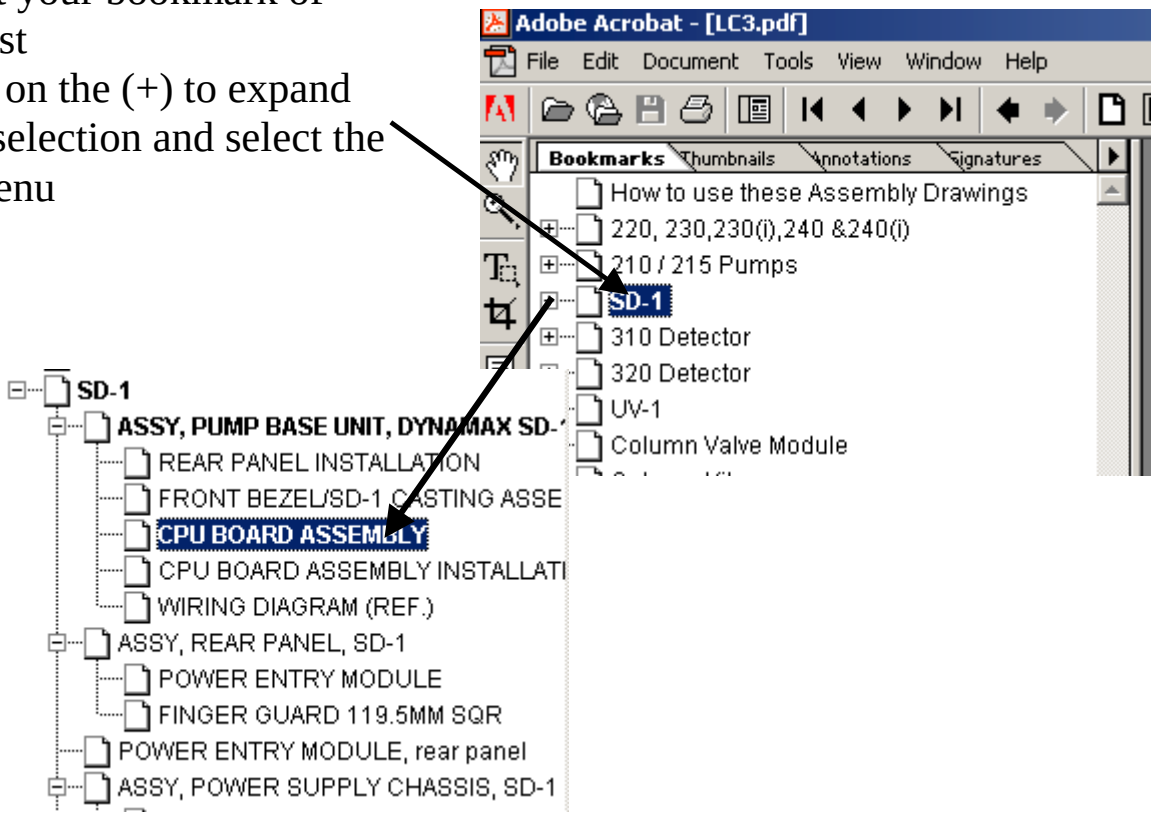
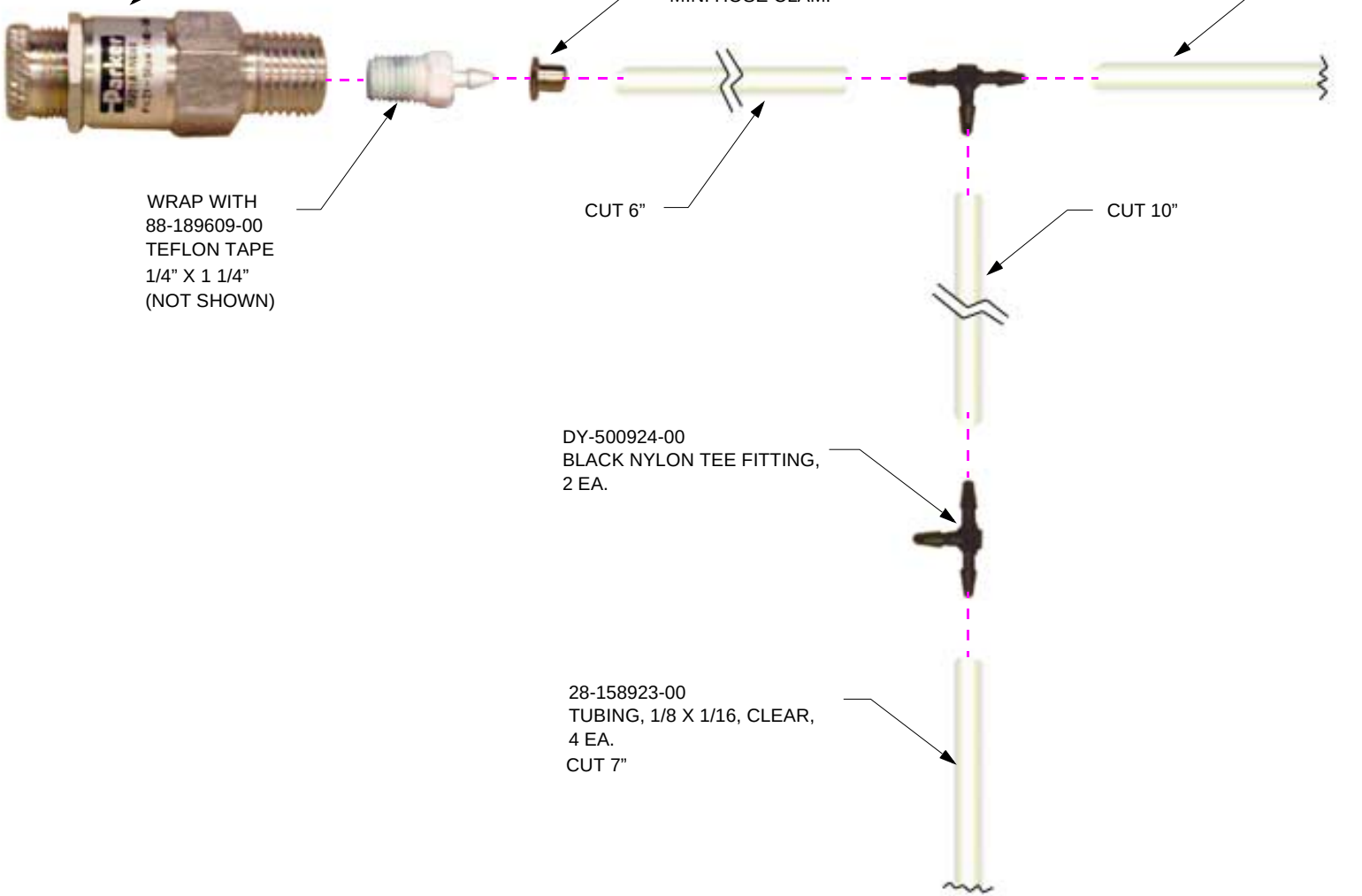
Maneuvering the Assembly Documentation

1. Select your bookmark of interest
2. Click on the (+) to expand your selection and select the submenu

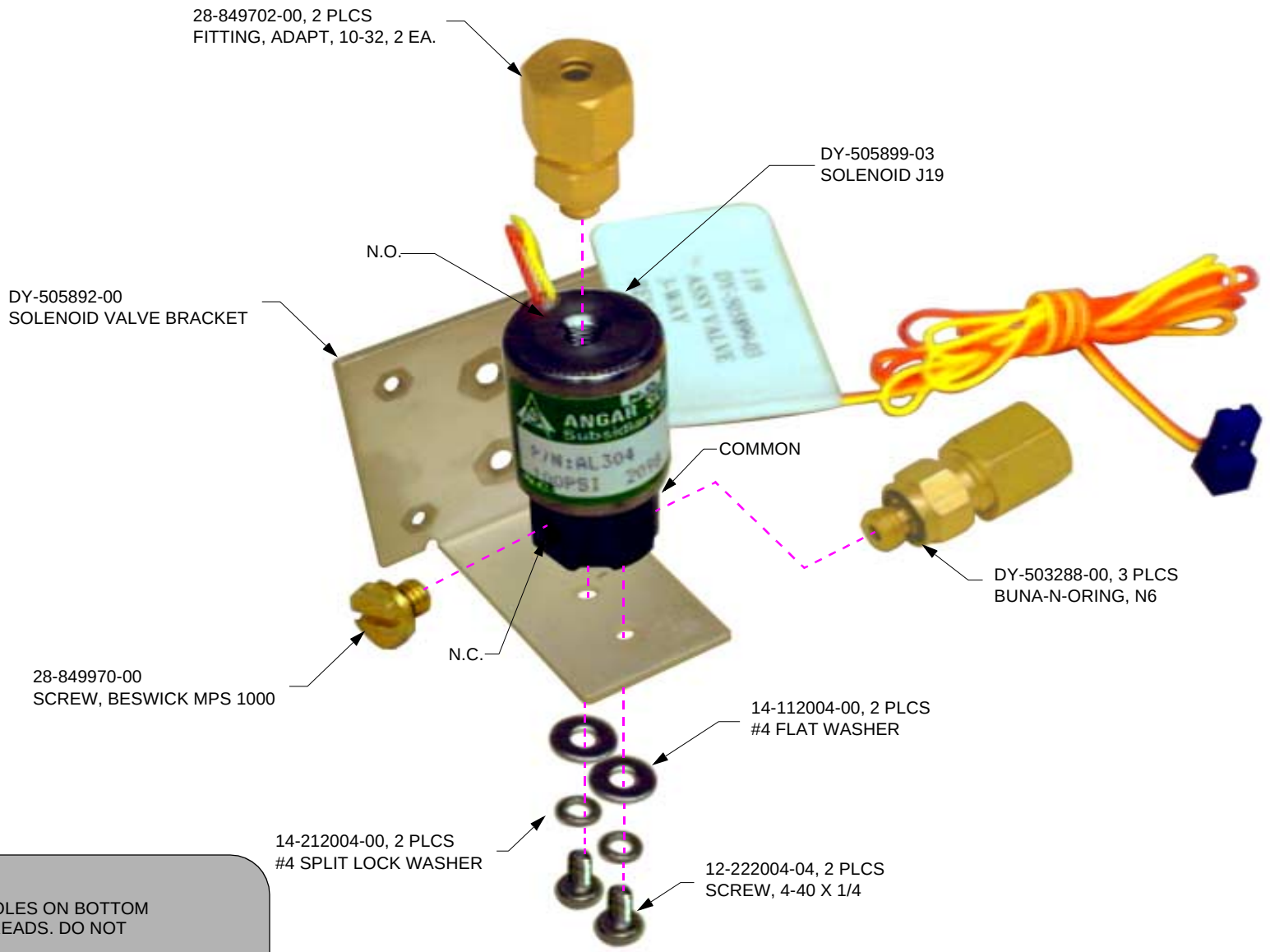


3. Navigate through the document with these buttons

Speedaire Relief Valve Assembly

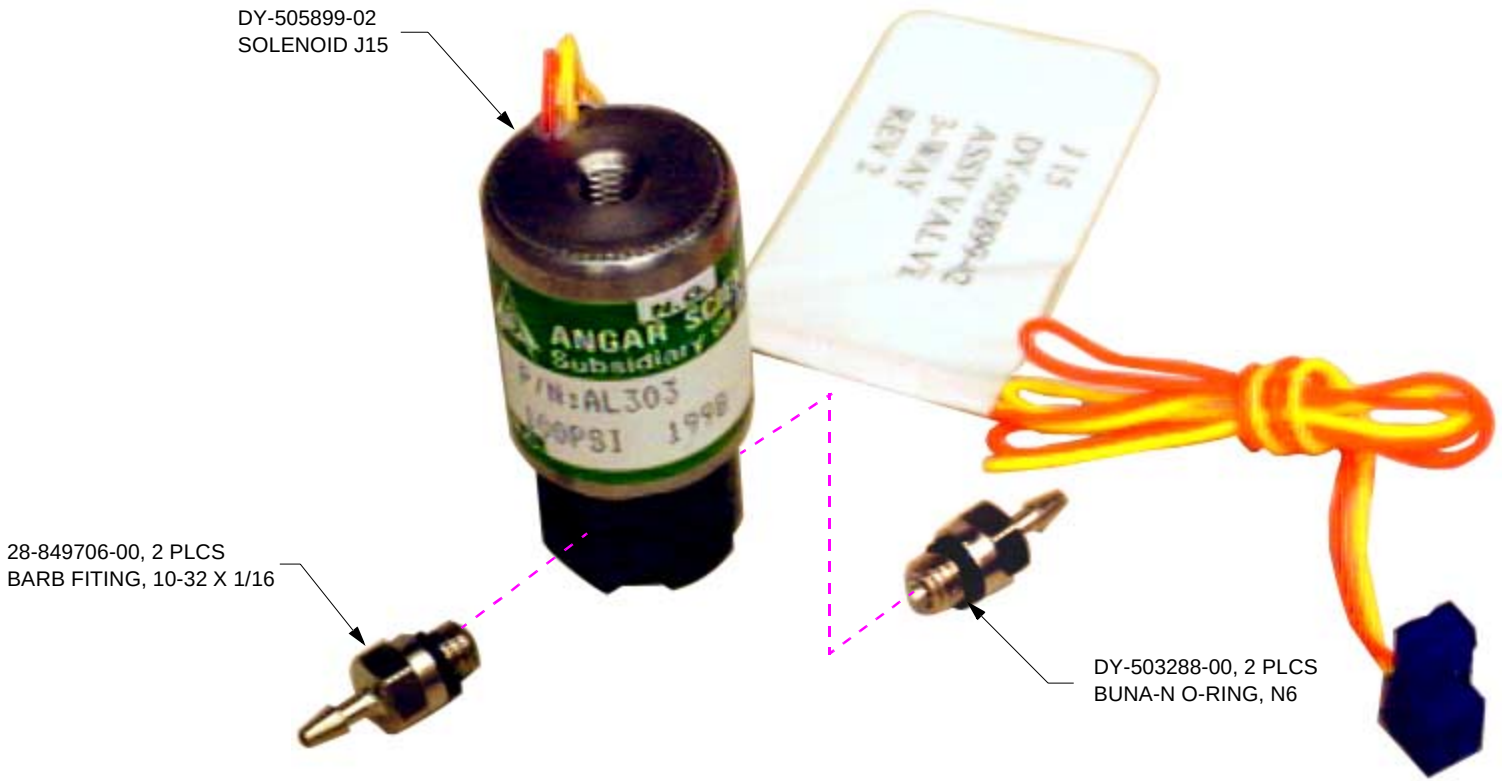

DY-503074-00
SPEEDAIRE RELIEF VALVE
28-849707-00
MINI HOSE CLAMP
CUT 5”
WRAP WITH
88-189609-00
TEFLON TAPE
1/4” X 1 1/4”
(NOT SHOWN)
CUT 6”
CUT 10”
DY-500924-00
BLACK NYLON TEE FITTING,
2 EA.
28-158923-00
TUBING, 1/8 X 1/16, CLEAR,
4 EA.
CUT 7”

Cut Off Solenoid Assembly

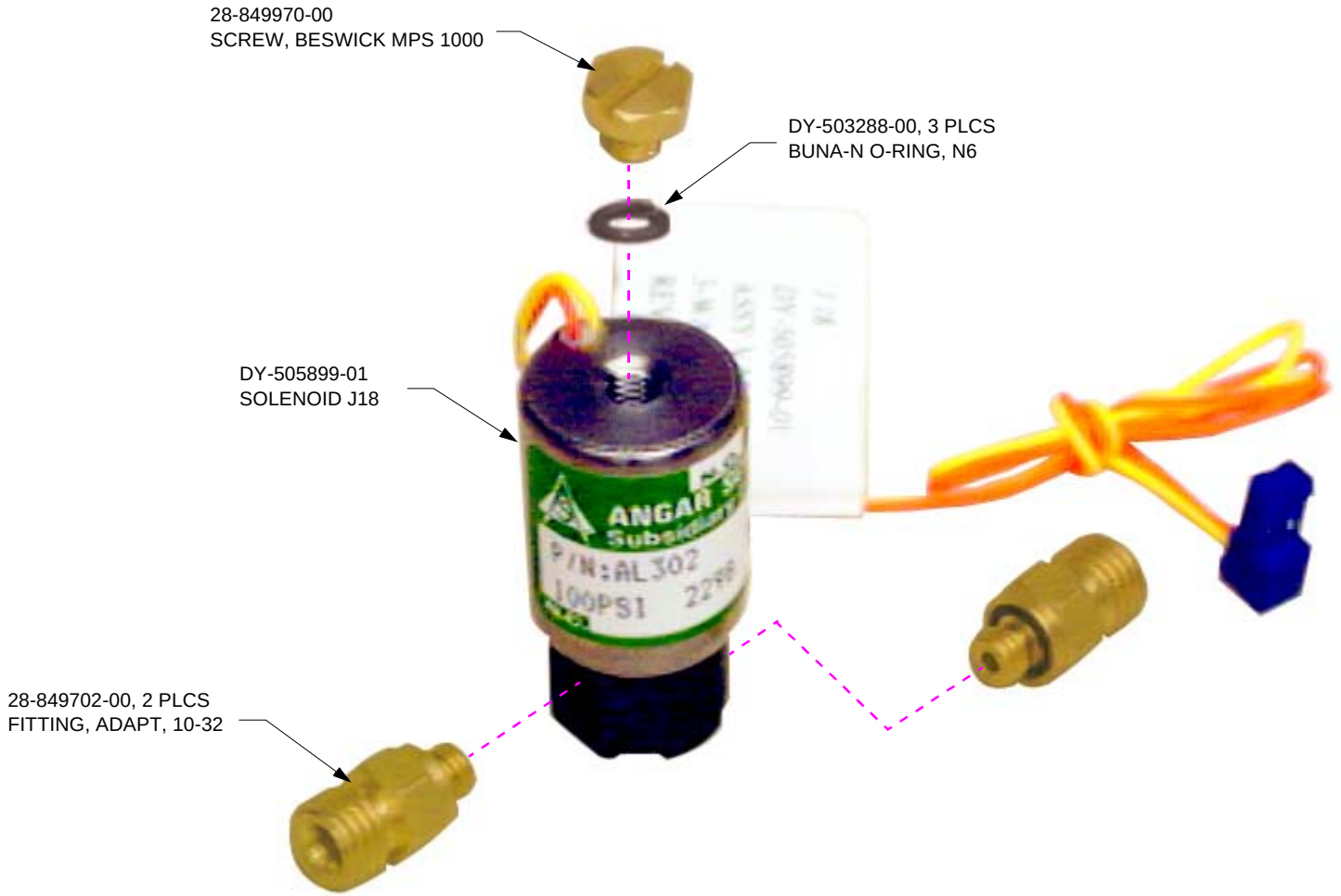


NOTE: YOU HAVE TO TAP HOLES ON BOTTOM OF SOLENOID TO MAKE THREADS. DO NOT TAP TO DEEP.

Gripper Solenoid Assembly

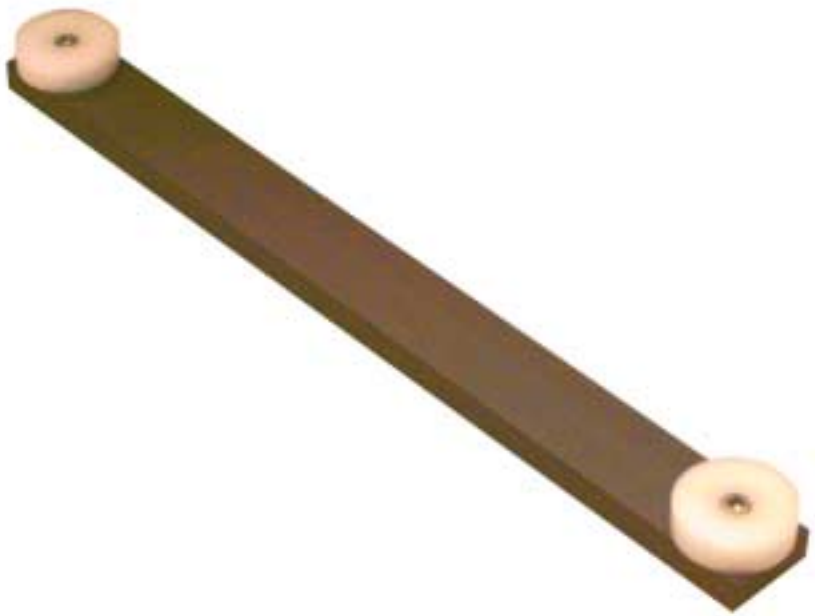

DY-505899-02
SOLENOID J15
28-849706-00, 2 PLCS
BARB FITING, 10-32 X 1/16
DY-503288-00, 2 PLCS
BUNA-N O-RING, N6

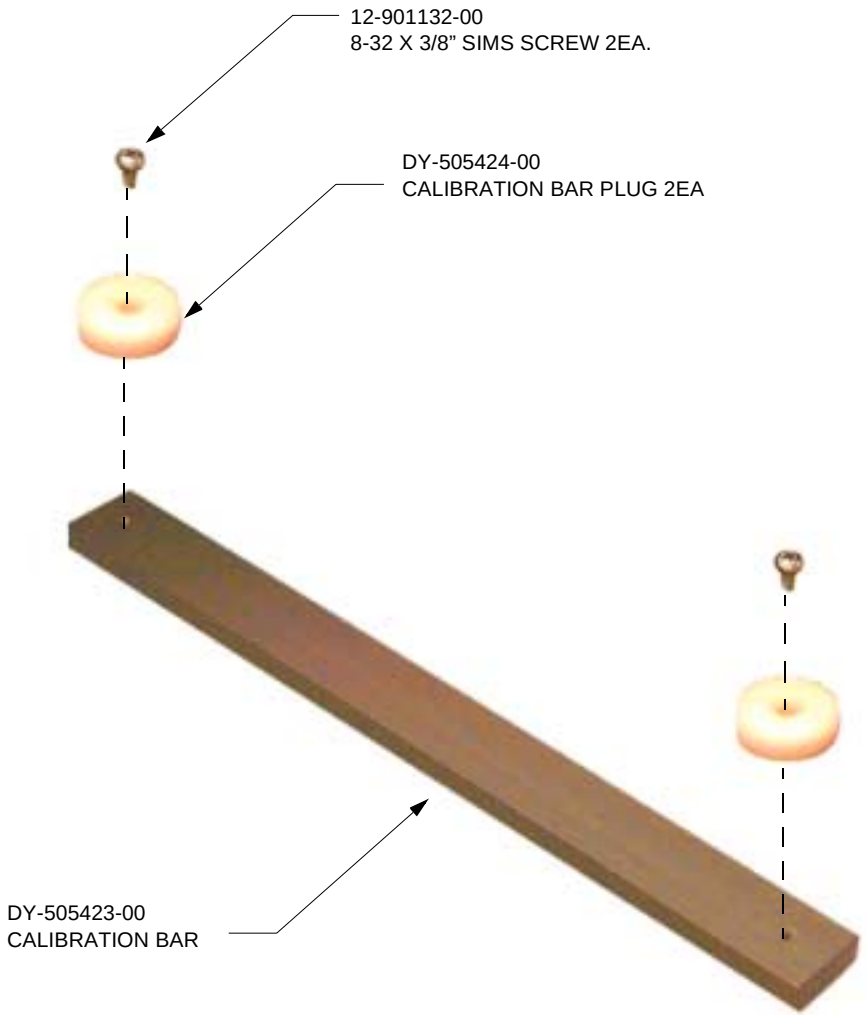
Soil Purge Solenoid Assembly


28-849970-00
SCREW, BESWICK MPS 1000
DY-503288-00, 3 PLCS
BUNA-N O-RING, N6
DY-505899-01
SOLENOID J18
28-849702-00, 2 PLCS
FITTING, ADAPT, 10-32
ANGAR
P/N:AL302
100PSI

Calibration Bar

Subassembly





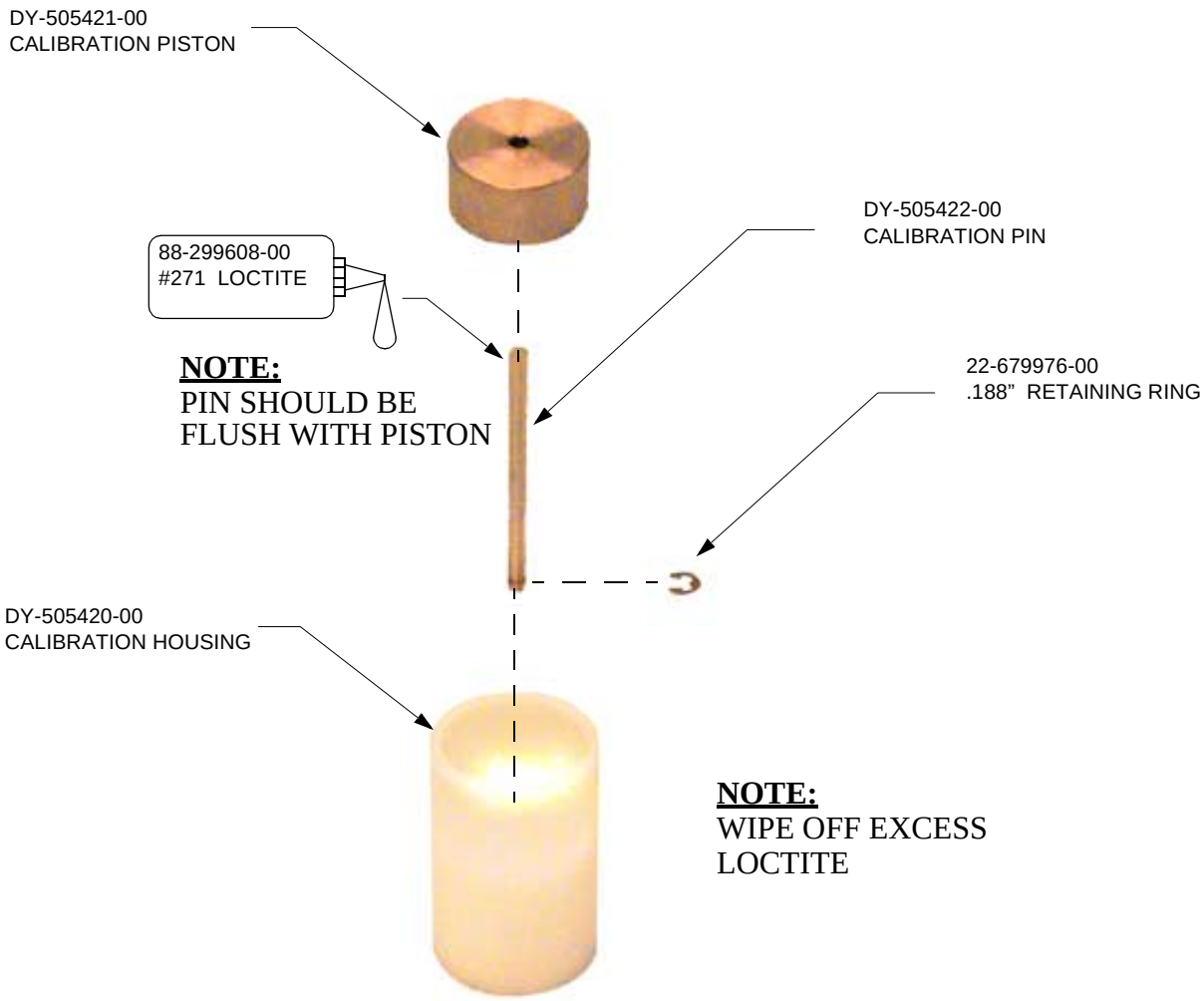
OPERATION NOTES:

Note:

1. **VERIFY** THAT ROUTED SIDE OF BAR IS DOWN & CALIBRATION BAR PLUGS ARE MOUNTED TO THE TOP SIDE.

Calibration Piston

Subassembly



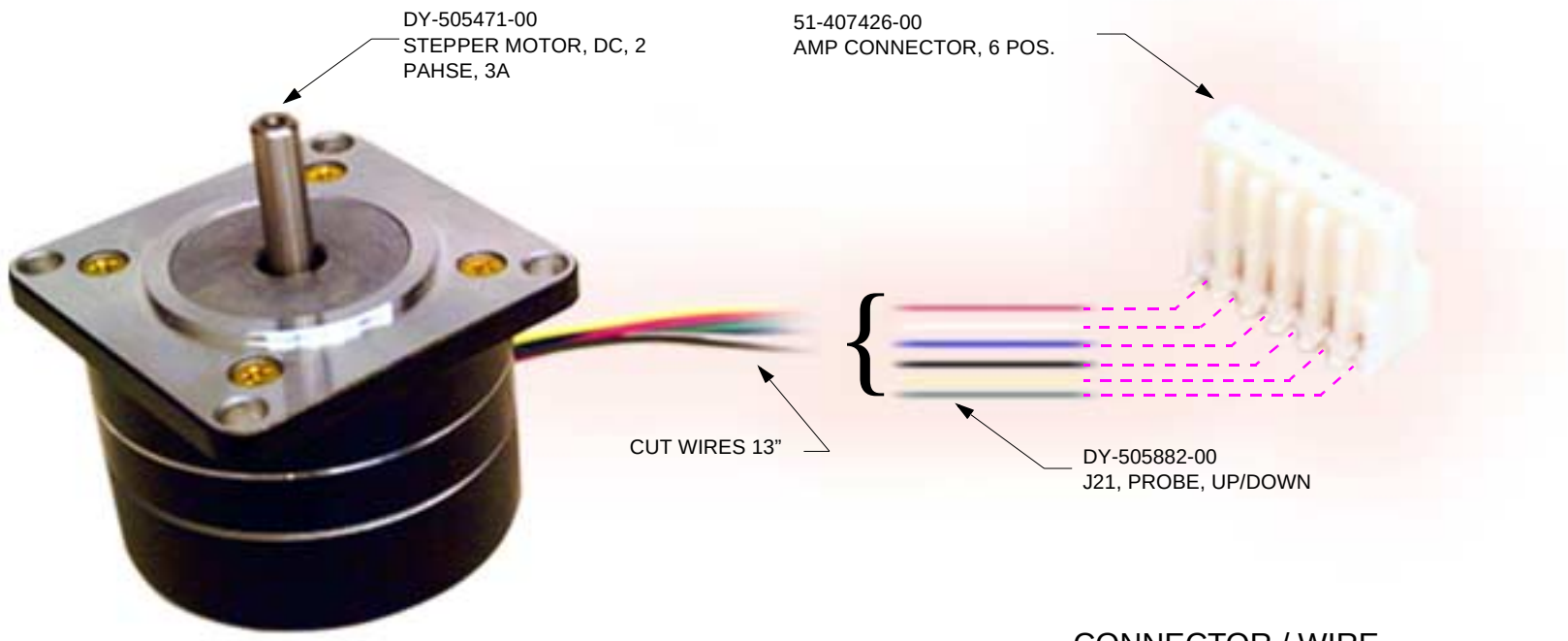
OPERATION NOTES:

Note:

1. MOUNT PISTON TO PIN USING LOCTITE LET DRY OVER NIGHT, FEED THROUGH CALIB. HOUSING AND ATTACH RETAINING RING.

Archon Station 1

Archon Probe Up/Down



OPERATION NOTES:

Note:

CE MARK REQUIRES

TWO TWISTED TRIPLES

A) TWIST GREEN, YELLOW & BLACK.

B) TWIST BLUE, WHITE & RED

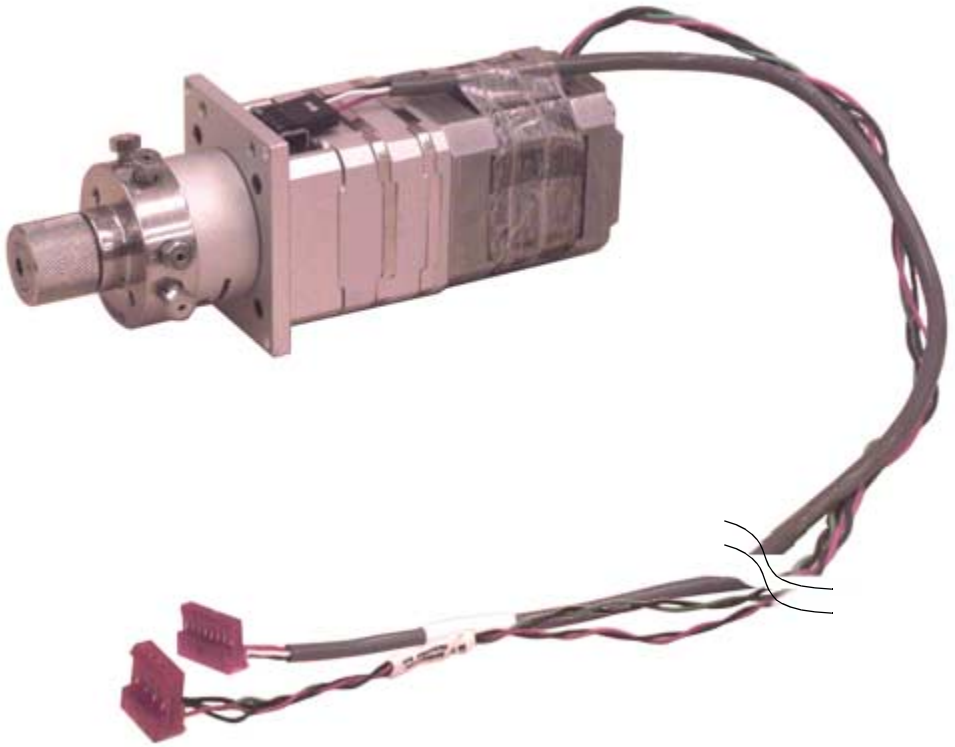
APPROX. 3 TWISTS PER INCH

CONNECTOR / WIRE POSITIONS

Position	Color
1	RED
2	WHITE
3	BLUE
4	BLACK
5	YELLOW
6	GREEN

ASSY, VALCO VALVE, SIX PORT

STATION #1 ARCHON, ASSEMBLY PROCEDURES



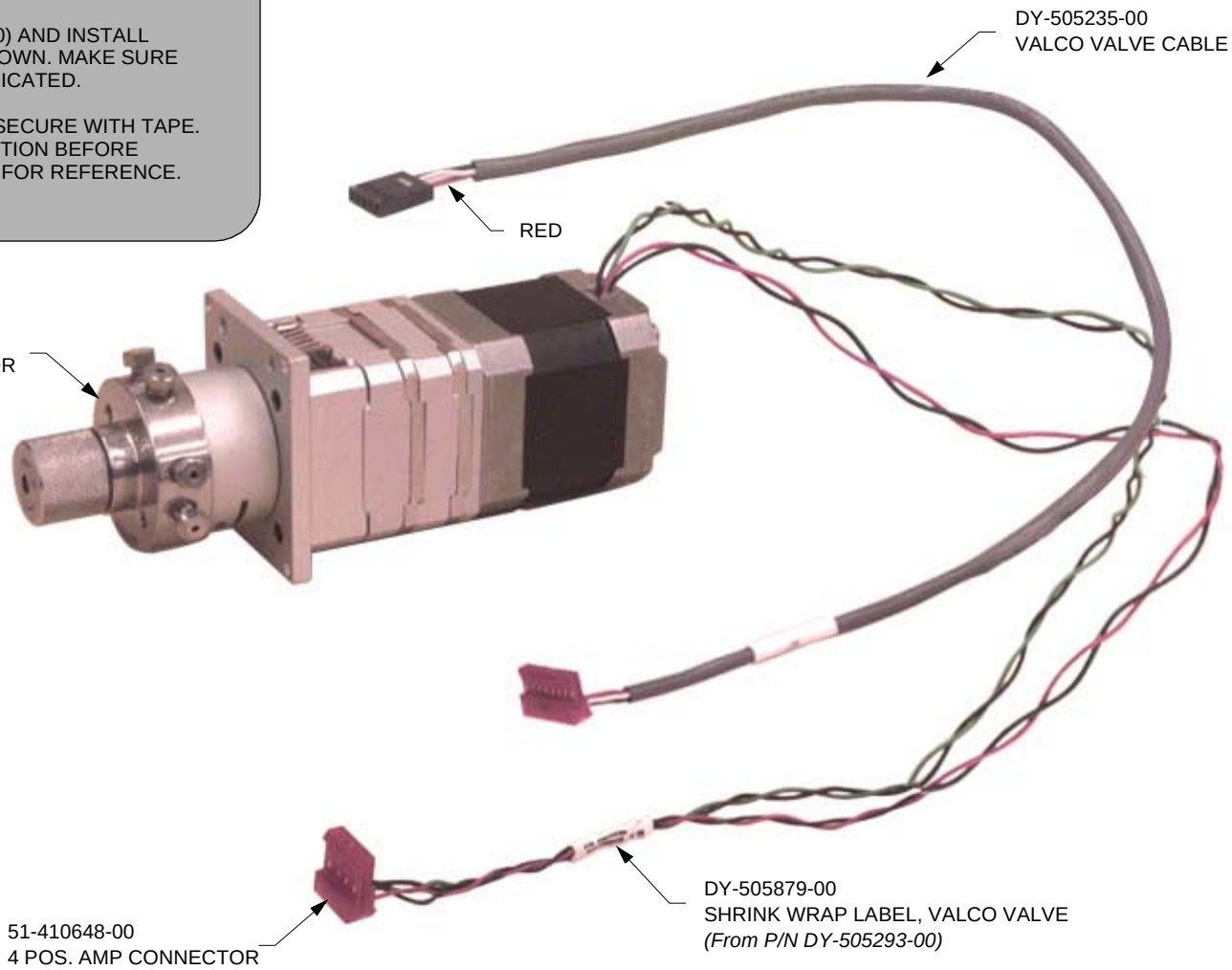
OPERATION INSTRUCTION:

1. CUT THE CONNECTOR SUPPLIED WITH THE VALCO VALVE (DY-505407-00). TWIST TWO WIRES *BLACK/GREEN* TOGETHER AND *RED/BLUE* TOGETHER AS SHOWN.

2. INSTALL THE SHRINK WRAP LABEL ON BOTH TWISTED PAIRS OF WIRES AS SHOWN. RE-INSTALL THE 4 POS. AMP CONNECTOR (51-410648-00) AS SHOWN. SEE CONNECTOR WIRES DIAGRAM TABLE FOR REFERENCE.

3. OBTAIN ONE VALCO VALVE CABLE (DY-505235-00) AND INSTALL IT ONTO THE VALCO VALVE & ACTUATOR AS SHOWN. MAKE SURE THE *RED* WIRE IS AT THE LEFT POSITION AS INDICATED.

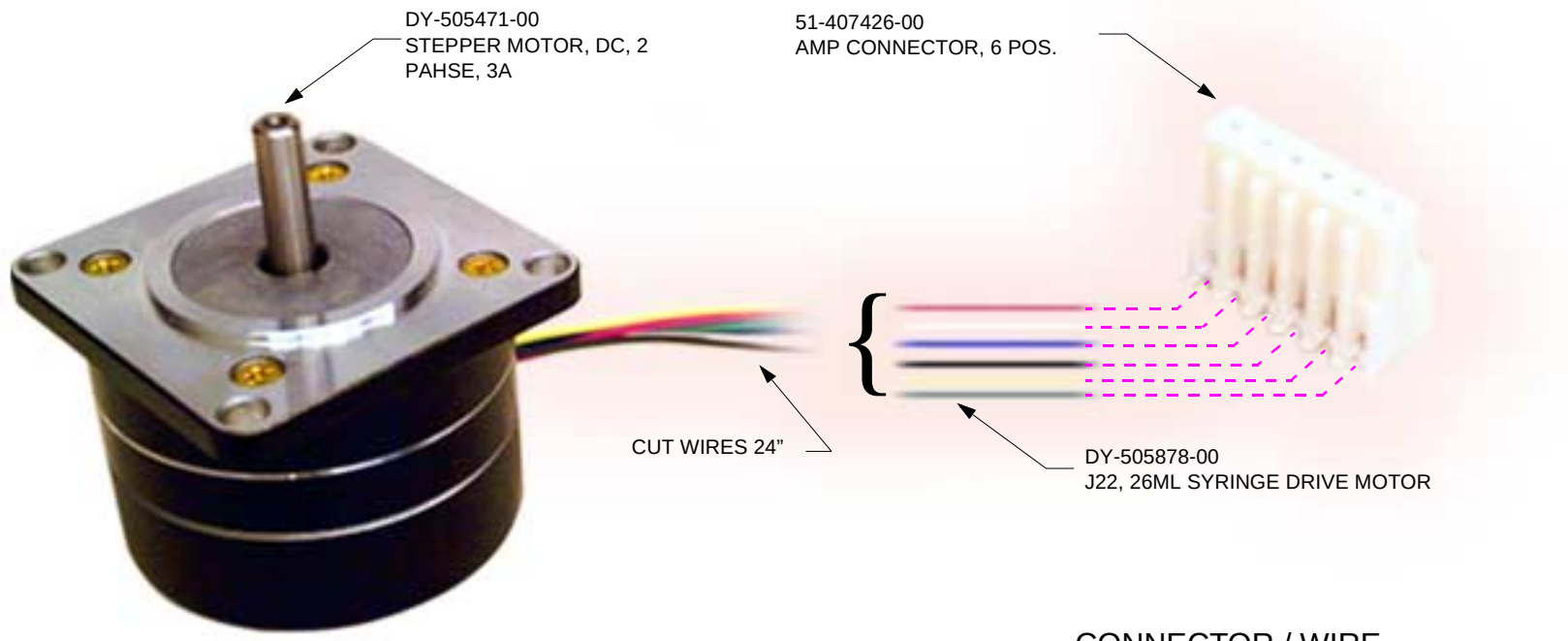
4. ONCE THE VALCO VALVE CABLE IS INSTALLED, SECURE WITH TAPE. MAKE SURE CONNECTOR IS IN A NATURAL POSITION BEFORE TAPING (NOT SHOWN). REFER TO SHEET 1 OF 2 FOR REFERENCE.



CONNECTOR WIRES DIAGRAM	
CONN. POS.	WIRE COLOR
1	RED
2	BLUE
3	BLACK
4	GREEN

Archon Station 1

26mL Syringe Drive Motor



OPERATION NOTES:

Note:

CE MARK REQUIRES

TWO TWISTED TRIPLES

A) TWIST GREEN, YELLOW & BLACK.

B) TWIST BLUE, WHITE & RED

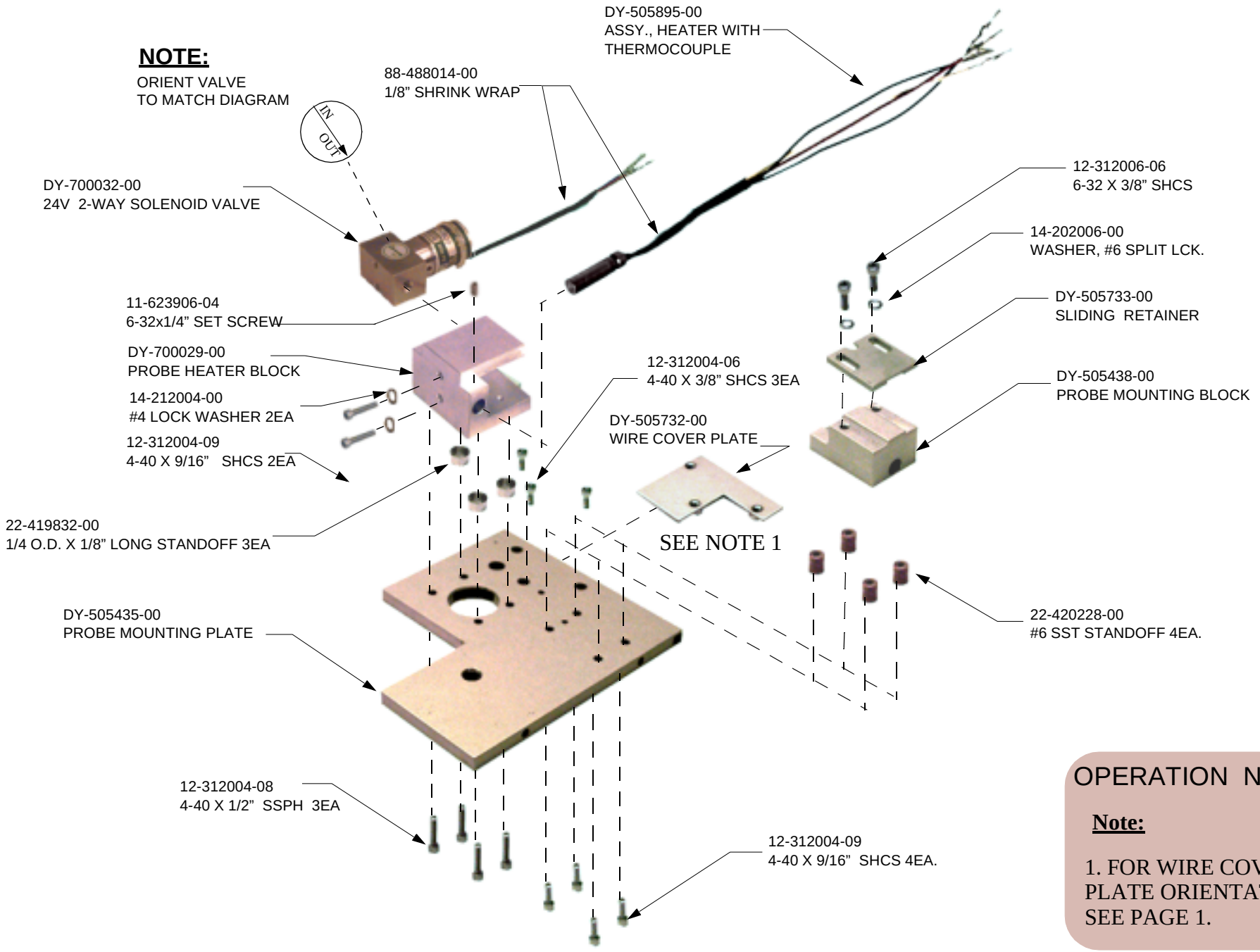
APPROX. 3 TWISTS PER INCH

CONNECTOR / WIRE POSITIONS

Position	Color
1	RED
2	WHITE
3	BLUE
4	BLACK
5	YELLOW
6	GREEN

Probe Mounting Plate

Subassembly



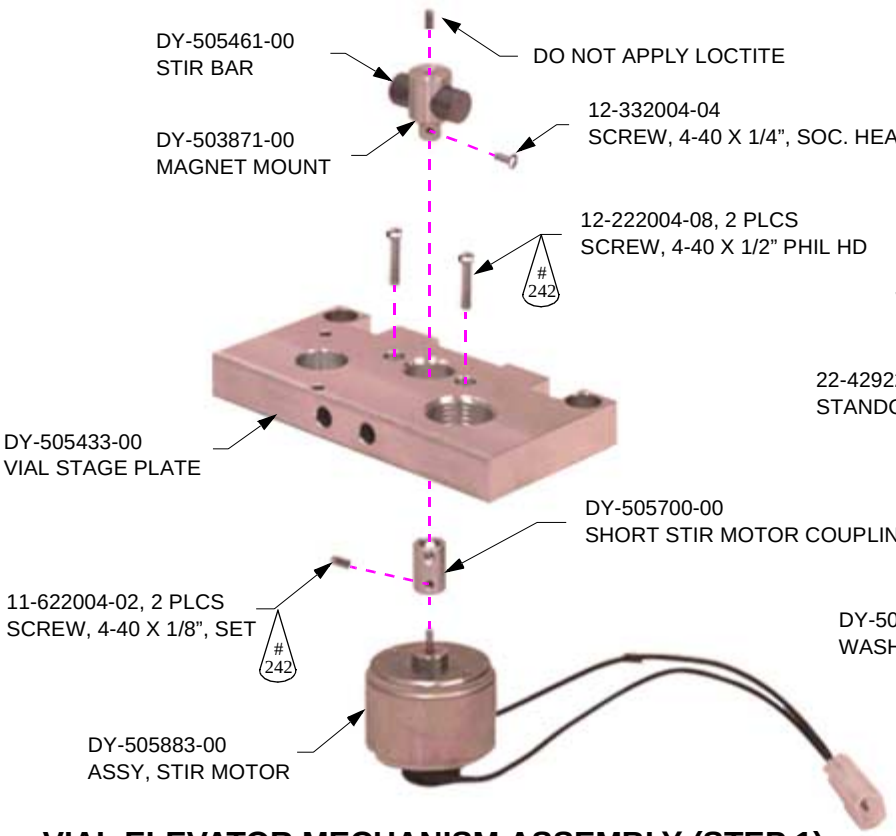
OPERATION NOTES:

Note:

1. FOR WIRE COVER PLATE ORIENTATION SEE PAGE 1.

ASSY, VIAL ELEVATOR MECHANISM (WATER ONLY VERSION)

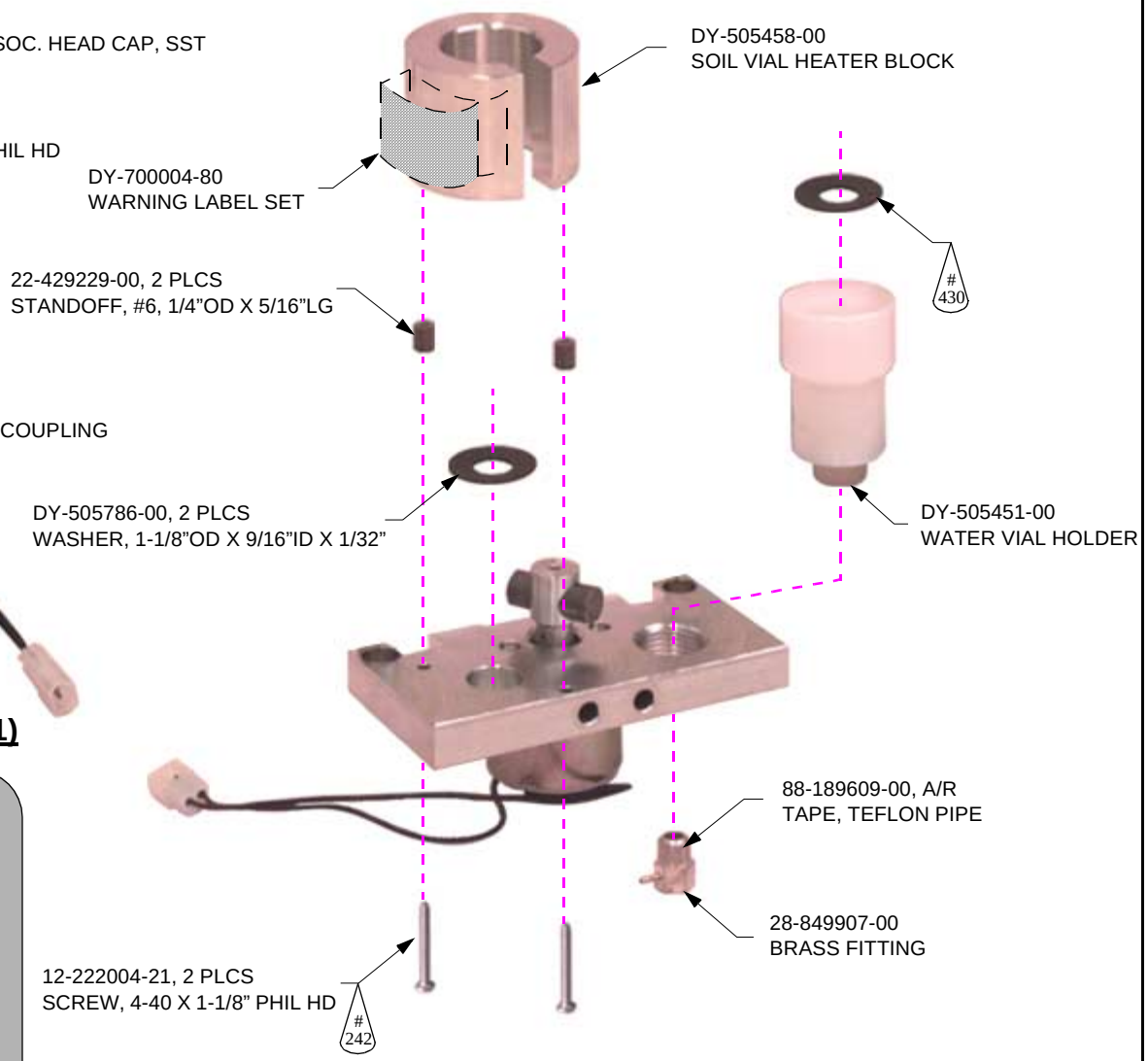
STATION #1 ARCHON, ASSEMBLY PROCEDURES



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

NOTES:

1. VERIFY THAT MAGNET IS EVENLY MOUNTED. USE MOUNTING TOOL #_____.
2. PROBE GUIDE PLATE (DIMPLED SIDES) SHOULD BE FACING DOWN TOWARD VIAL STAGE PLATE.
3. AFTER COMPLETING THE ASSEMBLY AS ILLUSTRATED, PULL THE PROBE GUIDE PLATE TO ITS FULL EXTENT AND MEASURE FROM THE BOTTOM OF THE GUIDE ROD BUSHING TO THE TOP OF THE PROBE GUIDE PLATE. IT SHOULD BE APPROXIMATELY 8" IN LENGTH.
4. ENLARGE THE HOLE IN THE WATER VIAL HOLDER BY INSERTING THE PIN TOOL THROUGH EXISTING CENTER HOLE. ONCE ONLY.



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1. VIAL ELEVATOR MECHANISM (STANDARD VERSION), ASSEMBLY PROCEDURES

1.1 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

1.1.1 Obtain Short Stir Motor Coupling (DY-505700-00), place it over the Stir Motor Assembly (DY-505883-00) shaft. Place spacer card between them and secure Short Stir Motor Coupling using one 4-40 x 1/8" Set Screw (11-622004-02) then remove the spacer card.

Note: Apply Loctite #242 on the screw threads.

1.1.2 Assemble the Stir Motor Assembly to the Vial Stage Plate (DY-505433-00), using two 4-40 x 1/2" Phil HD Screws (12-222004-08) as shown.

Note: Apply Loctite #242 on the screws threads.

1.1.3 Insert the Stir Bar (DY-505461-00) into the Magnet Mount (DY-503871-00), place magnet spacer tool over both ends of the Stir Bar and secure with one 4-40 x 1/8" Set Screw (11-622004-02) as shown. Place the Stir Bar Assembly onto the Short Stir Motor Coupling and secure with one 4-40 x 1/4" SOC HD CAP Screw (12-332004-04) as shown.

Note: See note #2 on sheet 2 of 5.

1.2 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1.2.1 Enlarge the hole in the Water Vial Holder by inserting the Pin Tool through existing hole *once only.* Obtain two large foam Washers (DY505786-00) and remove adhesive backing paper. Apply one to inside of Water Vial Holder (DY-505451-00) and another to Vial Stage Plate where shown.

Note: Make sure the Washers are properly seated and the holes are aligned.

1.2.2 Assemble the Soil Vial Heater Block (DY-505896-00) onto the Vial Stage Plate using two #4 Standoffs (22-420229-00) and two 4-40 x 1-1/8" Phil HD Screws (12-222004-21) as shown. Apply Loctite #242 at the end of the threads of the screws prior to installation.

1.2.3 Next, hand screw the Water Vial Holder into the large hole on the right side of the Vial Stage Plate until it completely bottoms out. Wrap Pipe Teflon Tape (88-189609-00) over the threads on Brass Fitting (28-849907-00) not shown. Install Brass Fitting into the Water Vial Holder from bottom of the Vial Stage Plate as shown.

1.2.4 Obtain the Warning Label Set (DY-505896-00) and attach to the Soil Vial Heater Block where shown.

1.3 VIAL ELEVATOR MACHANISM ASSEMBLY (STEP 3)

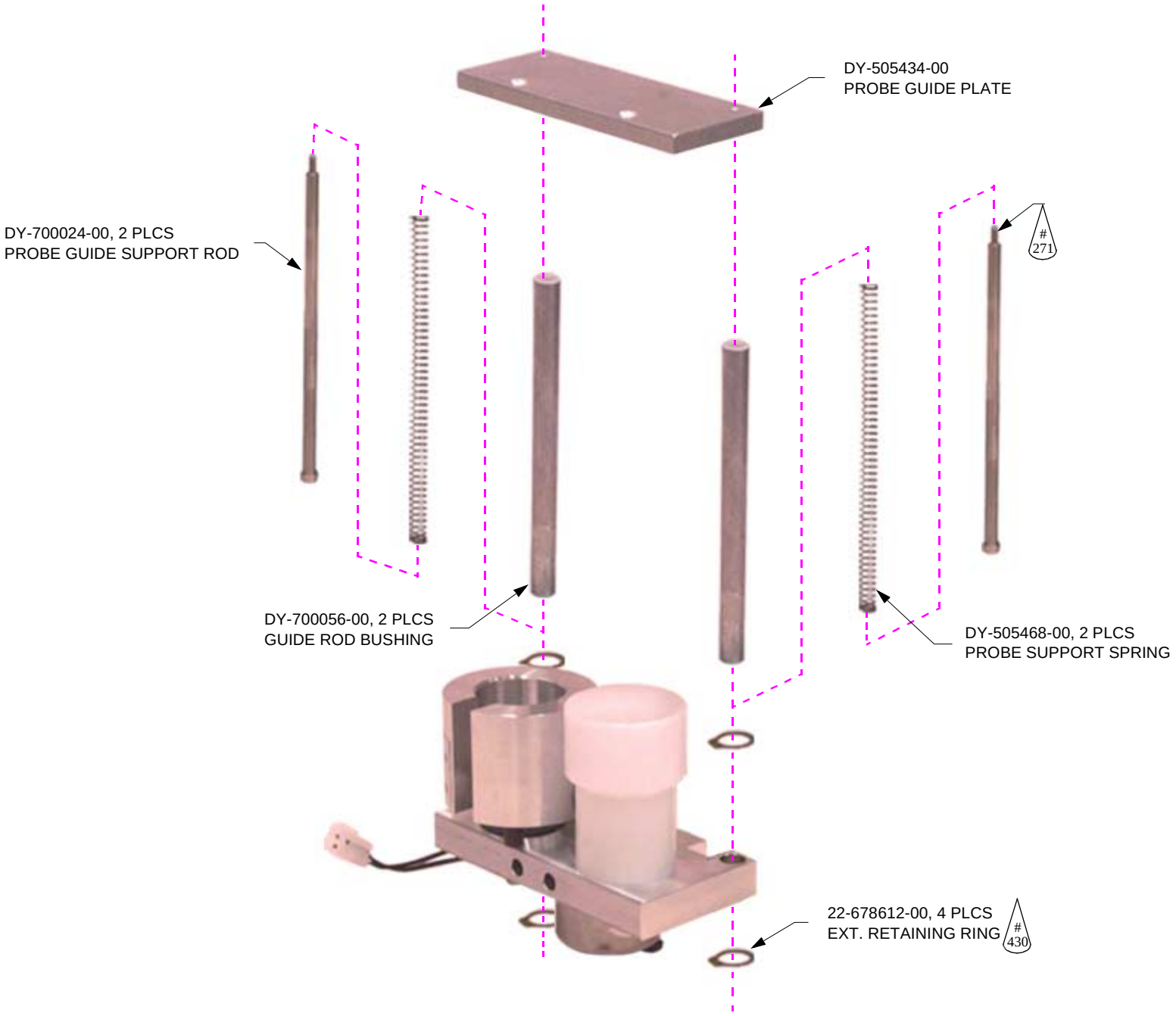
1.3.1 Apply Super White Grease (88-299405-00) on entire Rod body. Assemble the Probe Support Spring (DY-505468-00), Probe Guide Support Rod (DY-700024-00) and Guide Rod Bushing (DY-700056-00) as shown. Apply 1/2 drop of Loctite #271 on the threaded end and screw the entire assembly onto the Probe Guide Plate (DY-505434-00) ***Dimpled sides should be facing down toward Rods***. Repeat previous step for other side of the Probe Guide Support Assembly.

Note: Make sure the dimple side of the Probe Guide Plate faces the Vial Stage Plate as shown. Cut Spring to 5-5.2”, 51 turns and cut both ends to open. See note #1, #3, and #4 on sheet 2 of 5.

1.3.2 Secure the Probe Guide Support Assembly to the Vial Stage Plate, using four External Retaining Rings (22-678612-00) as shown. Apply Loctite #430 on External Retaining Rings four places.

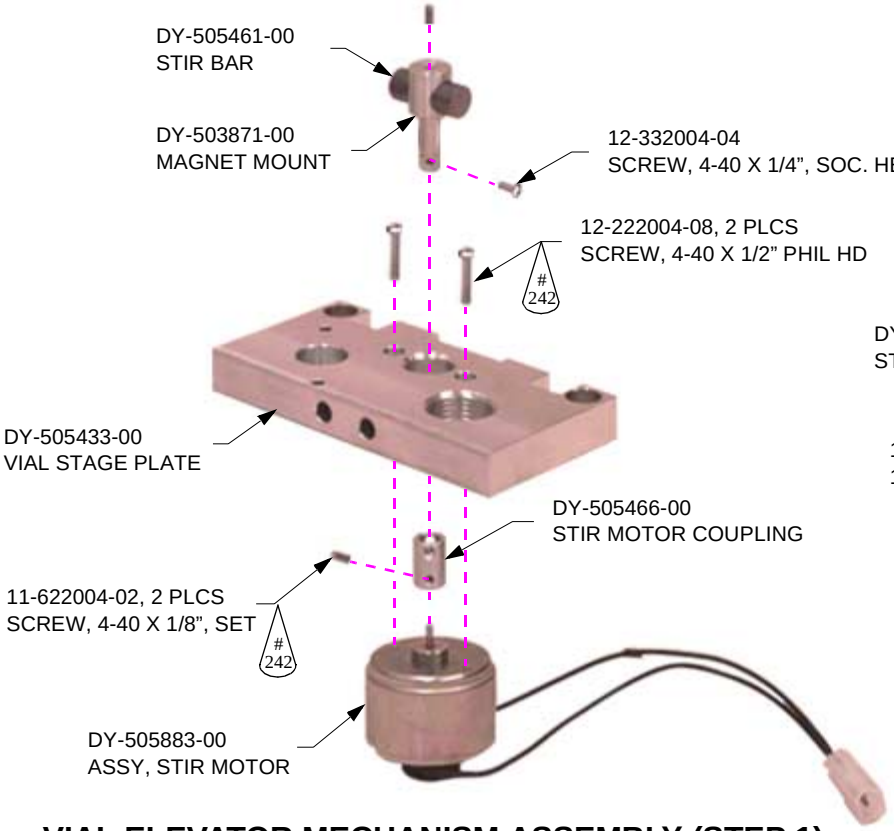
Note: Use the Retaining Ring plier tool to assist.

See Step 3 next page...


DY-505434-00
PROBE GUIDE PLATE
DY-700024-00, 2 PLCS
PROBE GUIDE SUPPORT ROD
271
DY-700056-00, 2 PLCS
GUIDE ROD BUSHING
DY-505468-00, 2 PLCS
PROBE SUPPORT SPRING
22-678612-00, 4 PLCS
EXT. RETAINING RING
430

ASSY, VIAL ELEVATOR MECHANISM, (SOIL VERSION ONLY)

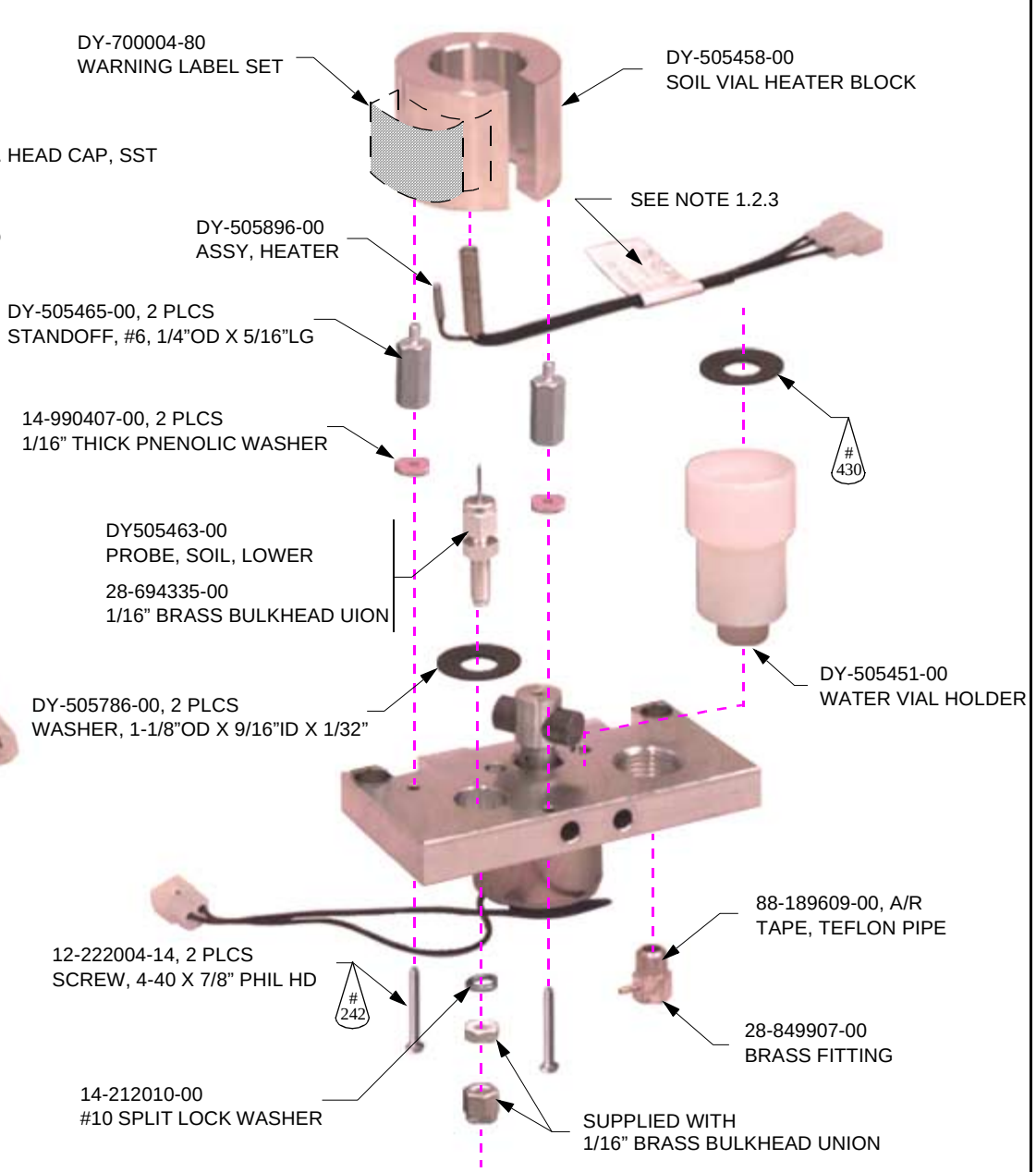
STATION #1 ARCHON, ASSEMBLY PROCEDURES



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

NOTES:

1. VERIFY THAT MAGNET IS EVENLY MOUNTED. USE MOUNTING TOOL #_____.
2. PROBE GUIDE PLATE (DIMPLED SIDES) SHOULD BE FACING DOWN TOWARD VIAL STAGE PLATE.
3. AFTER COMPLETING THE ASSEMBLY AS ILLUSTRATED, PULL THE PROBE GUIDE PLATE TO ITS FULL EXTENT AND MEASURE FROM THE BOTTOM OF THE GUIDE ROD BUSHING TO THE TOP OF THE PROBE GUIDE PLATE. IT SHOULD BE APPROXIMATELY 8" IN LENGTH.
4. ENLARGE THE HOLE IN THE WATER VIAL HOLDER BY INSERTING THE PIN TOOL THROUGH EXISTING HOLE.



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1. VIAL ELEVATOR MECHANISM (STANDARD VERSION), ASSEMBLY PROCEDURES

1.1 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

1.1.1 Obtain Short Stir Motor Coupling (DY-505700-00), place it over the Stir Motor Assembly (DY-505883-00) shaft. Place spacer card between them and secure Short Stir Motor Coupling using one 4-40 x 1/8" Set Screw (11-622004-02) then remove the spacer card.

Note: Apply Loctite #242 on the screw threads.

1.1.2 Assemble the Stir Motor Assembly to the Vial Stage Plate (DY-505433-00), using two 4-40 x 1/2" Phil HD Screws (12-222004-08) as shown.

Note: Apply Loctite #242 on the screws threads.

1.1.3 Insert the Stir Bar (DY-505461-00) into the Magnet Mount (DY-503871-00), place magnet spacer tool over both ends of the Stir Bar and secure with one 4-40 x 1/8" Set Screw (11-622004-02) as shown. Place the Stir Bar Assembly onto the Short Stir Motor Coupling and secure with one 4-40 x 1/4" SOC HD CAP Screw (12-332004-04) as shown.

Note: See note #2 on sheet 2 of 5.

1.2 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1.2.1 Obtain two large foam Washers (DY505786-00) and remove adhesive backing paper. Apply one to inside of Water Vial Holder (DY-505451-00) and another to Vial Stage Plate where shown.

Note: Make sure the Washers proper seated and the holes is align.

1.2.2 Insert Heater Assembly (DY-505896-00) into the Soil Vial Heater Block (DY-505896-00) and bend to 90 degree angle. Secure the Soil Vial Heater Block Assembly to the Vial Stage Plate using two and Phil HD Screws (12-222004-21) as shown. Cut and remove the label on the Heater Assembly where indicated on sheet 2 of 5.

Note: Make sure the Heater Assembly completely bottoms out inside the Soil Vial Heater Block. Apply Loctite #242 at the end of the threads of the screws prior to installation.

1.2.3 Next, hand screw the Water Vial Holder into the large hole on the right side of the Vial Stage Plate until it completely bottom out. Wrap Pipe Teflon Tape (88-189609-00) over the thread on Brass Fitting (28-849907-00) not shown. Install Brass Fitting into the Water Vial Holder from bottom of the Vial Stage Plate as shown.

1.2.4 Obtain the Warning Label Set (DY-505896-00) and attach to the Soil Vial Heater Block where shown.

1.3 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 3)

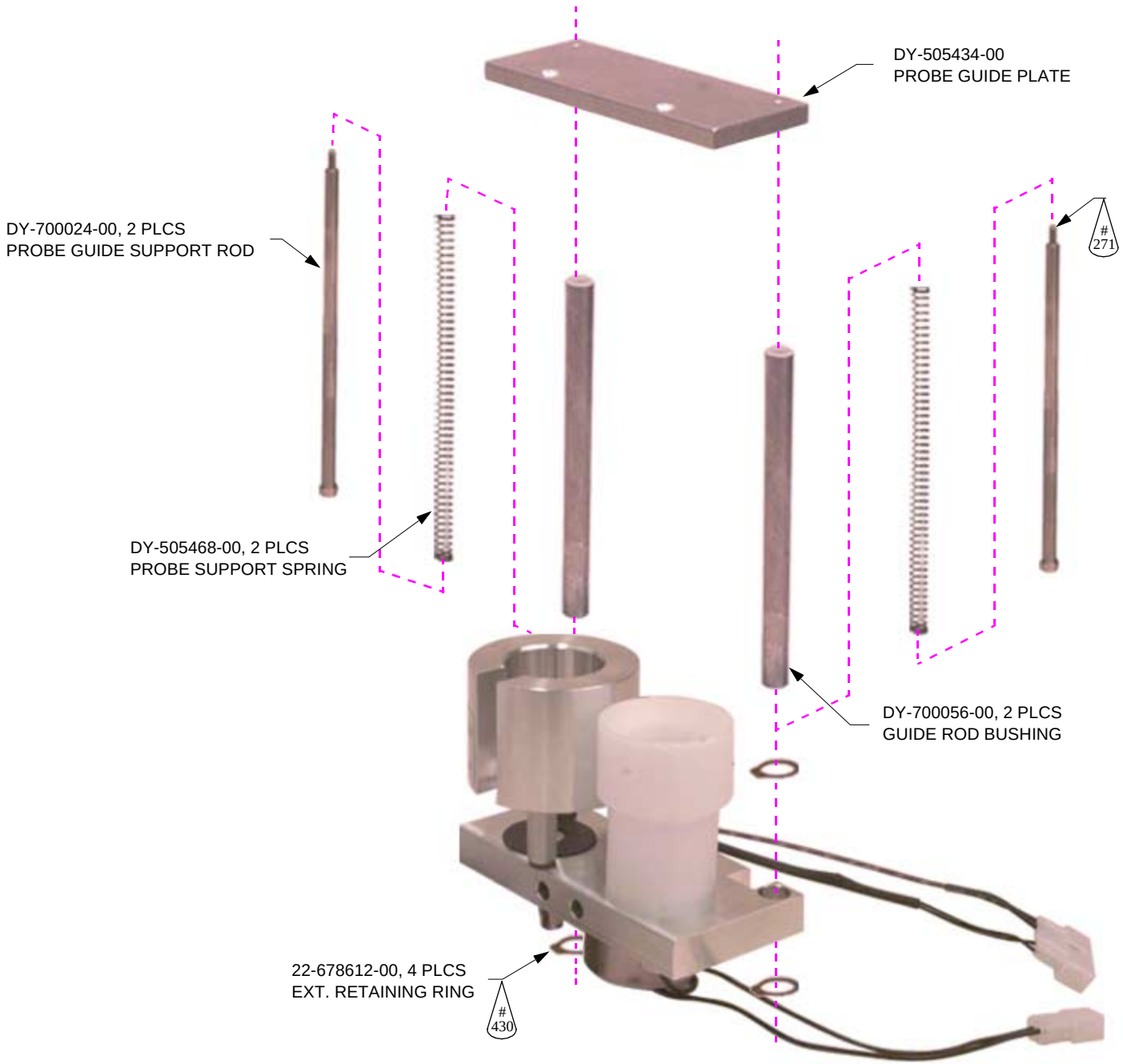
1.3.1 Apply Super White Grease (88-299405-00) on entire Rod body. Assemble the Probe Support Spring (DY-505468-00), Probe Guide Support Rod (DY-700024-00) and Guide Rod Bushing (DY-700056-00) as shown. Apply 1/2 drop of Loctite #271 on the threaded end and screw the entire assembly onto the Probe Guide Plate (DY-505434-00) ***Dimpled sides should be facing down toward Rods***. Repeat previous step for other side of the Probe Guide Support Assembly.

Note: Make sure the dimple side of the Probe Guide Plate faces the Vial Stage Plate as shown. Cut Spring to 5-5.2”, 51 turns and cut both ends to open. See note #1, #3, and #4 on sheet 2 of 5.

1.3.2 Secure the Probe Guide Support Assembly to the Vial Stage Plate, using four External Retaining Rings (22-678612-00) as shown. Apply Loctite #430 on External Retaining Rings four places.

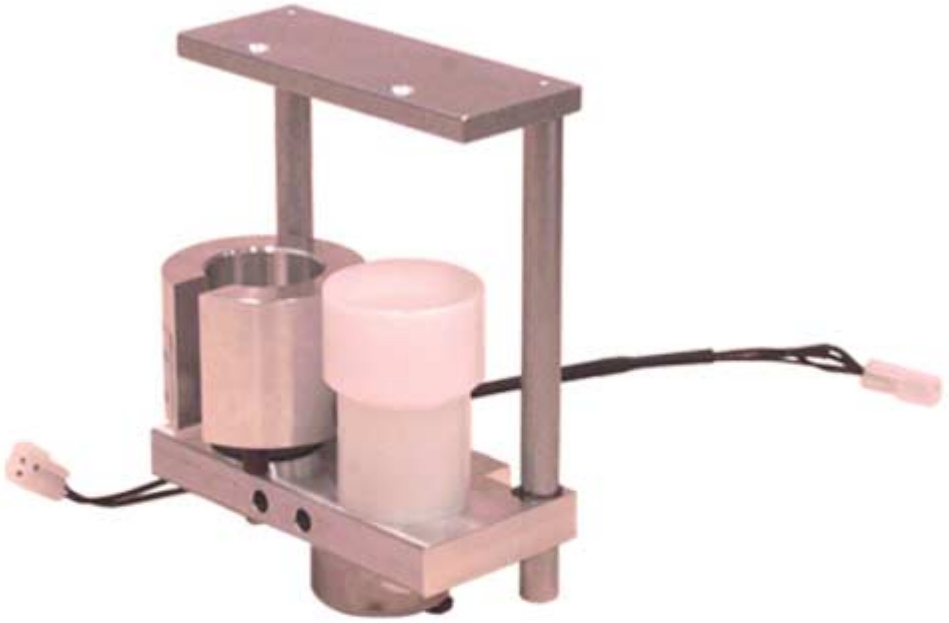
Note: Use the Retaining Ring plier tool to assist.

See Step 3 next page...

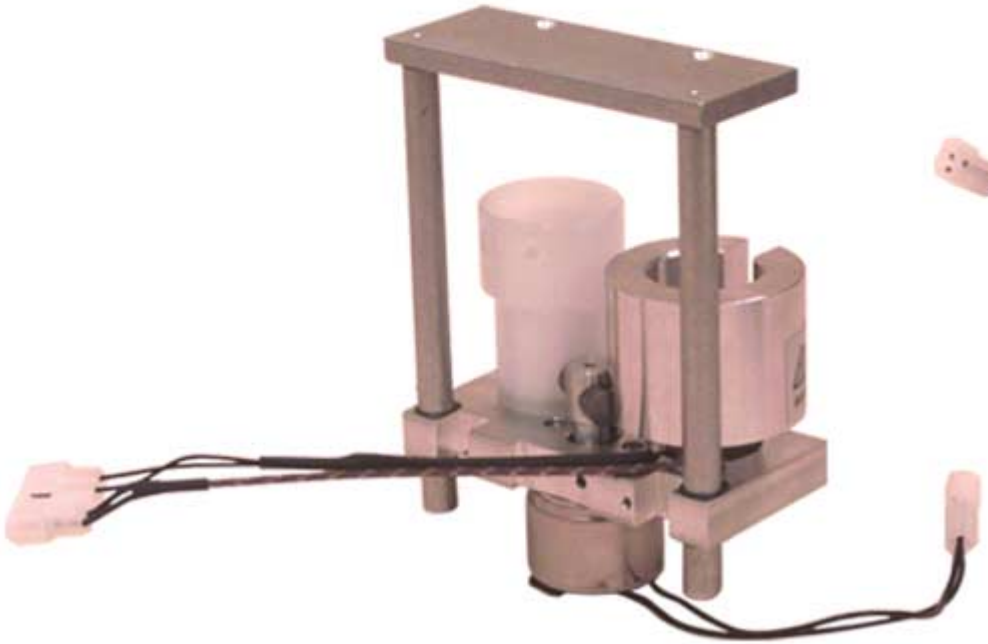

DY-505434-00
PROBE GUIDE PLATE
DY-700024-00, 2 PLCS
PROBE GUIDE SUPPORT ROD
271
DY-505468-00, 2 PLCS
PROBE SUPPORT SPRING
DY-700056-00, 2 PLCS
GUIDE ROD BUSHING
22-678612-00, 4 PLCS
EXT. RETAINING RING
430

ASSY, VIAL ELEVATOR MECHANISM

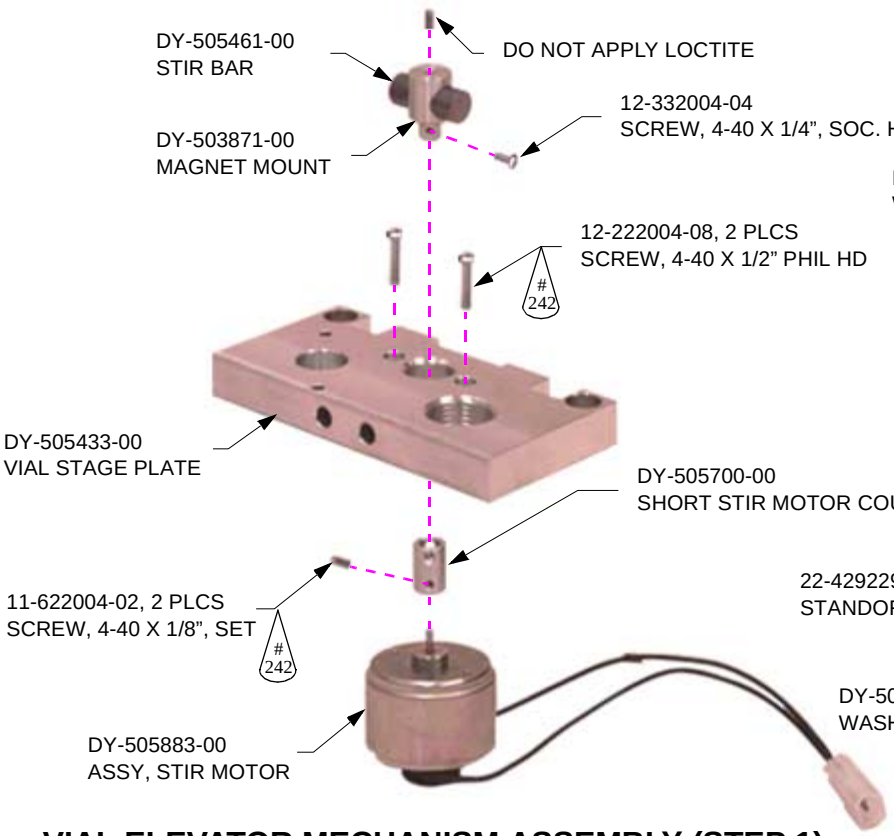
STATION #1 ARCHON, ASSEMBLY PROCEDURES



FRONT VIEW



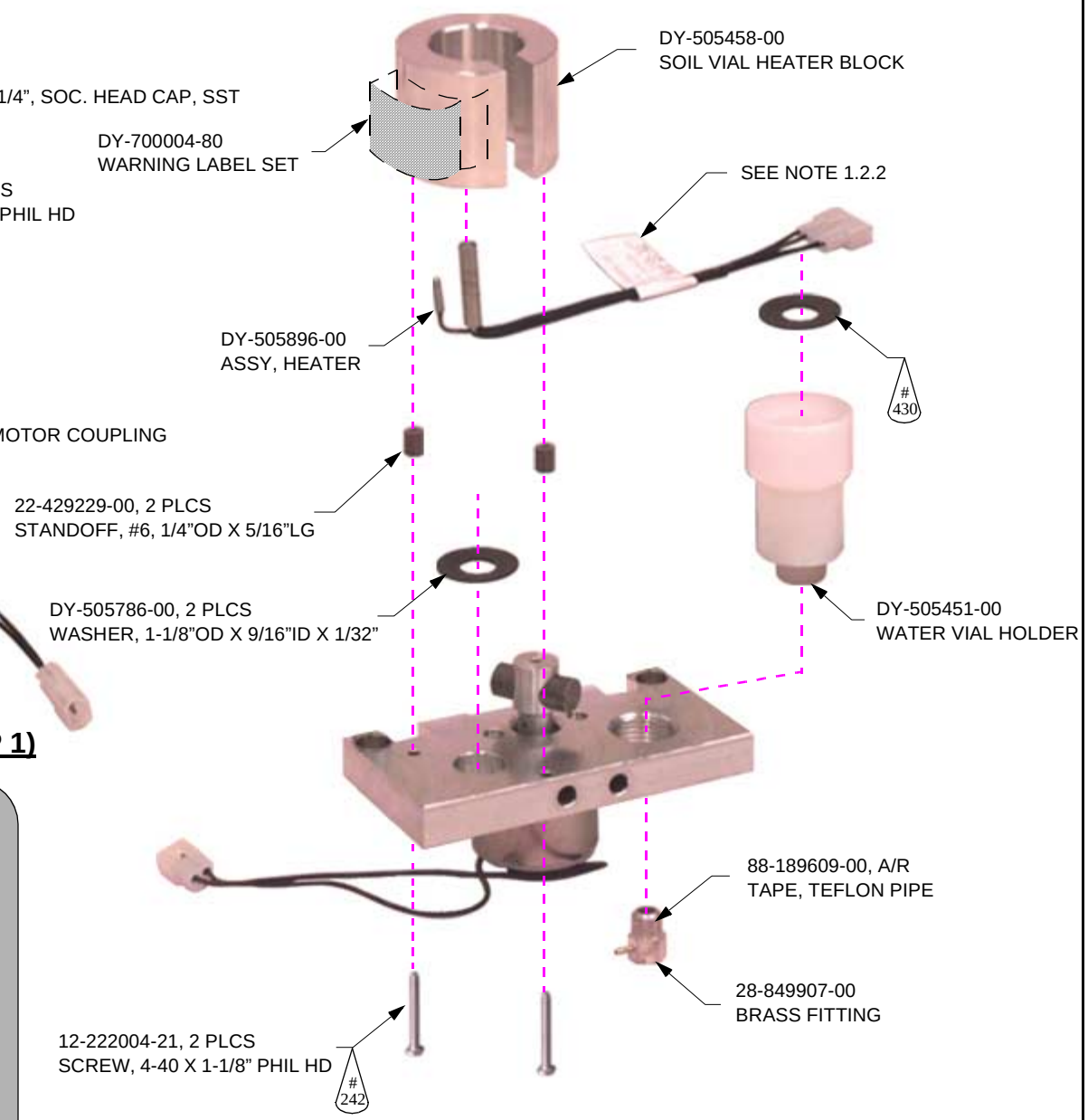
REAR VIEW



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

NOTES:

1. VERIFY THAT MAGNET IS EVENLY MOUNTED. USE MOUNTING TOOL #_____.
2. PROBE GUIDE PLATE (DIMPLED SIDES) SHOULD BE FACING DOWN TOWARD VIAL STAGE PLATE.
3. AFTER COMPLETING THE ASSEMBLY AS ILLUSTRATED, PULL THE PROBE GUIDE PLATE TO ITS FULL EXTENT AND MEASURE FROM THE BOTTOM OF THE GUIDE ROD BUSHING TO THE TOP OF THE PROBE GUIDE PLATE. IT SHOULD BE APPROXIMATELY 8" IN LENGTH.
4. ENLARGE THE HOLE IN THE WATER VIAL HOLDER BY INSERTING THE PIN TOOL THROUGH EXISTING HOLE..



VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1. VIAL ELEVATOR MECHANISM (STANDARD VERSION), ASSEMBLY PROCEDURES

1.1 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 1)

1.1.1 Obtain Short Stir Motor Coupling (DY-505700-00), place it over the Stir Motor Assembly (DY-505883-00) shaft. Place spacer card between them and secure Short Stir Motor Coupling using one 4-40 x 1/8" Set Screw (11-622004-02) then remove the spacer card.

Note: Apply Loctite #242 on the screw threads.

1.1.2 Assemble the Stir Motor Assembly to the Vial Stage Plate (DY-505433-00), using two 4-40 x 1/2" Phil HD Screws (12-222004-08) as shown.

Note: Apply Loctite #242 on the screws threads.

1.1.3 Insert the Stir Bar (DY-505461-00) into the Magnet Mount (DY-503871-00), place magnet spacer tool over both ends of the Stir Bar and secure with one 4-40 x 1/8" Set Screw (11-622004-02) as shown. Place the Stir Bar Assembly onto the Short Stir Motor Coupling and secure with one 4-40 x 1/4" SOC HD CAP Screw (12-332004-04) as shown.

Note: See note #2 on sheet 2 of 5.

1.2 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 2)

1.2.1 Obtain two large foam Washers (DY505786-00) and remove adhesive backing paper. Apply one to inside of Water Vial Holder (DY-505451-00) and another to Vial Stage Plate where shown.

Note: Make sure the Washers are properly seated and the holes are aligned.

1.2.2 Insert Heater Assembly (DY-505896-00) into the Soil Vial Heater Block (DY-505896-00) and bend to 90 degree angle. Secure the Soil Vial Heater Block Assembly to the Vial Stage Plate using two #4 Standoffs (22-420229-00) and two 4-40 x 1-1/8" Phil HD Screws (12-222004-21) as shown. Cut and remove the label on the Heater Assembly where indicated on sheet 2 of 5.

Note: Make sure the Heater Assembly completely bottom out inside the Soil Vial Heater Block. Apply Loctite #242 at the end of the threads screws threads prior to installation.

1.2.3 Next, hand screw the Water Vial Holder into the large hole on the right side of the Vial Stage Plate until it completely bottom out. Wrap Pipe Teflon Tape (88-189609-00) over the thread on Brass Fitting (28-849907-00) not shown. Install Brass Fitting into the Water Vial Holder from bottom of the Vial Stage Plate as shown.

1.2.4 Obtain the Warning Label Set (DY-505896-00) and attach to the Soil Vial Heater Block where shown.

1.3 VIAL ELEVATOR MECHANISM ASSEMBLY (STEP 3)

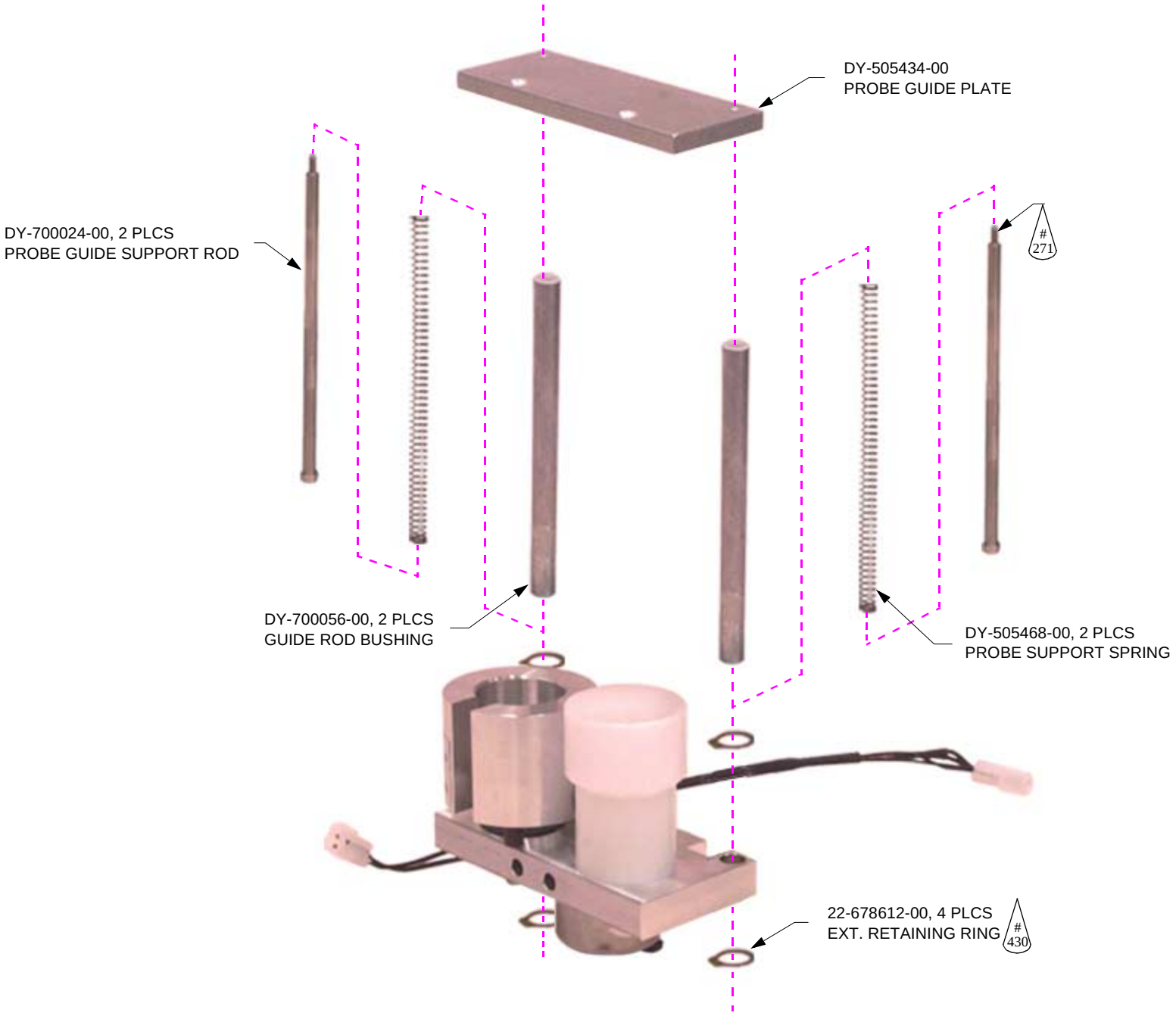
1.3.1 Apply Super White Grease (88-299405-00) on entire Rod body. Assemble the Probe Support Spring (DY-505468-00), Probe Guide Support Rod (DY-700024-00) and Guide Rod Bushing (DY-700056-00) as shown. Apply 1/2 drop of Loctite #271 on the threaded end and screw the entire assembly onto the Probe Guide Plate (DY-505434-00) ***dimpled sides should be facing down toward Rods***. Repeat previous step for other side of the Probe Guide Support Assembly.

Note: Make sure the dimple side of the Probe Guide Plate faces the Vial Stage Plate as shown. Cut Spring to 5-5.2”, 51 turns and cut both ends to open. See note #1, #3, and #4 on sheet 2 of 5.

1.3.2 Secure the Probe Guide Support Assembly to the Vial Stage Plate, using four External Retaining Rings (22-678612-00) as shown. Apply Loctite #430 on External Retaining Rings four places.

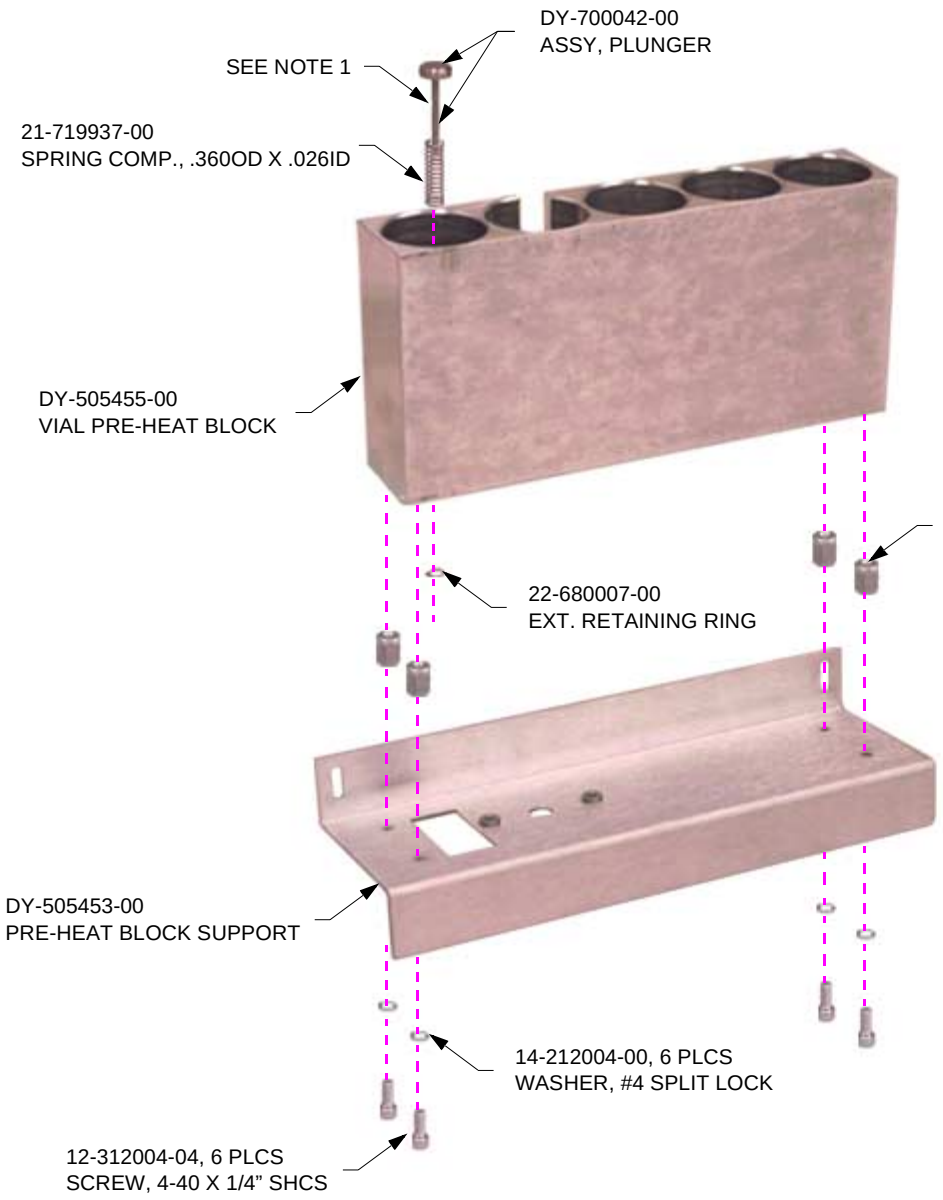
Note: Use the Retaining Ring plier tool to assist.

See Step 3 next page...


DY-505434-00
PROBE GUIDE PLATE
DY-700024-00, 2 PLCS
PROBE GUIDE SUPPORT ROD
271
DY-700056-00, 2 PLCS
GUIDE ROD BUSHING
DY-505468-00, 2 PLCS
PROBE SUPPORT SPRING
22-678612-00, 4 PLCS
EXT. RETAINING RING
430

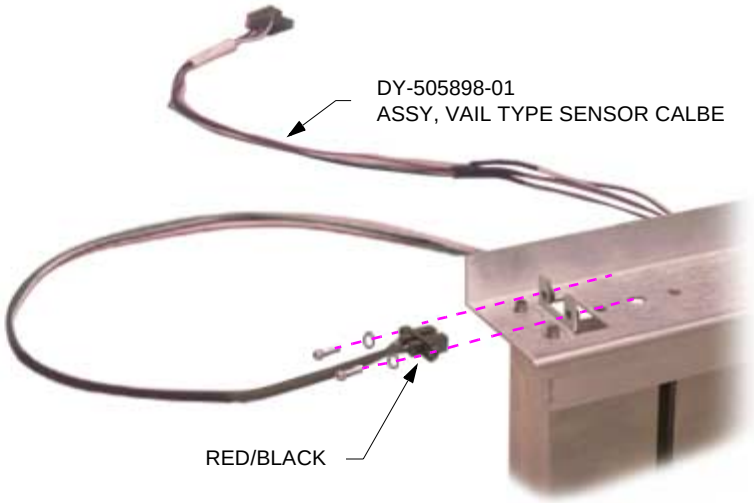
ASSY, VIAL PREHEAT BLOCK

STATION #1 ARCHON, ASSEMBLY PROCEDURES



NOTES:

1. COAT STEM WITH WHITE GREASE.
2. CHECK PLUNGER ASSEMBLY USING 2 VIALS AND THE T-9109 GREEN LED BOX.
3. VERIFY ON/OFF.
4. WHEN INSTALL FOUR STANDOFFS HAND TIGHT ONLY.

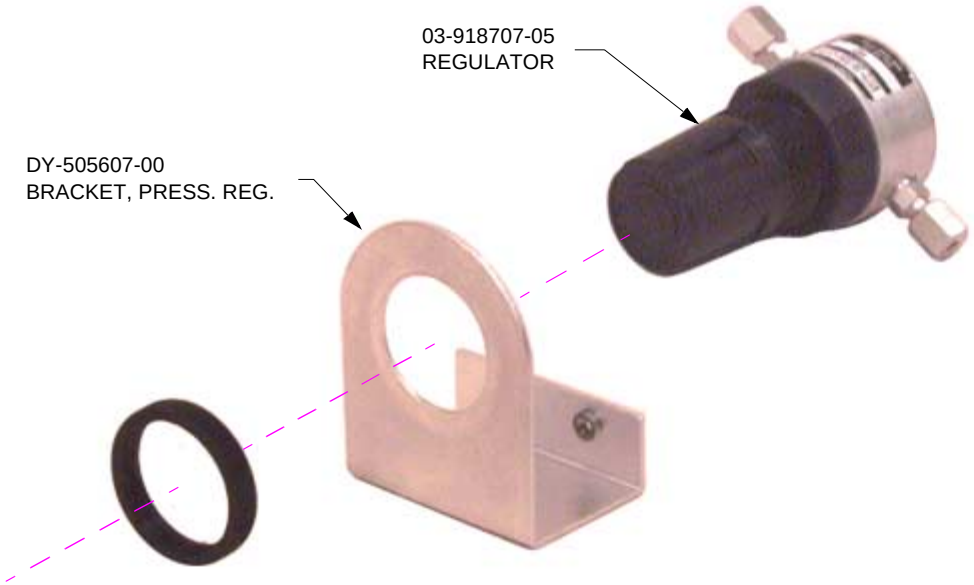


SENSOR INSTALLATION

VIEW FROM BOTTOM

ASSY, PRESSURE REGULATOR

ARCHON STATION #1, ASSEMBLY PROCEDURES



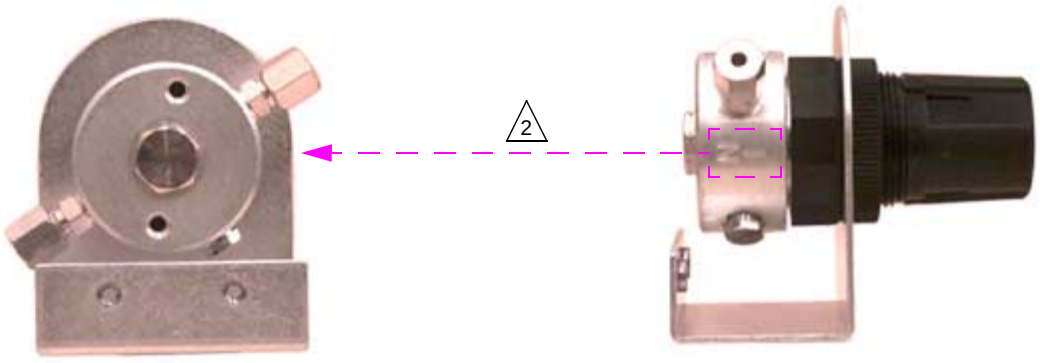
EXPLODED VIEW

NOTES:

1 ROTATE REGULATOR APPROXIMATELY 60 DEGREE. USE REAR VIEW AS REFERENCE.

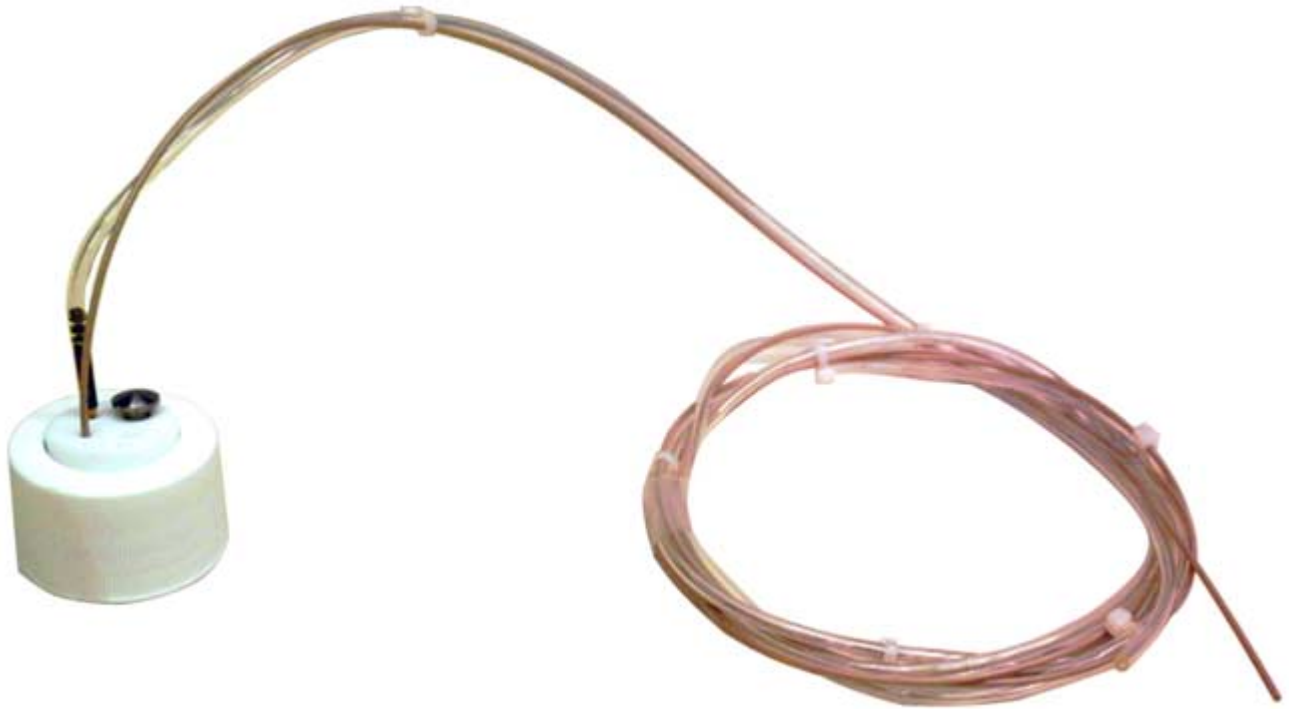
△2 MAKE SURE VALVE FITTING LABEL (N) ON RIGHT SIDE AS SHOWN.

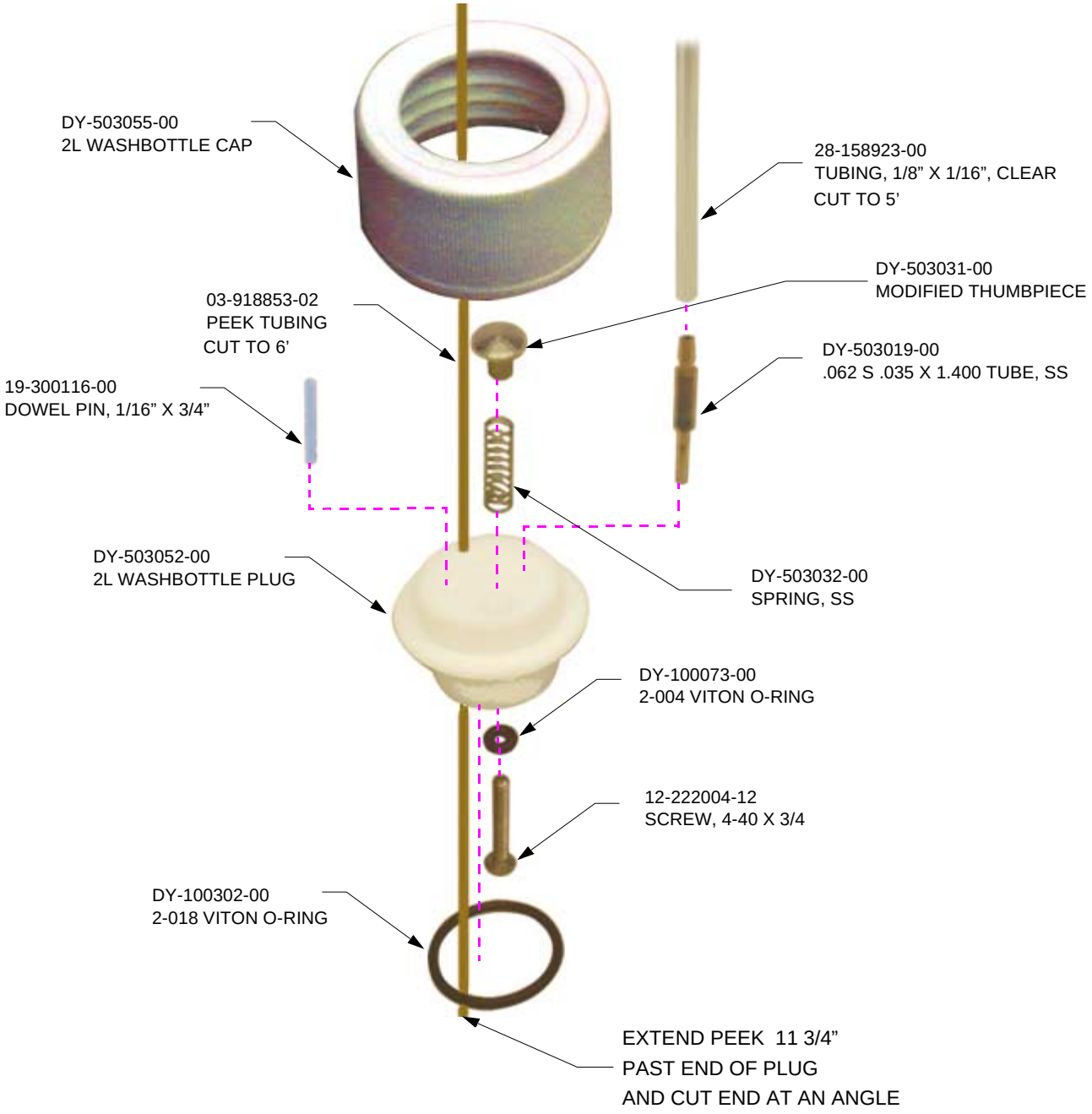
3 ASSEMBLE IN ORDER AS SHOWN. CHECK TO MAKE SURE NOT CROSS THREAD. USE EXPLODED VIEW AS REFERENCE.



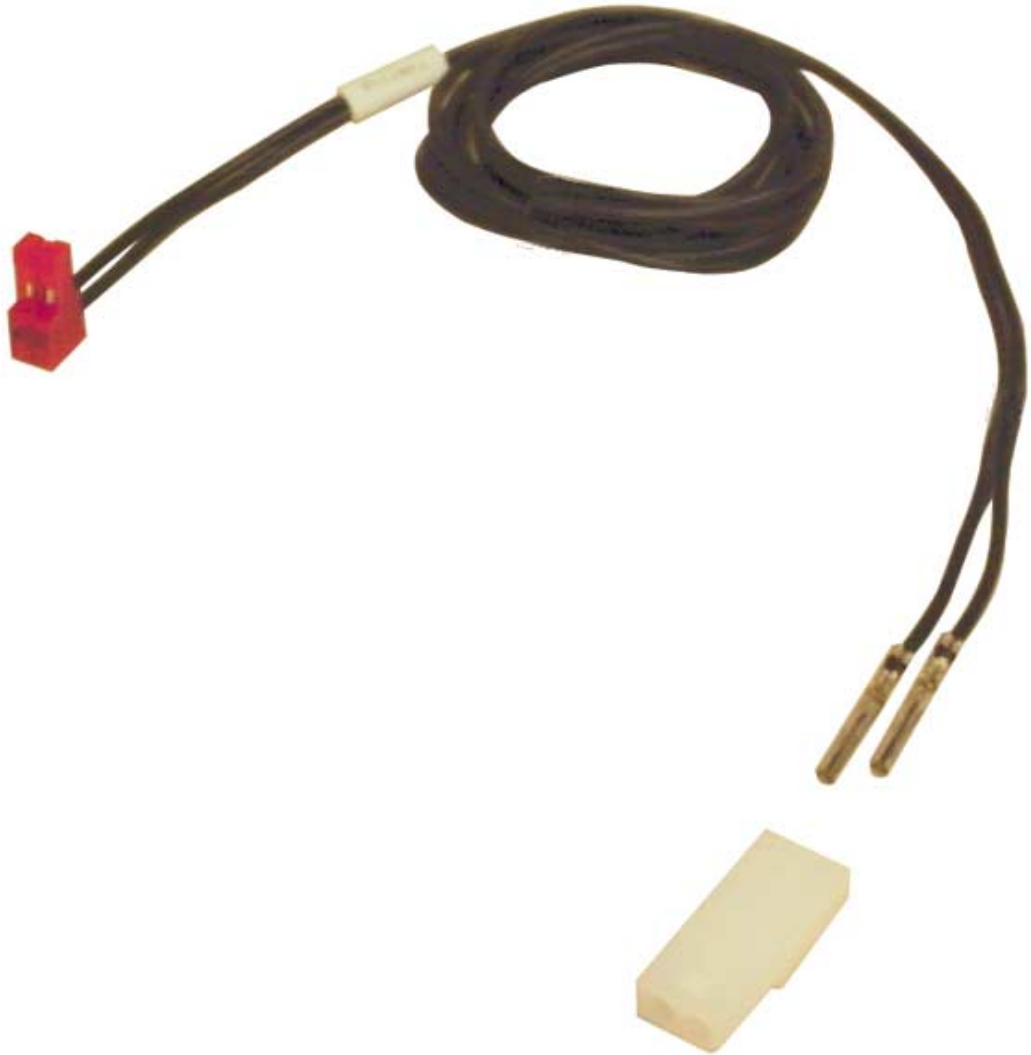
REAR VIEW **SIDE VIEW**

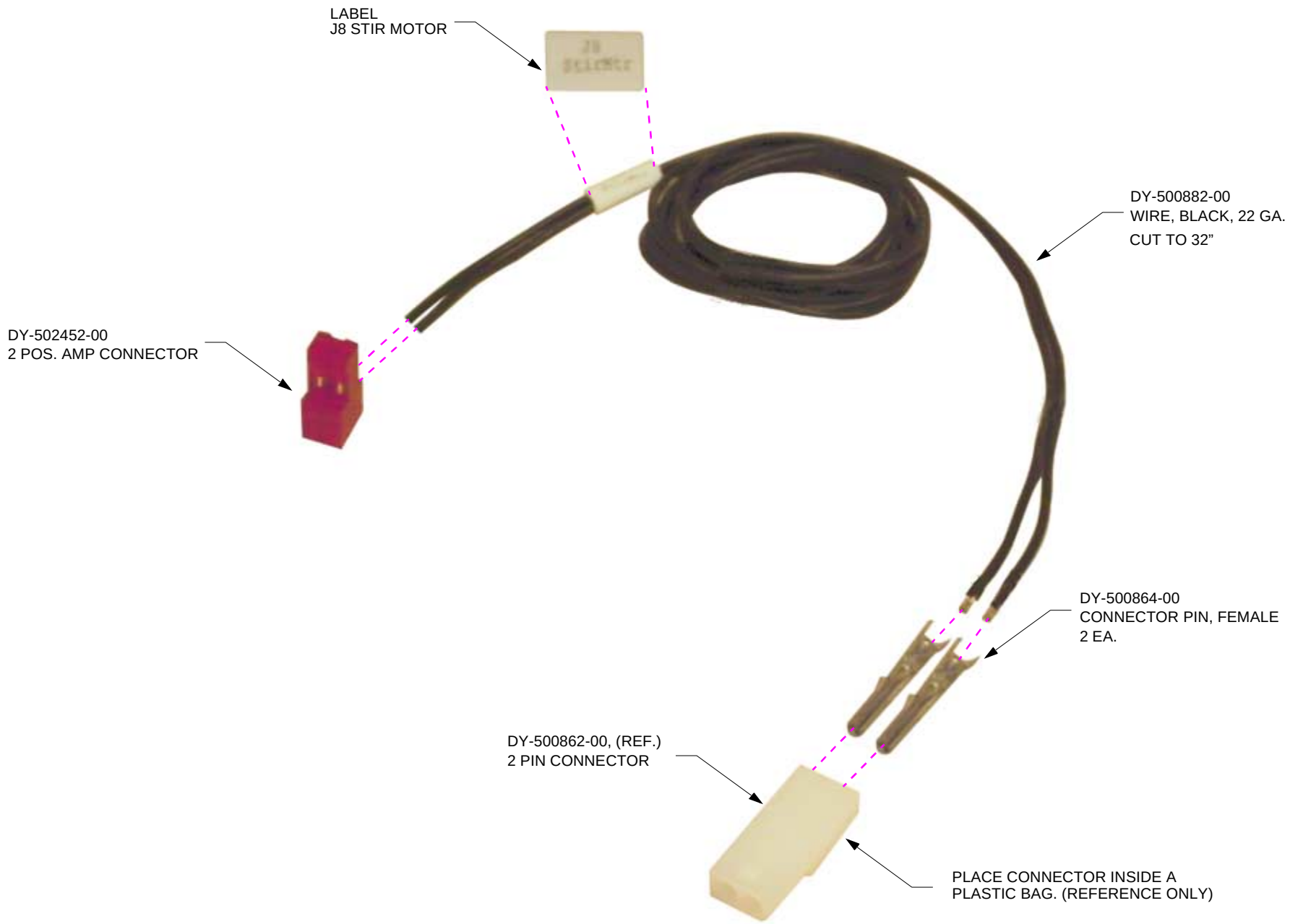
2L Washbottle Cap Assembly




DY-503055-00
2L WASHBOTTLE CAP
28-158923-00
TUBING, 1/8" X 1/16", CLEAR
CUT TO 5'
DY-503031-00
MODIFIED THUMBPIECE
03-918853-02
PEEK TUBING
CUT TO 6'
DY-503019-00
.062 S .035 X 1.400 TUBE, SS
19-300116-00
DOWEL PIN, 1/16" X 3/4"
DY-503052-00
2L WASHBOTTLE PLUG
DY-503032-00
SPRING, SS
DY-100073-00
2-004 VITON O-RING
12-222004-12
SCREW, 4-40 X 3/4
DY-100302-00
2-018 VITON O-RING
EXTEND PEEK 11 3/4"
PAST END OF PLUG
AND CUT END AT AN ANGLE

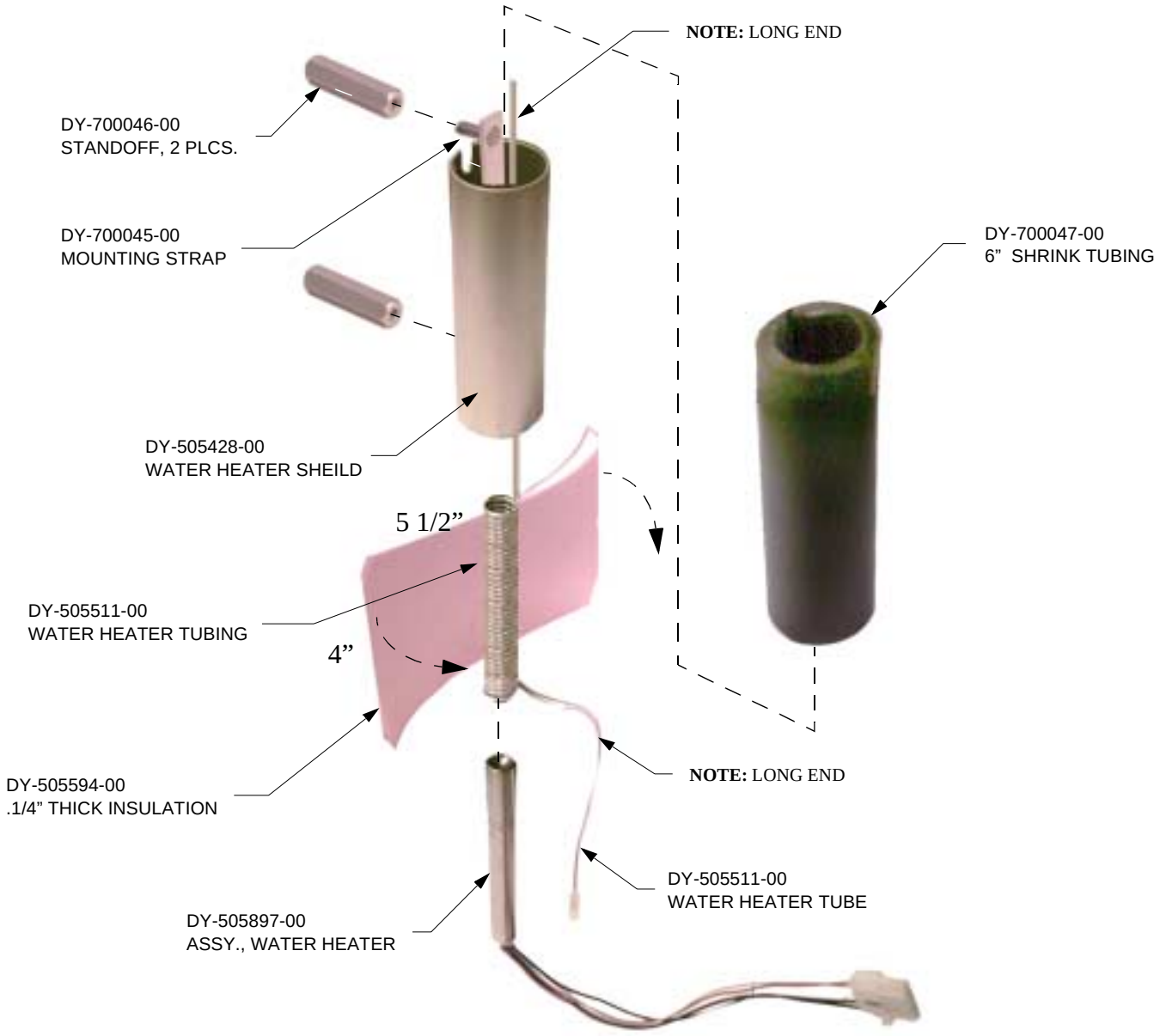
Stir Motor Cable Assembly



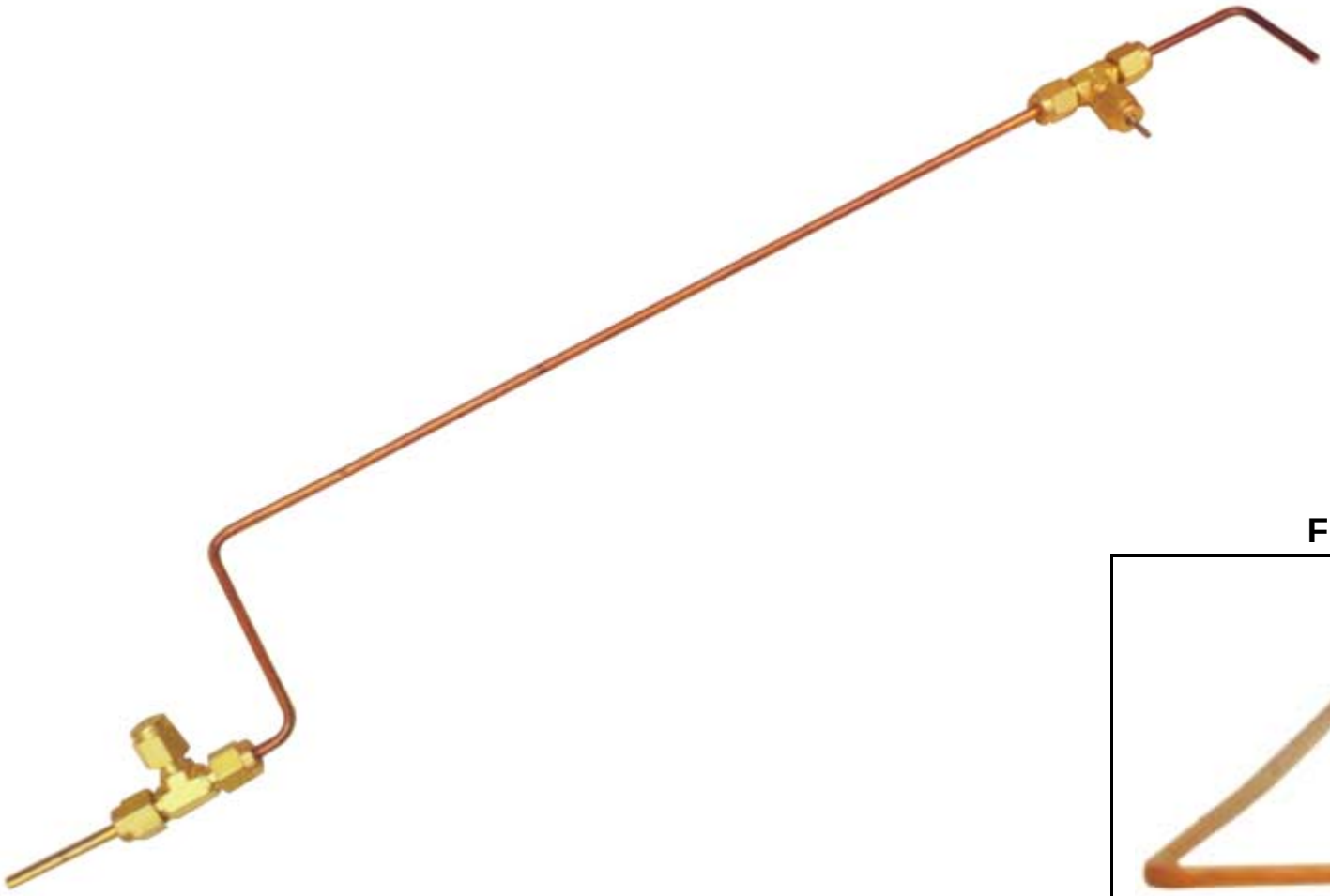

LABEL
J8 STIR MOTOR
DY-500882-00
WIRE, BLACK, 22 GA.
CUT TO 32”
DY-502452-00
2 POS. AMP CONNECTOR
DY-500864-00
CONNECTOR PIN, FEMALE
2 EA.
DY-500862-00, (REF.)
2 PIN CONNECTOR
PLACE CONNECTOR INSIDE A
PLASTIC BAG. (REFERENCE ONLY)

Water Heater

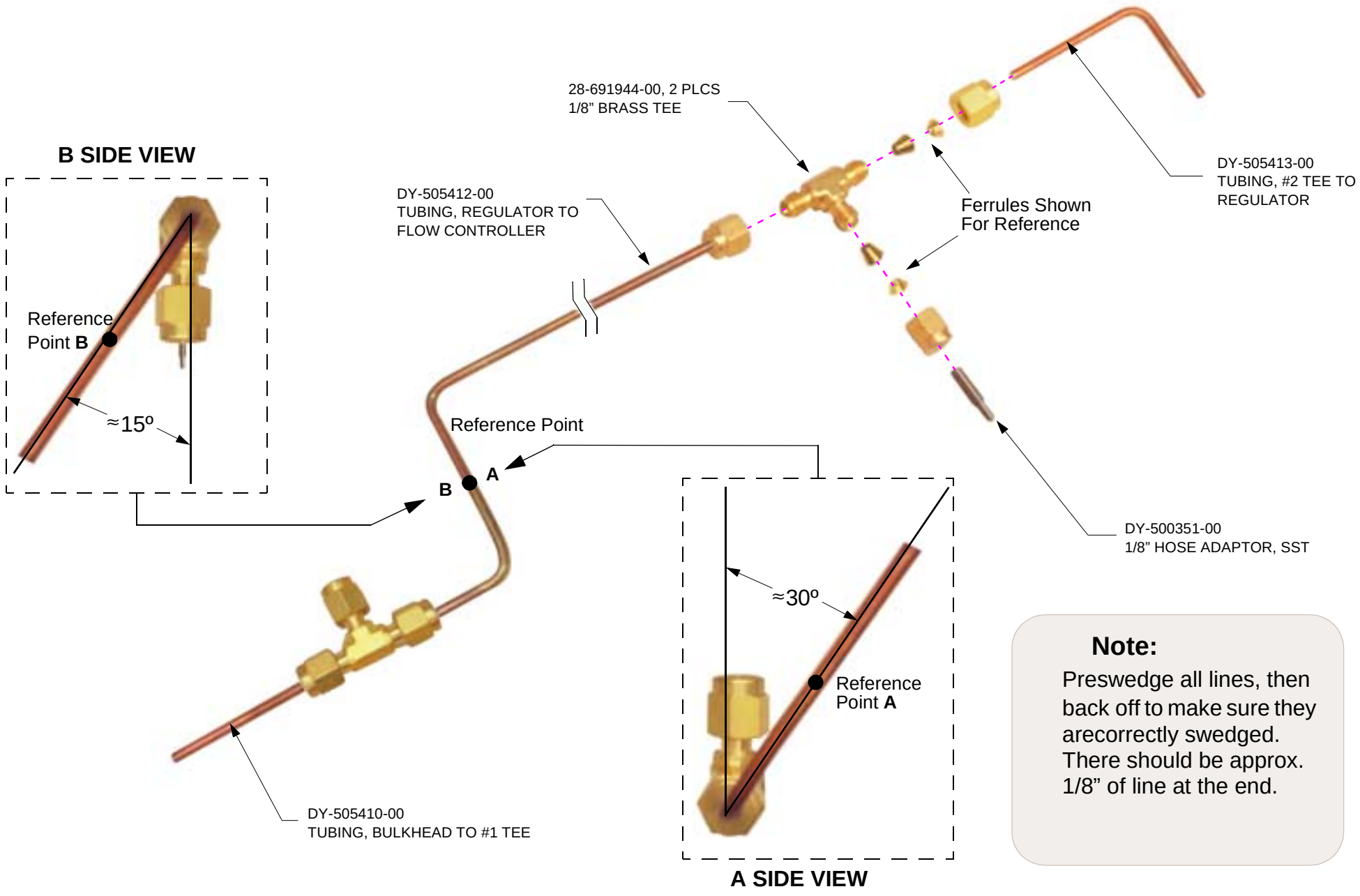
Subassembly


NOTE: LONG END
DY-700046-00
STANDOFF, 2 PLCS.
DY-700045-00
MOUNTING STRAP
DY-700047-00
6" SHRINK TUBING
DY-505428-00
WATER HEATER SHEILD
5 1/2"
DY-505511-00
WATER HEATER TUBING
4"
DY-505594-00
.1/4" THICK INSULATION
NOTE: LONG END
DY-505511-00
WATER HEATER TUBE
DY-505897-00
ASSY., WATER HEATER

Copper Tubing Assembly



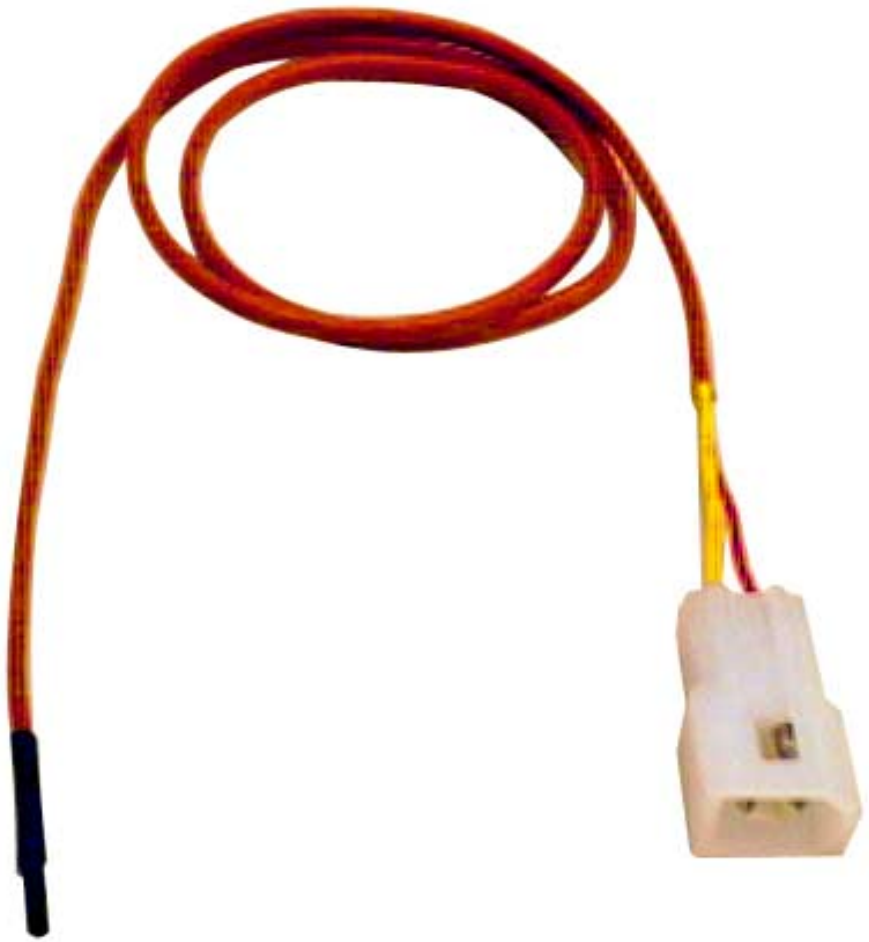
Front View

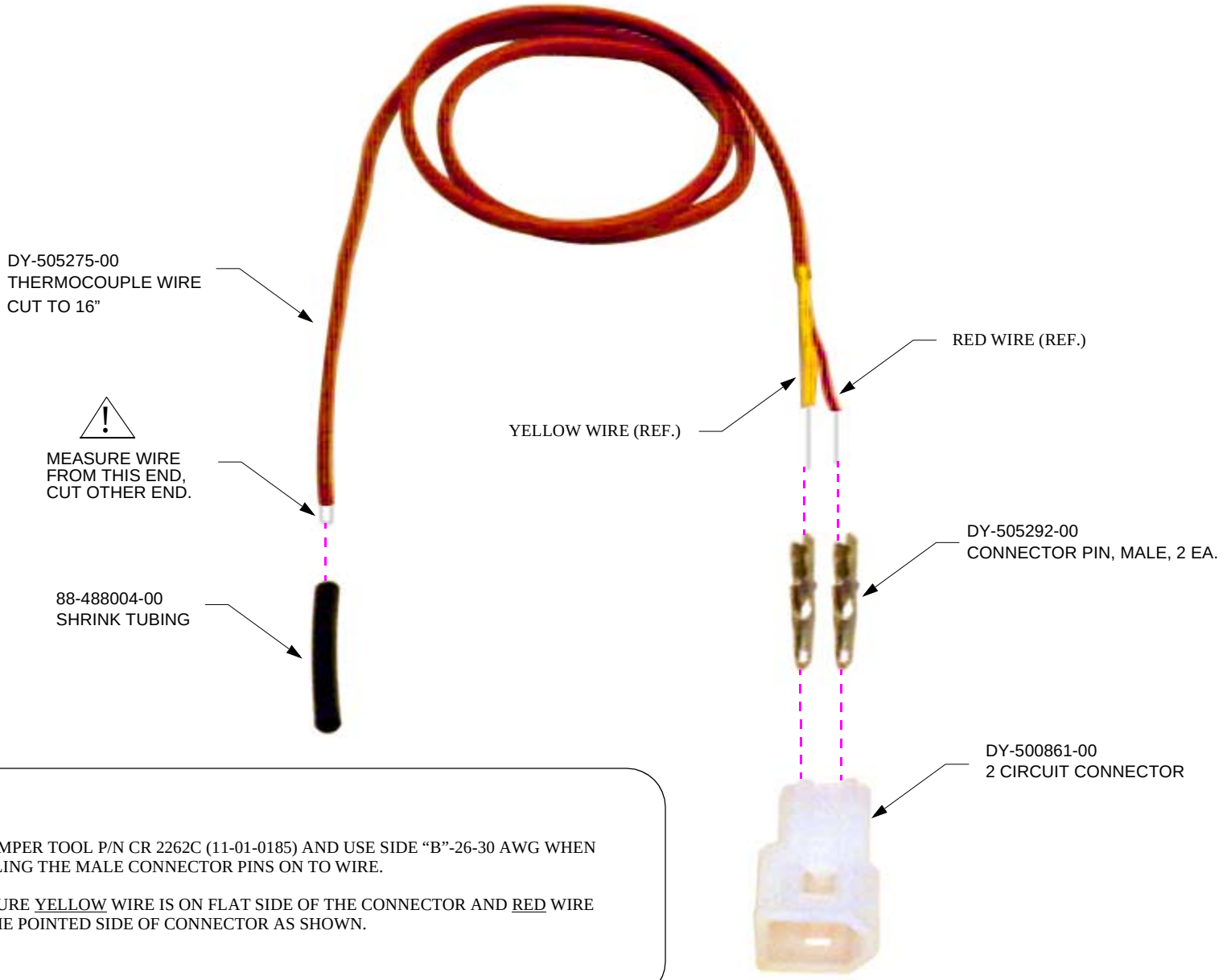


Note:

Preswedge all lines, then back off to make sure they arecorrectly swedged. There should be approx. 1/8" of line at the end.

Tray Thermocouple Wire Assembly

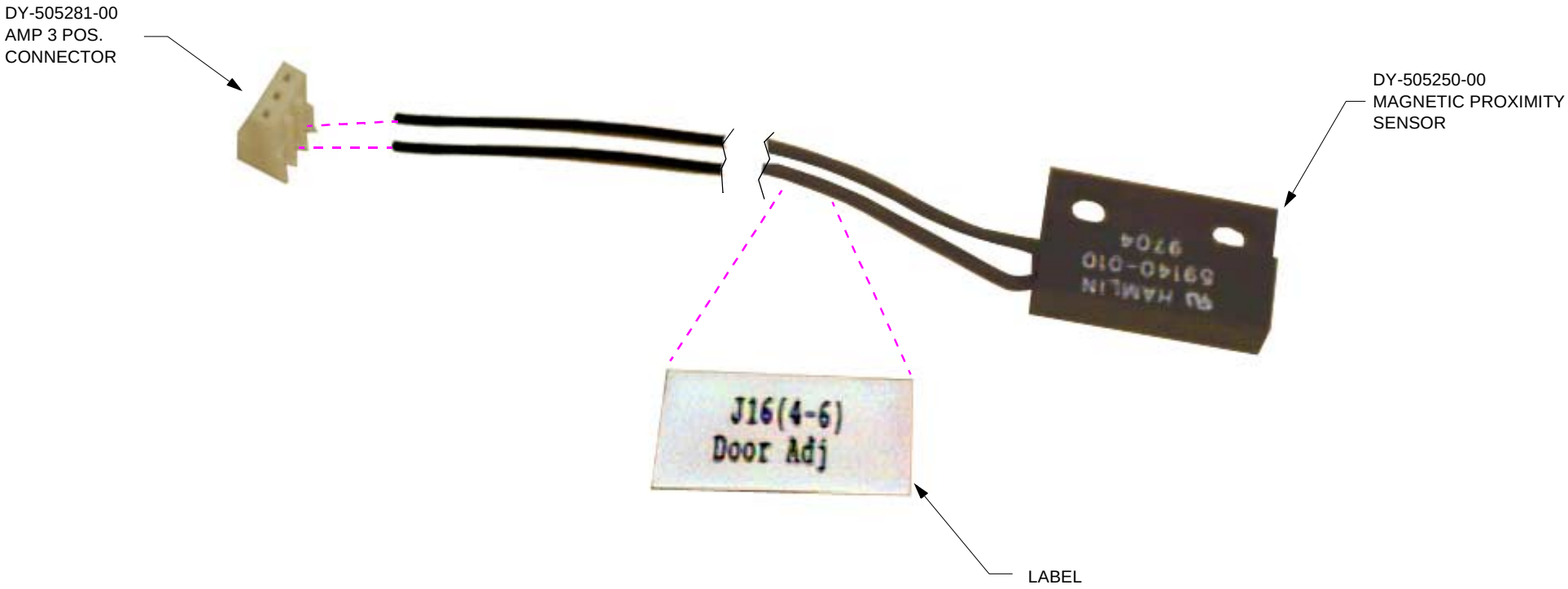




NOTES:

1. USE CRIMPER TOOL P/N CR 2262C (11-01-0185) AND USE SIDE “B”-26-30 AWG WHEN INSTALLING THE MALE CONNECTOR PINS ON TO WIRE.
2. MAKE SURE YELLOW WIRE IS ON FLAT SIDE OF THE CONNECTOR AND RED WIRE IS ON THE POINTED SIDE OF CONNECTOR AS SHOWN.

Magnetic Proximity Sensor



1. MAGNETIC PROXIMITY SENSOR, ASSEMBLY PROCEDURES

1.1 SENSOR ASSEMBLY

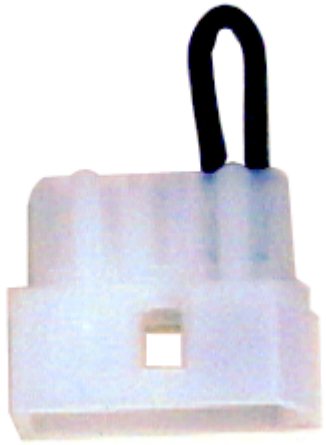
1.1.1 Cut wires of Magnetic Proximity Sensor (DY-505250-00) to 6” in length.

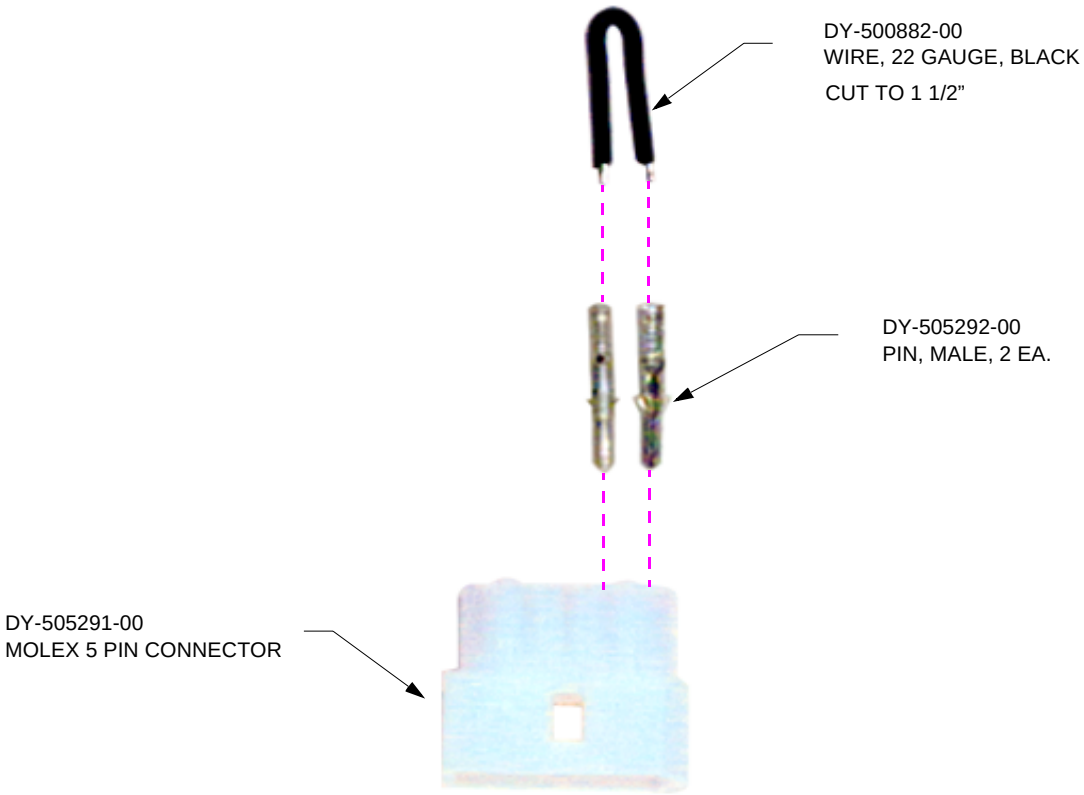
1.1.2 Slide Label over wires.

1.1.3 Attach 3 Pos. Connector (DY-505281-00) to ends of wires using AMP crimping gun. Wires go into #’s 3 & 2 on connector with #1 left empty.

1.1.4 Heatshrink label.

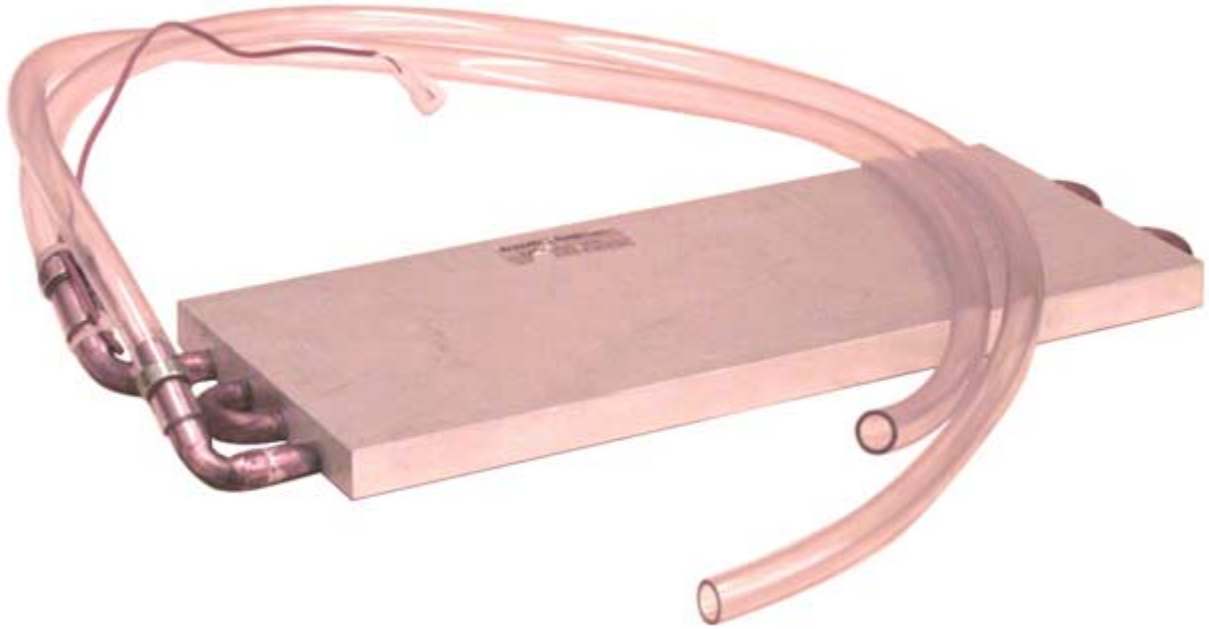
J13 Jumper Assembly




DY-500882-00
WIRE, 22 GAUGE, BLACK
CUT TO 1 1/2”
DY-505292-00
PIN, MALE, 2 EA.
DY-505291-00
MOLEX 5 PIN CONNECTOR

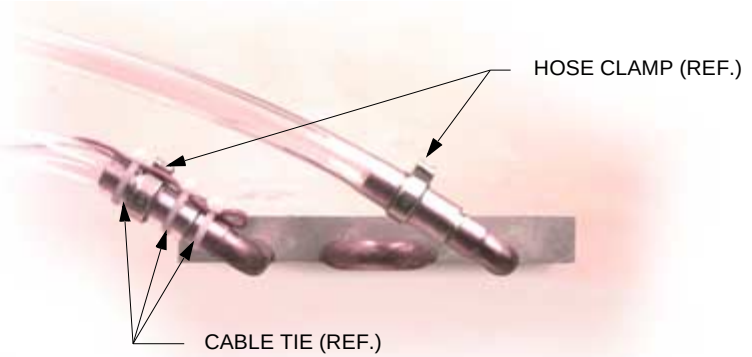
ASSY, CHILLER, PLATE

ARCHON STATION 1, ASSEMBLY PROCEDURES

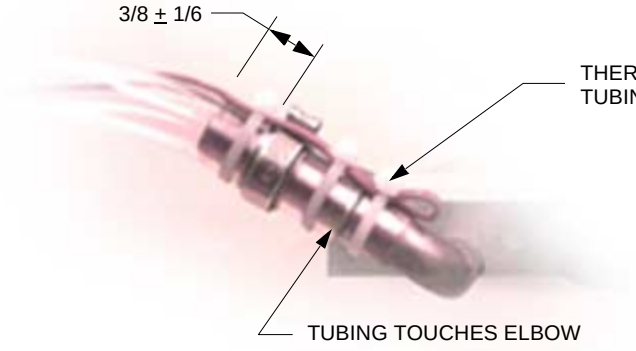


NOTES:

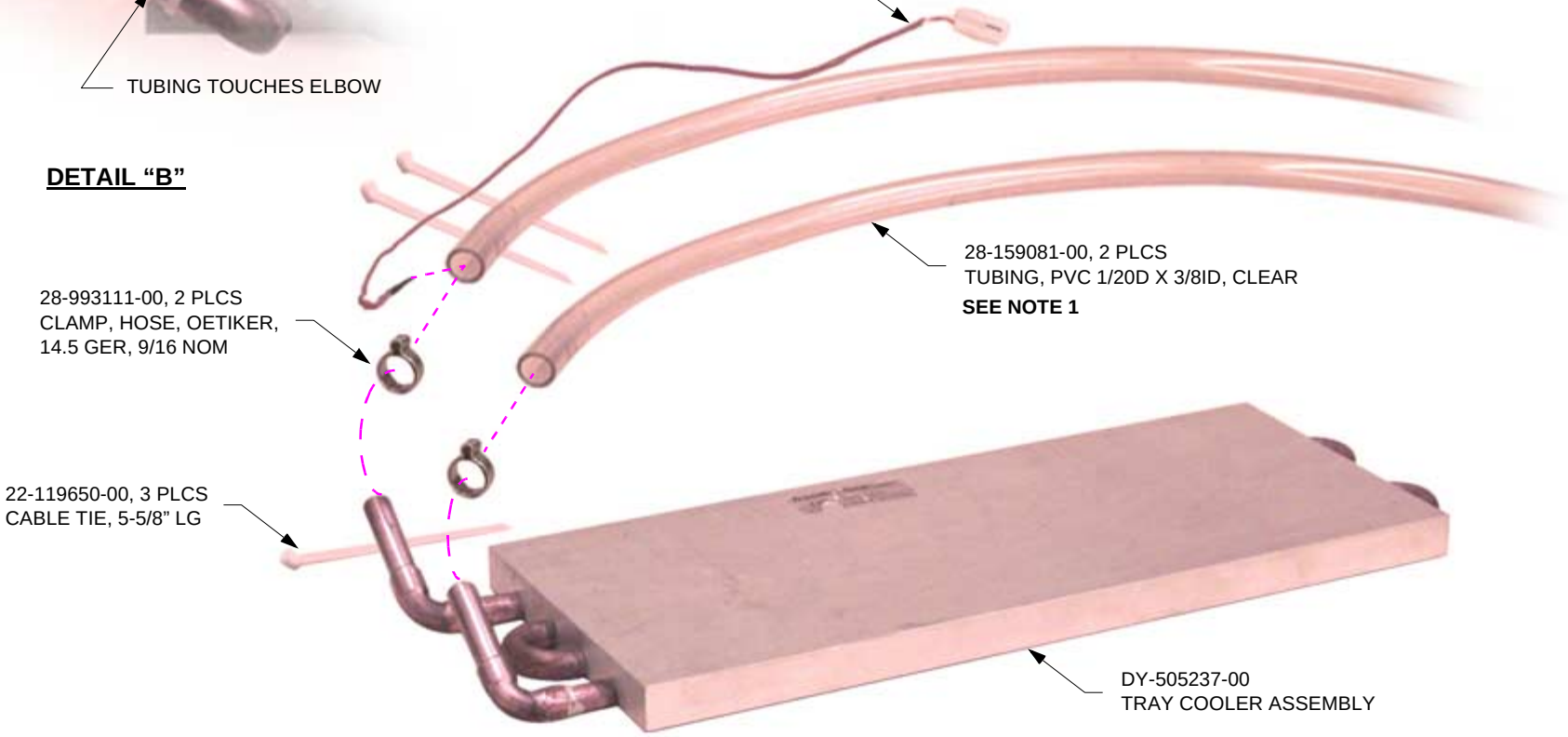
1. OBTAIN 14' OF CLEAR TUBING (28-1590810-00) AND CUT IN HALF PRIOR TO INSTALLING TUBING ONTO THE TRAY COOLER ASSEMBLY.
2. POSITION HOSE CLAMP (28-993111-00) APPROXIMATELY WHERE SHOWN. EAR MUST BE ORIENTED ON TOP. CRIMP HOSE CLAMPS USING OETIKER CRIMPING TOOL.
3. LEAK CHECK BY PRESSURIZING TO 10PSI, SHUTTING OFF THE INLET, WAITING 5MIN. AND VERIFYING THAT PRESSURE IS $\geq$ 9 PSI.



DETAIL "A"

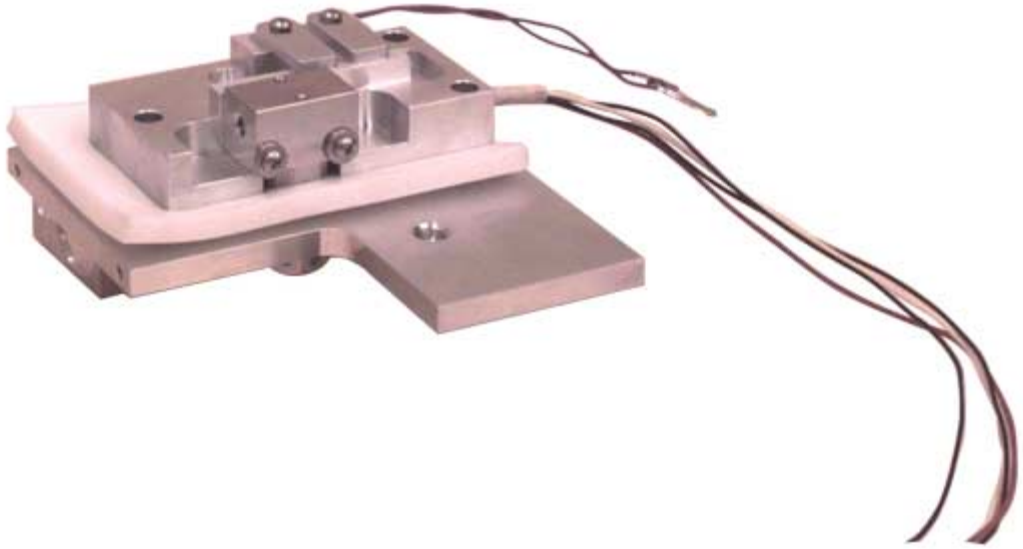


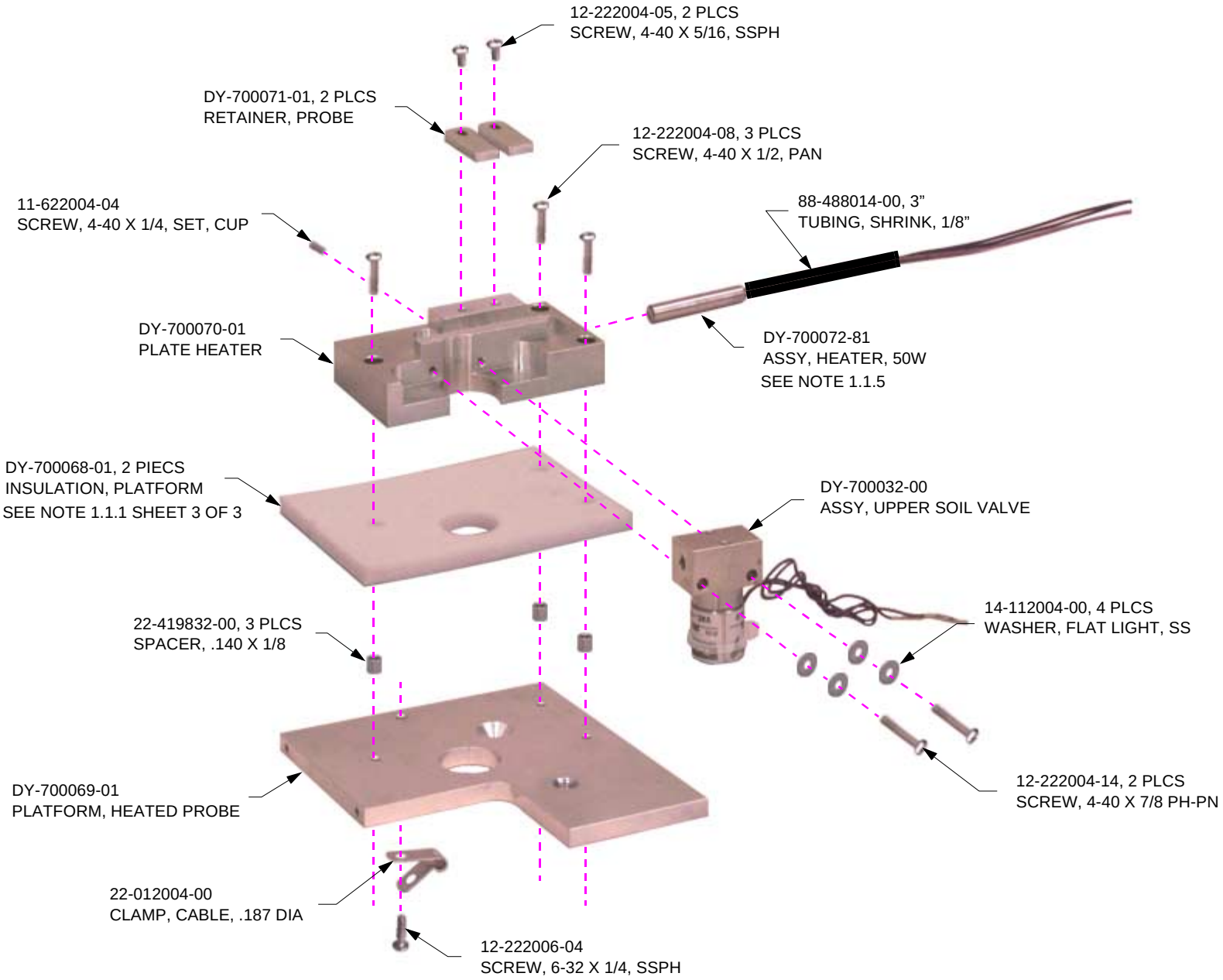
DETAIL "B"



ASSY, UPPER HEATED PROBE

STATION #1 ARCHON, ASSEMBLY PROCEDURES




12-222004-05, 2 PLCS
SCREW, 4-40 X 5/16, SSPH
DY-700071-01, 2 PLCS
RETAINER, PROBE
12-222004-08, 3 PLCS
SCREW, 4-40 X 1/2, PAN
11-622004-04
SCREW, 4-40 X 1/4, SET, CUP
88-488014-00, 3"
TUBING, SHRINK, 1/8"
DY-700070-01
PLATE HEATER
DY-700072-81
ASSY, HEATER, 50W
SEE NOTE 1.1.5
DY-700068-01, 2 PIECS
INSULATION, PLATFORM
SEE NOTE 1.1.1 SHEET 3 OF 3
DY-700032-00
ASSY, UPPER SOIL VALVE
14-112004-00, 4 PLCS
WASHER, FLAT LIGHT, SS
22-419832-00, 3 PLCS
SPACER, .140 X 1/8
12-222004-14, 2 PLCS
SCREW, 4-40 X 7/8 PH-PN
DY-700069-01
PLATFORM, HEATED PROBE
22-012004-00
CLAMP, CABLE, .187 DIA
12-222006-04
SCREW, 6-32 X 1/4, SSPH

1. UPPER HEATED PROBE, ASSEMBLY PROCEDURES

1.1 UPPER HEATED PROBE ASSEMBLY

1.1.1 Assemble the following parts in the order shown: Place Platform Insulation (DY-700068-01) on top of the Heated Probe Platform (DY-700069-01) and insert three Spacers (22-419832-00) into the three holes in the Platform Insulation as shown. Place the Heater Plate (DY-700070-01) over the Platform Insulation and secure with three 4-40 x 1/2 Pan Screws (12-222004-08) as shown.

Note: Use the large piece of the Platform Insulation as shown. Keep the remaining small piece to be used in station #2.

1.1.2 Obtain the Upper Soil Valve Assembly (DY-700032-00), remove the cable tie from Soil Valve ***Sliding it off*** and keep it to put on later. Feed the wire through the large hole on Platform Insulation and Heated Probe Platform not shown. Secure the Upper Soil Valve Assembly to the Heater Plate, using four Flat Light Washers (14-112004-00) and two 4-40 x 7/8 Pan HD Screws (12-222004-14) as shown.

Note: Make sure the label side of the Upper Soil Valve Assembly faces toward the Heater Plate not shown.

1.1.3 Run the wire from the Upper Soil Valve Assembly between the Cable Clamp (22-012004-00) and assemble onto the Heated Probe Platform from the bottom in arrangement shown. Secure with one 6-32 x 7/8 Pan HD Screw (12-222006-04) as shown. Re-assemble the cable tie that was removed from Step 1.1.3 back on the Soil Valve as it was.

1.1.4 Install two Probe Retainers (DY-700071-01) and use two 4-40 x 5/16 PH Screws (12-222004-05) to secure in place.

1.1.5 Obtain the 50W Heater Assembly (DY700072-81), cut Yellow/Orange wire evenly with the Black wires and strip both ends. Insert Heater Assembly into the side hole on the Heater Platform until it bottoms out. Use one 4-40 x 1/4 Set Cup Screw (11-622004-04) to secure in place as shown.

Note: Do not over tighten the set screw (just enough to hold it into place).

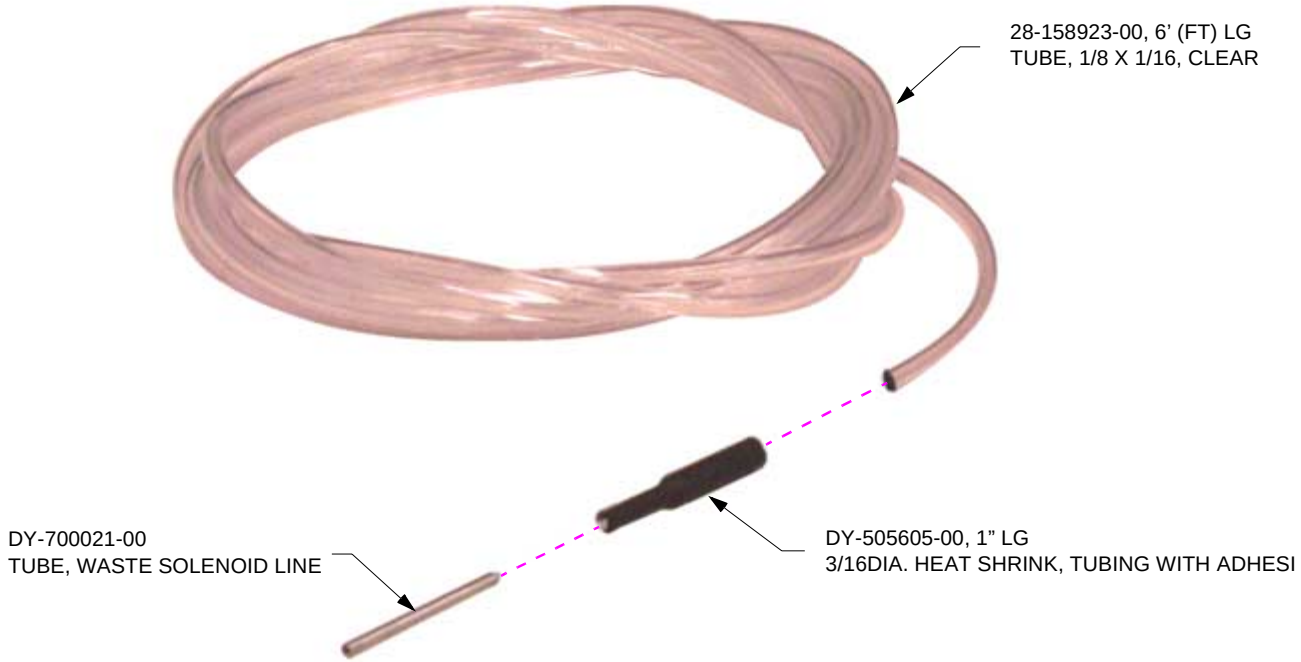
ASSY, TUBE, WASTE SOLENOID LINE

ARCHON STATION #1, ASSEMBLY PROCEDURES

NOTES:

1. OBTAIN CLEAR 1/16” POLY TUBING (28-158923-00) AND CUT TUBING APPROXIMATELY 6’ IN LENGTH.

2. PLACE A 1/8” X 1” LONG PIECE OF SHRINK TUBING (DY-505605-00) OVER EACH END OF THE WASTE SOLENOID LINE AND RED 1/16” CLEAR TUBING. HEAT SHRINK 1/8 SHRINK TUBING AND CHECK TO MAKE SURE THE GREEN TUBING IN PLACE. DO NOT OVER HEAT.



ASSY, WASTE LINE #2

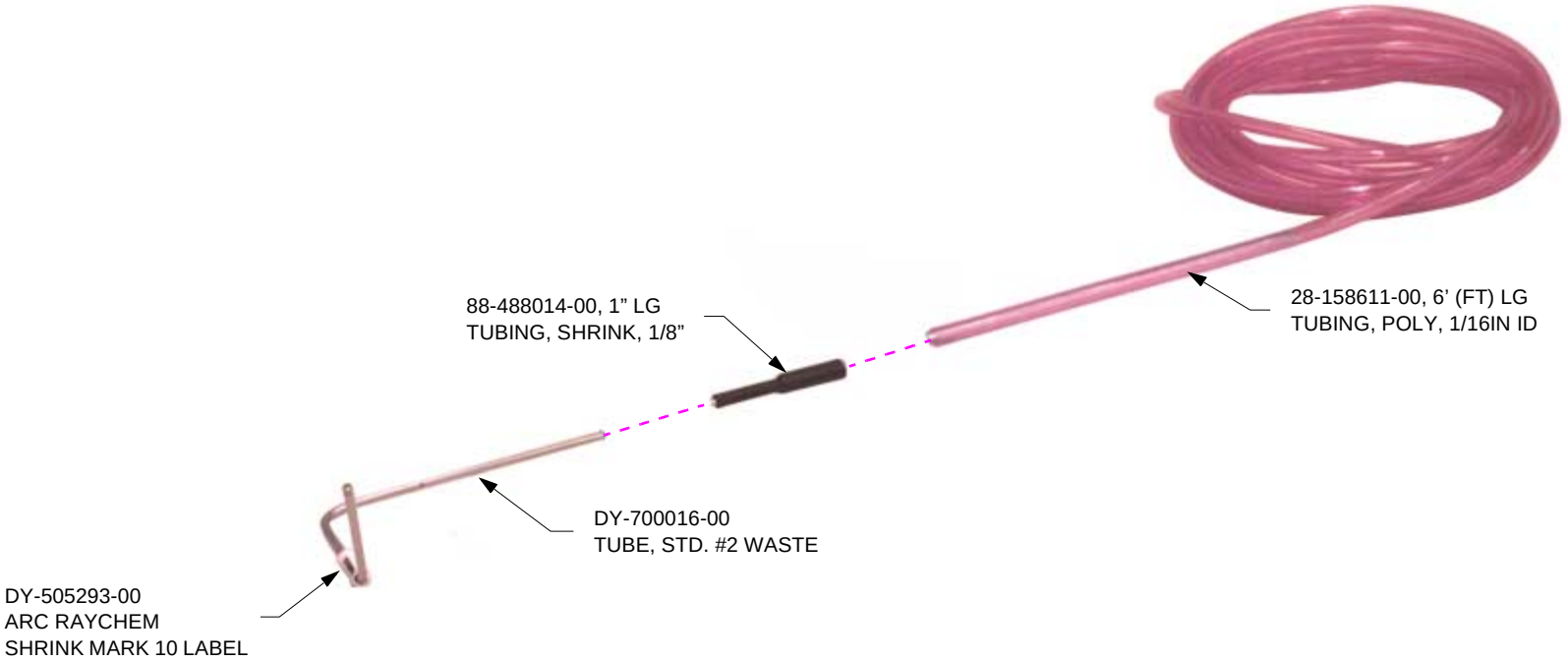
ARCHON STATION #1, ASSEMBLY PROCEDURES

NOTES:

1. OBTAIN AND PRINT PART NUMBER (DY-700017-00) ON ARC RAYCHEM SHRINK MARK 10 LABEL (DY-505293-00) IF NOT ALREADY PRINTED. PLACE RAYCHEM MARK ONTO STANDARD #2 WASTE LINE (DY-700016-00) WHERE SHOWN.

2. OBTAIN RED 1/16" POLY TUBING (28-158611-00) AND CUT TUBING APPROXIMATELY 6' IN LENGTH.

3. PLACE A 1/8" X 1" LONG PIECE OF SHRINK TUBING (88-488014-00) OVER EACH END OF THE STANDARD #2 WASTE LINE TUBE AND RED 1/16" TUBING. HEAT SHRINK 1/8 SHRINK TUBING AND CHECK TO MAKE SURE THE GREEN TUBING IS IN PLACE. DO NOT OVER HEAT.



ASSY, WASTE LINE #1

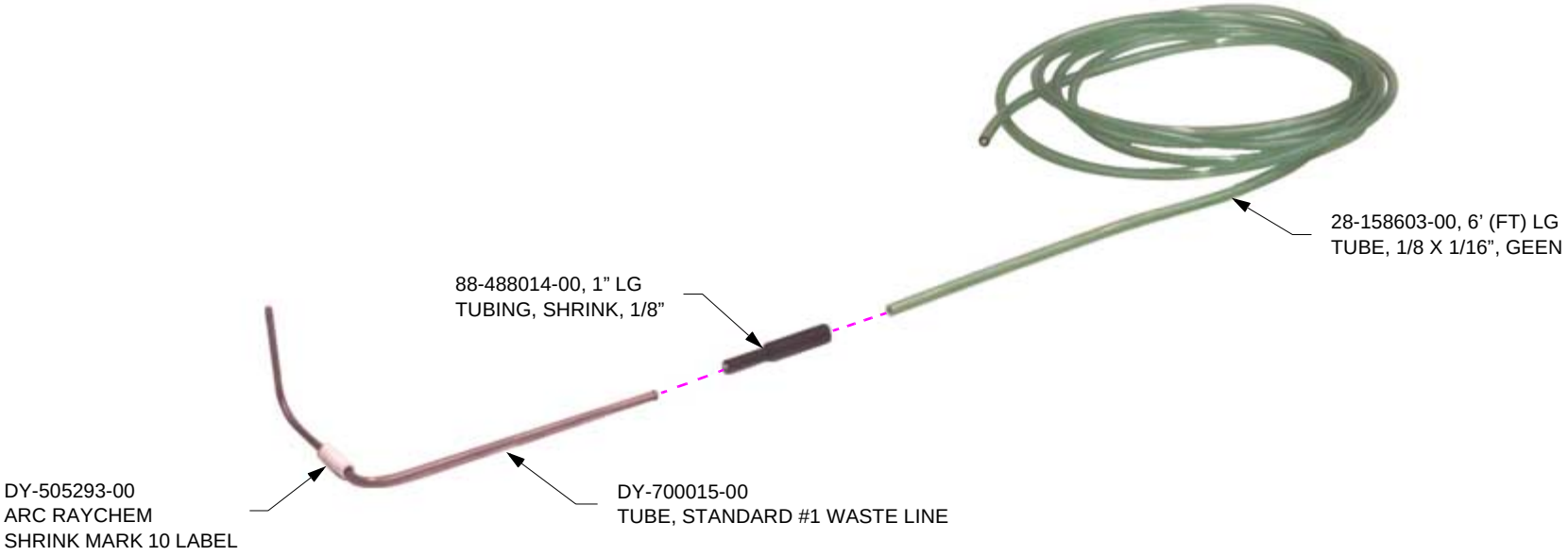
ARCHON STATION #1, ASSEMBLY PROCEDURES

NOTES:

1. OBTAIN AND PRINT PART NUMBER (DY-700017-00) ON ARC RAYCHEM SHRINK MARK 10 LABEL (DY-505293-00) IF NOT ALREADY PRINTE. PLACE RAYCHEM MARK ONTO STANDARD #1 WASTE LINE (DY-700015-00) WHERE SHOWN.

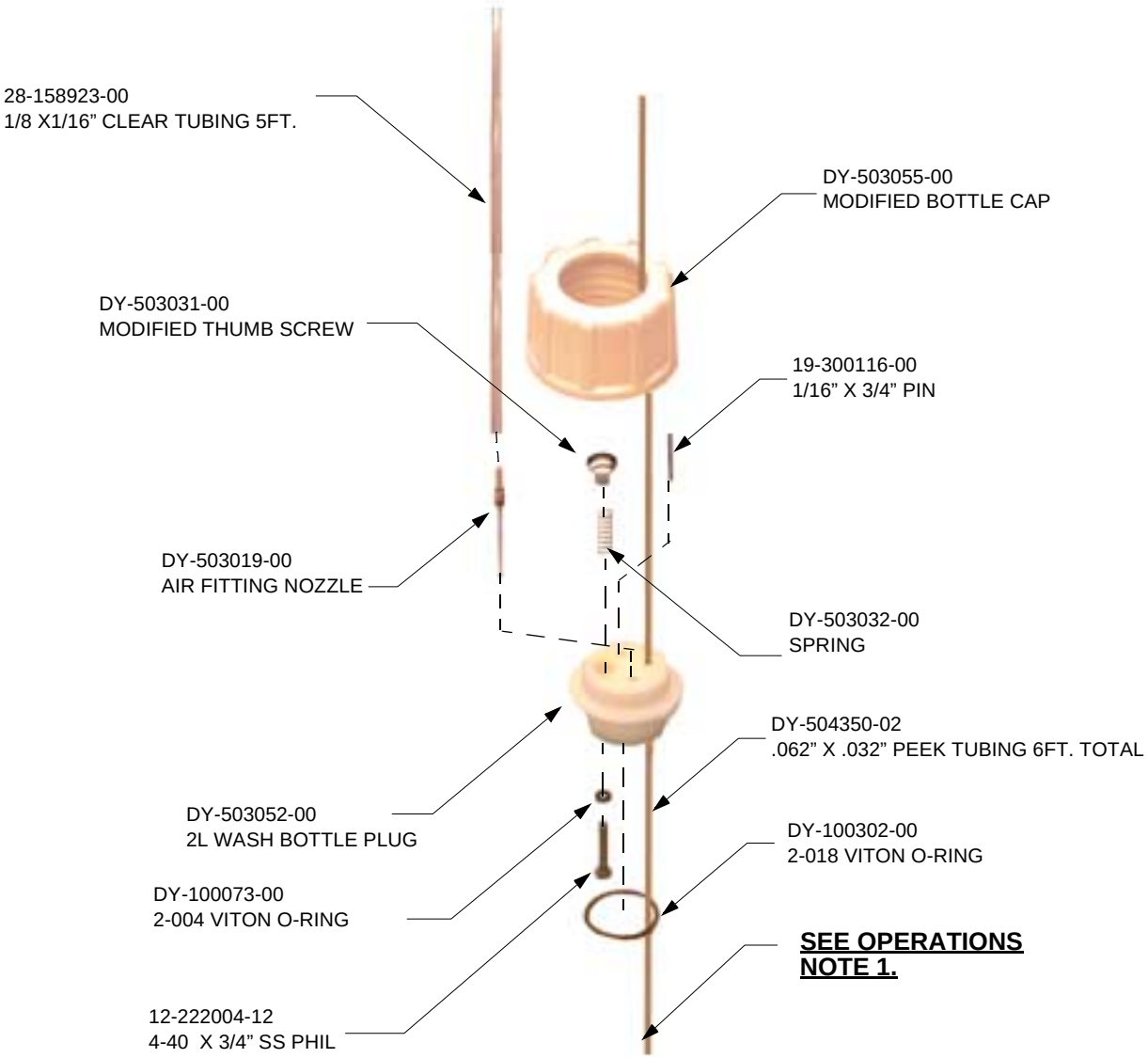
2. OBTAIN GREEN 1/8 X 1/16 TUBE (28-158603-00) AND CUT TUBING APPROXIMATELY 6' IN LENGTH.

3. PLACE A 1/8" X 1" LONG PIECE OF SHRINK TUBING (88-488014-00) OVER EACH END OF THE STANDARD #1 WASTE LINE TUBE AND GREEN 1/8 X 1/16" TUBE. HEAT SHRINK 1/8 SHRINK TUBING AND CHECK TO MAKE SURE THE GREEN TUBING IS IN PLACE. DO NOT OVER HEAT.



Washbottle Cap

Subassembly



OPERATION NOTES:

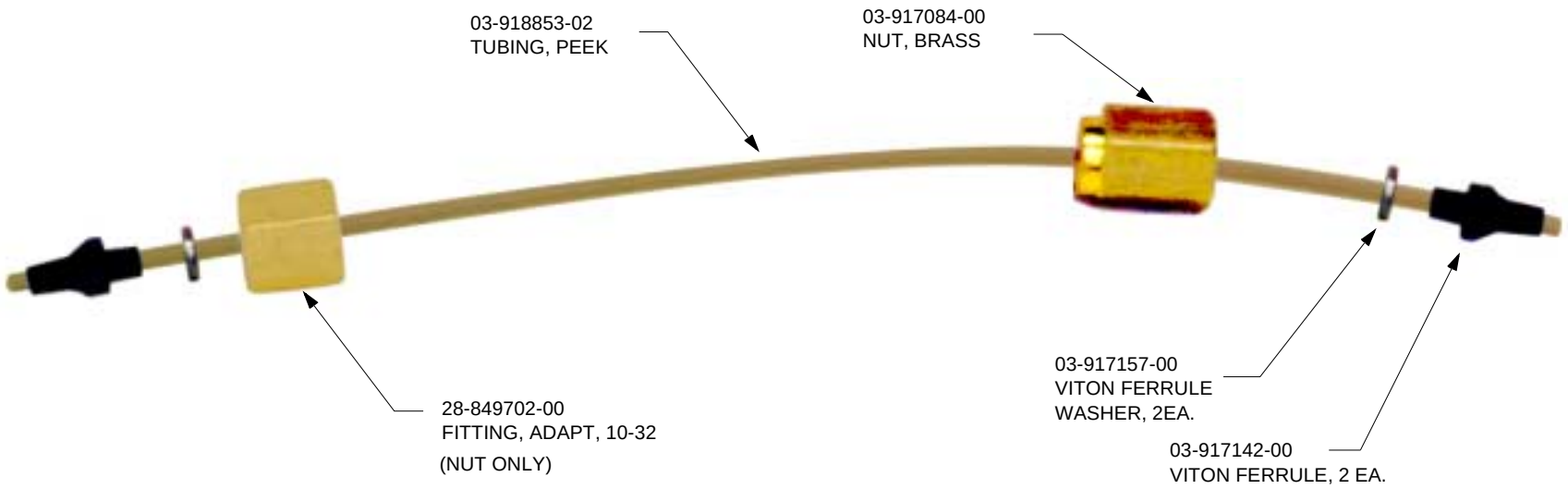
Note:

1. EXTEND PEEK 11 3/4" PAST WASH BOTTLE PLUG & CUT END AT AN ANGLE.

PARTS NOT SHOWN

22-119650-00
CABLE TIES 7EA

Peek Line Assembly



1. PEEK LINE, ASSEMBLY PROCEDURES

1.1 LINE ASSEMBLY

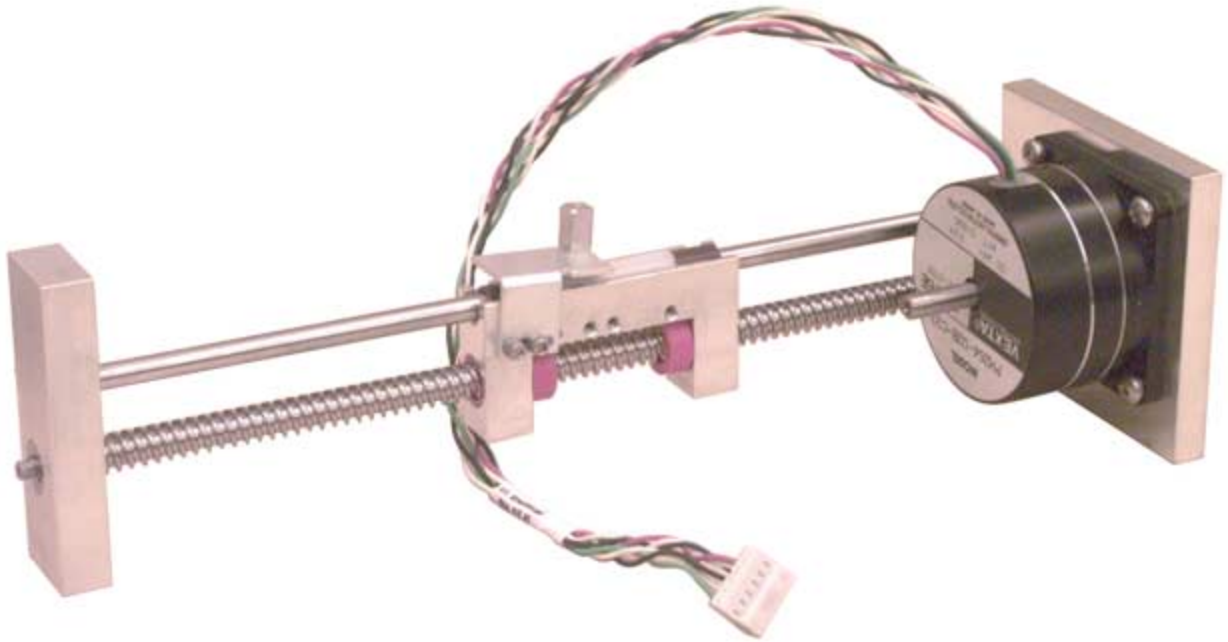
1.1.1 Cut tubing (03-918853-02) to 7” in length with razor blade.

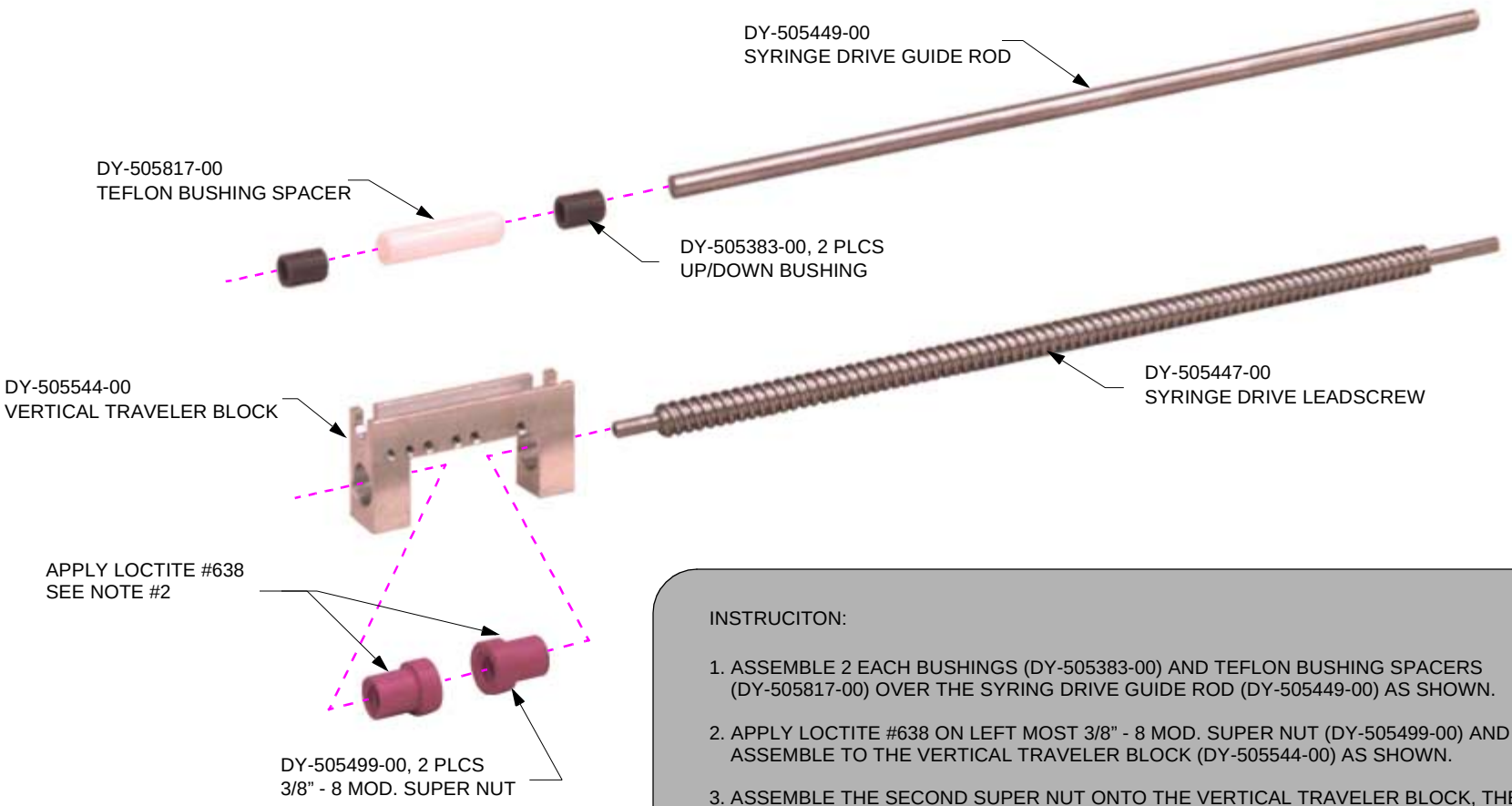
1.1.2 Slide Brass Nut (03-917084-00), 10-32 Fitting Nut (28-849067-00), and two(2) Viton Ferrule Washers (03-917157-00) onto tubing as shown.

1.1.3 On each end, push on Viton Ferrule (03-917142-00), leaving approximately 1/8” of tubing exposed on the end.

ASSY, VIAL DRIVE

ARCHON STATION #2, ASSEMBLY PROCEDURES





INSTRUCITON:

1. ASSEMBLE 2 EACH BUSHINGS (DY-505383-00) AND TEFLON BUSHING SPACERS (DY-505817-00) OVER THE SYRING DRIVE GUIDE ROD (DY-505449-00) AS SHOWN.

2. APPLY LOCTITE #638 ON LEFT MOST 3/8" - 8 MOD. SUPER NUT (DY-505499-00) AND ASSEMBLE TO THE VERTICAL TRAVELER BLOCK (DY-505544-00) AS SHOWN.

3. ASSEMBLE THE SECOND SUPER NUT ONTO THE VERTICAL TRAVELER BLOCK, THEN SCREW THE SYRINGE DRIVE LEADSCREW (DY-505447-00) INTO THE SECOND SUPER NUT.

NOTE: MAKE SURE THE BUSHING IS LINING UP TO EACH OTHER. APPLY LOCTITE #638 TO SECOND SUPER NUT AND LEAVE APPROXIMATELY A SMALL GAP BETWEEN BUSHINGS AND VERTICAL TRAVELER. LET SET FOR 24HRS.

DY-505477-00
56 TOOTH TIMING BELT

DY-505363-00
ARCHON TIMING PULLY

DY-505429-00
ARCHON 1/4" MOTOR PULLY

TOOL P/N T-7112

MOTOR PULLEY TOOL (REF.)

DY-505431-00
TRAVELER DRIVE PLATE

14-202008-00, 4 PLCS
WASHER, #8 LOCK

12-222008-08, 4 PLCS
SCREW, 8-32 X 1/2" PHIL. HD

DY-505882-00
26ML SYRINGE DRIVE MOTOR

VERTICAL TRAVELER
ASSEMBLY (REF.)

DY-505356-00
DRIVE SHAFT BEARING

DY-505442-02
ASSY, MICROSWITCH ACTUATOR

DY-505432-00
TRAVELER SUPPORT PLATE

14-212004-00, 2 PLCS
#4 LOCKWASHER

DY-504850-00, 2 (SET)
THRUST BEARING

12-312004-04, 3 PLCS
SCREW, 4-40 X 1/4" SHCS

14-212004-00
WASHER, #4 LOCK

14-112004-00
WASHER, #4 FLAT

INSTRUCTION:

1. ASSEMBLE VEXTA STEPER MOTOR (DY-505878-00) ONTO THE TRAVELER GUIDE PLATE (DY-505431-00), USING FOUR #8 LOCK WASHERS (14-202008-00) AND FOUR 8-32 X 1/2" PHIL. HD SCREWS (12-222008-08) AS SHOWN.

2. INSTALL MICROSWITCH ACTUATOR ASSEMBLY (DY-505442-02), USING TWO #4 LOCKWASHERS (14-212004-00) AND TWO 4-40 X 1/4" SHCS SCREWS (12-312004-04) AS SHOWN.

3. ASSEMBLE SET OF THRUST BEARING (DY-505850-00) IN ORDER SHOWN ONTO LEADSCREW AND APPLY WHITE GREASE ON BOTH SIDES OF BEARING PRIOR TO ASSEMBLY. PLACE END OF LEADSCREW INTO A HOLE ON TRAVELER SUPPORT PLATE (DY-505432-00) WHERE SHOWN. PLACE ANOTHER SET OF THRUST BEARINGS TO OTHER SIDE OF SUPPORT PLATE AND SECURE WITH ONE #4 FLAT WASHER (14-112004-00), #4 LOCK WASHERS (14-212004-00) AND ONE 4-40 X 1/4" SHCS SCREW (12-312004-04) AS SHOWN.

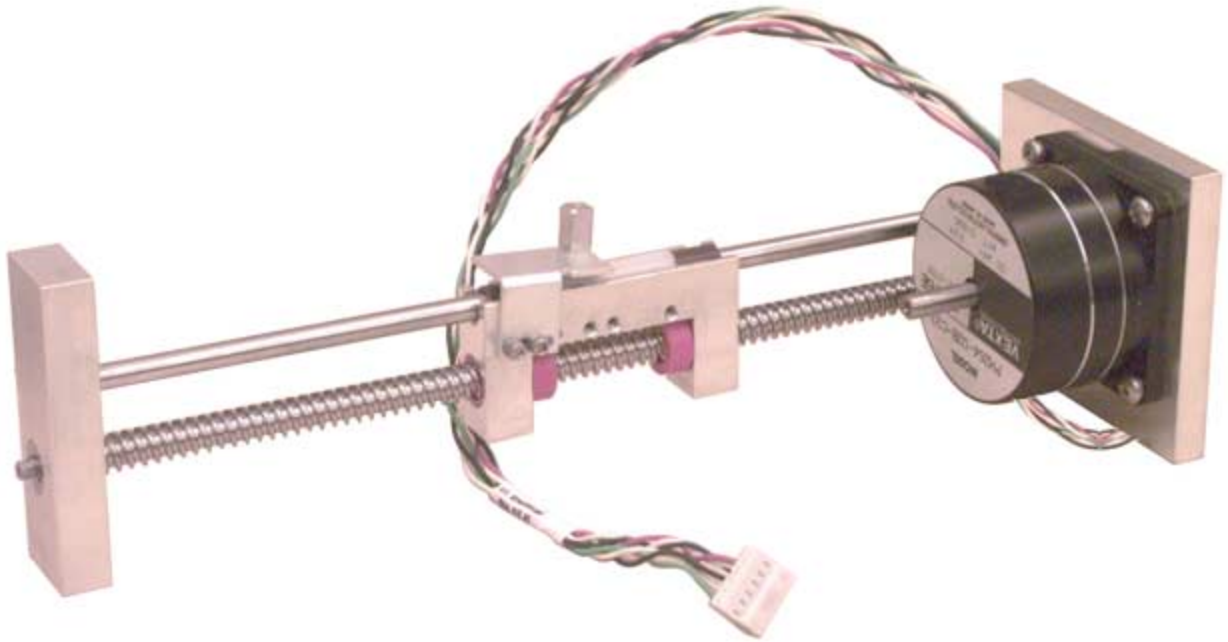
   NOTES: COAT BOTH SIDE OF BEARING WITH WHITE SILICONE GREASE. MAKE SURE NOT TO USE ELECTRIC SCREWDRIVER.

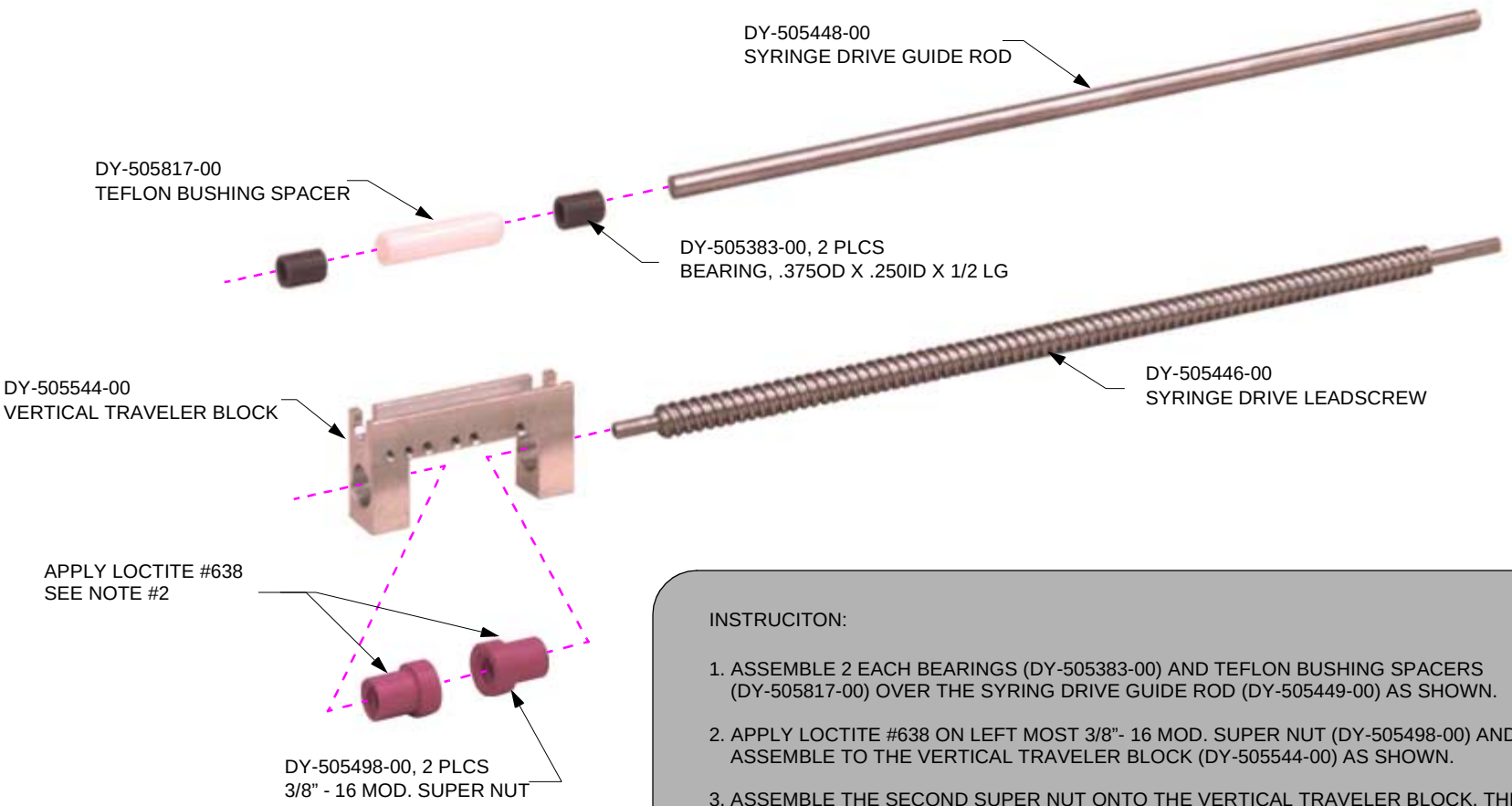
4. PLACE ONE DRIVE SHAFT BEARING (DY-505356-00) OVER LONG END OF VERTICAL TRAVELER ASSEMBLY AND ASSEMBLE TO THE VEXTA STEPPER MOTOR.

5. INSTALL MOTOR PULLEY (DY-505429-00), TIMING BELT PULLEY (DY-505840-00) AND 56 TOOTH TIMING BELT (DY-505477-00) ONTO BOTH VALVE DRIVE ASSEMBLY AS SHOWN. PLACE THE FIXTURE TOOL T-7112 OVER THE PULLEY AND PUSH THE PULLEY UP AGAINST THE TOOL UNITL BOTH PULLEY ARE EVENLY ALIGNED. SEE PICTURE FOR REFERENCE ON PAGE 3.

ASSY, SYRINGE DRIVE

ARCHON STATION #2, ASSEMBLY PROCEDURE





INSTRUCITON:

1. ASSEMBLE 2 EACH BEARINGS (DY-505383-00) AND TEFLON BUSHING SPACERS (DY-505817-00) OVER THE SYRING DRIVE GUIDE ROD (DY-505449-00) AS SHOWN.

2. APPLY LOCTITE #638 ON LEFT MOST 3/8"- 16 MOD. SUPER NUT (DY-505498-00) AND ASSEMBLE TO THE VERTICAL TRAVELER BLOCK (DY-505544-00) AS SHOWN.

3. ASSEMBLE THE SECOND SUPER NUT ONTO THE VERTICAL TRAVELER BLOCK, THEN SCREW THE SYRINGE DRIVE LEADSCREW (DY-505446-00) INTO THE SECOND SUPER NUT.

NOTE: MAKE SURE THE BUSHING IS LINING UP TO EACH OTHER. APPLY LOCTITE #638 TO SECOND SUPER NUT AND LEAVE APPROXIMATELY A SMALL GAP BETWEEN BUSHINGS AND VERTICAL TRAVELER. LET SET FOR 24HRS.

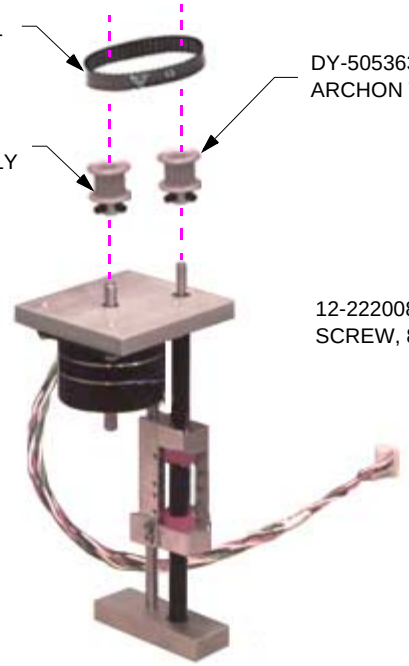
DY-505477-00
56 TOOTH TIMING BELT

DY-505363-00
ARCHON TIMING PULLY

DY-505429-00
ARCHON 1/4" MOTOR PULLY

TOOL P/N T-7112

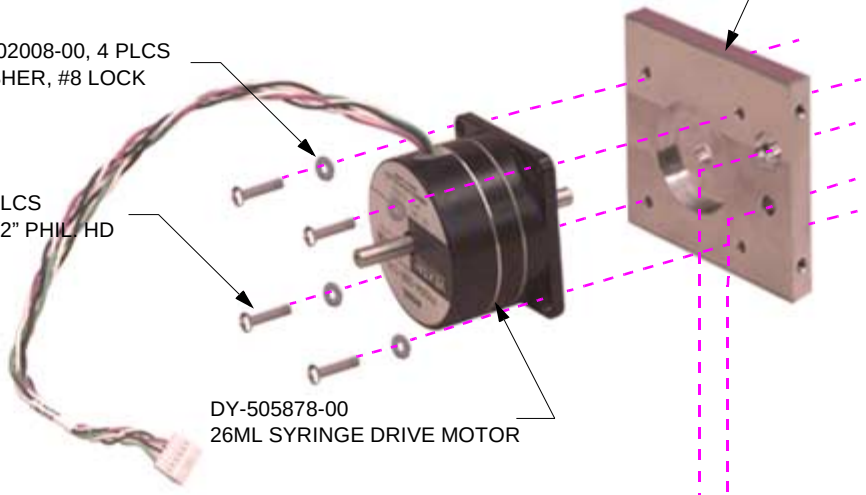
MOTOR PULLEY TOOL (REF.)



DY-505431-00
TRAVELER DRIVE PLATE

14-202008-00, 4 PLCS
WASHER, #8 LOCK

12-222008-08, 4 PLCS
SCREW, 8-32 X 1/2" PHIL HD



DY-505878-00
26ML SYRINGE DRIVE MOTOR

VERTICAL TRAVELER
ASSEMBLY (REF.)

DY-505356-00
DRIVE SHAFT BEARING

DY-505432-00
TRAVELER SUPPORT PLATE

DY-505442-01
ASSY, MICROSWITCH ACTUATOR

14-212004-00, 3 PLCS
#4 LOCKWASHER

APPLY LOCTITE #242

DY-504850-00, 2 (SET)
THRUST BEARING

12-312004-04, 3 PLCS
SCREW, 4-40 X 1/4" SHCS

14-112004-00
WASHER, LOCK, #4

INSTRUCTION:

1. ASSEMBLE 26ML SYRING DRIVE MOTOR (DY-505878-00) ONTO THE TRAVELER GUIDE DRIVE PLATE (DY-505431-00), USING FOUR #8 LOCK WASHERS (14-202008-00) AND FOUR 8-32 X 1/2" PHIL. HD SCREWS (12-222008-08) AS SHOWN.

2. INSTALL MICROSWITCH ACTUATOR ASSEMBLY (DY-505442-01), USING TWO #4 LOCK WASHERS (14-212004-00) AND TWO 4-40 X 1/4" SHCS SCREWS (12-312004-04) AS SHOWN.

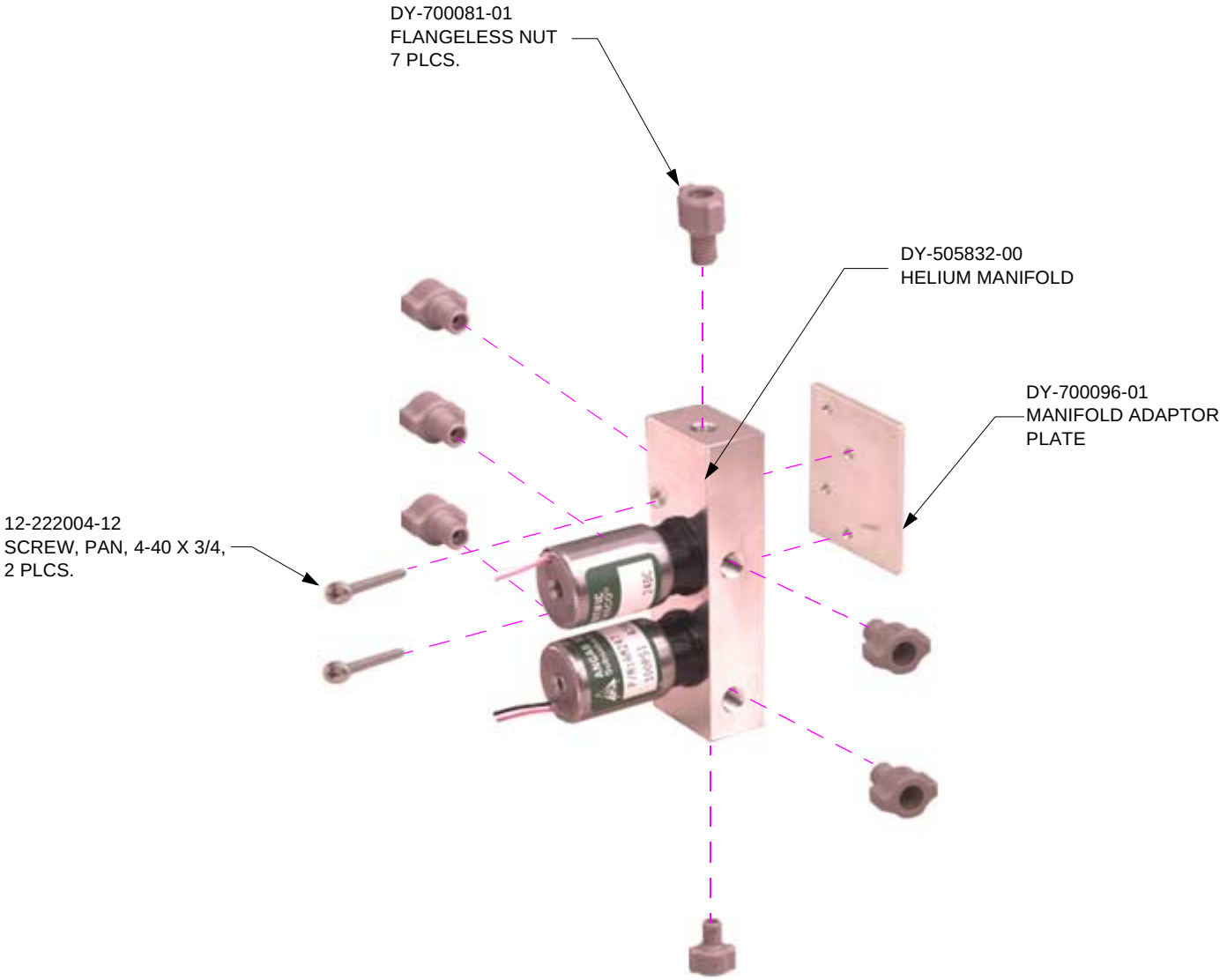
3. ASSEMBLE SET OF THRUST BEARING (DY-505850-00) IN ORDER SHOWN ONTO LEADSCREW AND APPLY WHITE GREASE ON BOTH SIDES OF BEARING PRIOR TO ASSEMBLY. PLACE END OF LEADSCREW INTO A HOLE ON TRAVELER SUPPORT PLATE (DY-505432-00) WHERE SHOWN. PLACE ANOTHER SET OF THRUST BEARINGS TO OTHER SIDE OF SUPPORT PLATE AND SECURE WITH ONE #4 FLAT WASHER (14-112004-00), #4 LOCK WASHER (14-212004-00) AND ONE 4-40 X 1/4" SHCS SCREW (12-312004-04) AS SHOWN.

NOTES: NOTES: COAT BOTH SIDE OF BEARING WITH WHITE SILICONE GREASE. MAKE SURE NOT TO USE ELECTRIC SCREWDRIVER.

4. PLACE ONE BALL BEARING (DY-505356-00) OVER LONG END OF VERTICAL TRAVELER ASSEMBLY AND ASSEMBLE TO THE 26ML SYRINGE DRIVE MOTOR.

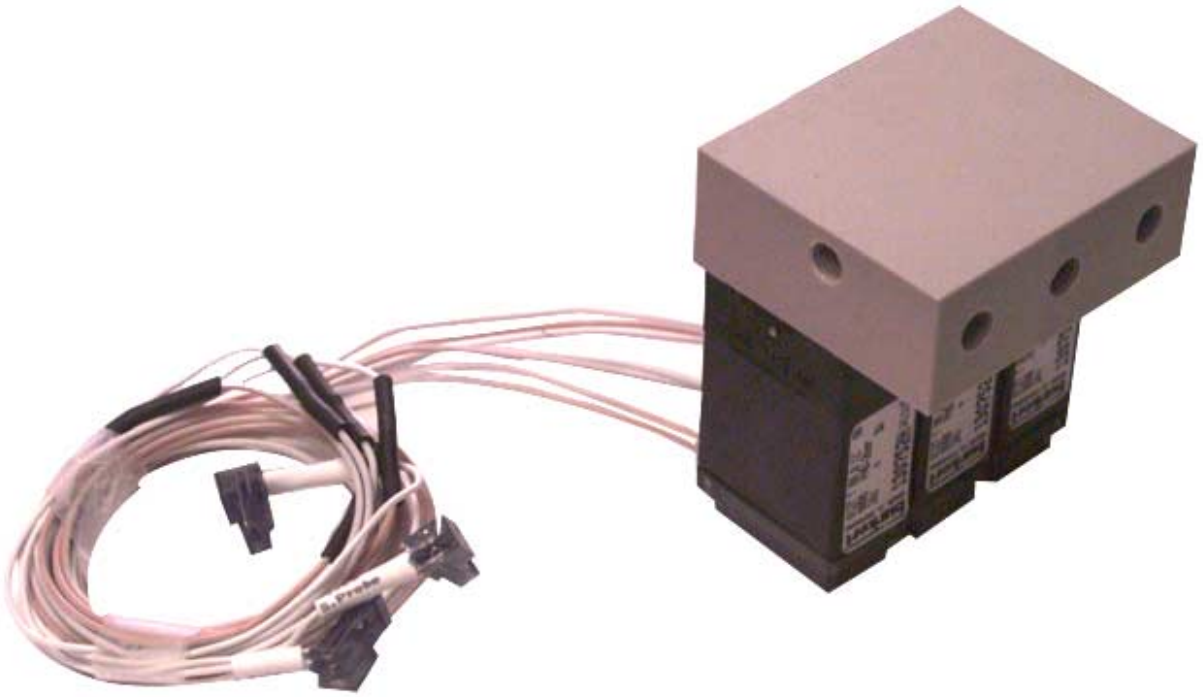
5. INSTALL MOTOR PULLEY (DY-505429-00), TIMING BELT PULLEY (DY-505840-00) AND 56 TOOTH TIMING BELT (DY-505477-00) ONTO BOTH SYRINGE DRIVE ASSEMBLY AS SHOWN. PLACE THE FIXTURE TOOL T-7112 OVER THE PULLEY AND PUSH THE PULLEY UP AGAINST THE TOOL UNITL BOTH PULLEY ARE EVENLY ALIGNED. SEE PICTURE FOR REFERENCE ON PAGE 3.

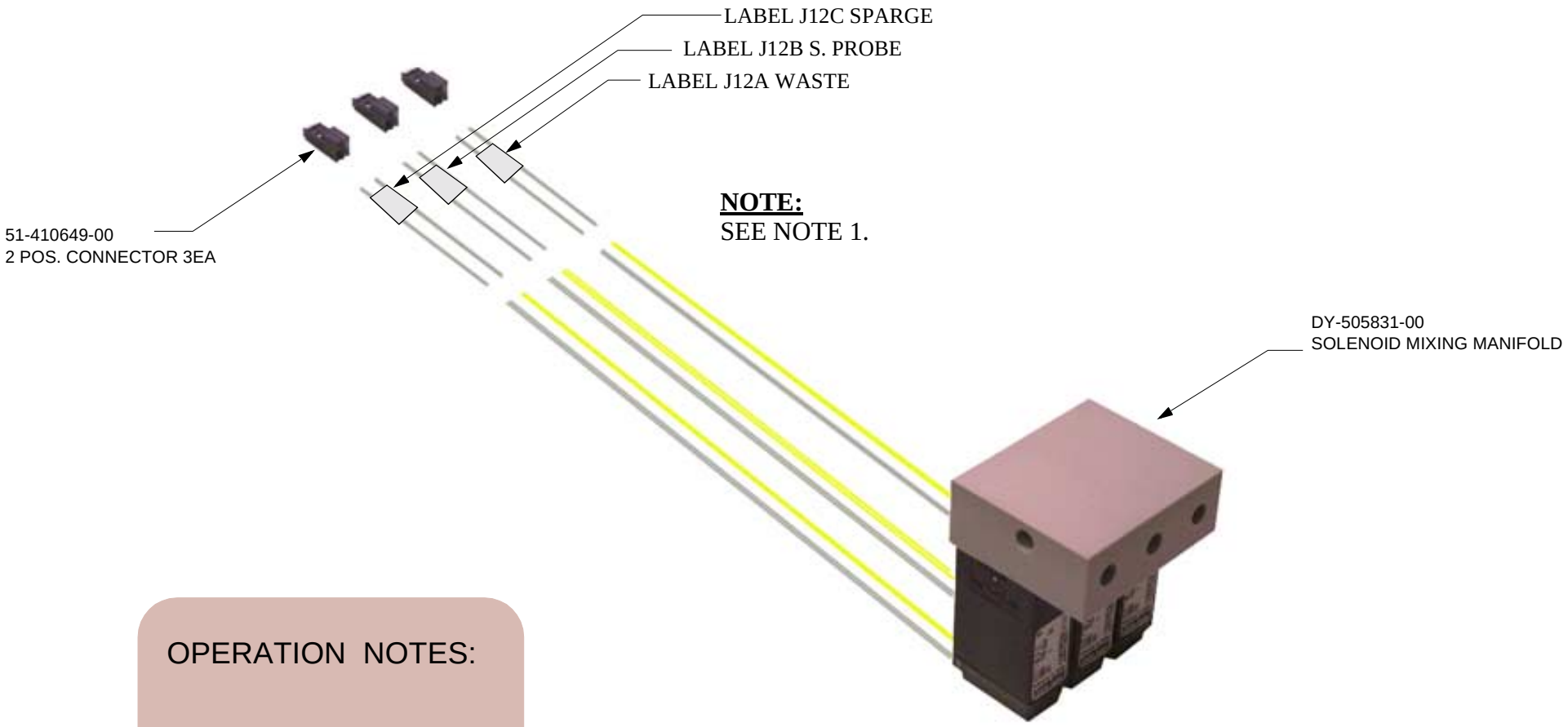
Helium Manifold


DY-700081-01
FLANGELESS NUT
7 PLCS.
DY-505832-00
HELIUM MANIFOLD
DY-700096-01
MANIFOLD ADAPTOR
PLATE
12-222004-12
SCREW, PAN, 4-40 X 3/4,
2 PLCS.

Solenoid Mixing Manifold

Subassembly





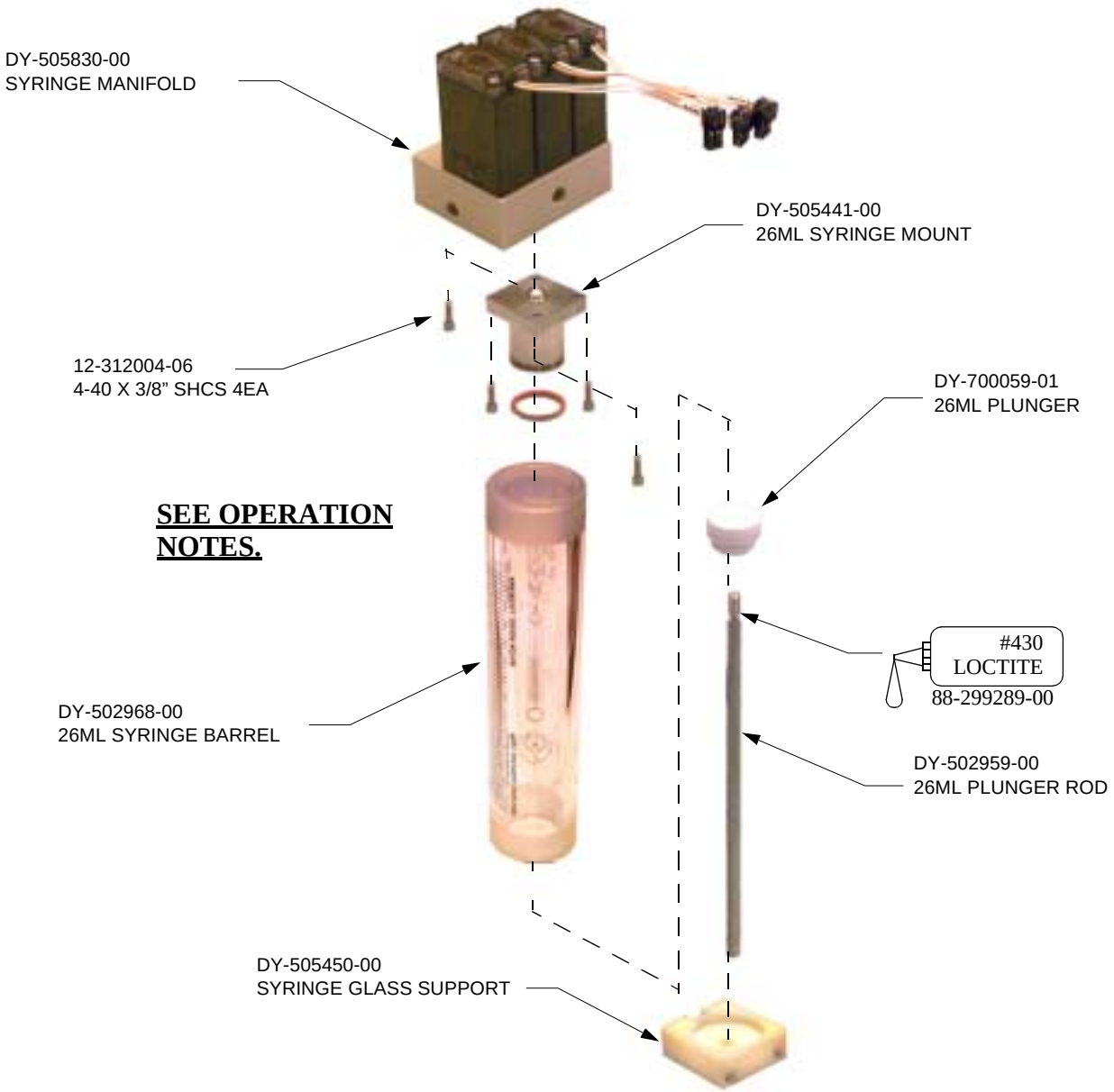
NOTE:
SEE NOTE 1.

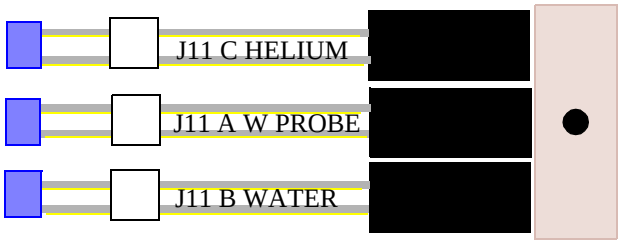
OPERATION NOTES:

Note:
1. SOLDER WIRES AND COVER CONNECTION WITH SHRINK WRAP

Syringe Mixing Manifold

Subassembly





LABEL / CONNECTOR DIAGRAM

OPERATION NOTES:

Note:

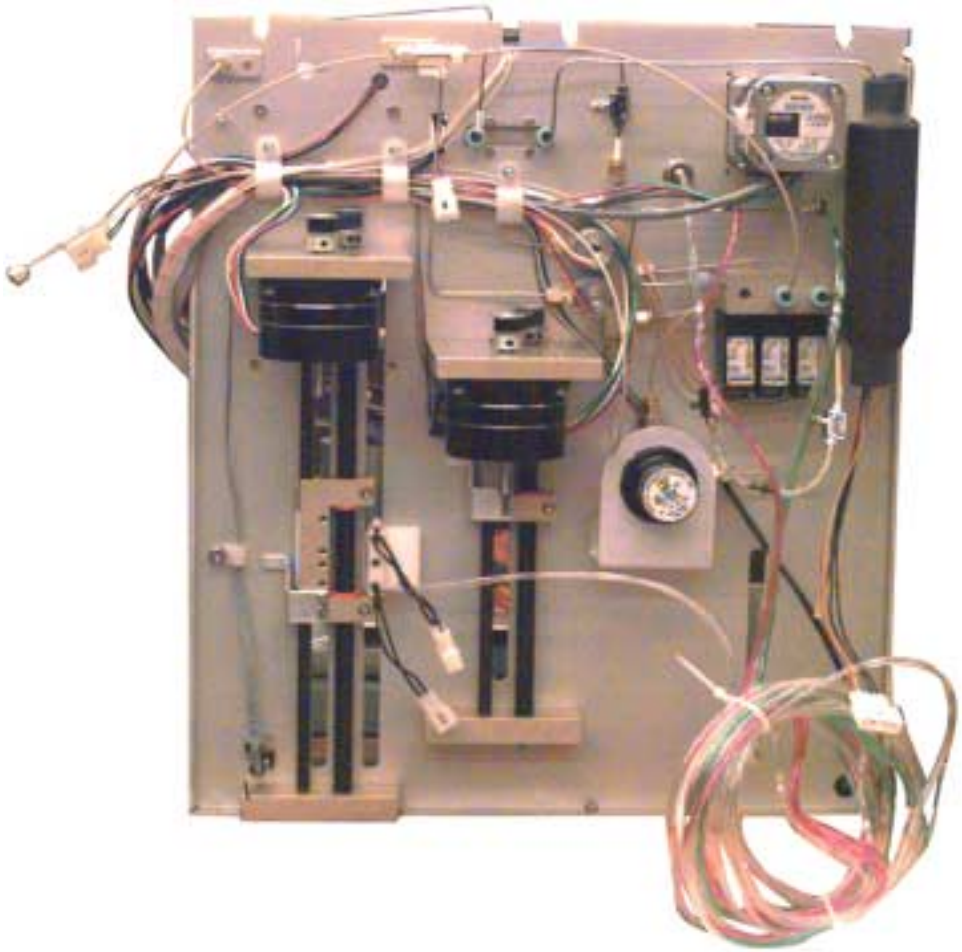
1. USE SAFTY GLOVES WHEN ATTACHING SYRINGE BARREL TO SYRINGE MOUNT AND PLUNGER.

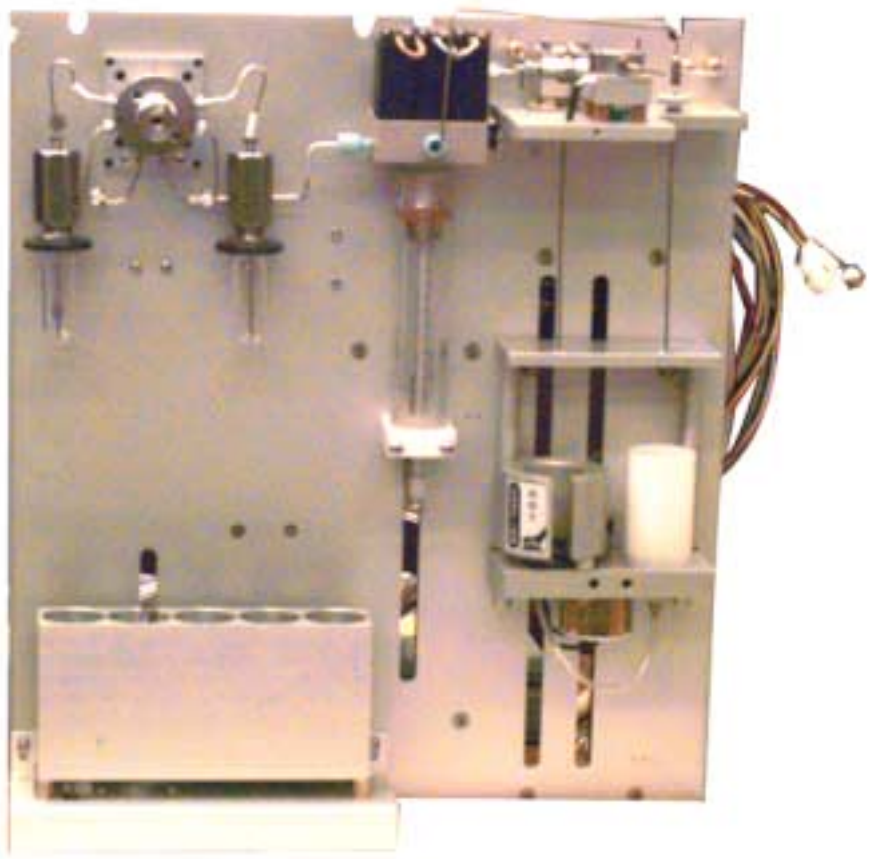
2. USE WARM WATER TO LUBRICATE O-RING

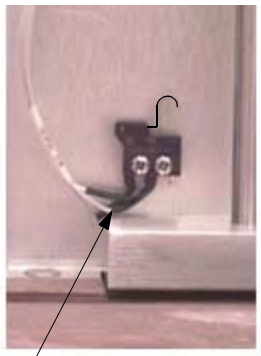
3. TIGHTEN ALL FOUR SCREWS EVENLY DO NOT OVER TIGHTEN.

ASSY, SYRINGE PLATE

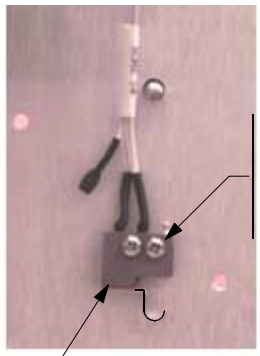
ARCHON STATION #2, ASSEMBLY PROCEDURES







LIMIT SWITCH (B)

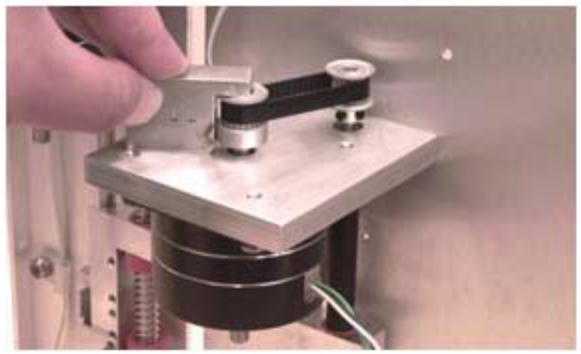


DY-700093-01
SWITCH ARM BRACKET

14-202002-00, 4 PLCS
WASHER, #2 SPLIT LOCK

12-222008-05, 4 PLCS
SCREW, 2-56 X 5/16 PH. HD.

DY-505273-00
LIMIT SWITCH ASSY (REF.)



MOTOR PULLEY TOOL (REF.)

DY-505477-00, 2 PLCS
56 TOOTH TIMMING BELT

12-212008-06, 8 PLCS
SCREW, 8-32 X 3/8 FLT., HD SHCS

DY-505363-00, 2 PLCS
TIMMIN BELT PULLEY

MOTOR
PULLEY (REF.)

DY-700004-01
SYRINGE PLATE

DY-504127-00, 4 PLCS
NYLON CABLE CLAMP

13-102008-00, 4 PLCS
NUT, 8-32 HEX
REFER TO NOTE 1.1.2

LIMIT SWITCH (A)
SEE DETAIL (REF.)

DY-505429-00, 2 PLCS
MOTOR PULLEY

DY-505840-00
ASSY, SYRINGE DRIVE

DY-505841-00
ASSY, SYRINGE DRIVE

MOUNTING
FIXTURE TOOL

CLICK HERE FOR
VIAL DRIVE ASSEMBLY

CLICK HERE FOR
SYRINGE DRIVE ASSEMBLY

SYRINGE DRIVE ASSEMBLY INSTALLATION

1. SYRINGE PLATE ASSEMBLY PROCEDURES

1.1 SYRINGE DRIVE ASSEMBLY INSTALLATION

1.1.1 Mount the Syringe Plate (DY-700004-01) onto the mounting fixture tool and secured in place.

1.1.2 Install three Nylon Cable Clamps (DY-504127-00) into the syringe Plate, using four 8-32 Hex Nuts (13-102008-00) where shown.

Note: Nut holds clamp to plate on inside of each clamp.

1.1.3 Install Limit Switch Assembly (DY-505273-00) through Nylon Cable Clamps and route the shorter switch toward top upper right and longer wire toward bottom left. Secure the bottom left Limit Switch, using two #2 Split Lock Washers (14-202002-00) and two2-56 x 5/16 PH HD Screws (12-222008-05) refer to *Detail B*. Secure the upper right Limit Switch, using one Switch Arm Bracket (DY-70093-01), two #2 Split Lock Washers (14-202002-00) and two2-56 x 5/16 PH HD Screws (12-222008-05) refer to *Detail A*. Make sure mount the upper Limit Switch with latch downward and lower Limit Switch with latch upward as shown in Limit Switch Assembly reference details.

1.1.4 Install Syringe Drive (DY-505841-00) onto the left most of the Syringe Plate, using four 8-32 x 3/8 Flat HD SHCS Screws (12-212008-06) as shown. Repeat the previous step for the shorter Syringe Drive (DY-505840-00) where shown. Apply Loctite #242 to screws thread prior to installation.

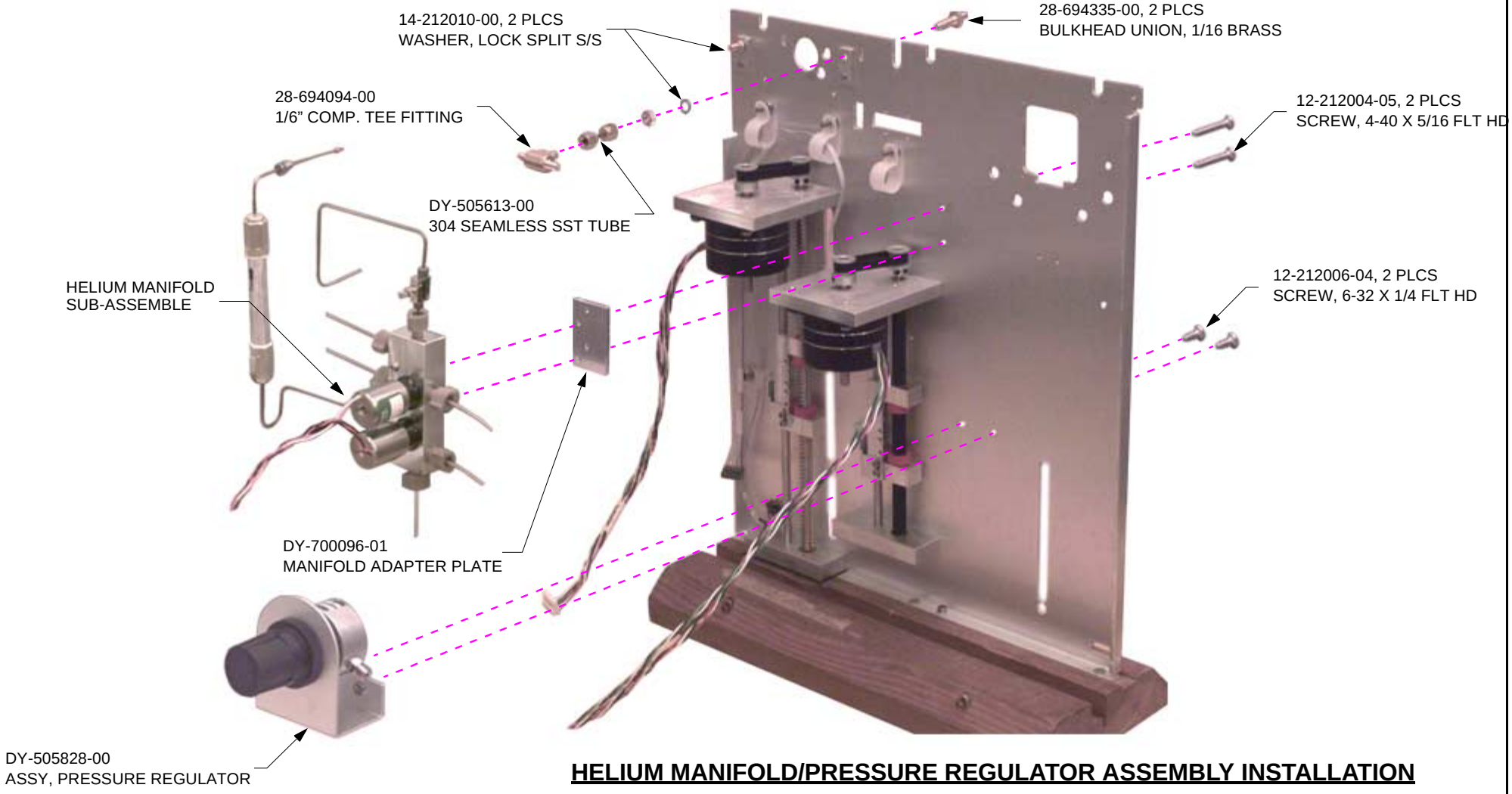
1.1.5 Install Motor Pulley (DY-505429-00), Timing Belt Pulley (DY-505363-00) and 56 Tooth Timing Belt (DY-505477-00) onto the both Syringe Drive Assembly as shown. Place the Fixture Tool T-7112 over the pulley and push the pulley up against the tool until both pulley are evenly align. Repeat the previous step for the shorter Syringe Drive (DY-505840-00) where shown. Apply Loctite #242 on each set screws on pulley prior tighten. See picture of Motor Pulley Tool reference on page 2.

1.2 HELIUM MANIFOLD/PRESSURE REGULATOR ASSEMBLY INSTALLATION

1.2.1 Install Helium Manifold Assembly (DY-505832-00) onto the Syringe Plate, using one Manifold Adapter Plate (DY-700096-01) and two 4-40 x 5/16 Flt HD Screws (12-212004-05) as shown.

1.2.2 Install Pressure Regulator Assembly (DY-505828-00) onto the Syringe Plate below Helium Manifold Assembly, using two 6-32 x 1/4 Flt HD Screws (12-212006-04) as shown. Apply Loctite #242 to screws thread prior to installation.

1.2.3 Install two 1/16 Brass Bulkhead Unions (28-694335-00) onto upper left corner of Syringe Plate, secure it in place using one each Split Lock Washer (14-212010-00) and tighten nut. Install one 1/16” Comp. Tee Fitting (28-694094-00) with 304 Seamless SST Tube (DY-505613-00) onto the second one to the right in horizontal position.



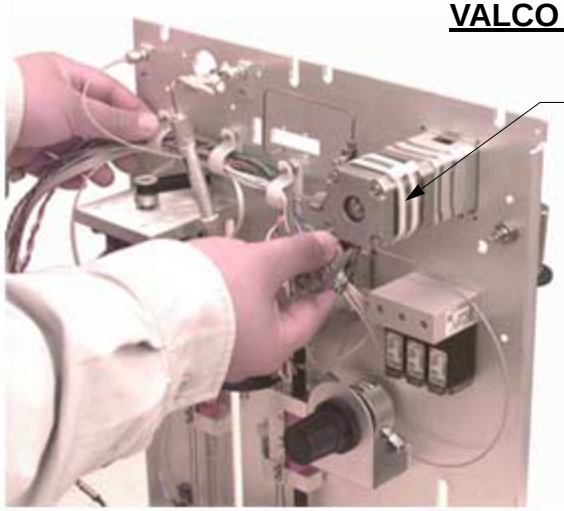
HELIUM MANIFOLD/PRESSURE REGULATOR ASSEMBLY INSTALLATION

CLICK HERE FOR
HELIUM MANIFOLD SUB-ASSEMBLY

NOTES:

1. REFER TO HELIUM MANIFOLD SUB-ASSEMBLY EXPLODED VIEW ASSEMBLY PROCEDURES FOR REFERENCE.
2. MAKE SURE THE SECOND TUBING TO BE PLACE ON THE FIRST AND SECOND NYLON CABLE CLAMPS ONLY. THIS KEEP TUBING FROM OVER BENDING AND DAMAGING THE TUBING.

VALCO VALVE W/6-PORTS, RESERVOIR MOUNT & WASTE MIXING MANIFOLD INSTALLATION



22-119654-00, 2 PLCS
CABLE, TIE, 11-1/2" LG

SCREWS SUPPLIED
WITH VALCO VALVE

DY-505879-00
VALCO VALVE W/6-PORTS

ATTACH TUBING FROM LEFT SIDE OF
HELIUM MANIFOLD *MIDDLE*

DY-505604-00, 2 PLCS
STANDARD RESERVOIR MOUNT

12-222004-06, 2 PLCS
SCREWS, 4-40 X 3/8, SSPH

14-212004-00, 2 PLCS
WASHER, #4 SPLIT LOCK, S/S

WIRING/TUBING (REF.)

14-202015-00, 2 PLCS
WASHER, LOCK, 5/16

ATTACH TUBING FROM RIGHT SIDE OF
HELIUM MANIFOLD *UPPER RIGHT*

ATTACH TUBING FROM RIGHT SIDE OF
HELIUM MANIFOLD *LOWER RIGHT*

28-849710-00, 2 PLCS
FITTING, BARB 1/6 X 10-32

14-112004-00, 2 PLCS
WASHER, FLAT LIGHT S/S

DY-505831-00
WASTE MIXING MANIFOLD

CLICK HERE FOR
WASTE MIXING MANIFOLD ASSEMBLY

CLICK HERE FOR
VALCO VALVE W/6-PORTS ASSEMBLY

1.3 HELIUM MANIFOLD PLUMNING

1.3.1 Connect first (upper) Tubing from right side of Helium Manifold to right side of the Pressure Regulator Assembly and connect second (lower) Tubing to left side of the Pressure Regulator Assembly as shown.

1.3.2 Place the first (upper) Tubing from left side of Helium Manifold onto three Nylon Cable Clamps. Place the second (middle) Tubing onto the first two Nylon Cable Clamps **only** and connect to the 1/16” Brass Bulkhead Union where shown.

Note: Make sure the second Tubing to be place on the first and second Nylon Cable Clamps only. This keep tubing from over bending and damaging the tubing.

1.3.3 Place the Tubing from (bottom) of the Helium Manifold onto three Nylon Cable Clamps.

1.4 RESERVOIR MOUNT INSTALLATION

1.4.1 Install Standard Reservoir Mount (DY-505604-00), using one 5/16 Split Lock Washer (14-202015-00) and Hex Nut supplied with Standard Reservoir Mount. Install one Hose Nozzle (28-849710-00) onto Standard Reservoir Mount as shown. Repeat previous step on opposite side.

1.5 WASTE MIXING MANIFOLD INSTALLATION

1.5.1 Install Waste Mixing Manifold (DY-505831-00) in order shown, using two Flat Light Washers (14-11204-00) on Waste Mixing Manifold side, two #4 Split Lock Washers (14-212004-00) on back side of Syringe Plate and secure with two 4-40 x 3/8 PH HD Screws (12-222004-06).

1.6 VELCO VALVE W/6 PORTS INSTALLATION

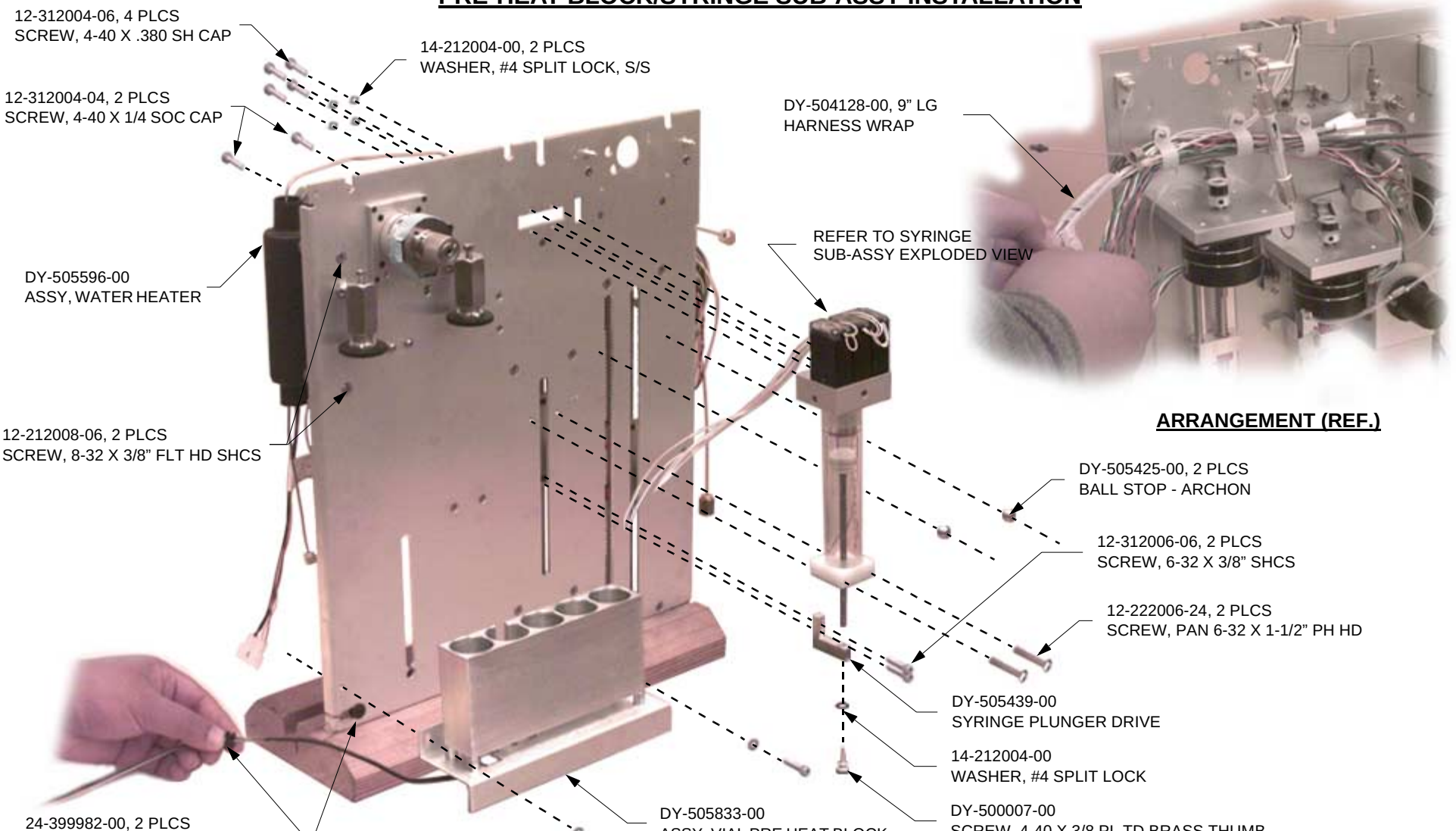
1.6.1 Install Valco Valve W/6 Ports (DY-505879-00) by feeding the connectors through the Syringe Plate where shown and secure with four screws that supplied with Valco Valve as shown.

1.6.2 Install two 11-1/2” Lg Cable Ties (22-119654-00) on the Valco Valve where shown on page 5.

1.6.3 Feed the connectors from the Waste Mixing Manifold up and behind the tubing on right side Helium Manifold Assembly. Route the same connectors over Helium Manifold Assembly and place onto three Nylon Cable Clamps.

1.6.4 Place connectors from Valco Valve and place onto three Nylon Cable Clamps as shown.

PRE-HEAT BLOCK/SYRINGE SUB-ASSY INSTALLATION



ARRANGEMENT (REF.)

CLICK HERE FOR
VIAL PRE HEAT BLOCK ASSEMBLY

CLICK HERE FOR
SYRINGE EXPLODED SUB-ASSEMBLY

1.7 VIAL PRE-HEAT BLOCK ASSEMBLY INSTALLATION

1.7.1 Install one 3/16” Blk Neoprene Grommet (24-399982-00) into slotted cutout at the lower left corner of Syringe Plate. Obtain the second Grommet, cut grommet and insert wire prior to secure grommet to sheet metal.

1.7.2 Assemble the Vial Pre-Heated Block Assembly to the Syringe Plate, using two #6 Lock Split Washers (14-212006-00) and two 6-32 x 1/4 Soc Screws (12-312006-04) as shown.

Note: Verify that when screws are tight, they are at the top of the slot.

1.8 WATER HEATER ASSEMBLY INSTALLATION

1.8.1 Install Water Heater Assembly (DY-505596-00) onto the Syringe Plate, using two 8-32 x 3/8 Flat Hd SCHS Screws (12-212008-06) where shown.

1.9 SYRINGE SUB-ASSEMBLY INSTALLATION

1.9.1 Install Syringe Plunger Drive (DY-505439-00) into the Syringe Plate, using two 6-32 x 3/8” SHCS Screws (12-312006-06) where shown.

Note: Apply Loctite #242 to screws thread prior to installation.

1.9.2 Install Syringe Sub-Assembly in order as shown, using two 6-32 x 1-1/2” PH HD Screws (12-222006-24), four #4 Split Lock Washers (14-212004-00) and four 4-40 x 3/8 SH Cap Screws (12-312004-06) as shown.

1.9.3 Install Brass Thumb Screw (DY-500007-00), using one #4 Split Lock Washer (14-212004-00) into 26ml Plunger Rod.

Note: Apply Loctite #242 to screws thread prior to installation and finger tight only.

1.9.4 Dress wires between Syringe Manifold, over the Syringe PLate into the deeper slotted and place onto first two Nylon Cable Clamps as shown.

1.9.4 Install Harness Wrap (DY-504128-00) over *J-11 wires A B C, J-12 wires A B C, J-15 wires* A B and 24” Tubing from bottom of Helium Manifold.

DY-700020-00, 2 PLCS
STANDARD RESERVOIR TUBE

28-211532-00, 2 PLCS
COMBO PEEK FIT'G & FERR. 1/16"

DY-700017-00
WASTE LINE #1 (GREEN)

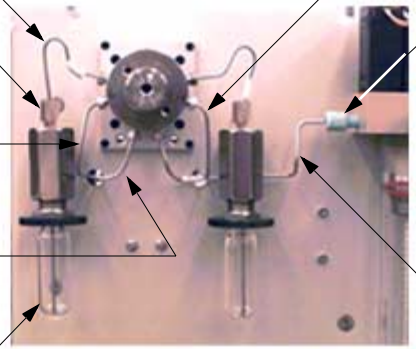
DY-505502-00
TUBE, VALCO VALVE
TO MIXING MANIFOLD

STANDARD RESERVOIR
INSTALL IN STAION 5 (REF.)

DY-700018-00
WASTE LINE #2 (RED)

DY-700081-01
FLANGELESS NUTS & FERRULE

DY-505501-00
TUBE, VALCO VALVE TO
SYRINGE MANIFOLD



VALCO VALVE PLUMING

DY-505436-00
STAGE MOUNT, ARCHON

DY-505806-00, 2 PLCS
SCREW, 6-32 X 1/2 SHS NYLON PTC

DY-505834-00
VAIL ELEVATOR MECHANISM

12-312006-06
SCREW, 6-32 x 3/8 Soc HD

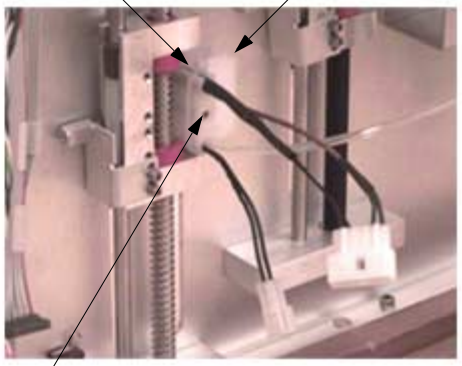
28-158923-00, 8' LG
TUBE, 1/8 X 1/16, CLEAR

12-312004-20, 2 PLCS
SCREW, 4-40 X 1" SHCS, SS

CLICK HERE FOR
VAIL ELEVATOR MECHANISM ASSEMBLY

22-119650-00
CABLE TIE

DY-500354-00
MINI HOSE CLAMP



CONNECTOR WIRES (REF.)

12-312004-20
SCREW, 4-40 X 1 SHC, SS

PLUMBING/VIAL EL EVATOR MECHANISM INSTALLATION

1.10 VALCO VALVE PLUMING

1.10.1 Install Syringe Tube (DY-505501-00) from Valco Valve to Syringe Manifold, using Flangeless Nut & Ferrule (DY-700081-01) as shown.

1.10.2 Install Valco Valve Tube (DY-505502-00) from Valco Valve to left side of Waste Mixing Manifold, using Flangeless Nut & Ferrule (DY-700081-01) as shown.

1.10.3 Insert (green) Waste Line #1 (DY-700017-00) though Syringe Plate and install to second position on the left side Valco Valve Assembly as shown. Repeat the previous step for (red) Waste Line #2 (DY-700018-00) on Valco Valve second position on the right side of Valco Valve Assembly as shown.

1.10.4 Insert two Standard Reservoir Tube (DY-700020-00) with 1/16” Combo Peek Fitting & Ferrule (28-211532-00) into the Standard Reservoir Mount as shown.

1.10.5 Standard Reservoir shown as reference only. This should only be install in Station 5.

1.10.6 Obtain two Fitting from Valco Valve, place in plastic bag and attach to Syringe Plate to be use in Station 5.

1.11 VIAL ELEVATOR MECHANISM INSTALLATION

1.11.1 Install Stage Mount (DY-505436-00) to the Vial Drive Block, using 6-32 x 1/2 SHS Nylon PTC Screws (DY-505806-00) at the top and 6-32 x 3/8 Soc HD Screw (12-312006-06) with Loctite #242 at the bottom screw only.

1.11.2 Obtain 1/8 x 1/16 Clear Tube (28-158923-00), cut approximately 8’ long and attach to Fitting on bottom of the Vial Elevator Mechanism Assembly (DY-505834-00) not shown.

1.11.3 Feed the connectors on Vial Elevator and Clear Tubing through the slotted cut-out on the Syringe Plate. Secure the Vial Elevator Assembly to Stage Mount, using two 4-40 x 1” SHCS Screws (12-312004-20) as shown.

1.11.4 Install Mini Hose Clamp (DY-500354-00) onto Vial Elevator and secure with one 4-40 x 1 SHCS Screw (12-312004-20). Install Cable Tie with connector wires and Clear Tubing on both side of the Clamp as shown in *Connector wires (Ref.).*

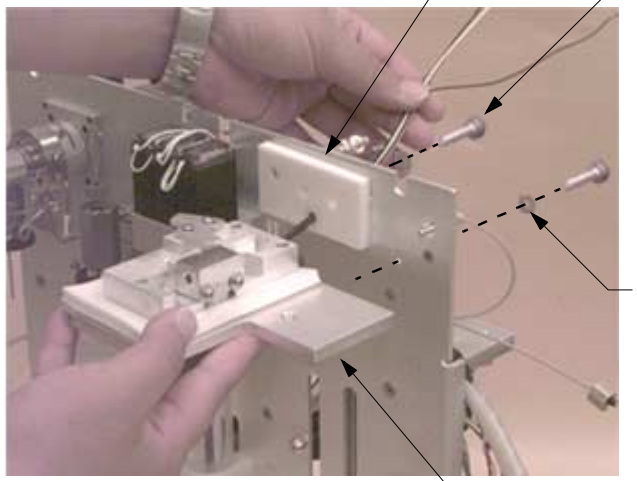


FIGURE 1

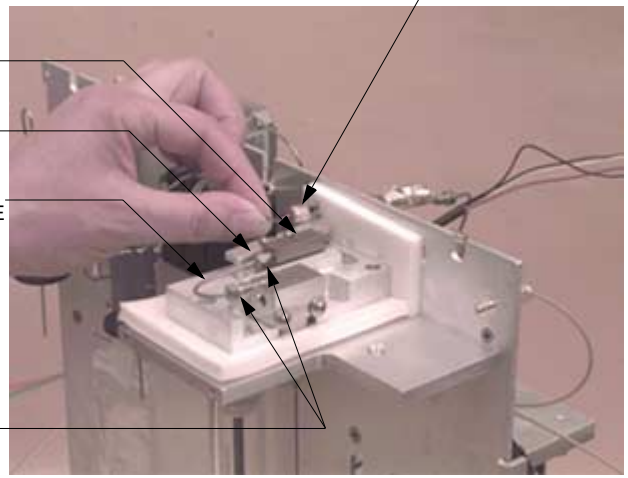


FIGURE 2

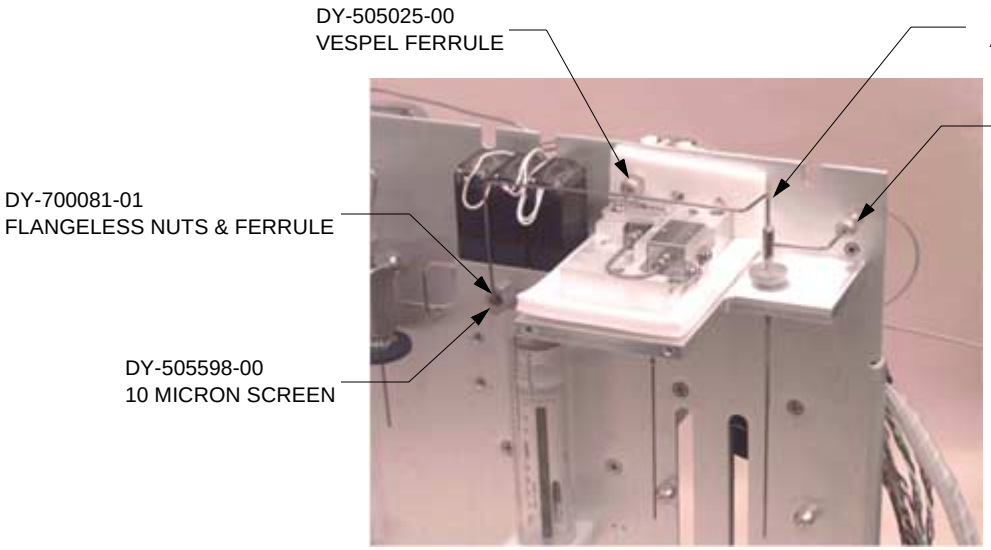


FIGURE 3

CLICK HERE FOR
PROBE MOUNTING PLATE PLUMING ASSEMBLY

UPPER HEATER PROBE ASSEMBLY INSATLLATION

NOTES:

1. USE NUT FROM 1/16" BRASS BULKHEAD UNION REFER TO STEP 1.2.3 ON FINGER TIGHT BRASS NUT AND **ONE** 1/4 TURN.
2. USE NUT FROM 1/16" BRASS BULKHEAD UNION REFER TO STEP 1.2.3 ON PAGE 4 AND **TWO** 1/4 TURN.

1.12 UPPER HEATER PROBE ASSEMBLY INSTALLATION

1.12.1 Feed the wire from the Upper Heater Probe Assembly (DY-700080-01) through the Platform Insulation (DY-700073-01) and insert through a lower left hole next to the large hole on Syringe Plate not shown. Secure the Upper Probe Assembly to Syringe Plate, using two #6 Split Lock Washers (14-202006-00) and two 6-32 x 3/8 Soc HD Screws (12-312006-06) as shown in figure 1.

1.12.2 Install Connectors

1.12.3 Swag the tubing on the Purge Probe Cleaned Assembly (DY-700077-01), using Vespel Ferrule (DY-505025-00) and Nut from 1/16" Brass Bulkhead Union left over from step 1.2.3 on page 4. Finger tight the 1/16" Brass Bulkhead Union Nut and 1/4 turn.

1.12.4 Insert 10 Micro Soil Frit (DY-545599-00) into Purge Probe Cleaned Assembly ***make sure it bottom out,*** assemble the longer end of Probe to Valve Tube (DY-700073-01), using 1/16" SST Ferrule (28-694533-00) and 10-32 Male Nut (28-211539-00) on both ends if not pre-assemble. Leave the fitting loose for now.

1.12.5 Loosen the screws on the Probe Retainers of the Upper Heater Probe Assembly. Place the Purge Probe Cleaned Assembly on top of the Upper Heater Probe Assembly, make sure it properly seated and tighten the screws on both Probe Retainer into original place. Finger tight the 1/16" Brass Bulkhead Union Nut from Step 1.12.2 and 1/4 turn.

1.12.6 Install Fitting from the Helium Manifold Assembly to rear of the Purge Probe Cleaned Assembly and install the fitting on short end of the Probe to Valve Tube to the Upper Heater Probe Assembly as shown on Figure 2. Tighten both fitting on the Probe to Valve Tube Assembly.

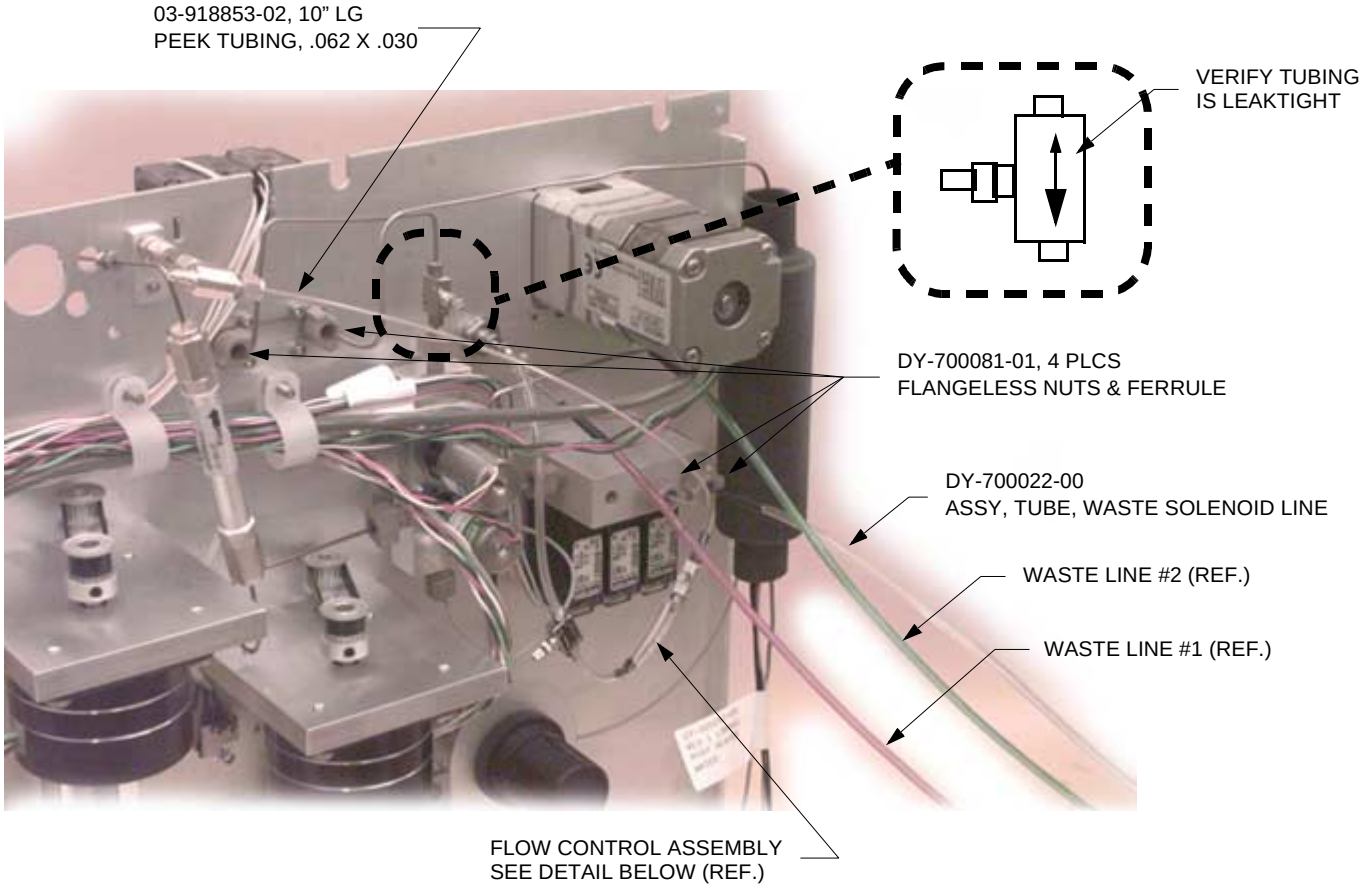
1.12.7 Place the Water Probe Assembly into a hole on the right side of the Upper Heater Probe Assembly and finger tight the thumb screws. Secure the right side tubing on the Water Probe Assembly, using Nut from 1/16" Brass Bulkhead Union and two 1/4 turn.

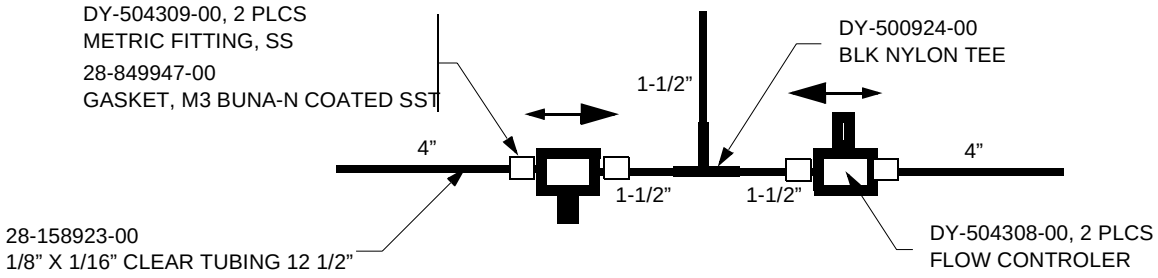
1.12.8 Insert one 10 Micron Screen (DY-505598-00) into front hole of Syringe Sub-Assembly ***make sure it bottom out with white surface facing out*** and secure the left side tubing of on the Water Probe Assembly, using Flangeless Nut & Ferrule (DY-700081-01) as shown on page 11.

1.13 COMPLETING THE FINAL PLUMBING

1.13.1 Install Waste Solenoid Line Tube Assembly (DY-700022-00) into the a hole on right side of Waste Mixing Manifold, using Flangeless Nut & Ferrule (DY-700081-01) as shown on page 13.

1.13.2 Cut 10" from .062 x .030 Peek Tubing (03-918853-02), attach to Waste Mixing Manifold and 16" Brass Union Tee (28-694094-00) as shown on page 13.



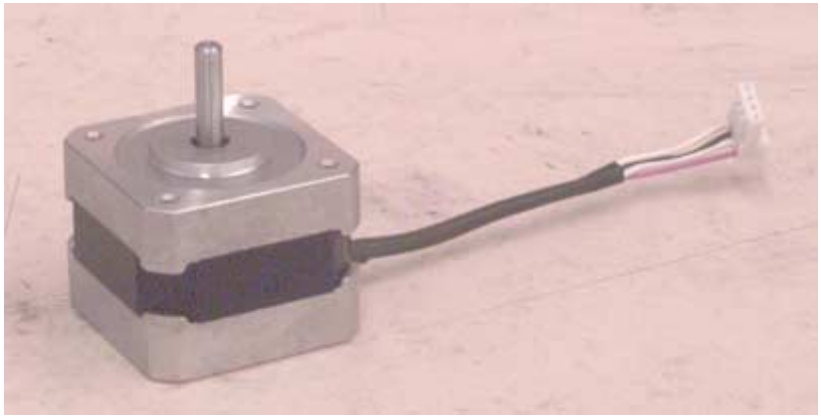


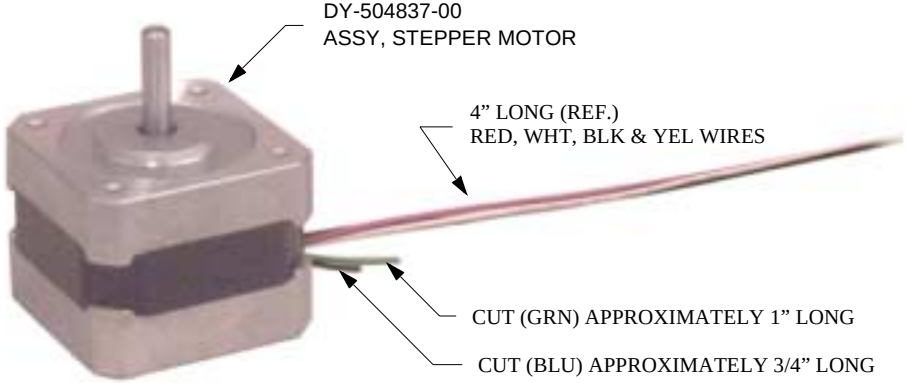
FLOW CONTROL ASSEMBLY

COMPLETING FINAL PLUBMING

ASSY, MOTOR, UP/DOWN

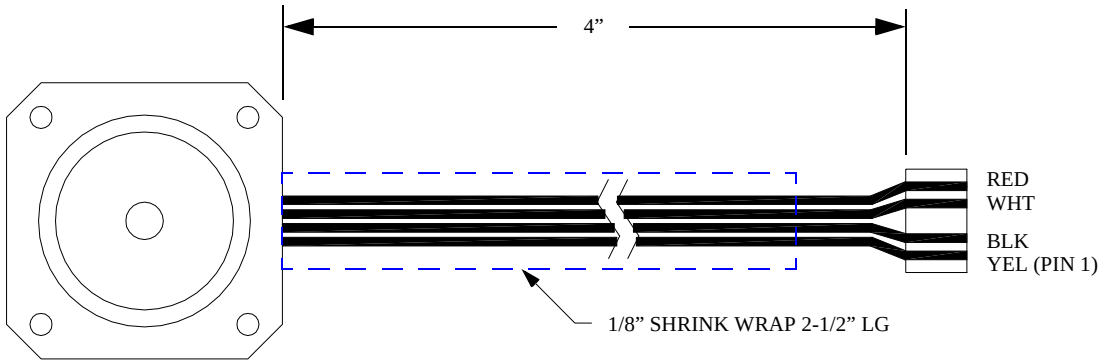
ARCHON STATION #3, ASSEMBLY PROCEDURES



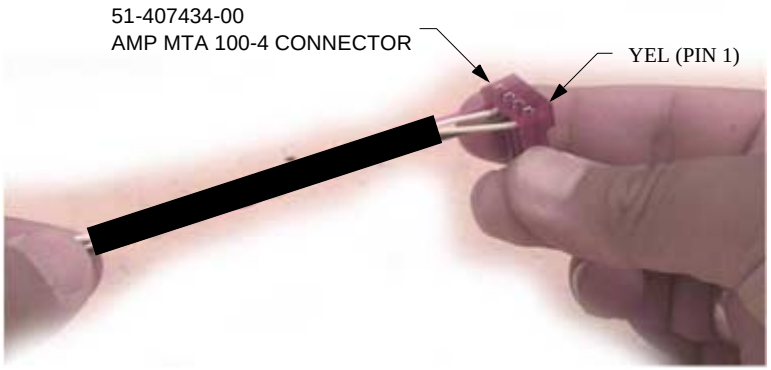


NOTES:

1. OBTAIN STEPPER MOTOR (DY-504837-00), CUT BLUE & GREEN MOTOR WIRES AT APPROXIMATELY 3/4" & 1" AND SECURE IN PLACE 1/8"DIA. X 2-1/2" HEATSHINK TUBING.
2. INSTALL AMP MTA 100-4 CONNECTOR (51-407434-00) AS SHOWN WITH YELLOW WIRE IN PIN 1 POSITION.



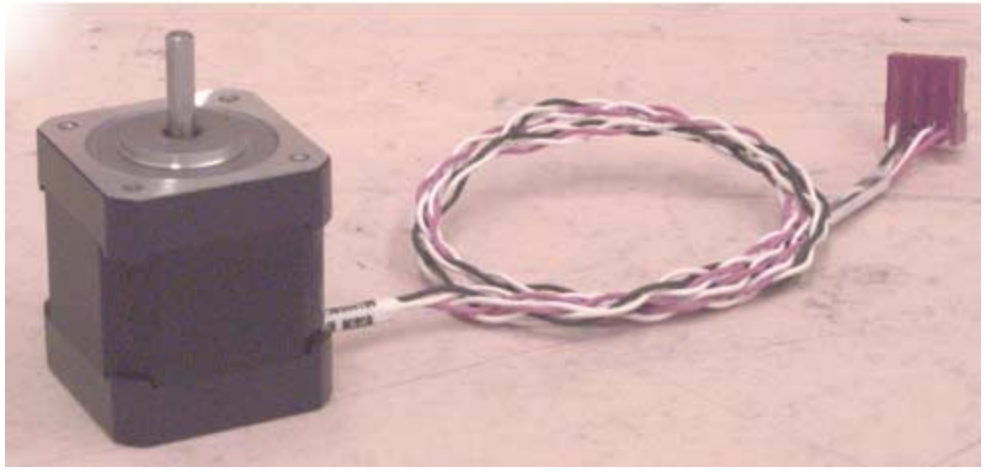
TOP VIEW (REF.)

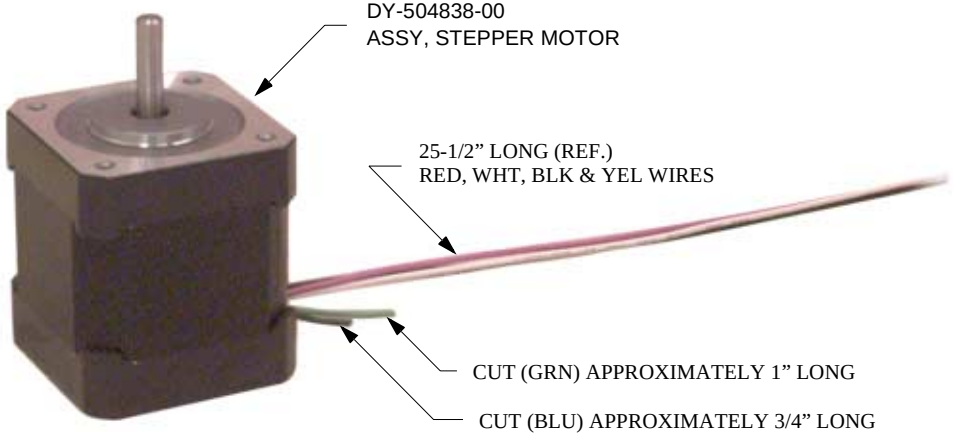


DETAIL "A"

ASSY, MOTOR, FRONT/REAR

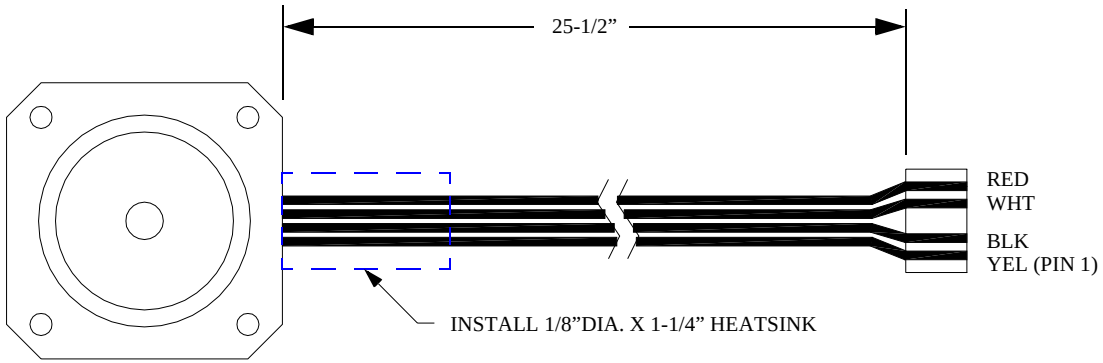
ARCHON STATION #3, ASSEMBLY PROCEDURES



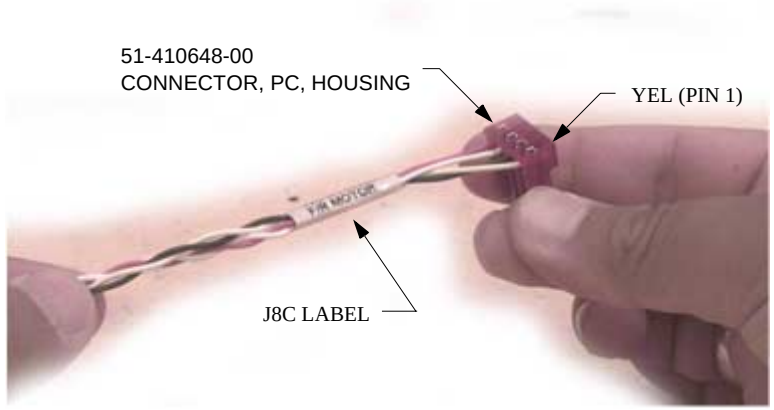


NOTES:

1. OBTAIN STEPPER MOTOR (DY-504838-00), CUT BLUE & GREEN MOTOR WIRES AT APPROXIMATELY 3/4" & 1" AND SECURE IN PLACE 1/8"DIA. X 1-1/4" HEATSHINK TUBING.
2. TWIST THE YELLOW AND BLACK WIRES TOGETHER AT APPROX 3 TWISTS PER INCH.
3. TWIST THE RED AND WHITE WIRES TOGETHER AT APPROX. 3 TWIST PER INCH.
4. INSTALL HOUSING PC CONNECTOR (51-410648-00) AND INSTALL J8C LABEL WHERE SHOWN.



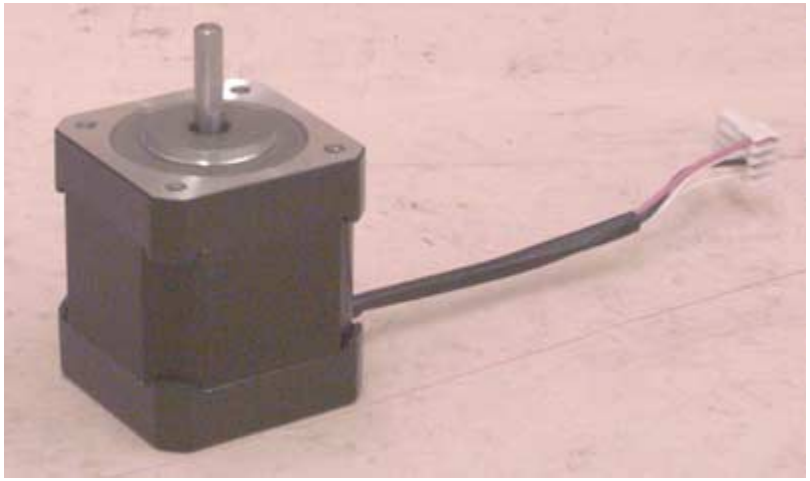
TOP VIEW (REF.)

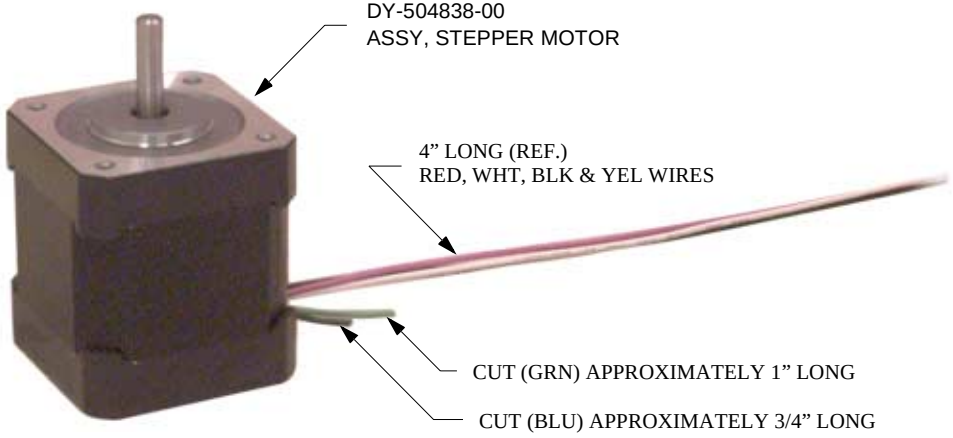


DETAIL "A"

ASSY, MOTOR, LEFT/RIGHT

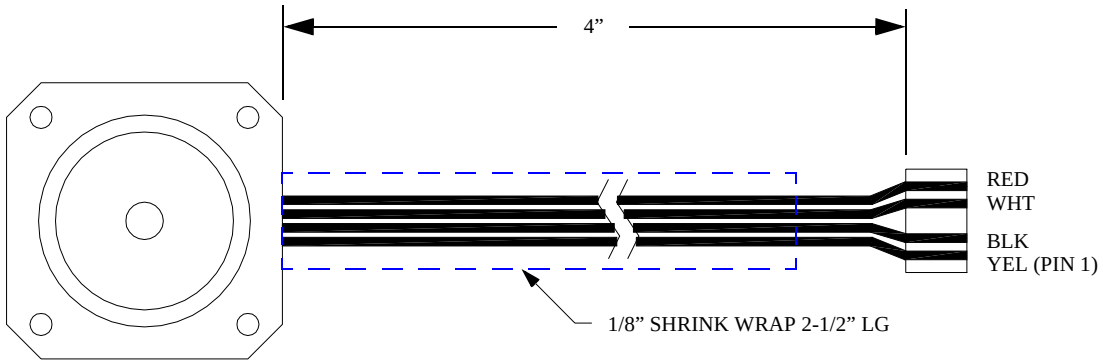
ARCHON STATION #3, ASSEMBLY PROCEDURES



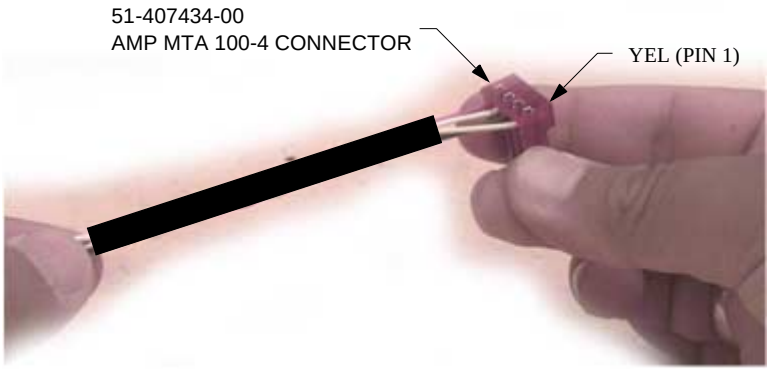


NOTES:

1. OBTAIN STEPPER MOTOR (DY-504838-00), CUT BLUE & GREEN MOTOR WIRES AT APPROXIMATELY 3/4” & 1” AND SECURE IN PLACE 1/8”DIA. X 2-1/2” HEATSHINK TUBING.
2. TWIST THE YELLOW AND BLACK WIRES TOGETHER AT APPROX 3 TWISTS PER INCH.
3. TWIST THE RED AND WHITE WIRES TOGETHER AT APPROX. 3 TWIST PER INCH.
4. INSTALL AMP MTA 100-4 CONNECTOR (51-407434-00) AS SHOWN WITH YELLOW WIRE IN PIN 1 POSITION.



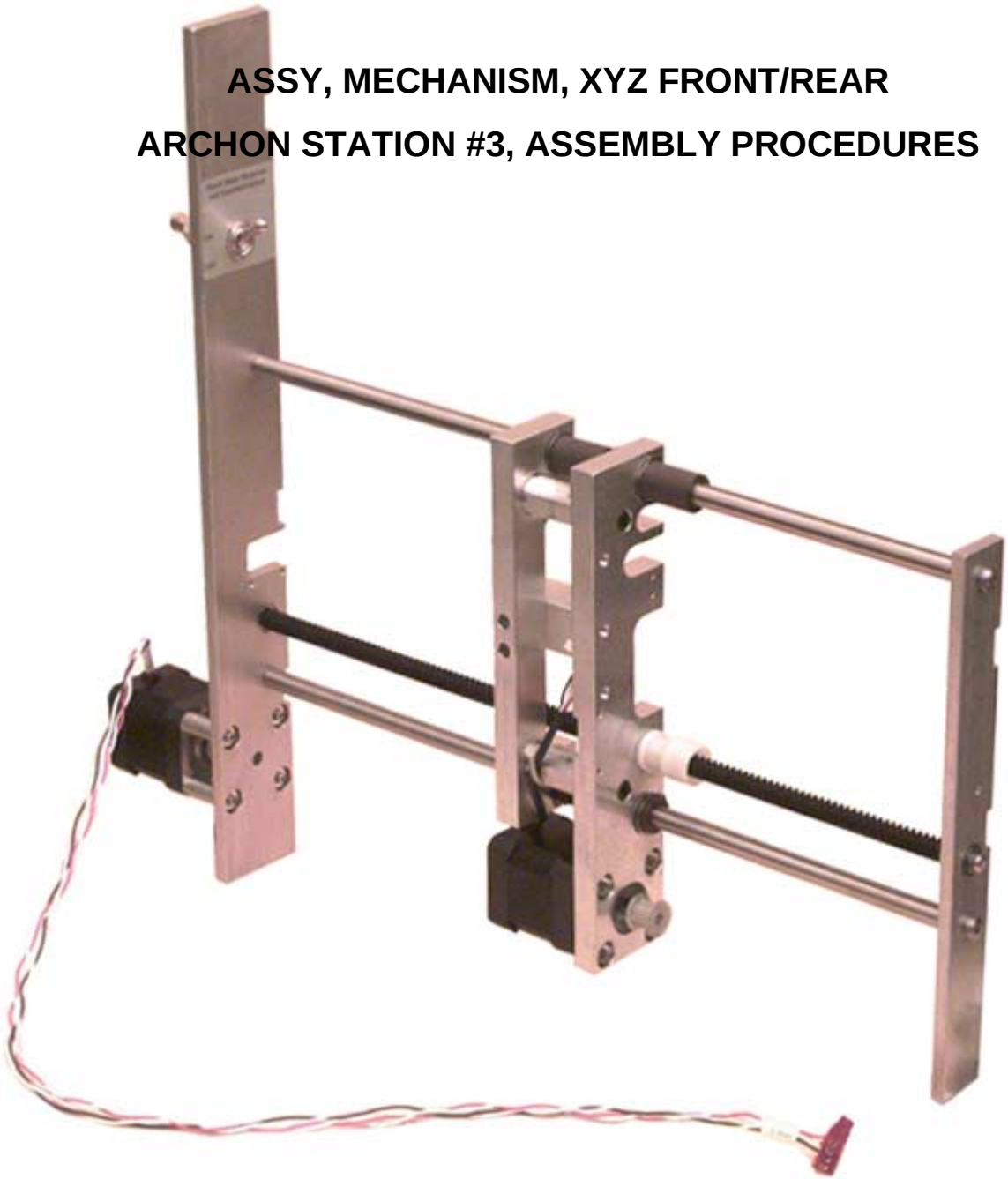
TOP VIEW (REF.)



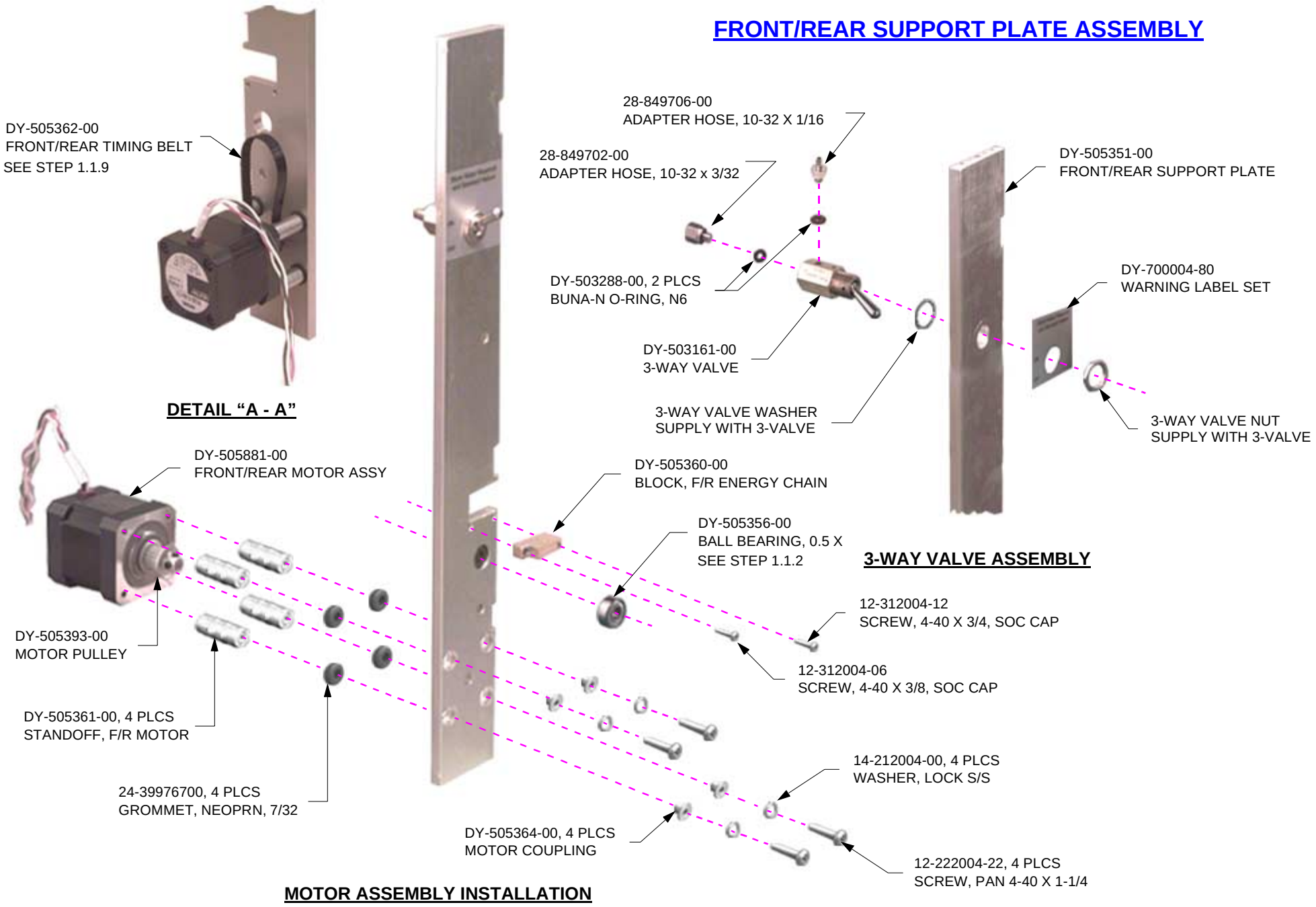
DETAIL “A”

ASSY, MECHANISM, XYZ FRONT/REAR

ARCHON STATION #3, ASSEMBLY PROCEDURES



FRONT/REAR SUPPORT PLATE ASSEMBLY



MOTOR ASSEMBLY INSTALLATION

1. XYZ FRONT/REAR ASSEMBLY

1.1 FRONT/REAR SUPPORT PLATE ASSEMBLY

1.1.1 Obtain Composite Label (DY-700004-80), remove adhesive backing paper and apply over a hole on the Front/Rear Support Plate (DY-505351-00) as shown.

1.1.2 Apply Loctite #609 with Primer to both surfaces to outside surface of Ball Bearing (DY-505356-00) and install into a hole of Front/Rear Support Plate where shown. Let Loctite dry for 60 minutes and wait 10 minutes before further assembly.

1.1.3 Attach Buna-N O-Ring (DY-503288-00) onto 10-32 X 1/16 Hose Adapter (28-849706-00) and install to upper port of 3-Way Valve as shown.

1.1.4 Attach Buna-N O-Ring (DY-503288-00) onto 10-32 X 3/32 Hose Adapter (28-849702-00) and install to rear port of 3-Way Valve as shown.

1.1.5 Attach 3-Way Valve Washer to the 3-Way Valve *body* (DY-503161-00) and insert 3-Way Valve Assembly into a hole on the Front/Rear Support Plate where Composite Label previous install in *Step 1.1.1*. Use 3-Way Valve Nut to secure into place and tighten 3-Way Valve, using 9/16 wrench.

1.1.6 Install four 7/32 Neoprene Grommets (24-399767-00) into lower four holes on Front/Rear Support Plate. If necessary use small Screwdriver to help put these Grommet into place. The Grommet needs to cover over all edges of hole.

1.1.7 Obtain four Motor Couplings (DY-505364-00) and apply a thin layer of silicone grease around the outside of the coupling shafts. This is to lubricate and allow them to be easily inserted into the grommets without the grommets coming out. Install four Motor Couplings into Front/Rear Support Plate opposite side of grommets as illustrated. If necessary use nut driver to push Motor Couplings into place.

Note: Make sure grommets do not come out of Front/Rear Support Plate.

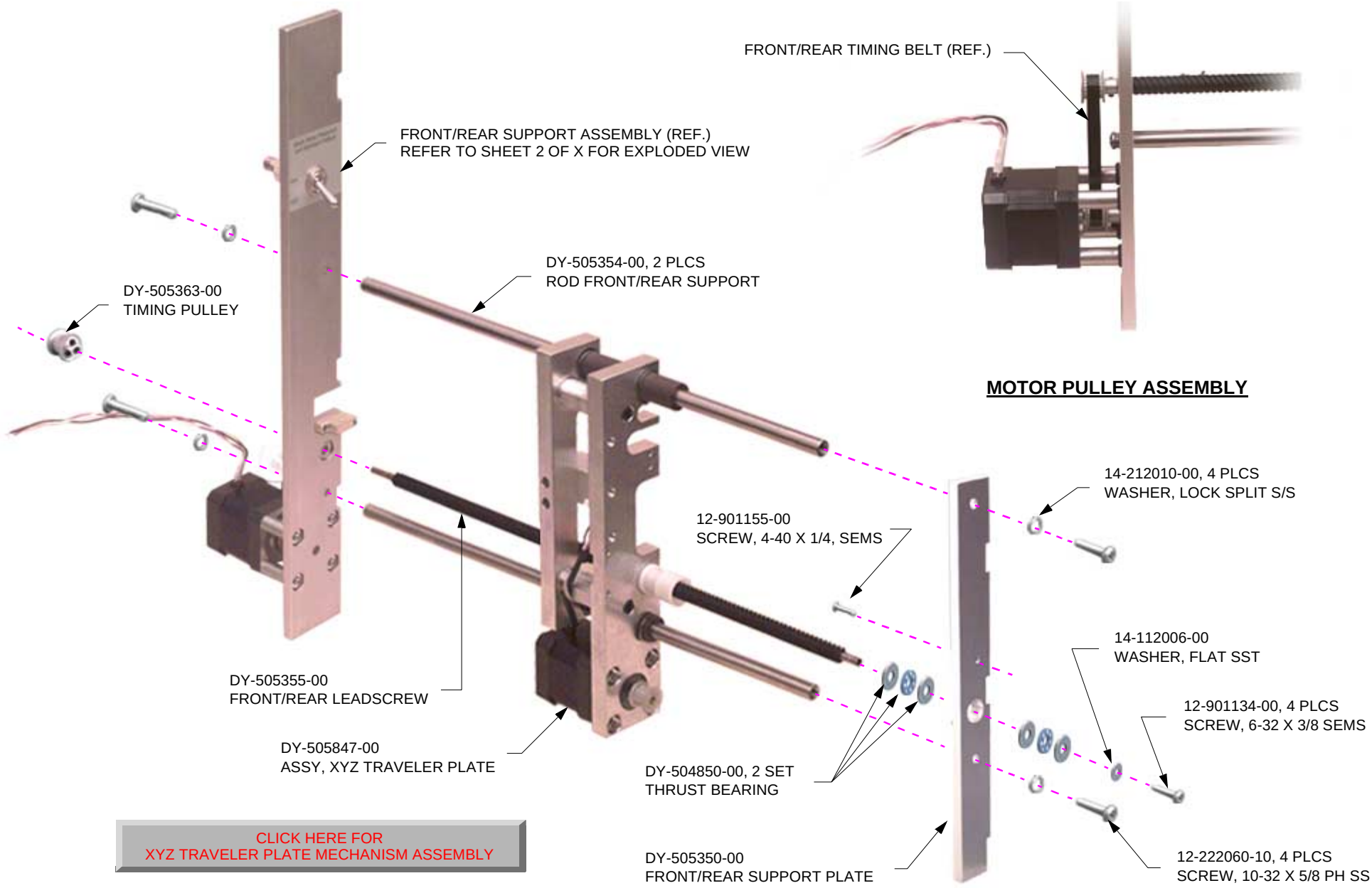
1.1.8 Obtain Motor Pulley (DY-505393-00), back out set screws a little and put loctite #242 on set screws. Mount Motor Pulley onto the Front/Rear Motor Assembly (DY-505881-00) and tighten. Leave space between pulley and base of motor.

Note: Make sure one of the set screws rests on the flat surface of the Motor Assembly shaft.

1.1.9 Place the Front/Rear Timing Belt (DY-505362-00) onto the Motor Pulley and assemble Front/Rear Motor Assembly to the Support Plate, using four Front/Rear Motor Standoffs (DY-505361-00), four Lock Washers (14-212004-00) and four 4-40 x 1-1/4 Pan Screws (12-222004-22) to secure in place as shown.

Note: Make sure the Timing Belt is place between the Motor Standoffs with motor wires facing upward. Motor pulley should move freely without interferences and shouldn't be touching the Front/Rear Support Plate. See Detail "A - A" for reference.

1.1.10 Install F/R Energy Chain Block (DY-505360-00), using one 4-40 x 3/8 Soc Cap (12-312004-06) and one 4-40 x 3/4 Soc Cap (12-312004-12). Apply Loctite #242 on both screws prior to installation not shown.



CLICK HERE FOR
XYZ TRAVELER PLATE MECHANISM ASSEMBLY

SUPPORT PLATE ASSEMBLY INSTALLATION

1.2 SUPPORT PLATE ASSEMBLY INSTALLATION

1.2.1 Screw Front/Rear Leadscrew (DY-505355-00), with shorter side of extended shaft toward the right side of the XYZ Traveler Plate Assembly (DY-505847-00) half way as illustrated.

1.2.2 Slide two Front/Rear Support Rod (DY-505354-00) into XYZ Traveler Plate Assembly above and below the Leadscrew as shown.

1.2.3 Assemble both sets of Thrust Bearing (DY-504850-00) in order shown into Front/Rear Leadscrew and apply white grease on both sides of bearing prior to assembly. Attach *right side* Front/Rear Support Plate onto the Leadscrew, followed by another set of Thrust Bearings with white grease applied to them. Secure with one Flat Washer (14-112006-00) and one 6-32 x 3/8 Sems Screw (12-901134-00) as shown. Apply small amount of Loctite #271 on screw thread prior to installation.

Note: When tightening Sems Screw hold the other end of Leadscrew with pliers. When the leadscrew spinning, the screw is tight. DO NOT use electric screwdriver.

1.2.4 Secure both Front/Rear Support Rods to the Front/Rear Support Plate, using two Split Lock Washers (14-212010-00) and two 10-32 x 5/8 PH SS Screws (12-222060-10) as shown.

1.2.5 Obtain Front/Rear Support Assembly from *Step 1.2.X* and assemble to other end of Leadscrew. Apply Loctite #242 on set screws, place Timing Pulley (DY-505363-00) into the Timing Belt **see picture for position,** then lay both assemblies flat on work bench and force it downward in order to slip Timing Pulley onto Leadscrew extended shaft. Leave the set screws loose.

Note: Make sure one of the set screws rests on the flat surface of the Leadscrew (not shown).

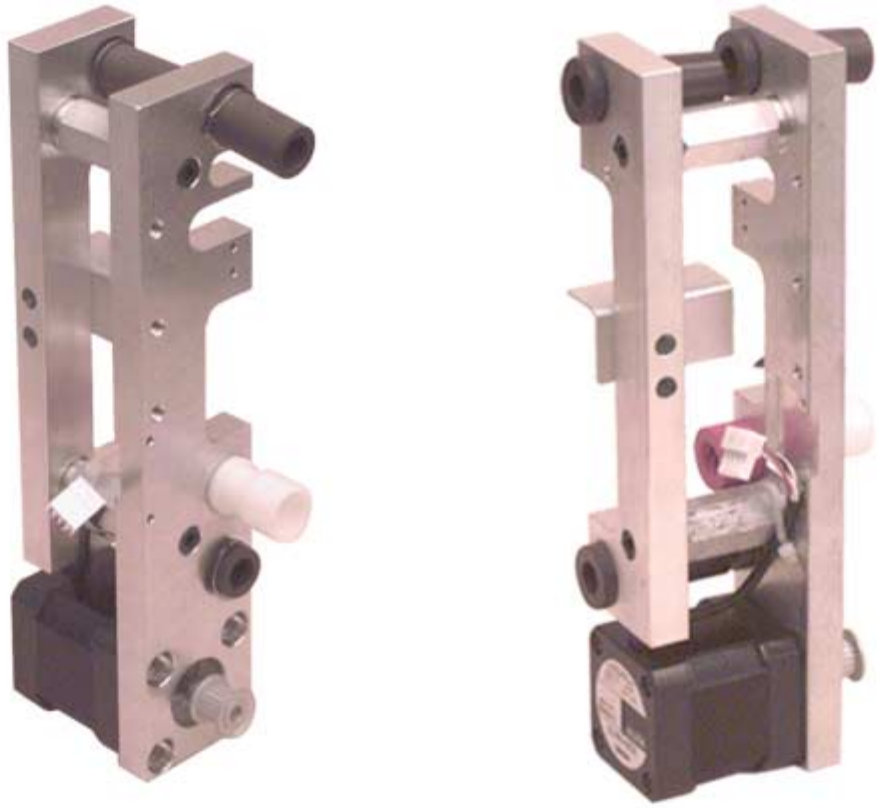
1.2.6 Secure Front/Rear Support Assembly to Front/Rear Support Rods, using two Split Lock Washers (14-212010-00) and two 10-32 x 5/8 PH SS Screws (12-222060-10) where shown.

1.2.7 Now tighten both set screws on the Timing Pulley installed in *Step 1.2.5* and make sure both Pulleys are aligned even with each other then make it tight.

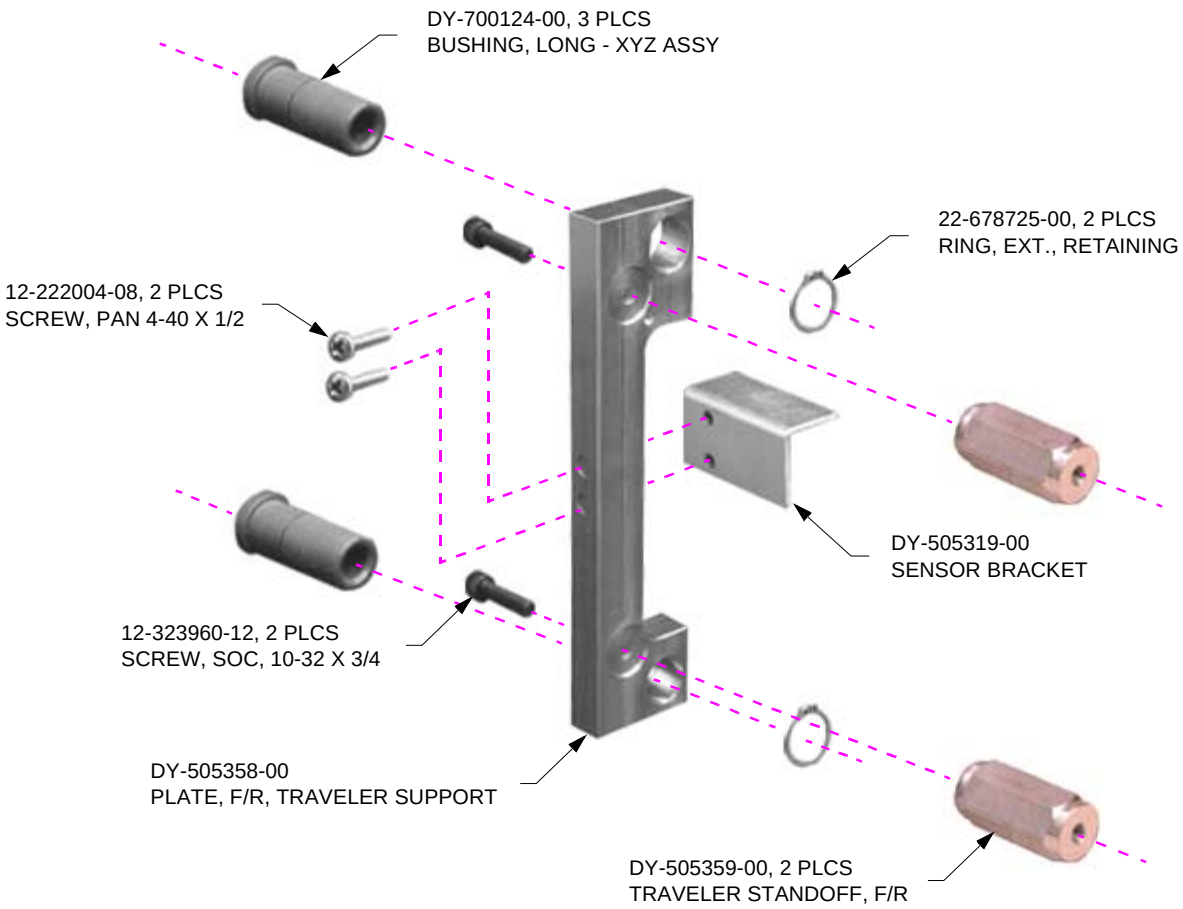
1.2.8 Partially install one 4-40 x 1/4 Sems Screw (12-901155-00) into the Front/Rear Support Plate where shown.

ASSY, XYZ TRAVELER PLATE MECHANISM

ARCHON STATION #3, ASSEMBLY PROCEDURES



FRONT/REAR TRAVELER SUPPORT PLATE ASSEMBLY



EXPLODED ASSEMBLY VIEW

ASSEMBLY VIEW

1. XYZ TRAVELER PLATE MECHANISM ASSEMBLY

1.1 FRONT/REAR TRAVELER SUPPORT PLATE ASSEMBLY

1.1.1 Assemble two Short Bushings (DY-700124-00) into Front/Rear Traveler Support Plate (DY-505358-00) and secure with two Retaining Rings (22-678725-00) where shown.

Note: Bushings should move freely in and out of the holes of the Traveler Support Plate. Make sure the Retaining Ring fits completely in the slot of Bushings all the way around.

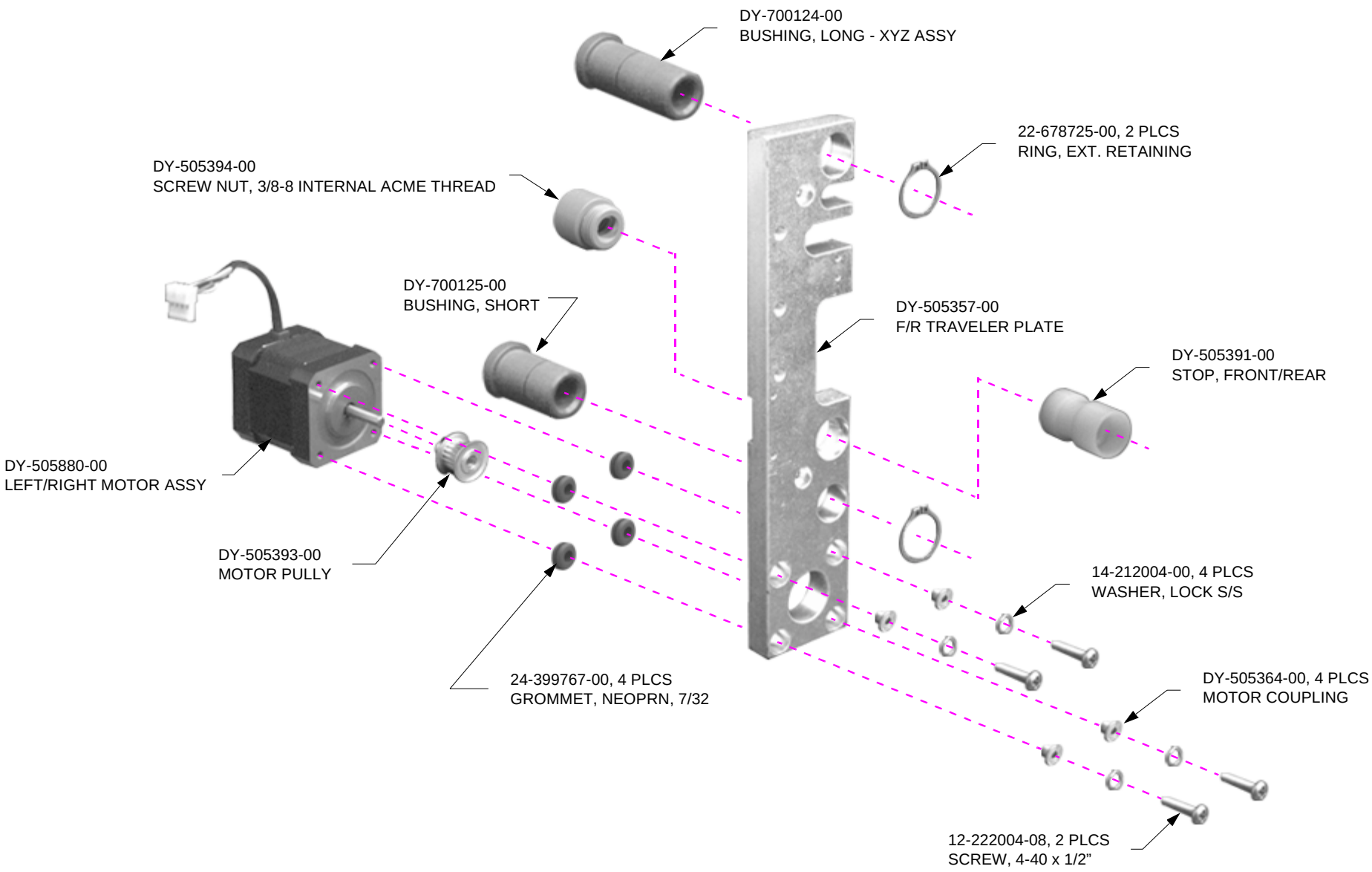
1.1.2 Assemble two Traveler Standoffs (DY-505359-00) onto Front Rear Traveler Support Plate, using two 10-32 x 3/4 SOC Screws (12-323960-12) as shown. Tighten screws using 5/8 wrench.

1.1.3 Attach Sensor Bracket (DY-505319-00) onto Front Rear Traveler Support Plate and secure with two 4-40 x 1/2 PAN Screws (12-222004-08) as shown. Apply Loctite #242 to both screws prior securing the Sensor Bracket not shown.

Note: Make sure the Sensor Bracket is even, not cocked.

Continue next page...

FRONT/REAR TRAVELER PLATE ASSEMBLY



1.2 FRONT/REAR TRAVELER PLATE ASSEMBLY

1.2.1 Install four 7/32 Neoprene Grommets (24-399767-00) into the Front/Rear Traveler Plate (DY-505357-00) as shown. Use small screwdriver to help put grommets into place and make sure all edges of the grommets are within the circle without the grommets coming out.

Note: Entire hole should be covered by grommet.

1.2.2 Obtain four Motor Couplings (DY-505364-00) and apply a thin layer of silicone grease around the outside of the coupling shafts. This is to lubricate them and allow them to be easily inserted into the grommets without the grommets coming out. Install four Motor Couplings into Front/Rear Traveler Plate opposite side of grommets as illustrated. If necessary use nut driver to push Motor Couplings into place.

Note: Make sure grommets do not come out of Traveler Plate.

1.2.4 Obtain Front/Rear Stop (DY-505391-00) and apply Loctite #430 on small end outside surface. Place Front/Rear Stop over the hole on the Front/Rear Traveler Plate where shown and hammer until it bottoms out.

1.2.3 Obtain 3/8-8 Internal ACME Nut Screw (DY-505394-00), apply Loctite #430 on the threads and fingertight into the Front/Rear Stop over the hole on the Front/Rear Traveler Plate opposite of Front/Rear Stop as shown.

1.2.5 Obtain Left/Right Motor Assembly (DY-505880-00) and Motor Pulley (DY-505393-00). Place Spacer Tool T-4379 onto base of the Motor then back out set screws a little on pulley and apply Loctite #242 on set screws. Tighten set screw on the flat of the shaft or the Motor down on spacer tool. This provides you with the exact pace needed between Motor and Pulley.

1.2.6 Assemble the Left/Right Motor Assembly to Front/Rear Traveler Plate, using four Lock Washers (14-212004-00) and four 4-40 x 1/2 Screws (12-222004-08) as shown.

1.2.7 Assemble one Long Bushings (DY-700124-00) into Front/Rear Traveler Support Plate and secure with one Retaining Rings (22-678725-00) where shown.

Note: Make sure Retaining Ring fits in the slot of Bushings all the way around completely. Bushings should move freely in and out of the holes of the Traveler Support Plate.

1.2.8 Install Short Bushing (DY-700125-00) by repeat step 1.2.7

Continue next page...

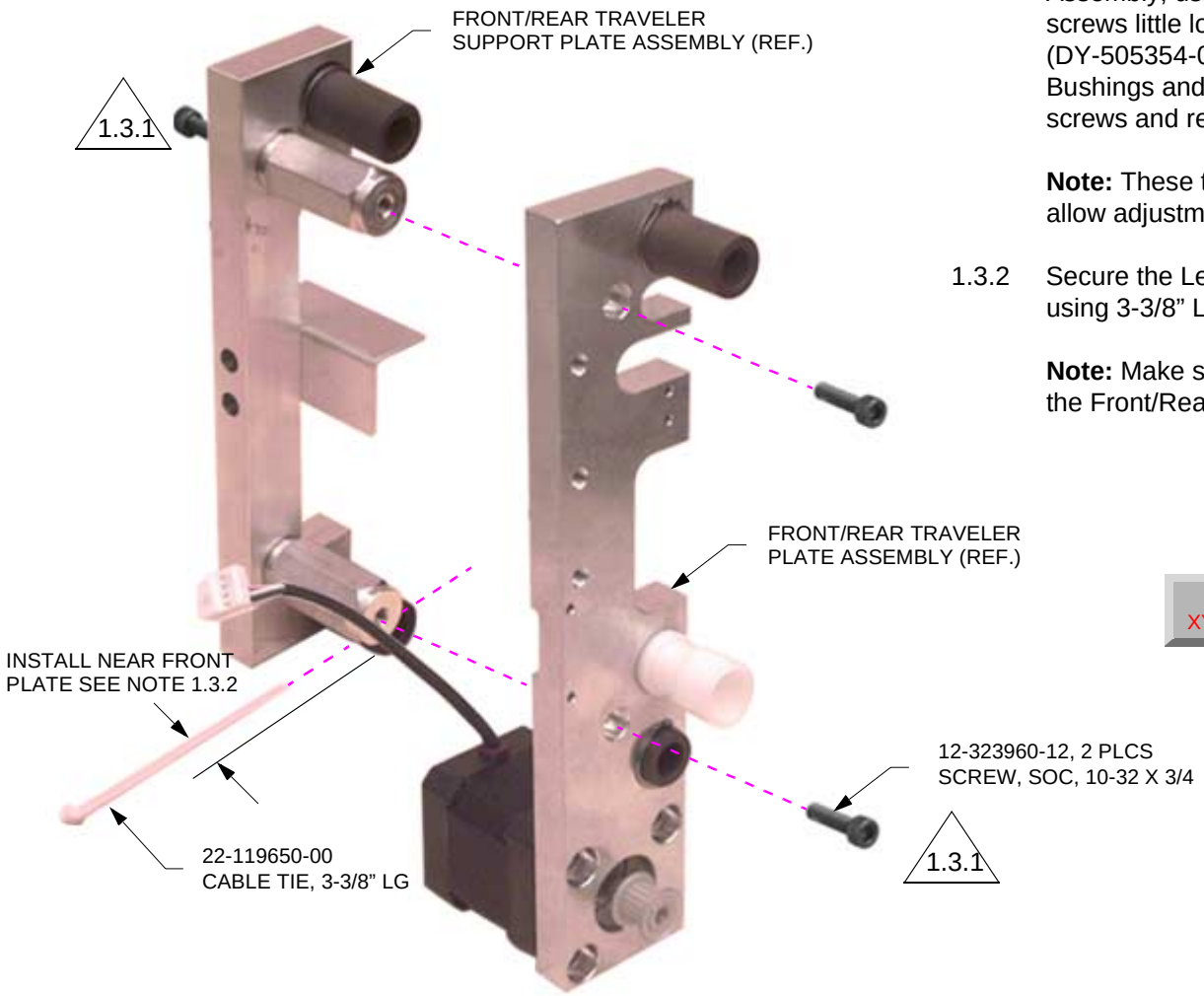
1.3 FRONT/REAR TRAVELER PLATE FINAL ASSEMBLY

1.3.1 Install the Traveler Support Plate Assembly to the Traveler Plate Assembly, using two 10-32 x 3/4 SOC Screws (12-323960-12) leave the screws little loose to allow insertion of Front/Rear Support Rod (DY-505354-00) not shown. Insert Front/Rear Support Rod into Linear Bushings and Short Bushings to help align the two plate, then secure both screws and remove the Support Rods.

Note: These two screws need to be backed out about 1/4" of a turn to allow adjustment in final test. Support Rods are not shown.

1.3.2 Secure the Left/Right Motor Assembly cable to lower Traveler Standoff, using 3-3/8" LG Cable Tie (22-119650-00) as shown.

Note: Make sure when installing the Cable Tie it must be flush up against the Front/Rear Traveler Plate Assembly side of the assembly.

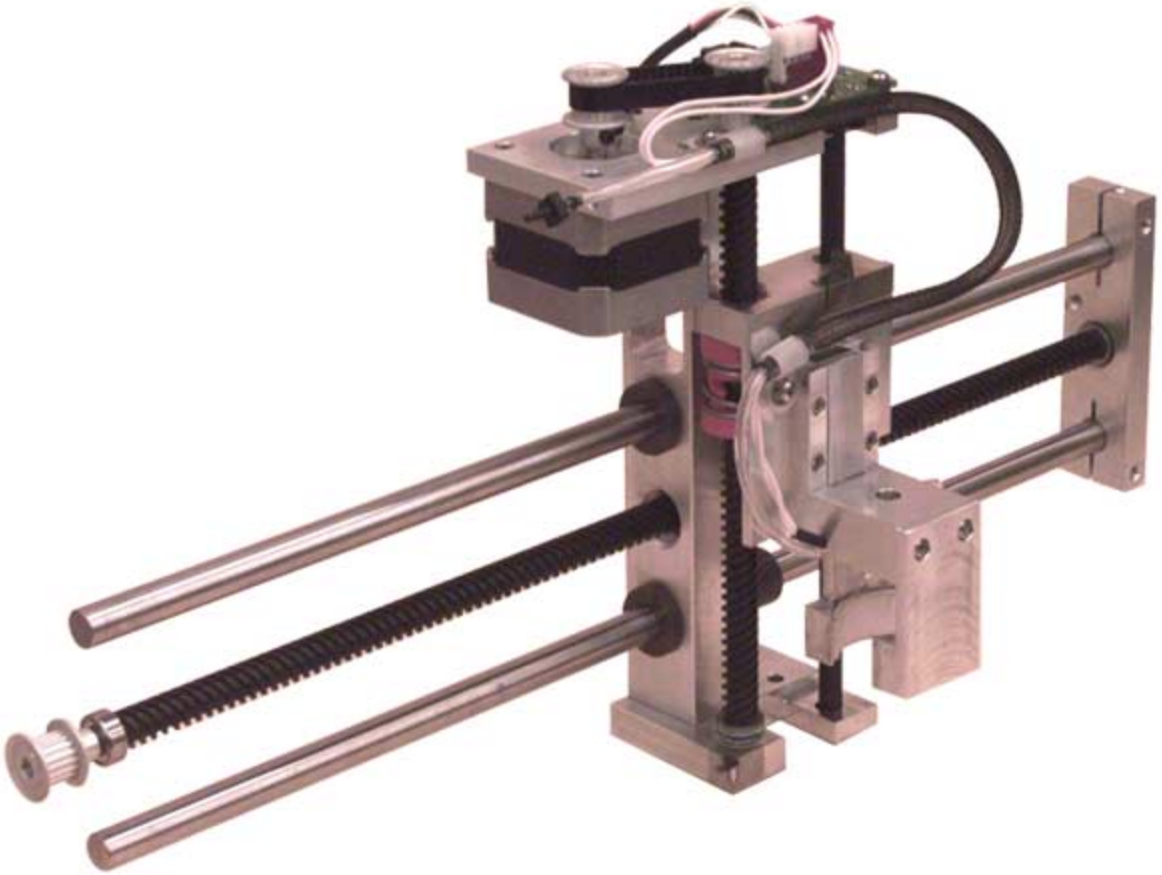


CLICK HERE FOR
XYZ TRAVELER PLATE MECHANISM INSTALLATION

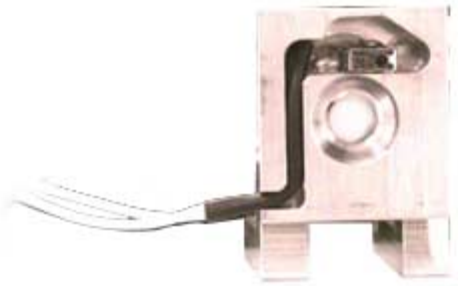
FRONT/REAR TRAVELER PLATE FINAL ASSEMBLY

ASSY, XYZ UP/DOWN MECHANISM

ARCHON STATION #3, ASSEMBLY PROCEDURES

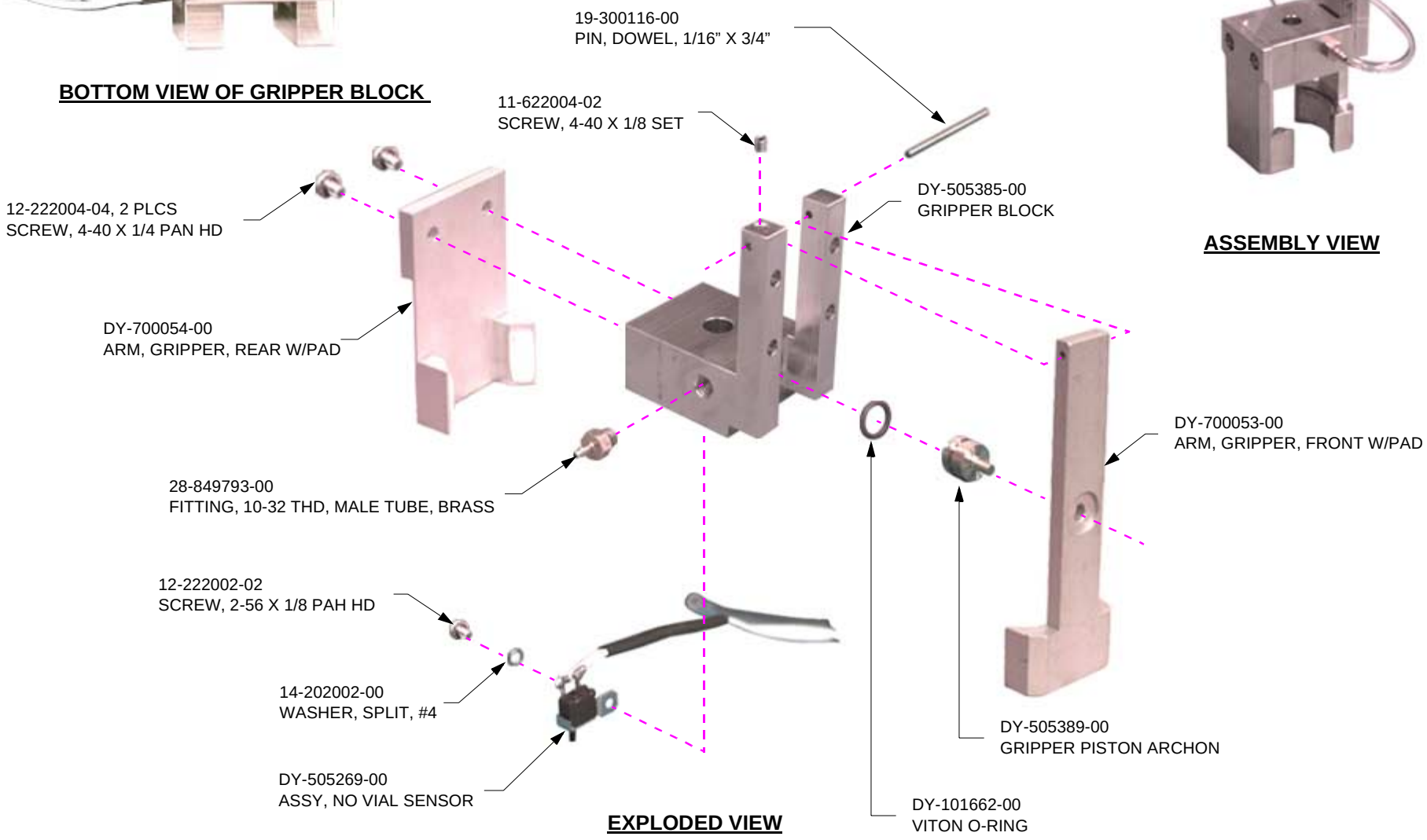


GRIPPER BLOCK ASSEMBLY
(DY-505845-00)



BOTTOM VIEW OF GRIPPER BLOCK

ASSEMBLY VIEW



EXPLODED VIEW

1. XYZ UP/DOWN MECHANISM ASSEMBLY

1.1 GRIPPER BLOCK ASSEMBLY

1.1.1 Assemble one #2 Split Washer (14-202002-00) and one 2-56 x 1/8 PAH HD Screw (12-22202-02) to No Vial Sensor Assembly (DY-505269-00). Secure No Valve Sensor Assembly into bottom cavity of Gripper Block (DY-505385-00) as shown. When putting sensor into Gripper Block.

Note: Make sure the little notch on the sensor fits into the little hole on Gripper Block cavity. Make sure the arms do not touch anywhere on the block after mounting because it will short out.

1.1.2 Obtain the Front Arm Gripper (DY-700053-00) and align holes with extruded parts on the Gripper Block holes. Hammer the 1/16 x 3/4 Dowel Pin (19-300116-00) through the Gripper Block and Front Arm Gripper. Use another Dowel Pin as a tool to hammer a litter more until you can see a little of the Dowel Pin through the threaded hole on top of Gripper Block. Apply small amount of Loctite #242 on a 4-40 x 1/8 Set Screw (11-622004-02) and secure the Dowel Pin in place.

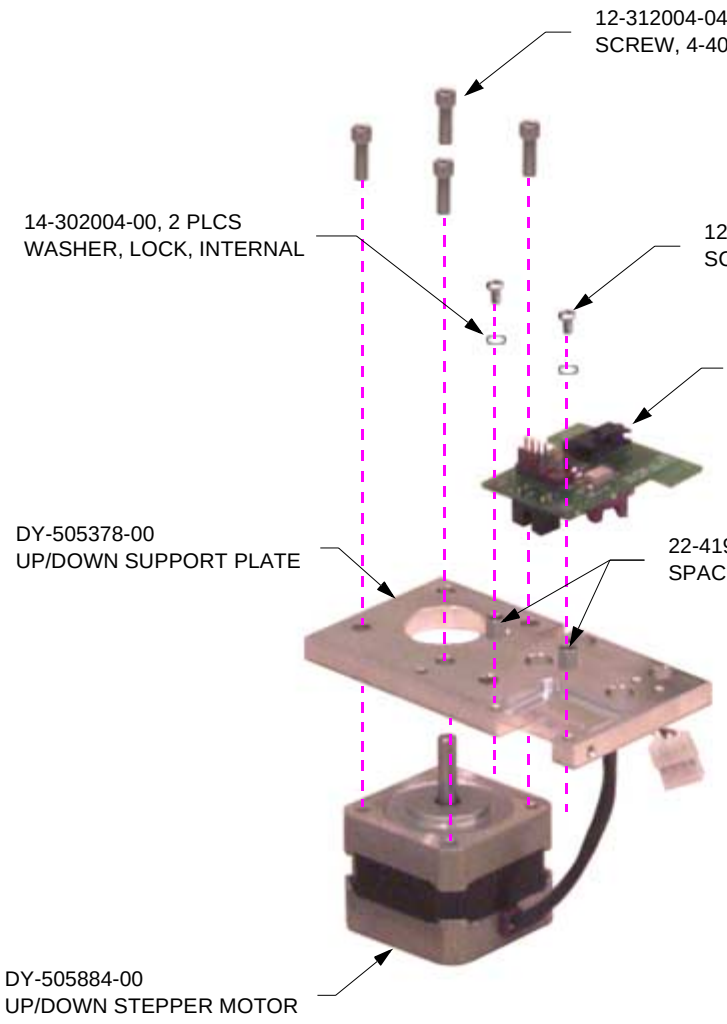
Note: Portion of Dowel Pin should show through the threaded hole top of Gripper Block. After tightening set screw make sure the Arm does move freely, and is not rubbing or difficult to move. If the arm doesn't move freely, just back the set screw out a little.

1.1.3 Install the 10-32 THD Male Tube Brass Fitting (28-849793-00) into side of Gripper Block where shown.

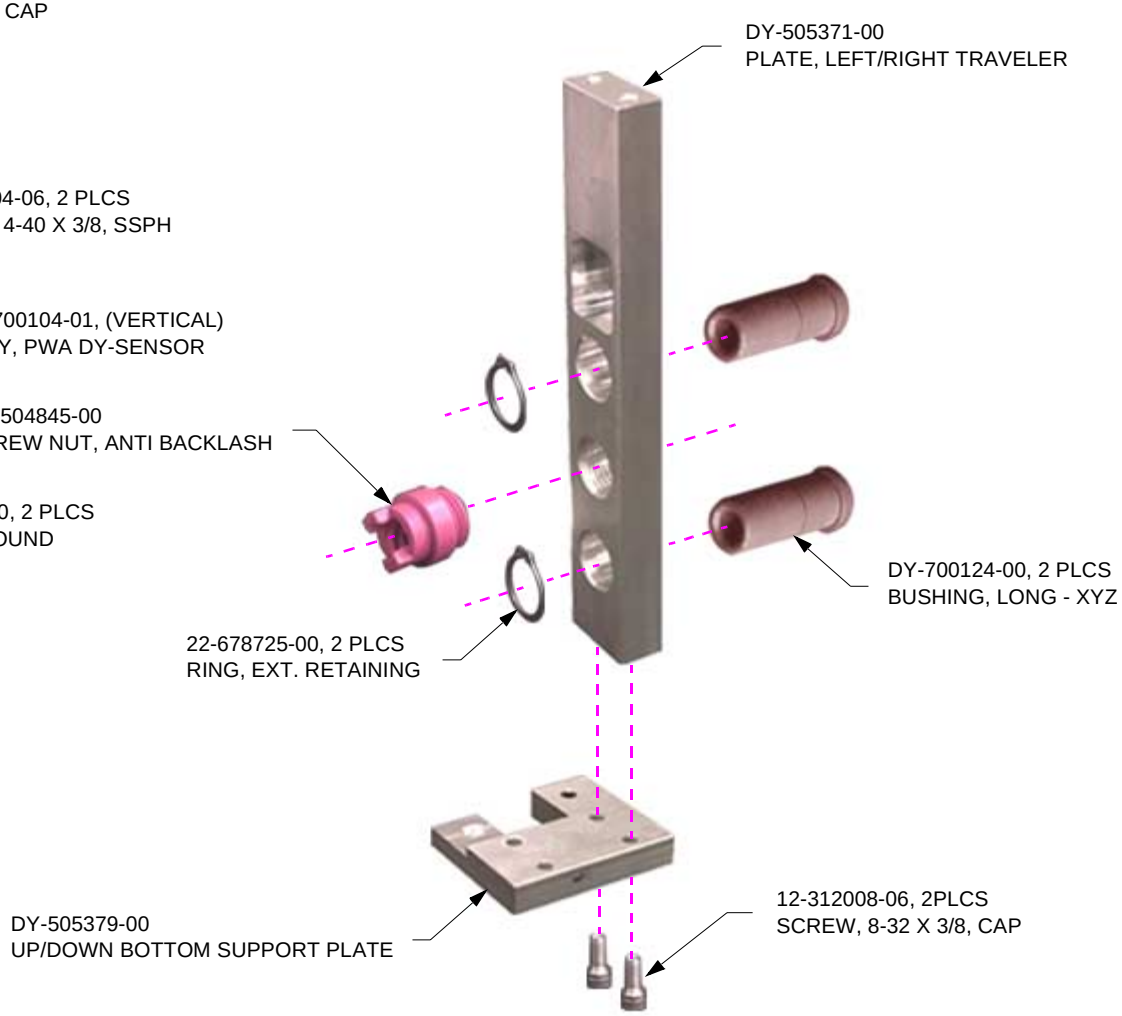
1.1.4 Secure the Rear Gripper Arm (DY-700054-00) to rear of Gripper Block, using two 4-40 x 1/4 PAN HD Screw (12-222004-04) as shown. Apply small amount of Loctite #242 onto threads of Pan Head Screws prior to installation.

1.1.5 Assemble Viton O-Ring (DY-101662-00) onto the groove of Gripper Piston (DY-505389-00) as shown. Apply silicone grease around O-Ring after you put the O-Ring onto the Piston. Coat well, but don't over do it, and insert Piston Assembly into the counterbored hole on Gripper Block where shown.

Continue next page...



STEPPER MOTOR ASSEMBLY



TRAVELER PLATE ASSEMBLY

1.2 STEPPER MOTOR ASSEMBLY

1.2.1 Assemble Up/Down Top Support Plate (DY-505378-00) onto Up/Down Stepper Motor (DY-505884-00), using four 4-40 x 1/4 Cap Screws (12-312004-04) as shown. Apply small amount of Loctite #242 onto screws threads prior to installing.

Note: Make sure position Up/Down Top Support Plate and Up/Down Stepper Motor in arrangement shown.

1.2.2 Obtain PWA DY-Sensor Assembly (DY-700104-01) and split into pieces. Assemble PWA DY-Sensor Assembly labeled *(Vertical)* onto Up/Down Top Support Plate, using two Round Spacers (22-419832-00), two Internal Lock Washers (14-302004-00) and two 4-40 x 3/8 PH HD Screws (12-222004-06) in order as shown. Attach connector from Stepper Motor to *J-2* on PWA DY-Sensor Assembly board.

1.3 TRAVELER PLATE ASSEMBLY

1.3.1 Obtain one 3 part set of 3/8-8 Anti Backlash Screw Nut (DY-504845-00) and apply Loctite #430 around the threads. Assemble the previous part of 3/8-8 Anti Backlash Screw Nut onto Left/Right Traveler Plate (DY-505371-00) as illustrated and tighten with Jig # T-8968 until it bottom out. Leave the remaining 3 part set aside for now.

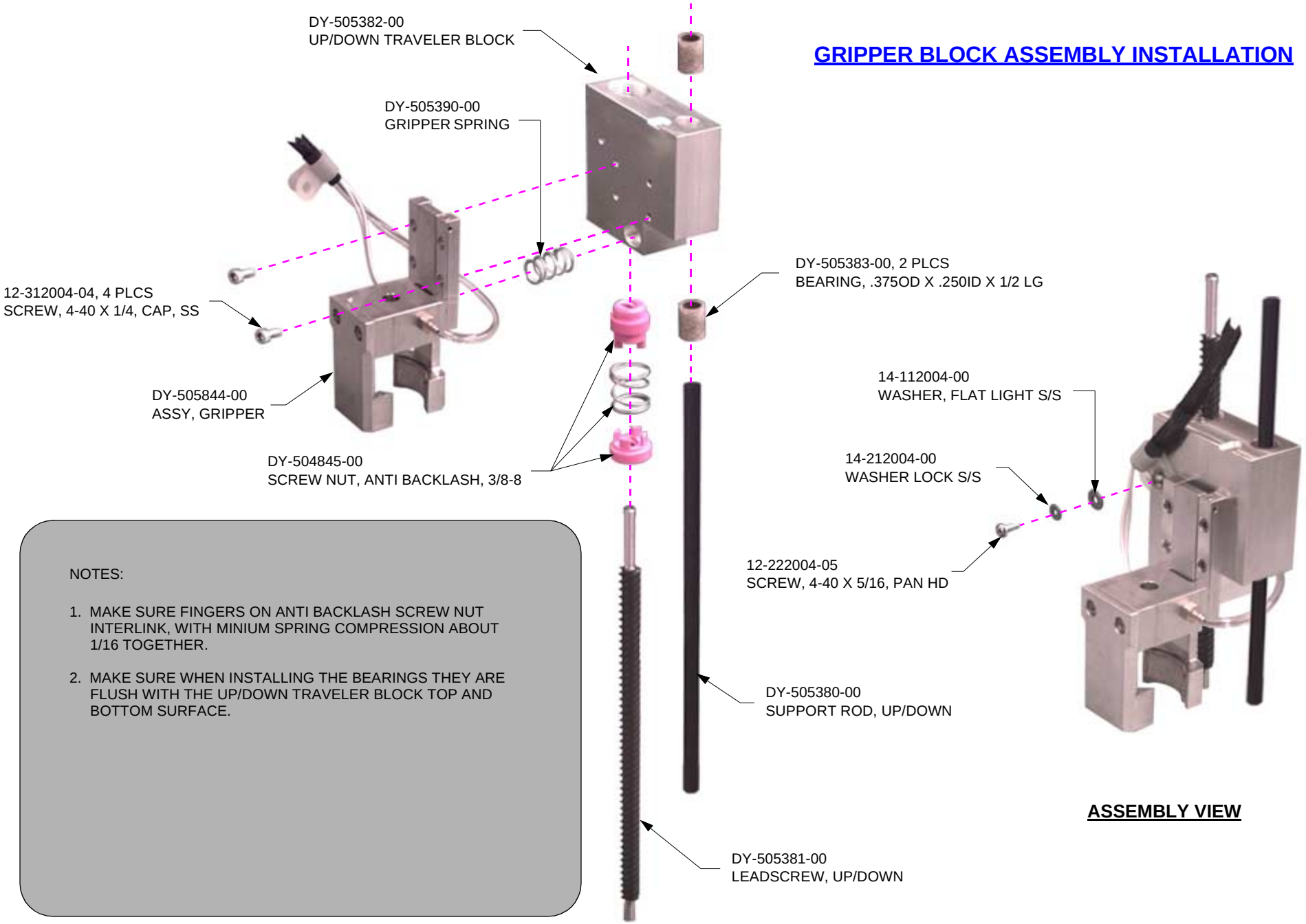
1.3.2 Assemble Up/Down Bottom Support Plate (DY-505379-00) onto Left/Right Traveler Plate, using two 8-32 x 3/8 SST Screws (12-312008-06) as shown. Apply small amount of Loctite #242 onto screws threads prior to installing. When tightening up screws lay this flat on table before you tighten all the way to make sure it is even and flush with each other.

1.3.3 Assemble two Long Bushing (DY-700124-00) onto Left/Right Traveler Plate, using two External Retaining Ring (22-678725-00) as shown.

Note Make sure Retaining Ring fits in the slot of Bushings all the way around completely. Bushings should move freely in and out of the holes of the Left/Right Traveler Plate.

Continue next page...

GRIPPER BLOCK ASSEMBLY INSTALLATION



ASSEMBLY VIEW

NOTES:

1. MAKE SURE FINGERS ON ANTI BACKLASH SCREW NUT INTERLINK, WITH MINIUM SPRING COMPRESSION ABOUT 1/16 TOGETHER.
2. MAKE SURE WHEN INSTALLING THE BEARINGS THEY ARE FLUSH WITH THE UP/DOWN TRAVELER BLOCK TOP AND BOTTOM SURFACE.

1.4 GRIPPER BLOCK ASSEMBLY INSTALLATION

1.4.1 Assemble .375OD x .250ID x 1/2" Bearing (DY-505383-00) into Up/Down Traveler Block (DY-505382-00) as shown. Use pressor vise to press Bearing into Up/Down Traveler Block until it flush.

1.4.2 Obtain another 3 part set of 3/8-8 Anti Backlash Screw Nut (DY-504845-00) and apply Loctite #430 around the threads. Assemble the previous part of 3/8-8 Anti Backlash Screw Nut onto bottom of Up/Down Traveler Block as illustrated and tighten with Jig # T-8968 until it bottom out. Place the remaining Spring/Anti Backlash Screw Nut on the previous installed Anti Backlash Screw Nut. Press and hold with your finger. Screw Up/Down Leadscrew (DY-505381-00) into them as shown.

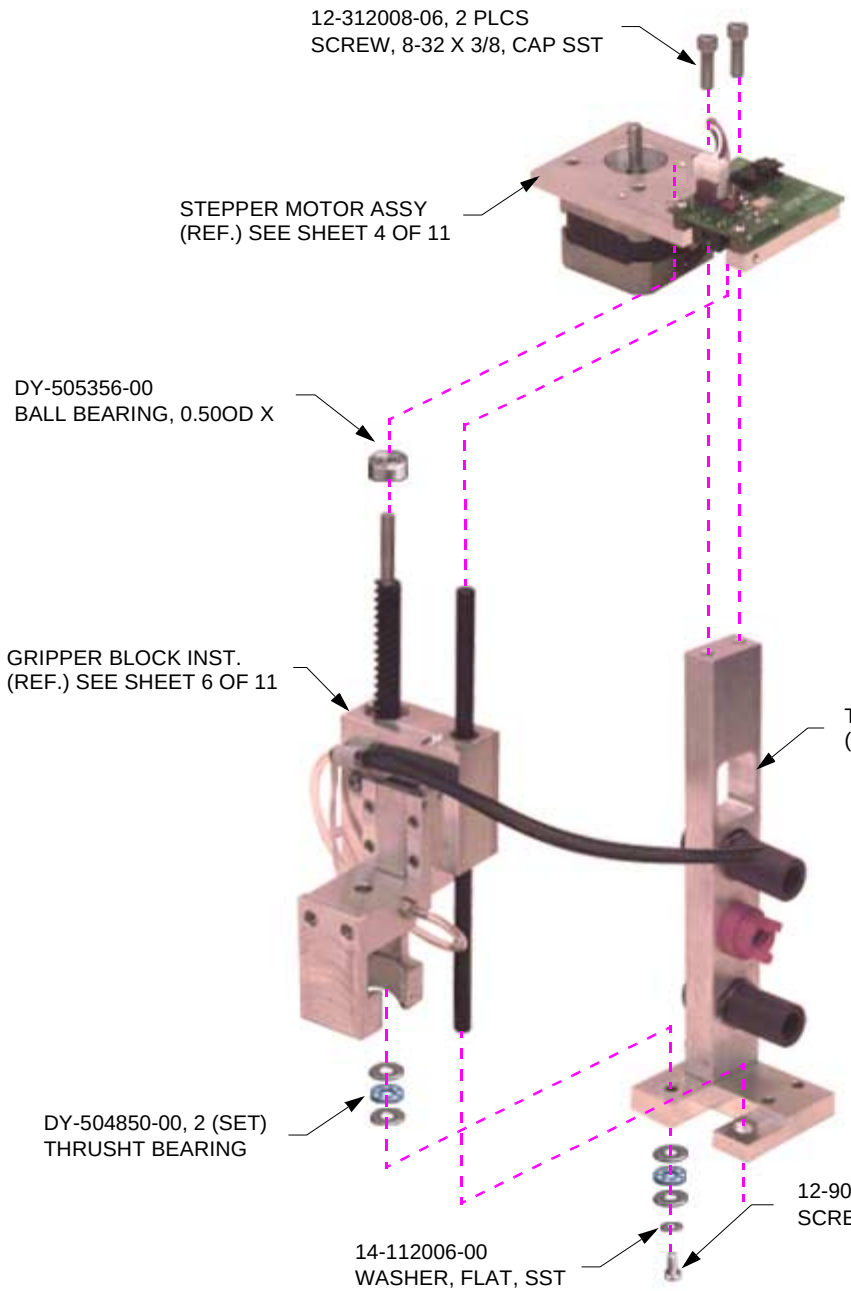
Note: Make sure fingers on nut interlink, with minimum spring compression about 1/16 together.

1.4.3 Place the Up/down Traveler Block Assembly on it back steady surface. Place one Gripper Spring (DY-505390-00) into counterbore hole on Up/Down Traveler Block and place Gripper Block Assembly over Gripper Spring. Align four holes on the Gripper Block Assembly with four holes on Up/Down Traveler block and secure with four 4-40 x 1/4 Cap Screws (12-312004-04) as shown.

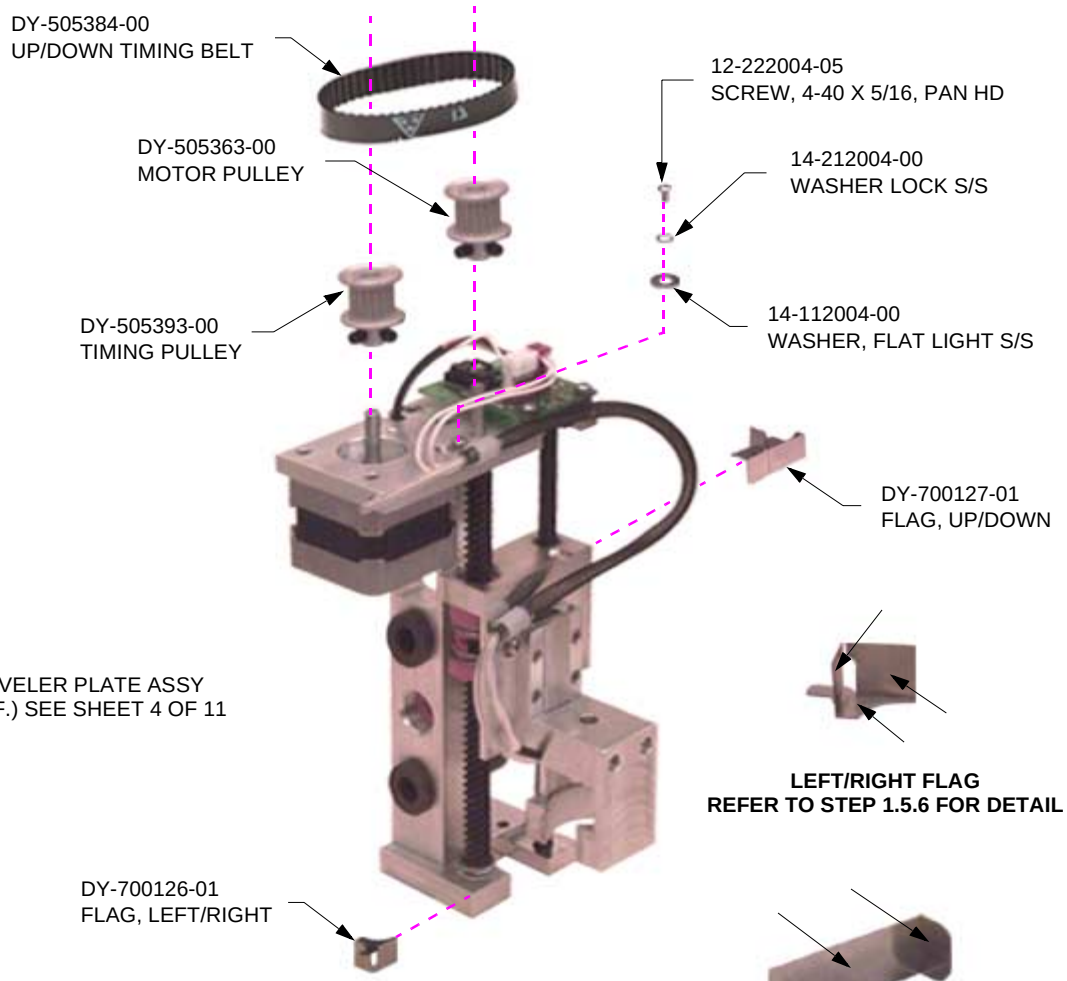
Note: Apply Loctite #242 on four screws prior to installing Gripper Block Assembly.

1.4.4 Secure wire mounting tab to Up/Down Traveler Block, using one Flat Light Washer (14-112004-00), one Lock Washer (14-212004-00) and one 4-40 x 5/16 Pan HD Screw (12-222004-05) as shown in Assembly View on sheet 6 of x.

1.4.5 Slide the Up/Down Support Rod (DY-505380-00) into the Bearing as shown.

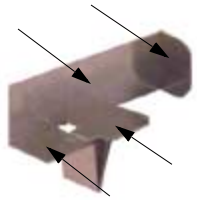


ASSEMBLY (STEP 1)



ASSEMBLY (STEP 2)

LEFT/RIGHT FLAG
REFER TO STEP 1.5.6 FOR DETAIL



UP/DOWN FLAG
REFER TO STEP 1.5.6 FOR DETAIL

UP/DOWN MECHANISM ASSEMBLY

1.5 UP/DOWN MECHANISM ASSMBLY *(STEP 1&2)*

1.5.1 Assemble both sets of Thrust Bearing (DY-504850-00) in order shown onto Up/Down Leadscrew and apply white grease on both sides of bearing prior to assembly. Place end of Leadscrew on Gripper Block Assembly into a hole on Traveler Plate Assembly where shown. Place another set of Thrust Bearing below the Up/Down Bottom Support Plate and secure with one Flat Washer (14-112006-00) and one 6-32 x 3/8 Sems Screw (12-901134-00) as shown. Apply small amount of Loctite #271 on screws threads prior to installation and hold the other end of Leadscrew with pliers while tightening until you see Leadscrew spinning.

Note: When tightening screw hold the other end of Leadscrew with pliers. When the leadscrew spinning, the screw is tight. DO NOT use electric screwdriver.

1.5.2 Obtain Ball Bearing (DY-505356-00) and place into a hole bottom of the Up/Down Top Support Plate opposite of PWA Sensor board. If necessary use a vise to press into place and make sure it is flush with Up/Down Top Support Plate not shown.

1.5.3 Place entire Stepper Motor Assembly over the Up/Down Leadscrew and Up/Down Support Rod. Align two holes on Up/Down Top Support Plate with two holes on Left/Right Traveler Plate and secure with two 8-32 x 3/8 Cap Screws (12-312008-06) as shown. Apply small amount of Loctite #242 on the thread of the screws prior of installation.

1.5.4 Obtain one Motor Pulley (DY-505393-00) and one Timing Pulley (DY-505363-00) ***do not mix the two up.*** Loosen set screws, apply Loctite #242 on set screws, put both Pulleys into Up/Down Timing Belt (DY-505384-00) and mount at the same time. Push Pulleys down but do not let them sit all the way on Motor Base and Top Support Plate. Push them down until they sit right above plate, making sure they are both level with each other. Place a 6” ruler on tops of Pulleys to verify they are even. Turn Pulleys with your fingers to make sure they work. Make sure one of set screw is set on Motor flat surface of shaft.

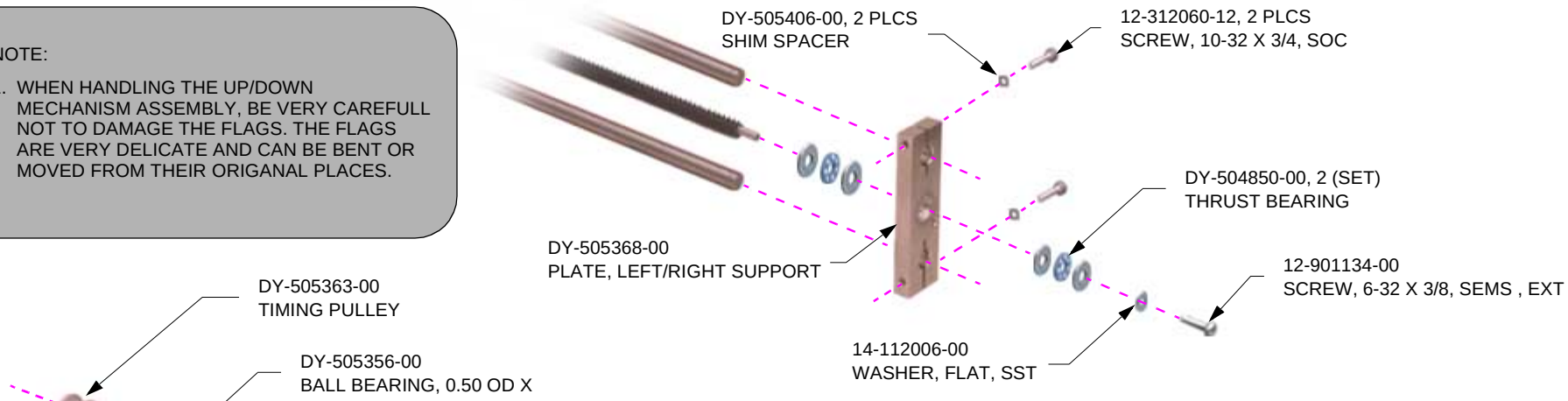
1.5.5 Secure wire mounting tab to Up/Down Top Support Plate, using one Flat Light Washer (14-112004-00), one Lock Washer (14-212004-00) and one 4-40 x 5/16 Pan HD Screw (12-222004-05) as shown in Assembly *Step 2* on sheet 8 of 11.

1.5.6 Apply small amount of Loctite #380 (88-299272-01) inside surfaces of the Left/Right Flag (DY-700126-01) and Up/Down Flag (DY-700127-01) in the areas shown and place the Flags on the corner areas of the Up/Down Mechanism area where shown. Make sure the Flags are fully set on the surface of Up/Down Bottom Support Plate and Up/Down Traveler Block.

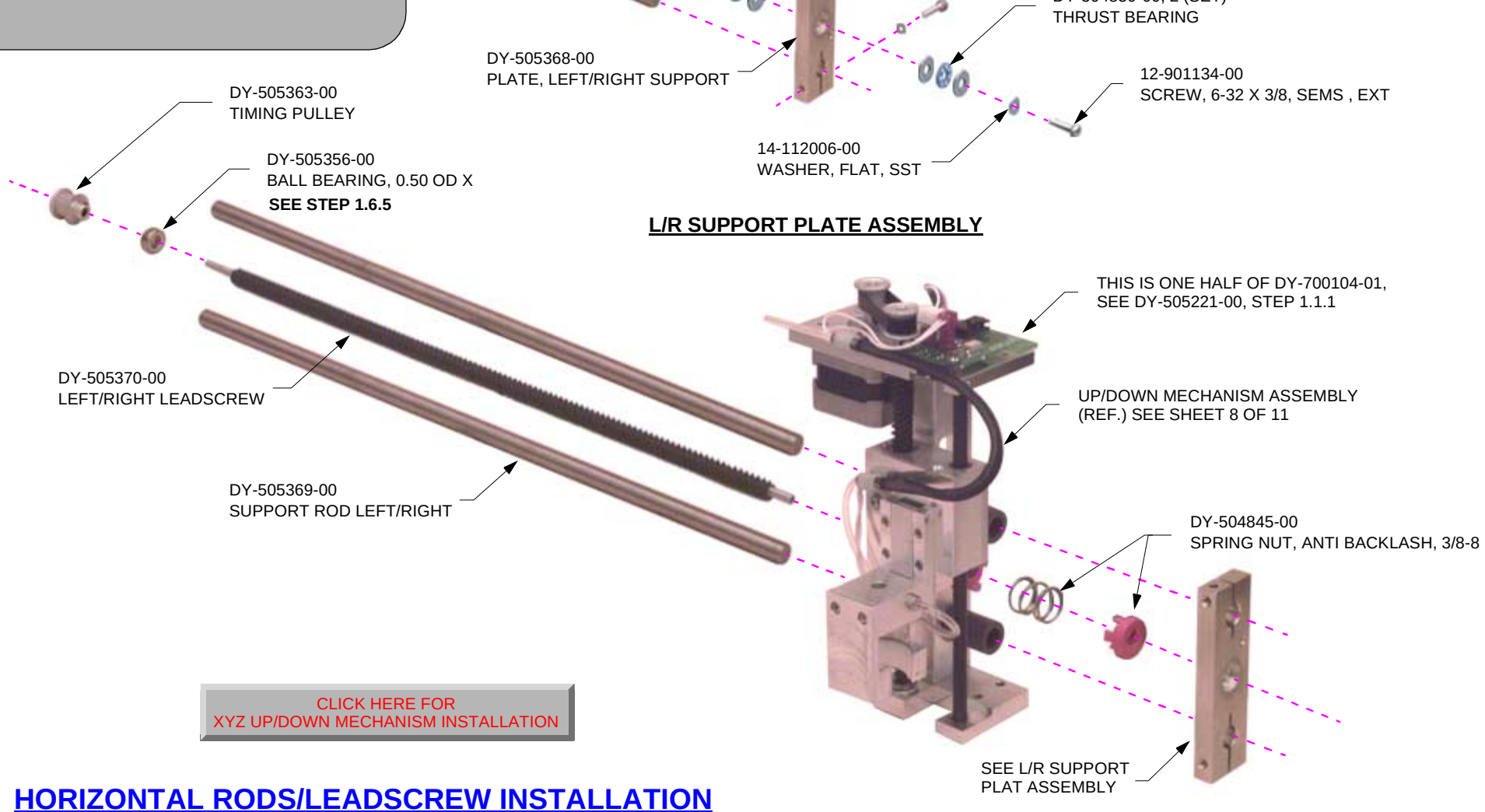
Continue next page...

NOTE:

1. WHEN HANDLING THE UP/DOWN MECHANISM ASSEMBLY, BE VERY CAREFULL NOT TO DAMAGE THE FLAGS. THE FLAGS ARE VERY DELICATE AND CAN BE BENT OR MOVED FROM THEIR ORIGANAL PLACES.



L/R SUPPORT PLATE ASSEMBLY



CLICK HERE FOR
XYZ UP/DOWN MECHANISM INSTALLATION

HORIZONTAL RODS/LEADSCREW INSTALLATION

EXPLODED VIEW

1.6 HORIZONAL RODS/LEADSCREW INSTALLATION

1.6.1 Place the remaining Spring/Anti Backlash Screw Nut from *Step 1.3.1*. Press and hold with your finger. Screw Left/Right Leadscrew (DY-505370-00) into them as shown.

Note: Make sure short shaft of the Leadscrew toward the Anti Backlash Screw nut and make sure fingers on nut interlink, with a minimum spring compression about 1/16 together.

1.6.2 Slide two Left/Right Support Rods (DY-505369-00) above and below the Left/Right Leadscrew as shown. Make sure they move in and out of Bushings smoothly

1.6.3 Assemble both sets of Thrust Bearing (DY-504850-00) in order shown onto Left/Right Leadscrew and apply white grease on both sides of bearing prior to assembly. Place end of Leadscrew into a hole on Left/Right Support Plate (DY-505368-00) where shown. Place another set of Thrust Bearing to other side of Left/Right Support Plate and secure with one Flat Washer (14-112006-00) and one 6-32 x 3/8 Sems Screw (12-901134-00) as shown. Apply small amount of Loctite #271 on screws threads prior to installation and hold the other end of Leadscrew with pliers while tightening until you see Leadscrew spinning.

Note: When tightening screw hold the other end of Leadscrew with pliers. When the leadscrew spinning, the screw is tight. DO NOT use electric screwdriver.

1.6.4 Secure the Left/Right Support Rods to Left/Right Support Plate, using two Shim Spacers (DY-505406-00) and two10-32 x 3/4 Soc Screws (12-312060-12) as shown. Apply small amount of Loctite #242 on screws threads prior to installation.

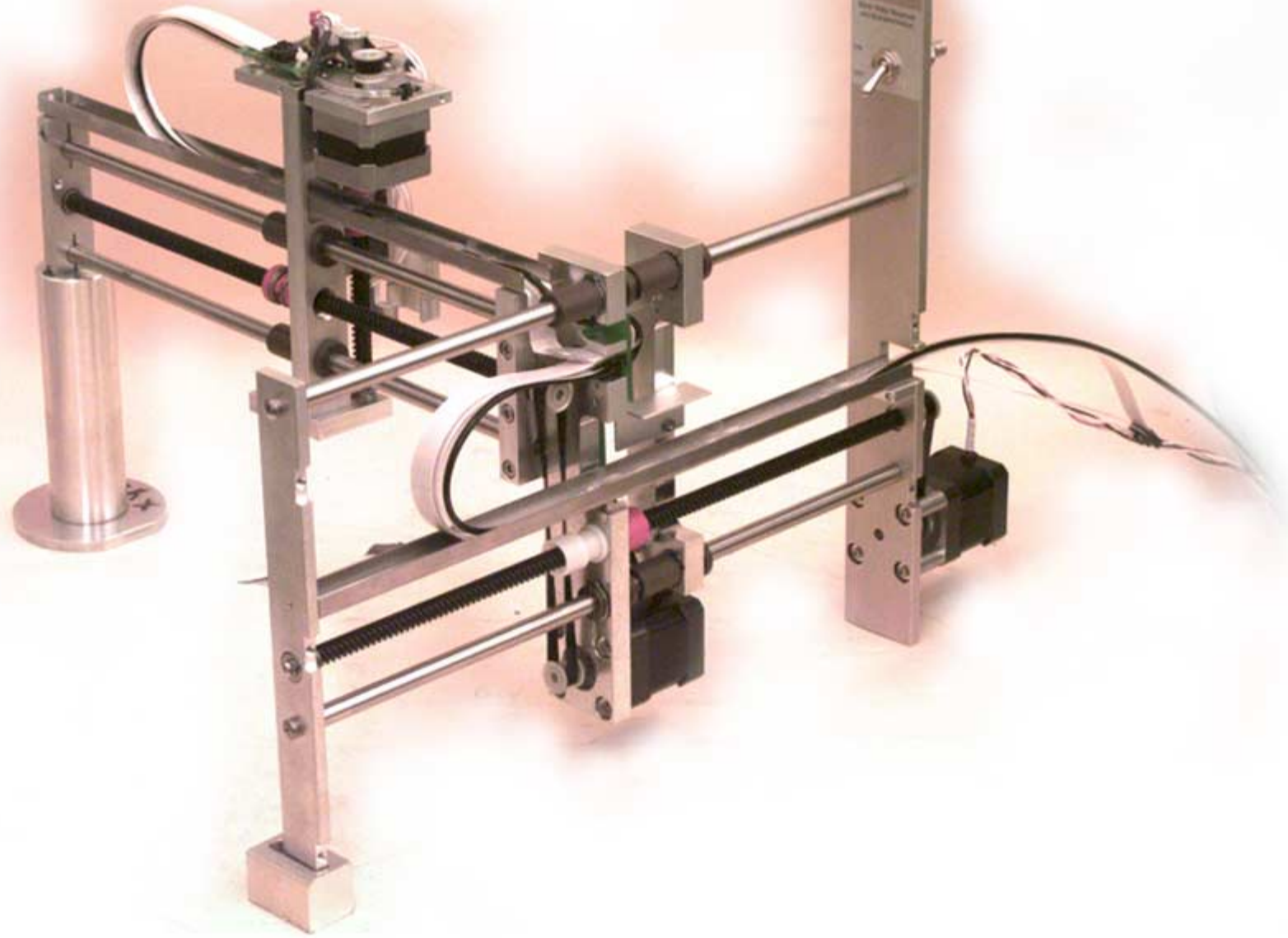
Note: Leave screws loose until you attach all of XYZ together because the other end of rods have to be flush.

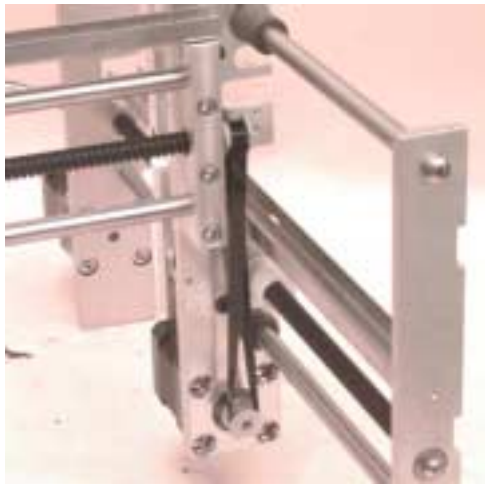
1.6.5 Obtain Ball Bearing (DY-505356-00), apply Primer (88-199663-00) both sides, after minutes apply Loctite #609 (88-299199-01) in front/back and rubbing over the Rod. Put a Razor blade between Bearing and shaft making sure it does not touch Shaft. Wipe off excess Loctited let dry for about 60 minutes to both bearing and shaft wait 10 minutes before further assembly.

1.6.6 Obtain Timing Pulley (DY-505363-00), back off set screws on Pulley and apply small amount of Loctite #242 on set screws. Assemble to Timing Pulley to the shaft of Leadscrew and make sure one of set screw is sit on flat surface of shaft. Pulley should be close to Bearing but not touching it or rubbing.

ASSY, XYZ MECHANISM FINAL

ARCHON STATION #3, ASSEMBLY PROCEDURES





TIMING BELT INSTALLATION

(DY-505372-00)

12-901155-00, 3 PLCS
SCREW, 4-40 X 1/4, SEM

CLICK HERE FOR
XYZ FRONT/REAR MECHANISM ASSEMBLY

DY-700116-01, 2 PLCS
SUPPORT, CABLE

DY-505848-00
ASSY, MECHANISM, XYZ FRONT/REAR

12-222004-06, 2 PLCS
SCREW, 4-40 X 3/8, SSPH

14-302004-00, 2 PLCS
WASHER, #4 INT. STAR

13-122004-00, 2 PLCS
NUT, KEPS, 4-40, SS

12-312060-22, 3 PLCS
SCREW, 10-32 X 1-1/4, SOC

DY-505366-00
BLOCK, SUPPORT, LEFT/RIGHT FRONT

DY-505367-00
BLOCK, SUPPORT, LEFT/RIGHT, BACK

DY-505845-00
ASSY, XYZ UP/DOWN MECHANISM

CLICK HERE FOR
XYZ UP/DOWN MECHANISM ASSEMBLY

1. XYZ MECHANISM FINAL ASSEMBLY

1.1 XYZ UP/DOWN MECHANISM ASSEMBLY INSTALLATION

1.1.1 Assemble Back Left/Right Support Block (DY-505367-00) and Front Left/Right Support Block (DY-700366-00) over the XYZ Up/Down Mechanism Assembly (DY-505846-00), using three 10-32 x 1-1/4 Soc Screws (12-312060-22) as shown. Apply a thin layer of Loctite #242 on the remaining end of the screws. Secure the Front and Back Support Block to the XYZ Front/rear Mechanism Assembly (DY-505848-00) and leave the screws loose for now.

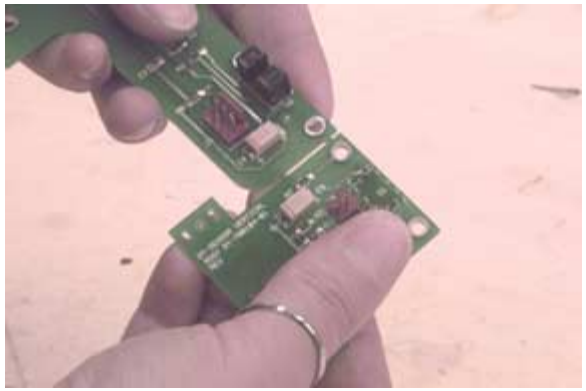
1.1.2 Position the XYZ Mechanism Assembly in arrangement shown. Install the Timing Belt (DY-505372-00) to the Motor Pulley on XYZ Front/rear Mechanism Assembly, twist the Timing Belt to the left and attach to the Leadscrew Pulley on the XYZ Up/Down Mechanism Assembly. Make sure Support Rods are flush when the screws are tightened. Refer to the Timing Belt Installation as illustrated for proper arrangement.

Note: When moving XYZ Up/Down Mechanism Assembly Pulley should move freely with touching any other parts.

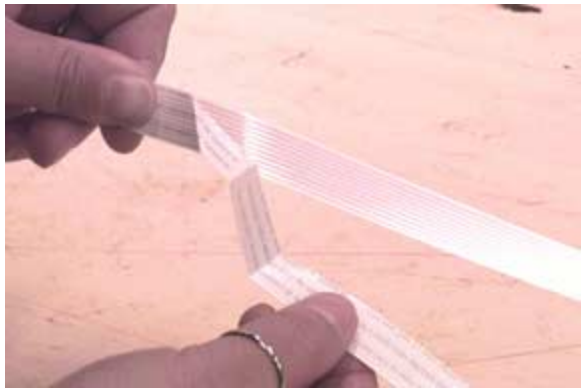
1.2 CABLE SUPPORT INSTALLATION

1.2.1 Obtain one Cable Support (DY-700116-01) and place slotted end of the Cable Support on the screw on Front/Rear Support Plate. Secure the Cable Support using two 4-40 x 1/4 Sems Screws (12-901155-00) where shown.

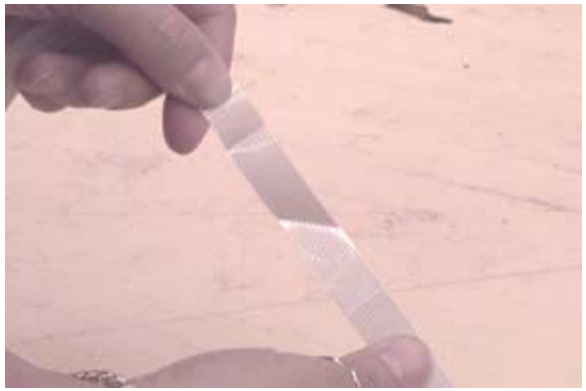
1.2.2 Assemble two 4-40 Keps Nuts (13-122004-00) and two 4-40 x 3/8 PH Screws (12-222004-06) onto the Cable Support. Put the nuts on only until you see the bottom of screw flush with the bottom of the nuts. Insert the Cable Support through the XYZ Up/Down Mechanism Assembly and Slide Keps Nuts into slotted on Front/Back Support Block. Secure the other end of Cable Support to the Left/Right Support Plate on the Up/Down Mechanism Assembly, using one 4-40 x 1/4 Sems Screws (12-901155-00) as shown.



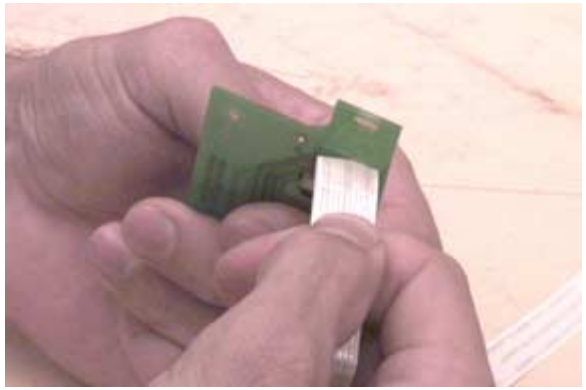
1.1.1 Break the Sensor Board, DY-700104-01, in half.



1.1.2 Stretch out the ribbon cable, DY-700109-00, in the region where it's folded, so that it is flat.

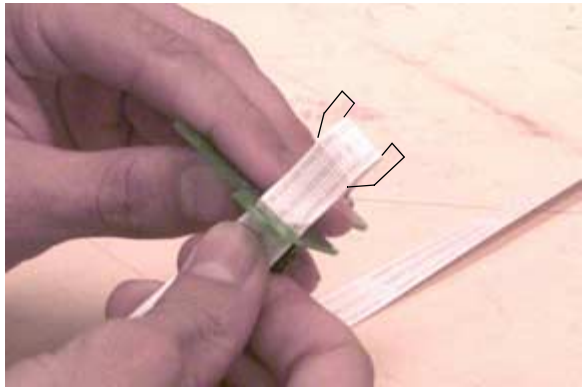


1.1.3 Fold it again on the last fold.

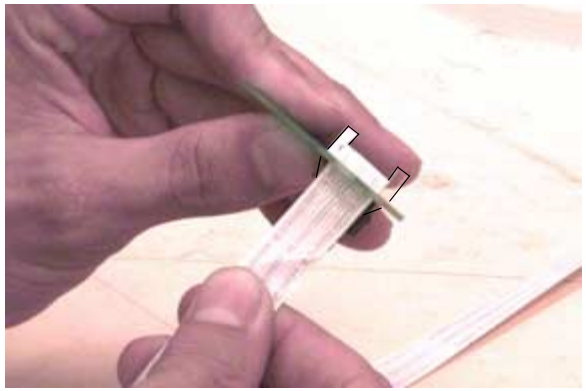


1.1.4 Press the fold through the tall half of the sensor board, from the back side, (where J5 is printed), so that it protrudes about 1 1/4".

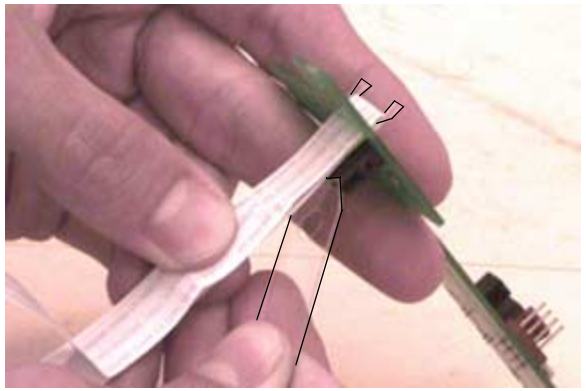
1.1.6 Break the Cable Anchor, DY-700132-01, in half.



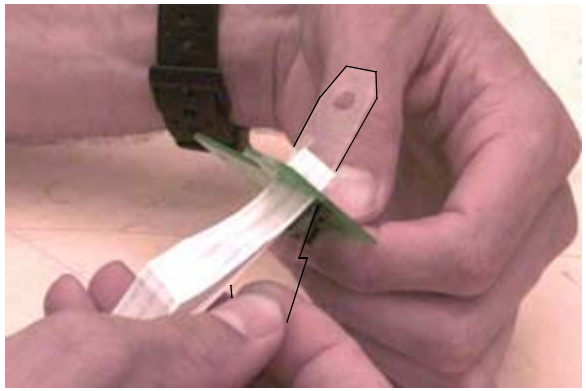
1.1.7 Put the stop end of the cable anchor between the top and bottom parts of the cable, and snap the cable in place between the ears of the stop.

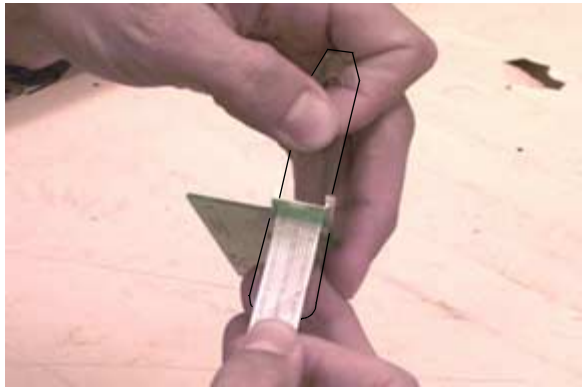


1.1.7 Pull the flex cable back so that the stop comes in contact with the board.

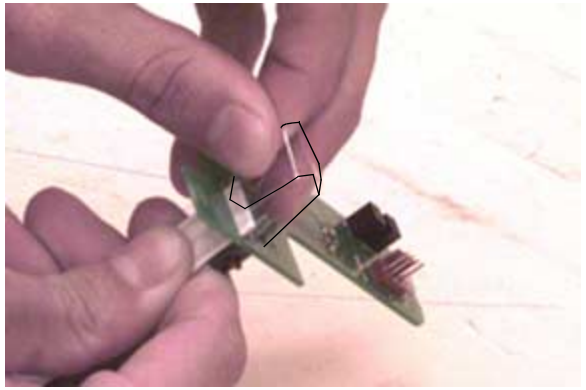


1.1.8 Insert the narrow end of the anchor part of the Cable Anchor broken in half in step 1.1.5 through the board as shown, underneath both cables.

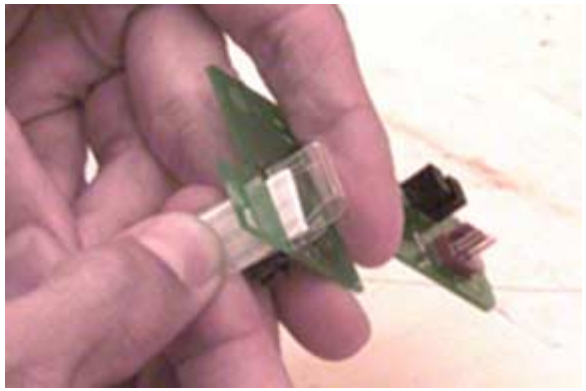


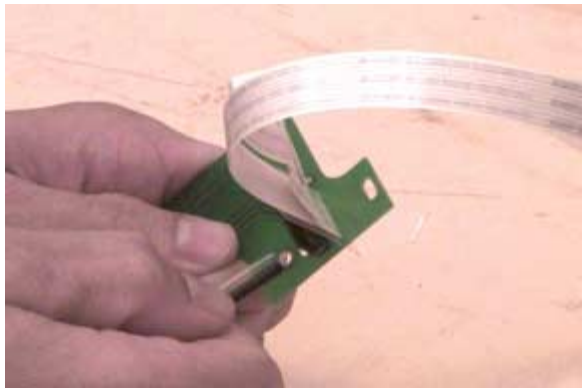


1.1.9 Pull the anchor through the slot until it stops.



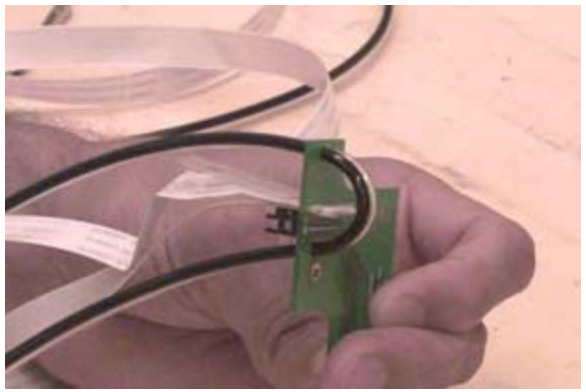
1.1.10 Insert the end of the anchor into the top of the slot in the board as shown.





1.1.11 Pull the end of the anchor until it slides into the two tabs on the stop.

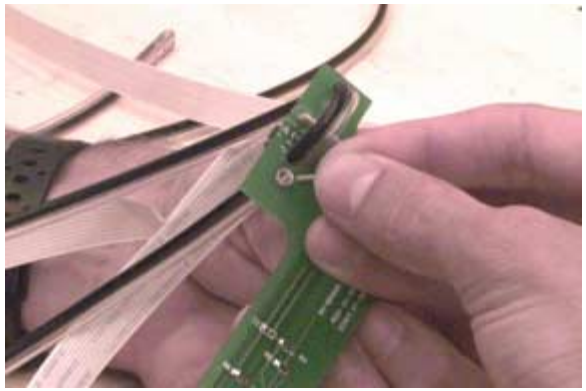
1.1.12 Cut a 72” length of black and clear twin tubing, 28-158634-00, and push one end of it, with the clear side on the left, through the obround slot on the cable side of the board as shown.

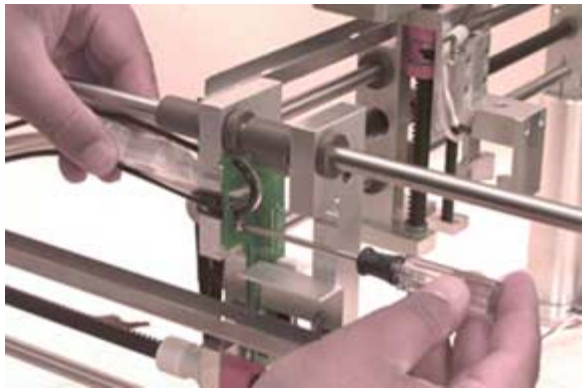


1.1.13 Pull 28½” of tubing through the slot.

1.1.4 Now push the end of the tubing, being careful to insure that it’s not twisted, through the top slot on the board. Pull 27½“ through.

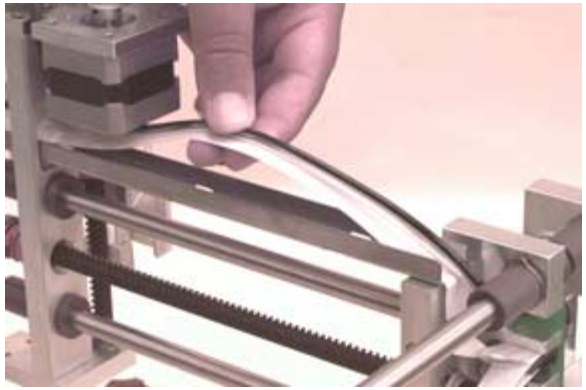
1.1.4b Press the connector on the cable not threaded through the board into J5. Tug on the cable to make sure it is latched correctly.

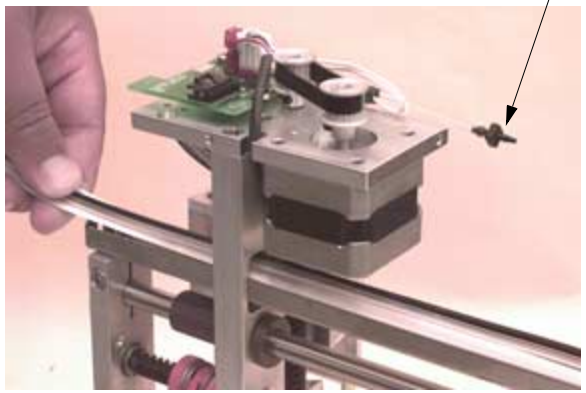




1.1.15 Insert (3) 4-40 x 3/8" Phillips Pan Head screws, (12-222004-06) into the holes on the board as shown, then a #4 Flat Washer (14-112004-00) and press a viton O-ring, (03-930109-15), onto each and against the board surface, so that the screw is held in place against the board.

1.1.16 Mount the board on the XYZ Traveler Plate Mechanism Assembly as shown. Do not tighten to tight. You don't want the board up against plate. There should be about 1/16 between board & plate.

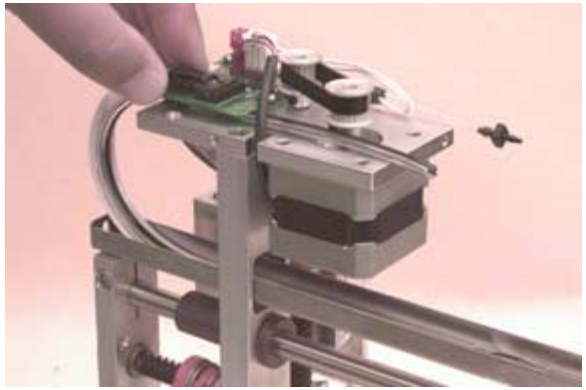


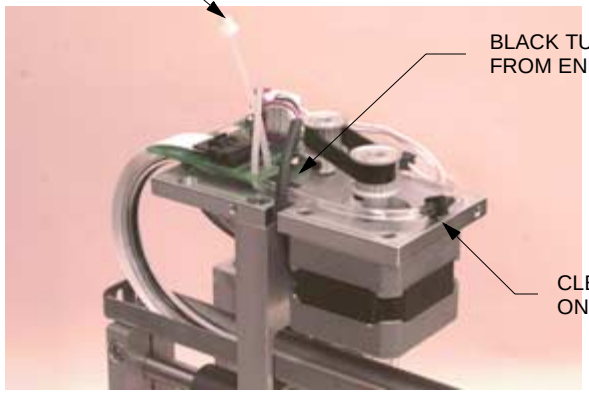


1.1.17 Feed the Tubing and Flex Cable through the Up/Down Mechanism Assembly. Dress the Flex Cable and Tubing as illustrated, with the clear tubing toward the front.

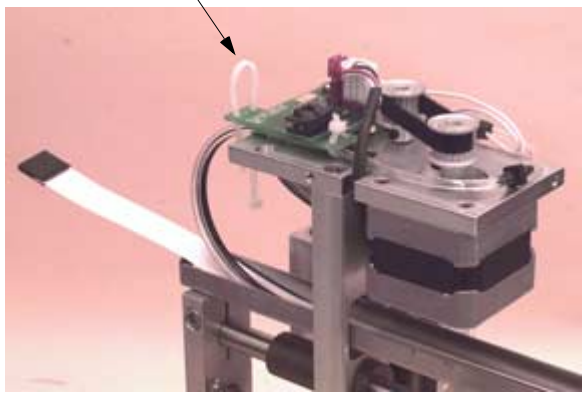
1.1.18 Move the Up/Down Mechanism Assembly all the way to the back until it stops.

1.1.9 Install three Cable Retainers (DY-700117-01) onto the tubing and attach to slotted holes on the Cable Support.

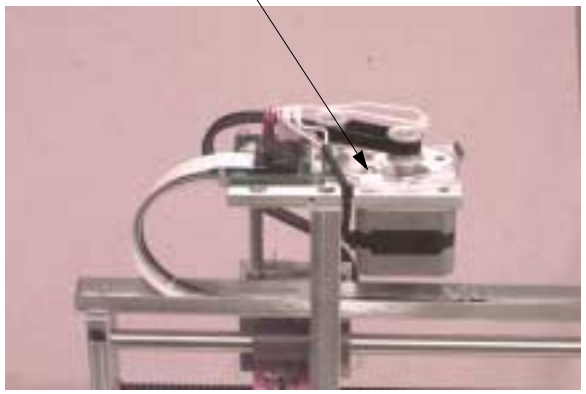




1.1.20 Insert the Tubing below the pc board and attach cable connector to *J-1* on pc board. Make sure the tubing rests against the Flex Cable. Loosen two screws on the pc board so you can lift it up slightly. Install one Tie wrap and re-secure pc board. Separate tubing until it lines up with the slot and cut a way black tubing at 45 degree angle. Attach clear tubing to the to barb fitting.



1.1.21 Disconnect connector from *J-1* and install another tie wrap from bottom of the pc board. Reattach connector to *J-1*.

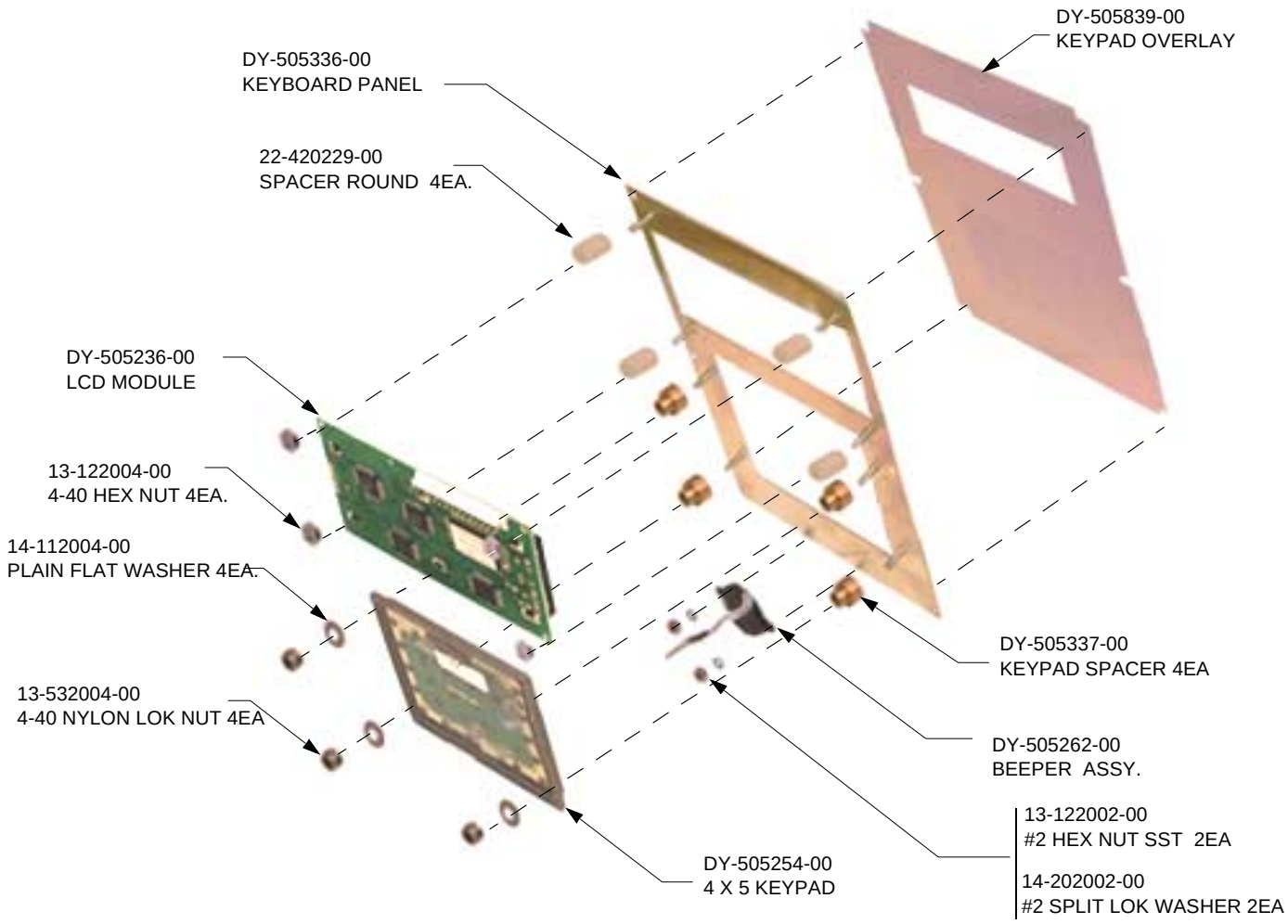


1.1.22 Install 3/16 Cable Clamp (22-119944-00), Flat Light Washer (14-112004-00), Lock Washer (14-212004-00) and 4-40 x 3/8 Ph Screw (12-222004-00) where show.

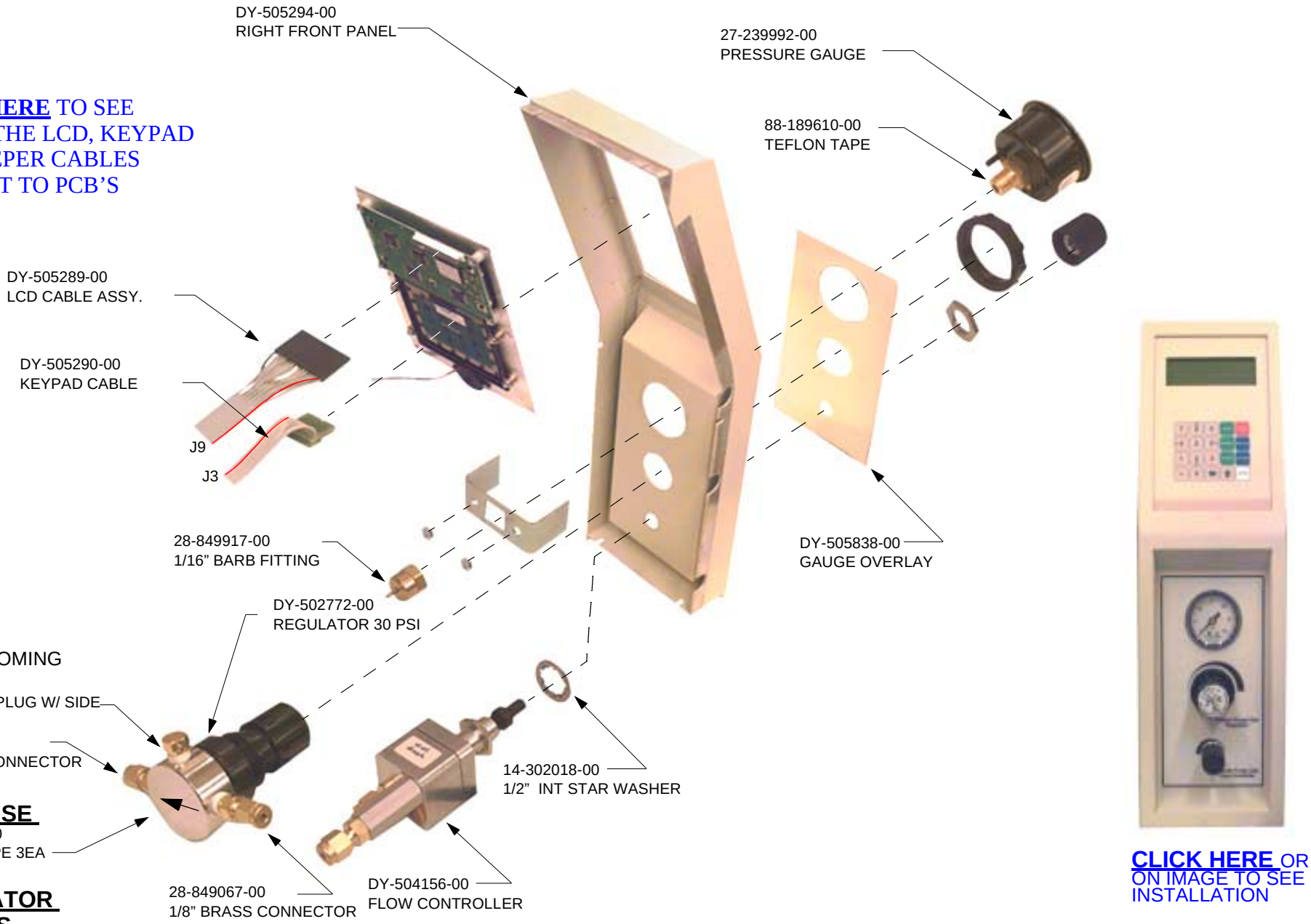
1.1.23 Repeat Step 1.1.18 and 1.1.19 by moving Traveler Plate Assembly to the left until it stops. Be careful not to kink the cable where shown. It should form a half circle just touching the Front Plate with no flat spots. Install three Cable Retainers.

Front Panel

Subassembly



KEYPAD & LCD ASSY.
CLICK HERE FOR NEXT LEVEL ASSY

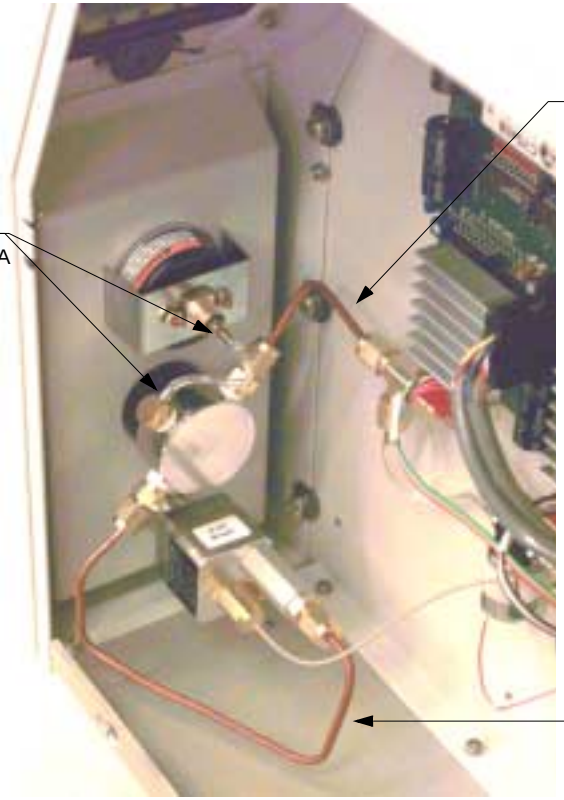


CLICK HERE TO SEE WHERE THE LCD, KEYPAD AND BEEPER CABLES CONNECT TO PCB'S

NOTE:
FACING INCOMING

NOTE: USE
88-189610-00
TEFLON TAPE 3EA
ON ALL REGULATOR FITTINGS

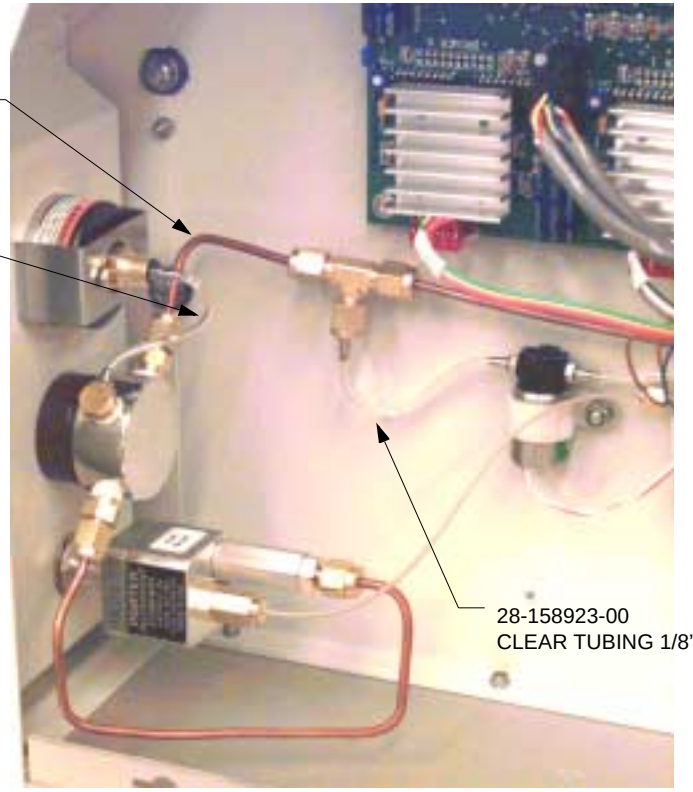
CLICK HERE OR ON IMAGE TO SEE INSTALLATION



SEE DIAG. BELOW FOR TUBING ASSY

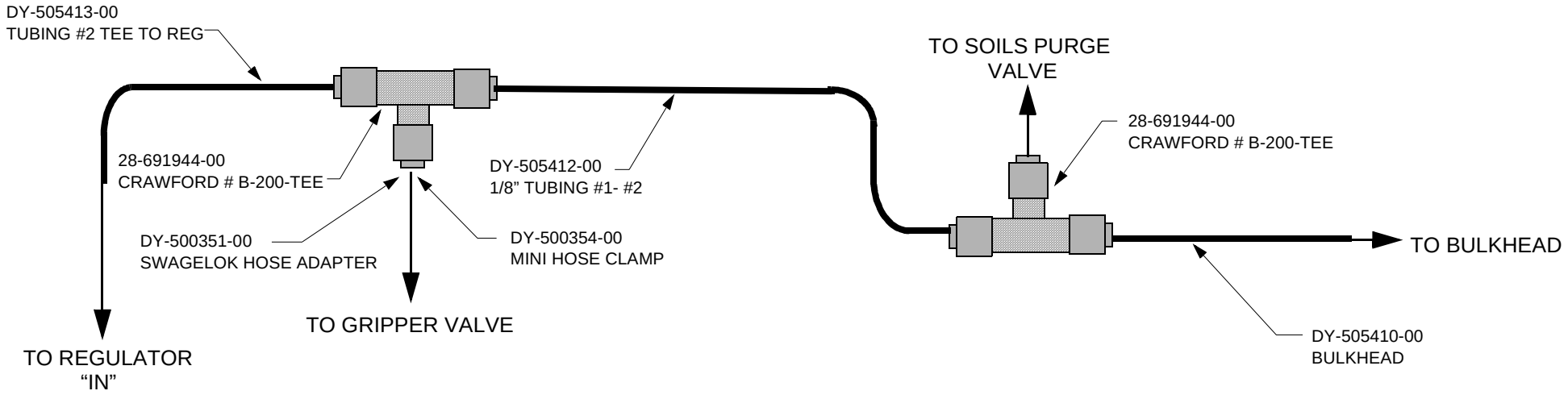
DY-500354-00
MINI HOSE CLAMP 2EA

DY-505414-00
INTERCONNECT TUBE



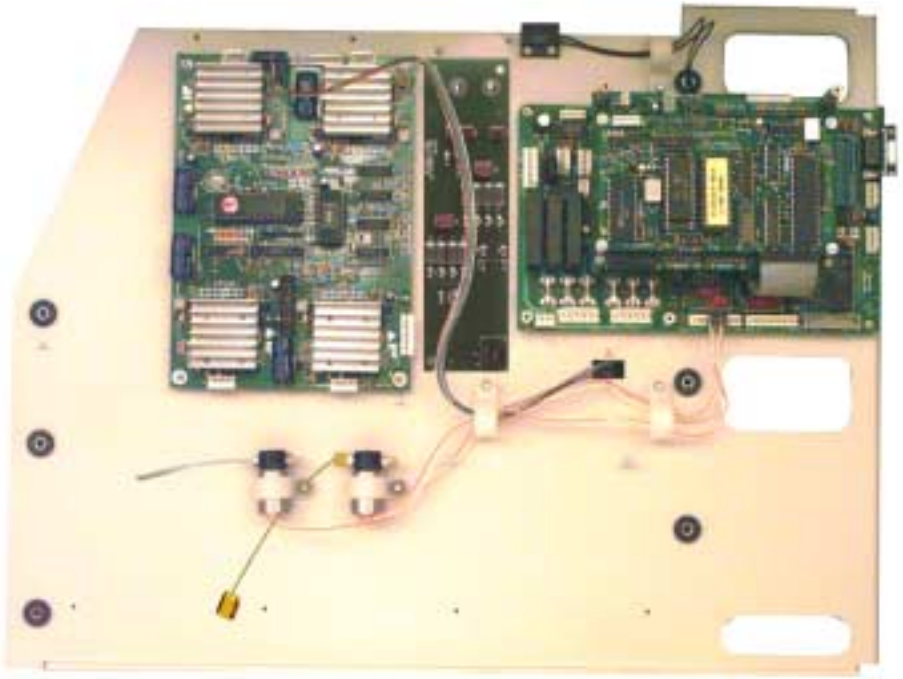
28-158923-00
CLEAR TUBING 1/8" X 4" LG

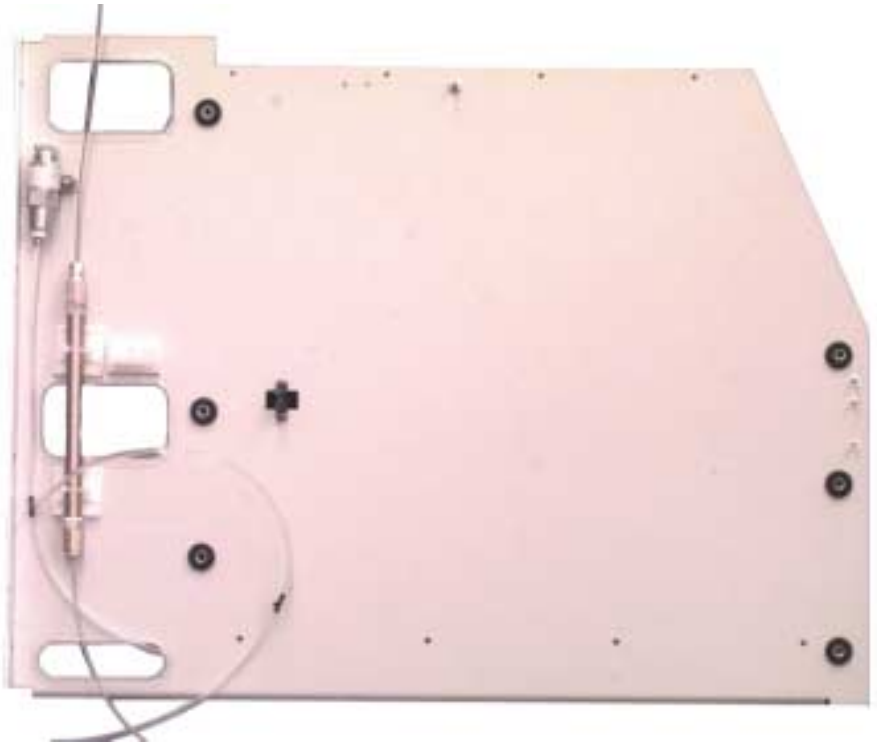
28-158923-00
CLEAR TUBING 1/8" X 4" LG.

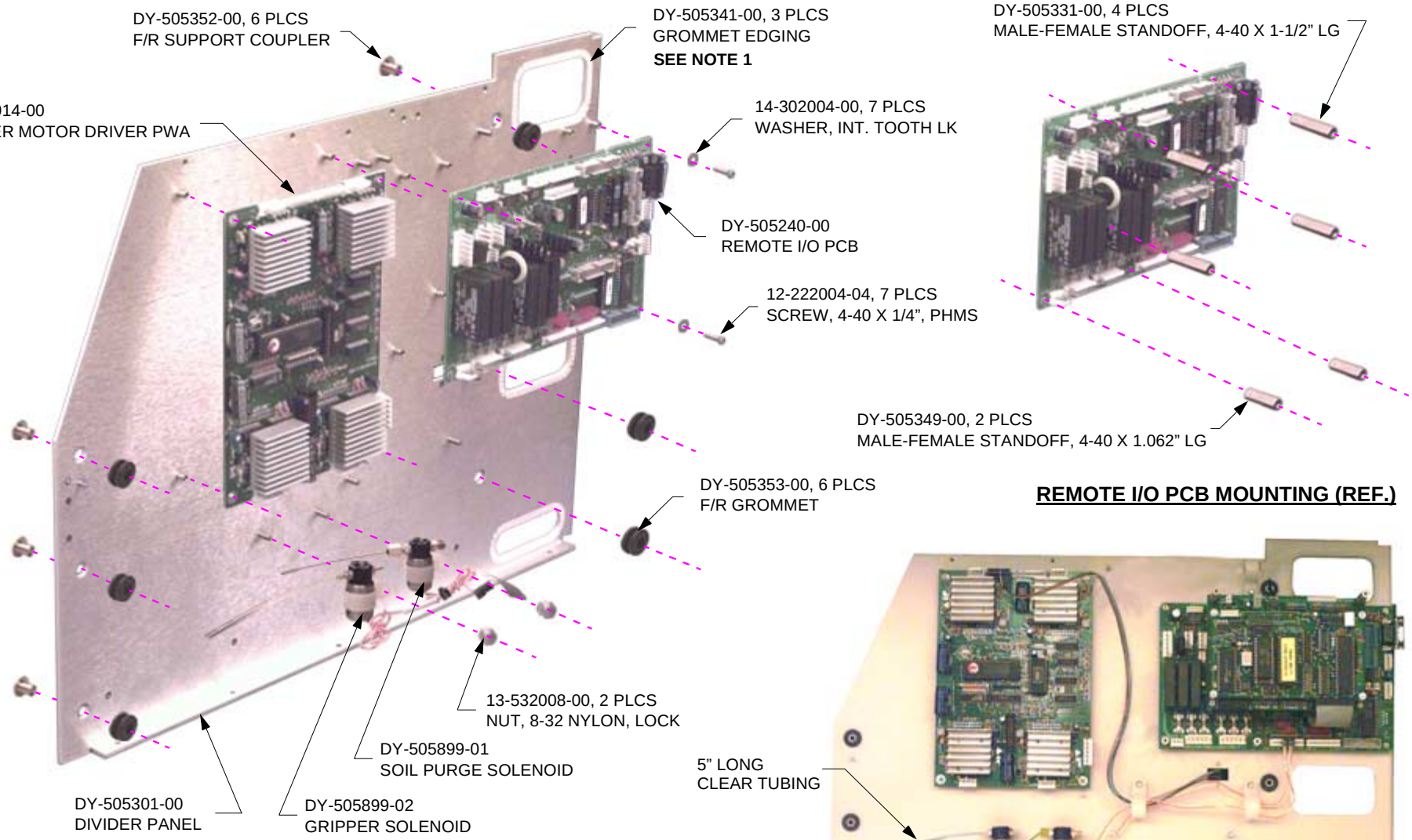


ASSY, DIVIDER PANEL

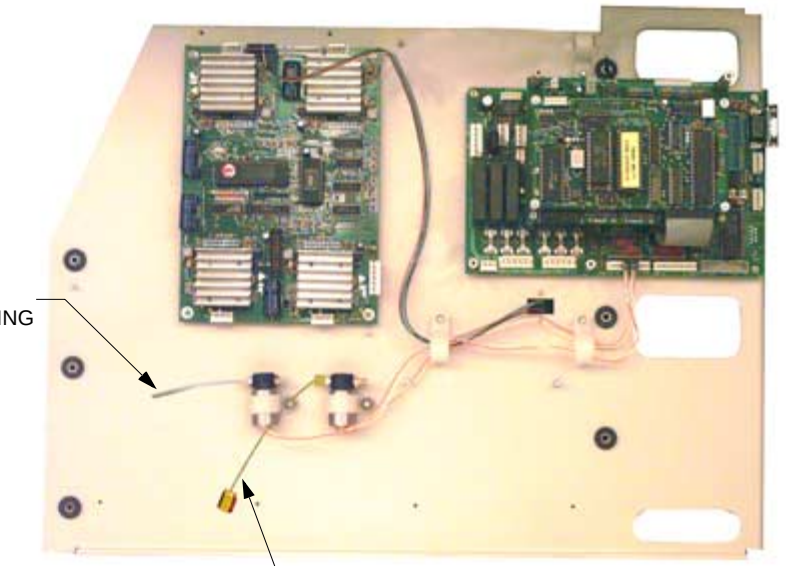
ARCHON STATION #4, ASSEMBLY PROCEDURES







REMOTE I/O PCB MOUNTING (REF.)



FRONT VIEW

NOTES:

1. INSTALL GROMMET EDGING (DY-505341-00) 8-3/4" AT TOP, 8-3/4" AT MIDDLE AND 6-7/8" AT THE BOTTOM CUT-OUT ON DIVIDER PANEL.

1. DIVIDER PANEL ASSEMBLY

1.1 OPERATION IN SEQUENCE

1.1.1 Install six F/R Grommets (DY-505353-00) and six F/R Support Couplings (DY-505352-00) on Divider Panel as shown.

1.1.2 Install three Grommet Edgings (DY-505341-00), three places on the divider panel. Use 9” long for top and middle holes cut-out and 7" long for bottom.

1.1.3 Install Gripper Solenoid (DY-505899-02), using 3/4" Cable Clamp (DY-505328-00) and 8-32 Nylon Lock Nut (13-532008-00) as shown. Repeat previous step for Soil Purge Solenoid (DY-505899-01) nex to gripper solenoid.

Note: Make sure label on Solenoid is facing down.

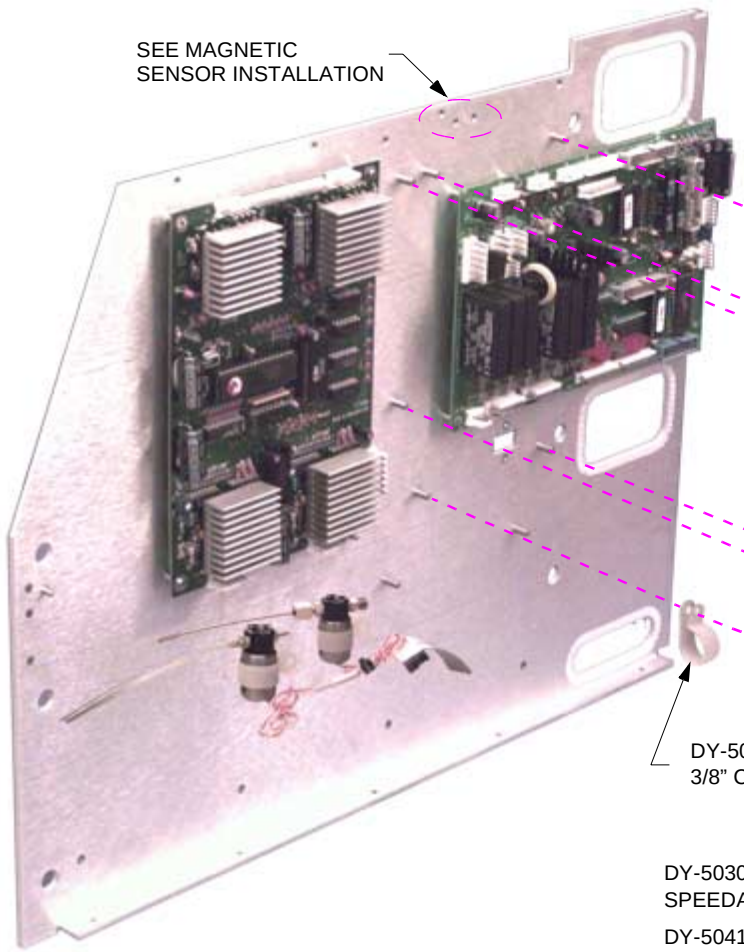
1.1.4 Attach a 5” long clear tubing to the left side of the Gripper Solenoid with a 1/8" Tube Clamp Hose (28-849707-00) as shown.

1.1.5 Install the Peek Link Assembly (no part number) to the left side of the Soil Purge Solenoid.

1.1.6 Install Stepper Motor Driver PWA (DY-504914-00), using four Int. Tooth Lk Washers (14-302004-00) and four 4-40 x 1/4” PHMS Screws (12-222004-04) above both solenoids.

Note: Set Pods to 3/4 of maximum. Refer to page 18 on Arachon Final Assembly (DY-505220-01).

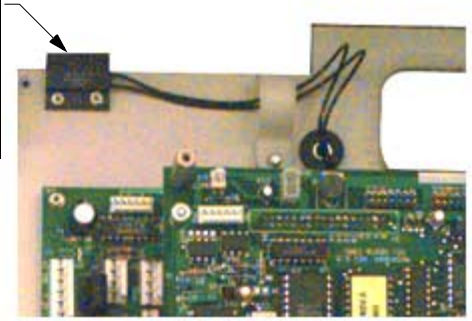
1.1.7 Install Remote I/O PWA (DY-505240-00), using four 4-40 x 1-1/2" Lg M/F Standoffs (DY-505331-00) and fingertight it. Install two 4-40 x 1.062" Lg M/F Standoffs (DY-505349-00) at the lower left of the remote I/O PWA as shown. Intall three Int. Tooth Lk Washers (14-302004-00) and three 4-40 x 1/4” PHMS Screws (12-222004-04) outter corner.



DY-505250-00
MAGNETIC SENSOR

14-212004-00, 2 PLCS
WASHER, #2 SPLIT LK

12-222004-04, 2 PLCS
SCREW, 4-40 X 1/4", PHMS



MAGNETIC SENSOR INSTALLATION

DY-503074-00
SPEEDAIRE RELIEF VALVE

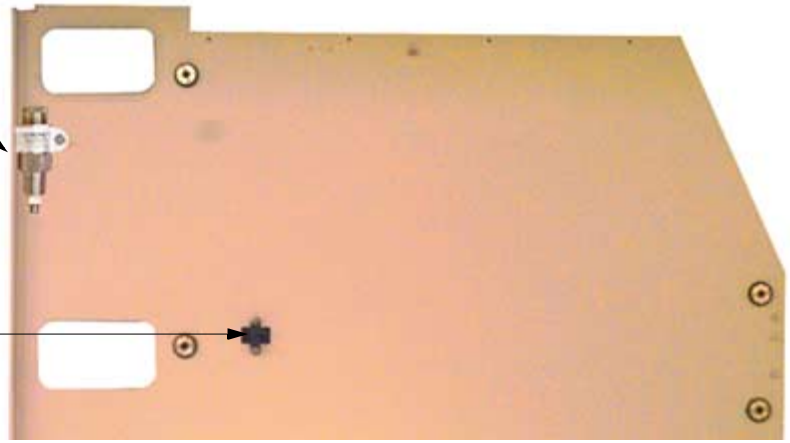
DY-504127-00
5/8" CABLE CLAMP

13-532008-00
NUT, 8-32 NYLON LOCK

DY-505898-00
PHOTO OPTICAL SWITCH

12-222004-06, 2 PLCS
SCREW, 4-40 X 3/8", PHMS

14-212004-00, 2 PLCS
WASHER, #2 SPLIT LK



1.1.8 Install three 3/4" Cable Clamps (Dy-505328-00), using 8-32 Hex Nuts (13-122008-00) between the bracket on three places. Leave Clamp half-open. See picture.

1.1.9 Install DY-Flex PWA (DY-700100-01) by placing three 8-32 Hex Nuts (13-122008-00) on stud mount first, then secure the DY-Flex PWA with three #8 Keps Nuts (13-312008-00) as shown.

1.1.10 Install Magnetic Sensor (DY-505250-01) above the Remote I/O PWA where shown, using two #2 Split Washers (14-212004-00) and two 4-40 x 1/4" PHMS Screws (12-222004-04) where shown.

1.1.11 Install Speedaire Relief Valve (DY-503074-00) on other side of divider panel, using 5/8" Cable Clamp (DY-504127-00) and 8-32 Nylon Lk Nut (13-532008-00) where shown.

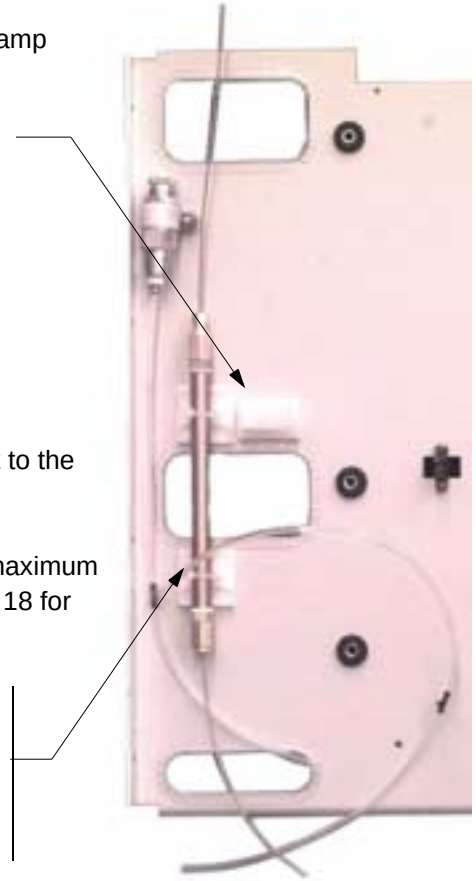
1.2 PENCIL FILTER INSTALLATION

1.2.1 Obtain two Cable Mounting Brackets (22-119603-00), remove the adhesive backing paper and affix approximately 3/4" away from the edge of the divider panel above the middle cut-out. Repeat previous step at bottom of the middle cut-out as shown.

1.2.2 Install the *brown* Pencil Filter assembly with the air flow pointing upward, using two Cable Ties (22-119650-00) to secured in place.

1.2.3 Obtain Adjustable Quick Clip (DY-505340-00), remove the adhesive backing paper and affix next to the upper cable mounting bracket in arrangement shown.

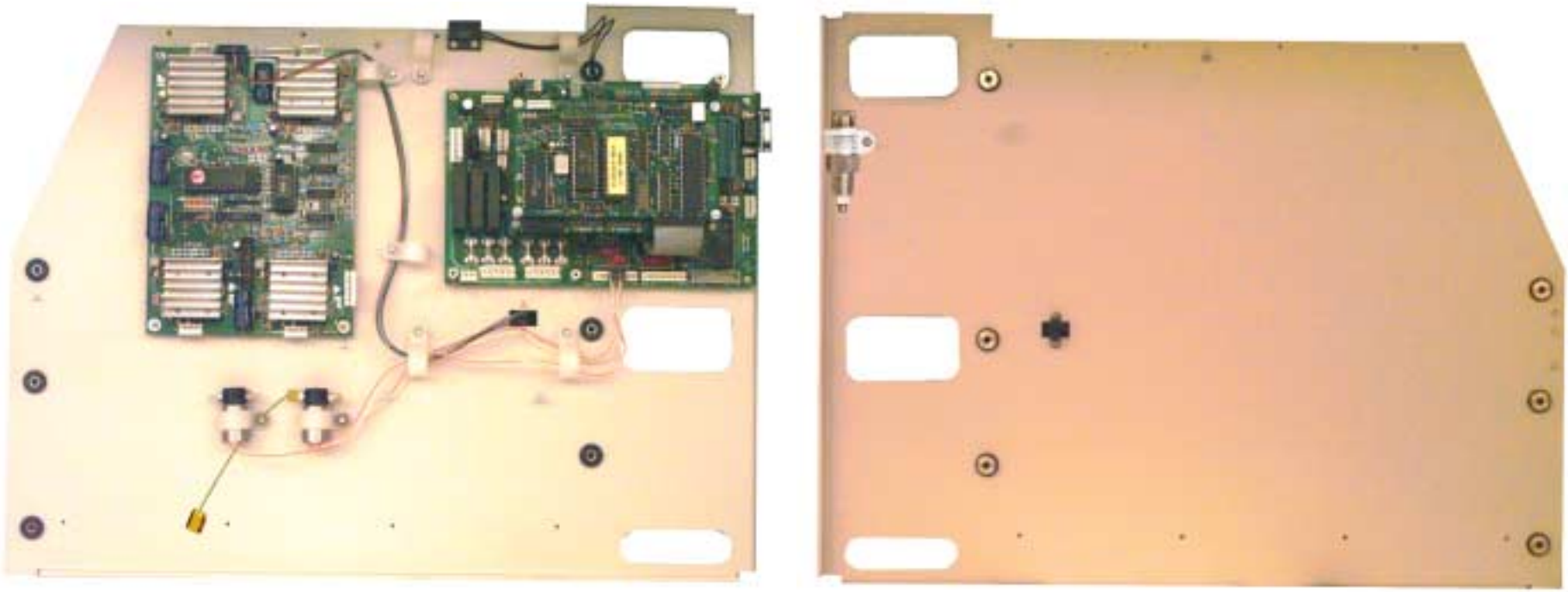
1.1.12 After the divider panel assembly secured to the base plate assembly, then set all Pods to 3/4 of maximum except the one shown with the diagram. Refer to assembly procedures (DY-505220-01) on page 18 for POD diagram for reference.



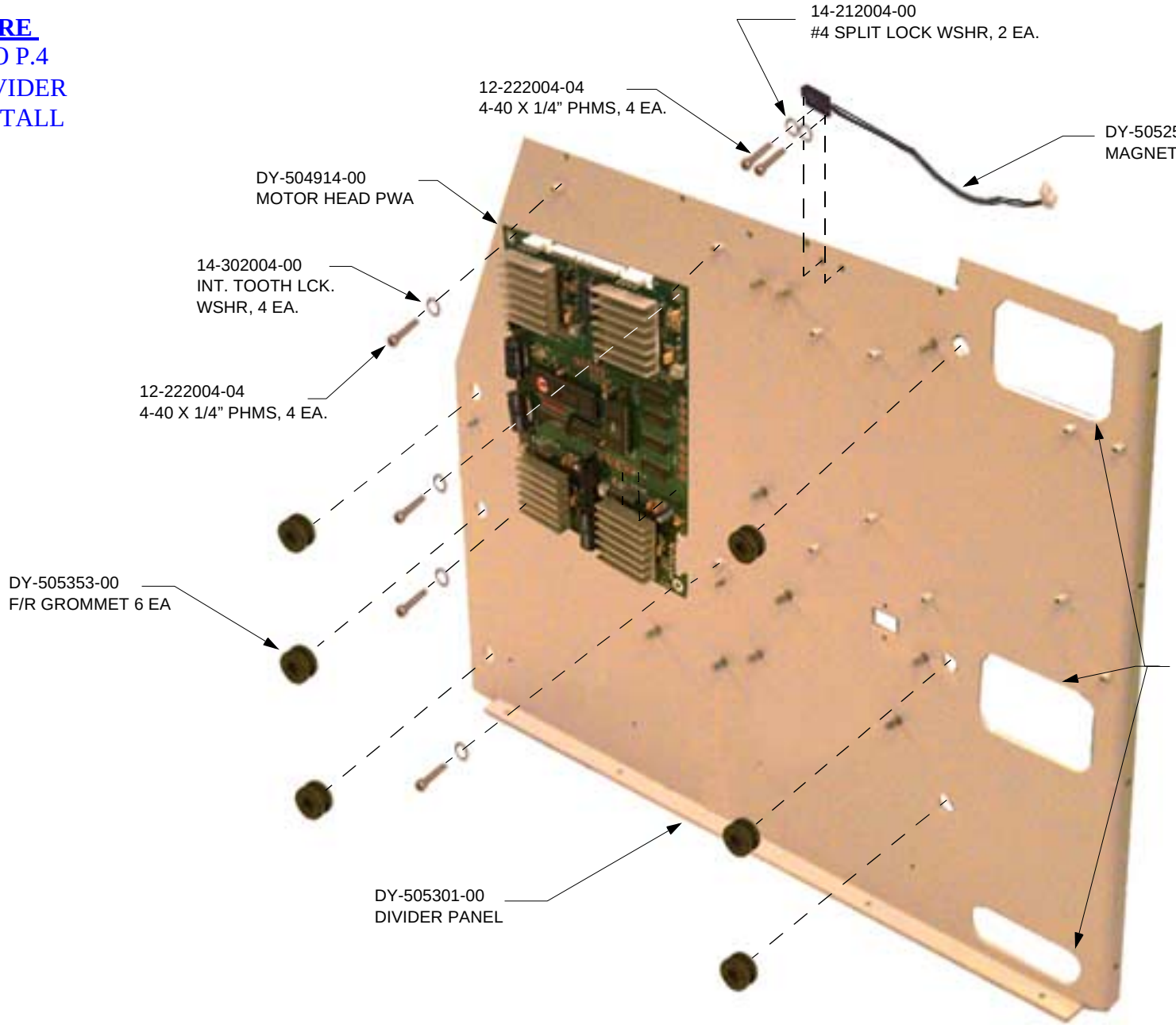
PENCIL FILTER INSTALLATION

Divider Panel

Subassembly



CLICK HERE
AND GO TO P.4
TO SEE DIVIDER
PANEL INSTALL



NOTE: GROMMET LENGTHS

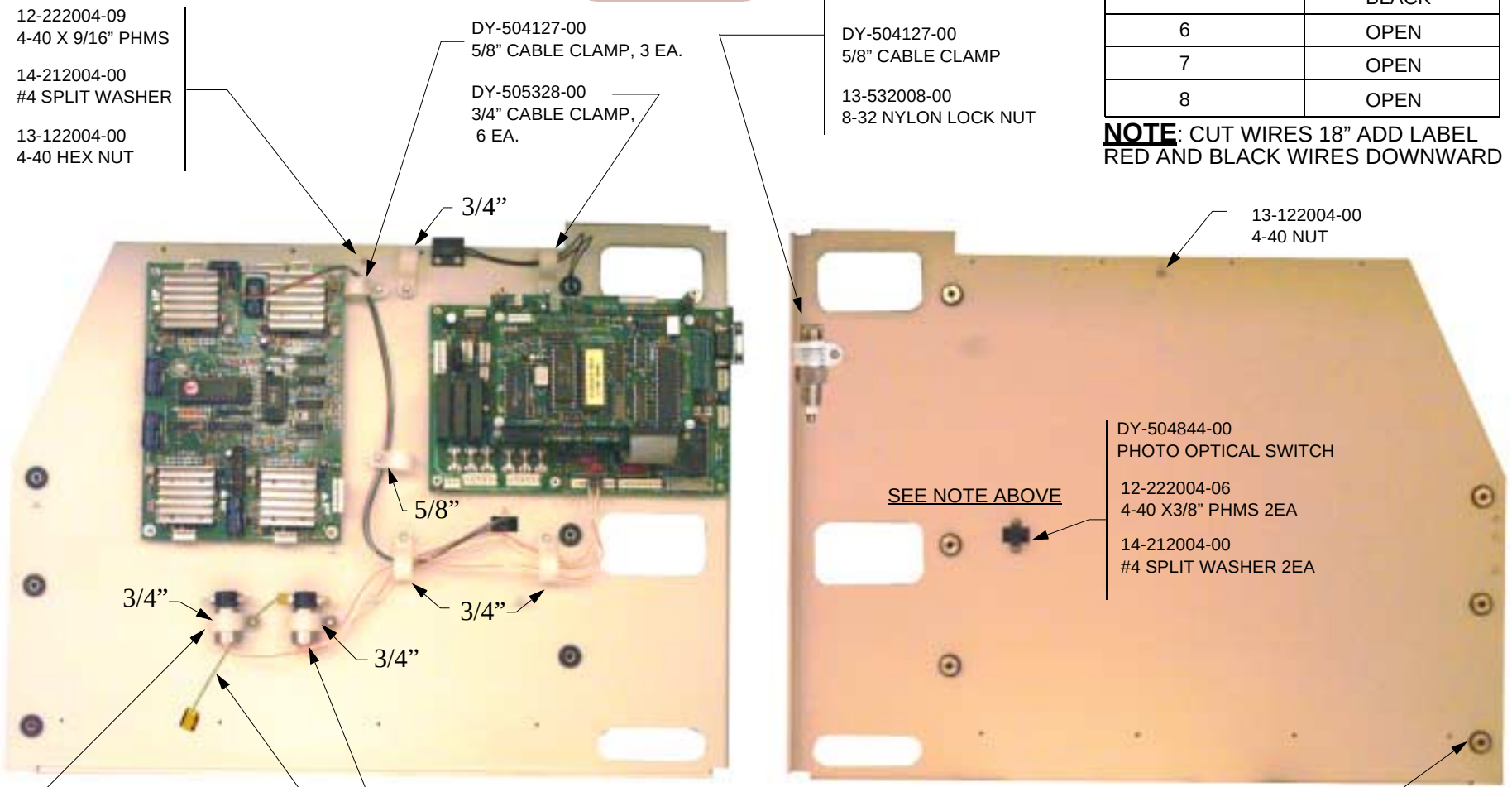
TOP = 8 3/4"
MIDDLE = 8 3/4"
BOTTOM = 6 7/8"

PHOTO OPTICAL SWITCH CONNECTOR

POSITION	COLOR
1	BLUE
2	GREEN
3	RED
4	WHITE
5	BLACK
6	OPEN
7	OPEN
8	OPEN

NOTE: CUT WIRES 18" ADD LABEL RED AND BLACK WIRES DOWNWARD

Note:
XYZ MECHANISM WILL NOT CLEAR OPTICAL SWITCH UNLESS SWITCH IS HELD DOWN WHILE SCREWS ARE TIGHTENED.



DIVIDER PANEL

Left Side Cover

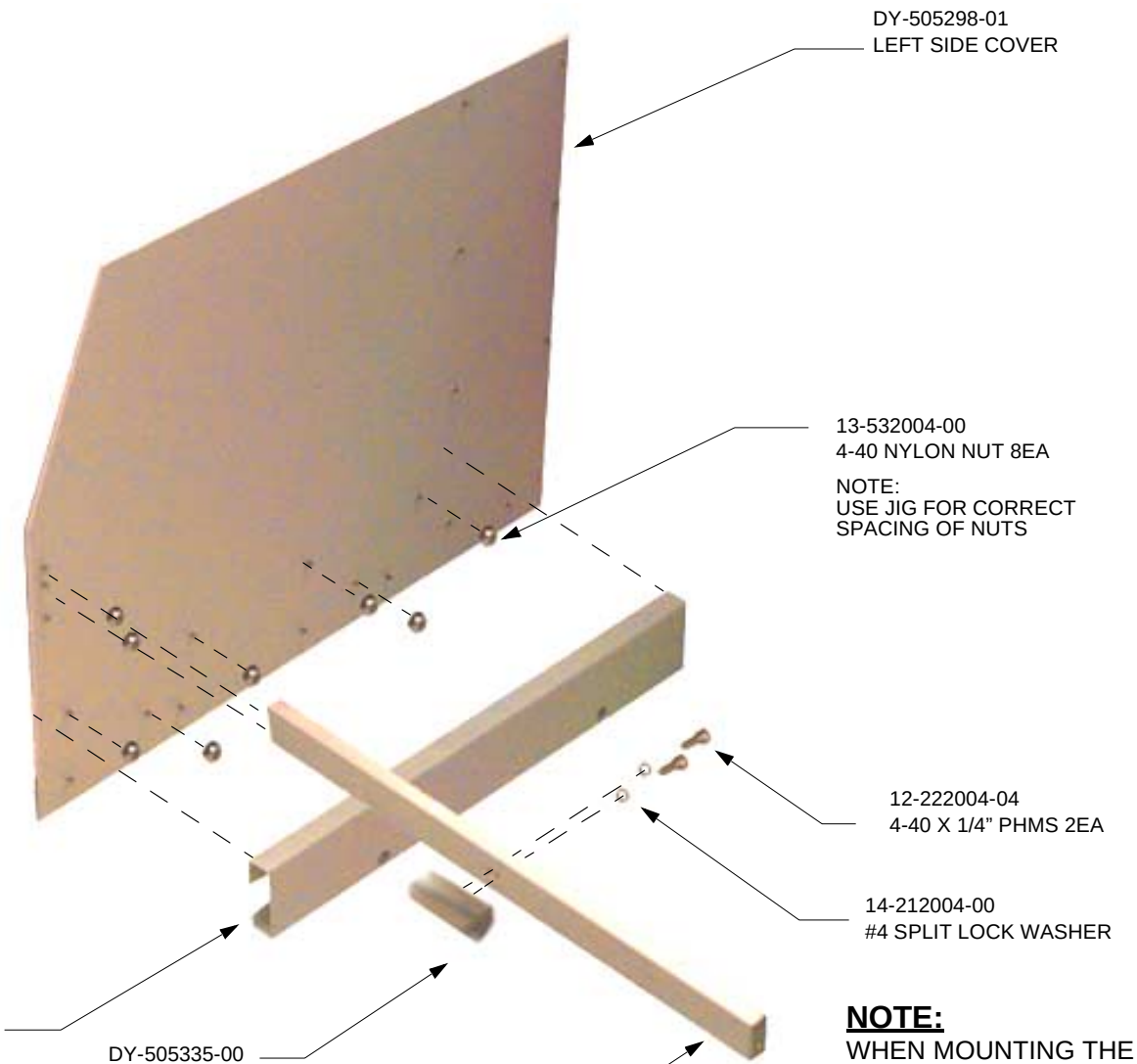
Subassembly

CLICK HERE OR ON SIDE PANEL & GO TO P.6 OF FINAL ASSY.TO SEE COVER INSTALLATION

OPERATION NOTES:

Note:

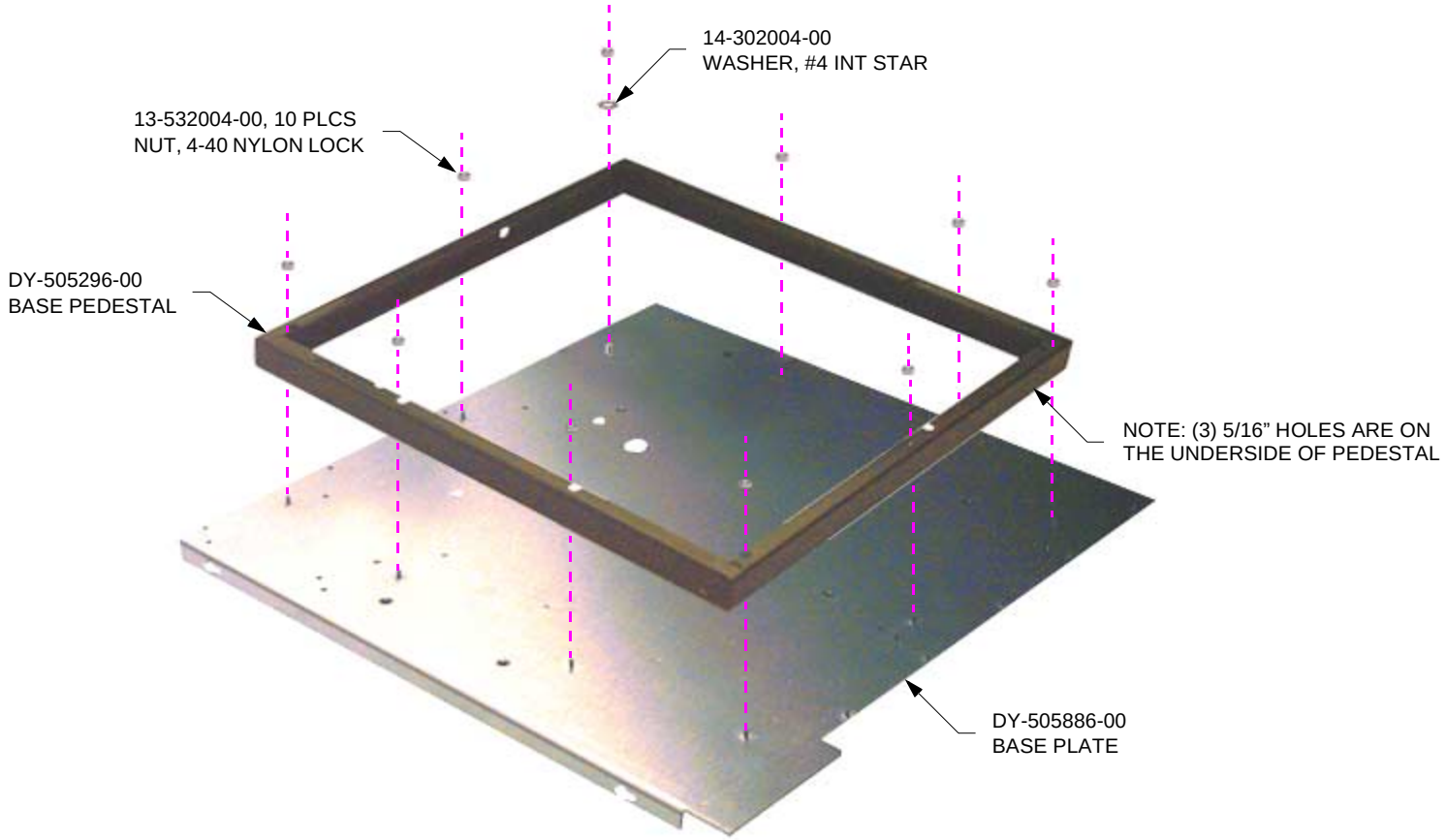
FIRST ATTACH ALL NUTS & TIGHTEN DOWN THEN BACK THE NUTS OFF APPROXIMATLY 1 1/2 TURNS. ATTACH INSIDE LEFT COVER AND SECURE THE 2 NUTS WITH ACCESS HOLES.



NOTE:
WHEN MOUNTING THE DOOR LATCH MAKE SURE THE MTG. HOLES ARE CLOSE TO THE TOP, THE CUT OUT SLOT OF THE DOOR LATCH IS FACING DOWN, AND THE LATCH IS STRAIGHT.

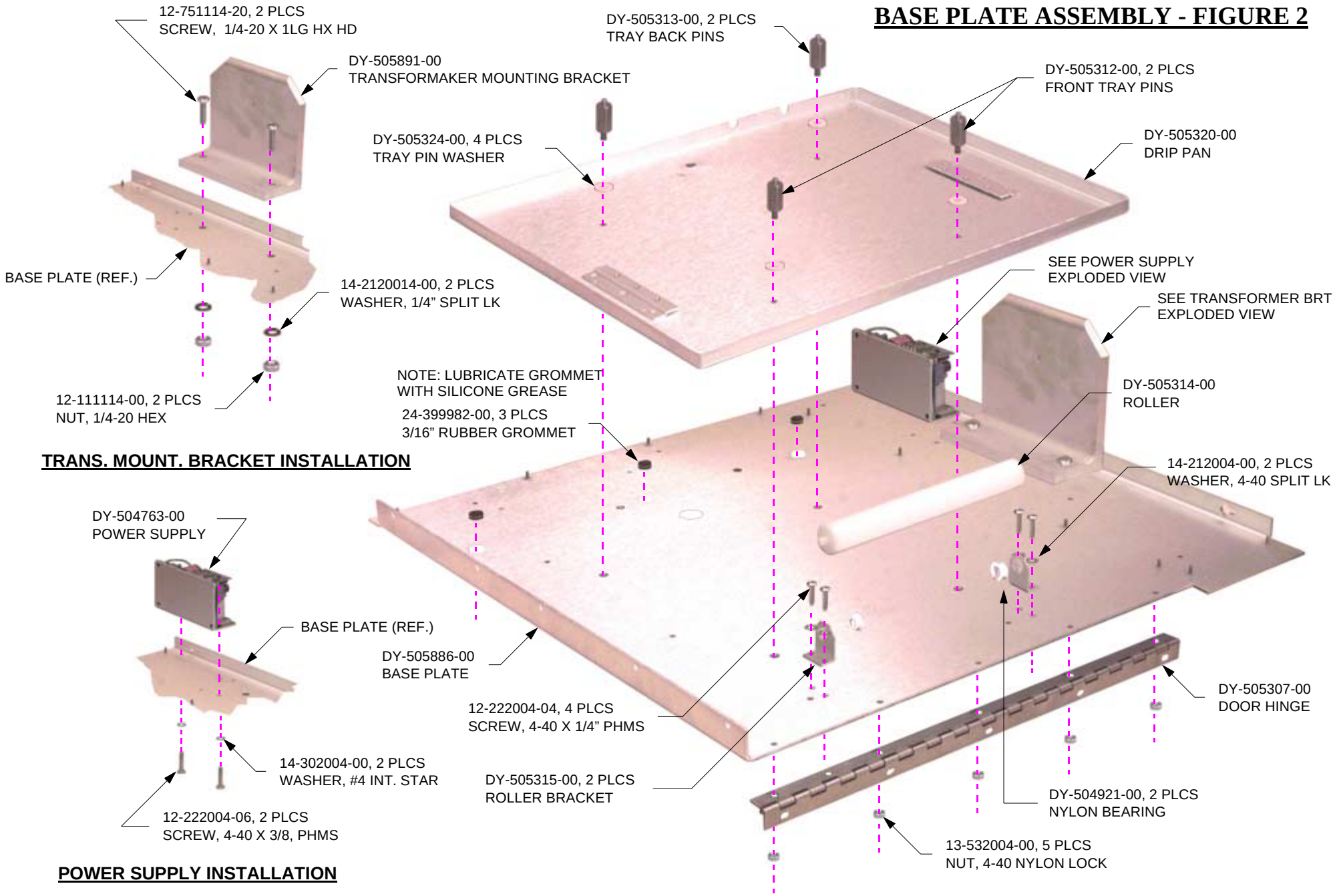
ASSY, ARCHON, FINAL

ARCHON STATION #4, ASSEMBLY PROCEDURES



BASE PLATE ASSEMBLY - FIGURE 1

BASE PLATE ASSEMBLY - FIGURE 2



TRANS. MOUNT. BRACKET INSTALLATION

POWER SUPPLY INSTALLATION

1. ARCHON FINAL ASSEMBLY PROCEDURES

1.1 BASE PLATE ASSEMBLY

1.1.1 **Figure 1:** Place the Base Plate (DY-505886-00) with bottom side up in arrangement shown. Install the Base Pedestal (DY-505296-00) on the Base Plate, using ten 4-40 Nylon Lock Nuts (13-532004-00) and one #4 Internal Star Washer (14-302004-00) where shown in *Figure 1* on page 2.

1.1.2 **Figure 2:** Install three 3/16" Rubber Grommets (24-399982-00) into the base plate and lubricate grommet with Silicone Grease.

1.1.3 Install Door Hinge (DY-505307-00) onto the base plate, using five 4-40 Nylon Lock Nuts (13-532004-00) as shown. Make sure do not to mount ***(sloted)*** holes onto the base plate and flat side is upwared.

1.1.4 Assemble Nylon Bearing (DY-504921-00) into the both Roller Brackets (DY-505315-00) and secure one of the roller bracket onto the base plate. Use two 4-40 Split Lock Washers (14-212004-00) and two 4-40 x 1/4" PHMS Screws (12-222004-04) as shown.

1.1.5 Insert the extruded end of the Roller (DY-505314-00) into the previously installed roller bracket and secure other end by repeating Step 1.1.4 as shown.

1.1.6 Assemble the Transformer Mounting Bracket (DY-505891-00) onto the base plate, using two 1/4-20 x 1" Hex HD Screws (12-751114-20), two 1/4" Split Lock Washers (14-2120014-00) and two 1/4-20 Hex Nuts (12-111114-00) as shown in exploded view on page 3.

1.1.7 Install the Power Supply (DY-504763-00) onto the base plate, using two #4 Internal Star Washers (14-302004-00) and two 4-40 x 3/8 HD Phillips Screws (12-222004-06) as shown.

1.1.8 Place the guide pin on the bottom of Drip Pan (DY-505320-00) into large hole on base plate. Secure the drip pan onto the base plate, using two Tray Pin Washers (DY-505324-00) and two Front Try Pins (DY-505312-00) near the door hinge side. Install two Tray Back Pins (DY-505313-00) with two more Try Pin Washers on opposite side of the hinge side as shown.

DY-501333-00
CABINET MOUNT AIR FITTING

13-122060-00
NUT, HEX, SS, 10-32

28-694335-00
BULKHEAD
UNION, 1/6 BRASS

14-212010-00
WASHER, LOCK SPLIT S/S

DY-505899-03
INTERNAL PURGE GAS CUT OFF

12-901163-00, 2 PLCS
SCREW, 8-32 X 3/8, SEMS, SS

FIGURE 1

51-110014-00
CONN, DW/FILTER, 25 POS

DY-505256-00, 2 PLCS
.13" JACKSCREW KIT
APPLY LOCTITE #271

DY-504755-00
REMOTE I/O CABLE

FIGURE 3

12-222004-04
SCREW, 4-40 X 1/4, PAN

14-212004-00
WASHER LOCK S/S

28-693973-00
UNION, BLKHD, 1/8 X 1/8

14-202015-00
WASHER, LK, 5/16

DY-505887-00
BACK PANEL

DY-505348-00
1/2" BULKHEAD RETAINER

14-312008-00
WASHER, EXT LOCK, #8

13-532004-00, 5 PLCS
NUT, LOCK, 4-40

49-399702-01
ASSY, CORCOM FILTER

14-302004-00, 2 PLCS
WASHER, #4 INT. TOOTH LOCK

13-532004-00, 2 PLCS
NUT, LOCK, 4-40

13-122008-00
NUT, 8-32 HEX, SS

DY-505403-00, 2 PLCS
GROMMET, RUBBER, 3/8 ID

DY-505340-00, 2 PLCS
ADJUSTABLE QUICK CLIP

BASE PLATE ASSEMBLY (REF.)

FIGURE 2

BACK PANEL ASSEMBLY

1.2 BACK PANEL ASSEMBLY

1.2.1 Install Back Panel (DY-505887-00) onto the base plate assembly, using five 4-40 Lock Nuts (13-532004-00).

1.2.2 **Figure 1:** Assemble the Internal Purge Gas Cut Off (DY-505899-03) into lower left side of the back panel, using two 8-32 x 3/8 Sems Screws (12-901163-00) as shown.

1.2.3 Install 1/16 Brass Bulkhead Union (28-694335-00), into a hole labeled *water 10 psi max* above internal purge gas cut off, using one each Split Lock Washer (14-212010-00) and Nut/Fitting that supplied with bulkhead union.

1.2.4 Install Cabinet Mount Air Fitting (DY-5013330-00) and secure with one each 10-32 Hex Nut (13-122060-00) as shown.

1.2.5 **Figure 2:** Install Corcom Filter Assembly (49-399702-01) onto lower right side of the back panel, using two each #4 Internal Tooth Lock Washers (14-302004-00) and two each 4-40 Lock Nuts (13-532004-00). Attach ground wire from the corcom Filter, using one each #8 External Lock Washer (14-312008-00) and one each 8-32 Hex Nut (13-122008-00) as show.

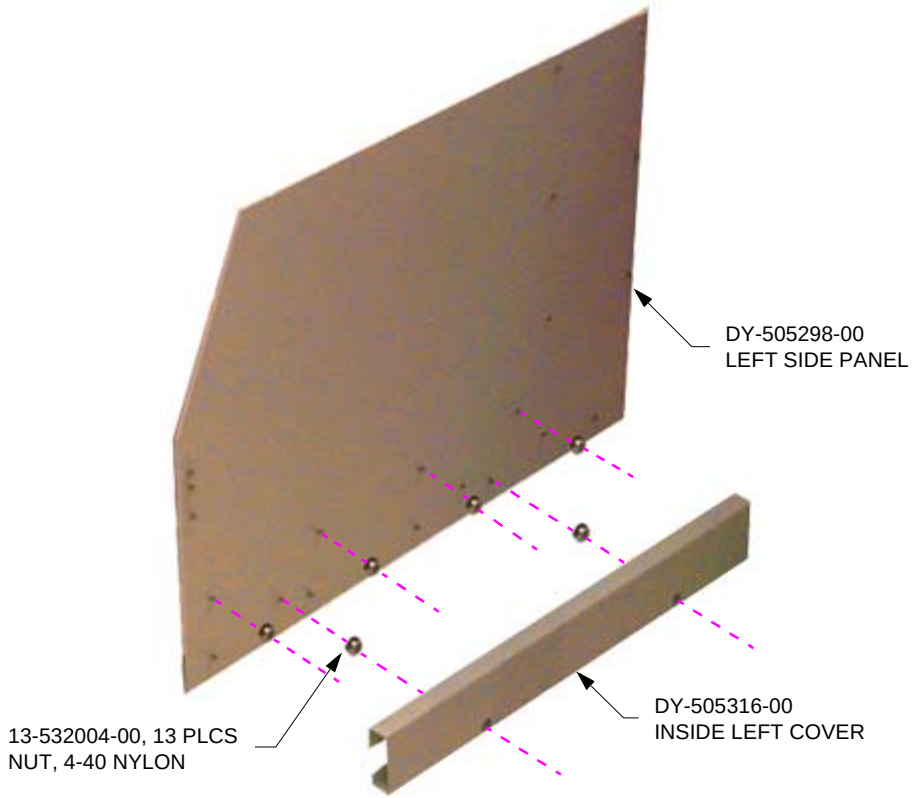
1.2.6 From the rear of the instrument install Bulkhead Union (28-693973-00), using one 5/16 Lock Washer (14-202015-00) and secure with Nut supplied with the bulkhead as shown. Install the 1/2” Bulkhead Retainer (DY-505348-00) and secure with one each Lock Washer (14-212004-00) and one each 4-40 x 1/4 Pan Screw (12-22204-04) where shown.

1.2.7 **Figure 3:** Assemble Remote I/O Cable (DY-504755-00), using two each .13” Jackscrew Kits (DY-505256-00) and theNuts that are supplied with the jackscrew. Attach 25 Pos. DW/Filter Conn. (51-110014-00) onto Remote I/O Cable and finger tighten the thumb screw.

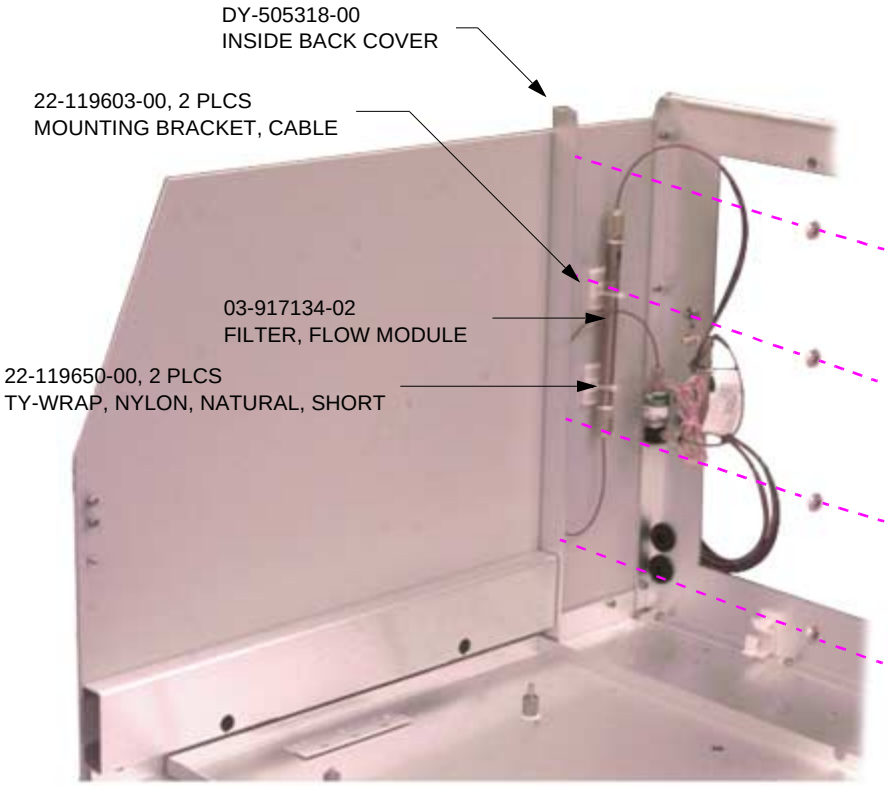
Note: Apply Loctite #271 to jackscrew prior to installing.

1.2.8 Install two 3/8 ID Rubber Grommets (DY-505403-00) into two lower left holes where shown.

1.2.9 Affix two Adjustable Quick Clips (DY-505340-00) lower back panel where indicated.



LEFT SIDE PANEL INSTALLATION



FLOW MODULE FILTER INSTALLATION

NOTES:

1. WHEN INSTALLING THE INSIDE LEFT COVER ONTO THE LEFT SIDE COVER, USE JIG FOR CORRECT SPACING OF NUTS.
2. FIRST ATTACH ALL NUTS & TIGHEN DOWN THEN BACK THE NUTS OFF APPROXIMATLY 1-1/2 TURNS. ATTACH INSIDE LEFT COVER AND SECURE THE 2 NUTS WITH ACCESS HOLES

1.3 LEFT SIDE PANEL INSTALLATION

1.3.1 Obtain the Left Side Panel Assembly (DY-505298-00). Install the left side panel onto the base plate assembly, using five each 4-40 Nylon Nuts (13-532004-00) at the bottom and four more 4-40 Nylon Nuts to back panel as shown. Assemble the Inside Left Cover (DY-505316-00) to the left side panel.

Note: Prior to installing the left side panel assembly, use the Spacer Tool to adjust the keps nut to proper spacing not shown.

1.3.2 Install Inside Back Cover (DY-505318-00) onto the Left side Panel in vertical position, using four each 4-40 Nylon Nuts (13-532004-00) to secure in place as shown.

1.4 FLOW MODULE FILTER INSTALLATION

1.4.1 Obtain two Cable Mounting Brackets (22-119603-00), remove the adhesive backing paper and affix the the cable mounting brackets between the inside back cover and back panel assembly where shown.

1.4.2 Place the Flow Module Filter Assembly (03-917134-02) with red tubing over the cable mounting brackets and secure flow module filter in place with two Short Natural Nuylon Ty-Wrap (22-119650-00) as shown.

Note: Flow direction on the flow module filter assembly must point upward as shown.

1.4.3 Attach the tubing from bottom of the flow module filter assembly to the upper port of the Internal Purge Gas Cut Off. Route red tubing through a hole *labeled Wast Line* on back panel assembly toward rear of the instrument.

1.4.4 Install Blue Peek Tubing (03-918853-04) to right port of the internal purge gas cut off, use bulkhead from Adapter Hose 3/32 x 10-32 (28-849702-00), with Ferrule Washer (03-91742-00) and Viton Ferrule (03-917142-00) not shown. Remove all ferrules from adapter hose.

1.4.5 Cut the blue & red peek tubing end even. Pre-swage the blue tubing to bulkhead on water 10psi max. Coil both tubing and install cable tie.

1.4.6 Install Bottle Plug Assembly (DY-505816-00, use bulkhead from otherside to attachown peek tubing goes to water 10psi max, clear tubing goes to helium.

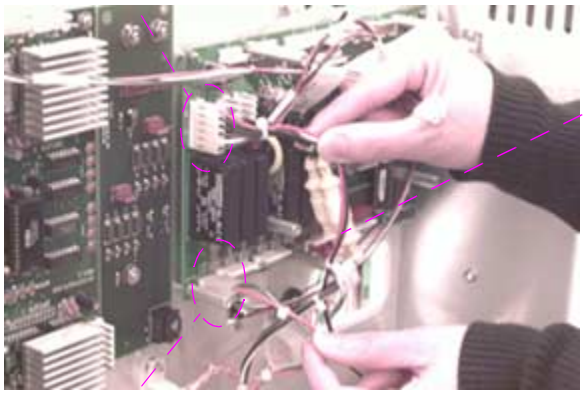
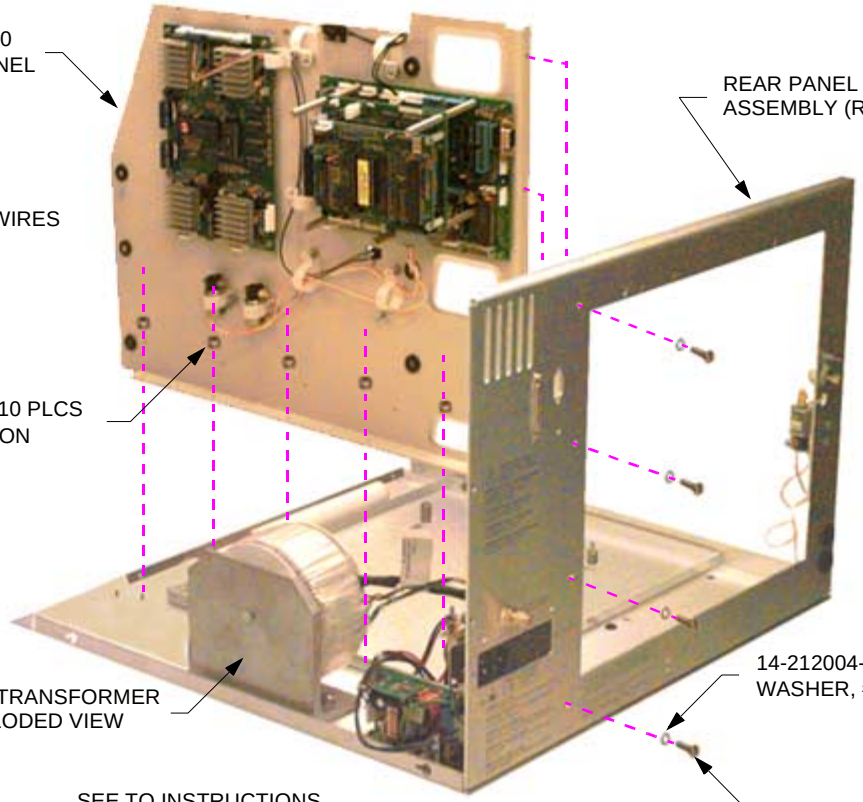
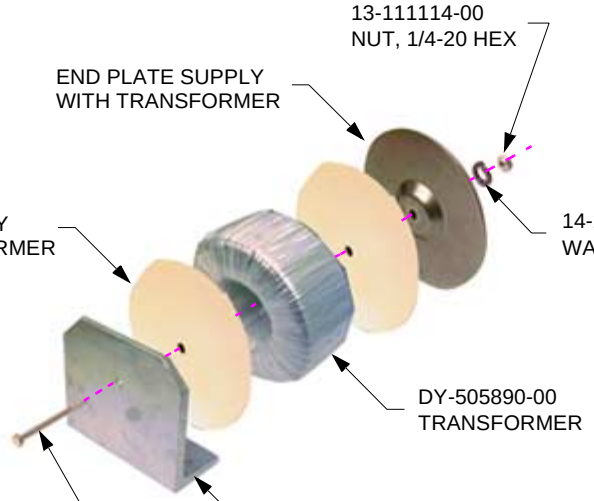
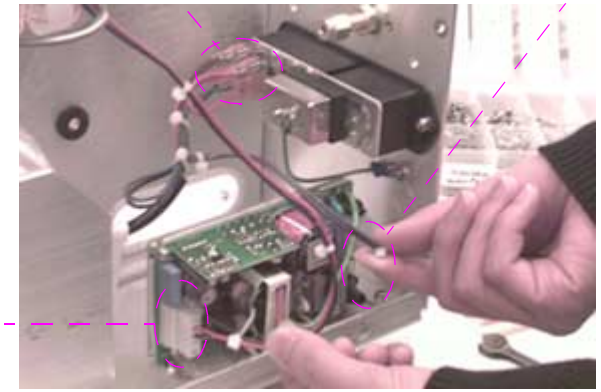


FIGURE 1







TRANSFORMAER EXPLODED VIEW

FIGURE 2

1.5 DIVIDER PANEL ASSEMBLY INSTALLATION

1.5.1 Install Divider Panel (DY-505301-00) onto the base plate assembly, using five 4-40 Nylon Nuts (13-532004-00) at the lower base. Install four additional 4-40 x 3/8 Ph Hd Screws (12-222004-06) with #4 Split Lk Washers (14-212004-00) from the rear panel assembly as shown.

1.6 TRANSFORMER INSTALLATION

1.6.1 Assemble the Transformer (DY-505890-00) onto the transformer mounting bracket in the order shown. See exploded view on page 9. Use 1/4-20 x 3-1/2 Lg Hex Screw (12-751114-44), Split Lock Washer (14-212014-00) and 1/4-20 Hex Nut (13-111114-00) as shown. *When transformer installing completed, tighten all five nuts at the base of the divider panel assembly.*

1.7 TRANSFORMER WIRING INSTRUCTIONS

1.7.1 I/O PWA Board:

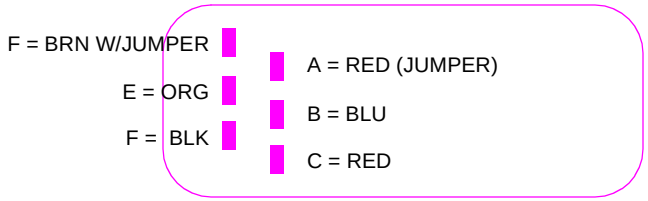
A) Attach Connector with 2 fuses from the transformer to *(J29)* on I/O PCB.
B) Attach Connector with GRN/RED wire to *(J30)* in I/O PCB.

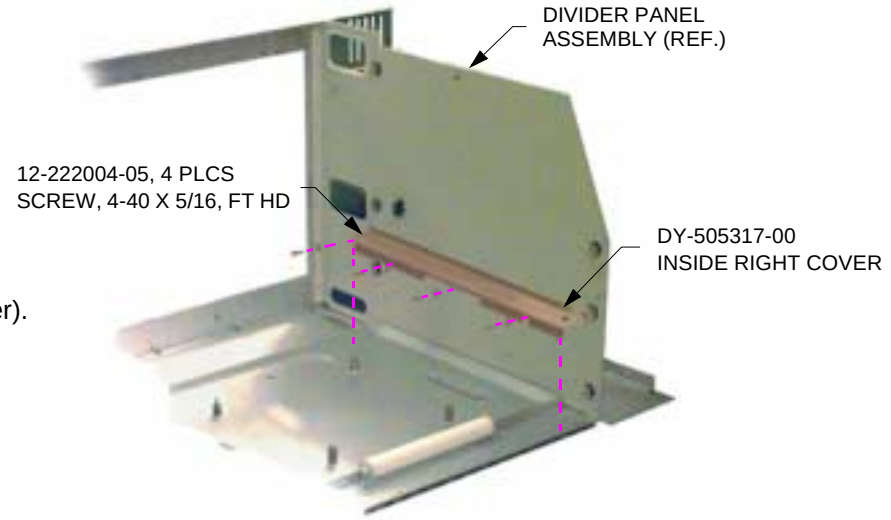
1.7.2 Power Supply:

A) Attach Connector with RED/BLK wire to *(P2)* on the left.
B) Attach Connector with BRW/BLU wire to *(P1)* on the right.

1.7.3 Corcom Filter Assembly:

A) BLU = B, BLK = D, ORG = E, BRN = F and RED = A/C (jumper).





INSIDE RIGHT COVER INSTALLATION

1.8 INSIDE RIGHT COVER INSTALLATION

1.8.1 Place the Inside Right Cover (DY-505317-00) against the lower corner of the divider panel and base plate assembly and secure with four 4-40 x 5/16 Ft Hd Screws (12-222004-05) as shown.

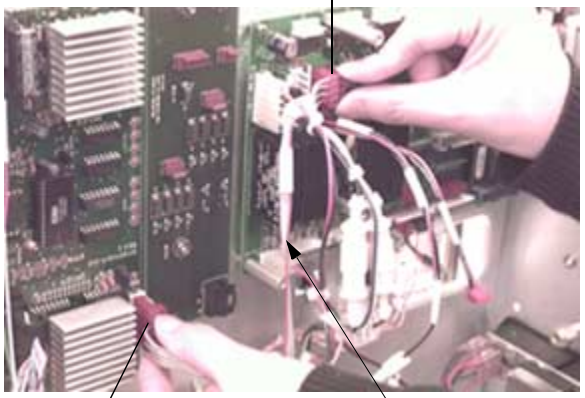


FIGURE 1.9.1

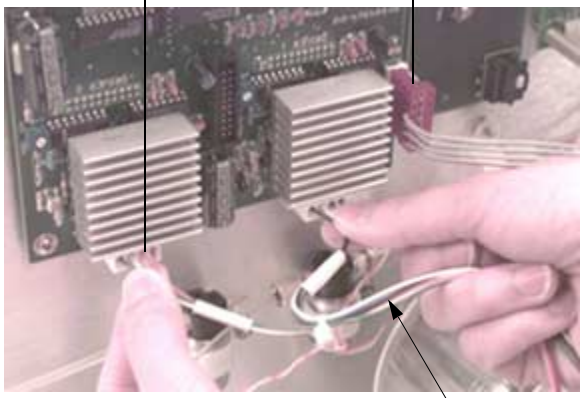


FIGURE 1.9.2a

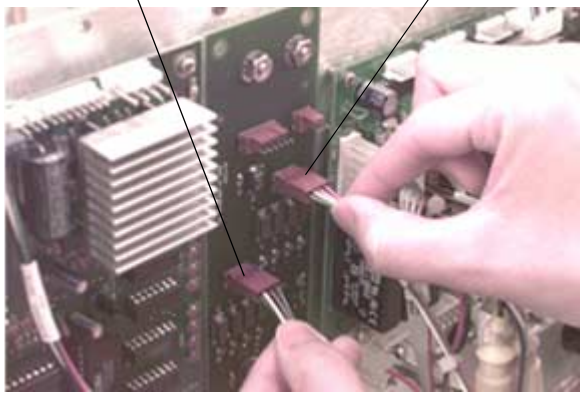


FIGURE 1.9.2b

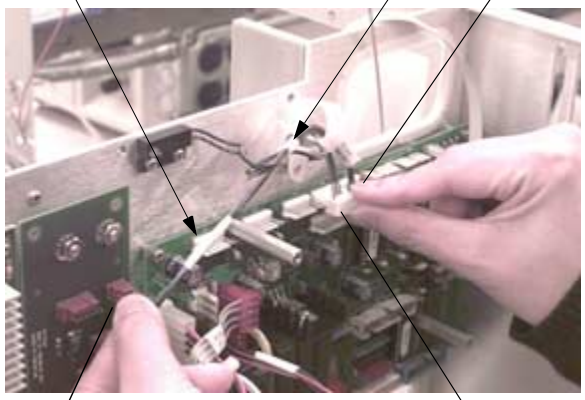


FIGURE 1.9.3

FIGURE 1.9.4

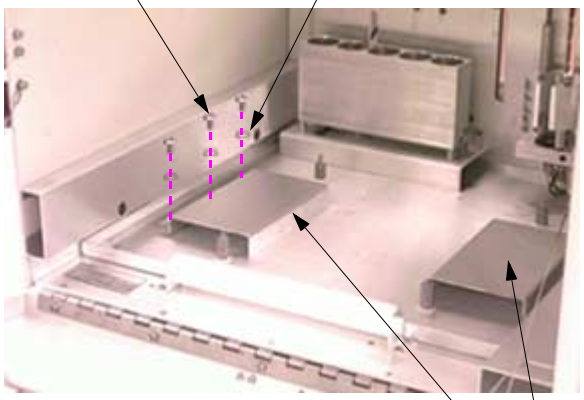


FIGURE 1.9.5

1.9 WIRING CONNECTIONS - PART I

1.9.1 Install Motor Power Cable Assembly (DY-505286-00) into *(TS1)* on Motor Head PCB Assembly (DY-505240-00) and attach other ends to *(J26)* Remote I/O PCB (DY-504914-00) as shown.

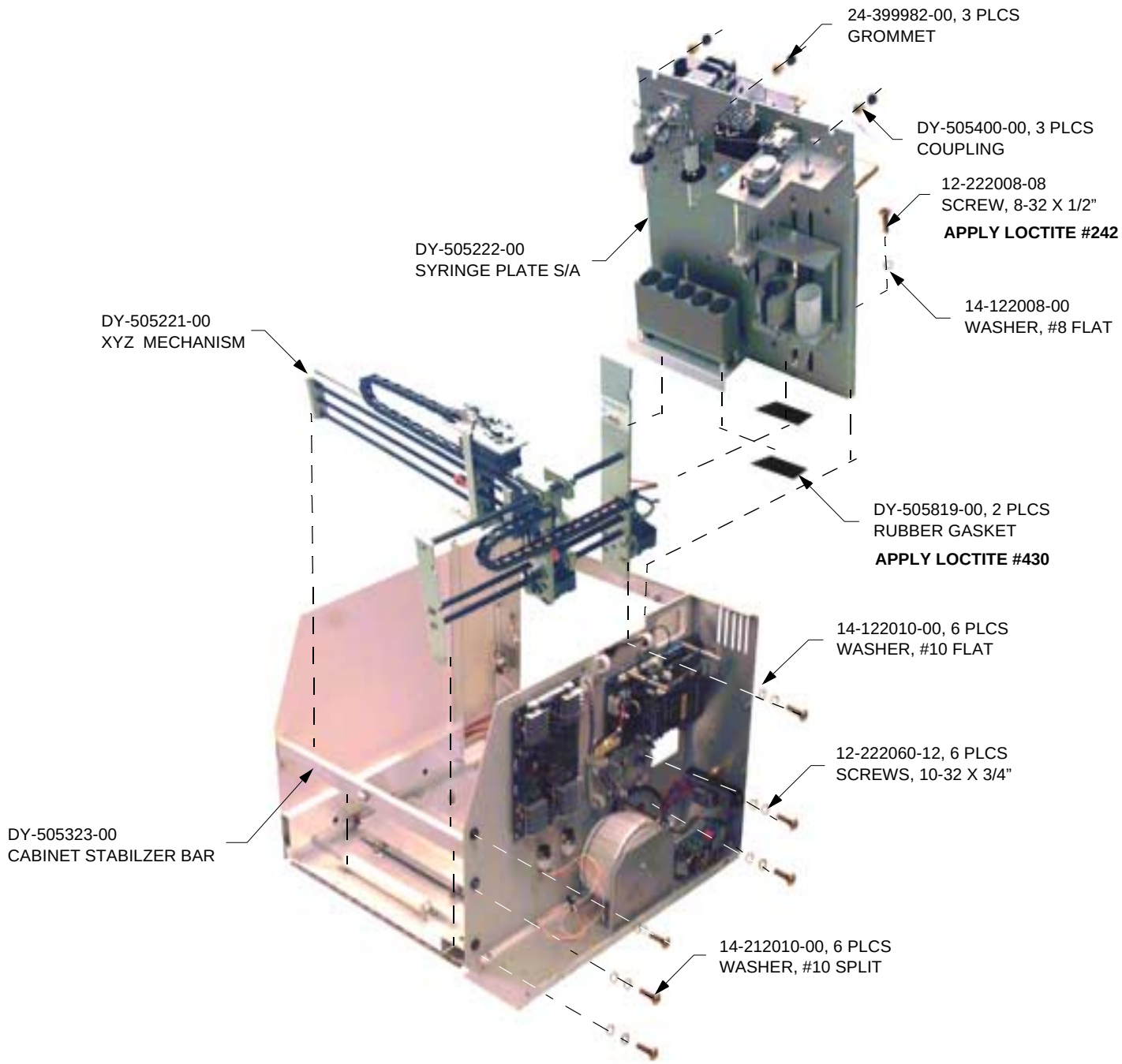
1.9.2 Install Cable XYZ Motors Assembly (DY-700130-01), connect white connectors into *(J8a) and (J8b)* on Motor Head PCB. Connect opposite ends to *(J8)* and *(10)* on the DY-Flex PWA Assembly (DY-700100-01) as shown in figure 1.9.2b.

1.9.3 Install No Vial PCB Cable Assembly (DY-700129-01) into *(J7)* on DY-Flex PWA assembly and connect other ends to pin 1,2,3... *(J16)* on the motor head PCB. Attach magnetic proximity sensor into *(J16)* pins 4-6 next to the previous connector and install Cable Tie (22-119650-00) on the wires where indicated on figure 1.9.3.

1.9.4 Obtain Cable Motor Control/DY-Flex Assembly (DY-700131-01), attach red connector labled *(P9)* to *(J9)* on the DY-Flex PWA assembly and attach another connector labeled *(P6)* to *(J6)* on the motor head PCB assembly. Connect the remain black connector to remote I/O PCB assembly between (J8a & J8b) where shown.

1.9.5 Install the Support Tray (DY-700084-01) onto the base plate assembly, using three Lock Washers (14-212004-00) and three 4-40 x 3/16 PH Screws (12-12-22204-03) where shown. Repeat previous step on other side of the instrument.

Note: In some case Chiller Assembly might need to be install rather then the Support Tray assembly. Refer to Chiller Assembly Installation (DY- 700085-90) documentation for details.


24-399982-00, 3 PLCS
GROMMET
DY-505400-00, 3 PLCS
COUPLING
12-222008-08
SCREW, 8-32 X 1/2”
APPLY LOCTITE #242
DY-505222-00
SYRINGE PLATE S/A
14-122008-00
WASHER, #8 FLAT
DY-505221-00
XYZ MECHANISM
DY-505819-00, 2 PLCS
RUBBER GASKET
APPLY LOCTITE #430
14-122010-00, 6 PLCS
WASHER, #10 FLAT
12-222060-12, 6 PLCS
SCREWS, 10-32 X 3/4”
DY-505323-00
CABINET STABILZER BAR
14-212010-00, 6 PLCS
WASHER, #10 SPLIT

1.10 XYZ ASSEMBLY INSTALLATION

1.10.1 Align XYZ Assembly with divider panel and left panel, using six #10 Flat Washers (14-122010-00), six #10 Split Washers (14-212010-00) and six 10-32 x 3/4" Screws (12-222060-12) as shown.

Note: Make sure the wires are not pinch, when installing the XYZ or syringe plate assemblies.

1.10.2 Install Cabinet Stabilizer Bar (DY-505323-00), by loosing the existing nuts on both divider and right side panel, installing the bar, then retightening the nut.

Note: Use Stabilizer Bar with Door Catch (DY-505335-00) already installed.

1.11 SYRINGE ASSEMBLY INSTALLATION

1.11.1 Place two Rubber Pads (50-581900-00) with Locttite #430 under syringe plate assembly in line with XYZ assembly support plate as show.

1.11.2 Take Syringe Plate Assembly (DY-505222-00) off fixture, place it onto the base plate assembly and flush with XYZ assembly support plate over the two rubber pads previously installed. Use #8 Flat Washer (14-122008-00) and 8-32 x 1/2 Screw (12-222008-08) to secure in place

Note: Apply Loctite #242 on screw thread prior to install.

1.11.3 Install three Grommets (24-399982-00) and three Couplings (DY-505400-00) onto cut-out slot at the top of the syringe plate assembly.

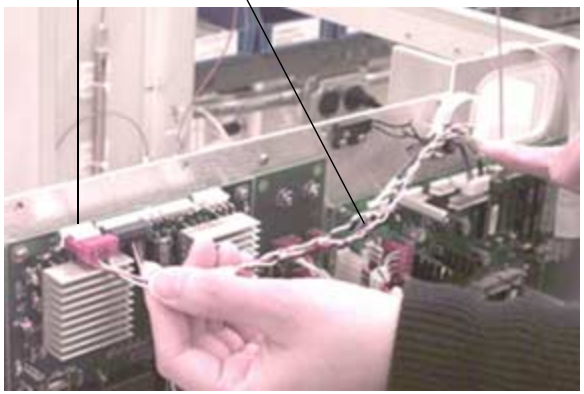


FIGURE 1.12.1

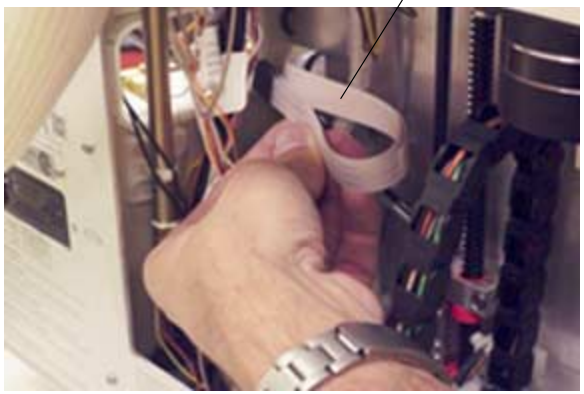


FIGURE 1.12.2a

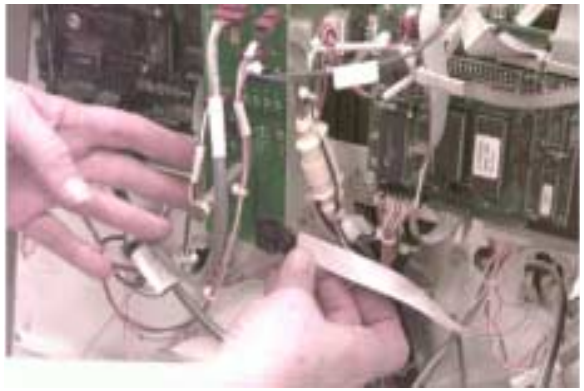


FIGURE 1.12.3b

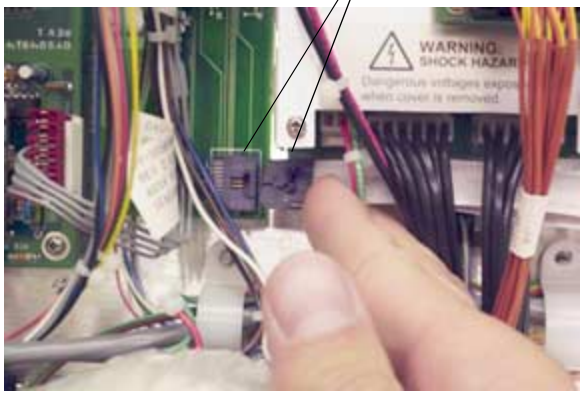


FIGURE 1.12.1c

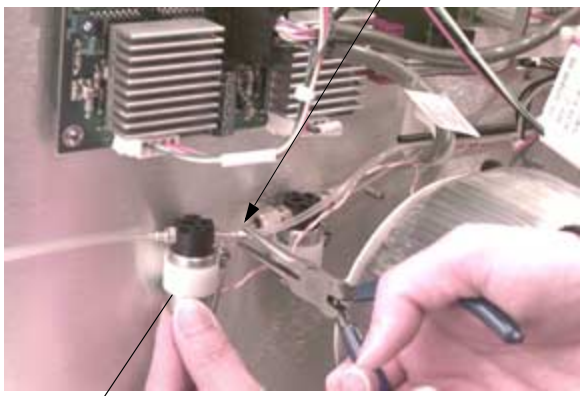


FIGURE 1.12.3

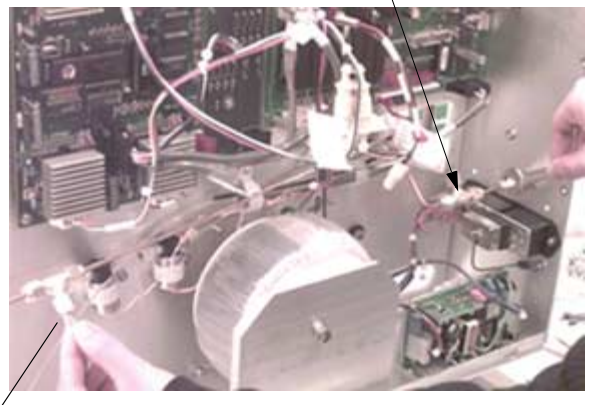


FIGURE 1.12.4

1.12 WIRING CONNECTIONS - PART II

1.12.1 Feed the F/R Motor Assembly connector through the top cut-out of the divider panel assembly and cable clamp. Attach connector to *(J8C)* on the motor head PCB as shown in figure 1.12.1.

1.12.2 Feed the flex cable from the XYZ assembly through the middle cut-out on the divider panel assembly. Connect the black flex cable connector to the socket *(J6)* on the lower right corner of the DY-Flex board as shown in figure 1.12.3b/c.

1.12.3 Feed black/clear tubing from the XYZ assembly through the middle cut-out of the divider panel assembly and cable calmps. Separate the tubings, then install clear tubing to right port of the gripper solenoid *the one on the left* with Cable Clamp (28-849707-00) as shown in figure 1.12.3. The black tubing does not connect to anything. Cut the extra clear and black tubing if needed.

1.12.4 Install Copper Tubing Assembly (DY-505414-01) to the bulkhead fitting on the rear panel assembly where shown. Attach clear tubing from the left side of the gripper solenoid valve assembly to Tee Fitting on the copper tubing assembly where shown with cable clamp. Cut off tubing from the gripper solenoid valve assembly to shorten if necessary.

1.12.5 Feed all wires/cable except heater wire & wire in harness wrap, from the cable clamp on syringe plate assembly, through the upper cut-out of the divider panel. Then connect *(J13 to J13)*, connect *(J21 to J21)* and connect *(J22 to J22)* on remote I/O PCB where shown. Install the AMP Cover (DY-505283-00) over J16 connector only not shown. Connect cable from *(J6 to J6)* on Motor Board and connect cable *(J17 to J17)* pins on I*/O* Board.

1.12.6 Connect *(J8D to J8D)* on the Motor Head PCB as shown.

1.12.7 Install Cable Tie (22-119650-00) to all wires/cable in bundle as shown except cable from transformer.

1.12.8 Install Vista PWA Cable (DY-505261-00) to *(J27)* on remote I/O PCB.

1.12.9 Install Vista Communication Cable (DY-505260-00) *(J1 to J1)* on I/O PCB. Attach Remote I/O Cable connect from the rear panel assembly to *(J7)* on remote I/O PCB.

1.12.10 Take lower Pencil Filter peek tubing from back of divider panel and feed through middle cut-out, to right port of the soil purge solenoid assembly as shown. Feed all wires in harness wrap from syringe plate and put through middle cut-out as well.

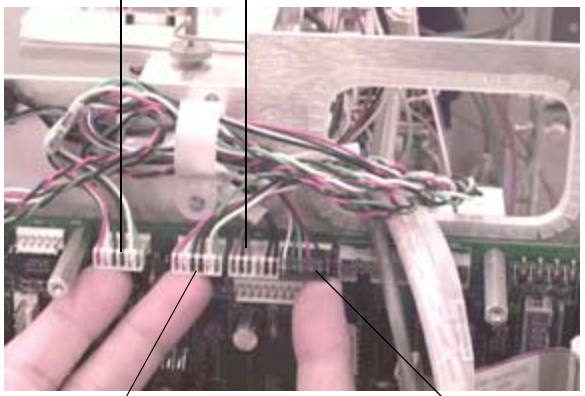


FIGURE 1.12.5

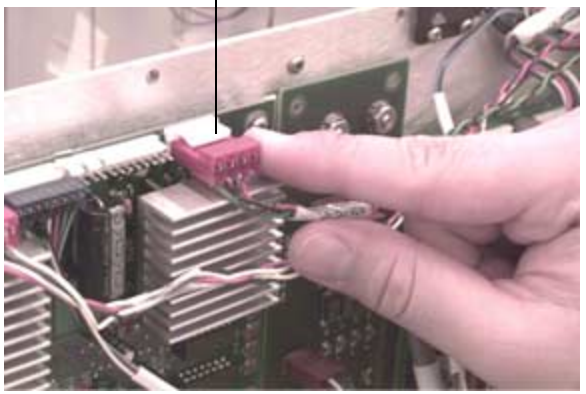


FIGURE 1.12.6

FIGURE 1.12.7

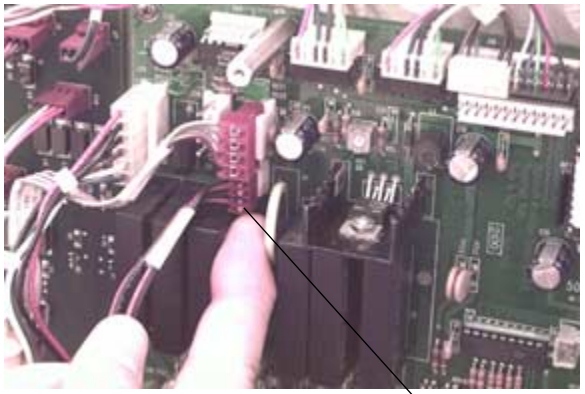


FIGURE 1.12.8

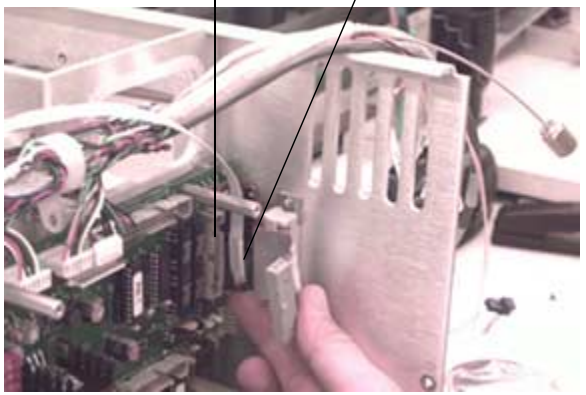


FIGURE 1.12.9

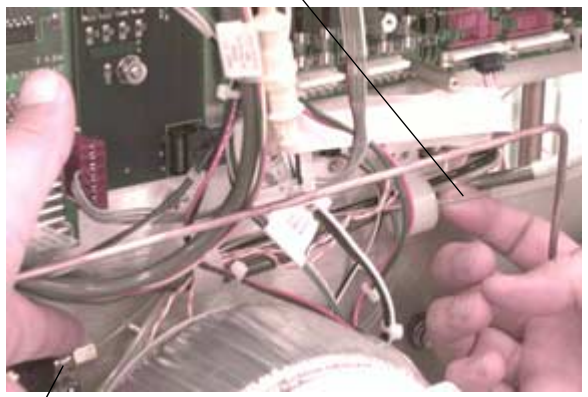
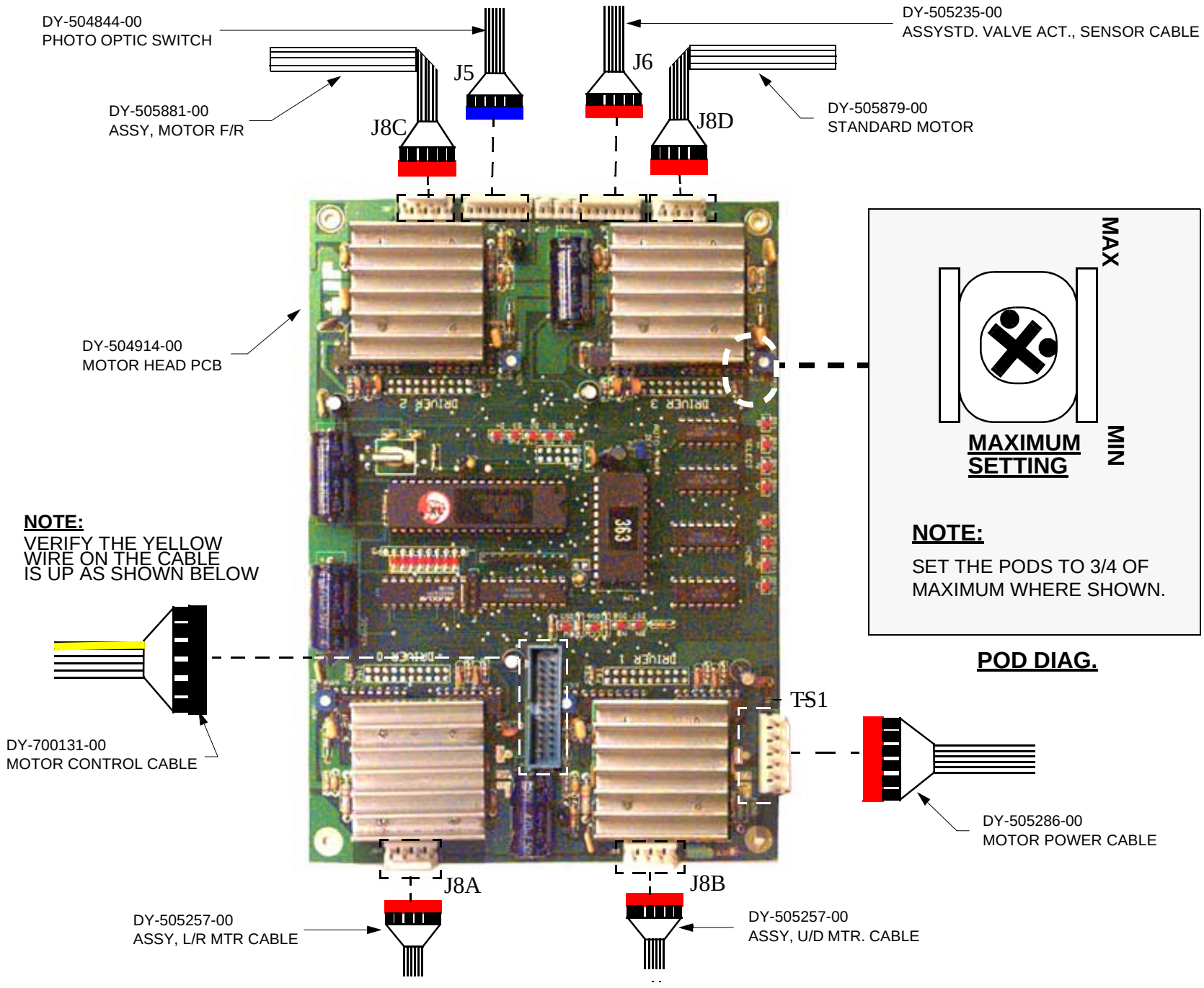
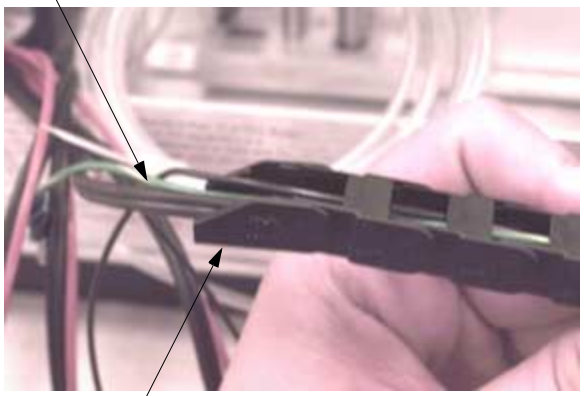


FIGURE 1.12.10



PREPARED BY: Sax Makthepharack	REVISED BY: Bob Vickroy	CONTROL: INDUSTRIAL ENGINEERING	REV. DATE: 05 - 15 - 00	- SHOWN

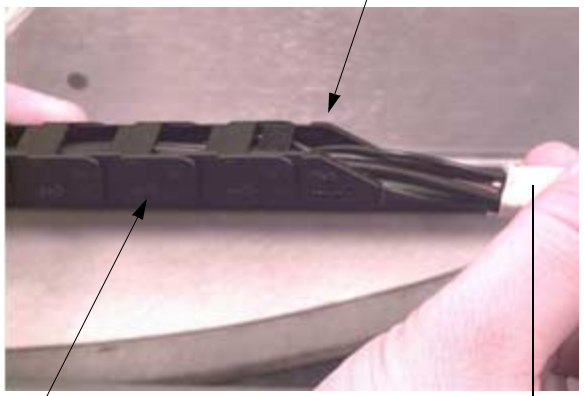
DY-505263-00
VAC & THERMOCOUPLE



DY-505376-00
BRACKET, CHAIN MOUNTING, W/PIN

FIGURE 1.13.1a

DY-505375-00
BRACKET, CHAIN MOUNTING, W/BORE



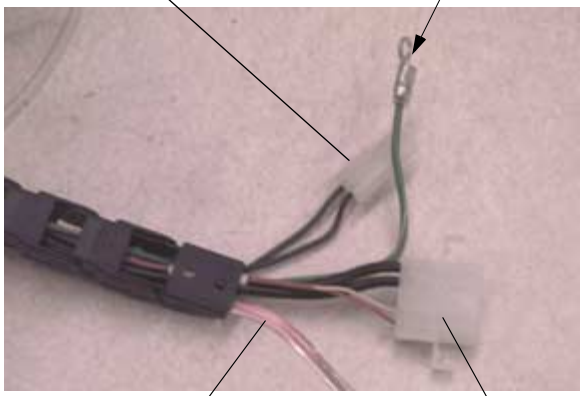
DY-505374-00, (15 LINK)
PLASTIC ENERGY CHAIN, BLACK

TAPE

FIGURE 1.13.1b

STIR MOTOR CABLE
ASSEMBLY W/CONNECTOR

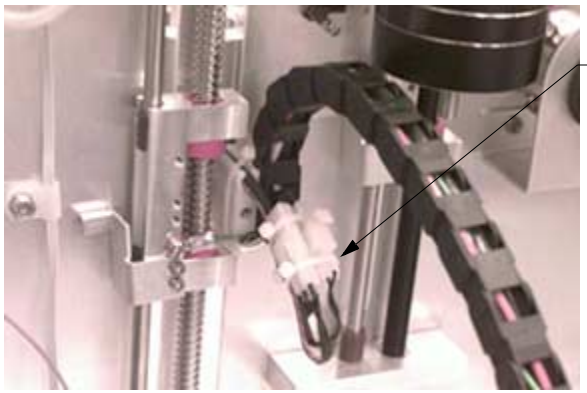
DY-905466-20
ASSY, GROUNDING STRAP



CLEAR TUBING
FROM VALVE ELEVATOR

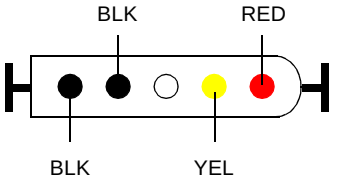
VAC & THERMOCOUPLE
W/CONNECTOR SEE DIAGRAM

FIGURE 1.13.2



22-119650-00, 2 PLCS
CABLE TIE

FIGURE 1.13.3



1.13 WIRING PLUMBING - PART I

1.13.1 Obtain the Vac & Thermocouple (DY-505263-00), Grounding Strap Assembly (03-905466-20) and Stir Motor Cable Assembly (DY-505800-00). Insert *(J4, J23 & J24)* connectors through bottom cut-out of divider panel. Then tape 4 pins vac & thermocouple wires without the connector, grounding strap (small end) and stir motor cable assembly together and feed it through the Energy Chain assembly.
Note: Feed the taped wire through the Bracket Chain Mouting W/Pin (DY-505376-00) end as shown.

1.13.2 Install loose connector supply with the vac & thermocouple wire assembly *(look in the bag)*.

1.13.3 Also install loose connector supplied with stir motor cable assembly *(look in the bag)*. No pararity.

1.13.4 Cut cable tie from the clear tubing on valve elevator assembly and feed the tubing thruough the Bracket Chain Mouting W/bore (DY-505375-00) side not shown.

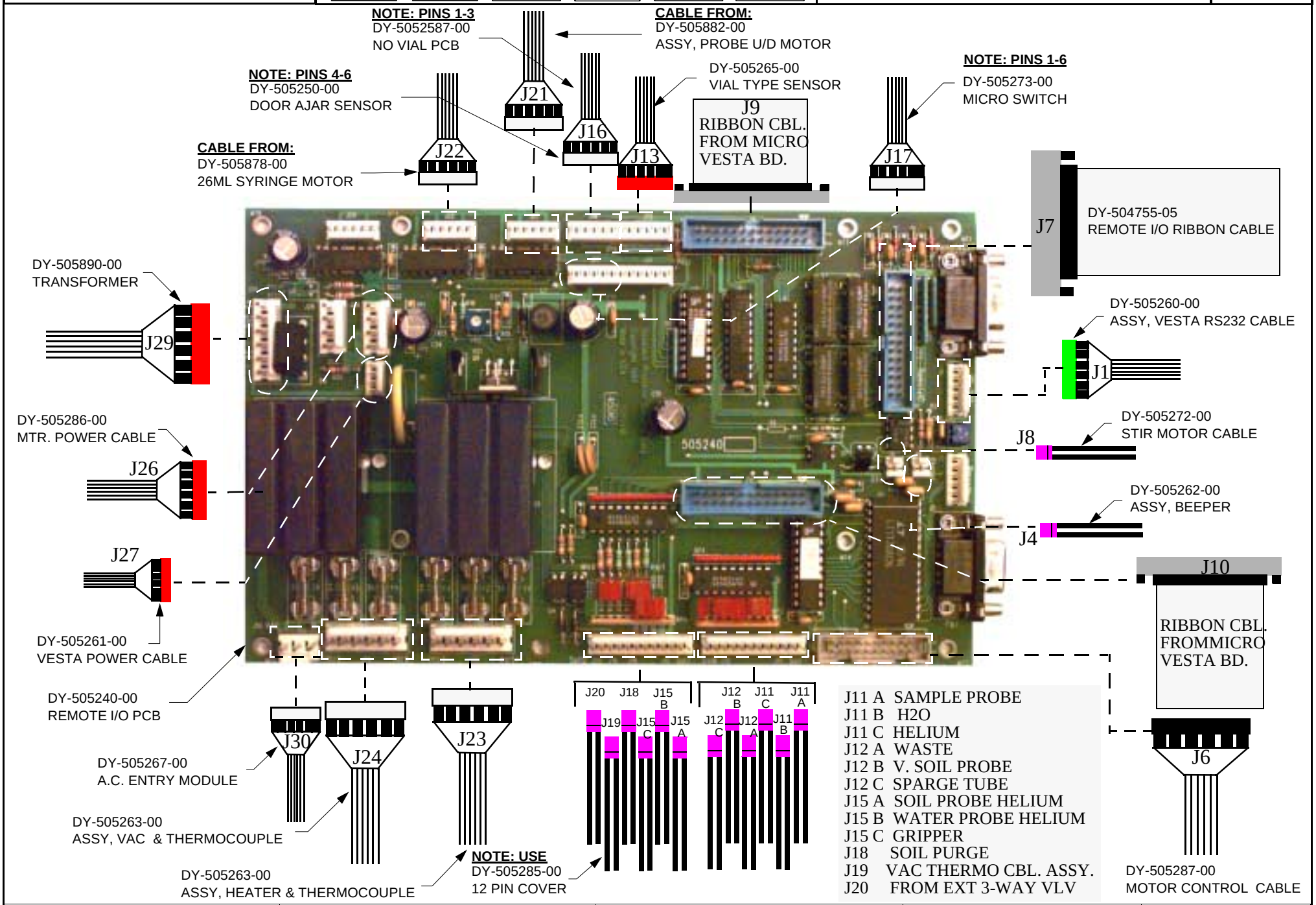
1.13.5 Assemble the energy chain assembly with *(connector side)* to the elevator valve assembly, using two #4 Int. Tooth Lk Washers (14-302004-00) and two 4-40 x 5/16 Pan Screws (12-222004-05) nut/washer not show. Secure grounding strap wire on the elevator valve assembly, using 6-32 x 3/8 Ext. Sems Screw (12-901134-00) where shwon.

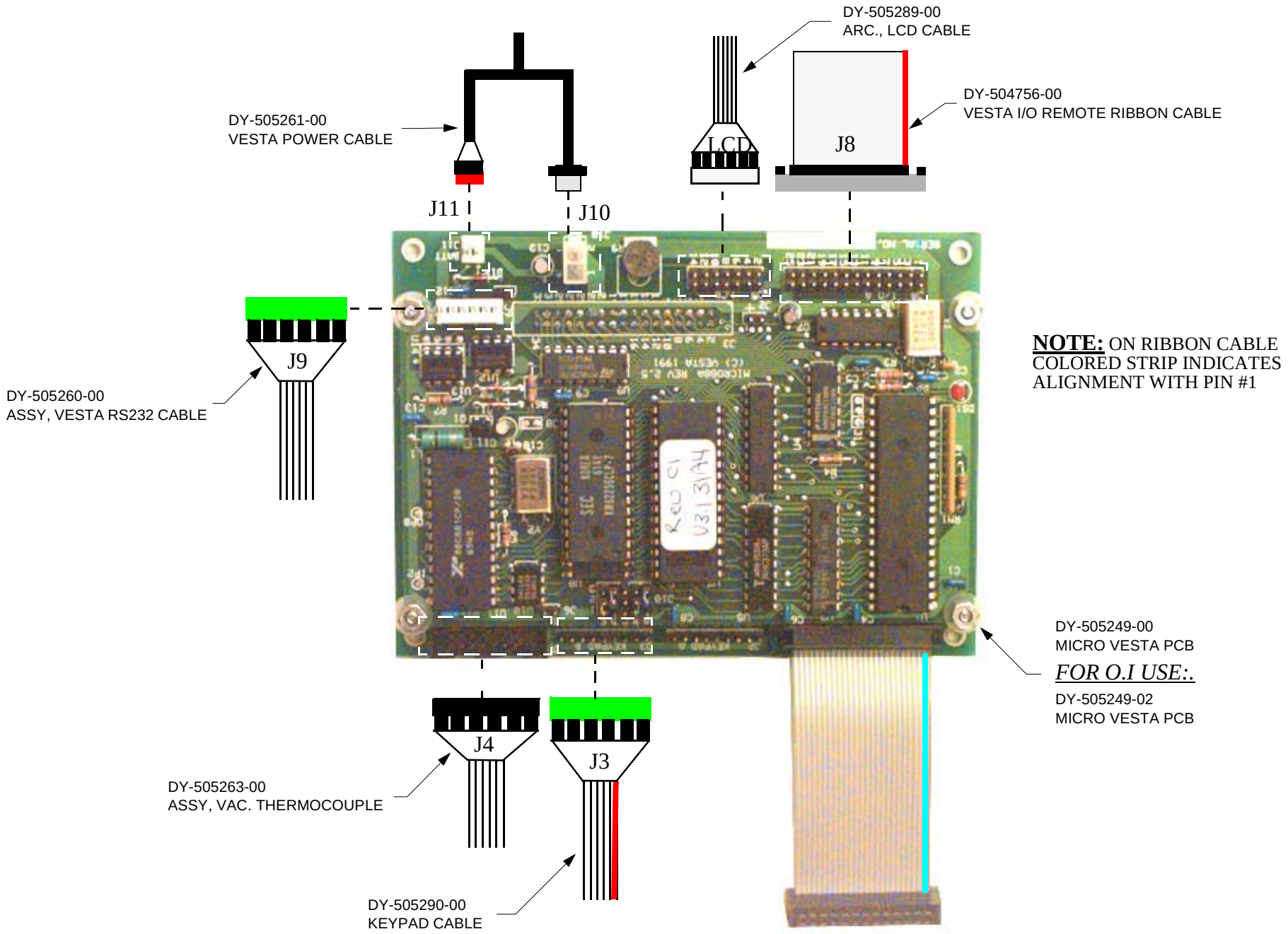
1.13.6 Connect both connectors from energy chain assembly to connectors on elevator valve assembly. Install cable tie on both connector together as shown.

Note: install cable tie in arrangement shown *(for elevator movement clearance purpose).*

1.13.7 Install other ends of the energy chain assembly to rear panel assembly, using Spacer (DY-700061-00), two 4-40 x 1/2 Pan Screw (12-222004-08) and two 4-40 Lk Nuts (13-532004-00) not shown. Use the latch tool to hold lock nut prior to tighten. Secure the grounding strap (large blue) assembly to the stud mount on the rear panel assembly, using #8 Lk Ext. Washer (13-312008-00), ground wire and then 8-32 Hex Nut (13-122008-00) not shown.

1.13.8 Obtain clear tubing from the energy chain, two red/blue peek tubing from flow module filter/internal purge gas cut off valve and three clear/red/green tubing from syringe plate assembly through the waste line cut-out on rear panel assembly. Install first Harness Wrap (DY-504128-00) over all these tubing, then the next two harness wraps cover only the two clear tubing with 1 red and 1 green together in equal spacing not shown and cut the ends evenly.


NOTE: PINS 1-3
DY-5052587-00
NO VIAL PCB
CABLE FROM:
DY-505882-00
ASSY, PROBE U/D MOTOR
NOTE: PINS 4-6
DY-505250-00
DOOR AJAR SENSOR
DY-505265-00
VIAL TYPE SENSOR
NOTE: PINS 1-6
DY-505273-00
MICRO SWITCH
CABLE FROM:
DY-505878-00
26ML SYRINGE MOTOR
J9
RIBBON CBL.
FROM MICRO
VESTA BD.
J21
J16
J13
J22
J17
J7
DY-504755-05
REMOTE I/O RIBBON CABLE
DY-505890-00
TRANSFORMER
J29
DY-505260-00
ASSY, VESTA RS232 CABLE
J1
DY-505286-00
MTR. POWER CABLE
J26
J8
DY-505272-00
STIR MOTOR CABLE
DY-505262-00
ASSY, BEEPER
J4
J27
J10
RIBBON CBL.
FROMMICRO
VESTA BD.
DY-505261-00
VESTA POWER CABLE
DY-505240-00
REMOTE I/O PCB
J30
J24
J23
J20 J18 J15 B
J19 J15 C J15 A
J12 B J11 C J11 A
J12 C J12 A J11 B
J6
DY-505267-00
A.C. ENTRY MODULE
DY-505263-00
ASSY, VAC & THERMOCOUPLE
DY-505263-00
ASSY, HEATER & THERMOCOUPLE
NOTE: USE
DY-505285-00
12 PIN COVER
J11 A SAMPLE PROBE
J11 B H2O
J11 C HELIUM
J12 A WASTE
J12 B V. SOIL PROBE
J12 C SPARGE TUBE
J15 A SOIL PROBE HELIUM
J15 B WATER PROBE HELIUM
J15 C GRIPPER
J18 SOIL PURGE
J19 VAC THERMO CBL. ASSY.
J20 FROM EXT 3-WAY VLV
DY-505287-00
MOTOR CONTROL CABLE



NOTE: ON RIBBON CABLE COLORED STRIP INDICATES ALIGNMENT WITH PIN #1

FIGURE 1.14.2

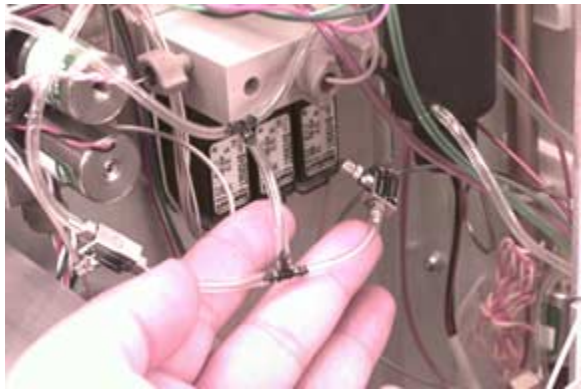


FIGURE 1.14.3

1.14 WIRING PLUMBING - PART II

1.14.1 Connect *(J11)* from the Vac & Thermocouple cable assembly to water heater cable not shown. Attach J13 Jumper Assembly (DY-50500-JX) to *(J13)* connector from vac & thermocouple cable assembly. Place all cable from Vac & Thermocouple cable assembly and clear tubing from energy chain assembly through cable clamp except *(J15 & J16)*.

1.14.2 Attach copper tubing from water heater to bulkhead on the rear panel assembly above the wast line.

1.14.3 Feed the clear tubing from speed aire refief valve assembly (DY-503774-00) through three cable clamps on syringe plate assembly. Route the same tubing behine the water heater and connect to barb fitting on rear panel assembly above bulkhead fitting with a cable clamp (28-849707-00). Attach Tee tubing from syringe plate asembly to Tee fitting on speed aire relief valve assembly. See Figure 1.14.3

1.14.4 Place (J15 & J16) on the cable clamp on the divider panel upward. Then connect (J16) connector to heater assembly connector from the syringe plate assembly.

1.14.5 Connect short Peek Tubing from syringe plate cable clamps to 3 Way Valve on XYZ, Clear Tubing from speed air relife valve to 3 Way Valve on XYZ with cable clamp and Peek Tubing from top pencil filter to Tee Fitting on top syringe plate not shown.

1.14.6 Attach cable assembly labeled Ext3 Way (J20/J25) *(look in the bag of vac & Thermocouple).* Attach white connector (J25) to valve communitcator from syringe plate assembly two *purple wires* and place on three cable clamp. Place the same cable opposite labeled (J20) through the middle cut-out on the divider panel assembly and connect to (J20) on remote I/O PCB.

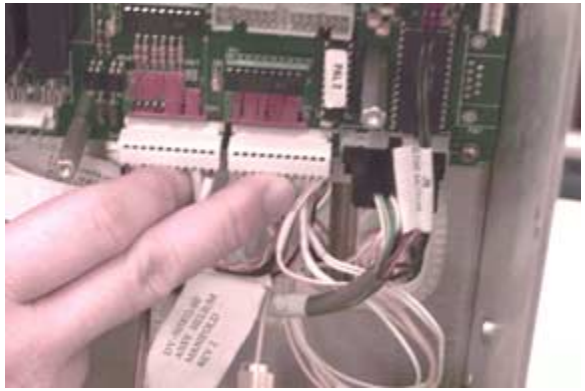


FIGURE 1.14.6 & 1.14.7

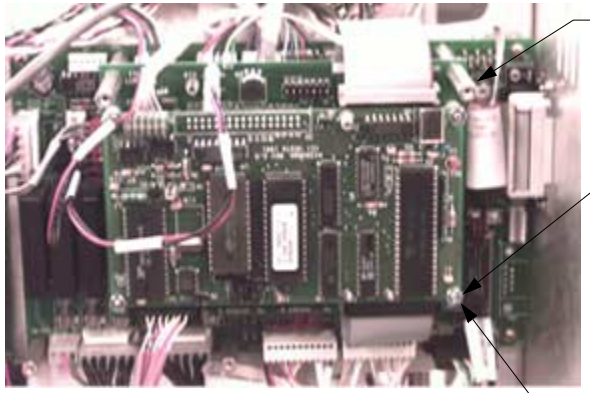


FIGURE 1.14.8

1.14.7 Feed (J8) stir motor cable assembly connector from the energy chain through middle cut-out of divider panel and connect to *(J8)* on I/O PCB. Also feed (J19) from cut off valve assembly to (J19) on I/O PCB. Connect the peek tubing with nut fitting from the wires with harness wrap to the Tee Fitting on the copper tubing assembly.

1.14.8 Start from the left; attach following cables:

A) Connect cables *(J15B = J15B, J15A = J15A, J12C = J12C, 12B = 12B, J12A = J12A, J11C = J11C, J11B = J11B & J11A = J11A)* from wire with harness on remote I/O PCB. Install two AMP Covers (DY-505285-00) over the connector previous installed as shown.

B) Connect *(J18)* from 2 Way Valve (DY-505899-01) to *(J18)* on I/O PCB. Connect *(J15c)* from 3 Way Valve (DY-50599-02) to *(J15c)* on I/O PWA.

C) Connect Vac & Thermocoupler cables *(J23 = J23 and J24 = J24)* on remote I/O PCB.

1.14.9 Obtain the Vista Micro 8 8A W/Generc (DY-505249-01) and install Vista I/O Remote Cable (DY-504756-00) to *(J8)* on top the of the board where red line on cable align with 1 on board. Connect Vista I/O Remote Cable to *(J9)* on remote I/O PCB and connect ribbin cable on the Vista Micro 8 8A W/Generc to *(J10)* I/O PCB not shown. Secure Vista Micro 8 8A W/Generc onto the remote I/O PCB, using two Standoffs (DY-505331-00) at the top and two #4 Int. Tooth Lk Washers (14-302004-00) and two 4-40 x 1/4 Pan Screws (12-222004-04) at bottom where shown. Connect *(J9)* from vesta cable, *(J4)* from thermocoupler cable and *(J11&J10)* from vesta power cable on Vista Micro 8 8A W/Generc PWA.

Note: If the instrument built as OI version use Vista Micro 8 8A W/Generc (DY-505249-02).

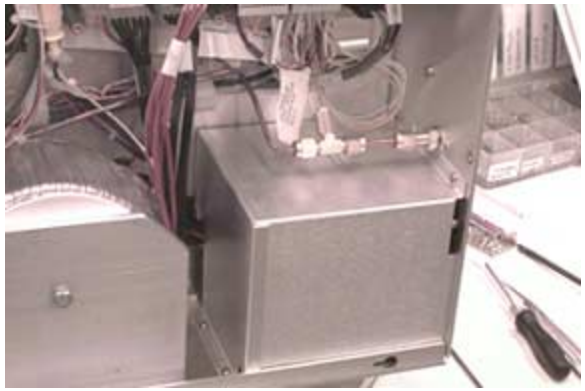
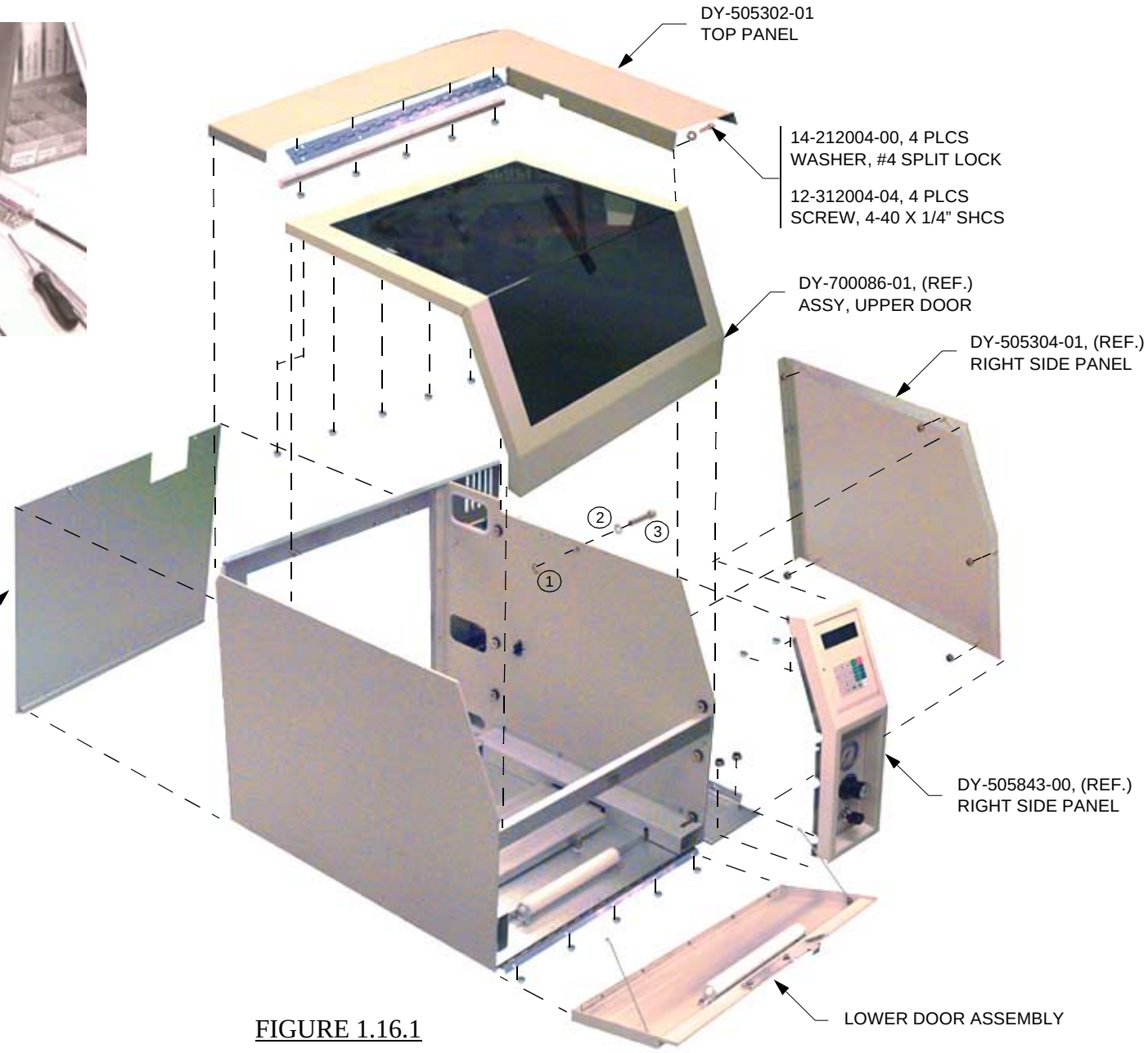


FIGURE 1.15.1



① 13-312004-00
NUT, 4-40 HEX

② 14-212004-00
WASHER, #4 SPLIT

③ 12-312004-09
SCREW, 4-40 X 9/16 SHCS

FIGURE 1.16.1

1.15 POWER SUPPLY SHEILD INSTALLATION

1.15.1 Install Power Supply Sheild (DY-505344-00) onto lower right of the instrument. Use four #4 Splt Washers (14-212004-00) and four 4-40 x 1/4 Ph Screws (12-222004-04) where shown.

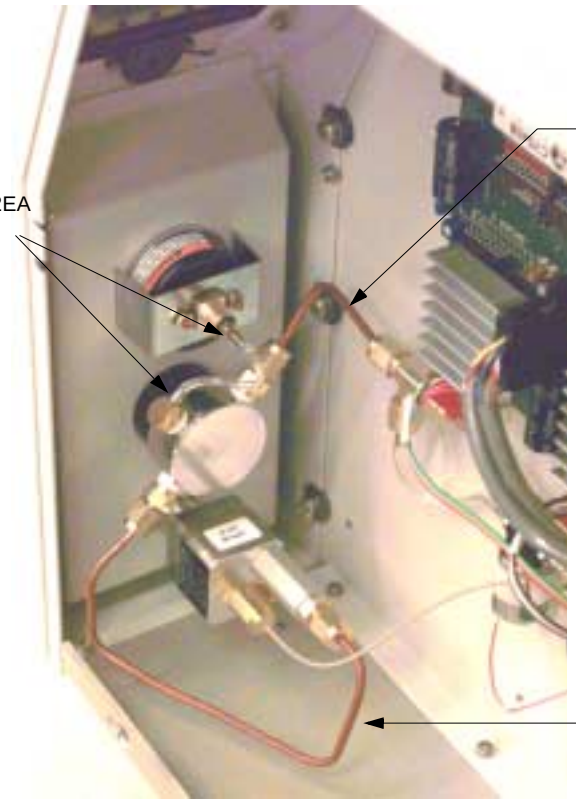
1.16 TOP PANEL ASSEMBLY INSTALLATION

1.16.1 Install Top Panel Assembly in arrangement as shown. Use five 4-40 Keps Nuts (13-532004-00) along the back, four #4 Lk Washers (14-212004-00) and four 4-40 x 1/4 SHCS Screws (12-312004-04) right side to secure divider panel and top panel.

1.16.2 Secure the top of the syringe plate with three Lock Washers (14-212004-00) and four 4-40 x 1/2 Pan Screws (12-222004-08) not shown.

Note: Screw at the upper left of syringe plate assembly does not require washer.

CONTINUE NEXT PAGE.....

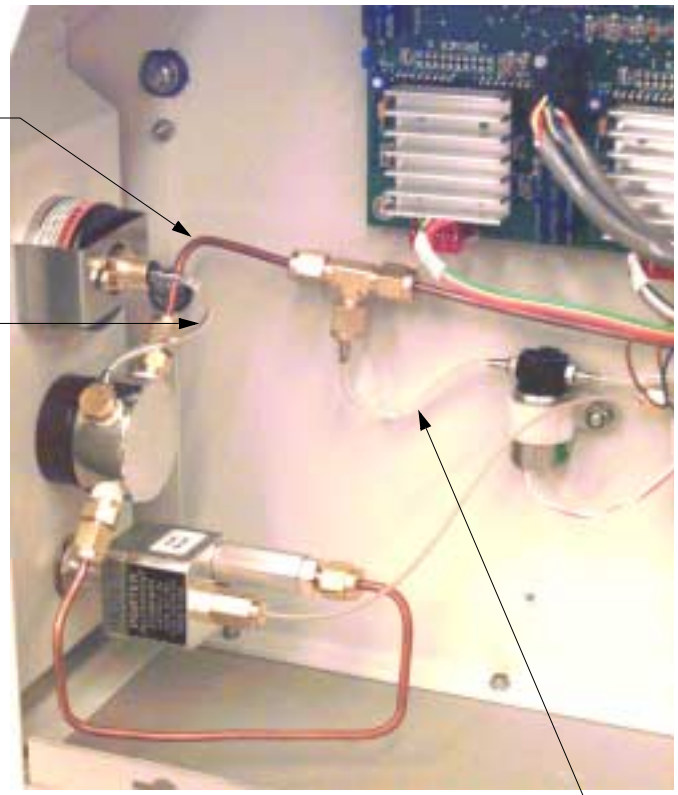


DY-500354-00
MINI HOSE CLAMP 2EA

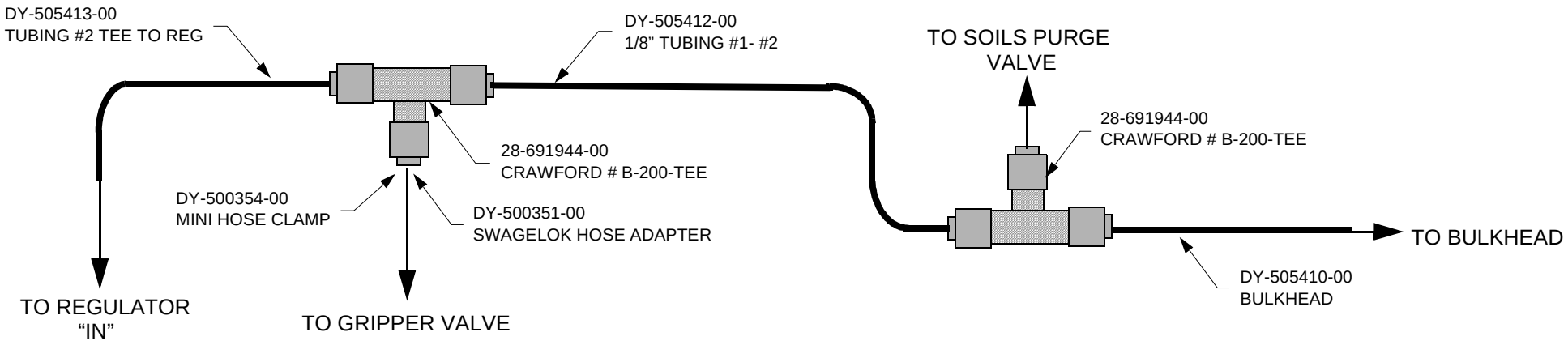
SEE DIAG. BELOW
FOR TUBING ASSY

28-158923-00
CLEAR TUBING 1/8" X 4" LG

DY-505414-00
INTERCONNECT TUBE



28-158923-00
CLEAR TUBING 1/8" X 4" LG.



DY-505223-00
ASSY, TRAY

FIGURE 1.18.1

03-935648-02
LABEL, VOLTAGE OPTION, 115V

03-935648-05
LABEL, VOLTAGE OPTION, 230V

REAR PANEL (REF.)

1.17 FRONT PANEL ASSEMBLY INSTALLATION

1.17.1 Place Front Panel Assembly (DY-505843-00) onto the front of the instrument right side. Attach LCD Cable (DY-505289-00) with red wire to the right. Attach Keypad Cable (DY-505290-00) with Red wire to the left. Make sure keypad cable says J3 on the loose end. Attach LCD Cable to LCD on generic board, keypad cable connects to keypad J3 on generic board and Buzzer cable connnect to buzzer pin on I/O Board. Place three ribbon cable from front panel through both cable clamp on top panel assembly not shown.

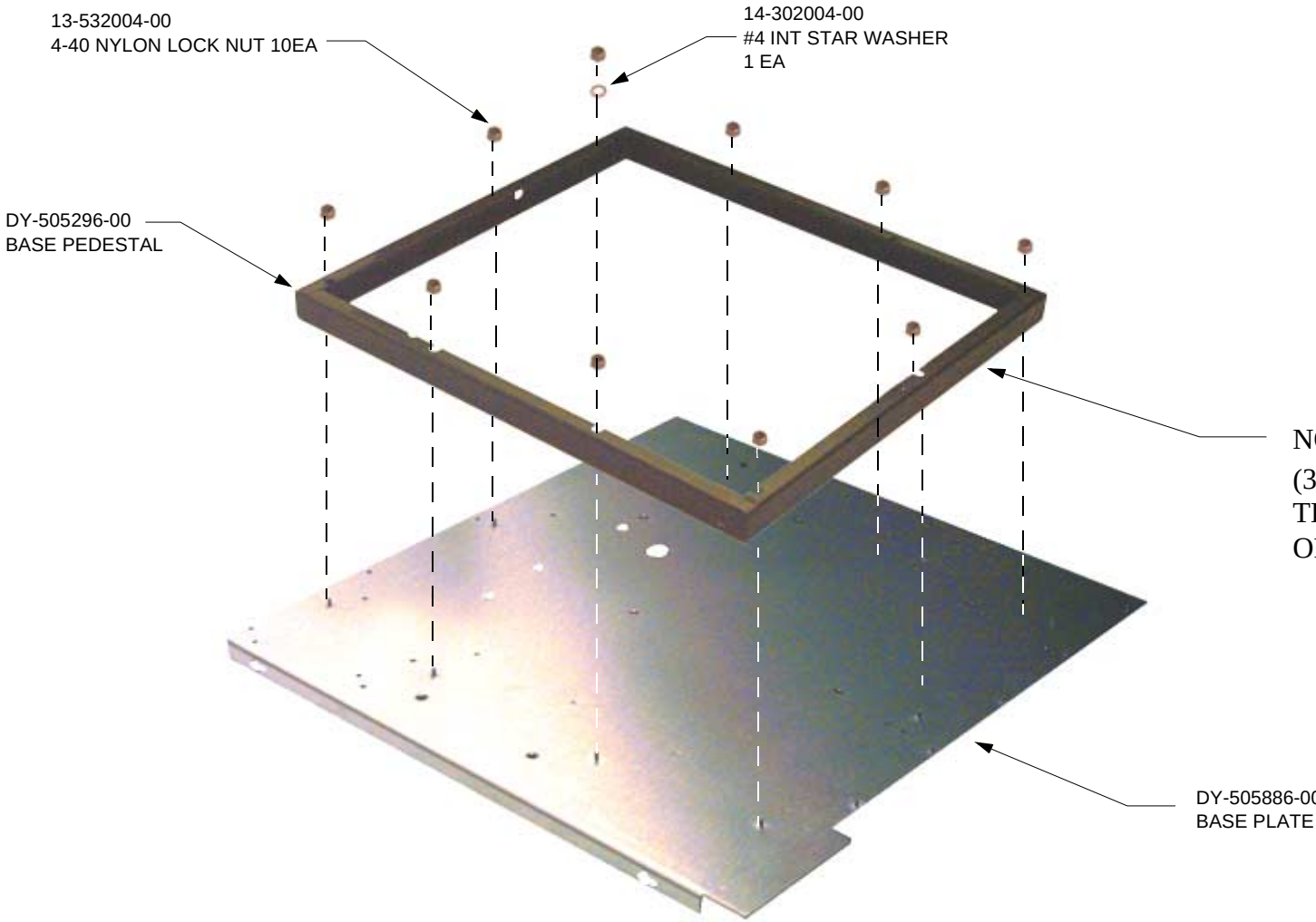
1.17.2 Connect clear tubing from left side of the 3way valve to the Tee Fitting on the copper tubing assembly. then attach end of the copper tubing assembly to right side of the regulator. Connect Peek Tubing from the Soil Purge Solenoid Assembly to the flow controller at lower left.

1.18 TRAY ASSEMBLY INSTALLATION

1.16.1 Slide the Tray Aseembly (DY-505223-00) into the instrument wit the sample number at lower left corner. Place Model/Serial Number composite label at the front of the tray assembly where shown. Check sales order, and place approaite voltage (03-935648-02) 115v or (03-935648-05) 230v cable on the back panel above Bulkhead Union.

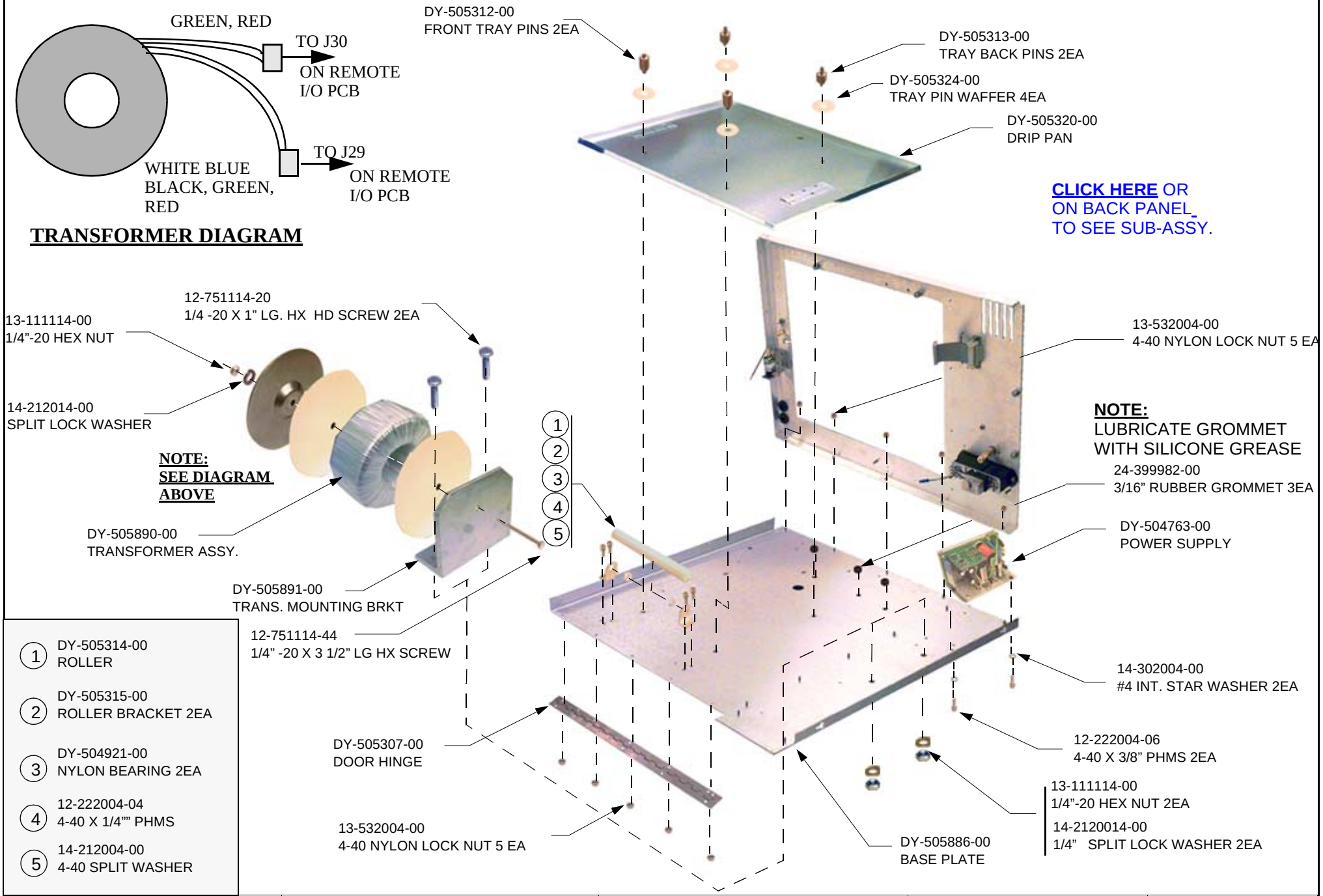
Final

Assembly



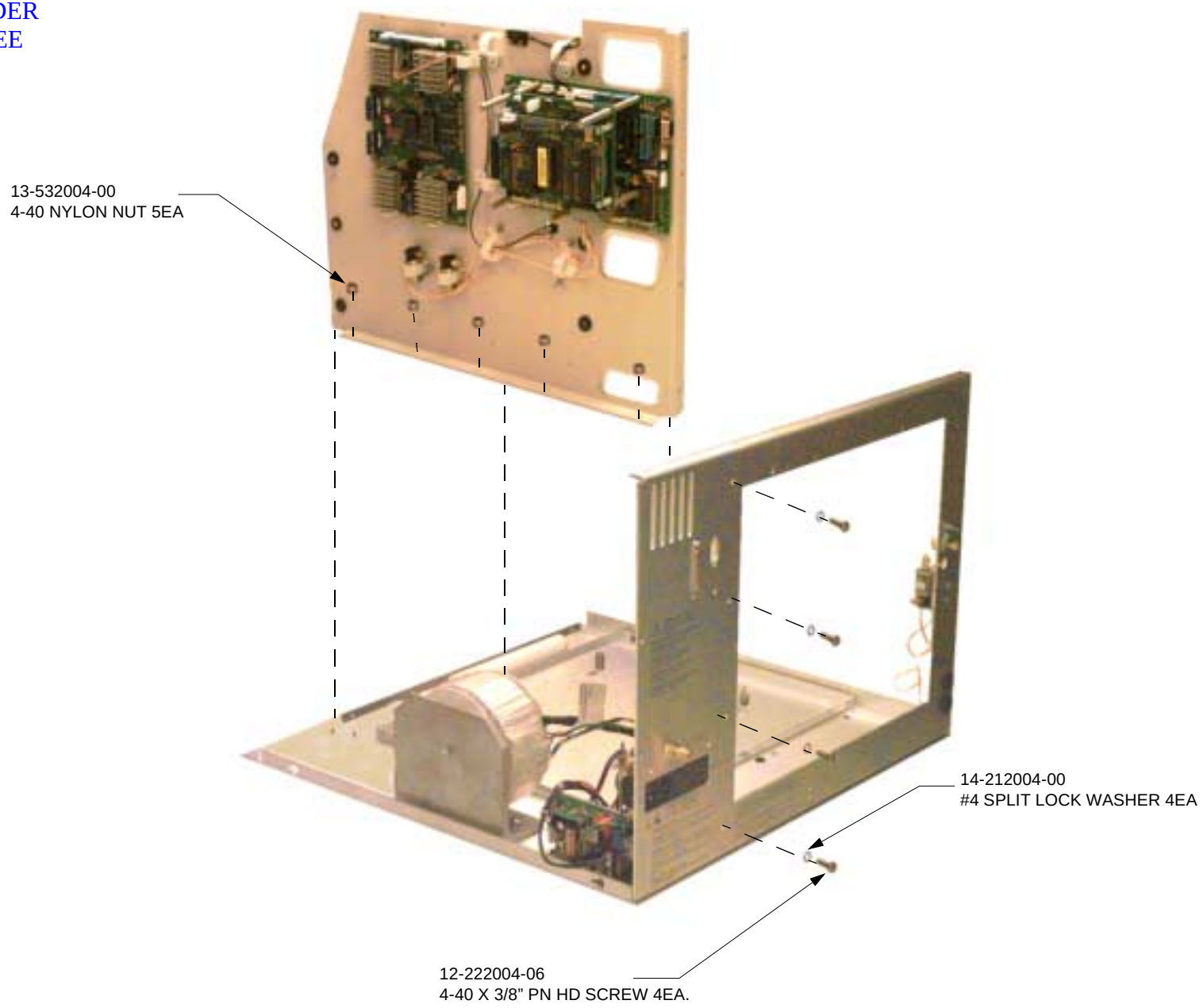
NOTE:
(3) 5/16" HOLE ARE ON THE UNDERSIDE OF PEDESTAL.

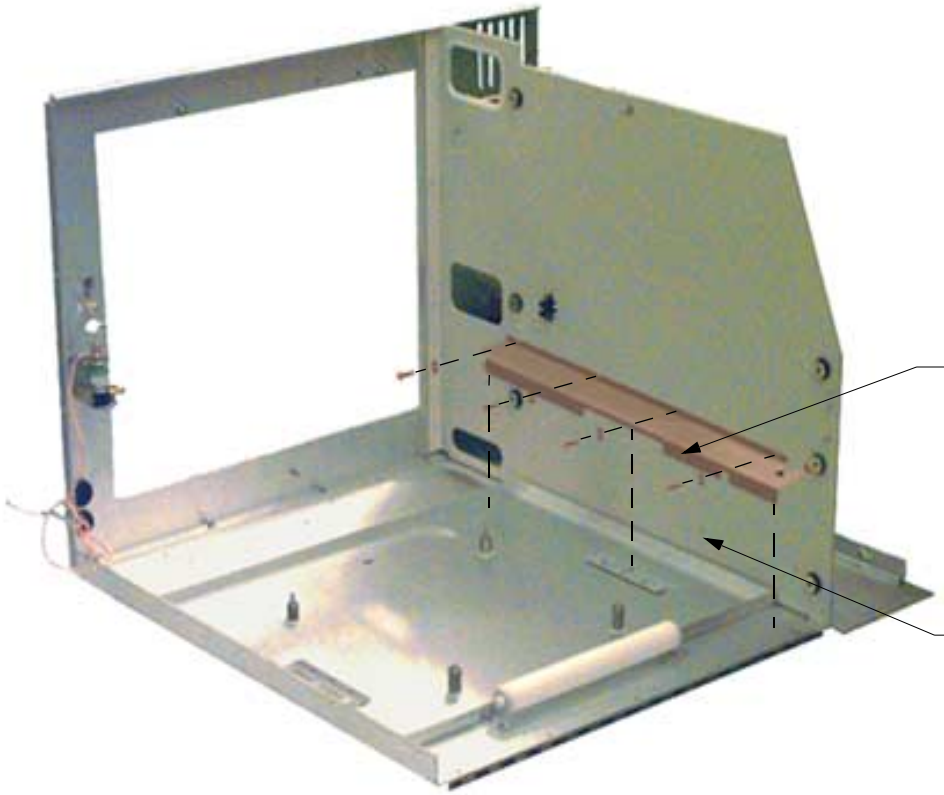
TRANSFORMER DIAGRAM



1	DY-505314-00 ROLLER
2	DY-505315-00 ROLLER BRACKET 2EA
3	DY-504921-00 NYLON BEARING 2EA
4	12-222004-04 4-40 X 1/4"" PHMS
5	14-212004-00 4-40 SPLIT WASHER

CLICK HERE
OR ON DIVIDER PANEL TO SEE SUB-ASSY.

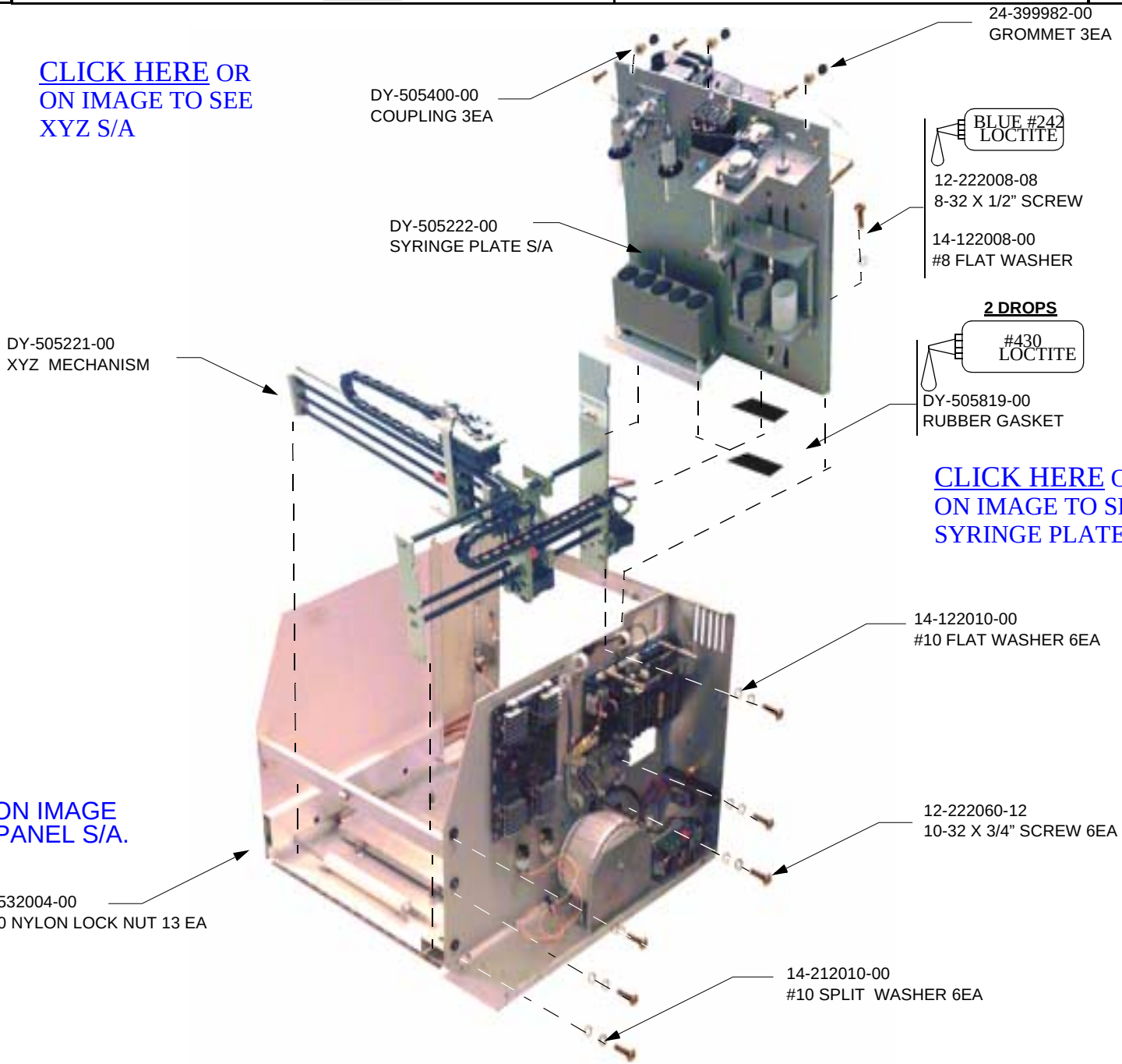



DY-505317-00
INSIDE RIGHT COVER
12-222004-05, 4 EA.
4-40 X 5/16” FLAT HEAD SCREW

Notes:

1. ALIGN LEFT SIDE PANEL STUDS WITH HOLES IN THE CHASSIS BASE AND INSIDE BACK COVER & ATTACH WITH NYLON NUTS (NOT SHOWN) FOR P/N'S SEE FIG. TO THE RIGHT.
2. ATTACH SYRINGE PLATE ASSY. USING HARDWARE & RUBBER PADS SHOWN. SEE FIG TO THE RIGHT FOR P/N'S .

CLICK HERE OR ON IMAGE TO SEE XYZ S/A

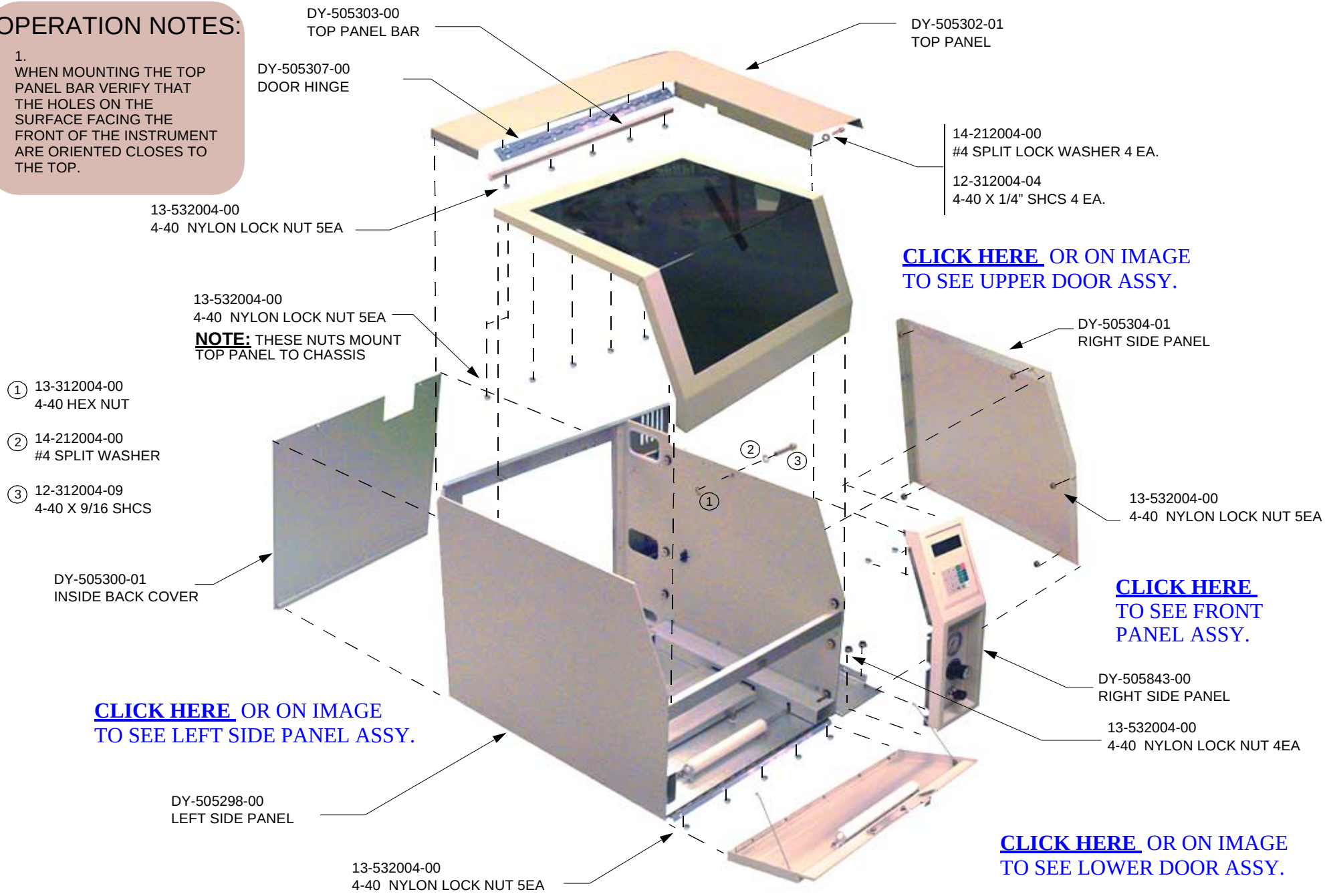


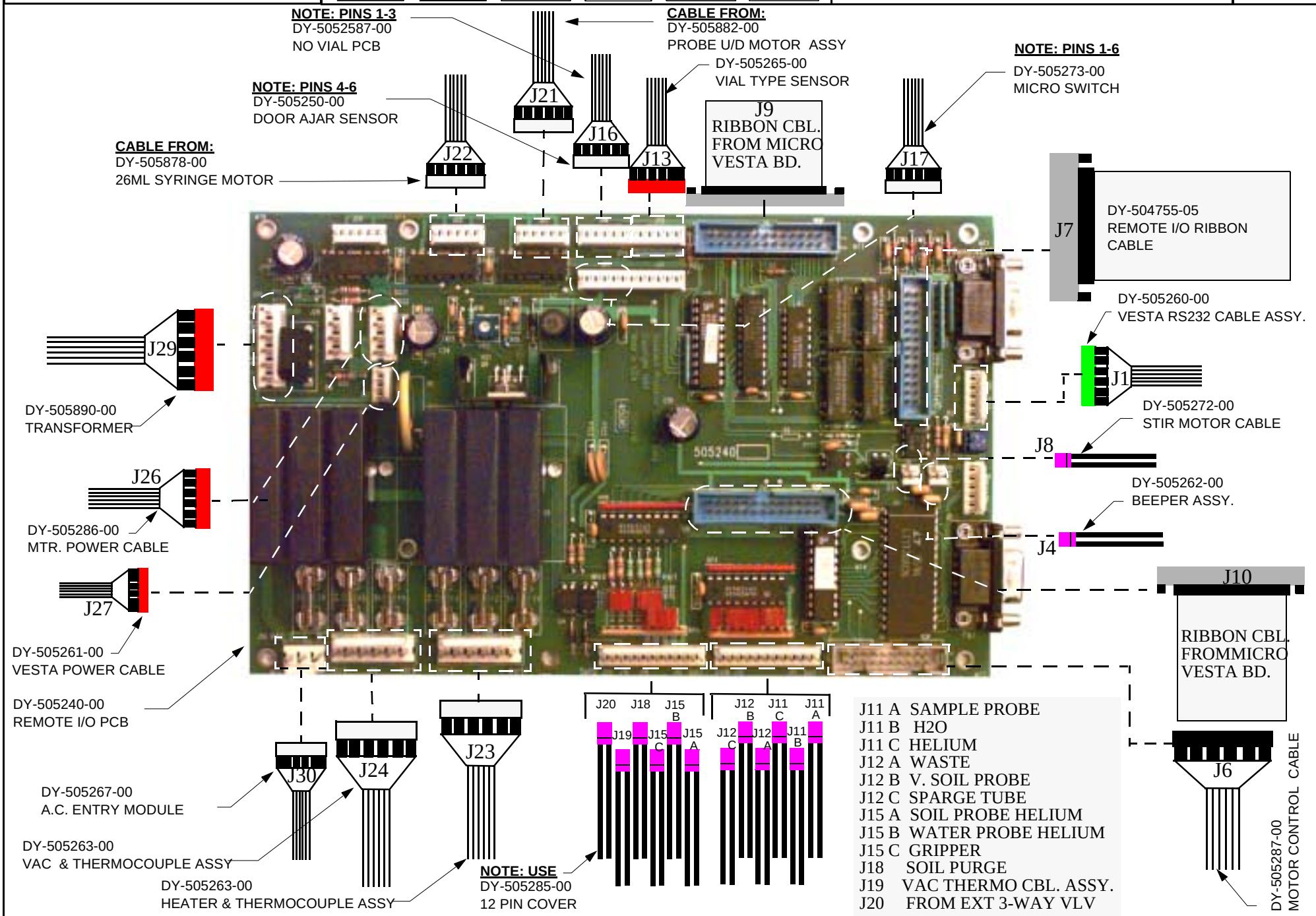
CLICK HERE OR ON IMAGE TO SEE SYRINGE PLATE S/A

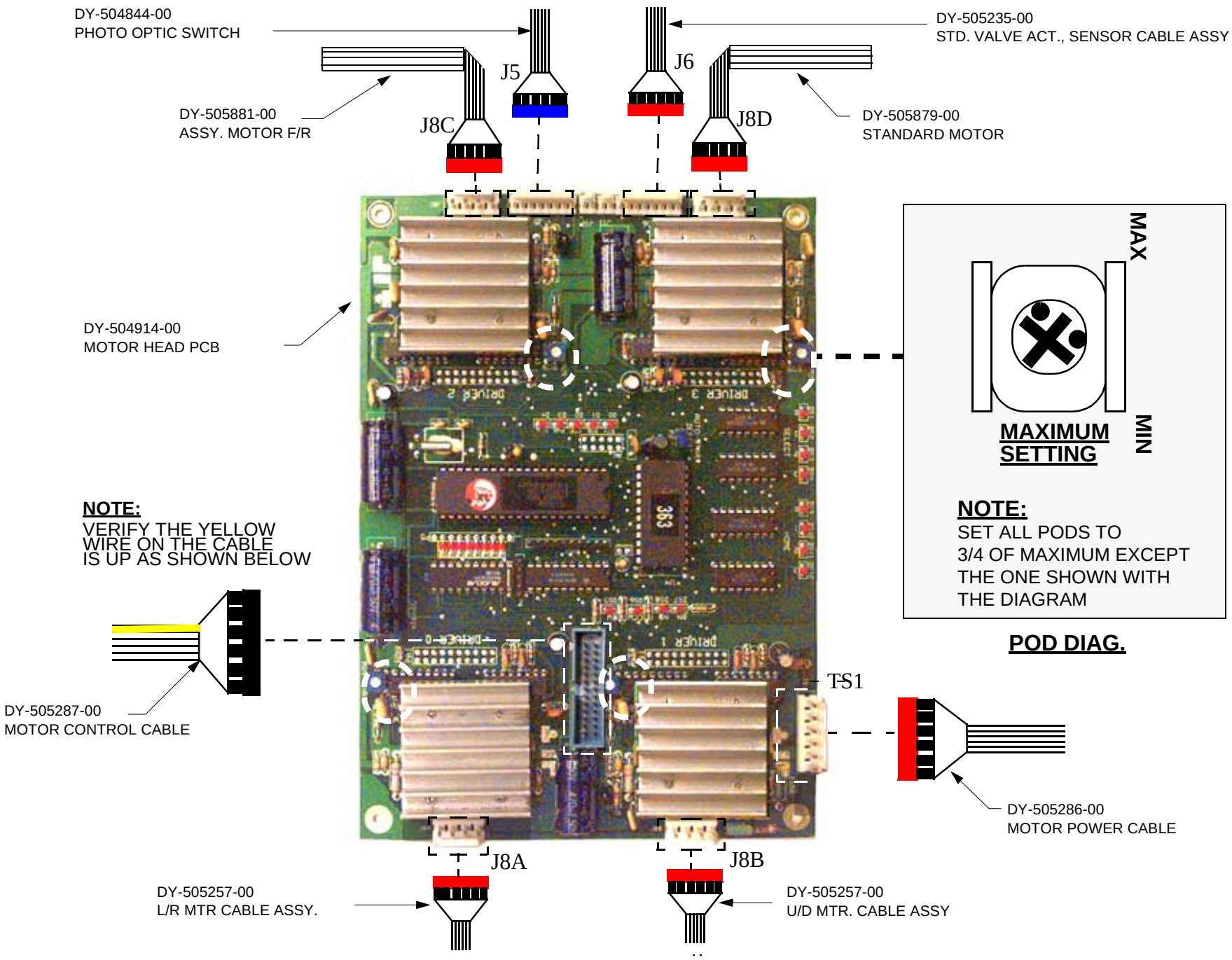
CLICK HERE OR ON IMAGE TO SEE LEFT SIDE PANEL S/A.

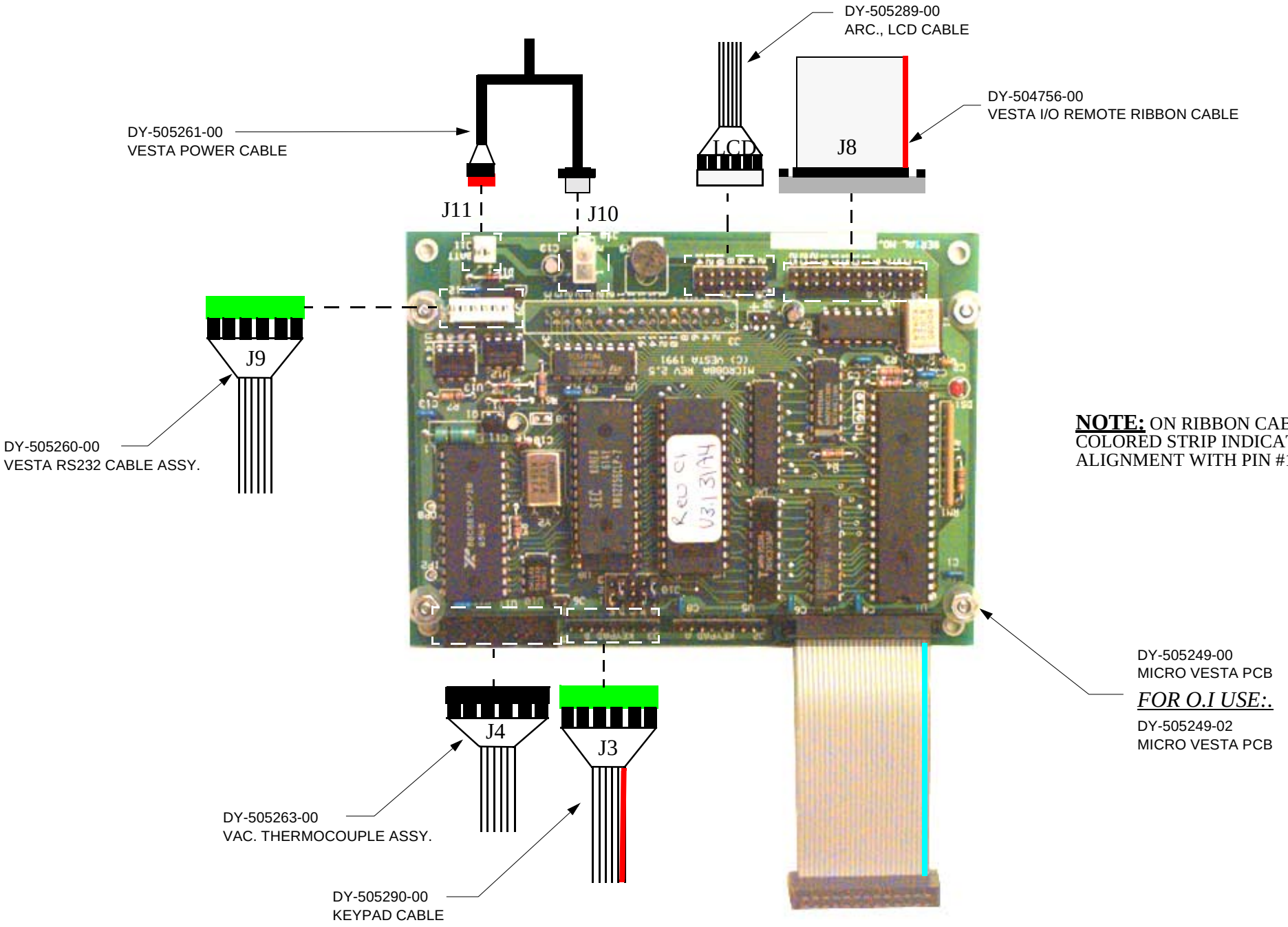
OPERATION NOTES:

1. WHEN MOUNTING THE TOP PANEL BAR VERIFY THAT THE HOLES ON THE SURFACE FACING THE FRONT OF THE INSTRUMENT ARE ORIENTED CLOSES TO THE TOP.

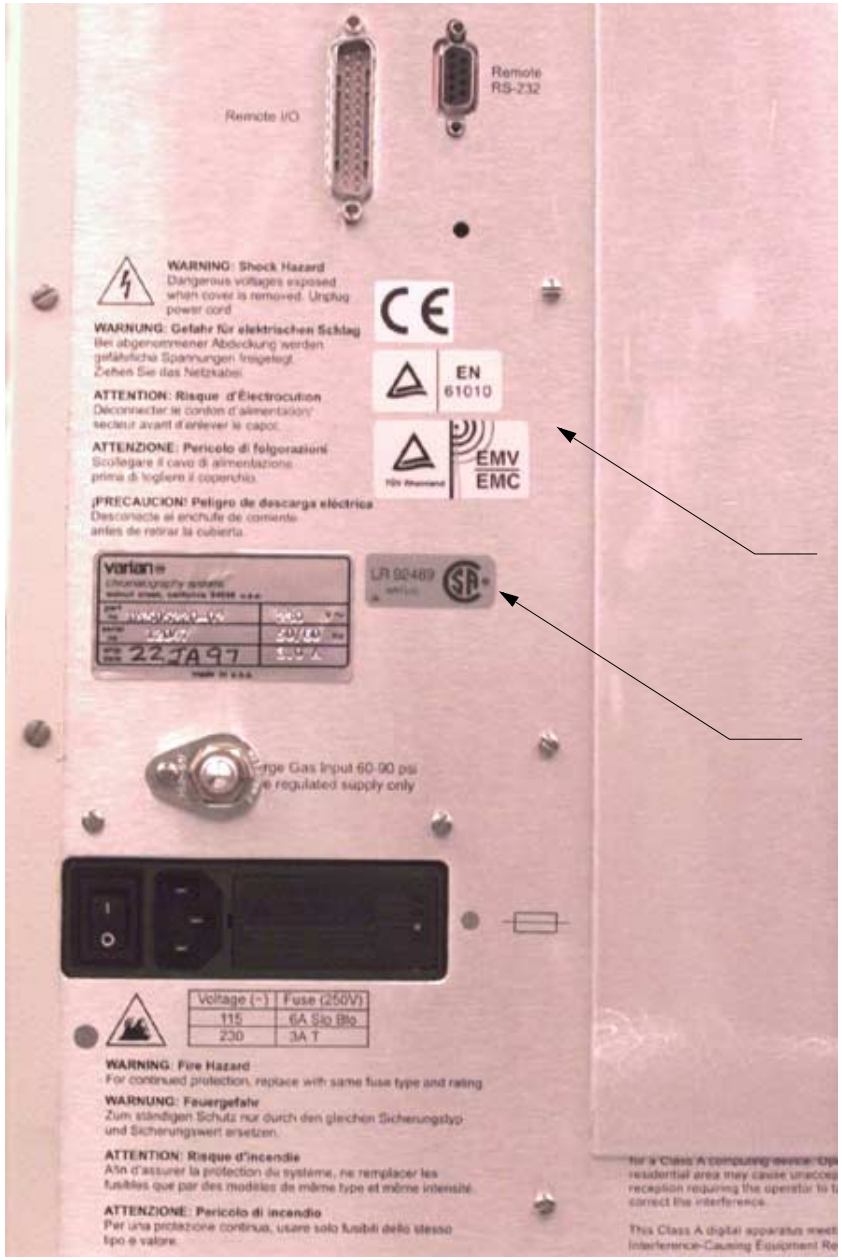



NOTE: PINS 1-3
DY-5052587-00
NO VIAL PCB
CABLE FROM:
DY-505882-00
PROBE U/D MOTOR ASSY
DY-505265-00
VIAL TYPE SENSOR
NOTE: PINS 1-6
DY-505273-00
MICRO SWITCH
NOTE: PINS 4-6
DY-505250-00
DOOR AJAR SENSOR
CABLE FROM:
DY-505878-00
26ML SYRINGE MOTOR
J21
J16
J13
J22
J17
J9
RIBBON CBL.
FROM MICRO
VESTA BD.
J7
DY-504755-05
REMOTE I/O RIBBON
CABLE
DY-505260-00
VESTA RS232 CABLE ASSY.
J29
J1
DY-505890-00
TRANSFORMER
DY-505272-00
STIR MOTOR CABLE
J8
J26
DY-505262-00
BEEPER ASSY.
DY-505286-00
MTR. POWER CABLE
J4
J10
J27
RIBBON CBL.
FROMMICRO
VESTA BD.
DY-505261-00
VESTA POWER CABLE
DY-505240-00
REMOTE I/O PCB
J20 J18 J15 B
J19 J15 C J15 A
J12 B J11 C J11 A
J12 C J12 A J11 B
J30
J24
J23
J6
DY-505267-00
A.C. ENTRY MODULE
DY-505263-00
VAC & THERMOCOUPLE ASSY
DY-505263-00
HEATER & THERMOCOUPLE ASSY
NOTE: USE
DY-505285-00
12 PIN COVER
DY-505287-00
MOTOR CONTROL CABLE
J11 A SAMPLE PROBE
J11 B H2O
J11 C HELIUM
J12 A WASTE
J12 B V. SOIL PROBE
J12 C SPARGE TUBE
J15 A SOIL PROBE HELIUM
J15 B WATER PROBE HELIUM
J15 C GRIPPER
J18 SOIL PURGE
J19 VAC THERMO CBL. ASSY.
J20 FROM EXT 3-WAY VLV


DY-504844-00
PHOTO OPTIC SWITCH
DY-505235-00
STD. VALVE ACT., SENSOR CABLE ASSY
J5
J6
DY-505881-00
ASSY. MOTOR F/R
J8C
J8D
DY-505879-00
STANDARD MOTOR
DY-504914-00
MOTOR HEAD PCB
MAX
MIN
MAXIMUM SETTING
NOTE:
SET ALL PODS TO 3/4 OF MAXIMUM EXCEPT THE ONE SHOWN WITH THE DIAGRAM
POD DIAG.
NOTE:
VERIFY THE YELLOW WIRE ON THE CABLE IS UP AS SHOWN BELOW
DY-505287-00
MOTOR CONTROL CABLE
TS1
DY-505286-00
MOTOR POWER CABLE
J8A
J8B
DY-505257-00
L/R MTR CABLE ASSY.
DY-505257-00
U/D MTR. CABLE ASSY

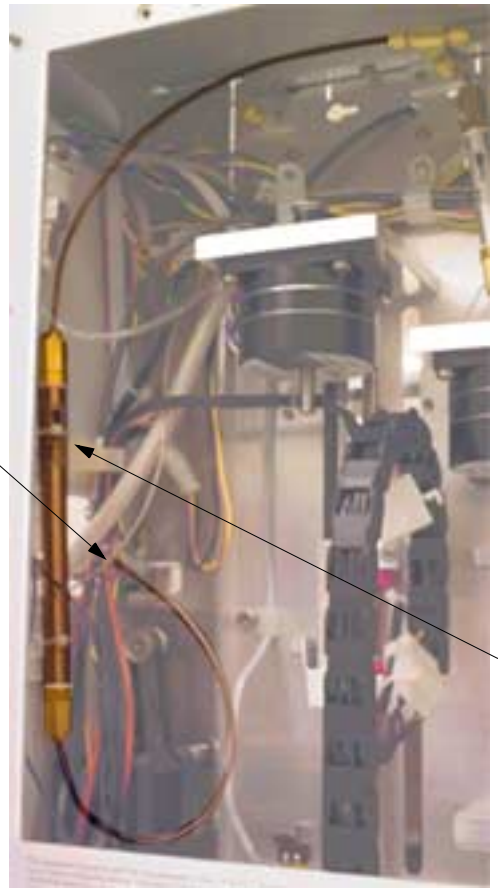


NOTE: ON RIBBON CABLE COLORED STRIP INDICATES ALIGNMENT WITH PIN #1



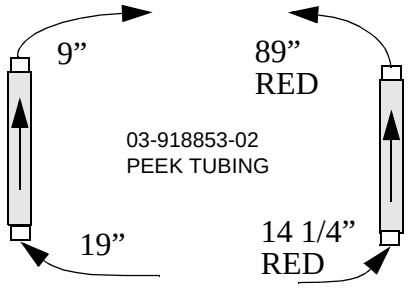
03-925219-00
COMPOSITE LABEL,CE MARK

03-920122-00
CBL, TURBO CONT. TO IC



TO SOIL
PURGE VALVE

NOTE: WHEN INSTALLING FERRULES
APPLY ARCHON TESTED WATER

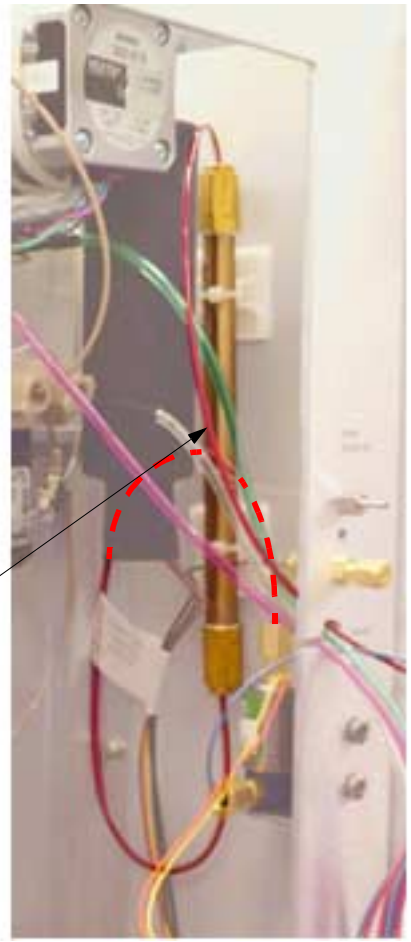


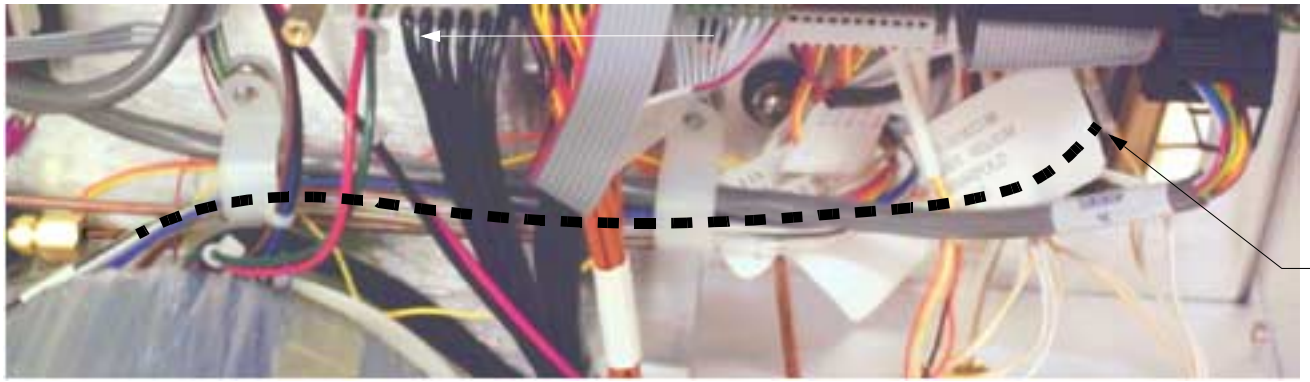
03-917134-02
PENCIL FILTER 2EA.

03-917142-00
VITON FERRULE 4EA

03-917157-00
FERRULE WASHER 2EA.

22-119603-00
MOUNT CABLE TIE 4EA





FROM PENCIL
FILTER

1. CHILLER ASSEMBLY INSTALLATION INSTRUCTION

1.1 OPERATION IN SEQUENCE SHOWN:

1.1.1 Remove two black rubber grommets from lower right corner of the back panel where the water line tubing will go (labeled “IN” and “OUT”) and replace with two Nylon Bushings (22-799863-00).

1.1.2 Remove two Tray Supports, using a Phillips screwdriver. Remove the Inside Left Cover by loosening the two Nylon nuts inside the holes in the cover, using a 1/4 nut driver.

1.1.3 Install the Chiller Assembly (DY-700113-00) by inserting the two lengths of clear tubing into the cutout in lower left corner of the units, pulling them through, and setting the chiller plate down. The right side must be set in place first, so that the two copper loops fit into the recesses in the lower right side panel.

1.1.4 Feed the thermocouple wire through the same cutout.

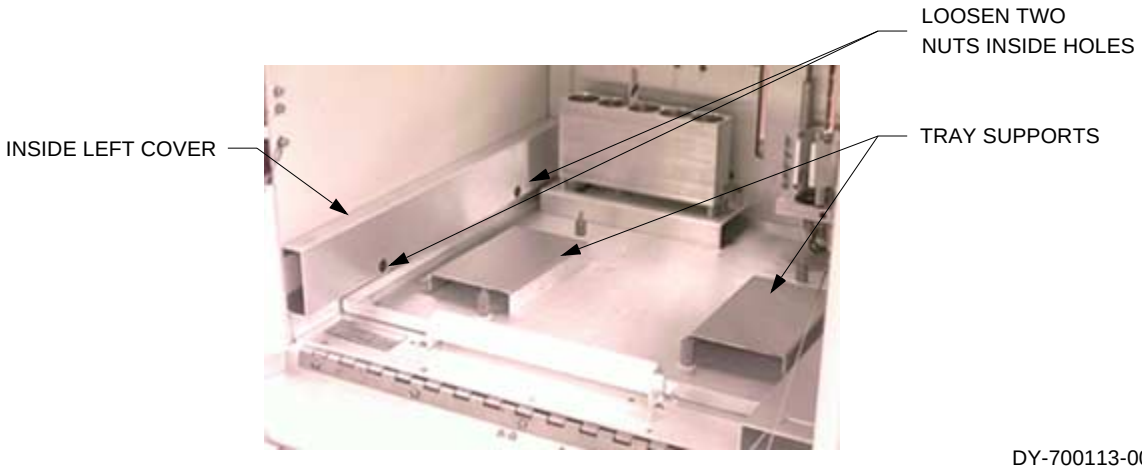


Fig. 1.1.2

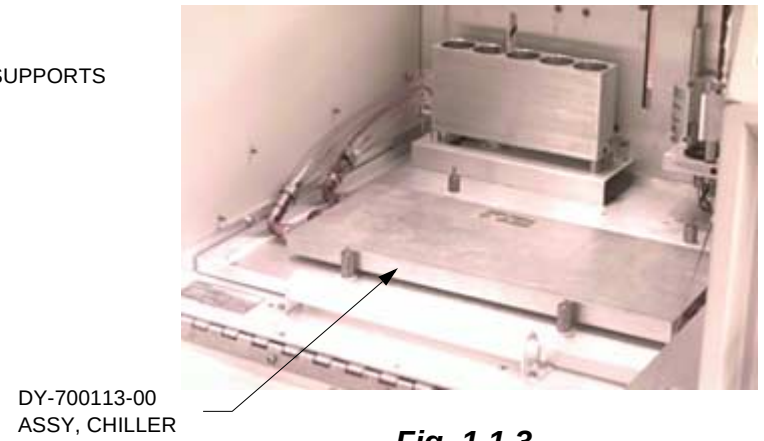


Fig. 1.1.3

1.1.5 Secure the Chiller Assembly to the unit with two Chiller Tie Down Brackets (DY-505322-00), using six Lock Washers (14-212004-00) and six 4-40 x 9/16 SSPH Screws (12-222004-09) as shown. See fig. 1.1.5.

1.1.6 Re-install the Inside Left Cover. When the cover is in place, tighten the two Nylon Locking Nuts using a 1/4 nut driver. If bottom of cover will not sit in place, loosen the six screws holding down the Chiller Plate and slide to the left. See Fig. 1.1.6

1.1.7 Attach thermocouple connector to *(J-17).* See Fig. 1.1.7

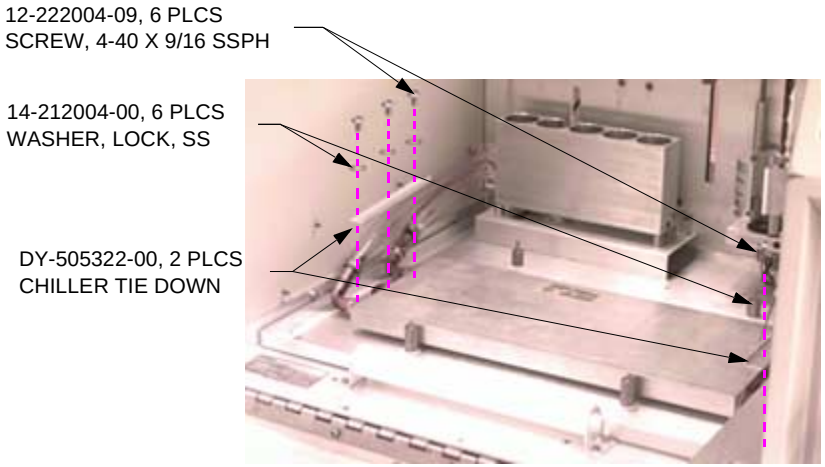


Fig. 1.1.5

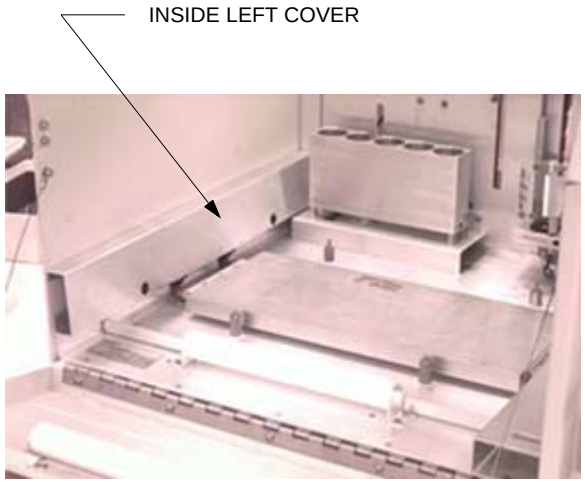


Fig. 1.1.6

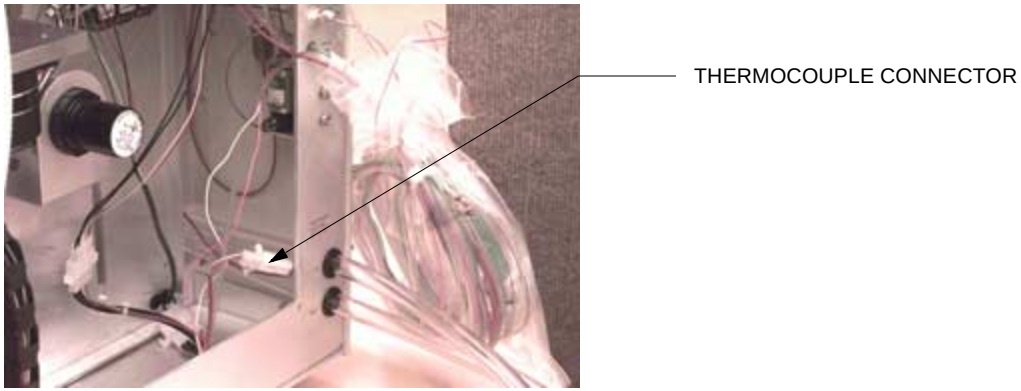
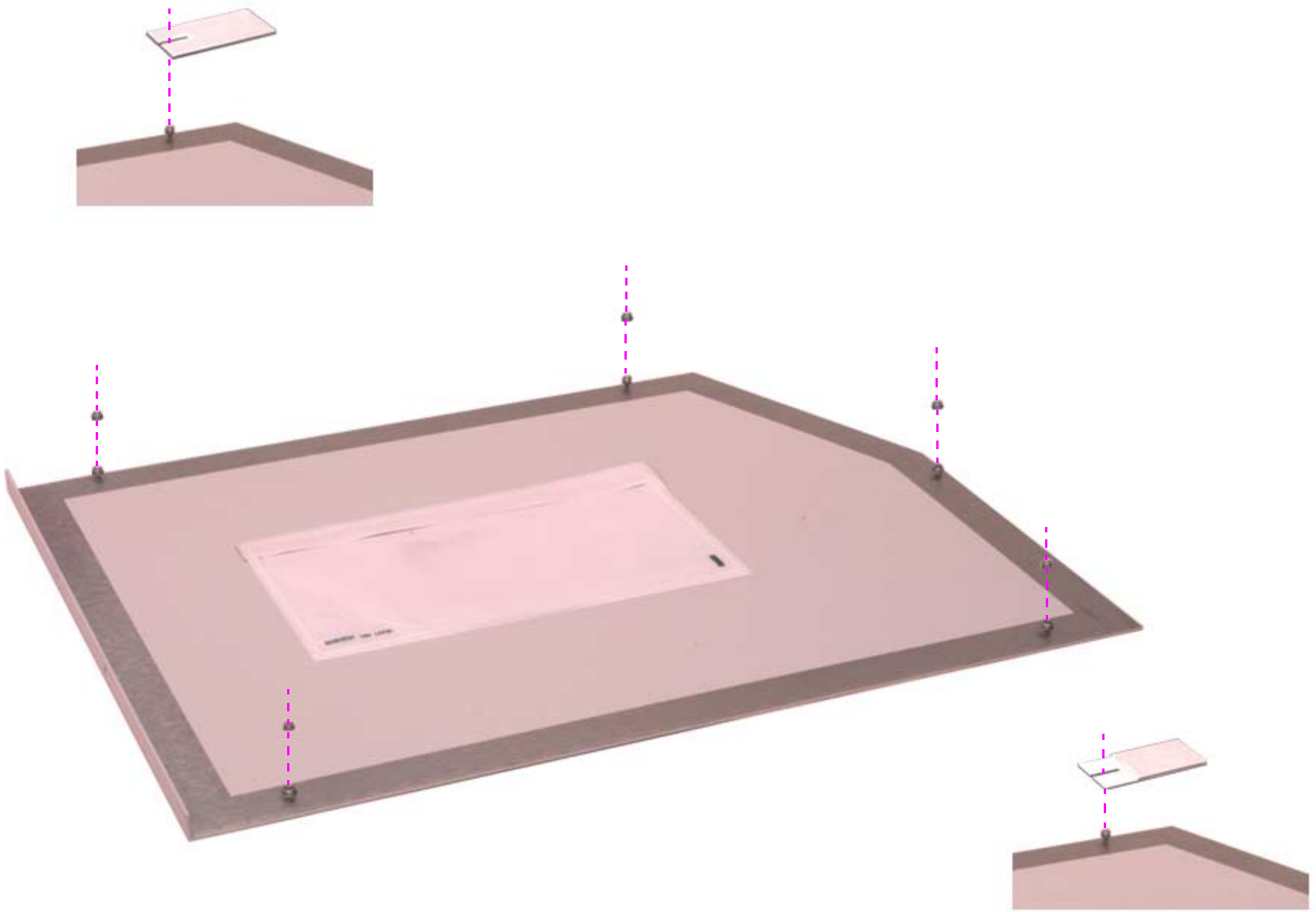


Fig. 1.1.7

Right Side Panel

DOC: DY-505304-01
DESC: Assembly Procedure
PAGE: 2 OF 2

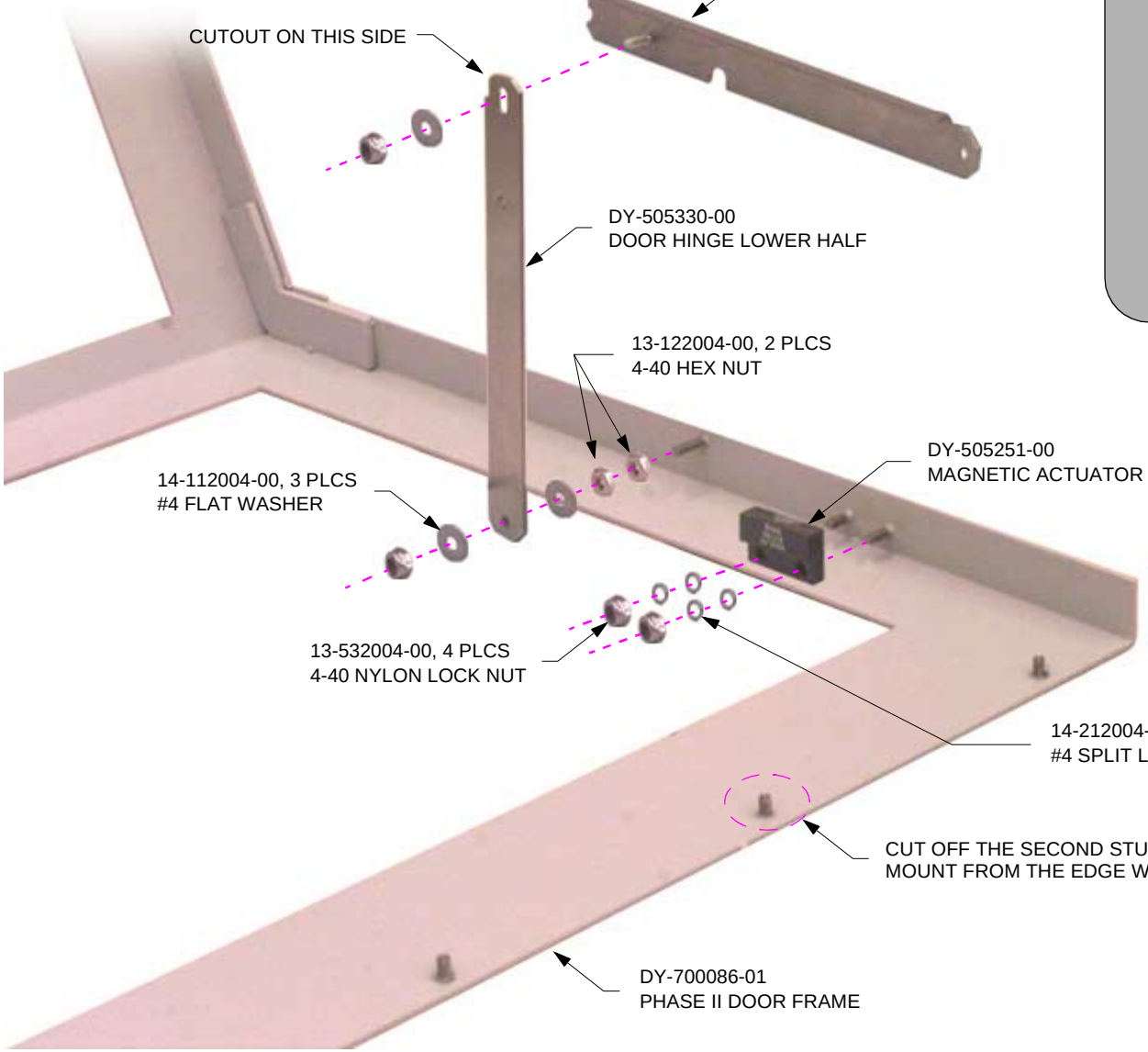
REV Pr



PREPARED BY: Sax Makthepharack	REVISED BY: Liz Chorlet	CONTROL: INDUSTRIAL ENGINEERING	REV. DATE: 02 - 04 - 98	- SHOWN

ASSY, UPPER DOOR

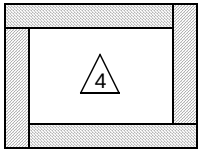
STATION #5 ARCHON, ASSEMBLY PROCEDURES



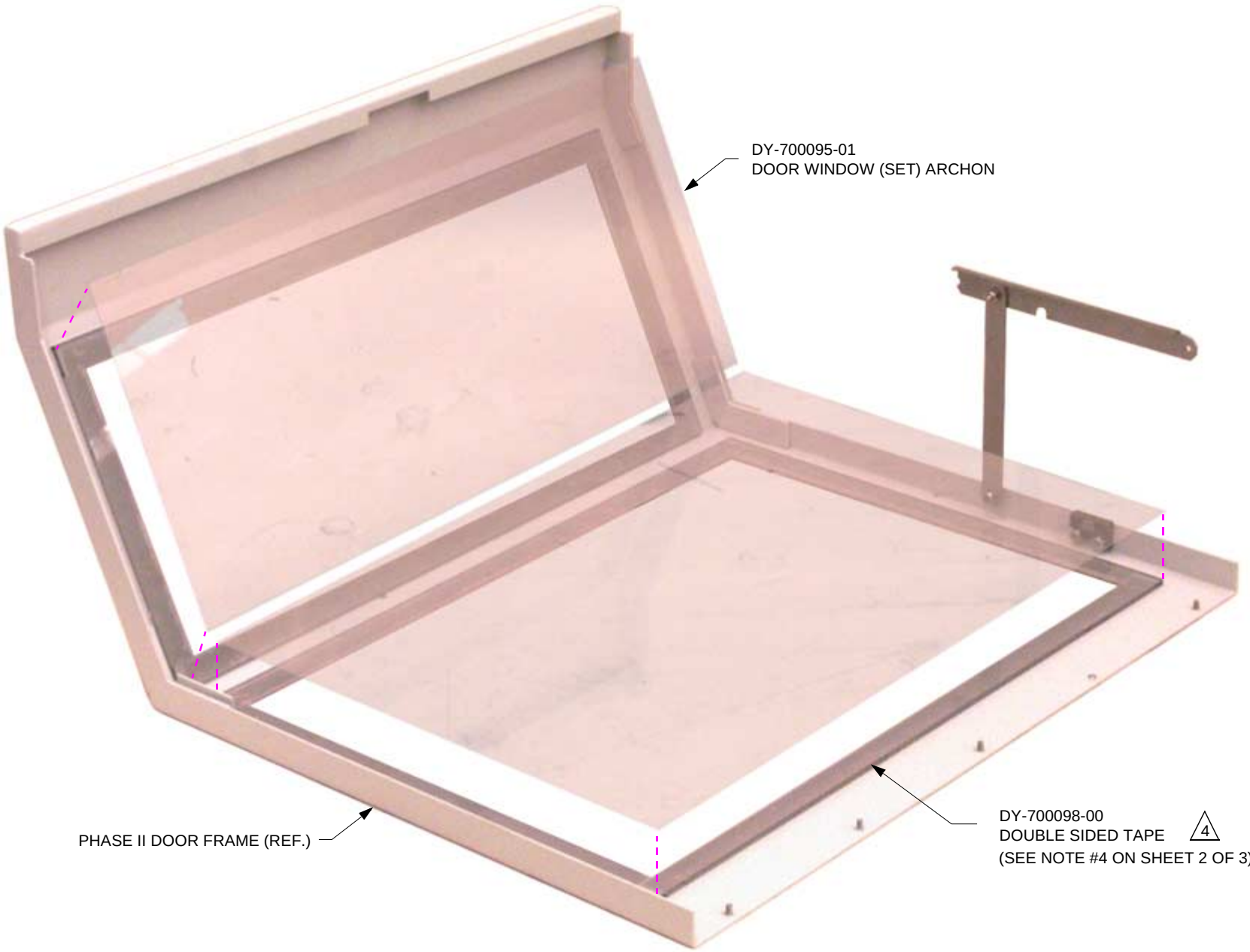
NOTES:

1. INSTALL DOOR HINGE LOWER HALF WITH THE SMALL CUTOUT TO THE LEFT AND THE RAISED SPOT TOWARD PEM STUD.
2. DO NOT OVERTIGHTEN THE NYLON LOCK NUT.
3. VERIFY THE HINGE MOVES FREELY. TIGHTEN DOWN AND BACK OFF APPROXMATELY 1/4 OF A TURN.

△4 DO NOT OVERLAP DOUBLE SIDED TAPE AT THE CORNERS. ONE END OF THE DOUBLE SIDED TAPE SHOULD FLUSH UP AGAINST ONE ANOTHER. SEE DOUBLE SIDED TAPE ARRANGEMENT BELOW.

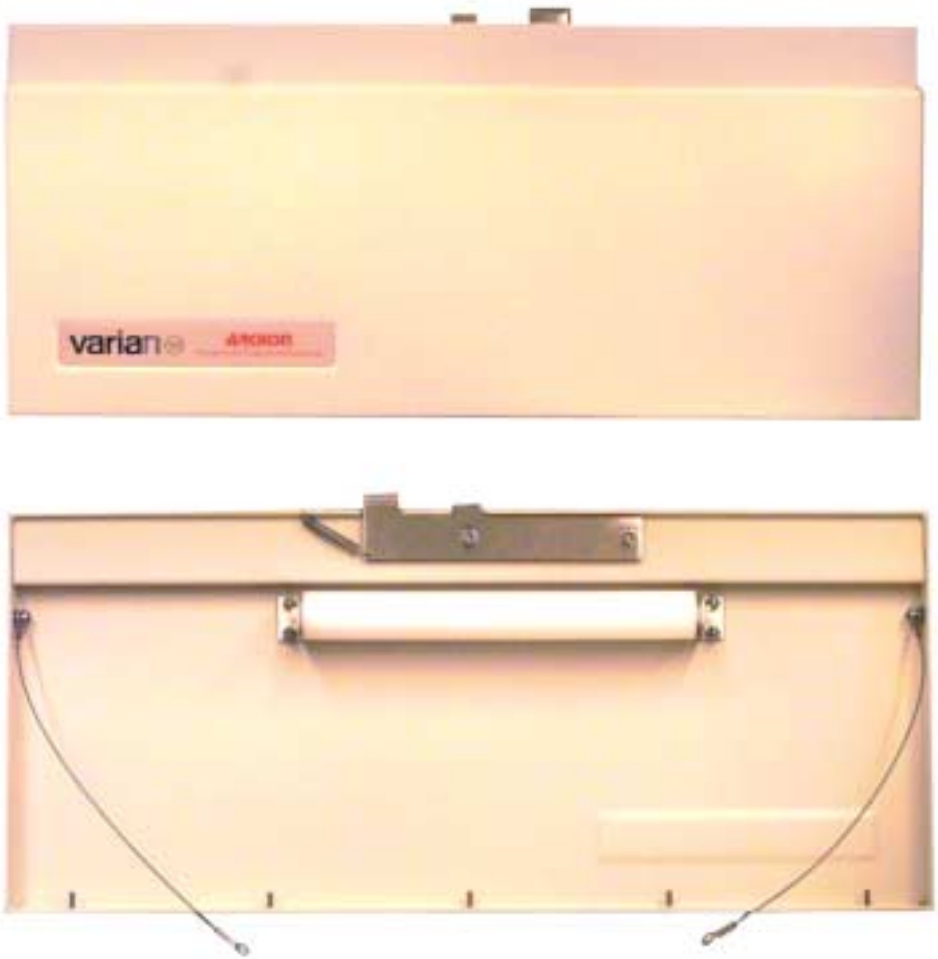


DOUBLE SIDED TAPE ARRANGEMENT


DY-700095-01
DOOR WINDOW (SET) ARCHON
PHASE II DOOR FRAME (REF.)
DY-700098-00
DOUBLE SIDED TAPE
4
(SEE NOTE #4 ON SHEET 2 OF 3)

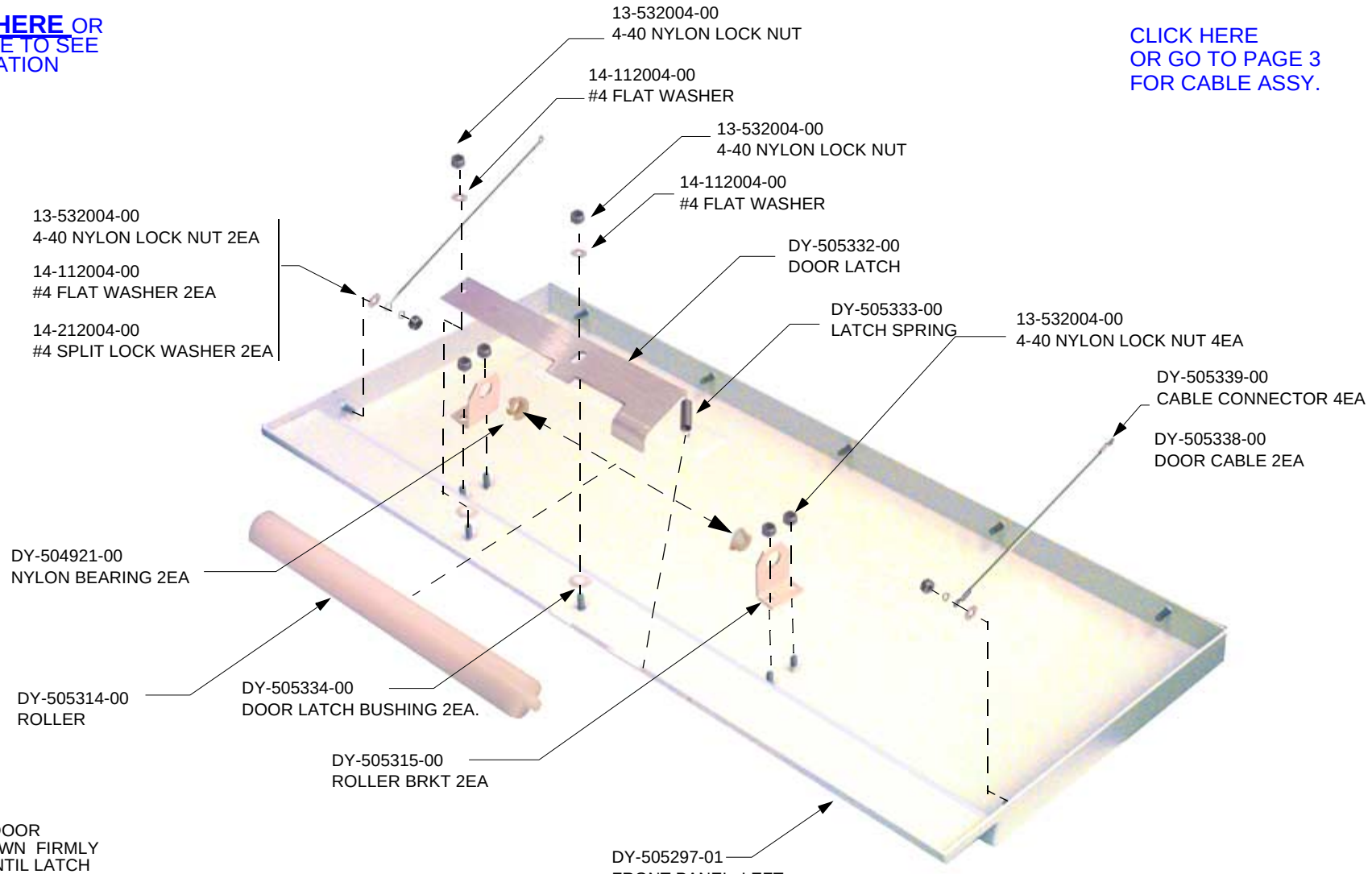
Lower Door Assy.

Subassembly



CLICK HERE OR ON IMAGE TO SEE INSTALLATION

CLICK HERE OR GO TO PAGE 3 FOR CABLE ASSY.



NOTE:

WHEN TIGHTENING DOOR LATCH, TIGHTEN DOWN FIRMLY AND BACK IT OUT UNTIL LATCH CAN MOVE FREELY.

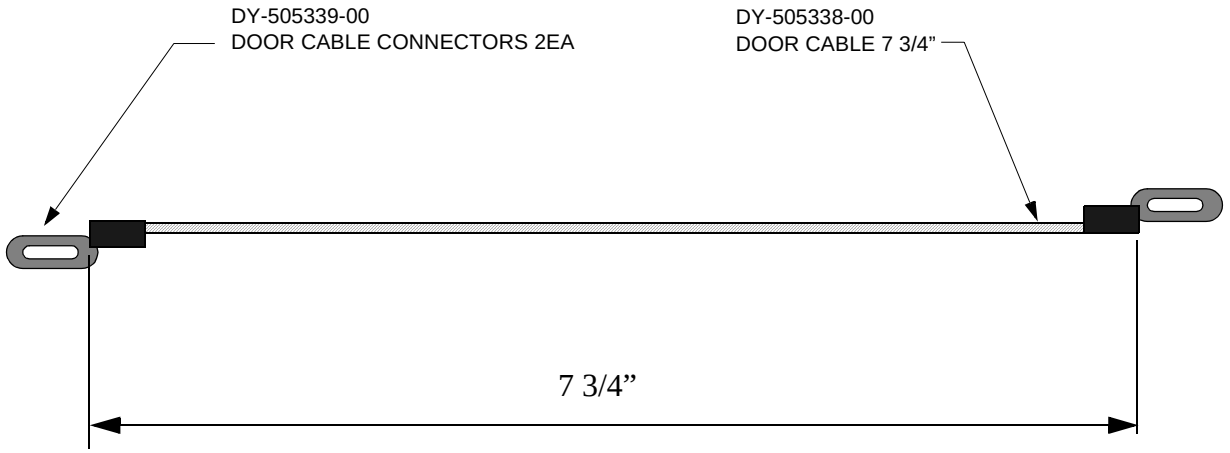
OPERATION NOTES:

Note:

1. VERIFY CABLE CONNECTORS ARE SECURLY CRIMPED.

2. ATTACH CABLE CONNECTORS FACING OPPOSITE DIRECTIONS

DOOR CABLE ASSEMBLY



ASSY, TRANSFER LINE CE MARK VERSION, O/I & TEKMAR (TEKMAR VERSION SHOWN), ASSEMBLY PROCEDURES

1. O/I & TEKMAR VERSION TRANSFER LINE, ASSEMBLY PROCEDURES

1.1 TUBING PREPARATION

1.1.1 Cut the items listed below to specified length:

A) Cut two 1" length of the Ø3/16 Heat Shrink Tubing with Adhesive (DY-505605-00).
B) Cut 6'-10" length of the Mass-Flex Helical Tubing (DY-505793-00).
C) Cut 6'-3" and 1-1/2" length of the #10 Fiberglass Sleeving (DY-505794-00)

1.1.2 Slide the previous pre-cut tubing into the wire-mounting fixture from the left end in the following order: First slide one 1" length of Ø3/16 Heat Shrink Tubing, 6'-10" length of Mass-Flex Helical Tubing, 6'4" length of #10 Fiberglass Sleeving, the other 1" length of Ø3/16 Heat Shrink Tubing and the 1-1/2" length of #10 Fiberglass Sleeving.

1.1.3 Tighten the wire-mounting fixture on left side by pulling the Left L Bracket and lock it down with the Allen Driver.

1.1.4 Feed the Mass-Flex Helical Tubing into the 6'4" length #10 Fiberglass Sleeving until the Fiberglass comes to within ½" of the end of the Mass-Flex Helical Tubing on the right end.

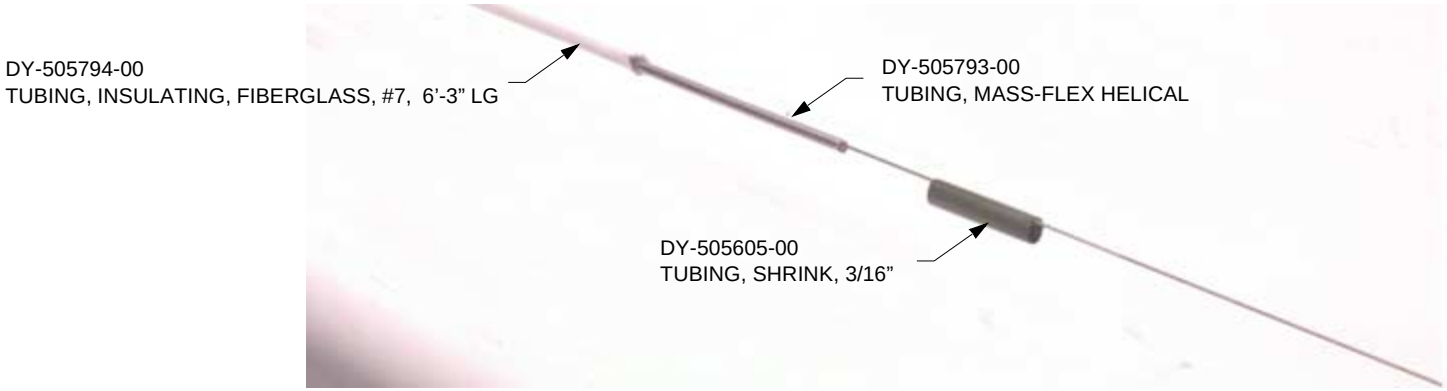


Fig. 1.1.4

1.1.5 Slide the 1" length of Ø3/16 Heat Shrink Tubing over the right end until flush with the end of heat shrink tubing. Heat shrink it lightly to secure the Mass-Flex Helical Tubing to the #10 Fiberglass Sleeving.

1.1.6 Continue pulling all of the slack in the #10 Fiberglass Sleeving toward the left end until it's within 1-1/2" to 2" of the Mass-Flex Helical Tubing.

1.1.7 Slide the second piece of 1" length of Ø3/16 Heat Shrink Tube over the #10 Fiberglass Sleeve and heat shrink it. Securing the Sleeve to the metal and leaving approx. 1-1/2" of the Mass-Flex Helical Tubing exposed at this end.

1.1.8 Obtain the Brass Shimstock Thermocouple (DY-504200-00) and trim about 1/8" off both side of Sensor.

NOTE: When trimming the sensor, be very carefully not to damage Sensor Filament inside.

Fig. 1.1.8a

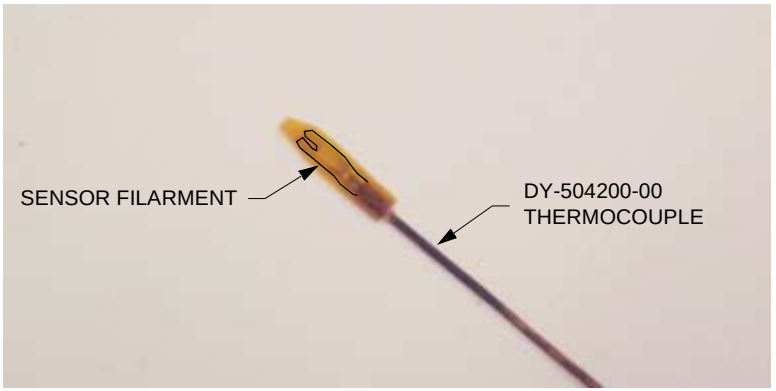


Fig. 1.1.8b

1.1.9 Measure and mark a spot on the assembly exactly 32" from the left end starting at the front of the Ø3/16 shrink tubing at the left.

1.1.10 Slide the loose piece of 1-1/2"of #10 Fiberglass Sleeving from the left end and just to the right of your mark at 32".

1.1.11 Place the Brass Shimstock Thermocouple sensor over the mark with the sensor lead face toward the left and then slide the 1-1/2" #10 Fiberglass Sleeving over it. Secure with two ½" Fiberglass Tape (DY-505801-01) approximately 1" long and Tape on both sides of the sensor very tightly.

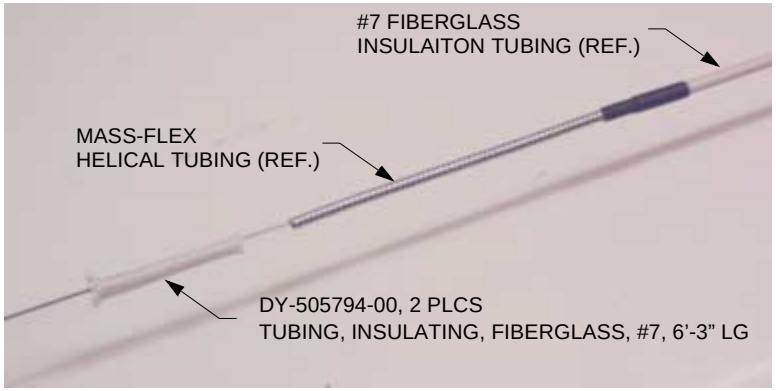


Fig. 1.1.10a

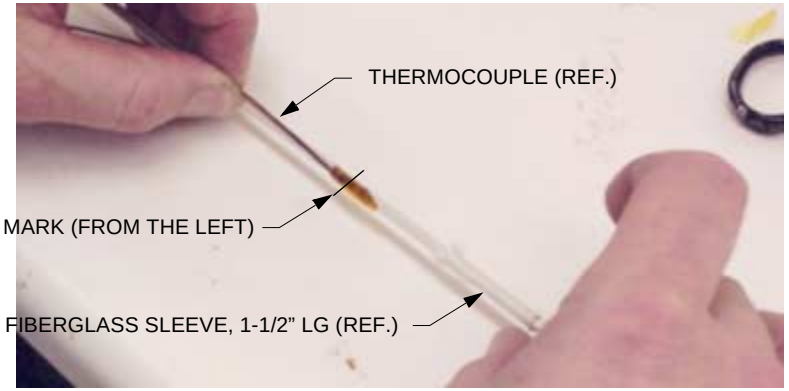


Fig. 1.1.10b

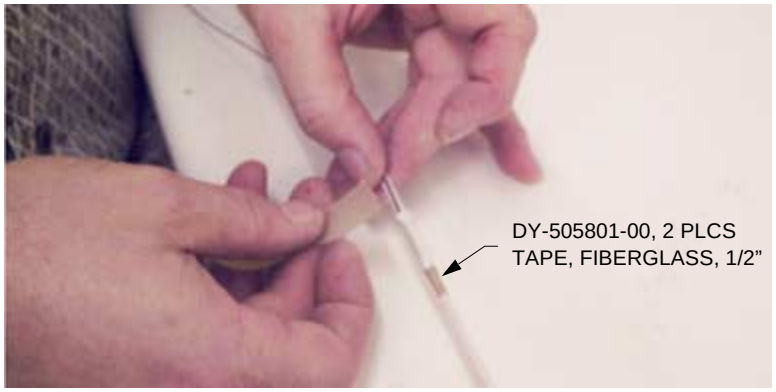


Fig. 1.1.11a

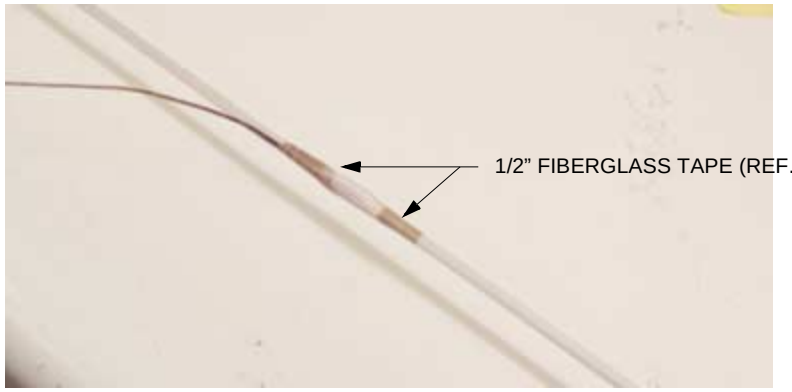


Fig. 1.1.11b

1.1.12 Measure off 12’6” of 4.7 Watt/ft Nichrome Wire (DY-505796-00) and fold it exactly halfway at 6’3”.

1.1.13 Place the folded end directly behind the heat shrink of the assembly at the right end and secure with ½” Fiberglass tape very tightly about ½” behind the fold and again about 4” ahead of this.

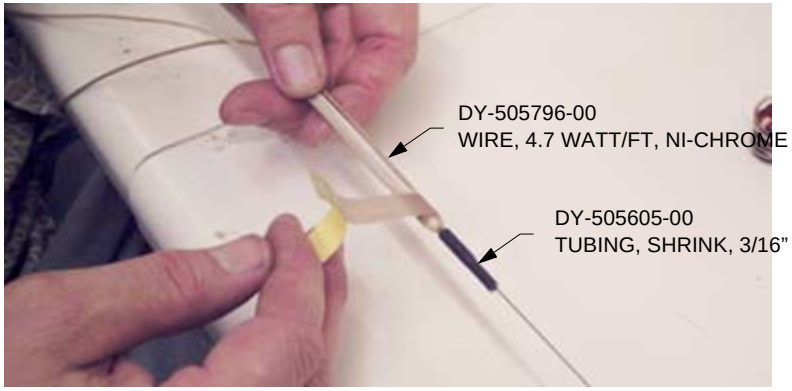


Fig. 1.1.13a

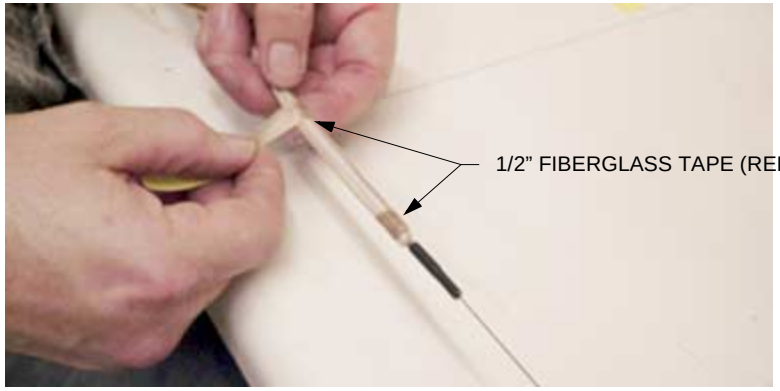


Fig. 1.1.13b

1.1.14 Stretch the Nichrome Wire while holding the entire assembly in your left hand.

1.1.15 Mark a spot on both ends of the Nichrome Wire just behind the shrink tubing on the left end and spray coat the remaining portion of both ends with Clear Enamel.

1.1.16 Blow dry the Enamel completely and repeat the previous step 1.1.15 to apply second coatings.

1.1.17 Pull the two ends straight again and cut off all excess exactly ½" beyond the end of the heat shrink of the assembly.

1.1.18 Obtain two Butt Connectors (DY-505798-00) and flare the opening of the Butt Connectors, using a drill bit and smooth the ends with Emery Cloth (sandpaper) to remove burr. Strip the Nichrome Wire about 3/8" and slide Butt Connectors over the Nichrome Wire and crimp one butt connector to each length.

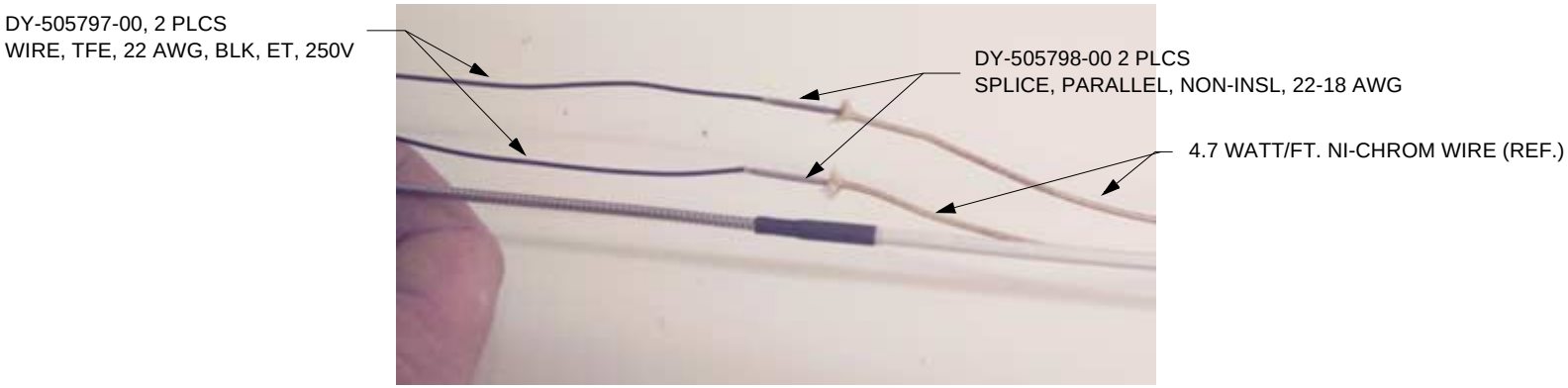


Fig. 1.1.18

1.1.19 Attach 7" of 22ga Insulated Lead Wire (DY 505797-00) to each butt connector and crimp at the other end.

1.1.20 Now obtain two 2" lengths of #10 Fiberglass Sleeve and two 1" length of Ø1/8 Heat Shrink Tubing.

1.1.21 Slide the 2" of #10 Fiberglass Sleeving over the first lead down the 7" 22ga wire until it just covers the crimp joint of the 7" wire to the butt connector, covering the butt connector and the end of the Nichrome Wire but leaving all of the 7" wire exposed.

1.1.22 Slide the 1" length of Ø1/8 Heat Shrink Tubing down over this and while holding the wire in your right hand firmly attach the butt connector. Use your left hand to slide the shrink tube over the butt connector and the 2" of #10 Fiberglass Sleeving. Inserting butt connector and #10 Fiberglass Sleeving about ½" into the 1" length of Ø1/8 Heat Shrink Tubing. Use the heat gun to secure this and repeat the step again for the 2nd lead.

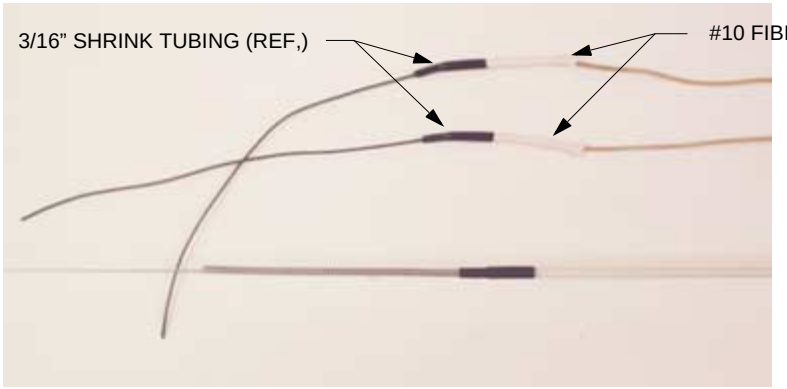


Fig. 1.1.22

1.1.23 Now, loosen the mounting wire fixture left Bracket. From the right end of the assembly slide a 6'5" length of #7 Fiberglass Sleeving (DY-505795-00) and one 1" length of ¼" Adhesive Lined Shrink Tube (DY-505799-00) onto the assembly, from the right end and tighten the Mounting Wire Fixture on the left.

1.1.24 Slowly slide the #7 Fiberglass Sleeving over the entire assembly. Continue feeding slack over the core with one hand as you pull it tighter with the other end.

NOTE: Make sure keep both lengths of Nichrome Wire lying flat on either side of the core.

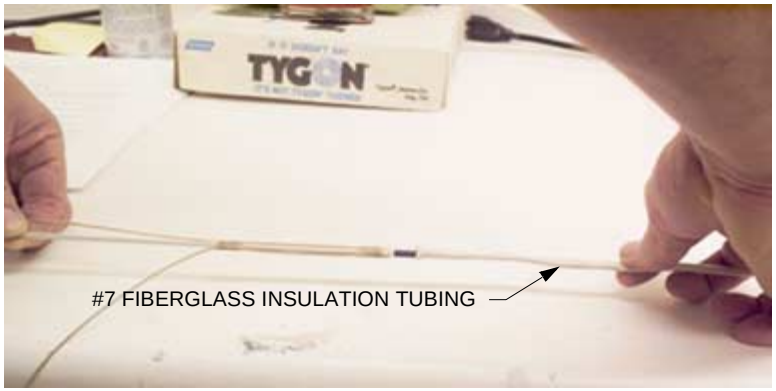


Fig. 1.1.24

1.1.25 Feed the sleeve until you expose approx. 5/8” of the small heat Shrink tube at the core and slide the 1” lengths of ¼” Adhesive Lined Shrink Tube over the first and over the end of the Fiberglass Sleeving and heat shrink them both together.

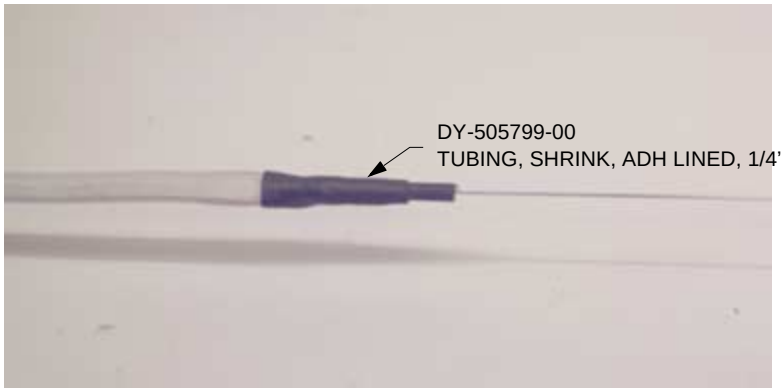


Fig. 1.1.25

1.1.26 Now that the right side is secure, continue pulling and stretching the Fiberglass Sleeving very tightly until comes exactly to the end of the exposed Nichrome Wire and covers it completely, leaving only the two black leads and the 2” Sleeve covering the butt connectors exposed.

1.1.27 Use tape and wrap the Fiberglass very tightly just below the 2” Sleeve of the Nichrome leads.

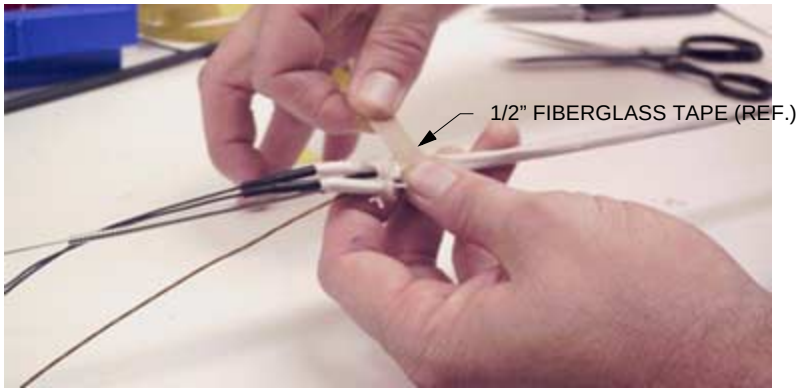


Fig. 1.1.27

1.1.28 Fold the two leads at the exact center of the 2 Fiberglass Sleeve back over the assembly so they lie flat against the core.

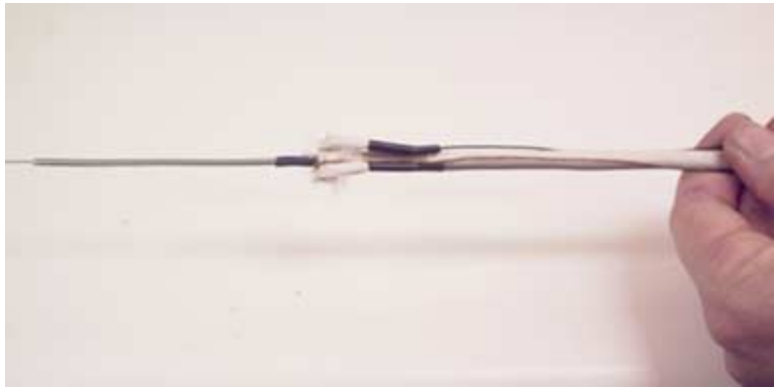


Fig. 1.1.28

1.1.29 Also fold the Thermocouple wire over until its end is exactly even with the leads.

1.1.30 Obtain one length of Ø2" foam insulation. Notice that it is completely slit open on one side along its on entire length to facilitate insertion of the core assembly.

Note: Notice that about 12" of Ø2" form insulation is only Ø1" in diameter (for Tekmar version only). For O/I version use full Ø2" Polyimide Foam Tubing (DY-700014-00) not shown.

1.1.31 Slip the insulation over the entire assembly with the 1" portion at the far right end and leave all wiring inside, Opposite the end with all the connectors.

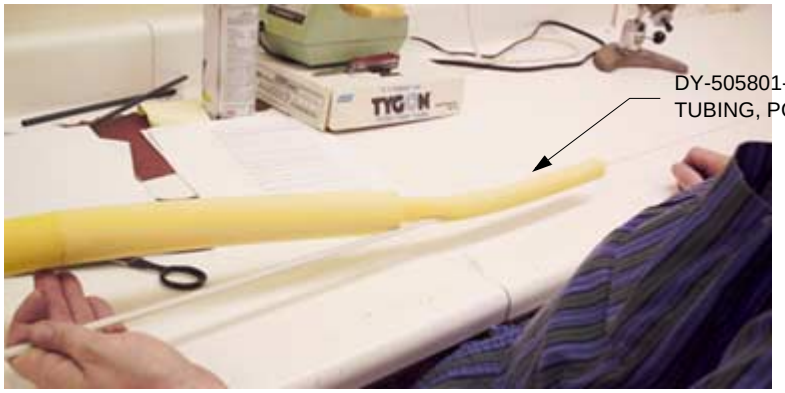


Fig. 1.1.31

1.1.32 With only about 1/2” of the ends exposed, use the 1/2” tape, pinch one end and hold it very tightly while wrapping the tape and compressing the ends of the insulation about 1/2” before each end.

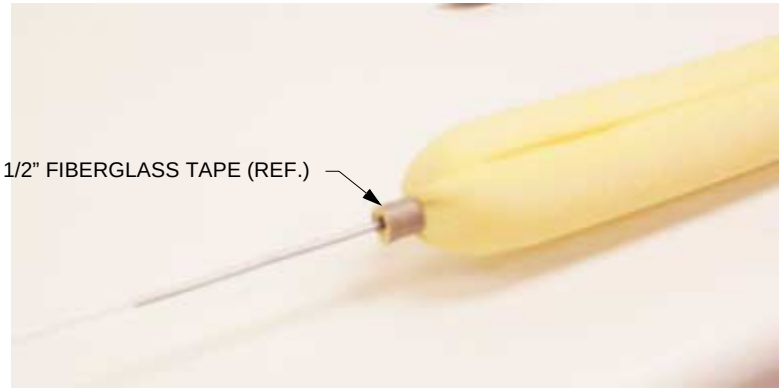


Fig. 1.1.32a

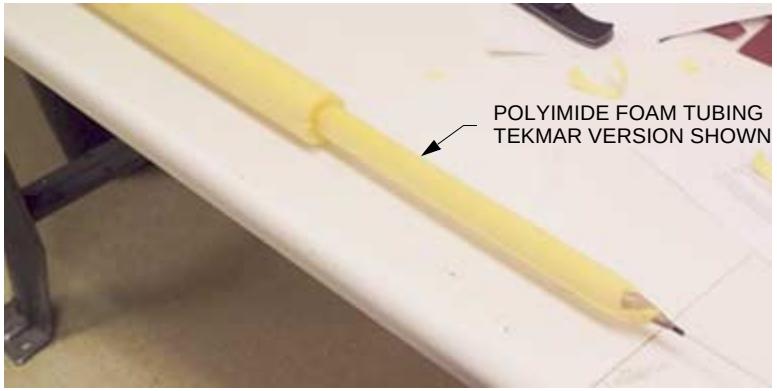


Fig. 1.1.32b

1.1.33 ***(O/I version skip this step)***. Loosen the assembly once again and feed a 14” in length of 1” in wide Fiberglass Sleeve from the right side and cover the 1” section of the insulation foram with it.

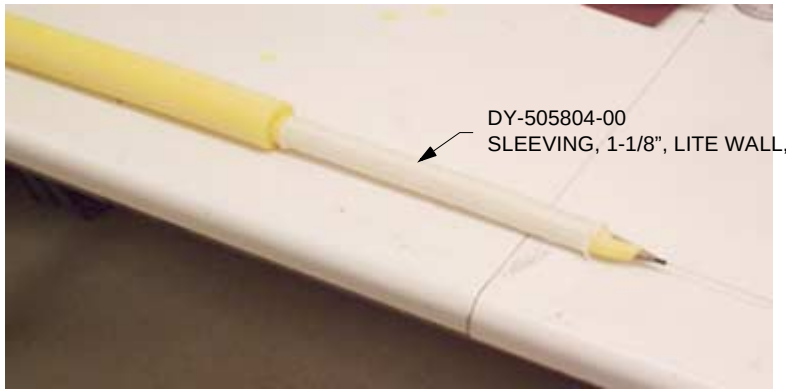


Fig. 1.1.33

1.1.34 Now cut 92” of 2” Fiberglass Sleeve and feed it over the assembly until you have about 3” of excess at both ends. See Fig. 1.1.34 for reference.

1.1.35 Before tightening the fixture, feed one 3/4” end spacer and one Ferrite bead onto the left side, and one 1/2” spacer and one 2” x 1” Heat Sink Tubing onto the right side.

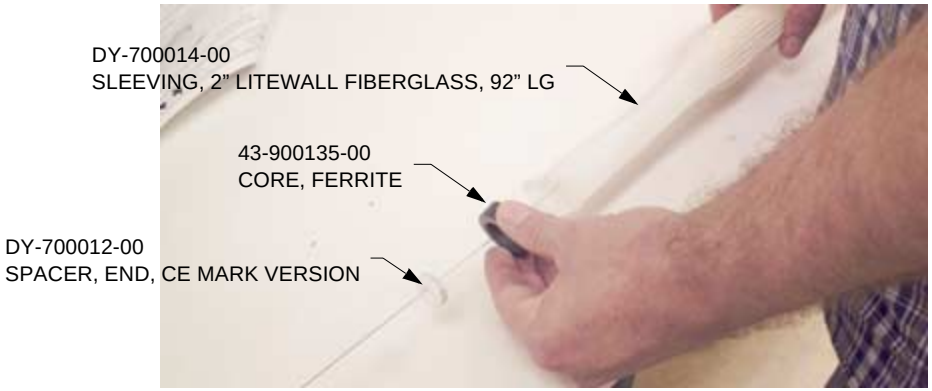


Fig. 1.1.34

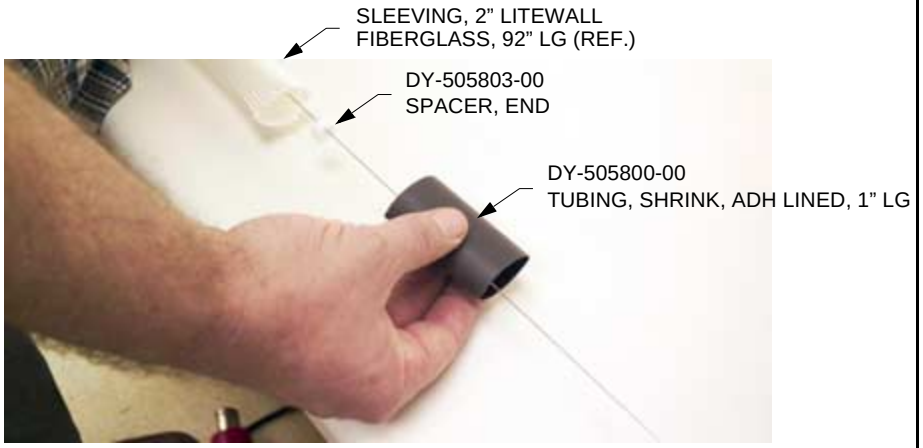


Fig. 1.1.35

1.1.36 Now tighten the fixture once again and squeeze the Ferrite bead over the left side and down approx. 6” on the left side. Smooth out any slack on the left and slide the 3/4 end spacer as far as it will go.

1.1.37 Now smooth out all the slack to the right end and then slide the 1/2” end spacer as far it will go.

1.1.38 Trim the excess outer Sleeving to within 1-1/2” of the right spacer. Take the remaining portion of sleeve and fold it back over itself covering the spacer. Slide the 2” section of 1” Heat Shrink Tubing over this until its exactly flush with the end of the Transfer line and heat shrink it. This end is now completed at this point.

1.1.39 On the left end, you need to use the knitting hook and small screw driver to find both leads and the Thermocouple cable through the weave of the outer Sleeve about 2” below where you slide the 3/4 end spacer.

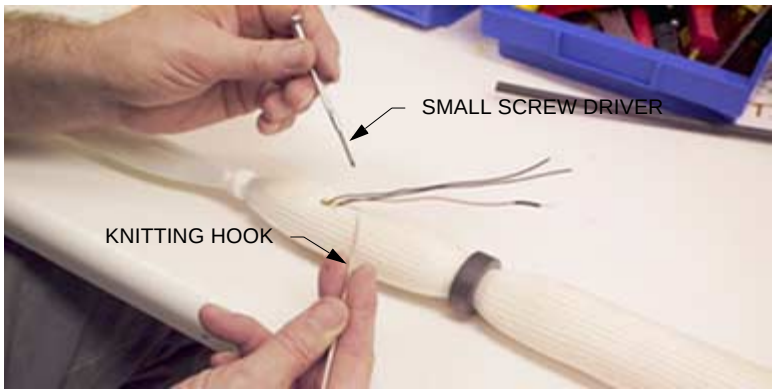


Fig. 1.1.39

1.1.40 Once found, feed all three wires through to the outside using the hook and pull on them until all three are exposed about 6". Heat Shrink about 4-1/2" of 3/16" Shrink Tubing over all three wires leaving only 1-1/2" of these wires exposed.

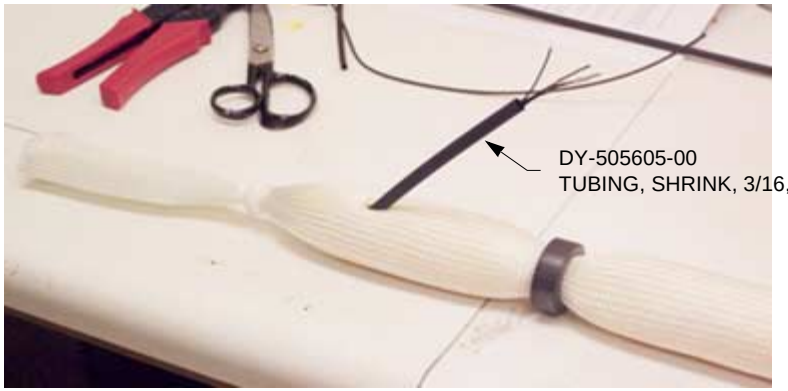


Fig. 1.1.40

1.1.41 Strip approximately 1/8" off the end of the 2 black wires and lug the two black wires with Molex crimp pins (DY-505292-00).

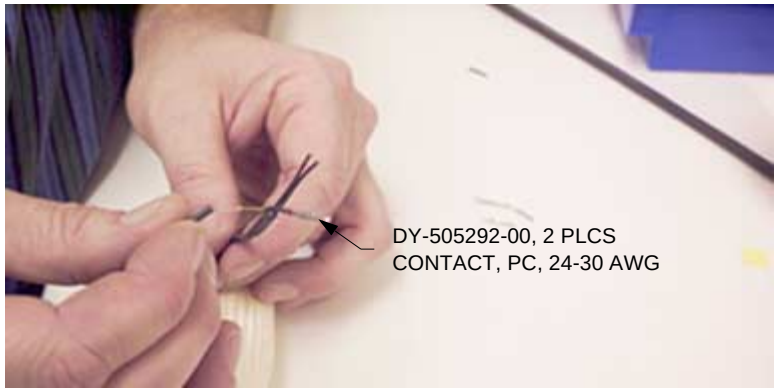


Fig. 1.1.41

1.1.42 There are two leads at the end of the thermocouple wire, one red and one yellow. Feed about 3/8" of 1/16 Heat Shrink over the red lead. Being sure to leave about 1/8" of exposed wire and crimp another molex pin and mark it red with a felt pen or marker. Repeat the same for the yellow-coated wire.

1.1.43 Obtain the 5 pin Molex connector (DY-505291-00): one end is round and one side is square. On the round side, in the first hole insert the red Thermocouple wire, Right next to it, insert the yellow wire. Then push them both all hard enough until they snap in place. Now at the square side insert one black wire in the 1st hole and the other in the second. The fifth hole in the center will remain empty.

1.1.44 Now remove the entire assembly from the mounting wire fixture. Loosen the left side and while holding the excess Helical Tubing, pull it to withdraw the wire from the center of the Transfer line.

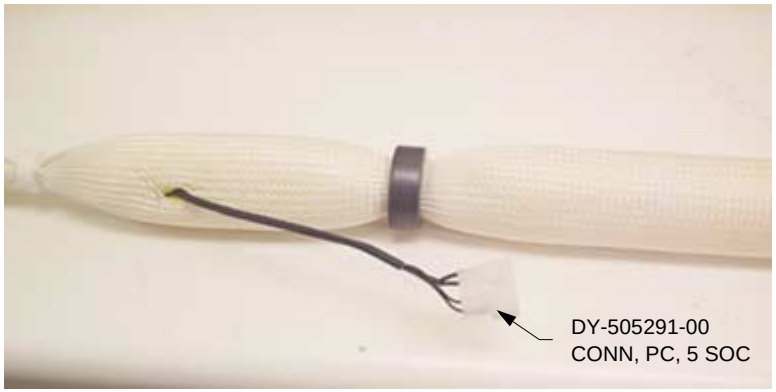


Fig. 1.143

1.1.45 Trim the excess 2” Sleeving to within 1-1/2” from the end Spacer, fold it back over the spacer and slide a 2”x2” piece of Heat Shrink Tubing down. Just cover the hole where the leads come out of the center and Heat Shrink it in place.

1.1.46 Cut off the excess Helical Tubing so it’s perfectly flush with the end. Feed a Soil Transfer Line (DY-505745-00) through the center from the right end. The assembly is complete.

1. XYZ TEST PROCEDURES

1.1 WIRINGS

1.1.1 Obtain XYZ Flex Cable Assembly (DY-700134-92) from kitting. Install DY-Flex PWA Assembly (DY-700100-01) onto the three Standoffs and secure with on Standoff at the bottom.

1.1.2 Install connectors on XYZ Motor Cable Assembly (DY-700130-01) labeled P8A to ***(J8A)*** and P8B to ***(J8B)*** below heat sink on Archon PWA Stepper Motor Assembly where shown.

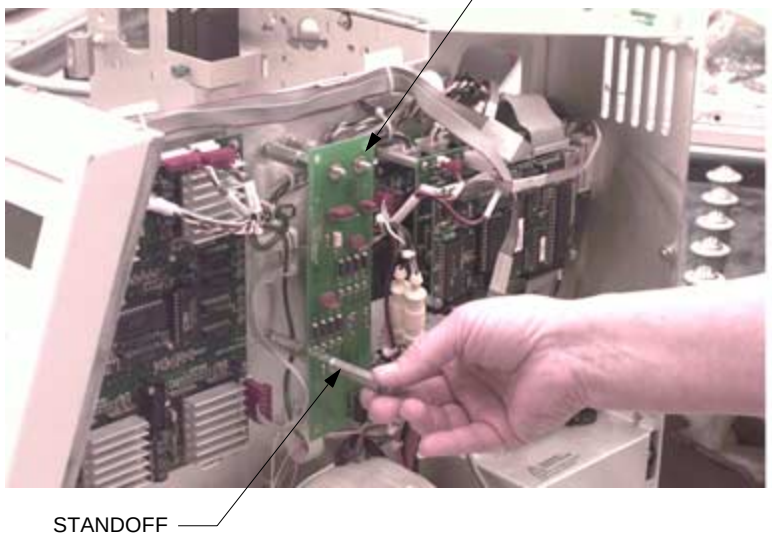


FIGURE 1.1.1

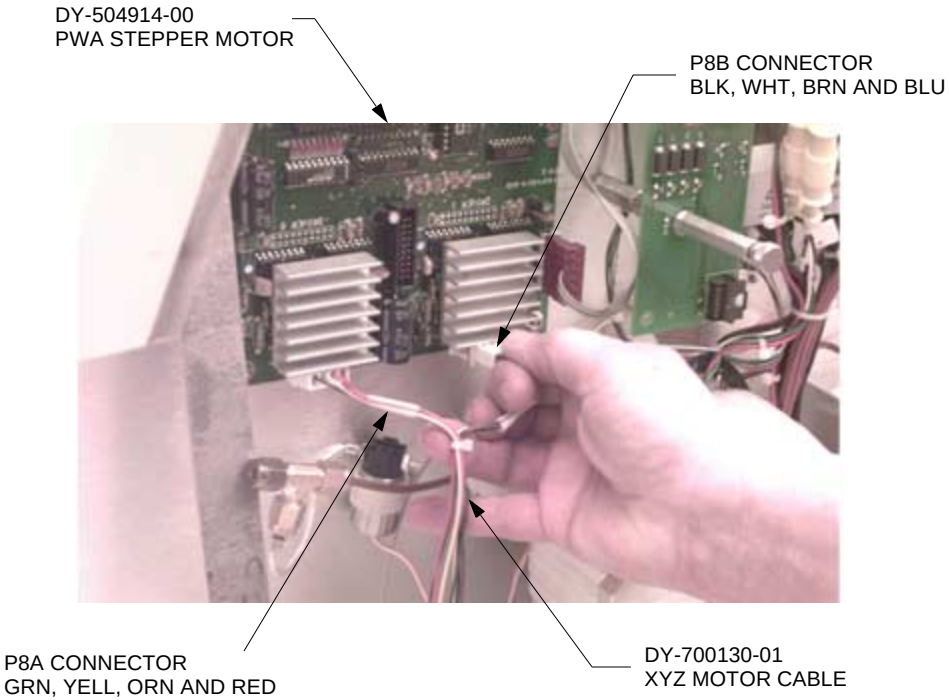


FIGURE 1.1.2

1.1.3 Install the connectors on opposite ends of the XYZ Motor Cable Assembly labeled P8 to ***J8*** and P10 to ***J10*** on the DY-Flex PWA Assembly as shown.

1.1.4 Take the center, (P3), of the Motor Control/DY-FLEX Cable, (DY-700131-01), and install it onto the PWA Stepper Motor Board Assembly as shown.

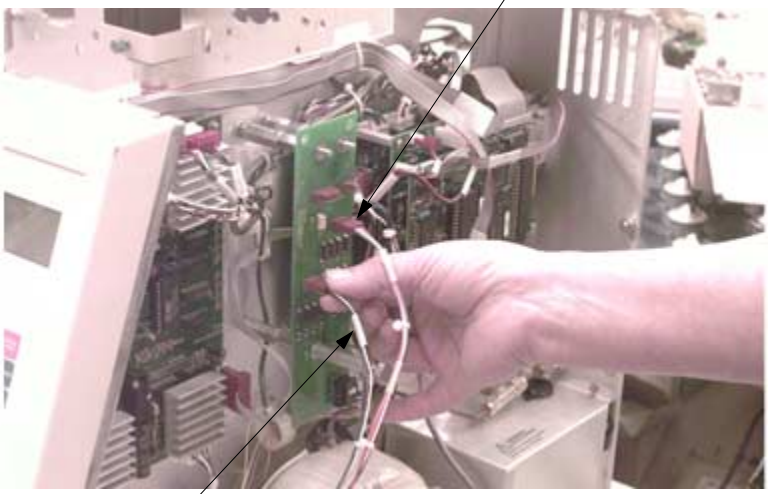
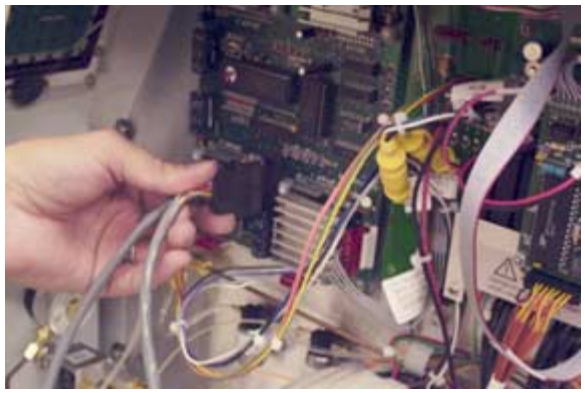


FIGURE 1.1.3

FIGURE 1.1.4



1.1.5 Install the connectors on the long end of the Motor Control/DY-Flex Cable Assembly labeled P6 to ***J6*** on Remote I/O PCB (DY-505240-00) where shown.

1.1.6 Install Red connector on No Vial PCB (DY-700129-01) to DY-Flex PWA labeled P7 to ***J7*** on DY-Flex PWA Assembly and install opposite end (white connector) on No Vial PCB labeled P16 (1-3) to ***J16*** to J16 on the Remote I/O PCB as shown.

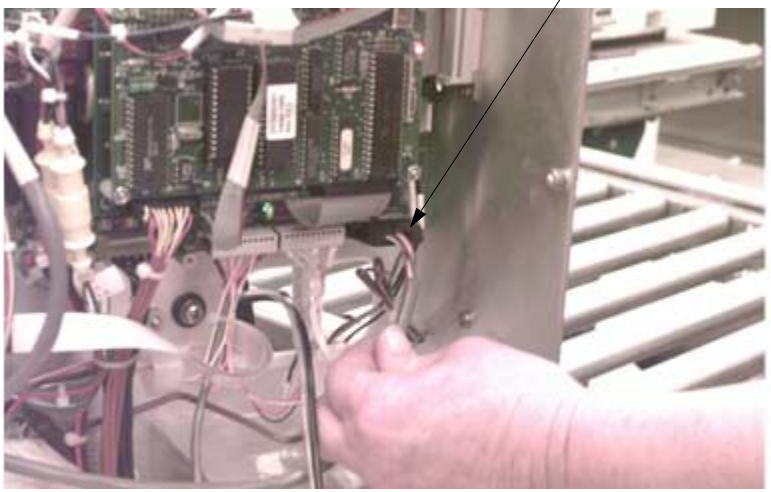


FIGURE 1.1.5

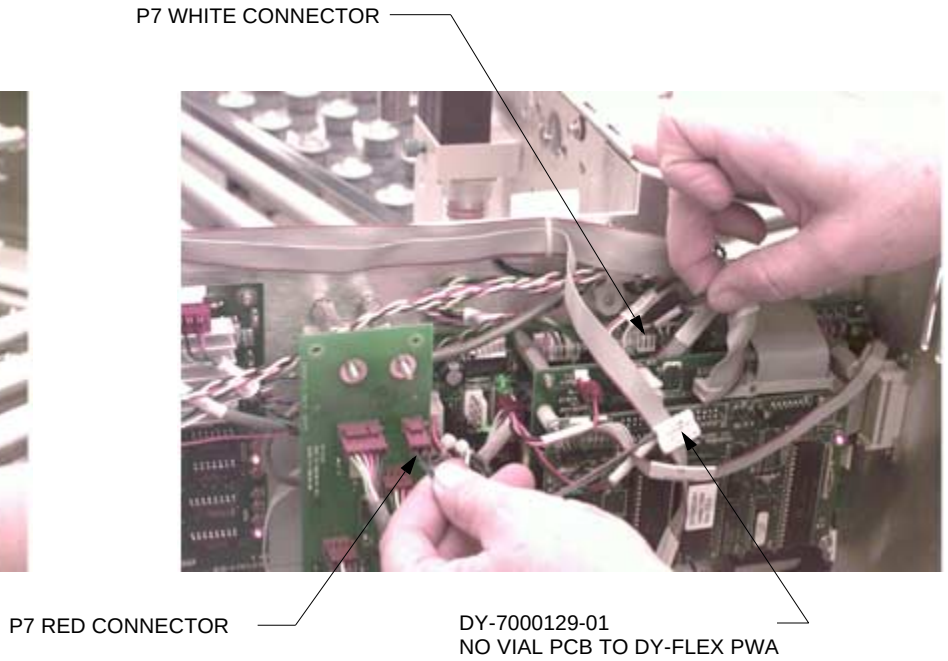


FIGURE 1.1.6

1.1.7 Begin installation of the new XYZ assembly by lifting the cables and tubing up and setting the assembly in place. Guide the end of F/R Leadscrew into the red Screw Nut on the F/R Traveler and rotate the Leadscrew counter clockwise while pushing the XYZ Mechanism toward the rear of the unit. Before you insert the front end of the leadscrew though the hole you put two washers with a thrust bearing sandwich between them on the front rear leadscrew. After you insert the front of the F/R leadscrew through the front plate then you put another two washers and thrust bearing on the portion of the F/R leadscrew that protrudes from the front plate. After this you need to put a screw with two washers and secure into end of F/R leadscrew to secure bearing etc.

1.1.8 Secure the XYZ Rework Assembly, using three thumb screws as shown.

FIGURE 1.1.7

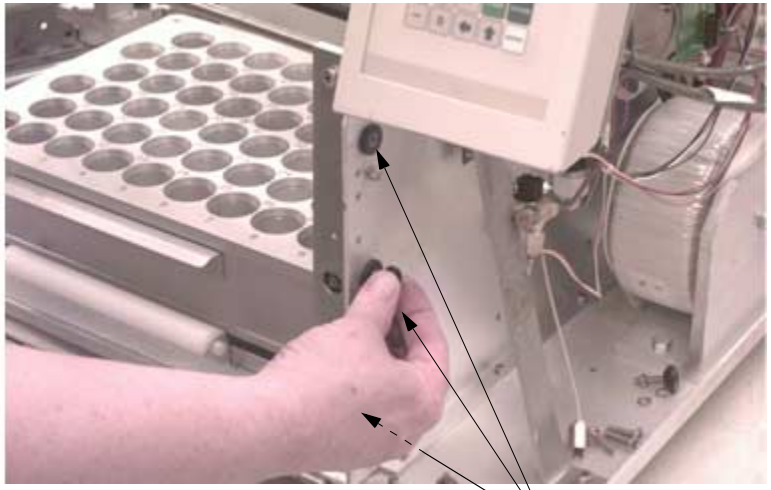


FIGURE 1.1.8

1.1.9 When XYZ is in place, insert and tighten two 4-40 x 1/4" Pan Head SEMS screws (12-901155-00) through the cable support bracket and into the support block. Install two more 10-32 x 3/4 PH Screws (12-222060-12) to secure the upper and lower rods on the XYZ assembly to the back plate from the rear of the instrument not shown.

1.1.10 Thread the flex cable and laminated tubing through the hole in the F/R Rear Support Plate.

1.1.11 Thread the flex cable through the hole in the partition.

1.1.12 Thread the tubing through the same hole in the partition.

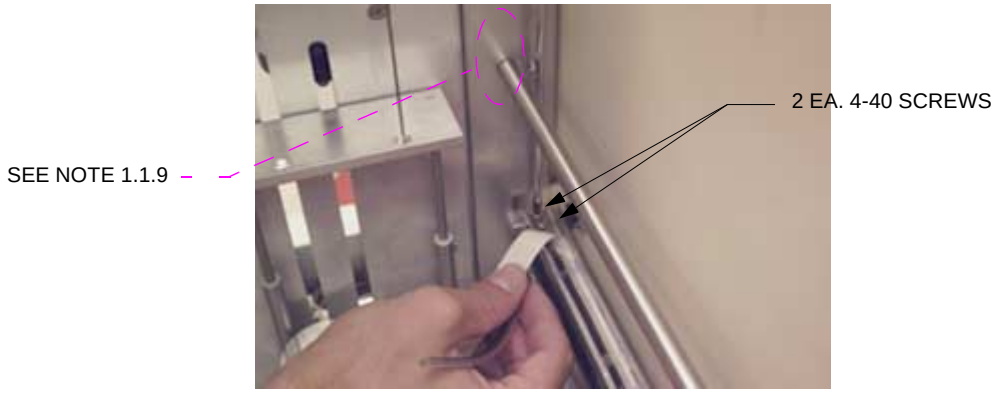


FIGURE 1.1.9

FIGURE 1.1.10

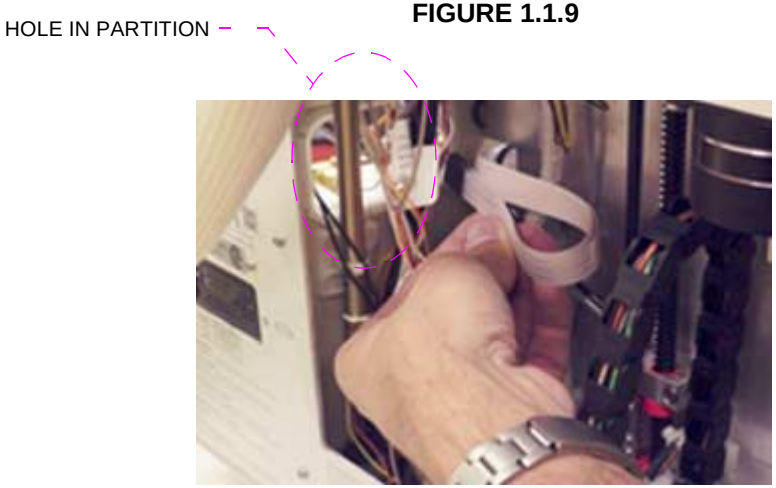


FIG. 1.1.11

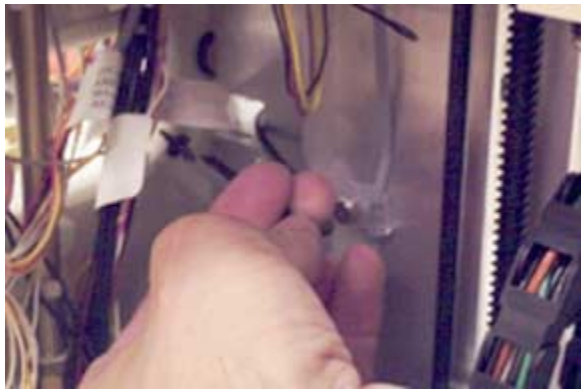


FIG. 1.1.12

1.1.13 Connect the black Flex Cable connector from the XYZ assembly to the socket J6 on the lower right corner of the DY-FLEX board.

1.1.14 Connect the clear tubing from the XYZ assembly to the right port of the gripper solenoid (the one on the left).

1.1.15 Plug the power cord back into the Archon and turn it on.

1.1.16 Reset the unit to factory defaults by holding down the “Pause/Stop” key and pressing “0”.

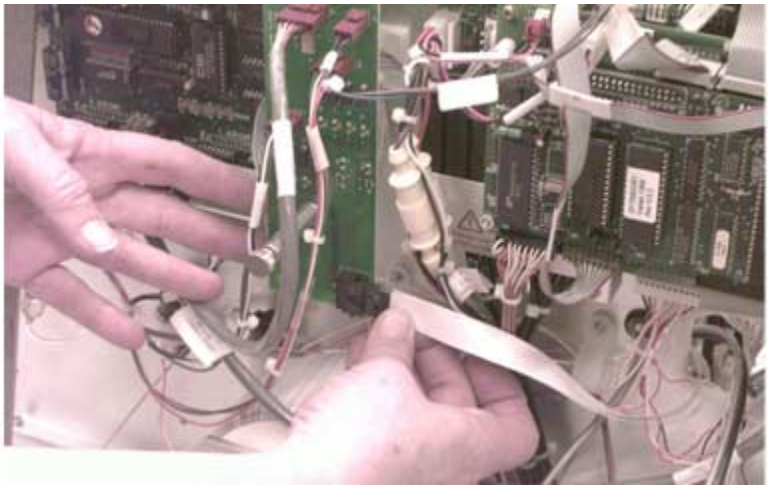
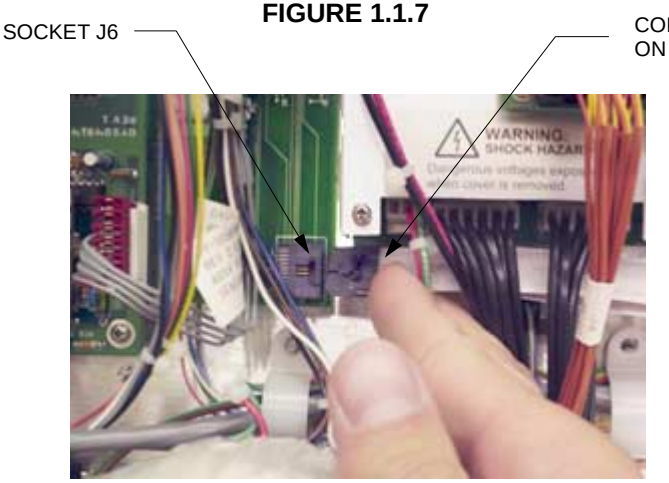
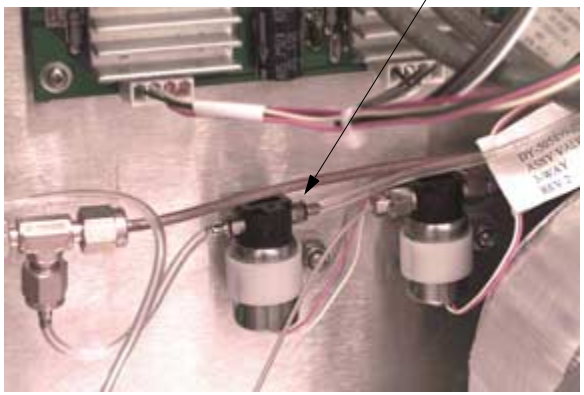


FIGURE 1.1.7

FIGURE 1.1.8





1.1.17 Adjust the XYZ mechanism:

a) Press “Manual” key and arrow down (2/↓) two times to “Move Gripper”, press Enter, press 3 to change display to Jog. Use large ← and ↑ to move XYZ Vertical, Front/Rear, and Left/Right positions. Use smaller arrows with numbers to move within the field. Position XYZ to the top of row 35-43 on the sample tray.

b) Verify alignment by lowering gripper assembly so it almost touches the tray (0.015 to 0.040” gap), and move the XYZ left/right across the tray making sure the XYZ is aligned. If the distance changes significantly from left to right loosen the three Allen head cap screws on the right side with a 5/32” Allen wrench to raise or lower the left side of the XYZ mechanism, pull up or press down on the left side of the XYZ mechanism, and tighten the screws fully while pulling. Repeat as necessary until gap is consistent across full L/R travel.

c) Next verify front/back alignment by moving the gripper left and right while looking down on it from above. Position the back edge of the gripper just tangent to the edge of one of the vial holes so that any change in Front/Rear position is easiest to see.

c) Align vertically by rotating Gripper assembly forward or back as needed so that the gripper assembly is even at the top of all holes on the tray.

d) Recheck the horizontal alignment and vertical alignment after each adjustment.

1.1.18 Auto-Calibrate using the procedure outlined in the Archon manual. (System, Calibration, Auto-Calibrate, insert the sensor bar and bar sensor into the unit when requested. When done, perform train on Vial 22, Equilibrium Block and Water Probe. Set data for Knockoff Clearance and Standard Clearance by selecting the items from the menu, but do NOT pick up the vial from position 22. Accept the default values by hitting Enter).

1.1.19 Put the unit in maintenance mode and run the Calibration Test for at lest 72 hours. There can be no failures during this time. If there is a failure, find the cause, fix and retest Consult a manufacturing engineer if you are uncertain how to proceed.

1. XYZ REWORK INSTRUCTIONS

1.1 REMOVE THE OLD XYZ ASSEMBLY FROM THE UNIT

1.1.1 Turn off the unit.

1.1.2 Remove Cabinet Stabilizer Bar, DY-505323-00, by loosening the four #4 nylock nuts with 1/4" nut driver and sliding the Cabinet Stabilizer Bar forward. You don't have to remove the nuts.

1.1.3 Remove the Archon Side Panel. Remove the three 10-32 x 5/8 Screws securing the XYZ Assembly to the Archon unit.

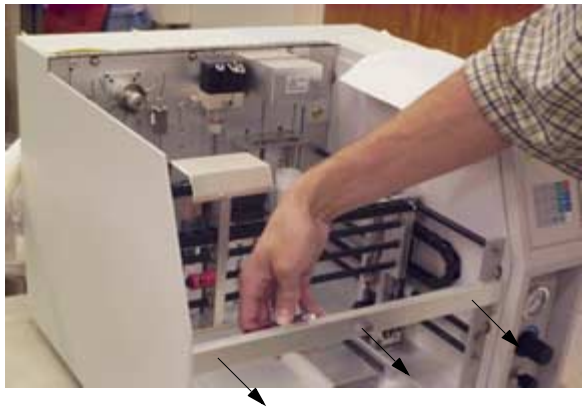


FIG. 1.1.2

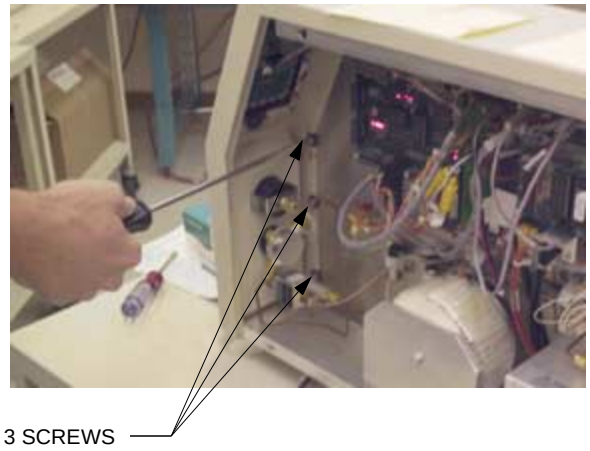


FIG. 1.1.3

1.1.4 Remove the Archon Rear Panel. Cut the wires protruding from the black energy chain as close to the syringe plate as possible.

1.1.5 Remove the two 10-32 x 5/8 Phillips head screws on the F/R Rear Support Plate that secure the F/R Support Rods to the F/R Support Plate.

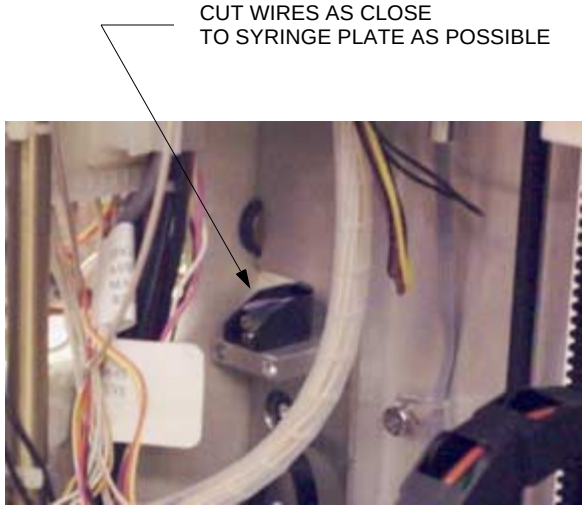


FIG. 1.1.4

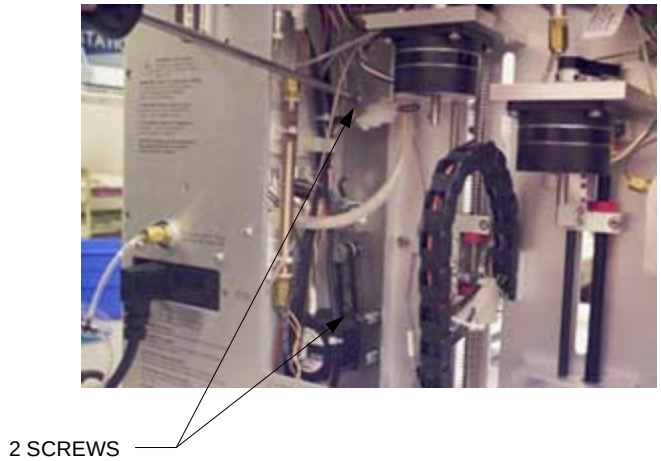


FIG. 1.1.5

1.1.6 Break the energy chain near the front of the unit and pull the wires forward. You may have to cut and remove cable ties near cut point to be able to pull wires freely. This allows you to more easily access the screw heads that were under the wires.

1.1.7 Remove two Screws securing the Energy Chain to the Energy Chain Mounting Bracket.

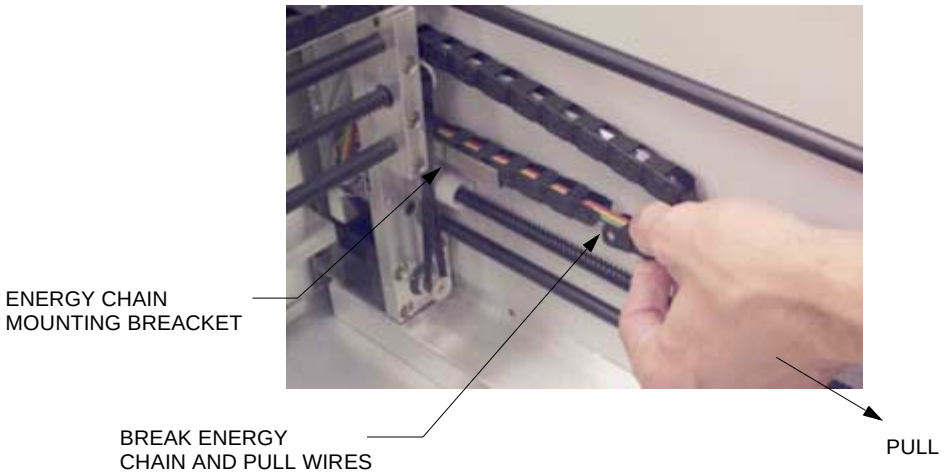


FIG. 1.1.6

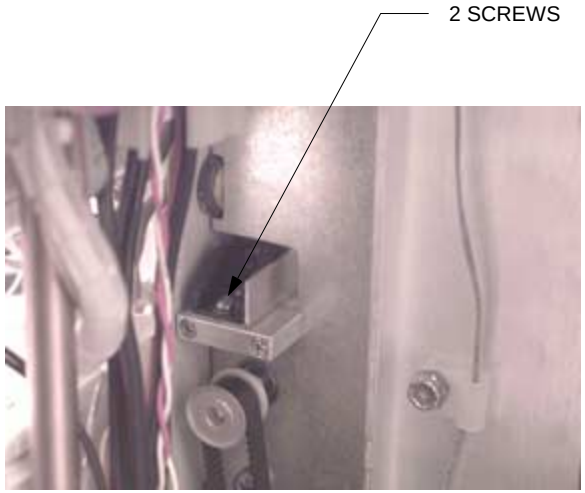


FIG. 1.1.7

1.1.8 Remove the entire XYZ Assembly from the Archon unit by removing the screw from the F/R leadscrew, then slide the L/R portion of the XYZ fully forward, then pull up on the front of the XYZ assembly until the front vertical plate clears the right inside cover, then slide the assembly forward and out of the unit.

1.1.9 Remove the F/R Energy Chain Block from the F/R Support Plate with a 3/32" Allen wrench, and discard the Block (Fig. 1.1.9a).

1.1.10 Place the new F/R Energy Chain Block on the other side of the F/R Rear Support Plate as shown, with the notched corner toward the center of the unit (Fig. 1.1.9b). Use one of the 4-40x3/4" Allen-headed cap screws just removed for the end closest to the divider panel, and the included 4-40x3/8" cap screw, 12-312004-06 for the side closest to the center of the unit.

FIG. 1.1.8

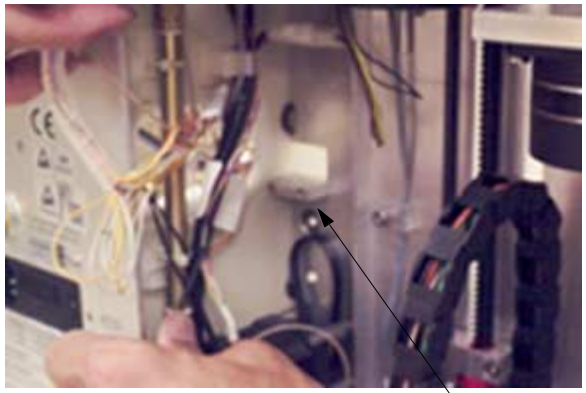


FIG. 1.1.9a

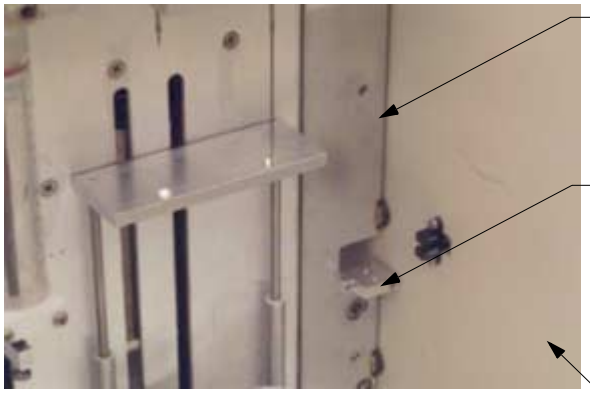


FIG. 1.1.9b

1.1.11 Begin installation of the new XYZ assembly by setting a set of washers and a thrust bearing on the F/R leadscrew, lifting the cables and tubing up and setting the assembly in place. Guide the end of F/R Leadscrew into the red Screw Nut on the F/R Traveler and rotate the Leadscrew counter clockwise while pushing the XYZ Mechanism toward the rear of the unit.

1.1.12 Press the lower front of the front vertical plate into the Inside Right Cover by pressing back and down on the lower front corner of the plate. Fig 1.1.8

FIG. 1.1.11a

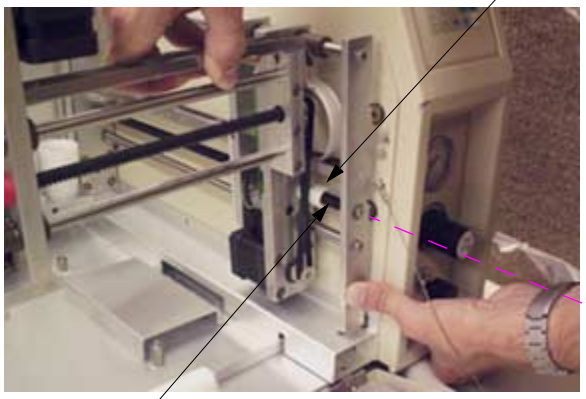


FIG. 1.1.11b

FIG. 1.1.12

1.1.13 When XYZ is in place, insert and tighten (2) 4-40 x 1/4" Pan Head SEMS screws (12-901155-00) through the cable support bracket and into the support block.

1.1.14 Thread the flex cable and laminated tubing through the hole in the F/R Rear Support Plate.

1.1.15 Thread the flex cable through the hole in the partition.

1.1.16 Thread the tubing through the same hole in the partition.

FIG. 1.1.13

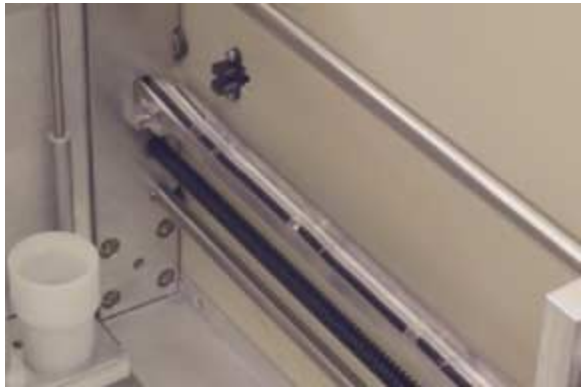


FIG. 1.1.14

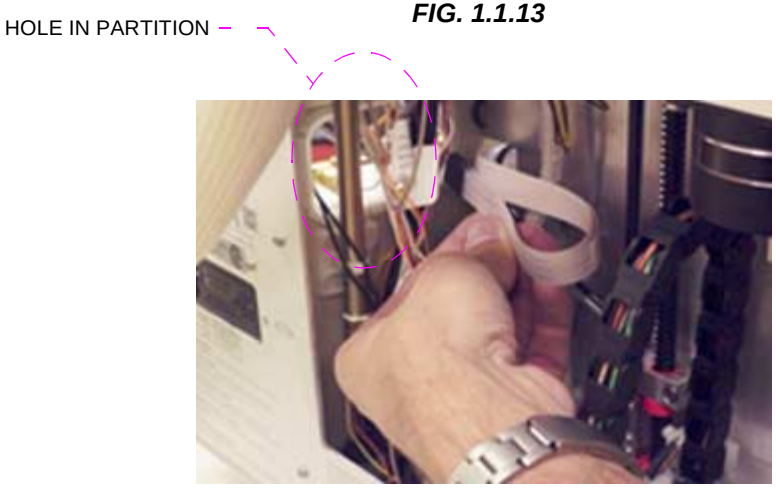


FIG. 1.1.15

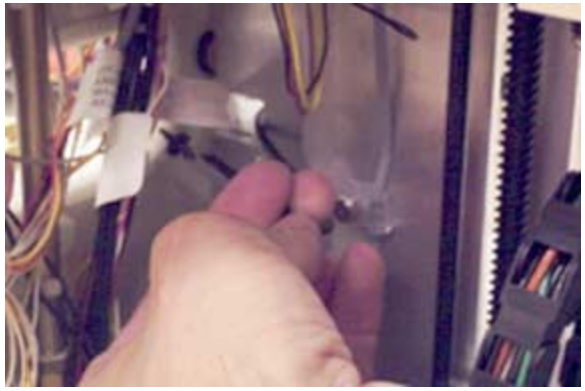


FIG. 1.1.16

1.1.17 Remove the outer 8-32 nuts retaining the cable clamps with an 11/32 nut driver.

1.1.18 Remove the lower nuts retaining the wire holders.

1.1.19 Install 3 new 8-32 KEPS nuts, (13-312008-00) onto the 3 studs the cable clamps were just removed from.

1.1.20 Install the new DY-FLEX Board, (DY-700100-01), on top of the 3 studs with nuts on them. Install three 8-32 KEPS Nuts, (13-312008-00), on top of the board, one on each of the studs. Do not over tighten.

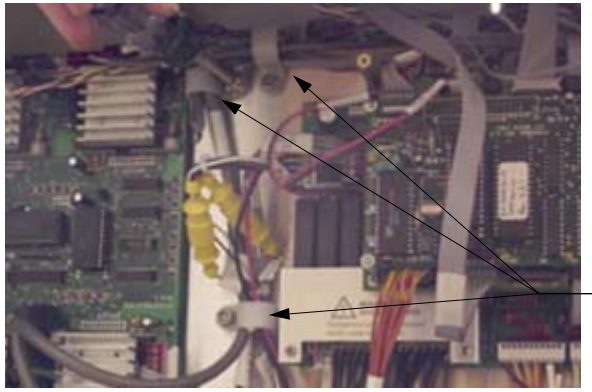


FIG. 1.1.17

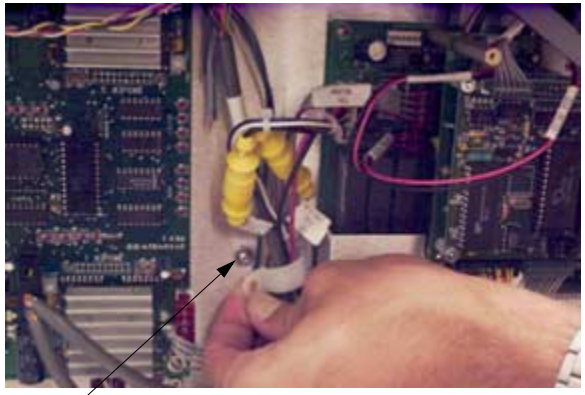


FIG. 1.1.18

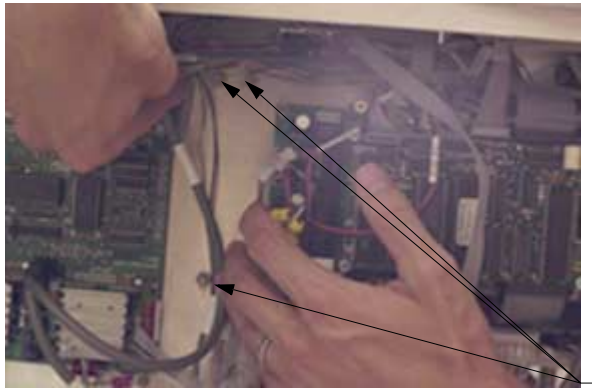


FIG. 1.1.19

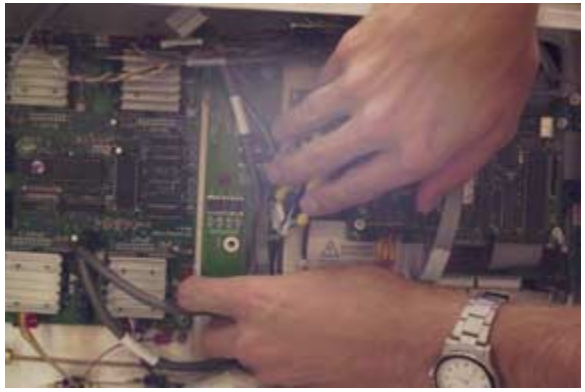


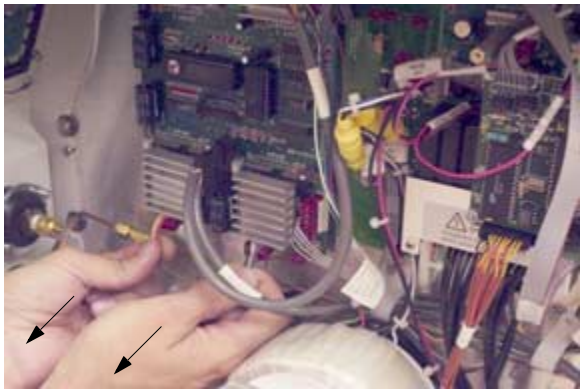
FIG. 1.1.20

1.1.21 Remove the 2 cables connecting to the bottom of the motor control board at J8A and J8B.

1.1.22 Remove the 2 ground wires from the old harnesses from the 4-40 PEM stud with a 1/4" nut driver. Remove both old harnesses from the unit and discard.

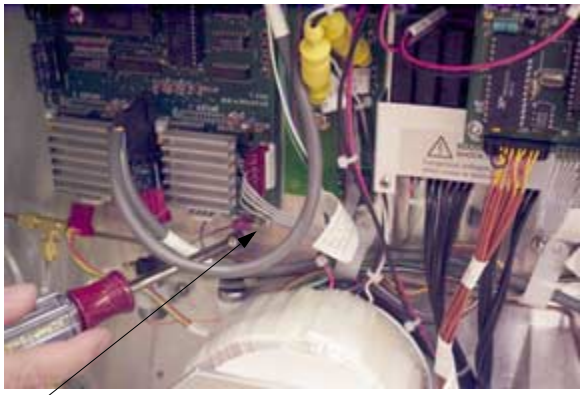
1.1.23 Install the 2 connectors on one end of the new X/Z Motor cable, (DY-700130-01) to the motor driver board as shown, with the blue, black, grey and white bundle (P8B) to the right.

1.1.24 Install the other 2 connectors on the opposite end of the cable to the DY-FLEX board. The blue, black, grey and white set connects on the left, to J8, and the other end connects to J10.



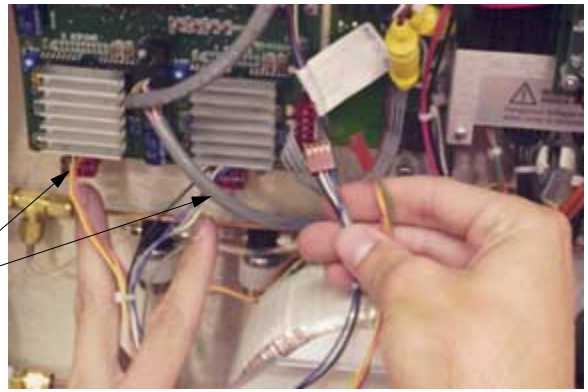
REMOVE THESE 2
CABLE FROM J8A & J8B

FIG. 1.1.21



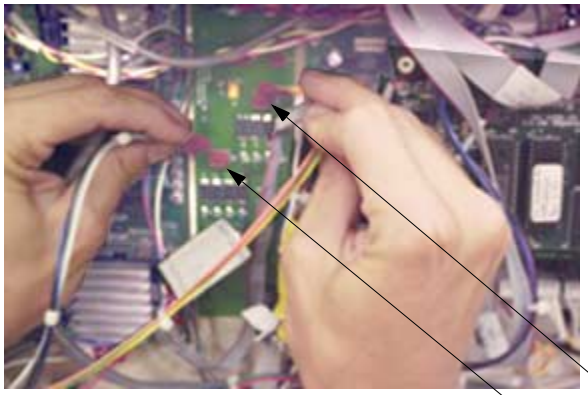
4-40 NUT & 2 GROUNDING LUGS

FIG. 1.1.22



INSTALL THE 2
NEW CONNECTORS
P8A & P8B

FIG. 1.1.23



J-10

J-8

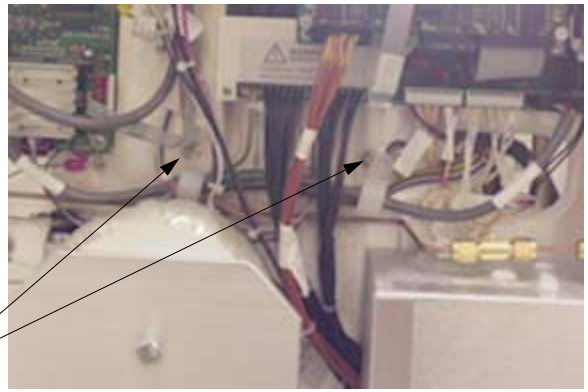
FIG. 1.1.24

1.1.25 Remove the outer 8-32 nuts holding the 2 cable clamps shown.

1.1.26 Remove the 3 ends of the Motor Control Cable Assembly from the motor driver board, the IO board and the free haning connector located at the upper right corner of the motor driver board and discard. Pull out the 2 grey cables that were connected to the upper right corner of the motor driver board, and discard. *See Fig. 1.1.26a and 1.1.26b.*

1.1.27 Remove the section of the Motor control cable from the cable supports below the motor driver board and pull the entire cable out of the Archon.

1.1.28 Take the center, (P3), of the new Motor Control/DY-FLEX cable, DY-700131-01, and install it onto the motor control board.



(CABLE CLAMPS)
WIRE RETAINERS WITH
OUTER NUTS REM0VED

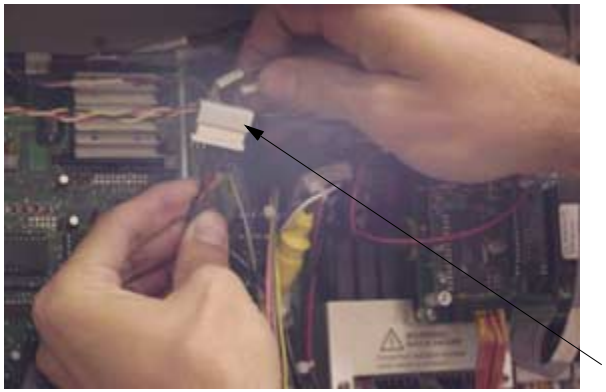
FIG. 1.1.25

SHORT END OF CABLE

CENTER OF CABLE

LONG END OF CABLE

FIG. 1.1.26a



DISCONNECT SHORT END
OF CABLE FROM THE 2
CABLES ATTACHED TO IT

FIG. 1.1.26b

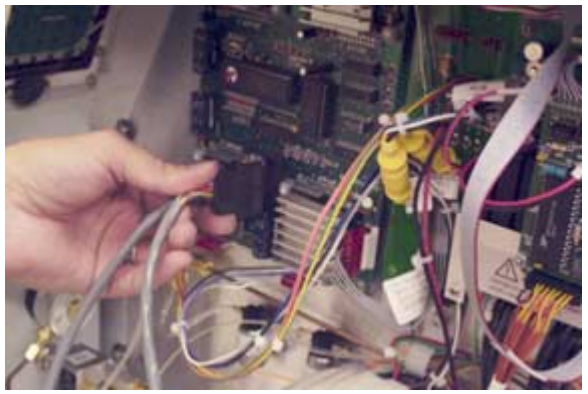


FIG. 1.1.28

1.1.29 Thread the P6 end of the cable (the long end) through the cable retainers.

1.1.30 Install the P6 cable end onto the IO board at J6.

FIG. 1.1.29a

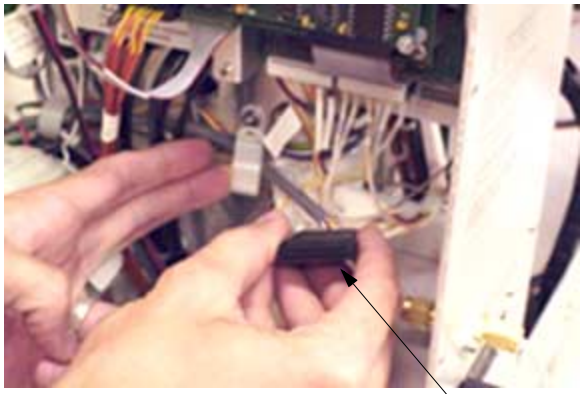


FIG. 1.1.29b

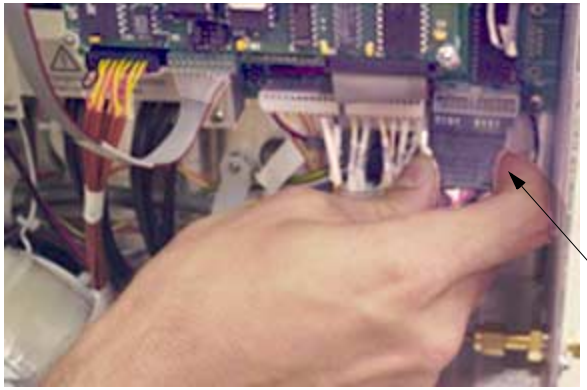


FIG. 1.1.30

1.1.31 Connect the remaining end (P9) to J9 on the DY-FLEX board.

1.1.32 Disconnect the cable from J-16 on the IO board, and separate the 2 sub-connectors. Replace the door sensor (2 black wires) to pins 4-6 of J-16.

1.1.33 Pull the loose cable that was connected to J-16, pins 1-3, out of the unit and discard.

1.1.34 Connect the orange end (P7) of the No Vial PCB to DY-FLEX cable, DY-700129-01 to J7 on the DY-FLEX board, and the other end, P16, to pins 1-3 of J-16 on the IO board.

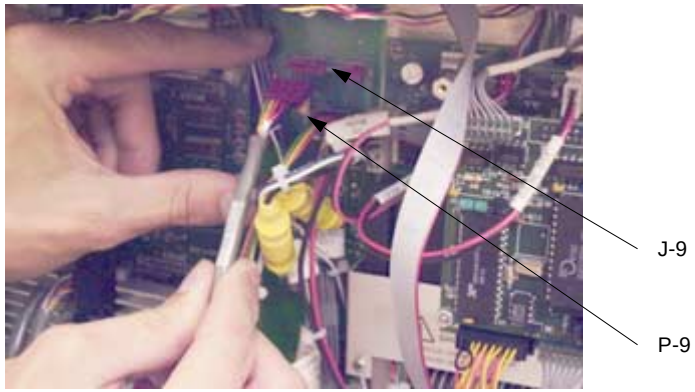


FIG. 1.1.31

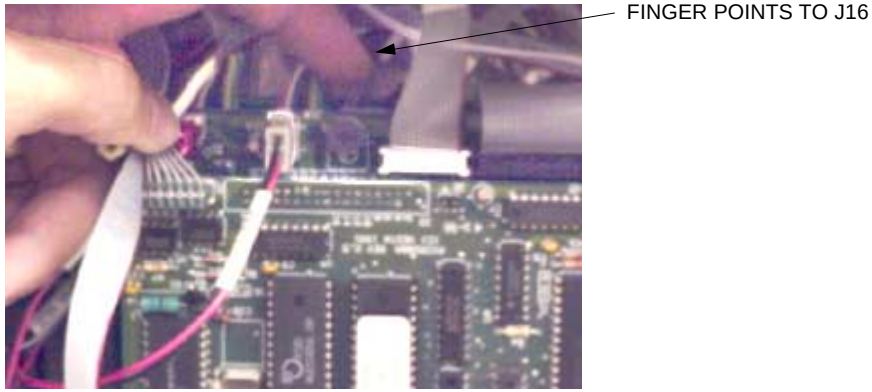


FIG. 1.1.32

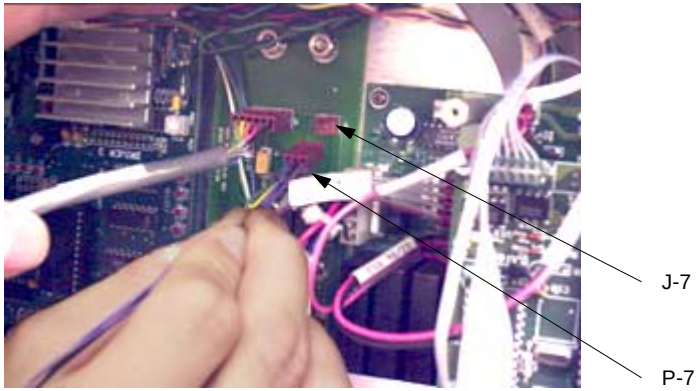


FIG. 1.1.34a

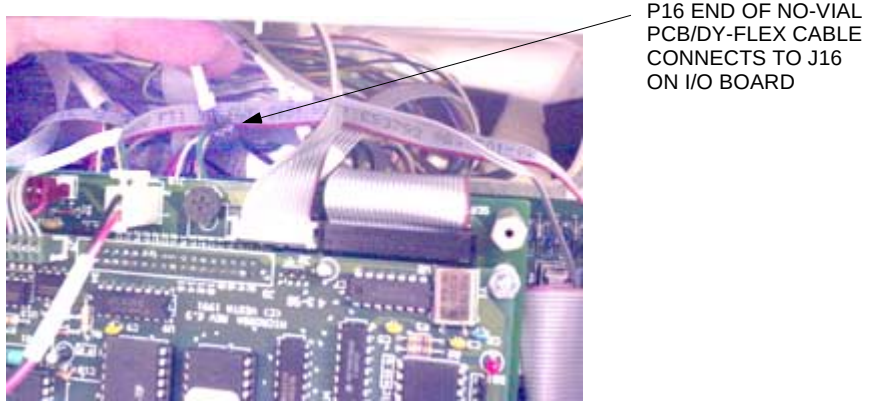


FIG. 1.1.34b

1.1.35 Connect the black Flex Cable connector from the XYZ assembly to the socket J6 on the lower right corner of the DY-FLEX board.

1.1.36 Connect the clear tubing from the XYZ assembly to the right port of the gripper solenoid (the one on the left).

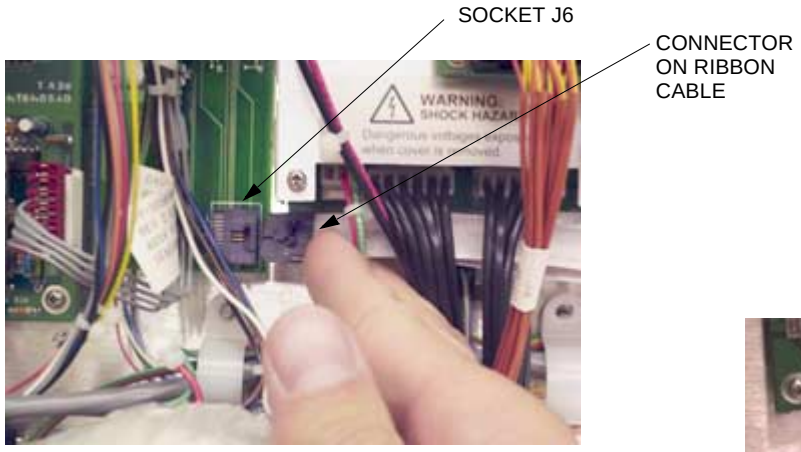


FIG. 1.1.35

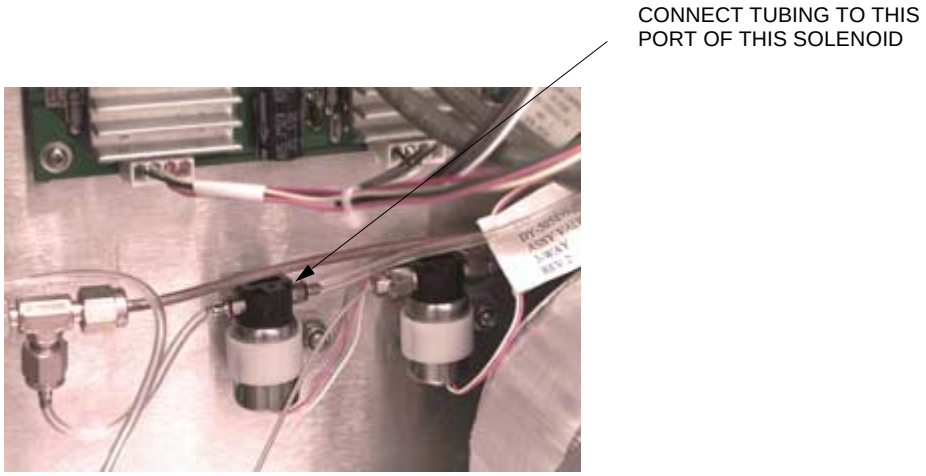


FIG. 1.1.36

1.1.37 Replace the 2 10-32 x 5/8 phillips head screws on the F/R rear support plate removed in step 1.1.4, and the 3 removed from the divider panel in step 1.1.3.

1.1.38 Plug the power cord back into the Archon and turn it on.

1.1.39 Reset the unit to factory defaults by holding down the “Pause/Stop” key and pressing “0” (method data will be lost - write down any methods you wish to keep prior to resetting to defaults).

1.1.40 Adjust the XYZ mechanism:

a) Press “Manual” key and arrow down (2/↓) two times to “Move Gripper”, press Enter, press 3 to change display to Jog. Use large ← and ↑ to move XYZ Vertical, Front/Rear, and Left/Right positions. Use smaller arrows with numbers to move within the field. Position XYZ to the top of row 35-43 on the sample tray.

b) Verify alignment by lowering gripper assembly so it almost touches the tray (0.015 to 0.040” gap), and move the XYZ left/right across the tray making sure the XYZ is aligned. If the distance changes significantly from left to right loosen the three Allen head cap screws on the right side with a 5/32” Allen wrench to raise or lower the left side of the XYZ mechanism, pull up or press down on the left side of the XYZ mechanism, and tighten the screws fully while pulling. Repeat as necessary until gap is consistant across full L/R travel.

c) Next verify front/back alignment by moving the gripper left and right while looking down on it from above. Position the back edge of the gripper just tangent to the edge of one of the vial holes so that any change in Front/Rear position is easiest to see.

c) Align vertically by rotating Gripper assembly forward or back as needed so that the gripper assembly is even at the top of all holes on the tray.

d) Recheck the horizontal alignment and vertical alignment after each adjustment.

1.1.41 Auto-Calibrate using the procedure outlined in the Archon manual. (System, Calibration, Auto-Calibrate, insert the sensor bar and bar sensor into the unit when requested. When done, perform train on Vial 22, Equilibrium Block and Water Probe. Set data for Knockoff Clearance and Standard Clearance by selecting the items from the menu, but do NOT pick up the vial from position 22. Accept the default values by hitting Enter).

1.1.42 Put the unit in maintenance mode and any run Calibration Test for several full cycles.

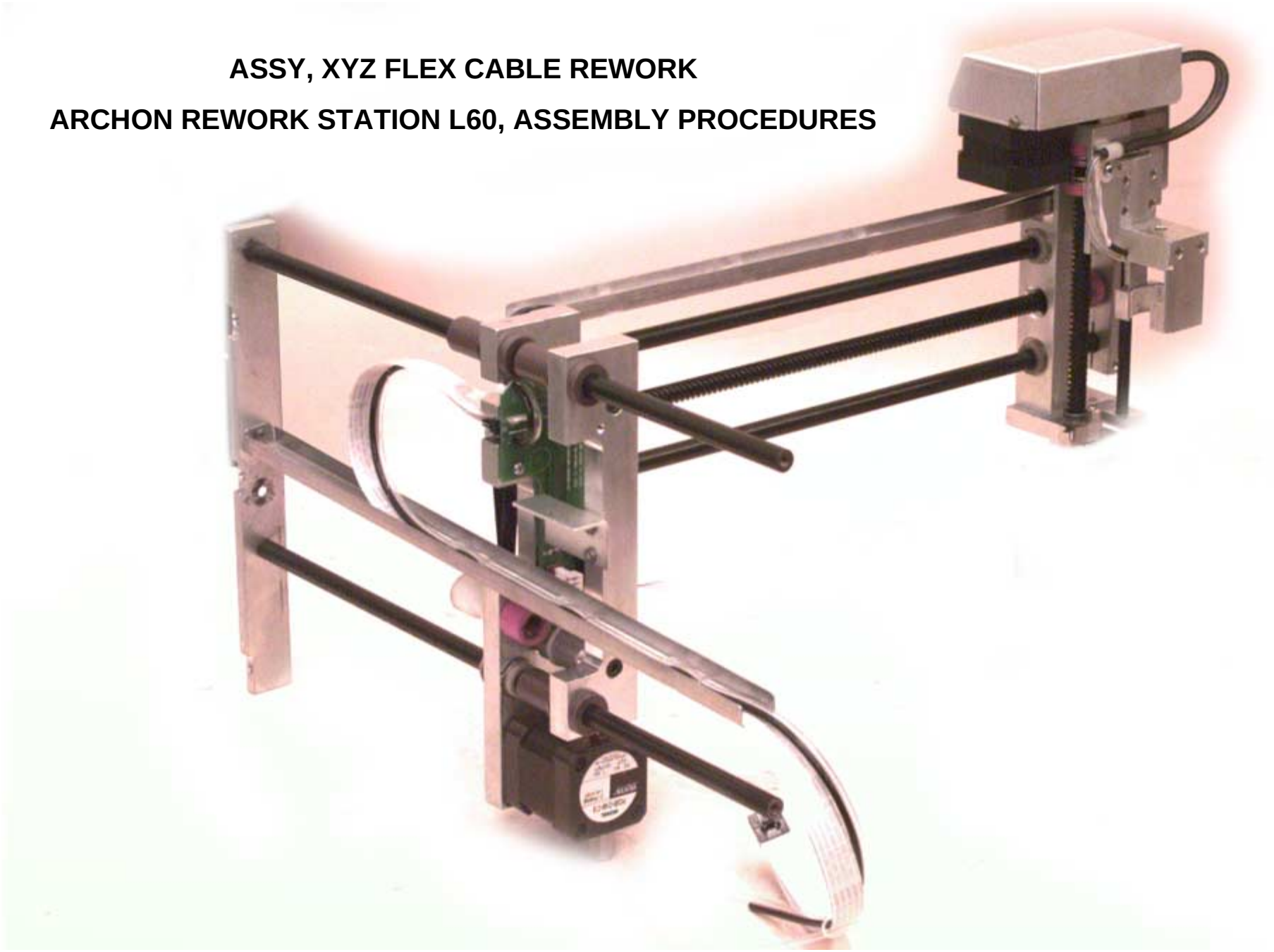
1.1.43 Re-enter method data, if any.

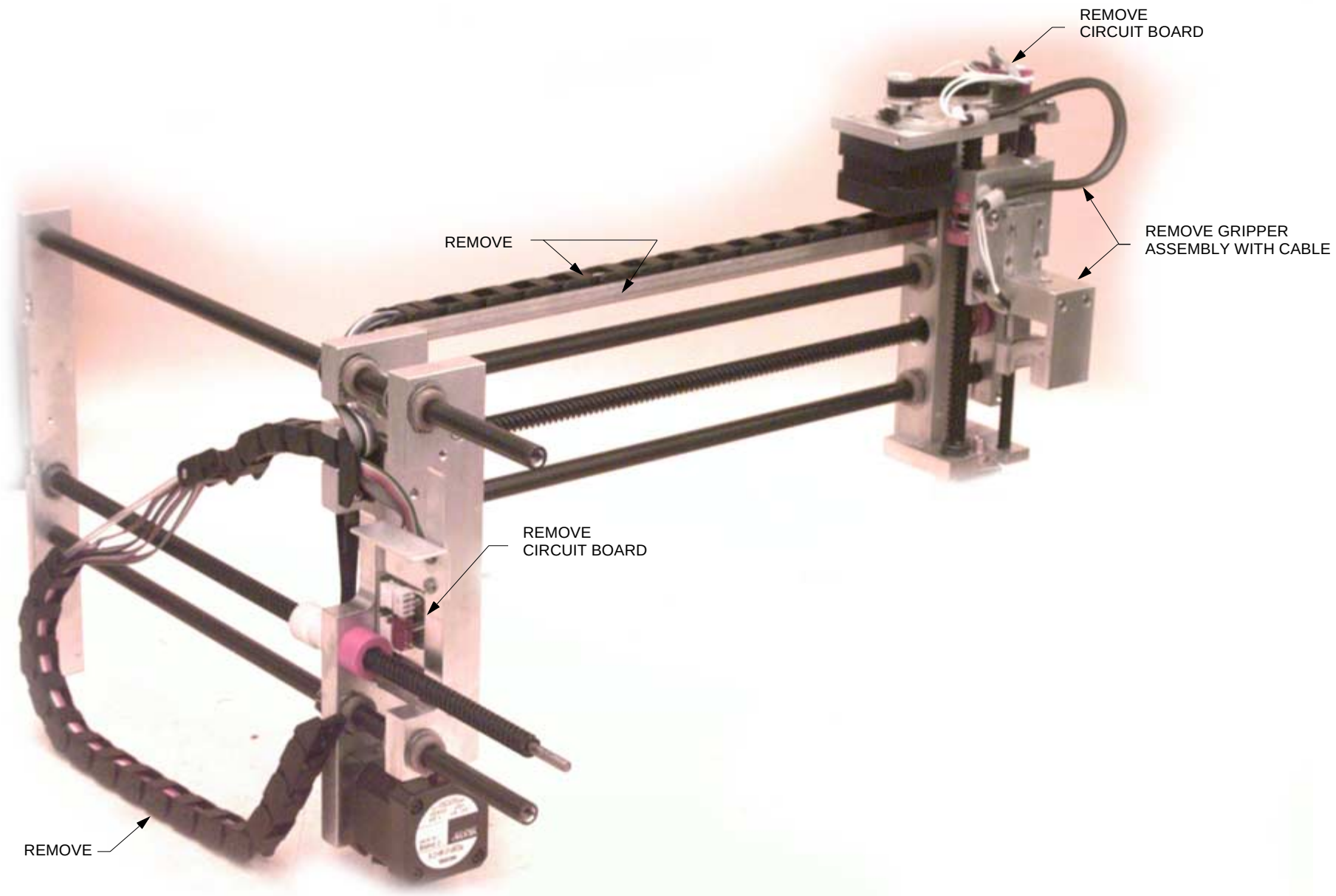
1.1.44 Back up the calibration data and any method data using DOSARC, if purchased.

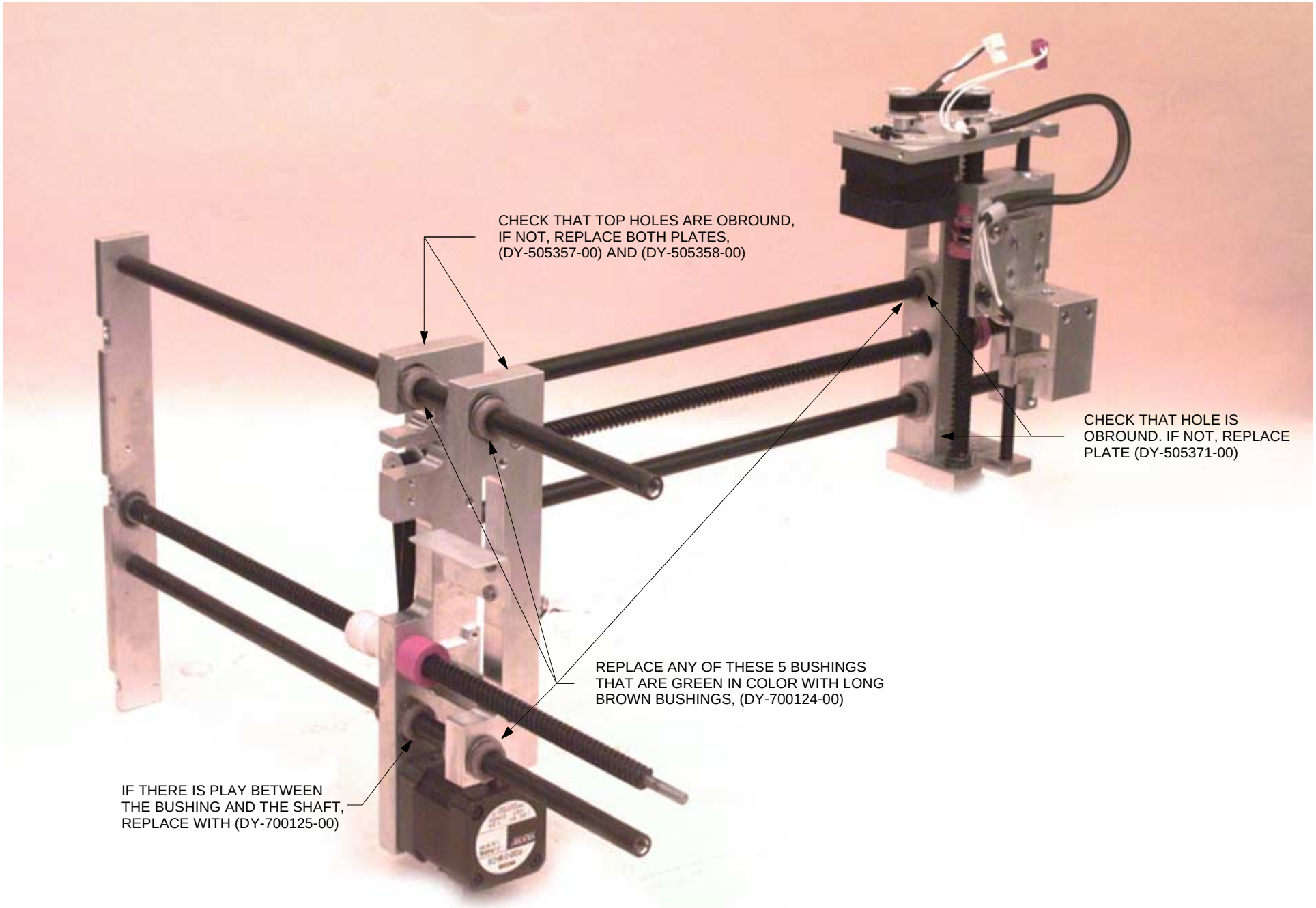
1.1.45 If you have a 1/2” pitch (black) elevator lead screw, and v3.5 or higher embedded software, you will need to set elevator pitch to 1/2” since 1/4” pitch is the default value. To check software version, press “-” from the main “Archon Autosampler”, “OI Autosampler”, “Archon Maintenance Mode” or “OI Autosampler Maintenance Mode” screens. Change pitch by entering Maintenance Mode (hold “Pause/Stop” and press System), press System, select Options, scroll up once to “Elevator Pitch”, and select 1/2” by using either the “4” (left) or “6” (right) key. Press Enter, then System, then System again to return to the main screen of the maintenance mode.

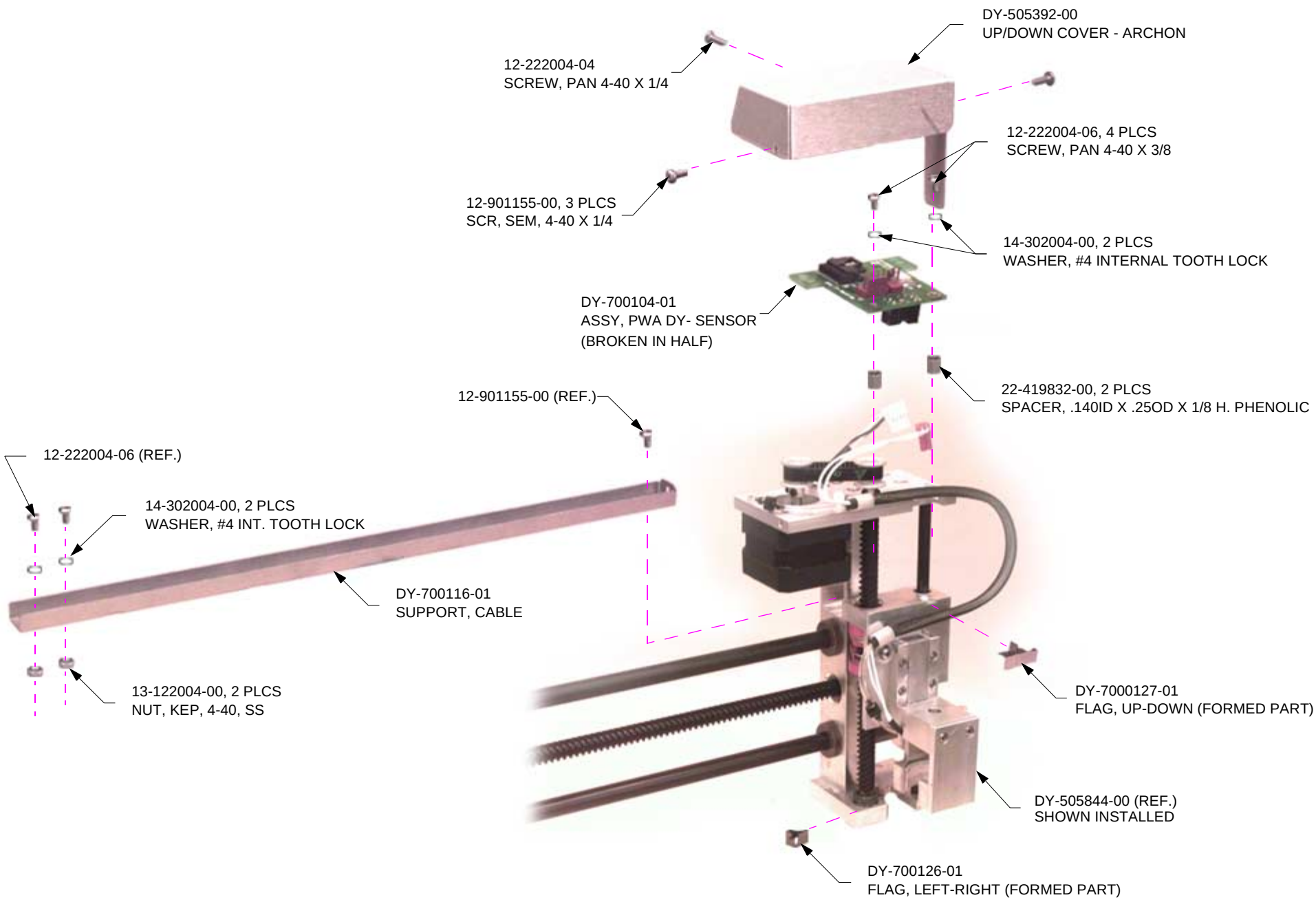
ASSY, XYZ FLEX CABLE REWORK

ARCHON REWORK STATION L60, ASSEMBLY PROCEDURES




REMOVE
CIRCUIT BOARD
REMOVE GRIPPER
ASSEMBLY WITH CABLE
REMOVE
REMOVE
CIRCUIT BOARD
REMOVE


CHECK THAT TOP HOLES ARE OBROUND,
IF NOT, REPLACE BOTH PLATES,
(DY-505357-00) AND (DY-505358-00)
CHECK THAT HOLE IS
OBROUND. IF NOT, REPLACE
PLATE (DY-505371-00)
REPLACE ANY OF THESE 5 BUSHINGS
THAT ARE GREEN IN COLOR WITH LONG
BROWN BUSHINGS, (DY-700124-00)
IF THERE IS PLAY BETWEEN
THE BUSHING AND THE SHAFT,
REPLACE WITH (DY-700125-00)


DY-505392-00
UP/DOWN COVER - ARCHON
12-222004-04
SCREW, PAN 4-40 X 1/4
12-222004-06, 4 PLCS
SCREW, PAN 4-40 X 3/8
12-901155-00, 3 PLCS
SCR, SEM, 4-40 X 1/4
14-302004-00, 2 PLCS
WASHER, #4 INTERNAL TOOTH LOCK
DY-700104-01
ASSY, PWA DY- SENSOR
(BROKEN IN HALF)
22-419832-00, 2 PLCS
SPACER, .140ID X .25OD X 1/8 H. PHENOLIC
12-901155-00 (REF.)
12-222004-06 (REF.)
14-302004-00, 2 PLCS
WASHER, #4 INT. TOOTH LOCK
DY-700116-01
SUPPORT, CABLE
13-122004-00, 2 PLCS
NUT, KEP, 4-40, SS
DY-7000127-01
FLAG, UP-DOWN (FORMED PART)
DY-505844-00 (REF.)
SHOWN INSTALLED
DY-700126-01
FLAG, LEFT-RIGHT (FORMED PART)

1. XYZ FLEX CABLE REWORK INSTRUCTIONS

Note: Locate "Hazard-free Material Certification" prior to commencing repairs.

1.1 REMOVAL OF OLD HARDWARE

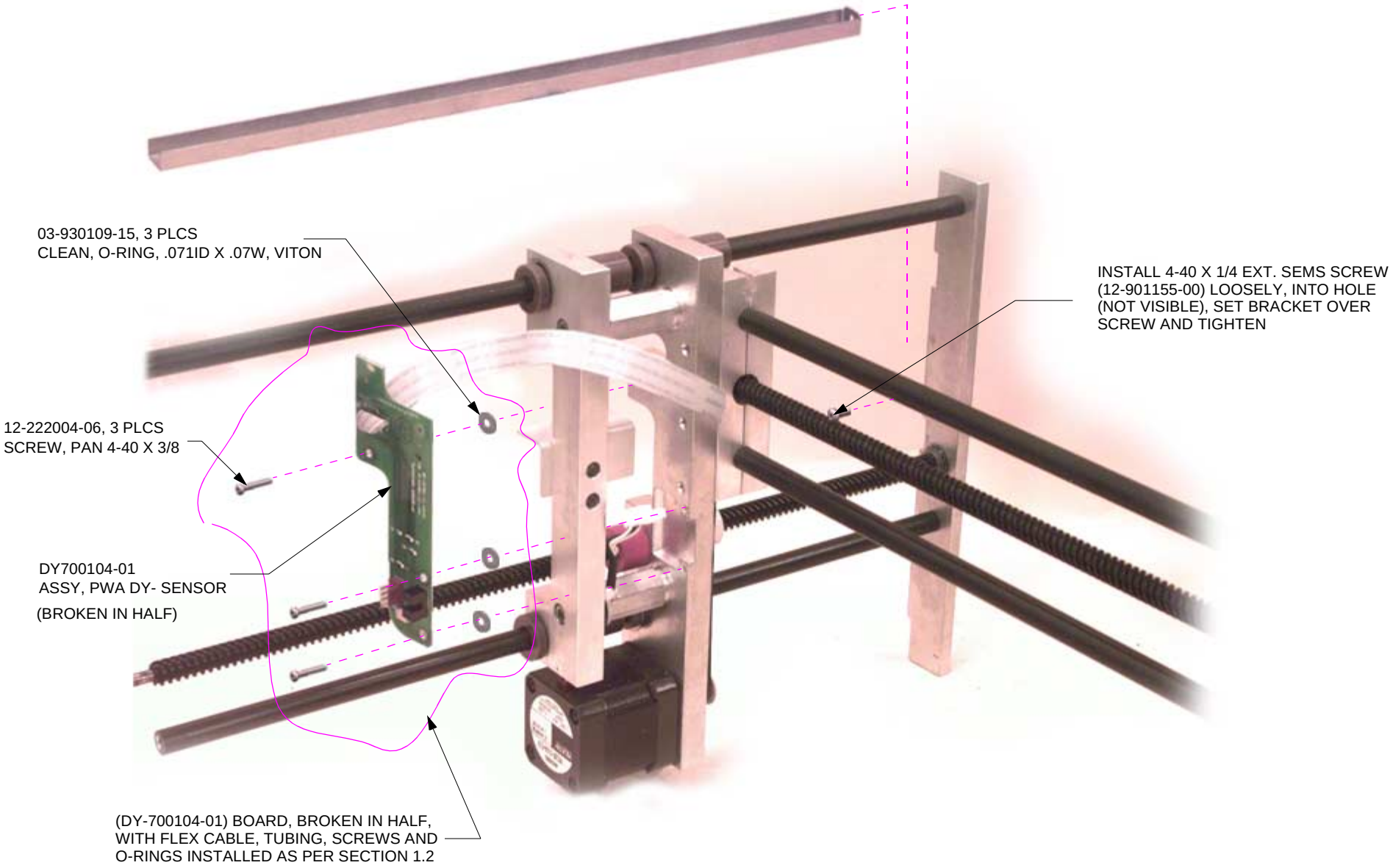
1.1.1 Remove hardware from old XYZ Mechanism such as Energy Chain/Wiring, Cable Support and both vertical/horizontal PWA DY-Sensor circuit boards per page 2.

1.1.2 Replace gripper mechanism, (DY-505844-00). Also check that top holes are obround on Traveler Support (F/R) Plate (DY-505358-00) and (DY-505357-00). If not , replace both Plates. Replace five Bushings that are green in color with long brown Bushings (DY-700124-00). Check the lower left Bushing on F/R Traveler Plate Assembly, if there is play between the bushing and the shaft, replace with (DY-700125-00) see page 3 for reference.

1.1.3 Re-install the new PWA DY-Sensor Assembly (DY-700104-01), using two Spacers (22-419832-00), two #4 Int. Lock Washers (14-302004-00) and two 4-40 x 3/8 Pan Screws (12-222004-06) as shown on page 4. Install new Cable Support (DY-700116-01) where shown, using two 4-40 Keps Nuts (13-122004-00), two #4 Int. Lock Washers (14-302004-00) and two 4-40 x 3/8 Pan Screw (12-222004-06) as shown. Install one 4-40 x 1/4 Sems Screw (12-901155-00) on opposite end of the Cable Support. Apply small amount of Loctite #380 (88-299272-01) on the inside surface of the Left/Right Flag (DY-70126-01) and Up/Down Flag (DY-700127-01) and place the Flags on the corner areas of the Up/Down Mechanism area where shown. Make sure the Flags are fully set on the surface of Up/Down Bottom Support Plate and Up/Down Traveler Block.

1.1.4 Install new Cable Support (DY-700116-01) where shown and follow the instructions on **PWA CIRCUIT BOARD INSTALLATION INSTRUCTIONS** on page 7.

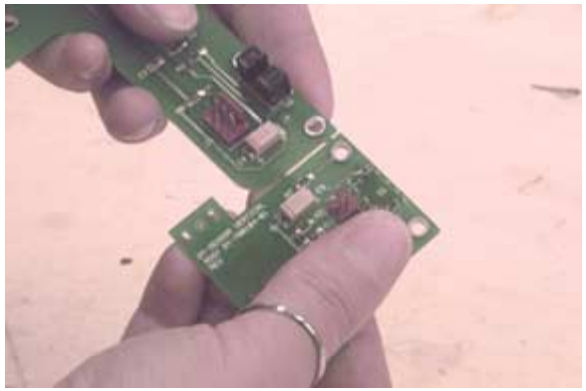
CONTINUE NEXT PAGE...


03-930109-15, 3 PLCS
CLEAN, O-RING, .071ID X .07W, VITON
INSTALL 4-40 X 1/4 EXT. SEMS SCREW (12-901155-00) LOOSELY, INTO HOLE (NOT VISIBLE), SET BRACKET OVER SCREW AND TIGHTEN
12-222004-06, 3 PLCS
SCREW, PAN 4-40 X 3/8
DY700104-01
ASSY, PWA DY- SENSOR
(BROKEN IN HALF)
(DY-700104-01) BOARD, BROKEN IN HALF, WITH FLEX CABLE, TUBING, SCREWS AND O-RINGS INSTALLED AS PER SECTION 1.2

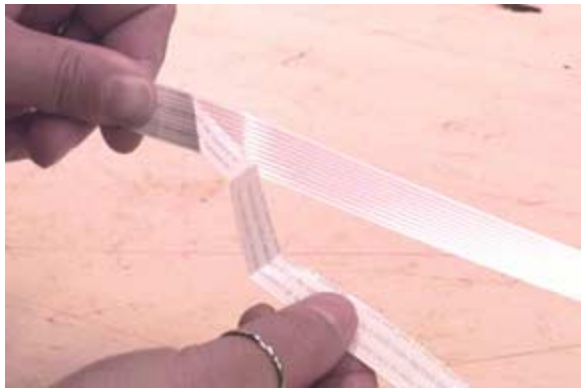
1.2 PWA CIRCUIT BOARD INSTALLATION

1.2.1 Obtain one Cable Support (DY-700116-01) and place slotted end of the Cable Support on the screw on Front/Rear Support Plate. Secure the Cable Support using two 4-40 x 1/4 Sems Screws (12-901155-00) where shown.

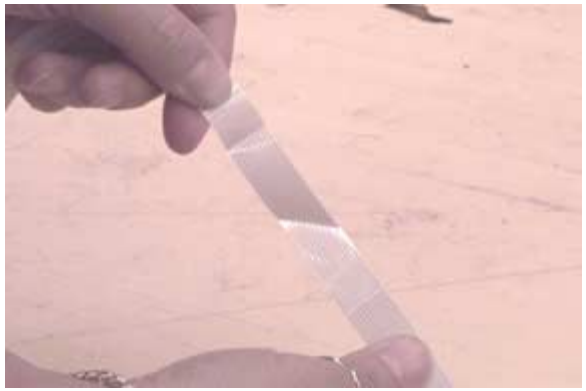
1.2.2 Assemble two 4-40 Keps Nuts (13-122004-00) and two 4-40 x 3/8 PH Screws (12-222004-06) onto the Cable Support. Put the nuts on only until you see the bottom of screw flush with the bottom of the nuts. Insert the Cable Support through the XYZ Up/Down Mechanism Assembly and Slide Keps Nuts into slotted on Front/Back Support Block. Secure the other end of Cable Support to the Left/Right Support Plate on the Up/Down Mechanism Assembly, using one 4-40 x 1/4 Sems Screws (12-901155-00) as shown.



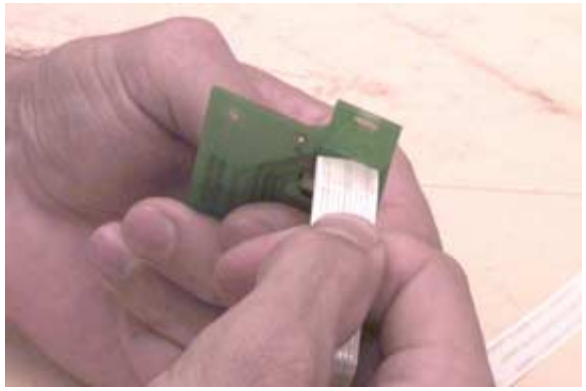
1.2.1 Break the Sensor Board, DY-700104-01, in half.



1.2.2a Stretch out the ribbon cable, DY-700109-00, in the region where it's folded, so that it is flat.

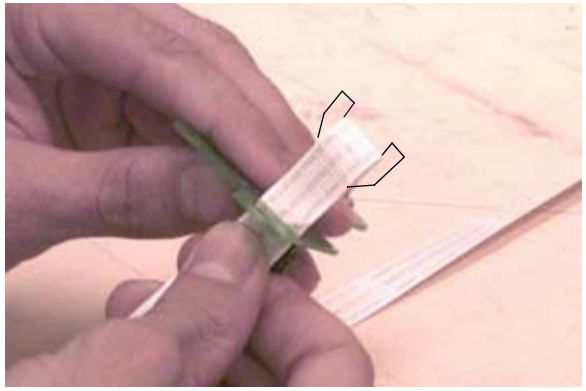


1.2.2b Fold it again on the last fold.

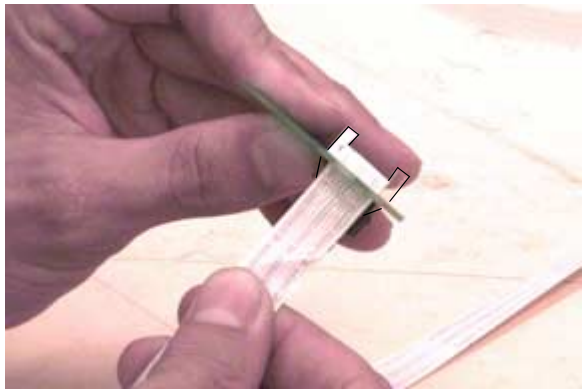


1.2.3 Press the fold through the tall half of the sensor board, from the back side, (where J5 is printed), so that it protrudes about 1 1/4".

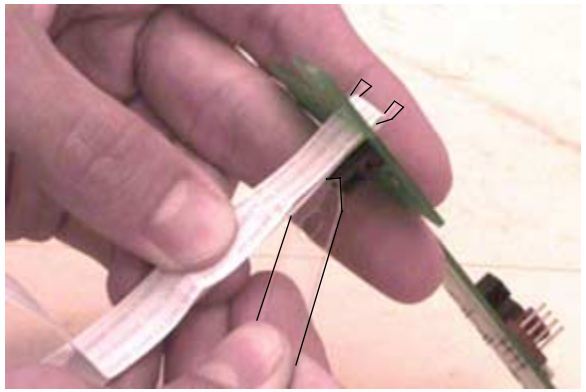
1.2.4 Break the Cable Anchor, DY-700132-01, in half.



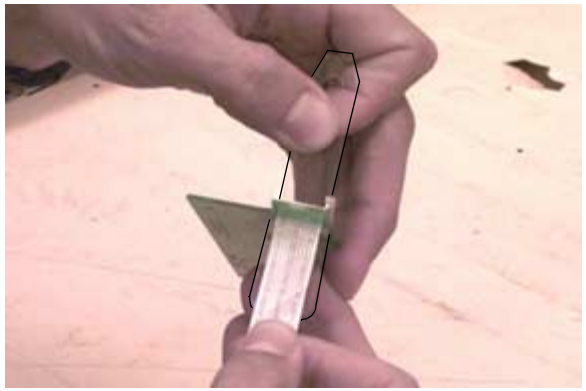
1.2.5 Put the stop end of the cable anchor between the top and bottom parts of the cable, and snap the cable in place between the ears of the stop.



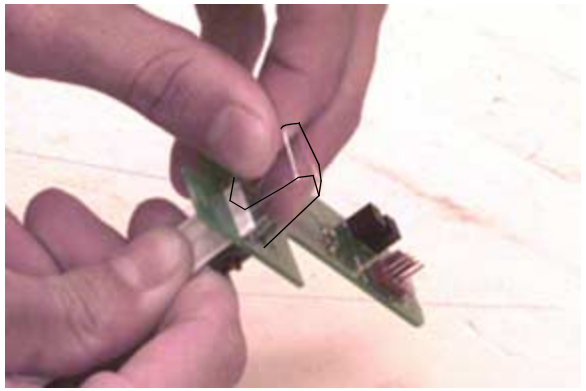
1.2.6 Pull the flex cable back so that the stop comes in contact with the board.



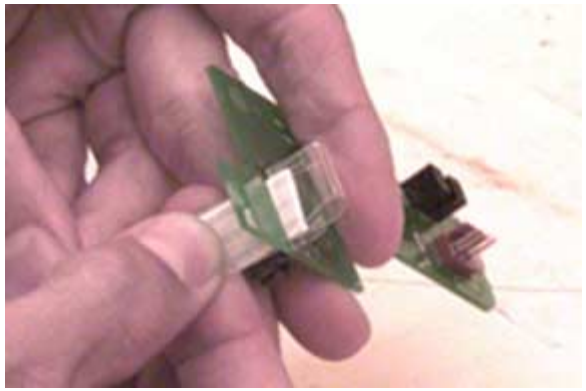
1.2.7 Insert the narrow end of the anchor part of the Cable Anchor broken in half in step 1.1.5 through the board as shown, underneath both cables.



1.2.8 Pull the anchor through the slot until it stops.

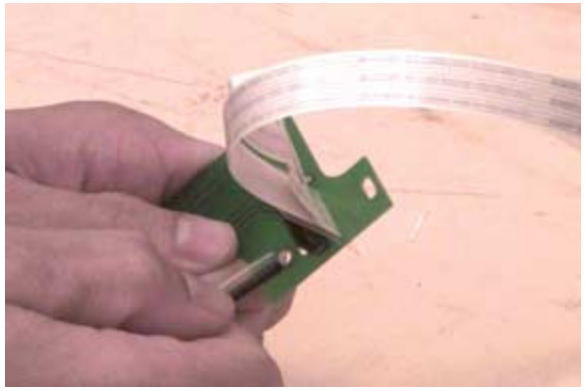


1.2.9 Insert the end of the anchor into the top of the slot in the board as shown.

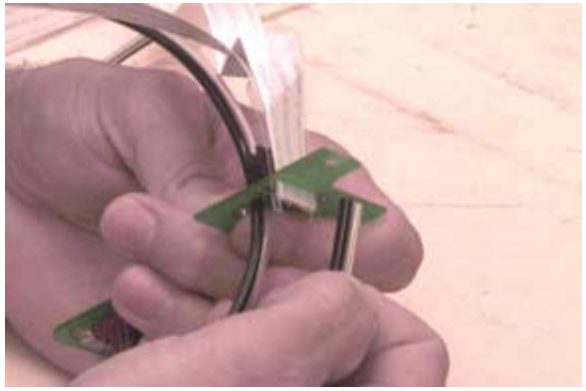


1.2.10a Pull the end of the anchor until it slides into the two tabs on the stop.

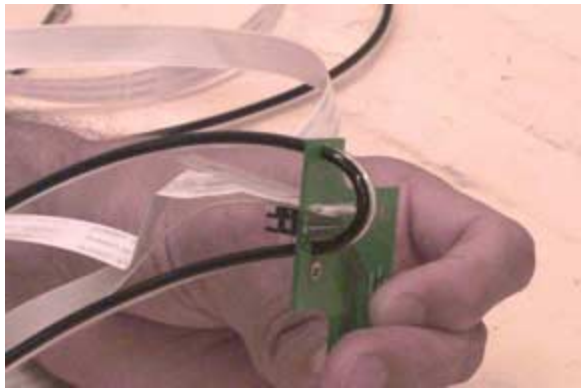
1.2.10b



1.2.11 Cut a 72” length of black and clear twin tubing, 28-158634-00, and push one end of it, with the clear side on the left, through the obround slot on the cable side of the board as shown.

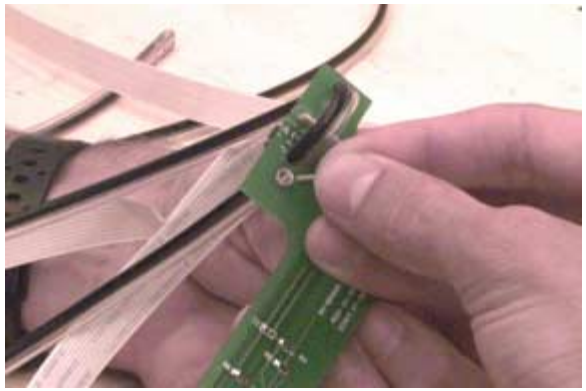


1.2.12 Pull 28½” of tubing through the slot.

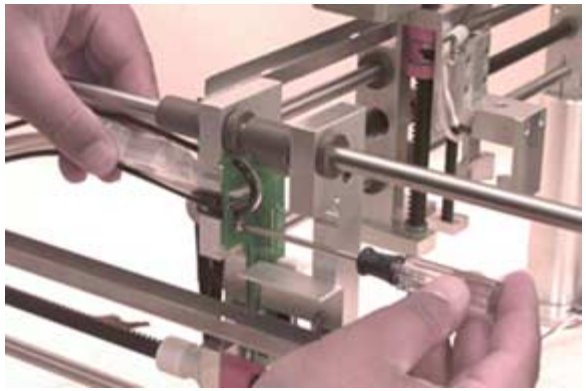


1.2.13 Now push the end of the tubing, being careful to insure that it's not twisted, through the top slot on the board. Pull 27½" through.

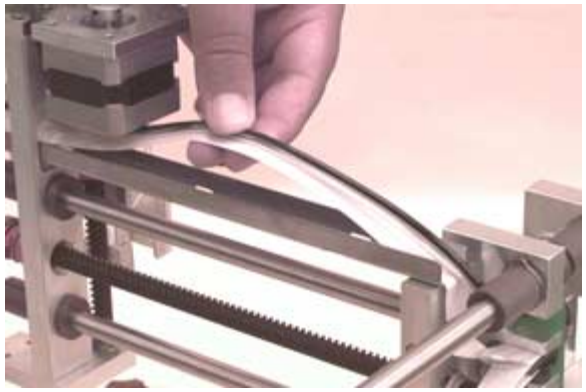
1.2.14 Press the connector on the cable not threaded through the board into J5. Tug on the cable to make sure it is latched correctly.



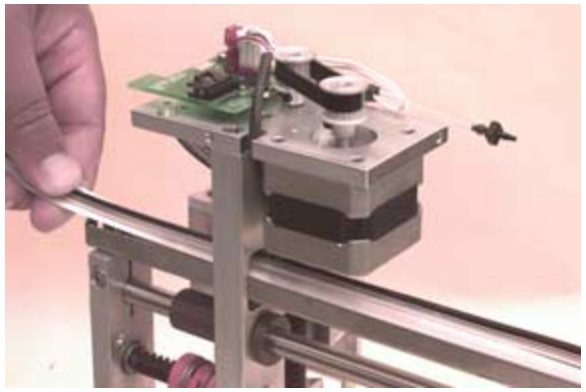
1.2.15 Insert (3) 4-40 x 3/8" Phillips Pan Head screws, (12-222004-06) into the holes on the board as shown, and press a viton O-ring, (03-930109-15), onto each and against the board surface, so that the screw is held in place against the board.



1.2.16 Mount the board on the XYZ Traveler Plate Mechanism Assembly as shown.

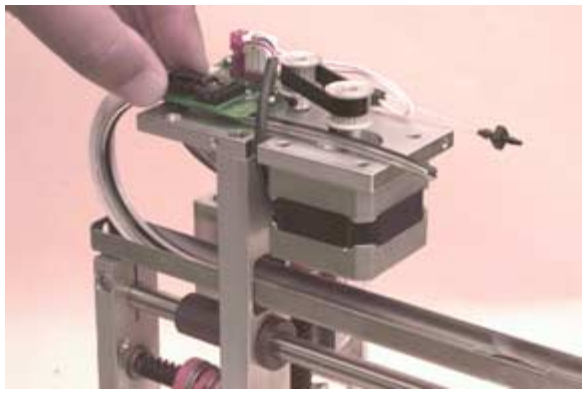


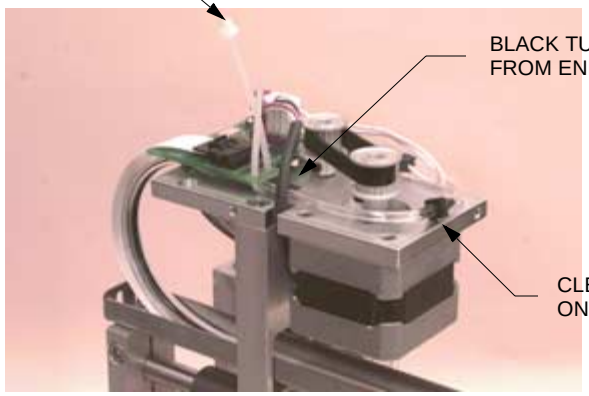
1.2.17 Feed the Tubing and Flex Cable through the Up/Down Mechanism Assembly. Dress the Flex Cable and Tubing as illustrated, with the clear tubing toward the front.



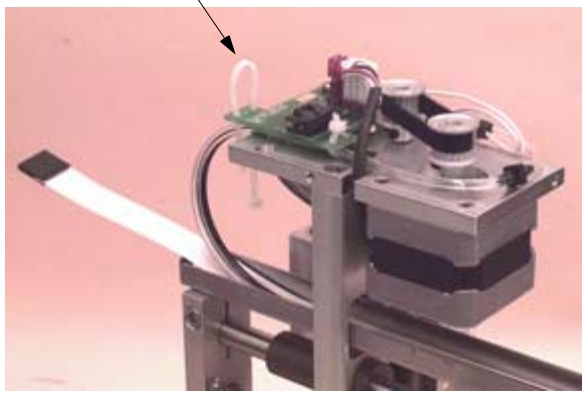
1.2.18 Move the Up/Down Mechanism Assembly all the way to the back until it stops.

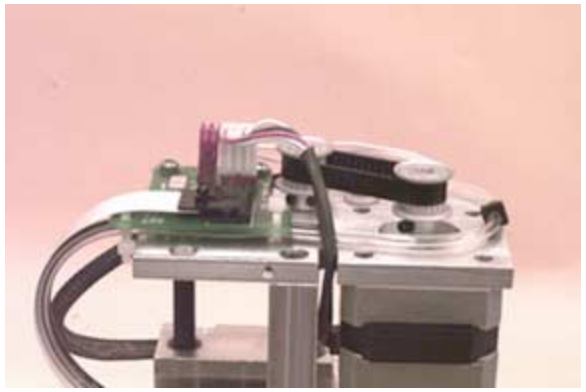
1.2.9 Install three Cable Retainers (DY-700117-01) onto the tubing and attach to slotted holes on the Cable Support.





1.2.20 Insert the Tubing below the pc board and attach cable connector to *J-1* on pc board. Make sure the tubing rests against the Flex Cable. Loosen two screws on the pc board so you can lift it up slightly. Install one Tie wrap and re-secure pc board. Separate tubing until it lines up with the slot and cut a way black tubing at 45 degree angle. Attach clear tubing to the to barb fitting.





1.2.21 Disconnect connector from *J-1* and install another tie wrap from bottom of the pc board. Reattach connector to *J-1*.

1.2.22 Repeat Step 1.1.18 and 1.1.19 by moving Traveler Plate Assembly to the left until it stops. Be careful not to kink the cable where shown. It should form a half circle just touching the Front Plate with no flat spots. Install three Cable Retainers.

1.2.23 Install the Up/Down Cover (DY-505392-00), using one 4-40 x 1/4 Pan Screw (12-222004-04) and two 4-40 x 1/4 Sems Screws (12-901155-00) where shown.

1. ARCHON ELEVATOR BOUNCE ELIMINATION REWORK INSTRUCTION

1.1 OPERATION IN SEQUENCE SHOWN:

1.1.1 Open top cover, if it is closed.

1.1.2 Open front lower door.

1.1.3 Remove the vial tray from the unit.

1.1.4 Remove the rear panel from the unit. Replace the screws in the chassis to prevent their becoming lost.

1.1.5 Remove the vial holder part of the elevator, using a 3/32 Allen wrench. Use of a T-handled Allen wrench might be somewhat easier, and can be done by manually moving the elevator upwards to the middle of its stroke by rotating the lead screw pulley behind the syringe plate.

1.1.6 Pull bottom of elevator away from syringe plate.

1.1.7 Grab knockoff plate between the two probes, being careful of the exposed probe tips. Pull outward gently to disengage the knockoff plate from the syringes and brass stops.

Fig. 1.1.5

Fig. 1.1.6

Fig. 1.1.7

1.1.8 Cut the 1 foot piece of 1/8 OD polyurethane tubing in half. Put the resulting 2 pieces onto the ends of both probes and slide them upwards until the ID contacts the wider, upper portion of the probes. Press each piece of tubing slightly further so it is firmly holding the probes .

1.1.9 Remove screw holding the wire mount with a 3/32 Allen wrench. Hold the elevator from the front side of the syringe plate as you remove the screw to prevent it from falling.

1.1.10 Set elevator down inside unit, near equilibrium block. May need to cut tie wraps holding wires in place. You must to have access to both screws in step #9.

Fig. 1.1.8

Fig. 1.1.9

Fig. 1.1.10

1.1.11 Remove the T-block. Use a 7/64 Allen wrench on both screws.

1.1.12 Disconnect the ground wire from the block using a phillips screwdriver. Replace the screw in the block.

1.1.13 Remove bottom Phillips FH screws, (2)

Fig. 1.1.11

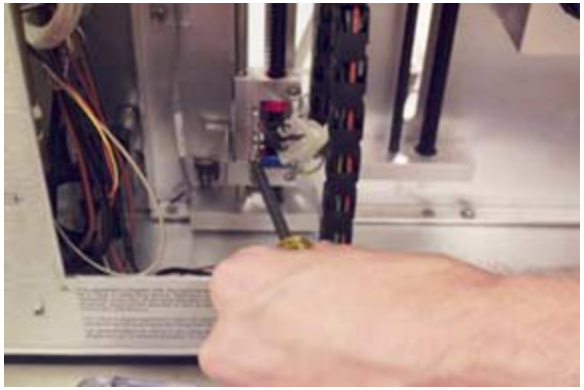


Fig. 1.1.12

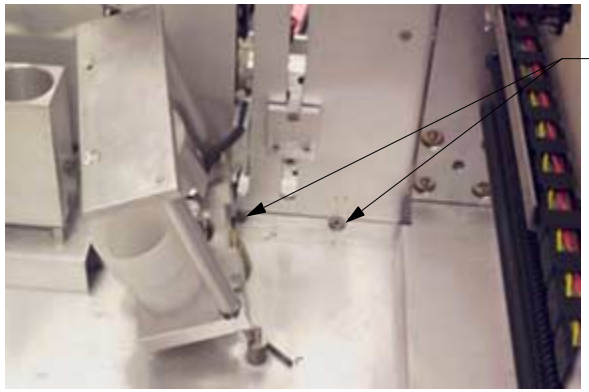


Fig. 1.1.13

1.1.14 Hold stepper Motor, remove top 2 Phillips pan head screws.

1.1.15 Move the bottom of the elevator assembly outside the unit.

Fig. 1.1.14a

Holding the Stepper Motor

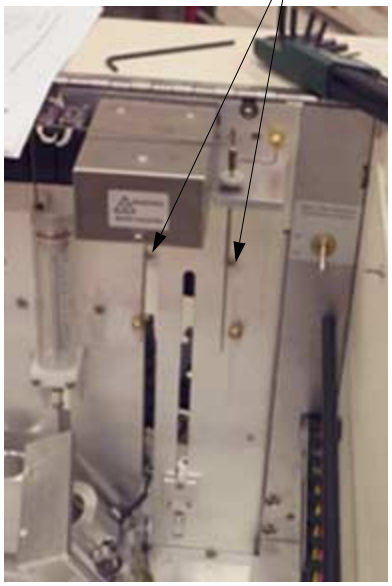


Fig. 1.1.14b

The top 2 screws

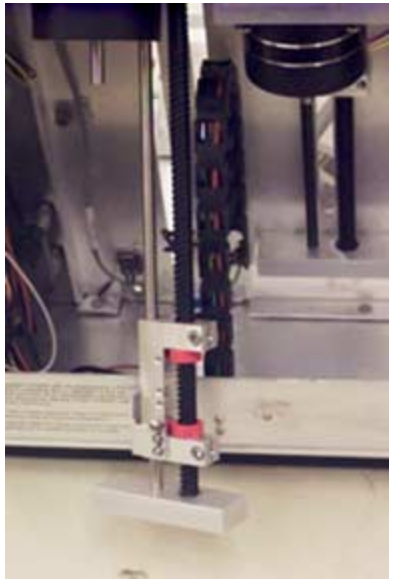


Fig. 1.1.15

1.1.16 Remove the 4-40 Allen-head cap screw from the leadscrew with a 3/32 Allen wrench. You may need to hold the top pulley wheel against the torque applied to the bottom of the lead screw by the Allen wrench.

1.1.17 Remove the lower plate from the 2 shafts slowly – bearing parts may fall out.

1.1.18 Remove the bearing parts from the lower end of the shaft, if some of them remain on the shaft, set them back in place in the lower plate, and set the plate aside, leaving it in a vertical orientation so that the bearing axis is horizontal, to prevent bearing parts from falling out.

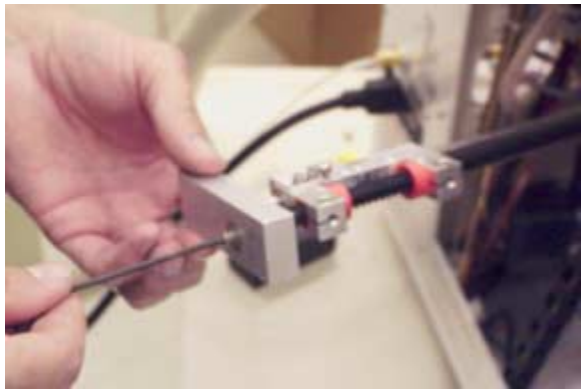


Fig. 1.1.16a

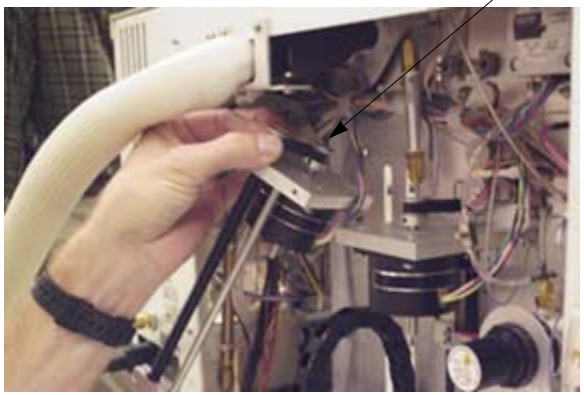


Fig. 1.1.6b

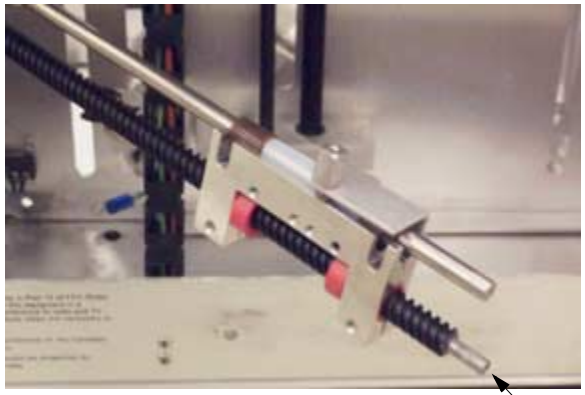


Fig. 1.1.18a

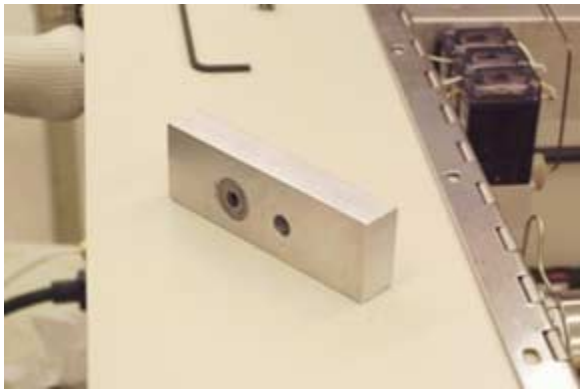


Fig. 1.1.8b

1.1.19 Loosen the 2 set screws on the pulley on the motor ¼ turn using a 5/64 Allen wrench.

1.1.20 Loosen the 2 set screws on the pulley on the lead screw, using a 1/16 Allen wrench.

1.1.21 Pull both pulleys off their respective shafts simultaneously.

1.1.22 Pull the lead screw out of the top plate, being careful not to loose the ball bearing at its end. Set the bearing aside.

Fig. 1.1.19

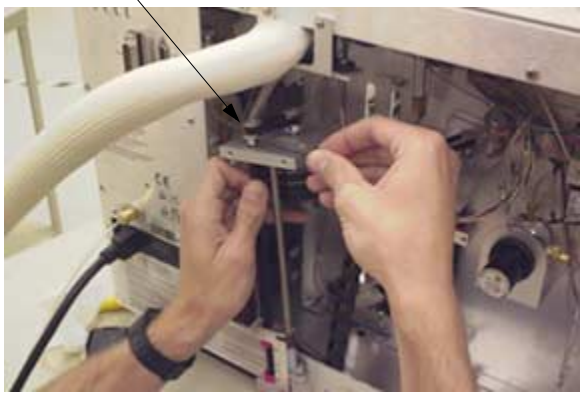


Fig. 1.1.20

remove lead screw from top plate, Step 22
Reinstall, step 42 (shown).

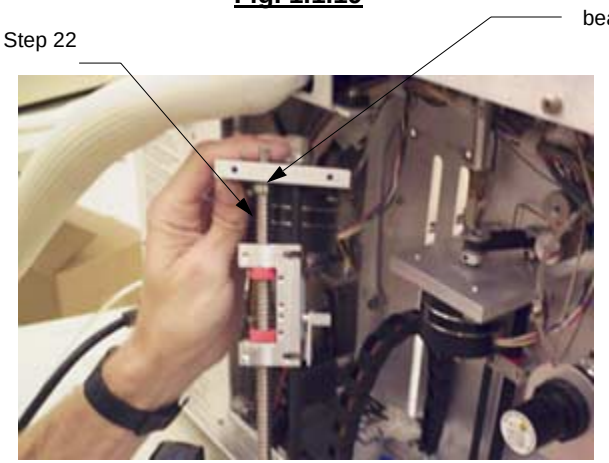


Fig. 1.1.21

Fig. 1.1.22

1.1.23 Remove the straight guide shaft, the 2 bushings and the bushing spacer.

1.1.24 Loosen the (2) retaining cap screws using a 9/64 Allen wrench, until the shaft rotates easily in the bushings.

1.1.25 Nearly remove the lead screw by rotating in either direction. Leave threads just fully engaged in one bushing.

1.1.26 Wiggle the lead screw until the Loctite breaks, and then push the lead screw into the hollow in the block, so that the bushing slides into the center of the block. Hold the bushing and rotate the shaft to remove it from the bushing. Discard the bushing.

Fig. 1.1.23

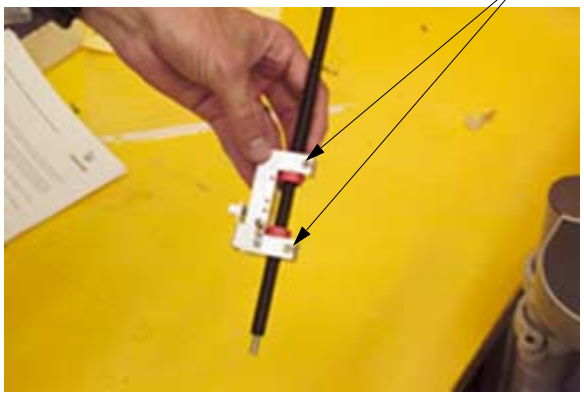


Fig. 1.1.24

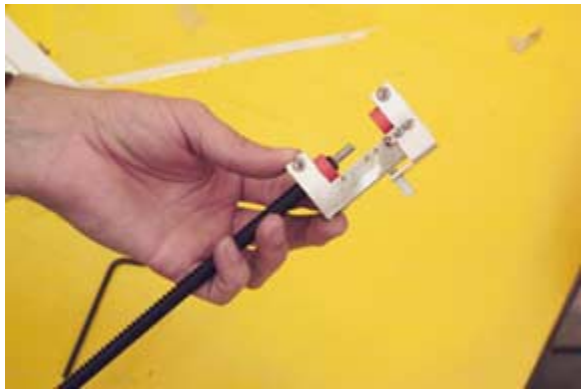


Fig. 1.1.25

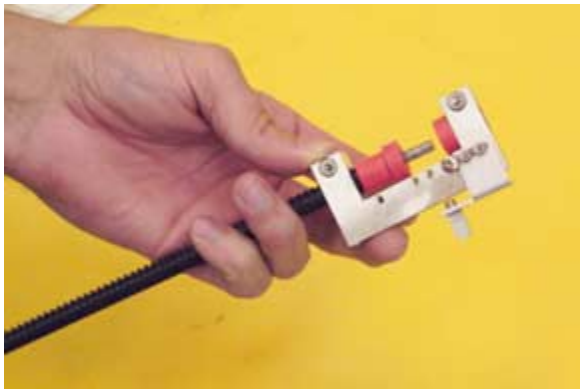


Fig. 1.1.26

1.1.27 Repeat the process for the other bushing by threading the lead screw into the bushing until it has full thread engagement and then remove the bushing as in step 26.

1.1.28 Discard both the second bushing and the lead screw.

1.1.29 Place new bushings into the block, with the big ends toward the center. Leave 1/16" to 1/8" (1 to 2 mm) of the small bushing diameter exposed.

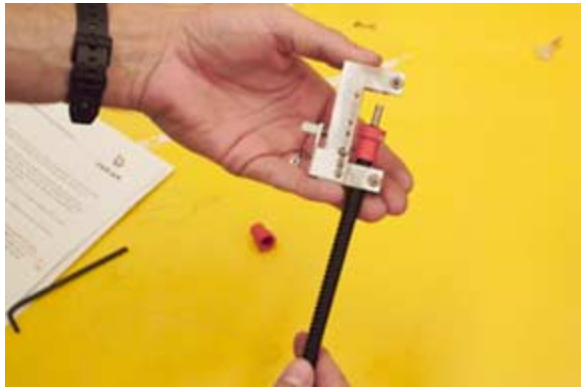


Fig. 1.1.27

Fig. 1.1.29

1.1.30 Put a drop of Loctite 430 on the small diameter of one NEW bushing, so that the drop touches both the bushing and the body, then QUICKLY rotate and push the bushing against the body, being careful not to touch the Loctite. You may wish to wear thin latex or rubber gloves to prevent the Loctite from getting on your fingers.

1.1.31 Thread the new lead screw into the bushing so that its end with the long straight section is away from the limit switch bracket.

Fig. 1.1.30

Fig. 1.1.31

1.1.32 Thread the shaft until the threads just touch the second bushing.

1.1.33 Slide and rotate the bushing until you can thread the shaft into the bushing and rotate the shaft easily. You do NOT want the bushings to be out of phase – the shaft must rotate easily. If it doesn't, the second bushing needs to be slid axially without rotation of the shaft so that its threads are lined up with those of the other bushing as if they were a single piece of material.

1.1.34 If necessary, rotate the second bushing until there is between 1/64" and 1/32" (about 1mm) between its head and the aluminum body.

1.1.35 Place a drop of Loctite 430 on the gap created in step 34, so that it touches both the aluminum body and the bushing.

1.1.36 Flip the block over and put another drop on the opposite side.

1.1.37 Wait 5 minutes for Loctite to cure.

1.1.38 Verify that the lead screw still rotates easily in the body. If not, remove the shaft from one bushing, break the Loctite on the bushing it is still threaded into, and rotate and slide the bushing until the shaft again rotates freely while engaged in both bushings on the body. Glue in place as described in steps 35-36. Then repeat this step to verify that the lead screw rotates smoothly after gluing.

1.1.39 Put the 2 bushings and bushing spacer back onto the guide rod, with the spacer in the middle, and put then back through the recess in the aluminum body. See step 23 for photo.

1.1.40 Re-install the ball bearing removed in step 22 onto the end of the lead screw.

Note: Do ***not*** tighen the 2 retaining cap screws shown in Fig. 1.1.24. Compression of the bushings is ***not*** required.

Continue next page ...

1.1.41 Insert the ends of both shafts into the lower plate, being sure to get the bearing parts back together in the right order, one bearing piece on each side of the lower aluminum block, covered by a flat washer. See Fig. 1.1.41a and b. Replace the 4-40 Allen-head cap screw in the end of the lead screw and tighten with a 3/32 Allen wrench. See Fig. 1.1.41c.

Fig. 1.1.41a

Fig. 1.1.41b

Fig. 1.1.41c

1.142 Slide the 2 shafts into their positions in the motor plate. Make sure the limit switch bracket is low, not high on the body, and that the tab is on the left side of the 2 shafts when the tapped holes in both plates face the syringe plate. If the tab is closer to the motor plate than the middle of the moving aluminum body is, remove the shafts and put the opposite ends into the lower plate, then perform this step.

1.143 Put the black drive belt onto both pulleys, and slide both pulleys onto their respective shafts simultaneously. Line up the tops of the 2 pulleys with about 1/16" of clearance between the bottom of the pulleys and the top of the motor plate. Tighten both set screws on both pulleys. *See steps 1.1.19 and 1.1.20 for photos of the pulley set screws.*

Fig. 1.1.42

Fig. 1.1.43

1.1.44 Set the elevator shaft mechanism in place against the syringe plate *(see step 14, Fig. 14a)* and loosely install the top flat head screws on the syringe plate *(See step 14, Fig. 14b).*

1.1.45 Insert the bottom 2 flat head screws and tighten fully. *See step 13 for photo.*

1.1.46 Tighten the top 2 screws installed in step 44.

1.1.47 Re-install the T-block removed in step 11. Move the elevator down if required by rotating the motor pulley counterclockwise. As you are tightening the screws, verify that the T is centered in the slot, and isn't rubbing on either side of the slot in the syringe plate.

1.1.48 Remove the pieces of polyurethane tubing installed in step 8 from both probes.

1.1.49 Carefully pull both probes slightly away from the syringe plate and move the knockoff plate up toward them, guiding the probes into the holes in the knockoff plate. Set the knockoff plate on the 2 brass stops protruding from the syringe plate. *See step 7 for photo.*

1.1.50 Pull on the bottom plate of the vial holding part of the elevator while pressing gently toward the syringe plate until the bottom plate snaps into the recess on the T-block. *See step 6 for photo.*

1.1.51 Reinstall the 2 allen-headed cap screws holding the bottom plate of the elevator. *See step 5 for photo.*

1.1.52 Re-install the nylon wire guide to the lower elevator plate, being careful to verify that the guide is centered from left to right in the slot in the syringe plate, and isn't rubbing on either side of the slot. Tie wrap any loose wires. *See step 1.1.9 for photo.*

1.1.53 Reinstall the ground wire removed in step 12.

1.1.54 Remove the right side panel and store the screws in the chassis.

1.1.55 You will be installing new software for the unit, so calibration and method data will be lost. Turn on the unit and store the XYZ calibration data and any method data you wish to keep.

1.1.56 Remove the Archon software. Use either a small screwdriver or the screwdriver blade from a Swiss army knife if you lack an IC puller. Insert the screwdriver nearly all the way under the chip and then push the tool inward, forcing the top of the chip out. Hold the chip as you remove it. Take proper care to either ground yourself or touch the chassis before you touch the chip.

1.1.57 Install the new software that came with the upgrade kit, version 3.5.1 or greater.

1.1.58 Reinstall the side panel.

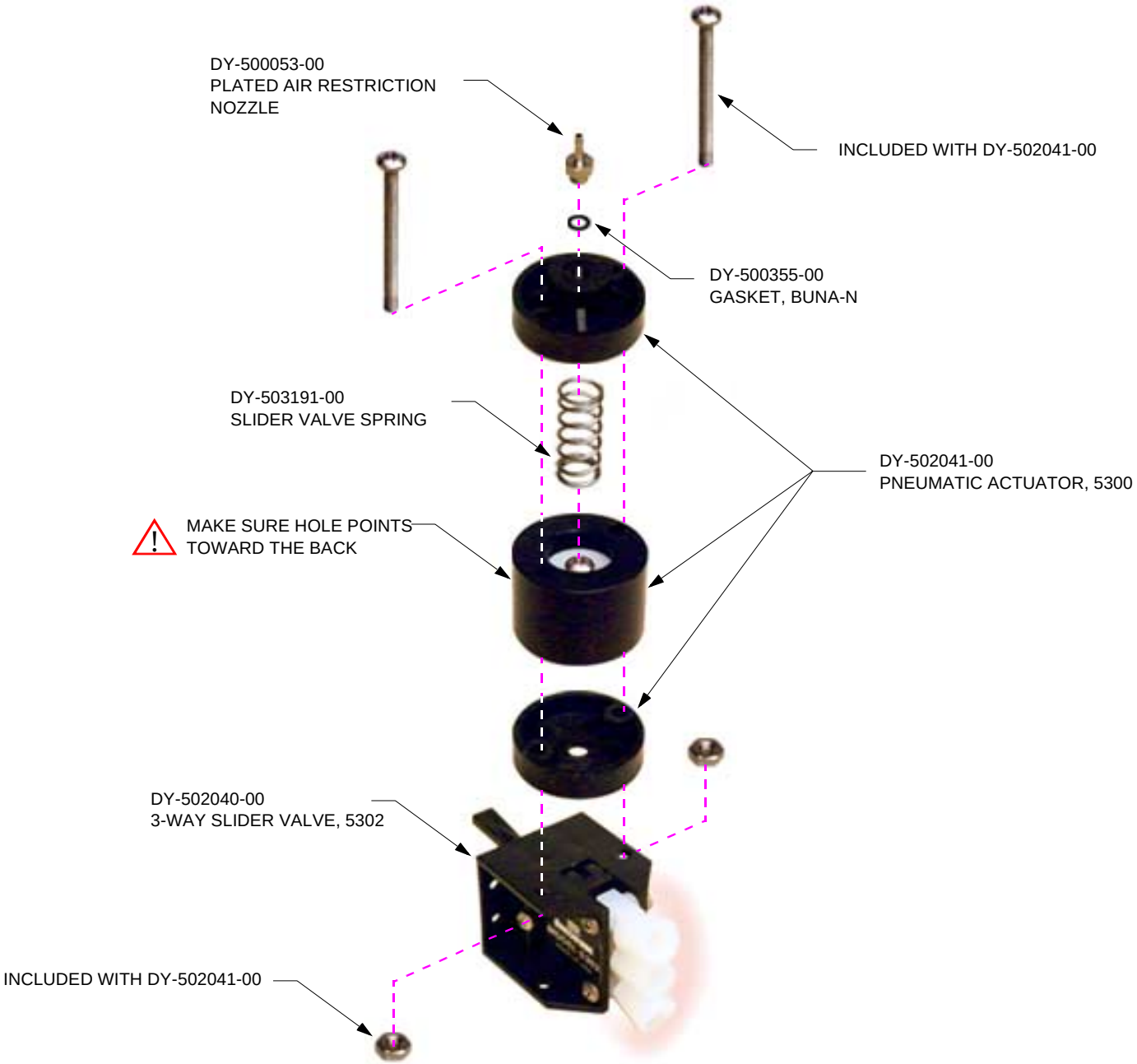
1.1.59 Turn the unit on. When startup is complete, reset to default values by holding Pause/Stop and touch "0".

1.1.60 Re-enter calibration and method data.

Note: System Status display of heater temperatures has been modified in version 3.5. Un-installed heaters without a jumper now display as "n/a", rather than "???".

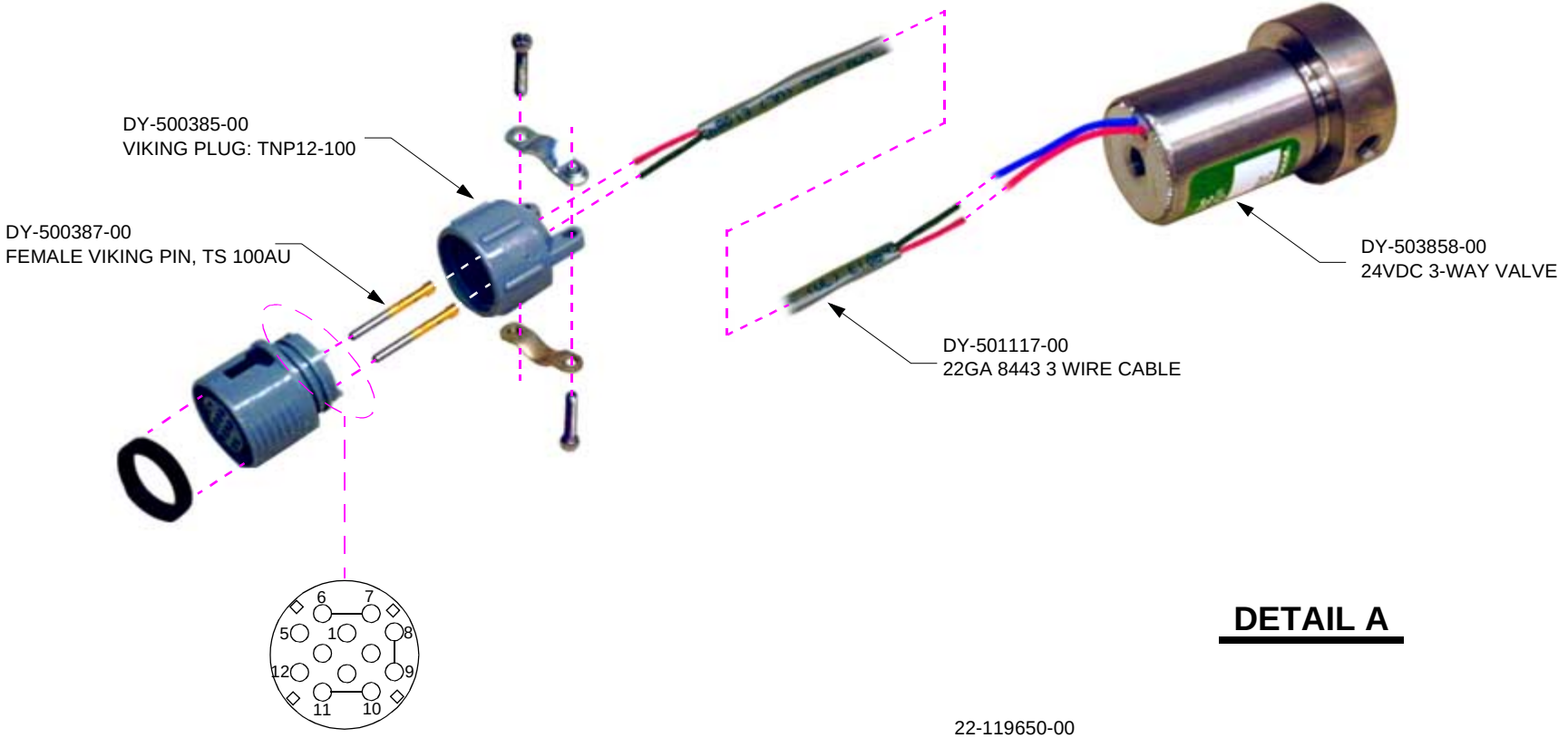
ARCHON SUBASSEMBLY

PTA30 RHEODYNE SLIDER VALVE ASSY


DY-500053-00
PLATED AIR RESTRICTION
NOZZLE
INCLUDED WITH DY-502041-00
DY-500355-00
GASKET, BUNA-N
DY-503191-00
SLIDER VALVE SPRING
DY-502041-00
PNEUMATIC ACTUATOR, 5300
MAKE SURE HOLE POINTS
TOWARD THE BACK
DY-502040-00
3-WAY SLIDER VALVE, 5302
INCLUDED WITH DY-502041-00

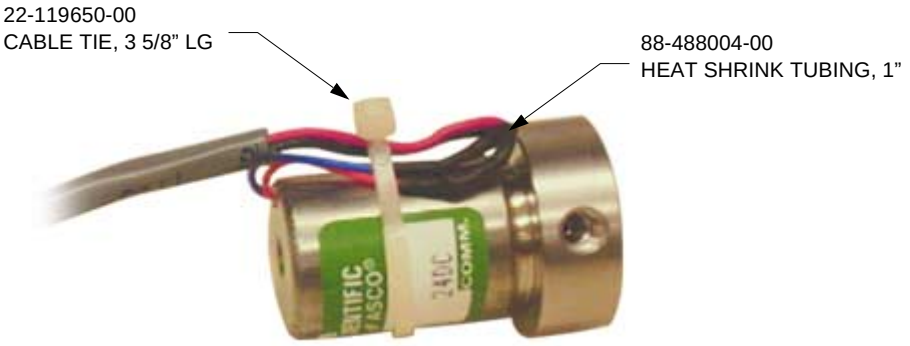
ARCHON SUBASSEMBLY

PTA30 W/S CABLE, EXT, 3-WAY



DETAIL B

DETAIL A



1. Assembly Instructions

1.1. 22GA 3 Wire Cable

1.1.1. Cut cable, DY-501117-00, to length of two feet. Strip outer insulation to expose inner wires on both ends. Cut green wire even with outer insulation, leaving red and black wires exposed.

1.2. 24VDC 3-Way Valve

1.2.1. Cut wires one inch from valve. Slide Heat Shrink Tubing, 88-488004-00, over wires and solder to wires to cable DY-501117-00. Solder Red to Red, and Black to Blue. Heat shrink the tubing and secure to body of 3-Way Valve, DY-503858-00, using cable tie 22-119650-00 as shown in Detail A, page 2.

1.3. Viking Pins

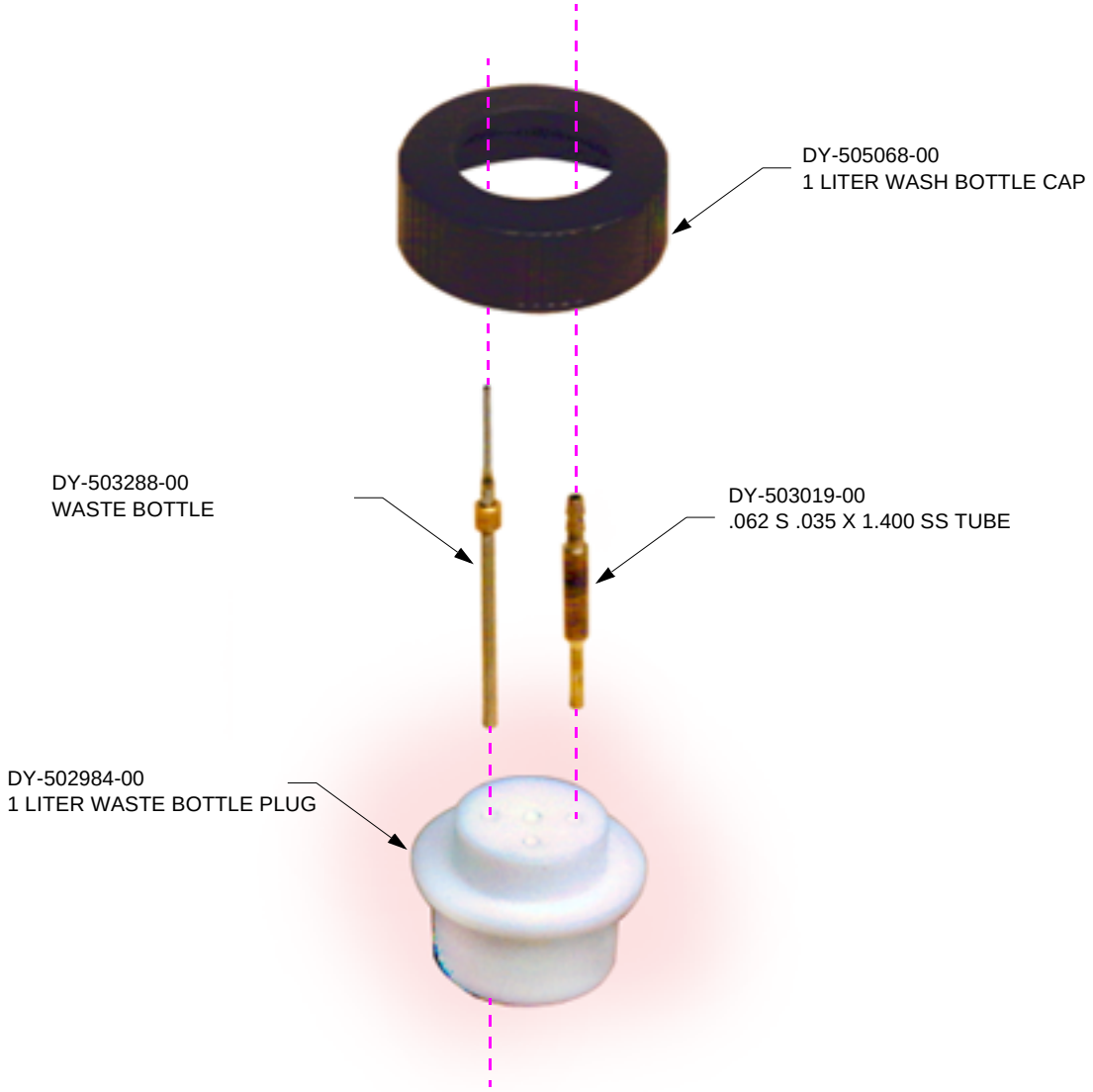
1.3.1. Crimp Viking Pins, DY-500387-00, on exposed wires using special crimping tool at Station 2.

1.4. Viking Plug

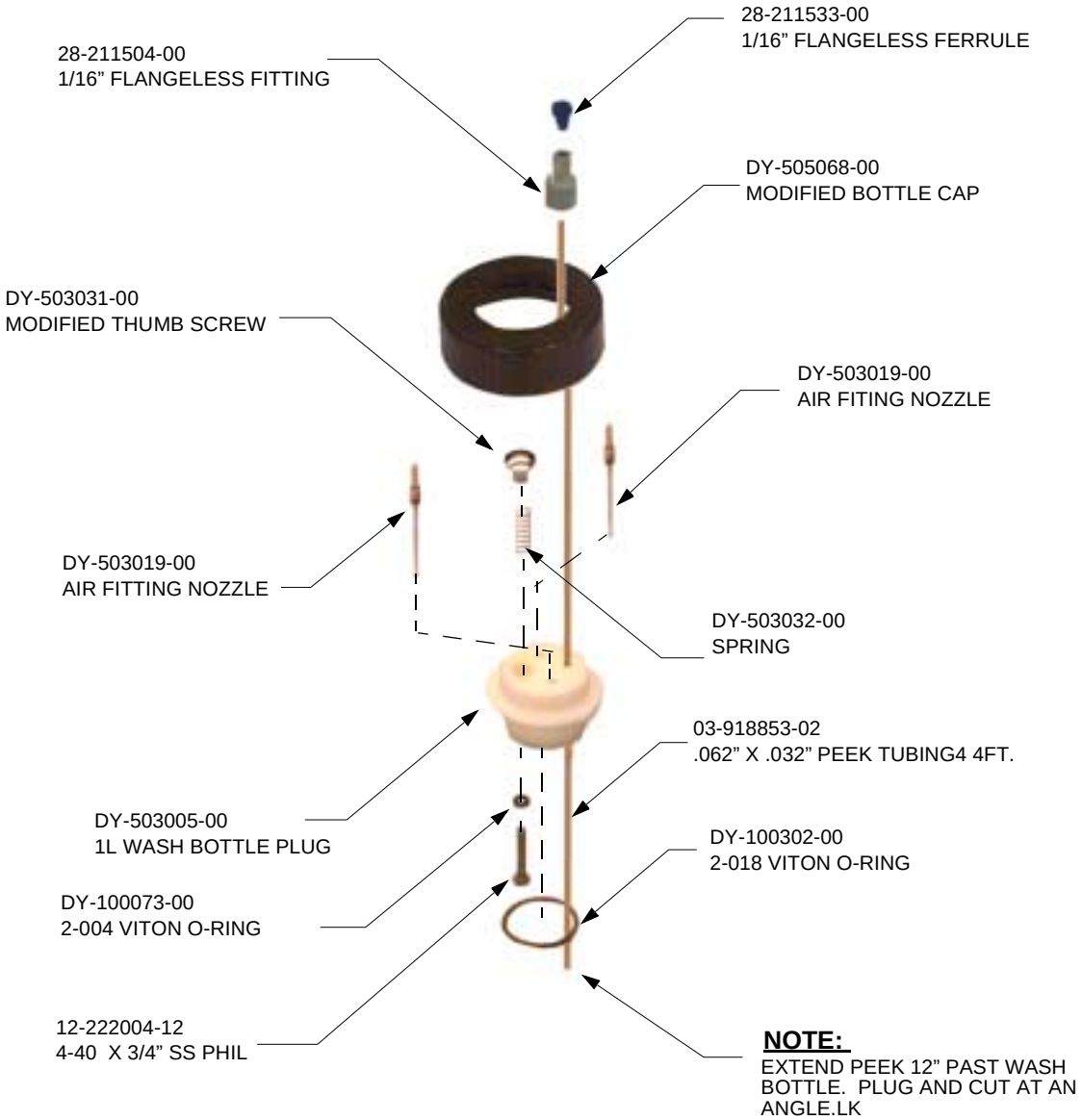
1.4.1. Slide pins through open end of Viking Plug, DY-500385-00. Insert pins into holes 1 and 2 on other end of plug, putting the Red wire into hole one and the Black wire into hole two as shown in Detail B. Screw plug together and secure wires with brackets and small screws. Push rubber gasket into end of plug with a small screwdriver.

Archon

1 Liter Waste Bottle Plug Assembly


DY-505068-00
1 LITER WASH BOTTLE CAP
DY-503288-00
WASTE BOTTLE
DY-503019-00
.062 S .035 X 1.400 SS TUBE
DY-502984-00
1 LITER WASTE BOTTLE PLUG

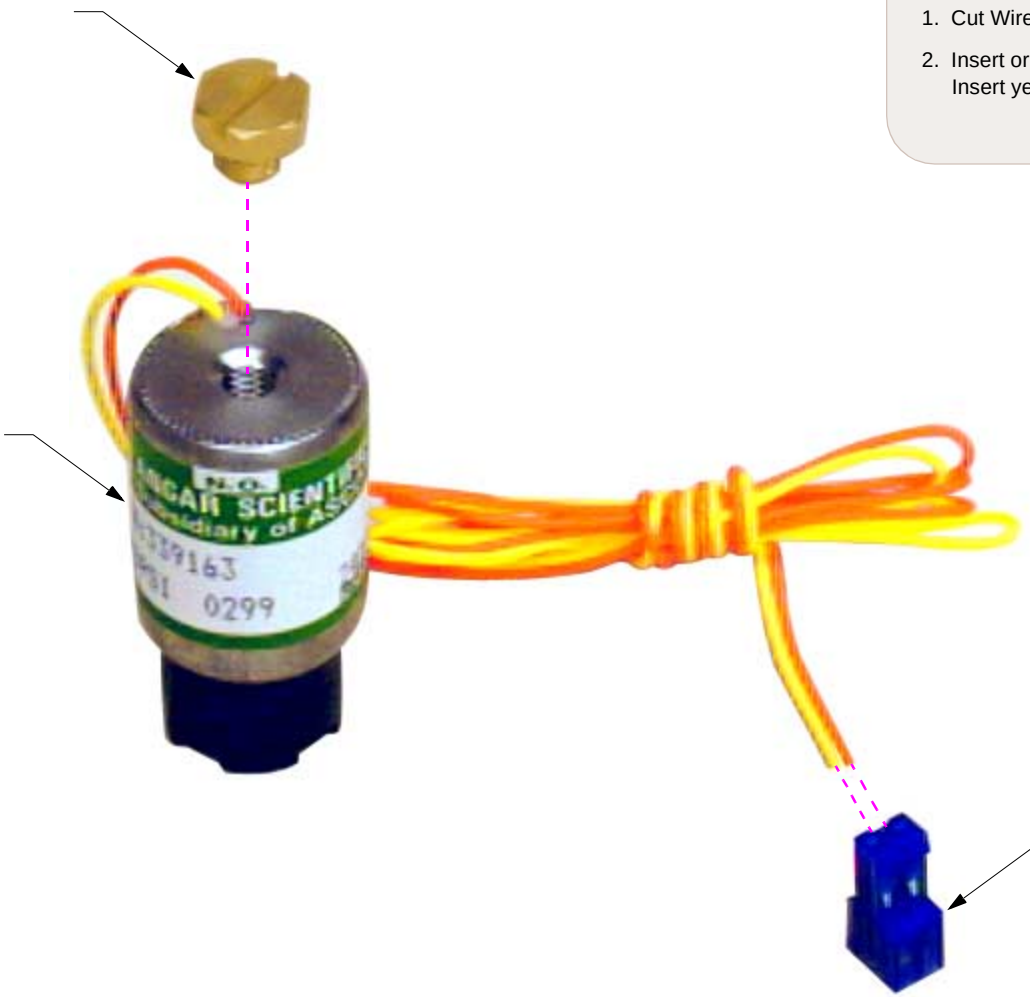
1 LITER WASHBOTTLE CAP ASSY.



2 Way Solenoid Assembly

28-849792-00
10-32 BRASS PLUG

DY-502318-00
24VDC 3 WAY VALVE



51-410649-00
AMP PC CONNECTOR, 2 CKT

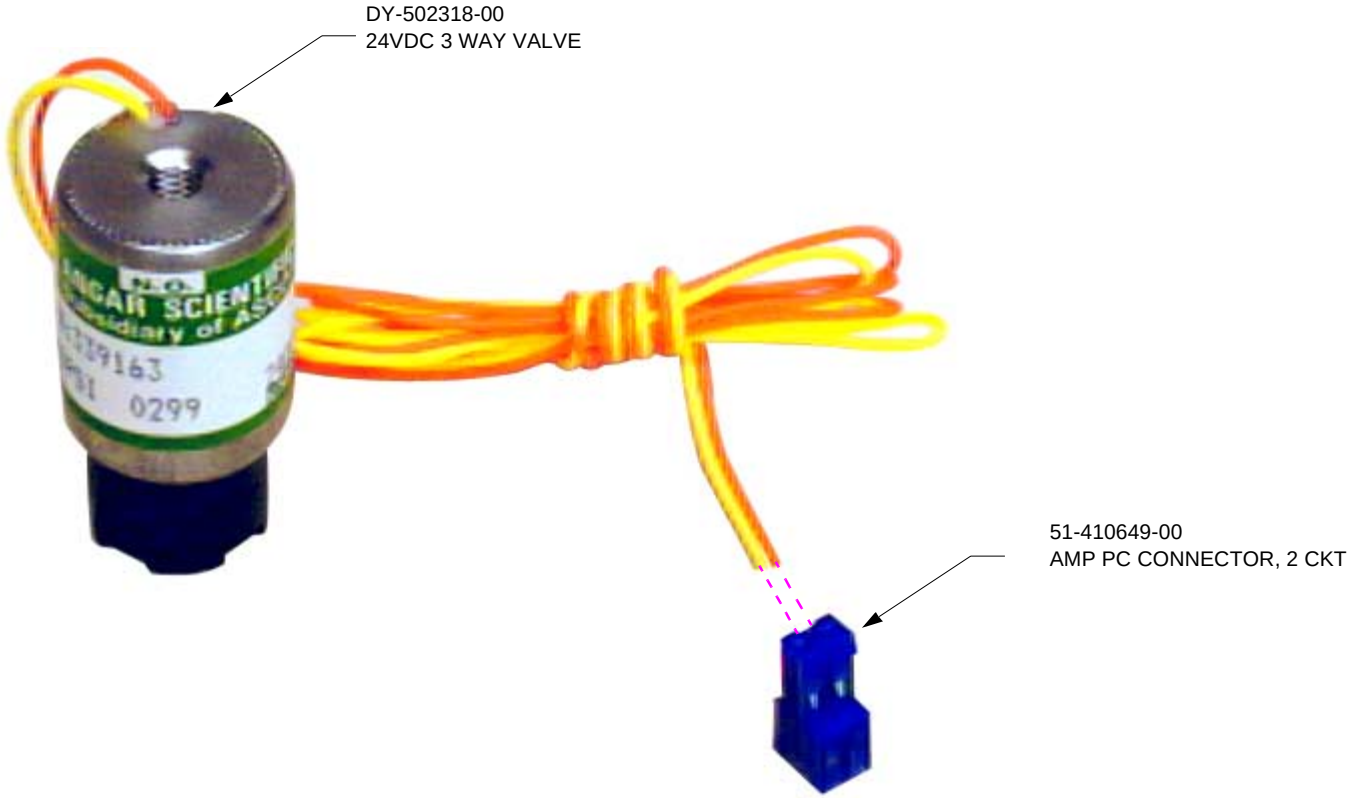
NOTES:

1. Cut Wires to 22".
2. Insert orange wire into position 1 of Amp connector.
   Insert yellow wire into position 2 of Amp connector.

24VDC 3 Way Valve Assembly

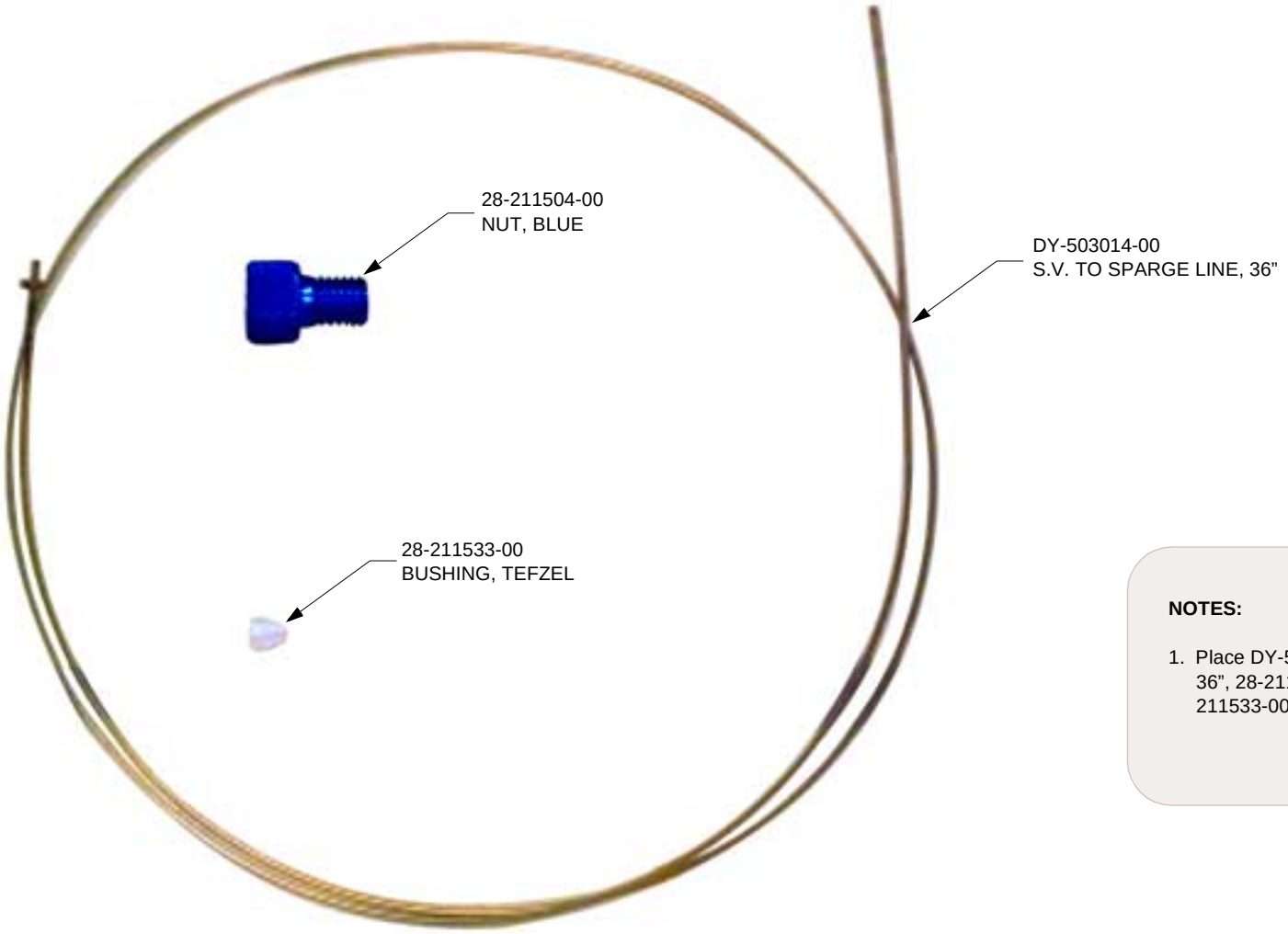
NOTES:

1. Cut Wires to 22".
2. Insert orange wire into position 1 of Amp connector.
   Insert yellow wire into position 2 of Amp connector.



ARCHON

WATER ADDITION LINE

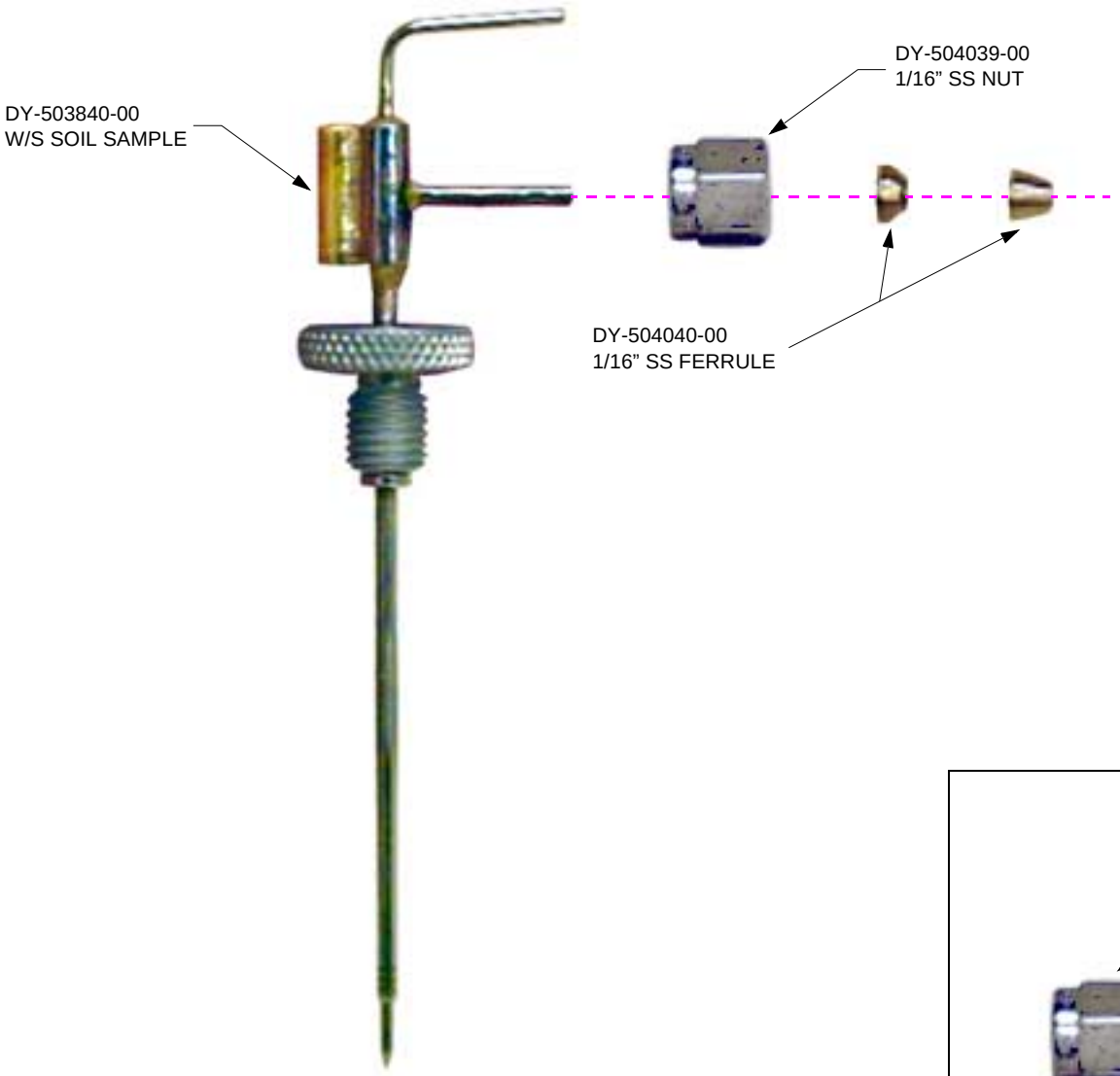


NOTES:

1. Place DY-503014-00, S.V. to Sparge Line, 36”, 28-211504-00, Blue Nut, and 28-211533-00, Tefzel Bushing in bag.

Archon

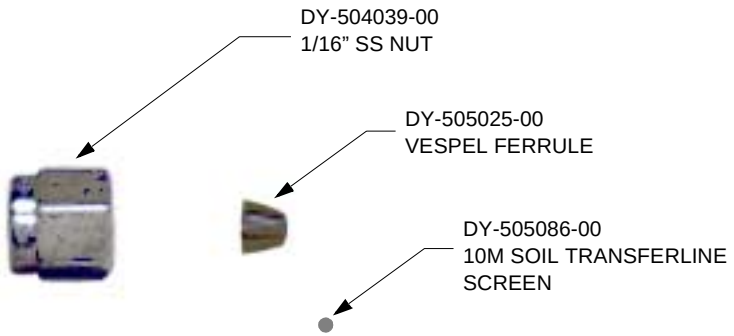
Upper Soil Probe Assembly



NOTES: See Reference Items

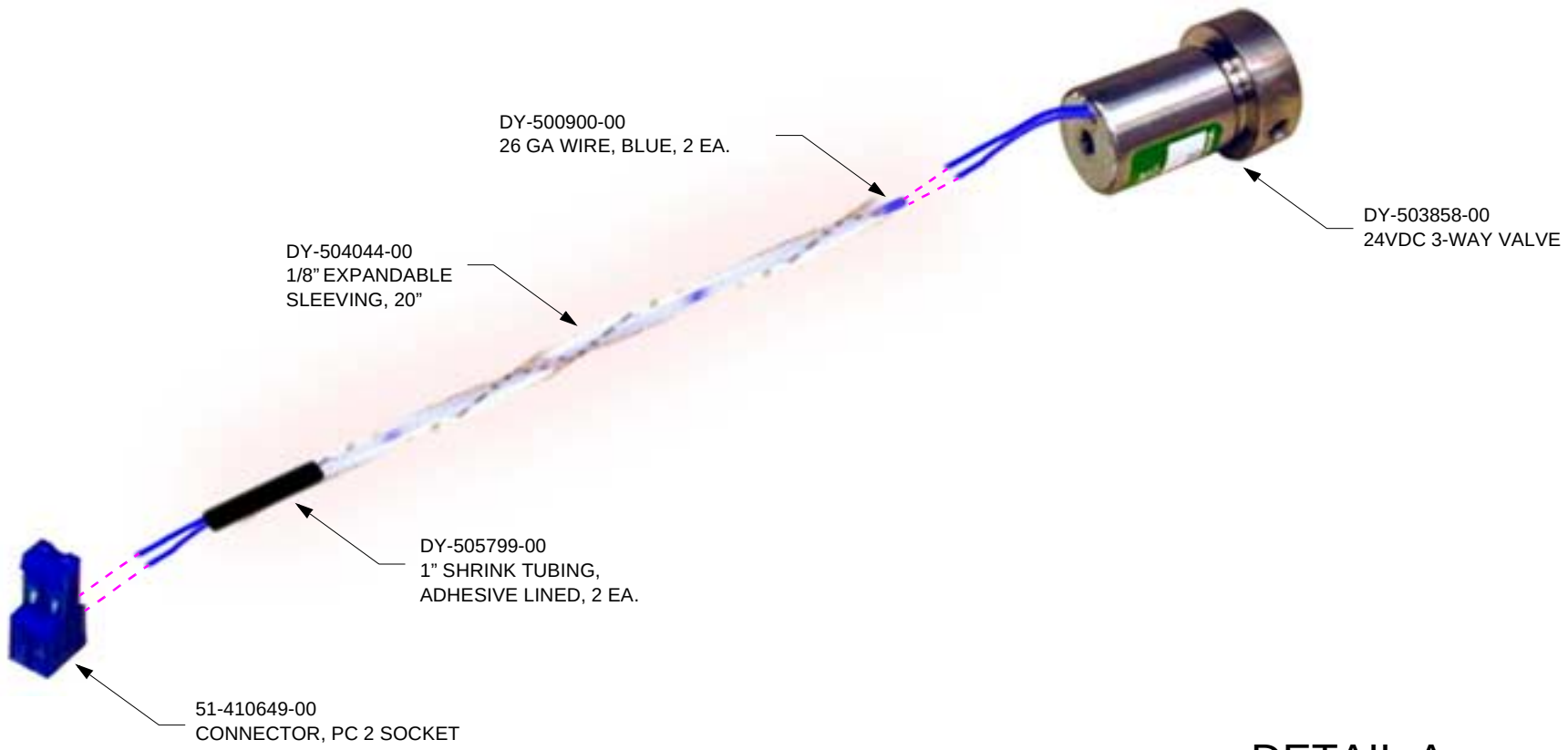
1. Place one DY-504039, 1/16" SS NUT and one DY-505025-00, VESPEL FERRULE, in small ziplock bag.
2. Place one DY-505086-00, 10M SOIL TRANSFERLINE SCREEN, in small ziplock bag. Mark "SCREEN" on bag.
3. Place both small bags in larger bag.

REFERENCE ITEMS

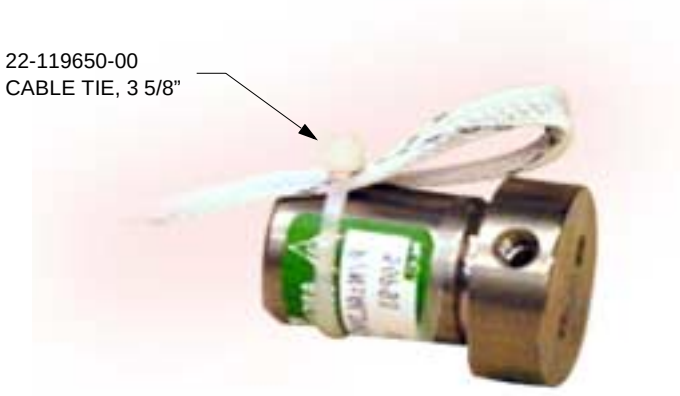


Archon Subassembly

3-Way External Valve Assembly


DY-500900-00
26 GA WIRE, BLUE, 2 EA.
DY-503858-00
24VDC 3-WAY VALVE
DY-504044-00
1/8" EXPANDABLE
SLEEVING, 20"
DY-505799-00
1" SHRINK TUBING,
ADHESIVE LINED, 2 EA.
51-410649-00
CONNECTOR, PC 2 SOCKET

DETAIL A


22-119650-00
CABLE TIE, 3 5/8"