



MODEL NUMBER

SERIAL NUMBER



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LIMITED WARRANTY

PAX PRODUCTS, INC. (the "Company") warrants to the original purchaser of each PAX LUBE SYSTEM that the System will be free from defects in material and workmanship, under normal and proper installation, use, and maintenance in accordance with the Company's instructions, for a period of 90 days after the date of shipment from the Company's plant.

Purchaser's exclusive remedy and the Company's sole liability under the above warranty or in connection with any other claim relating to the Pax Lube System shall be limited to the repair, or at the Company's option, the replacement or refund of the purchase price, of and System or part or component thereof which is returned to the Company freight prepaid and which is defective in material or workmanship. Defective Systems or parts or components thereof which the Company replaces become the property of the Company. All systems or parts or components thereof which are returned to the purchaser will be returned freight collect.

EXCEPT AS EXPRESSLY STATED ABOVE, THE COMPANY MAKES NO WARRANTY, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR USE OR OTHERWISE, ON ANY PAX LUBE SYSTEM, OR ANY PARTS OR LABOR FURNISHED DURING THE SALE, DELIVERY, OR SERVICING OF ANY PAX LUBE SYSTEM.

IN NO EVENT SHALL THE COMPANY BE LIABLE TO ANY PURCHASER OR PERSON CLAIMING THROUGH ANY PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY NONDELIVERY, SERVICING, USE OR LOSS OF USE, OF ANY PAX LUBE SYSTEM OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT THE COMPANY'S WRITTEN CONSENT, EVEN THOUGH THE COMPANY HAS BEEN NEGLIGENT. IN NO EVENT SHALL THE COMPANY'S LIABILITY UNDER ANY CLAIM MADE BY ANY PURCHASER OR PERSON CLAIMING THROUGH ANY PURCHASER EXCEED THE PURCHASE PRICE OF THE PAX LUBE SYSTEM OR COMPONENT THEREOF IN RESPECT OF WHICH DAMAGES ARE CLAIMED.

Purchaser shall promptly inspect each System upon receipt. Claims under the above warranty shall be made by contacting the Company at 5097 Monroe Rd., Celina, OH 45822, Attn: Service Department (1-800-733-6930) or (419) 586-6948. No claim under the above warranty will be allowed unless made within 10 days after the date of the warranty period on which the defect is or should have been discovered by the purchaser.

DESIGN CHANGES

Consistent with sound engineering principles and recognized practices, Pax Products, Inc. reserves the right to discontinue or change specifications, designs and materials, at any time and without notice.

Design differences or changes that exist between the unit received and the system illustrated in the manual are the result of design improvements or special arrangements contracted for at the time of purchase. Every effort is made to keep the manual consistent with the majority of systems supplied.



PAX V-SERIES DIAPHRAGM PUMP
TWO-YEAR WARRANTY

Pax Products warrants to the end-user/purchaser of the Pax diaphragm pump that Pax will repair or replace, free of charge, including return shipping costs within the Continental United States of America, any such product which under normal use and service proves defective in material or workmanship, as determined by Pax Products inspection, within TWO YEARS from date of shipment from Pax, the claimed defective product, or part thereof, is promptly returned to the Pax factory with transportation prepaid. This warranty does not cover failure of parts or components due to normal wear or damage, which in the judgment of Pax, arises from misuse, abrasion, corrosion, negligence, accident, substitution of non-Pax parts, faulty installation or tampering. If Pax inspection discloses no defect in material or workmanship, repair or replacement and return will be made at customary charges.

The foregoing warranty supersedes voids and is in lieu of all or any other warranties, express or implied, and no warranty or merchantability or fitness for particular purpose is intended or made. Pax Products' sole obligation and the original end-user/purchaser's sole remedy is as stated above and in no event shall Pax Products be liable for any special, direct, indirect, incidental, consequential or other damages, or expenses of any nature including, without limitation, loss of profits or production time incurred by the original end-user/purchaser of any other party.

Pax Products will stand behind the Pax 2-year warranty and provide their customers, with any repair work, replacement parts, and services deemed necessary to make Pax pumps functional and place them back in service. All Pax pumps brought in or sent back for repair and/or warranty work will be inspected by a factory authorized service representative prior to service. You will then be notified by phone or fax and provided with an estimate as to the repair work and parts required for completing the job. If it is determined that the pump is not repairable, Pax will provide an estimate for replacing the pump with a new or equivalent model.



SAFETY

UNDER NO CIRCUMSTANCES SHOULD THE PAX LUBE SYSTEM OR ANY COMPONENT BE PLACED IN SUCH A MANNER THAT WILL CAUSE POSSIBLE PERSONAL INJURY OR DAMAGE TO ANY EQUIPMENT.

PAX PRODUCTS, INC. RECOMMENDS THAT WHENEVER POSSIBLE, PERMANENT FIXTURES WITH QUICK DISCONNECT COUPLINGS SHOULD BE INSTALLED TO INSURE ULTIMATE LOCATION, CONTROL, PERFORMANCE RELIABILITY, AND OVERALL SAFETY.

SYSTEMS SHOULD BE PLACED IN SUCH A WAY SO THAT NO COMPONENT OR COMBINATION OF COMPONENTS INTERFERE WITH THE NORMAL OPERATION OF ANY MACHINE.

BEFORE OPERATING, INSURE CLEARANCES OF THE SPRAY LINES (NOZZLES INCLUDED), MAGNETIC BASES AND POSTS, AND RELATED COMPONENTS.

PRIOR TO SERVICING OR TROUBLESHOOTING ANY PAX LUBE SYSTEM, DISCONNECT THE ELECTRICAL POWER AND THE AIR SOURCE.

NOTICE: AN AIR SHUT-OFF DEVICE CONFORMING TO THE OSHA LOCKOUT/TAGOUT STANDARD IS AVAILABLE AS AN OPTIONAL FEATURE (REF. FIG. 4-PG. 13).



SYSTEM INSTALLATION

Please read this manual carefully for information regarding SAFETY, ASSEMBLY, INSTALLATION, OPERATION, MAINTENANCE, TROUBLESHOOTING, AND PARTS SERVICE.

PLACEMENT OF THE PAX LUBE SYSTEM



ATTENTION



IMPROPER PLACEMENT OF THE PAX LUBE SYSTEM MAY RESULT IN PERSONAL INJURY, DAMAGE TO THE PRESS, THE PAX LUBE SYSTEM, OR OTHER EQUIPMENT.

When planning the location of the system, consideration should be given to the routing of air and electrical lines for the unit. If a lubricant return line is to be used, the routing of this line should also be considered. Avoid creating situations that may be hazardous or conditions that may interfere with the operator or cause damage to the return line.

Locate the Pax Lube System at a convenient place as near to the press as possible where the unit will not be in the path of vehicles or moving parts of the press but will permit easy access for servicing the controller and filling or draining the reservoir.

Consideration should also be given for the type of spray lines and the routing of the lines. The optional spray lines are 8 feet long, from the quick connect plug to the end of the spray nozzle assembly. We recommend that these lines be shortened to the length required for each application. Lines may be as long as 16 feet for some applications.

For the most efficient operation of the system, placement should be as close as practical to the points where the lubrication will be applied. It is more efficient to use steel tubing for best transfer of the lubricant over longer distances (longer than 8 feet). The use of rigid tubing will help prevent the loss of line pressure, thus helping to assure the best performance. When spraying higher viscosity lubricants, rigid tubing and short lines (shorter than 8 feet) are strongly recommended. Generally speaking, the shorter the line, the better the spray pattern. The spray pattern may also improve by using the more rigid tubing for less viscous lubricants.

Magnetic base spray assemblies were designed for quick setup and versatility. They also assist with determining the most efficient location for the spray nozzles. Once the best location is determined, it is recommended that a permanent spray line and manifold block be installed. This permits the spray lines to be located in the same position at all times and eliminates setup inconsistencies.



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AIR REQUIREMENTS



ATTENTION



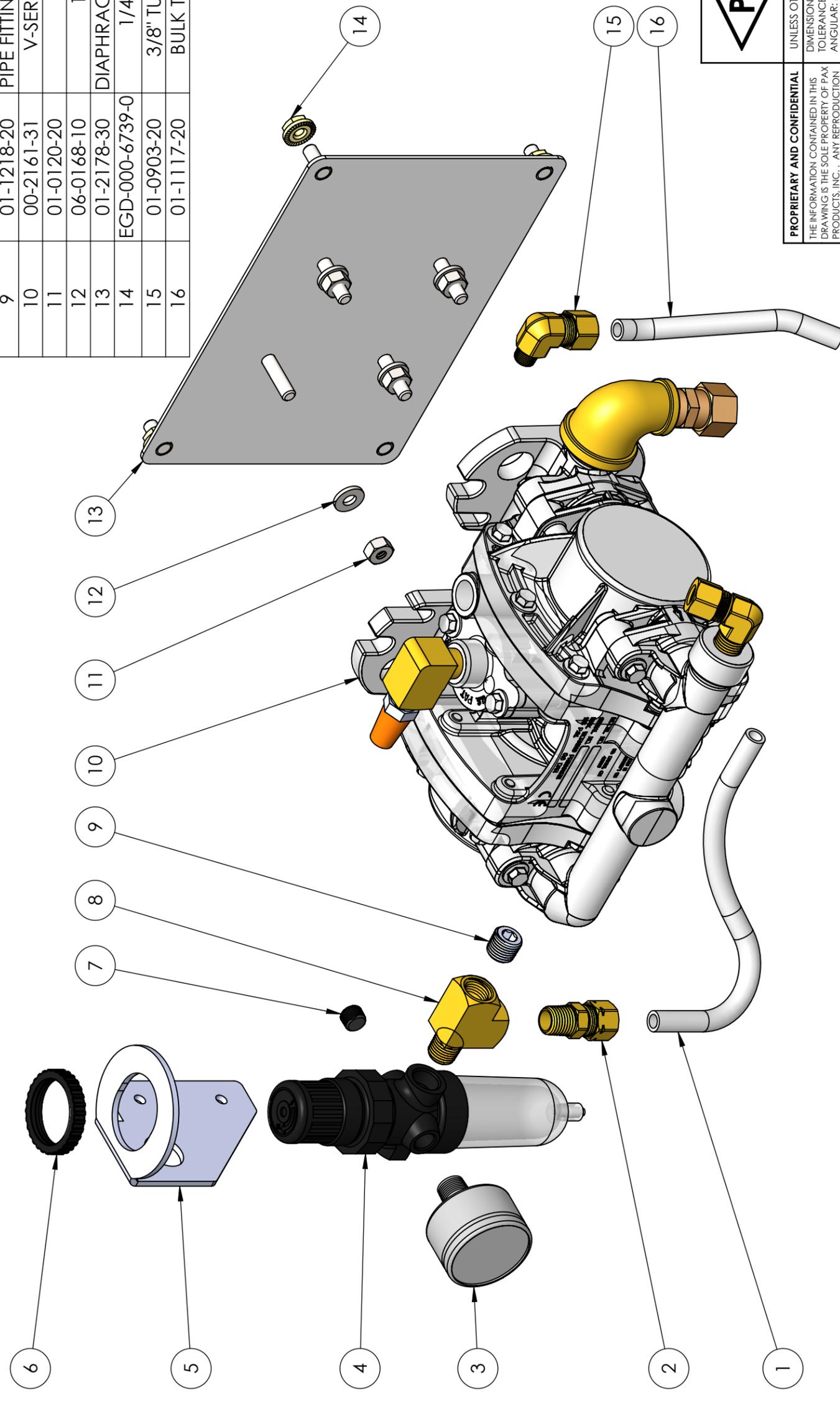
USE OF AIR PRESSURE IN EXCESS OF 100 PSI MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE AIR REGULATOR ASSEMBLY AND WILL VOID THE WARRANTY OF THE PAX LUBE SYSTEM.

The air pressure requirements of the Pax Lube System are as follows:

1. The maximum safe operating air pressure is 100 PSI.
2. The minimum operating air pressure is 40 PSI. (Measured when the solenoid is engaged).
3. The minimum recommended input line is 1/4" pipe or equivalent.

NOTE: MAINTAIN OR ADJUST THE AIR PRESSURE AT LOWEST POSSIBLE SETTING (MIN 40 PSI) WHICH PRODUCES A GOOD SPRAY PATTERN SETTING (TYPICALLY 60-80 PSI IS APPROPRIATE FOR MOST WATER SOLUBLE LUBRICANTS), HIGHER PRESSURE MAY BE REQUIRED FOR HEAVIER VISCOSITY LUBRICANTS. FOR LUBRICANTS WITH VISCOSITY GREATER THAN 100 SUS AT 100 DEGREES FAHRENHEIT CONTACT THE FACTORY FOR SUGGESTIONS ABOUT SYSTEMS THAT WILL SPRAY HIGHER VISCOSITY LUBES.

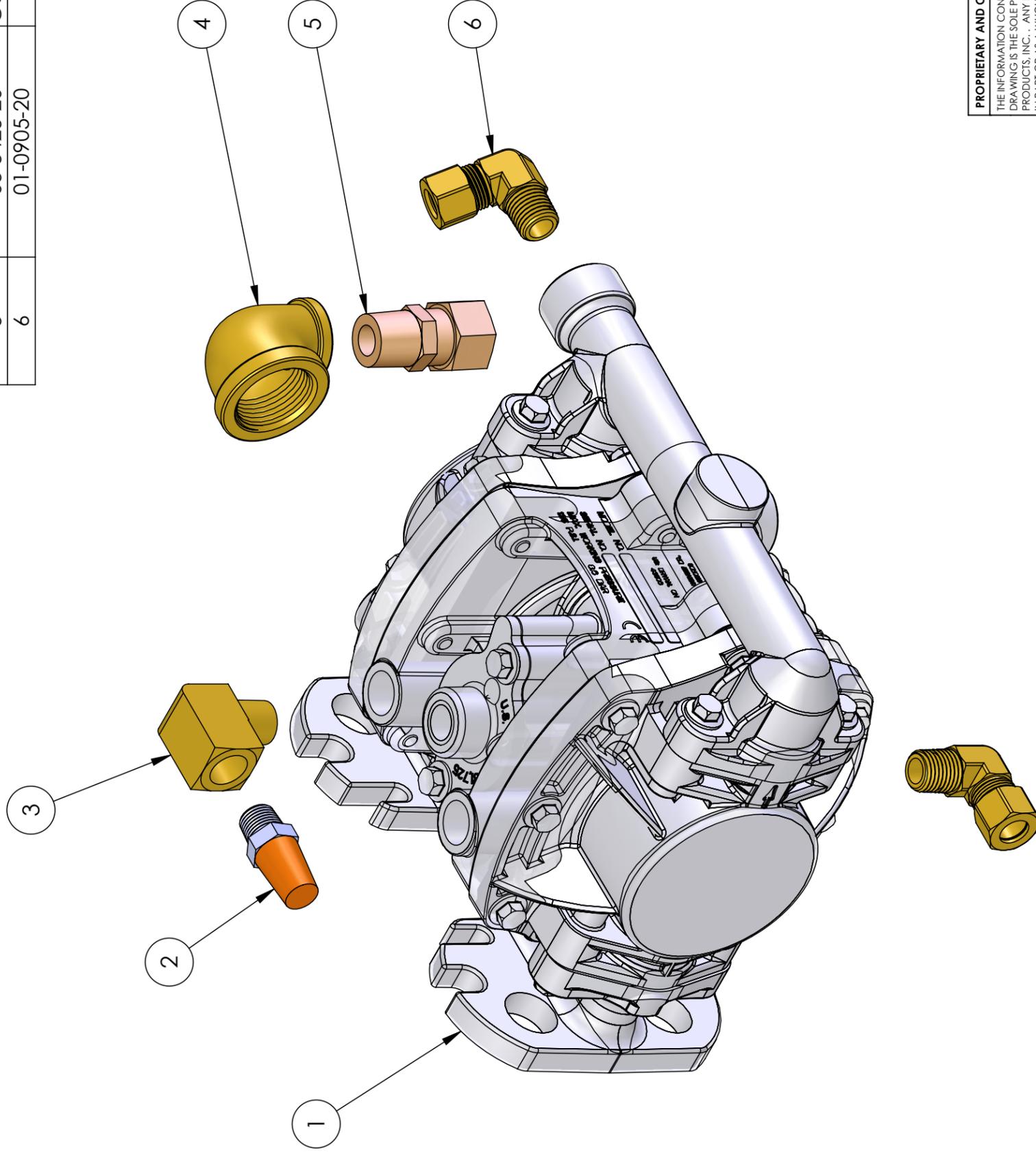
ITEM NO.	PART NUMBER	DESCRIPTION	DIAPHRAM PUMP COMPONENTS/QTY.
1	01-1117-20	BULK TUBING 3/8" OD - 8.25"	1
2	01-0915-20	STRAIGHT 3/8" TUBE X 1/4" MNPT	1
3	01-0963-20	AIR GAUGE	1
4	01-0961-21	FILTER/REGULATOR	1
5	01-1837-11	15 GALLON FRL BRACKET	1
6	01-0177-20	FRL BRACKET NUT	1
7	02-1206-20	PIPE FITTING - HEX PLUG 1/8" MNPT	1
8	03-1987-20	1/4" NPT MALE RUN TEE	1
9	01-1218-20	PIPE FITTING - SOCKET PLUG 1/4" NPT	1
10	00-2161-31	V-SERIES DIAPHRAGM PUMP	1
11	01-0120-20	HEX NUT 1/4"-20	4
12	06-0168-10	1/4" FLAT WASHER	4
13	01-2178-30	DIAPHRAGM ADAPTER PLATE 15 GAL	1
14	EGD-000-6739-0	1/4"-20 Hex Flange Nut	4
15	01-0903-20	3/8" TUBE X 1/8" MNPT ELBOW	1
16	01-1117-20	BULK TUBING 3/8" OD - 5.125"	1



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 P.O. BOX 257 FAX: (419)586-6932
 CELINA, OHIO 45822-0257

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	DO NOT SCALE DRAWING MATERIAL:	SIZE DWG. NO. B 00-3201-30
REVISION 1	WEIGHT:	SHEET 1 OF 9
		SCALE: 1:16
		DATE: 4/22/2019
		DRAWN BY: MAB

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	03-2162-21	V SERIES DIAPHRAM PUMP	1
2	01-0919-21	EXHAUST MUFFLER 1/4" MNPT	1
3	03-3423-20	PIPE FITTING - STREET ELBOW 1/4" MNPT X 1/4" FNPT	1
4	03-3424-20	PIPE FITTING - CAST ELBOW 3/8" FNPT X 3/4" FNPT	1
5	03-3425-20	COMPRESSION FITTING - STRAIGHT 1/2" TUEB X 3/8" MNPT	1
6	01-0905-20	1/4" NPT to 3/8" TUBING	2



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DO NOT SCALE DRAWING MATERIAL:

REVISION 1 WEIGHT: SHEET 1 OF 1

TITLE: V-SERIES DIAPHRAGM PUMP
 SIZE DWG. NO. **B** 00-2161-31
 SCALE: 1:2 DRAWN BY: MAB DATE: 4/22/2019



AIR FILTER: Periodically inspect the air filter bowl (Fig. 4.4) to assure the liquid level does not rise more than halfway in the bowl. The air filter bowl is drained by pushing the valve up. The valve is located on the bottom of the air filter bowl. Open until all the visible water has drained. Before operating the system, insure the air filter bowl valve is closed by releasing to its down position.

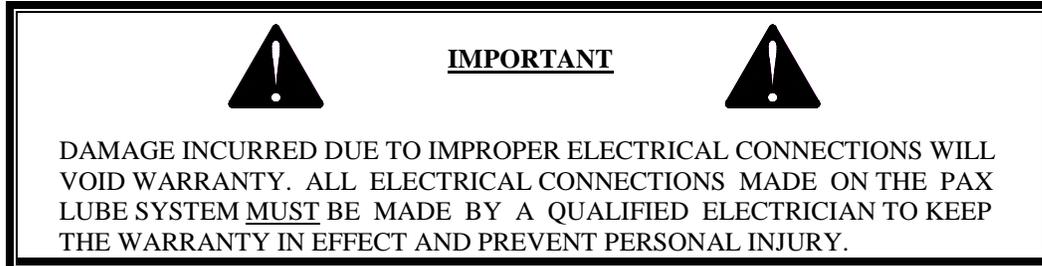
AIR REGULATOR AND GAUGE: The air pressure supplied to the Pax Lube System will be indicated on the pressure gauge (Fig. 4.3), refer to the AIR section of this manual for proper air supply information. Adjustment of the air pressure can be accomplished by pulling up on the adjustment knob (Fig. 4.2). Turn the adjusting knob (Fig. 4.2) in a clockwise rotation to increase the air pressure to the diaphragm pump assembly and in a counterclockwise rotation to decrease the air pressure. Refer to the AIR section of this manual for proper range settings. After the air pressure is adjusted within the recommended range, insure the adjustment knob (Fig. 4.2) is in the locked position by pushing down on the adjustment knob.



ELECTRICAL REQUIREMENTS

The Pax Lube System requires an electrical supply of 120 VAC 60 HZ at 3 AMP minimum. Contact the factory to determine the availability of other voltages and frequencies.

ELECTRICAL POWER



All connections must be made in the electrical section on the backside of the manifold mounting panel. The system must be wired according to electrical schematic on page 16.

When all electrical connections are completed and secured in such a manner as to prevent any possible damage, replace the back cover plate. Align the plate and insert the retaining screws and secure. The system is now ready for operation. The spray cycle on the Pax Lube System starts when the solenoid coil is **ENERGIZED** (Reference the "LUBE SYSTEM OPERATION" section of the manual for a detailed explanation).

ELECTRICAL SIGNAL (DRY CONTACT)

The electrical signal required (Dry Contact) to activate the Pax Lube System can be obtained from several sources:

1. Rotary switch on press
2. Cam switch on press
3. Limit switch on press
4. Electrical relay on press
5. Press programmable controller
6. Any type of programmable logic control

Other sources of a contact signal may be available and each individual installation will dictate the exact source. Care should be taken that any signal provided will meet the electrical requirements.



ELECTRICAL

REFERENCE ELECTRICAL SCHEMATIC



15 & 30 GALLON V-SERIES LUBE SYSTEM OPERATION

Solenoids, pump, and manifold assembly (figure 3 & 5)

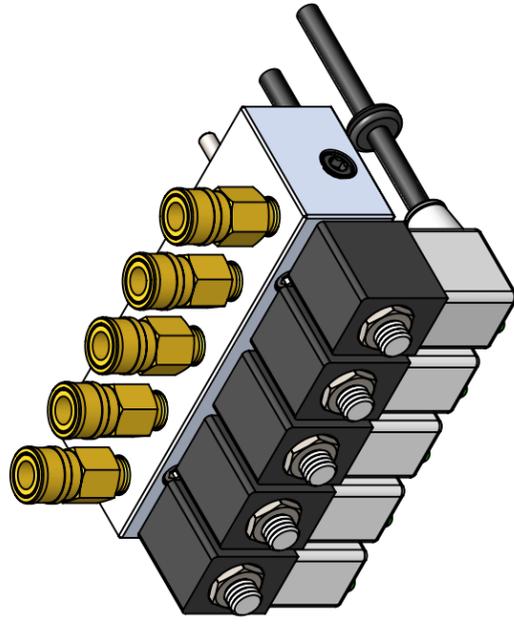
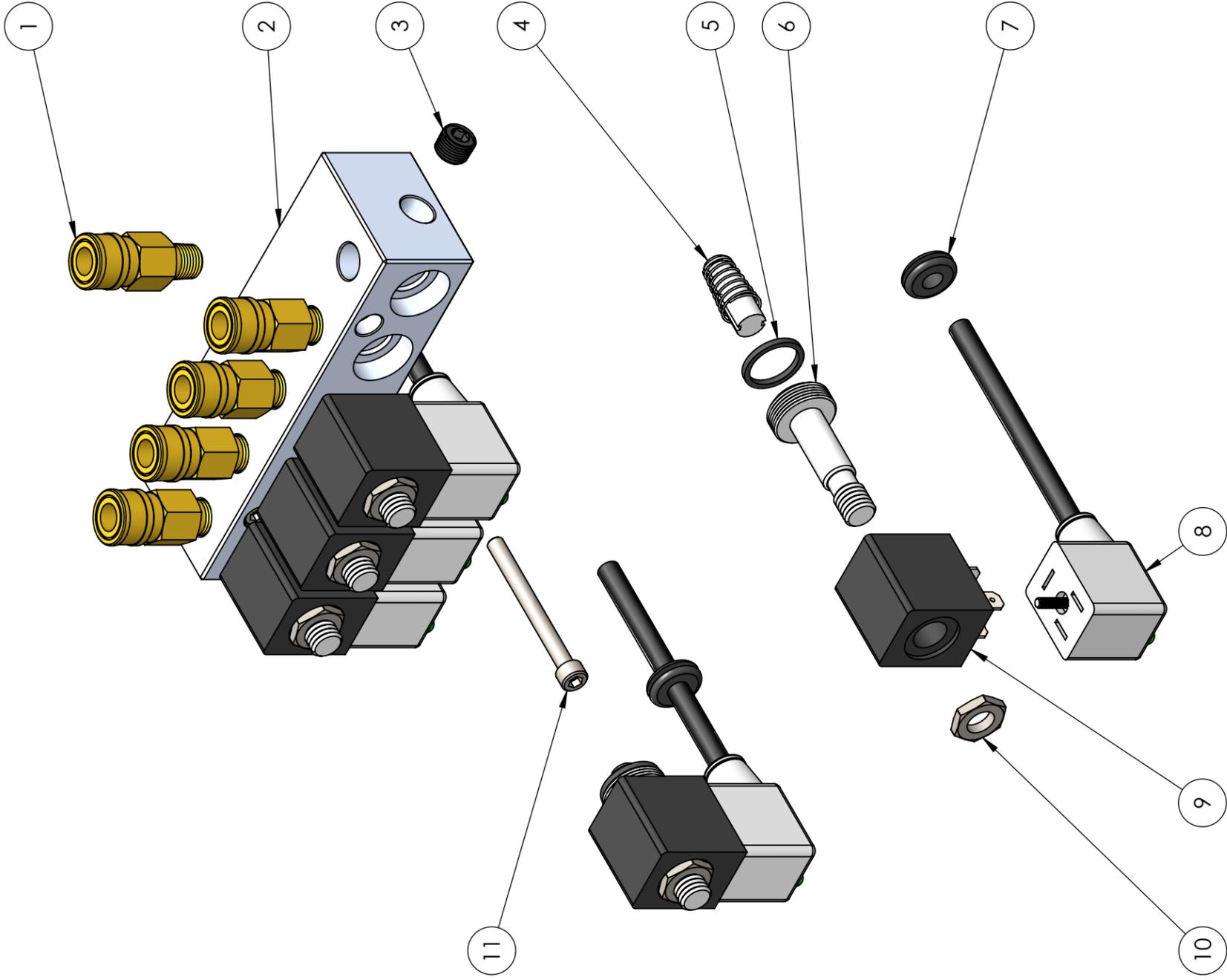
The diaphragm pump (3.1) will draw fluid from the reservoir and supply the manifold (5.1) with pressurized fluid. The pressurized fluid is distributed to the spray nozzles by energizing and de-energizing of the coil.

When the coil (5.9) is energized, the plunger pulls back and allows fluid to pass through the manifold to the quick connect (5.12). The quick connect is sealed and will not allow fluid to pass, unless a spray line is plugged into the quick connect. At this point fluid will be passing through the spray line and out the spray tip.



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ITEM NO.	PART NUMBER	DESCRIPTION	MANIFOLD SUB ASSEMBLY/QTY.
1	03-0911-20	QUICK CONNECT COUPLING	5
2	02-0524-10	MANIFOLD 5 VALVE V-SERIES	1
3	02-1206-20	PIPE FITTING - HEX PLUG 1/8" MNPT	3
4	04-1984-20	PLUNGER ASSEMBLY	5
5	04-0227-20	GASKET	5
6	04-1985-20	SLEEVE ASSEMBLY	5
7	01-0219-20	RUBBER GROMMET 1/4" ID	5
8	04-1379-23	INDUSTRY STD. FORM B - 120 VAC W/ MOV TRANSIENT SUPPRESSION	5
9	04-3209-20	SOLENOID OPERATOR - 120 VAC	5
10	04-0133-20	P-1005-09 NUT	5
11	02-0171-20	SHCS #10-32 X 2"	2



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REVISION 1	WEIGHT:	SHEET 2 OF 9
		SCALE: 1:2
		DRAWN BY: MAB
		DATE: 4/22/2019

MANIFOLD SUB ASSEMBLY



TABLE 1.

SOLENOID VALVE VOLUME ADJUSTMENT DATA

THE CONVERSION DATA REFERENCE IS:

1 fl oz = 1.805 cu in = 29.57 cc

1000 ml = 1 liter

1 liter = 33.814 fl oz

The volume calculated is based on spraying water using a .031 orifice spray tip at 80 PSI air inlet pressure.

	# of MS OPEN	fl oz	ml
MAXIMUM	.10 (100 MS)	.0287	.85
	.09 (90 MS)	.0271	.80
	.08 (80 MS)	.0230	.68
	.07 (70 MS)	.0206	.61
	.06 (60 MS)	.0176	.52
	.05 (50 MS)	.0156	.46
	.04 (40 MS)	.0129	.38
	.03 (30 MS)	.0074	.22
MINIMUM	.02 (20 MS)	.0041	.12
OFF	.00 (0 MS)	FULLY	CLOSED

MS = Milliseconds



MAINTENANCE SCHEDULE

A DAILY MAINTENANCE SCHEDULE IS RECOMMENDED FOR MAXIMUM OPERATIONAL EFFICIENCY.

There are several precautions that will assist with the system operation insuring the best operating characteristics. NOTE: FOR THE BEST RESULT, PERFORM THESE PROCEDURES DAILY. THEY ARE:

1. Inspect the filter/regulator assembly and perform the following procedures:
 - a. Air filter bowl should be drained
 - b. Check and adjust, as required, the air pressure input by adjusting the regulator as required (Refer to Air Pressure section of this manual – Page 9)
2. Inspect the Pax Lube System reservoir to insure the lubricant level is sufficient for operating the system. **NOTE: If a water soluble lubricant is used, inspect lubricant to determine if separation has occurred. If it has, mix. An optional air agitation feature may be added to the system.**
3. Inspect and clean, if required, the systems filter assembly found in the reservoir. (We recommend a spare filter be utilized to exchange as needed.) The following steps are recommended for cleaning or replacing the filter:
 - a. Turn the system power off and remove the pressurized air supply from the system.
 - b. Remove the filter assembly from the tank.
 - c. Remove the four (4) springs.
 - d. Remove the bottom cover plate.
 - e. Clean or replace the filter element.
 - f. Replace the cover plate.
 - g. Install the four (4) springs.
 - h. Install the filter assembly in the reservoir.**NOTE: A damaged filter should be replaced or the spray nozzle could become clogged.**
4. Should it become necessary to change lubricants, it is **ABSOLUTELY NECESSARY TO RUN COMPATIBILITY TESTS** between the two lubricants involved. Contact the manufacturer of the lubricant for information about methods of testing. Should the lubricants prove to be incompatible, it will be necessary to remove the filter assembly from the tank and thoroughly clean prior to the introduction of the new lubricant into the Pax Lube System. You must purge all fluid lines and diaphragm pump of the old lubricant to prevent reaction of the lubricants in the lines, which could cause poor performance, or failure of the Pax Lube System. **NOTE: THE FILTER ASSEMBLY WILL RETAIN A SMALL AMOUNT OF LUBRICANT. FLUSH OR RINSE AS NECESSARY.**
5. Manually operate the system to insure proper spray operation. Purge the spray lines of any trapped air. If the spray lines do not spray properly, follow the procedures outlined in the troubleshooting chart on Pages 23, 24 and 25.



TROUBLESHOOTING THE V SERIES PAX LUBE SYSTEMS (15 & 30 GALLON)

Review the V-Series “LUBE SYSTEM OPERATION” section on Page 17 of this manual.

<u>PROBLEM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
SYSTEM WILL NOT OPERATE	1. No power.	1. Check the fuse and all electrical connection insure proper connections.
	2. Faulty wiring.	2. Check for correct, loose or faulty wire connections.
	3. Defective solenoid coil.	3. Replace coil.
	4. Air pressure regulator.	4. Adjust within operating range – 40 PSI to 100 PSI.
INSUFFICIENT FLUID IN SPRAY LINES	1. Insufficient fluid in reservoir.	1. Add fluid to reservoir and manually cycle until spray pattern is crisp and no air is in the spray lines.
	2. Fluid supply pump is not supplying fluid to the fluid supply line(s).	2. Clogged filter. Remove, clean, check for damage and replace if it is damaged. After cleaning the filter, install nondamaged filter and manually cycle until the fluid supply line(s) are full and spray tips perform as expected.
	3. Malfunctioning fluid supply pump.	3. Remove fluid supply pump, check the components for damage. Replace any damaged components as required.
INDIVIDUAL SPRAY LINE NOT FUNCTIONING	1. Solenoid operator assembly not operating properly	1.1. Check relay on output module. Remove and replace if damaged. 1.2. Replace coil. 1.3. Remove operator assembly, check plunger assembly for damage. Clean and replace components as needed.
	2. Check valve not installed in the spray nozzle body or is not seating properly.	2. Check the nozzle body for the check valve. If not there, clean and install the check valve. If there, inspect for damage or foreign material. Clean or replace as required.



TROUBLESHOOTING (cont'd)

PROBLEM

CAUSE

SOLUTION

INDIVIDUAL
SPRAY LINE NOT
FUNCTIONING

3. Spray line fittings not tight.

3. Insure that the fittings are free of burrs, nicks and dirt. Tighten the fittings and test.

DRIPPING
NOZZLE BODY
SPRAY TIP
ASSEMBLY

1. Spray tip retainer is not secure or there may be damage to the surfaces of the tip or to the check valve.

1. Remove the spray tip and check valve from the nozzle body. Clean and inspect for damage. If damaged, replace the damaged part(s). Clean the surfaces of the nozzle body, check valve, and the face of the spray tip. Inspect to insure that all surfaces are free of damage. Install all components securely and test for leaks. If leak persists, replace the tip and check valve. Test again.

SPRAY PATTERN
IS NOT GOOD

1. Air pressure not regulated properly.

1. The input air pressure must be at least 40 PSI minimum. The more viscous the lubricant, the higher the pressure should be.

2. Pump is pumping air into the spray lines.

2.1. Check the lubricant level and fill if required.

2.2. Check the filter assembly in the reservoir. Clean or replace the filter element as required.

2.3. Check the reservoir for dirt or sludge. Clean as required.

2.4. Manually operate the system by depressing the manual button, then enter solenoid number and depress the "ON" button. The "ALL" button can be used to purge multiple lines. If the air does not clear, then follow the procedures for low fluid, clogged or dirty filter, malfunctioning fluid supply pump, and check for loose fittings.

3. The spray nozzle assembly is contaminated.

3.1. Check the spray nozzle assembly for the check valve. If it is not a part of the nozzle assembly, install and test the system.

3.2. Check the assembly for damage or foreign material. All surfaces must be clean and free of damage. Clean or replace as required.



TROUBLESHOOTING (cont'd)

PROBLEM

SPRAY PATTERN
IS NOT GOOD

CAUSE

4. Flexible (soft) spray lines are too long.
5. Air is trapped in the spray line.

SOLUTION

4. This tubing should not be longer than 16 feet. The shorter the length of tubing, the better the spray pattern should be.
5. The spray lines should be routed in such a way that the spray nozzle is the highest point in the line.

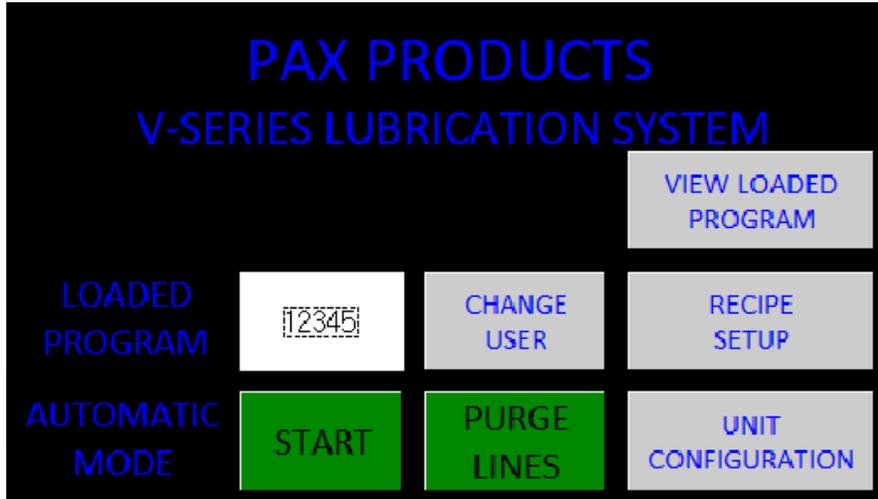


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Pax V-Series Standalone Control Unit and Interface



The controller for the Pax V-Series Lubrication system has been designed to facilitate independent control of the individual spray lines and store settings for 114 unique spray programs. Additional functionality allows for the operator to setup and prepare the unit for automatic functioning during production. Proper programming, loading of programs, preparation of the unit and changing to automatic mode will be discussed below.



To begin, select "VIEW LOADED PROGRAM"

SETUP	Line # ON/OFF	1	2	3	4	5
Job	Delay Time	12.34	12.34	12.34	12.34	12.34
12345	Spray Time	12.34	12.34	12.34	12.34	12.34
	Counter	123	123	123	123	123
▲	Line # ON/OFF	6	7	8	9	10
	Delay Time	12.34	12.34	12.34	12.34	12.34
▼	Spray Time	12.34	12.34	12.34	12.34	12.34
	Counter	123	123	123	123	123
LOAD	Line # ON/OFF	11	12	13	14	15
	Delay Time	12.34	12.34	12.34	12.34	12.34
◀	Spray Time	12.34	12.34	12.34	12.34	12.34
SINGLE CYLCE	Counter	123	123	123	123	123

The current program number can be viewed in the upper left hand corner. The remainder of the screen will show what valves are available, what valves are selected for this program and the settings used for this particular program. If the operator wants to view a different program, the up or down arrows can be used to select the program number. When a different program number is selected, the load button must be pressed to bring the settings into the current screen. Pressing of the load button will load the program to the operation of the unit. To test the loaded program, press the single cycle button to operate the program one time. When the counter value for a spray line is set to anything other than 0 or 1, the program will not spray that particular line.

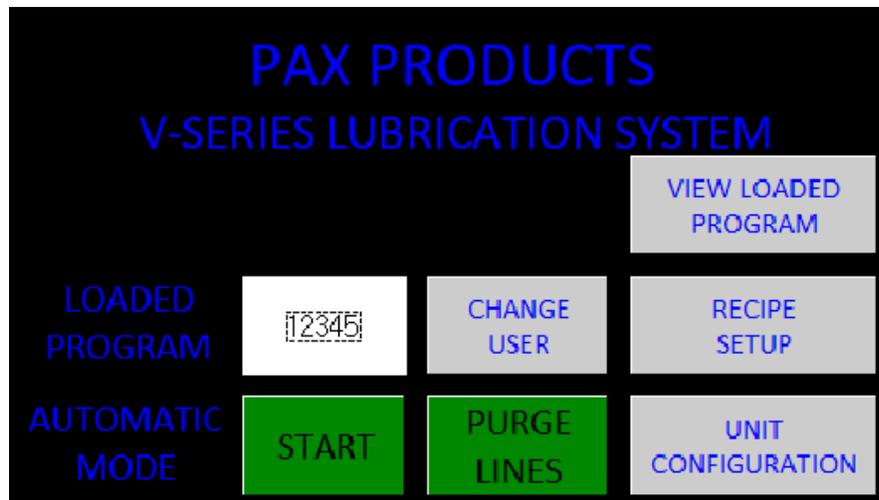


Programming and Operation

- To program the unit, it will be required to change the user to "PROGRAM" and use the password "5097MONROE"

SETUP	Line # ON/OFF	1	2	3	4	5
Job	Delay Time	12.34	12.34	12.34	12.34	12.34
12345	Spray Time	12.34	12.34	12.34	12.34	12.34
▲	Counter	123	123	123	123	123
▼	Line # ON/OFF	6	7	8	9	10
	Delay Time	12.34	12.34	12.34	12.34	12.34
	Spray Time	12.34	12.34	12.34	12.34	12.34
	Counter	123	123	123	123	123
SAVE	Line # ON/OFF	11	12	13	14	15
LOAD	Delay Time	12.34	12.34	12.34	12.34	12.34
◀	Spray Time	12.34	12.34	12.34	12.34	12.34
	Counter	123	123	123	123	123

- Select the job number by scrolling up or down using the arrow keys.
- Load the job number by hitting the load button.
- Select the valves to be operated by hitting the number corresponding to the valve.
 - Note: Only the valves that have been configured onto the unit can be selected.
- The delay time, spray time, and counter interval can be independently programmed for each valve.
 - Note: Counter can be set to 0 or 1 to spray every time.
- A completed program can be saved to the recipe memory by hitting the save button.
- To operate the new program, first save the program, then hit load to bring the program into the operation of the unit.



- To ensure proper spray patterns, the unit must be primed and devoid of air in the lines.
 - "PURGE LINES" can be used to operate all configured lines.
- If the desired program number is not shown in the "LOADED PROGRAM" use "VIEW LOADED PROGRAM" to change.
- To change to automatic mode, press "START". To stop automatic mode, press "STOP"



CONTROLLER PROGRAMING SETTINGS AND OPTIONS

**Low fluid level in fluid tank.
Refill to resume.**

- If the unit is equipped with the low level float and controller, the HMI will display the fault condition. Operation of the unit cannot resume until the low lubricant condition has been resolved.



PARTS LIST

ORDER REPAIR AND REPLACEMENT PARTS FROM:

PAX PRODUCTS, INC.
5097 MONROE ROAD
P.O. BOX 257
CELINA, OH 45822

PH: (419) 586-6948

Or

1-800-733-6930

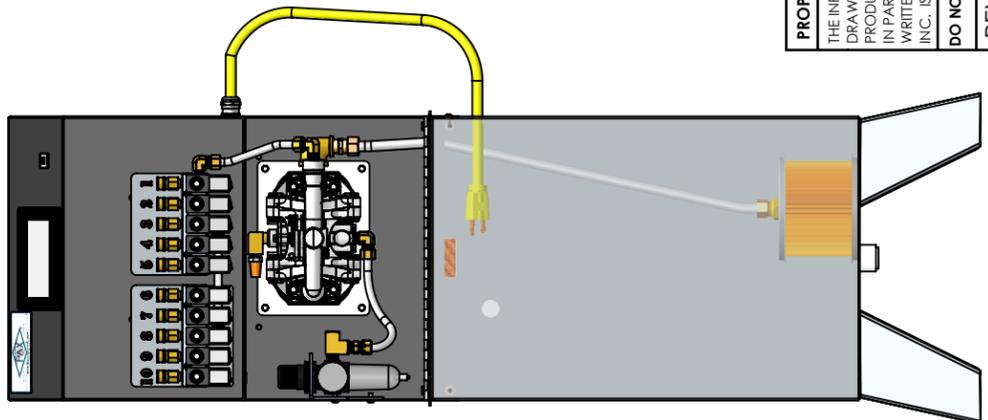
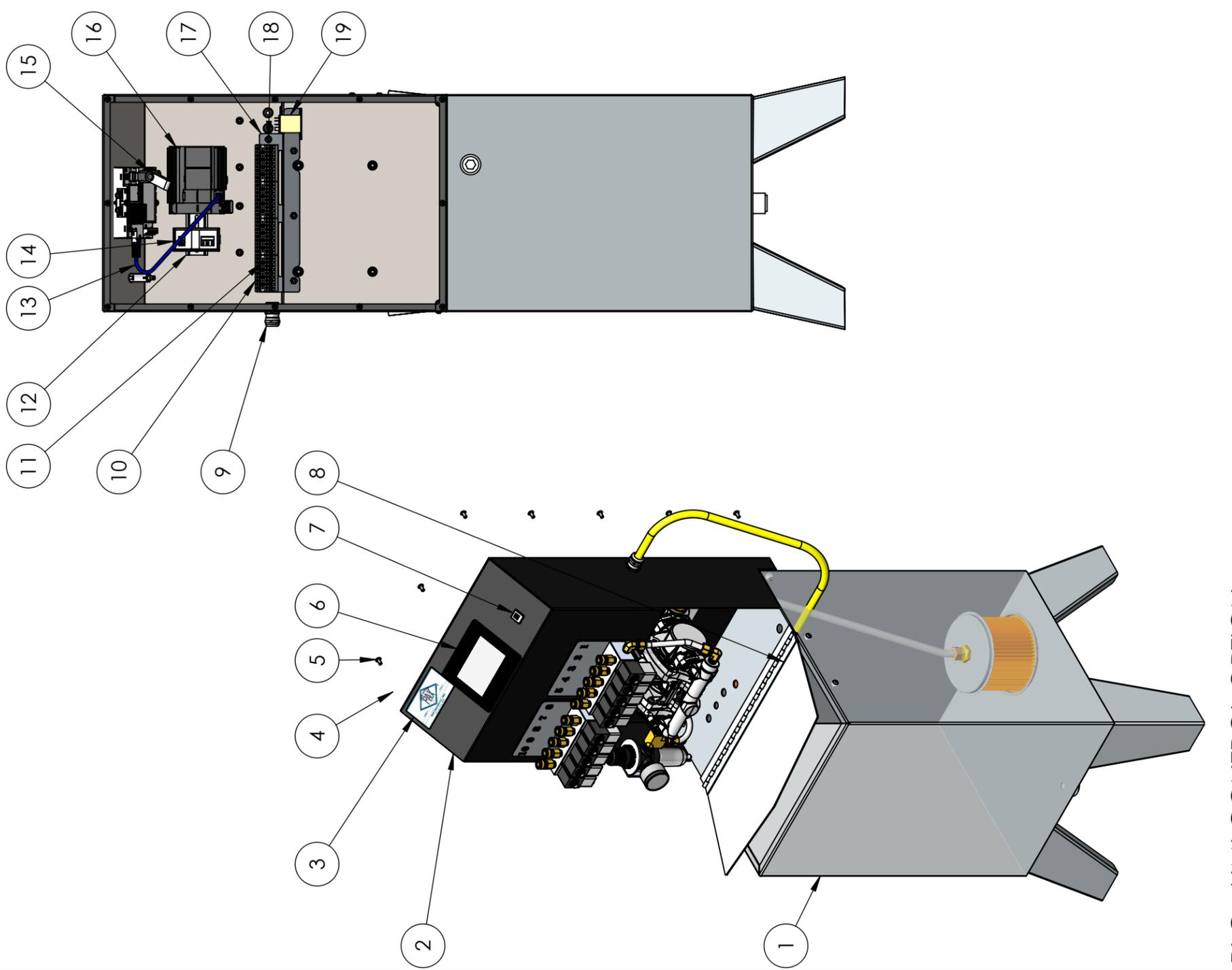
and

FAX: (419) 586-6932

PLEASE PROVIDE THE MODEL AND SERIAL NUMBER OF THE PAX
LUBE SYSTEM.

**NOTE: SUBSTITUTING PARTS NOT AUTHORIZED BY PAX PRODUCTS, INC. MAY CAUSE
A DETERIORATED PERFORMANCE OF THE PAX LUBE SYSTEM.**

ITEM NO.	PART NUMBER	DESCRIPTION	PLC - HMI CONTROL OPTION/QTY.
1	01-2126-30	15 GAL TANK ASSY	1
2	01-3306-10	V SERIES 15 GAL BACK WELDMENT	1
3	01-0737-20	LUBE SYSTEM NAME PLATE	1
4	01-0791-10	V SERIES 15 GALLON BACK COVER PLATE	1
5	01-0122-22	BHCS #10-32 X 3/8"	16
6	05-1467-21	HMI 4.3" 65K COLOR 24 VDC	1
7	05-1313-21	CIRCUIT BREAKER PANEL MOUNT 3A	1
8	05-1401-20	CORD SET NEMA 5-15P PLUG 9' LONG	1
9	500-5733-0	CORD CONNECTOR .236-.472" 1/2" TRADE SIZE, STRAIGHT	1
10	05-1447-20	WAGO - 5 POLE CONTACT BLOCK	6
11	05-0176-20	#4-40 SS PAN HEAD SCREW	8
12	05-1413-20	DIN RAIL	1
13	05-1468-21	COMMUNICATION CABLE, 1' CAT6 PATCH CABLE	1
14	05-1466-20	POWER SUPPLY 24VDC OUT, 1.3 AMPS	1
15	05-14XX-20	USB STICK	1
16	05-1465-21	PLC 24 VDC	1
17	01-3309-10	TERMINAL BRACKET 15 GAL V SERIES	1
18	01-0153-20	#10-32 Ground Screw	1
19	01-1381-20	DPDT RELAY	1

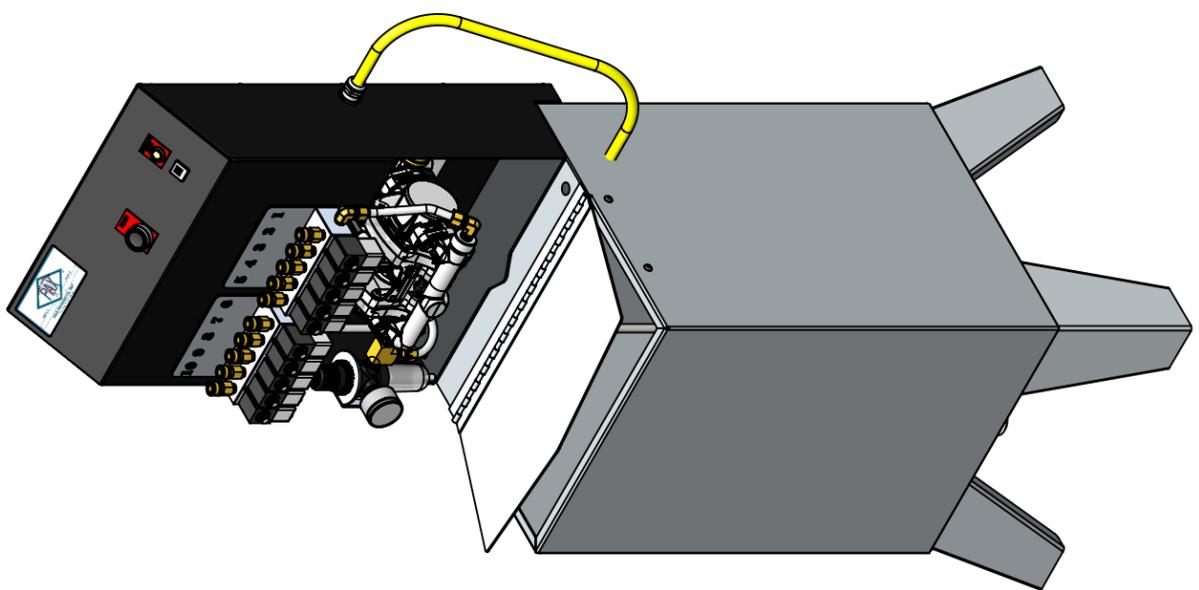
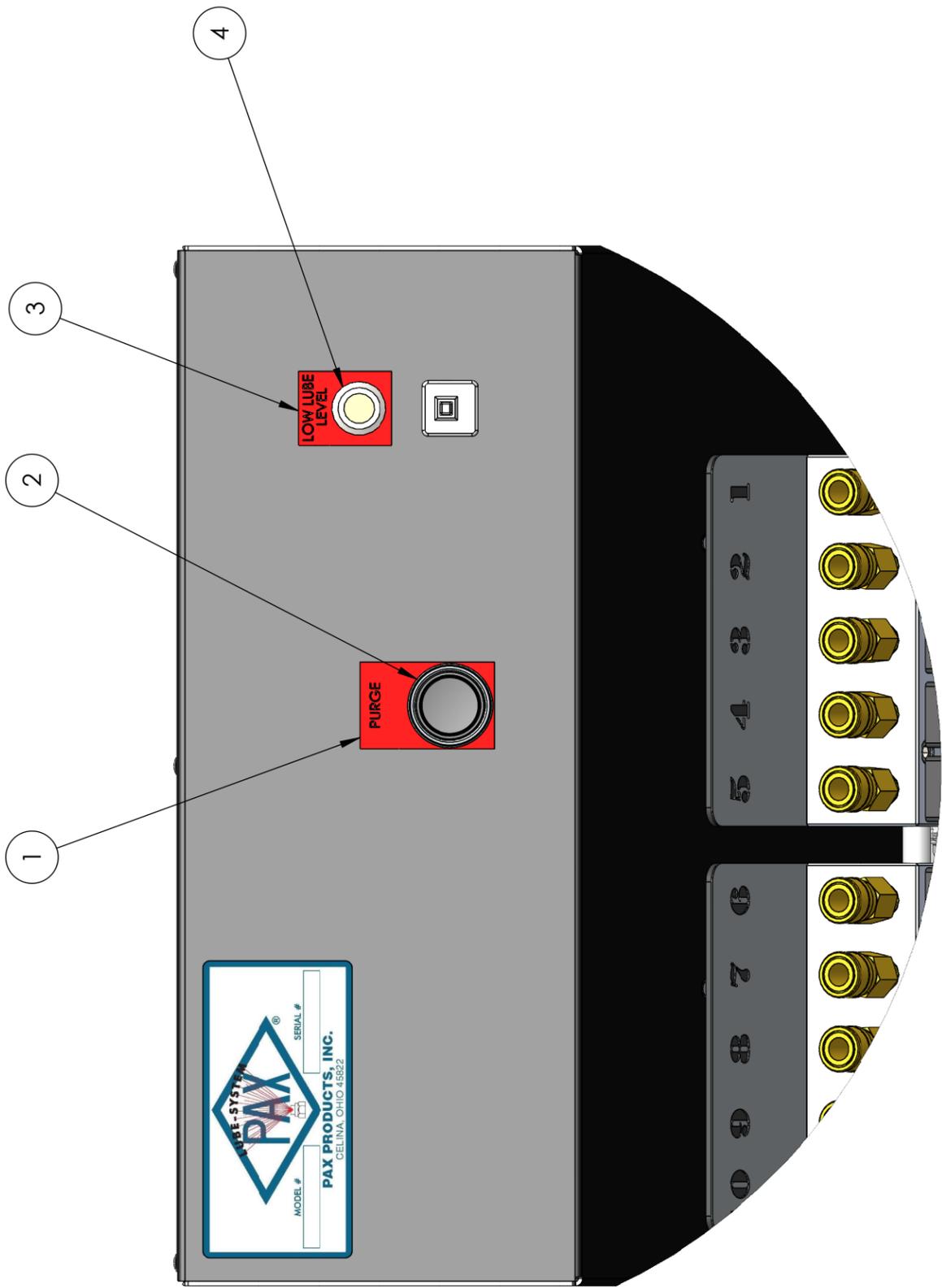


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P.O. BOX 257 FAX: (419)586-6932
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	REVISION 1 WEIGHT:	SIZE DWG. NO. B 00-3201-30

PLC - HMI CONTROL OPTION

ITEM NO.	PART NUMBER	DESCRIPTION	PURGE OPTION/QTY.
1	08-1352-20	LEGEND PLATE: PURGE	1
2	08-1365-21	PUSH BUTTON SWITCH ASSEMBLY	1
3	08-1353-20	LOW LUBE LEGEND PLATE	1
4	08-1453-20	120 VAC LED - LOW LEVEL	1

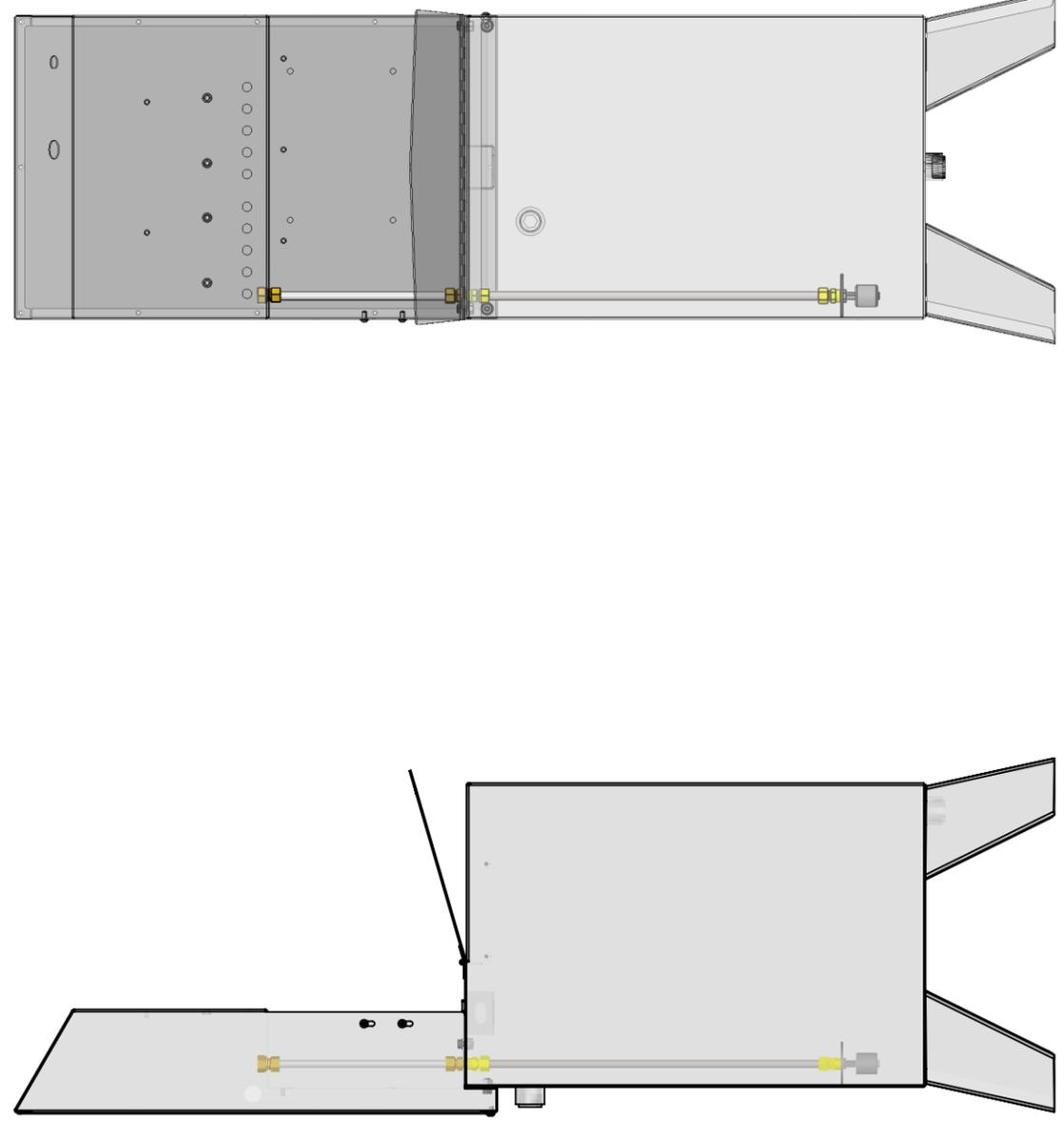
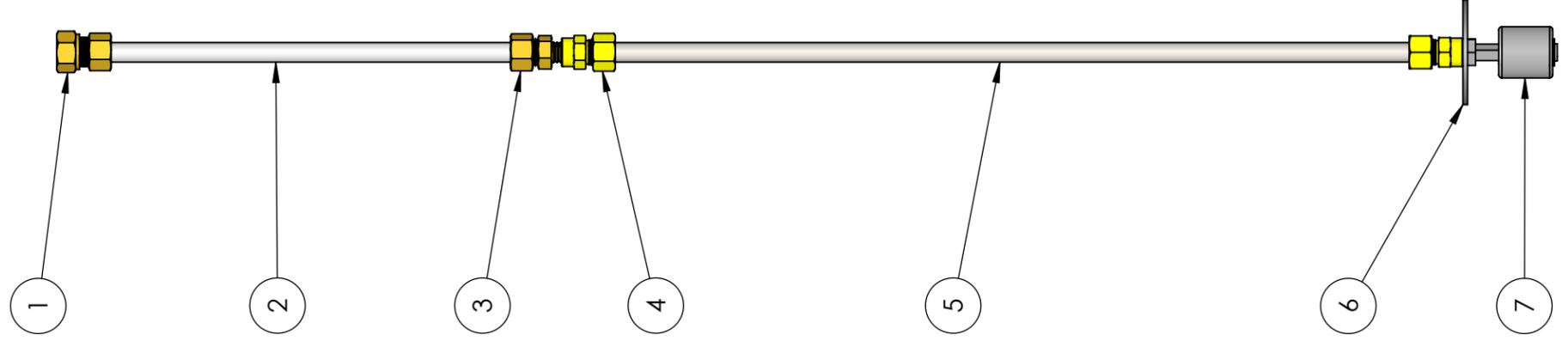


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	DO NOT SCALE DRAWING	SIZE DWG. NO. B 00-3201-30
REVISION 1	WEIGHT:	SHEET 7 OF 9
		SCALE: 1:16
		DATE: 4/22/2019
		DRAWN BY: MAB

PURGE OPTION

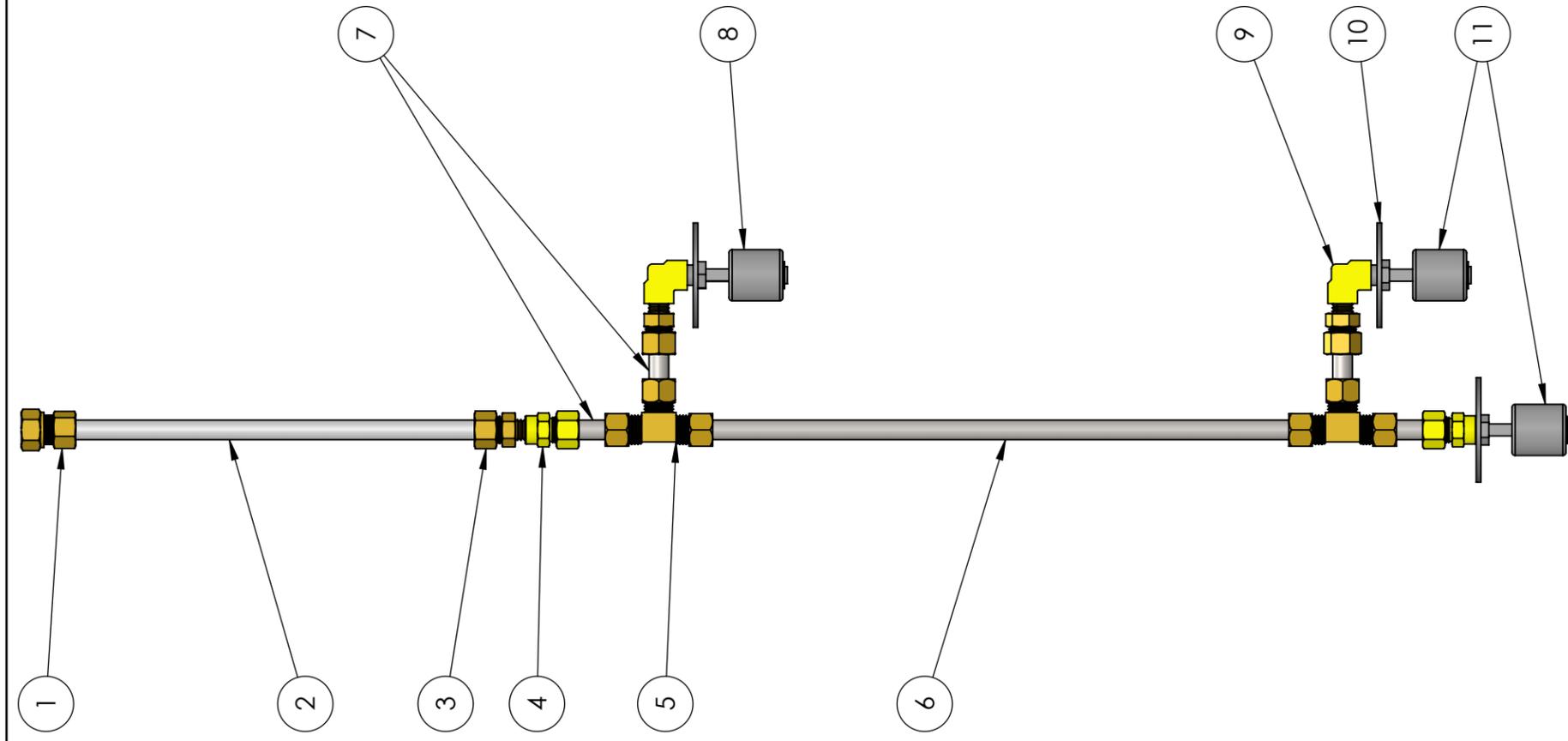
ITEM NO.	PART NUMBER	DESCRIPTION	LOW LEVEL FLOAT ASSEMBLY/QTY.
1	07-0916-40	BRASS MODIFIED CONNECTOR	1
2	01-1117-20	BULK TUBING 3/8" OD - 8.625"	1
3	01-0982-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/8" MNPT STRAIGHT	1
4	07-0995-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/8" FNPT	2
5	90-9013-20	304 SS 3/8" DIA SEAMLESS TUBING - 16.125"	1
6	07-1508-10	LLF WASHER	1
7	07-1501-24	FLOAT SWITCH 72" FLYING LEADS	1



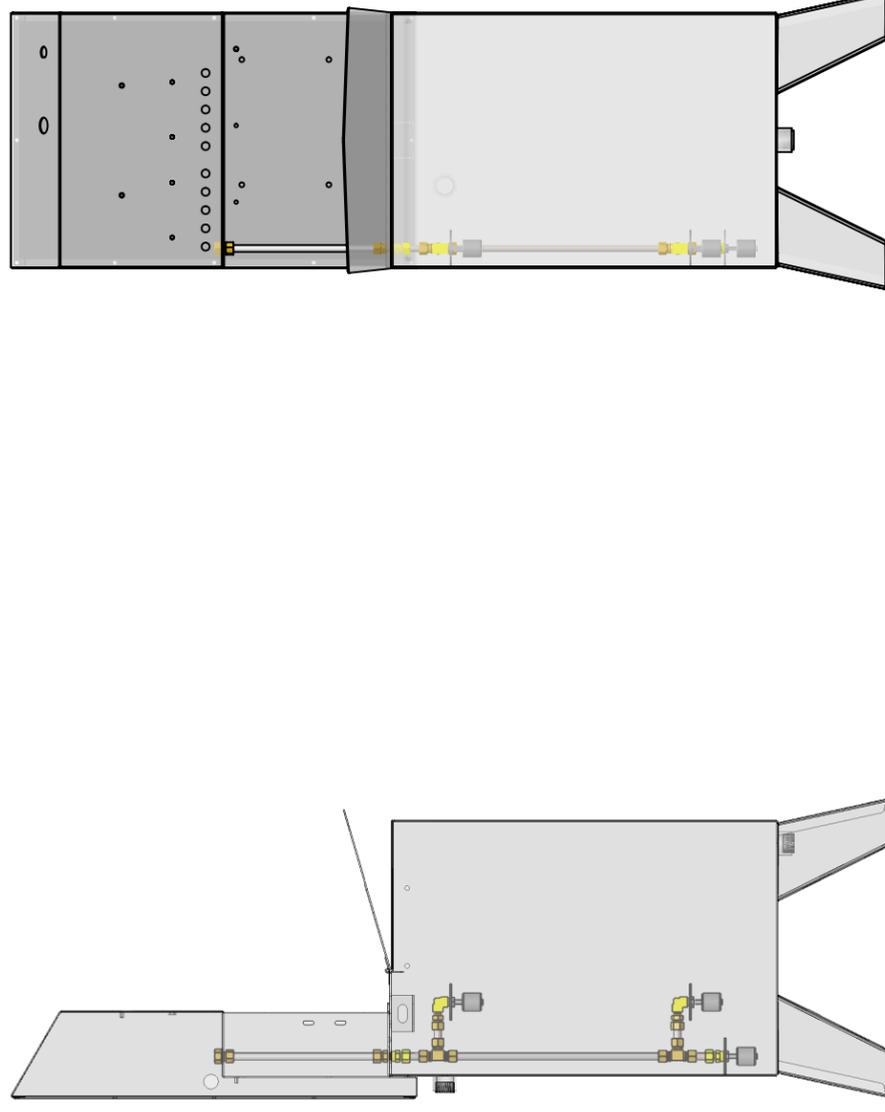
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	DO NOT SCALE DRAWING MATERIAL:	SIZE DWG. NO. B 00-3201-30
REVISION 1	WEIGHT:	SCALE: 1:12 DRAWN BY: MAB DATE: 4/22/2019

LOW LEVEL FLOAT ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	LOW LEVEL AND AUTO REFILL CONTROL/QTY.
1	07-0916-40	BRASS MODIFIED CONNECTOR	1
2	01-1117-20	BULK TUBING 3/8" OD - 8.5"	1
3	01-0982-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/8" MNPT STRAIGHT	3
4	07-0995-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/8" FNPT	2
5	01-0957-20	COMPRESSION FITTING - UNION 3/8" TUBE	2
6	90-9013-20	304 SS 3/8" DIA SEAMLESS TUBING - 12"	1
7	90-9013-20	304 SS 3/8" DIA SEAMLESS TUBING - 1.5"	4
8	07-1501-23	FLOAT SWITCH 24" FLYING LEADS	1
9	01-0983-20	PIPE FITTING - ELBOW 1/8" FNPT X 1/8" FNPT	2
10	07-1508-10	LLF WASHER	3
11	07-1501-24	FLOAT SWITCH 72" FLYING LEADS	2



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 THREE PLACE DECIMAL ± .003
 FOUR PLACE DECIMAL ± .0005

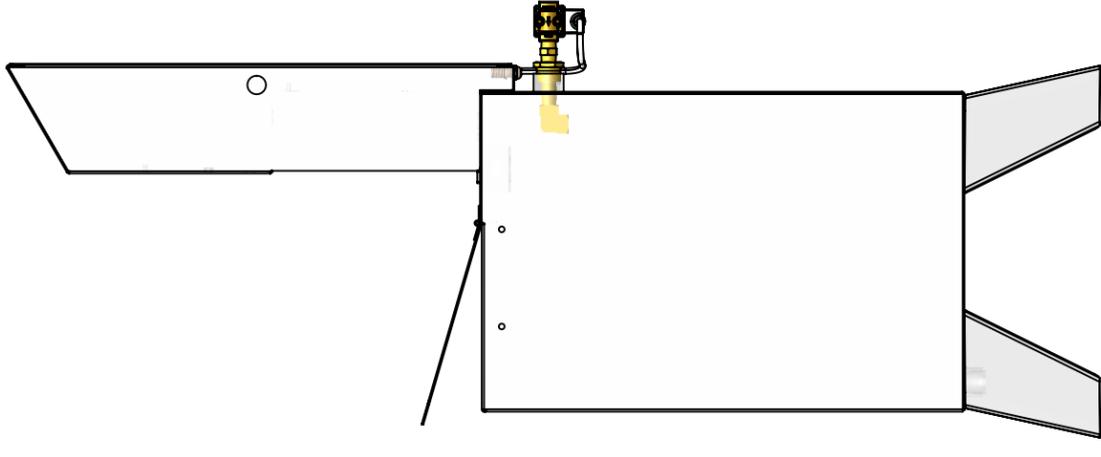
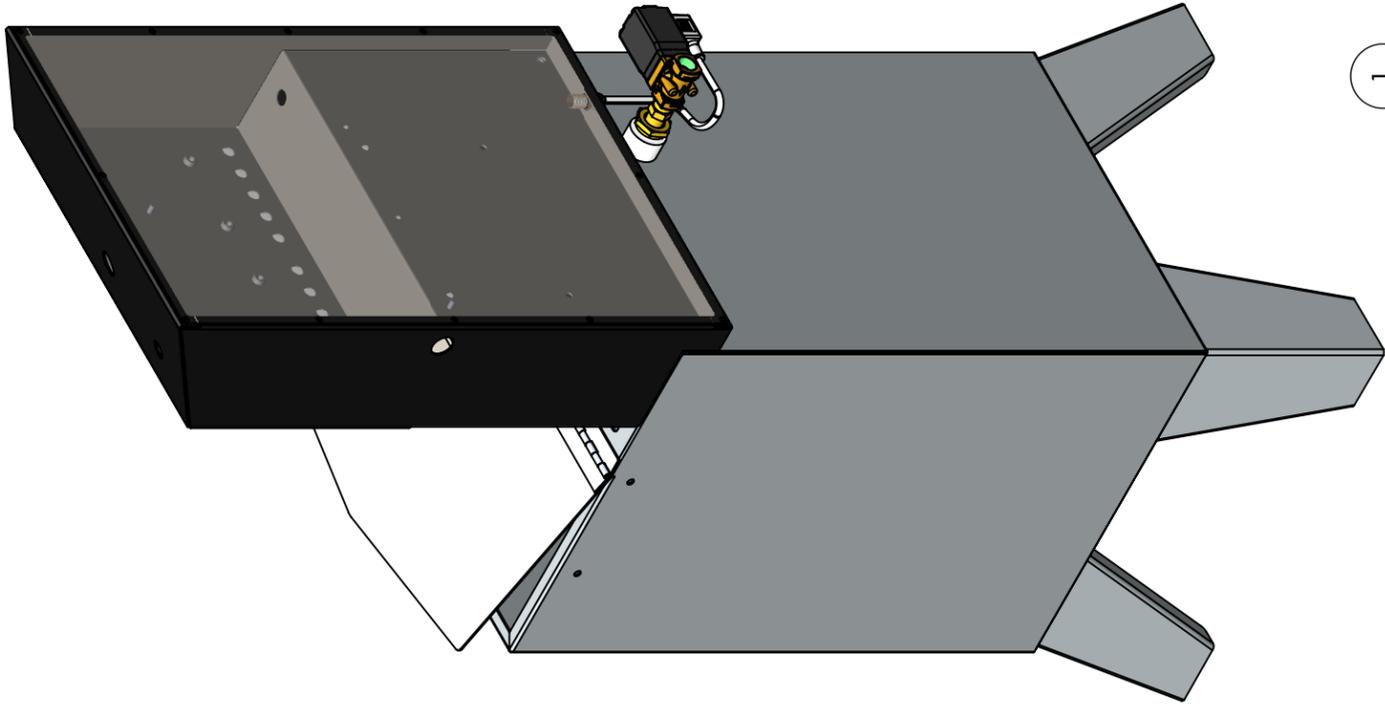
TITLE: PAX LUBE SYSTEM 10 VALVE/15GAL V SERIES LUBE SYSTEM
 SIZE DWG. NO. **B** 00-3201-30

DO NOT SCALE DRAWING
 REVISION 1 WEIGHT: SHEET 4 OF 9

SCALE: 1:16 DRAWN BY: MAB DATE: 4/22/2019

LOW LEVEL AND AUTO REFILL CONTROL

ITEM NO.	PART NUMBER	DESCRIPTION	AUTO REFILL SOLENOID VALVE ASSEMBLY/QTY.
1	04-1210-20	PIPE FITTING - ELBOW 3/8" FNPT X 3/8" FNPT	1
2	04-1211-20	PIPE FITTING - HEX NIPPLE 3/8" MNPT X 3/8" MNPT	1
3	04-1208-20	REDUCING BUSHING 3/4" MNPT X 3/8" FNPT	1
4	04-1219-20	PIPE FITTING - HEX NIPPLE 3/8" MNPT X 3/8" MNPT	1
5	04-2158-22	AUTO REFILL SOLENOID VALVE 120VAC	1
6	01-1464-20	CORD CONNECTOR .157-.315"DIA PG7 THREADS	1
7	05-1404-20	DIN STYLE CONNECTOR VAN-220-00	1



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TITLE: PAX LUBE SYSTEM 10 VALVE/15GAL
V SERIES LUBE SYSTEM

SIZE DWG. NO. **B** 00-3201-30

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TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

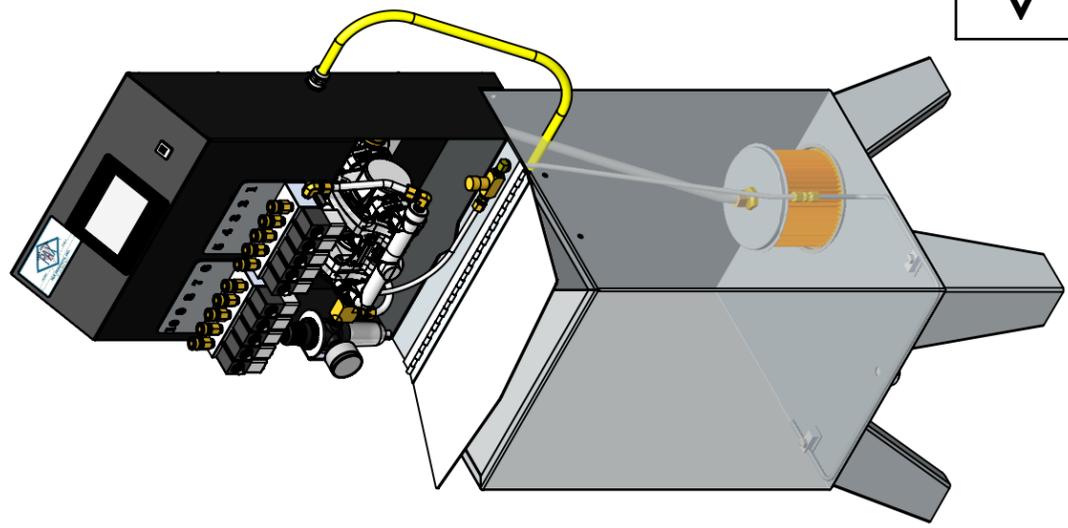
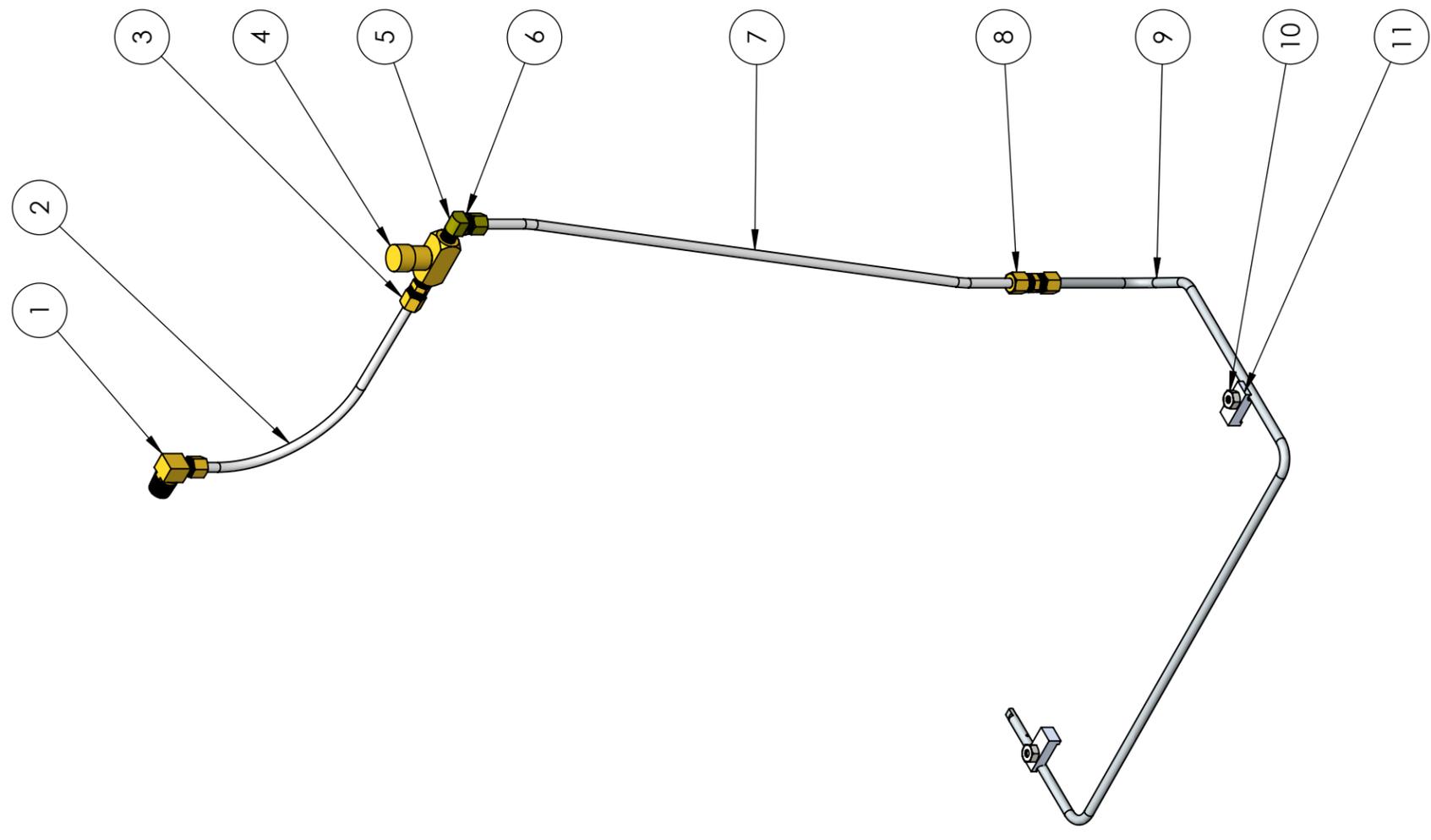
DO NOT SCALE DRAWING MATERIAL:

REVISION 1 WEIGHT: SHEET 5 OF 9

SCALE: 1:16 DRAWN BY: MAB DATE: 4/22/2019

AUTO REFILL SOLENOID VALVE ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	AIR AGITATION ASSEMBLY/QTY.
1	01-0960-20	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/4" MNPT	1
2	01-1116-21	BULK TUBING SEMI-RIGID 1/4" OD - 9"	1
3	01-0901-20	COMPRESSION FITTING - STRAIGHT 1/4" TUBE X 1/8" MNPT	1
4	01-1926-20	FLOW CONTROL VALVE	1
5	01-0914-21	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/8" MNPT	1
6	01-1988-10	SPACER	1
7	01-1116-20	BULK TUBING SOFT 1/4" OD - 19"	1
8	01-0902-20	1/8" MNPT TO 1/4" TUBING CONNECTOR	1
9	90-9364-10	AIR AGITATION - 15 GAL TUBE	1
10	01-0120-20	HEX NUT 1/4"-20	2
11	01-0745-10	AIR AGITATION TUBE CLAMP	2

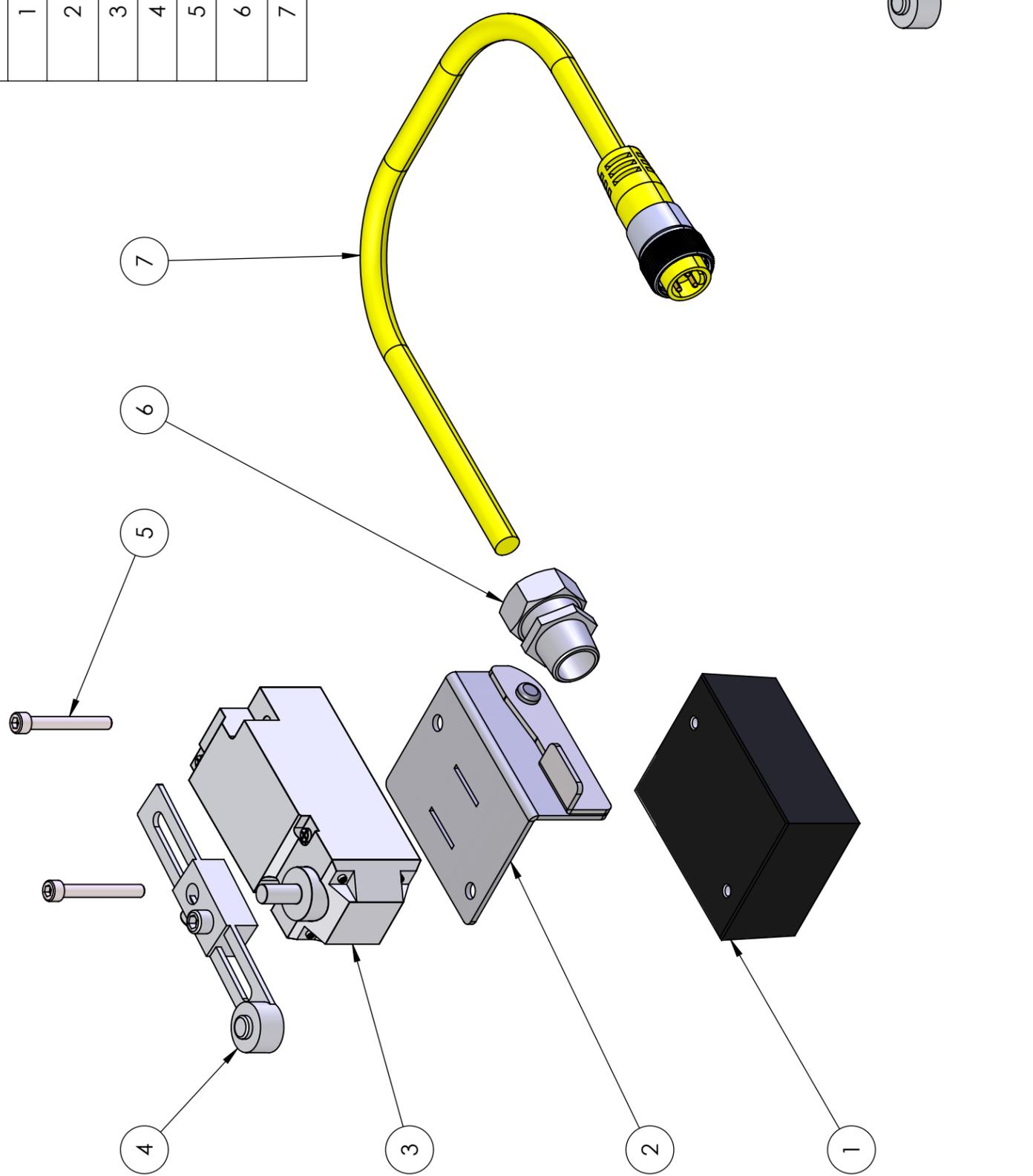


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	REVISION 1 WEIGHT: SHEET 6 OF 9	SCALE: 1:16 DRAWN BY: MAB DATE: 4/22/2019

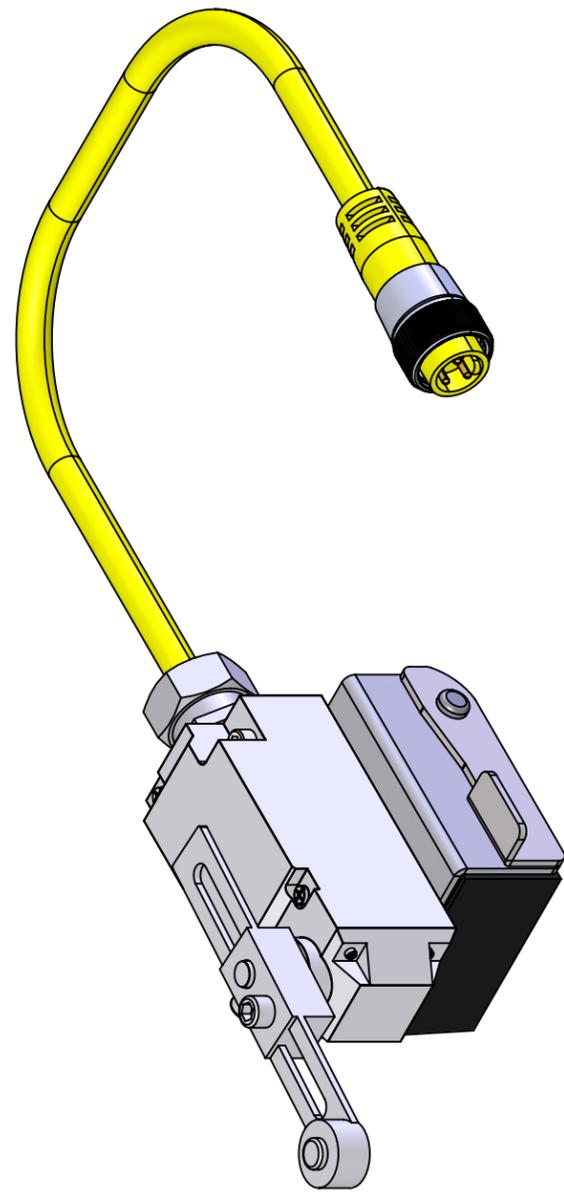
AIR AGITATION ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	09-1615-30	MAGNETIC BASE - LIMIT SWITCH	1
2	09-2090-30	MAG BASE LIMIT SWITCH RELEASE LEVER ASSEMBLY	1
3	09-1382-20	OMRON LIMIT SWITCH	1
4	09-1383-20	OMRON LIMIT SWITCH ARM	1
5	09-0139-20	SHCS #10-32 X 1-1/2"	2
6	01-1393-20	CORD CONNECTOR .375-.425" DIA 1/2" TRADE SIZE	1
7	09-1384-20	CORDSET MIN 3 PIN MALE 12'	1

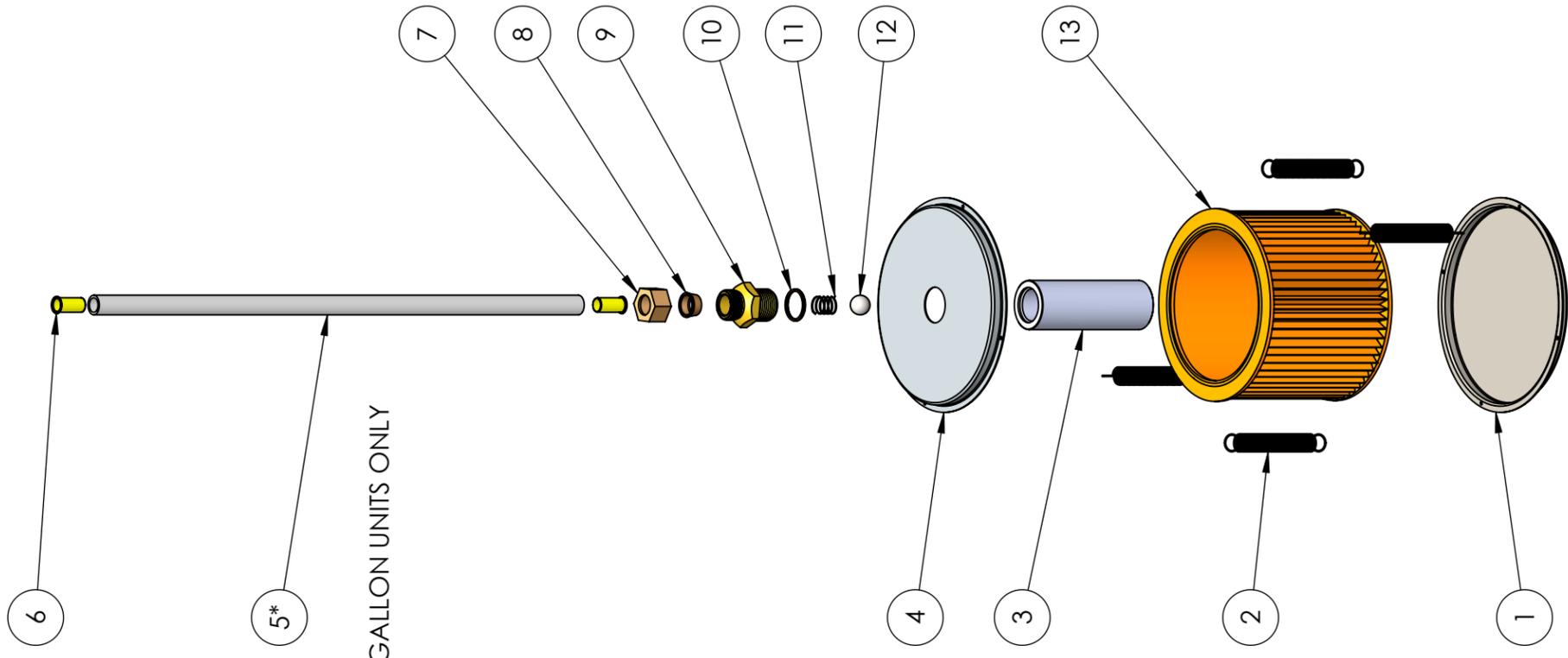


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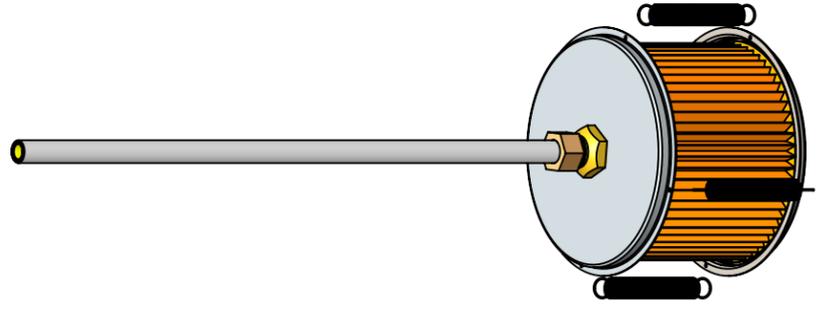
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	DO NOT SCALE DRAWING MATERIAL:	SIZE DWG. NO. B 09-2054-32
REVISION 1	WEIGHT: 2.76	SHEET 1 OF 1
		SCALE: 1:4
		DATE: 4/22/2019



ITEM NO.	PART NUMBER	DESCRIPTION	FILTER ASSEMBLY/QTY.
1	01-0817-10	BOTTOM PLATE - SCREEN FILTER	1
2	01-0309-21	FILTER ASSEMBLY SPRING	4
3	01-0621-10	FOOT VALVE	1
4	01-0836-10	V-SERIES TOP PLATE	1
5*	01-1136-20	BULK TUBING 1/2" OD - 19.5"	1
6	01-1999-20	TUBING INSERT 1/2" TUBE	2
7	01-1998-20	COMPRESSION NUT 1/2" TUBE	1
8	01-1997-20	COMPRESSION SLEEVE 1/2" TUBE	1
9	03-0622-10	1/2" OUTLET VALVE ADAPTER	1
10	03-0218-20	O-RING #017 VITON	1
11	03-0308-20	INLET VALVE SPRING - SINGLE D. PUMP	1
12	03-0403-20	S.S. CHECK BALL - DIAPHRAGM PUMP	1
13	01-0820-10	MESH SCREEN FILTER	1



*01-1136-20 FOR 15/30 GALLON UNITS ONLY



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	DO NOT SCALE DRAWING MATERIAL:	SIZE DWG. NO. B 00-3201-30
REVISION 1	WEIGHT:	SHEET 8 OF 9
		SCALE: 1:8
		DRAWN BY: MAB DATE: 4/22/2019

FILTER ASSEMBLY



INSTALLATION OF THE FOOT VALVE INTO THE FILTER ASSEMBLY

Reference Figure 12

The procedures are presented in order of importance for proper assembly of the FILTER ASSEMBLY. Following these procedures will insure proper assembly. Disassembly will follow the reverse order.

1. Place the filter element (3) in the bottom cover plate (1). Insure the filter is properly seated inside the cover plate.
2. Assemble check ball (6), inlet spring (7), and outlet valve adapter (8) through the top plate (5) and into foot valve (4). Torque outlet valve adapter (8) to 180 in. lbs.
3. Place the assembly with the top cover plate into the filter element. Insure the 4 spring clip holes of the top cover plate are in line with the 4 spring clip holes of the bottom cover plate.
4. Install the 4 filter assembly springs (2) one at a time following the X pattern.



1/4" DIAPHRAGM PUMP 1:1 RATIO (NON-METALLIC)

PUMP DATA

Part Number	03-2162-21
Pump Type	Non-Metallic Air Operated Double Diaphragm
Weight	Polypropylene - 2.86 lbs (1.30 kgs)
Maximum Air Inlet Pressure	125 p.s.i.g. (8.6 bar)
Minimum Air Inlet Pressure	10 p.s.i.g. (.69 bar)
Maximum Outlet Pressure	125 p.s.i.g. (8.6 bar)
Maximum Flow Rate	5.3 g.p.m. (20.0 liters)
Maximum Suction Lift	20 ft. (water)
Maximum Output Per Cycle	0.014 gallons (53 cc's)
Maximum Particle Size	1/16" (1.6mm) clean fluid only
Maximum Temperature Limits	Polypropylene - 35° to 175° F (2° t 79° C)

AIR AND LUBE REQUIREMENTS

WARNING

EXCESSIVE AIR PRESSURE. Can cause pump damage, personal injury or property damage.

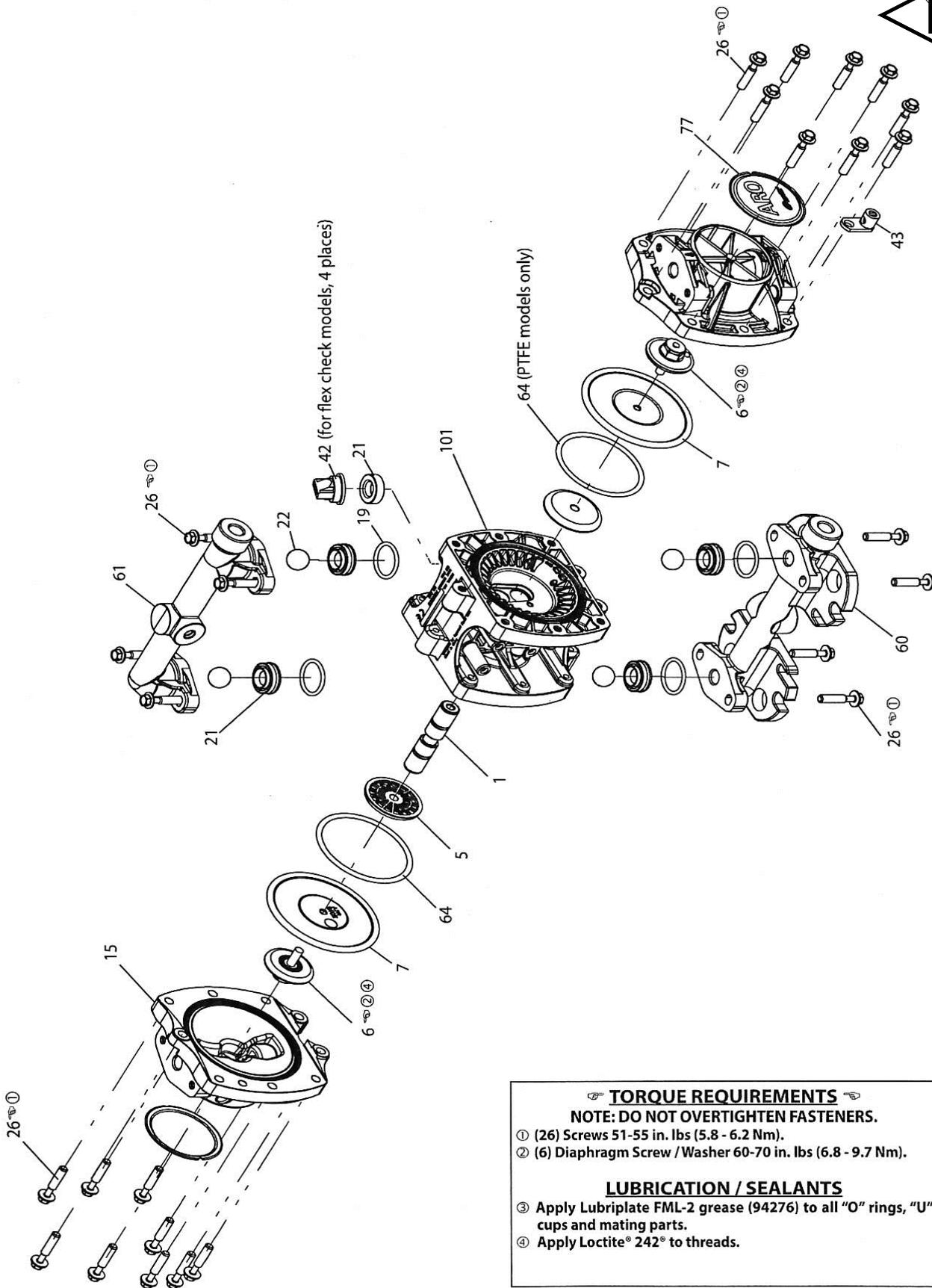
- A filter capable of filtering out particles larger than 50 microns should be used on the air supply. In most applications there is no lubrication required other than the “O” ring lubricant which is applied during assembly or repair.
- The pump can be rotated 360° to suit the application. It may be mounted upside down or on the wall with no effect on suction lift or operating efficiency. The filter and regulator need to be oriented in a normal vertical direction to function properly.
- Pipe plugs are included for the material inlets. They can be switched to accommodate piping requirements. However, the fluid inlet must always be in the port closest to the mounting base.

INSTALLATION

- **NOTICE: Re-torque fasteners prior to use. Refer to the chart on page 43.**
- Apply Teflon tape or pipe sealant to threads upon assembly to prevent leakage.
- Secure the diaphragm pump legs to a suitable surface to insure against damage by vibration.
- To avoid problems, install a particle fluid filter to screen out foreign matter 1/32” (.79 mm) or larger in diameter.
- The pump is not recommended for submerged applications.
- When the diaphragm pump is used in a forced-feed (flooded inlet) situation, it is recommended that a “Check Valve” be installed at the air inlet.

OPERATING INSTRUCTIONS

- Always flush the pump with a solvent compatible with the material being pumped, if the material being pumped is subject to “setting up” when not in use for a period of time.
- Disconnect the air supply from the pump if it is to be inactive for a few hours.
- The outlet material volume is governed not only by the air supply, but also by the material supply available at the inlet. The material supply tubing should not be too small or restrictive. Be sure not to use hose which might collapse.



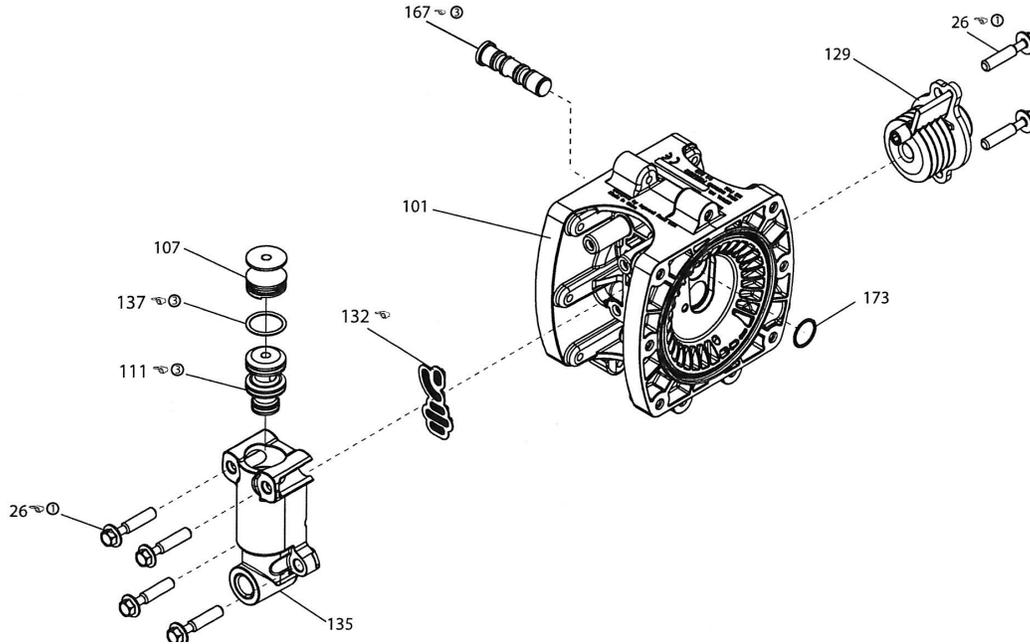
1/4" DIAPHRAGM PUMP
03-2162-20



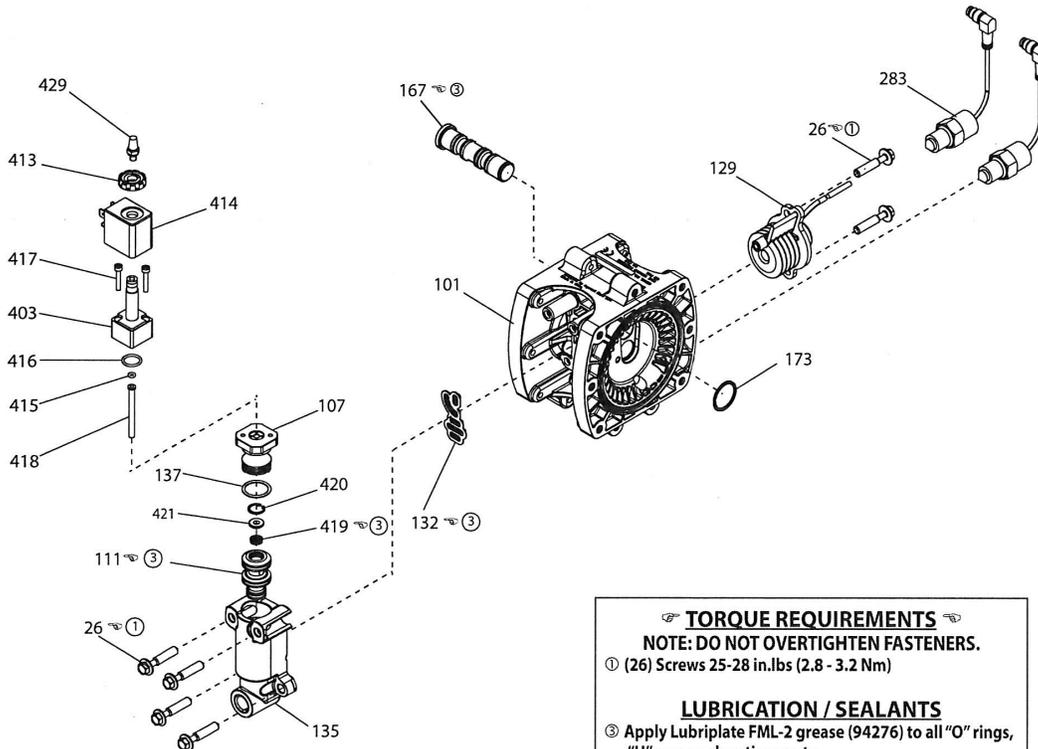
PUMP DISASSEMBLY AND REASSEMBLY

PX01X-XXX-XXX-AXXX / AIR SECTION

PD01X-XXX-XXX-AXXX - Air Section



PE01X-XXX-XXX-AXXX- Air Section



TORQUE REQUIREMENTS

NOTE: DO NOT OVERTIGHTEN FASTENERS.

① (26) Screws 25-28 in.lbs (2.8 - 3.2 Nm)

LUBRICATION / SEALANTS

③ Apply Lubriplate FML-2 grease (94276) to all "O" rings, "U" cups and mating parts.

④ Apply Loctite® 242® to threads.



PUMP DISASSEMBLY AND REASSEMBLY

PARTS LIST / PX01X-XXX-XXX-AXXX

COMMON PARTS				
PX01X-XXX-XXX-AXXX				
Item	Description	[Mtl]	Qty	Part no
1	Rod Assembly (includes seals)	---	[1]	24028284
5	Washer, Diaphragm	[P]	[2]	23981541
77	Plate	---	[2]	93264
206	Caution Label	---	[1]	93122
207	Warning Label	---	[1]	93616-1
26	Screw	[SS]	[32]	23981574

MATERIAL CODE
[B] = Nitrile
[Co] = Copper
[D] = Acetal
[E] = E.P.R. / EPDM
[G] = Nitrile
[GP] = Groundable Polypropylene
[H] = Hytrel
[K] = Kynar PVDF
[N] = Neoprene
[P] = Polypropylene
[Sp] = Santoprene
[SS] = Stainless Steel
[T] = PTFE
[U] = Polyurethane
[V] = Viton

FLUID CONNECTION										
PX01X-XXX-XXX-AXXX										
		PX01X-HDS			PX01X-HKS			PX01X-HPS		
Item	Description	Part no	[Mtl]	Qty	Part no	[Mtl]	Qty	Part no	[Mtl]	Qty
6	Diaphragm Screw	93810-2	[D]	(2)	93810-3	[K]	(2)	93810-1	[P]	(2)
15	Fluid Cap	23981640	[D]	(2)	23981657	[K]	(2)	23981632	[P]	(2)
60	Inlet Manifold	23981681	[D]	(1)	23981699	[K]	(1)	23981673	[P]	(1)
61	Outlet Manifold	23981723	[D]	(1)	23981731	[K]	(1)	23981715	[P]	(1)
43	Ground Lug	93004	[Co]	(1)	---			---		

SEAT OPTIONS PX01X-XXX-XXX-AXXX				BALL / FLEX CHECK OPTIONS PX01X-XXX-XXX-AXXX							
"21"				"22" (5/8" o.d)				"42"			
-XXX	Seat	Qty	[Mtl]	-XXX	Ball	Qty	[Mtl]	-XXX	FLEX CHECK	Qty	[Mtl]
-DXX	96580-2	(4)	[D]	-XAX	96481-A	(4)	[Sp]	-XJX	96744-2	(4)	[B]
-KXX	96580-3	(4)	[K]	-XCX	96481-C	(4)	[H]	-XNX	96744-3	(4)	[N]
-PXX	96580-1	(4)	[P]	-XGX	96481-G	(4)	[B]	-XLX	96744-4	(4)	[V]
-HPS-0XX	96745	(4)	[P]	-XTX	96481-4	(4)	[T]	-XKX	96744-1	(4)	[E]
-HKS-2XX	96745-1	(4)	[K]								
-HDS-1XX	96745-2	(4)	[D]								

DIAPHRAGM OPTIONS PX01X-XXX-XXX-AXXX									
"7"				"19"			"64"		
-XXX	Diaphragm	Qty	Mtl	Seal	Qty	Mtl	"O" Ring	Qty	Mtl
-XXA	93808	(2)	[Sp]	93761	(4)	[E]	-----	---	---
-XXC	93808-C	(2)	[H]	Y325-119	(4)	[B]	-----	---	---
-XXG	93808-G	(2)	[B]	Y325-119	(4)	[B]	-----	---	---
-XXT	93898	(2)	[T]	96514	(4)	[T]	93947	---	[B]

Note: Item (19) O-ring is not used with Flex Check Options.



PUMP DISASSEMBLY AND REASSEMBLY

PARTS LIST / PX01X-XXX-XXX-AXXX

AIR SECTION PARTS

Item	Description	Part no	Qty	[Mtl]	Item	Description	Part no	Qty	[Mtl]		
101	Center Body				403	Valve (All PE01X with Solenoid)	114102	(1)			
	(PD01X)	23981392	(1)	[P]		413	Coil Nut (All PE01X with Solenoid)	119380	(1)		
	(All PE01X without Diaphragm Failure Detection)	23981392	(1)	[P]			414	Coil, 120 VAC (PE01X-XXX-XXX-XAXXX)	116218-33	(1)	
	(PE01X With Diaphragm Failure Detection)	23981608	(1)	[P]				Coil, 24 VAC, 12VDC (PE01X-XXX-XXX-XBXXX)	116218-38	(1)	
(PD01E and PE01E) (not available with Diaphragm Failure Detection)	24243354	(1)	[GP]	Coil, 240 VAC (PE01X-XXX-XXX-XCXXX)	116218-35	(1)					
107	Valve Block Plug				Coil, 48 VAC, 24VDC (PE01X-XXX-XXX-XDXXX)	116218-39		(1)			
	(PD01X, PE01X-XXX-XXX-XQXXX)	23981434	(1)	[P]	Coil, ATEX, 12VDC (PE01X-XXX-XXX-XGXXX)	117345-38	(1)				
	(All PE01X with Solenoid)	23981848	(1)	[P]	Coil, ATEX, 24VDC (PE01X-XXX-XXX-XHXXX)	117345-39	(1)				
111	Major Valve Spool Asm (includes seals)				Coil, ATEX, 220VAC (PE01X-XXX-XXX-XJXXX)	117345-35	(1)				
	(PD01X, PE01X-XXX-XXX-XQXXX)	24028268	(1)	[D]	415	O-Ring (All PE01X with Solenoid)	114103	(1)	[B]		
	(All PE01X with Solenoid)	24086779	(1)	[D]		416	O-Ring (All PE01X with Solenoid)	114104	(1)	[B]	
129	Muffler Baffle				417		Screw (All PE01X with Solenoid)	96728647	(2)		
	(PD01X, PE01X-XXX-XXX-XXQXX)	23981475	(1)	[P]		418	Tube (All PE01X with Solenoid)	15309974	(1)	[SS]	
	(PE01X-XXX-XXX-XXNXX)	24110926	(1)	[P]	419		Seal (All PE01X with Solenoid)	96957	(1)	[B]	
	(PE01X-XXX-XXX-XXPXX)	24110926	(1)	[P]		420	Snap Ring (All PE01X with Solenoid)	Y147-43	(1)		
	(PE01X-XXX-XXX-XXEXX)	24110934	(1)	[P]	421		Retainer (All PE01X with Solenoid)	96954	(1)	[B]	
	(PE01X-XXX-XXX-XXFXX)	24110934	(1)	[P]		429	Solenoid Muffler (All PE01X with Solenoid)	116464	(1)		
	(PE01X-XXX-XXX-XXLXX)	23981475	(1)	[P]							
132	Gasket	23981525	(1)	[B]							
135	Valve Block Assembly										
	(PD01X, PE01X-XXX-XXX-XQXXX)	24243388	(1)	[P]							
	(All PE01X with Solenoid)	24340275	(1)	[P]							
137	O-Ring (0.070 CS x 0.676 ID)	Y-325-17	(1)	[B]							
167	Pilot Valve Spool Assembly (includes seals)	24028276	(1)	[D]							
173	O-Ring	24243313	(1)	[U]							
283	Diaphragm Failure Detector										
	(PE01X-XXX-XXX-XXEXX)	96270-1	(2)								
	(PE01X-XXX-XXX-XXLXX)	96270-1	(2)								
	(PE01X-XXX-XXX-XXNXX)	96270-1	(2)								



SPRAY TIP TABLE 2

NOTE: TEST FOR SPRAY PATTERNS WERE CONDUCTED USING TELLUS #10 OIL (60 SUS) AND WATER MAINTAINING A 6" VERTICAL DISTANCE AND 70 PSI AIR PRESSURE.

	P/N	DESCRIPTION	PATTERN SIZE	
			TELLUS #10	WATER
FLAT	06-0952-20	110° (.031 Orifice)	1.50" x 9.00"	2.00" x 17.00"
	06-1909-20	95° (.031 Orifice)	1.25" x 7.00"	1.75" x 13.50"
	06-0950-20	80° (.031 Orifice)	1.25" x 5.00"	1.50" x 11.00"
	06-1908-20	65° (.031 Orifice)	1.25" x 3.00"	1.50" x 8.50"
	06-0951-20	50° (.031 Orifice)	1.25" x 2.00"	1.25" x 6.00"
	06-0973-20	25° (.031 Orifice)	1.00" x 1.00"	1.00" x 4.00"
CONE	06-0959-20	.030" Orifice TG0.7	2.50" Dia.	6.50" Dia.
	06-0953-20	.024" Orifice TG0.5	2.00" Dia.	5.50" Dia.
	06-0958-20	.020" Orifice TG0.3	1.75" Dia.	5.00" Dia.
DEFLECTED	06-0956-20	.041" Orifice TK1.5	None	1.00" x 24.00"

SELECTING SPRAY TIPS

There are many variables that impact the performance of the system to provide a specific spray pattern. Consideration should be given to:

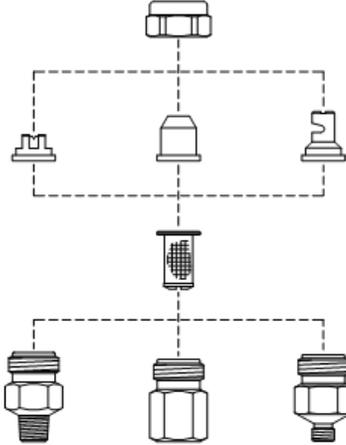
1. VISCOSITY - is that characteristic of any liquid which resists the forces of movement. Viscosity is the measure of the internal resistance of a fluid to shear and is related to the internal friction of the fluid.
2. SURFACE TENSION - is the characteristic of any liquid where the surface tends to assume the smallest size possible. The higher the surface tension the more resistance to flow.
3. TEMPERATURE - may affect viscosity, surface tension, and specific gravity. Therefore, temperature may affect spray patterns. The chemical configuration of the fluid is the determining factor. Moderate changes in temperature may not have any effect on some fluids.

NOTE: Spray patterns will also be affected by tip orifice wear. The spray patterns will change size and the droplet size will increase. Spray coverage will change and may not be as even as when the tip was new.



SELECTING THE COMBINATION OF NOZZLE AND TIP

Determine the type of tip configuration required for your application and select from Table 2. Select the nozzle body style from Figure 13.



SPRAY NOZZLE DIMENSIONS

1/8" MALE NPT SPRAY NOZZLE FAN TIP P/N 06-3002-30 	1/8" MALE NPT SPRAY NOZZLE CONE TIP P/N 06-3002-30 	1/8" MALE NPT SPRAY NOZZLE DEFLECTED FAN TIP P/N 06-3002-30
1/8" FEMALE NPT SPRAY NOZZLE FAN TIP P/N 06-3001-30 	1/8" FEMALE NPT SPRAY NOZZLE CONE TIP P/N 06-3001-30 	1/8" FEMALE NPT SPRAY NOZZLE DEFLECTED FAN TIP P/N 06-3001-30
1/8" TUBING SPRAY NOZZLE FAN TIP P/N 06-3052-30 	1/8" TUBING SPRAY NOZZLE CONE TIP P/N 06-3052-30 	1/8" TUBING SPRAY NOZZLE DEFLECTED FAN TIP P/N 06-3052-30

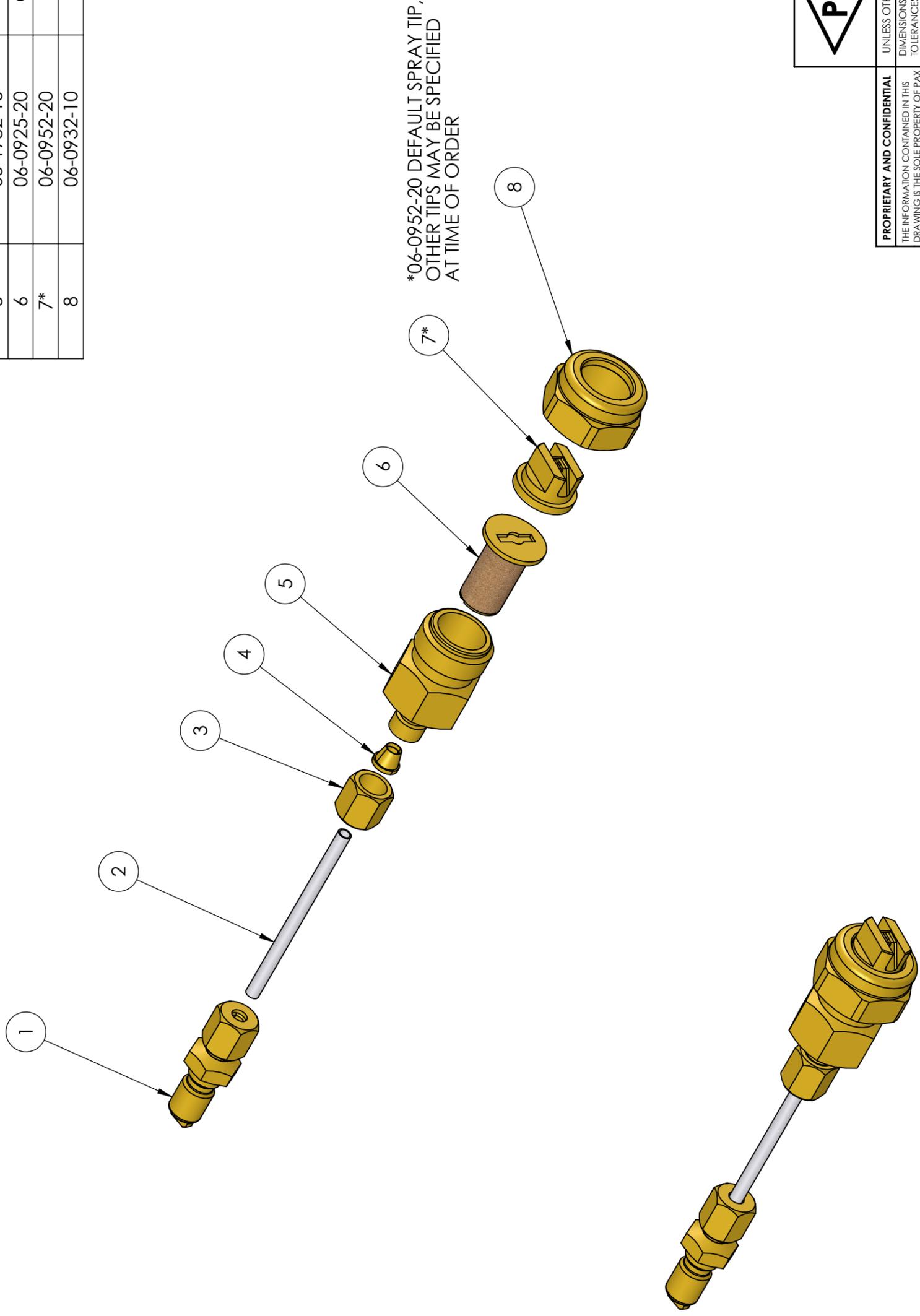
STANDARD SPRAY NOZZLE ASSEMBLIES

FIGURE 13



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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	06-1989-30	QUICK CONNECT PLUG ASM. 1/8" TUBING	1
2	01-1133-20	BULK TUBING SEMI-RIGID 1/8" OD	1
3	06-1945-20	COMPRESSION NUT 1/8" TUBE	1
4	06-1944-20	COMPRESSION SLEEVE 1/8" TUBE	1
5	06-1982-10	STD NOZZLE BODY 1/8" TUBING	1
6	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
7*	06-0952-20	110 DEG FLAT SPRAY TIP	1
8	06-0932-10	TIP RETAINER	1



PAX PRODUCTS, INC.
 5097 MONROE ROAD PHONE: (419)586-6948
 P.O. BOX 257 FAX: (419)586-6932
 CELINA, OHIO 45822-0257

TITLE: STD SPRAY ASSEMBLY LOW
 VOLUME, 8' 1/8" TUBING

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 ANGULAR: MACH ± 1 BEND ± .5
 TWO PLACE DECIMAL ± .010
 THREE PLACE DECIMAL ± .003
 FOUR PLACE DECIMAL ± .0005

SIZE DWG. NO. **B** 06-3049-30

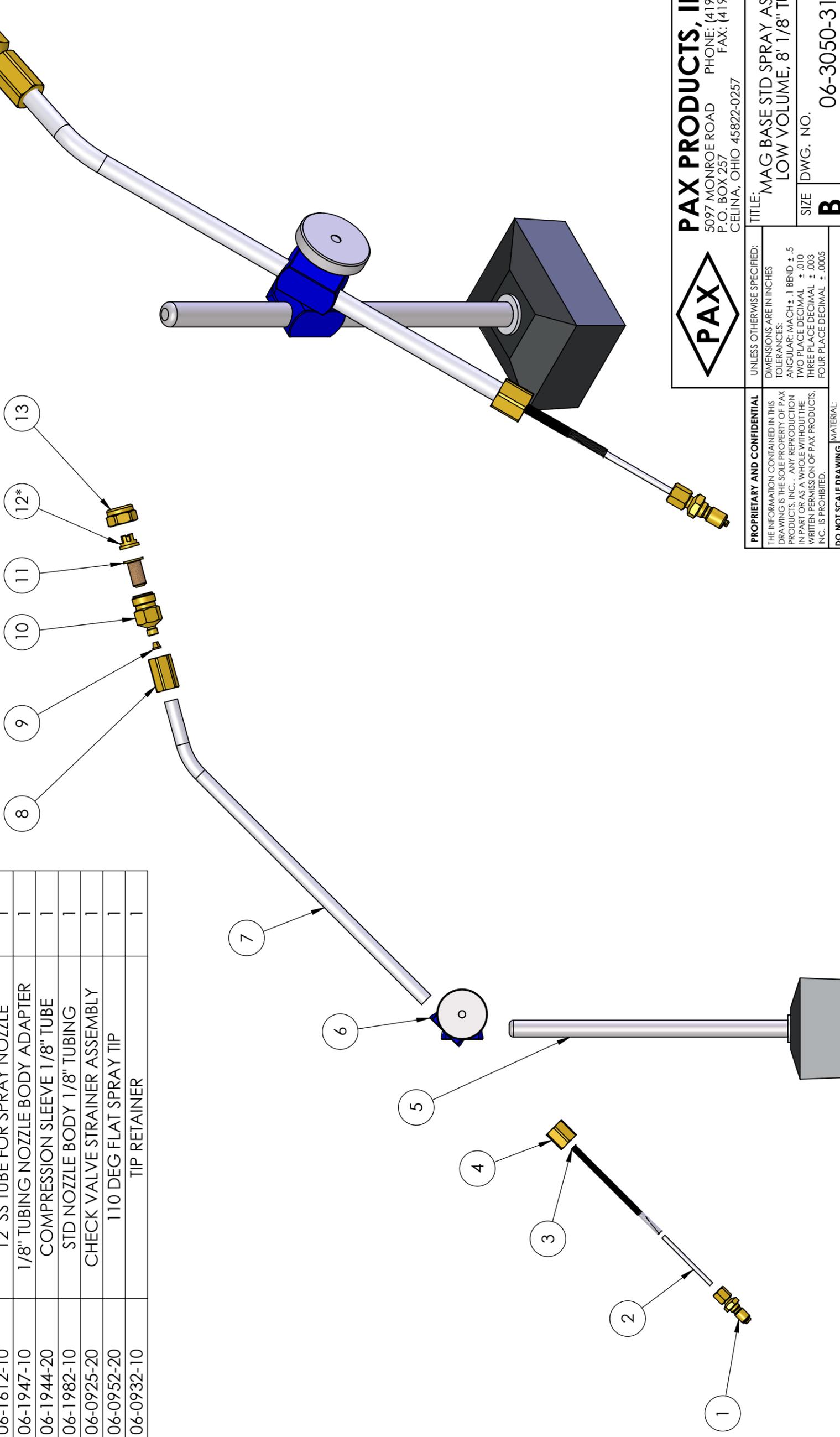
SCALE: 1:2 DRAWN BY: MAB DATE: 4/22/2019

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 REVISION 1 WEIGHT: 0.19 SHEET 1 OF 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	06-1989-30	QUICK CONNECT PLUG ASM. 1/8" TUBING	1
2	01-1133-20	BULK TUBING SEMI-RIGID 1/8" OD	1
3	06-0311-20	S.S. TUBE ANTI-KINK SPRING	1
4	06-1628-10	FLEXTUBE 1/8" TUBING GUIDE	1
5	06-1640-30	MAGNETIC BASE ASSY WITH UPRIGHT POST	1
6	06-1614-31	SWIVEL CLAMP ASSEMBLY	1
7	06-1612-10	12" SS TUBE FOR SPRAY NOZZLE	1
8	06-1947-10	1/8" TUBING NOZZLE BODY ADAPTER	1
9	06-1944-20	COMPRESSION SLEEVE 1/8" TUBE	1
10	06-1982-10	STD NOZZLE BODY 1/8" TUBING	1
11	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
12*	06-0952-20	110 DEG FLAT SPRAY TIP	1
13	06-0932-10	TIP RETAINER	1

*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER



PAX PRODUCTS, INC.
5097 MONROE ROAD PHONE: (419)586-6948
P.O. BOX 257 FAX: (419)586-6932
CELINA, OHIO 45822-0257

TITLE: **MAG BASE STD SPRAY ASSEMBLY
LOW VOLUME, 8' 1/8" TUBING**

SIZE **B** DWG. NO. **06-3050-31**

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± .1 BEND ± .5
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

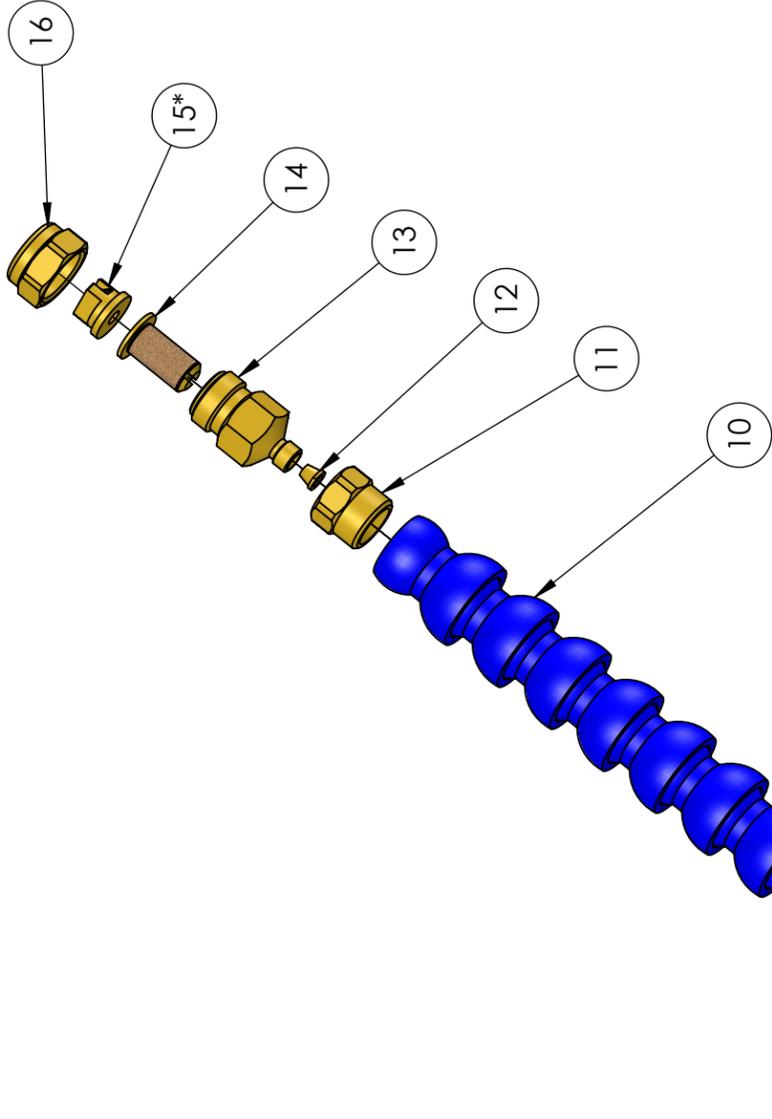
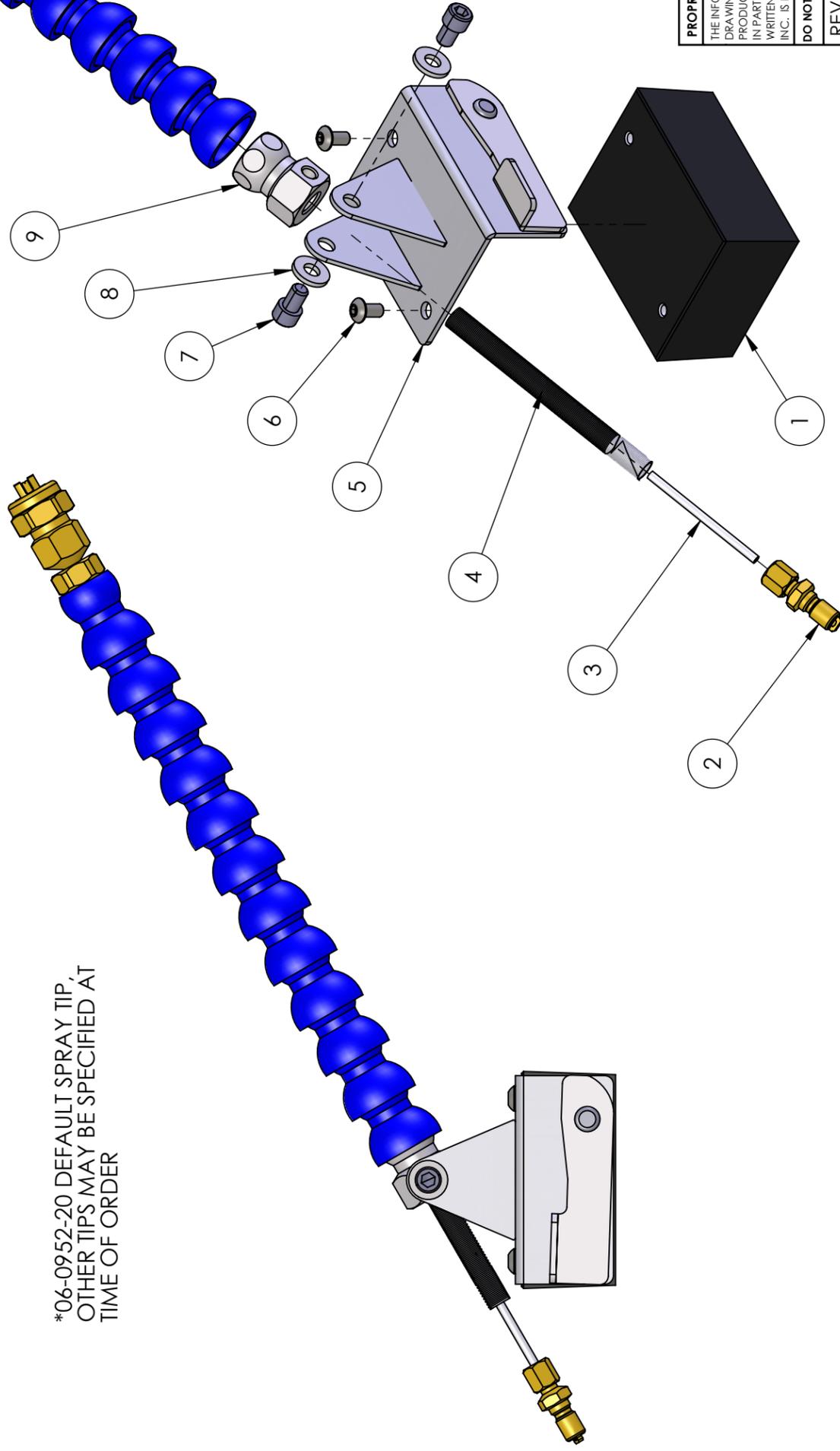
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REVISION **1** WEIGHT: 2.55 SHEET 1 OF 1 SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	09-1615-30	MAGNETIC BASE - LIMIT SWITCH	1
2	06-1989-30	QUICK CONNECT PLUG ASM. 1/8" TUBING	1
3	01-1133-20	BULK TUBING SEMI-RIGID 1/8" OD	1
4	06-0304-20	S.S. TUBE ANTI-KINK SPRING	1
5	06-2093-30	MAGNETIC BASE RELEASE LEVER ASSEMBLY [FLEXTUBE]	1
6	01-0122-22	BHCS #10-32 X 3/8"	2
7	06-0141-20	SHCS 1/4"-28 X 3/8"	2
8	06-0168-10	1/4" FLAT WASHER	2
9	06-1627-10	FLEXTUBE BRKT ADAPTER SEGMENT	1
10	06-1625-20	FLEXTUBE SEGMENT	12
11	06-1629-10	FLEXTUBE NOZZLE ADAPTER INSERT 1/8" LINE	1
12	06-1944-20	COMPRESSION SLEEVE 1/8" TUBE	1
13	06-1982-10	STD NOZZLE BODY 1/8" TUBING	1
14	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
15*	06-0952-20	110 DEG FLAT SPRAY TIP	1
16	06-0932-10	TIP RETAINER	1

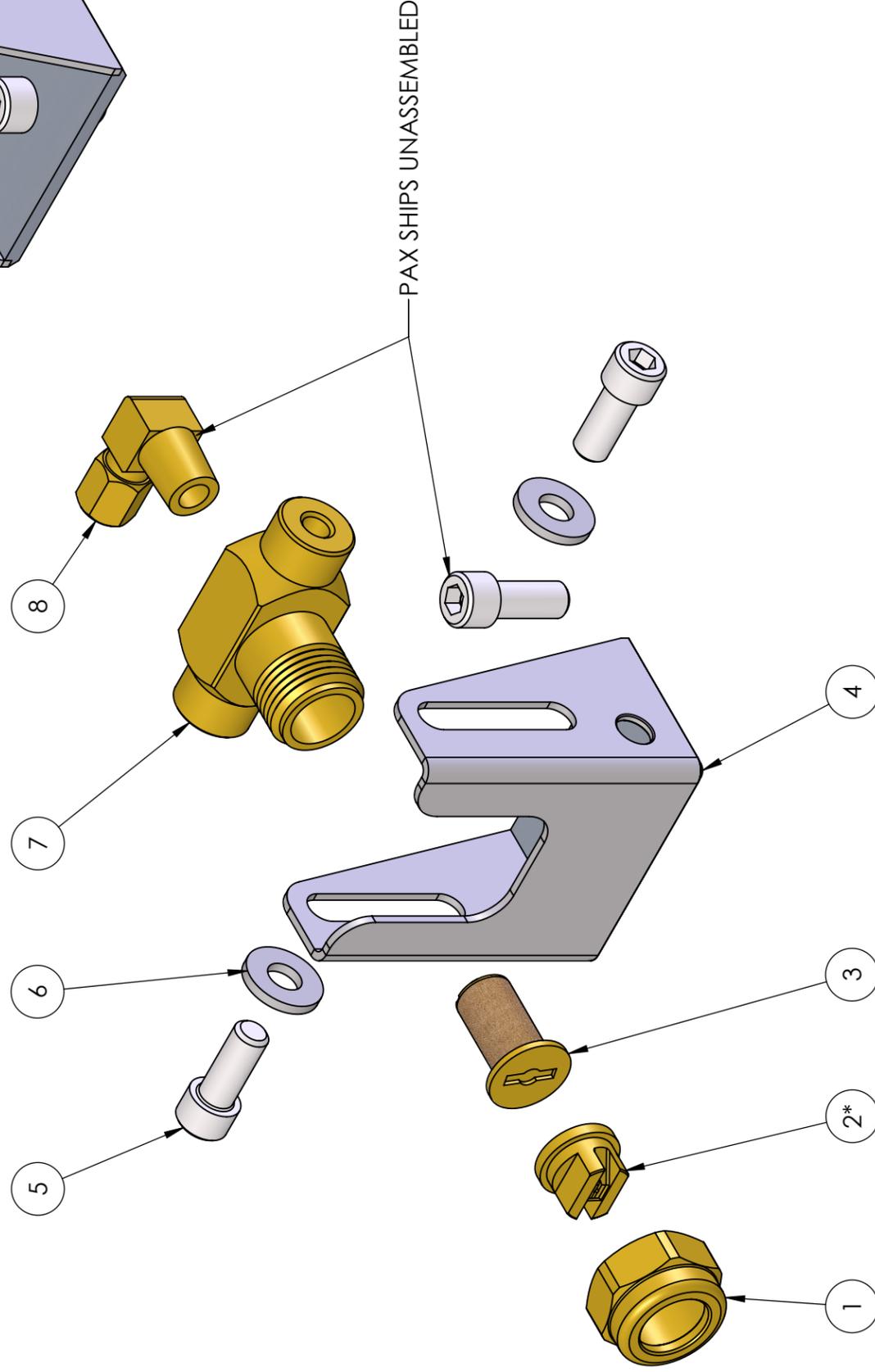
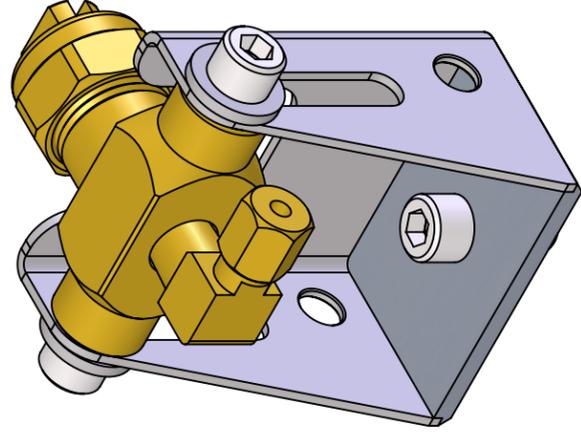
*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED AT
TIME OF ORDER



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	DO NOT SCALE DRAWING REVISION 1	MATERIAL:	SIZE DWG. NO. B 06-3051-30
WEIGHT: 2.64	SHEET 1 OF 1	SCALE: 1:4	DATE: 4/22/2019
DRAWN BY: MAB			

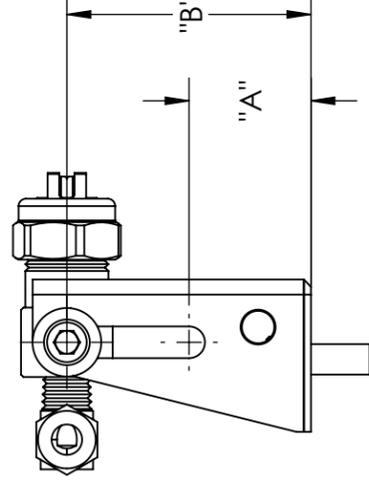
ITEM NO.	PART NUMBER	DESCRIPTION	0.125" TUBING/QTY.
1	06-0932-10	TIP RETAINER	1
2*	06-0952-20	110 DEG FLAT SPRAY TIP	1
3	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
4	06-1971-10	1"-2" NOZZLE BRACKET	1
5	500-5619-0	SHCS 1/4"-20 X 5/8"	3
6	06-0168-10	1/4" FLAT WASHER	2
7	06-1981-10	STD BRKT MOUNT SPRAY NOZZLE	1
8	01-0999-20	COMPRESSION FITTING - ELBOW 1/8" TUBE X 1/8" MNPT	1



*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER

AVAILABLE HEIGHT OPTIONS

ASSEMBLY NUMBER	HEIGHT (A - B")	NOZZLE BRACKET PART NUMBER
06-3040-30	1-2"	06-1971-10
06-3041-30	2-3"	06-1972-10
06-3042-30	3-4"	06-1973-10
06-3043-30	4-5"	06-1974-10
06-3044-30	5-6"	06-1975-10
06-3045-30	6-7"	06-1976-10
06-3046-30	7-8"	06-1977-10
06-3047-30	8-9"	06-1978-10
06-3048-30	9-10"	06-1979-10



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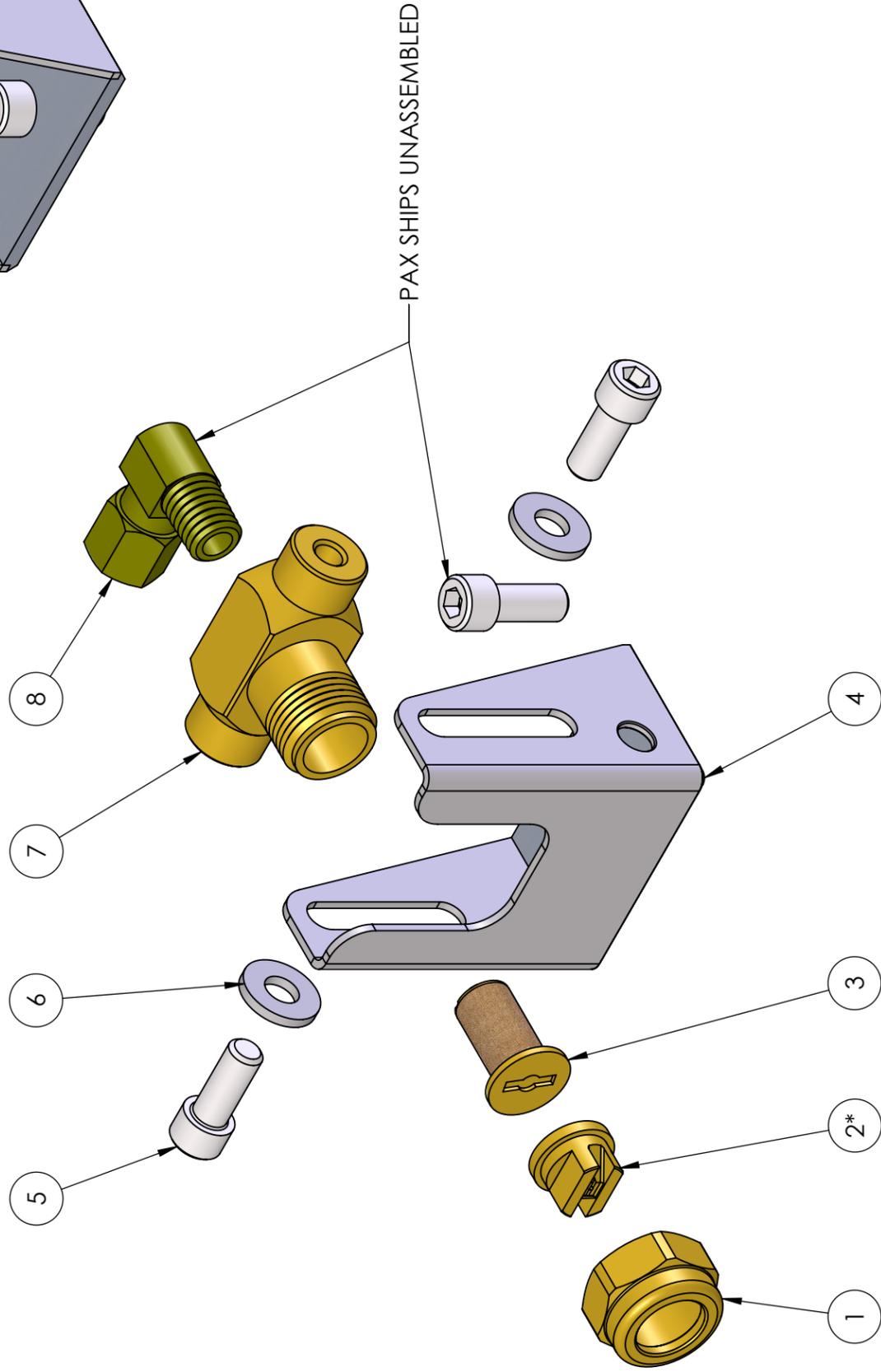
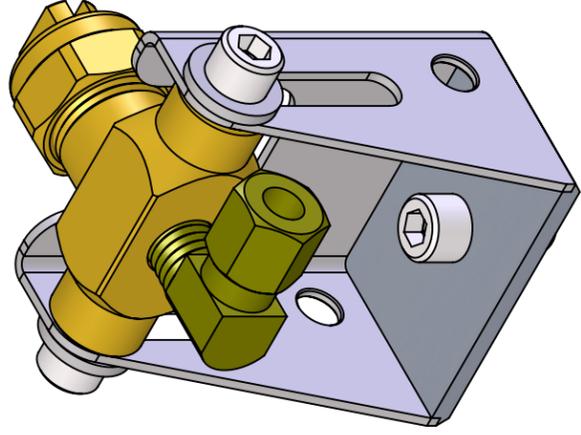
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TOLERANCES:
ANGULAR: MACH ± 1 BEND ± .5
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

TITLE: BRKT MNT STD SPRAY ASSY FOR 1/8" TUBING
SIZE DWG. NO. **B** BRACKET MOUNT STANDARD SPRAY ASSEMBLY
SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019

DO NOT SCALE DRAWING MATERIAL:
REVISION 1 WEIGHT: 0.55 SHEET 1 OF 2

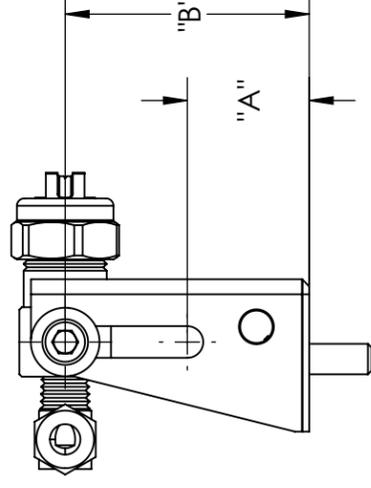
ITEM NO.	PART NUMBER	DESCRIPTION	0.250" TUBING/QTY.
1	06-0932-10	TIP RETAINER	1
2*	06-0952-20	110 DEG FLAT SPRAY TIP	1
3	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
4	06-1971-10	1"-2" NOZZLE BRACKET	1
5	500-5619-0	SHCS 1/4"-20 X 5/8"	3
6	06-0168-10	1/4" FLAT WASHER	2
7	06-1981-10	STD BRKT MOUNT SPRAY NOZZLE	1
8	01-0914-21	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/8" MNPT	1



*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER

AVAILABLE HEIGHT OPTIONS

ASSEMBLY NUMBER	HEIGHT (A - B")	NOZZLE BRACKET PART NUMBER
06-3109-30	1-2"	06-1971-10
06-3110-30	2-3"	06-1972-10
06-3111-30	3-4"	06-1973-10
06-3112-30	4-5"	06-1974-10
06-3113-30	5-6"	06-1975-10
06-3114-30	6-7"	06-1976-10
06-3115-30	7-8"	06-1977-10
06-3116-30	8-9"	06-1978-10
06-3117-30	9-10"	06-1979-10



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5097 MONROE ROAD PHONE: (419)586-6948
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CELINA, OHIO 45822-0257

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DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± 1 BEND ± .5
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

DO NOT SCALE DRAWING MATERIAL:

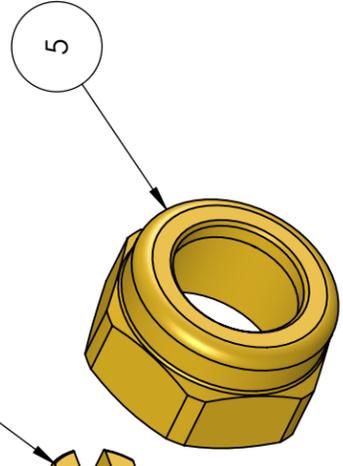
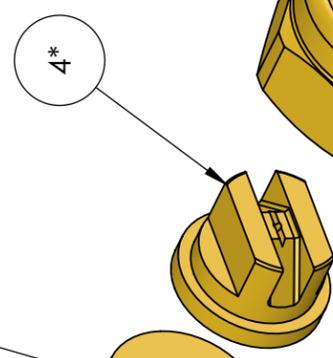
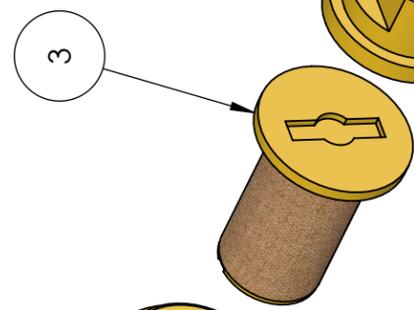
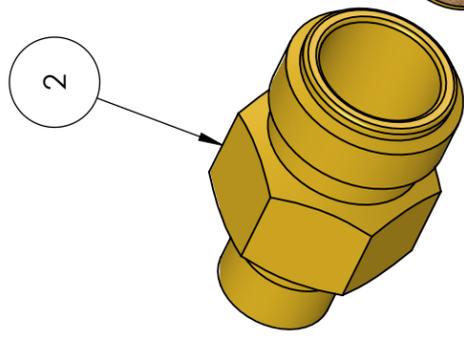
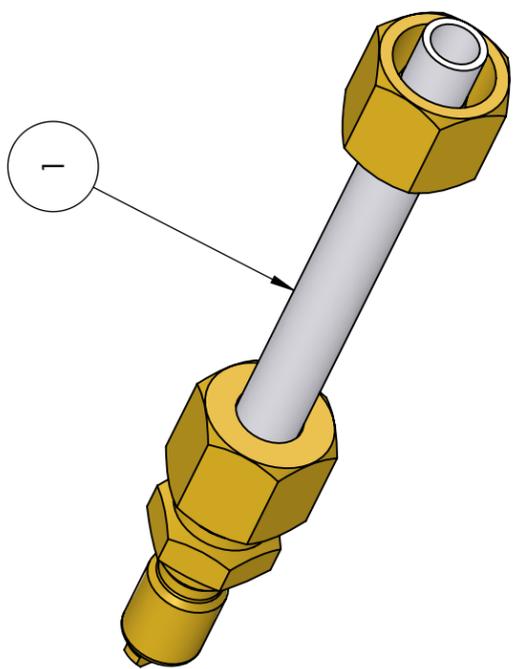
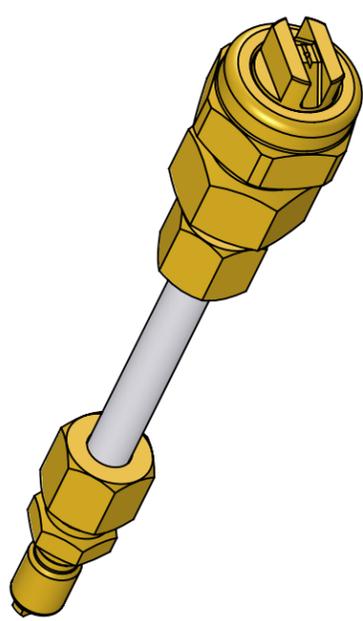
REVISION 1 WEIGHT: 0.55 SHEET 2 OF 2

TITLE: BRKT MNT STD SPRAY ASSY FOR 1/4" TUBING

SIZE DWG. NO. **B** BRACKET MOUNT STANDARD SPRAY ASSEMBLY

SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90-9358-30	RIGID TUBING SUB ASSEMBLY	1
2	06-0985-10	1/4" TUBING H.P. NOZZLE BODY	1
3	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
4*	06-0952-20	110 DEG FLAT SPRAY TIP	1
5	06-0932-10	TIP RETAINER	1



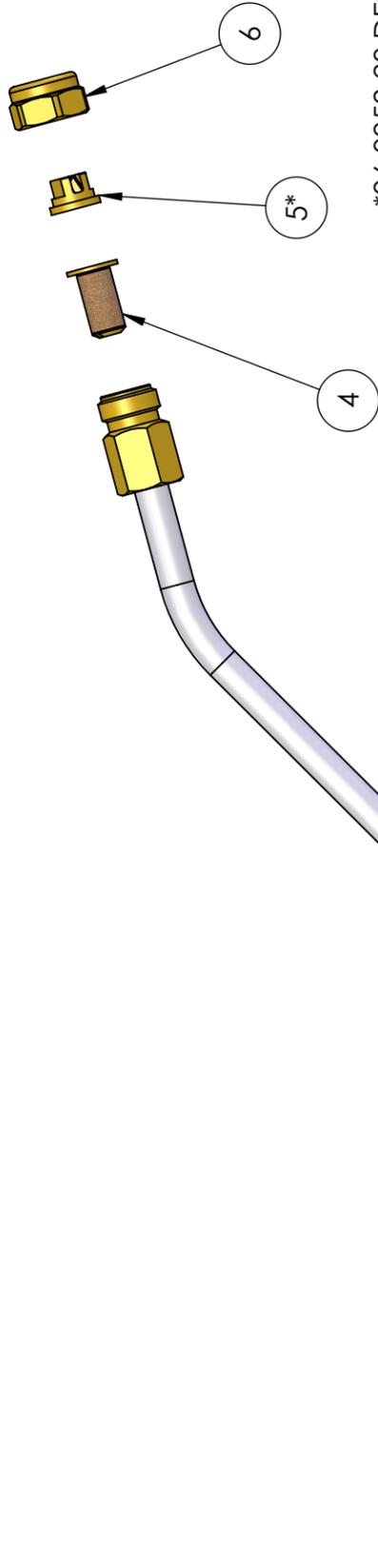
*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED AT
TIME OF ORDER



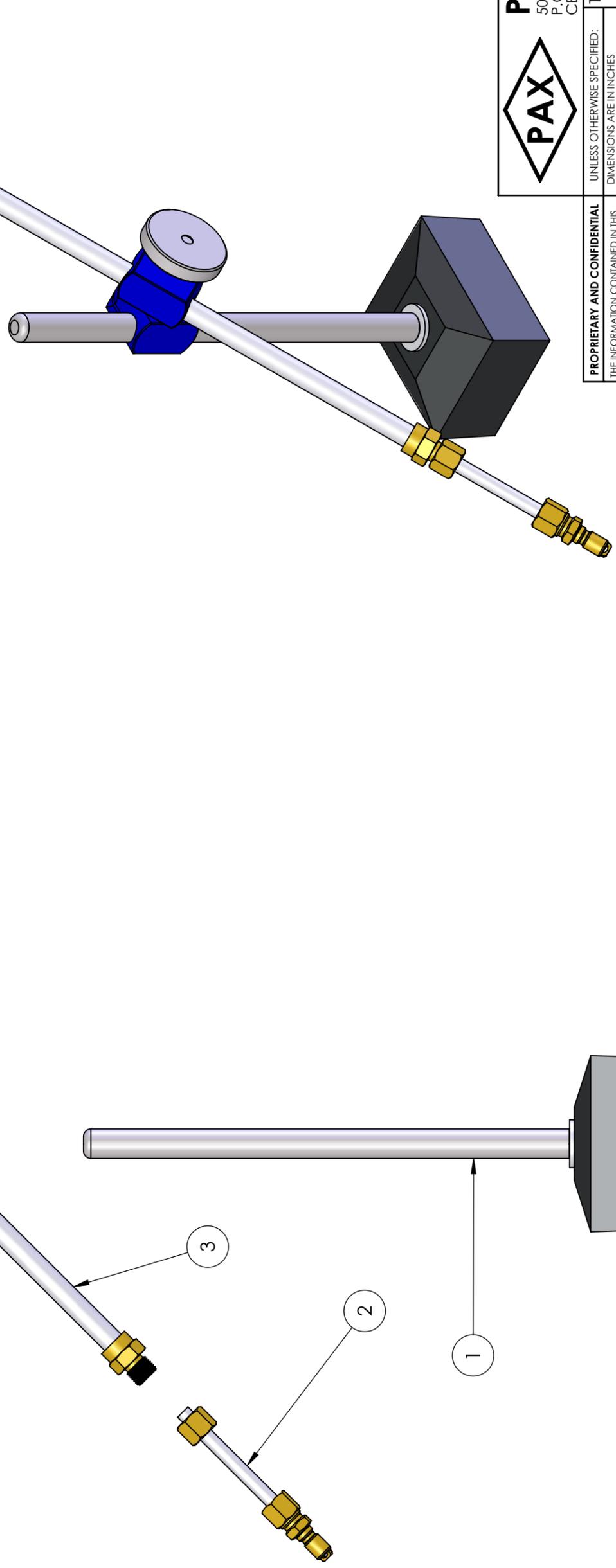
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	DO NOT SCALE DRAWING	SIZE B
REVISION 1	WEIGHT: 0.21	SHEET 1 OF 1
		SCALE: 1:1
		DRAWN BY: MAB
		DATE: 4/22/2019

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	06-1640-30	MAGNETIC BASE ASSY WITH UPRIGHT POST	1
2	90-9358-30	RIGID TUBING SUB ASSEMBLY	1
3	90-9359-30	STD NOZZLE SUB ASSEMBLY	1
4	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
5*	06-0952-20	110 DEG FLAT SPRAY TIP	1
6	06-0932-10	TIP RETAINER	1



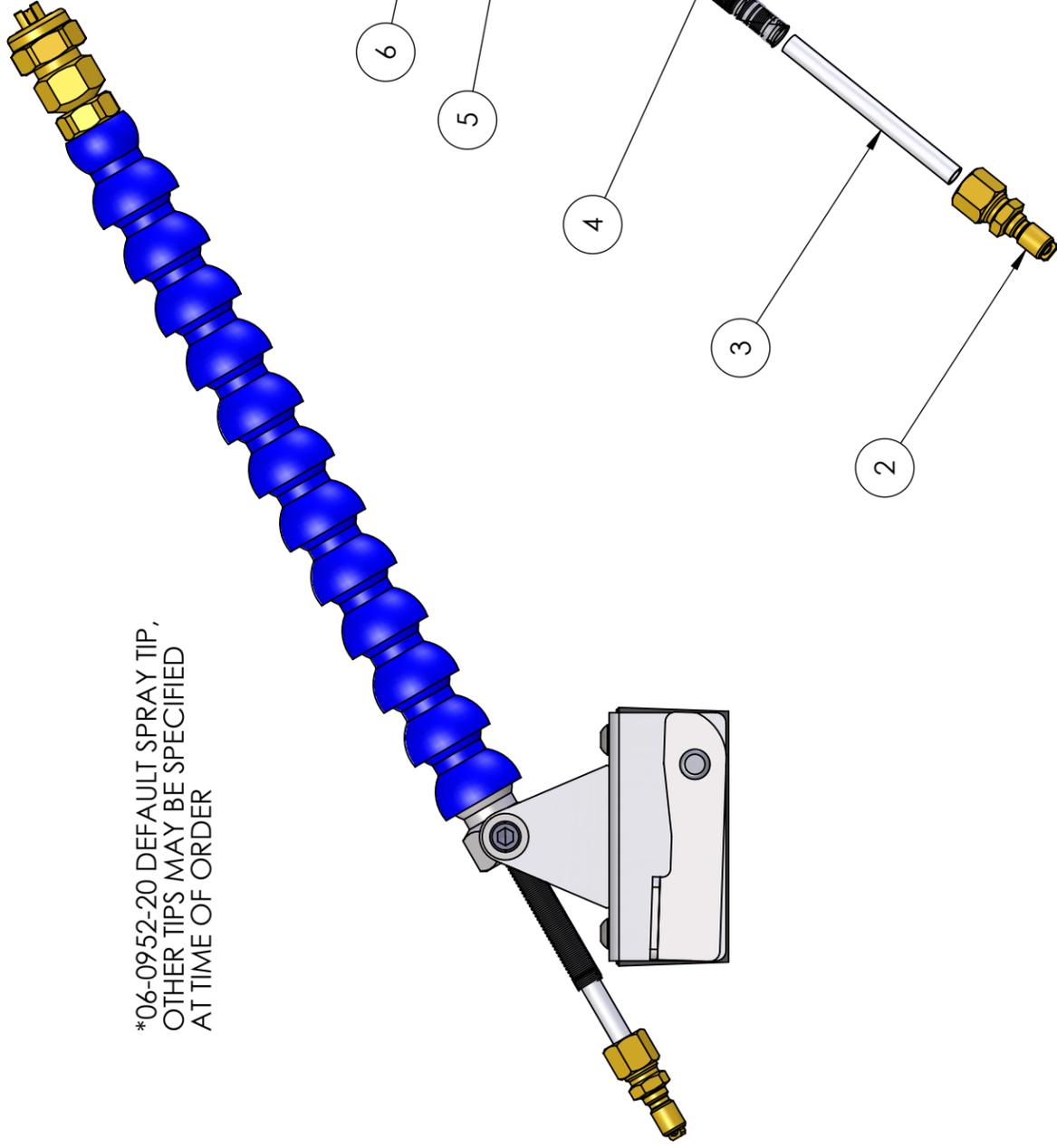
*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER



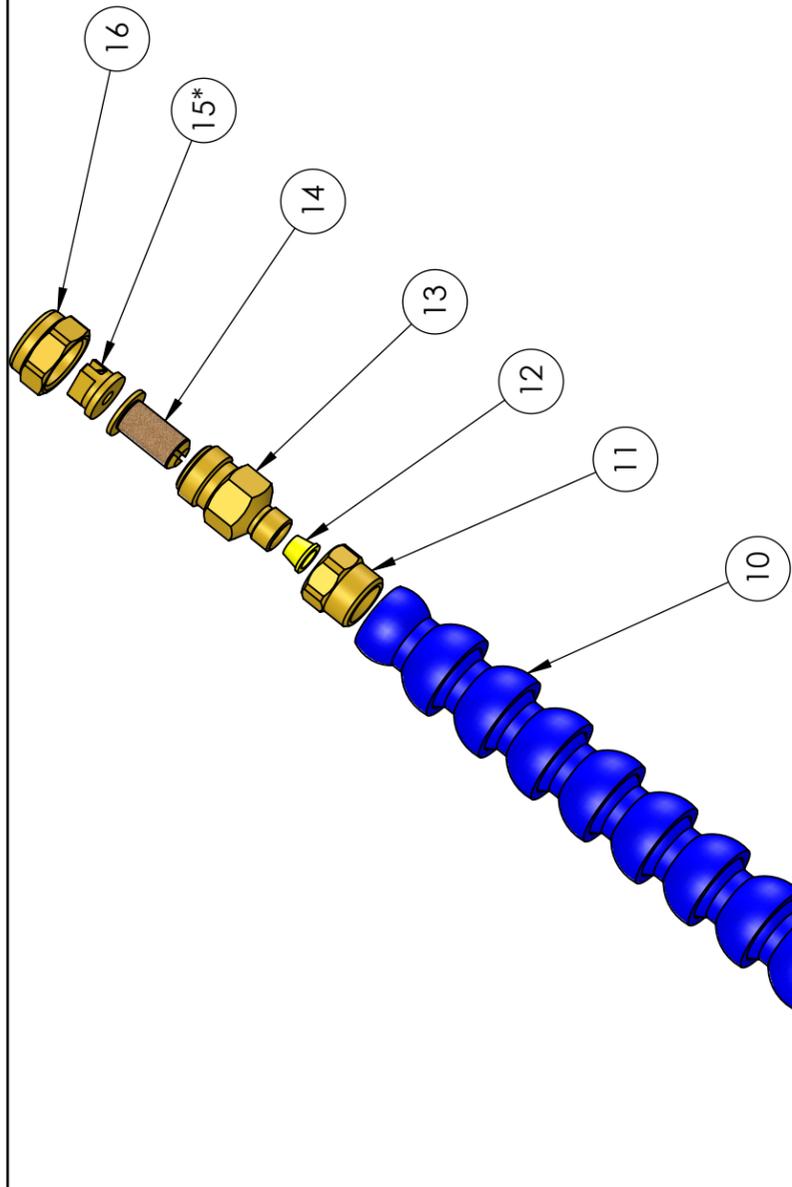
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	DO NOT SCALE DRAWING	SIZE DWG. NO. B 06-3012-31
REVISION 1	WEIGHT: 2.48	SHEET 1 OF 1
		SCALE: 1:8
		DATE: 4/22/2019
		DRAWN BY: MAB

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	09-1615-30	MAGNETIC BASE - LIMIT SWITCH	1
2	06-0928-32	QUICK CONNECT PLUG ASSY 1/4" TUBING	1
3	01-1116-21	BULK TUBING SEMI-RIGID 1/4" OD	1
4	06-0304-20	S.S. TUBE ANTI-KINK SPRING	1
5	06-2093-30	MAGNETIC BASE RELEASE LEVER ASSEMBLY [FLEXTUBE]	1
6	01-0122-22	BHCS #10-32 X 3/8"	2
7	06-0141-20	SHCS 1/4"-28 X 3/8"	2
8	06-0168-10	1/4" FLAT WASHER	2
9	06-1627-10	FLEXTUBE BRKT ADAPTER SEGMENT	1
10	06-1625-20	FLEXTUBE SEGMENT	12
11	06-1626-10	FLEXTUBE NOZZLE ADAPTER INSERT 1/8" LINE	1
12	01-0929-20	COMPRESSION SLEEVE	1
13	06-0985-10	1/4" TUBING H.P. NOZZLE BODY	1
14	06-0925-20	CHECK VALVE STRAINER ASSEMBLY	1
15*	06-0952-20	110 DEG FLAT SPRAY TIP	1
16	06-0932-10	TIP RETAINER	1



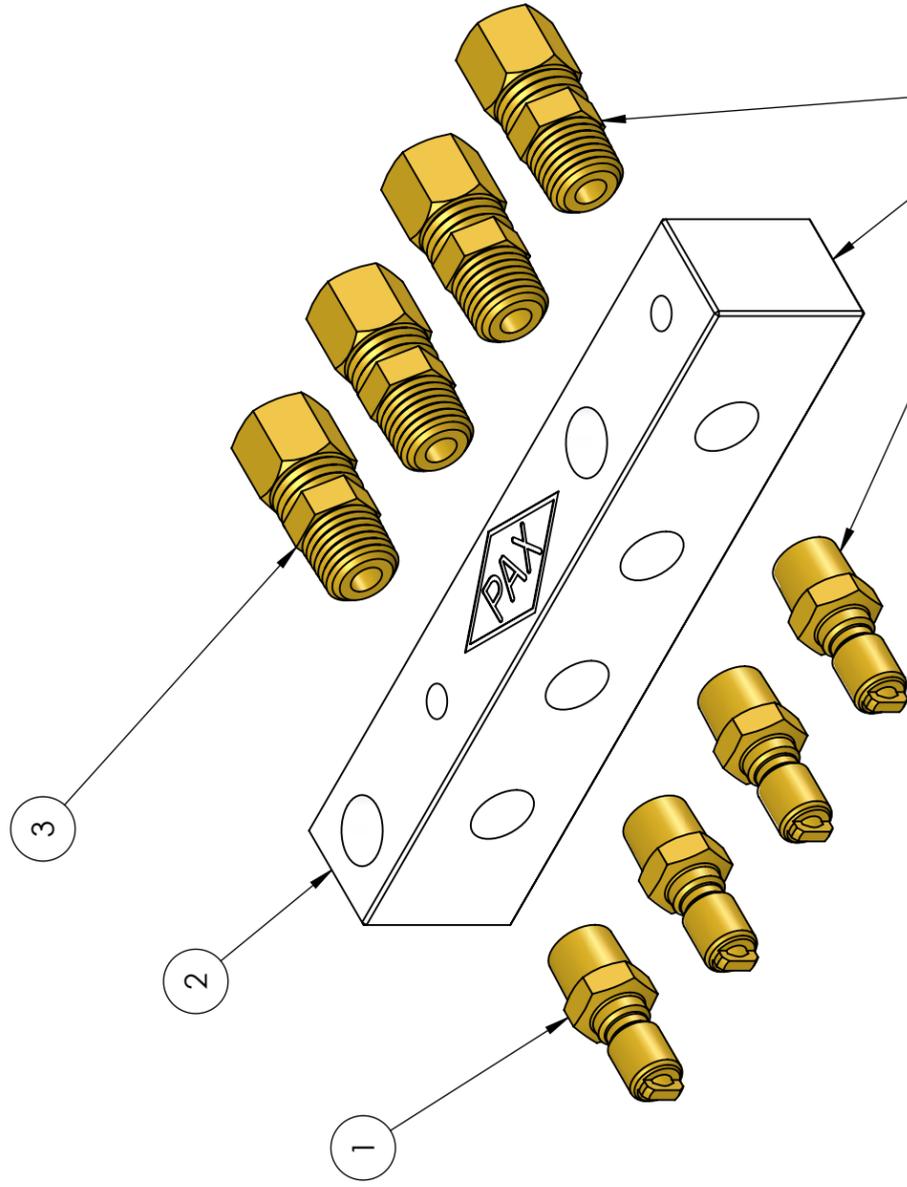
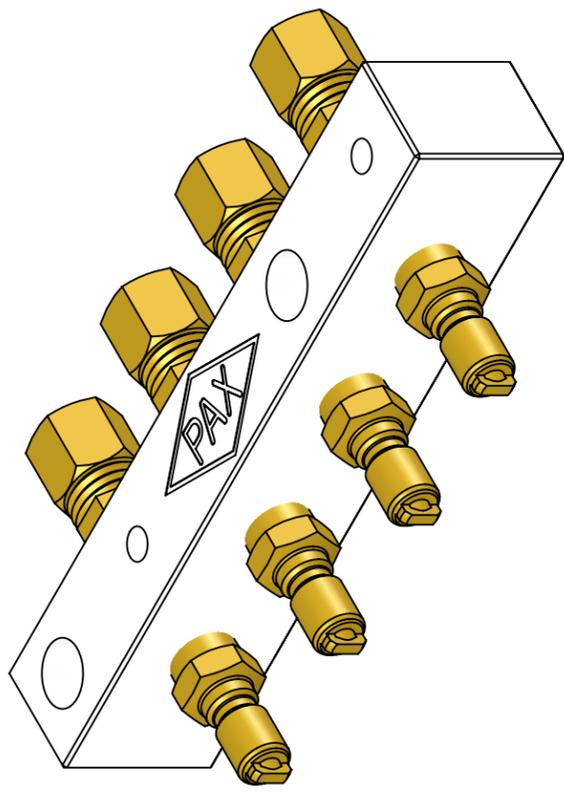
*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER



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	DO NOT SCALE DRAWING REVISION 1	MATERIAL: WEIGHT: 2.64
SHEET 1 OF 1	SCALE: 1:4	DATE: 4/22/2019

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	06-0967-10	QUICK CONNECT PLUG 1/8" MNPT	4
2	06-1980-10	4 PORT STACKABLE DIE MANIFOLD	1
3	01-0901-20	COMPRESSION FITTING - STRAIGHT 1/4" TUBE X 1/8" MNPT	4



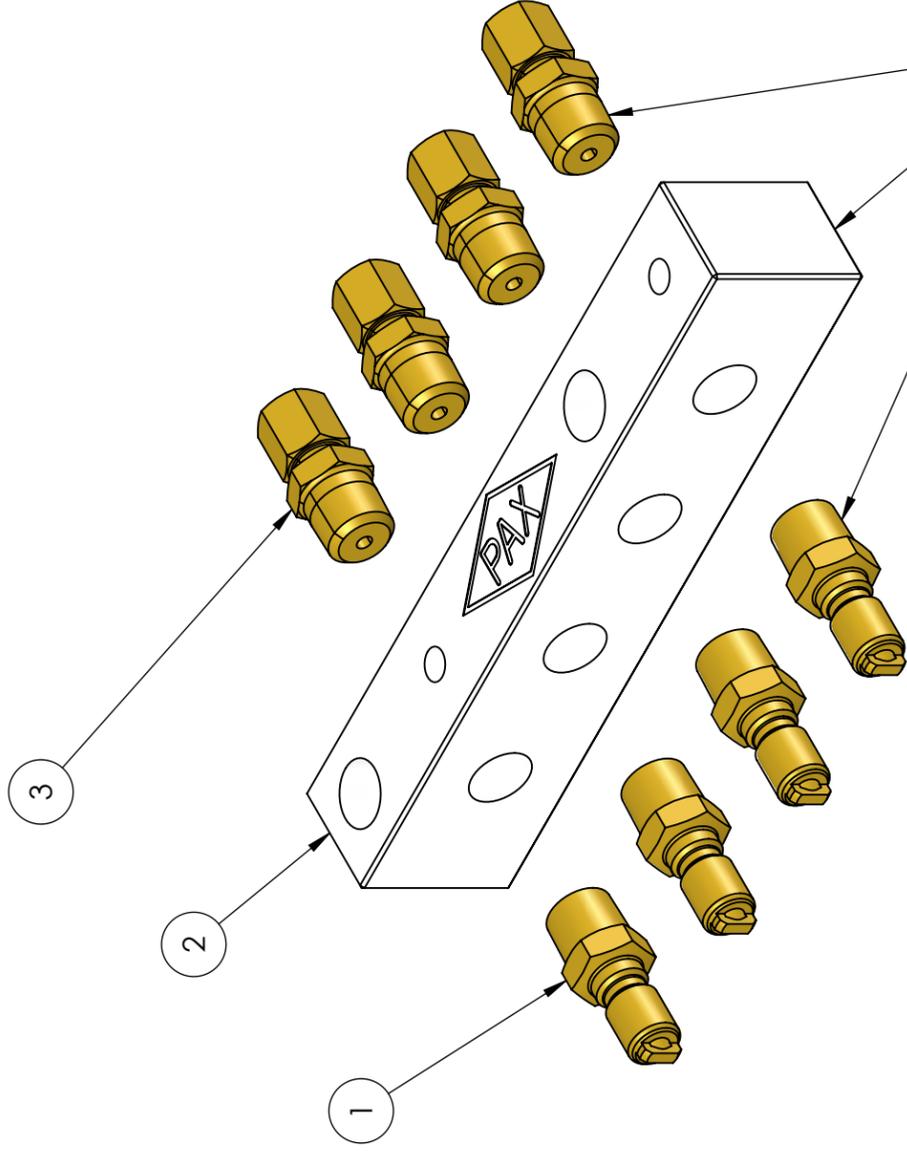
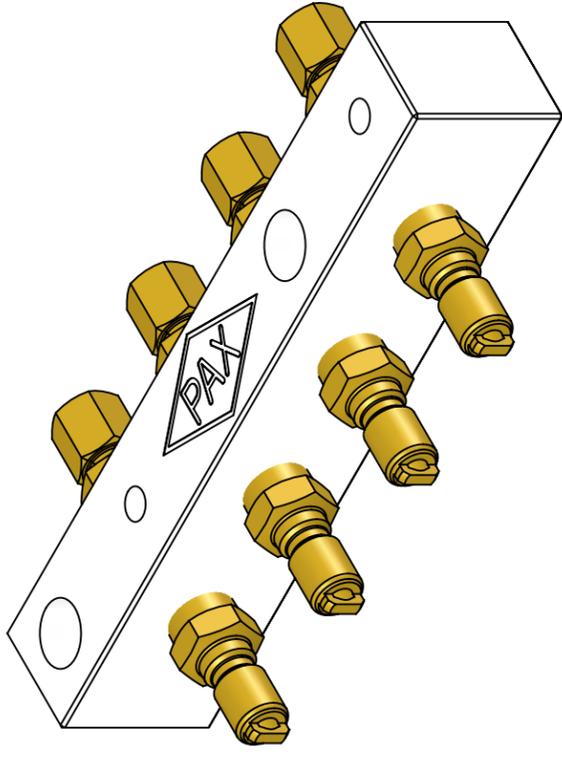
PAX SHIPS UNASSEMBLED



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	DO NOT SCALE DRAWING	SIZE DWG. NO. B 02-3222-30
REVISION 1	WEIGHT: 0.41	SHEET 1 OF 1
		SCALE: 1:1
		DATE: 4/22/2019
		DRAWN BY: MAB

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	06-0967-10	QUICK CONNECT PLUG 1/8" MNPT	4
2	06-1980-10	4 PORT STACKABLE DIE MANIFOLD	1
3	06-1943-20	COMPRESSION FITTING - STRAIGHT 1/8" TUBE X 1/8" MNPT	4



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	DO NOT SCALE DRAWING	SIZE B
REVISION 1	WEIGHT: 0.35	SHEET 1 OF 1
DRAWN BY: MAB		DATE: 4/22/2019

02-3223-30