes to the front fitting on the ACTUATOR ASSY.

10. **(700-5 only)** Cut PNEUMATIC TUBING below PRESSURE SWITCH and install PNEUMATIC TEE and PNEUMATIC TUBING. Connect other end of tubing to the DETERGENT INJECTOR PUMP SOLENOID.



Cut here and install Pneumatic Tee. Connect other end of tubing to input on Detergent Injector Pump Solenoid.

11. Perform electrical safety tests per procedure for Testing.

12. Perform functional tests per procedure for Functional Testing.

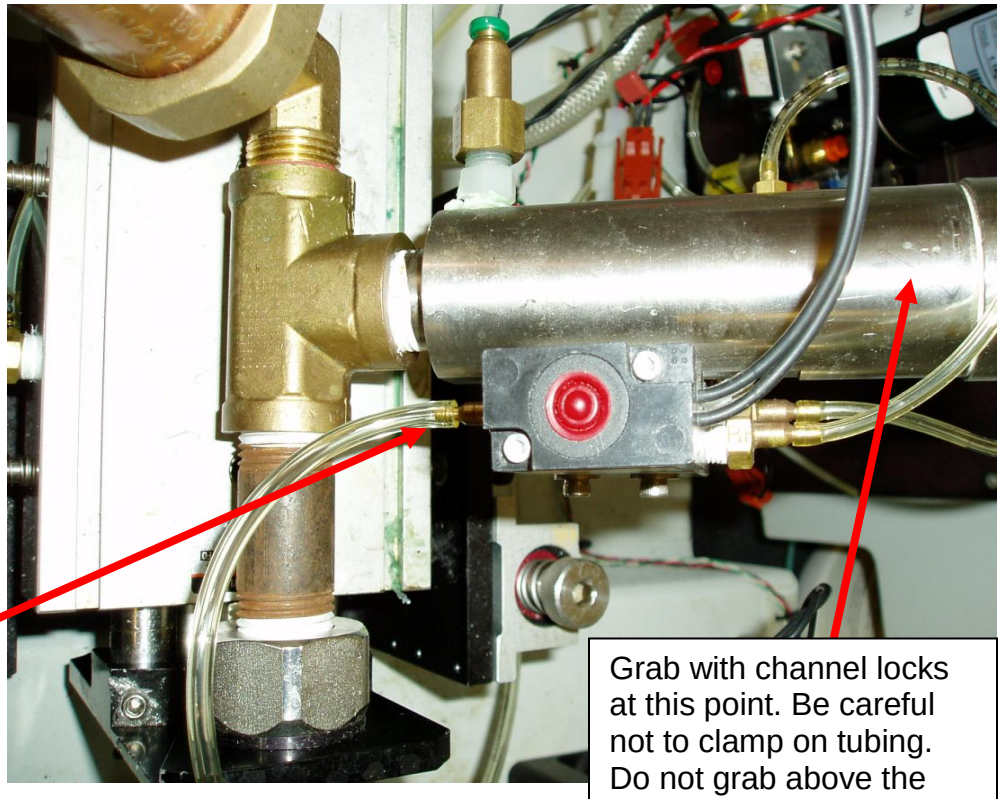
13. Return to service.

REMOVAL AND REPLACEMENT OF DETERGENT INJECTOR PUMP ASSY

1. Disconnect connector to **Pneumatic Solenoid Assy (P/N 0700-005-105Q)** on **Detergent Injector Pump Assy (P/N 0700-005-100Q)**.

2. Disconnect input **Pneumatic Tubing (P/N 0060-008-000 in 1inch increments)** to PNEUMATIC SOLENOID ASSY as shown.

3. Using Large Channel Locks, grab on to DETERGENT INJECTOR PUMP ASSEMBLY as shown below to loosen pump.



4. Re-thread new DETERGENT INJECTOR PUMP ASSEMBLY and tighten using channel locks. Ensure the PNEUMATIC SOLENOID ASSY is facing in an upward direction of which the red exhaust button is on top.

5. Reconnect connector to PNEUMATIC SOLENOID ASSY.

6. Reconnect PNEUMATIC TUBING to PNEUMATIC SOLENOID ASSY.

7. Perform electrical safety tests per procedure for Testing.

8. Perform functional tests per procedure for Functional Testing.

9. Return to service.

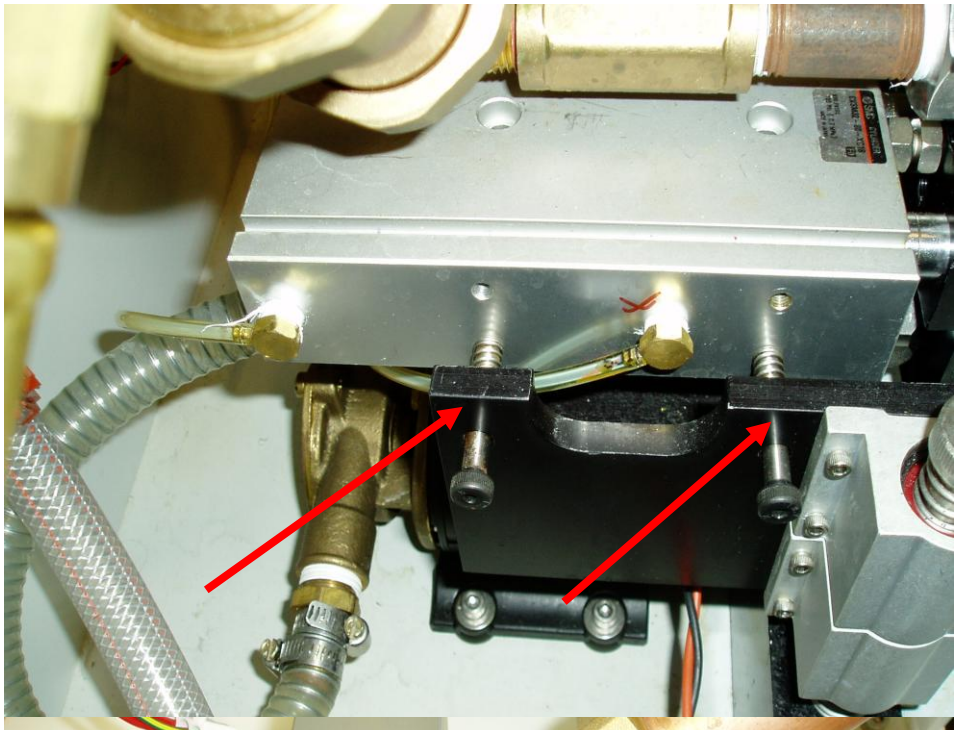
REMOVAL AND REPLACEMENT OF DOCKER WASTE COUPLER ASSY

1. Remove the four bolts on the side of the Actuator assembly. There are two on each side.

2. Retain the four compression springs and four linear bearings.

3. Keeping all hoses attached to the Actuator Assembly, carefully lift the entire assembly out of Actuator Support Channel.

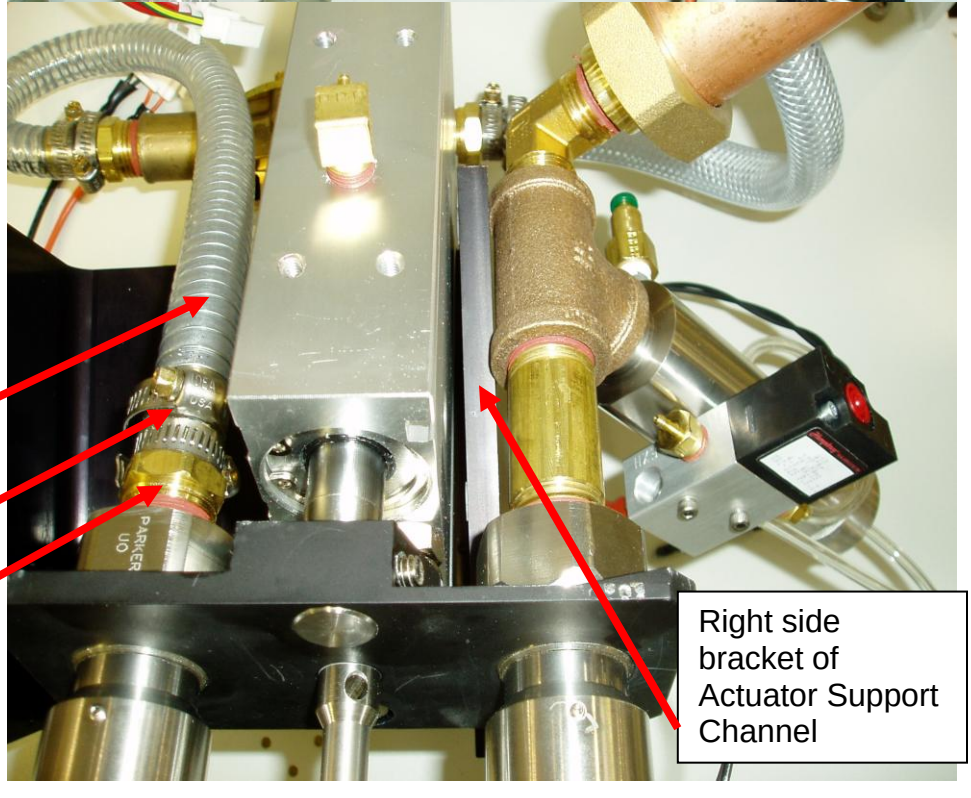
4. Rotate entire Actuator Assembly clockwise and slide the Actuator Assembly onto the right side of the Actuator Support Channel as shown below.



5. Loosen hose clamp on waste hose.

6. Remove Coupling Guide if present.

7. Use 12inch adjustable Crescent Wrench to unthread Coupling. Remove Waste hose. Remove Coupling from Coupling Plate.



Note: Ensure to retain Coupling Spacer and Barbed fitting threaded into old Coupling as these components will be used with the new Coupling.

8. Remove Barbed Fitting from Coupling.

9. Apply Teflon tape to Barbed fitting and thread into new Coupling.

10. Install new Coupling to include the Coupling Spacer as shown. Use wrench to tighten.

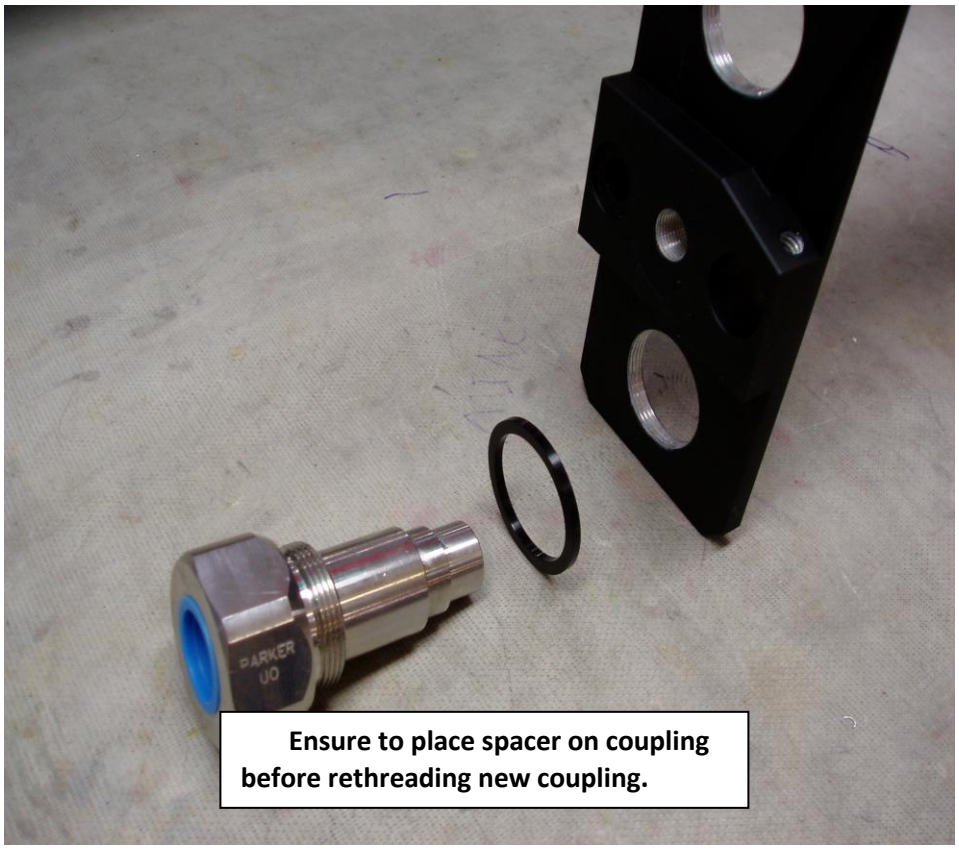
11. Re-attach Waste hose. Reattach Coupling Guide.

12. Remove Actuator Assembly from the Actuator Support Channel and re-install.

13. Perform electrical safety tests per procedure for Testing.

14. Perform functional tests per procedure for Functional Testing.

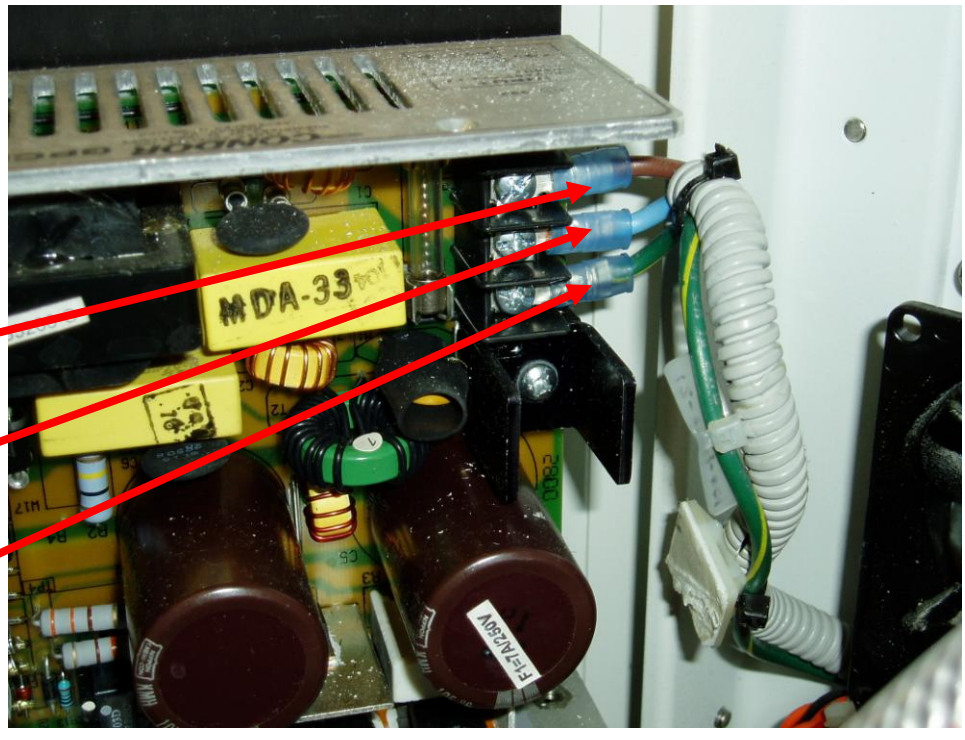
15. Return to service.



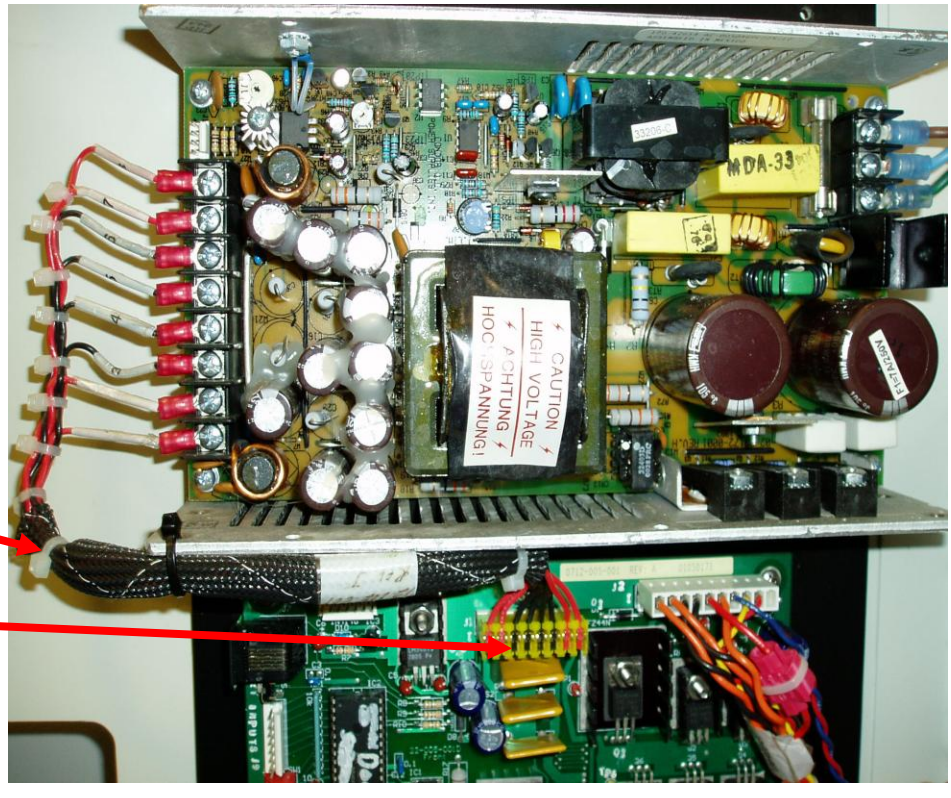
REMOVAL AND REPLACEMENT OF DOCKER POWER SUPPLY ASSY

1. Remove Power Supply Shroud by removing the four bolts, one on each corner.

2. Disconnect Brown, Blue and Green/Yellow wires from Power supply as shown.

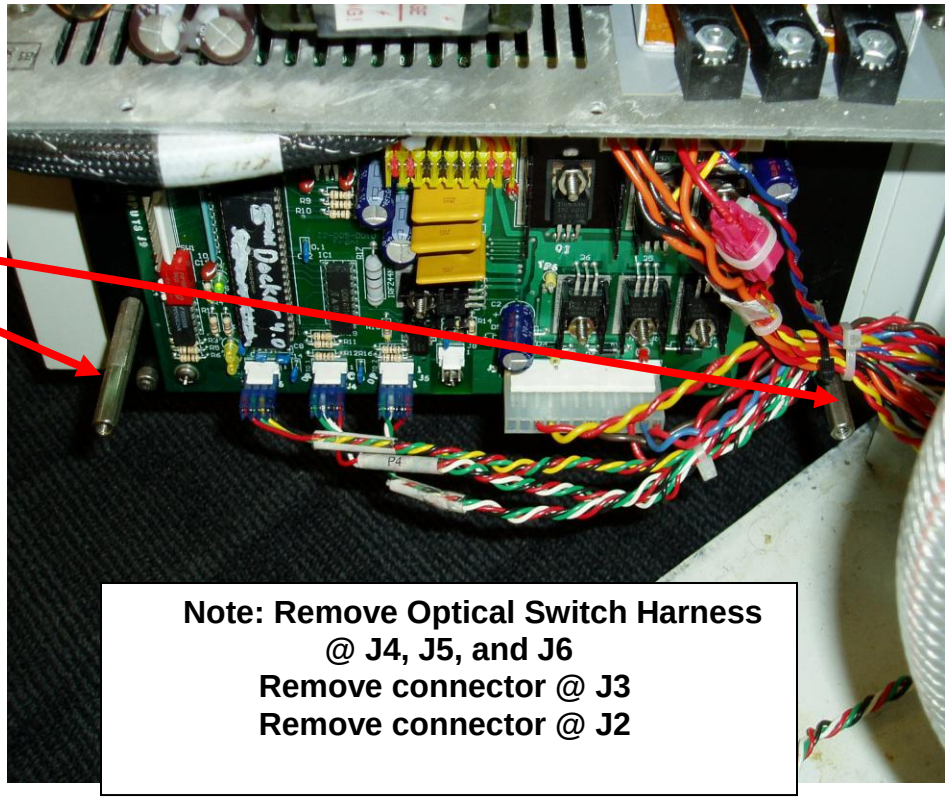


3. Disconnect Power Supply to PCB cable connections from the terminal block on the left side of Power Supply and remove connector from J1 on the Docker Control PCB as this cable will be used on the new Power Supply panel.



4. Remove all connections to the Docker Control PCB. Also, remove the two bottom stand-offs from the old panel as they will be used on the new panel.

Stand-offs to be removed



Note: Remove Optical Switch Harness @ J4, J5, and J6
Remove connector @ J3
Remove connector @ J2

5. Remove the four screws that secure the panel to the door.

6. Attach the Power Supply to PCB cable to new panel and connect J1 on Docker Control PCB.

7. Place the stand-offs onto the new panel. Secure panel to the door of Docker.

8. Reconnect the A/C Power connections to the Power Supply.

9. Reconnect all connectors to the Docker Control PCB.

10. Replace Power Supply shroud.

11. Perform electrical safety tests per procedure for Testing.

12. Perform functional tests per procedure for Functional Testing.

13. Return to service.

NEPTUNE WASTE MANAGEMENT SYSTEM TESTING REQUIREMENTS

Details

The testing listed in this section is **PERFORMED AFTER EVERY SERVICE VISIT** regardless to whether the visit was for Preventative Maintenance or Repair. The testing includes both Electrical Safety as well as Functional Testing.

The Rover testing is completed in two different configurations; covers installed, or covers removed. Some tests are performed with the side panel(s) removed, while others are completed once the side panel(s) has been reinstalled. This is to ensure that wires were not pinched when the side panels were installed. The docking station is tested with the top cover removed only. (No testing done with the top cover on) The recommended Safety Analyzer used in the following procedures is a **Dale Technologies LT544D+**. This model is used for the following procedures; however, the exact model ***is not*** required, but a suitable equivalent must be used when performing safety testing.

For example, the Safety Analyzer must be able to check Earth Leakage Current in reversed polarity, but it does not have to be the Dale Technologies model used for the following testing instructions. (Note: the neutral is also referred to as “L2” on some models. In this case an “open” state is equal to “No L2” and a “closed” condition is equal to “L2”) In either case, the technician must ensure that the test equipment used is within the calibration period, or “**In Calibration**”, and that *any* test equipment used has not exceeded the calibration due date listed. Similarly, if a piece of test equipment does not have a calibration sticker; it cannot be assumed that it is working properly. The technician should attempt to find an alternate means of testing the Neptune Waste Management System.

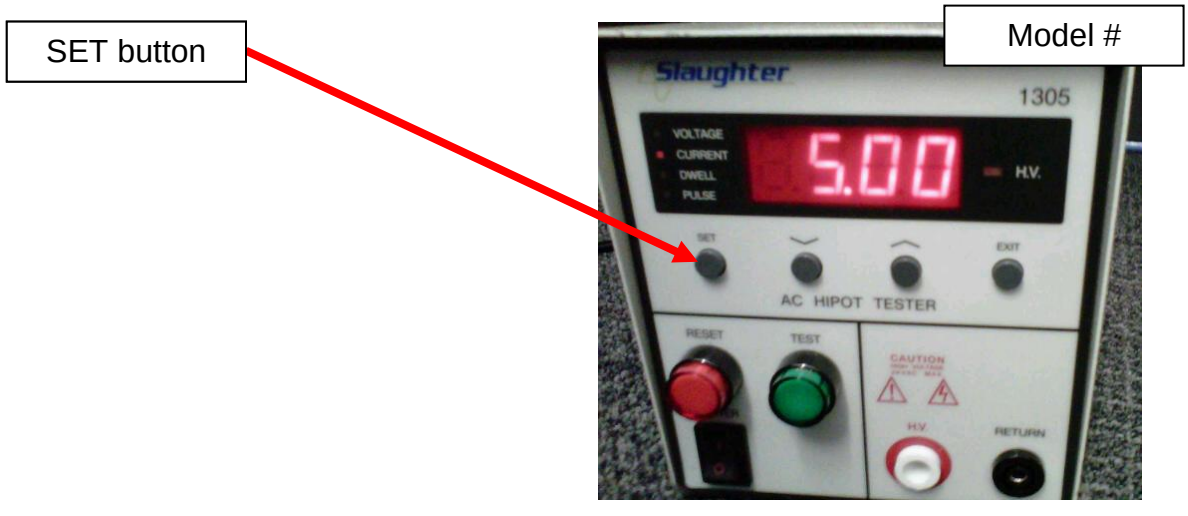
Hi-Pot Test (Covers Installed)

WARNING: DO NOT touch the Rover while performing the Hi-Pot test!! Serious harm may result in touching any portion of the Rover while testing.

The technician will change three functions of the hi-pot tester to set up for the test: **VOLTAGE**, **TRIP CURRENT**, and **DWELL TIME**. To configure the Hi-pot Tester, press the **SET** button to select either VOLTAGE, CURRENT, or DWELL. (When the correct setting is selected, the corresponding LED will blink on the face of the hi-pot tester.) Use the up and down arrows to adjust for the proper value. Verify the settings are correct for the model being used. See table 1 for the values for the Rover Hi-Pot Test.

Slaughter Model 2510			Slaughter Model 1305		
Hi-Pot Setting	**Set To**	**Actual Value**	**Hi-Pot Setting**	**Set To**	**Actual Value**
Voltage	1.8	1800v	Voltage	1.8	1800v
Current	10.00	10 ma	Current	5.00	5 ma
Dwell	1.0	1 second	Dwell	On	N/A

Table 1 - Hi-Pot Settings for Rover



1. Verify that the Hi-pot Tester is configured properly for Rover testing. (See table 1)

2. Ensure the **Rover Power Switch** is turned on.

3. The technician must test the Hi-Pot Tester before proceeding. To do this, connect the Return Line of the Hi-pot Tester to the High Voltage probe and press the TEST button. The Reset button must illuminate and be followed by a continuous beep. If the does not happen, do NOT continue the test. Press reset to continue.

WARNING: For the **1305** model, **HIGH VOLTAGE** is ***ALWAYS*** present at the test lead if the "Dwell" function is set to "ON". High voltage will remain in a continuous "ON" mode after pressing and releasing the test button. High voltage will remain applied until the two leads are shorted together or until the RESET button is pressed. It is important that the technician is mindful of this feature and that the RESET is pressed after each and every test.

4. **Attach** metal clamp to the live and neutral terminals of the Power Cord. (see figure 1)

Figure 1 - Attach the Metal Clamp to the Live and Neutral Terminals

5. **Attach** the return lead (small black clamp from Hi-pot Tester) to the Earth Ground pin on the Power Cord. (see figure 2)

6. **Touch** the HIGH VOLTAGE probe (red, pen-like attachment) to the shorted live and neutral terminals, **ensuring *not* to touch the Earth Ground pin.** (see figure 3)

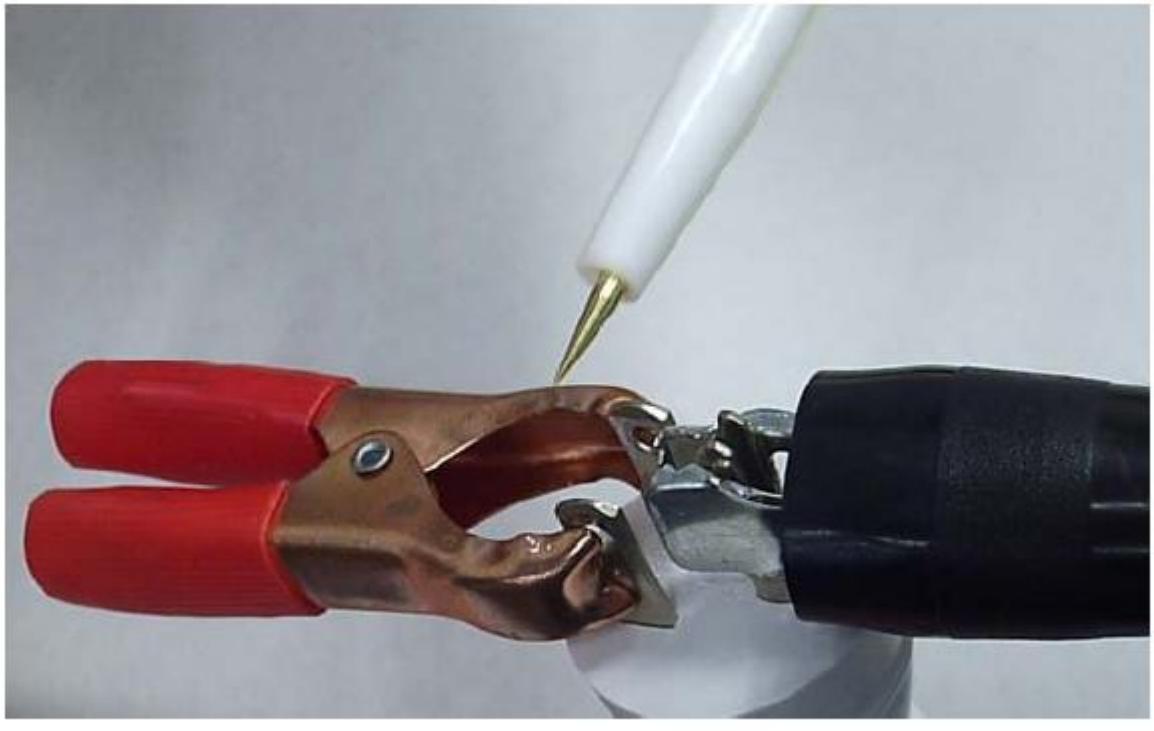


Figure 3 - Attach the Ground Lead to the Ground Pin

7. **Press** the green **TEST** button. The test is passed when a single short beep is heard. (Note: the 1305 model *does not* emit short beep.) If pressing the test button yields the same results as in step 3 (continuous beep and audible alarm) the Rover has failed the Hi-pot Test. Be sure to press the RESET button after pressing test!

8. Remove all connections from the Power Cord and turn the Rover Power Switch to the 'OFF' position in preparation for the next test.

1. **Ensure** Rover Power Switch is in the 'Off' position.

2. **Plug** Rover Power Cord into safety analyzer.

3. **Attach** the Ground Lead to one of the Vacuum Regulator Mounting Bolts inside the Smoke Evacuator Chamber.

Vacuum Regulator Mounting Bolts

4. Set the Safety Analyzer to **Normal Polarity** and **Neutral Open**.

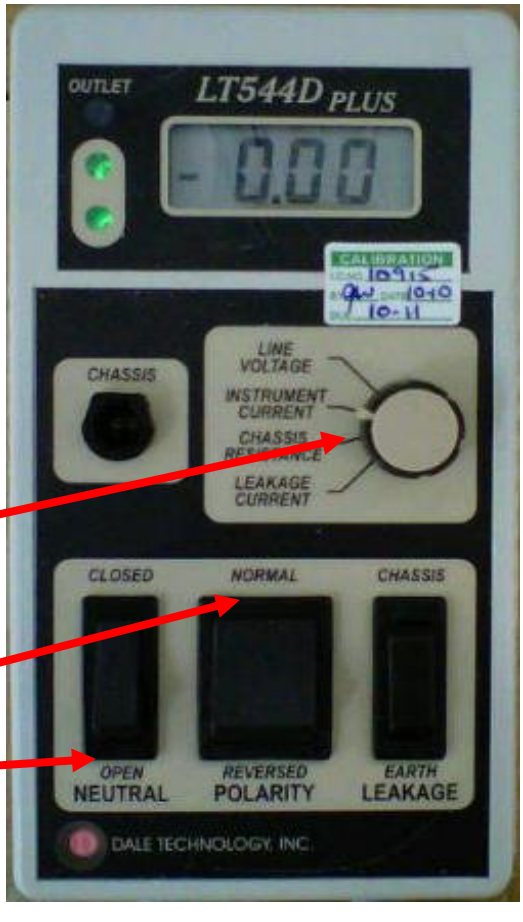
5. Set Safety Analyzer Dial to the CHASSIS RESISTANCE position.

6. Measure Earth Resistance. **Resistance must be less than .18 ohms**.

7. Once test is complete, set *Neutral Switch* to **Closed** in preparation for next test.

Chassis Resistance position

Normal Polarity Neutral Open



1. **Plug** the Rover into the Safety Analyzer.

2. **Turn** on Rover Main Power Switch.

3. **Turn** on both the **Smoke Evacuator** and **Vacuum Pump** and set both to maximum. (Vacuum adjustment knob and smoke evacuator dial both fully clockwise)

4. Ensure the Vacuum Gauge on the Rover reads 18.5 in/Hg ± .5 in/Hg

5. Turn the Safety Analyzer dial to the LEAKAGE CURRENT position.

6. Measure and record the Earth Leakage in all combinations listed in Table 1.

NOTE: When the condition below asks for "**NO EARTH**" the LEAKAGE switch must be depressed towards the "**EARTH**" label as this position removes Earth therefore creating a No Earth condition.

	Polarity	Earth	Neutral	
Earth Leakage	Normal	No Earth	Closed	20 < x < 300µA
	Reverse	No Earth	Closed	20 < x < 300µA
	Normal	No Earth	Open	20 < x < 1000µA
	Reverse	No Earth	Open	20 < x < 1000µA

Table 1 - Analyzer Settings and Earth Leakage Current Limit for Rover

Leakage Current position

NOTE: DEPRESS SWITCH TOWARDS "EARTH" AND HOLD TO OBTAIN A "NO EARTH" READING FOR EACH OF THE 4 SETTINGS ABOVE

7. Once test is complete, set *Neutral Switch* to **Closed** and *Polarity Switch* to **Normal** in preparation for next test.

1. Plug the Rover into the Safety Analyzer.

2. Attach the Ground Lead to one of the screws in the Canister Cap Assy.

3. Turn on both the **Smoke Evacuator** and **Vacuum Pump** and set both to maximum. (Vacuum adjustment knob and smoke evacuator dial both fully clockwise)

4. Ensure the Vacuum Gauge on the Rover reads 18.5 in/Hg ± .5 in/Hg

5. Turn the Safety Analyzer dial to the LEAKAGE CURRENT position.

6. Measure and record the Enclosure Leakage in all combinations listed in Table 1.

NOTE: When the condition below asks for "**NO EARTH**" the LEAKAGE switch must be depressed towards the "**CHASSIS**" label as this position removes Earth therefore creating a No Earth condition.

Enclosure Leakage	Normal	Earth	Closed	< 100µA
	Reverse	Earth	Closed	< 100µA
	Normal	No Earth	Closed	< 300µA
	Reverse	No Earth	Closed	< 300µA
	Normal	Earth	Open	< 300µA
	Reverse	Earth	Open	< 300µA

Table 1 - Analyzer Settings and Enclosure Leakage Current Limit for Rover

Leakage Current position

NOTE: DEPRESS SWITCH TOWARDS "CHASSIS" AND HOLD TO OBTAIN A "*NO EARTH*" READING FOR EACH OF THE 2 *NO EARTH* SETTINGS ABOVE.

FOR EARTH READINGS, LEAVE SWITCH IN NORMAL STATE AS THIS IS THE *EARTH* SETTING.

7. Once test is complete, set *Neutral Switch* to **Closed** and *Polarity Switch* to **Normal** in preparation for next test.

1. Plug the Rover into the Safety Analyzer.

2. Ensure that the Canister has Prefill amount of fluid up to two liters of water before proceeding. If fluid from the Canister leaks it can potentially create a shorted condition to the chassis. The Patient Leakage Test **must be performed** with fluid in the Canister to verify that this condition does not exist.

3. Attach the test lead to the bottom of the Fluid Level Transducer underneath the Transducer Block.

NOTE: Make sure that the Ground Lead is connected to the metal portion on the top of the Transducer, and that it is not clamped on the black potting material on the underside of the Transducer. (See figure 6)

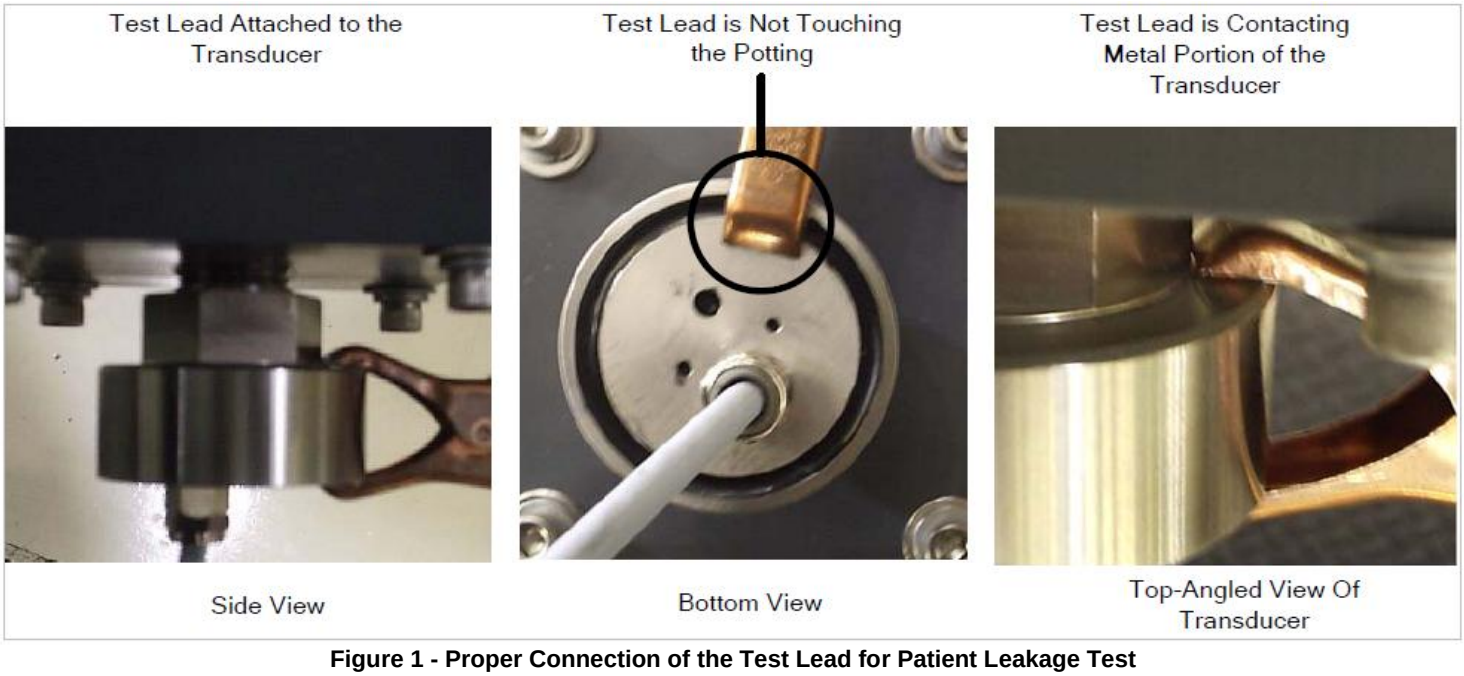


Figure 1 - Proper Connection of the Test Lead for Patient Leakage Test

4. Turn on both the **Smoke Evacuator** and **Vacuum Pump** and set both to maximum. (Vacuum adjustment knob and smoke evacuator dial both fully clockwise)

5. Ensure the Vacuum Gauge on the Rover reads 18.5 in/Hg ± .5 in/Hg.

6. Turn the analyzer dial to the LEAKAGE CURRENT position.

7. Measure and record the Patient Leakage in all combinations listed in Table 1.

Patient Leakage	Normal	Earth	Closed	< 10µA
	Reverse	Earth	Closed	< 10µA
	Normal	No Earth	Closed	< 50µA
	Reverse	No Earth	Closed	< 50µA
	Normal	Earth	Open	< 50µA
	Reverse	Earth	Open	< 50µA

Table 1 - Analyzer Settings and Patient Leakage Current Limit for Rover

Leakage Current position

NOTE: DEPRESS SWITCH TOWARDS "<u>CHASSIS</u>" AND HOLD TO OBTAIN A "*NO EARTH*" READING FOR EACH OF THE 2 *NO EARTH* SETTINGS ABOVE.

FOR EARTH READINGS, LEAVE SWITCH IN NORMAL STATE AS THIS IS THE *EARTH* SETTING.

8. Once test is complete, set *Neutral Switch* to **Closed** and *Polarity Switch* to **Normal** in preparation for next test.

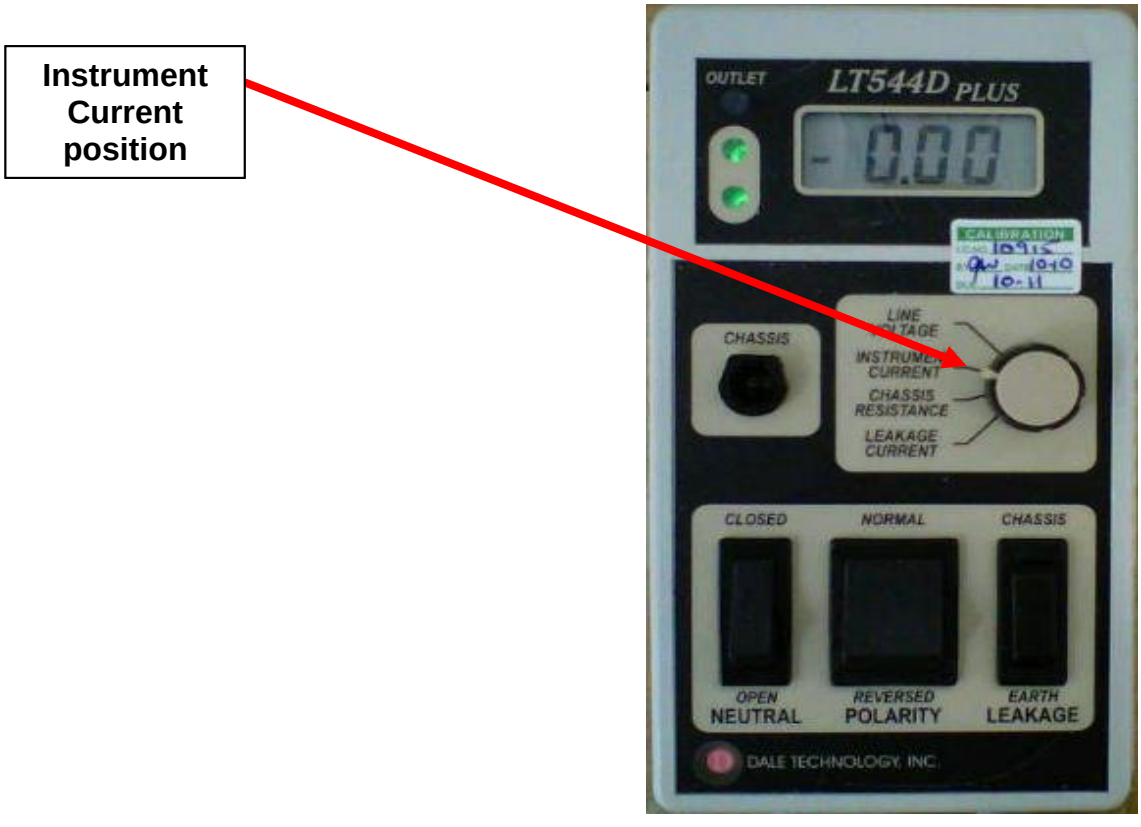
1. Plug the Rover into the Safety Analyzer.

2. Turn on both the **Smoke Evacuator** and **Vacuum Pump** and set both to maximum. (Vacuum Adjustment knob and smoke evacuator dial both fully clockwise)

3. Ensure the Vacuum Gauge on the Rover reads 18.5 in/Hg ± .5 in/Hg.

4. Turn the Safety Analyzer dial to the INSTRUMENT CURRENT position.

5. Measure and record the Amp Draw. It must not exceed 16.0 amps (700-1) or 12.0 amps (700-3).



1. Ensure mains wiring (blue and brown wires) inside the chassis are secure and not touching any components on the circuit boards.

2. Verify wires are secured in a manner to prevent chafing. (see Figure 1)

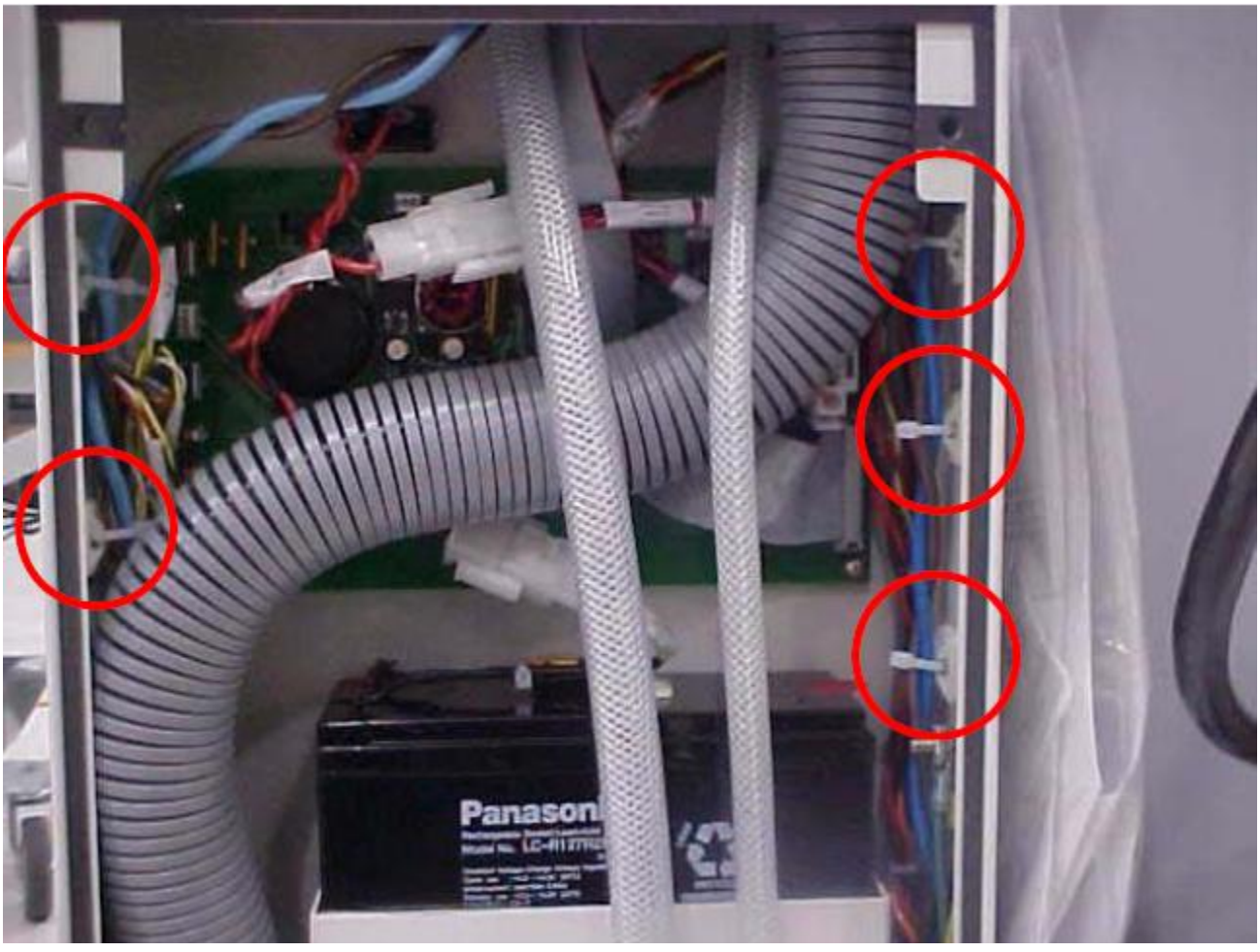


Figure 1 - Inspect Mains Wiring

Vacuum Function

1. Ensure the Rover is plugged in and turned on.
2. Insert Manifold in the canister cap with all ports closed.
3. Turn on the vacuum pump and rotate the vacuum adjustment knob fully clockwise.
4. The suction level should read 18.5 in/Hg ± .5 in/Hg.
5. Record the Suction Level on the appropriate paperwork.

Smoke Evacuator Function (700-1 Gold Model Only)

1. Ensure the Rover is plugged in and turned on.
2. Turn on the Smoke Blower and adjust the Smoke Blower Control Knob fully clockwise.
3. Verify the LEDs around the Smoke Blower Control Knob are fully lit.
4. Verify that the Blower motor runs.
5. Verify that there are no extraneous characters on the User Interface Panel.
6. Turn the Smoke Blower off.

IV Pole (700-1 Gold Model Only)

1. Ensure the Rover is plugged in and turned on.
2. Depress and hold the IV Pole up arrow button. Ensure the Pole moves up smoothly until it reaches the top of its range of motion.
3. Depress and hold the IV Pole down arrow button. Ensure the Pole moves down smoothly until it reaches the bottom of its range of motion.
4. Depress and hold the IV Pole up arrow button again to fully extend the IV Pole.
5. Turn off the Rover Power Switch and verify that the pole descends.
6. Note any unusual vibrations or noise while Pole is ascending or descending.

Calibration Verification - Level Sensor Models

1. Ensure the Rover is plugged in and turned on.
2. Insert Manifold into Canister Cap and attach Suction Tubing.
3. Turn on the Vacuum Pump and rotate the Vacuum Adjust Knob fully clockwise.
4. Measure and suction **350mL** of water and verify readout displays **.350L ±.200L**
5. Measure and suction **400mL** of water and verify readout displays **.750L ±.200L**
6. Measure and suction **14.25L** of water and verify readout displays **15.0L ±.200L**
7. Measure and suction **6.0L** of water and verify readout displays **FULL 19.75L - 20.00L**
8. Verify the Vacuum Pump shuts off automatically.
9. Inspect the bond from the bottom Canister Seal to the grey Canister Ring. There should be no evidence of leaks.
10. Perform a docking cycle to empty the Rover and return unit to service.

Neptune Docker Testing Requirements (P/N 0700-004-000, 0700-005-000)

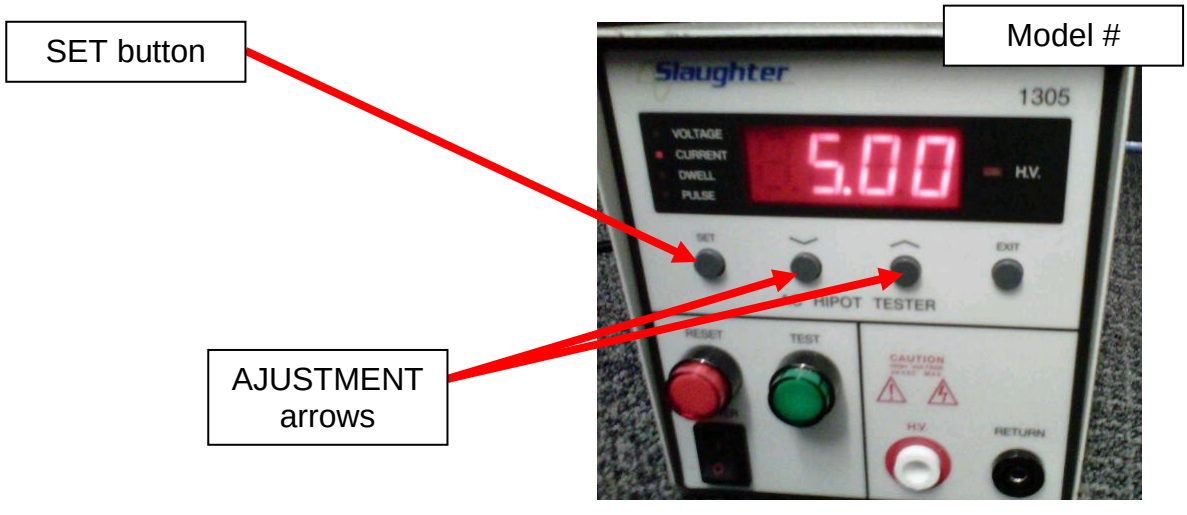
Hi-Pot Test (Covers Removed)

WARNING: DO NOT touch the Docker while performing the Hi-Pot test!! Serious harm may result in touching any portion of the Docker while testing.

The technician will change three functions of the Hi-Pot Tester to set up for the test: **VOLTAGE**, **TRIP CURRENT**, and **DWELL TIME**. To configure the Hi-pot Tester, press the **SET** button to select either VOLTAGE, CURRENT, or DWELL. (When the correct setting is selected, the corresponding LED will blink on the face of the Hi-Pot Tester.) Use the up and down arrows to adjust for the proper value. Verify the settings are correct for the model being used. See Table 1 for the values for the Docker Hi-Pot Test.

Slaughter Model 2510			Slaughter Model 1305		
Hi-Pot Setting	**Set To**	**Actual Value**	**Hi-Pot Setting**	**Set To**	**Actual Value**
Voltage	.82	820v	Voltage	.82	820v
Current	10.00	10 ma	Current	5.00	5 ma
Dwell	1.0	1 second	Dwell	On	N/A

Table 1 - Hi-Pot Settings for Docker



1. **Verify** that the Hi-pot Tester is configured properly for Docker testing. (See Table 1)

2. **Ensure** the **Docker Power Switch** is turned on.

3. The technician must test the Hi-Pot Tester before proceeding. To do this, connect the Return Line of the Hi-pot Tester to the High Voltage probe and press the TEST button. The Reset button must illuminate and be followed by a continuous beep. If the does not happen, do NOT continue the test. Press reset to continue.

WARNING: For the **1305** model, **HIGH VOLTAGE** is ***ALWAYS*** present at the test lead if the "Dwell" function is set to "ON". High voltage will remain in a continuous "ON" mode after pressing and releasing the test button. High voltage will remain applied until the two leads are shorted together or until the RESET button is pressed. It is important that the technician is mindful of this feature and that the RESET is pressed after each and every test.

4. **Attach** metal clamp to the live and neutral terminals of the Power Cord. (see Figure 1)

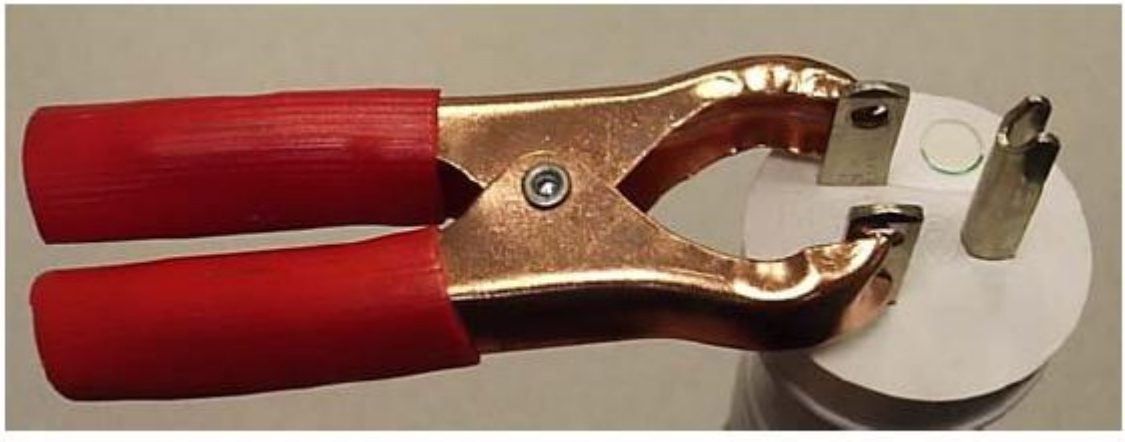


Figure 1 - Attach the Metal Clamp to the Live and Neutral Terminals

5. **Attach** the return lead (small black clamp from Hi-pot Tester) to the Earth Ground pin on the Power Cord. (see Figure 2)

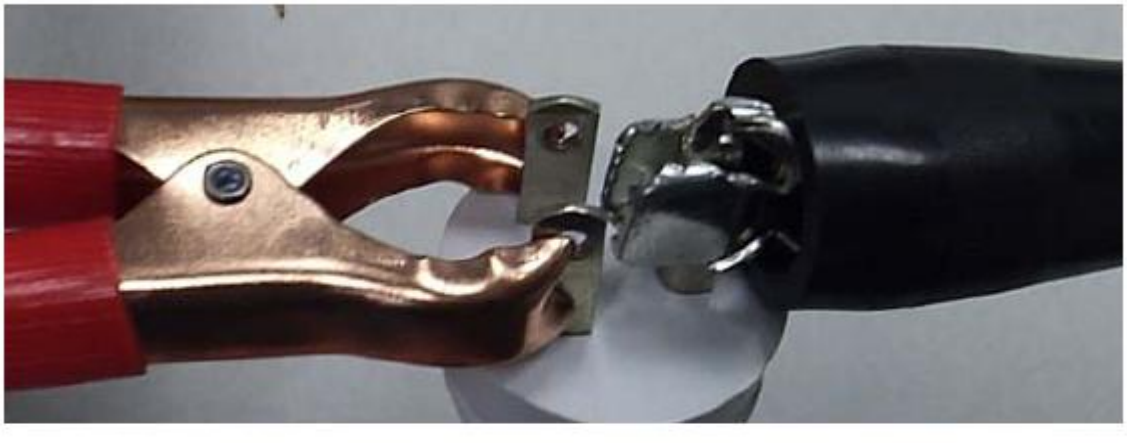


Figure 2 - Attach the Ground Lead to the Ground Pin

6. **Touch** the HIGH VOLTAGE probe (red, pen-like attachment) to the shorted live and neutral terminals, **ensuring *not* to touch the Earth Ground pin.** (see Figure 3)

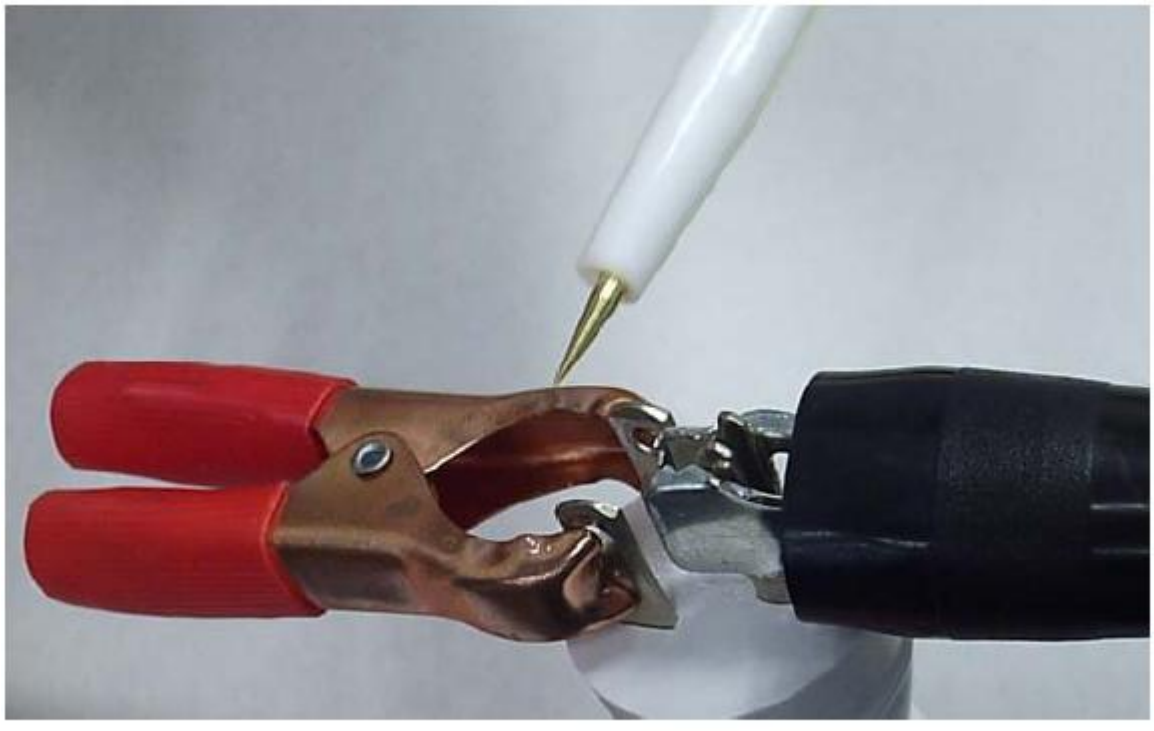


Figure 3 - Attach the Ground Lead to the Ground Pin

7. **Press** the green **TEST** button. The test is passed when a single short beep is heard. (Note: the 1305 model *does not* emit short beep.) If pressing the test button yields the same results as in step 3 (continuous beep and audible alarm) the Docker has failed the Hi-pot Test. Be sure to press the RESET button after pressing test!

8. **Remove** all connections from the Power Cord and turn the Docker Power Switch to the 'OFF' position in preparation for the next test.

1. **Turn** Docker Power Switch off.

2. **Plug** Docker Power Cord into Safety Analyzer.

3. **Attach** the Ground Lead to Protective Earth Stud or on the back panel of the Docker Chassis. (see Figure 1)

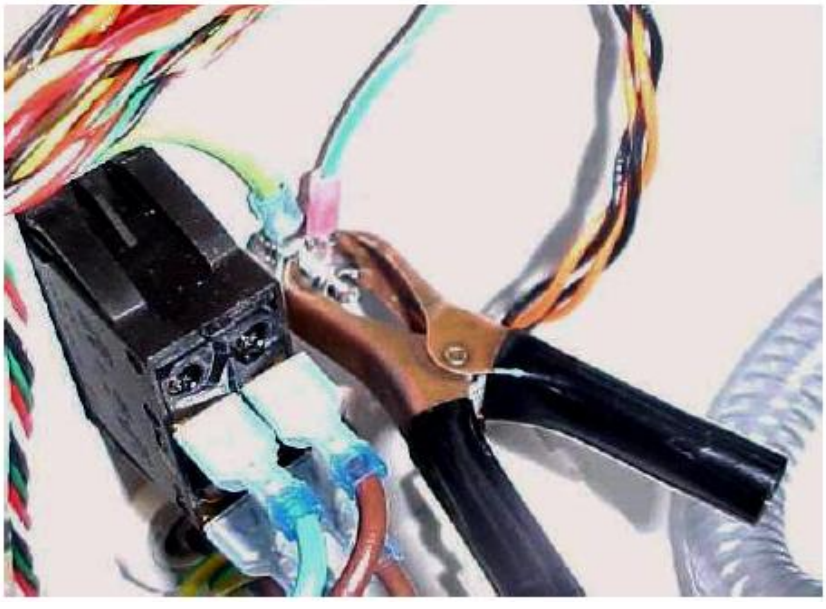


Figure 1 - Connect Ground Lead to Protective Earth Stud on the Back Panel

4. **Set** the Safety Analyzer to **Normal Polarity** and **Neutral Open**.

5. Measure Earth Resistance by placing the Safety Analyzer dial to the CHASSIS RESISTANCE position.

6. Resistance must be less than .09 ohms.

7. Once test is complete, set *Neutral Switch* to **Closed** and *Polarity Switch* to **Normal** in preparation for next test.

Chassis Resistance position

Normal Polarity Neutral Open

1. Plug the Docker Power Cord into the Safety Analyzer.

Note: Ensure Safety Analyzer is set to Normal Polarity and Neutral Closed to apply power to Docking Station for the subsequent test.

2. Turn the Safety Analyzer dial to the INSTRUMENT CURRENT position.

Instrument Current position

3. Turn on the Main Power Switch on the Docker and verify the Power Switch illuminates.

4. Fill a Rover with approximately 5 liters of water. Ensure the DETERGENT INLET TUBE is connected to the Inlet Port on the Docker. Place the other end of the tube into the Neptune Detergent container.

5. Push the Rover up to the Docker. Ensure that the Electromagnet holds the Rover in place.

6. Select STANDARD WASH from the Cleaning Cycle options.

7. Observe and record the peak current draw during the remainder of the Offload cycle. Docker current draw must not exceed 3 amps.

8. Observe that the Detergent Injector is pumping detergent out of the container. This should be evident by visible soap bubbles in the Rover Canister. Verify that the Detergent Injector Pump runs 6 injection cycles.

9. Rover will complete the Docking Cycle, retract the Couplings, and release from the Docker. Note any unusual noises during this time.

10. Check the hoses and fittings for signs of leaks inside the Docker at the end of the Docking Cycle.

11. Check Waste and Water Couplings for signs of leaks. Anything more than 1 or 2 drops of fluid below the Couplers is considered excessive.

Appendix A

The procedure illustrated below is to ensure that the Neptune Waste Management System has been cleaned and prepared for shipment. The procedures below must be **PERFORMED BEFORE EQUIPMENT IS SHIPPED.** Cleaning will take place using **Neptune Cleaner (P/N 0700-001-024)** and a **Sodium Hypocrite Based Disinfectant/ Bleach (Clorox Professional Products, etc)**.

A. Gold and Silver Rovers (Models 700-1 and 700-3)

1. Enter Diagnostic Mode by holding “Smoke Mode” & “Down” keys simultaneously on the **User Interface Panel (P/N 0700-001-050Q or 0700-003-050Q)** while turning on Battery Switch or turning on Main Power Switch with Rover plugged into outlet.

2. Scroll to “Calibration” and enter by touching in sequence “Yes” - “Up” - “Down” - “Yes”. Scroll to “Dock Control” and push the Rover up to the Docker.

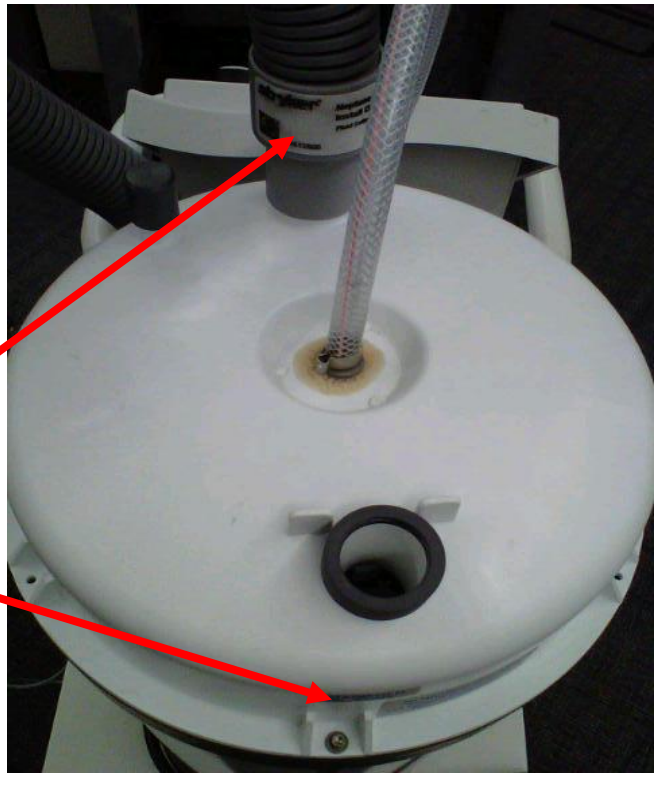
3. Utilize “Coupling Out” and “Pump On” functions to empty pre-fill. Once empty, press “Pump Off” and “Undock” to release unit from Docker.

Note: Remain in DIAGNOSTIC MODE as it is required after the unit is reassembled.

4. Remove **Canister Cap Assy (P/N 0700-001-170Q)** by removing the **Carbon Hose (P/N 0700-035-000)**, six Socket Head Cap Screws using 3/32 Allen Key or equivalent. Remove the **Hose Clamp (P/N 0058-339-000)** using a Slotted Screwdriver or equivalent attached to the **Fresh Water Inlet Tubing (P/N 0700-001-456)**. Set CANISTER CAP ASSY aside and discard CARBON HOSE per facility bio-hazardous waste disposal procedures.

Carbon Hose

Socket Head Cap Screws



5. Remove **Float Sensor (P/N 0700-001-155)** inside CANISTER ASSYand discard per facilities bio-hazardous waste disposal procedures.

6. Spray all interior surfaces of **Canister Assy (P/N 0700-001-320Q)** and CANISTER CAP ASSY with a heavy saturating spray of the **Neptune Cleaner (P/N 0700-001-024)**.

7. Pour NEPTUNE CLEANER into CANISTER ASSY until cleaner level is flush with the bottom hole in base.

8. Place CANISTER CAP ASSY onto CANISTER ASSY (This keeps the surfaces from drying out).

9. Wait 10 minutes before cleaning CANISTER ASSY or CANISTER CAP ASSY. While waiting, proceed with steps 10-12.

10. Remove **Right Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key or equivalent, **Battery Compartment Door (P/N 0700-001-145)** using 1/8 Allen Key or equivalent and **HEPA Filter Door (P/N 0700-001-190)** by grasping handle and pulling forward.

11. Remove **HEPA Filter (P/N 0700-034-000)** and **Lower Vacuum Hose (P/N 0700-001-116)** from unit and discard per facilities biohazard waste disposal procedures.

12. Reattach BATTERY COMPARTMENT DOOR and HEPA FILTER DOOR.

Note: Make sure 10 minutes have passed since step 8 before proceeding.

13. Scrub all surfaces of the CANISTER ASSY, CANISTER CAP ASSY and **Level Sensor (P/N 0700-001-140Q)** using brush provided with the NEPTUNE CLEANER.

14. While still in “Dock Control” dock the Rover. Utilize “Coupling Out” , “Pump On”’ and “Sprinkler On” functions to rinse the Rover until there are no suds from the cleaner visible. Turn “Sprinkler Off”, and “Pump Off”. Leave Rover connected to Docker and remain in Dock Control.

15. Utilize the “Sprinkler On” function to fill the Rover to approximately 19 liters.

16. Utilize the “Sprinkler Off” and “Undock” function to separate from Docking Station but remain in Dock Control Menu.

Note: Due to the bleach solution, please ensure that at a maximum, no more than two units are soaking with bleach at any one time to reduce the smell and fumes that bleach can create in the Operating Room area.

17. Remove CANISTER CAP ASSY and soak in 5gal bucket (or equivalent container/ sink, etc.) full of water and add 0.1 liters of bleach (1:37.8 concentration). Allow solution to soak for a minimum of 10 minutes.

18. Add 1 liter of Bleach to the 19 liters of water in the Canister. Allow solution to soak for a minimum of 10 minutes.

19. Re-attach CANISTER CAP ASSY to CANISTER ASSY using the six SOCKET HEAD CAP SCREWS and washers removed in step 4.

20. Rover LCD should display “Dock Control”. Press “Yes” to re-dock Rover. Utilize “Coupling Out” and “Pump On” functions to empty solution inside canister. Once empty, press “Pump Off” and “Undock” to release unit from Docker.

21. Scroll to “Exit Menu” and press “Yes”.

22. Scroll to “Shipping Mode” and press “Yes”.

23. Scroll to “Exit Menu” and press “Yes” to exit out of Diagnostic Mode.

Note: The LCD should read “Shipping Mode Set, Dock to clear”.

24. Turn off A/C and Battery Power to the unit.

25. Spray entire exterior of Rover with Bleach, let sit for 2 minutes, and wipe to remove any visible signs of stains (blood, fluid) from unit.

26. Wrap and secure power cord to unit to ensure it doesn’t move during shipping.

27. Label the device as **CLEANED**, initial and date. Seal hose openings on CANISTER CAP ASSY and ROVER TOWER behind USER INTERFACE PANEL with duct tape.

28. At this point, the unit(s) has been prepped for shipment.

B. Bronze Model (Model 700-7)

1. Remove **Canister Cap Assy (P/N 0700-007-170Q)** by removing the six Socket Head Cap Screws using 3/32 Allen Key or equivalent. Remove the **Hose Clamp (P/N 0058-325-000)** using a Slotted Screwdriver or equivalent attached to the **Upper Sprinkler Tubing (P/N 0700-007-017)**.

2. Spray all interior surfaces of **Canister Assy (P/N 0700-007-320Q)** and CANISTER CAP ASSY with a heavy saturating spray of the **Neptune Cleaner (P/N 0700-001-024)**.

3. Pour NEPTUNE CLEANER into CANISTER ASSY until cleaner level is flush with the **Float Switch (P/N 0700-007-327)** on the bottom of the base.

4. Place CANISTER CAP ASSY onto CANISTER ASSY (This keeps the surfaces from drying out).

5. Wait 10 minutes before cleaning CANISTER ASSY or CANISTER CAP ASSY. While waiting, proceed with step 6.

6. Spray entire exterior of Rover with Bleach, let sit for 2 minutes, and wipe to remove any visible signs of stains (blood, fluid) from unit.

Note: Make sure 10 minutes have passed since step 5 before proceeding.

7. Scrub all surfaces of the CANISTER ASSY and CANISTER CAP ASSY using brush provided with the NEPTUNE CLEANER.

8. Dock Rover to empty detergent.

Note: Due to the bleach solution, please ensure that at a maximum, no more than two units are soaking with bleach at any one time to reduce the smell and fumes that bleach can create in the Operating Room area.

9. Remove CANISTER CAP ASSY and soak in 5gal bucket (or equivalent container/ sink, etc.) full of water and add 0.1 liters of bleach (1:37.85 concentration). Allow solution to soak for a minimum of 10 minutes.

10. Manually fill Rover with water to approximately 19 liters. Add 1 liter of bleach and allow solution to soak for a minimum of 10 minutes.

Note: Make sure 10 minutes have passed since step 10 before proceeding.

11. Dock the Rover to empty solution. Wipe unit once more to ensure there are no visible signs of fluid on exterior.

12. Label the device as **CLEANED**, initial and date. At this point, the unit(s) has been prepped for shipment.

C. Docker Models (Model 700-4 and 700-5)

Note: If Rovers were prepped before preparation of Docker, then the conditions below have been met therefore, proceed to step 3 below.

1. Using a Rover, add 1 liter of Bleach to the 19 liters of water in the CANISTER ASSY.

2. Run Rover through a “Standard Wash” cycle (longer of the 2 cycles).

3. Once docking cycle is complete, turn off power to Docker and turn off water supply.

4. Disconnect **Braided Stainless Supply Line (P/N 0702-014-004Q)** and the **Drain Hose Assembly (P/N 0700-004-005Q)** from the Docker.

5. Dry out each port and cover with duct tape.

6. Secure power cord to unit so that it does not move during shipping.

7. Label the device as **CLEANED**, initial and date. At this point, the unit(s) has been prepped for shipment.

The Neptune Bronze Rover (P/N 0700-007-000) is the mobile Canister version of the Rover. The Bronze runs on 2 AA Bateries. The Batteries are strickly for Docking purposes to communicate via the process using Infra-Red signals just as the Gold or Silver models would. Eventhough the Bronze Rover has no LCD display for error messages; it will communicate errors via flashing LEDs.

1. To Dock the Rover, center the Rover directly in front of the Docking Station and gently press until the electromagnet of the Docker hold the Rover in place.

2. Green light flashes when Rover is docked and functioning properly. The Rover will complete the Docking process in 3 minutes. When cleaning is complete, return the Rover to service.

3. If the Rover and Docking Station do not connect…

- Make sure the electromagnet for the Docker and the Rover Strikeplate are flush with each other and there are no gaps.
- Check to see if the Docker is turned “ON”.
- Make sure that Rover Batteries do not need to be replaced. (The battery light flashes yellow when the batteries need to be replaced).

This Rover features lights that signal when the system needs attention. The number of times both Yellow and Green indicators flash in a quick sequence represents the message on the chart. (exp. 2 flashes followed by a brief resting period corresponds to ERROR 2).

Error Signals	**Cause**	**Solution**
Error 1	Fluid Coupler Connection Problem Docking Station not level	Adjust casters on Docker
	Insufficient Pneumatic pressure in Docking Station	Check Docker Pneumatics for air leak
Error 2	Couple Switch error (switch is Stuck in closed position)	Remove and replace **Couple Switch (P/N 0700-007-215)**
Error 4	Rover / Docker communication Error. Obstruction between Rover & Docker that is blocking Infra-Red Communication.	Clean LED’s and repeat docking cycle. If this does not work, remove and replace **Main Controller PCBA (P/N 0700-007-213)**
Error 5	Float switch is stuck in the floating Position	Remove and replace **Float Switch (P/N 0700-007-326)**
Error 6	Incompatible Docker software	Upgrade Docker software to Rev. 4.0

Note: The following parts are needed before attempting to perform this procedure; **Neptune Rover PM Parts Kit (P/N 0700-060-040).** This parts kit will be used for GOLD (700-1) or SILVER (700-3) model Rovers. **Neptune Docker PM Parts Kit (P/N 0700-060-050).** This parts kit will be used for ALL Docker Models. **Neptune Cleaner (P/N 0700-001-024)** Containers are 1 Gallon each; which will clean up to 4 Rovers. Also have on hand **90˚ Elbow (P/N 0048-212-000)** for each Rover as this part can break when replacing the WIRE REINFORCED TUBING from the PM Kit.

For NEPTUNE BRONZE PM, the following parts are needed: **AA Batteries (2ea) (P/N 0207-050-041)** and **O-Ring (Canister Cap) (P/N 0045-267-000).**

Gold and Silver Rovers (Models 700-1 and 700-3) (approximate elapsed time 45 Minutes)

Enter Diagnostic Mode by Performing the Following:

a. Hold *SMOKE MODE* and *POLE DOWN* ▼ buttons at the same time
b. Turn on either *AC POWER* or *BATTERY POWER*.
c. *DIAGNOSTIC MODE* will then be momentarily displayed, followed by *REVIEW ERRORS*
d. Press *YES* to review the errors. Clear Errors after review.
e. Use the arrow buttons to scroll to *EXIT MENU.* You should see *REVIEW ERRORS* again.
f. Use the arrow buttons to scroll to *CALIBRATION*.

Enter Dock Control by Performing the Following:

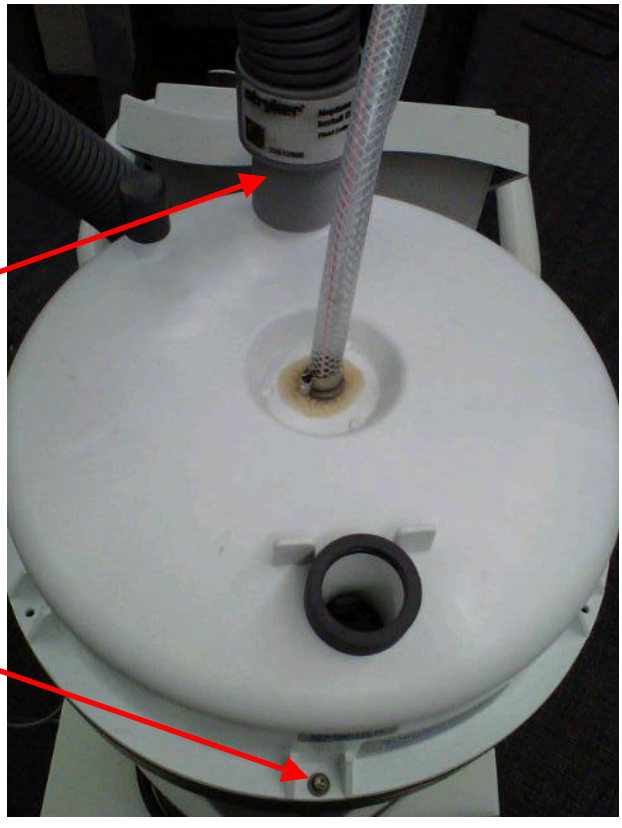
g. The Rover will display *CALIBRATION MODE* ↑↓
h. At this point you must press the *YES, UP, DOWN, & YES* buttons in sequence (quickly) to enter the calibration menu.
i. If done properly, the Rover will display *CLEAR ERRORS.*
j. Press *YES* to clear errors.
k. Use the arrow buttons to scroll to *DOCK CONTROL* and press *YES*.
l. The Rover will display *READY TO DOCK…*
m. At this point, push Rover up to Docker as if it was a normal Docking Cycle, the magnet will engage and *ROVER DOCKED* will then be momentarily displayed, followed by *GET REVISION.*
n. Use the arrow buttons to scroll to *COUPLING OUT* and press *YES*.
o. The Couplings will extend. Once fully extended, use the arrow buttons to scroll to *PUMP ON* and press *YES*.
p. The pump will run until it is manually turned off. Once the Canister is emptied, use the arrow buttons to scroll to *PUMP OFF* and press *YES*.
q. Use the arrow buttons to scroll to *UNDOCK* and press *YES*.

Note: Remain in Diagnostic Mode as it is required after the unit is reassembled!

1. Remove **Canister Cap (P/N 0700-001-170Q)** by removing the **Carbon Hose (P/N 0700-035-000)** and the six **Socket Head Cap Screws (P/N 0004-546-000)** and **Flat Washers (P/N 0011-052-000)** securing the CANISTER CAP using 3/32in Allen Key or equivalent.

CARBON HOSE
SOCKET HEAD CAP

SCREW
FLAT WASHER



2. Inspect **Canister Assembly (P/N 0700-001-320Q)** for any cracks or leaks that will indicate that the Canister should be replaced. Note any concerns.

3. Spray all interior surfaces of CANISTER ASSY and underside of CANISTER CAP ASSY with a heavy saturating spray of the **Neptune Cleaner (P/N 0700-001-024)**.

4. Pour NEPTUNE CLEANER into CANISTER ASSY until flush with the bottom hole in base.

5. Place CANISTER CAP ASSY onto CANISTER ASSY (This keeps the surfaces from drying out).

6. Wait 15 minutes before cleaning CANISTER ASSY or CANISTER CAP ASSY (If wait time is longer such that the surface has dried, NEPTUNE CLEANER can be reapplied just before scrubbing). While waiting, proceed with steps 7-14.

7. Remove **Right Side Panel (P/N 0700-001-135Q)** using 5/32 Allen Key on the side that has the IV Pole Assy.

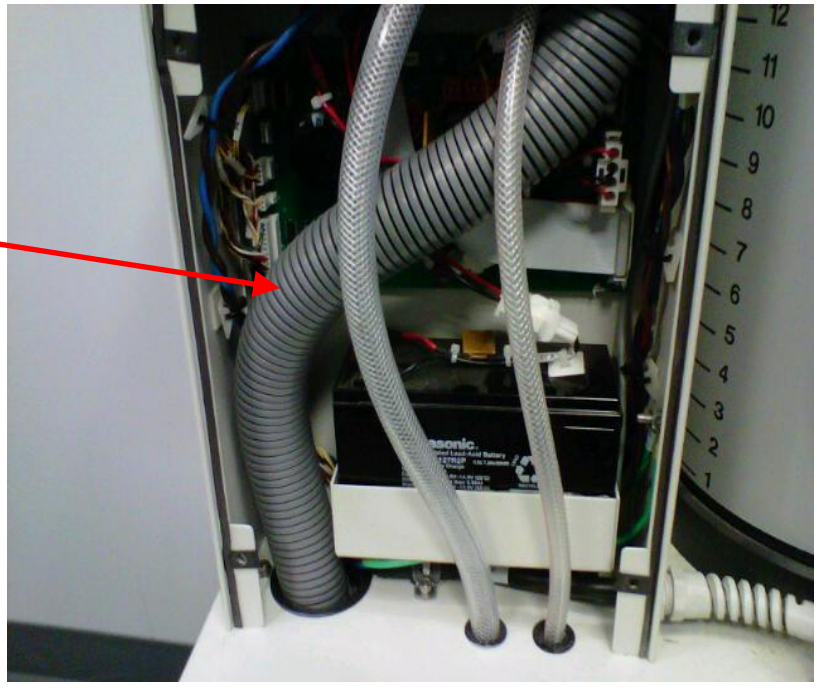
8. Remove **Tower Right Panel Assy (P/N 0700-001-145)** by removing four **Button Head Cap Screws (P/N 0700-004-555)** using 1/8in Allen Key or equivalent.

9. Remove the **Fluid Suction Hepa Filter Door (P/N 0700-001-190)** of the Rover exposing the **Fluid Suction HEPA Filter (P/N 0700-034-000)**.

NOTE: Verify that the **Hepa Filter (P/N 0700-034-000)** has/ as not been replaced in the *12mth* or *1000hrs* time frame. If it has been replaced within the time frame allotted, leave in unit and record in the comment section of the **PM Checklist (P/N 0700-001-742)** that it has been replaced on a previous PM. Proceed to remove the **Lower Vacuum Hose (P/N 0700-001-116)** and continue to step 11. If the HEPA FILTER has not been replaced, proceed to step 10. Ensure to record on the HEPA FILTER itself the date of replacement and the date of next replacement.

10. Remove and replace HEPA FILTER and LOWER VACUUM HOSE from unit and discard per facilities biohazard waste disposal procedures.

LOWER VACUUM HOSE

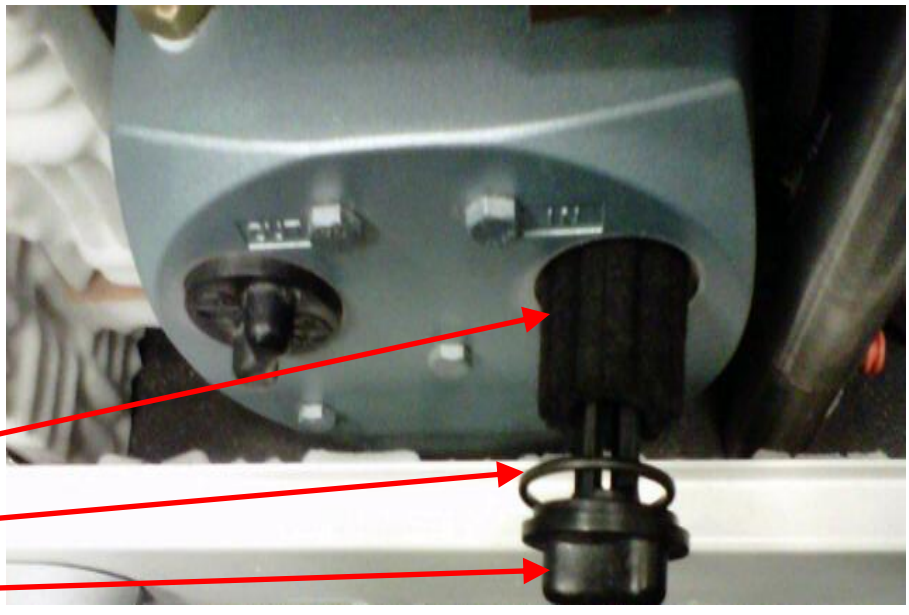


11. Reattach BATTERY COMPARTMENT DOOR and HEPA Filter Door.

12. Visually inspect **Female Quick Disconnect Couplers (P/N 0700-001-223)** and surrounding area of panel for any indication of leaks. Wipe off Couplers.

13. Clean IR LED's with a moist Q-Tip.

14. While the RIGHT SIDE PANEL is removed, unscrew the two VACUUM PUMP END CAPS from the side of the VACUUM PUMP. Replace the **Vacuum Pump End Caps (P/N 0700-001-246)**, **O-Ring (P/N 0045-302-000)** and **Vacuum Pump Filters (P/N 0700-001-315Q)**.



15. While SIDE PANEL is removed, remove and replace **Vacuum Relief Valve O-Ring (P/N 0045-141-000)**.

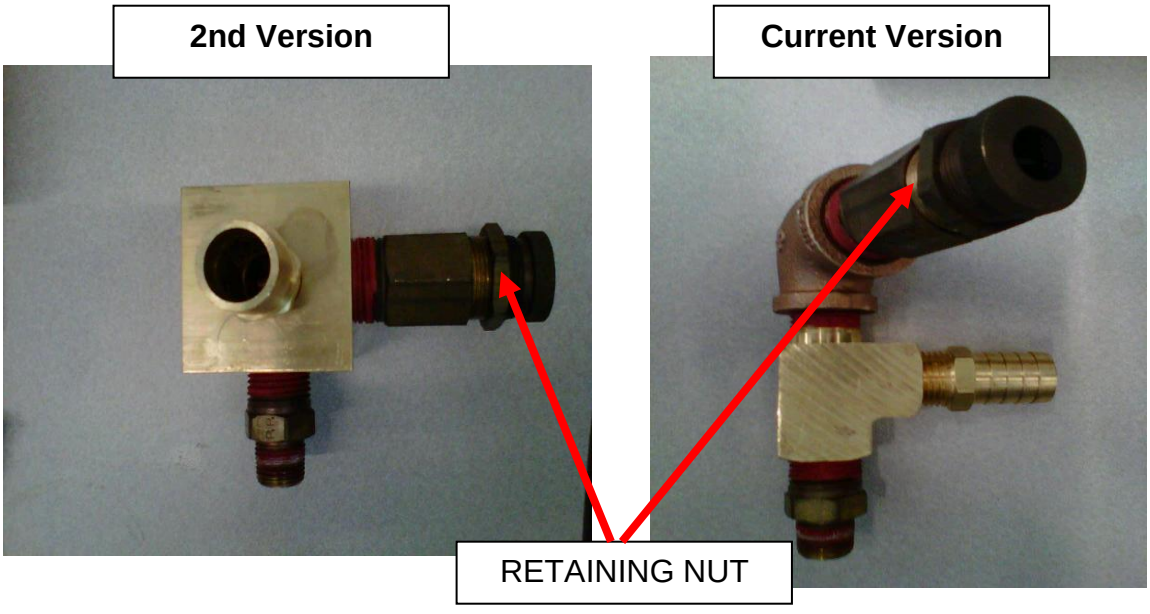
Note: There are 3 versions of the VACUUM RELIEF VALVE and associated brass components.

1st Version:
DURING THE PM, THE O-RING IS NOT REPLACED.

2nd Version:
DURING THE PM, THE O-RING IS REPLACED.

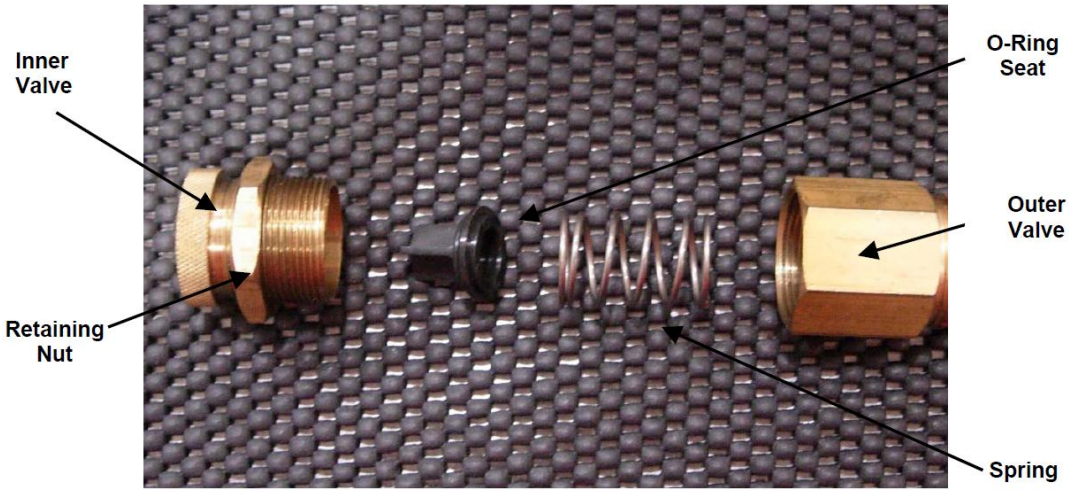
Current Version:
DURING THE PM, THE O-RING IS REPLACED.

16. Using a Crescent Wrench or equivalent, loosen the RETAINING NUT on the VACUUM RELIEF VALVE to remove the inner portion of the valve.



17. Once the nut has been loosened, remove the inner portion of the valve by rotating counterclockwise.

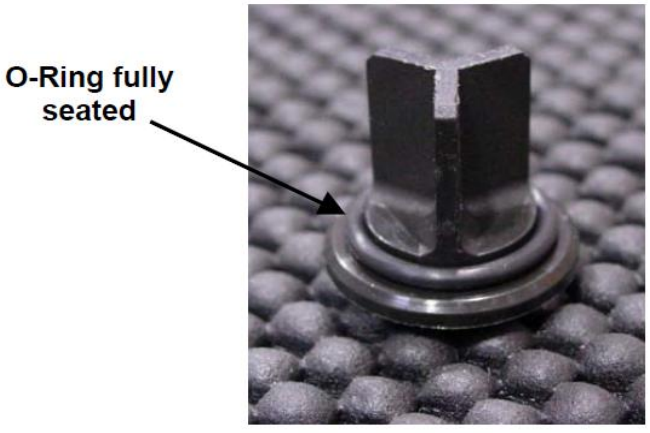
Note: The inner portion o the valve contains a Spring and the O-ring Seat.Take caution when removing as these parts may fall under the VACUUM PUMP.



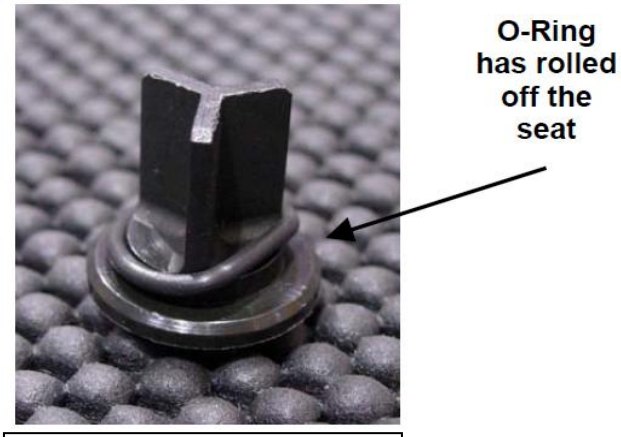
Note: Placement diagram of how the parts should be installed. Note the direction of the O-ring Seat. It is important these parts be installed the same way for re-assembly.

18. Remove the old **O-Ring (P/N 0045-141-000)** from the O-RING SEAT. Ensure there is no debris remaining.

19. Place the seat face down on a flat surface and roll the new O-RING onto the seat from the stem side.



CORRECT INSTALLATION

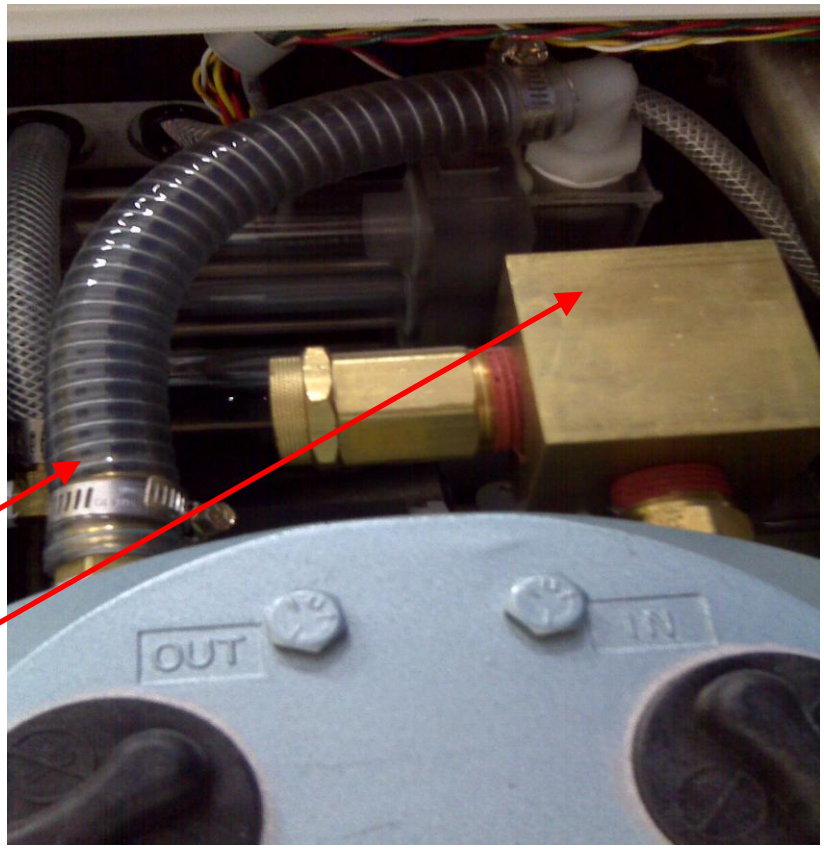


INCORRECT INSTALLATION

20. Verify the O-RING does not roll off the O-RING SEAT. The O-RING may twist when placing it over the STEM and on to the SEAT. This will cause an air leak in the system equivalent to that of an O-RING failure.

21. If the O-RING does not seat correctly it may be necessary to remove the twist placed in it during installation. Reinstall the VACUUM RELIEF VALVE but don't tighten the Lock Nut as the Vacuum Level has to be set first. **Vacuum Level will be reset in step 32**.

22. While Side Panel is removed, remove and replace the **Wire Reinforced Tubing (P/N 0700-001-457)** between the Vacuum Pump and Silencer Manifold. If **90˚ Elbow (P/N 0048-212-000)** is cracked or hard and brittle, remove and replace as well.



WIRE REINFORCED TUBING

90˚ ELBOW

23. Inspect **Silencer Manifold Assy (P/N 0700-001-160Q)** for cracks or breaking. If Silencer Manifold needs to be replaced, make a comment on the PM Checklist and inform the customer accordingly.

NOTE: Make sure 15 minutes have passed since step 5 before proceeding.

24. Scrub all surfaces of the CANISTER ASSY, CANISTER CAP ASSY, LEVEL SENSING ROD, and FLOAT SENSOR.

25. Install new CANISTER CAP O-RING and reinstall CANISTER CAP ASSY.

26. Install new CARBON HOSE.

27. While still in “Dock Control” dock the Rover. Utilize “Coupling Out” and “Sprinkler On” functions to fill the Rover to the 10 liter mark on the Canister. Turn “Sprinkler Off”.

28. Utilize the “Pump On” function to offload the Rover and record the time required to offload 8 liters. Turn “Pump Off”. If the offload rate is **greater than 50 seconds**, troubleshoot the problem, make a comment on the Rover PM CHECKLIST, and perform a repair based on the severity of the problem. Be aware that the Docker may be the source of the problem if several Rovers are slow. Note this on the Docker PM CHECKLIST.

29. Utilize “Undock” and “Exit Menu” functions to exit out of Calibration Menu.

NOTE: IF YOU REPLACE THE HEPA FILTER (P/N 0700-034-000), VERIFY THE SOFTWARE VERSION IS 6.3 (The new software will give the option to set the Hepa Filter hours to 1000). IF NOT VERSION 6.3, you will only be able to reset the hours to 500.

30. While still in In Diagnostic Mode, scroll to “Reset Fl Filt” (IF software is 5.1 or higher) to reset the Fluid HEPA Filter hours. Press “Exit Menu” to exit out of Diagnostic Mode.

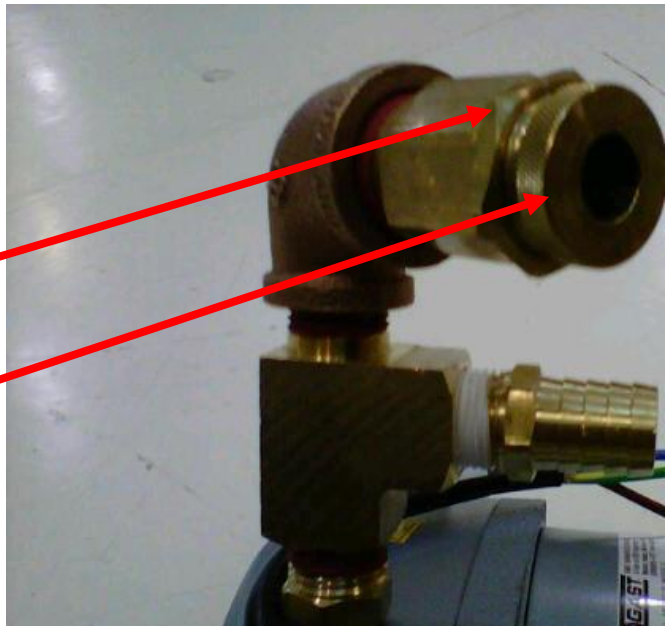
31. Check to ensure CANISTER CAP ASSY seal is tight and no water leaks exist.

32. Insert a FOUR-PORT MANIFOLD into the CANISTER CAP, ensuring the caps are on all ports. Plug the Rover in, turn it on, and depress the “Fluid Suction On/Off” button.

33. With the LOCKING NUT loose, rotate the INNER VACUUM VALVE until the **Vacuum Pressure Guage (P/N 0700-001-416)** reads 18.5 in/Hg +/- .5 in/Hg and allow pressure level to stabilize.

LOCKING NUT

INNER VACUUM VALVE



34. Once the pressure has stabilized, hold the INNER VALVE and tighten the LOCK NUT. Once tightened, ensure the vacuum level did not deviate from 18.5 in/Hg +/-.5 in/Hg.

35. Reattach the RIGHT SIDE PANEL.

36. Check the function of the IV Pole and the Smoke Evacuator (700-1 only).

37. Dock Rover. Check for successful Docking Cycle.

Rover Model 700-7 (approximate elapsed time 25 Minutes)

1. Remove **Canister Cap Assy (P/N 0700-007-170Q)** by removing the six **Socket Head Cap Screws (P/N 0004-546-000)** and **Flat Washers (P/N 0011-052-000)** securing the CANISTER CAP using 3/32in Allen Key or equivalent.

2. Inspect **Canister Assy (P/N 0700-007-320Q)** for any cracks or leaks that will indicate that the CANISTER ASSY should be replaced. Note any concerns.

3. Spray all interior surfaces of CANISTER ASSY and CANISTER CAP ASSY with a heavy saturating spray of the **Neptune Cleaner (P/N 0700-001-024)**.

4. Pour NEPTUNE CLEANER into CANISTER ASSY until it is flush with the **Float Switch Assy (P/N 0700-007-326)** on the bottom of the base.

5. Place CANISTER CAP ASSY onto CANISTER ASSY. (This keeps the surfaces from drying out).

6. Wait 15 minutes before cleaning CANISTER ASSY or CANISTER CAP ASSY. (If wait time is longer such that the surface has dried, NEPTUNE CLEANER can be reapplied just before scrubbing). While waiting, proceed with steps 7-8.

7. Visually inspect **Female Quick Disconnect Couplers (P/N 0700-001-223)** and surrounding area of panel for any indication of leaks. Wipe off Couplers.

8. Clean IR LED’s with a moist Q-Tip.

9. Remove the Battery Door and Replace the two (2) **AA Batteries (P/N 0207-050-041)**. Reattach the door securely.

10. Scrub all surfaces of the CANISTER ASSY and CANISTER CAP ASSY.

11. Install new **Canister Cap O-Ring (P/N 0045-267-000)** and replace CANISTER CAP ASSY.

12. Clean House Suction Ports if necessary.

13. Manually fill Rover with water to approximately 10 liters. Dock Rover and record the time required to offload 8 liters. If the offload rate is **greater than 50 seconds**, troubleshoot the problem, make a comment on the Rover PM CHECKLIST, and perform a repair based on the severity of the problem. Be aware that Docker may be the source of problem if several Rovers are slow. Note this on Docker PM Checklist.

14. Check to ensure Canister Cap seal is tight and no water leaks exist.

15. Dock the Rover and ensure all sequences of Docking Cycle are completed and no leaks are present.

Docker Models 700-4 and 700-5 (approximate elapsed time 25 Minutes)

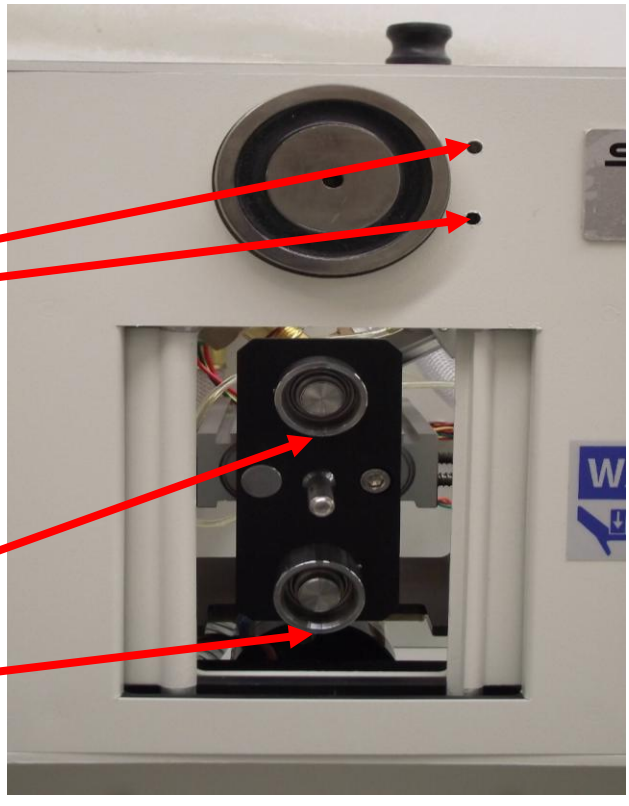
1. Turn off power to Docker and turn off water supply.

2. Clean the LED's on the **IR Transceiver Board (P/N 0712-019-001)** with a moist Q-Tip.

IR TRANSCEIVER BOARD LED's

3. Visually inspect the **Male Quick Disconnect Couplers (P/N 0700-004-472)** to ensure they are sealing properly and there are no indications of leaks. Wipe off any excess fluid on or around couplers.

Male Quick Disconnect Couplers



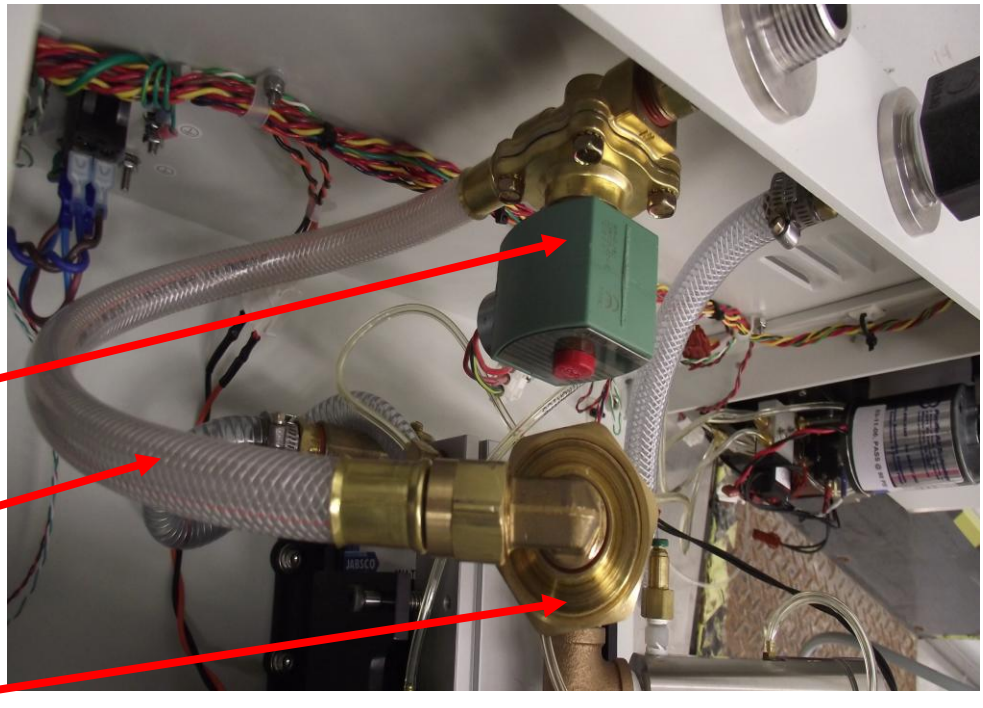
4. Remove the **Docker Top Cover (P/N 0700-004-011)**.

5. Inspect the entire fresh water loop to include the **Backflow Prevention Valve (P/N 0700-005-016)**, **1/2 in Fresh Water Supply Hose (P/N 0700-005-120)**, and **Sprinkler Valve Assy (P/N 0700-004-475Q)** to ensure there are no leaks.

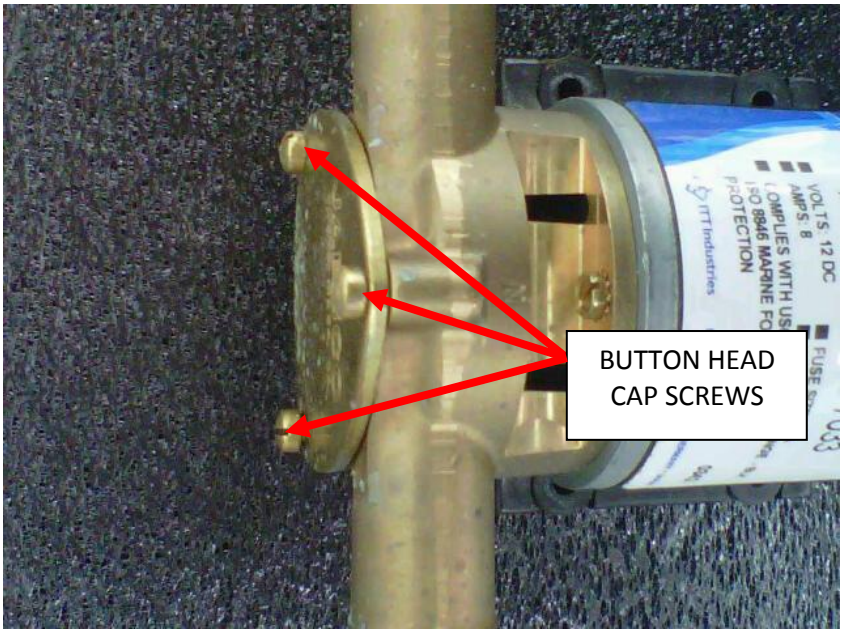
SPRINKLER VALVE ASSY

1/2 IN FRESH WATER SUPPLY HOSE

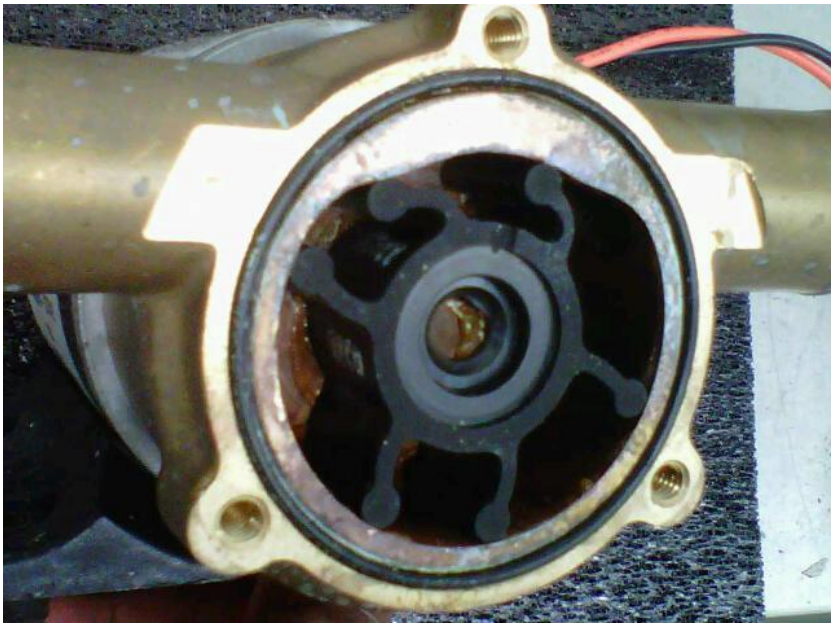
BACKFLOW PREVENTION VALVE



6. Remove the Cover Plate from the **Offload Pump Assy (0700-004-080Q)** using a Stubby Slotted Screwdriver or equivalent.



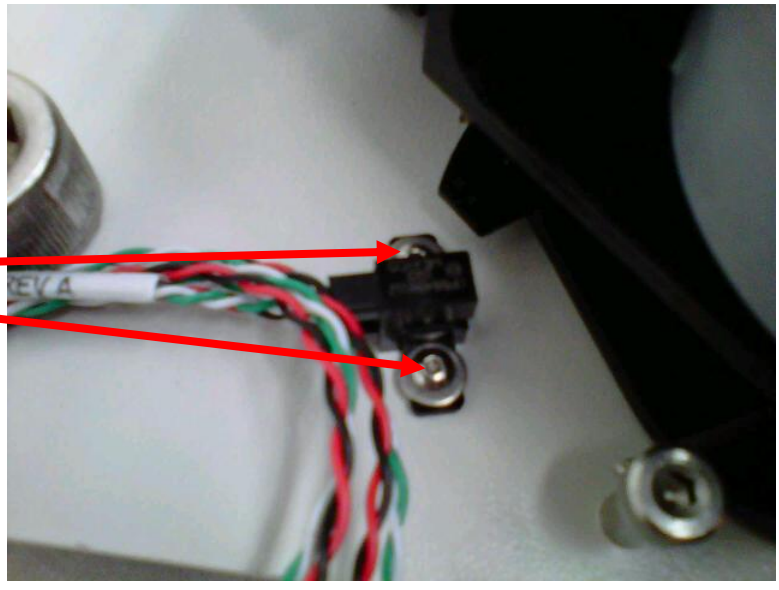
7. Replace the **Macerator Impeller (P/N 0700-001-315)** in the OFFLOAD PUMP ASSY and replace the Cover Plate. Be sure that the screws on the Cover Plate are secure to prevent leaking.



8. Remove and replace both **Optical Switches (P/N 0700-004-240)**.

a. To remove **Optical Switch Assy (P/N 0700-001-240)** from the Left Side Door or Right Side Door area, unthread the two **Button Head Cap Screws (P/N 0004-295-000)** using a 1/16 Allen Key or equivalent.

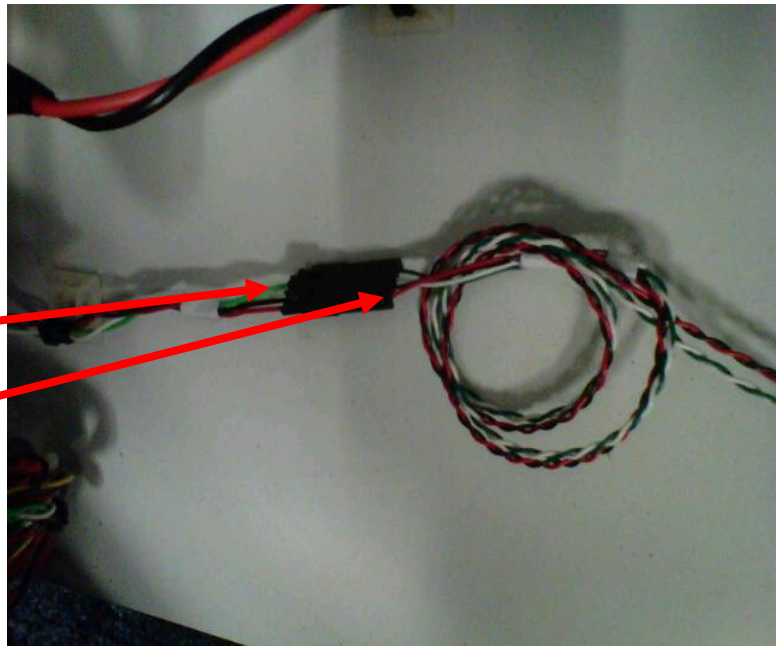
BUTTON HEAD CAP SCREWS



b. Disconnect the OPTICAL SWITCH ASSY from the **Optical Switch Harness Assy (P/N 0700-004-112)**.

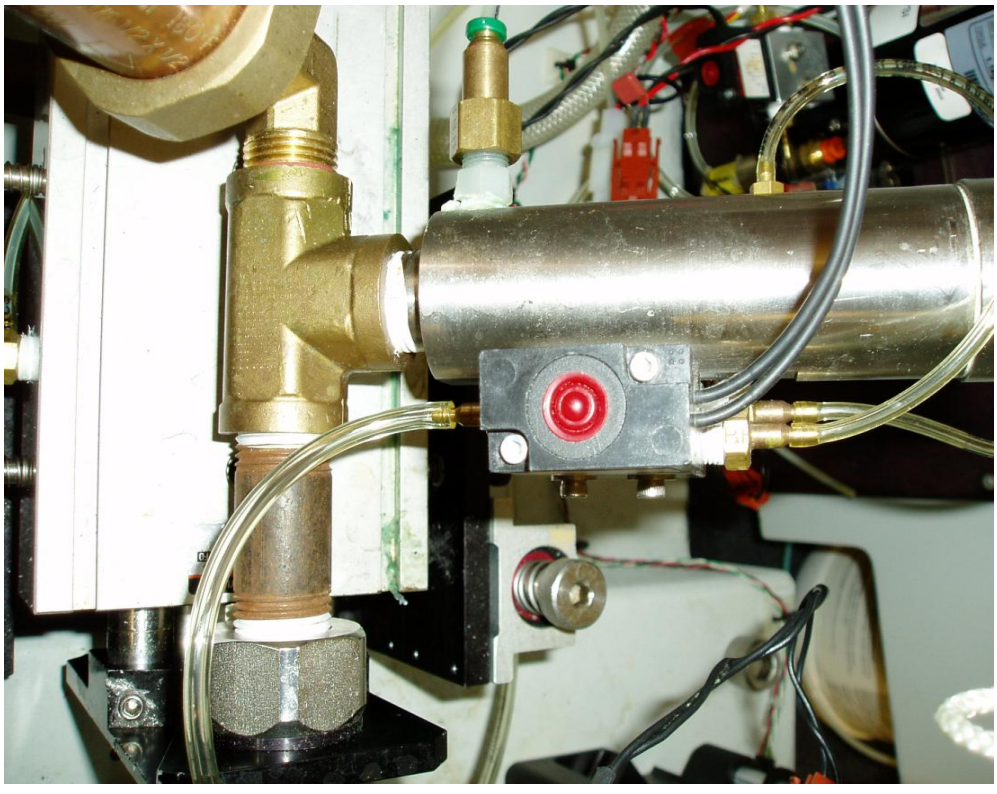
OPTICAL SWITCH HARNESS ASSY

OPTICAL SWITCH ASSY



9. Remove the braided stainless steel fresh water hose attached to the Docker. Remove old Filter Washer if present and insert new **Filter Washer (P/N 0011-546-000)**.

10. Inspect **Detergent Injector Pump Assy (P/N 0700-005-100Q)** and detergent tubing for signs of leaking. (700-5 Only).

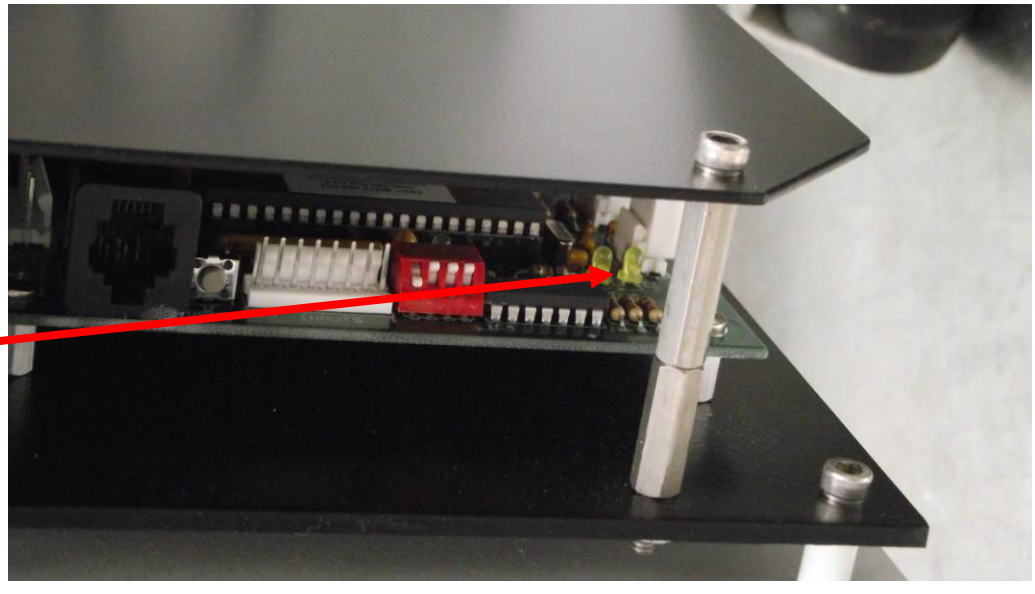


11. If applicable, check the state of the mounting of the Docker and comment on recommendations.

12. Check the level and height of the Docker with several Rovers.

13. Reconnect water supply to unit and restore power. Ensure that the Pneumatic Compressor energizes.

14. Observe Docker Control Board for two Amber LED's at bottom left area of board to be lit when actuator doors are closed. Open left door and ensure top LED goes out. Open right door and ensure bottom LED goes out.



15. During docking, inspect the OFFLOAD PUMP and WATER HOSE for leaks around the Cover Plate.

16. Also during docking, inspect the DETERGENT INJECTOR PUMP and all connections for signs of leaking.

17. Reattach the DOCKER TOP COVER and close side doors.

Complete PM Form 0700-001-742

1. Use one PM Form per serial number.

2. Fill out top section of PM Form and sign.

3. Fill out serial number in appropriate section on PM Form.

4. Check each box "OK" as appropriate.

5. If service is recommended check the appropriate box.

NOTE: This should be something that does not make the main function of the unit inoperable, e.g. an IV pole that will not stay extended.

6. If service is needed check the appropriate box.

NOTE: This should be something that makes the main function of the unit inoperable, e.g. a total loss of vacuum.

7. Measure and record Offload Rate and Vacuum Level.

8. Add any comments in the comments section.

9. Leave the carbon copy with the customer.

10. Send the original copy to Stryker with the Field Service Report (FSR).

Note: The chart below represents the approximate time needed to complete the Preventative Maintenance process.

CHECKLIST ITEM(S)	MAJOR ACTIONS PERFORMED	APPROXIMATE TIME REQUIRED
1. Clear Errors 2. Check Flapper Operation 3. Inspect Canister 4. Spray Cap and Canister 5. Replace HEPA Filter 6. Replace/ verify software when needed. (6.3 upgrade) 7. Replace Lower Vacuum Hose 8. Check Coupler Sealing 9. Clean Waste Coupler 10. Clean IR LED's 11. Replace Relief Valve O-Ring 12. Replace Vacuum Filters 13. Check Silencer Elbow	Enter Diagnostic Mode and empty Rover. Remove cap and spray cleaner on cap and sides of canister and pour cleaner to bottom of base. Remove appropriate rover panels. Check items as shown at left. Replace parts as shown at left. Replace appropriate rover panels	**20 Minutes**
1. Clean Inside of Cap 2. Clean Inside of Canister 3. Clean Outside of Rover 4. Replace Cap (and O-Ring) 5. Replace Carbon Hose	Scrub inside of canister and canister cap. Clean outside of rover, including the couplers and LED's.	**15 Minutes**
1. Check Offload Rate 2. Check Cap Seal 3. Check Vacuum Level 4. Check IV Pole Function 5. Check Smoke Function 6. Reset HEPA Filter hours 7. Complete Dock Sequence		**10 Minutes**
Time Allotted for Rover 700-1 and 700-3:		**45 Minutes**
Time Allotted for Rover 700-7:		**25 Minutes**
Time Allotted for Docker 700-4 and 700-5:		**25 Minutes**
Time Allotted for Completion of PM Form:		**5 Minutes**

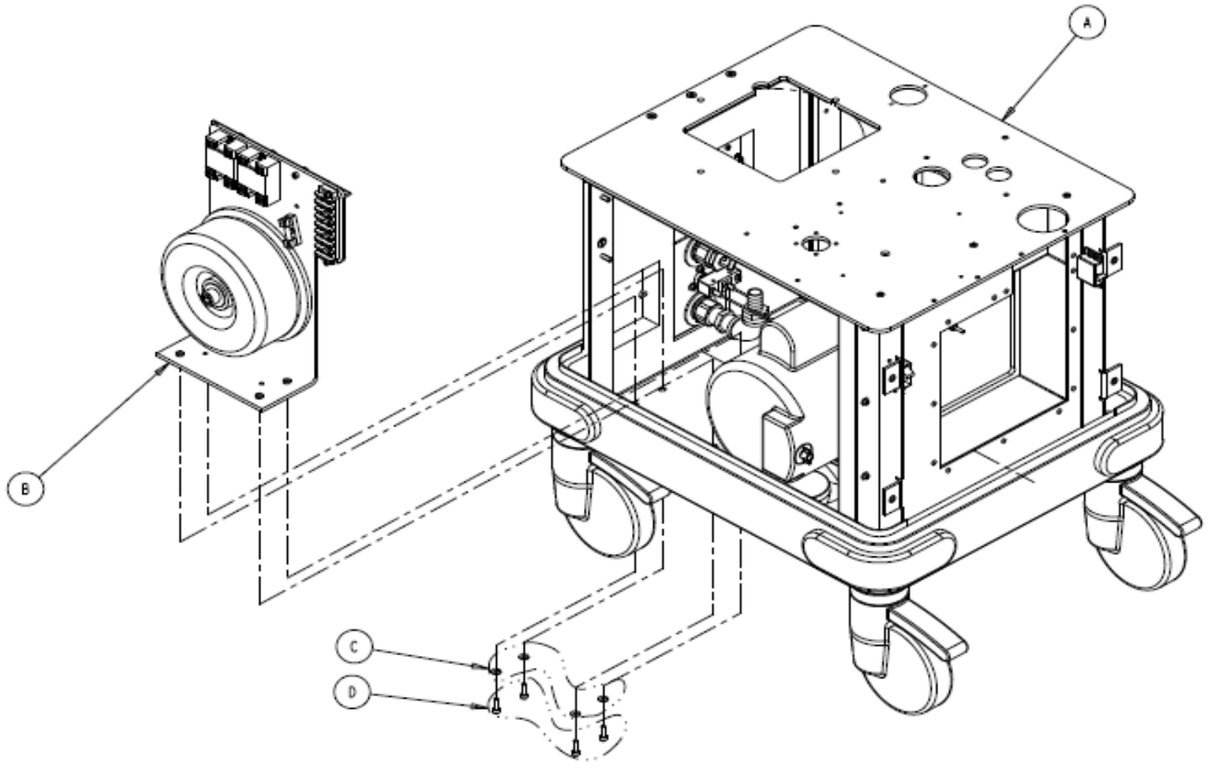
Appendix B (Prints)

700-001 ROVER ASSY

Item	Part No.	Part Name	Qty.
A	0700-001-110	BASE ROVER ASSEMBLY	1
L1 B	0700-001-030	ROVER TRANSFORMER ASSEMBLY	1
C	0011-511-000	FLAT WASHER	4
L2 L3 D	0004-521-000	SOCKET HEAD CAP SCREW	4
E	0700-001-014	BLOWER GASKET	1
F	0700-001-013	VACUUM MOTOR	1
L4 H	0014-107-000	RUBBER WASHER	6
L5 J	0011-510-000	FLAT WASHER	5
L6 K	0004-533-000	SOCKET HEAD CAP SCREW	3
L	0700-001-015	STANDOFF	1
M	0700-001-016	STANDOFF	2
L7 N	0001-159-000	FLAT HEAD SOCKET SCREW	1
P	0700-001-012	FINGER GUARD	1
L8 R	0004-529-000	SOCKET HEAD CAP SCREW	4
S	0700-001-011	SMOKE FILTER PLENUM	1
L9 T	0004-156-000	SOCKET HEAD CAP SCREW	4
W	0700-001-017	ROVER POWER CORD	1
Y	0700-001-412	POWER SWITCH	1
AA	0700-001-409	POWER SWITCH SPLASH COVER	1

Item	Part No.	Part Name	Qty.
L10 AB	0004-525-000	SOCKET HEAD CAP SCREW	4
L11 AC	0013-018-000	INTERNAL & EXTERNAL TOOTH LOCK WASHERS	10
L12 AD	0015-004-000	NUT	5
AE	0058-334-000	ADHESIVE CABLE MOUNT	1
AF	0700-001-455	POWER IV POLE ASSEMBLY	1
L13 AH	0011-508-000	FLAT WASHER	1
L14 AJ	0004-536-000	SOCKET HEAD CAP SCREW	1
L15 AK	0011-491-000	FLAT WASHER	2
L16 AL	0004-523-000	SOCKET HEAD CAP SCREW	2
AM	0700-001-070	PNEUMATICS PANEL ASSEMBLY	1
AP	0700-001-050	USER INTERFACE PANEL ASSEMBLY	1
AS	0700-001-018	TOWER FRONT FOAM	1
AT	0700-001-019	TOWER BACK FOAM	1
AW	0700-001-080	TOWER LEFT PANEL ASSEMBLY	1
L17 AY	0700-001-714	SPEC. LABEL	1
L18 BA	0700-001-702	SPEC LABEL	1
BB	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
BC	0072-002-061	RTV 108 (NOT SHOWN)	AR
BD	0700-001-730	ROVER GOLD LABEL	1
BE	0004-205-000	BUTTON HEAD SOCKET SCREW	4
L19 BF	0700-001-125	PNEUMATICS PANEL CABLE ASSY (NOT SHOWN)	1

PRODUCTION RELEASED	DATE 11-26-02			
DATE	CAP'N BY	DFTG	SYM	DESCRIPTION
			L	REVISED AND REDRAWN ECO 0612E09821
			L1	WAS: ITEM B P/N 0700-001-030...POWER..
			L2	WAS: ITEM C P/N 0011-511-000...WASHER (#10)...
			L3	WAS: ITEM D P/N 0004-521-000...10-32 X 5/8...
			L4	WAS: ITEM H P/N 0014-107-000...WASHER #8...
			L5	WAS: ITEM J P/N 0011-510-000...WASHER (#8)...
			L6	WAS: ITEM K P/N 0004-533-000...8/32 X 1...
			L7	WAS: ITEM N P/N 0001-159-000...SCREW (#8)...
			L8	WAS: ITEM R P/N 0004-529-000...6-32 X 5/8...
			L9	WAS: ITEM T P/N 0004-156-000...4-40 X 1/4...
6-26 02		PE	L10	WAS: ITEM AB P/N 0004-525-000...8-32 X 3/8...
			L11	WAS: ITEM AC P/N 0013-018-000...WASHER #10...
			L12	WAS: ITEM AD P/N 0015-004-000...HEX NUT 10-32...
			L13	WAS: ITEM AH P/N 0011-508-000...WASHER (5/16)...
			L14	WAS: ITEM AJ P/N 0004-536-000...5/16-18 X 3/4...
			L15	WAS: ITEM AK P/N 0011-491-000...WASHER (#6)...
			L16	WAS: ITEM AL P/N 0004-523-000...6-32 X 1/2...
			L17	WAS: ITEM AY P/N 0700-001-714...LABEL (SMOKE...
			L18	WAS: ITEM BA P/N 0700-001-702...LABEL (700-1...
			L19	WAS: ITEM BF P/N 0700-001-125...PNEUMATICS...
			L20	WAS: SHEET 3: DETAIL B...
			L21	SHEET 6 REVISED AND REDRAWN TO ORCAD
5-31 02		BC	M	REVISED PICTORIALLY ECR 113712



FORM NO. 054m100, Rev. D	SHEET 1 OF 6	PROJECT NO. MTR-0338	0700-001-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER RADII (EXTERNAL & INTERNAL)---- .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250/ (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY	DATE	TITLE
G. HEILMAN	11-02	ROVER ASSEMBLY
DESIGNED BY	DATE	
S/ K. STALEY	11-02	MATERIAL
MFG APPROVAL	DATE	
S/ K. LAKE	11-02	
QA APPROVAL	DATE	FINISH
S/ S. ORVATH	11-02	
AUTHORIZED BY	DATE	
S/ R. RUSSELL	11-02	
DFTG APPROVAL	DATE	SIZE / PART NO. / REV.
S/ D. MORRIS	11-02	B / 0700-001-010 / M

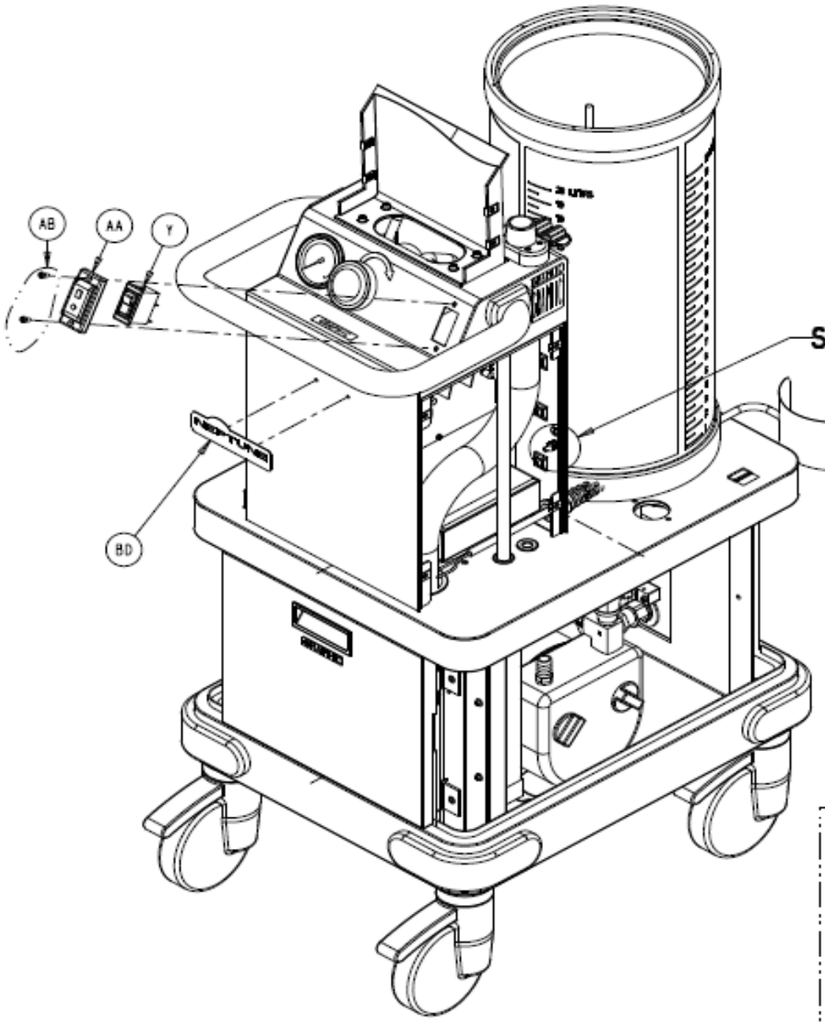
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

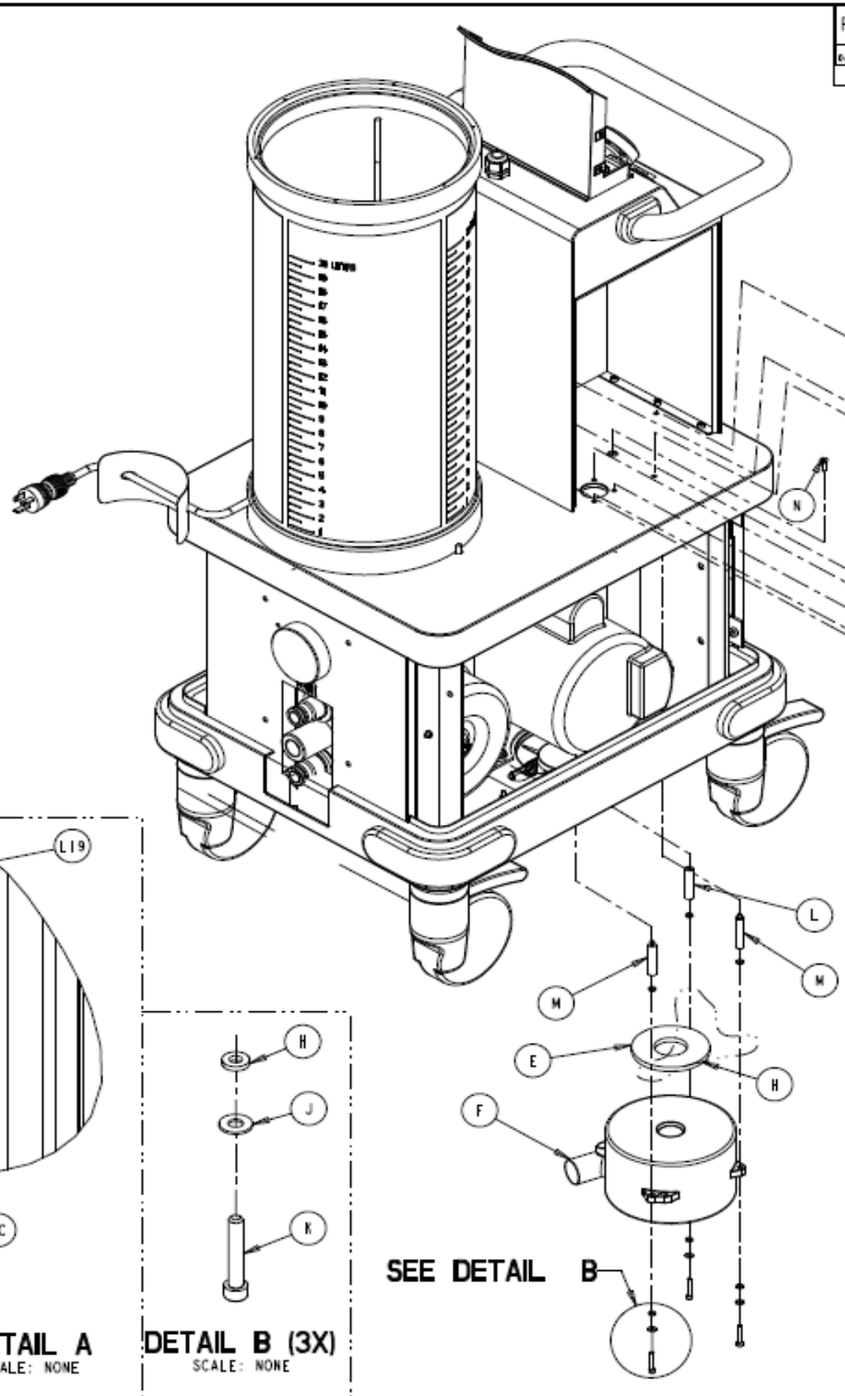
3. INSPECT PER QIP-0752.
2. CALIBRATE PER SOE-121-027.
1. ASSEMBLE PER SOE-121-001.

PRODUCTION RELEASED	DATE	11-26-02

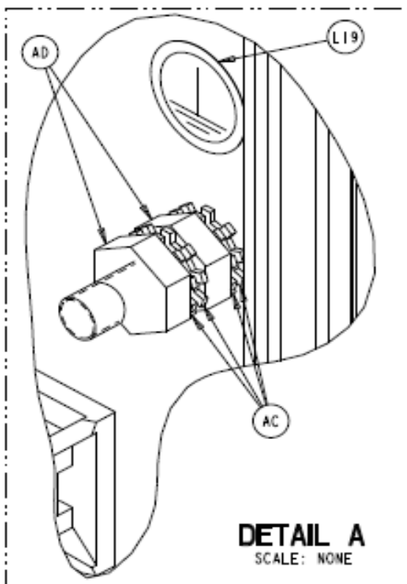
DATE	CAP'N BY	ECT'S	SYM	DESCRIPTION



SEE DETAIL A



SEE DETAIL B



DETAIL A
SCALE: NONE

DETAIL B (3X)
SCALE: NONE

NOTES:

FORM NO. 054m100, Rev. D	SHEET 2 OF 6	PROJECT NO. MTR-0338	0700-001-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---- .020/.060 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

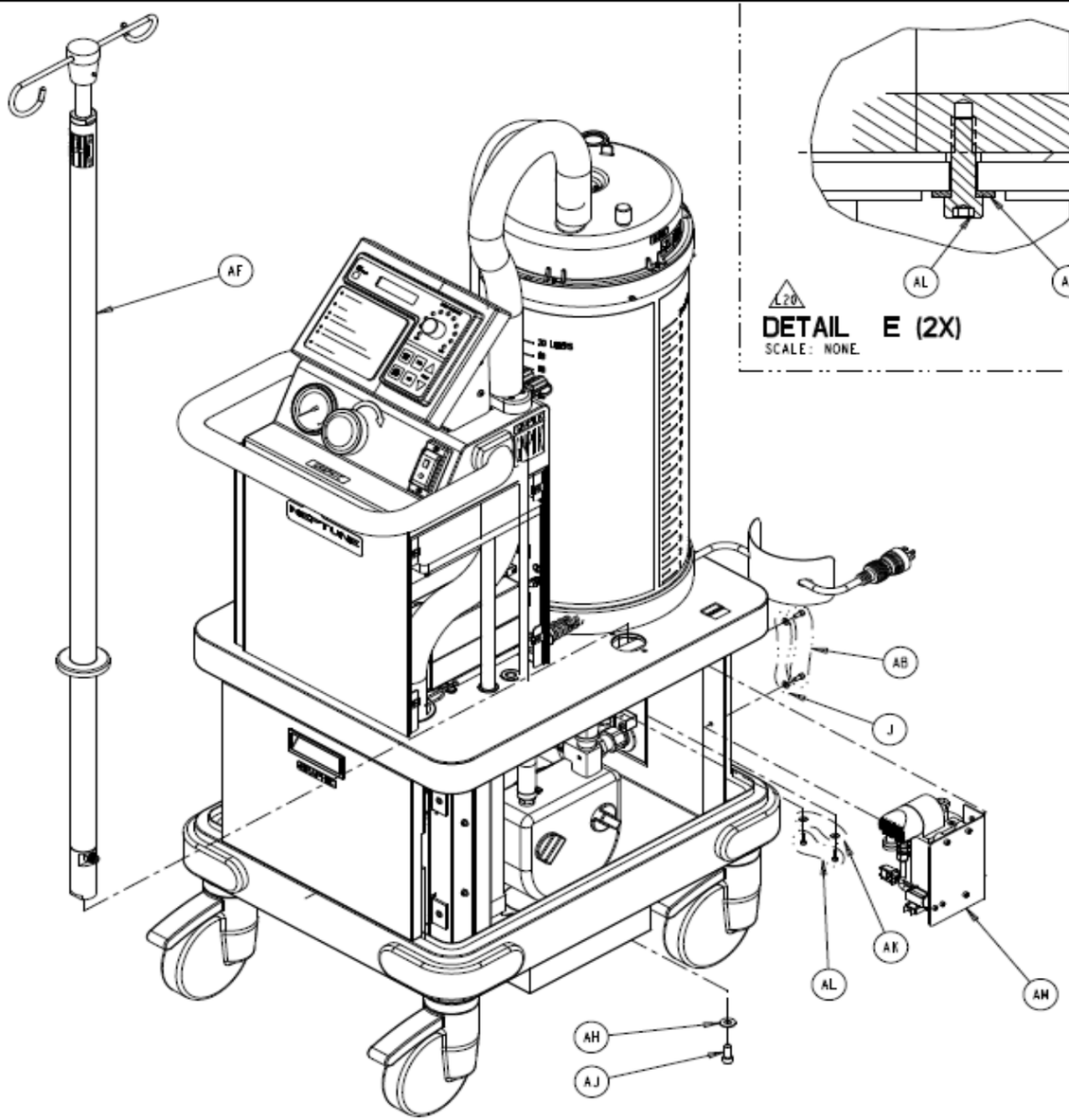
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

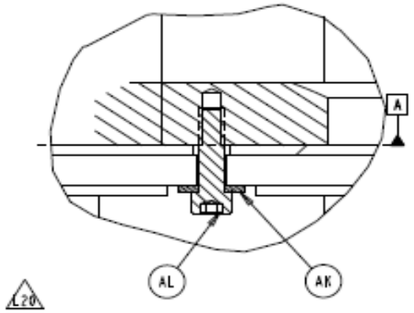
DRAWN BY: G. HEILMAN	DATE: 11-02	TITLE: ROVER ASSEMBLY	
DESIGNED BY: S/ K. STALEY	DATE: 11-02		
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL	
QA APPROVAL: S/ S. BORVATH	DATE: 11-02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02		
DPTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B	PART NO.: 0700-001-010 REV.: M

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	11-26-02

DATE	CHG'D BY	EFF'G	SYM	DESCRIPTION

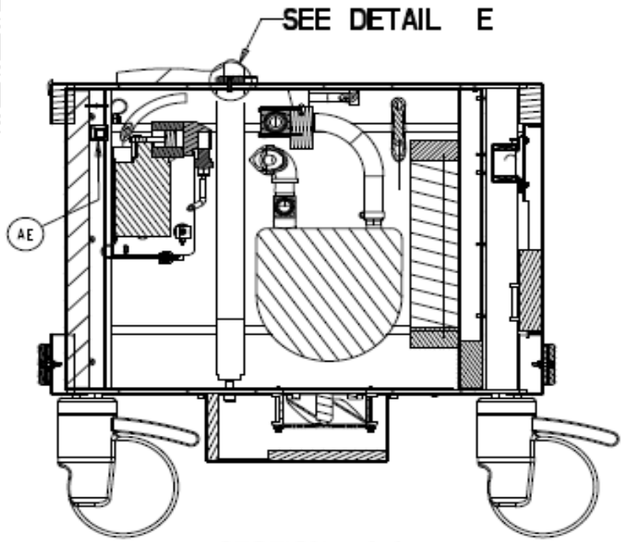




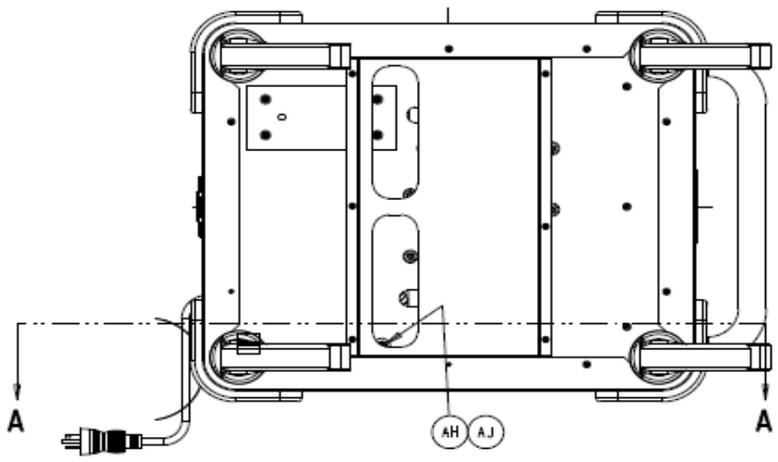
L20
DETAIL E (2X)
SCALE: NONE.

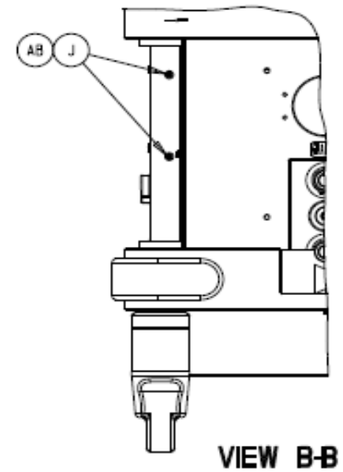
B

B



SECTION A-A





VIEW B-B
SCALE: NONE

FORM NO. 054m100, Rev. D	SHEET 3 OF 6	PROJECT NO. MTR-0338	0700-001-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
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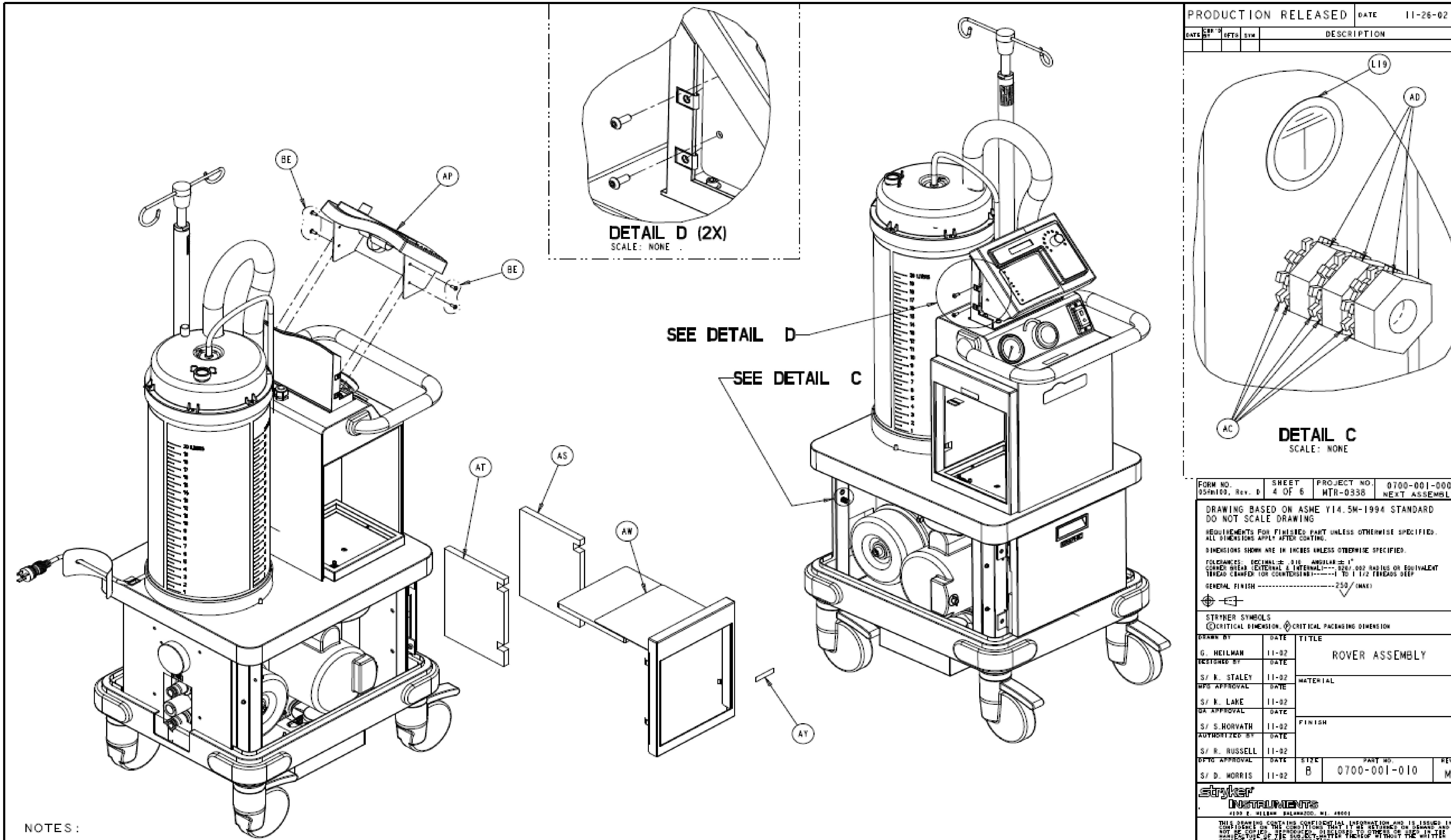
GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY	DATE	TITLE
G. HEILMAN	11-02	ROVER ASSEMBLY
DESIGNED BY	DATE	
S/ K. STALEY	11-02	MATERIAL
MFG APPROVAL	DATE	
S/ K. LAKE	11-02	
QA APPROVAL	DATE	FINISH
S/ S. BORVATH	11-02	
AUTHORIZED BY	DATE	
S/ R. RUSSELL	11-02	
DPTG APPROVAL	DATE	SIZE / PART NO. / REV.
S/ D. MORRIS	11-02	B / 0700-001-010 / M

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:



BE
AP
BE
DETAIL D (2X)
SCALE: NONE
SEE DETAIL D
SEE DETAIL C
AT
AS
AW
AY
NOTES:
PRODUCTION RELEASED
DATE 11-26-02
DATE
CHK'D BY
DFTG
SYM
DESCRIPTION
L19
AD
AC
DETAIL C
SCALE: NONE
FORM NO. 05Fm100, Rev. D
SHEET 4 OF 6
PROJECT NO. MTR-0338
0700-001-000 NEXT ASSEMBLY
DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING
REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
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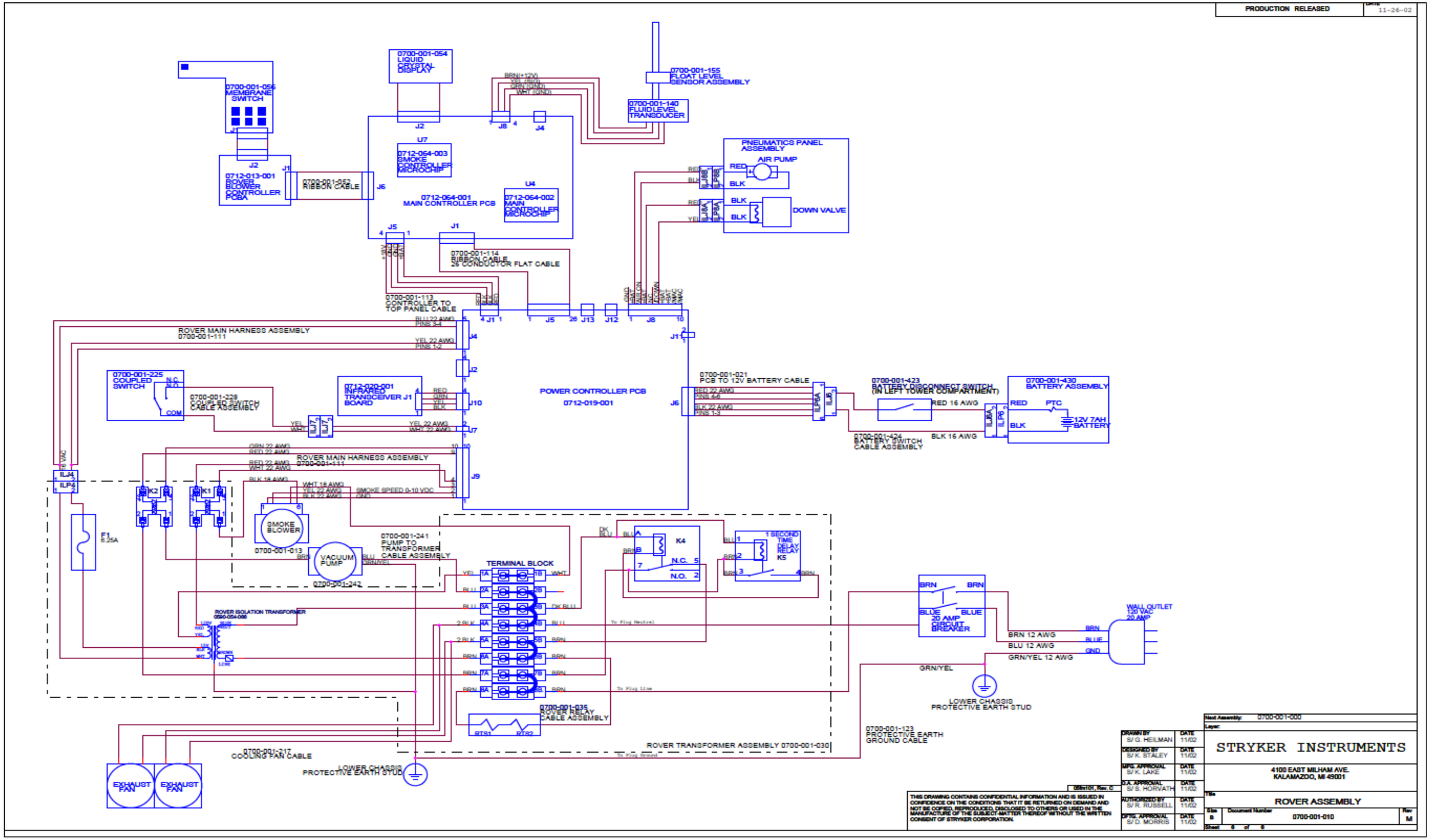
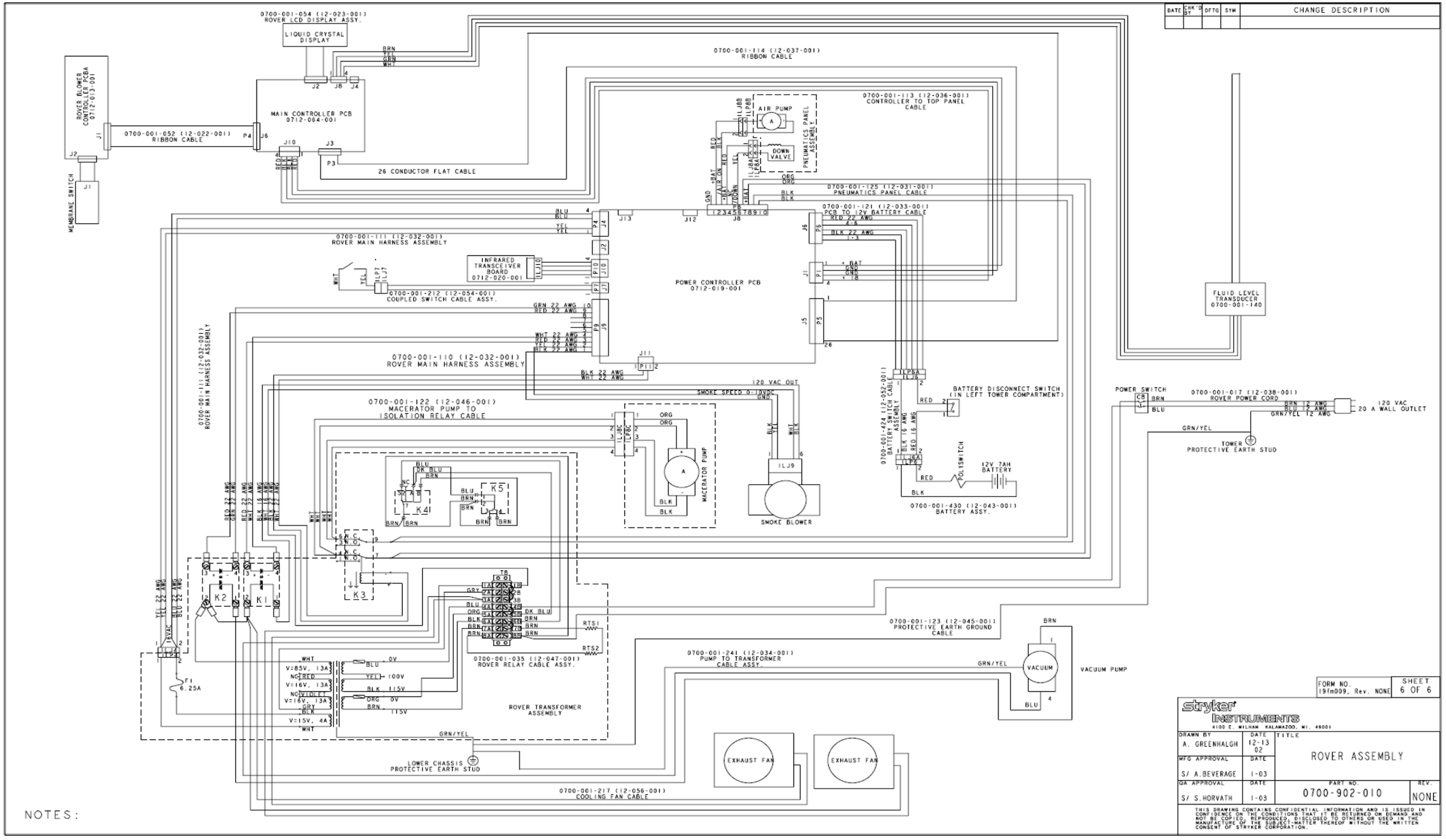
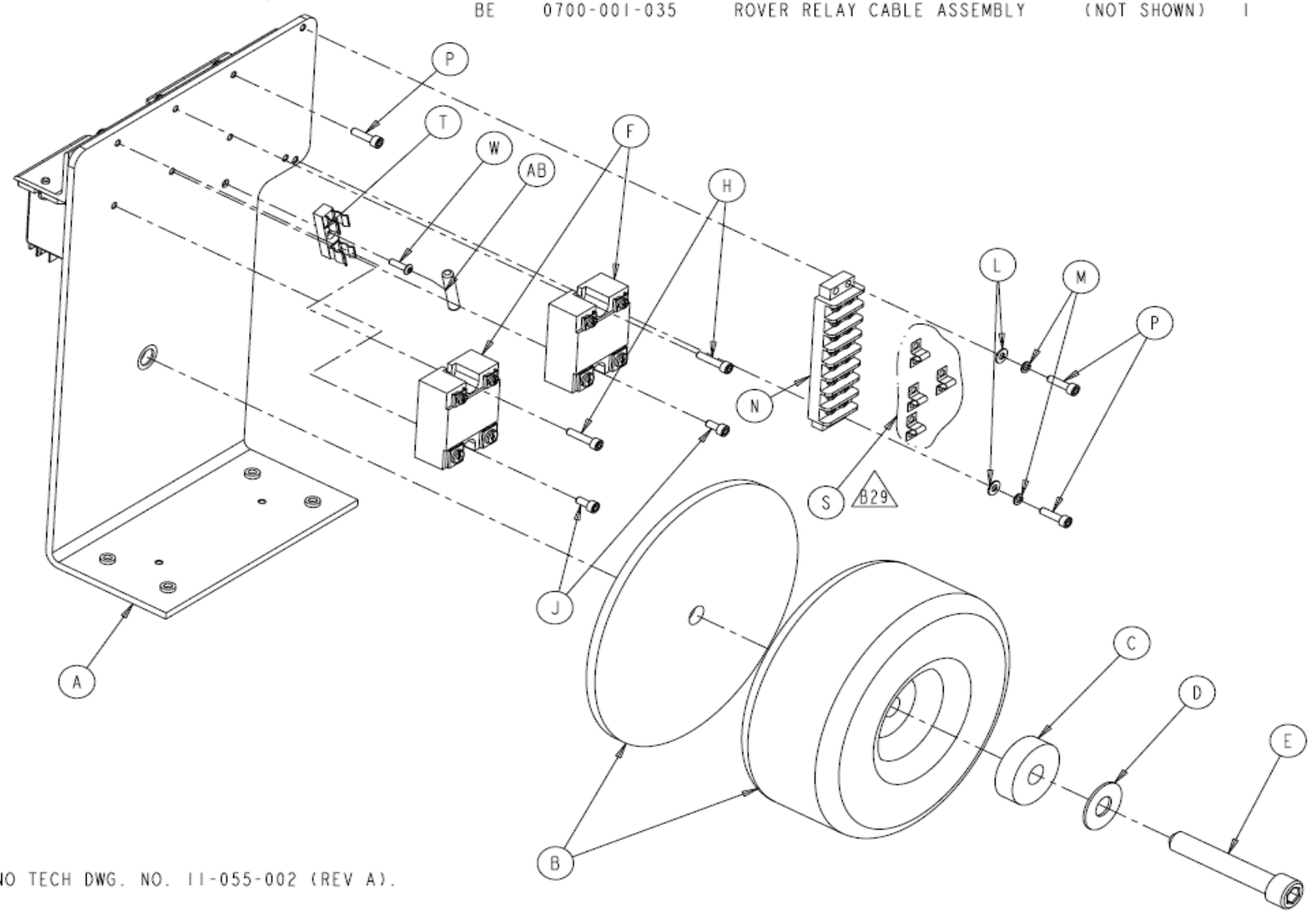
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------------------250 (MAX)
STRYKER SYMBOLS
CRITICAL DIMENSION, CRITICAL PACKAGING DIMENSION
DRAWN BY G. HEILMAN DATE 11-02
DESIGNED BY S/ K. STALEY DATE 11-02
MFG APPROVAL S/ K. LAKE DATE 11-02
QA APPROVAL S/ S.HORVATH DATE 11-02
AUTHORIZED BY S/ R. RUSSELL DATE 11-02
DFTG APPROVAL S/ D. MORRIS DATE 11-02
TITLE ROVER ASSEMBLY
MATERIAL
FINISH
SIZE B
PART NO. 0700-001-010
REV. M
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.


PRODUCTION RELEASED
11-26-02
0700-001-056 MEMBRANE SWITCH
0700-001-054 LIQUID CRYSTAL DISPLAY
0700-001-155 FLOAT LEVEL SENSOR ASSEMBLY
0700-001-140 FLUID LEVEL TRANSDUCER
0712-013-001 ROVER BLOWER CONTROLLER PCBA
0700-001-052 RIBBON CABLE
0712-064-001 MAIN CONTROLLER PCB
U7 0712-064-003 SMOKE CONTROLLER MICROCHIP
U4 0712-064-002 MAIN CONTROLLER MICROCHIP
PNEUMATICS PANEL ASSEMBLY
AIR PUMP
DOWN VALVE
0700-001-114 RIBBON CABLE 26 CONDUCTOR FLAT CABLE
0700-001-113 CONTROLLER TO TOP PANEL CABLE
ROVER MAIN HARNESS ASSEMBLY 0700-001-111
0700-001-225 COUPLED SWITCH
0700-001-228 COUPLED SWITCH CABLE ASSEMBLY
0712-020-001 INFRARED TRANSCEIVER J1 BOARD
POWER CONTROLLER PCB 0712-019-001
0700-001-021 PCB TO 12V BATTERY CABLE
0700-001-423 BATTERY DISCONNECT SWITCH (IN LEFT TOWER COMPARTMENT)
0700-001-424 BATTERY SWITCH CABLE ASSEMBLY
0700-001-430 BATTERY ASSEMBLY
12V 7AH BATTERY
ROVER MAIN HARNESS ASSEMBLY 0700-001-111
SMOKE BLOWER
VACUUM PUMP
0700-001-013
0700-001-241 PUMP TO TRANSFORMER CABLE ASSEMBLY
0700-001-242
TERMINAL BLOCK
K4
1 SECOND TIME DELAY RELAY K5
ROVER ISOLATION TRANSFORMER 0350-054-006
0700-001-025 ROVER RELAY CABLE ASSEMBLY
ROVER TRANSFORMER ASSEMBLY 0700-001-030
0700-001-317 COOLING FAN CABLE
EXHAUST FAN
EXHAUST FAN
LOWER CHASSIS PROTECTIVE EARTH STUD
20 AMP CIRCUIT BREAKER
WALL OUTLET 120 VAC 20 AMP
0700-001-123 PROTECTIVE EARTH GROUND CABLE
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.
STRYKER INSTRUMENTS
4100 EAST MILHAM AVE. KALAMAZOO, MI 49001
ROVER ASSEMBLY
0700-001-010


DATE
CHK'D BY
DFTG
SYM
CHANGE DESCRIPTION
0700-001-054 (12-023-001)
ROVER LCD DISPLAY ASSY.
LIQUID CRYSTAL DISPLAY
ROVER BLOWER CONTROLLER PCBA 0712-013-001
MAIN CONTROLLER PCB 0712-064-001
0700-001-052 (12-022-001) RIBBON CABLE
MEMBRANE SWITCH
26 CONDUCTOR FLAT CABLE
0700-001-114 (12-037-001) RIBBON CABLE
AIR PUMP
DOWN VALVE
PNEUMATICS PANEL ASSEMBLY
0700-001-113 (12-036-001) CONTROLLER TO TOP PANEL CABLE
0700-001-125 (12-031-001) PNEUMATICS PANEL CABLE
0700-001-121 (12-033-001) PCB TO 12V BATTERY CABLE
RED 22 AWG
BLK 22 AWG
0700-001-111 (12-032-001) ROVER MAIN HARNESS ASSEMBLY
INFRARED TRANSCEIVER BOARD 0712-020-001
0700-001-212 (12-054-001) COUPLED SWITCH CABLE ASSY.
POWER CONTROLLER PCB 0712-019-001
FLUID LEVEL TRANSDUCER 0700-001-140
0700-001-110 (12-032-001) ROVER MAIN HARNESS ASSEMBLY
0700-001-122 (12-046-001) MACERATOR PUMP TO ISOLATION RELAY CABLE
120 VAC OUT
SMOKE SPEED 0-10VDC
GND
MACERATOR PUMP
SMOKE BLOWER
0700-001-424 (12-052-001) BATTERY SWITCH CABLE ASSEMBLY
BATTERY DISCONNECT SWITCH (IN LEFT TOWER COMPARTMENT)
POLYSWITCH
12V 7AH BATTERY
0700-001-430 (12-043-001) BATTERY ASSY.
POWER SWITCH
0700-001-017 (12-038-001) ROVER POWER CORD
120 VAC 20 A WALL OUTLET
TOWER PROTECTIVE EARTH STUD
K1
K2
K3
K4
K5
F1 6.25A
ROVER TRANSFORMER ASSEMBLY
0700-001-035 (12-047-001) ROVER RELAY CABLE ASSY.
0700-001-123 (12-045-001) PROTECTIVE EARTH GROUND CABLE
0700-001-241 (12-034-001) PUMP TO TRANSFORMER CABLE ASSY.
VACUUM
VACUUM PUMP
LOWER CHASSIS PROTECTIVE EARTH STUD
EXHAUST FAN
EXHAUST FAN
0700-001-217 (12-056-001) COOLING FAN CABLE
NOTES:
FORM NO. 19fm009, Rev. NONE
SHEET 6 OF 6
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001
DRAWN BY A. GREENHALGH
DATE 12-13 02
TITLE ROVER ASSEMBLY
MFG APPROVAL S/ A.BEVERAGE
DATE I-03
QA APPROVAL S/ S.HORVATH
DATE I-03
PART NO. 0700-902-010
REV. NONE
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.

ITEM	PART NO.	PART NAME	QTY.
A	0700-001-031	MOUNTING BRACKET	1
B2 B	0590-054-066	ROVER ISOLATION TRANSFORMER	1
C	0052-504-000	SPACER	1
B3 D	0011-506-000	FLAT WASHER	1
B4 E	0004-635-000	SHCS 1/2-13 X 3	1
F	0700-001-033	SOLID-STATE RELAY	2
B5 H	0004-538-000	SOCKET HEAD CAP SCREW	2
B6 J	0004-525-000	SOCKET HEAD CAP SCREW	6
B22			
B7 L	0011-510-000	FLAT WASHER	2
B8 M	0012-015-000	LOCK WASHER	2
N	0700-001-036	TERMINAL BLOCK	1
B9 P	0004-522-000	SOCKET HEAD CAP SCREW	3
B23			
S	0034-425-000	TERMINAL BLOCK JUMPER	4
B10 T	0700-001-039	BLOCK FUSE HOLDER	1
B11 W	0004-553-000	BUTTON HEAD SCREW	1
B12 Y	0013-005-000	INTERNAL & EXTERNAL TOOTH LOCK WASHERS	1
B13 AA	0015-001-000	NUT	1
AB	0034-424-000	FUSE 6.2A, 250V	1

ITEM	PART NO.	PART NAME		QTY.
AC	0700-001-041	RELAY MOUNTING BRACKET		1
AD	0700-001-038	TIME DELAY RELAY		1
B14 AE	0013-012-000	INTERNAL & EXTERNAL TOOTH LOCK WASHERS		5
AF	0700-001-037	POWER RELAY		1
B15 AH	0016-014-000	FIBERLOCK HEX NUT		3
B16 AJ	0058-209-000	NYLON CABLE CLAMP, 7/16		1
B17 AK	0004-548-000	BUTTON HEAD SCREW		1
AL	0058-334-000	ADHESIVE CABLE MOUNT		1
B18 AM	0034-421-000	BLOCK SPADE TERMINAL 12-10 AWG	(NOT SHOWN)	1
B19 AN	0039-276-000	BROWN WIRE, 12 AWG	(NOT SHOWN)	7.5 IN
AP	0034-413-000	CONNECTOR	(NOT SHOWN)	1
AR	0034-415-000	CRIMP CONTACT 20-14 AWG	(NOT SHOWN)	2
B24				
AT	0034-422-000	BLOCK SPADE TERMINAL 12-10 AWG	(NOT SHOWN)	1
B20 AW	0058-330-000	CABLE TIE	(NOT SHOWN)	4
B21 AY	0034-420-000	RING TERMINAL 16-14 AWG	(NOT SHOWN)	5
B25				
B26				
BC	0034-419-000	QUICK DISCONNECT TERMINAL	(NOT SHOWN)	2
BD	0039-008-000	WIRE	(NOT SHOWN)	1.1 FT
BE	0700-001-035	ROVER RELAY CABLE ASSEMBLY	(NOT SHOWN)	1



NOTES:

1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-055-002 (REV A).
2. ASSEMBLE PER SOE-121-002.
3. INSPECT PER QIP-0754

PRODUCTION RELEASED DATE 11-25-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
2-4-04		JAR	A	REVISED PICTORIALLY ECO 04Y2E00585
			A1	WAS: ITEM AJ 0058-210-000 NYLON LOOP....
			B	REVISED PICTORIALLY ECO 06Y2E09839
			B1	WAS: SHEET: 1 OF 2
			B2	WAS: ITEM B P/N 0700-001-032 ...TOROIDAL...
			B3	WAS: ITEM D P/N 0011-506-000 ...(1/2)...
			B4	WAS: ITEM E P/N 0004-537-000 ...1/2-13 X 4...
			B5	WAS: ITEM H P/N 0004-538-000...8-32 X 3/4...3
			B6	WAS: ITEM J P/N 0004-525-000...8-32 X 3/8...7
			B7	WAS: ITEM L P/N 0011-510-000...(#8)...QTY. 4
			B8	WAS: ITEM M P/N 0012-015-000...#8...QTY. 3
			B9	WAS: ITEM P P/N 0004-522-000...8-32 X 5/8...2
			B10	WAS: ITEM T P/N 0700-001-039...BLOCK HOLDER...
			B11	WAS: ITEM W P/N 0004-553-000...6-32 X 1/2...
			B12	WAS: ITEM Y P/N 0013-005-000...WASHER #6...
			B13	WAS: ITEM AA P/N 0015-001-000...NUT 6-32...
			B14	WAS: ITEM AE P/N 0013-012-000...#8 INTERNAL...
6-20-06	S/EA	PE	B15	WAS: ITEM AH P/N 0016-014-000...INSERT 8-32...
			B16	WAS: ITEM AJ P/N 0058-209-000...LOOP STRAP...
			B17	WAS: ITEM AK P/N 0004-548-000...8-32 X 1/4...
			B18	WAS: ITEM AM P/N 0034-421-000 ... QTY. 3
			B19	WAS: ITEM AN P/N 0039-275-000...WHITE...3 IN
			B20	WAS: ITEM AW P/N 0058-330-00...TIE...QTY 1
			B21	WAS: ITEM AY P/N 0034-420-000...RING...QTY. 1
			B22	REMOVED: ITEM K P/N 0700-001-034...RELAY...
			B23	REMOVED: ITEM R P/N 0050-038-000...PAN HEAD...
			B24	REMOVED: ITEM AS P/N 0034-046-000...SHRINK...
			B25	REMOVED: ITEM BA P/N 0034-423-000...FLANGED...
			B26	REMOVED: ITEM BB P/N 0034-408-000...TUBING...
			B27	RELOCATED: VIEW FROM SHEET 1
			B28	RELOCATED: VIEW TO SHEET 2
			B29	RELOCATED: POSITION OF ITEM S P/N 0034-425-000
			B30	ADDED: F1; SHEET 3 OF 3

B1

FORM NO. 05fm100, Rev. D	SHEET 1 OF 3	PROJECT NO. MTR-0338	0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
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GENERAL FINISH ----------250 (MAX)

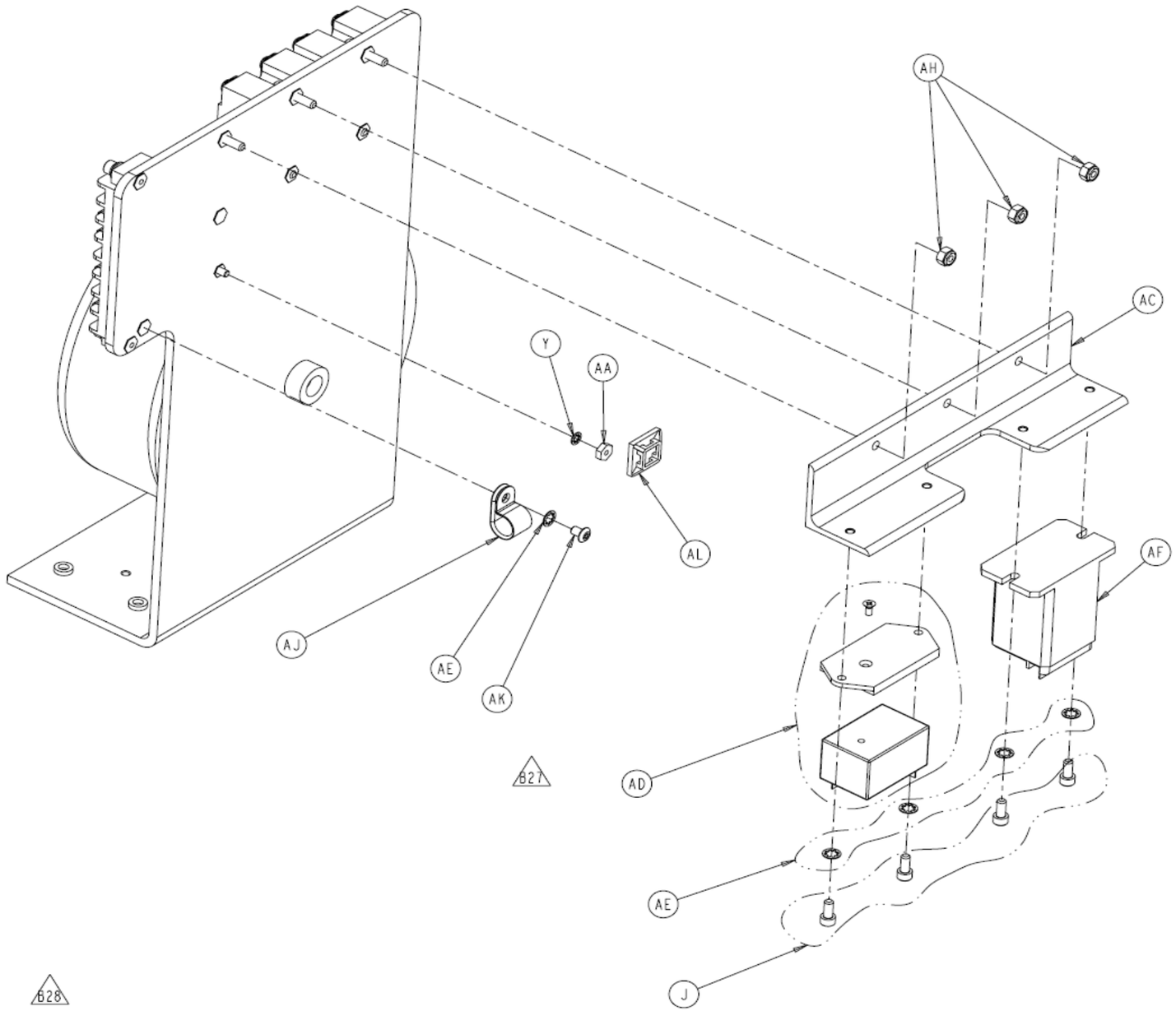
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

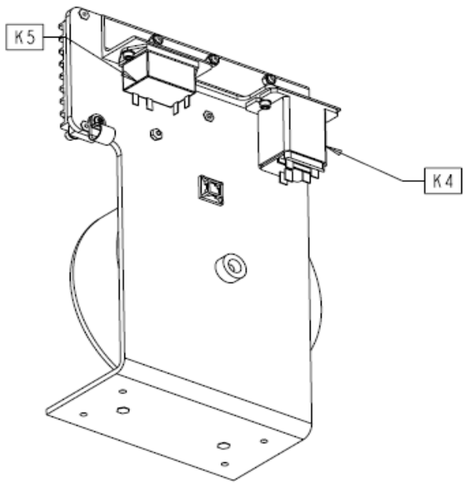
DRAWN BY G. HEILMAN	DATE 10-02	TITLE ROVER TRANSFORMER ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 11-02	
MFG APPROVAL S/ K. LAKE	DATE 11-02	MATERIAL
QA APPROVAL S/ S. HORVATH	DATE 11-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02	
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B / PART NO. 0700-001-030 / REV. B

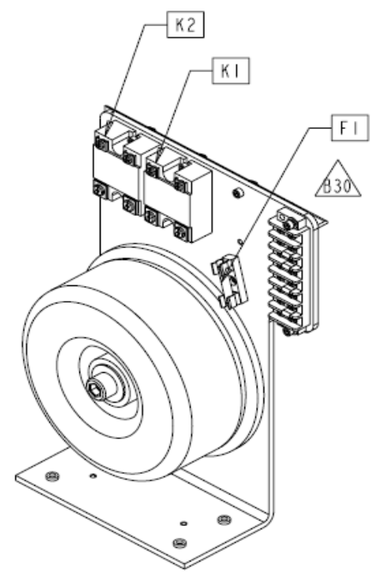
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	11-25-02

DATE	CHK'D BY	DFTG	STM	DESCRIPTION







NOTES:

FORM NO. 05fm100, Rev. D	SHEET 2 OF 3	PROJECT NO. MTR-0338	0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

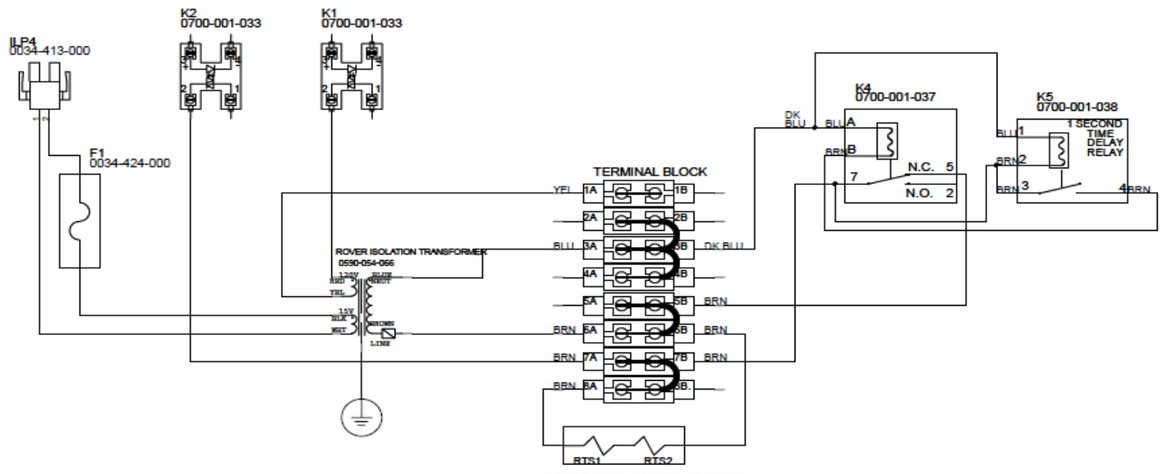
GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY: G. HEILMAN	DATE: 10-02	TITLE: ROVER TRANSFORMER ASSEMBLY
DESIGNED BY: S/ K. STALEY	DATE: 11-02	
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL
QA APPROVAL: S/ S. HORVATH	DATE: 11-02	FINISH
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02	
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B; PART NO.: 0700-001-030; REV.: B

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED
DATE 11-25-02



Next Assembly: 0700-001-010
Layer:

DRAWN BY S/ G. HEILMAN DATE 10/02
DESIGNED BY S/ K. STALEY DATE 11/02
MFG. APPROVAL S/ K. LAKE DATE 11/02
Q.A. APPROVAL S/ S. HORVATH DATE 11/02
AUTHORIZED BY S/ R. RUSSELL DATE 11/02
DFTG. APPROVAL S/ D. MORRIS DATE 11/02

STRYKER INSTRUMENTS

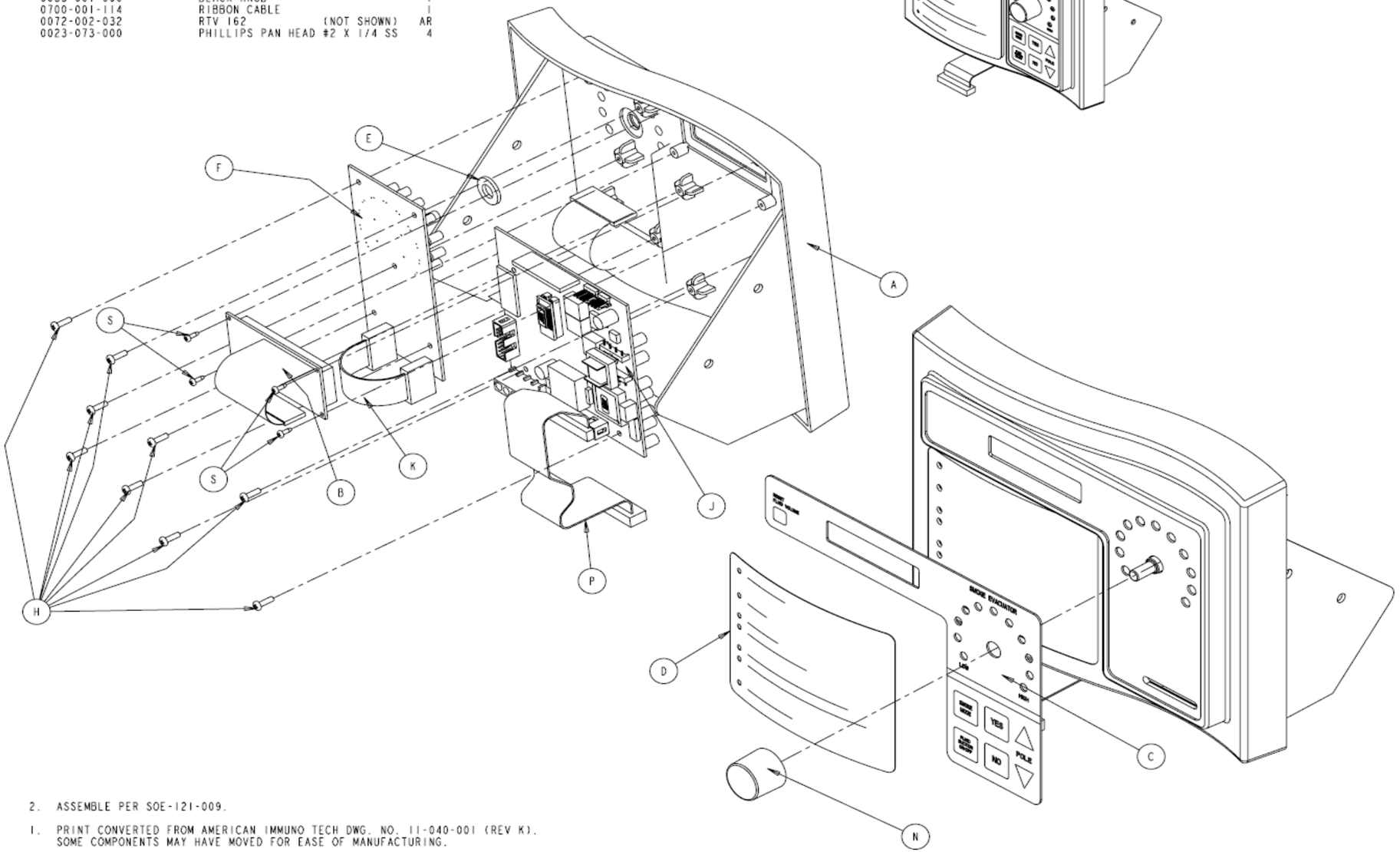
4100 EAST MILHAM AVE.
KALAMAZOO, MI 49001

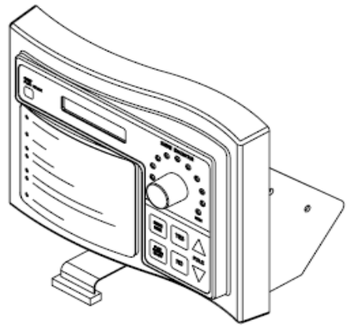
Title
ROVER TRANSFORMER ASSEMBLY

Size B
Document Number 0700-001-030
Rev B
Sheet 3 of 3

05fm101, Rev. C

Item	Part No.	Part Name	Qty.
A	0700-001-051	USER INTERFACE PANEL	1
B	0700-001-054	ROVER LCD DISPLAY ASSY	1
C	0700-001-056	MEMBRANCE SWITCH	1
D	0700-001-055	OVERLAY	1
E	0700-001-057	SEALING GASKET	1
F	0712-013-001	ROVER BLOWER CONTROLLER PCBA	1
⚠1 H	0050-059-000	PAN HEAD SCREW #4 X 3/8	9
J	0712-064-001	ROVER MAIN CONTROLLER PCBA	1
K	0700-001-052	RIBBON CABLE	1
⚠2			
⚠3			
N	0033-007-000	BLACK KNOB	1
P	0700-001-114	RIBBON CABLE	1
R	0072-002-032	RTV 162 (NOT SHOWN)	AR
⚠4 S	0023-073-000	PHILLIPS PAN HEAD #2 X 1/4 SS	4





PRODUCTION RELEASED	DATE 11-21-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
10-15 04	S/KB	PE	A	REVISED PICTORIALLY ECO 04Y2E07332
			A1	WAS: ITEM: H 0050-059-000 13
			A2	REMOVED: ITEM L 0700-001-058 SEAL GASKET 1
			A3	REMOVED: ITEM M 0700-001-053 PANEL COVER 1
			A4	ADDED: ITEM S 0023-073-000 PHILLIPS 4
1-7 05		KB	B	REVISED PICTORIALLY ECO 04Y2E09455

NOTES:

2. ASSEMBLE PER SOE-121-009.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-040-001 (REV K). SOME COMPONENTS MAY HAVE MOVED FOR EASE OF MANUFACTURING.

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

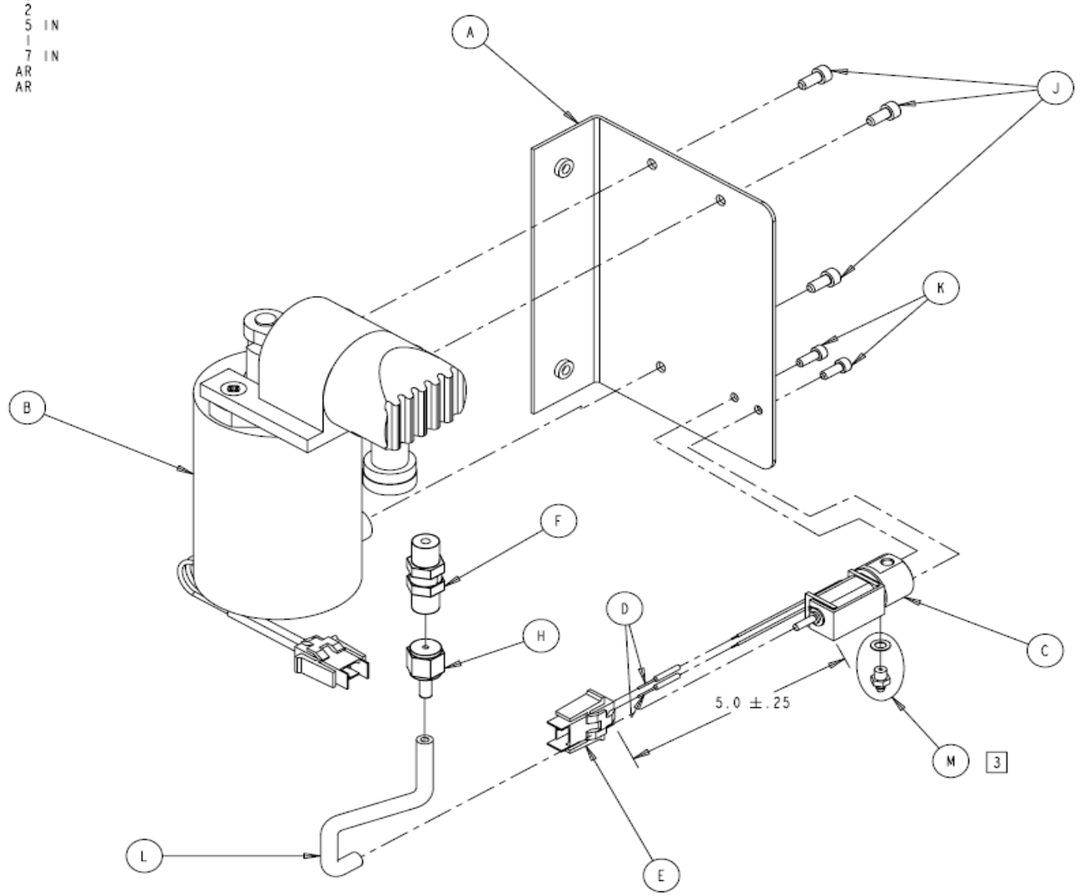
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY: D. MORRIS	DATE: 11-01 02	TITLE: USER INTERFACE PANEL ASSEMBLY	
DESIGNED BY: S/ K. STALEY	DATE: 11-02		
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL	
QA APPROVAL: S/ S.HORVATH	DATE: 11-02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02		
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B	PART NO.: 0700-001-050 REV.: B

Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED			DATE 10-9-02
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
10/20/05	S/BC	EA	A	ECO 05Y2E06124
			A1	WAS: ITEM B 0700-004-055 PNEUMATIC...ASSEMBLY I

Item	Part No.	Part Name		Qty.
A1 A	0700-001-071	MOUNTING BRACKET		1
B	0700-001-075	POWER POLE COMPRESSOR ASSEMBLY		1
C	0700-001-072	PNEUMATIC SOLENOID		1
D	0034-418-000	CRIMP CONTACT 26-24 AWG		2
E	0034-411-000	2 CONDUCTOR PIN HOUSING CONNECTOR		1
F	0061-006-000	CHECK BALL VALVE 1/8"		1
H	0048-205-000	BARBED FITTING 1/8 X 1/8		1
J	0004-525-000	SHCS 8-32 X 3/8		3
K	0004-529-000	SHCS 6-32 X 3/8		2
L	0060-015-000	PNEUMATIC CLEAR TUBING		5 IN
M	0048-194-000	PNEUMATIC BARBED FITTING 10-32		1
N	0060-008-000	PNEUMATIC TUBING	(NOT SHOWN)	7 IN
P	0072-002-003	LOCTITE 222	(NOT SHOWN)	AR
R	0044-021-000	TEFLON TAPE, 1/4	(NOT SHOWN)	AR



3 ITEM N ATTACHES TO ITEM M

2. ASSEMBLE PER SOE-121-007.

NOTES:
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-051-001 (REV C)

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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ALL DIMENSIONS APPLY AFTER COATING.

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TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY: G. HEILMAN	DATE: 8-02	TITLE: PNEUMATICS PANEL ASSEMBLY	
DESIGNED BY: S/T. AUSTIN	DATE: 9-02	MATERIAL	
MFG APPROVAL: S/K. LAKE	DATE: 9-02		
QA APPROVAL: S/S. HORVATH	DATE: 9-02	FINISH	
AUTHORIZED BY: S/R. RUSSELL	DATE: 10-02		
DFTG APPROVAL: S/N. BLOCK	DATE: 10-9 02	SIZE: B	PART NO.: 0700-001-070 REV.: A

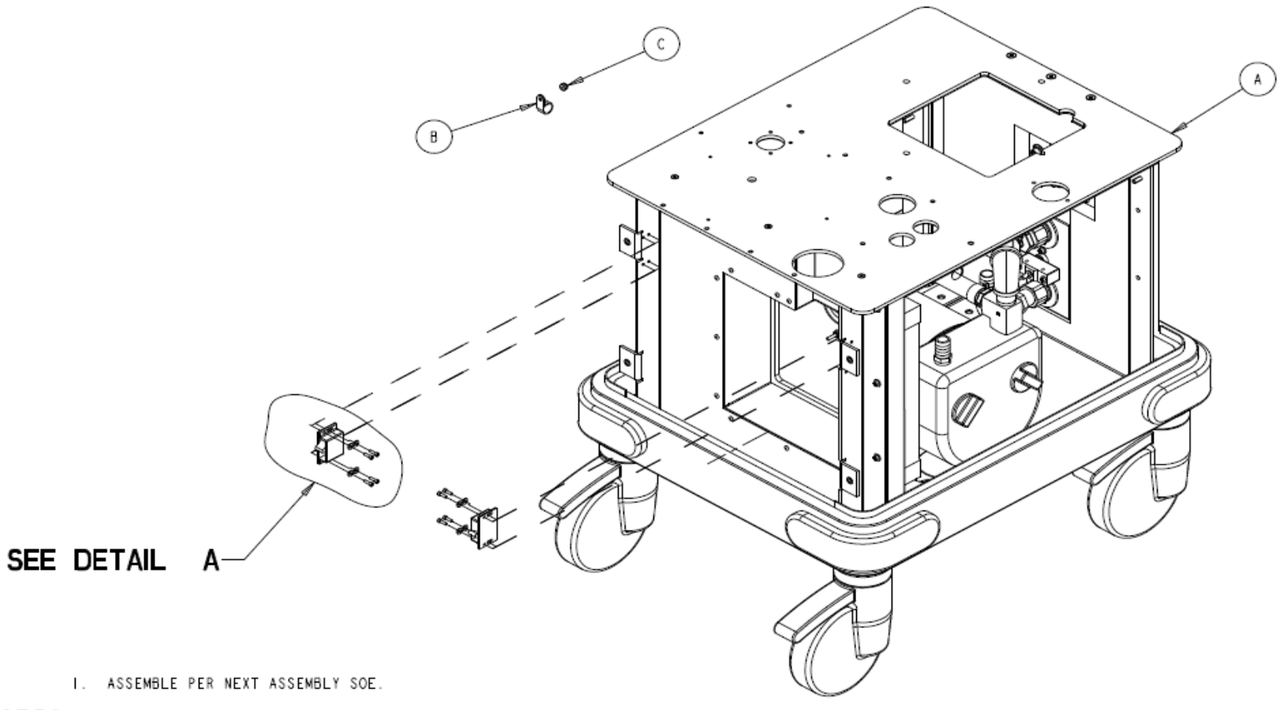
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

Item	Part No.	Part Name		Qty.
A	0700-001-210	CHASSIS ASSEMBLY		1
B	0058-333-000	NYLON LOOP CLAMP		1
C	0016-320-000	LOCKNUT, NYLON INSERT 6-32		1
D	0700-001-126	SLAM ACTION LATCH		2
E	0011-052-000	FLAT WASHER (#4)		14
F	0004-540-000	SHCS 4-40 X 3/8		8
H	0700-001-127	UPPER SKIRT		1
J	0700-001-128	SOUND DAMPENING FOAM		1
B1 K	0700-001-309	TRANSDUCER MANIFOLD/CAN ASSEMBLY		1
L	0058-328-000	HOSE CLAMP		6
M	0700-001-140	FLUID LEVEL TRANSDUCER ASSEMBLY		1
N	0011-507-000	FLAT WASHER (1/4)		3
P	0012-012-000	LOCK WASHER (1/4)		3
R	0004-534-000	SHCS 1/4-20 X 7/8		4
S	0058-319-000	BUSHING		1
T	0058-320-000	BUSHING		1
W	0058-321-000	BUSHING		1
J1 Y	0700-001-218	SNAP BUSHING, MODIFIED		1
AB	0700-001-113	CONTROLLER TO TOP PANEL CABLE	(NOT SHOWN)	1
C1 AC	0700-001-121	PCB TO 12V BATTERY CABLE	(NOT SHOWN)	1
AE	0700-001-123	PROTECTIVE EARTH GROUND CABLE	(NOT SHOWN)	1
E1 AF	0700-001-124	TRANSFORMER TO CIRCUIT BREAKER CABLE	(NOT SHOWN)	1
AJ	0700-001-410	TOWER ASSEMBLY		1
AK	0013-018-000	LOCK WASHER #10 EXTERNAL		2
AL	0004-535-000	SHCS 10-32 X 3/8		8
AM	0058-335-000	LOOP STRAP, RUBBER CUSHIONED		1
AN	0011-511-000	FLAT WASHER (#10)		1
AP	0004-521-000	SHCS 10-32 X 5/8		1
AR	0058-334-000	ADHESIVE CABLE MOUNT		7
AS	0700-001-430	ROVER BATTERY ASSEMBLY		1
F AT	0700-034-000	FLUID SUCTION HEPA FILTER		1
AW	0700-001-116	VACUUM HOSE		1
AY	0700-001-190	FRONT PANEL ASSEMBLY		1

Item	Part No.	Part Name		Qty.
BA	0058-338-000	NYLON LOOP STRAP		3
BB	0016-025-000	LOCKNUT, NYLON INSERT 10-32		3
BC	0058-336-000	LOOP STRAP, RUBBER CUSHIONED		1
BD	0700-001-119	SILENCER MANIFOLD MOUNTING BRACKET		1
BE	0700-001-155	FLOAT ASSEMBLY		1
BF	0045-267-000	O-RING		1
BH	0700-001-170	CANISTER CAP ASSEMBLY		1
BJ	0004-546-000	SHCS 4-40 X 1/2		6
L1 BK	0700-001-456	CAP SPRINKLER TUBING		1
BL	0058-327-000	HOSE CLAMP		2
BM	0700-001-160	SILENCER MANIFOLD ASSEMBLY		1
BN	0011-512-000	FLAT WASHER (#10)		2
A3 A2 A1 BP	0012-014-000	SPLIT LOCK WASHER #10		2
BR	0004-526-000	SHCS 10-32 X 1/2		2
BY	0058-323-000	HOSE CLAMP		1
M L2 H1 CA	0700-001-457	CANISTER WASTE REINFORCED TUBING		2
CB	0700-001-117	VACUUM HOSE		1
H2 CD	0058-339-000	HOSE CLAMP		1
CE	0700-001-150	EXHAUST PLENUM ASSEMBLY		1
CF	0004-004-000	SHCS 8-32 X 1/4		6
CH	0700-001-145	TOWER RIGHT PANEL ASSEMBLY		1
CJ	0004-555-000	BHCS 10-24 X 1-1/2		4
K CK	0700-001-135	SIDE PANEL ASSEMBLY		2
CM	0004-551-000	BHCS 1/4-20 X 3/4		4
CN	0280-004-097	POWER CORD WARNING LABEL	(NOT SHOWN)	1
CP	0044-049-000	TEFLON TAPE, 1/2"	(NOT SHOWN)	AR
CR	0072-002-003	LOCTITE 222	(NOT SHOWN)	AR
CS	0072-002-061	RTV 108	(NOT SHOWN)	AR
CT	0072-002-032	RTV 162	(NOT SHOWN)	AR
CW	0034-409-000	SLIT-CONVOLUTED CONDUIT	(NOT SHOWN)	7.5 IN
CY	0058-342-000	WIRE TIE	(NOT SHOWN)	1
DA	0072-002-056	LOCTITE 425	(NOT SHOWN)	AR
N1 DB	0400-615-086	1/2 INCH DI SHRINK WRAP	(NOT SHOWN)	24 IN

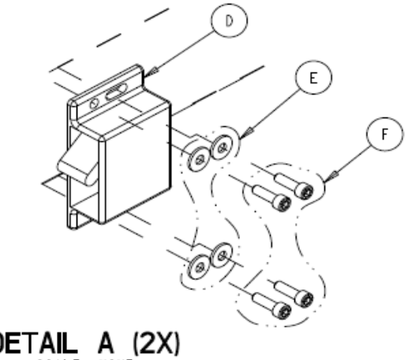
PRODUCTION RELEASED DATE 11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
			A	REVISED PICTORIALLY ECO 04Y3E01646
			A1	REMOVED: ITEM BS 0048-218-000 HEX PIPE...
3-8 04	S/JR	KB	A2	REMOVED: ITEM BT 0048-214-000 PIPE FITTING...
			A3	REMOVED: ITEM BW 0700-001-131 VACUUM...
			A4	REMOVED: DETAIL R (PAGE 4)
5-12 04	S/KB	JAR	B	REVISED PICTORIALLY ECO 04Y2E01789
			B1	WAS: ITEM K 0700-001-310 MACERATOR PUMP....
10-5 04	S/KB	KB	C	REVISED PICTORIALLY ECO 04Y2E07036
			C1	REMOVED: ITEM AD 0700-001-122 MACERATOR...
10-19 04	S/KB	KB	D	REVISED PICTORIALLY ECO 04Y1E07333
11-24 04	S/KB	KKB	E	REVISED PICTORIALLY ECO 04Y2E08805
			E1	REMOVED: ITEM AH 0700-001-125 PNEUMATICS...1
05-24 05	S/BC	EA	F	WAS: ITEM AT 0700-027-000... ECO 05Y1E04591
			H	REVISED PICTORIALLY ECO 05Y2E05433
12-1 05	S/BC	EA	H1	WAS: ITEM CB 0700-001-117 VACUUM HOSE...1
			H2	REMOVED: ITEM CC 0700-027-001 VACUUM...FOAM...
6-26 06	S/EA	PE	J	REVISED PICTORIALLY ECO 06Y2E09822
			J1	REMOVED: ITEM AA P/N 0700-001-111...ROVER...1
2-21 07	BC	BC	K	REVISED PICTORIALLY ECR-ECN 102172
				REMOVED: ITEM CL 0004-552-000...
5-30 07	JK	JK	L	ECR-ECN 103325
			L1	WAS: ITEM BK 0060-011-000...
			L2	WAS: ITEM CA 0060-014-000...
12-7 07		BC	M	WAS: ITEM CB 0700-035-010... ECO 07T2E25324
3-5 08		BC	N	REVISED PICTORIALLY ECR 113740
			N1	ADDED: ITEM DB 0400-615-086...



NOTES:

1. ASSEMBLE PER NEXT ASSEMBLY SOE.



DETAIL A (2X)
SCALE: NONE

FORM NO. 054m100, Rev. D	SHEET 1 OF 4	PROJECT NO. MTR-0338	0700-003-010 0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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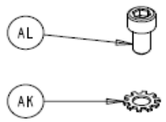
TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

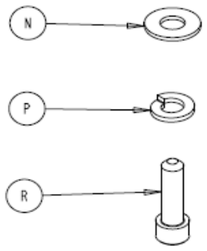
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 10-02	TITLE	BASE ROVER ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 11-02	MATERIAL	
MFG APPROVAL S/ K. LAKE	DATE 11-02		
QA APPROVAL S/ T. ANDERSON	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-001-110 REV. N

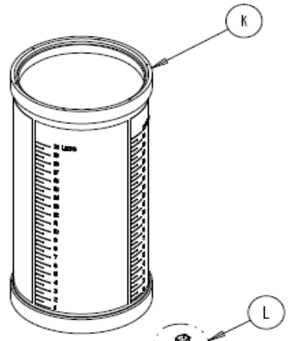
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001



DETAIL E (2X)
SCALE: NONE

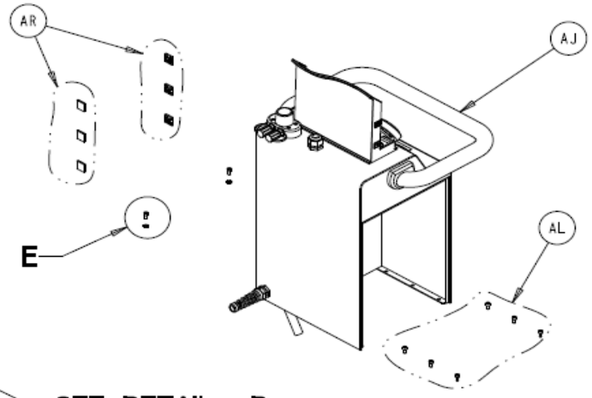


DETAIL B (3X)
SCALE: NONE



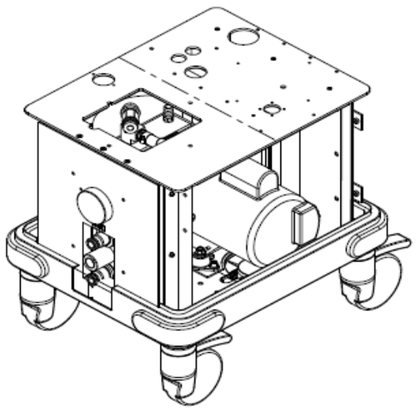
SEE DETAIL B

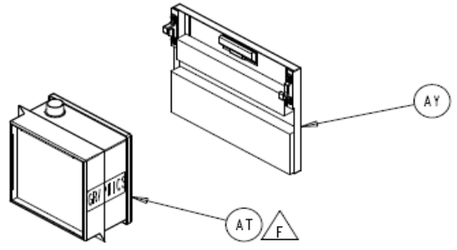
SEE DETAIL C

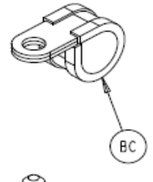


SEE DETAIL E

SEE DETAIL D





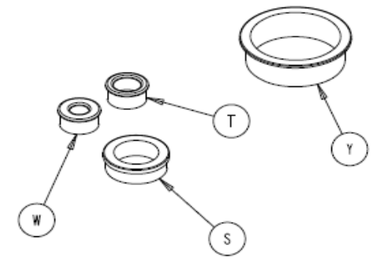


DETAIL C
SCALE: NONE

NOTES:

PRODUCTION RELEASED DATE 11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



DETAIL D
SCALE: NONE

FORM NO. 054m100, Rev. D	SHEET 2 OF 4	PROJECT NO. MTR-0338	0700-003-010 0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
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TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

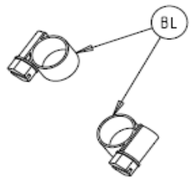
DRAWN BY: G. NEILMAN	DATE: 10-02	TITLE: BASE ROVER ASSEMBLY	
DESIGNED BY: S/ K. STALEY	DATE: 11-02	MATERIAL	
MFG APPROVAL: S/ K. LAKE	DATE: 11-02		
QA APPROVAL: S/ T. ANDERSON	DATE: 11-02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02		
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B	PART NO.: 0700-001-110 REV.: N

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

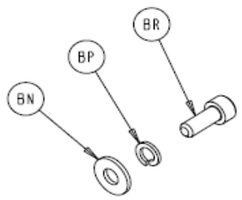
PRODUCTION RELEASED	DATE	11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

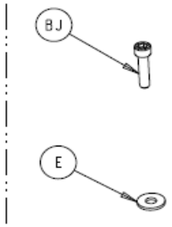
DETAIL F
SCALE: NONE



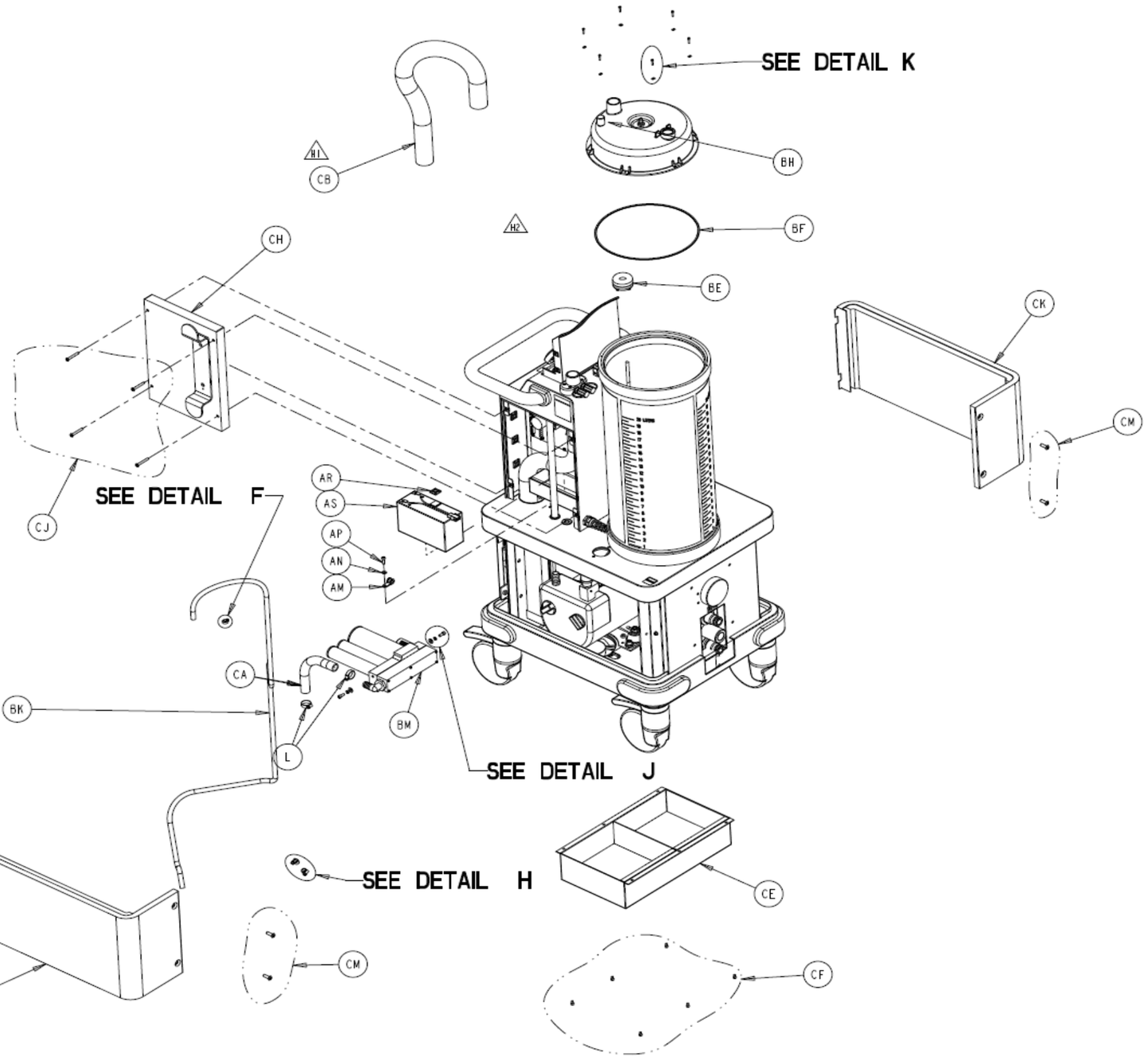
DETAIL H
SCALE: NONE



DETAIL J (2X)
SCALE: NONE



DETAIL K (6X)
SCALE: NONE



NOTES:

FORM NO. 05fm100, Rev. D	SHEET 3 OF 4	PROJECT NO. MTR-0338	0700-003-010 0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

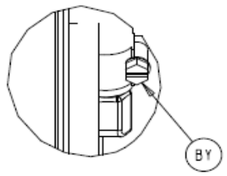
DRAWN BY: G. HEILMAN	DATE: 10-02	TITLE: BASE ROVER ASSEMBLY
DESIGNED BY: S/ K. STALEY	DATE: 11-02	
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL
QA APPROVAL: S/ T. ANDERSON	DATE: 11-02	FINISH
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02	
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B; PART NO.: 0700-001-110; REV.: N

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

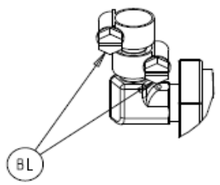
PRODUCTION RELEASED	DATE	11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

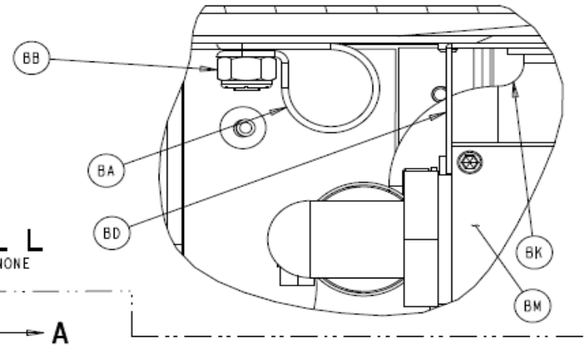
A4



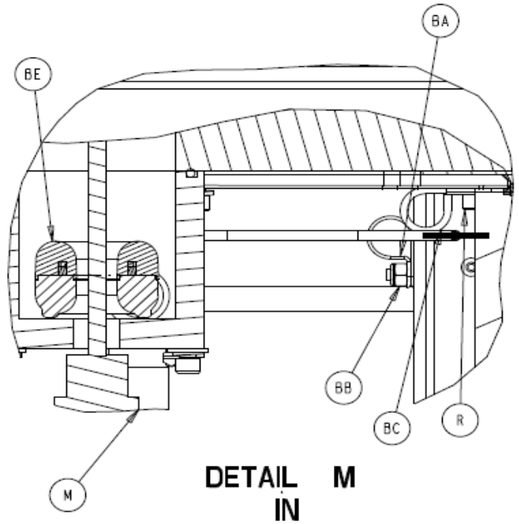
DETAIL P
SCALE: NONE



DETAIL N
SCALE: NONE



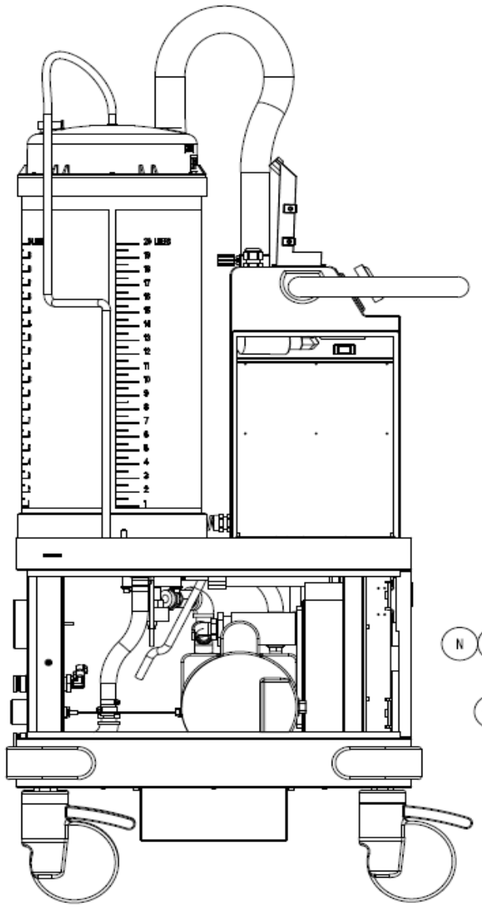
DETAIL L
SCALE: NONE

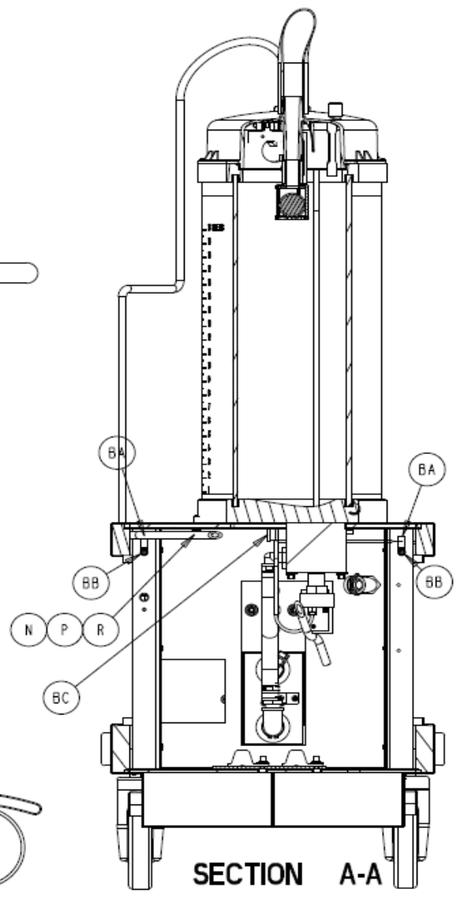


DETAIL M
IN
SECTION C-C
SCALE: NONE

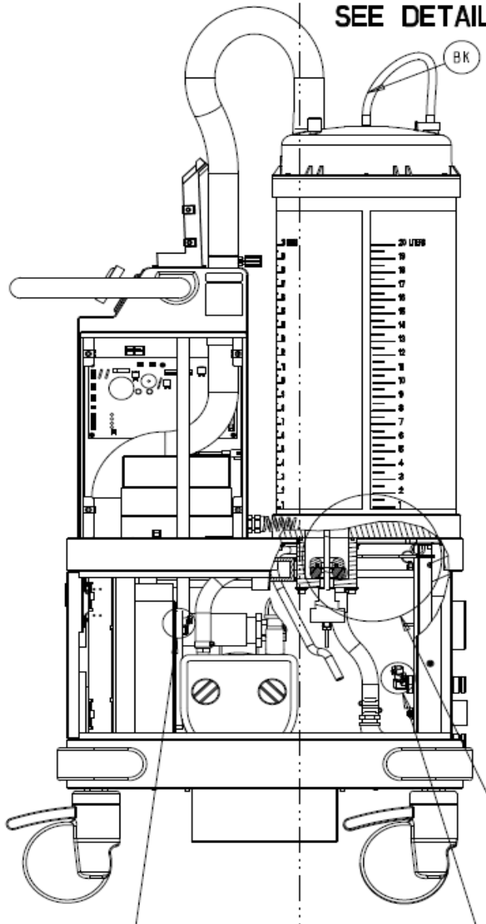
B ⟷ A

SEE DETAIL L



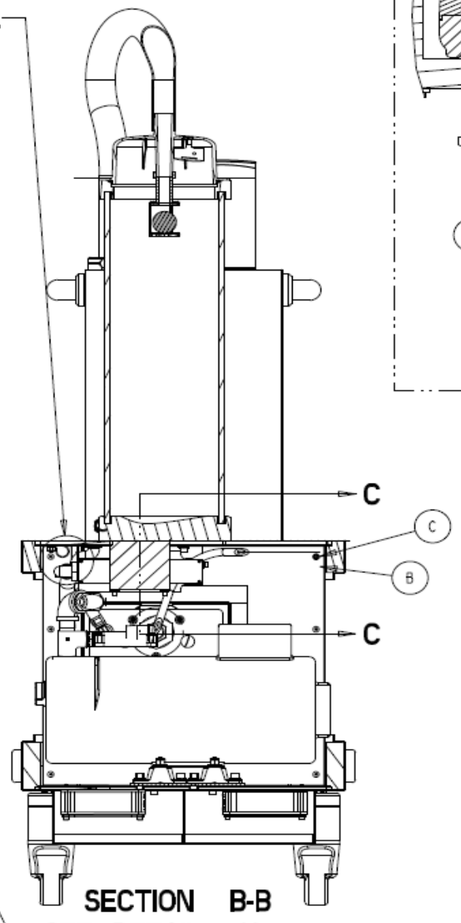


SECTION A-A



SEE DETAIL P

B ⟷ A



SECTION B-B

SEE DETAIL M

SEE DETAIL N

NOTES:

FORM NO. 054m100, Rev. D	SHEET 4 OF 4	PROJECT NO. MTR-0338	0700-003-010 0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.032 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◇ CRITICAL PACKAGING DIMENSION

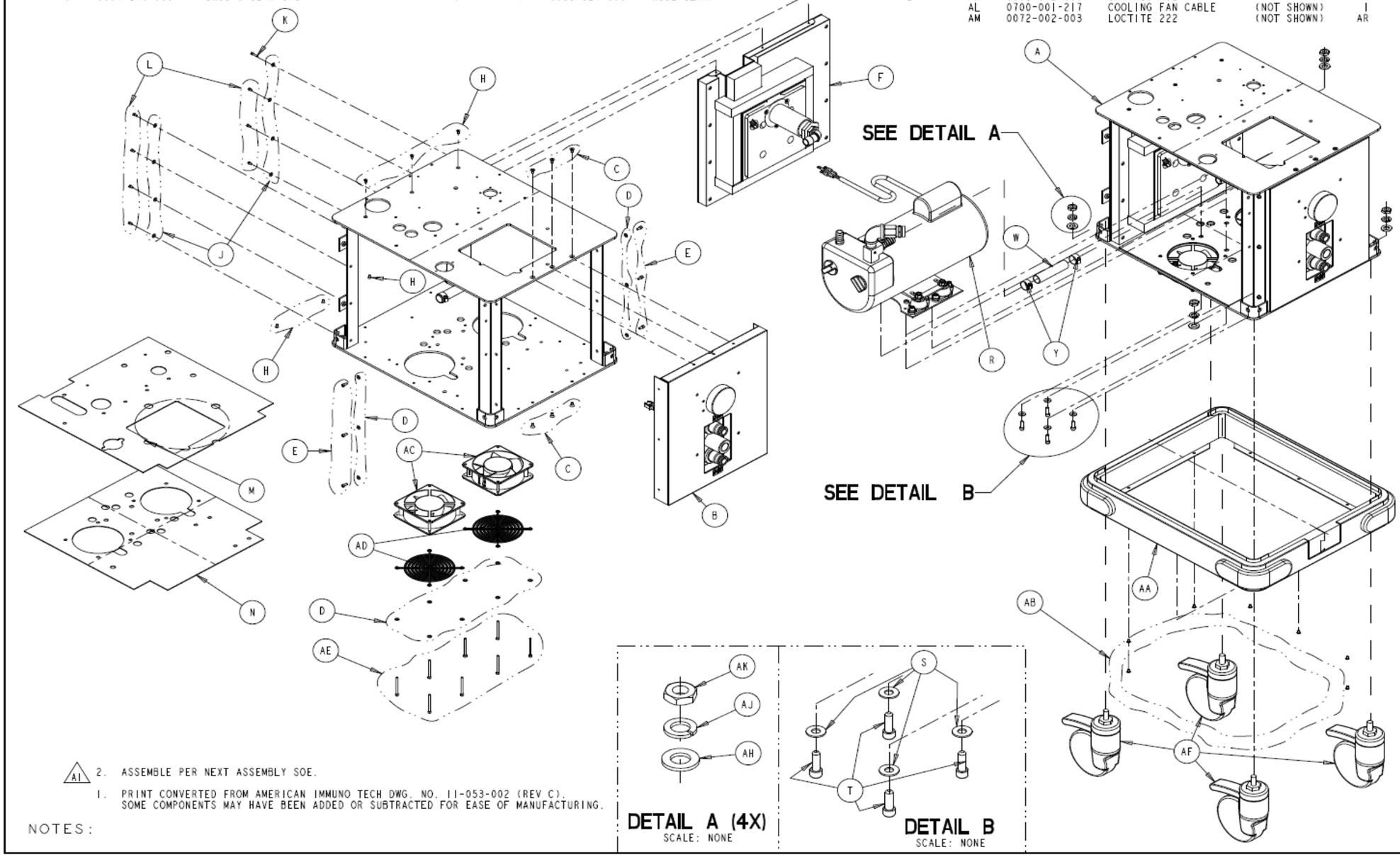
	DATE	TITLE
DRAWN BY: G. HEILMAN	10-02	BASE ROVER ASSEMBLY
DESIGNED BY: S/ K. STALEY	11-02	MATERIAL
MFG APPROVAL: S/ K. LAKE	11-02	
QA APPROVAL: S/ T. ANDERSON	11-02	FINISH
AUTHORIZED BY: S/ R. RUSSELL	11-02	
DFTG APPROVAL: S/ D. MORRIS	11-02	SIZE B — PART NO. 0700-001-110 — REV. N

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

Item	Part No.	Part Name	Qty.
A	0700-001-211	CHASSIS WELDMENT	1
B	0700-001-220	FLUID INTERFACE PANEL ASSEMBLY	1
C	0001-158-000	FHSS (10-24 X 3/8)	6
D	0011-510-000	FLAT WASHER (#8)	14
E	0004-525-000	SHCS 8-32 X 3/8	6
F	0700-001-250	HEPA FILTER PLENUM ASSEMBLY	1
H	0001-157-000	FHSS (6-32 X 5/16)	6
J	0011-491-000	FLAT WASHER #6	8
K	0004-541-000	SHCS 6-32 X 5/8	1
L	0004-022-000	SHCS 6-32 X 1/4	7
M	0700-001-212	VIBRATION DAMPENING SHEET	1
N	0700-001-213	VIBRATION DAMPENING SHEET	1
P	0036-046-000	LABEL, PROTECTIVE EARTH (GRD.)	1
R	0700-001-240	VACUUM PUMP ASSEMBLY	1
S	0011-507-000	FLAT WASHER (1/4)	4
T	0004-518-000	SHCS 1/4-20 X 3/4	4
W	0700-001-459	VACUUM/CHECK VALVE TUBING	1
Y	0058-324-000	HOSE CLAMP	2
AA	0700-001-270	LOWER SKIRT ASSEMBLY	1
AB	0004-548-000	SBHCS 8-32 X 1/4	10
AC	0700-001-215	COOLING FAN	2
AD	0700-001-216	FINGER GUARD	2
AE	0004-539-000	SHCS 8-32 X 2	8
AF	0700-001-214	5" CASTER	4
AH	0011-509-000	FLAT WASHER (M13)	4
AJ	0012-054-000	SPLIT LOCK WASHER M12	4
AK	0015-072-000	JAM NUT M12	4
AL	0700-001-217	COOLING FAN CABLE (NOT SHOWN)	1
AM	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR

PRODUCTION RELEASED	DATE 11-14-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
4-4 05	S/JH	JAR	A	ECO 03Y2E02024
			A1	WAS: NOTE 2. ASSEMBLE PER SOE-121-021.
3-28 07	JK	JK	B	ECR-ECN 103326
			B1	WAS: ITEM W 0060-016-000...
3-9 09		TW	C	REVISED PICTORIALLY ECR 113712



DETAIL A (4X)
SCALE: NONE

DETAIL B
SCALE: NONE

A1 2. ASSEMBLE PER NEXT ASSEMBLY SOE.

1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-053-002 (REV.C). SOME COMPONENTS MAY HAVE BEEN ADDED OR SUBTRACTED FOR EASE OF MANUFACTURING.

NOTES:

FORM NO. 054m100, Rev. D	SHEET 1 OF 2	PROJECT NO. MTR-0338	0700-001-110 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---- .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (FOR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

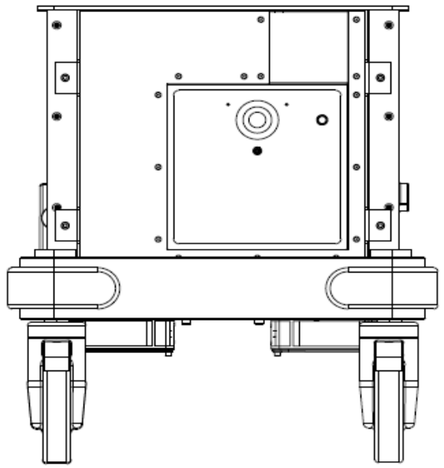
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

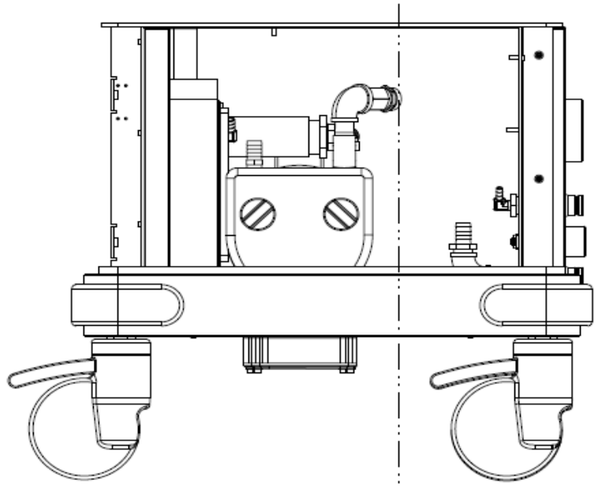
DRAWN BY G. HEILMAN	DATE 9-02	TITLE	CHASSIS ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 10-02	MATERIAL	
MFG APPROVAL S/ K. LAKE	DATE 10-02		
QA APPROVAL S/ S.HORVATH	DATE 10-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-001-210 REV. C

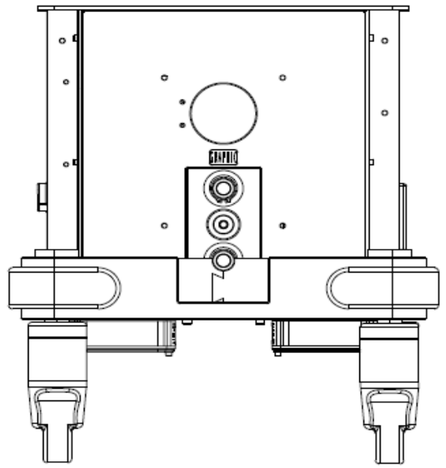
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

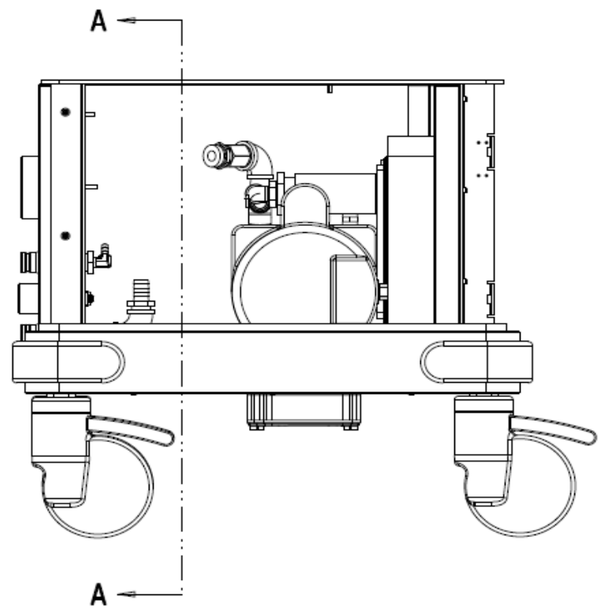
PRODUCTION RELEASED	DATE	11-14-02

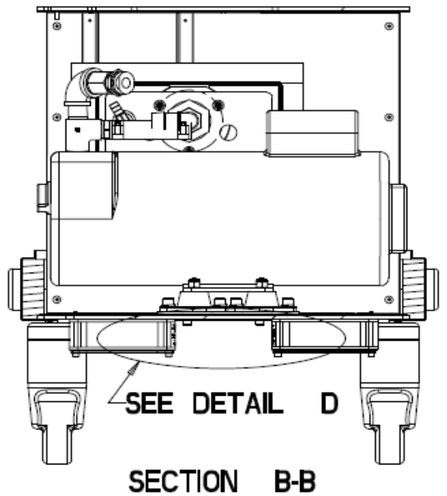
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



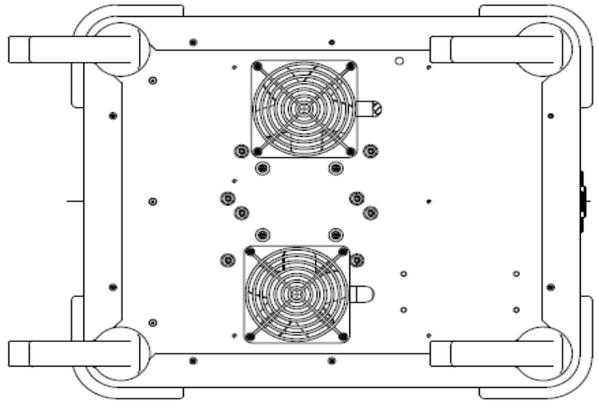


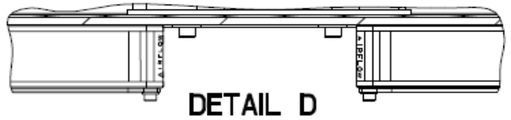






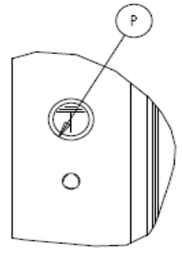
SECTION B-B



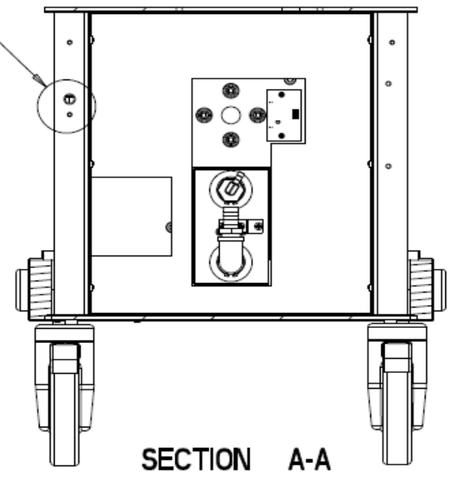


DETAIL D
SCALE: NONE

SEE DETAIL C



DETAIL C
SCALE: NONE



SECTION A-A

FORM NO. 05fm100, Rev. D	SHEET 2 OF 2	PROJECT NO. MTR-0338	0700-001-110 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250/ (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

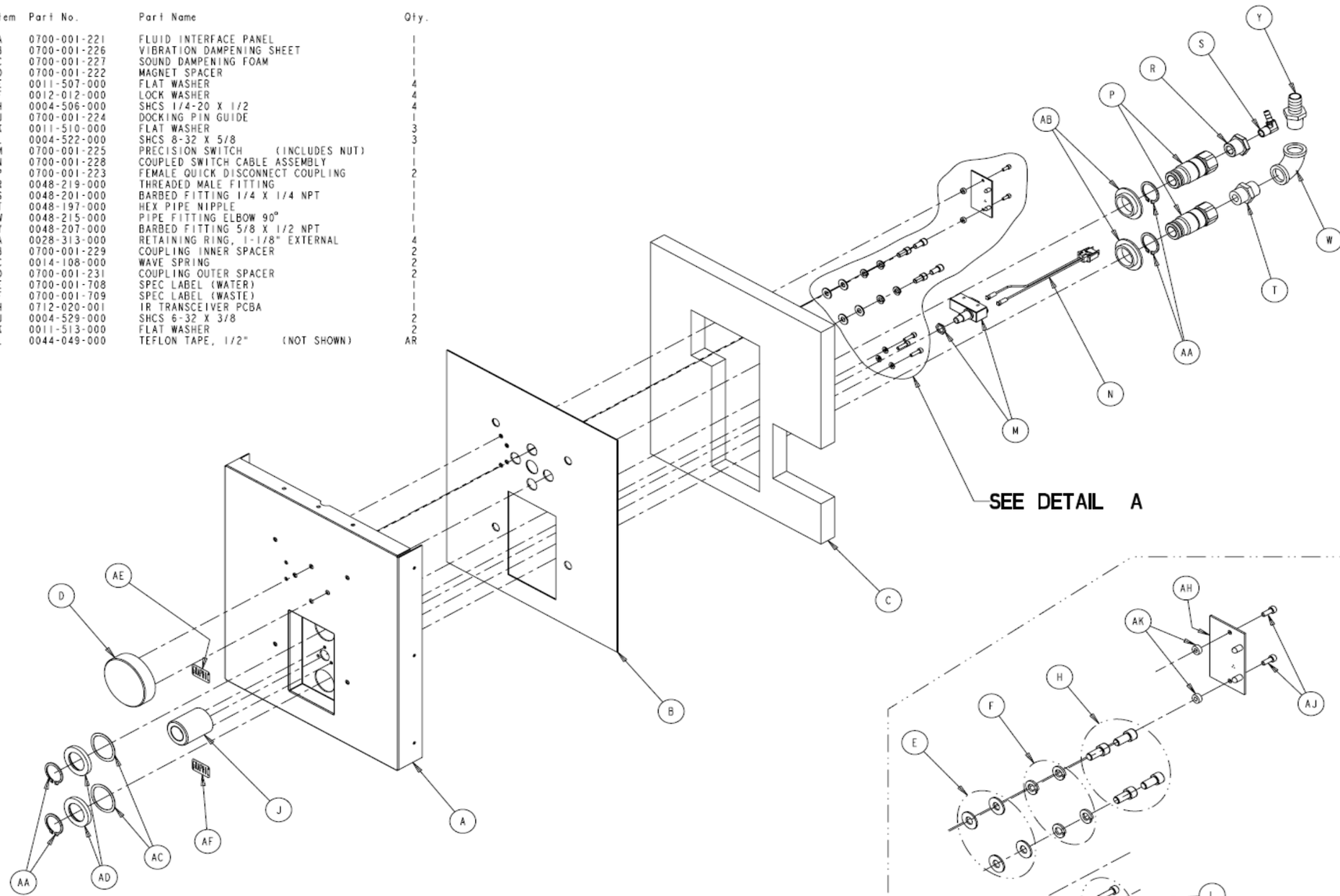
	DATE	TITLE
DRAWN BY G. HEILMAN	9-02	CHASSIS ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 10-02	MATERIAL
MFG APPROVAL S/ K. LAKE	DATE 10-02	
QA APPROVAL S/ S.HORVATH	DATE 10-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02	
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B / PART NO. 0700-001-210 / REV. C

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

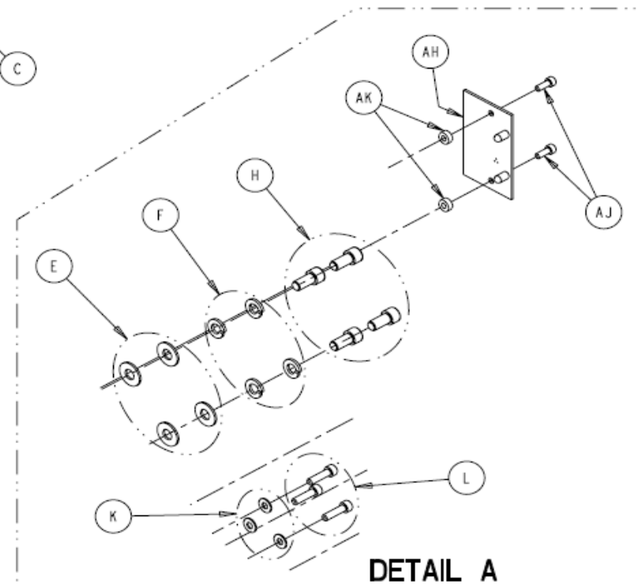
NOTES:

Item	Part No.	Part Name	Qty.
A	0700-001-221	FLUID INTERFACE PANEL	1
B	0700-001-226	VIBRATION DAMPENING SHEET	1
C	0700-001-227	SOUND DAMPENING FOAM	1
D	0700-001-222	MAGNET SPACER	1
E	0011-507-000	FLAT WASHER	4
F	0012-012-000	LOCK WASHER	4
H	0004-506-000	SHCS 1/4-20 X 1/2	4
J	0700-001-224	DOCKING PIN GUIDE	1
K	0011-510-000	FLAT WASHER	3
L	0004-522-000	SHCS 8-32 X 5/8	3
M	0700-001-225	PRECISION SWITCH (INCLUDES NUT)	1
N	0700-001-228	COUPLED SWITCH CABLE ASSEMBLY	1
P	0700-001-223	FEMALE QUICK DISCONNECT COUPLING	2
R	0048-219-000	THREADED MALE FITTING	1
S	0048-201-000	BARBED FITTING 1/4 X 1/4 NPT	1
A1 T	0048-197-000	HEX PIPE NIPPLE	1
W	0048-215-000	PIPE FITTING ELBOW 90°	1
Y	0048-207-000	BARBED FITTING 5/8 X 1/2 NPT	1
AA	0028-313-000	RETAINING RING, 1-1/8" EXTERNAL	4
AB	0700-001-229	COUPLING INNER SPACER	2
AC	0014-108-000	WAVE SPRING	2
AD	0700-001-231	COUPLING OUTER SPACER	2
AE	0700-001-708	SPEC LABEL (WATER)	1
AF	0700-001-709	SPEC LABEL (WASTE)	1
AH	0712-020-001	IR TRANSCEIVER PCBA	1
AJ	0004-529-000	SHCS 6-32 X 3/8	2
AK	0011-513-000	FLAT WASHER	2
AL	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR

PRODUCTION RELEASED			DATE 11-25-02	
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
12-13 06	BC	BC	A	REVISED PICTORIALLY ECR-ECN 101873
			A1	WAS: ITEM T 0048-217-000 PIPE...



SEE DETAIL A



DETAIL A
SCALE: NONE

2. ASSEMBLE PER SOE-121-022.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-031-002 (REV B).

NOTES:

FORM NO. 05fm100, Rev. D	SHEET 1 OF 2	PROJECT NO. MTR 0338	0700-001-210 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

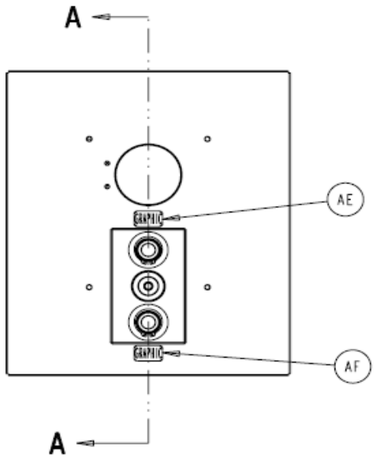
DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ---------- 250 (MAX)

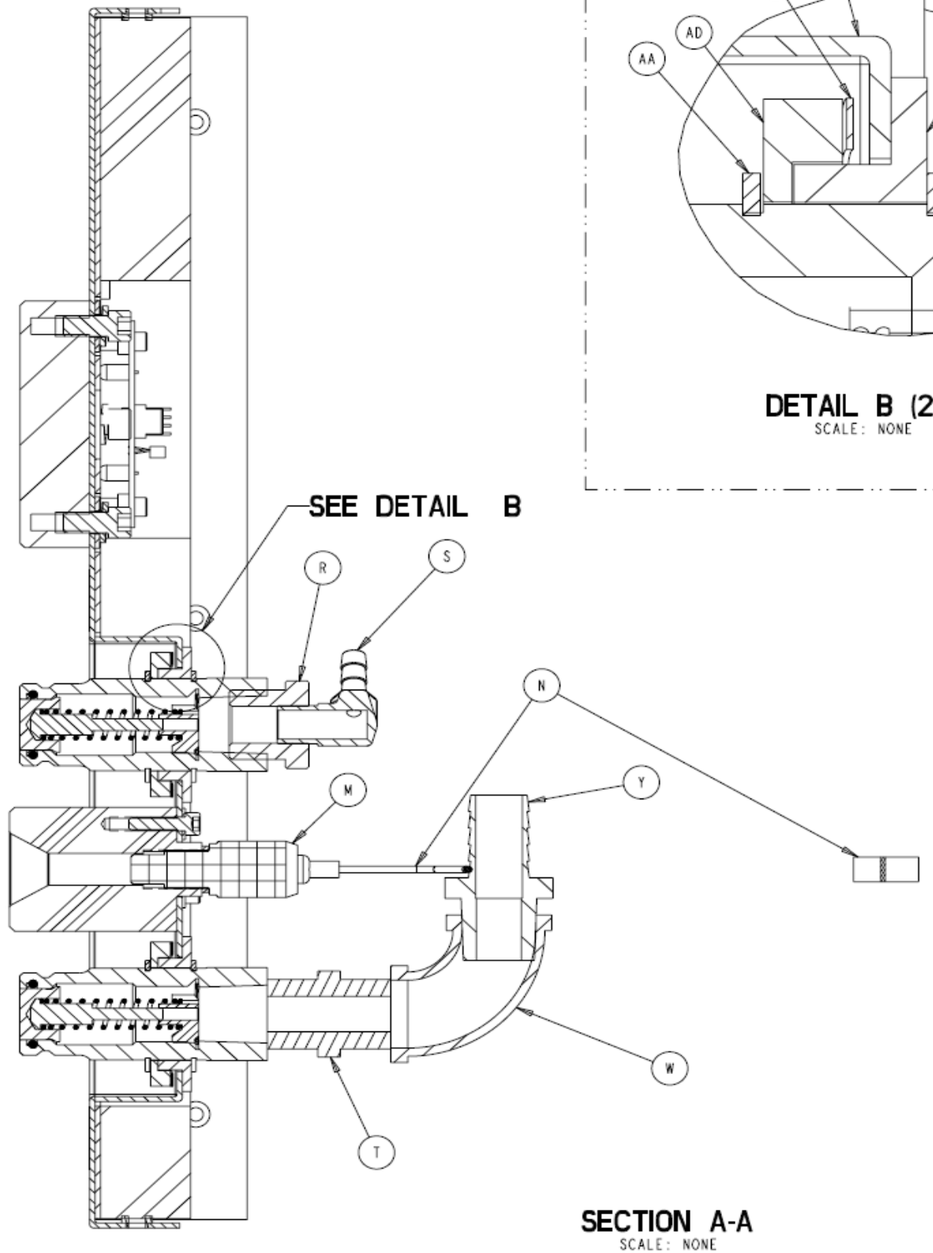
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 9-02	TITLE FLUID INTERFACE PANEL ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 11-02	MATERIAL
MFG APPROVAL S/ K. LAKE	DATE 11-02	
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02	
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B / PART NO. 0700-001-220 / REV. A

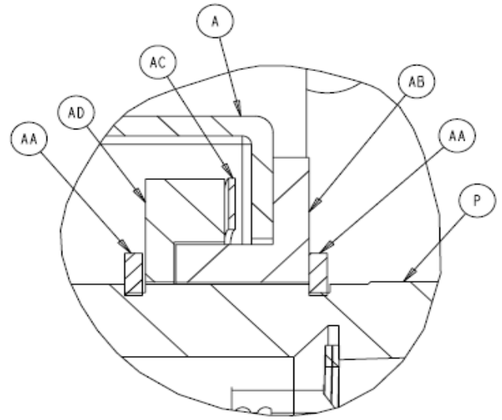
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001



FRONT VIEW
SCALE: NONE



SECTION A-A
SCALE: NONE



DETAIL B (2X)
SCALE: NONE

PRODUCTION RELEASED	DATE	11-25-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

NOTES:

FORM NO. 05fm100, Rev. D	SHEET 2 OF 2	PROJECT NO. MTR-0338	0700-001-210 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

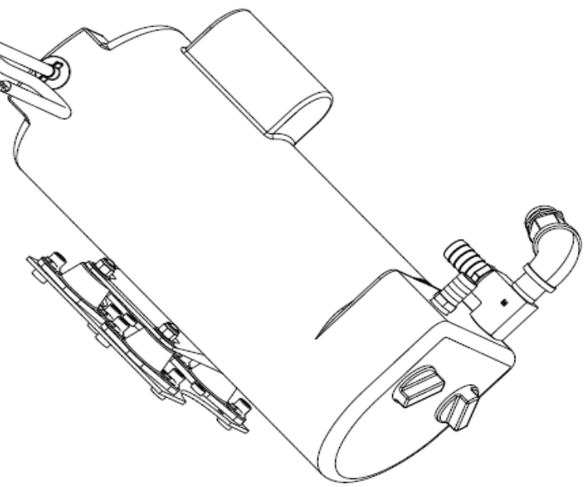
TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

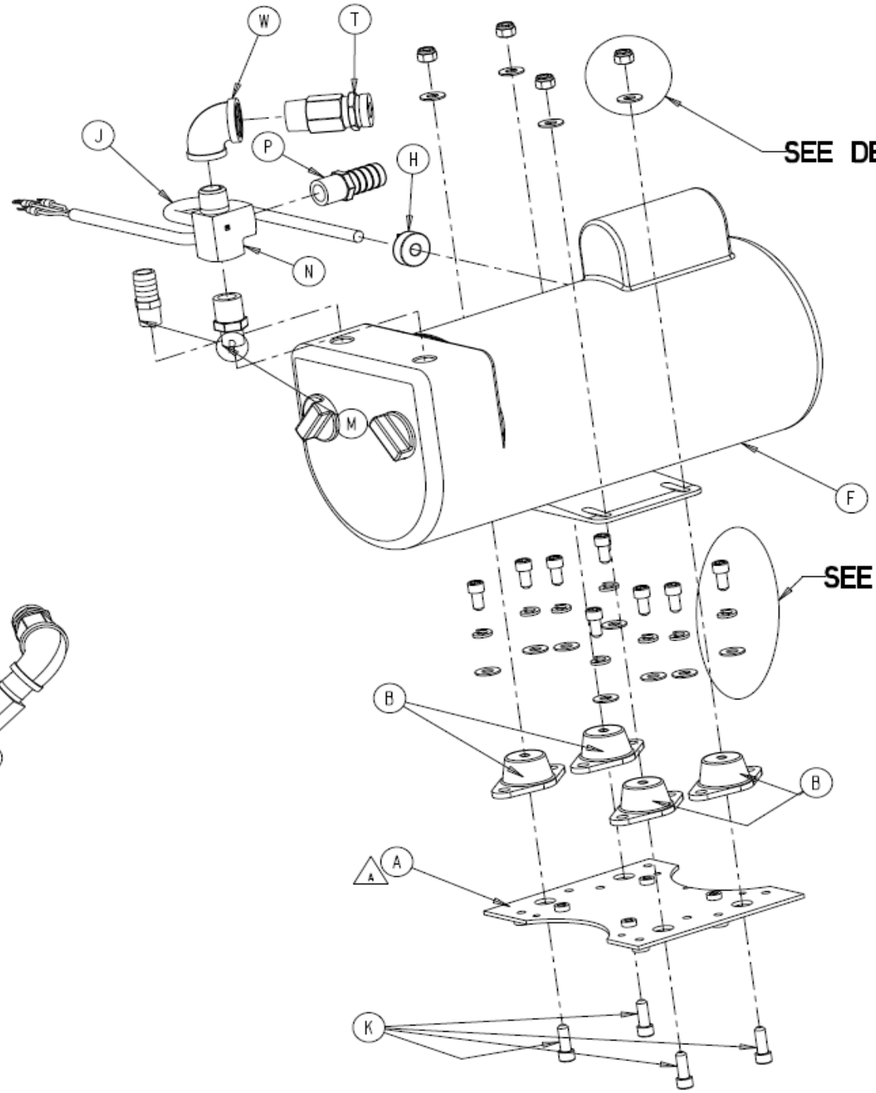
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

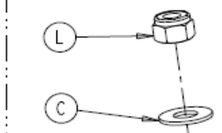
DRAWN BY: G. HEILMAN	DATE: 9-02	TITLE: FLUID INTERFACE PANEL ASSEMBLY	
DESIGNED BY: S/ K. STALEY	DATE: 11-02		
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL	
QA APPROVAL: S/ S.HORVATH	DATE: 11-02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02		
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B	PART NO.: 0700-001-220 / REV.: A

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

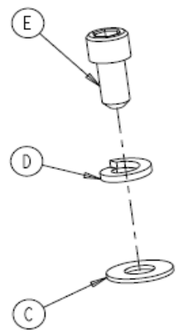
Item	Part No.	Part Name	Qty.
A	0700-001-244	MOUNTING PLATE	1
B	0700-001-243	VIBRATION CONTROL MOUNT	4
C	0011-508-000	FLAT WASHER	12
D	0012-011-000	SPLIT LOCK WASHER 5/16	8
E	0004-527-000	SHCS 5/16-18 X 5/8	8
F	0700-001-242	VACUUM PUMP	1
H	0058-332-000	CABLE FITTING	1
J	0700-001-241	PUMP TO TRANSFORMER CABLE ASSY	1
K	0004-531-000	SHCS 5/16-18 X 7/8	4
L	0016-321-000	LOCKNUT, NYLON INSERT 5/16-18	4
M	0048-196-000	HEX REDUCING NIPPLE	1
C1 B1 N	0048-328-000	STREET TEE PIPE FITTING	1
P	0048-204-000	BARBED FITTING	1
R	0048-209-000	BARBED FITTING 3/8 NPT	1
S	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
B2 T	0700-001-131	VACUUM RELIEF VALVE	1
C2 W	0048-327-000	90 DEGREE REDUCING ELBOW	1







DETAIL B (4X)
SCALE: NONE.



DETAIL A (8X)
SCALE: NONE.

PRODUCTION RELEASED	DATE	10-02		
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
11-19 02	S/CD	DM	A	REVISED PICTORIALLY ECO 02Y2E07517
			B	REVISED PICTORIALLY ECO 04Y3E01645
3-8 04		KB	B1	WAS: ITEM N 0048-216-000 PIPE TEE 1
			B2	ADDED: ITEM T 0700-001-131 VACUUM... 1
			C	REVISED PICTORIALLY ECO 113695
3-5 09		PE	C1	WAS: ITEM N 0048-300-000 THREE WAY ELBOW...
			C2	ADDED: ITEM W 0048-327-000 90 DEGREE...

FORM NO. 054m100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-001-110 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)--- .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY: G. HEILMAN	DATE: 7-30 02	TITLE: VACUUM PUMP ASSEMBLY	
DESIGNED BY: S/ K. SMIT	DATE: 9-02		
MFG APPROVAL: S/ K. LAKE	DATE: 9-02	MATERIAL	
QA APPROVAL: S/ S. HORVATH	DATE: 9-19 02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 9-02		
DFTG APPROVAL: S/ D. MORRIS	DATE: 9-02	SIZE: B	PART NO.: 0700-001-240 REV.: C

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

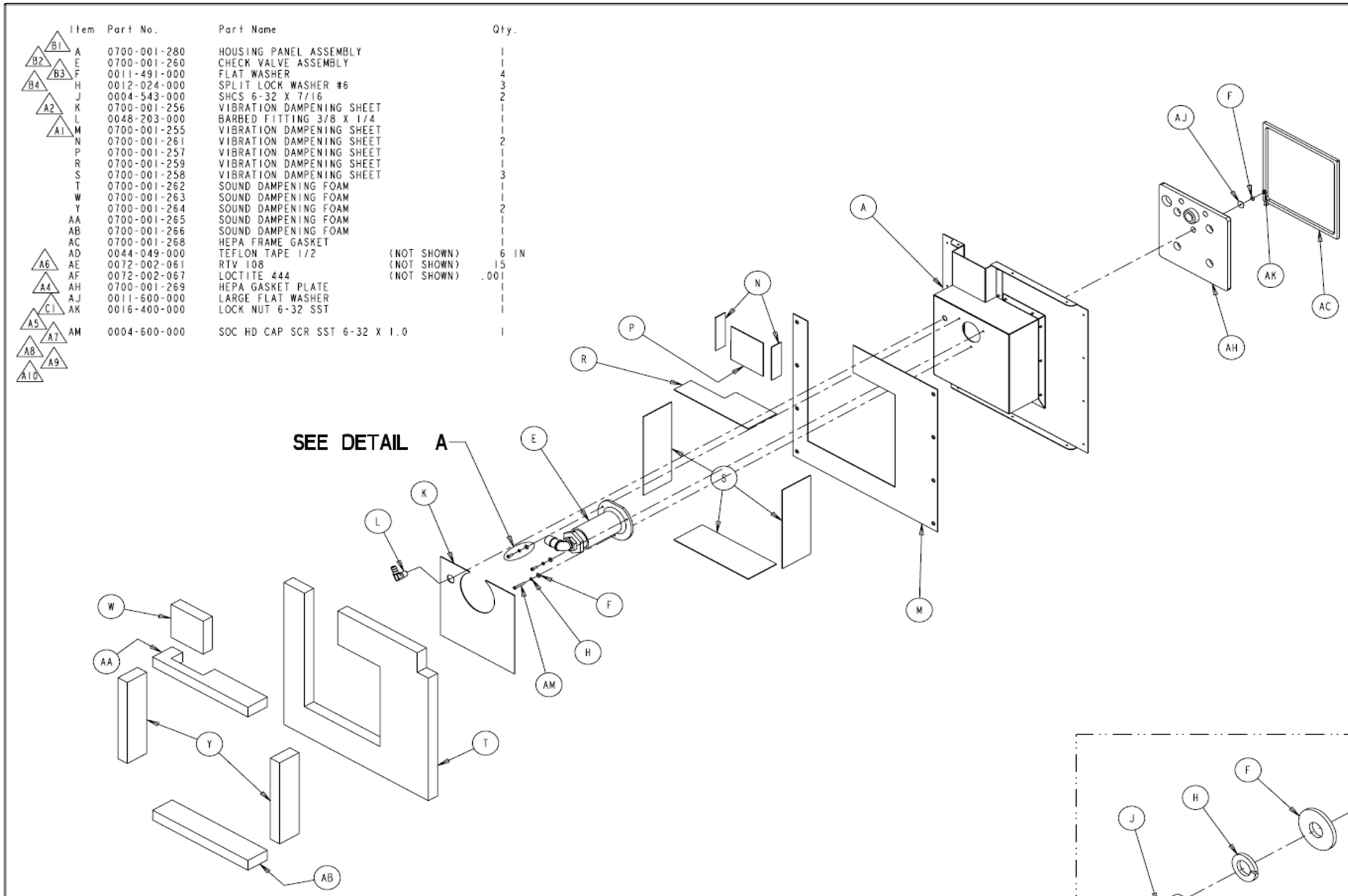
2. ASSEMBLE PER SOE-121-024.

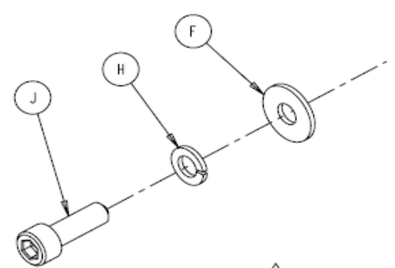
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-056-001 (REV D).

NOTES:

Item	Part No.	Part Name		Qty.
A	0700-001-280	HOUSING PANEL ASSEMBLY		1
E	0700-001-260	CHECK VALVE ASSEMBLY		1
F	0011-491-000	FLAT WASHER		4
H	0012-024-000	SPLIT LOCK WASHER #6		3
J	0004-543-000	SHCS 6-32 X 7/16		2
K	0700-001-256	VIBRATION DAMPENING SHEET		1
L	0048-203-000	BARBED FITTING 3/8 X 1/4		1
M	0700-001-255	VIBRATION DAMPENING SHEET		1
N	0700-001-261	VIBRATION DAMPENING SHEET		2
P	0700-001-257	VIBRATION DAMPENING SHEET		1
R	0700-001-259	VIBRATION DAMPENING SHEET		1
S	0700-001-258	VIBRATION DAMPENING SHEET		3
T	0700-001-262	SOUND DAMPENING FOAM		1
W	0700-001-263	SOUND DAMPENING FOAM		1
Y	0700-001-264	SOUND DAMPENING FOAM		2
AA	0700-001-265	SOUND DAMPENING FOAM		1
AB	0700-001-266	SOUND DAMPENING FOAM		1
AC	0700-001-268	HEPA FRAME GASKET		1
AD	0044-049-000	TEFLON TAPE 1/2	(NOT SHOWN)	6 IN
AE	0072-002-061	RTV 108	(NOT SHOWN)	15
AF	0072-002-067	LOCTITE 444	(NOT SHOWN)	.001
AH	0700-001-269	HEPA GASKET PLATE		1
AJ	0011-600-000	LARGE FLAT WASHER		1
AK	0016-400-000	LOCK NUT 6-32 SST		1
AM	0004-600-000	SOC HD CAP SCR SST 6-32 X 1.0		1

PRODUCTION RELEASED	DATE 11-13-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
5-10 04	S/KB	JAR	A	REVISED PICTORIALLY ECO 04A2E03401
			A1	WAS: ITEM J 0004-543-000 SHCS 6-32...3
			A2	WAS: ITEM F 0011-491-000 FLAT WASHER...3
			A3	WAS: DETAIL A (3X)
			A4	REMOVED: ITEM AC 0700-001-267 HEPA FILTER...
			A5	ADDED: ITEM AH 0700-001-269 HEPA...
			A6	ADDED: ITEM AC 0700-001-268 HEPA...
			A7	ADDED: ITEM AJ 0011-600-000 LARGE FLAT...
			A8	ADDED: ITEM AK 0016-400-000 LOCK NUT...
			A9	ADDED: ITEM AL 0044-200-400 DBL SD....
			A10	ADDED: ITEM AM 0004-600-000 SOC HD CAP...
6-14 04	S/KB	JAR	B	REVISED PICTORIALLY ECO 04Y2E04086
			B1	WAS: ITEM A 0700-001-251 HOUSING PANEL 1
			B2	REMOVED: ITEM B 0700-001-252 HEPA FILTER...
			B3	REMOVED: ITEM C 0700-001-253 COVER 1
			B4	REMOVED: ITEM D 0025-173-000 BLIND...
6-26 06	S/BC	EA	C	REVISED PICTORIALLY ECO 06Y2E12308
			C1	REMOVED: ITEM AL 0044-200-400...





A3

DETAIL A (2X)

SCALE: NONE

NOTES:

2. ASSEMBLE PER SOE-121-025.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-025-001 (REV D).

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-001-210 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY	DATE	TITLE
G. HEILMAN	8-5 02	HEPA FILTER PLENUM ASSEMBLY
DESIGNED BY	DATE	
S/ K. STALEY	10-02	MATERIAL
MFG APPROVAL	DATE	
S/ K. LAKE	10-02	
QA APPROVAL	DATE	FINISH
S/ S.HORVATH	10-02	
AUTHORIZED BY	DATE	
S/ R. RUSSELL	10-02	
DFTG APPROVAL	DATE	SIZE / PART NO. / REV.
S/ D. MORRIS	11-02	B / 0700-001-250 / C

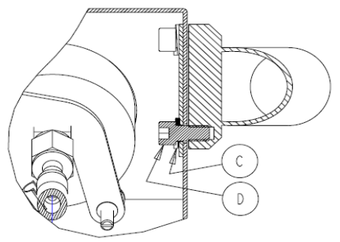
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

Item	Part No.	Part Name	Qty.
A	0700-001-411	ROVER TOWER HOUSING	1
B	0700-001-413	ROVER HANDLE	1
C	0012-012-000	LOCK WASHER (1/4)	6
D	0004-506-000	SHCS 1/4-20 X 1/2	6
E	0700-001-450	SUCTION COUPLING ASSEMBLY	1
F	0004-532-000	SHCS 6-32 X 3/4	4
H	0048-202-000	BARBED FITTING 1/4 X 1/8	1
J	0700-001-418	DOME STRAIN RELIEF	1
K	0700-001-440	NEEDLE VALVE ASSEMBLY	1
L	0011-510-000	FLAT WASHER (#8)	4
M	0016-014-000	LOCKNUT, NYLON INSERT 8-32	4
P	0024-072-000	PLASTIC KNOB W/ BRASS INSERT	1
R	0700-001-416	VACUUM GAUGE	1
S	0048-200-000	BARBED FITTING 1/4 X 1/4	1
T	0700-001-443	VALVE INTAKE MUFFLER	1
W	0030-060-000	RUBBER EDGE TRIM	7.25"

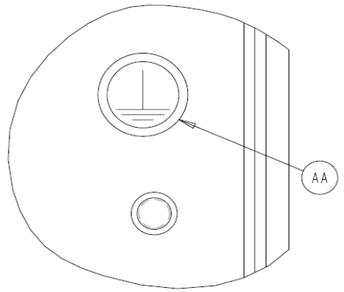
Item	Part No.	Part Name	Qty.
Y	0700-001-415	FLEX STYLE STRAIN RELIEF	1
AA	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	1
AB	0700-001-417	BATTERY TRAY FOAM	2
AC	0700-001-421	TOWER SHORT GASKET	1
AD	0700-001-422	TOWER GASKET	2
AE	0055-033-000	U-NUT	4
AJ	0700-001-703	SPEC LABEL (WALL VAC SUCT PORT)	1
AK	0700-001-723	LABEL (WALL VAC CAUTION)	1
AL	0700-001-706	SPEC LABEL (VAC PRES CONTROL)	1
AM	0700-001-715	SPEC LABEL (BATT SWITCH ON/OFF)	1
AN	0700-001-726	LABEL (INCREASE ARROW-CW)	1
AP	0700-001-423	ROCKER SWITCH	1
AR	0700-001-115	USER INTERFACE PANEL TOWER	1
AS	0011-511-000	FLAT WASHER (#10)	4

Item	Part No.	Part Name		Qty.
AT	0004-535-000	SHCS 10-32 X 3/8		4
AY	0712-019-001	ROVER POWER CONTROLLER PCBA		1
BA	0012-024-000	SPLIT LOCK WASHER #6		6
BB	0050-038-000	PAN HEAD SCREW 6-32 X 1/4		6
BC	0700-001-446	VACUUM NEEDLE VALVE TUBING	(NOT SHOWN)	1
BD	0700-001-445	VACUUM GAUGE TUBING	(NOT SHOWN)	1
BE	0058-327-000	HOSE CLAMP	(NOT SHOWN)	2
BF	0700-001-424	BATTERY SWITCH CABLE ASSEMBLY	(NOT SHOWN)	1
BH	0058-323-000	HOSE CLAMP	(NOT SHOWN)	1
BJ	0044-049-000	TEFLON TAPE, 1/2"	(NOT SHOWN)	AR
BK	0072-002-001	LOCTITE 242	(NOT SHOWN)	AR
BL	0072-002-090	LOCTITE 411	(NOT SHOWN)	AR
BM	0004-580-000	BHCS M5-.8 X 35MM		2
BN	0016-030-000	U-NUT		4
BP	0072-002-015	LOCTITE 262	(NOT SHOWN)	AR

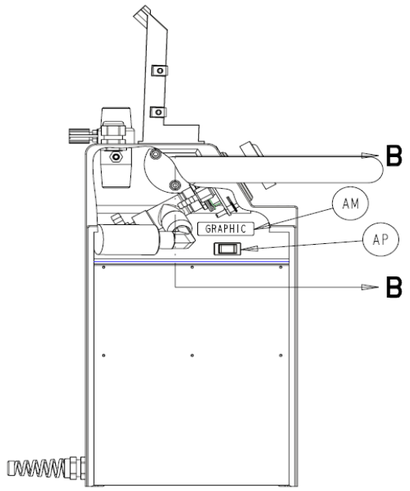
PRODUCTION RELEASED	DATE 11-25-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
3-17 03	S/CD	JAR	A	REVISED PICTORIALLY ECO 03Y2E01675
			A1	REMOVED: ITEM N 0015-005-000 HEX NUT..
4-6 04	S/JR	KB	B	REVISED PICTORIALLY ECO 04Y2E02582
			B1	REMOVED: ITEM AF 0044-048-000 VHB TAPE AR
			B2	REMOVED: ITEM AH 0700-001-718 SPEC LABEL.. 1
4-19 04	S/JR	KB	C	REVISED PICTORIALLY ECO 04Y2F02944
			C1	ADDED: ITEM BM 0004-580-000 BHCS M5-.8...
10-18 04	S/KB	PE	D	REVISED PICTORIALLY ECO 04Y2F07330
			D1	REMOVED: ITEM AW 0037-239-000 NYLON LOCKING...
			D2	ADDED: ITEM BN 0016-030-000 U-NUT 4
7-14 06	S/BC	EA	E	ADDED: ITEM BP... ECO 06Y2E12751
03-15 07	DS	JK	F	ECO 103028
			F1	WAS: ITEM BC 0700-001-446...
			F2	WAS: ITEM BD 0700-001-445...
			F3	WAS: NOTE 3 - TUBING (0060-011-000)...
			F4	WAS: NOTE 4 - TUBING (0060-012-000)...



PARTIAL SECTION B-B
SCALE: NONE



PARTIAL SECTION C-C
SCALE: NONE



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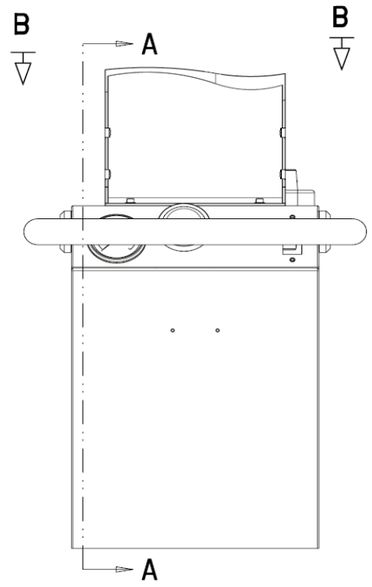
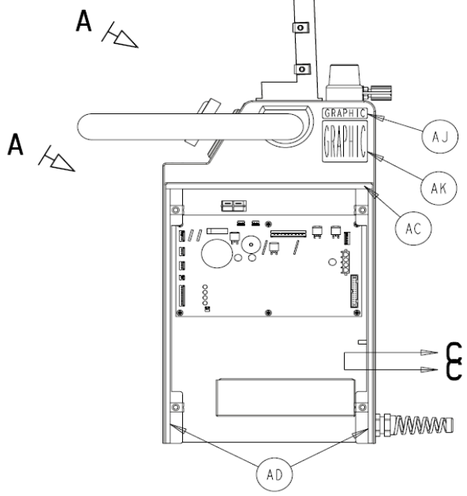
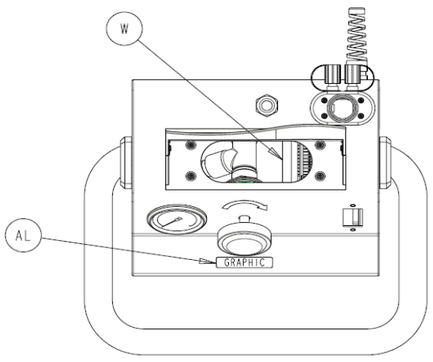
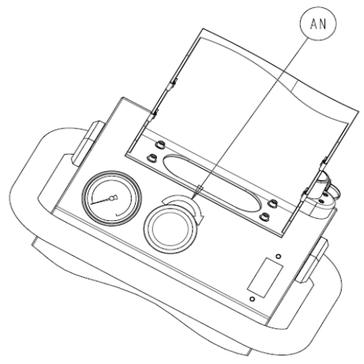






VIEW B-B
SCALE: NONE



VIEW A-A
SCALE: NONE

FORM NO. 05fm100, Rev. D	SHEET 1 OF 2	PROJECT NO. MTR-0338	0700-001-110 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

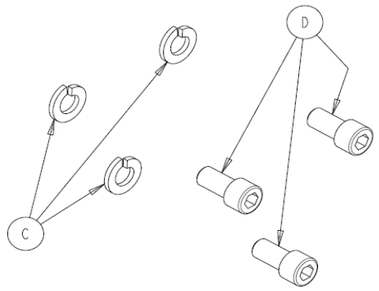
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 10-02	TITLE TOWER ASSEMBLY	
DESIGNED BY S/ K. STALEY	DATE 11-02	MATERIAL	
MFG APPROVAL S/ K. LAKE	DATE 11-02		
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-001-410 REV. F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-033-001 (REV P) AND 11-107-001 (REV. A) SOME COMPONENTS MAY HAVE MOVED FOR EASE OF MANUFACTURING.
2. ASSEMBLE PER SOE-121-010.
3. F3 [3] TUBING (0700-001-445) ATTACHES TO BARBED FITTING. HOSE CLAMP (0058-327-000) SECURES TUBING TO FITTING
4. F4 [4] TUBING (0700-001-446) ATTACHES TO BARBED FITTING. USE HOSE CLAMP (0058-323-000) TO SECURE

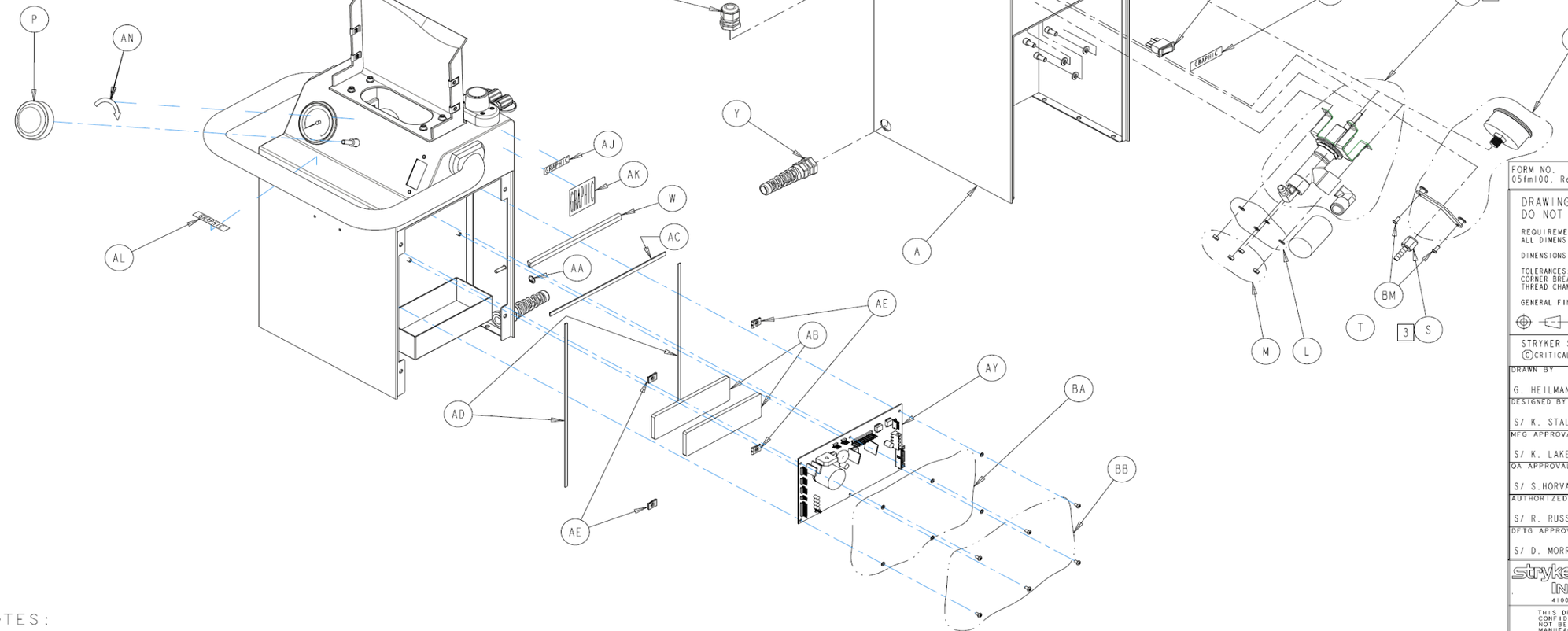


DETAIL A (2X)
SCALE: NONE

PRODUCTION RELEASED	DATE	11-25-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

SEE DETAIL A



FORM NO. 05fm100, Rev. D	SHEET 2 OF 2	PROJECT NO. MTR-0338	0700-001-110 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250/ (MAX)

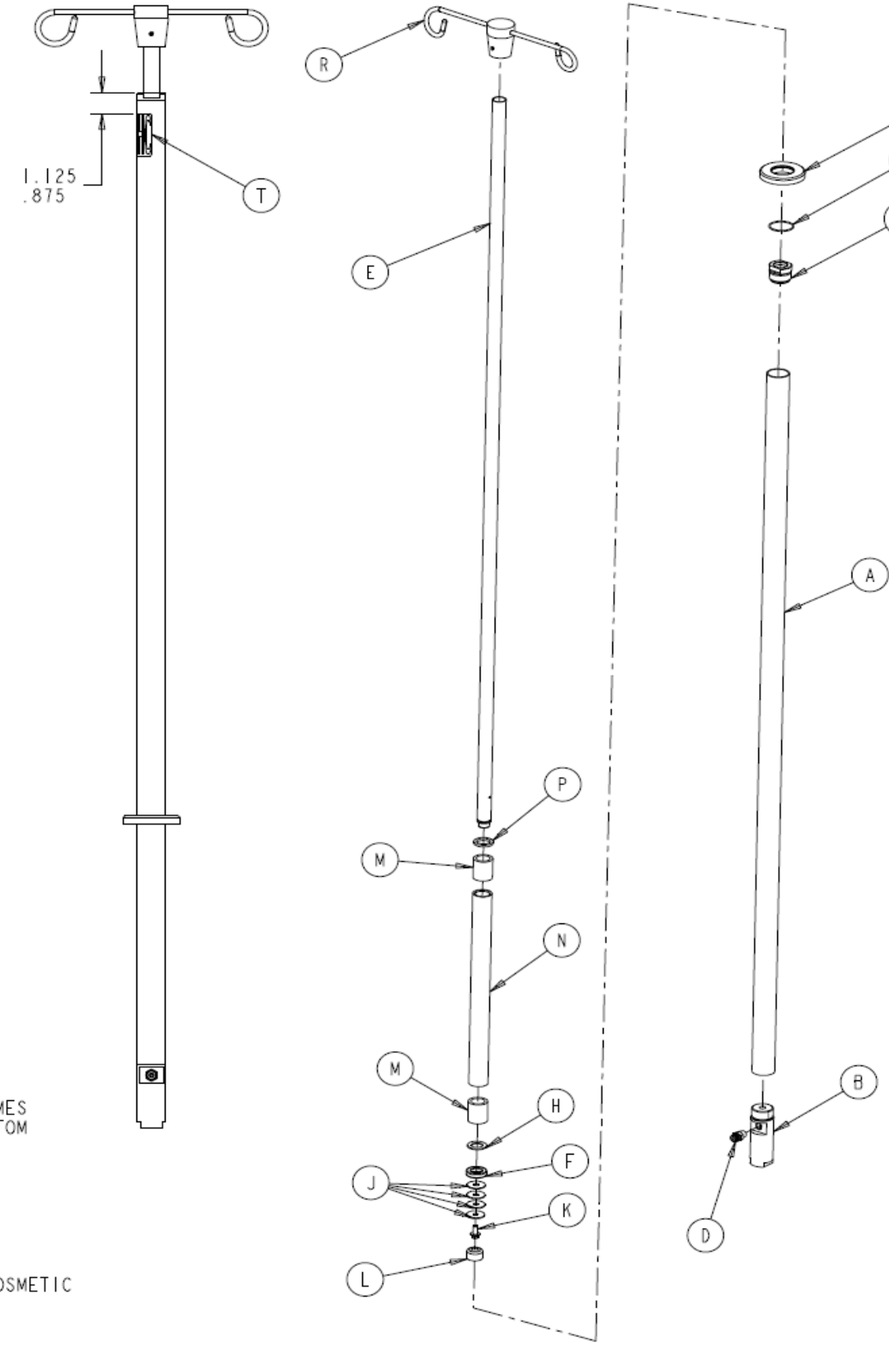
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY: G. HEILMAN	DATE: 10-02	TITLE: TOWER ASSEMBLY
DESIGNED BY: S/ K. STALEY	DATE: 11-02	
MFG APPROVAL: S/ K. LAKE	DATE: 11-02	MATERIAL
QA APPROVAL: S/ S.HORVATH	DATE: 11-02	FINISH
AUTHORIZED BY: S/ R. RUSSELL	DATE: 11-02	
DFTG APPROVAL: S/ D. MORRIS	DATE: 11-02	SIZE: B; PART NO.: 0700-001-410; REV.: F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

ITEM	PART NO.	PART NAME		QTY.
A	0700-001-419	IV POLE OUTER TUBE		1
B	0700-001-420	OUTER TUBE ENDCAP		1
C	0700-001-064	POWER IV POLE BUSHING		1
D	0048-229-000	PNEUMATIC QUICK DISCON FITTING		1
E	0700-001-425	INNER TUBE IV POLE		1
F	0030-059-000	U-CUP SEAL		1
H	0700-001-067	BACKUP RING		1
J	0011-505-000	FLAT WASHER		4
K	0005-045-000	HEX HEAD FLANGE BOLT		1
L	0056-024-000	RUBBER BUMPER		1
M	0700-001-428	IV POLE SPACER SLEEVE		2
N	0700-001-429	IV POLE SPACER ADAPTER		1
P	0014-121-000	RUBBER WASHER		1
R	0700-001-066	IV POLE HOOK W/ SET SCREW		1
S	0700-001-062	POWER IV POLE RING		1
T	0700-001-725	POWER IV POLE LABEL		1
W	0045-265-000	O-RING		1
Y	0044-021-000	TEFLON TAPE, 1/4"	(NOT SHOWN)	A/R
AA	0072-005-031	SILICONE GREASE	(NOT SHOWN)	A/R
AB	0072-002-003	LOCTITE 222	(NOT SHOWN)	A/R



PRODUCTION RELEASED	DATE	9-1-04

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

NOTES:

4. PACKAGE PARTS TO PROTECT THEIR FINISHES AND TOLERANCES DURING TRANSPORTATION, RECEIPT AND STORAGE. DAMAGE CAUSED BY CARELESSNESS CAN BE CAUSE FOR REJECTION. PARTS MUST BE CLEAN BEFORE PACKAGING.

3. CERTIFICATE OF CONFORMANCE REQUIRED VERIFYING TEST RESULTS.

2. PERFORMANCE TESTS:
   - *USING AN AIR SOURCE OF 80 PSI, MOVE THE IV POLE UP AND DOWN (3) TIMES TO MAKE SURE ASSEMBLY MOVES SMOOTHLY TO THE TOP AND TO THE BOTTOM OF ITS RANGE OF MOTION.
   - *APPLY THE 6-LITER EQUIVALENT WEIGHT (5906-002-982) TO THE HOOKS OF THE IV POLE.
   - *RAISE THE IV POLE TO ITS FULLY EXTENDED POSITION. VERIFY THAT THE IV POLE DOES NOT SINK MORE THAN 1/2" IN A PERIOD OF 15 MINUTES WHILE HOLDING THE WEIGHTS.

1. OVERALL APPEARANCE MUST BE FREE FROM ANY DEFECTS DETRIMENTAL TO THE COSMETIC QUALITIES OF THE DEVICE.

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO MTR-0338	0700-001-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY: PAM ELLIOTT	DATE 6-7 04	TITLE: POWER IV POLE ASSEMBLY	
DESIGNED BY: S/T. DURNELL	DATE 9-1 04	MATERIAL	
MFG APPROVAL: S/N. SYED	DATE 9-1 04		
QA APPROVAL: S/T. ANDERSON	DATE 9-1 04	FINISH	
AUTHORIZED BY: S/T. ONEEFE	DATE 9-1 04		
DFTG APPROVAL: S/J. ROZANC	DATE 9-1 04	SIZE: B	PART NO.: 0700-001-455 REV.: NONE

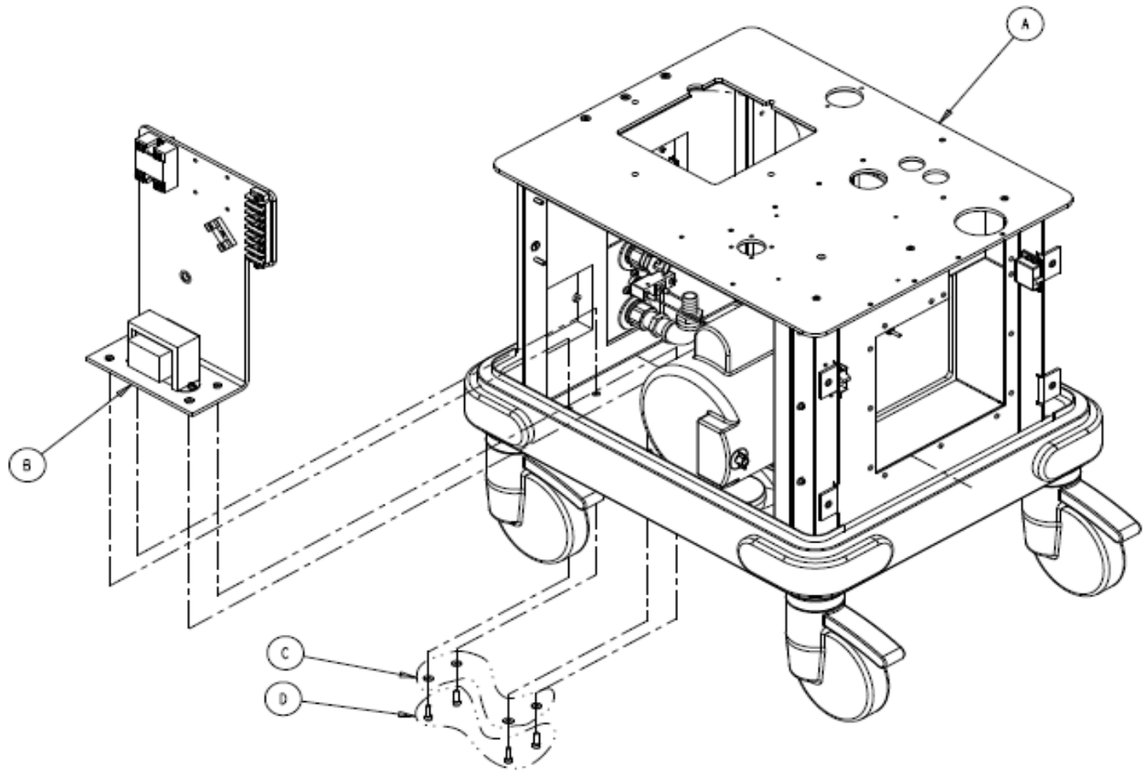
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

700-003 SILVER ROVER ASSY

Item	Part No.	Part Name	Qty.
A	0700-001-110	BASE ROVER ASSEMBLY	1
B	0700-003-030	ROVER TRANSFORMER ASSEMBLY	1
C	0011-511-000	FLAT WASHER (#10)	4
D	0004-521-000	SHCS 10-32 X 5/8	4
E	0700-005-011	UPPER SKIRT SQUARE PLUG	1
F	0011-491-000	FLAT WASHER (#6)	4
H	0004-529-000	SHCS 6-32 X 3/8	2
J	0001-159-000	FLAT HEAD SOCKET SCREW (#8)	1
K	0016-014-000	LOCKNUT, NYLON INSERT 8-32	1
L	0011-052-000	FLAT WASHER (#4)	4
M	0004-156-000	SHCS 4-40 X 1/4	4
N	0700-003-017	ROVER POWER CORD	1
P	0700-003-412	POWER SWITCH	1
R	0700-001-409	POWER SWITCH SPLASH COVER	1

Item	Part No.	Part Name		Qty.
S	0004-525-000	SHCS 8-32 X 3/8		2
T	0013-018-000	LOCK WASHER #10 EXTERNAL		8
W	0015-004-000	HEX NUT 10-32		4
Y	0058-334-000	ADHESIVE CABLE MOUNT		1
AA	0700-003-012	UPPER SKIRT ROUND PLUG		1
AB	0004-523-000	SHCS 6-32 X 1/2		2
AD	0700-003-050	USER INTERFACE PANEL ASSEMBLY		1
AF	0700-003-013	TOWER LEFT PANEL		1
AH	0700-003-700	SPECIFICATION LABEL (MANIFOLD STORAGE COMPARTMENT)		1
AJ	0700-003-701	SPEC LABEL (700-3 ROVER SERIAL NUMBER)		1
AK	0072-002-003	LOCTITE 222	(NOT SHOWN)	AR
AL	0072-002-061	RTV 108	(NOT SHOWN)	AR
AM	0034-046-000	SHRINK TUBE	(NOT SHOWN)	AR
AN	0034-408-000	HEAT SHRINK TUBING	(NOT SHOWN)	AR
AP	0058-330-000	CABLE TIE	(NOT SHOWN)	16
AR	0700-002-730	ROVER SILVER LABEL		1
AS	0004-205-000	BUTTON HEAD SOCKET SCREW		4
AT	0700-003-111	700-3 MAIN HARNESS ASSEMBLY	(NOT SHOWN)	1

PRODUCTION RELEASED	DATE 12-20-02		
DATE	CHK'D BY	DFTG	STM	DESCRIPTION
06-16-05	S/JR	JH	A	REVISED PICTORIALLY ECO 05Y2E03688
			A1	ADDED: LABELING BOM L1, L2, L3...L18
5-12-04	S/MB	JAR	B	REVISED PICTORIALLY ECO 04A2E01787
			B1	REMOVED: MACERATOR FROM WIRING DIAGRAM (PG 6)
4-8-04	S/JR	KB	C	REVISED PICTORIALLY ECO 04Y2E02583
			C1	WAS: ITEM L4 0700-001-718 NEPTUNE PLACARD
			C2	ADDED: ITEM AR 0700-002-730 ROVER SILVER... 1
6-15-04	S/JR	KB	D	WAS: ITEM L16 ...5X CANISTER.. ECO 04Y2E05728
			D1	WAS: ITEM L18 0280-004-097 POWER CORD WARNING
			D2	REMOVED: ITEM L17 0700-001-326...
			D3	ADDED: ITEM L18 0036-046-000 (X2 PG 284)...
10-20-04	S/MB	KB	E	REVISED PICTORIALLY ECO 04Y2E07328
			E1	REMOVED: ITEM AC 0700-001-021 PANEL RETAINER..
			E2	REMOVED: ITEM AE 0023-282-000 #4 20 PAN...
			E3	ADDED: ITEM AS 0004-205-000 BUTTON HEAD..
11-7-05	S/BC	EA	F	REVISED PICTORIALLY ECO 05Y2E05424
				REMOVED: K1-2
05-1-06		EA	H	REVISED AND REDRAWN ECO 06Y2E09278
			H1	WAS: 0700-001-110...ROVER MAIN HARNESS...
			H2	ADDED: ITEM AT 0700-003-111...(NOT SHOWN)...1
3-24-06		BC	J	REVISED PICTORIALLY ECR 113712



3. INSPECT PER QIP-0752.
2. CALIBRATE PER SOE-121-027.
1. ASSEMBLE PER SOE-121-003.

NOTES:

FORM NO. 05Fm100, Rev. D	SHEET 1 OF 6	PROJECT NO. MTR-0338	0700-003-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)--- .020/.062 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

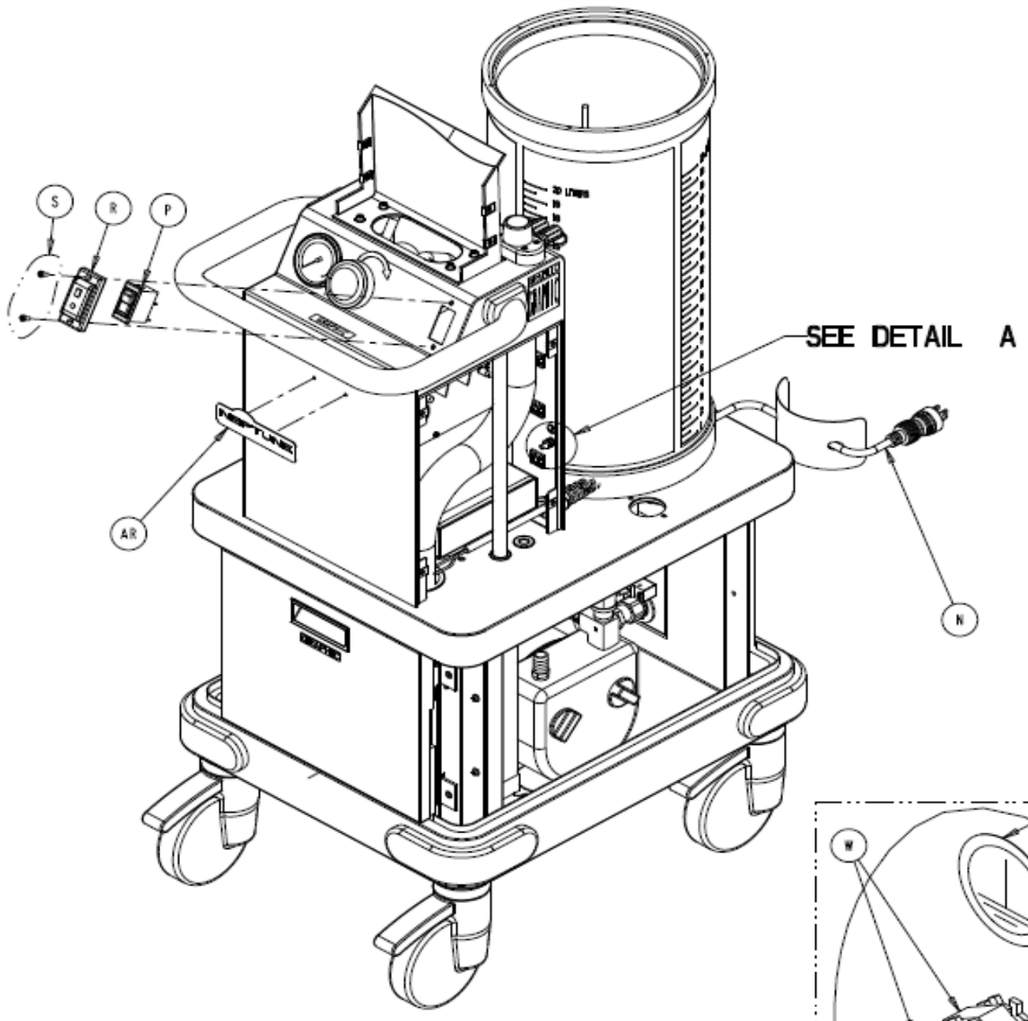
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

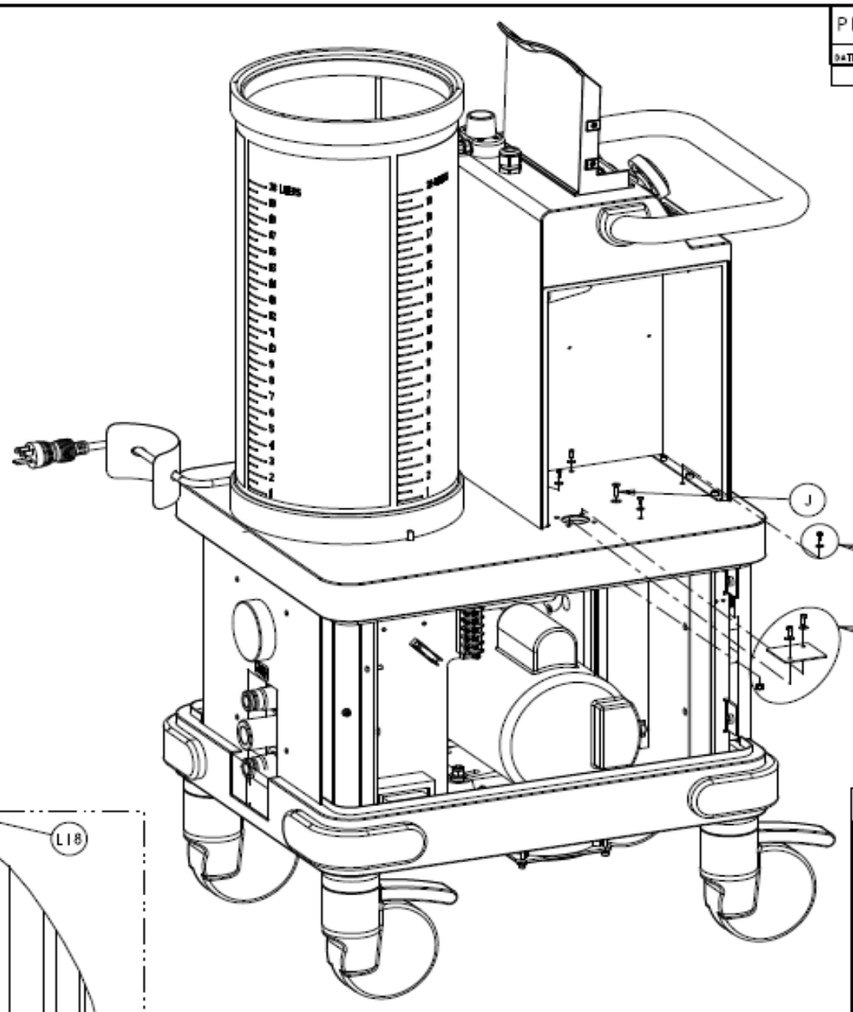
DRAWN BY G. HEILMAN	DATE 12-02	TITLE	ROVER ASSEMBLY
DESIGNED BY S/K. STALEY	DATE 12-02	MATERIAL	
MFG APPROVAL S/K. LAKE	DATE 12-02		
QA APPROVAL S/T. ANDERSON	DATE 12-02	FINISH	
AUTHORIZED BY S/T. O'BEEFE	DATE 12-20-02		
DFTG APPROVAL S/C. DRAKE	DATE 12-20-02	SIZE B	PART NO. 0700-003-010 REV. J

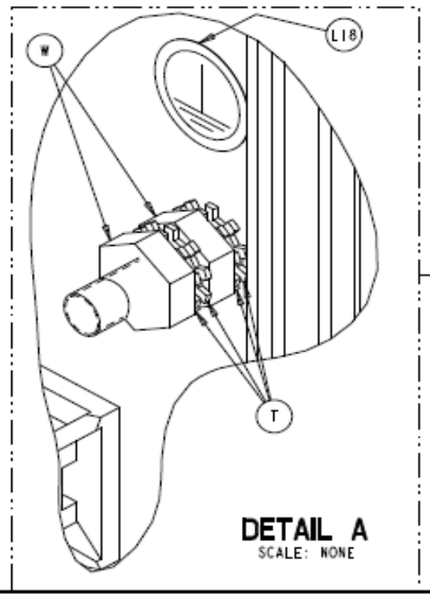
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	12-20-02

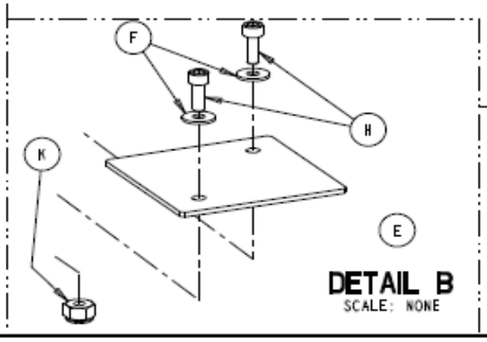
DATE	CHK'D BY	DWG	STN	DESCRIPTION







DETAIL A
SCALE: NONE



DETAIL B
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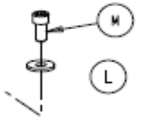


DETAIL C (4X)
SCALE: NONE

NOTES:

FORM NO. 054m100, Rev. D	SHEET 2 OF 6	PROJECT NO. MTR-0338	0700-003-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)--- .030/.062 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ---------- 250 (MAX)

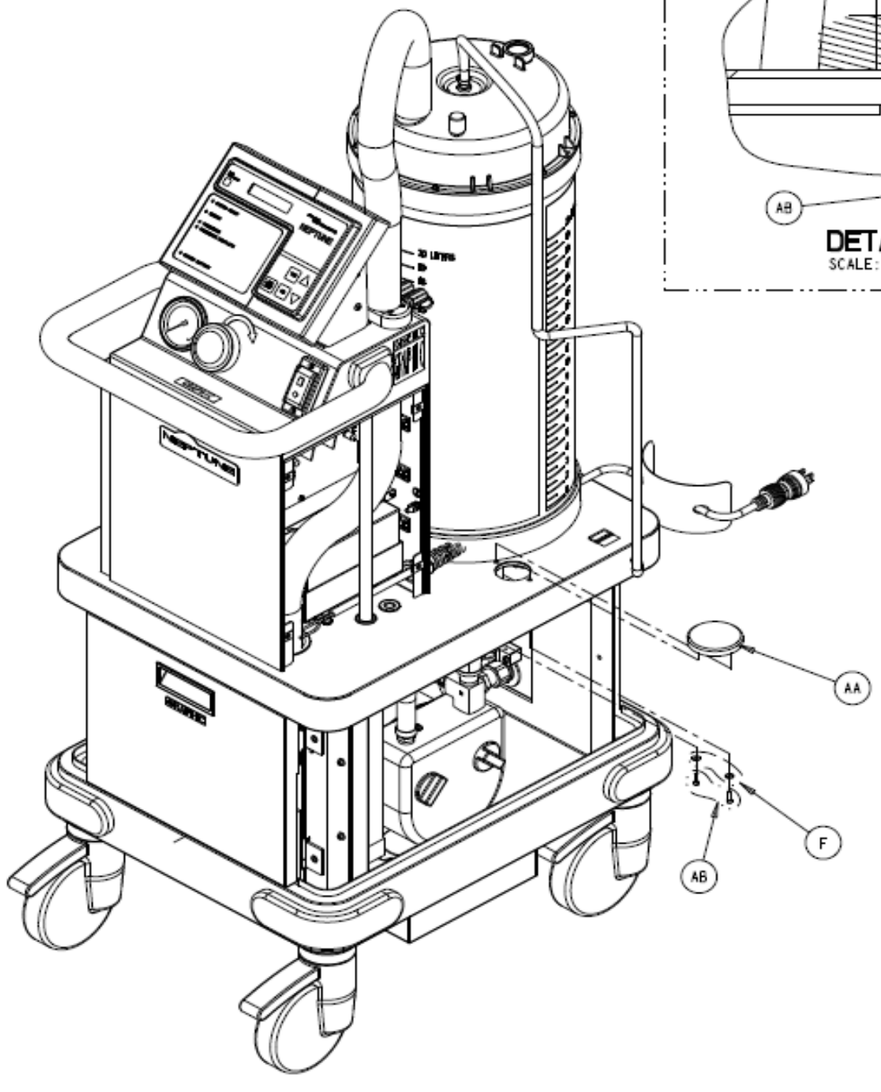
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

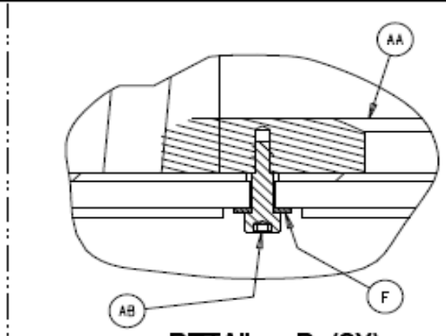
DRAWN BY G. HEILMAN	DATE 12-02	TITLE	ROVER ASSEMBLY
DESIGNED BY S/R.STALEY	DATE 12-02	MATERIAL	
MFG APPROVAL S/R.LAKE	DATE 12-02		
QA APPROVAL S/T.ANDERSON	DATE 12-02	FINISH	
AUTHORIZED BY S/T.O'KEEFE	DATE 12-20 02		
PPTG APPROVAL S/C.DRAKE	DATE 12-20 02	SIZE B	PART NO. 0700-003-010 REV. J

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	12-20-02

DATE	CHK'D BY	DPTG	STM	DESCRIPTION





DETAIL D (2X)
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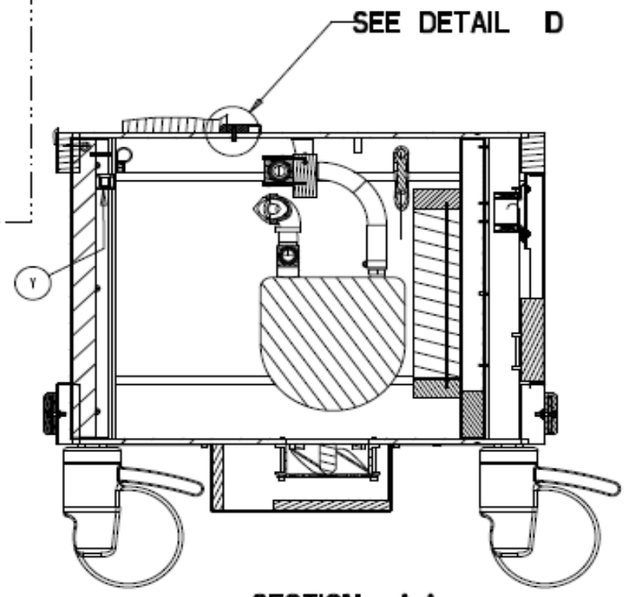
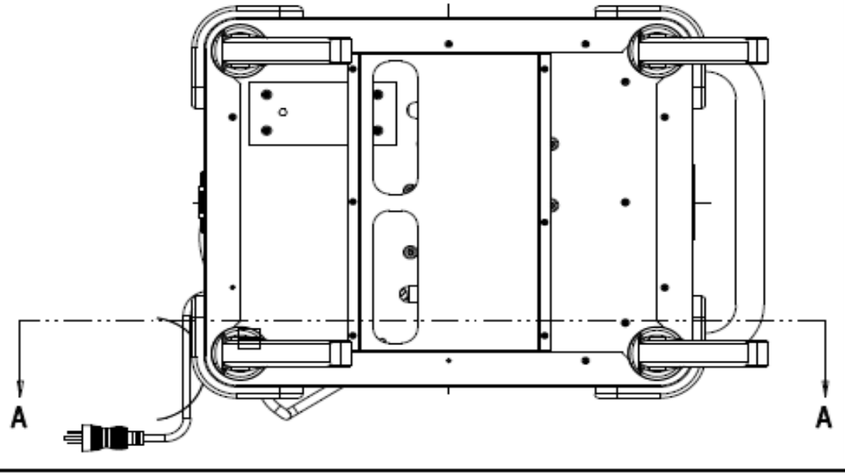


SECTION A-A



FORM NO. 05fm100, Rev. D	SHEET 3 OF 6	PROJECT NO. MTR-0338	0700-003-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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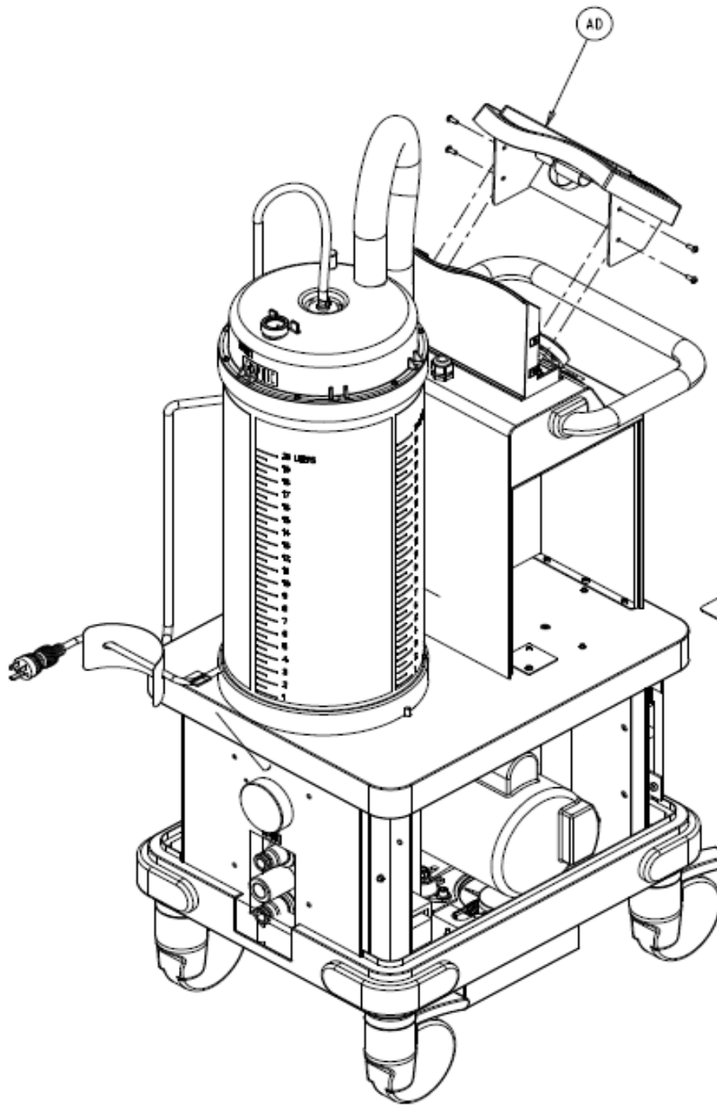
TOLERANCES: DECIMAL ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---- .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

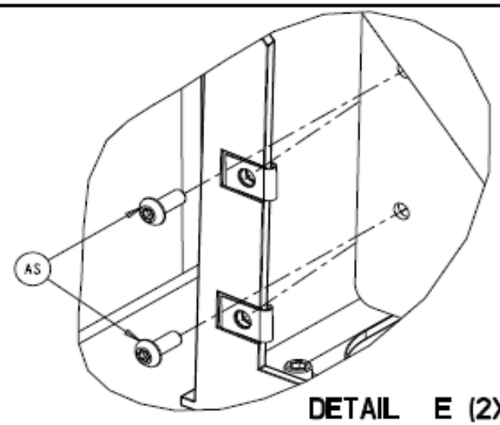
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 12-02	TITLE ROVER ASSEMBLY		
DESIGNED BY S/R.STALEY	DATE 12-02			
MFG APPROVAL S/R.LABE	DATE 12-02	MATERIAL		
QA APPROVAL T.ANDERSON	DATE 12-02	FINISH		
AUTHORIZED BY S/T.O'BEEFE	DATE 12-20-02			
DPTG APPROVAL S/C.DRAKE	DATE 12-20-02	SIZE B	PART NO. 0700-003-010	REV. J

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

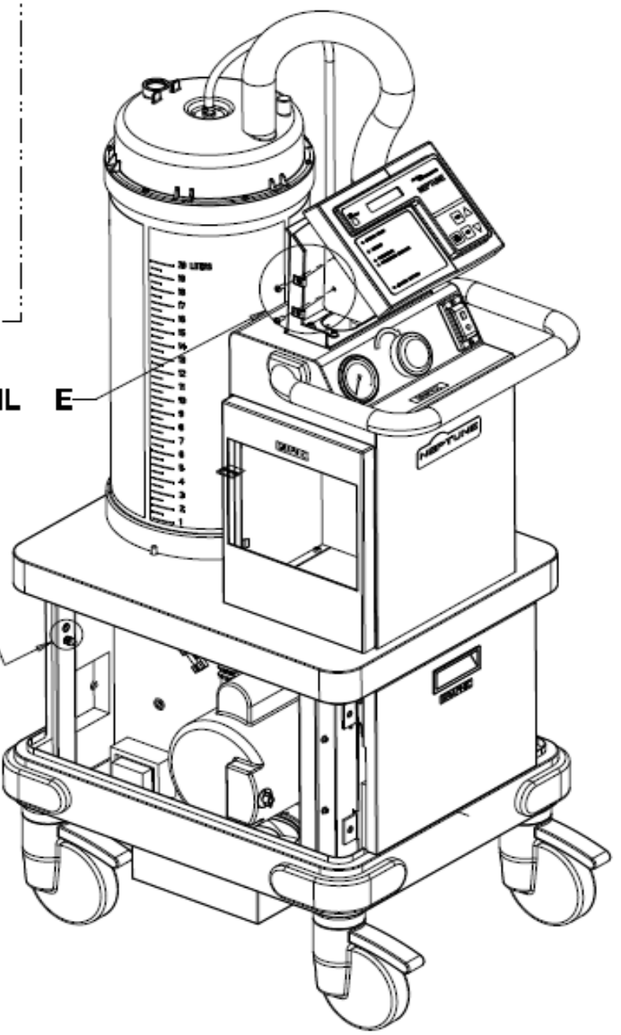


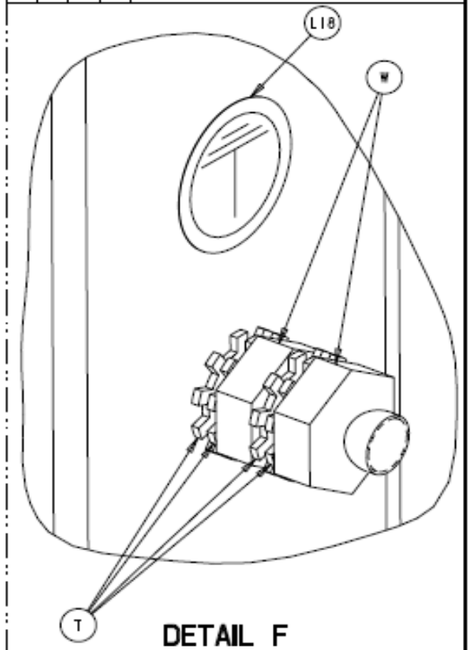


DETAIL E (2X)
SCALE: NONE

SEE DETAIL E

SEE DETAIL F





DETAIL F
SCALE: NONE

NOTES:

PRODUCTION RELEASED	DATE 12-20-02

DATE	CHK'D BY	DFTG	STN	DESCRIPTION

FORM NO. 054m100, Rev. D	SHEET 4 OF 6	PROJECT NO. MTR-0338	0700-003-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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GENERAL FINISH ---------- 250 (MAX)

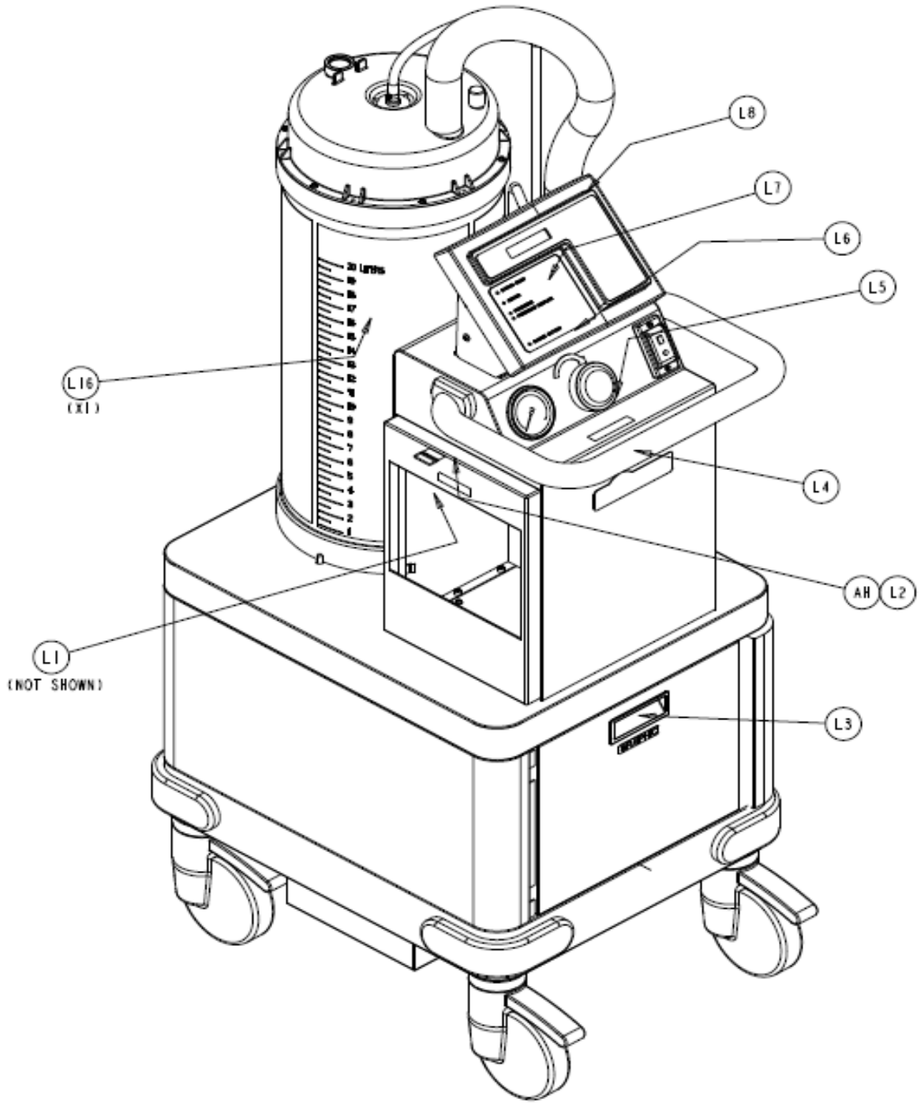
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

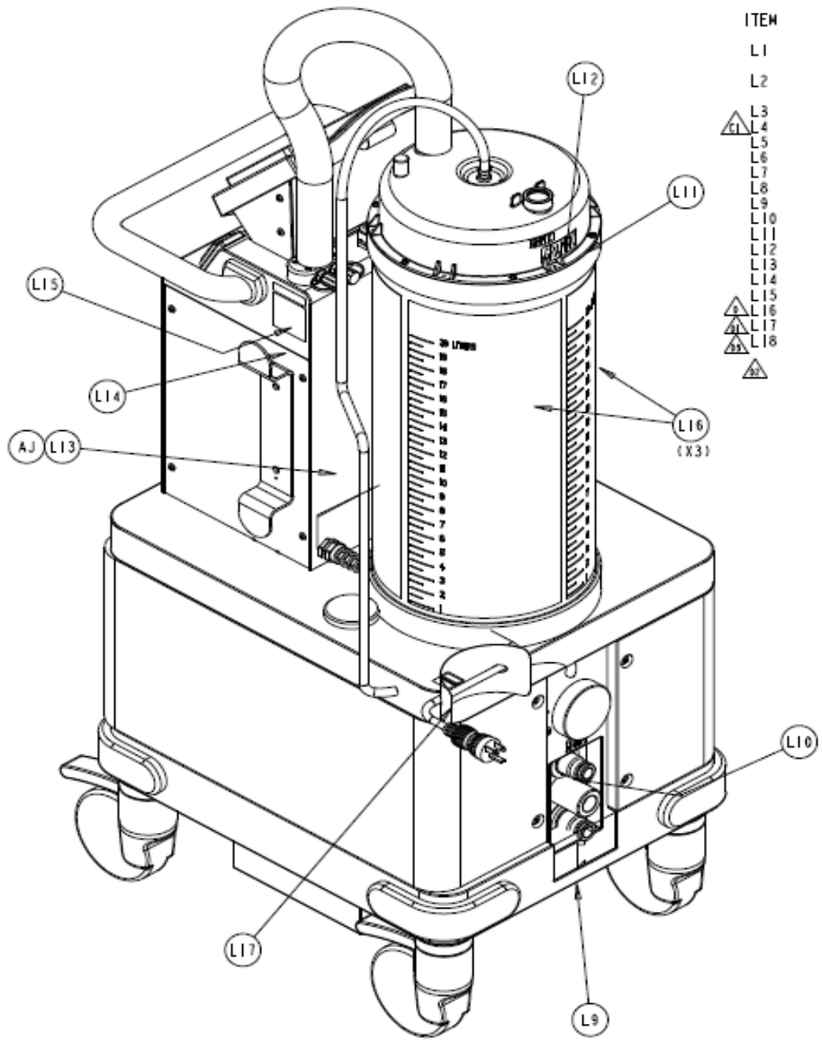
DRAWN BY G. HEILMAN	DATE 12-02	TITLE	ROVER ASSEMBLY
DESIGNED BY S/R. STALEY	DATE 12-02		
REG APPROVAL S/R. LAKE	DATE 12-02	MATERIAL	
QA APPROVAL S/T. ANDERSON	DATE 12-02	FINISH	
AUTHORIZED BY S/T. O'KEEFE	DATE 12-20-02		
DFTG APPROVAL S/C. DRAKE	DATE 12-20-02	SIZE B	PART NO. 0700-003-010 REV. J

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	12-20-02

DATE	CHK'D BY	DPTG	SYM	DESCRIPTION





LABELING BOM

ITEM	P/N	DESCRIPTION
L1	0700-001-715	BATTERY DISCONNECT SWITCH (NOT SHOWN)
L2	0700-003-700	MANIFOLD STORAGE DEPARTMENT (PLACED AFTER FINAL QC)
L3	0700-001-705	FLUID SUCTION HEPA FILTER
1 L4	0700-002-730	ROVER SILVER LABEL
L5	0700-001-706	VACUUM PRESSURE CONTROL
L6	0700-001-726	VACUUM INCREASE ARROW
L7	0700-003-055	OVERLAY
L8	0700-003-056	MEMBRANE SWITCH
L9	0700-001-709	WASTE LABEL
L10	0700-001-708	WATER LABEL
L11	0700-001-716	MANIFOLD REMOVAL
L12	0700-001-707	MANIFOLD PORT
L13	0700-003-701	SERIAL NUMBER LABEL
L14	0700-001-723	WALL SUCTION CAUTION
L15	0700-001-703	WALL VACUUM SUCTION PORTS
3 L16	0700-001-327	(X4) CANISTER LITER LABEL
4 L17	0280-004-097	POWER CORD WARNING
5 L18	0036-046-000	(X2, PG 2&4) PROTECTIVE EARTH (GRD)
2		

NOTES:

FORM NO. 05fm100, Rev. D	SHEET 5 OF 6	PROJECT NO. MTR-0338	0700-003-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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THREAD CHAMFER (FOR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

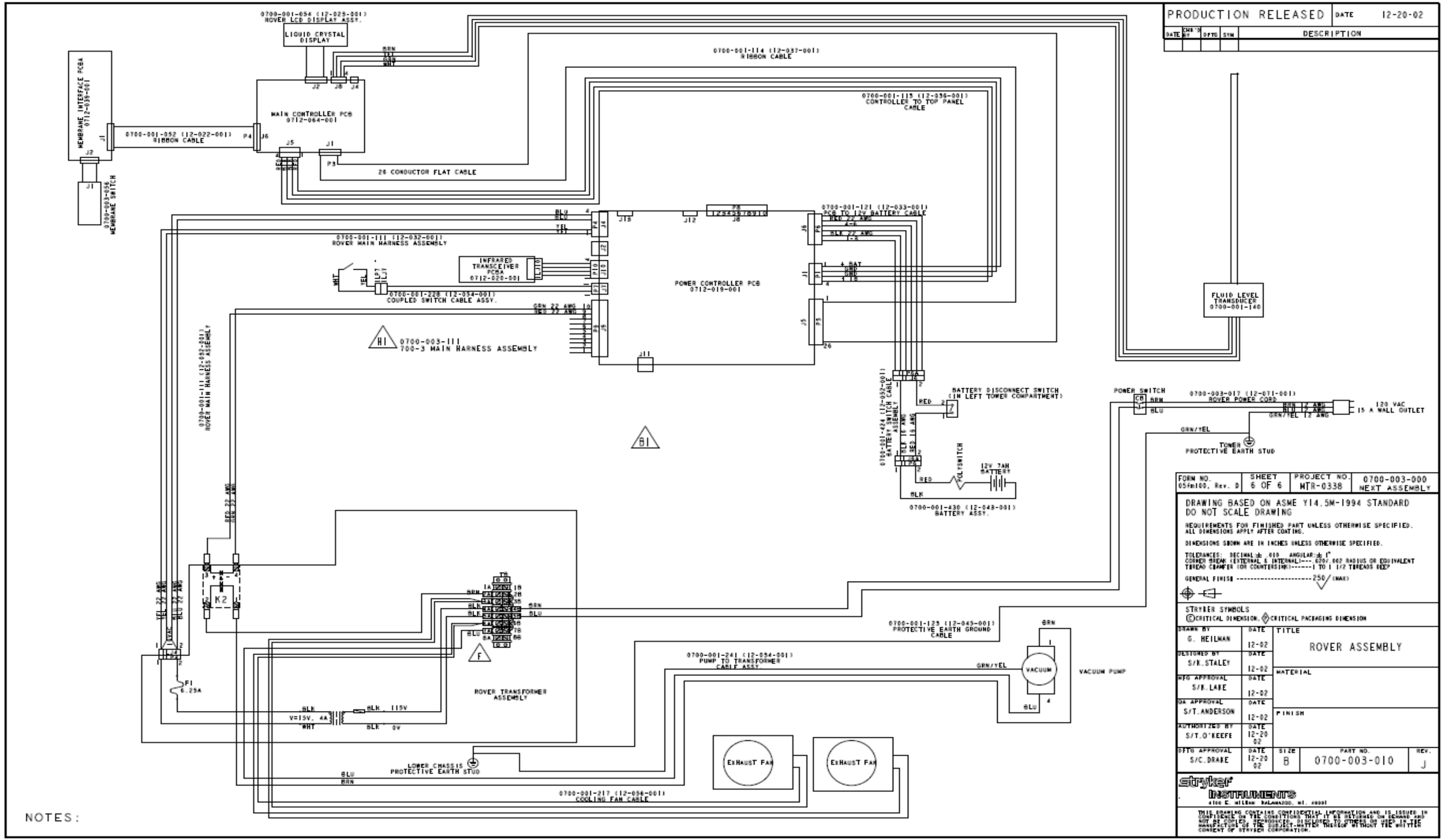
GENERAL FINISH ----------250 (MAX)

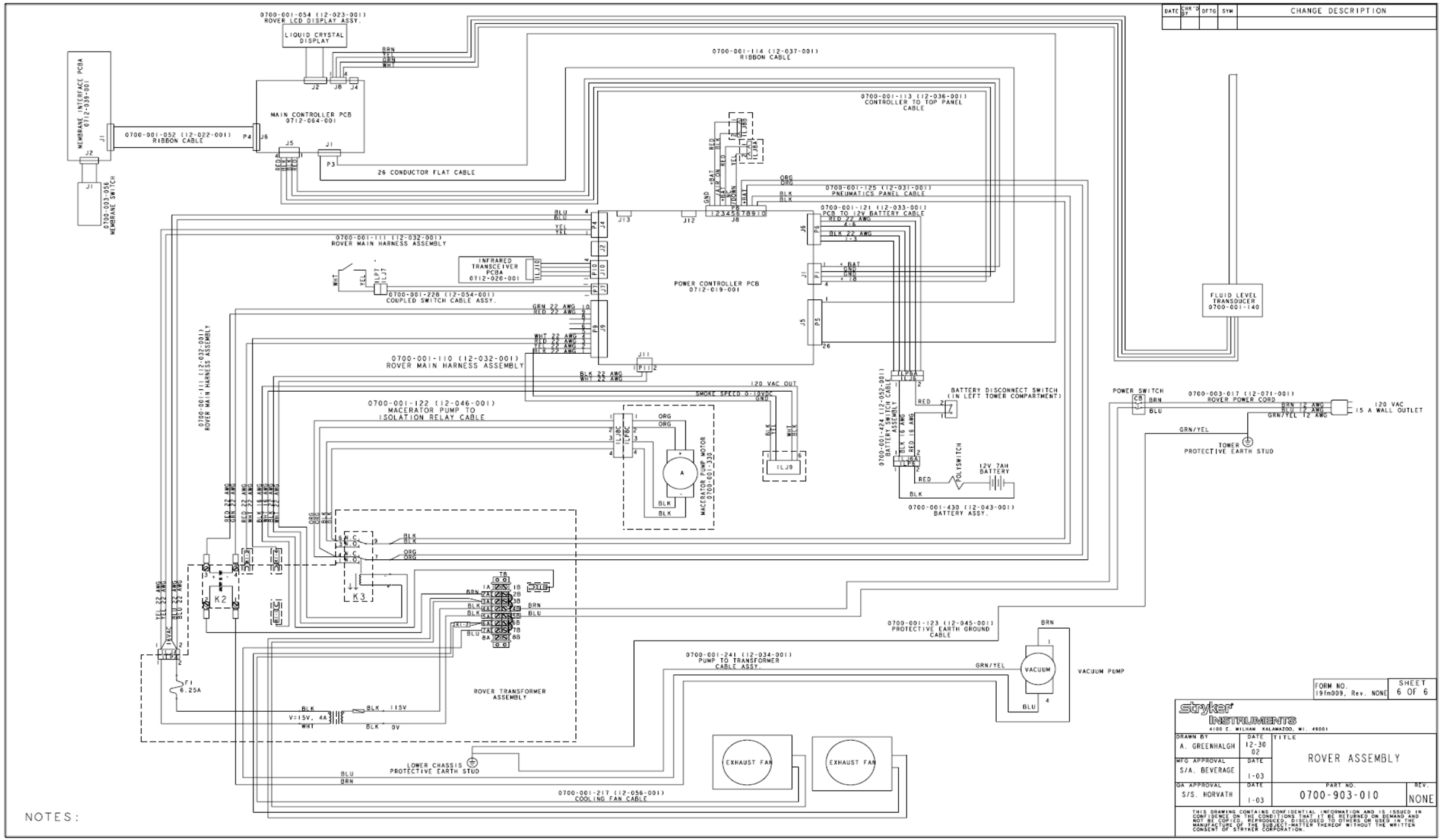
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

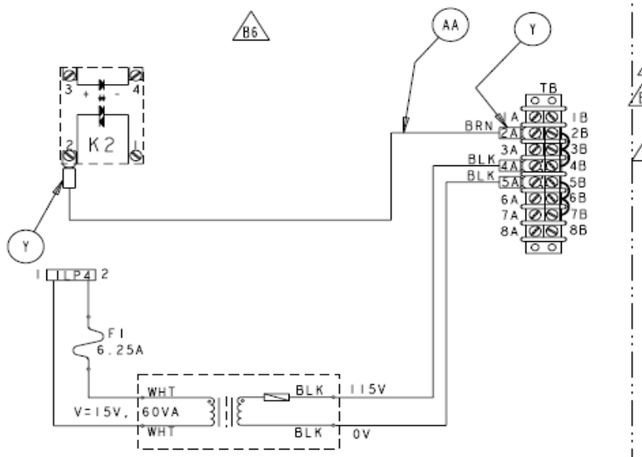
DRAWN BY G. HEILMAN	DATE 12-02	TITLE	ROVER ASSEMBLY
DESIGNED BY S/K.STALEY	DATE 12-02		
MFG APPROVAL S/K.LABE	DATE 12-02	MATERIAL	
QA APPROVAL S/T.ANDERSON	DATE 12-02	FINISH	
AUTHORIZED BY S/T.O'REEFE	DATE 12-20 02		
DPTG APPROVAL S/C.DRAKE	DATE 12-20 02	SIZE B	PART NO. 0700-003-010 REV. J

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

700-3 SILVER CURRENT PRODUCTION MODEL WIRING DIAGRAM




DATE
CHK'D BY
DFTG
SYM
CHANGE DESCRIPTION
0700-001-054 (12-023-001)
ROVER LCD DISPLAY ASSY.
LIQUID CRYSTAL DISPLAY
MEMBRANE INTERFACE PCBA
0712-039-001
0700-001-052 (12-022-001)
RIBBON CABLE
MAIN CONTROLLER PCB
0712-064-001
26 CONDUCTOR FLAT CABLE
0700-003-056
MEMBRANE SWITCH
0700-001-114 (12-037-001)
RIBBON CABLE
0700-001-113 (12-036-001)
CONTROLLER TO TOP PANEL CABLE
0700-001-125 (12-031-001)
PNEUMATICS PANEL CABLE
0700-001-121 (12-033-001)
PCB TO 12V BATTERY CABLE
RED 22 AWG
BLK 22 AWG
0700-001-111 (12-032-001)
ROVER MAIN HARNESS ASSEMBLY
INFRARED TRANSCEIVER PCBA
0712-020-001
0700-001-228 (12-054-001)
COUPLED SWITCH CABLE ASSY.
POWER CONTROLLER PCB
0712-019-001
FLUID LEVEL TRANSDUCER
0700-001-140
0700-001-110 (12-032-001)
ROVER MAIN HARNESS ASSEMBLY
120 VAC OUT
SMOKE SPEED 0-10VDC
GND
0700-001-122 (12-046-001)
MACERATOR PUMP TO ISOLATION RELAY CABLE
MACERATOR PUMP MOTOR
0700-001-330
BATTERY DISCONNECT SWITCH
(IN LEFT TOWER COMPARTMENT)
0700-001-424 (12-052-001)
BATTERY DISCONNECT CABLE ASSY.
12V 7AH BATTERY
POLYSWITCH
0700-001-430 (12-043-001)
BATTERY ASSY.
POWER SWITCH
0700-003-017 (12-071-001)
ROVER POWER CORD
120 VAC
15 A WALL OUTLET
TOWER
PROTECTIVE EARTH STUD
K2
K3
F1
6.25A
ROVER TRANSFORMER ASSEMBLY
BLK
V=115V, 4A
WHT
BLK 115V
BLK 0V
TB
0700-001-123 (12-045-001)
PROTECTIVE EARTH GROUND CABLE
0700-001-241 (12-034-001)
PUMP TO TRANSFORMER CABLE ASSY.
VACUUM
VACUUM PUMP
LOWER CHASSIS
PROTECTIVE EARTH STUD
EXHAUST FAN
EXHAUST FAN
0700-001-217 (12-056-001)
COOLING FAN CABLE
NOTES:
FORM NO. 19fm009, Rev. NONE
SHEET 6 OF 6
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001
DRAWN BY A. GREENHALGH
DATE 12-30 02
TITLE ROVER ASSEMBLY
MFG APPROVAL S/A. BEVERAGE
DATE 1-03
QA APPROVAL S/S. HORVATH
DATE 1-03
PART NO. 0700-903-010
REV. NONE
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.

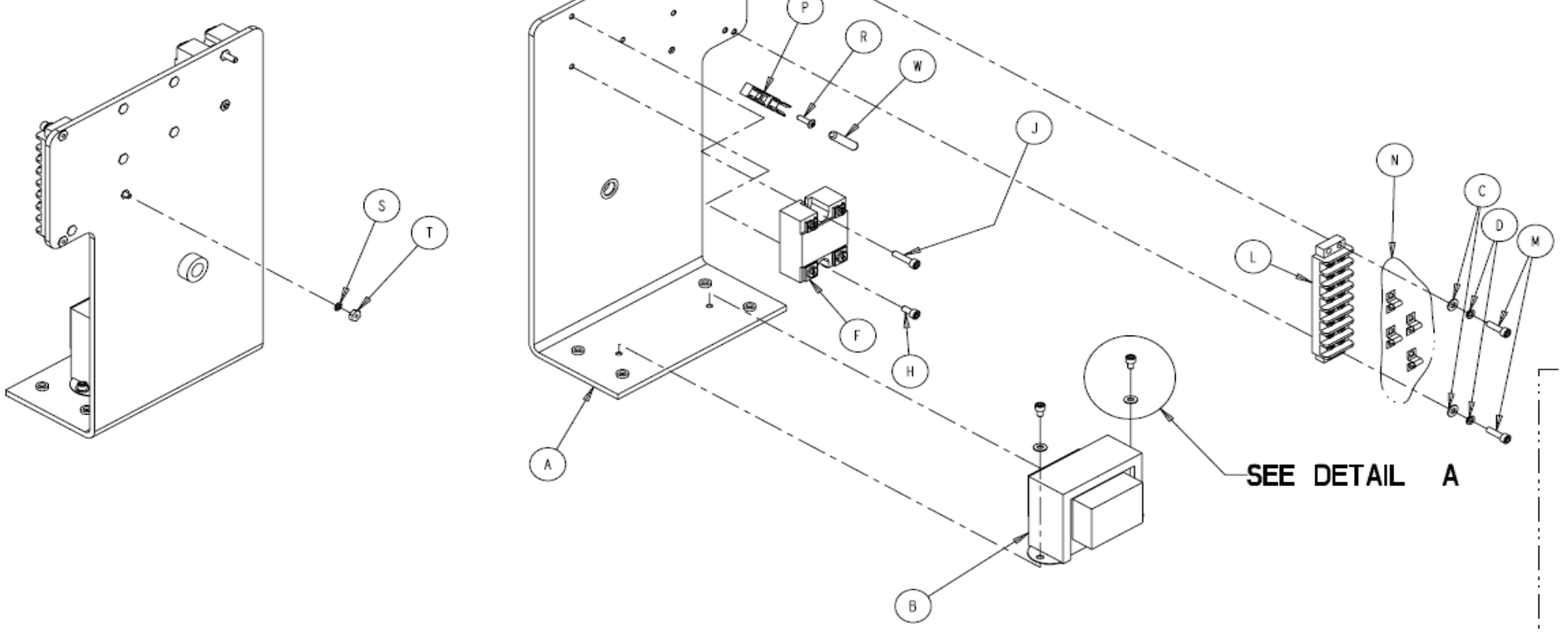


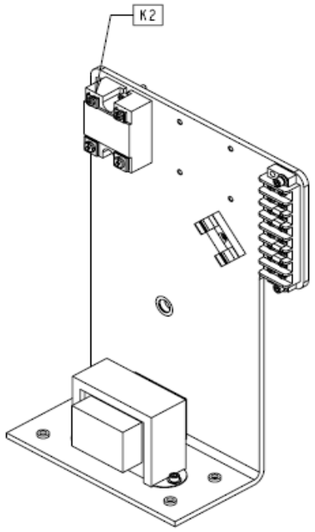
SCHEMATIC
SCALE: NONE

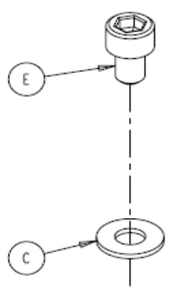
Item	Part No.	Part Name	Qty.
A	0700-001-031	MOUNTING BRACKET	1
B	0700-003-032	ISOLATION TRANSFORMER	1
C	0011-510-000	FLAT WASHER (#8)	4
D	0012-015-000	SPLIT LOCK WASHER #8	2
E	0004-004-000	SHCS 8-32 X 1/4	2
F	0700-001-033	SOLID-STATE RELAY	1
H	0004-525-000	SHCS 8-32 X 3/8	1
J	0004-538-000	SHCS 8-32 X 3/4	1
L	0700-001-036	TERMINAL BLOCK	1
M	0004-522-000	SHCS 8-32 X 5/8	2
N	0034-425-000	TERMINAL BLOCK JUMPER	4
P	0700-001-039	BLOCK FUSE HOLDER	1
R	0004-553-000	BUTTON HEAD SCREW 6-32 X 1/2	1
S	0013-005-000	LOCK WASHER #6 INTERNAL	1
T	0015-001-000	HEX NUT 6-32	1
W	0034-424-000	FUSE 6.2A, 250V	1
Y	0034-421-000	BLOCK SPADE TERMINAL 12-10 AWG	2
AA	0039-276-000	BROWN WIRE, 12 AWG	9 IN
AB	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
AC	0072-002-002	LOCTITE 271 (NOT SHOWN)	AR

PRODUCTION RELEASED	DATE	12-18-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
6-14-04	S/KB	JAR	A	REVISED PICTORIALLY ECO 04Y2E04085
			A1	WAS: ITEM D 012-015-000 SPLIT LOCK WASHER 5
			A2	ADDED: ITEM AC 0072-002-002 LOCTITE 271....
3-9-06	S/EA	BC	B	REVISED PICTORIALLY ECO 06Y2E09289
			B1	WAS: ITEM C ...QTY. 6
			B2	WAS: ITEM D ...QTY. 3
			B3	WAS: ITEM H ...QTY. 2
			B4	WAS: ITEM J ...QTY. 2
			B5	REMOVED: ITEM K 0700-001-034...
			B6	REMOVED: SCHEMATIC K3







DETAIL A (2X)
SCALE: NONE

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-003-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------ 1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

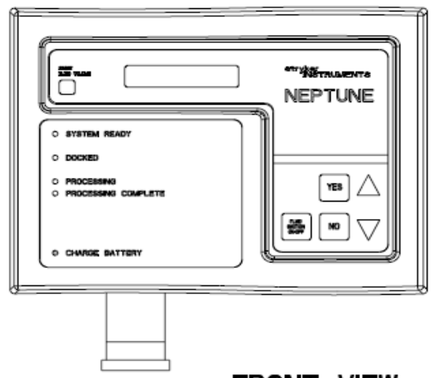
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

	DATE	TITLE
DRAWN BY G. HEILMAN	11-02	ROVER TRANSFORMER ASSEMBLY
DESIGNED BY S/ K. STALEY	12-02	
MFG APPROVAL S/ K. LAKE	12-02	MATERIAL
QA APPROVAL S/ T. ANDERSON	12-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	12-02	
DFTG APPROVAL S/ D. MORRIS	12-02	SIZE B / PART NO. 0700-003-030 / REV. B

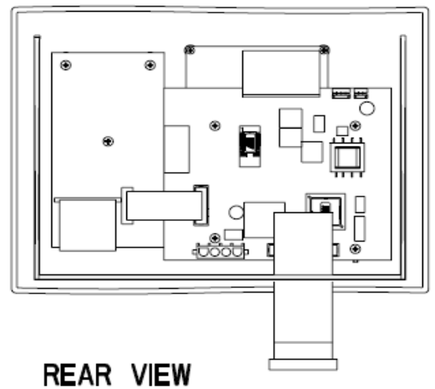
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:
3. INSPECT PER QIP-0753
2. ASSEMBLE PER SOE-121-030.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-106-001 (REV A).

ITEM	PART NO.	PART NAME	QTY.
A	0700-001-051	USER INTERFACE PANEL	1
B	0700-001-054	ROVER LCD DISPLAY ASSY	1
C	0700-003-056	MEMBRANCE SWITCH	1
D	0700-003-055	OVERLAY	1
E	0712-039-001	MEMBRANE INTERFACE PCBA, ROVER	1
F	0050-059-000	PAN HEAD SCREW #4 X 3/8	9
H	0712-064-001	ROVER MAIN CONTROLLER PCBA	1
J	0700-001-052	RIBBON CABLE	1
K2			
K3			
M	0700-001-114	RIBBON CABLE	1
N	0072-002-032	RTV 162 (NOT SHOWN)	AR
P	0023-073-000	PHILLIPS PAN HEAD #2 X 1/4 SS	4

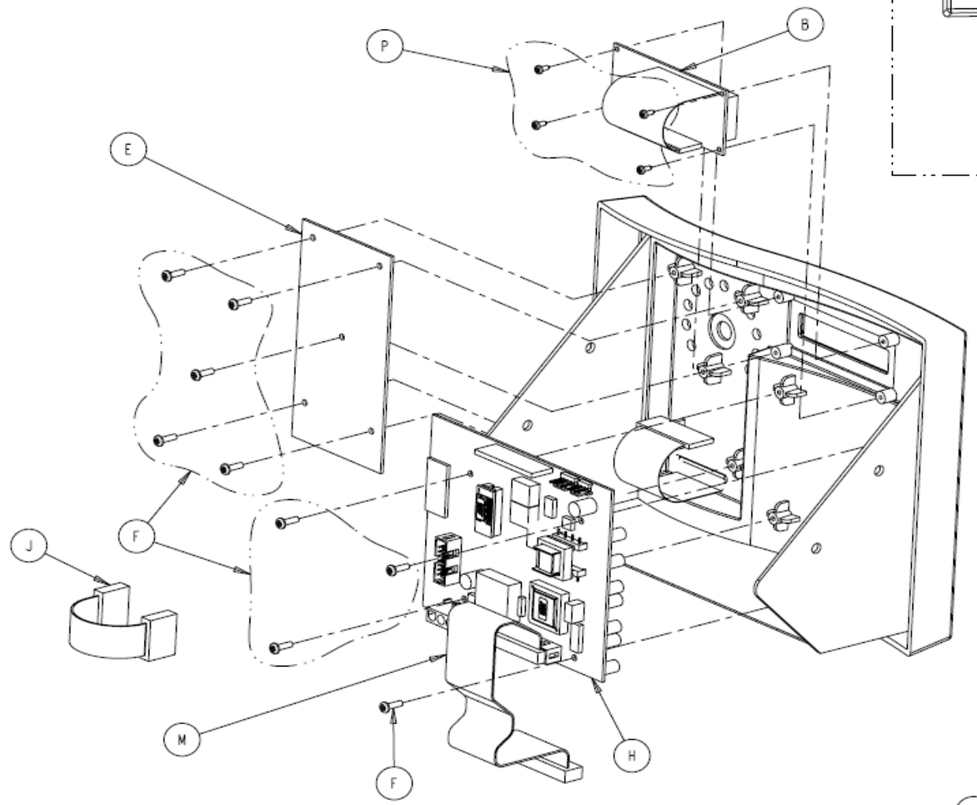


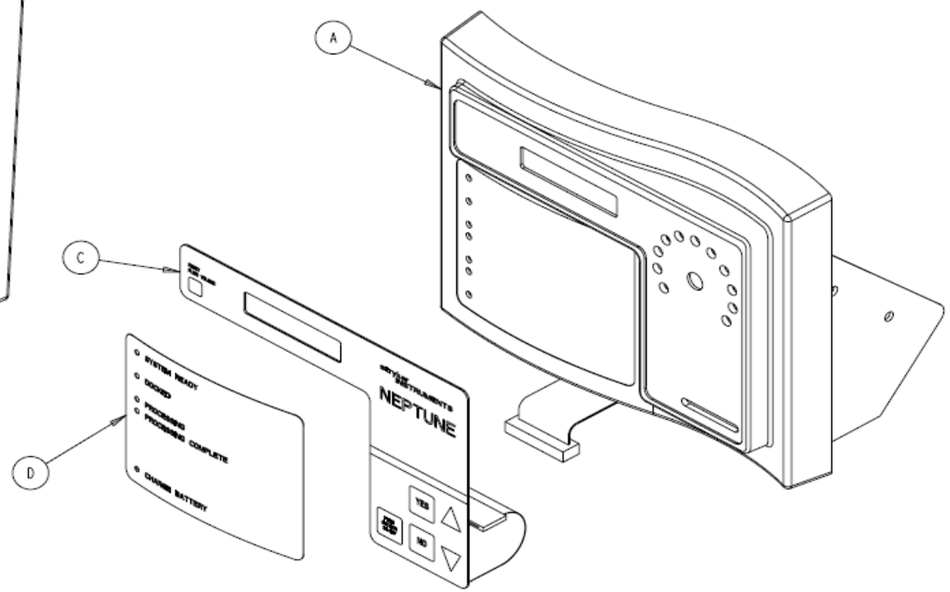
FRONT VIEW
SCALE: NONE



REAR VIEW
SCALE: NONE

PRODUCTION RELEASED	DATE 12-19-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
10-15-04	S/KB	PE	A	REVISED PICTORIALLY ECO 04Y2E07329
			A1	WAS: ITEM F 0050-059-000 13
			A2	REMOVED: ITEM K 0700-001-058 SEAL GASKET 1
			A3	REMOVED: ITEM L 0700-001-053 PANEL COVER 1
			A4	ADDED: ITEM P 0023-073-000 PHILLIPS... 4





NOTES:

2. ASSEMBLE PER SOE-121-019.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-108-001 (REV B). SOME COMPONENTS MAY HAVE MOVED FOR EASE OF MANUFACTURING.

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-003-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 12-02	TITLE USER INTERFACE PANEL ASSEMBLY			
DESIGNED BY S/ K. STALEY	DATE 12-02				
MFG APPROVAL S/ K. LAKE	DATE 12-02	MATERIAL			
QA APPROVAL S/ T. ANDERSON	DATE 12-02	FINISH			
AUTHORIZED BY S/ R. RUSSELL	DATE 12-02				
DFTG APPROVAL S/ D. MORRIS	DATE 12-02	SIZE B	PART NO. 0700-003-050	REV. A	

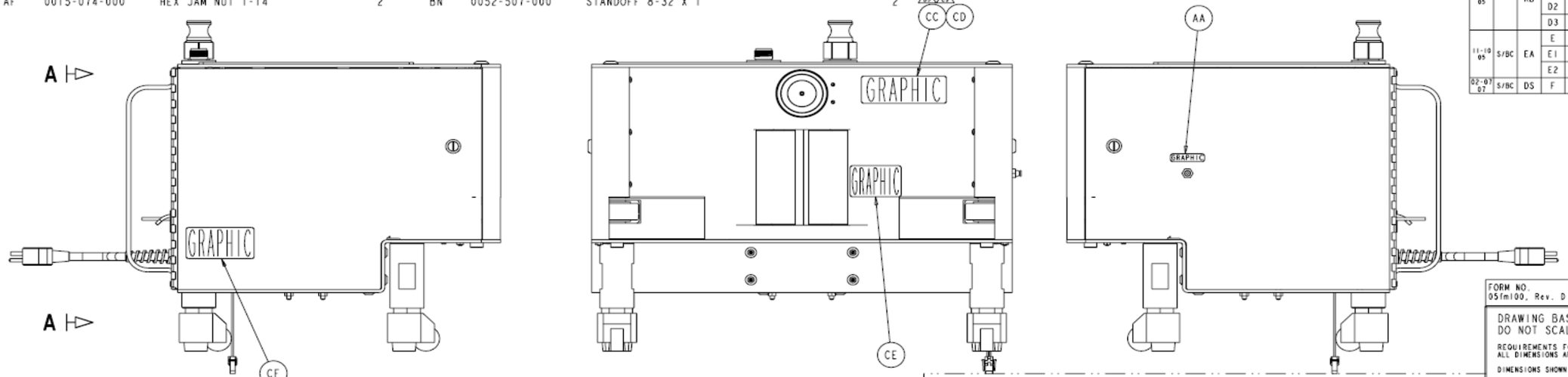
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

700-005 DETERGENT DISPENSING DOCKER ASSY

Item	Part No.	Part Name	Qty.
A	0700-004-210	CHASSIS ASSEMBLY	1
B	0700-004-080	OFFLOAD PUMP ASSEMBLY	1
C	0011-507-000	FLAT WASHER	4
D	0004-542-000	SHCS 1/4-20 X 1-1/4	4
E	0015-005-000	HEX NUT 1/4-20	4
F	0700-005-070	ACTUATOR ASSEMBLY	1
H	0004-550-000	BHCS 3/8-16 X 3/4	6
J	0700-004-061	REAR PANEL	1
K	0590-060-006	POWER SWITCH	1
L	0700-001-415	FLEX STYLE STRAIN RELIEF	1
M	0700-004-065	POWER CORD ASSEMBLY	1
N	0004-549-000	BHCS 10-32 X 3/8	12
P	0700-004-012	WALL ANCHORING RAIL	2
R	0004-521-000	SHCS 10-30 X 5/8	8
S	0700-005-041	RIGHT DOOR WELDMENT	1
T	0700-004-050	PNEUMATICS PANEL ASSEMBLY	1
W	0004-525-000	SHCS 8-32 X 3/8	14
Y	0048-184-000	PNEUMATIC BULKHEAD FITTING	1
AA	0700-005-700	SPEC LABEL (DETERGENT INLET)	1
AB	0700-004-032	SLOTTED CAM LATCH	2
AC	0700-004-031	LEFT DOOR WELDMENT	1
AD	0700-004-020	POWER SUPPLY PANEL ASSEMBLY	1
AE	0700-004-013	WATER DRAIN FITTING	1
AF	0015-074-000	HEX JAM NUT 1-14	2

Item	Part No.	Part Name	Qty.
AH	0048-199-000	BARBED FITTING 1/2 X 3/8	1
AJ	0700-004-015	CAM AND GROOVE COUPLING, MALE	1
AK	0700-004-014	WATER INLET FITTING	1
AL	0048-196-000	HEX REDUCING NIPPLE	1
AP	0700-005-072	OUTLET BRAIDED TUBING	1
AR	0058-325-000	HOSE CLAMP	6
AS	0700-004-019	DOCKER GROUND CABLE ASSEMBLY (NOT SHOWN)	1
AT	0700-004-103	POWER SUPPLY CABLE (NOT SHOWN)	1
AW	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	2
AY	0013-018-000	LOCK WASHER #10 EXTERNAL	6
BB	0034-427-000	SLIT-CONVOLUTED CONDUIT (NOT SHOWN)	6 IN
BC	0058-330-000	CABLE TIE (NOT SHOWN)	44
BD	0700-004-102	POWER SUPPLY TO PCB CABLE (NOT SHOWN)	1
BE	0700-004-112	OPTICAL SWITCH WIRE HARNESS (NOT SHOWN)	1
BF	0700-005-111	DOCKER MAIN WIRE HARNESS ASSY (NOT SHOWN)	1
BH	0700-004-114	AIR PUMP WIRE HARNESS (NOT SHOWN)	1
BJ	0700-004-116	PNEUMATICS WIRE HARNESS (NOT SHOWN)	1
BK	0058-333-000	NYLON LOOP CLAMP	3
BL	0016-014-000	LOCKNUT, NYLON INSET 8-32	7
BM	0058-334-000	ADHESIVE CABLE MOUNT	17
BN	0052-507-000	STANDOFF 8-32 X 1	2

Item	Part No.	Part Name	Qty.
BP	0015-002-000	HEX NUT 8-32	2
BR	0052-506-000	STANDOFF 8-32 X 3/4	2
BS	0700-004-017	POWER SUPPLY SHIELD	1
BT	0048-185-000	PNEUMATIC TEE FITTING	1
BW	0700-004-011	TOP COVER	1
BY	0015-004-000	HEX NUT 10-32	3
CA	0700-001-709	SPEC LABEL (WASTE)	1
CB	0700-001-708	SPEC LABEL (WATER)	1
CC	0044-048-000	VHB TAPE	5 IN
CD	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)	1
CE	0700-004-707	PINCH POINT WARNING LABEL	1
CF	0700-005-701	SPEC LABEL (700-5 DOCKER S/N LABEL)	1
CH	0700-004-703	SPEC LABEL (INPUT WATER PRESSURE WARNING)	1
CJ	0060-008-000	PNEUMATIC TUBING (NOT SHOWN)	24 IN
CK	0060-009-000	NYLON TUBING (NOT SHOWN)	20 IN
CL	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
CM	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
CN	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
CP	0700-005-120	1/2" FRESH WATER SUPPLY HOSE	1
CR	0700-004-475	SPRINKLER VALVE	1
CS	0034-415-000	CRIMP CONTACT 20-14 AWG	3
CT	0034-412-000	3 CONDUCTOR PIN HOUSING CONNECTOR	1



PRODUCTION RELEASED	DATE 11-26-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
			A	REVISED PICTORIALLY ECO 03Y2E02753
5-7 03	S/CD	JAR	A1	WAS: ITEM BY 0015-004-000 HEX-NUT 10-32 1
			A2	REMOVED: ITEM BA 0016-025-000 LOCKNUT...
			B	REVISED PICTORIALLY ECO 04A2B03225
5-4 04	S/KB	JAR	B1	WAS: ITEM AN 0048-198-000 BARBED...
			C	REVISED PICTORIALLY ECO 04Y2E05003
			C1	WAS: ITEM AN 0048-307-000 SWIVEL BARBED..
			C2	WAS: ITEM AP 0060-010-000 BRAIDED.. 32
			C3	WAS: ITEM AR 0058-325-000 HOSE CLAMP 10
7-13 04	S/JR	KB	C4	WAS: ITEM BM 0058-334-000 ADHESIVE.. 18
			C5	ADDED: ITEM CR 0700-004-475 SPRINKLER.. 1
			C6	ADDED: ITEM CS 0034-415-000 CRIMP... 3
			C7	ADDED: ITEM CT 0034-412-000 3 CONDUCTOR.. 1
			C8	ADDED: ITEM CP 0700-005-120 1/2" FRESH.. 1
			C9	ADDED: ITEM CW 0048-197-000 HEX PIPE.. 1
			D	REVISED PICTORIALLY ECO 05Y2E01500
3-21 05		KB	D1	REMOVED: ITEM AM 0700-004-016 BACKFLOW...
			D2	REMOVED: ITEM AN 0048-240-000 1/2" ML NPT...
			D3	REMOVED: ITEM CW 0048-197-000 HEX PIPE...
			E	ECO 05Y2E05266
11-10 05	S/BC	EA	E1	WAS: ITEM BM 0058-334-000 ADHESIVE...20
			E2	REVISED PICTORIALLY SHEET 5 OF 6
02-07 07	S/BC	DS	F	WAS: ITEM AP 0060-010-000 BRAIDED...ECO 102637

FORM NO. 05fm100, Rev. D	SHEET 1 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)-----.020/.032 RADIUS OR EQUIVALENT
THREAD CHAMFER (FOR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

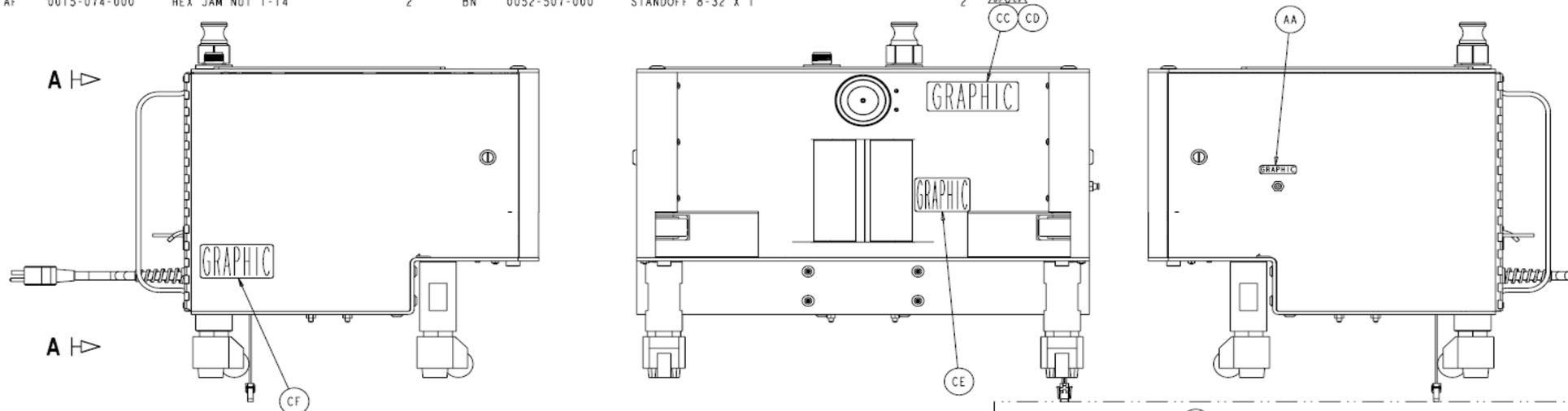
DRAWN BY G. HEILMAN	DATE 9-02	TITLE NEPTUNE DOCKER ASSEMBLY	
DESIGNED BY S/ K. STALEY	DATE 11-02		
MFG APPROVAL S/ K. LAKE	DATE 11-02	MATERIAL	
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-005-010 REV. F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

3. INSPECT PER QIP-0749.
2. ASSEMBLE PER SOE-121-005
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-116-001 (REV A)

Item	Part No.	Part Name	Qty.
A	0700-004-210	CHASSIS ASSEMBLY	1
B	0700-004-080	OFFLOAD PUMP ASSEMBLY	1
C	0011-507-000	FLAT WASHER	4
D	0004-542-000	SHCS 1/4-20 X 1-1/4	4
E	0015-005-000	HEX NUT 1/4-20	4
F	0700-005-070	ACTUATOR ASSEMBLY	1
H	0004-550-000	BHCS 3/8-16 X 3/4	6
J	0700-004-061	REAR PANEL	1
K	0590-060-006	POWER SWITCH	1
L	0700-001-415	FLEX STYLE STRAIN RELIEF	1
M	0700-004-065	POWER CORD ASSEMBLY	1
N	0004-549-000	BHCS 10-32 X 3/8	12
P	0700-004-012	WALL ANCHORING RAIL	2
R	0004-521-000	SHCS 10-30 X 5/8	8
S	0700-005-041	RIGHT DOOR WELDMENT	1
T	0700-004-050	PNEUMATICS PANEL ASSEMBLY	1
W	0004-525-000	SHCS 8-32 X 3/8	14
Y	0048-184-000	PNEUMATIC BULKHEAD FITTING	1
AA	0700-005-700	SPEC LABEL (DETERGENT INLET)	1
AB	0700-004-032	SLOTTED CAM LATCH	2
AC	0700-004-031	LEFT DOOR WELDMENT	1
AD	0700-004-020	POWER SUPPLY PANEL ASSEMBLY	1
AE	0700-004-013	WATER DRAIN FITTING	1
AF	0015-074-000	HEX JAM NUT 1-14	2
AH	0048-199-000	BARBED FITTING 1/2 X 3/8	1
AJ	0700-004-015	CAM AND GROOVE COUPLING, MALE	1
AK	0700-004-014	WATER INLET FITTING	1
AL	0048-196-000	HEX REDUCING NIPPLE	1
AP	0700-005-072	OUTLET BRAIDED TUBING	1
AR	0058-325-000	HOSE CLAMP	6
AS	0700-004-019	DOCKER GROUND CABLE ASSEMBLY (NOT SHOWN)	1
AT	0700-004-103	POWER SUPPLY CABLE (NOT SHOWN)	1
AW	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	2
AY	0013-018-000	LOCK WASHER #10 EXTERNAL	6
BB	0034-427-000	SLIT-CONVOLUTED CONDUIT (NOT SHOWN)	6 IN
BC	0058-330-000	CABLE TIE (NOT SHOWN)	44
BD	0700-004-102	POWER SUPPLY TO PCB CABLE (NOT SHOWN)	1
BE	0700-004-112	OPTICAL SWITCH WIRE HARNESS (NOT SHOWN)	1
BF	0700-005-111	DOCKER MAIN WIRE HARNESS ASSY (NOT SHOWN)	1
BH	0700-004-114	AIR PUMP WIRE HARNESS (NOT SHOWN)	1
BJ	0700-004-116	PNEUMATICS WIRE HARNESS (NOT SHOWN)	1
BK	0058-333-000	NYLON LOOP CLAMP	3
BL	0016-014-000	LOCKNUT, NYLON INSET 8-32	7
BM	0058-334-000	ADHESIVE CABLE MOUNT	17
BN	0052-507-000	STANDOFF 8-32 X 1	2
BP	0015-002-000	HEX NUT 8-32	2
BR	0052-506-000	STANDOFF 8-32 X 3/4	2
BS	0700-004-017	POWER SUPPLY SHIELD	1
BT	0048-185-000	PNEUMATIC TEE FITTING	1
BW	0700-004-011	TOP COVER	1
BY	0015-004-000	HEX NUT 10-32	3
CA	0700-001-709	SPEC LABEL (WASTE)	1
CB	0700-001-708	SPEC LABEL (WATER)	1
CC	0044-048-000	VHB TAPE	5 IN
CD	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)	1
CE	0700-004-707	PINCH POINT WARNING LABEL	1
CF	0700-005-701	SPEC LABEL (700-5 DOCKER S/N LABEL)	1
CH	0700-004-703	SPEC LABEL (INPUT WATER PRESSURE WARNING)	1
CJ	0060-008-000	PNEUMATIC TUBING (NOT SHOWN)	24 IN
CK	0060-009-000	NYLON TUBING (NOT SHOWN)	20 IN
CL	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
CM	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
CN	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
CP	0700-005-120	1/2" FRESH WATER SUPPLY HOSE	1
CR	0700-004-475	SPRINKLER VALVE	1
CS	0034-415-000	CRIMP CONTACT 20-14 AWG	3
CT	0034-412-000	3 CONDUCTOR PIN HOUSING CONNECTOR	1



PRODUCTION RELEASED	DATE 11-26-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
			A	REVISED PICTORIALLY ECO 03Y2E02753
5-7 03	S/CD	JAR	A1	WAS: ITEM BY 0015-004-000 HEX-NUT 10-32 1
			A2	REMOVED: ITEM BA 0016-025-000 LOCKNUT...
			B	REVISED PICTORIALLY ECO 04A2B03225
5-4 04	S/KB	JAR	B1	WAS: ITEM AN 0048-198-000 BARBED...
			C	REVISED PICTORIALLY ECO 04Y2E05003
			C1	WAS: ITEM AN 0048-307-000 SWIVEL BARBED..
			C2	WAS: ITEM AP 0060-010-000 BRAIDED.. 32
			C3	WAS: ITEM AR 0058-325-000 HOSE CLAMP 10
7-13 04	S/JR	KB	C4	WAS: ITEM BM 0058-334-000 ADHESIVE.. 18
			C5	ADDED: ITEM CR 0700-004-475 SPRINKLER.. 1
			C6	ADDED: ITEM CS 0034-415-000 CRIMP... 3
			C7	ADDED: ITEM CT 0034-412-000 3 CONDUCTOR.. 1
			C8	ADDED: ITEM CP 0700-005-120 1/2" FRESH.. 1
			C9	ADDED: ITEM CW 0048-197-000 HEX PIPE.. 1
			D	REVISED PICTORIALLY ECO 05Y2E01500
3-21 05		KB	D1	REMOVED: ITEM AM 0700-004-016 BACKFLOW...
			D2	REMOVED: ITEM AN 0048-240-000 1/2" ML NPT...
			D3	REMOVED: ITEM CW 0048-197-000 HEX PIPE...
			E	ECO 05Y2E05266
11-10 05	S/BC	EA	E1	WAS: ITEM BM 0058-334-000 ADHESIVE...20
			E2	REVISED PICTORIALLY SHEET 5 OF 6
02-07 07	S/BC	DS	F	WAS: ITEM AP 0060-010-000 BRAIDED...ECO 102637

FORM NO. 05fm100, Rev. D	SHEET 1 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.032 RADIUS OR EQUIVALENT
THREAD CHAMFER (FOR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

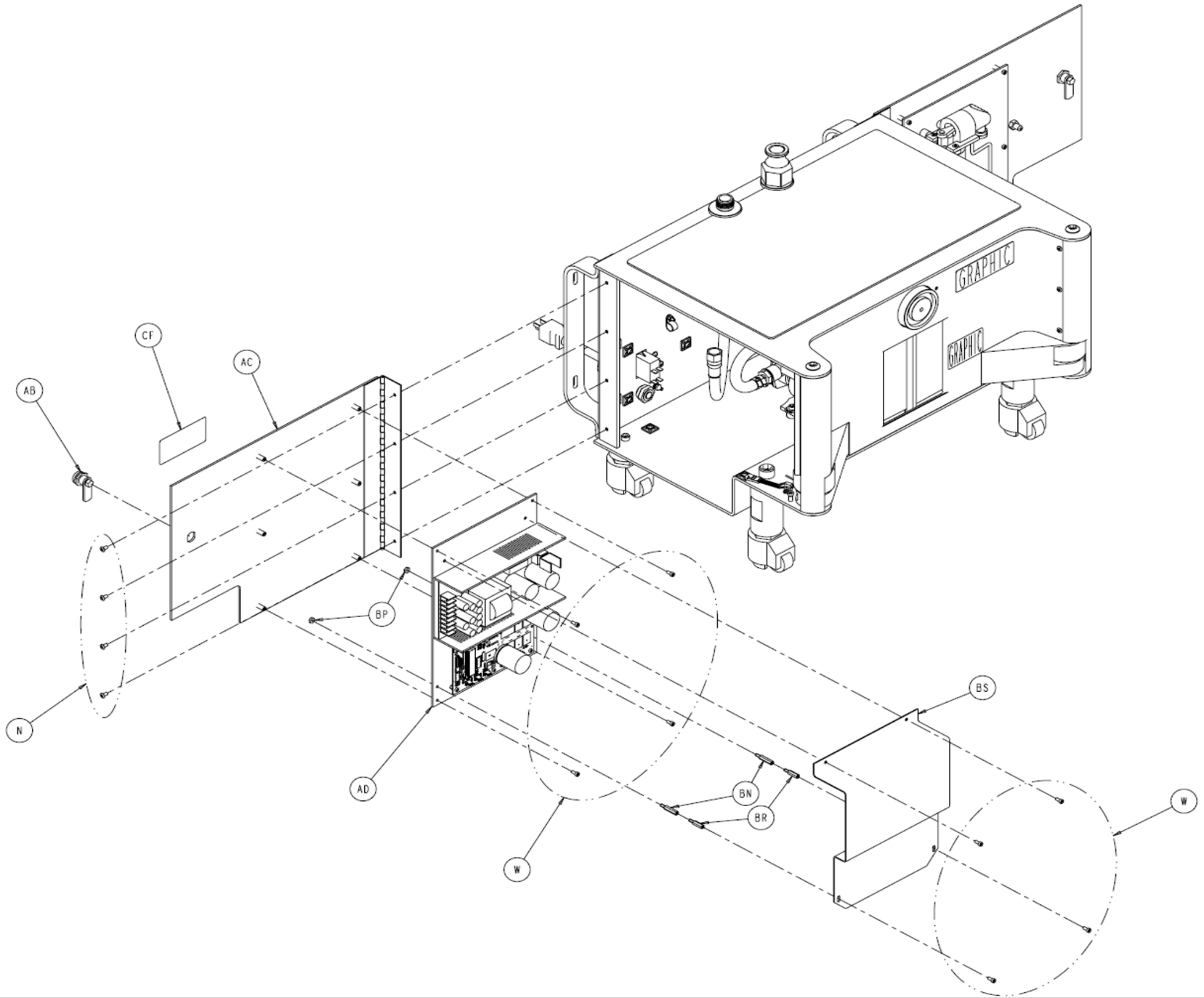
DRAWN BY G. HEILMAN	DATE 9-02	TITLE NEPTUNE DOCKER ASSEMBLY	
DESIGNED BY S/ K. STALEY	DATE 11-02		
MFG APPROVAL S/ K. LAKE	DATE 11-02	MATERIAL	
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-005-010 REV. F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

3. INSPECT PER QIP-0749.
2. ASSEMBLE PER SOE-121-005
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-116-001 (REV A)

PRODUCTION RELEASED				DATE 11-26-02
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



NOTES:

FORM NO. 05fm100, Rev. D	SHEET 2 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

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TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

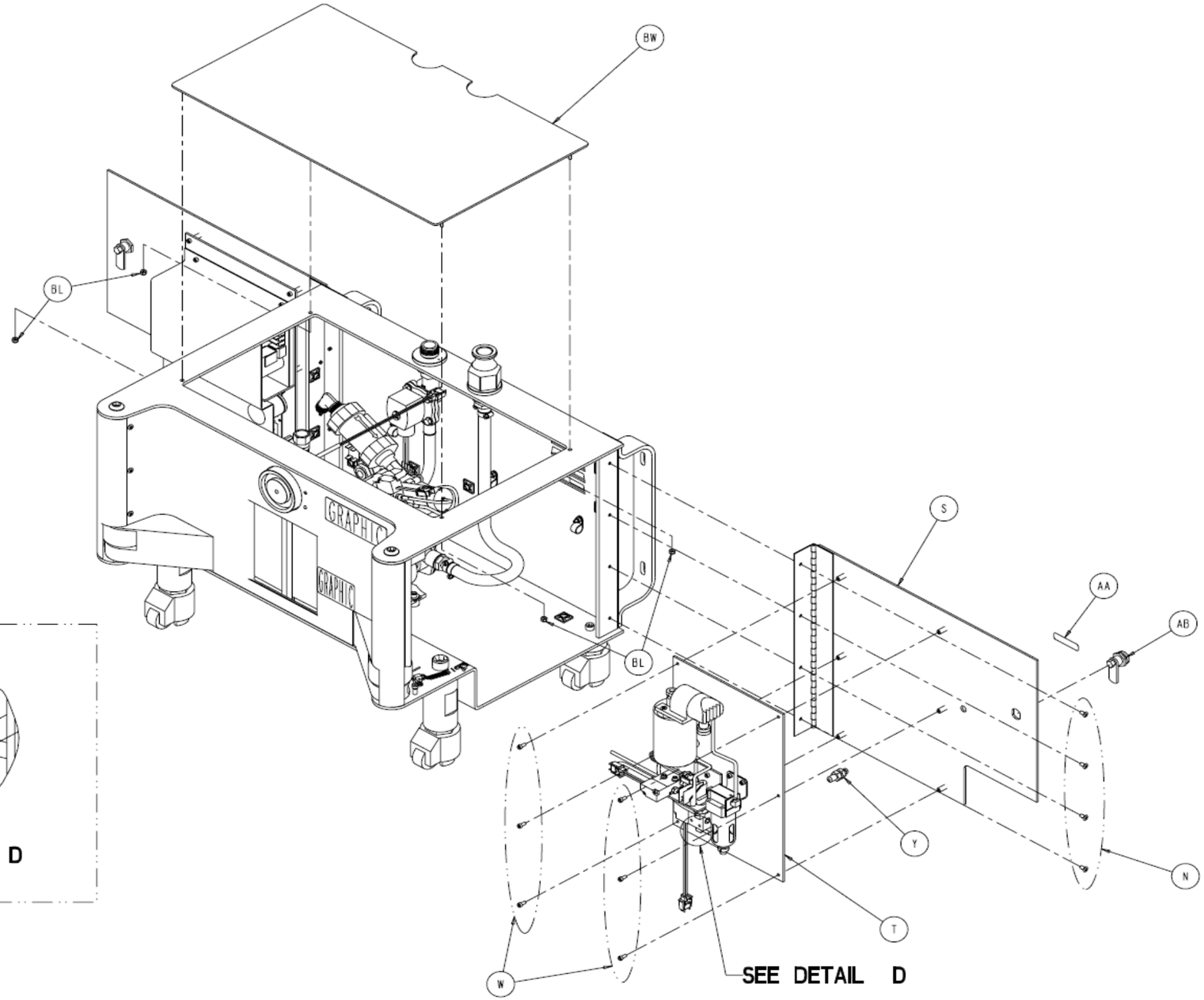
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

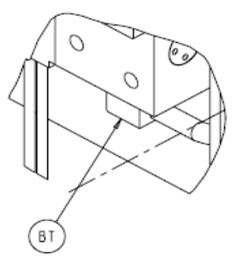
DRAWN BY G. HEILMAN	DATE 9-02	TITLE NEPTUNE DOCKER ASSEMBLY	
DESIGNED BY S/ K. STALEY	DATE 11-02	MATERIAL	
MFG APPROVAL S/ K. LAKE	DATE 11-02		
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-005-010 REV. F

Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION





DETAIL D

NOTES:

FORM NO. 05fm100, Rev. D	SHEET 3 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL) ---- .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK) ---- 1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 9-02	TITLE	NEPTUNE DOCKER ASSEMBLY
DESIGNED BY S/ K. STALEY	DATE 11-02	MATERIAL	
MFG APPROVAL S/ K. LAKE	DATE 11-02		
QA APPROVAL S/ S.HORVATH	DATE 11-02	FINISH	
AUTHORIZED BY S/ R. RUSSELL	DATE 11-02		
DFTG APPROVAL S/ D. MORRIS	DATE 11-02	SIZE B	PART NO. 0700-005-010 REV. F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	11-26-02

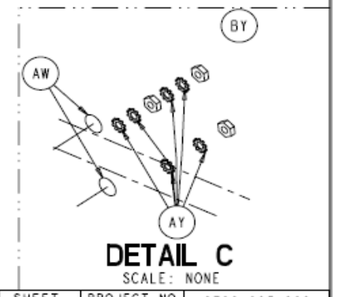
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

SEE VIEW ON FOLLOWING PAGE

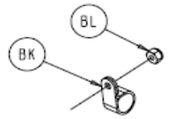
SEE DETAIL B

SEE DETAIL C

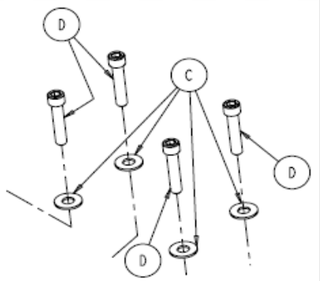
SEE DETAIL A



DETAIL C
SCALE: NONE



DETAIL B (3X)
SCALE: NONE



DETAIL A
SCALE: NONE

FORM NO. 05fm100, Rev. D	SHEET 4 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

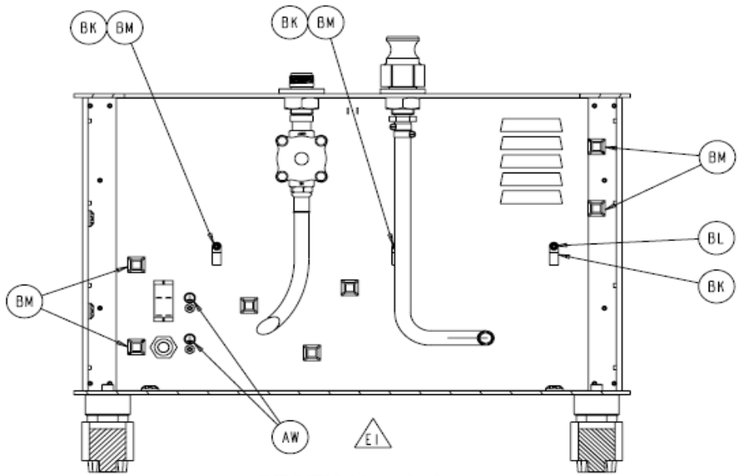
DRAWN BY	DATE	TITLE
G. HEILMAN	9-02	NEPTUNE DOCKER ASSEMBLY
DESIGNED BY	DATE	
S/ K. STALEY	11-02	MATERIAL
MFG APPROVAL	DATE	
S/ K. LAKE	11-02	
QA APPROVAL	DATE	FINISH
S/ S.HORVATH	11-02	
AUTHORIZED BY	DATE	
S/ R. RUSSELL	11-02	
DFTG APPROVAL	DATE	SIZE / PART NO. / REV.
S/ D. MORRIS	11-02	B / 0700-005-010 / F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

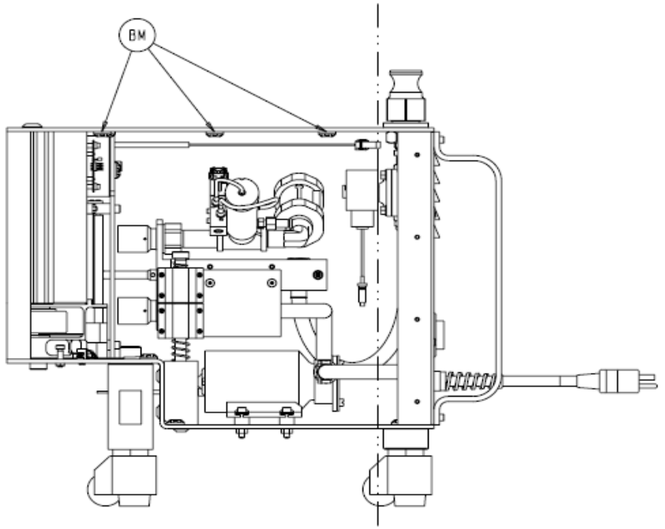
NOTES:

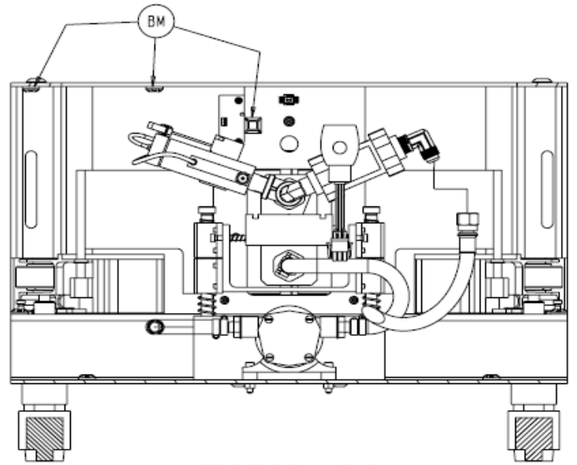
PRODUCTION RELEASED	DATE	11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



SECTION A-A





SECTION B-B

NOTES:

FORM NO. 05fm100, Rev. D	SHEET 5 OF 6	PROJECT NO. MTR-0338	0700-005-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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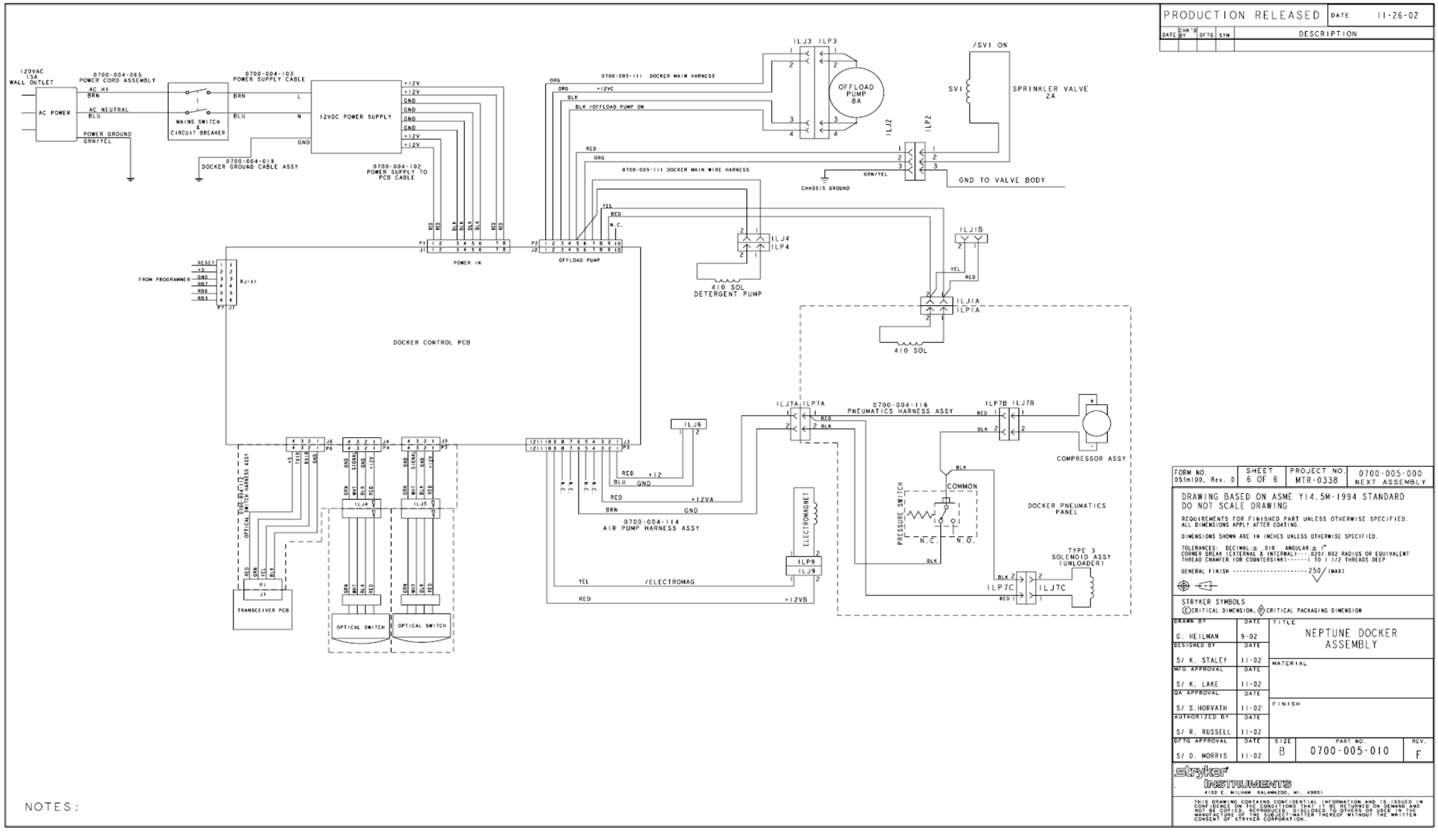
TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

	DATE	TITLE
DRAWN BY G. HEILMAN	9-02	NEPTUNE DOCKER ASSEMBLY
DESIGNED BY S/ K. STALEY	11-02	
MFG APPROVAL S/ K. LAKE	11-02	MATERIAL
QA APPROVAL S/ S.HORVATH	11-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	11-02	
DFTG APPROVAL S/ D. MORRIS	11-02	SIZE B / PART NO. 0700-005-010 / REV. F

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001



PRODUCTION RELEASED DATE 11-26-02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

FORM NO.	SHEET	PROJECT NO.	0700-005-000
05fm100, Rev. D	6 OF 6	MTR-0338	NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

	DATE	TITLE
DRAWN BY: G. HEILMAN	9-02	NEPTUNE DOCKER ASSEMBLY
DESIGNED BY: S/ K. STALEY	11-02	
MFG APPROVAL: S/ K. LAKE	11-02	MATERIAL
QA APPROVAL: S/ S.HORVATH	11-02	FINISH
AUTHORIZED BY: S/ R. RUSSELL	11-02	
DFTG APPROVAL: S/ D. MORRIS	11-02	SIZE B / PART NO. 0700-005-010 / REV. F

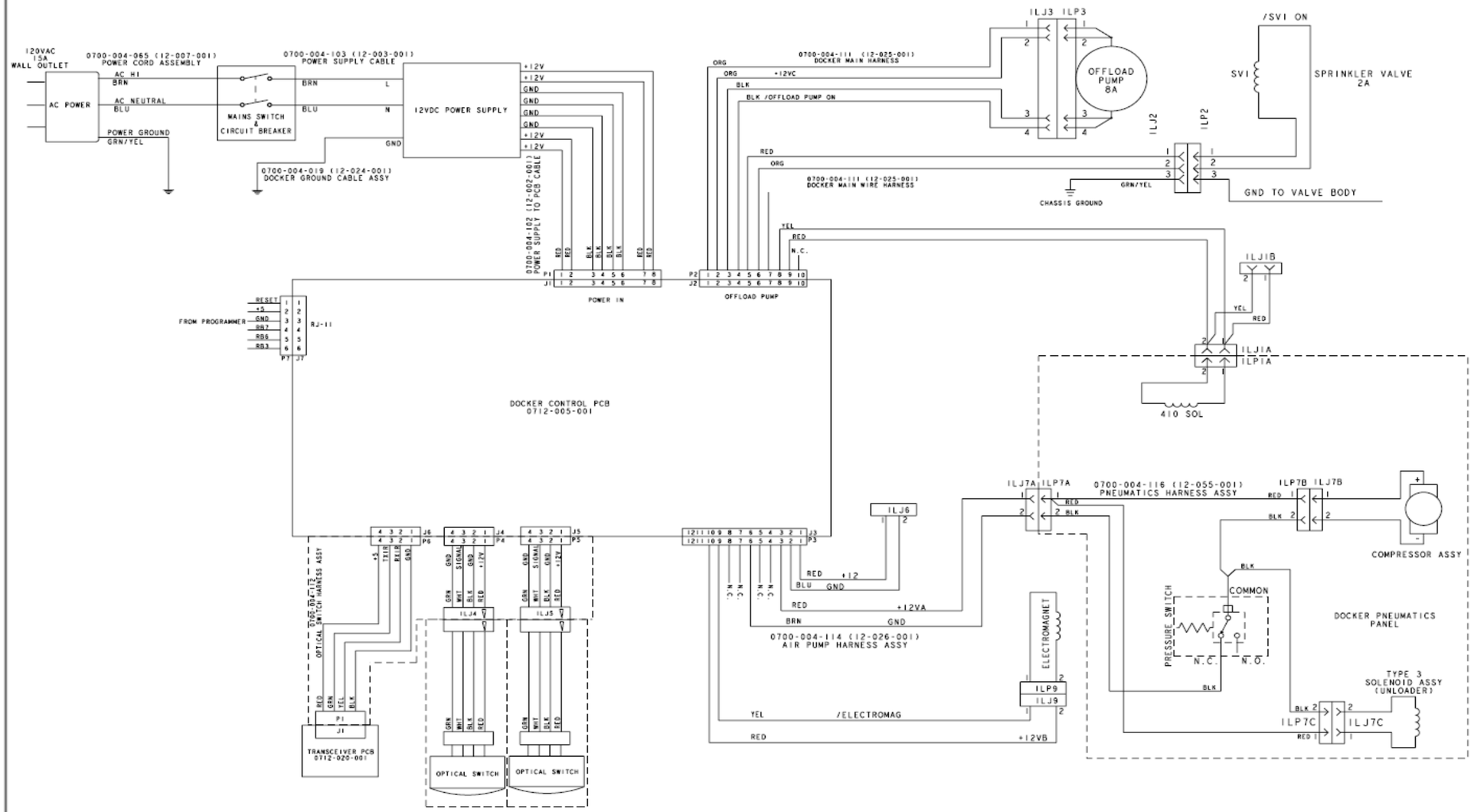
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

700-4 NON-DETERGENT DOCKER EARLY MODEL WIRING DIAGRAM

PRODUCTION RELEASED	DATE	1-7-03

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



NOTES:

FORM NO. 05fm100, Rev. D	SHEET 6 OF 6	PROJECT NO. MTR-0338	0700-004-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

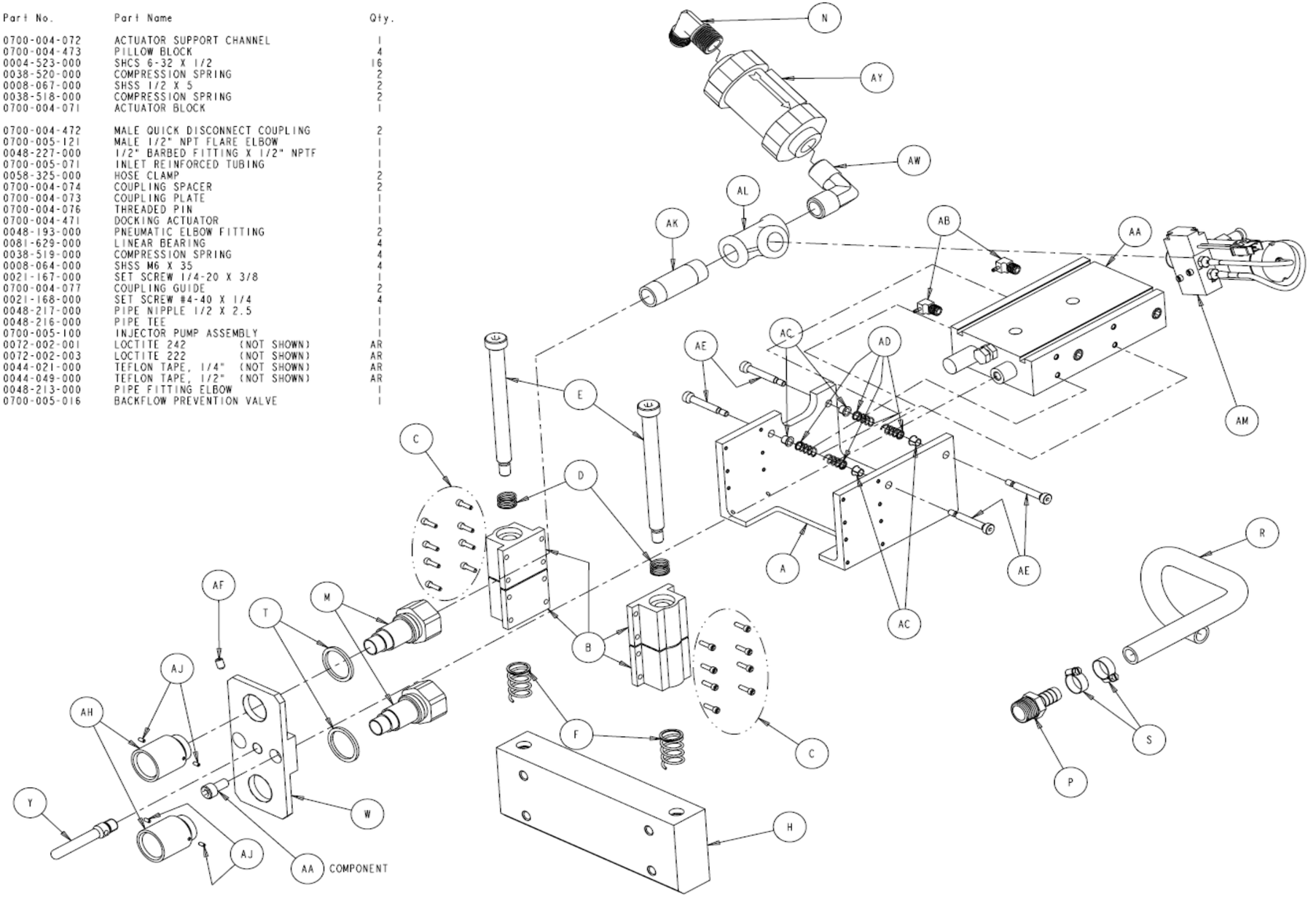
TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL): .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK): 1 TO 1 1/2 THREADS DEEP
GENERAL FINISH: 250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

	DATE	TITLE
DRAWN BY G. HEILMAN	12-02	NEPTUNE DOCKER ASSEMBLY
DESIGNED BY S/ K. STALEY	1-03	MATERIAL
MFG APPROVAL S/ K. LAKE	12-02	
QA APPROVAL S/ S.HORVATH	1-03	FINISH
AUTHORIZED BY S/ R. RUSSELL	1-7-03	
DFTG APPROVAL S/ D. MORRIS	1-03	SIZE B / PART NO. 0700-004-010 / REV. NONE

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

Item	Part No.	Part Name	Qty.
A	0700-004-072	ACTUATOR SUPPORT CHANNEL	1
B	0700-004-473	PILLOW BLOCK	4
C	0004-523-000	SHCS 6-32 X 1/2	16
D	0038-520-000	COMPRESSION SPRING	2
E	0008-067-000	SHSS 1/2 X 5	2
F	0038-518-000	COMPRESSION SPRING	2
H	0700-004-071	ACTUATOR BLOCK	1
M	0700-004-472	MALE QUICK DISCONNECT COUPLING	2
N	0700-005-121	MALE 1/2" NPT FLARE ELBOW	1
A1 P	0048-227-000	1/2" BARBED FITTING X 1/2" NPTF	1
C R	0700-005-071	INLET REINFORCED TUBING	1
A2 S	0058-325-000	HOSE CLAMP	2
T	0700-004-074	COUPLING SPACER	2
A3 W	0700-004-073	COUPLING PLATE	1
A4 Y	0700-004-076	THREADED PIN	1
AA	0700-004-471	DOCKING ACTUATOR	1
A5 AB	0048-193-000	PNEUMATIC ELBOW FITTING	2
AC	0081-629-000	LINEAR BEARING	4
AD	0038-519-000	COMPRESSION SPRING	4
AE	0008-064-000	SHSS M6 X 35	4
AF	0021-167-000	SET SCREW 1/4-20 X 3/8	1
AH	0700-004-077	COUPLING GUIDE	2
AJ	0021-168-000	SET SCREW #4-40 X 1/4	4
AK	0048-217-000	PIPE NIPPLE 1/2 X 2.5	1
AL	0048-216-000	PIPE TEE	1
AM	0700-005-100	INJECTOR PUMP ASSEMBLY	1
AP	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
AR	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
AS	0044-021-000	TEFLON TAPE, 1/4" (NOT SHOWN)	AR
AT	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
B1 AW	0048-213-000	PIPE FITTING ELBOW	1
B2 AY	0700-005-016	BACKFLOW PREVENTION VALVE	1



PRODUCTION RELEASED	DATE 9-02			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
7-13 04	S/KB	JAR	A	REVISED PICTORIALLY ECO 04Y2E05004
			A1	WAS: ITEM P 0048-198-000 BARBED....
			A2	REMOVED: ITEM J 0700-004-475 SPRINKLE...
			A3	REMOVED: ITEM K 0034-415-000 CRIMP...
			A4	REMOVED: ITEM L 0034-412-000 3 CONDUCTOR...
			A5	REMOVED: ITEM N 0048-197-000 HEX NIPPLE...
5-18 05	S/KKB	KB	B	REVISED PICTORIALLY ECO 05Y2E01502
			B1	ADDED: ITEM AW 0048-213-000 PIPE FITTING...
			B2	ADDED: ITEM AY 0700-005-016 BACKFLOW...
2-01 07	DS	DS	C	WAS: ITEM R 0060-013-000 WIRE... ECO 102558

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-005-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

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TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

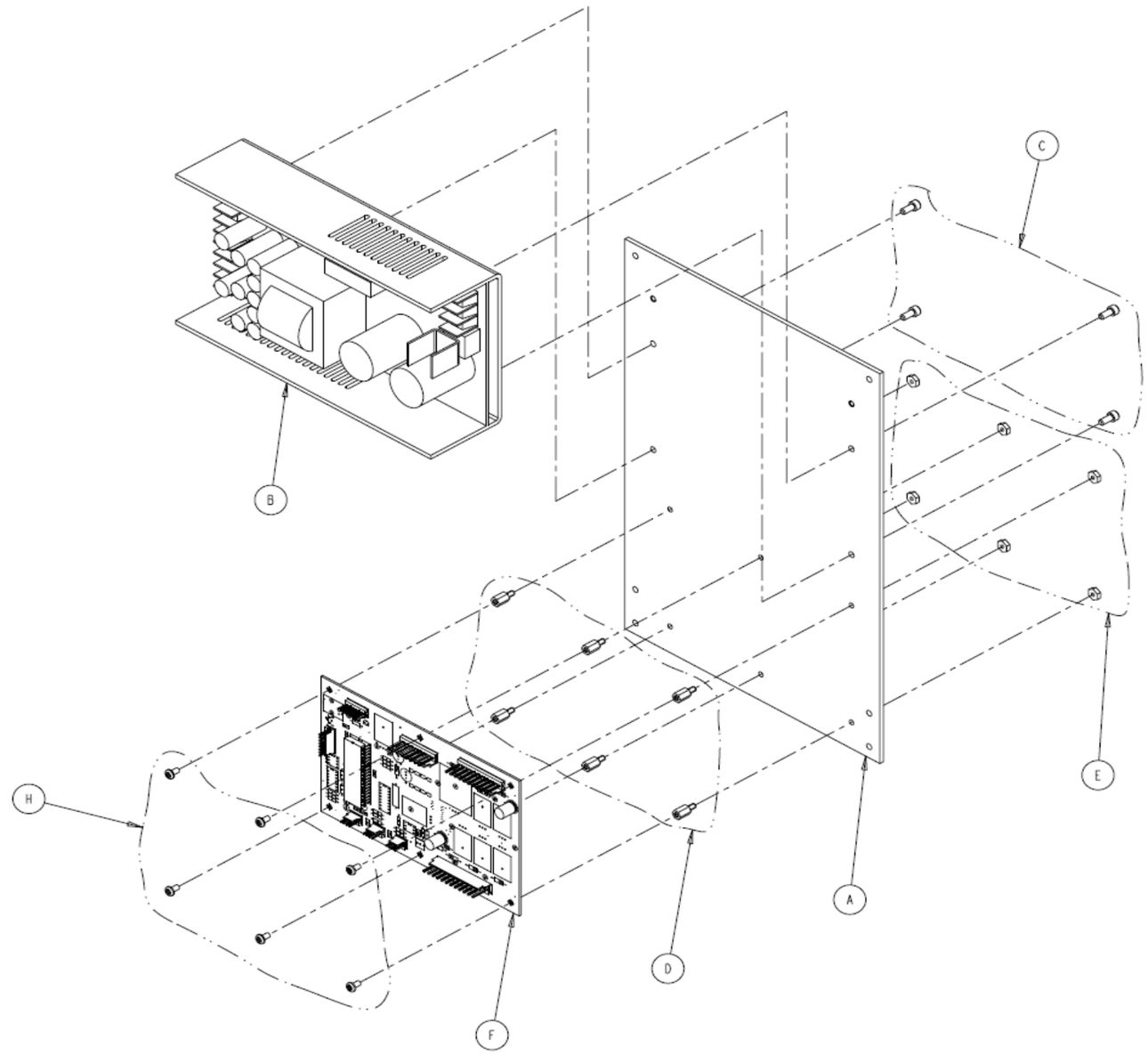
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY	DATE	TITLE
G. HEILMAN	8-27 02	ACTUATOR ASSEMBLY
DESIGNED BY	DATE	
S/ K. SMIT	9-02	MATERIAL
MFG APPROVAL	DATE	
S/ K. LAKE	9-02	
QA APPROVAL	DATE	FINISH
S/ S.HORVATH	9-02	
AUTHORIZED BY	DATE	
S/ R. RUSSELL	9-02	
DFTG APPROVAL	DATE	SIZE B / PART NO. 0700-005-070 / REV. C
S/ D. MORRIS	9-02	

Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:
2. ASSEMBLE PER SOE-121-039.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-117-001 (REV A).
SOME COMPONENTS MAY HAVE BEEN MOVED TO OTHER ASSEMBLIES FOR EASE OF MANUFACTURING.

Item	Part No.	Part Name	Qty.
A	0700-004-021	POWER SUPPLY PLATE	1
B	0700-004-022	POWER SUPPLY	1
C	0004-525-000	SHCS 8-32 X 3/8	4
D	0052-505-000	STANDOFF ALUMINUM 6-32 X 3/8	6
E	0015-001-000	HEX NUT 6-32	6
F	0712-005-001	PCB ASSY, CONTROLLER, LOWER, DOCKER	1
H	0050-038-000	PAN HEAD SCREW 6-32 X 1/4	6
J	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



PRODUCTION RELEASED	DATE

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-005-010 0700-004-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL: ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 9-02	TITLE POWER SUPPLY PANEL ASSEMBLY			
DESIGNED BY S/ K. SMIT	DATE 9-02				
MFG APPROVAL S/ K. LAKE	DATE 9-02	MATERIAL			
QA APPROVAL S/ S.HORVATH	DATE 9-02	FINISH			
AUTHORIZED BY S/ R. RUSSELL	DATE 9-02				
DFTG APPROVAL S/ D. MORRIS	DATE 9-02	SIZE B	PART NO. 0700-004-020	REV. NONE	

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

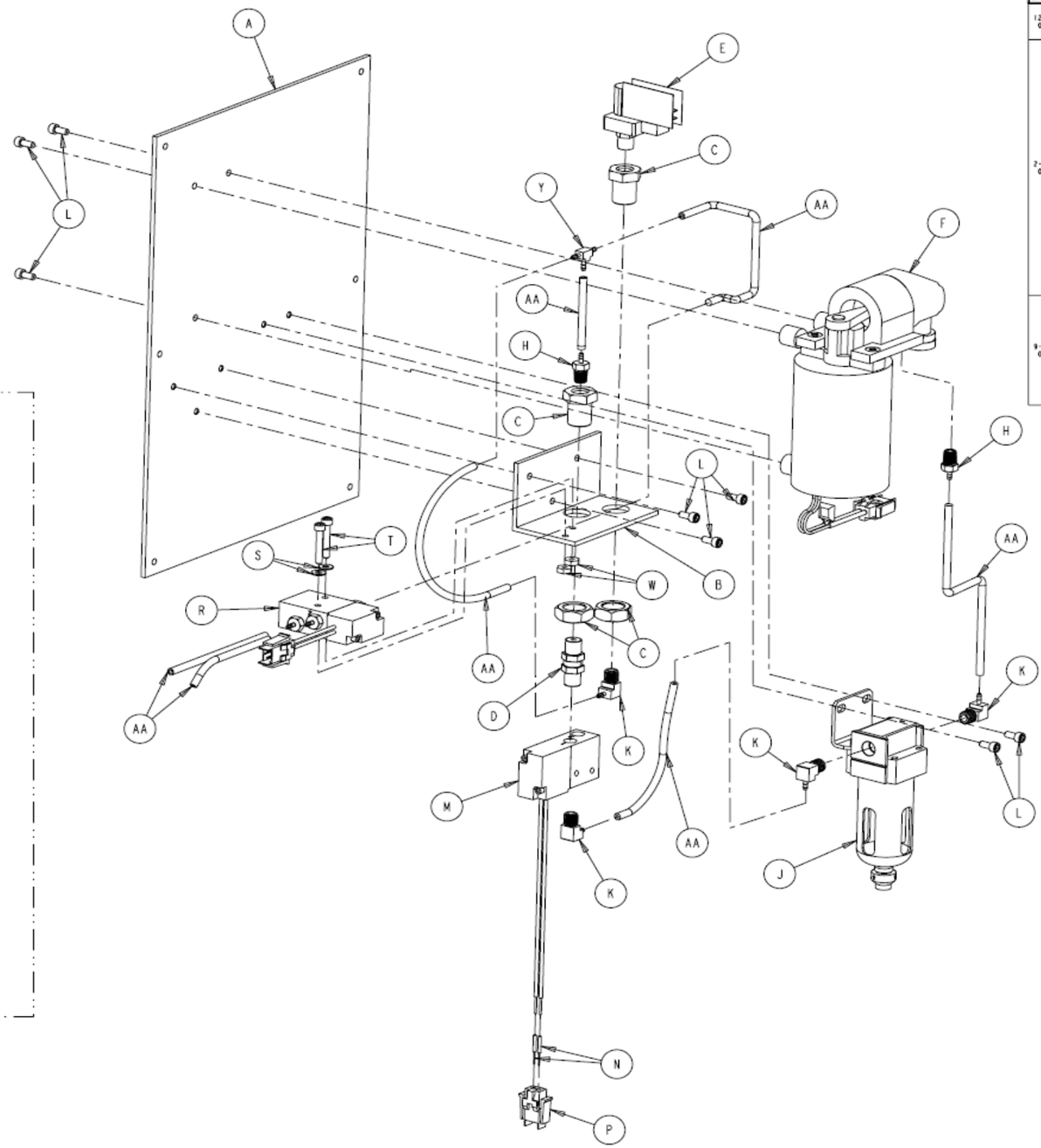
2. ASSEMBLE PER SOE-121-032.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-021-001 (REV D)

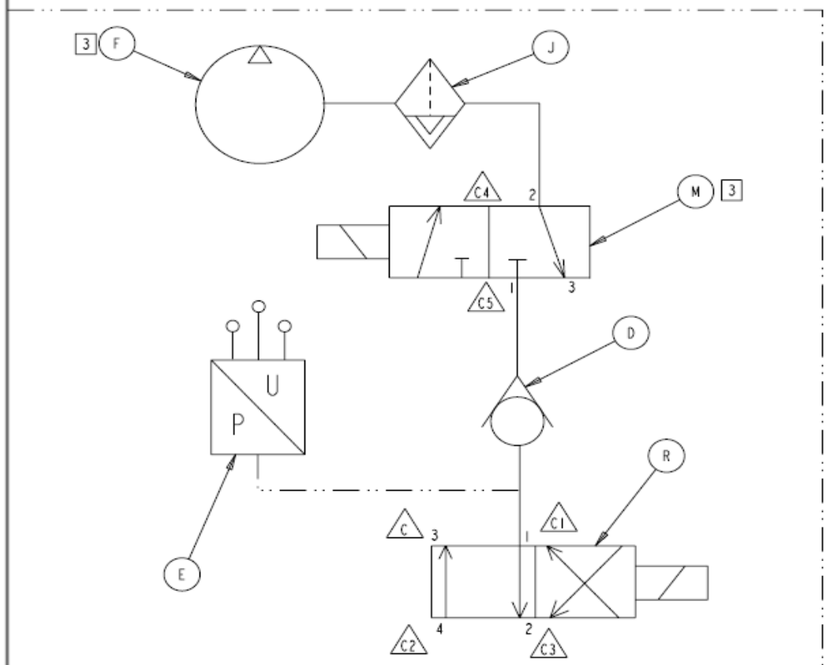
Item	Part No.	Part Name	Qty.
A	0700-004-051	PNEUMATICS PLATE	1
B	0700-004-052	COMPRESSOR REGULATOR BRACKET	1
C	0048-192-000	BULKHEAD FITTING	2
D	0061-006-000	CHECK BALL VALVE 1/8	1
E	0700-004-053	PRESSURE SWITCH	1
F	0700-004-055	PNEUMATIC COMPRESSOR ASSEMBLY	1
B1 H	0048-195-000	BARBED FITTING 1/8 NPT	2
J	0700-004-059	PNEUMATIC FILTER	1
B4 K	0048-193-000	PNEUMATIC ELBOW FITTING	4
L	0004-525-000	SHCS 8-32 X 3/8	8
B5 M	0700-004-056	PNEUMATIC SOLENOID 310	1
B6 N	0034-416-000	CRIMP CONTACT 26-18 AWG	2
P	0034-411-000	2 CONDUCTOR PIN HOUSING CONNECTOR	1
R	0700-005-105	PNEUMATIC VALVE ASSEMBLY	1
S	0011-510-000	FLAT WASHER	2
T	0004-533-000	SHCS 8-32 X 1.00	2
W	0015-002-000	HEX NUT 8-32	2
Y	0048-185-000	PNEUMATIC TEE FITTING	1
B7 A1 AA	0060-008-000	PNEUMATIC TUBING	80.5 IN
AB	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR

B6 B5 B1 B4

PRODUCTION RELEASED DATE 9/02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
12-6 02	S/NB	DAN	A	REVISE PICTORIALLY ECO02Y2E08040
			A1	WAS: PNEUMATICS TUBING 36 IN
2-24 03		KB	B	REVISED AND REDRAWN ECO 05Y2E01163
			B1	WAS: TITLE: PNUEMATICS PANEL
			B2	WAS: NEXT ASSEMBLY: 0700-005-010, 0700-004-010
			B3	WAS: ITEM J 0048-195-000 BARBED FITTING...1
			B4	WAS: ITEM L 0048-193-000 PNEUMATIC ELBOW...2
			B5	WAS: ITEM N 0700-004-056 ..TYPE 3 SOLENOID 1
			B6	WAS: ITEM P 0034-418-000 CRIMP CONTACT 26-24 AWG 2
			B7	WAS: ITEM AD 0060-008-000 PNEUMATIC TUBING 84 IN
			B8	REMOVED: ITEM E 0048-206-000...
			B9	REMOVED: ITEM S 0004-529-000...
			B10	REMOVED: ITEM T 0048-194-000...
			B11	REMOVED: ITEM AE 0044-021-000...
			B12	REMOVED: NOTE 1. PRINT CONVERTED FROM...
			B13	RENUMBERED EXISTING NOTES
9-13 07		BC	C	WAS: EXH ECR-ECN 105232
			C1	WAS: IN
			C2	WAS: 4
			C3	WAS: 2
			C4	REMOVED: (OUT)
			C5	REMOVED: (IN)





PNEUMATIC SCHEMATIC
SCALE: NONE

NOTES:
B12 B13
1. ASSEMBLE PER SOE-121-035.
2. INSPECT PER QIP-0750.
3 ITEM L ENERGIZED ONLY WHEN ITEM F OPERATES.

B2

FORM NO.	SHEET	PROJECT NO.	NEXT ASSEMBLY
05fm100, Rev. D	1 OF 2	MTR-0338	0700-005-010

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
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DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL) .020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK) 1 TO 1 1/2 THREADS DEEP

GENERAL FINISH 250 (MAX)

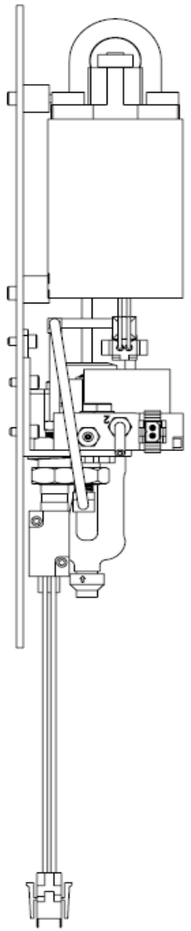
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

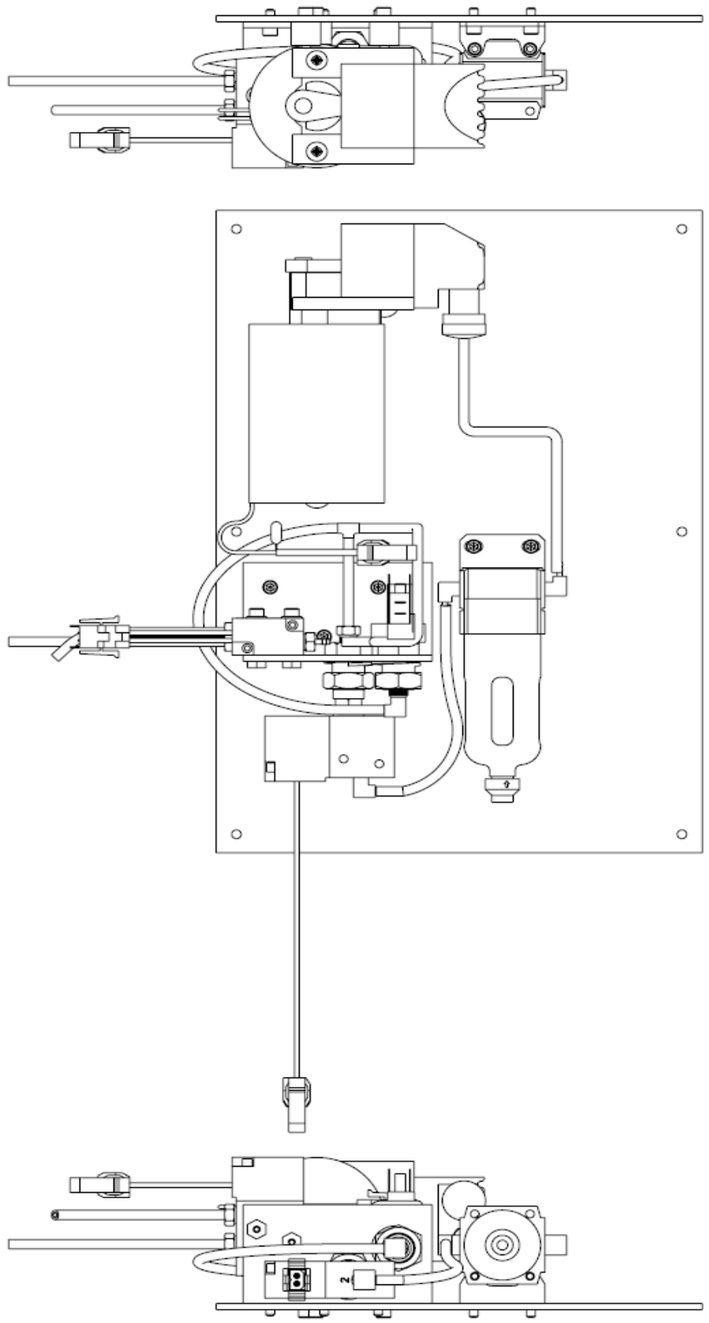
DRAWN BY G. HEILMAN	DATE 9-02	TITLE PNEUMATICS PANEL ASSEMBLY B1
DESIGNED BY S/ K. SMIT	DATE 9-02	
MFG APPROVAL S/ K. LAKE	DATE 9-02	MATERIAL
QA APPROVAL S/ S.HORVATH	DATE 9-19 02	FINISH
AUTHORIZED BY S/ R. RUSSELL	DATE 9-02	
DFTG APPROVAL S/ D. MORRIS	DATE 9-02	SIZE B / PART NO. 0700-004-050 / REV. C

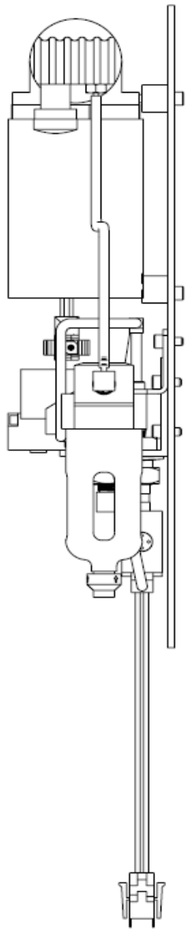
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION







NOTES:

FORM NO. 05fm100, Rev. D	SHEET 2 OF 2	PROJECT NO. MTR-0338	0700-005-010 0700-004-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

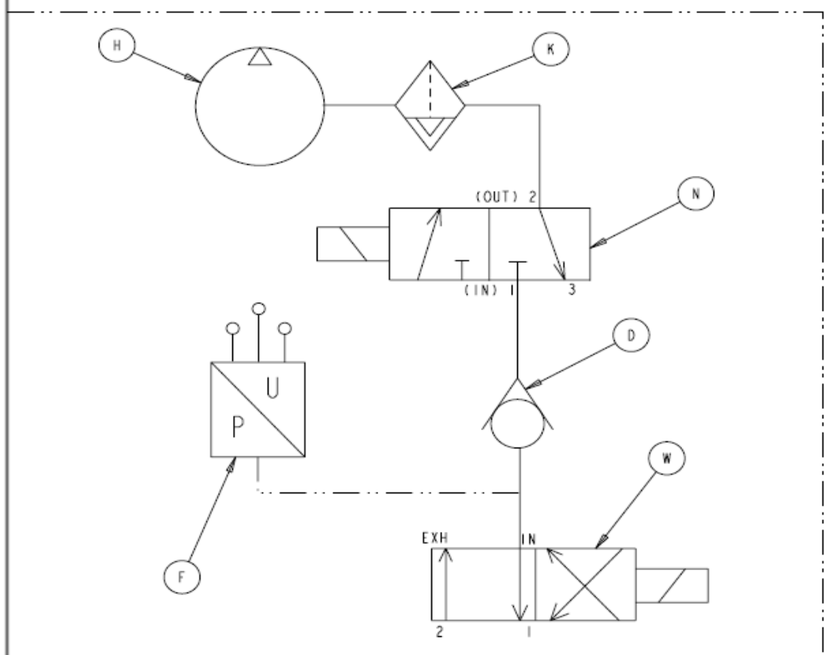
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◈ CRITICAL PACKAGING DIMENSION

DRAWN BY: G. HEILMAN	DATE: 9-02	TITLE: PNEUMATICS PANEL ASSEMBLY	
DESIGNED BY: S/ K. SMIT	DATE: 9-02		
MFG APPROVAL: S/ K. LAKE	DATE: 9-02	MATERIAL	
QA APPROVAL: S/ S.HORVATH	DATE: 9-19 02	FINISH	
AUTHORIZED BY: S/ R. RUSSELL	DATE: 9-02		
DFTG APPROVAL: S/ D. MORRIS	DATE: 9-02	SIZE: B	PART NO.: 0700-004-050 REV.: C

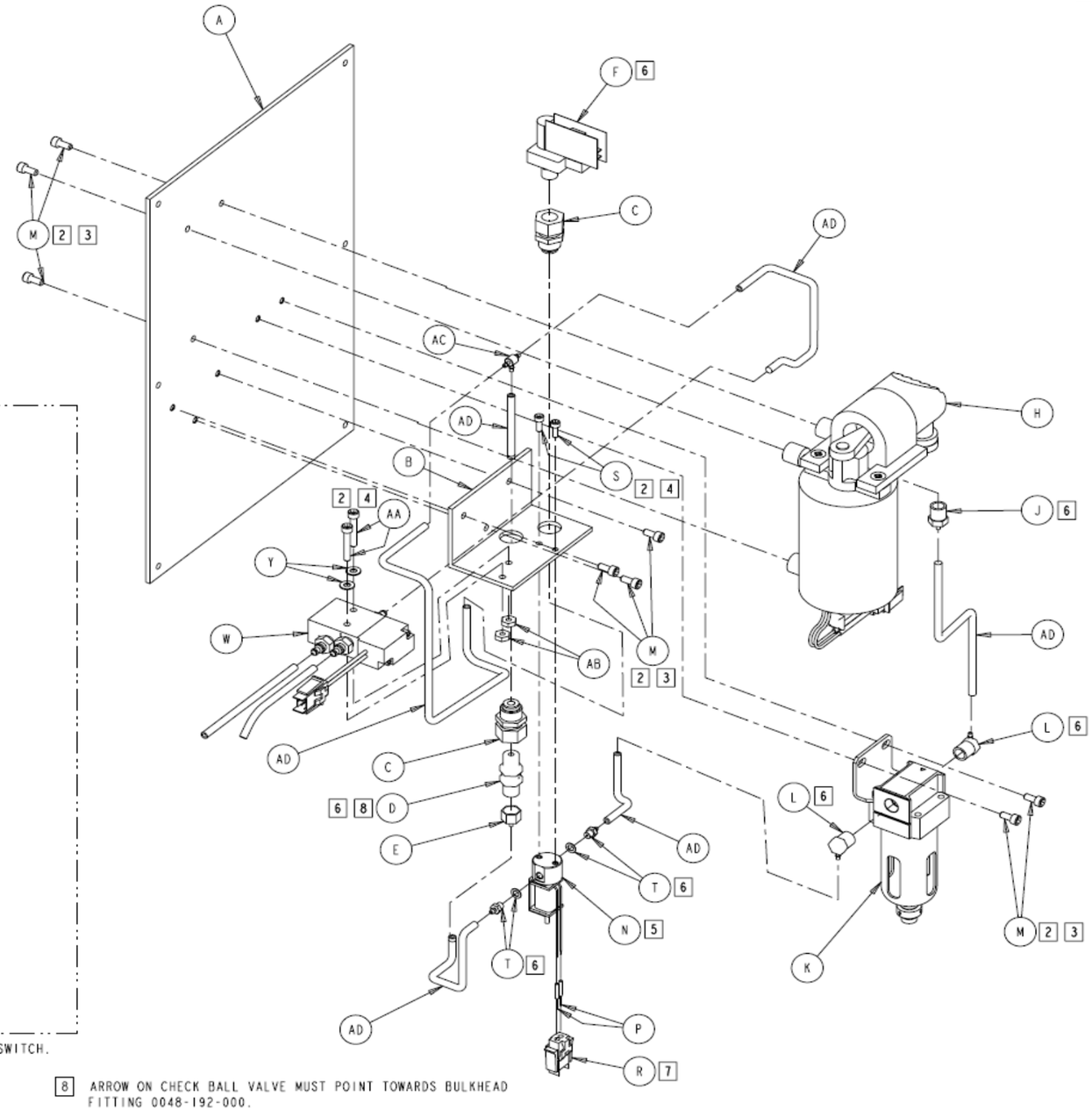
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name		Qty.
A	0700-004-051	PNEUMATICS PLATE		1
B	0700-004-052	COMPRESSOR REGULATOR BRACKET		1
C	0048-192-000	BULKHEAD FITTING		2
D	0061-006-000	CHECK BALL VALVE 1/8		1
E	0048-206-000	BARBED FITTING .096 TUBE X 1/8		1
F	0700-004-053	PRESSURE SWITCH		1
H	0700-004-055	PNEUMATIC COMPRESSOR ASSEMBLY		1
J	0048-195-000	BARBED FITTING 1/8 NPT		1
K	0700-004-059	PNEUMATIC FILTER		1
L	0048-193-000	PNEUMATIC ELBOW FITTING		2
M	0004-525-000	SHCS 8-32 X 3/8		8
N	0700-004-056	PNEUMATIC TYPE 3 SOLENOID		1
P	0034-418-000	CRIMP CONTACT 26-24 AWG		2
R	0034-411-000	2 CONDUCTOR PIN HOUSING CONNECTOR		1
S	0004-529-000	SHCS 6-32 X 3/8		2
T	0048-194-000	PNEUMATIC BARBED FITTING 10-32		2
W	0700-005-105	PNEUMATIC VALVE ASSEMBLY		1
Y	0011-510-000	FLAT WASHER		2
AA	0004-533-000	SHCS 8-32 X 1.00		2
AB	0015-002-000	HEX NUT 8-32		2
AC	0048-185-000	PNEUMATIC TEE FITTING		1
AD	0060-008-000	PNEUMATIC TUBING		84 IN
AE	0044-021-000	TEFLON TAPE, 1/4"	(NOT SHOWN)	48 IN
AF	0072-002-003	LOCTITE 222	(NOT SHOWN)	AR



PNEUMATIC SCHEMATIC
SCALE: NONE



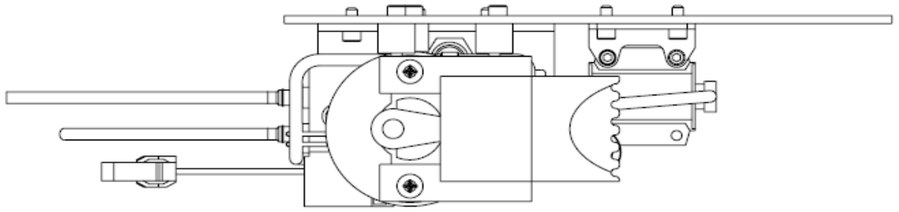
NOTES:
1. APPLIES TO DOCKER MODELS 700-4 ONLY.
2. APPLY LOCTITE 222.
3. TORQUE TO 25 IN-LBS.
4. TORQUE TO 17 IN-LBS.
5. THE OUT PORT OF THE SOLENOID MUST POINT TOWARDS THE PRESSURE SWITCH.
6. APPLY TEFLON TAPE CLOCKWISE TO THREADS.
7. WIRE POSITION IN CONNECTOR IS REVERSIBLE.
8. ARROW ON CHECK BALL VALVE MUST POINT TOWARDS BULKHEAD FITTING 0048-192-000.

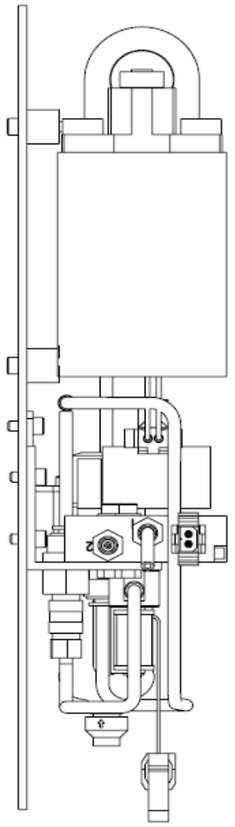
FORM NO. 19fm009, Rev. NONE | SHEET 1 OF 2

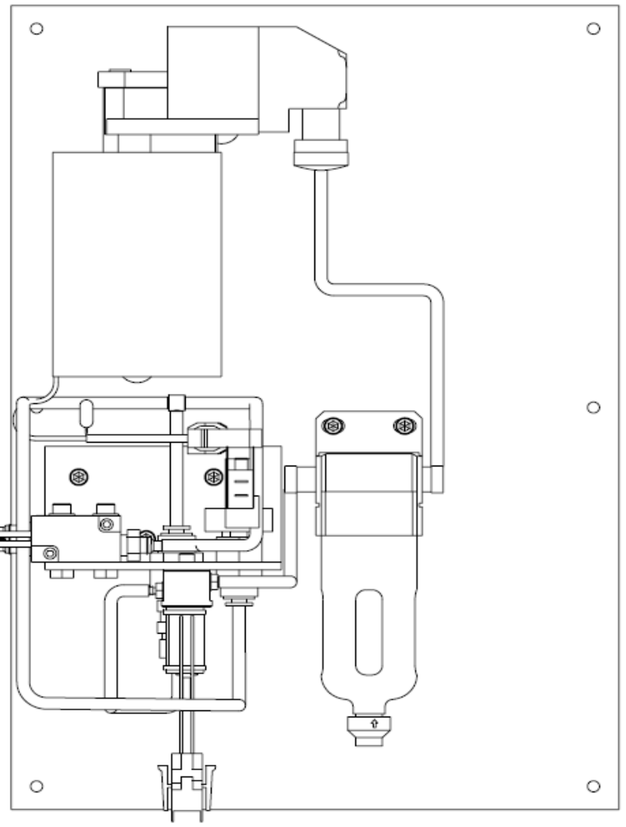
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

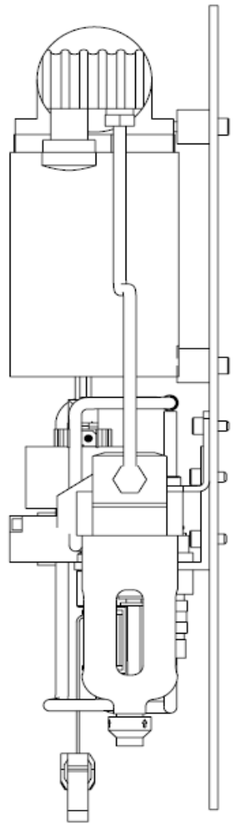
DRAWN BY: A. GREENHALGH	DATE: 12-16 02	TITLE: PNEUMATICS PANEL ASSEMBLY
MFG APPROVAL: S/A. BEVERAGE	DATE: 2-03	
QA APPROVAL: S/S. HORVATH	DATE: 2-03	PART NO.: 0700-904-050 REV.: NONE

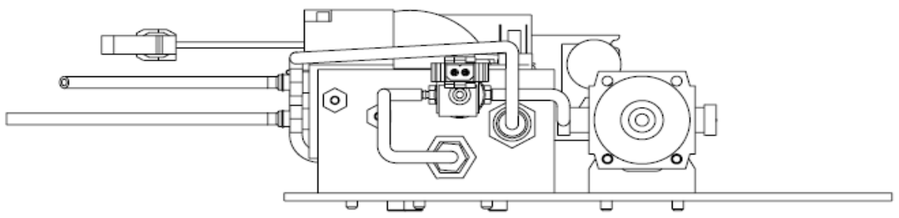
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION











NOTES:

FORM NO. 19fm009, Rev. NONE

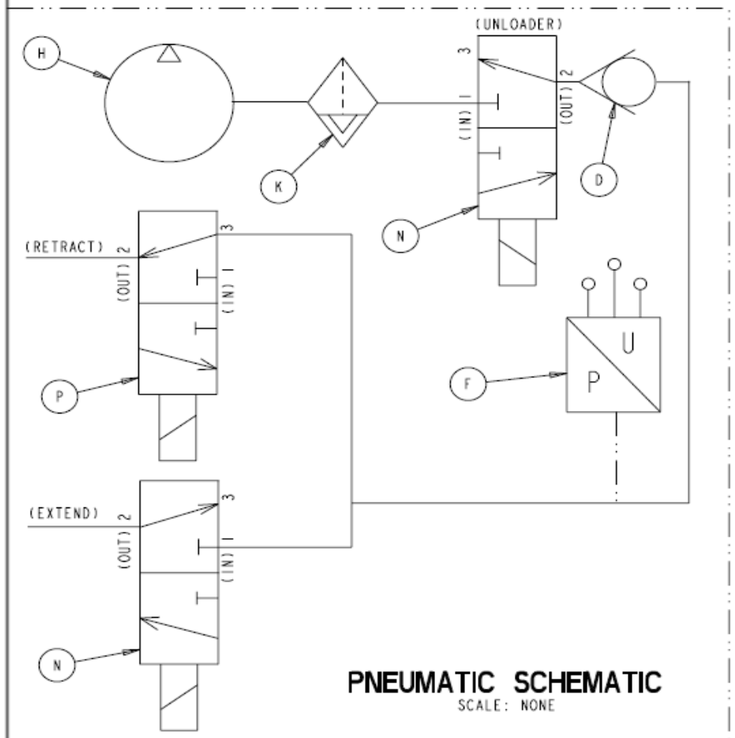
SHEET 2 OF 2

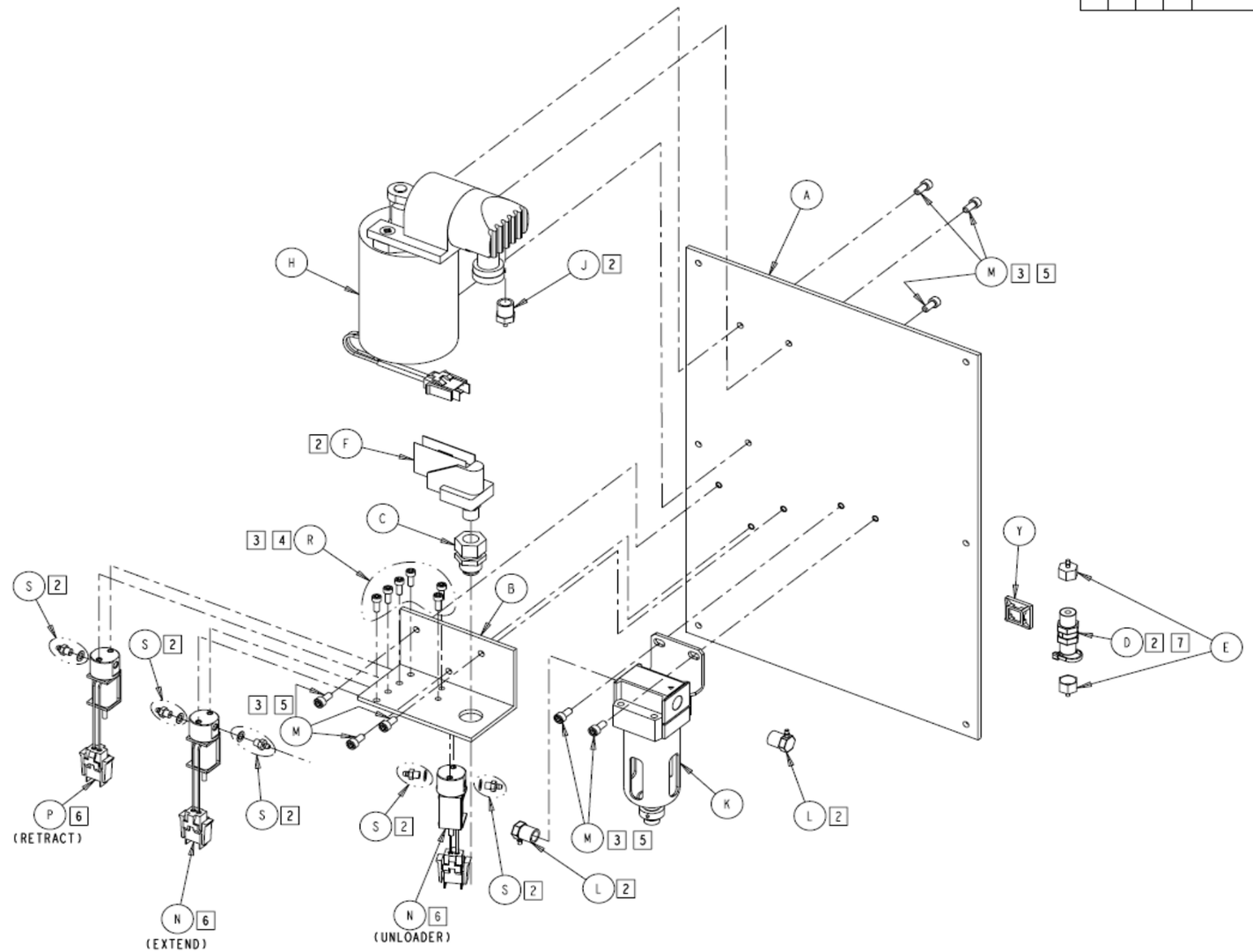
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY	DATE	TITLE	
A. GREENHALGH	12-16 02	PNEUMATICS PANEL ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-050	REV. NONE

Item	Part No.	Part Name		Qty.
A	0700-004-051	PNEUMATICS PLATE		1
B	DISCONTINUED	COMPRESSOR REGULATOR BRACKET		1
C	0048-192-000	BULKHEAD FITTING		2
D	0061-006-000	CHECK BALL VALVE 1/8		1
E	0048-206-000	BARBED FITTING .096 TUBE X 1/8		2
F	0700-004-053	PRESSURE SWITCH		1
H	0700-004-055	PNEUMATIC COMPRESSOR ASSEMBLY		1
J	0048-195-000	BARBED FITTING 1/8 NPT		1
K	0700-004-059	PNEUMATIC FILTER		1
L	0048-193-000	PNEUMATIC ELBOW FITTING		2
M	0004-525-000	SHCS 8-32 X 3/8		8
N	0712-008-001	PNEUMATIC TYPE 3 SOLENOID ASSEMBLY		2
P	0712-017-001	PNEUMATIC TYPE 4 SOLENOID ASSEMBLY		1
R	0004-529-000	SHCS 6-32 X 3/8		6
S	0048-194-000	PNEUMATIC BARBED FITTING 10-32		5
T	0048-185-000	PNEUMATIC TEE FITTING	(NOT SHOWN)	2
W	0060-008-000	PNEUMATIC TUBING	(NOT SHOWN)	90 IN
Y	0058-334-000	ADHESIVE CABLE MOUNT		1
AA	0044-021-000	TEFLON TAPE, 1/4"	(NOT SHOWN)	48 IN
AB	0072-002-003	LOCTITE 222	(NOT SHOWN)	AR
AC	0058-330-000	CABLE TIE	(NOT SHOWN)	1

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION





NOTES:

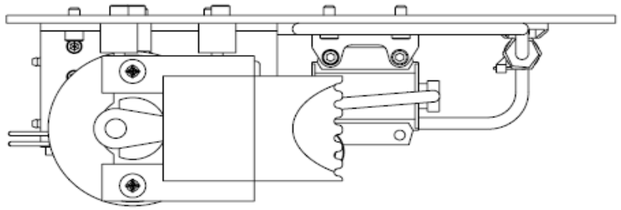
1. APPLIES TO DOCKER MODELS 700-4.
2. APPLY TEFLON TAPE CLOCKWISE TO THREADS.
3. APPLY LOCTITE 222.
4. TORQUE TO 17 IN-LBS.
5. TORQUE TO 25 IN-LBS.
6. WIRE POSITION IN CONNECTOR IS REVERSIBLE.
7. ARROW ON CHECK BALL VALVE MUST POINT TOWARDS BULKHEAD FITTING 0048-192-000.

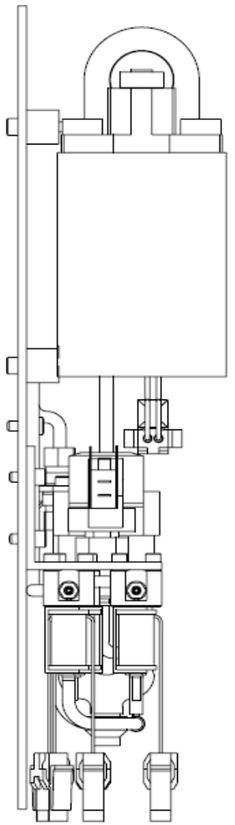
FORM NO. 19fm009, Rev. NONE | SHEET 1 OF 2

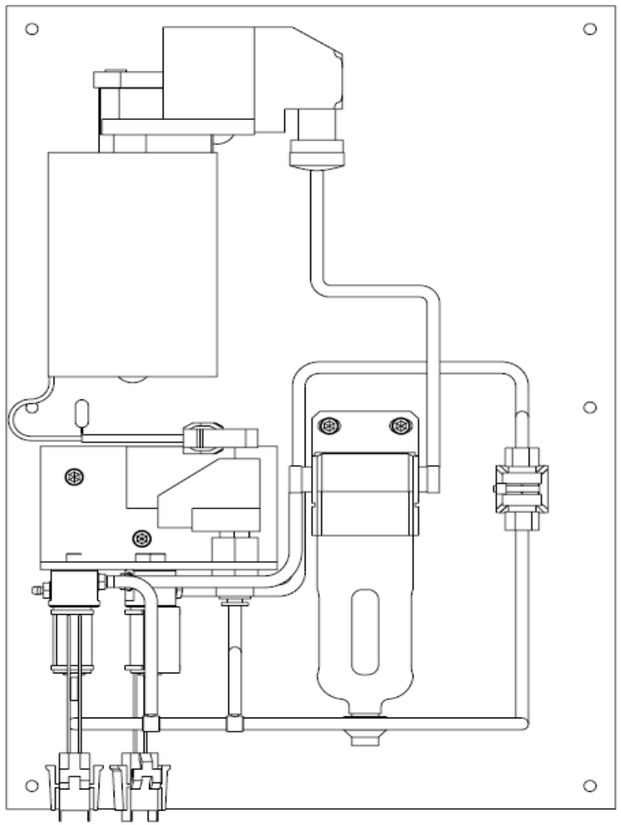
Stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

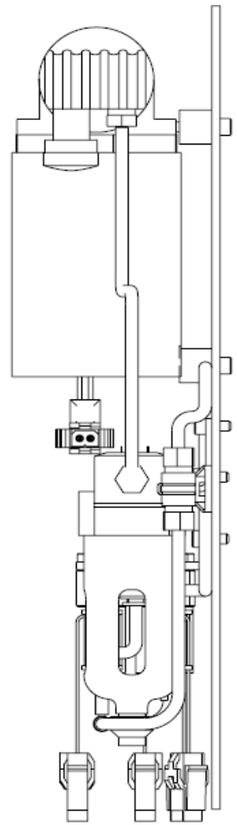
DRAWN BY	DATE	TITLE	
G. HEILMAN	1-03	PNEUMATICS PANEL	
MFG APPROVAL	DATE		
S/A. BEVERAGE	2-03		
QA APPROVAL	DATE	PART NO.	REV.
S/S. HORVATH	2-03	0700-904-051	NONE

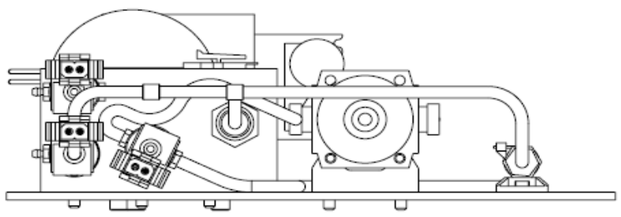
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION











NOTES:

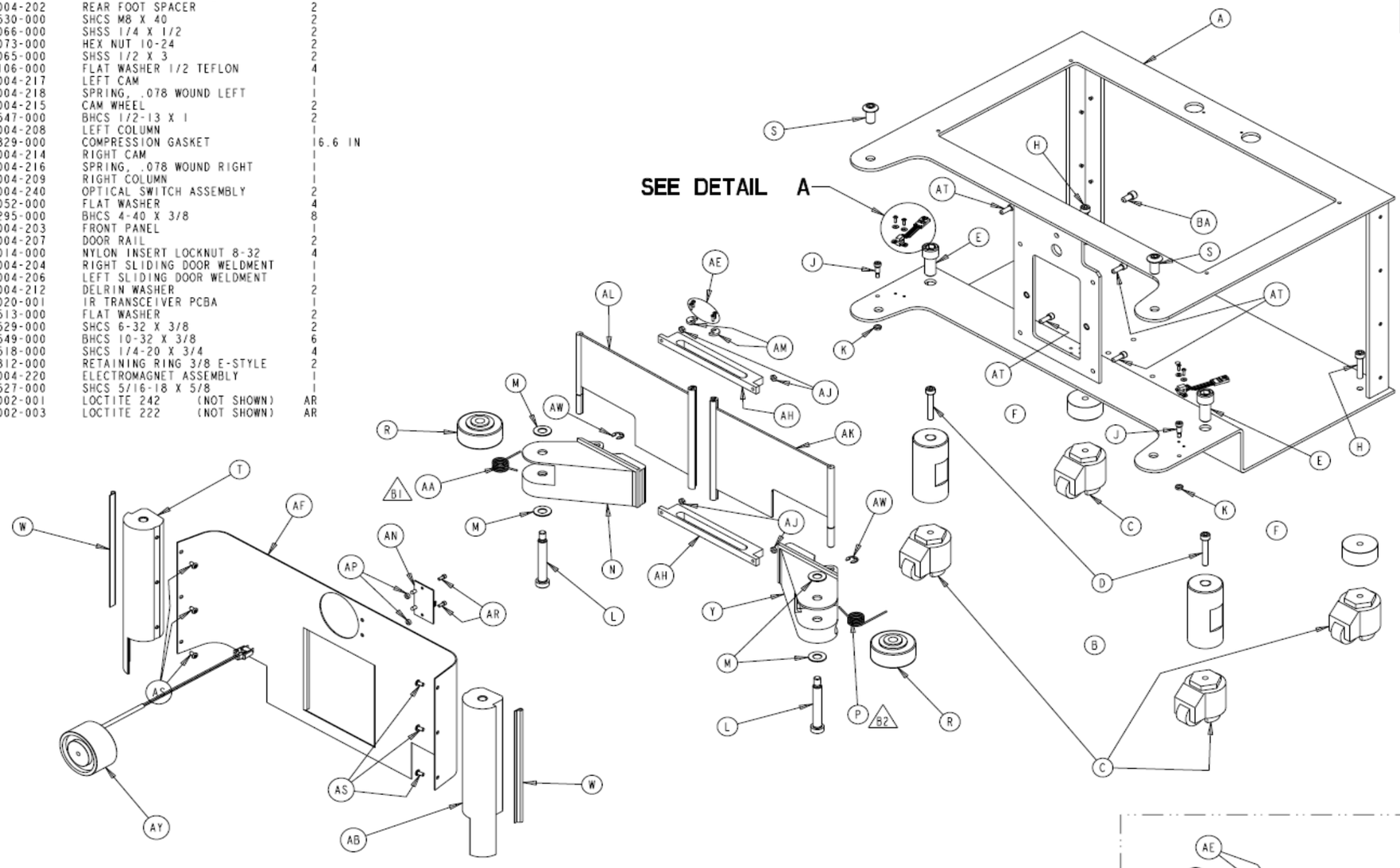
FORM NO. 19fm009, Rev. NONE

SHEET 2 OF 2

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY	DATE	TITLE	
G. HEILMAN	1-03	PNEUMATICS PANEL	
MFG APPROVAL	DATE		
S/A. BEVERAGE	2-03		
QA APPROVAL	DATE	PART NO.	REV.
S/S. HORVATH	2-03	0700-904-051	NONE

Item	Part No.	Part Name	Qty.
A	0700-004-205	FRAME WELDMENT	1
B	0700-004-201	FRONT FOOT SPACER	2
C	0700-004-211	SWIVEL CASTER WITH LEVELING	4
D	0004-528-000	SHCS M8 X 50	2
E	0004-524-000	SHCS 5/8-11 X 1-1/2	2
F	0700-004-202	REAR FOOT SPACER	2
H	0004-530-000	SHCS M8 X 40	2
J	0008-066-000	SHSS 1/4 X 1/2	2
K	0015-073-000	HEX NUT 10-24	2
L	0008-065-000	SHSS 1/2 X 3	2
M	0014-106-000	FLAT WASHER 1/2 TEFLON	4
N	0700-004-217	LEFT CAM	1
P	0700-004-218	SPRING, .078 WOUND LEFT	1
R	0700-004-215	CAM WHEEL	2
S	0004-547-000	BHCS 1/2-13 X 1	2
T	0700-004-208	LEFT COLUMN	1
W	0058-329-000	COMPRESSION GASKET	16.6 IN
Y	0700-004-214	RIGHT CAM	1
AA	0700-004-216	SPRING, .078 WOUND RIGHT	1
AB	0700-004-209	RIGHT COLUMN	1
AC	0700-004-240	OPTICAL SWITCH ASSEMBLY	2
AD	0011-052-000	FLAT WASHER	4
AE	0004-295-000	BHCS 4-40 X 3/8	8
AF	0700-004-203	FRONT PANEL	1
AH	0700-004-207	DOOR RAIL	2
AJ	0016-014-000	NYLON INSERT LOCKNUT 8-32	4
AK	0700-004-204	RIGHT SLIDING DOOR WELDMENT	1
AL	0700-004-206	LEFT SLIDING DOOR WELDMENT	1
AM	0700-004-212	DELRIN WASHER	2
AN	0712-020-001	IR TRANSCEIVER PCBA	1
AP	0011-513-000	FLAT WASHER	2
AR	0004-529-000	SHCS 6-32 X 3/8	2
AS	0004-549-000	BHCS 10-32 X 3/8	6
AT	0004-518-000	SHCS 1/4-20 X 3/4	4
AW	0028-312-000	RETAINING RING 3/8 E-STYLE	2
AY	0700-004-220	ELECTROMAGNET ASSEMBLY	1
BA	0004-527-000	SHCS 5/16-18 X 5/8	1
BB	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
BC	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



PRODUCTION RELEASED	DATE	9/02

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
1-14-03	S/CD	JAR	A	REVISED PICTORIALLY ECO 03Y2E00216
			B	REVISED PICTORIALLY ECO 03D2E00270
1-14-03	S/JAR	JH	B1	WAS: BALLOON (P)
			B2	WAS: BALLOON (AA)
4-6-06	S/EA	BC	C	ECO 06Y2E09101
				WAS: NEXT ASSEMBLY: 0700-004-010;0700-005-010

C

0700-004-010
0700-005-010
0700-006-010
NEXT ASSEMBLY

FORM NO.	SHEET	PROJECT NO.
05fm100, Rev. D	1 OF 1	MTR-0338

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

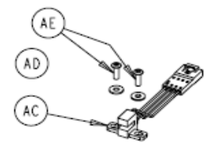
TOLERANCES: DECIMAL ± .010 ANGULAR ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)-----.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250/ (MAX)

STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION

	DATE	
DRAWN BY G. HEILMAN	7-29-02	TITLE: CHASSIS ASSEMBLY
DESIGNED BY S/ K. SMIT	9-02	
MFG APPROVAL S/ K. LAKE	9-02	MATERIAL
QA APPROVAL S/ S.HORVATH	9-02	FINISH
AUTHORIZED BY S/ R. RUSSELL	9-02	
DFTG APPROVAL S/ D. MORRIS	9-02	SIZE: B; PART NO.: 0700-004-210; REV.: C

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001



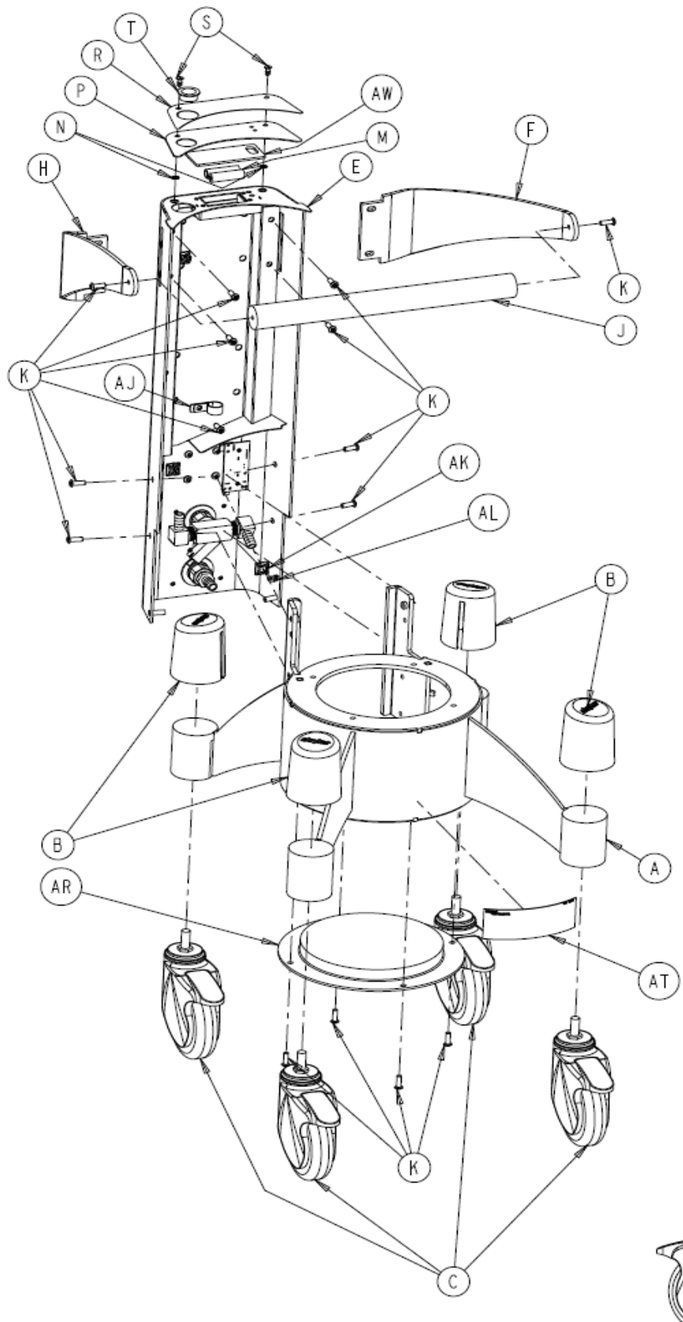
DETAIL A (2X)
SCALE: NONE

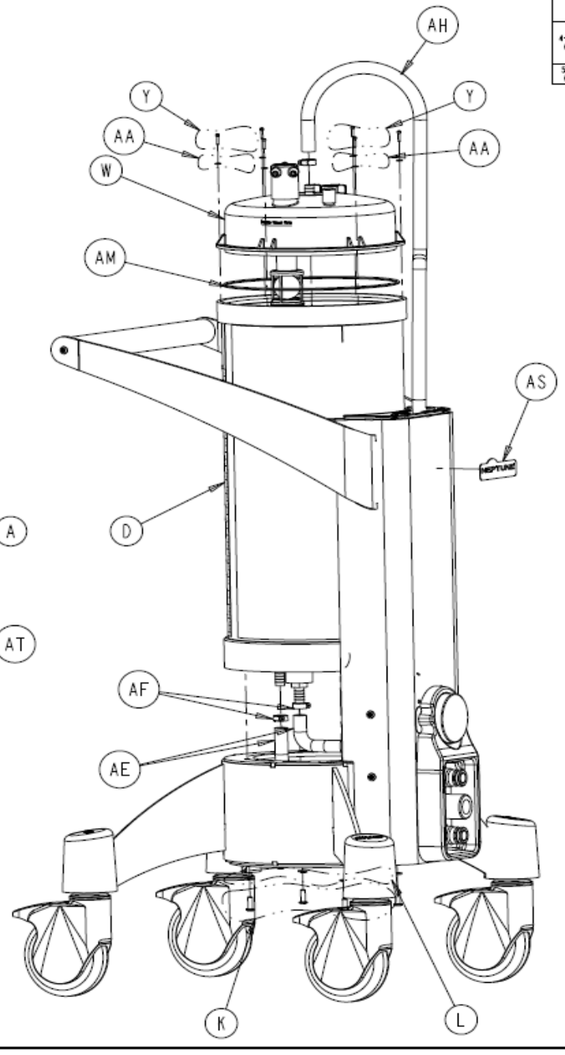
NOTES:

2. ASSEMBLE PER SOE-121-040.
1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-017-001 (REV F).

700-7 CURRENT PRODUCTION BRONZE ASSY

ITEM	PART NO.	PART NAME	QTY
A	0700-007-011	CHASSIS WELDMENT	1
B	0700-007-013	BUMPER	4
C	0700-007-019	CASTER	4
D	0700-007-320	CANISTER ASSEMBLY	1
E	0700-007-210	TOWER ASSEMBLY	1
F	0700-007-014	HANDLE LEFT SUPPORT	1
H	0700-007-015	HANDLE RIGHT SUPPORT	1
J	0700-007-016	HANDLE	1
K	0004-551-000	1/4-20 X 3/4 BHCS	19
L	0012-012-000	SPLIT LOCK WASHER 1/4 I.D.	4
M	0207-050-041	AA BATTERY	2
N	0058-115-000	RETAINER	2
P	0700-007-411	BATTERY DOOR	1
R	0700-007-702	BATTERY DOOR LABEL	1
S	0058-114-000	1/4-TURN STUD	2
T	0058-347-000	SNAP BUSHING	1
W	0700-007-170	CANISTER CAP ASSEMBLY	1
Y	0004-546-000	#4-40 X 1/2 SHCS	6
AA	0011-052-000	#4 FLAT WASHER	6
◊1			
◊2			
◊3			
AE	0700-007-018	WASTE/SPRINKLER TUBE	2
AF	0058-325-000	HOSE CLAMP	6
AH	0700-007-017	UPPER SPRINKLER TUBE	1
AJ	0058-349-000	STEEL LOOP STRAP	1
AK	0058-334-000	ADHESIVE CABLE MOUNT	3
AL	0058-330-000	CABLE TIE	3
AM	0045-267-000	O-RING	1
AN	0700-007-023	TOP EDGE TRIM	2
AP	0700-007-024	BOARD EDGE TRIM	1
AR	0700-007-022	BOTTOM COVER	1
AS	0700-007-705	ROVER BRONZE LABEL	1
AT	0700-007-701	SPEC LABEL	1
AW	0700-007-412	BATTERY DOOR FOAM	1
AY	0072-002-019	3M SCOTCH-WELD DP-8005 (NOT SHOWN)	AR
BA	0072-002-002	LOCTITE 271 (NOT SHOWN)	AR
BB	0072-002-056	LOCTITE 425 (NOT SHOWN)	AR
BC	0072-002-138	LOCTITE 242 (NOT SHOWN)	AR





PRODUCTION RELEASED	DATE 3-26-04			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
7-12 04	S/KB	JAR	A	REVISED PICTORIALLY ECO 04Y2004060
			A1	WAS: T2 (PG.5)
			A2	WAS:SEQUENCE: 430 ...LINE UP 4 HOLES.(PG.15)
			A3	WAS:SEQUENCE: 490 REMOVE BACKING...(PG.17)
			A4	WAS:SEQUENCE: 670 USING (2) FIXTURES..(PG.22)
			A5	ADDED:SEQUENCE: 445 TQC CHECK FOR...(PG.15)
			A6	ADDED: ITEM F9 5905-003-492... (PG.17)
11-18 04	S/KKB	KB	B	REVISED PICTORIALLY ECO 04Y2E08505
			B1	REMOVED: ITEM AB 0061-009-000 CHECK...1
			B2	REMOVED: ITEM AC 0028-340-000 RETAINING...1
			B3	REMOVED: ITEM AD 0048-227-000 1/2" BARBED...1
			B4	REMOVED: FIXTURES: 5905-003-437...(PG.3)
			B5	REMOVED: FIXTURES: 5905-003-444...(PG.3)
			B6	REMOVED: SHEET 5
			B7	RENUMBERED EXISTING SEQUENCES
4-17 06		EA	C	REVISED PICTORIALLY ECO 06Y2E09732
			C1	WAS:SEQUENCE NUMBER 60 (PAGE 5):...PLASTIC...
5-8 09		BC	D	REVISED PICTORIALLY ECR 115064

FORM NO. 09fm147, Rev. C	SHEET 1 OF 21	PROJECT NO. 1808	0700-007-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL ± .010 ANGULAR: ± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ---------- 250 (MAX)

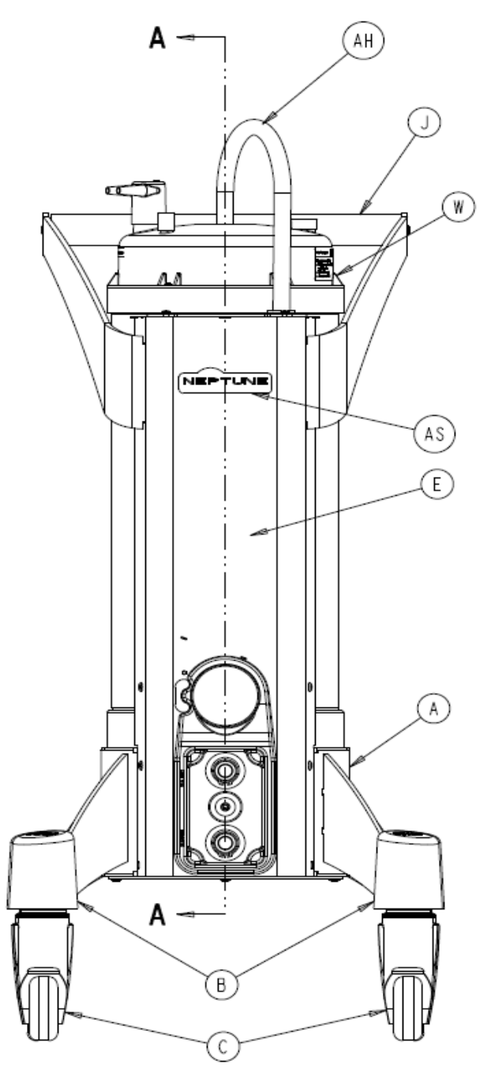
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

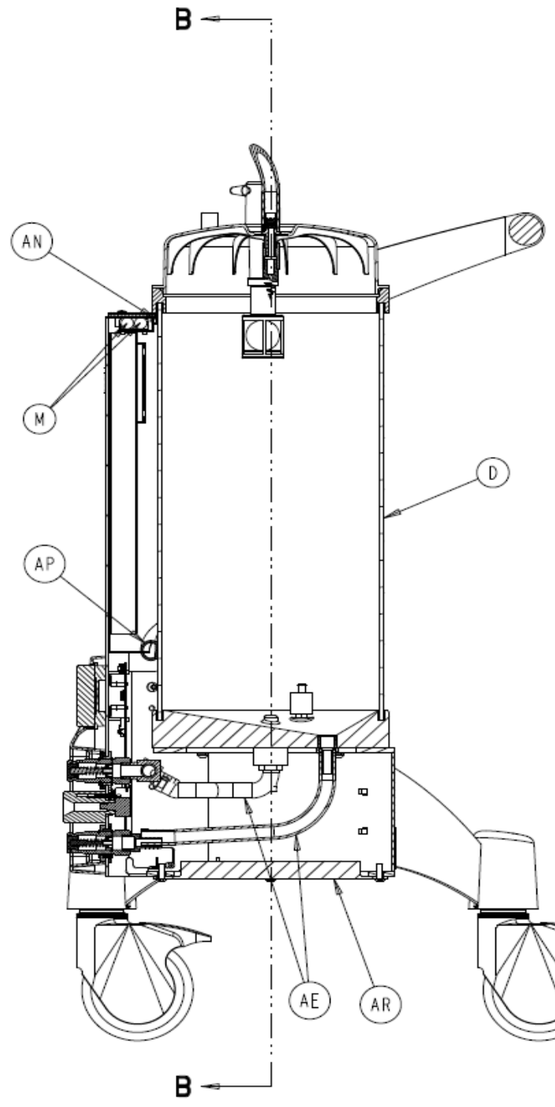
DRAWN BY C. DRAKE	DATE 2-9 04	TITLE ROVER ASSEMBLY	
DESIGNED BY S/S. REASONER	DATE 3-25 04		
MFG APPROVAL S/B. SHARP	DATE 3-25 04	MATERIAL	
QA APPROVAL S/A. BEVERAGE	DATE 3-25 04	FINISH	
AUTHORIZED BY S/B. LALOMIA	DATE 3-25 04		
DFTG APPROVAL S/C. DRAKE	DATE 3-26 04	SIZE B	PART NO. 0700-007-010 REV. D

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

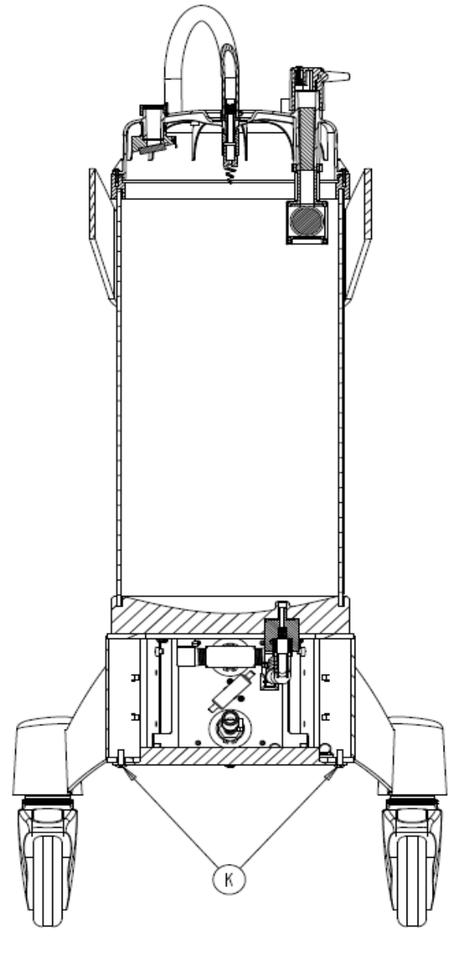
NOTES:

PRODUCTION RELEASED				DATE 3-26-04
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION





SECTION A-A



SECTION B-B

FORM NO. 09fm147, Rev. C	SHEET 2 OF 21	PROJECT NO. 1808	0700-007-000 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP
GENERAL FINISH ----------250/ (MAX)

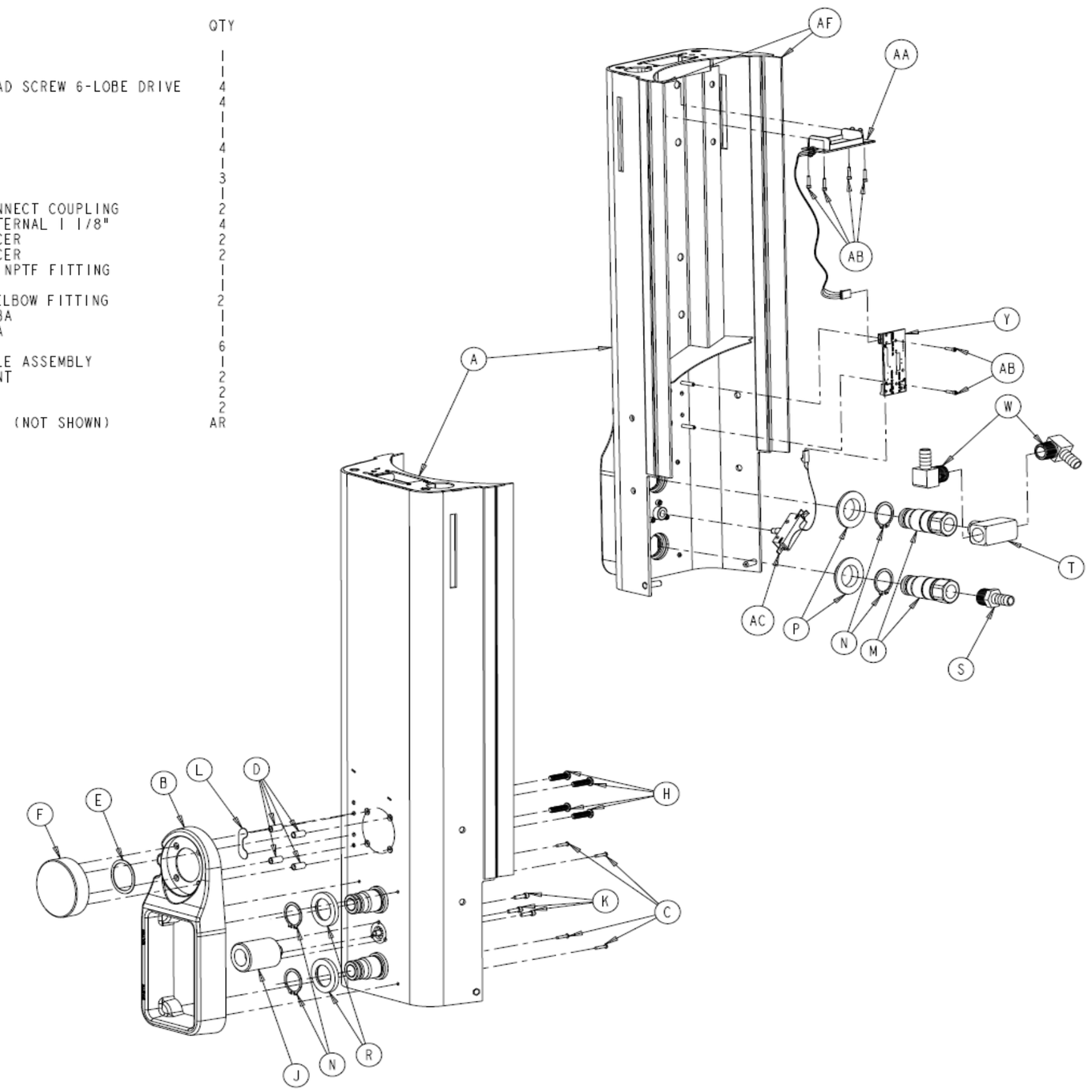
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY C. DRAKE	DATE 2-9 04	TITLE	ROVER ASSEMBLY
DESIGNED BY S/S. REASONER	DATE 3-25 04	MATERIAL	
MFG APPROVAL S/B. SHARP	DATE 3-25 04		
QA APPROVAL S/A. BEVERAGE	DATE 3-25 04	FINISH	
AUTHORIZED BY S/B. LALOMIA	DATE 3-25 04		
DFTG APPROVAL S/C. DRAKE	DATE 3-26 04	SIZE B	PART NO. 0700-007-010 REV. D

stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

NOTES:

ITEM	PART NO.	PART NAME	QTY
A	0700-007-211	TOWER WELDMENT	1
B	0700-007-218	FINGER GUARD	1
C	0023-274-000	4-24 X .625 PAN HEAD SCREW 6-LOBE DRIVE	4
D	0700-007-233	SCREW SPACER	4
E	0014-108-000	WAVE SPRING	1
F	0700-001-222	MAGNET SPACER	1
H	0004-576-000	1/4-20 X 1 BHCS	4
J	0700-007-224	DOCKING PIN GUIDE	1
K	0004-522-000	8-32 X 5/8 SHCS	3
L	0700-007-710	IR SHIELD	1
M	0700-001-223	FEMALE QUICK DISCONNECT COUPLING	2
N	0028-313-000	RETAINING RING, EXTERNAL 1 1/8"	4
P	0700-001-229	COUPLING INNER SPACER	2
R	0700-001-231	COUPLING OUTER SPACER	2
S	0048-227-000	1/2" BARBED X 1/2" NPTF FITTING	1
T	0048-224-000	1/2" BRANCH TEE	1
W	0048-225-000	1/2" BARBED X 90° ELBOW FITTING	2
Y	0700-007-213	MAIN CONTROLLER PCBA	1
AA	0700-007-212	BATTERY STATUS PCBA	1
AB	0004-546-000	4-40 X 1/2 SHCS	6
AC	0700-007-215	COUPLED SWITCH CABLE ASSEMBLY	1
AD	0058-334-000	ADHESIVE CABLE MOUNT	2
AE	0058-330-000	CABLE TIE	2
AF	0700-007-214	EDGE TRIM	2
AH	0072-002-138	LOCTITE 242 (NOT SHOWN)	AR



NOTES:

PRODUCTION RELEASED	DATE 3-16-04			
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION
9-10 04	S/JR	KB	A	WAS: 80 SET...11 Holes... ECO 04Y2004059
			A1	WAS: 470 ...Make..PCB visible from front..
			A2	ADDED: 295 NOTE: Rinse Water Coupling...
7-21 03		BC	B	REVISED AND REDRAWN ECR-ECN 104588
3-9 12		BC	C	REVISED PER ECR 120604

FORM NO. 09fm147, Rev. C	SHEET 1 OF 18	PROJECT NO. 1808	0700-007-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

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THREAD CHAMFER (OR COUNTERSINK)------1 TO 1 1/2 THREADS DEEP

GENERAL FINISH ----------250 (MAX)

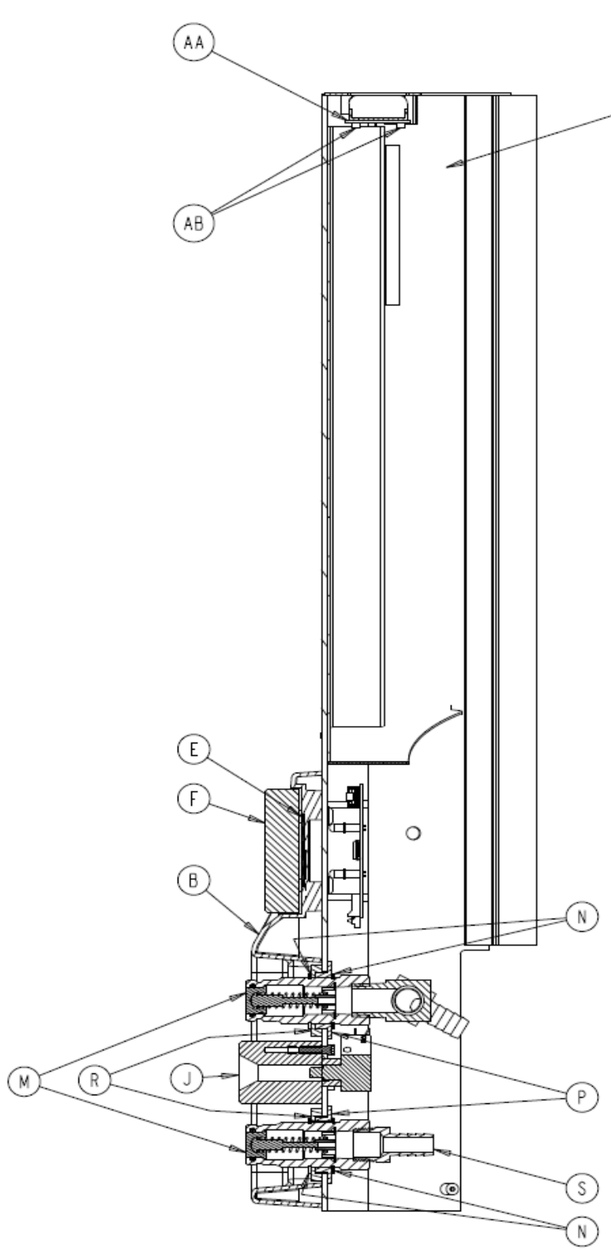
STRYKER SYMBOLS
Ⓒ CRITICAL DIMENSION, ◊ CRITICAL PACKAGING DIMENSION

DRAWN BY C. DRAKE	DATE 11-19 03	TITLE TOWER ASSEMBLY
DESIGNED BY S/S. REASONER	DATE 3-12 04	MATERIAL
MFG APPROVAL S/B. SHARP	DATE 3-04	
QA APPROVAL S/A. BEVERAGE	DATE 3-12 04	FINISH
AUTHORIZED BY S/B. LALOMIA	DATE 3-12 04	
DFTG APPROVAL S/G. HEILMAN	DATE 3-12 04	SIZE B / PART NO. 0700-007-210 / REV. C

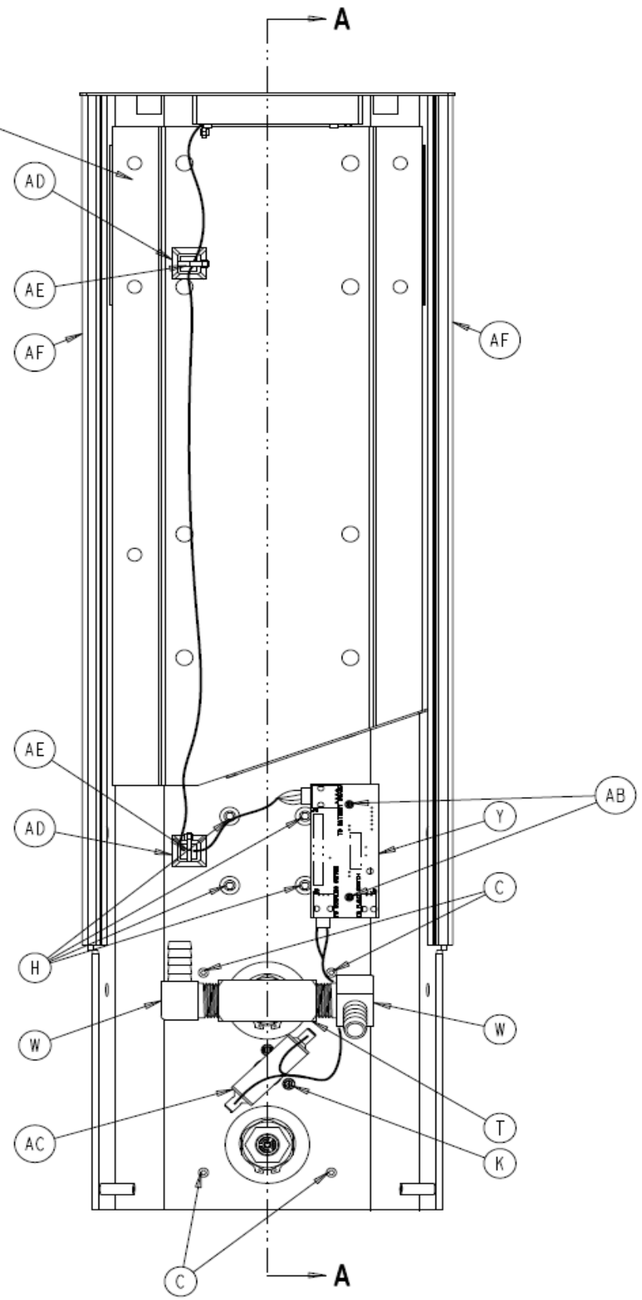
stryker INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

PRODUCTION RELEASED	DATE	3-16-04

DATE	CHK'D BY	DFTG	SYM	DESCRIPTION



SECTION A-A



NOTES:

FORM NO. 094m147, Rev. C	SHEET 2 OF 18	PROJECT NO. 1808	0700-007-010 NEXT ASSEMBLY

DRAWING BASED ON ASME Y14.5M-1994 STANDARD
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STRYKER SYMBOLS
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DRAWN BY C. DRAKE	DATE 11-19 03	TITLE	TOWER ASSEMBLY
DESIGNED BY S/S. REASONER	DATE 3-12 04	MATERIAL	
MFG APPROVAL S/B. SHARP	DATE 3-04		
QA APPROVAL S/A. BEVERAGE	DATE 3-12 04	FINISH	
AUTHORIZED BY S/B. LALOMIA	DATE 3-12 04		
DFTG APPROVAL S/G. HEILMAN	DATE 3-12 04	SIZE B	PART NO. 0700-007-210 REV. C

stryker INSTRUMENTS
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