

## 2 PUMP- ELECTRICALLY ACTIVATED-SUPPLIES UP TO 10 NOZZLES



The MOD-2E JET-SET® spray system comes standard with our 5 Gallon stainless steel tank with sight gauge, reusable filter, and air regulator. This system includes two JET-SET 9100 stainless steel piston pumps (0-5cc per stroke) with 10 outlets for spray nozzles. The 9100 pumps are engaged using the electric solenoid to receive external signals for system activation. The MOD-2E comes standard 110v unless specified.

The electric solenoid in our MOD-2E is wired into your machine which allows lubrication to be sprayed at the beginning of each machine cycle.

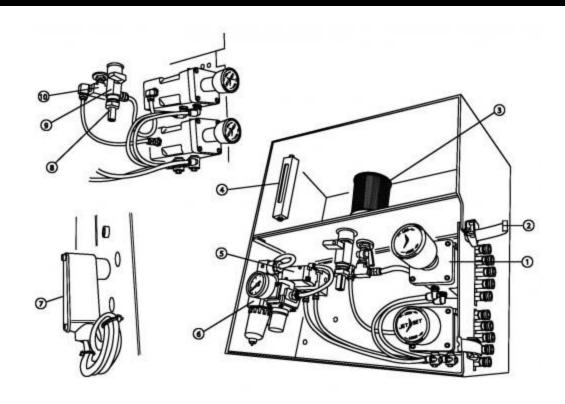
The MOD-2E comes standard with two 9100 pumps that will give you millions of cycles of maintenance free operation. All JET-SET® pumps provide easy volume regulation by turning the nuraled regulator knob found on top of the 9100 pump. The 9100 pump can be regulated from 0 to 5 cc per cycle.

The MOD-2E can also be equipped with a 1401 timer, 1471 counter, or both. With the 1471 you can count a predetermined number of press cycles before lubricant is required. The 1401 can be set to activate when you want per cycle, including multiple times per cycle





## 2 PUMP- ELECTRICALLY ACTIVATED-SUPPLIES UP TO 10 NOZZLES



#### **INDIVIDUAL PARTS:**

1) 9100: Large Stainless Steel Pump

2) 810: Draw Latch

3) 620: Stainless Steel Filter

4) 525: Sight Glass W/Fittings

5) 1400-N-NU: Solenoid Valve and Base

6) 1501: SMS Style Filter Regulator

7) 837: Electrical Elbow

8) 725: Tube Stem

9) 724-L: Male Ball Valve 10) 622: Tee Assembly





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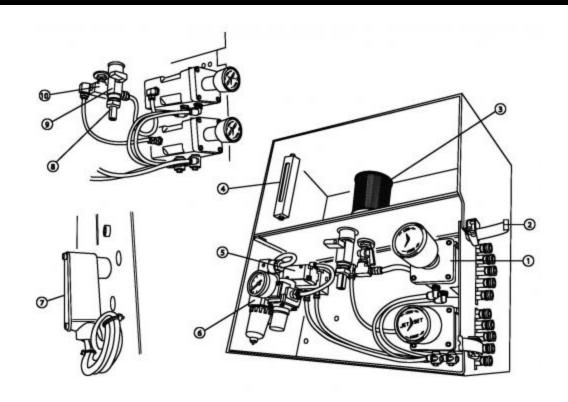
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#### INSTALLATION

- 1. Using the template provided, select a location that will be convenient for filling the tank and making setup changes.
- 2. Drill and tap two holes for bolts to support the module. The template will provide you with the exact location of the holes.
- 3. Now hang the module and connect shop air to the  $\frac{1}{4}$ " F.P.T. brass fitting located on the left side of the module.
- 4a. Place the air switch where the trigger rod\* can best be activated by mechanical movement. The switch may be adjusted to fire in either direction or in both directions. To change direction: See attached 714N Air Switch Installation Data."
- 4b. \*If installing an electrically activated module, a four way solenoid has been provided to activate the pump. Simply complete the circuit from the four way solenoid to the switch of your choice. See attached "1400N Solenoid Valve Instructions" or "1400 SMC Valve Instructions"
- 5. Keeping all the nozzle leads the same approximate length, plug the quick disconnect hose connectors into the bottom of the Module. Keeping the nozzle leads the same length assures even distribution of fluid to each nozzle. Position nozzles where needed.
- 6. Fill the tank with lubricant and turn the slot in the teecock shutoff, located at the top right of the control panel, to a vertical position. When using the standard high pressure nylon tubing provided, we recommend spraying light viscosity fluids. A copper tubing conversion kit is available for spraying heavy viscosity fluids.
- 7. With the large knurled knob on the control panel turned all the way out, hand activate the air switch until all air is out of the system. See attached "How to Bleed Air From The Manifold of #9100 Pump"



#### FINAL ADJUSTMENT

- 1. To adjust the volume of liquid being sprayed, turn the large knurled knob on the control panel clockwise to decrease, and counterclockwise to increase. With the air regulator set at high pressures it may be necessary to hand activate the air switch to relieve air pressure and allow the knob to move freely.
- 2. To adjust the air pressure on the unit, turn the adjustment knob which is under the panel and just below the gauge. This adjustment will regulate the velocity of the spray. The higher the air pressure, the higher the velocity of spray. We suggest lowering the air pressure until the best spray pattern has been obtained.
- 3. Position the spray nozzles for the coverage desired. The distance away from the surface will determine the area of coverage. If longer nozzle leads are required or nozzle placement is a question CALL YOUR JETSET ® DISTRIBUTOR or visit us online at h ttp://www.JetSetSpray.com . JETSET® distributors carry a complete line of interchangeable spray tips for changing spray patterns, nozzle holders and the required high pressure nylon tubing.



## JET-SET

### **JET-SET®** GUIDES

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## Spray System Troubleshooting

### **System Troubleshooting**

Problem	Possible Cause	Possible Solution	
Entire system will not 1. Solenoid Wiring operate		Check for correct wire hookup	
		1A. Check for proper placement of sensor or micro switch	
	2. Loss of Air Pressure	Check air regulator for adequate pressure adjust for operation at 10PSI-130PSI.	

### Pump Troubleshooting

Problem	Possible Cause	Possible Solution
Pump Will Not Operate	Pump will not draw fluid in feedline.	Check tank fluid level, be sure the fluid stopcock is in open position.
		1a. Be sure the filter surface is clean.
	2. Pump may have an air lock in the fluid discharge area.	Follow pump priming procedure. Refer to "Pump Priming Instruction Sheet".
	3. Oil in the feedline rises and falls with each cycle of operation.	3. Inspect Inlet SS Seat for proper placement of spring and SS Ball. Inspect for foreign matter lodged between seat and ball that may prevent proper seating action.
	4. Fluid in the spray line rises and falls with each cycle of operation.	4. Inspect Outlet SS Seat for proper placement of spring and SS Ball. Inspect for foreign matter lodged between seat and ball that may prevent proper seating action.
	5. Pump passes air into the nozzle line while in idle position or during operation.	5. Check pump position "O" rings for wear.Replace seals if needed.
		5a. Be sure fluid connectors supplying the pump are tight.



### Spray System Troubleshooting

### **Spray Troubleshooting**

Problem	Possible Cause	Possible Solution
Poor Spray Pattern	Low air regulator pressure.	Increase regulator pressure to obtain optimum pattern.
	2. Contaminated nozzle ballcheck and strainer.	2. Clean or replace as necessary. Make sure all nozzles have ballcheck for proper spray checking action.
	3. Flex spray lines too long.	3. Keep to a minimum all nozzle leads. When using a lubricant with higher viscosity, replace nylon leads with rigid tubing for best spraying results.
	4. Air is trapped in spray lines or in a pump outlet manifold.	4. Bleed all nozzle leads of air. Refer to "Pump Priming Instruction Sheet" to clear air in pump.

## TO ASSURE CONTINUED TROUBLE FREE OPERATION OF YOUR JETSET ® SYSTEM, A DAILY CHECK OF THE FOLLOWING IS RECOMMENDED.

- 1. Drain air filter regulator bowl of moisture buildup.
- 2. Check spray nozzles for proper placement and spray quality.
- 3. Check for contaminants in holding tank. Clean filter element as needed.
- 4. Check for proper lubricant level and refill as needed to assure continual operation.



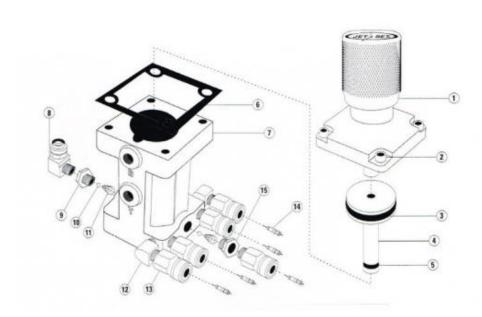


# JET-SET® GUIDES 9100 Pump

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## JET-SET® #9100 Pump

### STAINLESS STEEL PUMP



### Individual part numbers:

1) 9114-A: End Cap Assembly

2) 9121: Socket Cap Screw

3) 9112\*: Viton O-Ring

4) 9111: Stainless Steel Piston

5) 9108\*: Viton O-Ring

6) 9113\*: Gasket

7) 9101: Stainless Steel Pump Boby

8) 897: Elbow Connector

9) 9104-I: STainless Steel Inlet Ball Check

10) 9102\*: Stainless Steel Check Ball

11) 9103: Stainless Steel Check Spring

12) 811: Brass Elbow

13) 802: Midget Socket

14) 802-V: Valve Core

15) 9104-0: Outlet Ball Check

16)9118\*: Viton O-Ring

17) \*Seal Kit available : All parts with\*\* are included in a replacement 9100 Seal Kit





# JET-SET® GUIDES 9100 Pump

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## JET-SET® #9100 Pump

#### STAINLESS STEEL PUMP



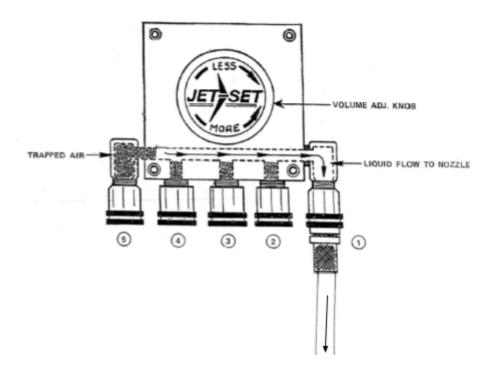
All JET-SET® Module Systems have the new stainless steel JET-SET® pump designed for long life cycles. Utilizing stainless components and viton seal. The #9100 pump will give millions of cycles of maintenance-free operation. All JET-SET® pumps provide easy volume regulation by turning the large knob on top of the pump. You can regulate the output of fluid from 0 to 5 cc per cycle. One to three pumps may be mounted in the system. All pumps have five quick disconnect fittings for nozzles.





## JET-SET® GUIDES How To Bleed 9100 Pump

\*\*\* PLEASE NOTE: Adjustment knob should be in the full open position (More >) \*\*\* before each and every time the pump is to be primed.



A #9100 JETSET® pump comes from our factory fully primed, tested and ready to use. It has been found, however, that when first installing the *JETSET*® system, small amounts of air might be trapped in the manifold of the #9100 pump. This is not noticeable when spraying at full volume, only when spraying very small amounts. Then, the pump may need to be reprimed. For best results, bleed all five connections, in the order shown. Simply plug a nozzle into each connection while the pump is being activated. Release just enough fluid to eliminate air. This will ensure a good spray pattern and eliminate drippage.

This procedure should never have to be repeated, unless the system runs dry and loses its prime.



### JET-SET® GUIDES 1400-N-NU Solenoid

## **JET-SET® 1400-N-NU Solenoid**

1400-N-NU



The 1400 -N-NU Solenoid Valve is a directional air control valve which comes standard on all MOD systems. Ruggedly built to withstand harsh environments. Please specify when ordering either 110v or 24v.

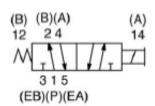


### JET-SET® GUIDES 1400-N-NU Solenoid

## **JET-SET® 1400-N-NU Solenoid**

1400-N-NU

single solenoid 2 position 4-way





#### **Technical Data**

Value Data	English		Metric			
Cv	1/8 G Tap = 0.08	1/4 G Tap = 1.0	1/8 G Tap = 0.08	1/4 G Tap = 1.0		
Flow Capacity	37 SCFm	46 SCFM	790 NI/m	985 NI/m		
	Upstream Pressure to atmosphere @80 PSIG		@ 6 bar upstream/5 bar downstream			
Operating Pressure Range	28deg Hg Vacuum to 150 PSIG		Vacuum to 10 Bar			
Temperature Range (Ambient)	-10 F to +115 F	-10 F to +115 F				





### JET-SET® GUIDES 1400-N-NU Solenoid

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All Solenoi Duty Rated	ds are continuous	12 VDC	24 VDC	24 VAC 50 Hz	24 VAC 60 Hz	115 VAC 60 Hz	120 VAC 60 Hz	230 VAC 50 Hz	240 VAC 60 Hz
Power (Wa	tts)	6.0	6.0	N/A	N/A	N/A	N/A	N/A	N/A
Holding Cu	ırrent (Amps)	0.50	0.25	0.84	0.38	0.15	0.09	0.007	0.04
InRush Cu	rrent (Amps)	N/A	N/A	2.25	1.85	0.41	0.38	0.021	0.19
Energize in	2-Position, Single, Spring Return	0.032	0.032	0.011	0.011	0.011	0.011	0.011	0.011
Seconds	2-Position, Double, Detented	0.028	0.028	0.012	0.012	0.012	0.012	0.012	0.012
	3-Position, Spring Centered	0.028	0.028	0.012	0.012	0.012	0.012	0.012	0.012
De-energi ze in	2-Position, Single, Spring Return	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.011
Seconds	2-Position, Double, Detented	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3-Position, Spring Centered	0.008	0.008	0.018	0.018	0.018	0.018	0.018	0.018



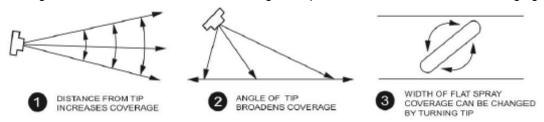


## JET-SET® GUIDES Tips For Spraying

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The JETSET® Hydraulic Spray System Assures a controlled deposit on any configuration. First, the spray displacement can vary from zero to full capacity by adjusting the volume control on the pump. And second, the velocity can be controlled from a soft, gentle spray to a full strong blast by regulating the pressure in the air supply.

The Following three sketches show how the coverage and pattern can be varied without changing tips.



JET SET® HYDRAULIC SPRAY KITS ARE SHIPPED WITH AN 80015 FLAT SPRAY TIP.
THE FOLLOWING INTERCHANGEABLE TIPS ARE AVAILABLE FOR SPECIFIC NEEDS.



SOLID ROUND SPRAY

	CODE	ACTUAL ORIFICE	ANGLE
*	TG 0.4	.022	63°
	TG 1	.036	60°
	TG 2	.047	50°
	TG 3	.062	65°

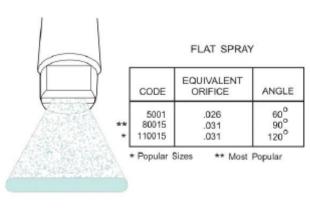
\* Popular Sizes

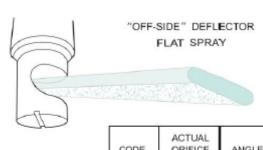


HOLLOW ROUND SPRAY

	CODE	ACTUAL ORIFICE	ANGLE
*	TY 14	.059	68°
	TX 10	.060	76°
	T8W	.063	136°

\* Popular Sizes





	CODE	ACTUAL ORIFICE	ANGLE
*	TK 1.5	.040	140°
	TK 2.5	.051	140°

\* Popular Sizes

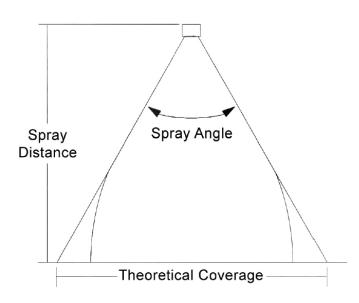
NOTE: Other tips are available. For recommendation, submit pint sample of liquid and details of operation.





# JET-SET® GUIDES Spray Angle and Coverage

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Tabulated spray angles indicate approximate spray coverages based on spray or distribution of water. In actual spraying, the effective spray angle varies with spray distance. Liquids more viscous than water form relatively smaller spray angles ( or even solid stream), depending upon viscosity, nozzle capacity and spraying pressure. Liquids with surface tensions lower than water will produce relatively wider spray angles than those listed for water. This table list the theoretical coverage of spray patterns as calculated from the included spray angle of the spray and the distance from the nozzle orifice. Values are based on the assumption that the spray angle remains the same throughout the entire spray distance. In actual practice the tabulated spray angle does not hold for long spray distances. If spray coverage requirement is critical contact JETSET® for help in determining the specs.

#### Theoretical Spray Coverage

at Various Distances in Inches (cm) from Nozzle Orifice 10 20 10\* 25 15" 50 60 30" 100 cm cm cm 2.2 2.1 7.0 1.1 1.3 3.5 5.2 2.6 3.1 8.7 1.8 2.6 6.1 10° .9 .7 2.6 8.8 4.2 10.5 5.2 14.0 17.5 159 .5 1.3 1.1 2.6 1.6 4.0 2.1 5.3 2.6 6.6 3.2 7.9 3.9 10.5 4.7 13.2 6.3 15.8 7.9 18.4 9.5 21.1 12.6 26.3 200 .7 1.8 1.4 3.5 2.8 7.1 3.5 8.8 4.2 10.6 5.3 14.1 17.6 21.2 10.6 24.7 28.2 35.3 25 2.2 1.8 2.7 8.9 17.7 8.0 10.6 26.6 31.0 21.2 4.4 6.7 3.5 4.4 11.1 5.3 13.3 6.6 22.2 13.3 15.9 35.5 44.3 2.7 2.1 10.7 6.4 12.8 37.5 42.9 25.7 53.6 30 5.4 3.2 8.0 4.3 5.4 13.4 16.1 8.1 21.4 9.7 26.8 32.2 16.1 19.3 35 1.3 3.2 2.5 6.3 3.8 9.5 5.0 12.6 6.3 15.8 7.6 18.9 9.5 25.2 11.3 31.5 15.5 37.8 18.9 44.1 22.7 50.5 30.3 63.1 409 1.5 3.6 2.9 7.3 4.4 10.9 14.6 7.3 18.2 8.7 21.8 10.9 29.1 13.1 36.4 17.5 43.7 21.8 51.0 26.2 58.2 34.9 72.8 5.8 1.7 4.1 3.3 8.3 5.0 12.4 6.6 16.6 8.3 20.7 12.4 41.4 19.9 49.7 24.8 29.8 66.3 82.8 50° 3.7 14.0 28.0 37.3 16.8 56.0 1.9 4.7 9.3 5.6 7.5 18.7 9.3 23.3 11.2 14.0 46.6 22.4 28.0 65.3 33.6 74.6 44.8 93.3 37.5 5.2 4.2 10.4 6.3 15.6 8.3 20.8 10.3 26.0 12.5 31.2 41.7 18.7 52.1 25.0 62.5 31.2 72.9 83.3 50.0 104 609 2.3 5.8 4.6 11.6 17.3 23.1 11.5 13.8 34.6 46.2 20.6 57.7 27.7 69.3 80.8 92.4 115 6.9 28.9 17.3 34.6 41.6 65 2.5 6.4 5.1 12.7 7.6 19.1 10.2 25.5 12.7 31.9 15.3 38.2 19.2 51.0 22.9 63.7 30.5 76.5 38.2 89.2 45.8 102 61.2 127 70 7.0 21.0 28.0 16.8 42.0 21.0 56.0 25.2 70.0 33.6 42.0 98.0 112 2.8 5.6 14.0 8.4 11.2 14.0 35.0 84.0 50.4 67.2 140 75 7.7 15.4 23.0 30.7 15.3 18.4 46.0 27.6 76.7 36.8 92.1 46.0 107 55.2 73.6 153 3.1 6.1 9.2 12.3 38.4 23.0 61.4 123 3.4 6.7 16.8 10.1 25.2 13.4 33.6 16.8 42.0 20.2 25.2 83.9 101 50.4 60.4 134 85 3.7 9.2 7.3 18.3 11.0 27.5 14.7 36.7 18.3 45.8 22.0 55.0 27.5 73.3 33.0 91.6 44.0 110 55.0 128 66.0 147 88.0 183 36.0 909 4.0 10.0 8.0 20.0 12.0 30.0 16.0 40.0 20.0 50.0 24.0 60.0 30.0 0.08 100 48.0 120 60.0 140 72.0 160 96.0 200 10.9 13.1 32.7 43.7 21.8 26.2 39.3 109 131 65.5 153 175 218 4.4 8.7 21.8 17.5 54.6 65.5 32.8 87.3 52.4 78.6 105 100 4.8 11.9 9.5 23.8 14.3 35.8 19.1 47.7 23.8 59.6 28.6 71.5 35.8 95.3 43.0 119 57.2 143 71.6 167 85.9 191 114 238 17.1 42.9 57.1 28.5 34.3 143 68.5 85.6 200 103 286 13.9 120 17.3 34.6 20.8 52.0 69.3 34.6 86.6 41.6 104 52.0 139 62.4 173 83.2 208 104 243 130 8.6 21.5 17.2 42.9 25.7 64.3 34.3 85.8 42.9 107 51.5 129 64.4 172 77.3 215 103 257 140 10.9 27.5 21.9 55.0 32.9 82.4 43.8 110 54.8 137 65.7 165 82.2 220 98.6 275 89.5 224 299 150° 37.3 29.8 74.6 44.7 112 59.6 149 74.5 187 112 14.9 56.7 68.0 170 91.6





# JET-SET® GUIDES Spray Tips

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Spray tips are available in a wide variety of materials, capacities, and patterns. For specific information about spray tips of or different patterns other than indicated here, please contact us.

The following spray tips are regularly stocked at *JET-SET*®

### **FLAT SPAY (TP)**

Tip#	Orifice	Spray Angle (approx.)	ТР
902- 5001	.026"	50° @ 40psi / 60° @ 80psi	
902- 6501	.026"	65° @ 40psi / 74° @ 80psi	
902- 80015	.031"	80° @ 40psi / 90° @ 80psi	
902- 800050	.018"	80° @ 20psi / 95° @ 80psi	
902- 110015	.031"	110° @ 40psi / 120° @ 80psi	

#### **FULL CONE (TG)**

Tip#	Orifice	Spray Angle (approx.)	TG
902- TG 0.3	.020"	50° @ 20psi / 61° @ 80psi	
902- TG 0.4	.022"	56° @ 20psi / 63° @ 80psi	
902- TG 0.6	.027"	54° @ 20psi / 62° @ 80psi	O SPRAY
902- TG 1	.036"	58° @ 20psi / 53° @ 80psi	TEEJE
902- TG 2	.047"	50° @ 20psi / 46° @ 80psi	
902- TG 3	.062"	65° @ 20psi / 59° @ 80psi	





# JET-SET® GUIDES Spray Tips

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### **DEFLECTED FLAT SPRAY (TK)**

Orifice	Spray Angle (approx.)	тк
.040"	108° @ 20psi / 130° @ 60psi	
.052"	122° @ 20psi / 133° @ 60psi	
		90
	.040"	.040" 108° @ 20psi / 130° @ 60psi

#### **HOLLOW CONE (TX/TY)**

	<u> </u>		
Tip#	Orifice	Spray Angle (approx.)	TX / TY
902- TX 10	.059"	68° @ 20psi / 74° @ 40psi	
902- TY 14	.070	70° @ 20psi / 76° @ 40psi	
			O. SPRA
			TEEJO





## JET-SET® GUIDES Nozzle Assemblies

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Part# 900 (O/A Length 1 7/8" Approx.)		Female Nozzle Assembly	
1рс	901 Nozzle Nut	(5) (4) (2) (1)	
1рс	902-80015 Standard Spray Tip		
1рс	903 20 (40) 20 or 40lb Check Valve		
2pc	904 Nozzle Bracket		
1pc	905 Nozzle Body		

Part# 900-1/8MT (O/A Length 1 3/4" Approx.)		Male Nozzle Assembly	
1рс	901 Nozzle Nut	(5) (4) (2) (1)	
1pc	902-80015 Standard Spray Tip		
1pc	903 20 (40) 20 or 40lb Check Valve		
2рс	904 Nozzle Bracket		
1pc	905-1/8 MT Nozzle Body		

Part# 902-8	0015-M20 (O/A Length 7/8"Approx)20lb Check Valve	Mini Nozzle
OR		
Part# 902-80015-MNV (O/A Length 7/8"Approx)No Check Valve		

Part# 908-SW 1/8x1/8 (O/A Length 1 1/4" Approx.)	Mini Nozzle
Swivel For 900-1/8M or 902-80015-M's	

