



MODEL NUMBER

SERIAL NUMBER

REVISION: 1-11-2021

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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.

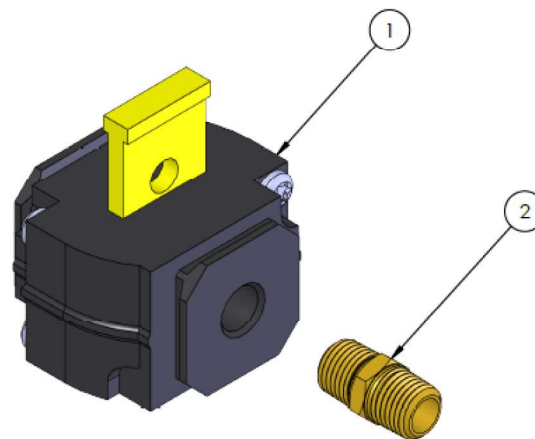
SYSTEMS SHOULD BE PLACED IN SUCH A WAY SO THAT NO COMPONENT OR COMBINATION OF COMPONENTS INTERFERE WITH THE NORMAL OPERATION OF ANY MACHINE.

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.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	01-1932-21	SHUT OFF VALVE	1
2	01-1201-20	PIPE FITTING - HEX NIPPLE	1





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



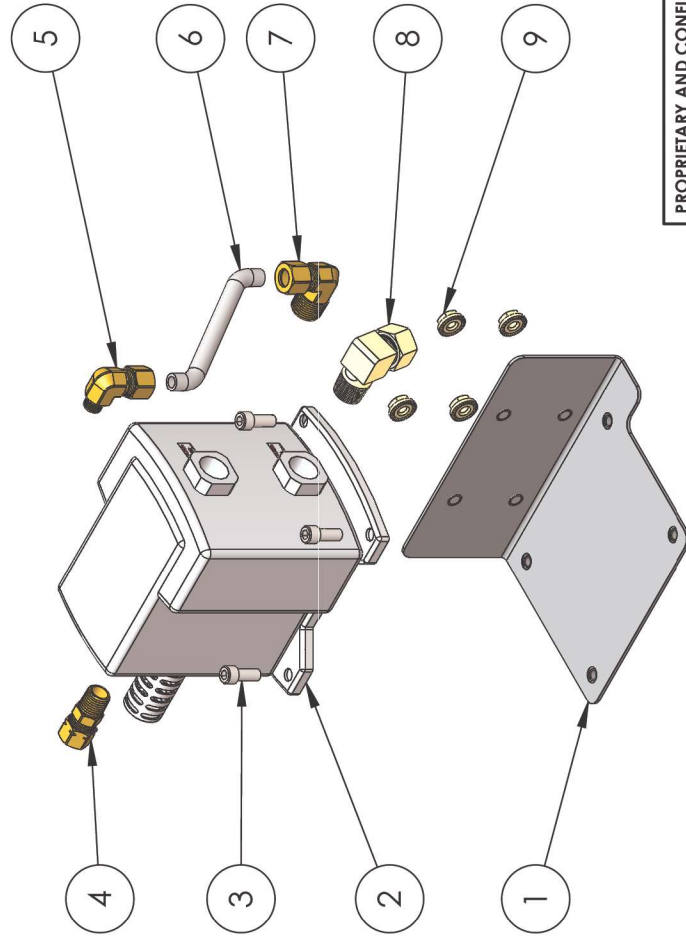
USE OF AIR PRESSURE IN EXCESS OF 100 PSI MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE AIR REGULATOR ASSEMBLY AND WILL VOID THE WARRANTY OF THE PAX LUBE SYSTEM.

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 ¼" 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	01-2180-31	DIAPHRAGM MOUNTING BRKT	1
2	03-2162-22	DIAPHRAM PUMP	1
3	500-5619-0	SHCS 1/4"-20 X 5/8"	4
4	01-0915-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/4" MNPT	1
5	01-0903-20	3/8" TUBE X 1/8" MNPT ELBOW	1
6	01-1117-20	BULK TUBING 3/8" OD - 5.125"	1
7	01-1214-20	COMPRESSION FITTING - ELBOW 3/8" TUBE X 3/8" MNPT	1
8	01-3401-20	COMPRESSION FITTING - ELBOW 1/2" TUBE X 3/8" MNPT	1
9	EGD-000-6739-0	HEX FLANGE NUT 1/4"-20	4

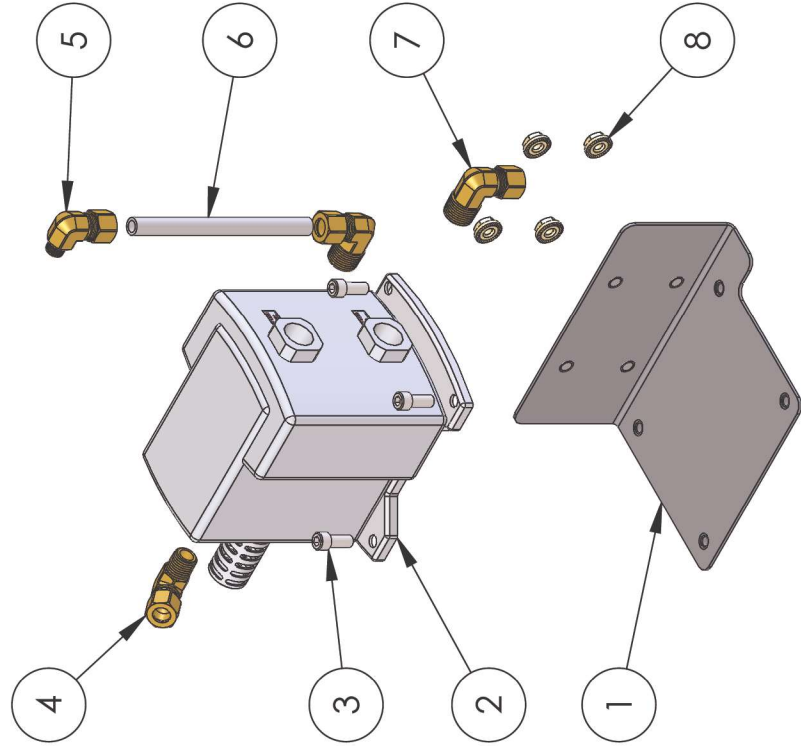


PAX PRODUCTS, INC.

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	DO NOT SCALE DRAWING		SIZE DWG. NO. A DIAPHRAGM PUMP COMPONENTS
REVISION 1	WEIGHT:	SHEET 1 OF 11	SCALE: 1:16 DRAWN BY: MAB DATE: 1/11/2021

ITEM NO.	PART NUMBER	DESCRIPTION	DIAPHRAGM PUMP COMPONENTS/QTY.
1	01-2180-31	DIAPHRAGM MOUNTING BRKT	1
2	03-2162-22	DIAPHRAM PUMP	1
3	500-5619-0	SHCS 1/4"-20 X 5/8"	4
4	01-0905-20	1/4" NPT to 3/8" TUBING	1
5	01-0903-20	3/8" TUBE X 1/8" MNPT ELBOW	1
6	01-1117-20	BULK TUBING 3/8" OD - 4.5"	1
7	01-1214-20	COMPRESSION FITTING - ELBOW 3/8" TUBE X 3/8" MNPT	2
8	EGD-000-6739-0	HEX FLANGE NUT 1/4"-20	4



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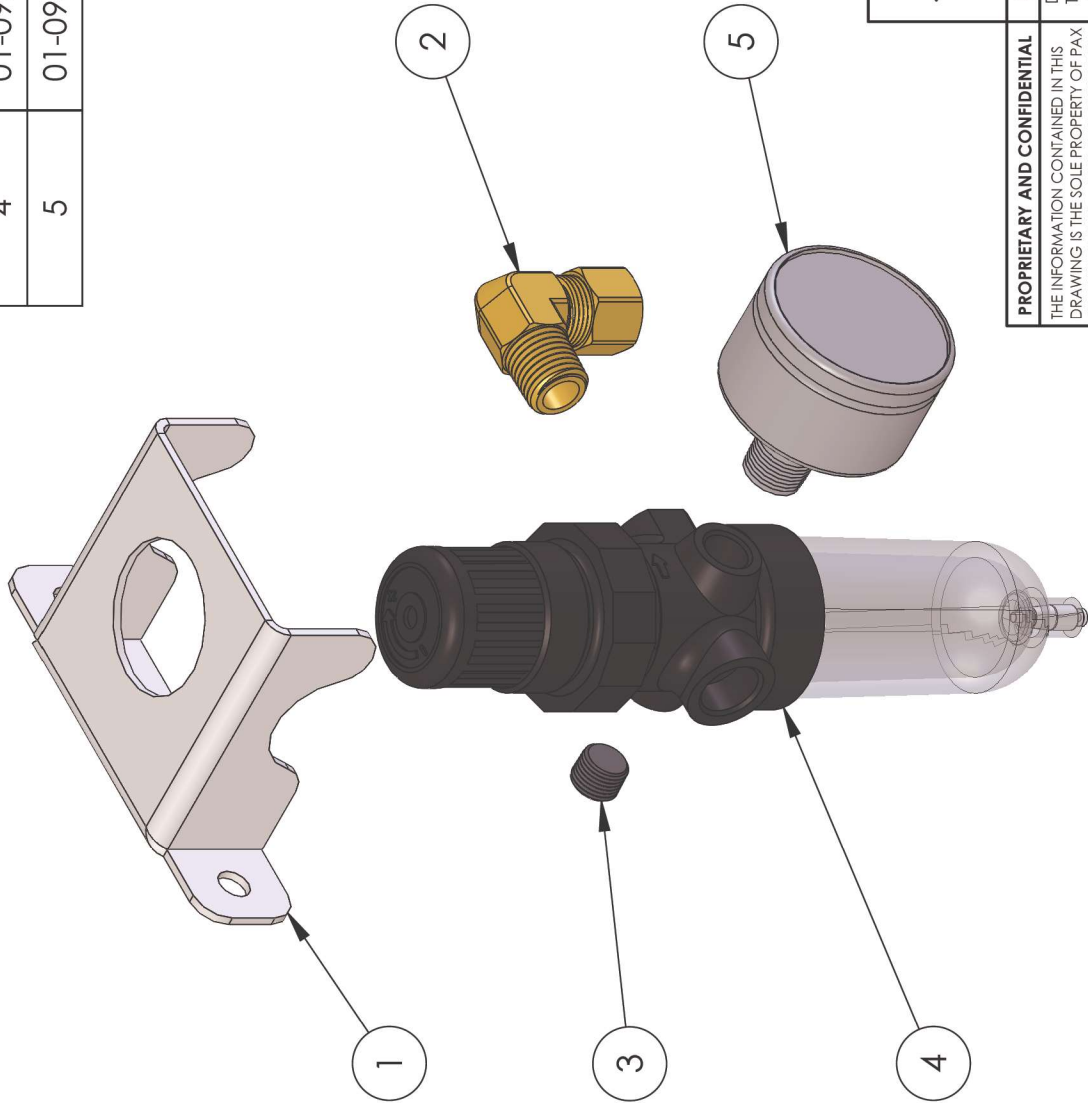
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	DO NOT SCALE DRAWING MATERIAL:		SIZE DWG. NO. A DIAPHRAGM PUMP COMPONENTS
REVISION 1	WEIGHT:	SHEET 3 OF 5	SCALE: 1:6 DRAWN BY: DATE: 1/11/2021



AIR FILTER: Periodically inspect the air filter bowl 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 , 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. Turn the adjusting knob 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 is in the locked position by pushing down on the adjustment knob.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	01-3327-10	V5-5 REGULATOR BRACKET	1
2	01-0905-20	1/4" NPT to 3/8" TUBING	1
3	02-1206-20	PIPE FITTING - HEX PLUG 1/8" MNPT	1
4	01-0961-21	FILTER/REGULATOR	1
5	01-0963-20	AIR GAUGE	1

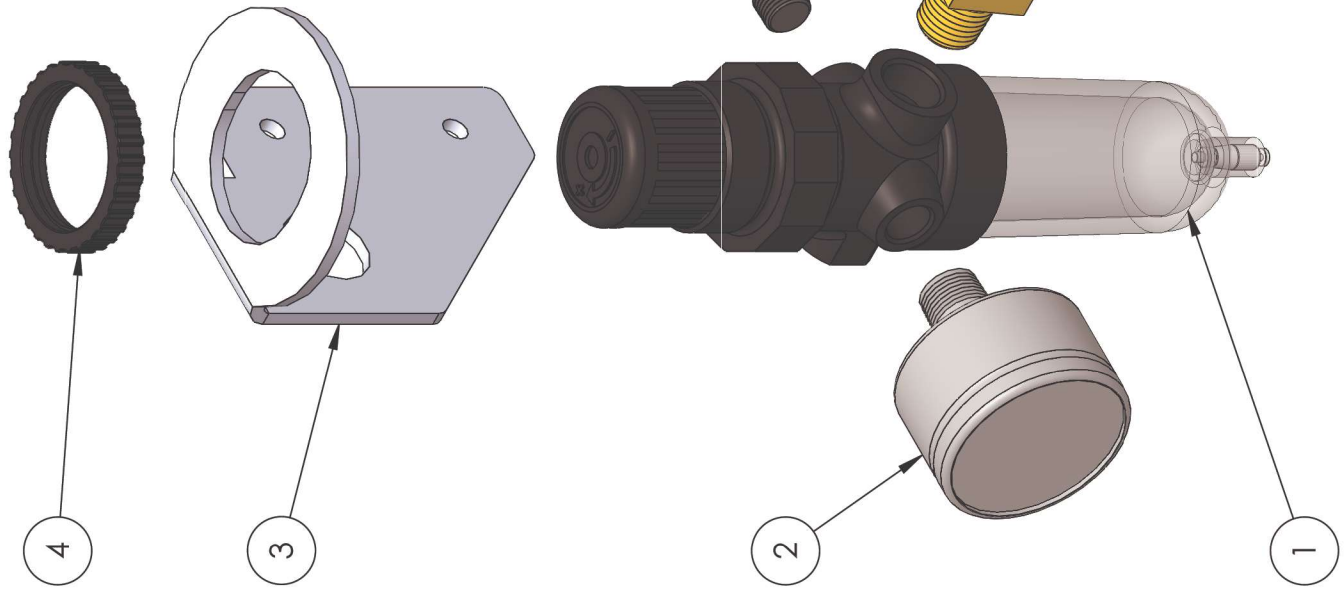


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	DO NOT SCALE DRAWING MATERIAL:		SIZE DWG. NO. A FILTER/REGULATOR COMPONENTS
REVISION 1	WEIGHT:	SHEET 6 OF 6	SCALE: 1:6 DRAWN BY: DATE: 1/11/2021

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	01-0961-21	FILTER/REGULATOR	1
2	01-0963-20	AIR GAUGE	1
3	01-1837-11	15 GALLON FRL BRACKET	1
4	01-0177-20	FRL BRACKET NUT	1
5	02-1206-20	PIPE FITTING - HEX PLUG 1/8" MNPT	1
6	01-0905-20	1/4" NPT to 3/8" TUBING	1
7	03-1987-20	1/4" NPT MALE RUN TEE	1
8	01-1218-20	PIPE FITTING - SOCKET PLUG 1/4" NPT	1

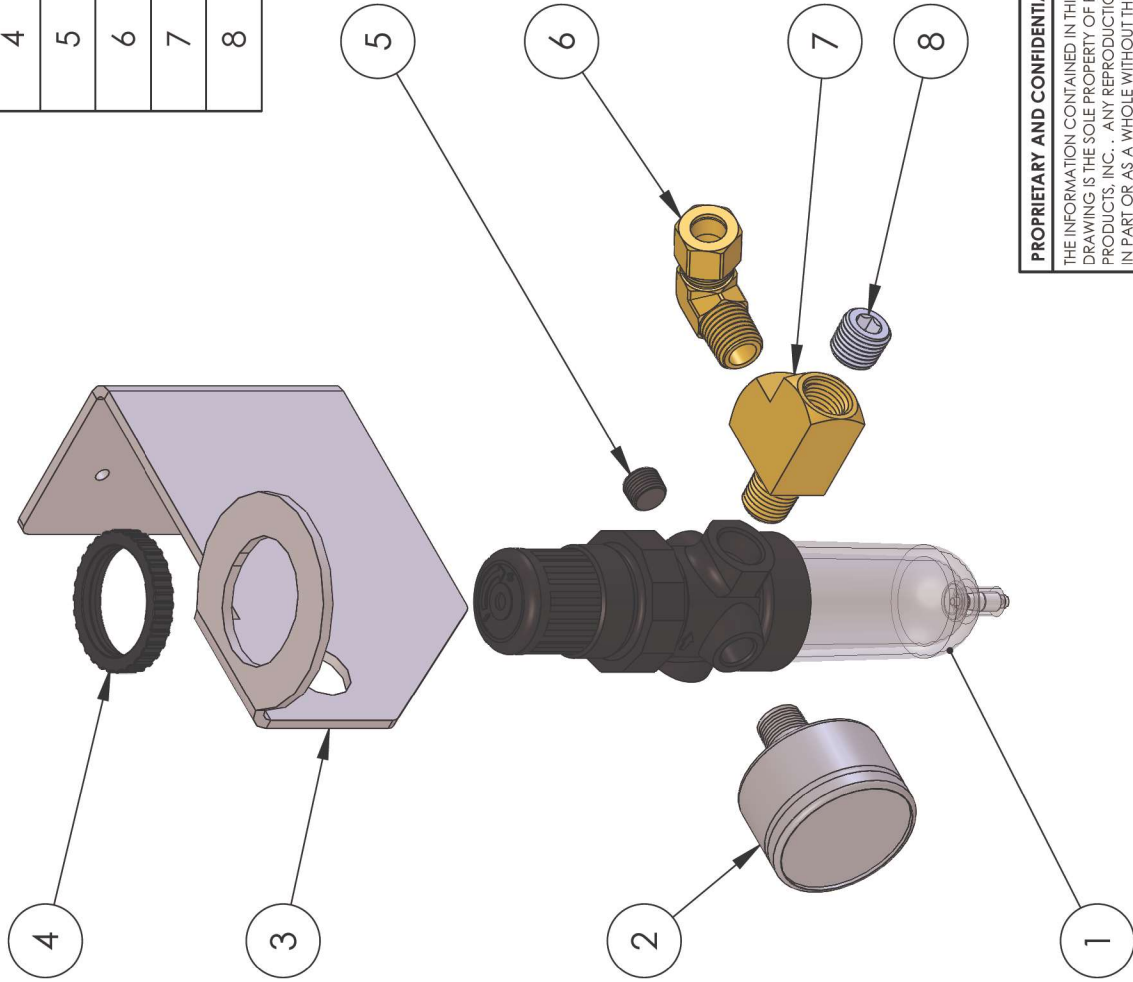


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	DO NOT SCALE DRAWING MATERIAL:		SIZE DWG. NO. A FILTER/REGULATOR COMPONENTS
REVISION 1	WEIGHT:	SHEET 2 OF 11	SCALE: 1:16 DRAWN BY: MAB DATE: 1/11/2021

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	01-0961-21	FILTER/REGULATOR	1
2	01-0963-20	AIR GAUGE	1
3	01-1838-11	REGULATOR BRACKET - 30 GAL	1
4	01-0177-20	FRL BRACKET NUT	1
5	02-1206-20	PIPE FITTING - HEX PLUG 1/8" MNPT	1
6	01-0905-20	1/4" NPT to 3/8" TUBING	1
7	03-1987-20	1/4" NPT MALE RUN TEE	1
8	01-1218-20	PIPE FITTING - SOCKET PLUG 1/4" NPT	1



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	DO NOT SCALE DRAWING		SIZE DWG. NO. A FILTER/REGULATOR COMPONENTS
REVISION 1	WEIGHT:	SHEET 3 OF 3	SCALE: 1:16 DRAWN BY: DATE: 1/11/2021



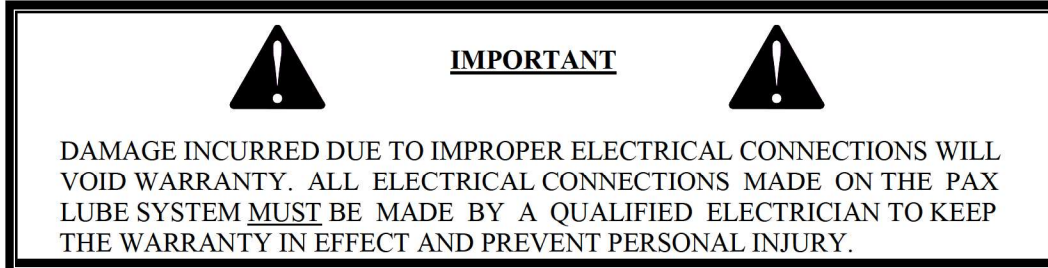
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ELECTRICAL REQUIREMENTS

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



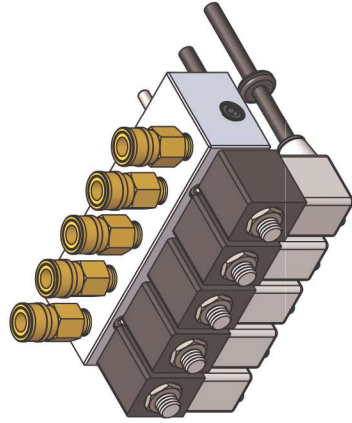
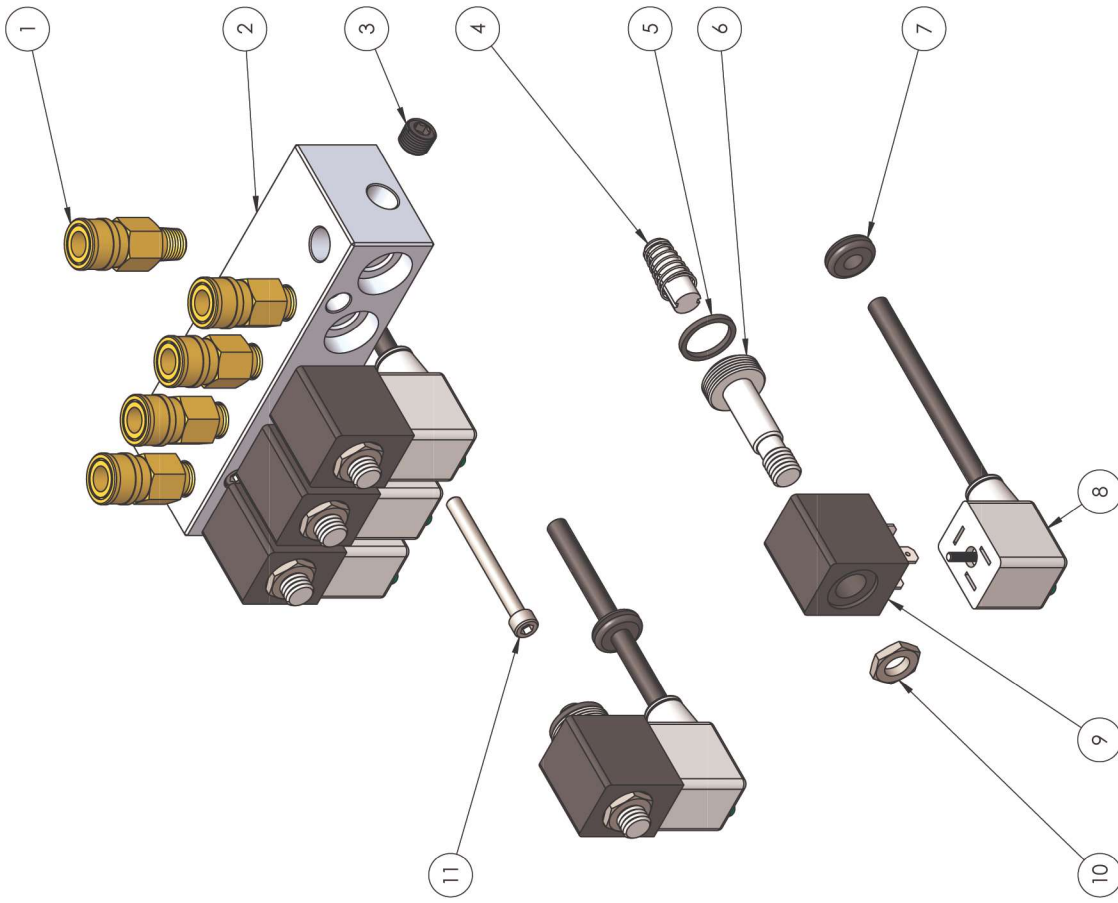
V-SERIES LUBE SYSTEM OPERATION

Solenoids, pump, and manifold assembly (Reference Pages 10,11,20,21)

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

When the coil is energized, the plunger pulls back and allows fluid to pass through the manifold to the quick connect. 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.

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

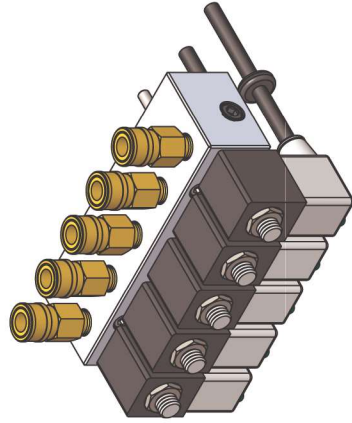
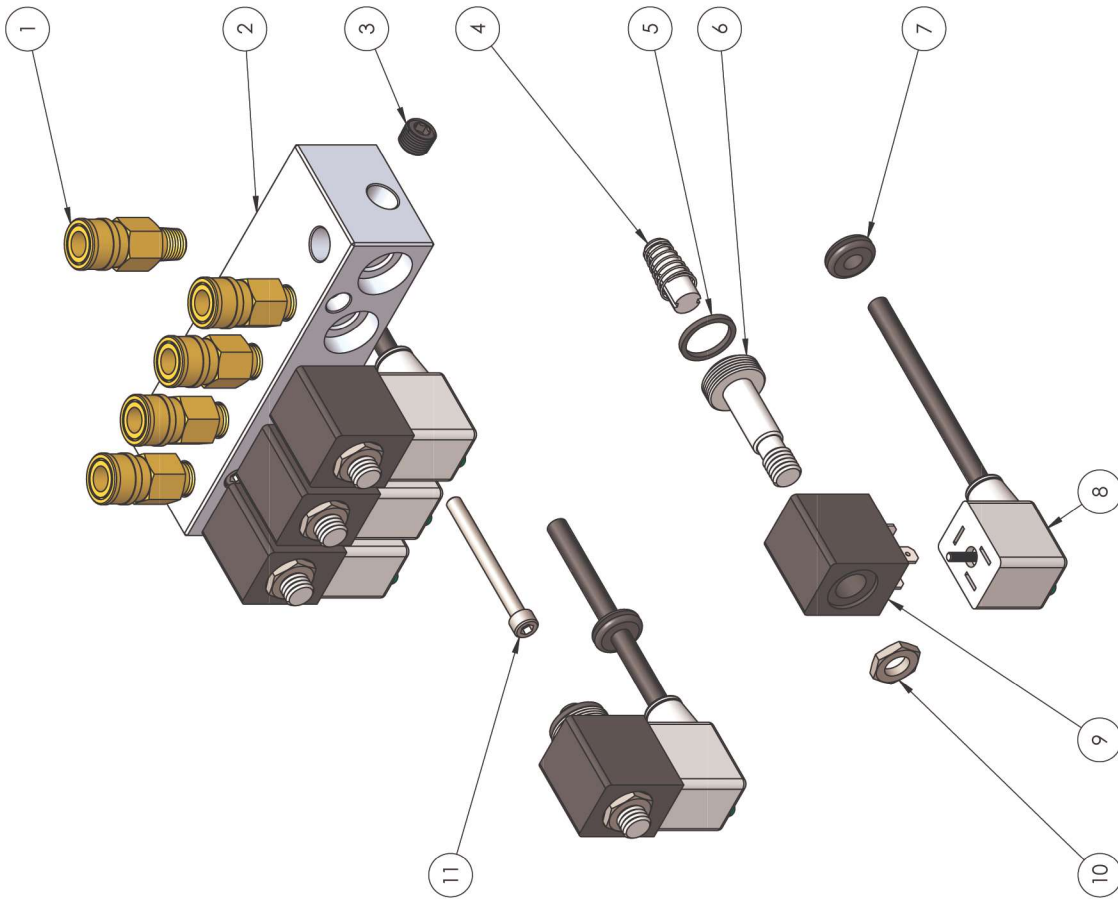


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 5097 MONROE ROAD
 P.O. BOX 257
 CELINA, OHIO 45822-0257
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	REVISION 1 WEIGHT: SHEET 2 OF 9	SCALE: 1:2 DRAWN BY: MAB DATE: 4/22/2019

NOTE: ASSEMBLY SHOWN MAY VARY PER ORDERED UNIT

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	04-1379-22	INDUSTRY STD. FORM B - 24 VDC W/ MOV TRANSIENT SUPPRESSION	5
9	04-3225-40	SOLENOID OPERATOR - 24 VDC	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	DRAWN BY: MAB	DATE: 4/22/2019
SIZE DWG. NO. B		MANIFOLD SUB ASSEMBLY

NOTE: ASSEMBLY SHOWN MAY VARY PER ORDERED UNIT



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 also 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 24, 25 and 26.



TROUBLESHOOTING THE V SERIES PAX LUBE SYSTEMS

Review the V-Series “LUBE SYSTEM OPERATION” section on Page 19 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)

<u>PROBLEM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
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. 2. Pump is pumping air into the spray lines. 3. The spray nozzle assembly is contaminated.	1. The input air pressure must be at least 40 PSI minimum. The more viscous the lubricant, the higher the pressure should be. 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. 3.1. 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.

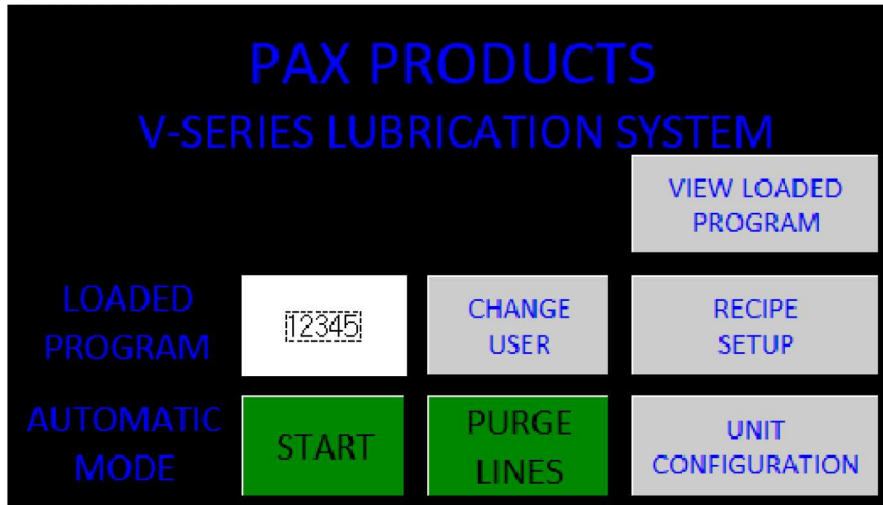


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Pax V-Series Standalone Control Unit and Interface



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.

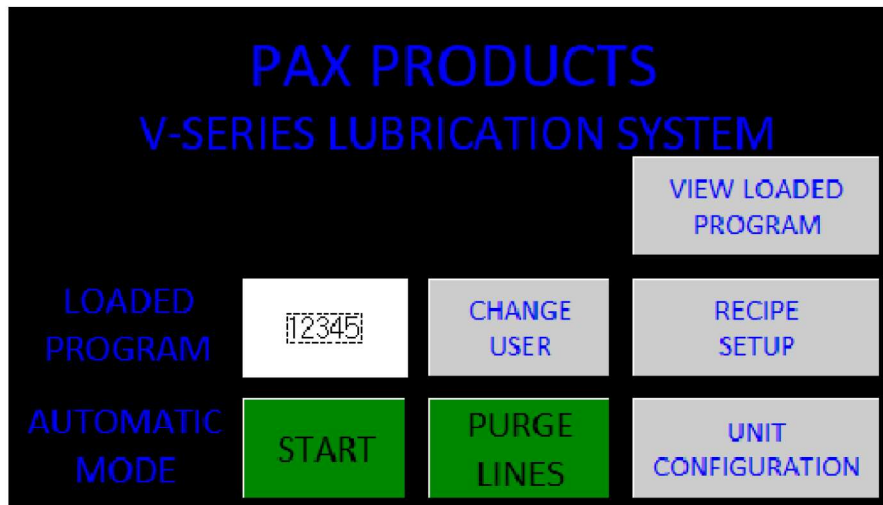


Programming and Operation

- 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	QTY.
1	500-5733-0	CORD CONNECTOR .236-.472" 1/2" TRADE SIZE, STRAIGHT	1
2	05-1401-20	CORD SET NEMA 5-15P PLUG 9' LONG	1
3	05-1413-20	DIN RAIL	1
4	05-1466-20	POWER SUPPLY 24VDC OUT, 1.3 AMPS	1
5	05-1468-21	COMMUNICATION CABLE, 1' CAT6 PATCH CABLE	1
6	05-1465-21	PLC 24 VDC	1
7	05-1447-20	WAGO - 5 POLE CONTACT BLOCK	4
8	01-1381-20	DPDT RELAY	1
9	05-1467-21	HMI 4.3" 65K COLOR 24 VDC	1
10	05-1313-21	CIRCUIT BREAKER PANEL MOUNT 3A	1



PAX PRODUCTS, INC.

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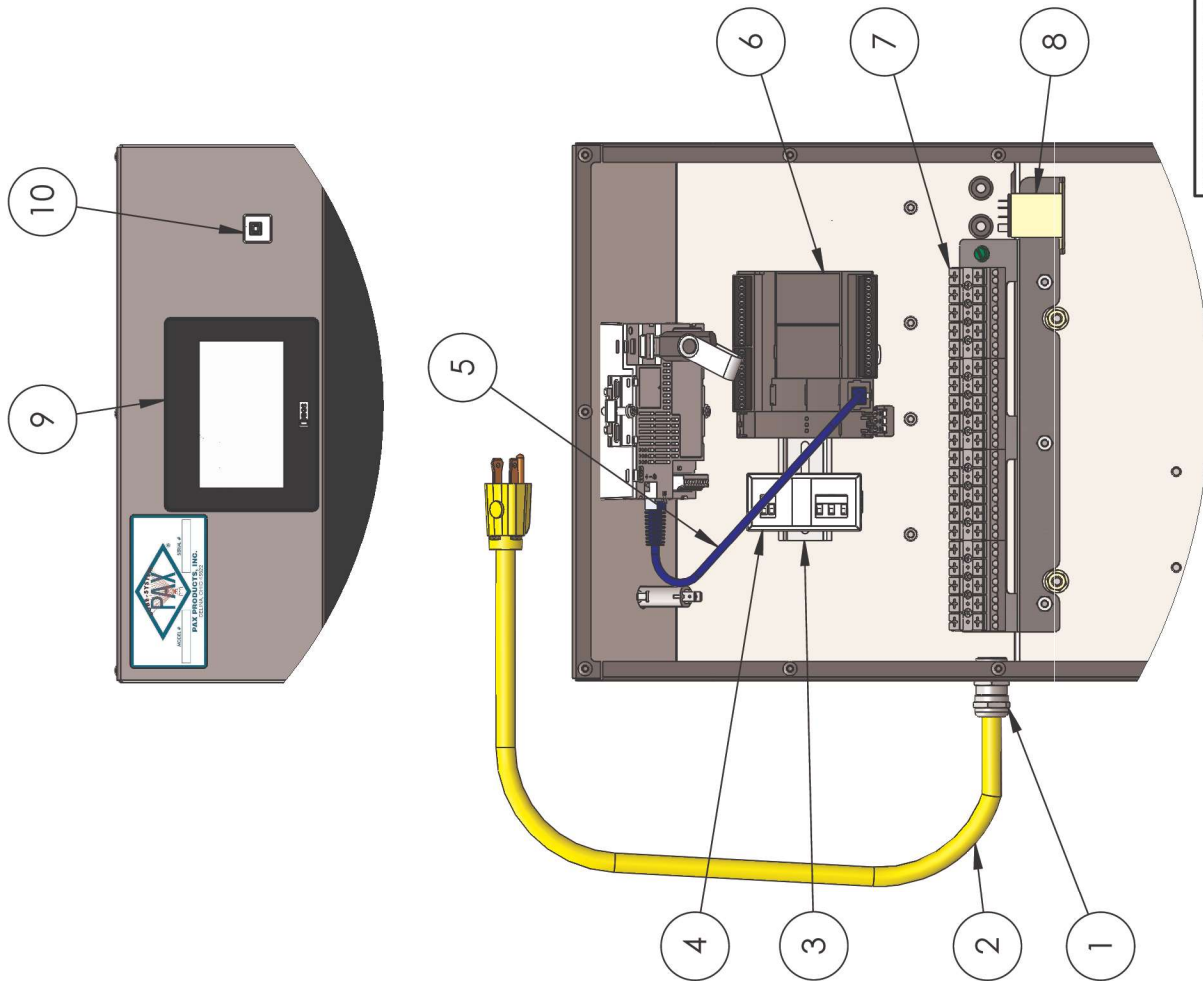
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TOLERANCES:
ANGULAR: MACH ± .1 BEND ± .5
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

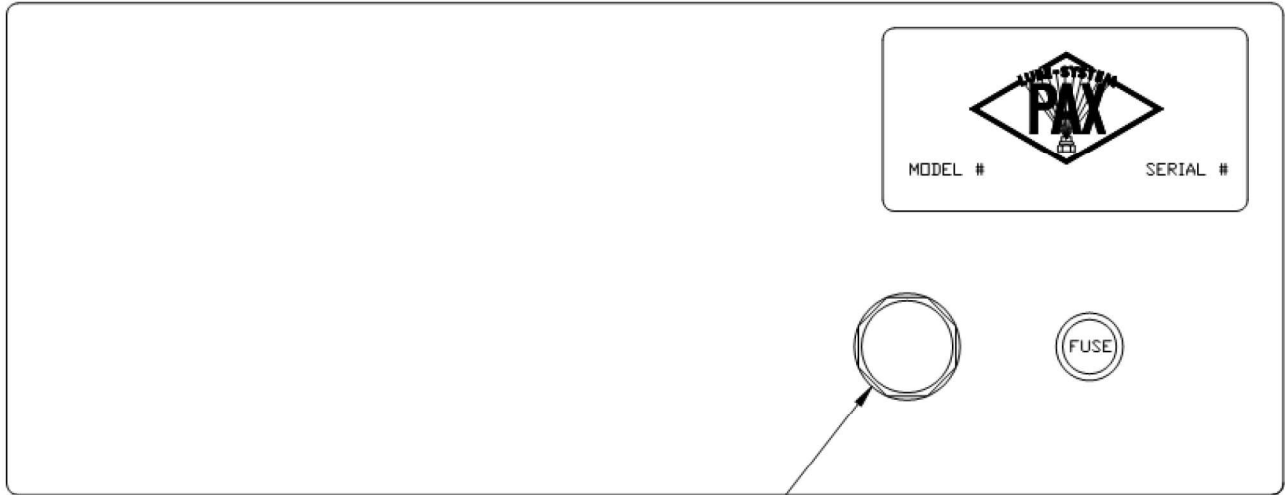
TITLE:
A PLC-HMI CONTROL OPTION

SIZE DWG. NO.

SCALE: 1:12 DRAWN BY: MAB DATE: 1/11/2021



REVISION 1 WEIGHT: SHEET 10 OF 11



PURGE OPTION

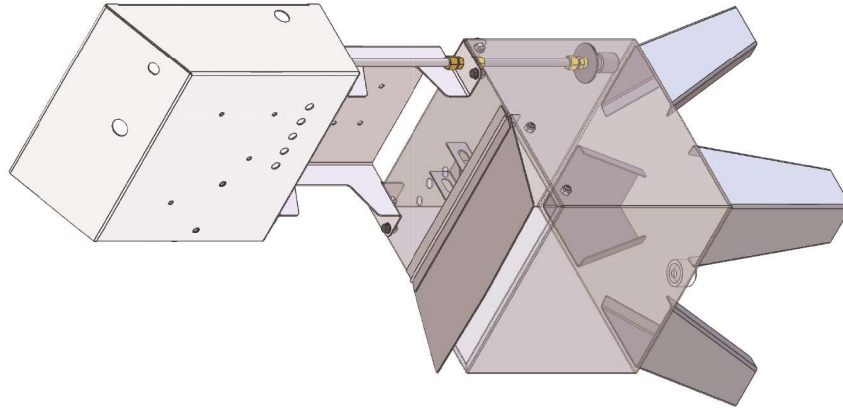
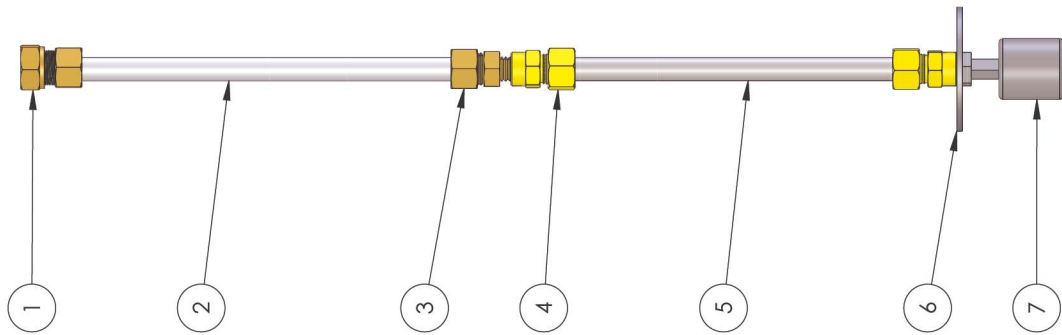
PART NO.

08-1352-20
 08-1365-21
 08-1366-20
 08-1368-21
 05-1429-20
 05-1430-20
 05-1431-20
 05-1432-20
 05-1433-20
 05-1434-20
 500-5620-0

DESCRIPTION

PURGE LEGEND PLATE
 PUSH BUTTON OPERATOR
 CONTACT BLOCK MOUNTING ADAPTER
 N.O. CONTACT BLOCK
 5 CIRCUIT PURGE-120 VOLT
 10 CIRCUIT PURGE-120 VOLT
 15 CIRCUIT PURGE-120 VOLT
 5 CIRCUIT PURGE- 24 VDC
 10 CIRCUIT PURGE-24 VDC
 15 CIRCUIT PURGE-24 VDC
 10-32 X 1/4" BHCS (2pc)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	07-0916-40	BRASS MODIFIED FEMALE CONNECTOR	1
2	01-1117-20	BULK TUBING 3/8" OD	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	1
6	07-1508-10	LLF WASHER	1
7	07-1501-23	FLOAT SWITCH 24" FLYING LEADS	1



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

TITLE:

5 GAL
 SIZE DWG. NO. B
 LOW LEVEL FLOAT ASSEMBLY

REVISION 1

WEIGHT:

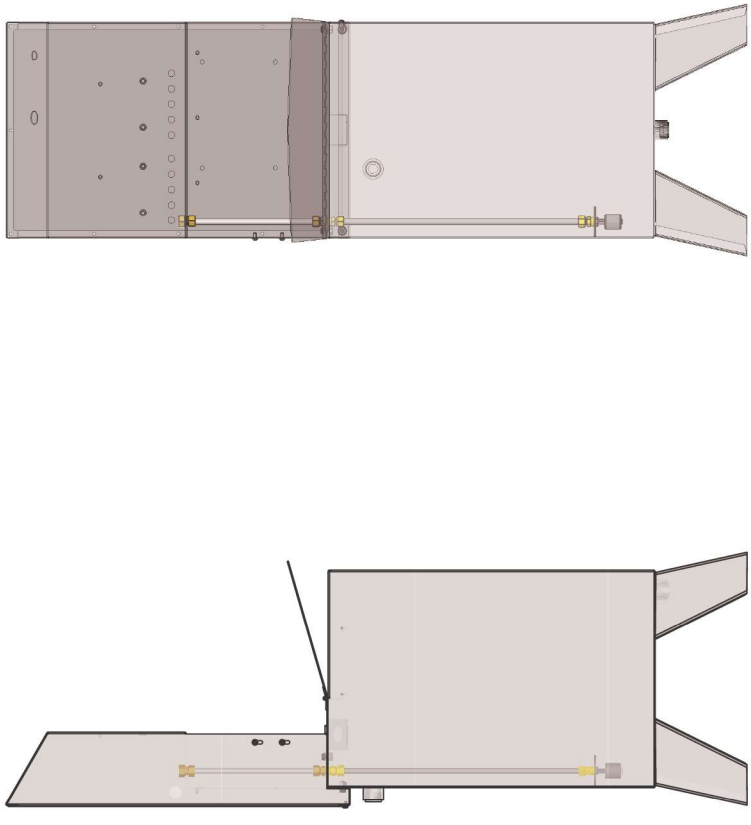
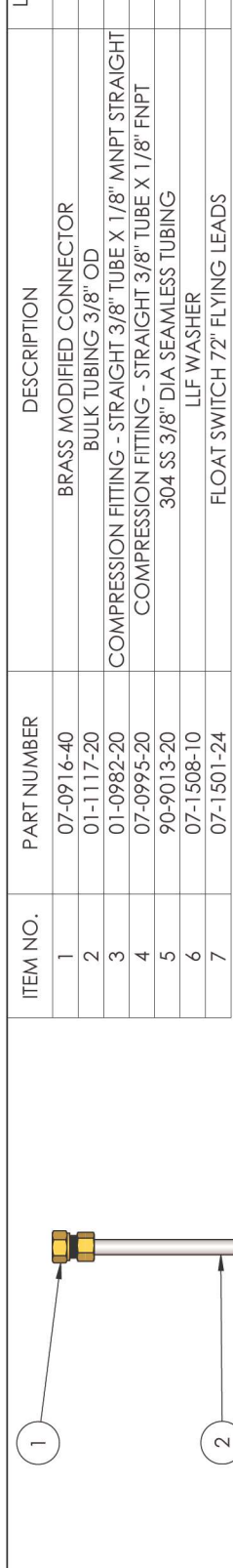
SHEET 4 OF 4

SCALE: 1:6

DRAWN BY:

DATE: 1/5/2021

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	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	1
6	07-1508-10	LF WASHER	1
7	07-1501-24	FLOAT SWITCH 72" FLYING LEADS	1



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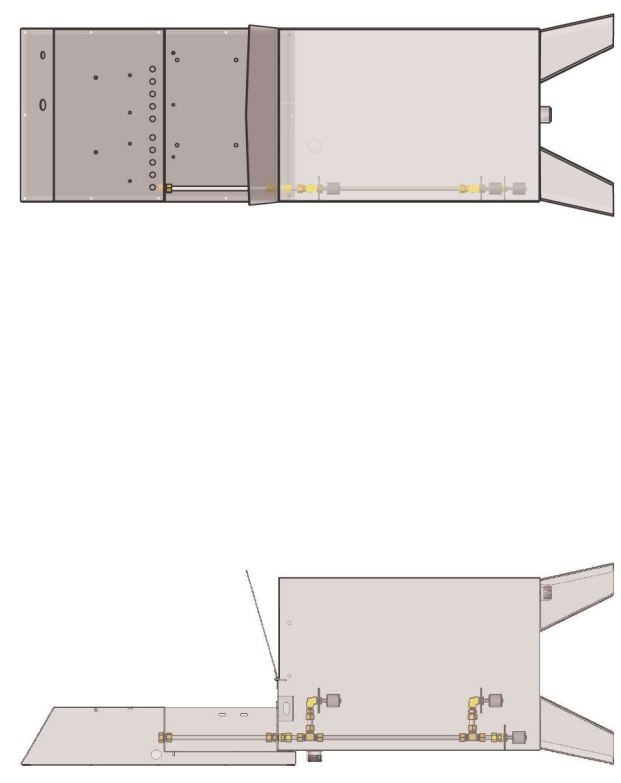
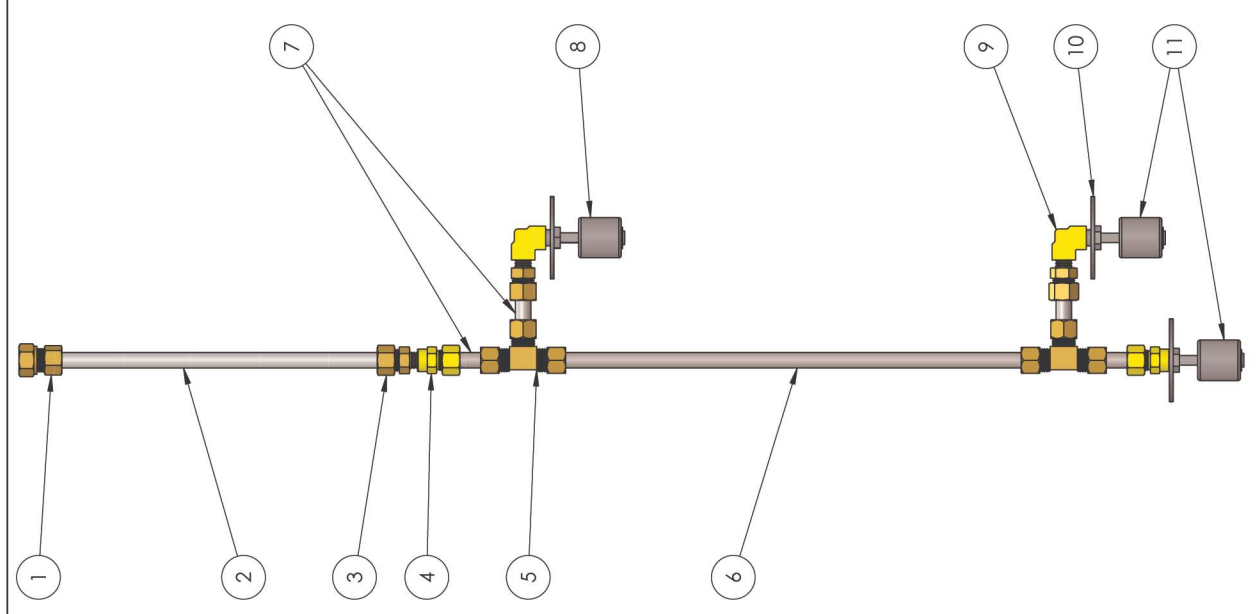
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 TOLERANCES ARE:
 ANGULAR: MACH ± .1 BEND ± .5
 TWO PLACE DECIMAL ± .010
 THREE PLACE DECIMAL ± .003
 FOUR PLACE DECIMAL ± .0005

TITLE: 15/30 GAL
SIZE: DWG. NO. B
LOW LEVEL FLOAT ASSEMBLY

REVISION 1 **WEIGHT:** **SHEET 3 OF 9** **SCALE:** 1:12 **DRAWN BY:** **DATE:** 4/22/2019

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	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	1
7	90-9013-20	304 SS 3/8" DIA SEAMLESS TUBING	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	LF WASHER	3
11	07-1501-24	FLOAT SWITCH 72" FLYING LEADS	2

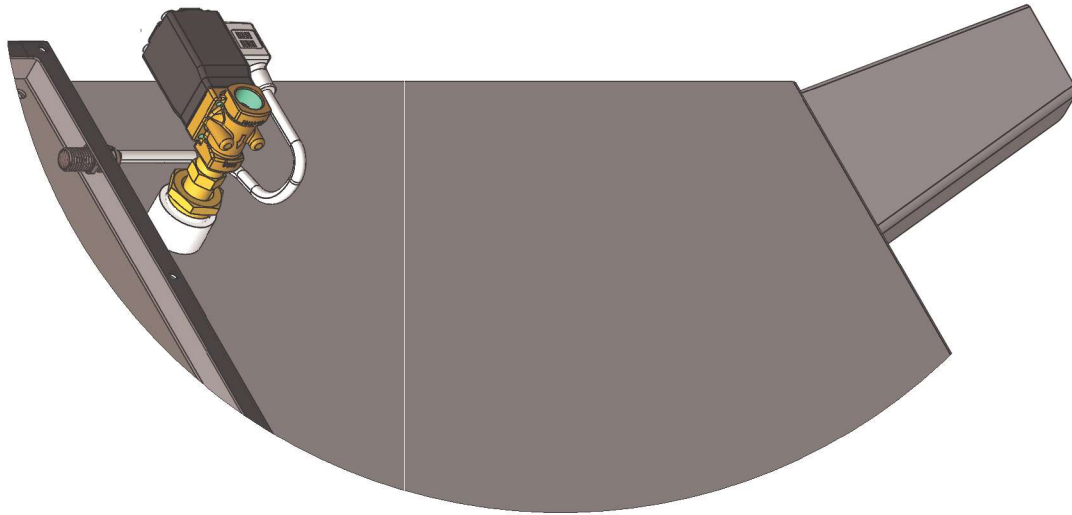




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<p>TITLE: 15/30 GAL</p>	
<p>SIZE: DWG. NO. LOW LEVEL AND AUTO REFILL CONTROL</p>	
<p>REVISION 1 WEIGHT:</p>	<p>SCALE: 1:16</p>
<p>SHEET 4 OF 9</p>	<p>DRAWN BY: MAB DATE: 4/22/2019</p>

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



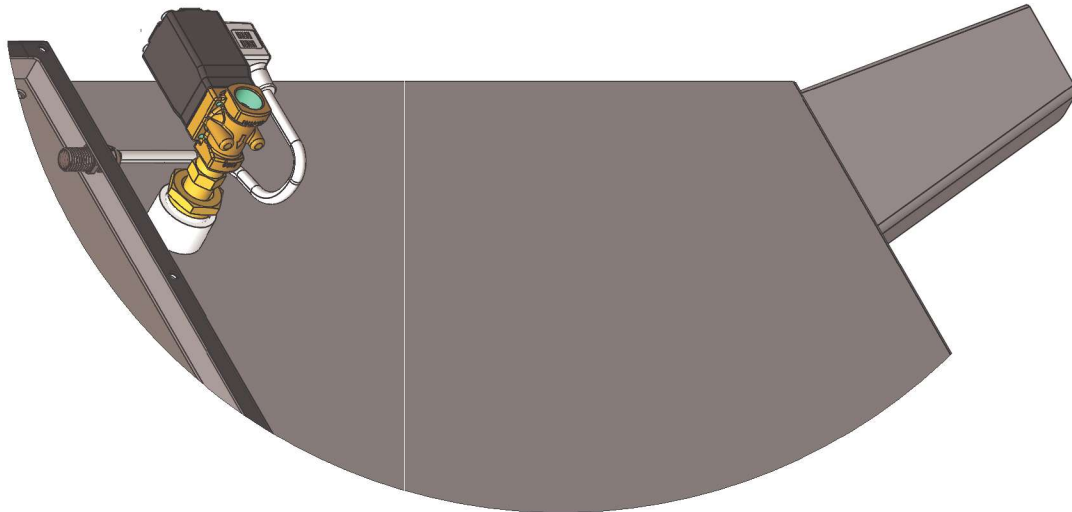
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	DO NOT SCALE DRAWING	MATERIAL:	SIZE DWG. NO. A AUTO REFILL SOLENOID VALVE ASSEMBLY
REVISION 1	WEIGHT:	SHEET 5 OF 10	SCALE: 1:16 DRAWN BY: MAB DATE: 1/8/2021

NOTE: 15 & 30 GAL UNITS ONLY

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	04-2158-23	AUTO REFILL SOLENOID VALVE 24VDC	1
6	01-1464-20	CORD CONNECTOR .157-.315"DIA PG7 THREADS	1
7	05-1404-20	DIN STYLE CONNECTOR VAN-220-00	1



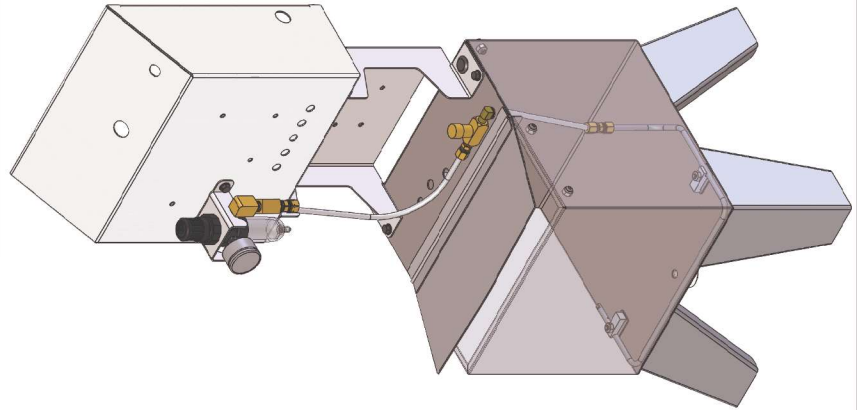
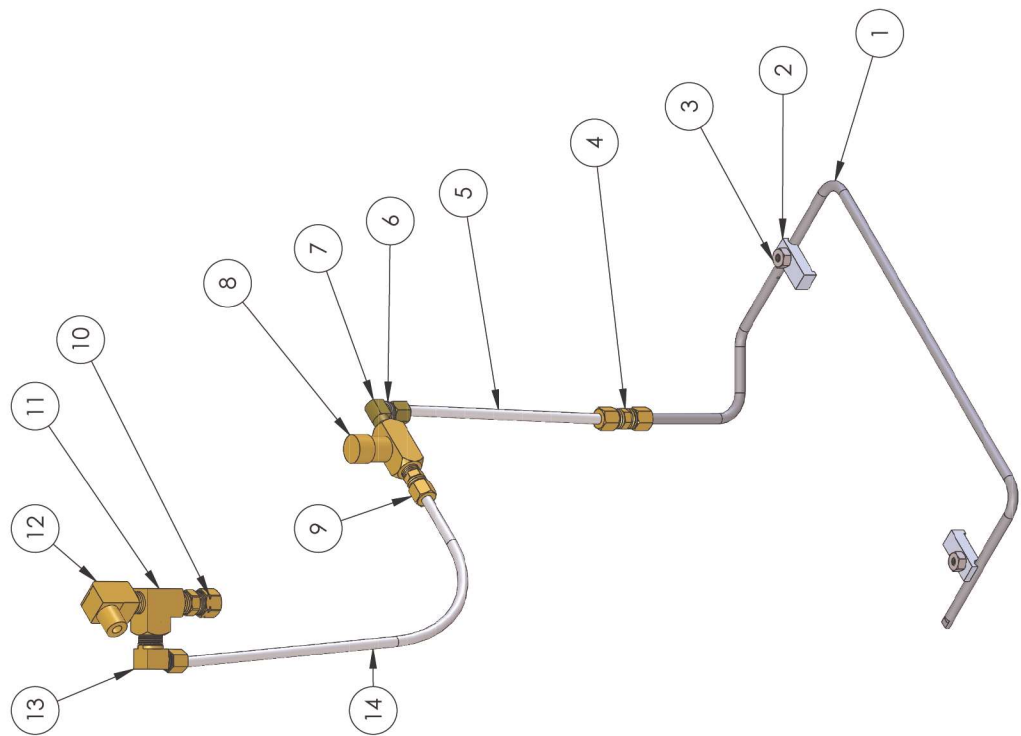
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		SIZE: A	DWG. NO.: AUTO REFILL SOLENOID VALVE ASSEMBLY
DO NOT SCALE DRAWING	MATERIAL:	REVISION 1	WEIGHT:
SHEET 5 OF 10		SCALE: 1:16	DATE: 1/8/2021

NOTE: 15 & 30 GAL UNITS ONLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90-9363-10	AIR AGITATION - 5 GAL TUBE	1
2	01-0745-10	AIR AGITATION TUBE CLAMP	2
3	01-0120-20	HEX NUT 1/4"-20	2
4	01-0902-20	COMPRESSION FITTING - UNION 1/4" TUBE	1
5	01-1116-20	BULK TUBING SOFT 1/4" OD	1
6	01-1988-10	SPACER	1
7	01-0914-21	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/8" MNPT	1
8	01-1926-20	FLOW CONTROL VALVE	1
9	01-0901-20	COMPRESSION FITTING - STRAIGHT 1/4" TUBE X 1/8" MNPT	1
10	01-0915-20	COMPRESSION FITTING - STRAIGHT 3/8" TUBE X 1/4" MNPT	1
11	03-1987-20	1/4" NPT MALE RUN TEE	1
12	03-3423-20	PIPE FITTING - STREET ELBOW 1/4" MNPT X 1/4" FNPT	1
13	01-0960-20	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/4" MNPT	1
14	01-1116-21	BULK TUBING SEM-RIGID 1/4" OD	1



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

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FOUR PLACE DECIMAL ± .0005

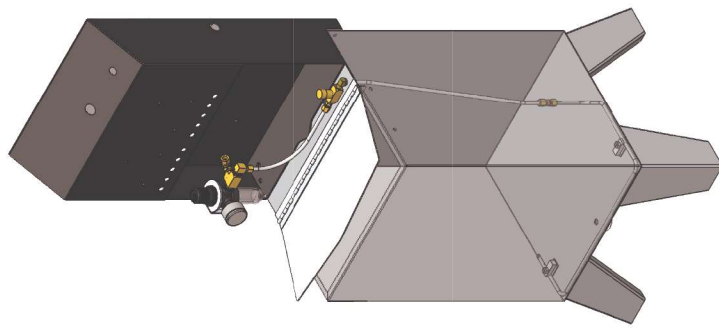
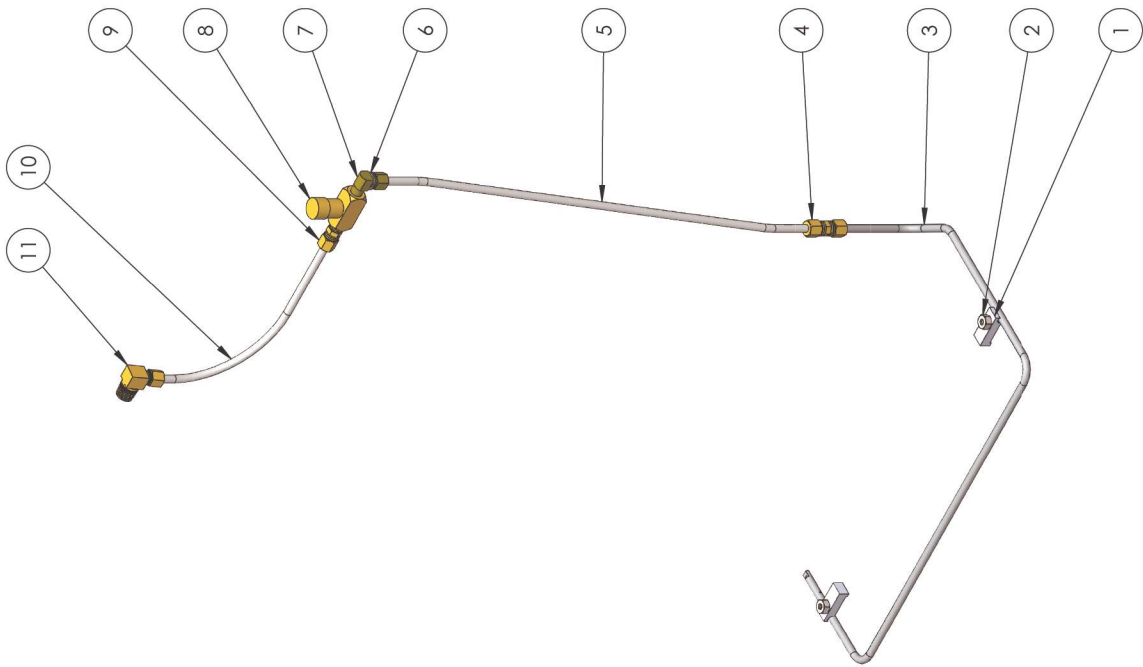
REVISION 1 WEIGHT: SHEET 5 OF 5 SCALE: 1:6 DRAWN BY: DATE: 1/5/2021

TITLE:
5 GAL

SIZE DWG. NO.

B AIR AGITATION ASSEMBLY

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



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 P.O. BOX 257
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TITLE:

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

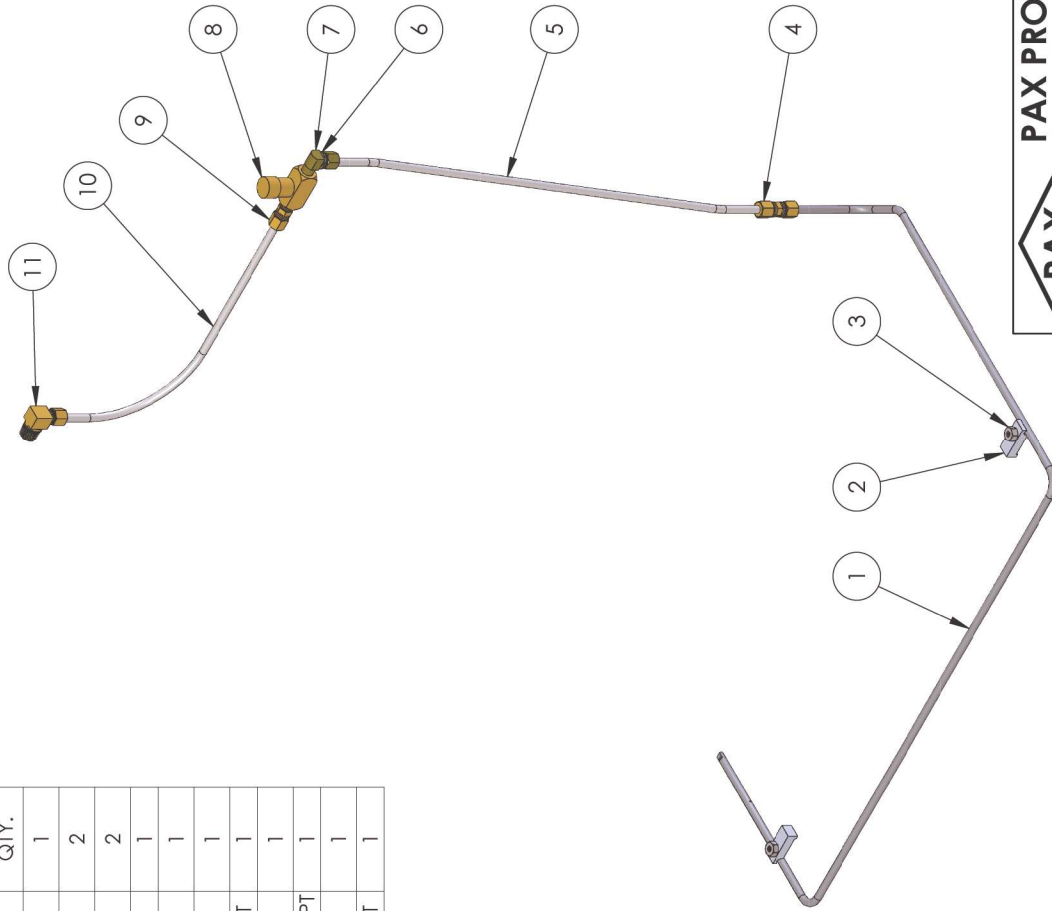
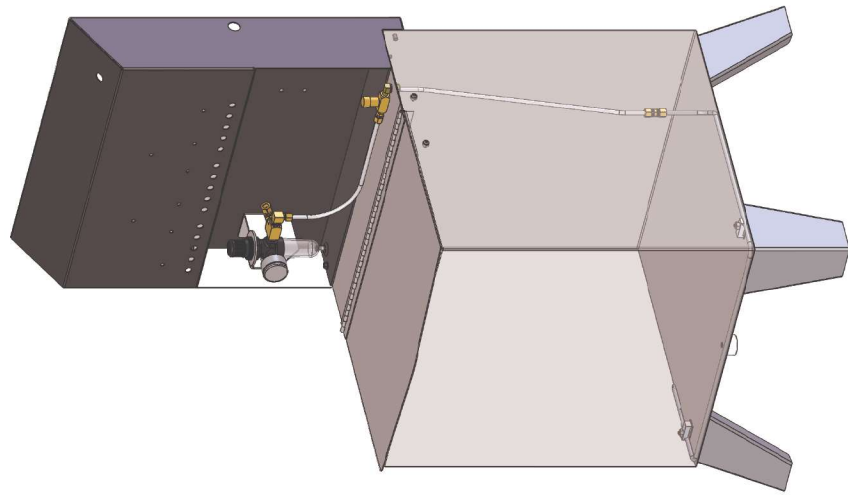
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15 GAL
 SIZE DWG. NO. B AIR AGITATION ASSEMBLY

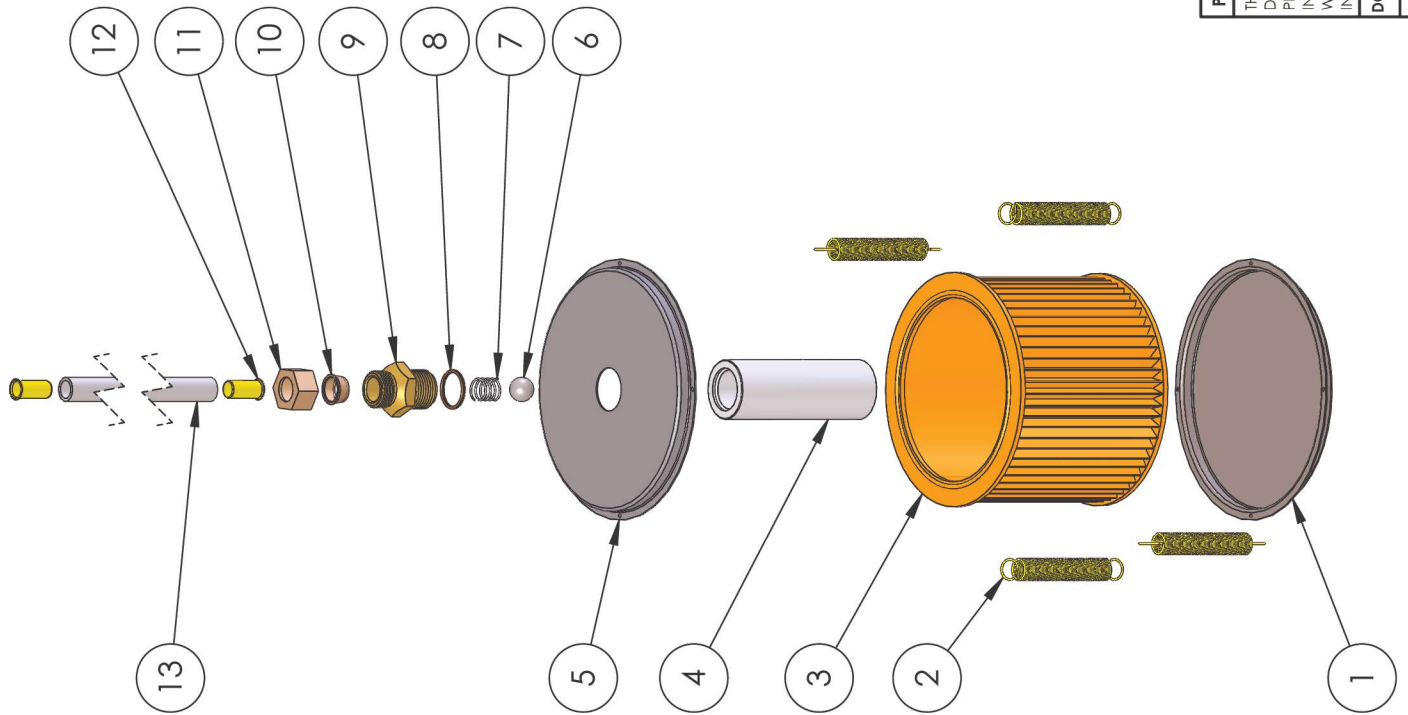
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	90-9365-10	AIR AGITATION - 30 GAL TUBE	1
2	01-0745-10	AIR AGITATION TUBE CLAMP	2
3	01-0120-20	HEX NUT 1/4"-20	2
4	01-0902-20	COMPRESSION FITTING - UNION 1/4" TUBE	1
5	01-1116-20	BULK TUBING SOFT 1/4" OD	1
6	01-1988-10	SPACER	1
7	01-0914-21	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/8" MNPT	1
8	01-1926-20	FLOW CONTROL VALVE	1
9	01-0901-20	COMPRESSION FITTING - STRAIGHT 1/4" TUBE X 1/8" MNPT	1
10	01-1116-21	BULK TUBING SEMI-RIGID 1/4" OD	1
11	01-0960-20	COMPRESSION FITTING - ELBOW 1/4" TUBE X 1/4" MNPT	1



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 CELINA, OHIO 45822-0257
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	DO NOT SCALE DRAWING MATERIAL	REVISION 1 WEIGHT: SHEET 5 OF 5
DRAWN BY: DATE: 1/5/2021		

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

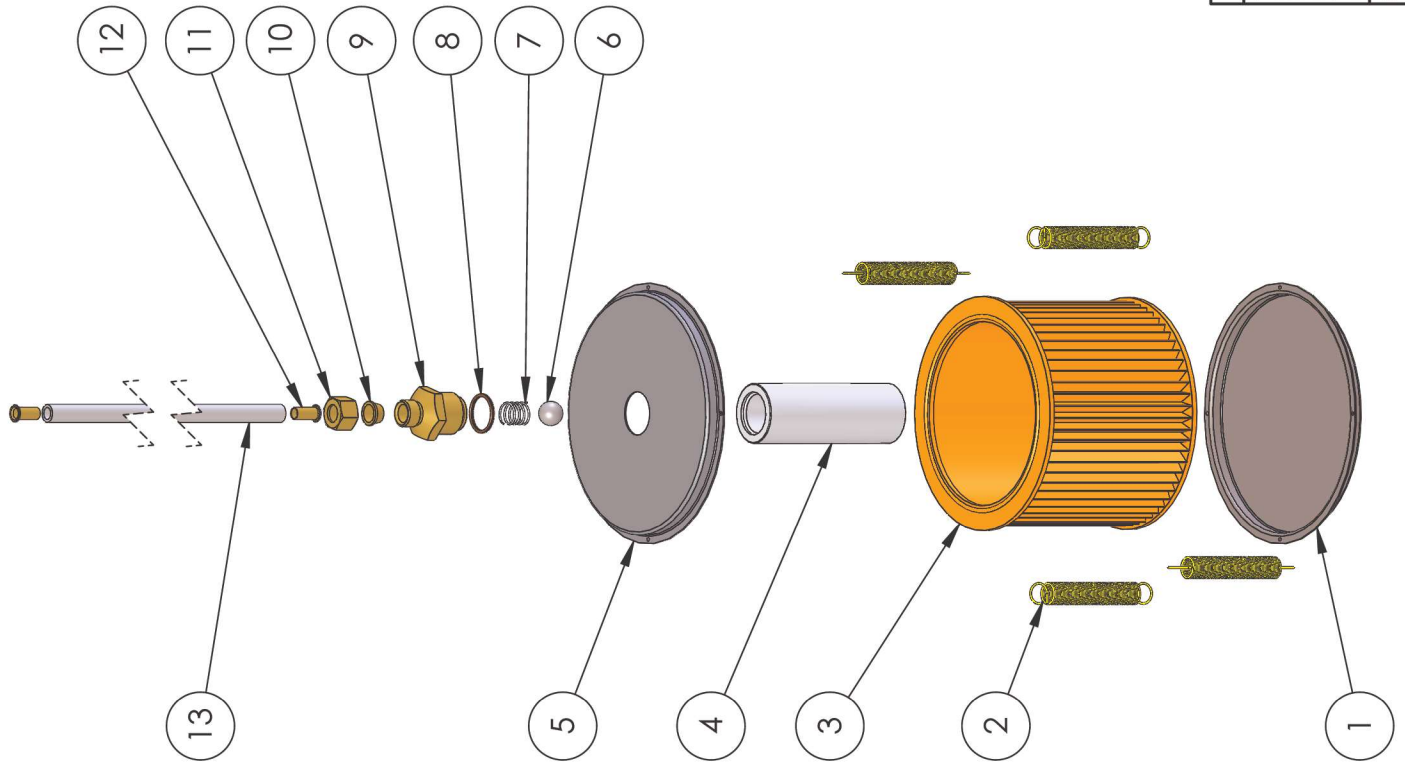


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	DO NOT SCALE DRAWING MATERIAL:		SIZE DWG. NO. A V SERIES FILTER ASSEMBLY
REVISION 1	WEIGHT:	SHEET 1 OF 2	SCALE: 1:8
			DATE: 1/8/2021

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	01-0817-10	BOTTOM PLATE - SCREEN FILTER	1
2	01-0309-21	FILTER ASSEMBLY SPRING	4
3	01-0820-10	MESH SCREEN FILTER	1
4	01-0621-10	FOOT VALVE	1
5	01-0836-10	V-SERIES TOP PLATE	1
6	03-0403-20	S.S. CHECK BALL - DIAPHRAGM PUMP	1
7	03-0308-20	INLET VALVE SPRING - SINGLE D. PUMP	1
8	03-0218-20	O-RING #017 VITON	1
9	03-0616-10	D. PUMP - OUTLET VALVE ADAPTER	1
10	01-0968-20	COMPRESSION SLEEVE 3/8" TUBE	1
11	01-0969-20	COMPRESSION NUT 3/8"	1
12	02-3411-20	TUBING INSERT 3/8" TUBE	2
13	01-1117-20	BULK TUBING 3/8" OD	1



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P.O. BOX 257 FAX: (419)586-6932
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	DO NOT SCALE DRAWING MATERIAL:		SIZE DWG. NO. A V SERIES FILTER ASSEMBLY
REVISION 1	WEIGHT:	SHEET 2 OF 2	SCALE: 1:8
		DRAWN BY:	DATE: 1/8/2021



INSTALLATION OF THE FOOT VALVE INTO THE FILTER ASSEMBLY

Reference Pages 42,43

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 (9) through the top plate (5) and into foot valve (4). Torque outlet valve adapter (9) 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 (PTFE DIAPHRAGM)

PUMP DATA

Part Number	03-2162-22
Pump Type	Automatically Operated - Air Pilot- Double Diaphragm
Weight	Stainless Steel Body - 4.84 lbs (2.20 kgs)
Maximum Air Inlet Pressure	100 p.s.i.g. (0.7 MPa)
Minimum Air Inlet Pressure	30 p.s.i.g. (0.2 MPa)
Maximum Outlet Pressure	90 p.s.i.g. (0.6 MPa)
Maximum Flow Rate	5.3 g.p.m. (20.0 liters)
Maximum Suction Lift	20 ft. (6m) (water)
Maximum Air Consumption.....	50 g.p.m. (200 liters)
Maximum Noise Generation.....	80 dB (without silencer)
Maximum Temperature Limits.....	32° to 140° F (0° to 60° C) (No freezing)

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 filter and regulator need to be oriented in a normal vertical direction to function properly.

INSTALLATION

- Apply Teflon tape or pipe sealant to threads upon assembly to prevent leakage.
- Secure the diaphragm pump to a suitable surface to insure against damage by vibration. The pump must be horizontally mounted with the mounting foot at bottom.
- 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.



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:

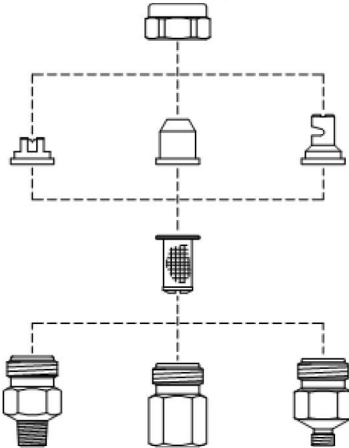
1. VISCOSITY - is that characteristic of any liquid which resists the forces of movement. Viscosity is the measure of the internal resistance of a fluid to shear and is related to the internal friction of the fluid.
2. SURFACE TENSION - is the characteristic of any liquid where the surface tends to assume 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.



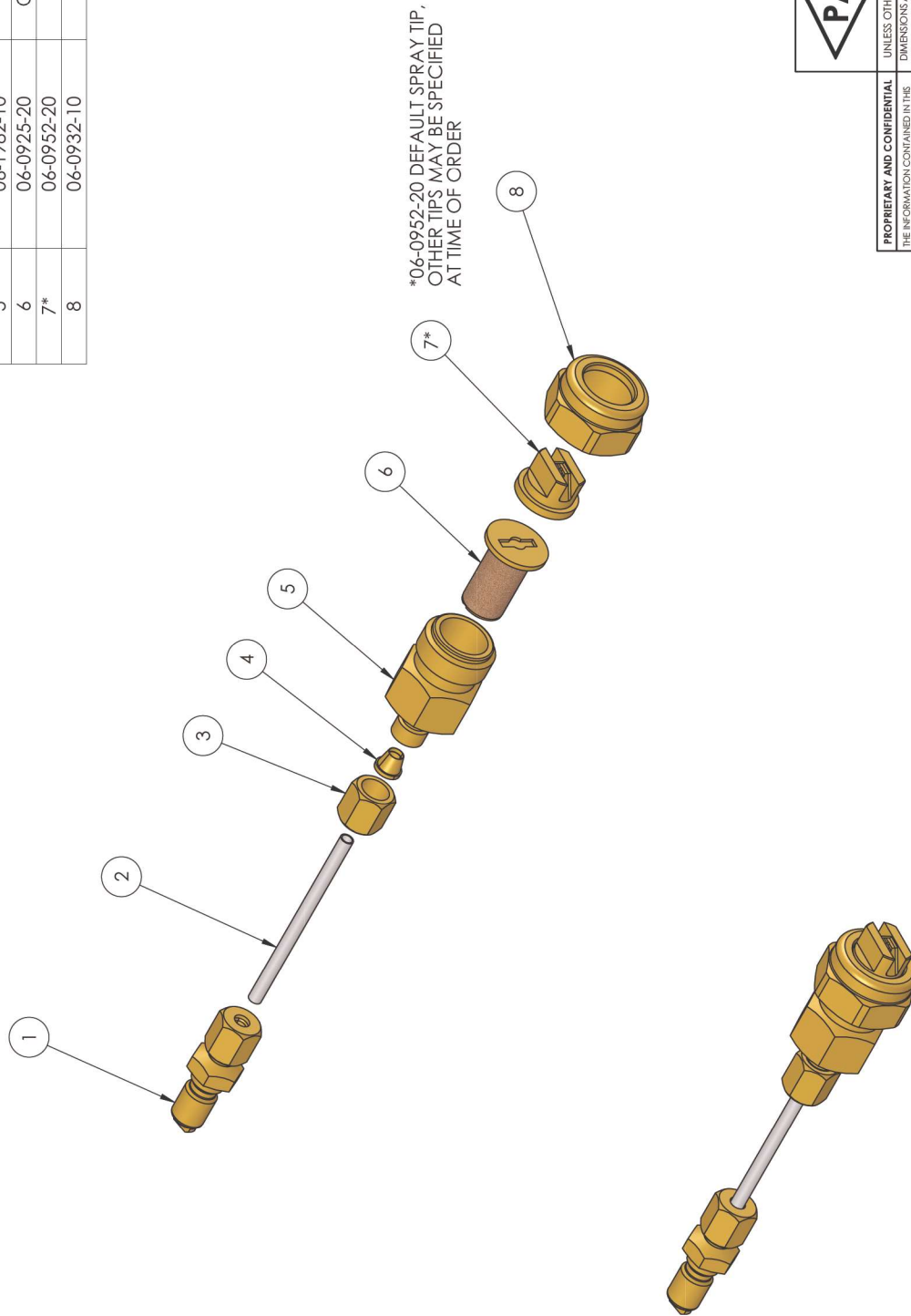
SPRAY NOZZLE DIMENSIONS

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

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



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 P.O. BOX 257 FAX: (419) 586-6932
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 THREE PLACE DECIMAL ± .0005
 FOUR PLACE DECIMAL ± .0005

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

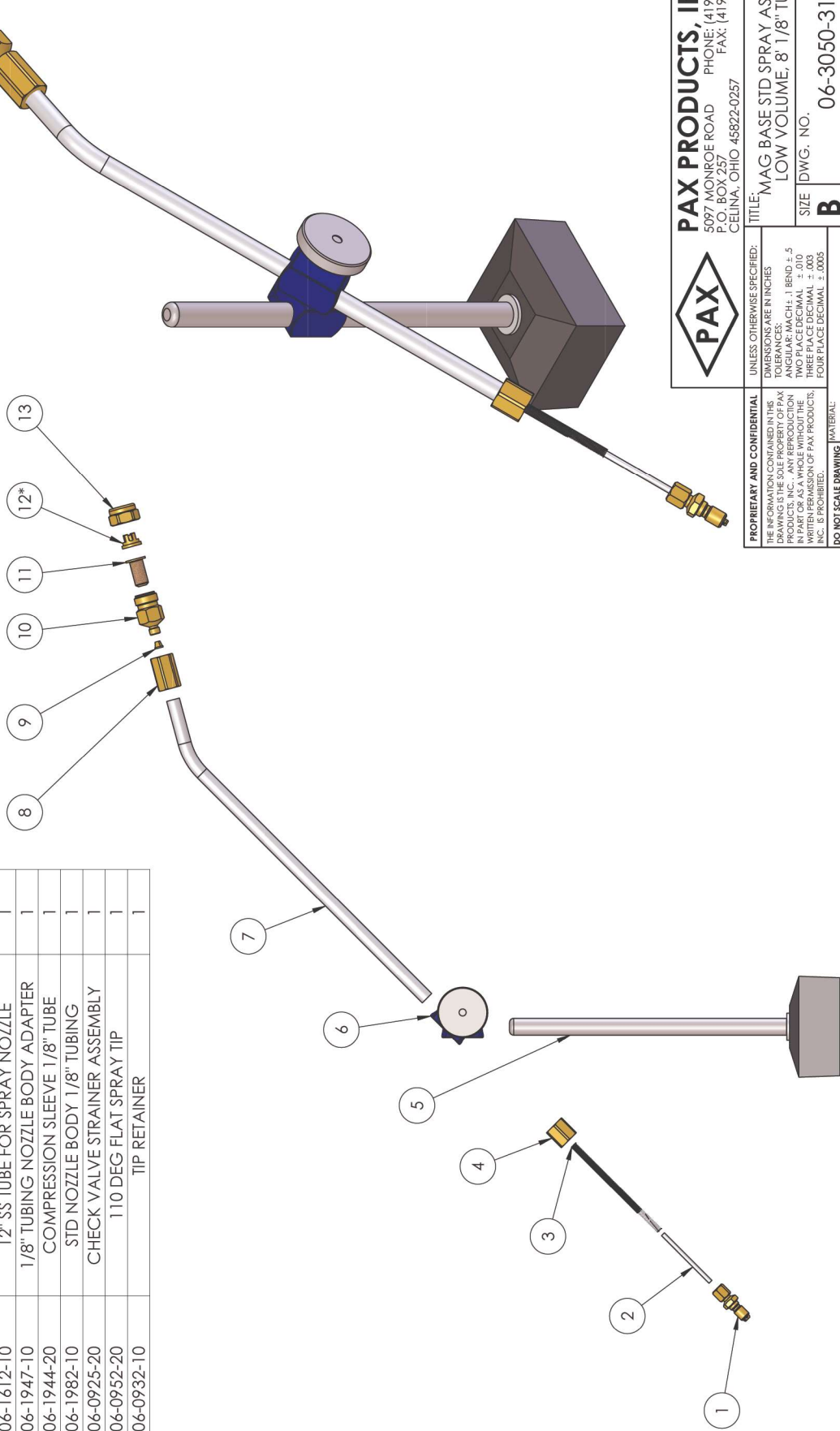
SIZE DWG. NO. **B** 06-3049-30

SCALE: 1:2 SHEET 1 OF 1

DRAWN BY: MAB DATE: 4/22/2019

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

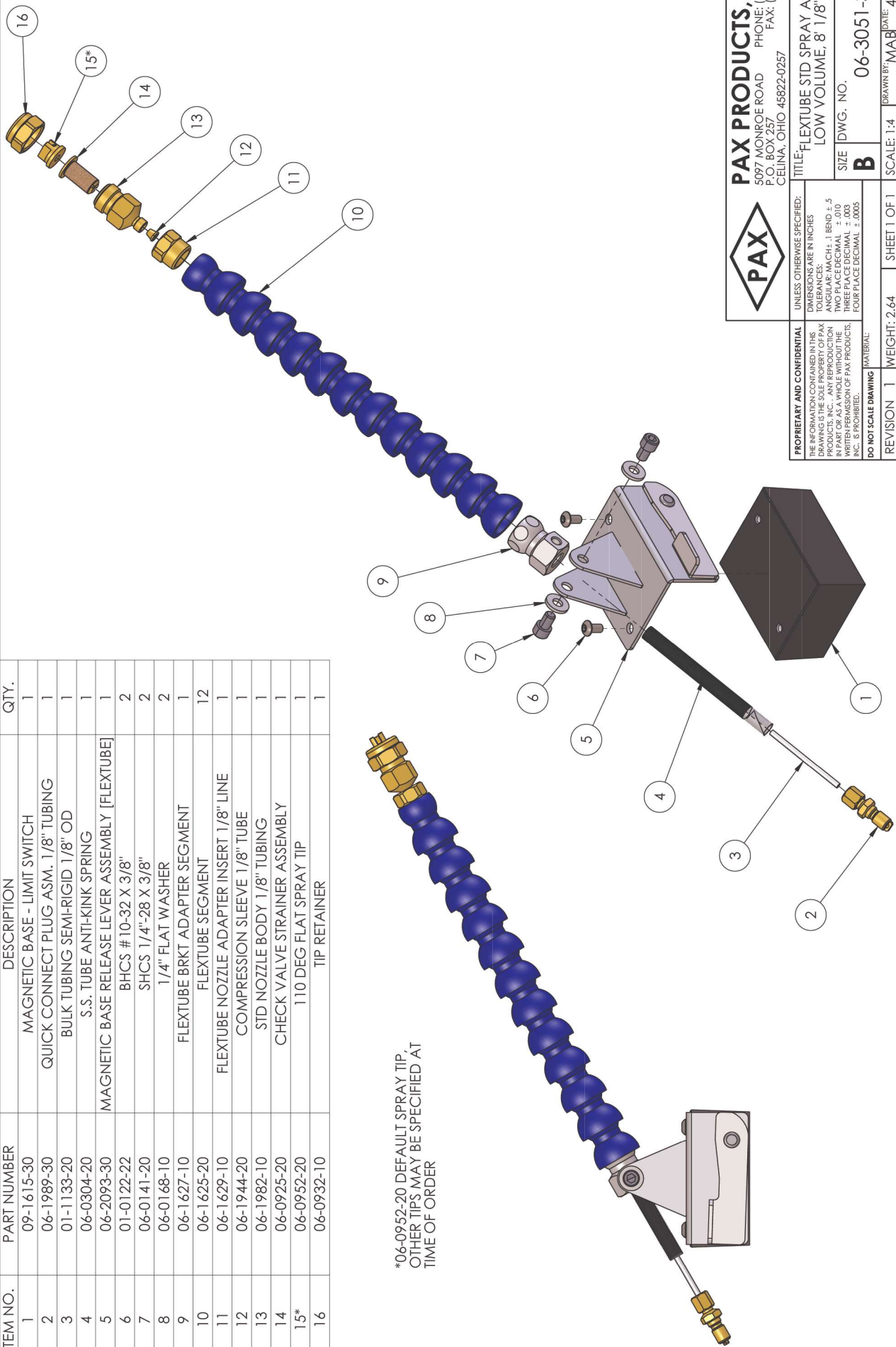


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	TITLE: MAG BASE STD SPRAY ASSEMBLY LOW VOLUME, 8 1/8" TUBING SIZE: DWG. NO. B DWG. NO. 06-3050-31
REVISION 1 WEIGHT: 2.55 SHEET 1 OF 1	SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019

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

SIZE DWG. NO. B 06-3051-30

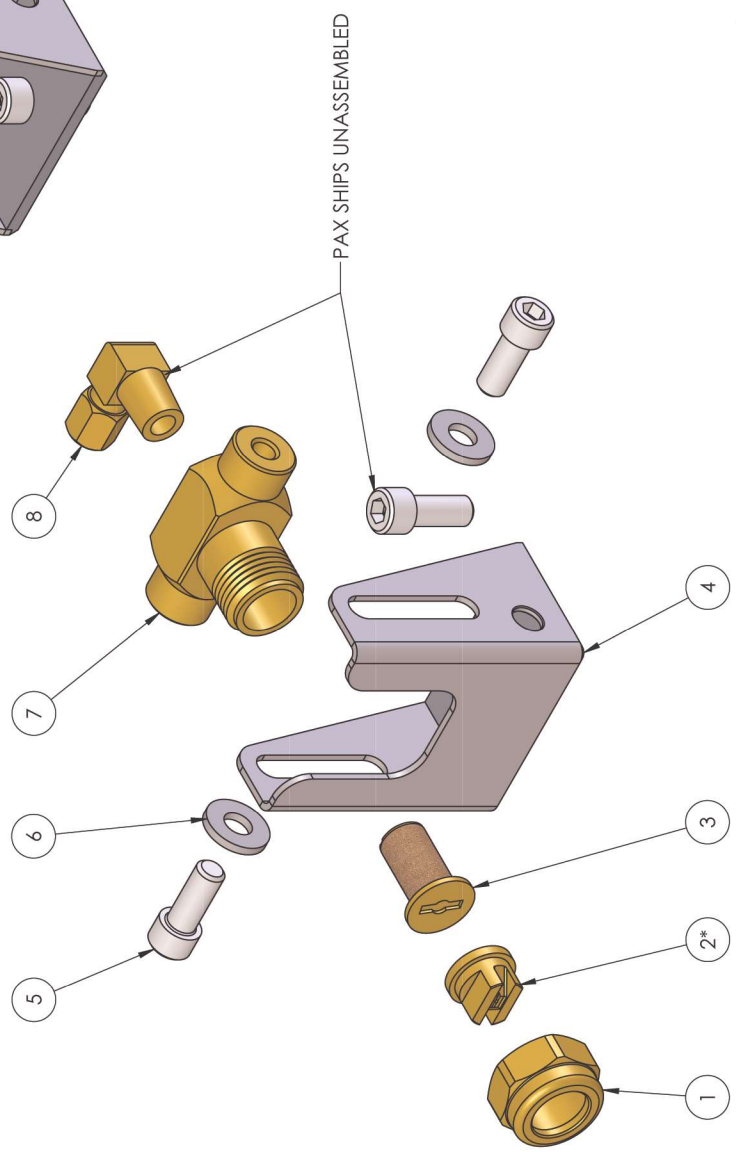
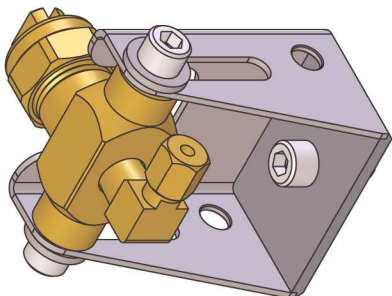
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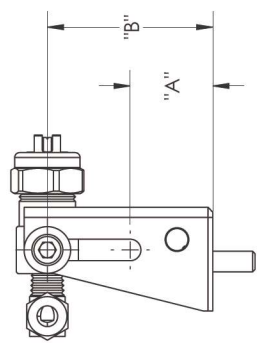
REVISION 1 WEIGHT: 2.64 SHEET 1 OF 1 SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019

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



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



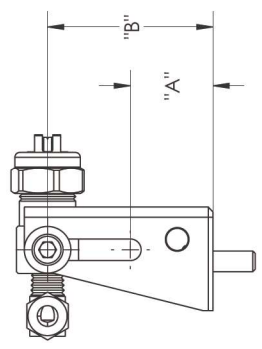
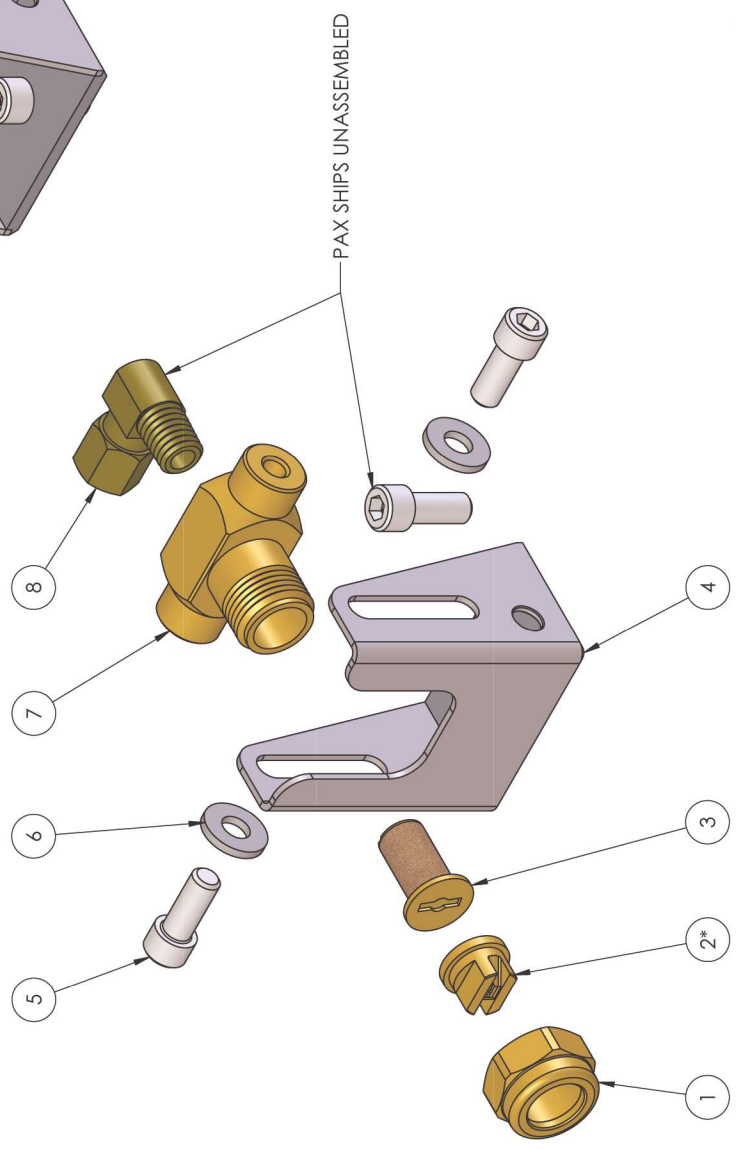
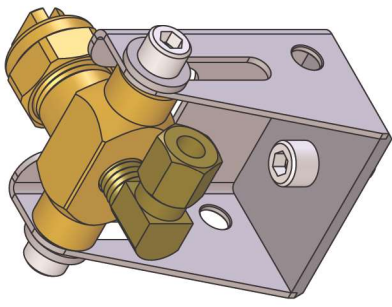
PAX PRODUCTS, INC.
 5097 MONROE ROAD
 P.O. BOX 257
 CELINA, OHIO 45822-0257
 PHONE: (419) 586-6948
 FAX: (419) 586-6932

PROPRIETARY AND CONFIDENTIAL	UNLESS OTHERWISE SPECIFIED:	TITLE: BRKT MNT STD SPRAY ASSY FOR 1/8" TUBING
	ALL DIMENSIONS ARE IN INCHES	SIZE DWG. NO. BRACKET MOUNT
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF PAX PRODUCTS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PAX PRODUCTS, INC. IS PROHIBITED.	TOLERANCES ARE IN INCHES FRACTIONS DECIMALS ANGULAR: MACH: J BEND ± .5 TWO PLACE DECIMAL ± .010 THREE PLACE DECIMAL ± .003 FOUR PLACE DECIMAL ± .0005	SCALE: 1:4
DO NOT SCALE DRAWING	MATERIAL:	SHEET 1 OF 2
REVISION 1	WEIGHT: 0.55	DRAWN BY: MAB DATE: 4/22/2019

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

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

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	

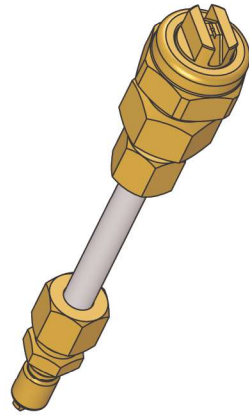


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 P.O. BOX 257
 CELINA, OHIO 45822-0257
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	TITLE: BRKT MNT STD SPRAY ASSY FOR 1/4" TUBING SIZE: DWG. NO. BRACKET MOUNT B STANDARD SPRAY ASSEMBLY
REVISION 1	WEIGHT: 0.55 SHEET 2 OF 2
SCALE: 1:4 DRAWN BY: MAB DATE: 4/22/2019	

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

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



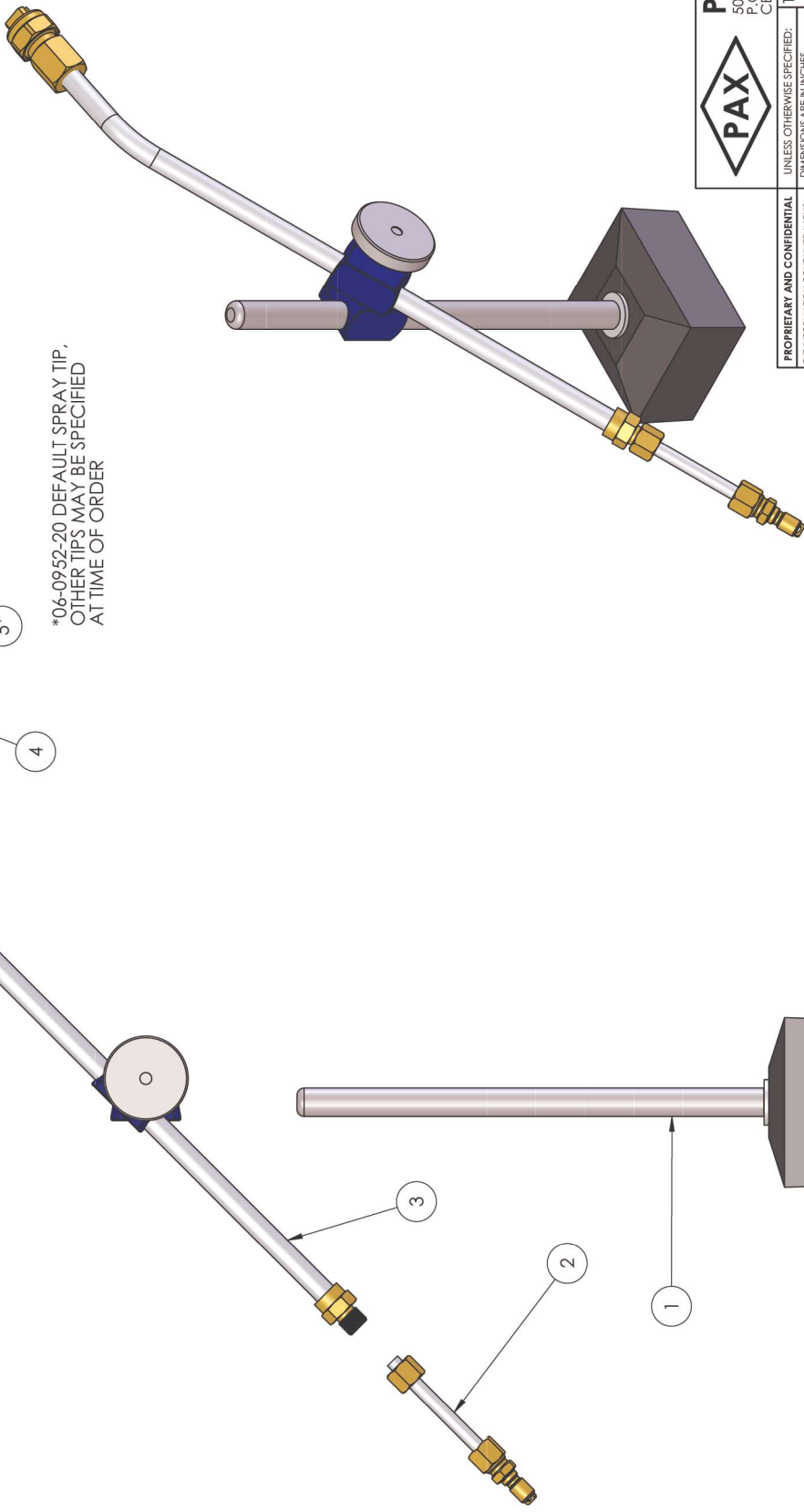
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PROPRIETARY AND CONFIDENTIAL	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	TITLE: STD SPRAY ASSEMBLY W/ 8'
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF PAX PRODUCTS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PAX PRODUCTS, INC. IS PROHIBITED.	TOLERANCES: ANGULAR: MACH: J BEND ± .5 TWO PLACE DECIMAL ± .010 THREE PLACE DECIMAL ± .003 FOUR PLACE DECIMAL ± .0005	1/4" SEMI RIGID TUBING
DO NOT SCALE DRAWING	MATERIAL:	SIZE: DWG. NO. B
REVISION 1	WEIGHT: 0.21	06-3008-30
SHEET 1 OF 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

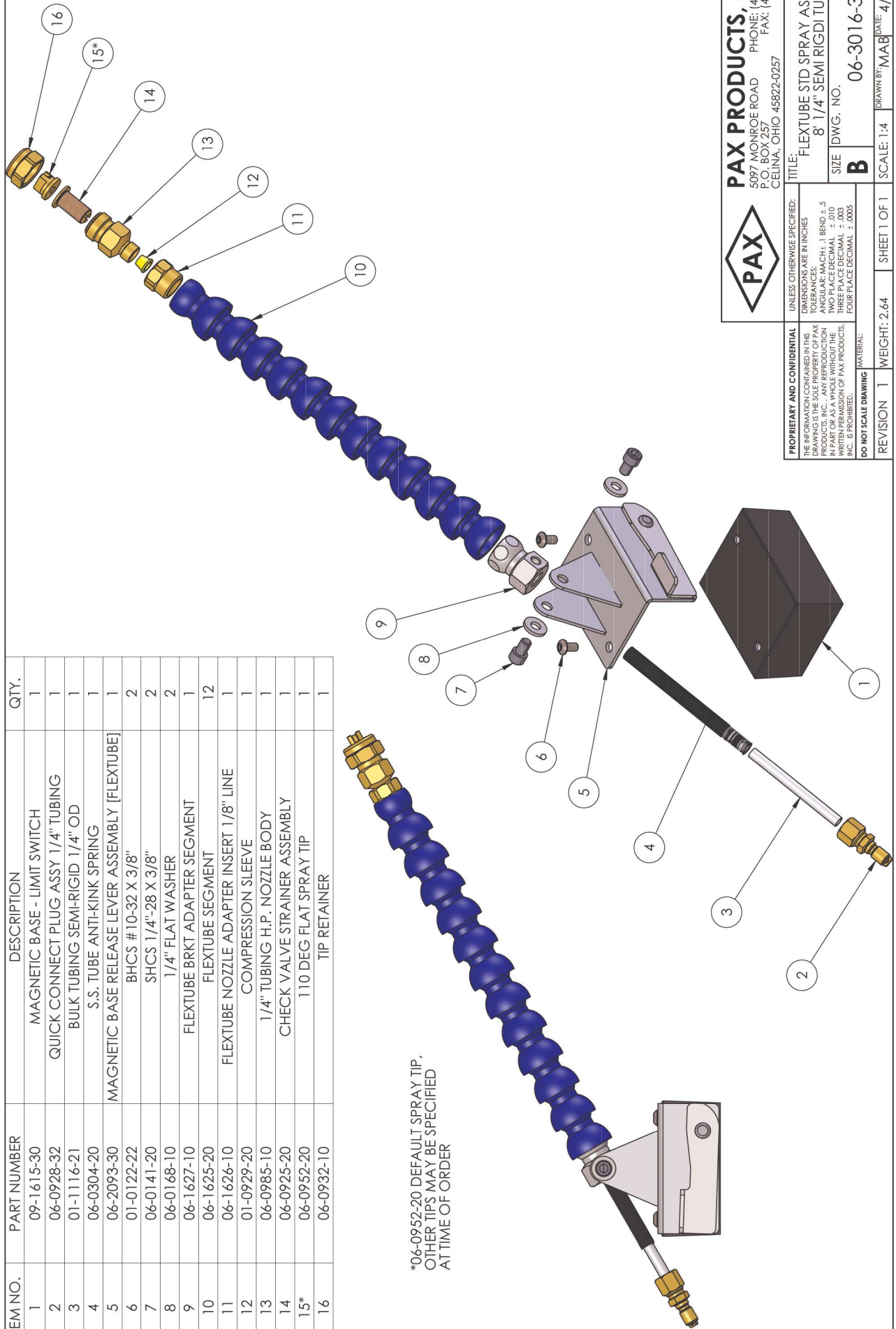


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	TITLE: MAG BASE STD SPRAY ASSEMBLY W/ 8, 1/4" SEMI RIGID TUBING SIZE: DWG. NO. B 06-3012-31
DO NOT SCALE DRAWING MATERIAL:	REVISION 1 WEIGHT: 2.48 SHEET 1 OF 1 SCALE: 1:8 DRAWN BY: MAB DATE: 4/22/2019

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

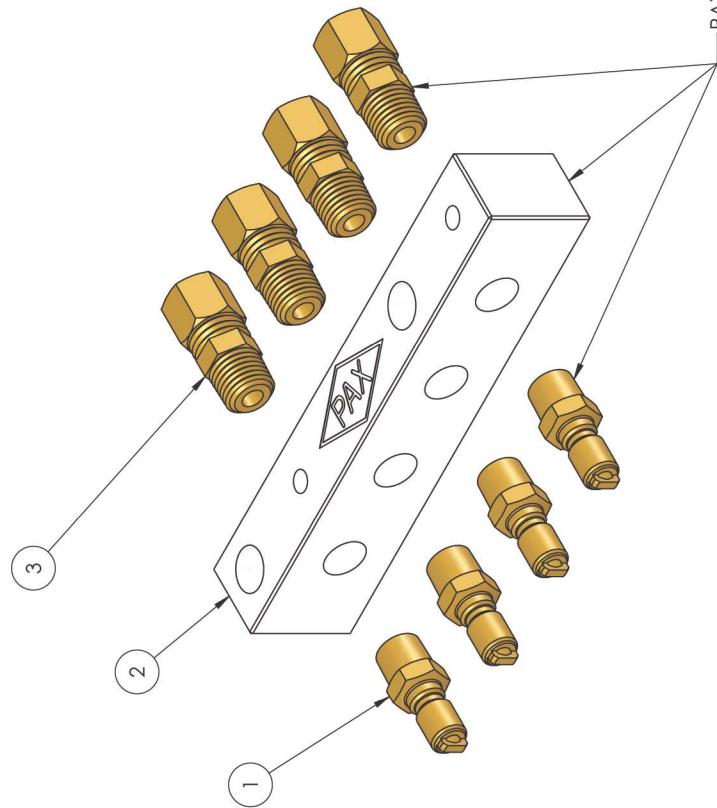
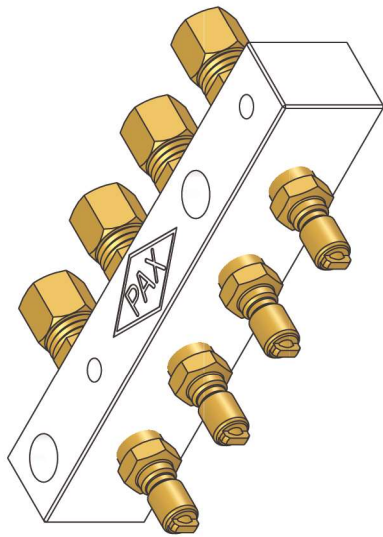
*06-0952-20 DEFAULT SPRAY TIP,
OTHER TIPS MAY BE SPECIFIED
AT TIME OF ORDER



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	TITLE: FLEXTUBE STD SPRAY ASSEMBLY, 8' 1/4" SEMI RIGDI TUBING SIZE: DWG. NO. B 06-3016-30
REVISION 1 WEIGHT: 2.64 SHEET 1 OF 1	SCALE: 1:4 DRAWN BY: MAB 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



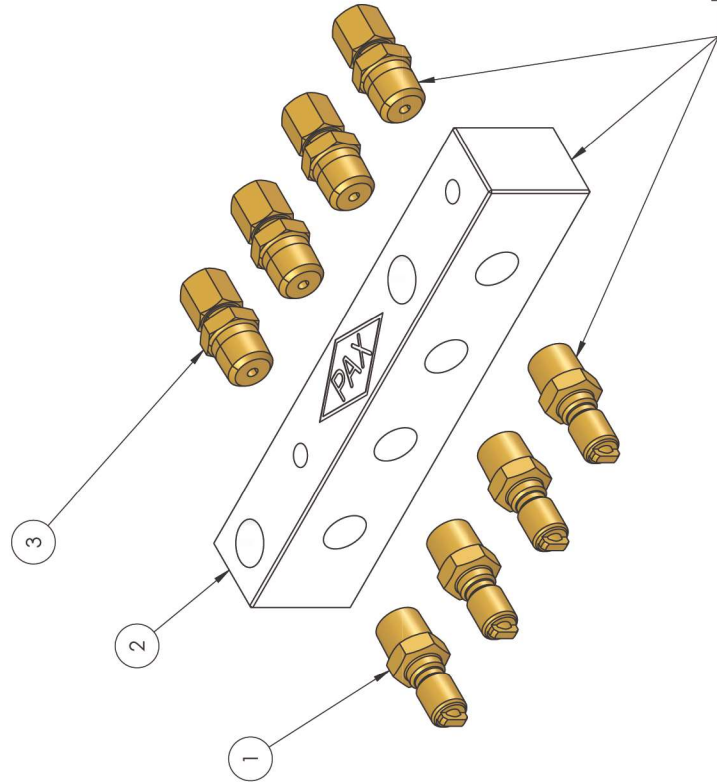
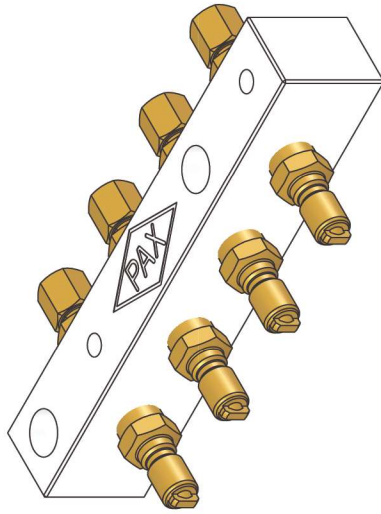
PAX SHIPS UNASSEMBLED




PAX PRODUCTS, INC.
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	DO NOT SCALE DRAWING	SIZE: B	DWG. NO.: 02-3222-30
REVISION 1	WEIGHT: 0.41	SCALE: 1:1	SHEET 1 OF 1
		DRAWN BY: MAB	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	06-1943-20	COMPRESSION FITTING - STRAIGHT 1/8" TUBE X 1/8" MNPT	4





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TITLE: 4 PORT STACKABLE DIE MANIFOLD ASSEMBLY - 1/8" SPRAY LINES

SIZE: DWG. NO. 02-3223-30

SCALE: 1:1

DRAWN BY: MAB **DATE:** 4/22/2019

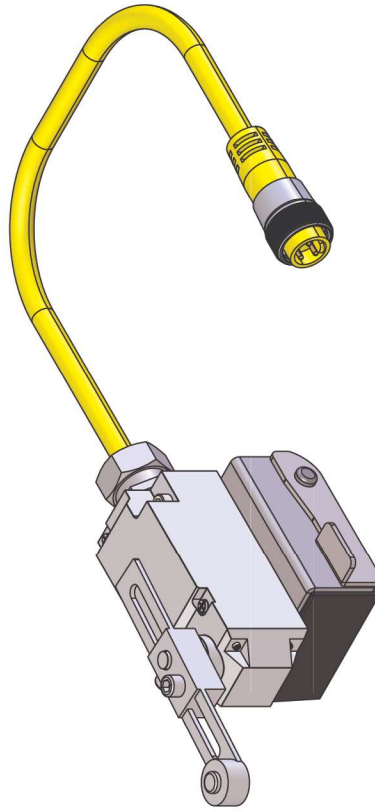
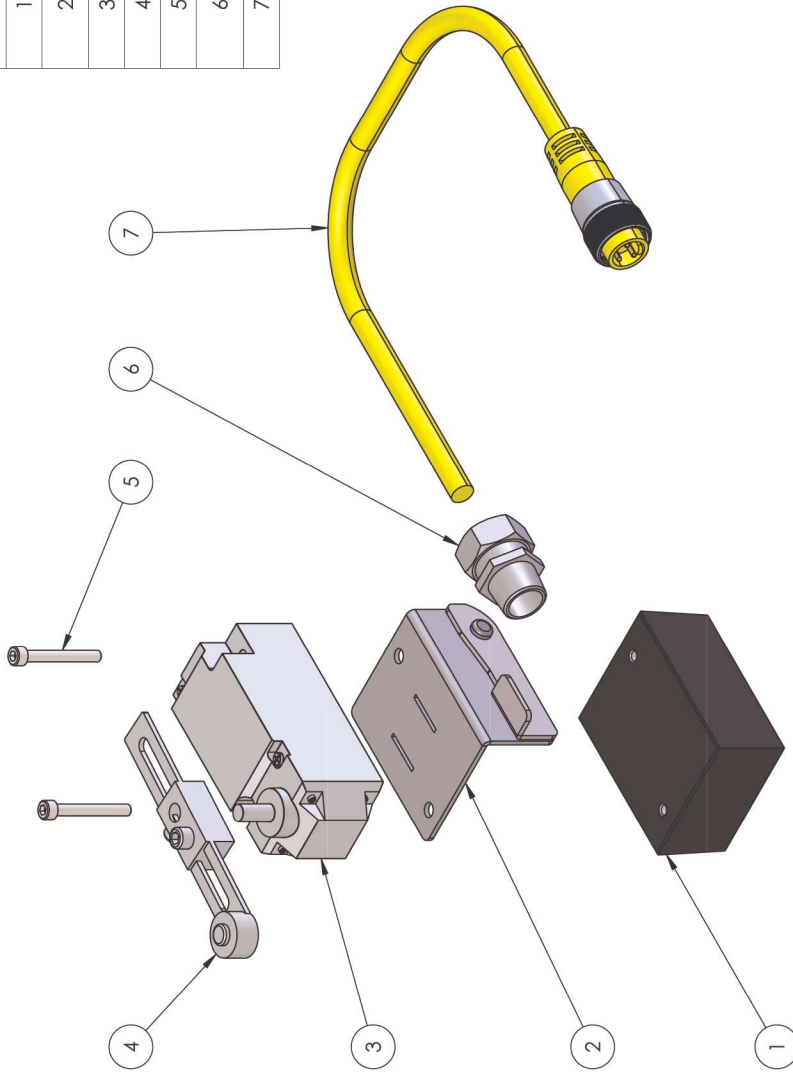
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UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH: J BEND ± .5
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .003
FOUR PLACE DECIMAL ± .0005

DO NOT SCALE DRAWING

REVISION 1 WEIGHT: 0.35 SHEET 1 OF 1

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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	DO NOT SCALE DRAWING
TITLE: MAGNETIC BASE LIMIT SWITCH WITH RELEASE LEVER	SIZE: DWG. NO. 09-2054-32
REVISION 1	WEIGHT: 2.76
SHEET 1 OF 1	SCALE: 1:4
DRAWN BY: MAB	DATE: 4/22/2019