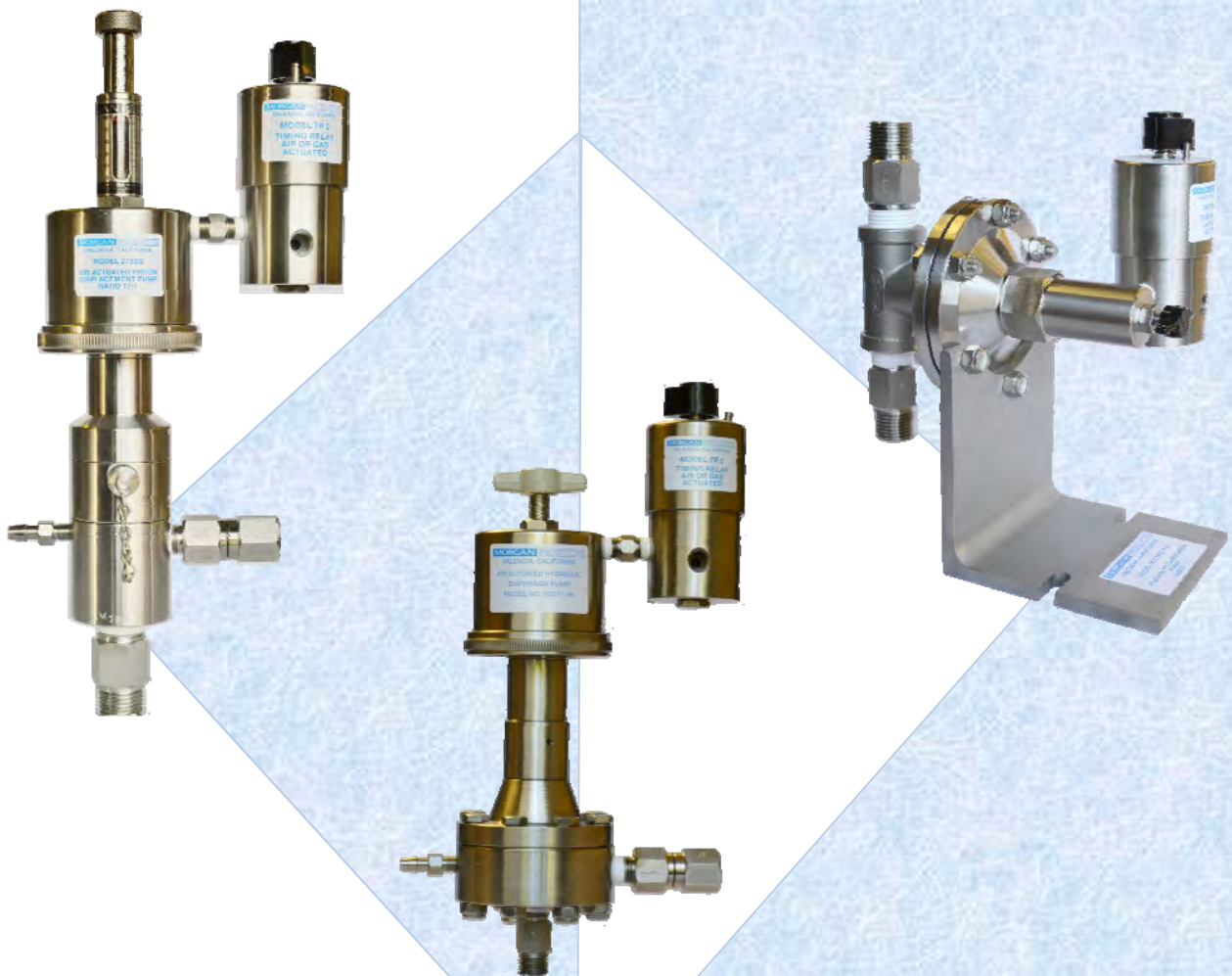


MORGAN PRODUCTS

**Pneumatic Chemical
Injection Specialists**

**Oil, Gas and Water
Treatment**



Morgan's pneumatic metering pumps are economical performers.

Morgan builds precision pumps with vast applications in oil, gas and water treatments. Over 20 years of experience supports the design and manufacture of pumps that, on occasion, have raised the entire industry's standards. The quality of Morgan products is continually acclaimed in the field for accurate performance, minimal maintenance and long life.

Solid Performance

A computer driven manufacturing process guarantees precision of pump dimensions resulting in accurate, trouble-free performance. Morgan Products has the widest selection of pump applications and sizes, making it easier to meet individual job specifications.

Performance ranges of individual pumps exceed many industry standards. For example, supply pressure range from 25 to 150 PSI with a single Morgan timer and output pulses are 0 to 50 strokes per minute (SPM). Every Morgan Product is tested to ensure performance accuracy before shipment.

Built To Last

Morgan pumps are designed for lasting performance and easy maintenance. Their stainless steel construction is highly resistant to corrosive elements and is especially recommended for offshore drilling applications. Lighter weight, fewer parts and easy assembly reduce maintenance costs and improve durability.

Less is More

Morgan Products are competitively priced for outstanding savings on your initial investment. Additional savings result from long service life and low maintenance

HD Series Injector and TR2 Timer

Typical application include caustic, acid, formaldehyde and odorant injection.

- ◇ Innovative pump design incorporates a hydraulic diaphragm, separating chemical from seals, thereby preventing leaks into the environment.
- ◇ All fluid contact parts 316 stainless steel. All other parts 300 series stainless steel.
- ◇ The oil in the upper chamber serves as a plunger lubricant as well as hydraulic fluid.
- ◇ The diaphragm is Teflon coated to prevent corrosion.
- ◇ The plunger spring is 17-7 SS-coated with Teflon for longer service life.
- ◇ The Pump housing is made of stainless steel, particularly recommended for corrosive environments
- ◇ The TR2 timer has become a design standard for the industry. Light weight, no springs and only two moving parts make it especially easy to maintain. Typically out performs other timer / controllers in PSI



D Series Pneumatic Diaphragm Injectors

Unsurpassed for pumping caustics or acids up to 150 PSI

- ◇ Pumps are available in solid stainless steel construction or a combination of stainless steel and PVC.
- ◇ The chemical compatibility of the Teflon-laminated diaphragm results in increased durability.
- ◇ Morgan's unique design eliminates unbalanced pressures which can cause diaphragm failure.
- ◇ Rate and volume adjustments can be made while the unit is in operation.
- ◇ The solids stainless steel base is designed for secure and convenient mounting of the injector



DS Series Pneumatic Chemical

Typical applications include methanol and corrosion inhibitor injection.

- ◇ The plunger is made of hardened 17-4 PH stainless steel. A protective coat of titanium nitride adds superior abrasion resistance and chemical compatibility for a longer service life.
- ◇ Hand tightened lock ring provides easy access to plunger and seal maintenance
- ◇ The spring is made of 17-7 SS and coated with Teflon for an extended service life
- ◇ The plunger is separate from the air piston and can be replaced independently at one third the cost of replacing both.
- ◇ Standard ceramic check valve balls have a longer service life than standard stainless steel balls.



MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

HD Series Injectors

Model (No Timer)	Plunger Displacement	Pump Ratio	Stroke Length in - cm.	Connections All NPT Input/Output	Maximum Discharge PSI - BAR	Output Per Hour Gal. / Lts.
HD187	.2 cc	10:1	1/2 - 1.27	1/4 -M / 1/8-F	1000 - 68.9	.01 - .12 / .05 - .46
HD187-3K	.2 cc	30:1	1/2 - 1.27	1/4 -M / 1/8-F	3000 - 206	.01 - .12 / .05 - .46
HD187M	.2 cc	10:1	1/2 - 1.27	1/4 -M / 1/8-F	1000 - 68.9	.005 - .12 / .02 - .46
HD187-3KM	.2 cc	30:1	1/2 - 1.27	1/4 -M / 1/8-F	3000 - 206	.005 - .12 / .02 - .46
HD312	1.0 cc	10:1	1.0 - 2.54	1/4 -M / 1/4-F	1000 - 68.9	.06 - .63 / .24 - 2.4
HD312M	1.0 cc	10:1	1.0 - 2.54	1/4 -M / 1/4-F	1000 - 68.9	.01 - .63 / .05 - 2.4
HD312-3K	1.0 cc	30:1	1.0 - 2.54	1/4 -M / 1/4-F	3000 - 206	.06 - .63 / .24 - 2.4
HD312-3KM	1.0 cc	30:1	1.0 - 2.54	1/4 -M / 1/4-F	3000 - 206	.01 - .63 / .05 - 2.4
HD312-5K	1.0 cc	50:1	1.0 - 2.54	1/4 -M / 1/4-F	5000 - 344	.06 - .63 / .24 - 2.4
HD312-5KM	1.0 cc	50:1	1.0 - 2.54	1/4 -M / 1/4-F	5000 - 344	.01 - .63 / .05 - 2.4
HD562	3.5 cc	10:1	1.0 - 2.54	1/2 -M / 1/4-F	1000 - 68.9	.25 - 2.5 / 1 - 9.5
HD562M	3.5 cc	10:1	1.0 - 2.54	1/2 -M / 1/4-F	1000 - 68.9	.06 - 2.5 / .24 - 9.5
HD562-3K	3.5 cc	30:1	1.0 - 2.54	1/2 -M / 1/4-F	3000 - 206	.25 - 2.5 / 1 - 9.5
HD562-3KM	3.5 cc	30:1	1.0 - 2.54	1/2 -M / 1/4-F	3000 - 206	.06 - 2.5 / .24 - 9.5
HD562-5K	3.5 cc	50:1	1.0 - 2.54	1/2 -M / 1/4-F	5000 - 344	.25 - 2.5 / 1 - 9.5
HD562-5KM	3.5 cc	50:1	1.0 - 2.54	1/2 -M / 1/4-F	5000 - 344	.06 - 2.5 / .24 - 9.5
HD1062	12.8 cc	10:1	1.0 - 2.54	3/4-M / 1/2-F	1000 - 68.9	1 - 10.4 / 3.9 - 39
HD1062-3K	12.8 cc	30:1	1.0 - 2.54	3/4-M / 1/2-F	3000 - 206	1 - 10.4 / 3.9 - 39

Notes:

All pumps require [TR1](#) timing relay, [TR2](#) timing relay or electric solenoid valve.

HD1062, HD1062-3K requires [SR1S](#) snap action relay.

Maximum stroke rate for all pumps is 50 SPM. Exception HD2000 35 SPM.



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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Pneumatic Diaphragm Injectors

Model (No Timer)	Diaphragm Displacement	Pump Ratio	Diaphragm Size in - cm.	Connections All NPT Input/Output	Maximum Discharge PSI - BAR	Output Per Hour Gal. / Lts.
D10-316	.8 cc	1:1	1 - 2.5	1/4 -M / 1/4-M	125 - 8.6	.06 - .63 / .24 - 2.4
D10-PVC	.8 cc	1:1	1 - 2.5	1/4 -M / 1/4-F	125 - 8.6	.06 - .63 / .24 - 2.4
D15-316	6.6 cc	1:1	1.5 / 3.8	1/4 -M / 1/4-M	125 - 8.6	.5 - 5.2 / 2 - 20
D15-PVC	6.6 cc	1:1	1.5 / 3.8	1/4 -M / 1/4-F	125 - 8.6	.5 - 5.2 / 2 - 20
D25-316	21.2 cc	1:1	2.5 / 6.4	1/2 -M / 1/2-M	125 - 8.6	2 - 17 / 6.3 - 63
D25-PVC	21.2 cc	1:1	2.5 / 6.4	1/2 -M / 1/2-F	125 - 8.6	2 - 17 / 6.3 - 63
D40-316	51.0 cc	1:1	4 / 10	3/4 -M / 3/4-M	125 - 8.6	3 - 30 / 11 - 114
D40-PVC	51.0 cc	1:1	4 / 10	3/4 -M / 3/4-F	125 - 8.6	3 - 30 / 11 - 114

Notes:

All pumps require [TR1](#) timing relay, [TR2](#) timing relay or electric solenoid valve.

All pumps are shipped with mounting stand.

Maximum stroke rate for all pumps is 50 SPM.



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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Pneumatic Chemical Injectors

Model (No Timer)	Plunger Displacement	Pump Ratio	Stroke Length in - cm.	Connections All NPT Input/Output	Maximum Discharge PSI - BAR	Output Per Hour Gal. / Lts.
55DS	.2 cc	54:1	3/4 - 1.91	1/4 -M / 1/4-F	8100 - 558	.01 - .12 / .05 - .46
125DS	.8 cc	31:1	1 - 2.54	1/4 -M / 1/4-F	4650 - 320	.06 - .63 / .24 - 2.4
225DS	.8 cc	69:1	1 - 2.54	1/4 -M / 1/4-F	10000 - 689	.06 - .63 / .24 - 2.4
325DS	.8 cc	122:1	1 - 2.54	1/4 -M / 1/4-F	15000 - 1034	.06 - .63 / .24 - 2.4
425DS	.8 cc	217:1	1 - 2.54	1/4 -M / 1/4-F	15000 - 1034	.06 - .63 / .24 - 2.4
235DS	1.8 cc	31:1	1 - 2.54	1/4 -M / 1/4-F	4650 - 320	.15 - 1.5 / .55 - 5.5
335DS	1.8 cc	54:1	1 - 2.54	1/4 -M / 1/4-F	8100 - 558	.15 - 1.5 / .55 - 5.5
435DS	1.8 cc	97:1	1 - 2.54	1/4 -M / 1/4-F	10000 - 689	.15 - 1.5 / .55 - 5.5
275DS	3.2 cc	17:1	1 - 2.54	1/2 -M / 1/4-F	2550 - 175	.25 - 2.5 / .95 - 9.5
375DS	3.2 cc	31:1	1 - 2.54	1/2 -M / 1/4-F	4650 - 320	.25 - 2.5 / .95 - 9.5
475DS	3.2 cc	54:1	1 - 2.54	1/2 -M / 1/4-F	8100 - 558	.25 - 2.5 / .95 - 9.5
3755DS	7.2 cc	14:1	1 - 2.54	3/4 -M / 1/2-F	2100 - 144	.56 - 5.6 / 2.1 - 21
4755DS	7.2 cc	24:1	1 - 2.54	3/4 -M / 1/2-F	3600 - 248	.56 - 5.6 / 2.1 - 21
3500DS	12.8 cc	8:1	1 - 2.54	3/4 -M / 1/2-F	1200 - 83	1 - 10 / 3.9 - 39
4500DS	12.8 cc	14:1	1 - 2.54	3/4 -M / 1/2-F	2100 - 144	1 - 10 / 3.9 - 39
880DS	19.7 cc	31:1	2 - 5.10	3/4 -M / 1/2-F	4650 - 320	1.1 - 11 / 4.1 - 41
1255DS	40.0 cc	14:1	2 - 5.10	1-1/2-M / 3/4-F	2100 - 144	2.2 - 22 / 8.4 - 84
5500DS	154.0 cc	6:1	3.1 - 7.87	1-1/2-M / 3/4-F	900 - 62	9 - 90 / 34 - 341
8500DS	154.0 cc	14:1	3.1 - 7.87	1-1/2-M / 3/4-F	2100 - 144	9 - 90 / 34 - 341

Notes:

All pumps require [TR1](#) timing relay, [TR2](#) timing relay or electric solenoid valve.

Model 425DS, 435DS, 4755DS and 4500DS pumps require [SR1S](#) snap action relay.

Model 800DS, 1255DS, 5500DS and 8500DS require [SR2S](#) snap action relay.

Maximum stroke rate for all pumps is 50 SPM. Exception 800DS and larger 35 SPM.



High Pressure Technologies, LLC.

HPT

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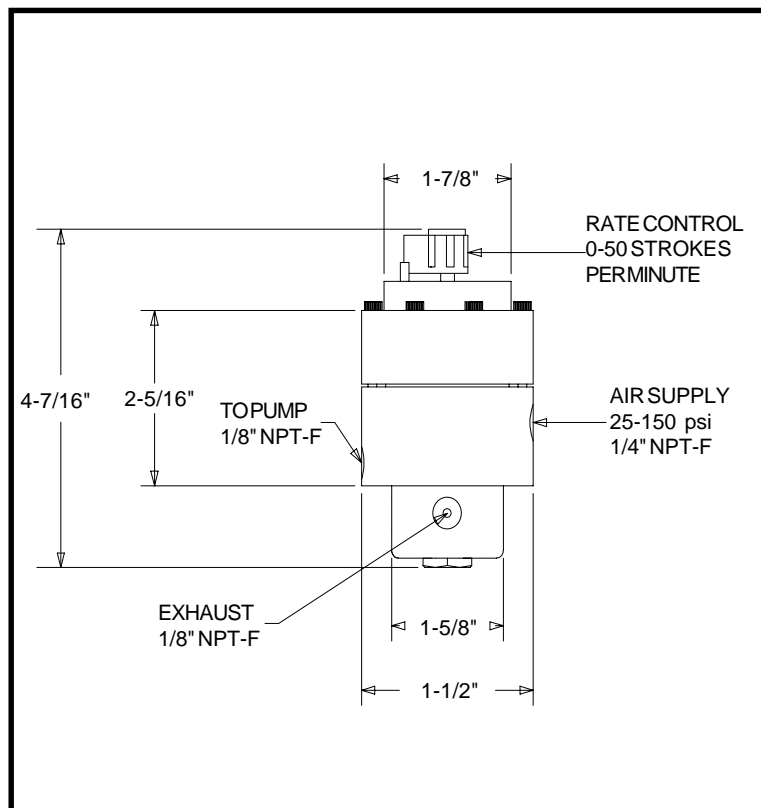
MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL TR1 AIR ACTUATED TIMER

SETUP AND OPERATION

Connect the TR1 timer to the pump. Next connect the air or gas supply to the TR1 timer. Note: Gas supply should be regulated at or near the timing relay. Now open the rate control knob counterclockwise approximately one-quarter turn. Cycling should begin. Increase gas supply pressure until the pump strokes solidly. Then, refer to the volume chart for your specific pump and set the cycle rate for your required volume. Use the stroke adjuster on the pump to fine tune. Finally, place protective cover on the relay covering the control knob.



TROUBLE - SHOOTING

1. Constant air flow through exhaust port.
 - A. Check "Air supply" and "To pump" ports for proper connection.
 - B. Check exhaust poppet (TR1-24).
 - C. Check lower diaphragm (TR1-17).
2. Relay cycles but will not adjust properly.
 - A. Replace Teflon seal (TR2-7).
3. Constant air flow between body sections.
 - A. Check upper diaphragm (TR1-11) or middle diaphragm (TR1-14).
4. Intermittent or sluggish operation.
 - A. Inspect upper seat orifice (TR1-18) for any obstruction.
 - B. Inspect poppet nose (TR1-24) for excessive wear.

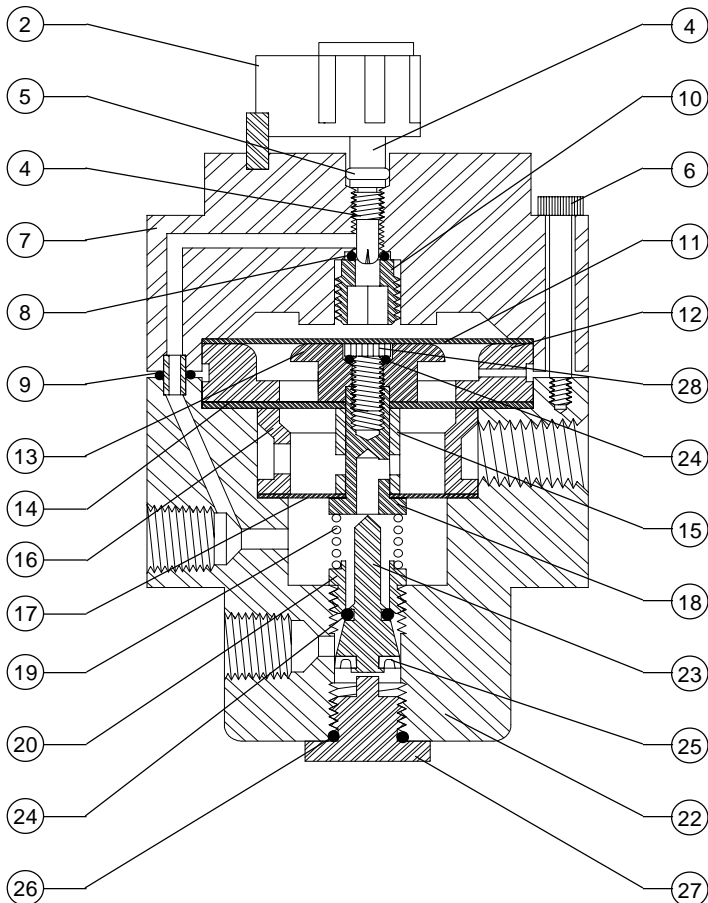
CONNECTIONS INPUT/OUTPUT/EXHAUST	RANGE SPM	PRESSURE RATING PSI / BAR	MATERIAL
1/4 NPT-F / 1/8 NPT-F / 1/8" NPT-F"	0 - 50	25-150 / 1.7-10.3	ANODIZED ALUMINIUM

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model TR1



NO	NAME	PART NO.	MATERIAL
N/S	Cover	TR1-1	Alum.
2	Knob	TR2-1	Plastic
3	Knob Spring	TR2-2	303 SS
4	Metering Valve	TR2-3	303 SS
5	O-Ring	TR2-4 *	Buna-N
6	8-32 Cap Screw	TR1-15 (6)	18-8 SS
7	Upper Body	TR1-7	Alum.
8	Teflon Seal	TR2-7 *	Teflon
9	O-Ring	TR2-4 *	Buna-N
10	Metering Seat	TR2-6	18-8 SS
11	Upper Diaphragm	TR1-11 *	Buna-N
12	Upper Spool	TR1-16	Alum.
13	Diaphragm Plate	TR1-13	Alum.
14	Middle Diaphragm	TR1-14 *	Buna-N
15	Middle Spool	TR1-18	Alum.
16	Lower Spool	TR1-19	Alum.
17	Lower Diaphragm	TR1-17 *	Buna-N
18	Upper Seat	TR1-20	Alum.
19	Seat Spring	SR1S-15 *	302 SS
20	Lower Seat	TR1-22	303 SS
21	Not Used		
22	Lower Body	TR1-23	Alum.
23	Poppet	TR1-24	PVC
24	Poppet O-Ring	TR2-16 * (2)	Viton
25	Poppet Seal	TR2-17 *	Viton
26	O-Ring Seal	TR2-18 *	Buna-N
27	Plug	TR2-19	303 SS
28	Screw	TR1-5	18-8 SS
	Repair Kit	TR1-50	

ALL PARTS NOTED BY * INCLUDED IN REPAIR KIT

INSTALLATION INSTRUCTIONS

1. Choose the chemical injector best suited for your specific needs.
2. Connect the smaller (1/8" NPT) port on the TR1 to the air inlet port at the top of the pump.
3. Connect the air or gas supply to the larger (1/4" NPT) port.
4. Open the control knob clockwise about 3/4 of a turn. The timer should start to cycle.
5. Set the air supply so that the pump full strokes. See pump start up instructions.
6. Set cycle rate in strokes per minute. (See volume graph for specific pump)

NOTE 2 1/4" diameter and smaller air cylinders will operate up to 50 SPM.
3" and larger air cylinders require an SR1S relay.

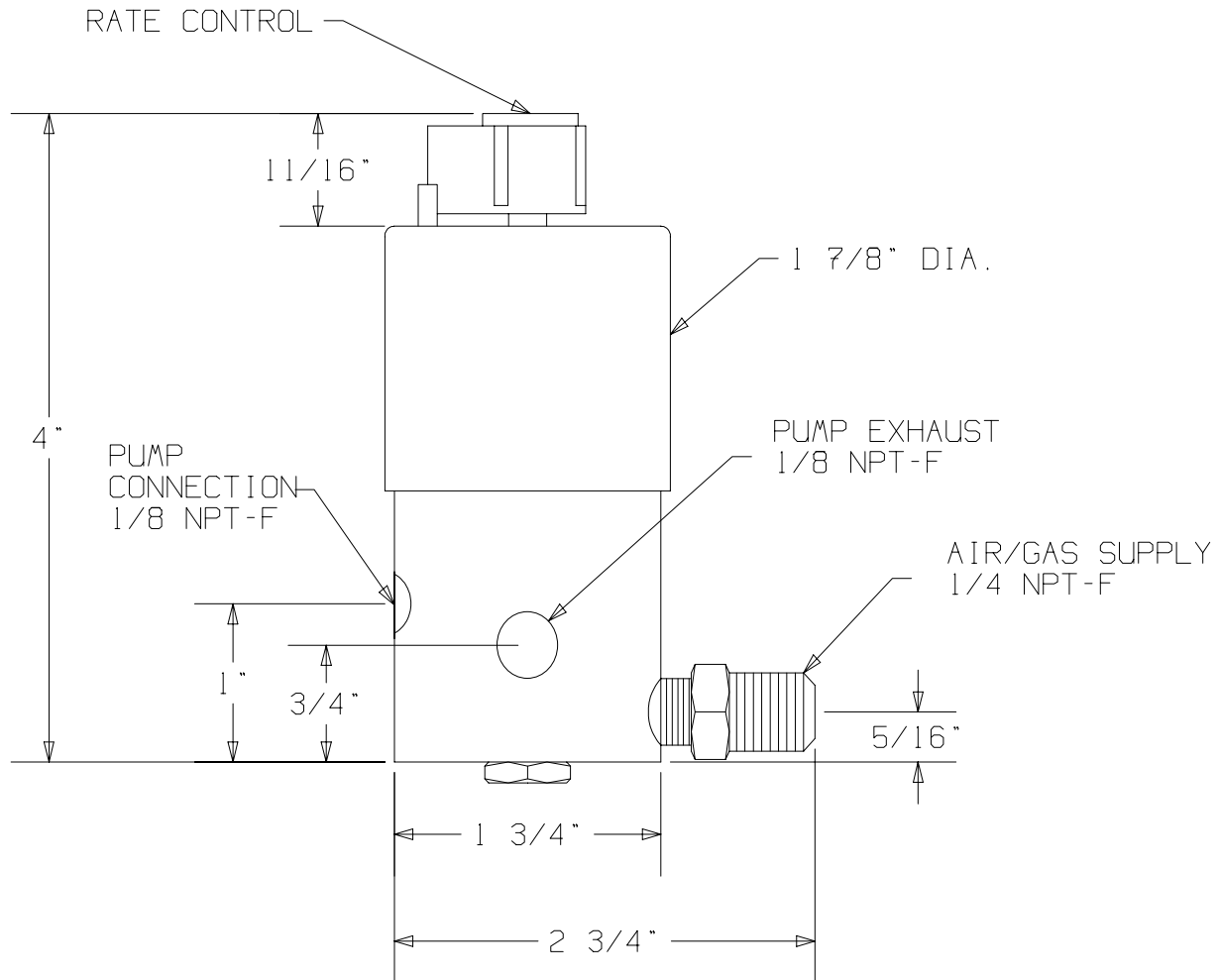
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL TR2 AIR ACTUATED TIMER



CONNECTIONS
INPUT, OUTPUT, EXHAUST

RANGE
SPM

PRESSURE RATING
PSI / BAR

MATERIAL

1/8 NPT-FEMALE *

0 - 50

25-150 / 1.7-10.3

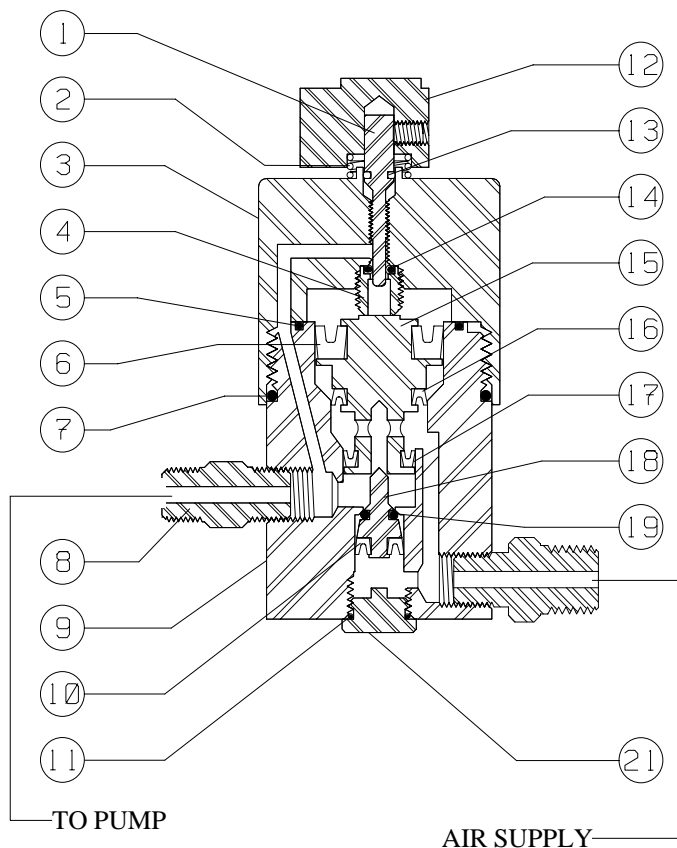
300 SERIES SS

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model TR2



NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
	Optional	TR2-10T *	TEFLON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8 x 1/8 NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
	Optional	TR2-17T *	TEFLON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
	Optional	TR2-29 *	ALUM
16	Middle Seal	TR2-11 *	VITON
	Optional	TR2-11T *	TEFLON
17	Lower Seal	TR2-12 *	VITON
	Optional	TR2-12T *	TEFLON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
N/I	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	
	Repair Kit	TR2-50	

* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

1. Choose the chemical injector best suited for your specific needs.
2. Connect the port marked "TO PUMP" on the TR2 to the air inlet port at the top of the pump.
3. Connect the air or gas supply to the port marked "AIR SUPPLY".
4. Open the control knob counter clockwise about 3/4 of a turn. The timer should start to cycle.
5. Set the air supply so that the pump full strokes. See pump start up instructions.
6. Set cycle rate in strokes per minute. (See volume graph for specific pump)
7. For continued reliable operation keep all rubber goods lubricated with Morgan Products 4024 grease. Depending on specific application approximately every 30-60 days.

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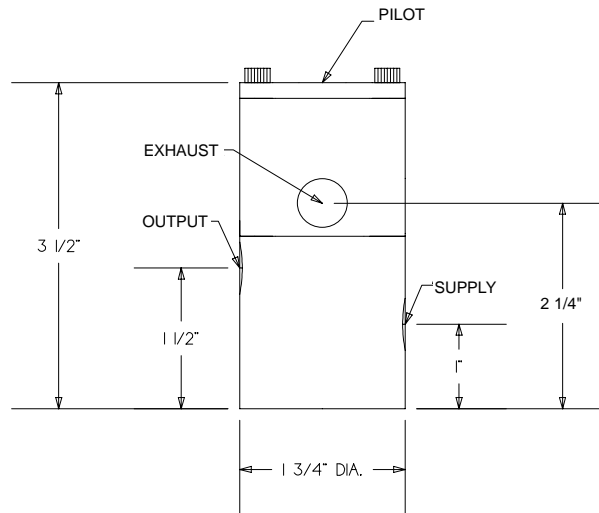
MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

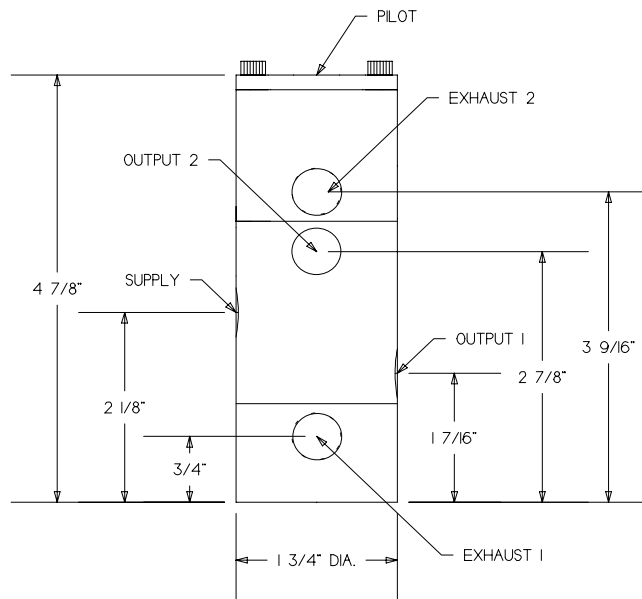
SNAP RELAY

AIR ACTUATED SNAP RELAY

MODEL SR1S



MODEL SR2S



CONNECTIONS
INPUT / OUTPUT / EXHAUST / PILOT

RANGE
SPM

PRESSURE RATING
PSI / BAR

MATERIAL

1/4 NPT-F / 1/4 NPT-F / 1/4 NPT-F / 1/8 NPT-F

0 - 50

25-150 / 1.7-10.3

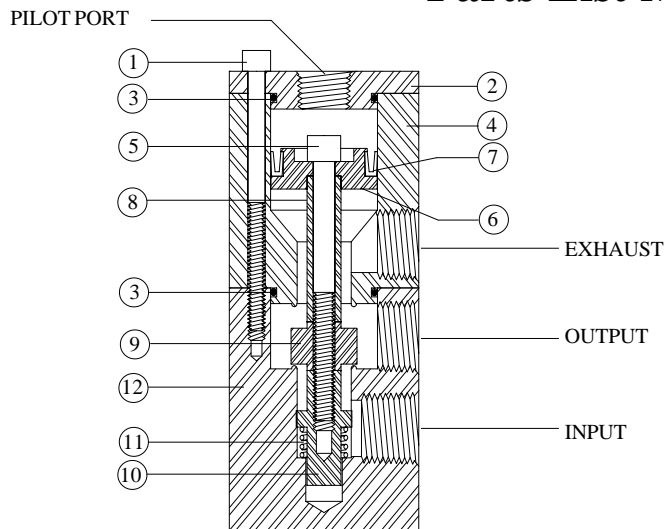
300 SERIES SS

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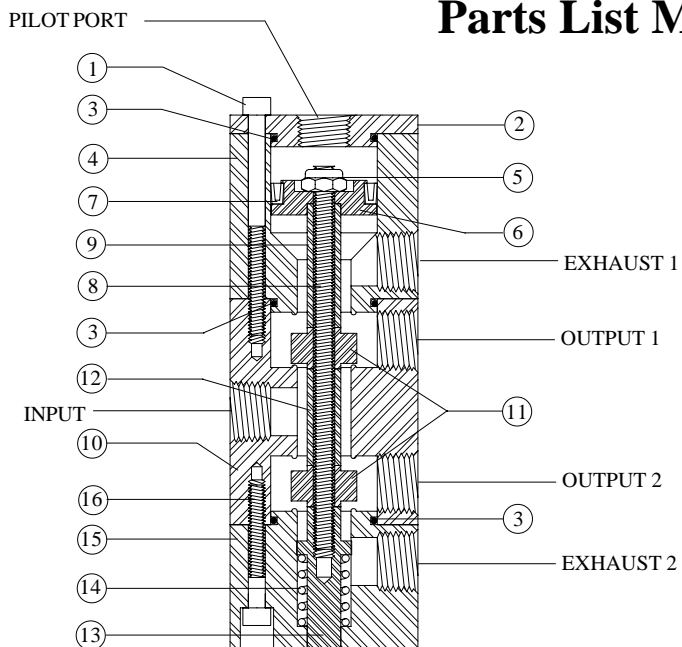
Parts List Model SR1S



NO	NAME	PART NO.	MATERIAL
1	Cap Screw	SR1S-1 (4)	18-8 SS
2	Cap	SR1S-2	316 SS
3	O-Ring	100-21 (2)*	Buna-N
4	Upper Valve Body	SR1S-4	316 SS
5	Bolt	SR1S-5	18-8 SS
6	Drive Piston	SR1S-6	316 SS
7	Piston Seal	50-9 *	BUNA-N
8	Upper Shaft	SR1S-9	313 SS
9	Valve Seat	SR1S-11 *	Buna-N/Alum.
10	Lower Shaft	SR1S-14	316 SS
11	Spring	SR1S-15 *	302 SS
12	Lower Valve Body	SR1S-16	316 SS
	Repair Kit	SR1S-50	

The SR1S relay is used in series with, and mounted between the timing relay and the pump. When it is desirable to use but one supplyline. The SR1S is also used when two supply lines are more desirable. The SR1S snap acting relay is plumbed directly to the pump with one supply. The timing relay is used to activate the SR1S using a second air supply. On double acting pumps, (Example: Model 5500DS) the SR2S snap acting relay must be used in conjunction with the timing relay, using two separate air supplies. The SR2S snap relay requires a regulated air or gas source separate from that of the timing relay it is used in conjunction with.

Parts List Model SR2S



NO	NAME	PART NO.	MATERIAL
1	Cap Screw	SR1S-1 (4)	18-8 SS
2	Cap	SR1S-2	316 SS
3	O-Ring	100-21 (3)*	Buna-N
4	Upper Valve Body	SR1S-4	316 SS
5	Nut	SR2S-5	18-8 SS
6	Drive Piston	SR1S-6	316 SS
7	Piston Seal	50-9 *	BUNA-N
8	Tie Rod	SR2S-8	18-8 SS
9	Upper Shaft	SR1S-9	316 SS
10	Center Valve Body	SR2S-10	316 SS
11	Valve Seat	SR1S-11 (2)*	Buna-N/Alum.
12	Center Shaft	SR2S-12	304 SS
13	Lower Shaft	SR2S-14	316 SS
14	Spring	SR2S-15 *	302 SS
15	Lower Valve Body	SR2S-16	316 SS
16	Cap Screw	SR2S-17 (4)	18-8 SS
	Repair Kit	SR2S-50	

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ALL PARTS INCLUDED IN REPAIR KIT ARE NOTED BY: *

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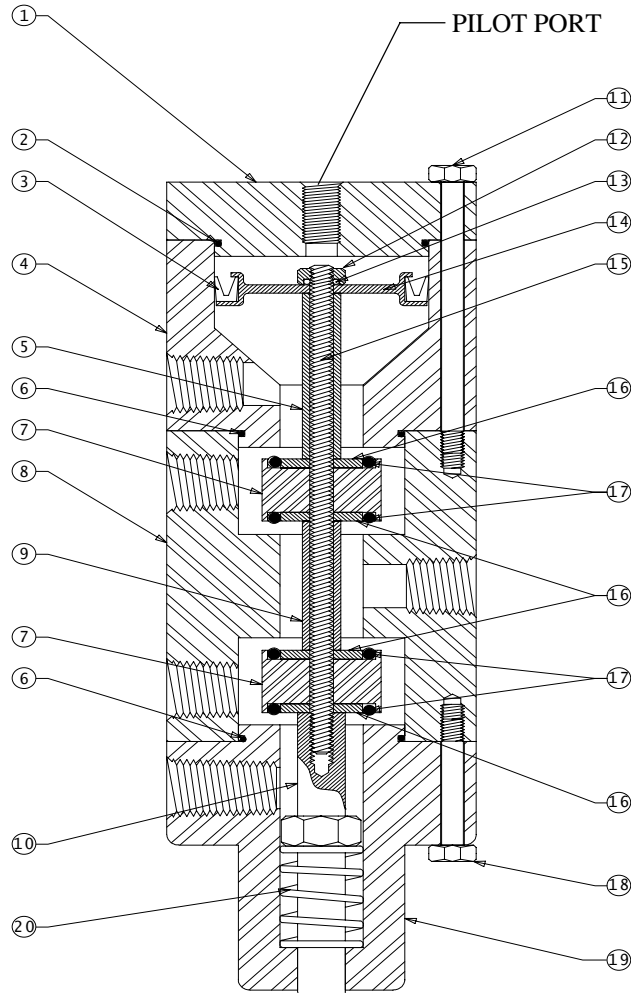
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

PARTS LIST MODEL SR3S RELAY



No.	Name	Part No.
1	Cap	SR3S-2
2	O-Ring	SR3S-1 *
3	Piston Seal	200-9 *
4	Upper Valve Body	SR3S-4
5	Upper Shaft	SR3S-9
6	O-Ring	SR3S-3 (2)*
7	Poppet Body	SR3S-5 (2)
8	Center Valve Body	SR3S-6
9	Center Shaft	SR3S-12
10	Lower Shaft	SR3S-14
11	Bolt	SR3S-7 (4)
12	Locknut	100-7
13	O-Ring	100-11 *
14	Piston	200-8
15	Tie Rod	SR3S-8
16	O-Ring Retainer	SR3S-9 (4)
17	Poppet O-Ring	SR3S-10 (4)*
18	Bolt	HD312-3K-36 (4)
19	Lower Body	SR3S-16
20	Spring	SR3S-15 *
	Repair Kit	SR3S-50
	1oz Grease	*

NOTE:

Pilot port is 1/8" NPT-Female, all others are 1/2" NPT- Female.

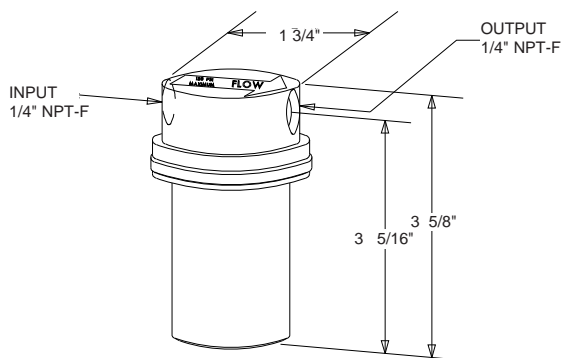
* Included in Repair Kit

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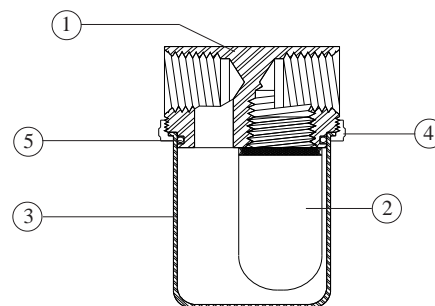
MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model F4



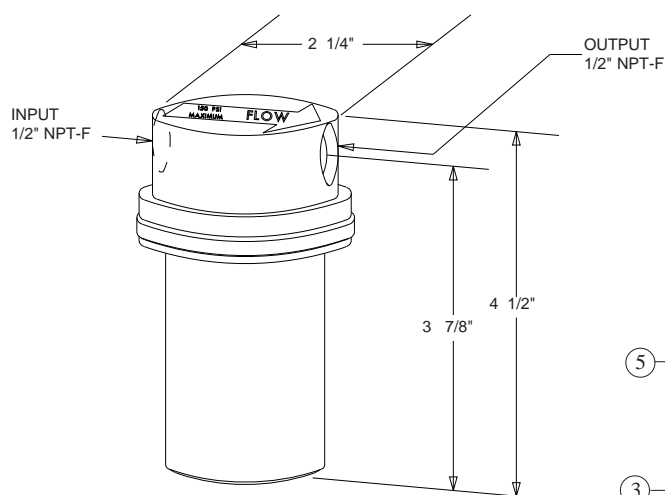
NO	NAME	PART NO.	MATERIAL
1	Body	F4-1	316SS
2	Element	F4-2/25 Micron	Polyethelene
	Element	F4-2/100 Micron	Polyethelene
3	Can	F4-3	304 SS
4	Lock Ring	F4-4	303 SS
5	O-Ring	F4-5	Buna-n / Viton



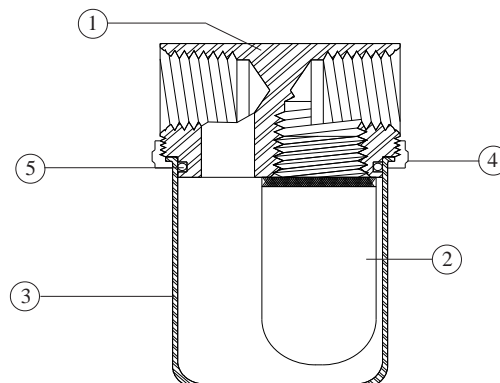
Air, gas or liquid chemical filter. All stainless steel construction. Polyethelene filter element. Connecting ports are 1/4" NPT on F4 and 1/2" NPT on F8. The element may be cleaned or

replaced without removing the filter from the process line. (No wrenches required). Excellent for Methanol service. Maximum recommended operating pressure 150 psi. Burst pressure 2000 psi.

Parts List Model F8



NO	NAME	PART NO.	MATERIAL
1	Body	F8-1	316 SS
2	Element	F8-2/25 Micron	Polyethelene
	Element	F8-2/100 Micron	Polyethelene
3	Can	F8-3	304 SS
4	Lock Ring	F8-4	303 SS
5	O-Ring	F8-5	Buna-n / Viton



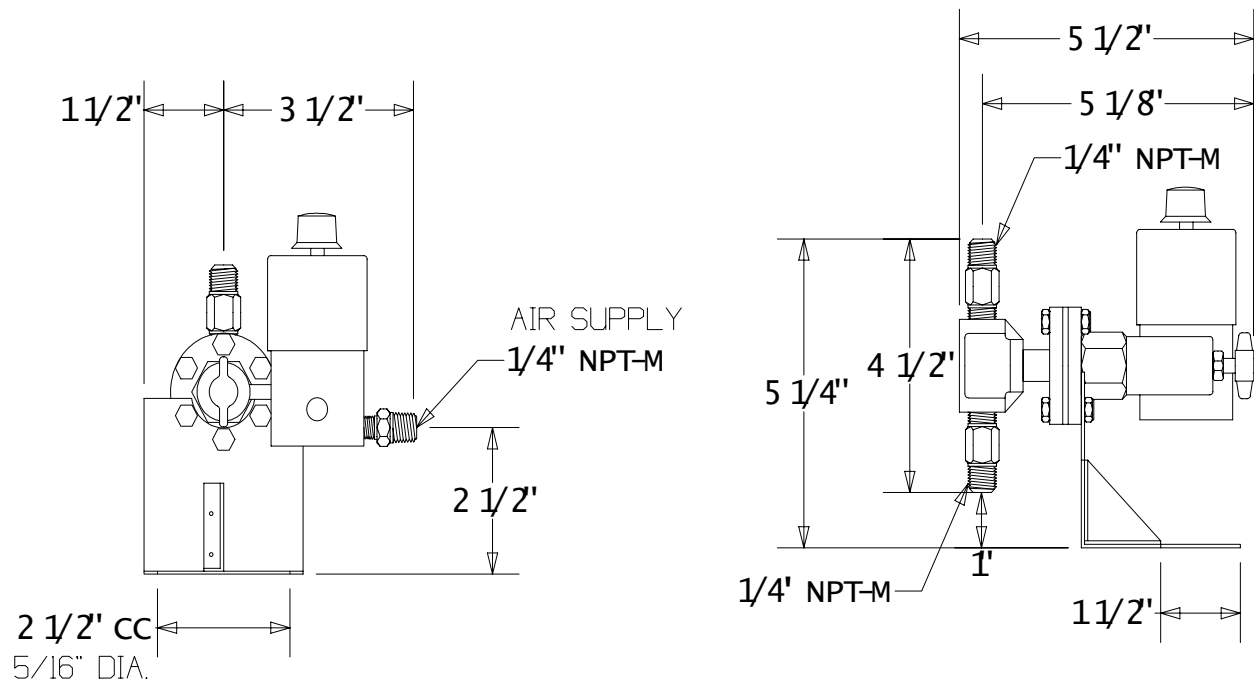
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D10-316-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

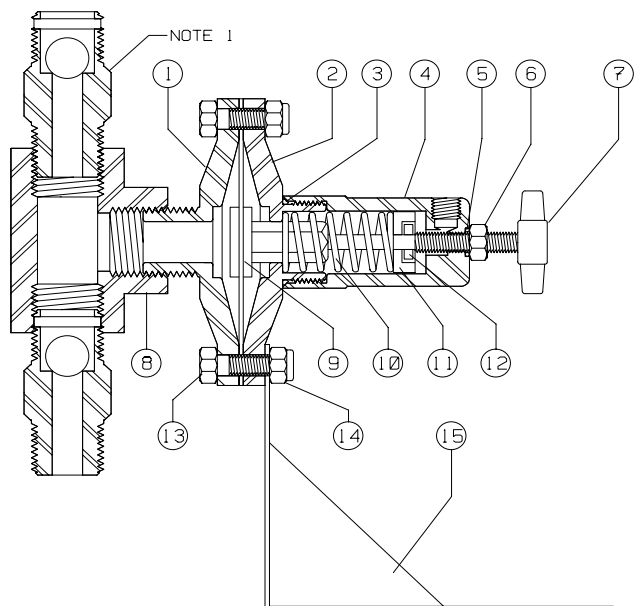
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D10-316-TR2	.8 cc	1:1	1.0 / 2.5	1/4 - M / 1/4 - F	125 - 8.6	.06 - .63 / .24 - 2.4

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PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-316, D15-316, D25-316 & D40-316



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-316-1	D15-316-1	D25-316-1	D40-316-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Check Valve Tee	D15-11		D25-11	D40-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-316-10+		D40-316-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
	Repair Kit	D10-50	D15-50	D25-50	D40-50

NOTE 1:

D10 & D15 Check Valve MM4-316 (2 Required)
 D25 Check Valve MM8-316 (2 Required)
 D40 Check Valve MM12-316 (2 Required)

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-316	D15-316	D25-316	D40-316
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Discharge Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)

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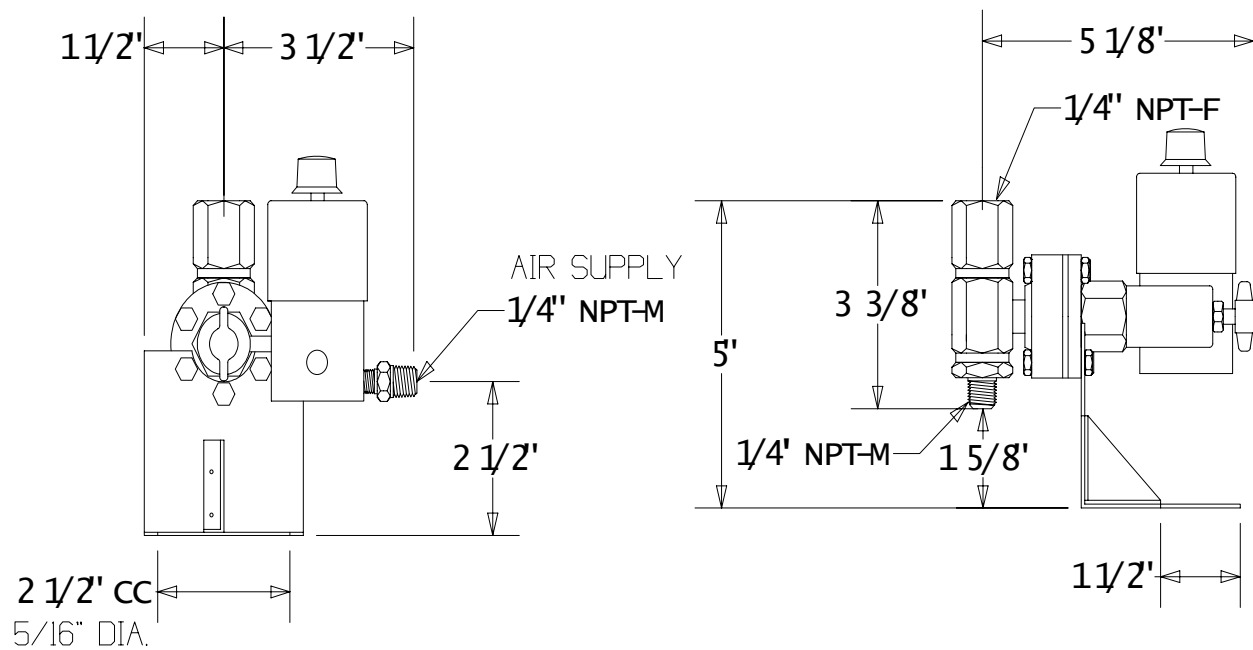
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D10-PVC-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

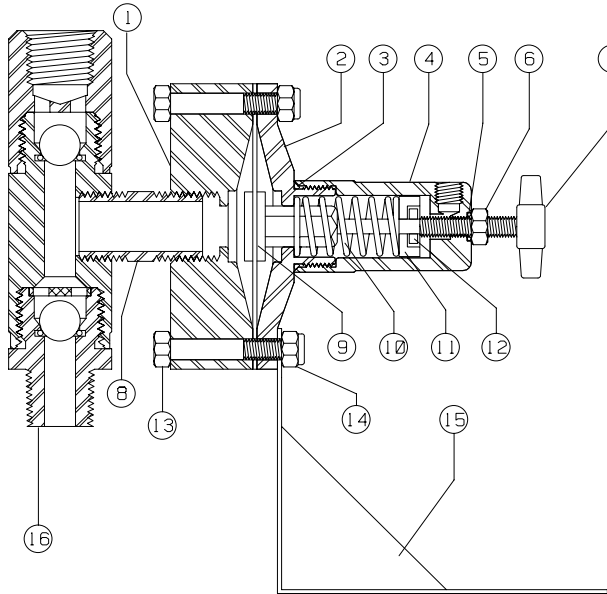
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D10-PVC-TR2	.8 cc	1:1	1.0 / 2.5	1/4 - M / 1/4 - F	125 - 8.6	.06 - .63 / .24 - 2.4

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-PVC, D15-PVC, D25-PVC & D40-PVC



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-PVC-1	D15-PVC-1	D25-PVC-1	D40-PVC-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Nipple	D15-PVC-11		D25-PVC-11	D40-PVC-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-PVC-10+		D40-PVC-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
16	Check Valve	D15-PVC-12		D25-PVC-12	D40-PVC-12
	Repair Kit	D10-50	D15-50	D25-50	D40-50

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-PVC	D15-PVC	D25-PVC	D40-PVC
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Design Pressure	250 PSI		17.24 BAR	
Maximum Operating Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (F)	1/4 NPT (F)	1/2 NPT (F)	3/4 NPT (F)

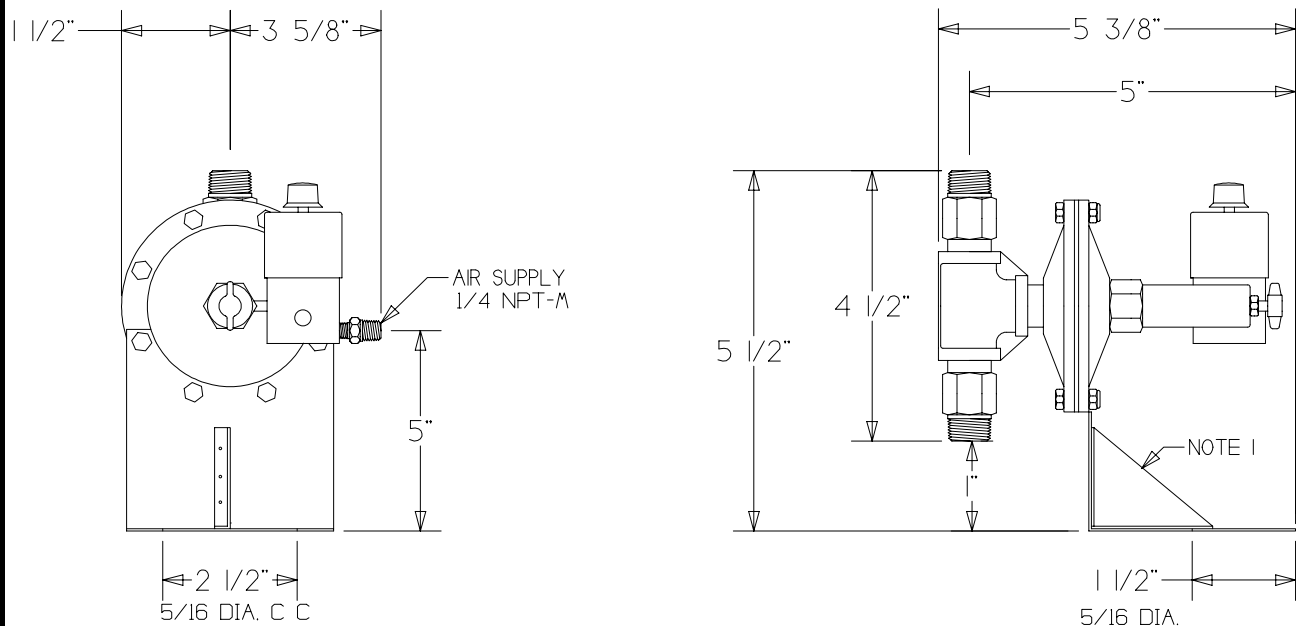
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D15-316-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

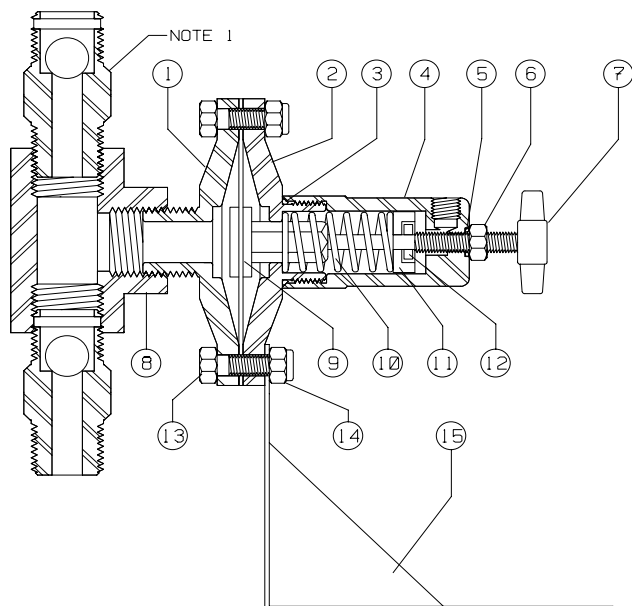
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D15-316-TR2	6.6 cc	1:1	1.5 / 3.8	1/4 - M / 1/4 - F	125 - 8.6	.5 - 5.2 / 2 - 20

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-316, D15-316, D25-316 & D40-316



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-316-1	D15-316-1	D25-316-1	D40-316-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Check Valve Tee	D15-11		D25-11	D40-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-316-10+		D40-316-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
	Repair Kit	D10-50	D15-50	D25-50	D40-50

NOTE 1:

D10 & D15 Check Valve MM4-316 (2 Required)
 D25 Check Valve MM8-316 (2 Required)
 D40 Check Valve MM12-316 (2 Required)

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-316	D15-316	D25-316	D40-316
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Discharge Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)

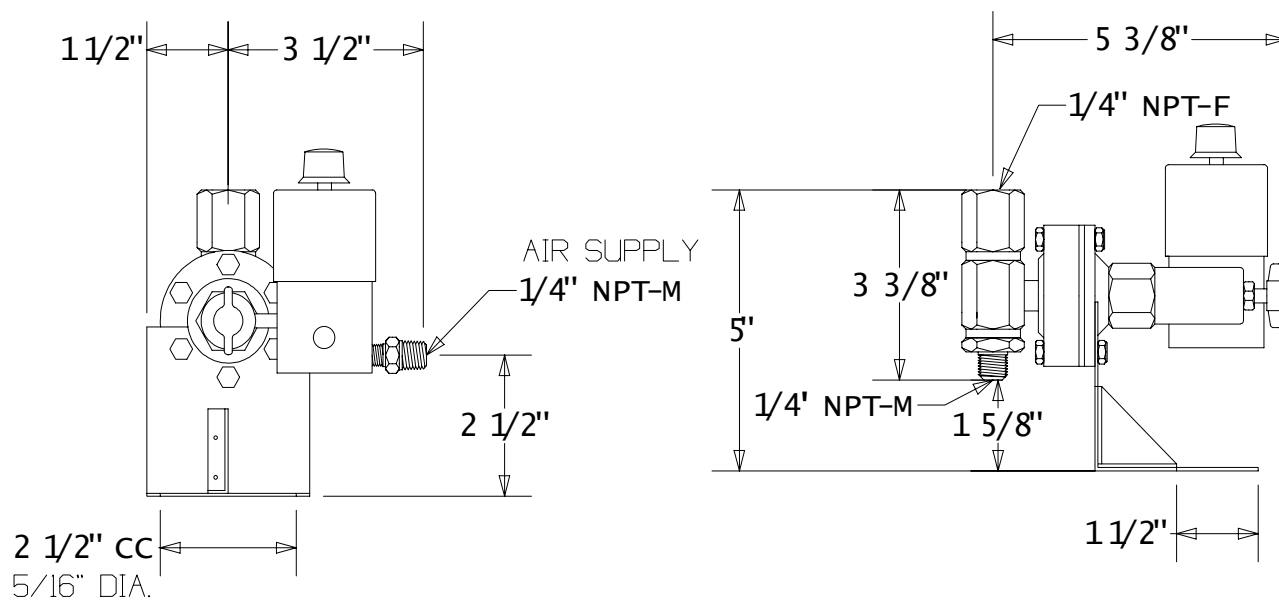
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D15-PVC-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

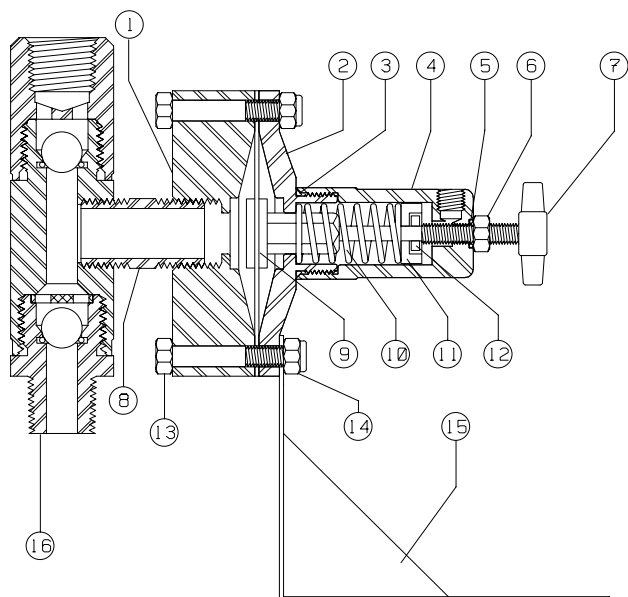
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D15-PVC-TR2	6.6 cc	1:1	1.5 / 3.8	1/4 - M / 1/4 - F	125 - 8.6	.5 - 5.2 / 2 - 20

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-PVC, D15-PVC, D25-PVC & D40-PVC



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-PVC-1	D15-PVC-1	D25-PVC-1	D40-PVC-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Nipple	D15-PVC-11		D25-PVC-11	D40-PVC-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-PVC-10+		D40-PVC-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
16	Check Valve	D15-PVC-12		D25-PVC-12	D40-PVC-12
	Repair Kit	D10-50	D15-50	D25-50	D40-50

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-PVC	D15-PVC	D25-PVC	D40-PVC
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Design Pressure	250 PSI		17.24 BAR	
Maximum Operating Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (F)	1/4 NPT (F)	1/2 NPT (F)	3/4 NPT (F)

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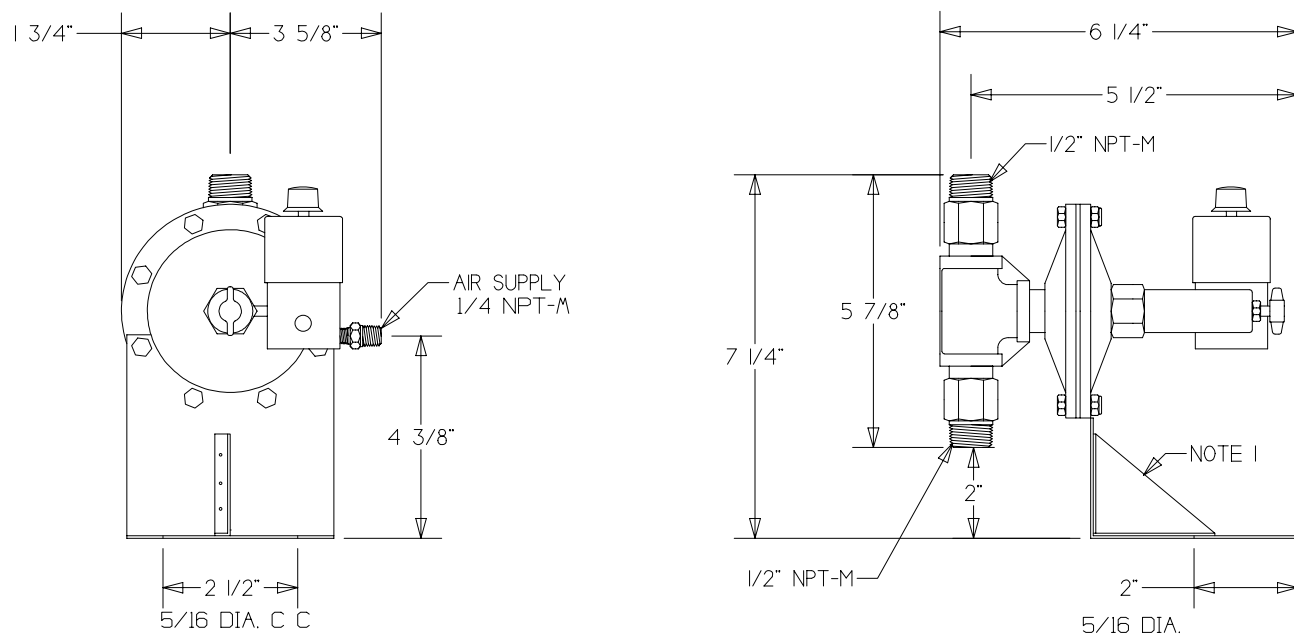
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D25-316-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

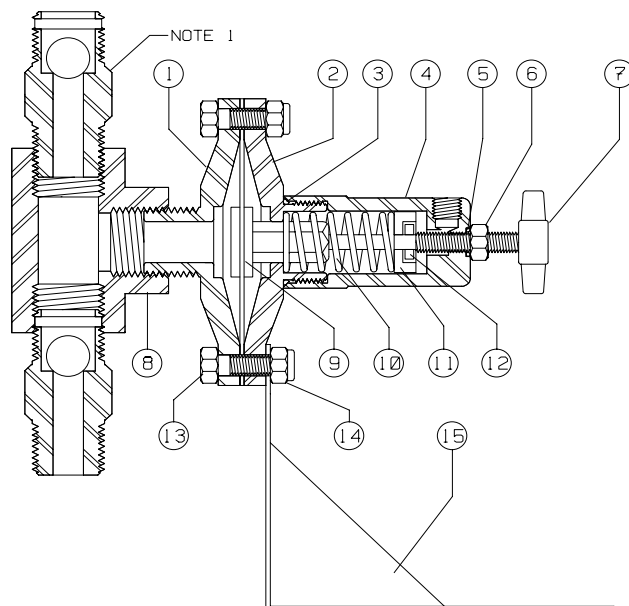
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D25-316-TR2	21.0 cc	1:1	2.5 / 6.4	1/2 - M / 1/2 - F	125 - 8.6	2 - 17 / 6.3 - 63

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-316, D15-316, D25-316 & D40-316



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-316-1	D15-316-1	D25-316-1	D40-316-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Check Valve Tee	D15-11		D25-11	D40-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-316-10+		D40-316-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
	Repair Kit	D10-50	D15-50	D25-50	D40-50

NOTE 1:

D10 & D15 Check Valve MM4-316 (2 Required)
 D25 Check Valve MM8-316 (2 Required)
 D40 Check Valve MM12-316 (2 Required)

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-316	D15-316	D25-316	D40-316
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Discharge Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)

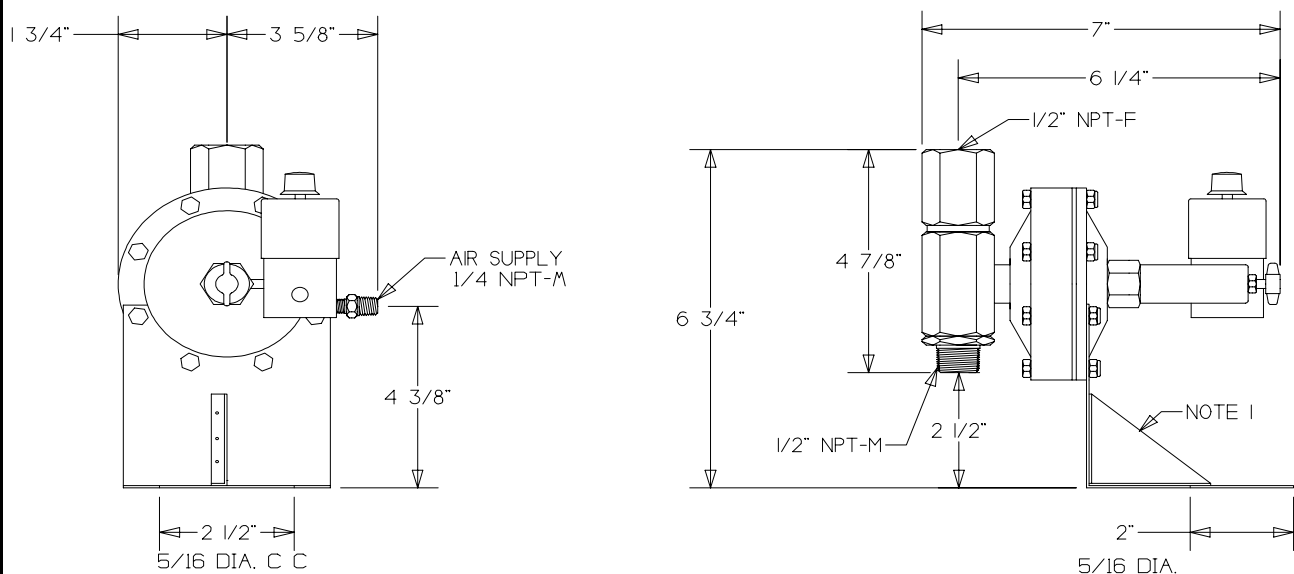
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D25-PVC-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

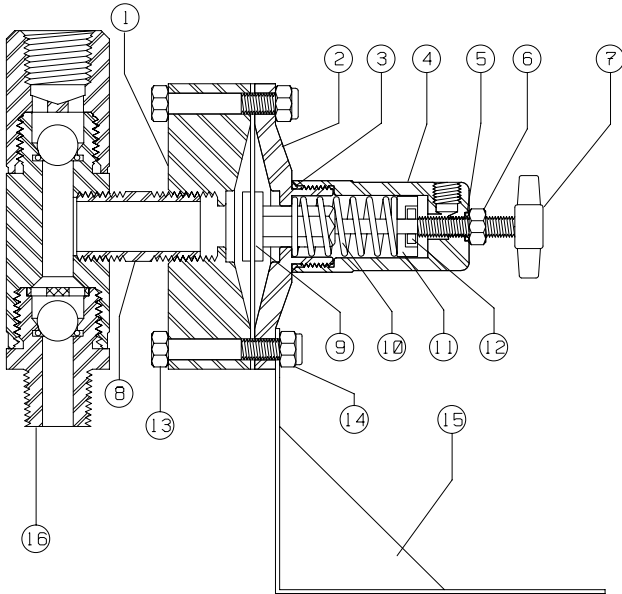
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D25-PVC-TR2	21.0 cc	1:1	2.5 / 6.4	1/2 - M / 1/2 - F	125 - 8.6	2 - 17 / 6.3 - 63

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-PVC, D15-PVC, D25-PVC & D40-PVC



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-PVC-1	D15-PVC-1	D25-PVC-1	D40-PVC-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Nipple	D15-PVC-11		D25-PVC-11	D40-PVC-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-PVC-10+		D40-PVC-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
16	Check Valve	D15-PVC-12		D25-PVC-12	D40-PVC-12
	Repair Kit	D10-50	D15-50	D25-50	D40-50

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-PVC	D15-PVC	D25-PVC	D40-PVC
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Design Pressure	250 PSI		17.24 BAR	
Maximum Operating Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (F)	1/4 NPT (F)	1/2 NPT (F)	3/4 NPT (F)

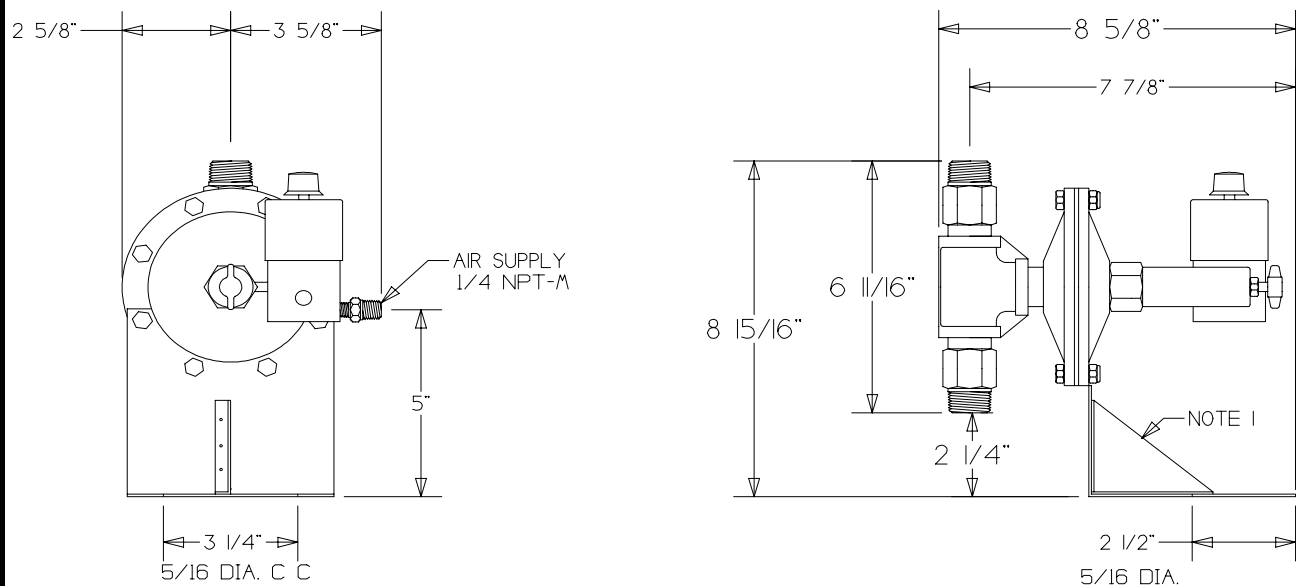
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D40-316-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

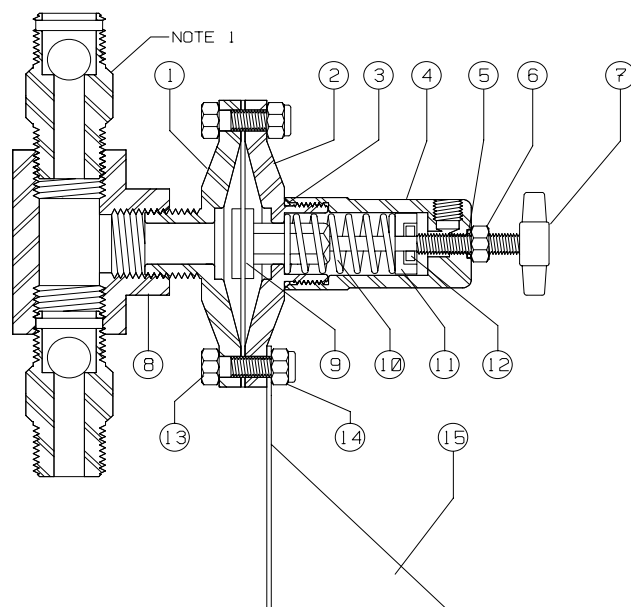
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D40-316-TR2	37.9 cc	1:1	4.0 / 10	3/4 - M / 3/4 - F	125 - 8.6	3 - 30 / 11 - 114

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-316, D15-316, D25-316 & D40-316



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-316-1	D15-316-1	D25-316-1	D40-316-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Check Valve Tee	D15-11		D25-11	D40-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-316-10+		D40-316-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
	Repair Kit	D10-50	D15-50	D25-50	D40-50

NOTE 1:

D10 & D15 Check Valve MM4-316 (2 Required)

D25 Check Valve MM8-316 (2 Required)

D40 Check Valve MM12-316 (2 Required)

* = Included in Repair Kit

+= 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-316	D15-316	D25-316	D40-316
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Discharge Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)

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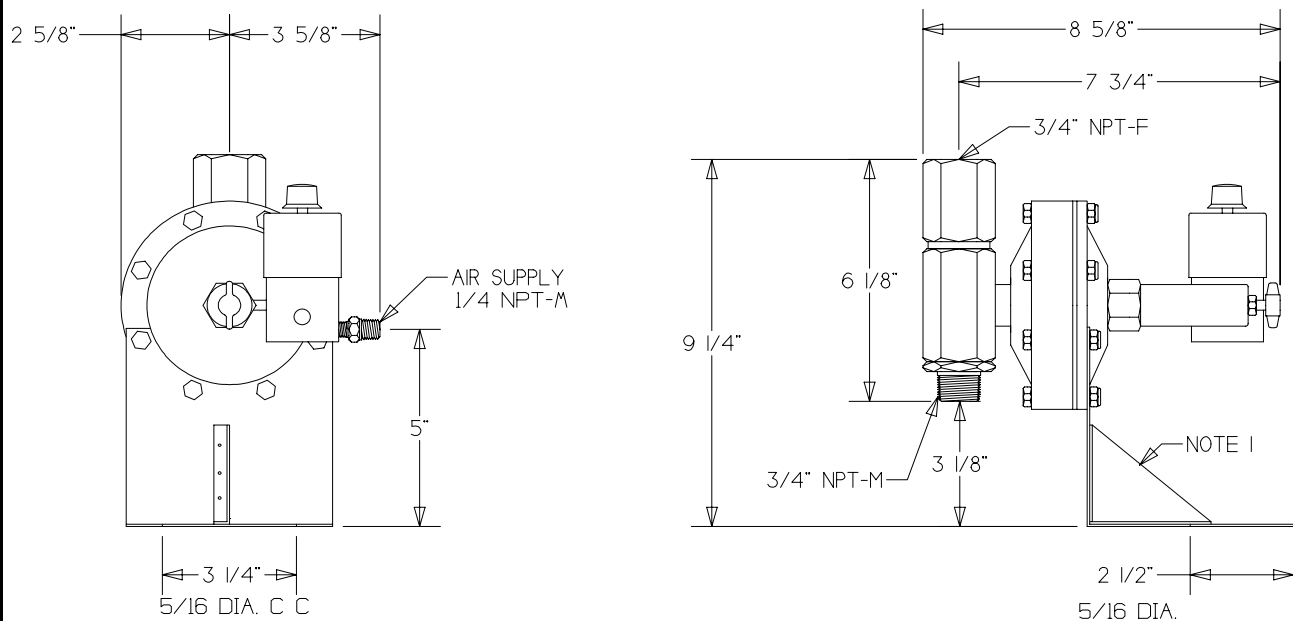
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL D40-PVC-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Note:

Mounting Bracket may be removed

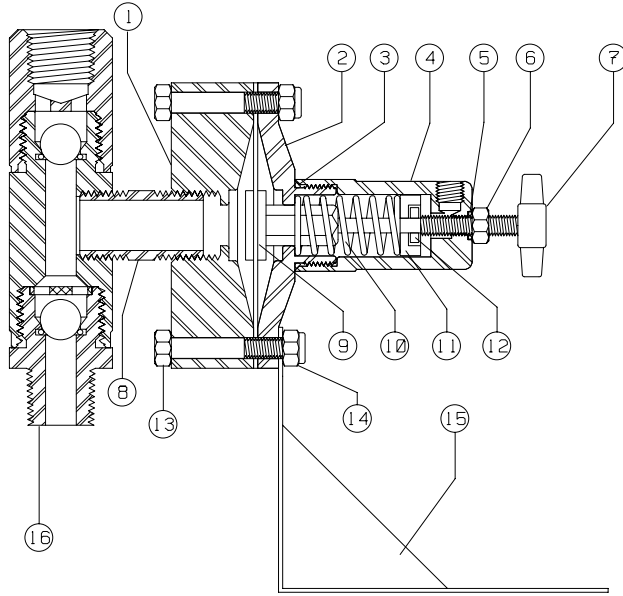
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	DIAPHRAGM SIZE in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
D40-PVC-TR2	37.9 cc	1:1	4.0 / 10	3/4 - M / 3/4 - F	125 - 8.6	3 - 30 / 11 - 114

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model D10-PVC, D15-PVC, D25-PVC & D40-PVC



No	Name	D10	D15	D25	D40
1	Pressure Chamber	D10-PVC-1	D15-PVC-1	D25-PVC-1	D40-PVC-1
2	Drive Chamber	D10-2	D15-2	D25-2	D40-2
3	O-Ring Seal	50-21*		100-21*	
4	Spring Housing	D15-3		D25-3	D40-3
5	O-Ring Seal	100-11*			
6	Locknut	50-2			
7	Stroke Adjuster	50-1			
8	Nipple	D15-PVC-11		D25-PVC-11	D40-PVC-11
9	Diaphragm Assembly	D10-7*	D15-7*	D25-7*	D40-7*
10	Return Spring	50-13*		D25-6*	250-13*
11	Spring Retainer	D15-5		D25-5	
12	Retainer Pin	D15-4		D25-4	
13	Chamber Bolt	D15-PVC-10+		D40-PVC-10+	
14	Chamber Locknut	D15-9+		D40-9+	
15	Stand	D10-13	D15-13	D25-13	D40-13
16	Check Valve	D15-PVC-12		D25-PVC-12	D40-PVC-12
	Repair Kit	D10-50	D15-50	D25-50	D40-50

* = Included in Repair Kit

+ = 6 ea. Required on D10, D15 & D25

8 ea. Required on D40

Set-Up and Operation

1. Discard all red protective closures.
2. Connect the suction check valve (bottom) to the chemical source.
3. Connect the discharge check valve (top) to your process line.
4. Connect a regulated air/gas supply (150 psi maximum) to the timing relay.
5. Set the air/gas supply 10-15 psi higher than process line pressure.
6. Set cycle rate on the TR2 timing relay to get flow rate required. (see chart)

CAUTION: Do not use this pump with chemicals that become hazardous when aerated.

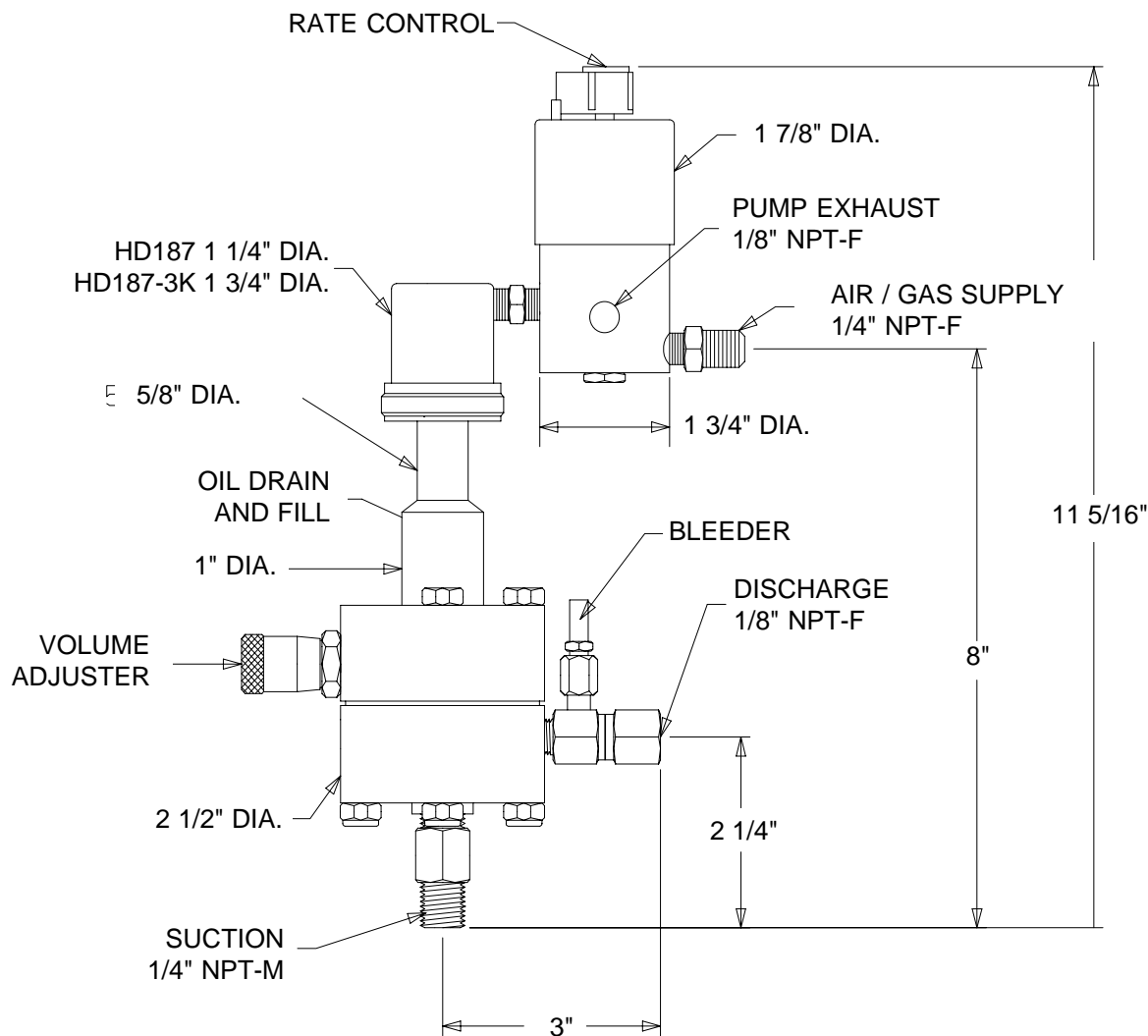
CAUTION: Check Valves will not stop flow of chemical supply. Install a shut off valve between pump and chemical source.

MODEL NO.	D10-PVC	D15-PVC	D25-PVC	D40-PVC
Volume Per Stroke	.3 oz - .8cc	.2 oz - 6cc	.7oz - 21cc	1.7 oz - 51cc
Maximum Volume Per Day	15 ga. - 58 liters	125 ga. - 473 liters	400 ga. - 1514 liters	720 ga. - 2725 liters
Maximum Stroke Rate	50 SPM			
Maximum Design Pressure	250 PSI		17.24 BAR	
Maximum Operating Pressure	150 PSI		10.34 BAR	
Diaphragm Size	1 in. - 2.5 cm.	1.5 in - 3.8 cm	2.5 in - 6.35 cm	4 in - 10.16 cm
Diaphragm Material	Teflon			
Pump Material	316 SS			
Suction Size	1/4 NPT (M)	1/4 NPT (M)	1/2 NPT (M)	3/4 NPT (M)
Discharge Size	1/4 NPT (F)	1/4 NPT (F)	1/2 NPT (F)	3/4 NPT (F)

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES
MODEL HD187M-TR2 / HD187-3KM-TR2
 AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP

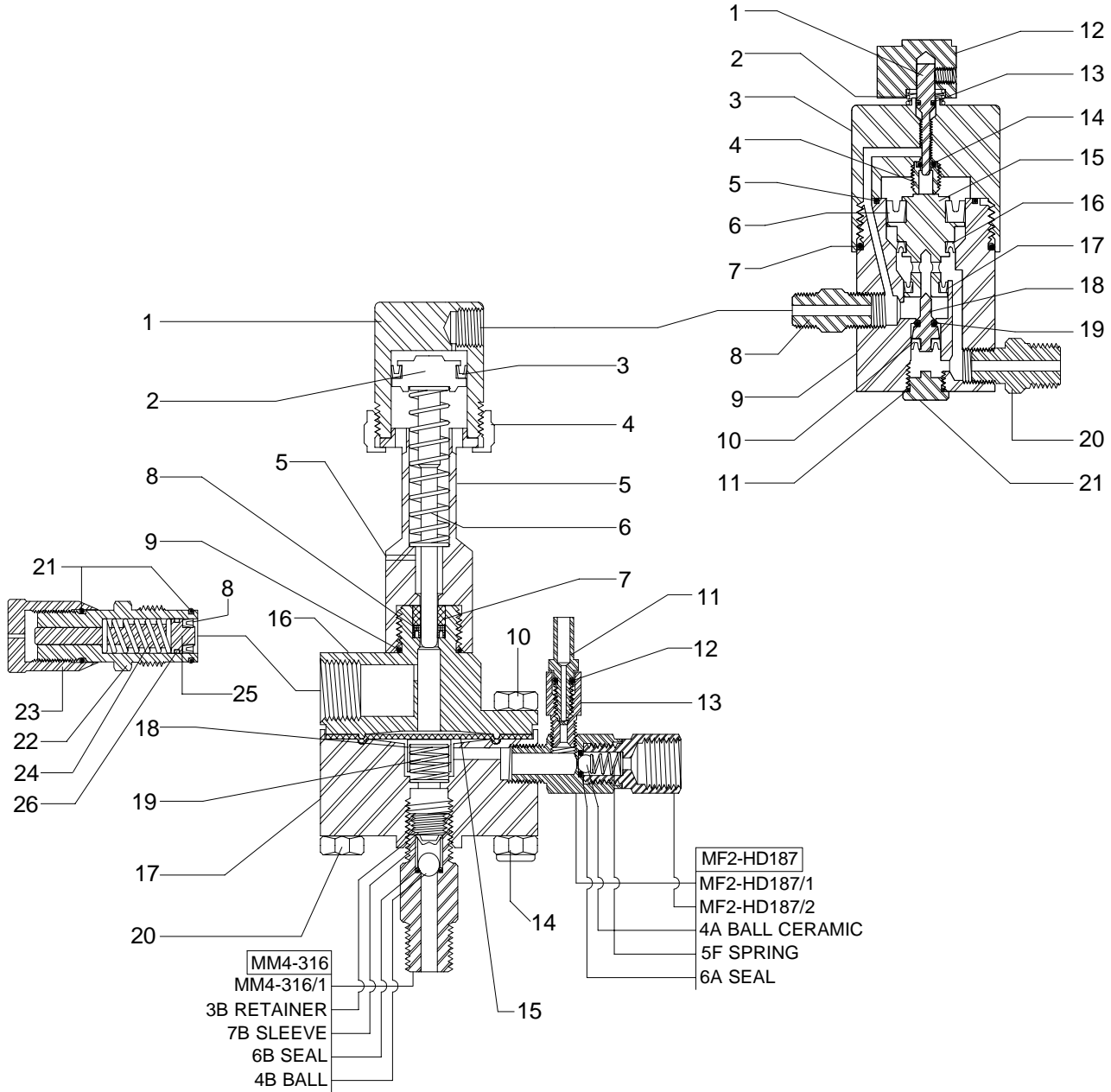


MODEL (WITH TIMER)	PUMP DISPLACEMENT	RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD187M-TR2	.02-.2 cc	10:1	1/2 - 1.27	1/4 - M / 1/8 - F	1000 - 68.9	.005 - .12 / .019 - .46
HD187-3KM-TR2	.02-.2cc	30:1	1/2 - 1.27	1/4 - M / 1/8 - F	3000 - 206	.005 - .12 / .019 - .46

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MODEL HD187M

TR2



To order check valve parts, use check valve designation & dash number.
 EXAMPLE: Ball for MM4-316 Order MM4-316/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD187M
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Air Chamber	HD187M-4 HD187-3KM-4	HD187M HD187-3KM
2	Piston Plunger	HD187-15 *	HD187M
n/s	Piston	100-8	HD187-3KM
n/s	Plunger	HD187-3K-15	HD187-3KM
n/s	Piston Locknut	100-7	HD187-3KM
n/s	O-Ring Seal	100-11 *	HD187-3KM
3	Piston Seal	HD187-9 * 100-9 *	HD187M HD187-3KM
4	Air Chamber Ring	50-5 100-5	HD187M HD187-3KM
5	Oiler Housing	HD187-14 HD187-3K-14	HD187M HD187-3KM
6	Return Spring	50-13 * 100-13 *	HD187M HD187-3KM
7	Back Up Ring	HD187-19 +*	ALL
8	Pressure Seal	HD187-20 +*(2)	ALL
9	O-Ring Seal	50-21 *	ALL
10	Chamber Bolt	HD187-30 (4)	ALL
11	Bleeder	HD187-22	ALL
12	O-Ring Seal	TR2-16 *	ALL
13	Bleeder Adapter	HD187-38	ALL
14	Locknut	HD187-30 (4)	ALL
15	Diaphragm	HD187-32 *	ALL
16	Hydraulic Chamber	HD187-29M	ALL
17	Pressure Chamber	HD187-23	ALL
18	Spring Cup	HD187-35	ALL
19	Diaphragm Spring	HD187-36 *	ALL
20	Short Chamber Bolt	HD187M-30 (2)	ALL
21	O-Ring Seal	HD187M-7 *(2)	ALL
22	Oil Chamber	HD187M-1	ALL
23	Adjuster Knob	HD187M-2	ALL
24	Spring	SR1S-15 *	ALL
25	Plunger	HD187M-3	ALL
26	O-Ring	100-11 *	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

* = Included in Repair Kit

+ = Included in Seal Set

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD187M-50	REPAIR KIT	HD187
HD187-3KM-50	REPAIR KIT	HD187-3KM
HD187-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

**MATERIAL SPECIFICATIONS
HD187**

NAME	STANDARD	OPTION
Stroke Adjuster	18-8 SS & ABS	
Locknut	18-8 SS	
O-Ring Seals	Buna - N	Viton
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

**AIR / GAS USAGE
SCF/DAY AT 1 STROKE PER MINUTE**

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD187M	1.0	2.0	2.9	3.7	4.5	5.3
HD187-3KM	3.9	6.4	8.9	11.3	13.8	16.2

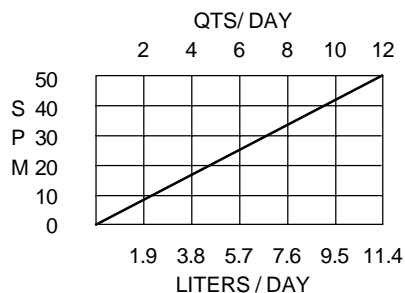
Table constant multiplied by stroke rate = SCFD
 Example: HD187 (operated at 50 psi) Multiply 2.0 by 20 SPM = 40 SCFD

INSTALLATION INSTRUCTIONS

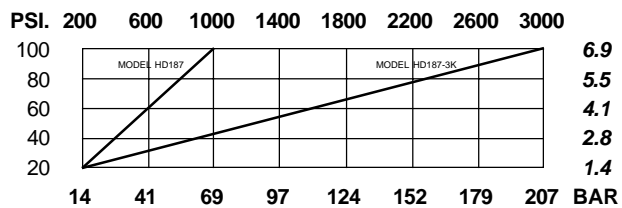
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill pump with oil provided, oil will flow out of the bleed hole to regulate oil level.
 ** This must be done BEFORE start up. **
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate for approximate strokes per minute.
 (See volume graph)
9. Further adjust volume per stroke using the metering knob on the side of the pump.

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

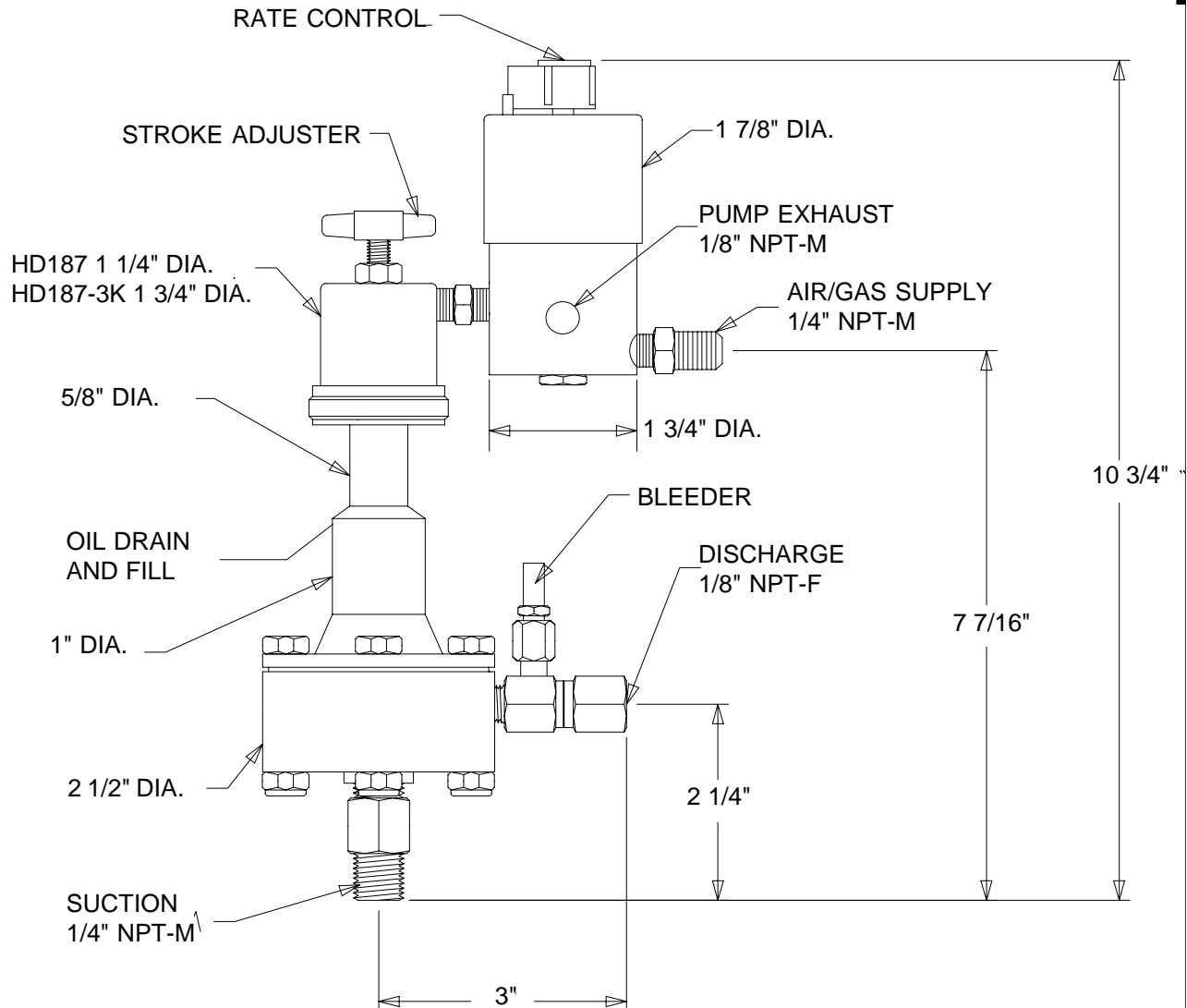


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD187 /HD187-3K

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP

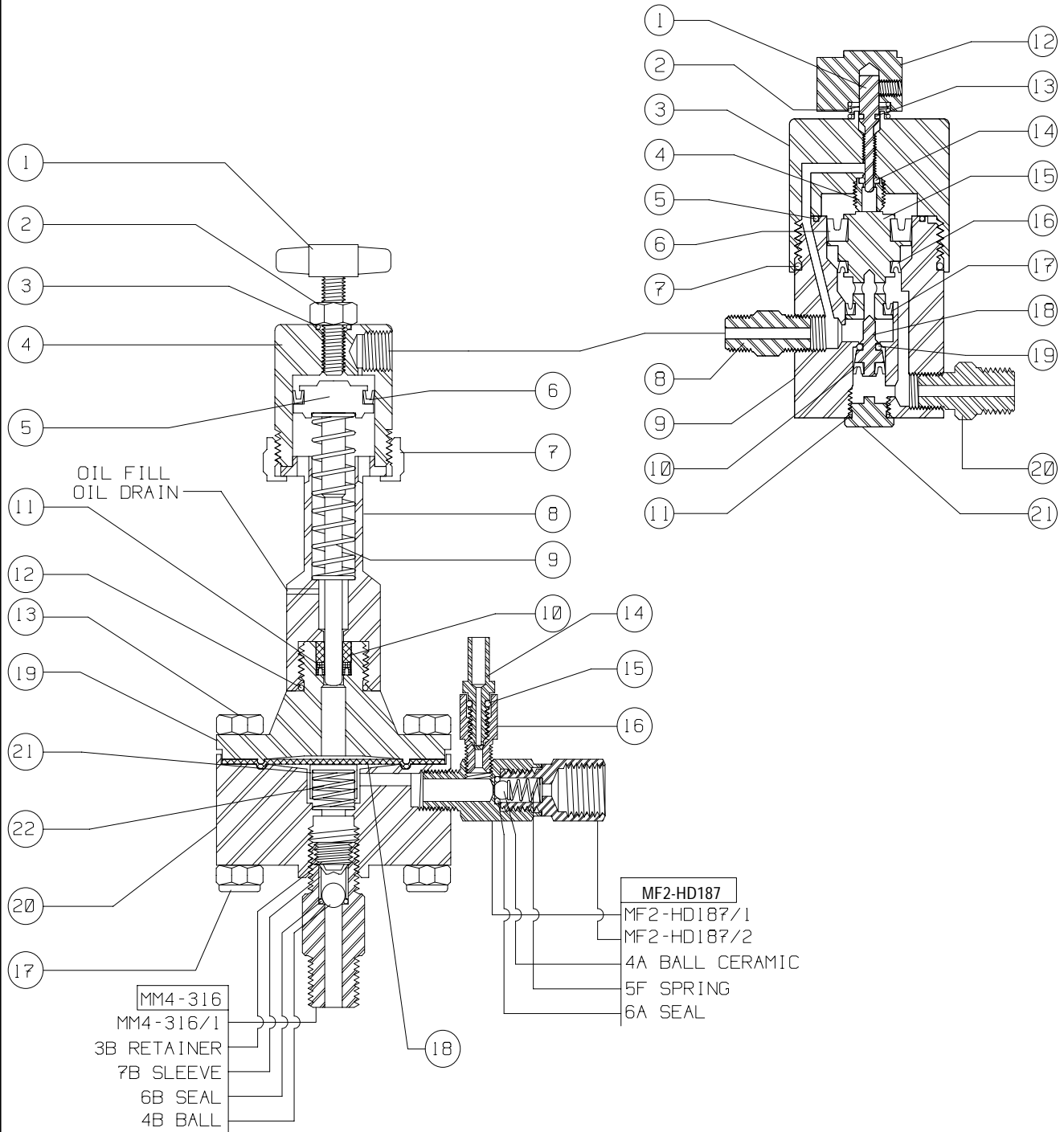


MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD187-TR2	.2 cc	10:1	1/2 - 1.27	1/4 - M / 1/8 - F	1000 - 68.9	.01 - .12 / .05 - .46
HD187-3K-TR2	.2 cc	30:1	1/2 - 1.27	1/4 - M / 1/8 - F	3000 - 206	.01 - .12 / .05 - .46

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MODEL HD187

TR2



To order check valve parts, use check valve designation & dash number.
 EXAMPLE: Ball for MM4-316 Order MM4-316/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD187
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Stroke Adjuster	HD187-1	HD187
		HD312-1	HD187-3K
2	Locknut	50-2	HD187
		100-2	HD187-3K
3	O-Ring Seal	100-11 *	HD187
		100-3	HD187-3K
4	Air Chamber	HD187-4	HD187
		HD187-3K-4	HD187-3K
5	Piston Plunger	HD187-15 *	HD187
n/s	Piston	100-8	HD187-3K
n/s	Plunger	HD187-3K-15	HD187-3K
n/s	Piston Locknut	100-7	HD187-3K
n/s	O-Ring Seal	100-11 *	HD187-3K
6	Piston Seal	HD187-9 *	HD187
		100-9 *	HD187-3K
7	Air Chamber Ring	50-5	HD187
		100-5	HD187-3K
8	Oiler Housing	HD187-14	HD187-3K
		HD187-3K-14	HD187-3K
9	Return Spring	50-13 *	HD187
		100-13 *	HD187-3K
10	Back Up Ring	HD187-19 *	ALL
11	Pressure Seal	HD187-20 *	ALL
12	O-Ring Seal	50-21 *	ALL
13	Chamber Bolt	HD187-30 (6)	ALL
14	Bleeder	HD187-22	ALL
15	O-Ring Seal	TR2-16 *	ALL
16	Bleeder Adapter	HD187-38	ALL
17	Locknut	D40-9 (6)	ALL
18	Diaphragm	HD187-32 *	ALL
19	Hydraulic Chamber	HD187-29	ALL
20	Pressure Chamber	HD187-23	ALL
21	Spring Cup	HD187-35	ALL
22	Diaphragm Spring	HD187-36 *	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

* = Included in Repair Kit

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD187-50	REPAIR KIT	HD187
HD187-3K-50	REPAIR KIT	HD187-3K
HD187-48	SEAL SET	All
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

**MATERIAL SPECIFICATIONS
HD187 /HD187-3K**

NAME	STANDARD	OPTION
Stroke Adjuster	18-8 SS & ABS	
Locknut	18-8 SS	
O-Ring Seals	Buna - N	Viton
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

**AIR / GAS USAGE
SCF/DAY AT 1 STROKE PER MINUTE**

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD187	1.0	2.0	2.9	3.7	4.5	5.3
HD187-3K	3.9	6.4	8.9	11.3	13.8	16.2

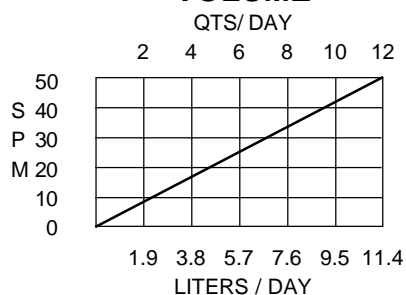
Table constant multiplied by stroke rate = SCFD
 Example: HD187 (operated at 50 psi) Multiply 2.0 by 20 SPM = 40 SCFD

INSTALLATION INSTRUCTIONS

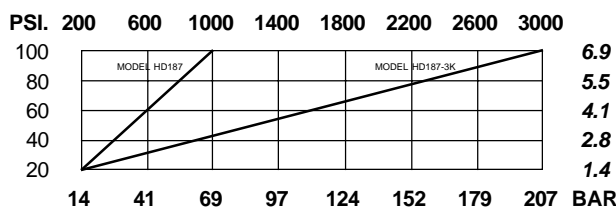
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided, until oil flows out of the bleed hole.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate in strokes per minute.
 (See volume graph)

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

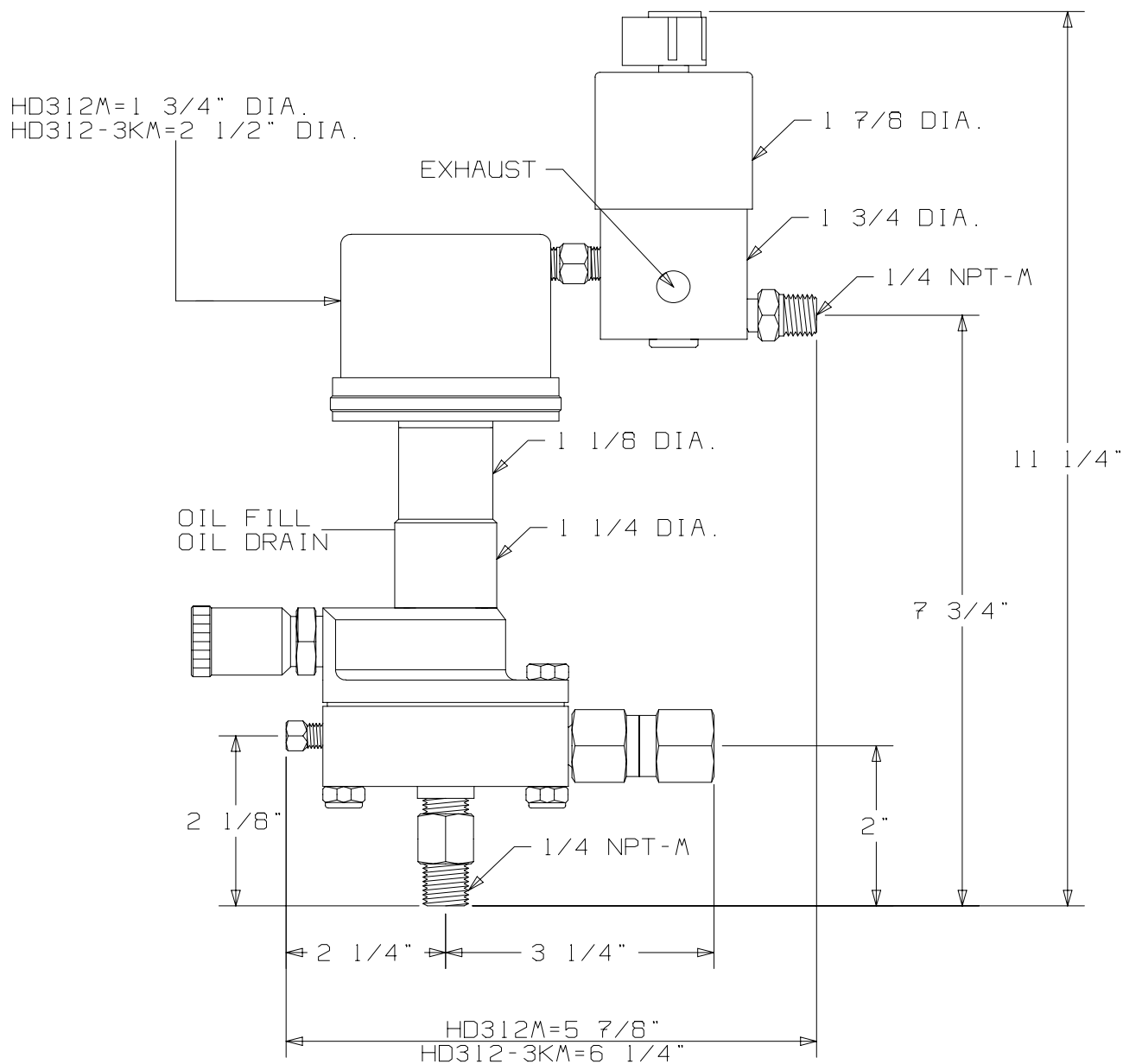


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD312M / HD312-3KM

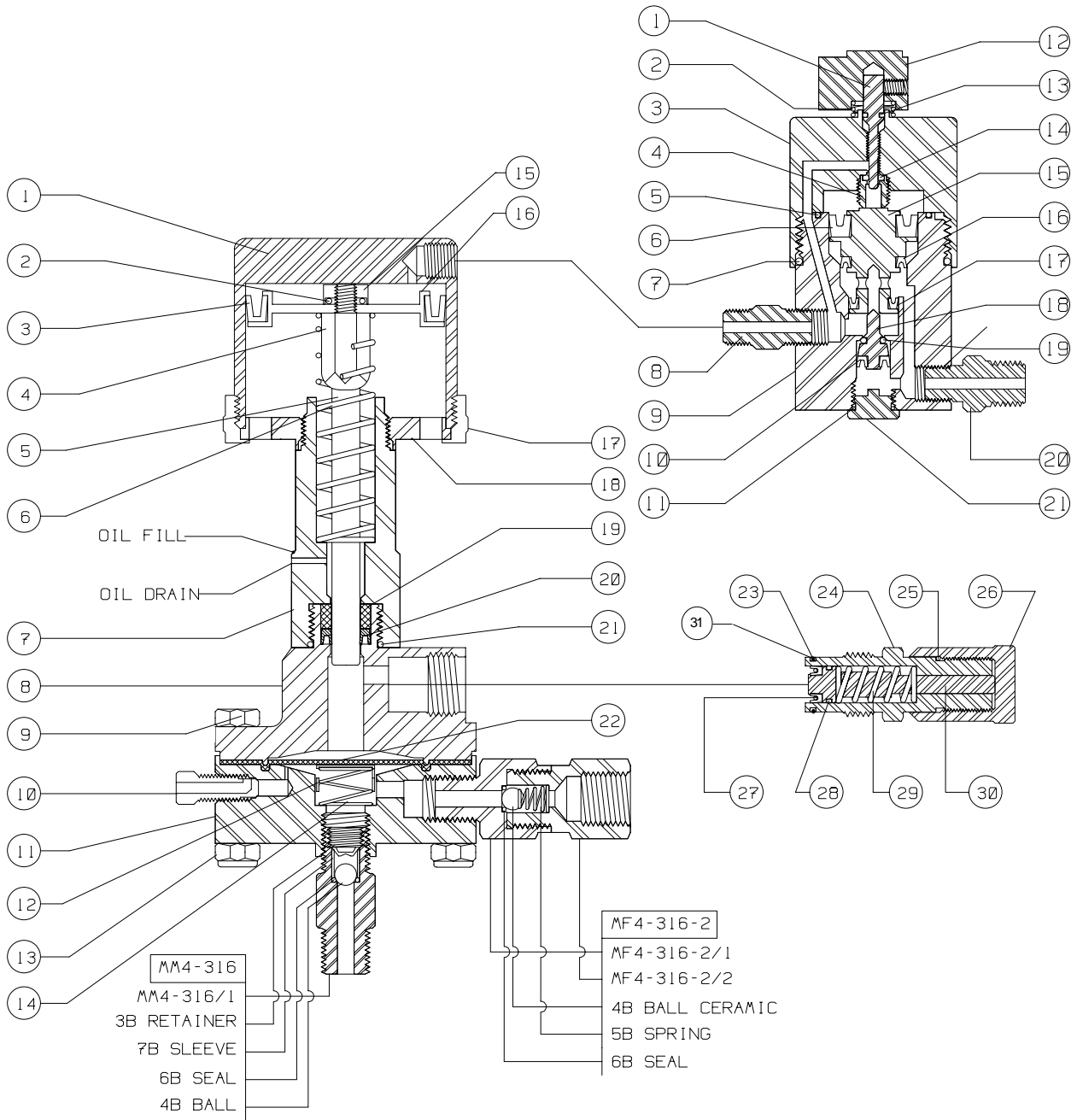
AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD312M-TR2	.1-1 cc	10:1	1 - 2.5	1/4 - M / 1/4 - F	1000 - 68.9	.01 - .63 / .05 - 2.4
HD312-3KM-TR2	.1-1cc	30:1	1 - 2.5	1/4 - M / 1/4 - F	3000 - 207	.01 - .63 / .05 - 2.4

High Pressure Technologies, LLC.
24895 Avenue RockefellerValencia, CA 91355
www.highpressuretech.com
Telephone: (661) 257-7600, Fax: (661) 257-7062

HD312M-TR2 / HD312-3KM-TR2



To order check valve parts, use check valve designation & dash number.

EXAMPLE: Ball for MF4-316-2 Order MF4-316-2/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD312M / HD312-3KM
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Air Chambers	HD312M-4 HD312-3KM-4 #	HD312M HD312-3KM
2	O-Ring Seal	100-11 *	ALL
3	Piston Seals	100-9 * 200-9 *	HD312M HD312-3KM
4	Spring Guide	HD312-10	HD312-3KM
5	Plunger	HD312-15 *	ALL
6	Return Spring	100-13 * 200-13 *	HD312M HD312-3KM
7	Oiler Housings	HD312-14 HD312-3K-14	HD312M HD312-3KM
8	Hydraulic Chamber	HD312M-29 #	ALL
9	Chamber Bolt	D40-PVC-10 (6)	ALL
10	Bleeder	125-22	ALL
11	Pressure Chamber	HD312-23	ALL
12	Spring Cup	HD312-35	ALL
13	Locknut	D40-9 (6)	ALL
14	Diaphragm Spring	HD312-36 *	ALL
15	Piston Locknut	100-7	ALL
16	Pistons	100-8 200-8	HD312M HD312-3KM
17	Air Chamber Rings	100-5 200-5	HD312M HD312-3KM
18	Faceplates	200-6	HD312-3KM
19	Back Up Ring	HD312-19 * +	ALL
20	Pressure Seal	HD312-20 * +	ALL
21	O-Ring Seal	50-21 *	ALL
22	Diaphragm	HD312-32 *	ALL
23	O-Ring Seal	50-21 # *	ALL
24	Oil Chamber	HD312M-1 #	ALL
25	O-Ring Seal	50-21 # *	ALL
26	Adjuster Knob	HD312M-2 #	ALL
27	Pressure Seal	100-20 # *	ALL
28	O-Ring Seal	TR2-18 # *	ALL
29	Spring	HD562M-6 # *	ALL
30	Plunger	HD312M-3 #	ALL
31	Teflon Seal	HD312M-11 # *	ALL
	Short Chamber Bolt	HD312M-10 (2) #	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

= Included in conversion kit.

* = Included in Repair Kit + = Included in Seal Set

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD312M-50	REPAIR KIT	HD312M
HD312-3KM-50	REPAIR KIT	HD312-3KM
HD312-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

**MATERIAL SPECIFICATIONS
HD312M / HD312-3KM**

NAME	STANDARD	OPTION
Stroke Adjuster	18-8 SS & ABS	
Locknut	18-8 SS	
O-Ring Seals	Buna - N	Viton
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Spring Cup	316 SS	
Diaphragm Spring	Inconel	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

**AIR / GAS USAGE
SCF/DAY AT 1 STROKE PER MINUTE**

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD312M	3.9	6.4	8.9	11.3	13.8	16.2
HD312-3KM	8.9	14.4	19.9	25.5	31.0	36.5

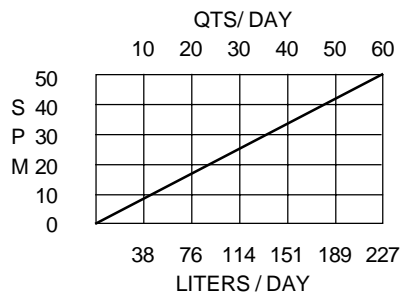
Table constant multiplied by stroke rate = SCFD
 Example: HD312 (operated at 50 psi) Multiply 6.4 by 20 SPM = 128 SCFD

INSTALLATION INSTRUCTIONS

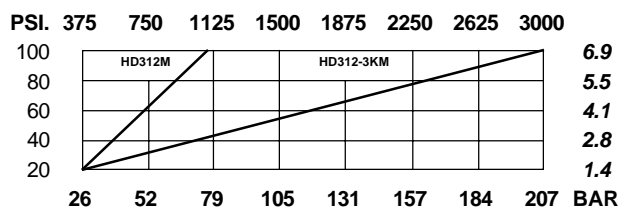
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill pump with oil provided, oil will flow out of the bleed hole to regulate oil level.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate for approximate strokes per minute.
 (See volume graph)
9. Further adjust volume per stroke using the metering knob on the side of the pump.

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

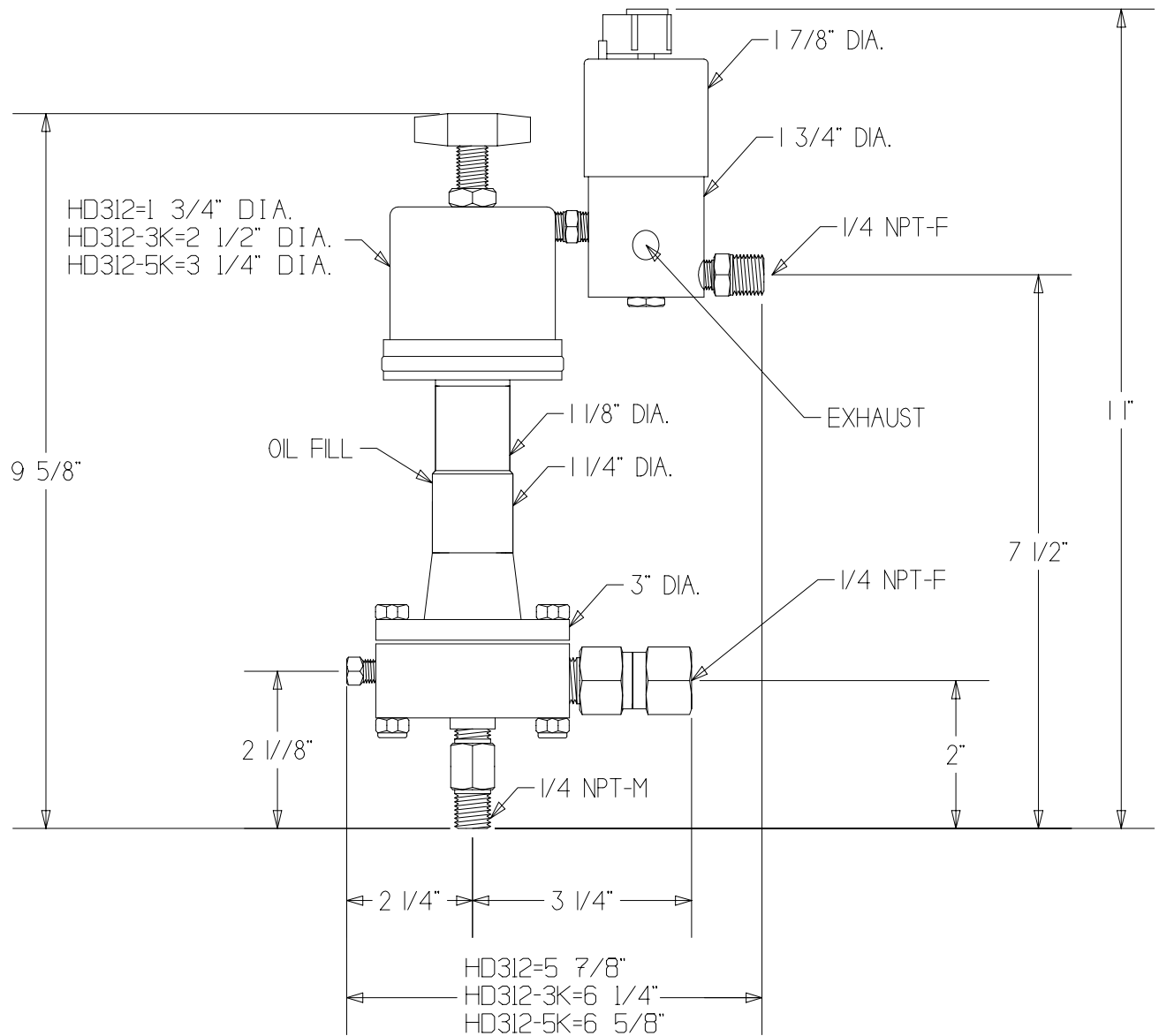


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD312 / HD312-3K / HD312-5K

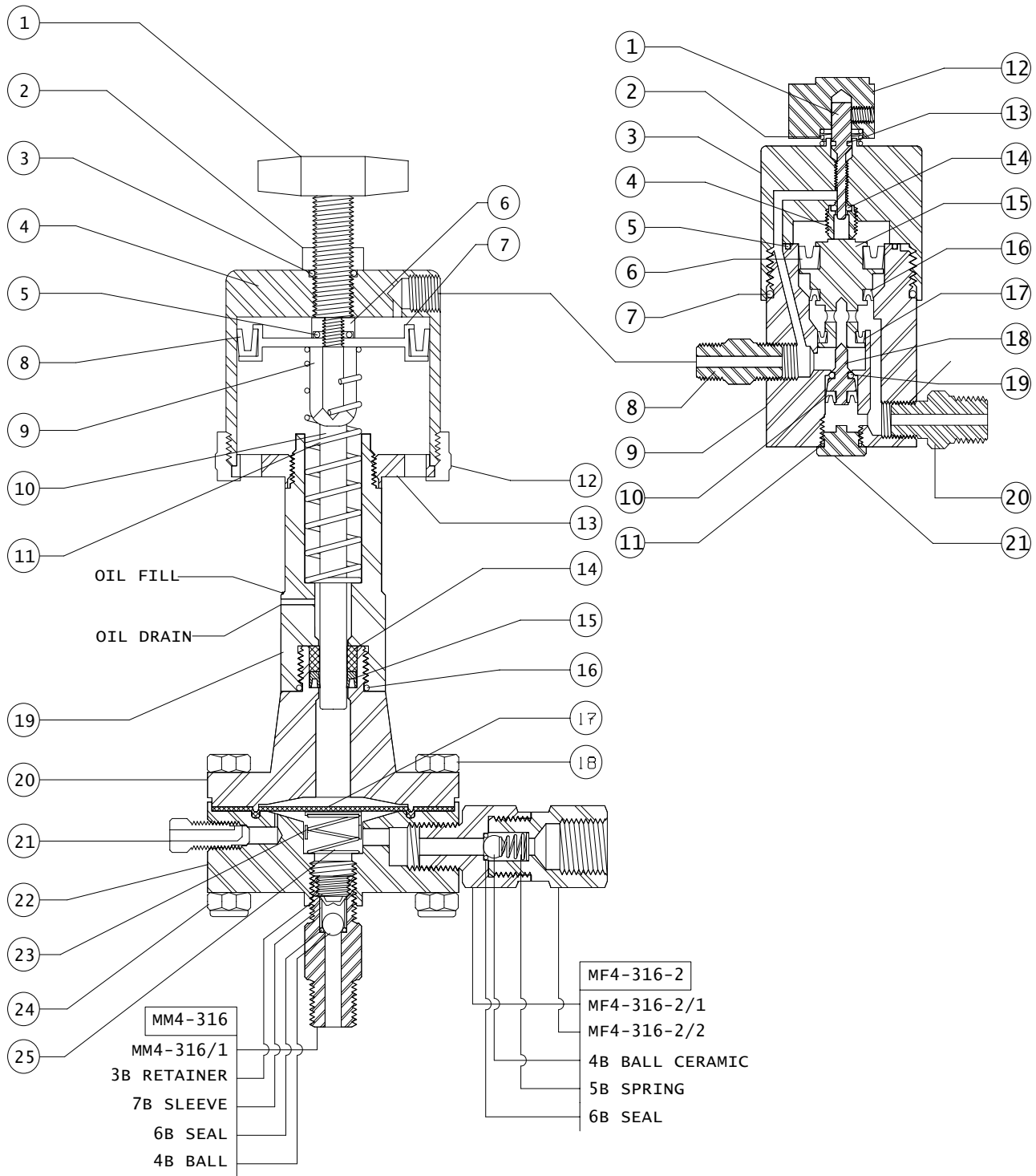
AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD312-TR2	1 cc	10:1	1 - 2.5	1/4 - M / 1/4 - F	1000 - 68.9	.06 - .63 / .24 - 2.4
HD312-3K-TR2	1 cc	30:1	1 - 2.5	1/4 - M / 1/4 - F	3000 - 207	.06 - .63 / .24 - 2.4
HD312-K5-TR2	1 cc	50:1	1 - 2.5	1/4 - M / 1/4 - F	5000 - 345	.06 - .63 / .24 - 2.4

High Pressure Technologies, LLC.
24895 Avenue RockefellerValencia, CA 91355
www.highpressuretech.com
Telephone: (661) 257-7600, Fax: (661) 257-7062

HD312-TR2 / HD312-3K-TR2 / HD312-5K-TR2



To order check valve parts, use check valve designation & dash number.
 EXAMPLE: Ball for MF4-316-2 Order MF4-316-2/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD312 / HD312-3K / HD312-5K
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Stroke Adjuster	HD312-1	ALL
2	Locknut	100-2	ALL
3	O-Ring Seal	100-3 *	ALL
4	Air Chambers	100-4 200-4 300-4	HD312 HD312-3K HD312-5K
5	O-Ring Seal	100-11 *	ALL
6	Piston Locknut	100-7	ALL
7	Pistons	100-8 200-8 300-8	HD312 HD312-3K HD312-5K
8	Piston Seals	100-9 * 200-9 * 300-9 *	HD312 HD312-3K HD312-5K
9	Spring Guide	HD312-10	HD312-3K, 5K
10	Plunger	HD312-15 *	ALL
11	Return Spring	100-13 * 200-13	HD312 HD312-3K, 5K
12	Air Chamber Rings	100-5 200-5 300-5	HD312 HD312-3K HD312-5K
13	Faceplates	200-6 300-6	HD312-3K HD312-5K
14	Back Up Ring	HD312-19 * +	ALL
15	Pressure Seal	HD312-20 * +	ALL
16	O-Ring Seal	50-21 *	ALL
17	Diaphragm	HD312-32 *	ALL
18	Chamber Bolt	D40-PVC-10 (8) HD-5K-36	HD312, HD312-3K HD312-5K
19	Oiler Housings	HD312-14 HD312-3K-14	HD312 HD312-3K, 5K
20	Hydraulic Chamber	HD312-29	ALL
21	Bleeder	125-22	ALL
22	Pressure Chamber	HD312-23	ALL
23	Spring Cup	HD312-35	ALL
24	Locknut	D40-9 (8) HD-5K-37	HD312, HD312-3K HD312-5K
25	Diaphragm Spring	HD312-36 *	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

* = Included in Repair Kit

+ = Included in Seal Set

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD312-50	REPAIR KIT	HD312
HD312-3K-50	REPAIR KIT	HD312-3K
HD312-5K-50	REPAIR KIT	HD312-5K
HD312-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

**MATERIAL SPECIFICATIONS
HD312 / HD312-3K / HD312-5K**

NAME	STANDARD	OPTION
Stroke Adjuster	18-8 SS & ABS	
Locknut	18-8 SS	
O-Ring Seals	Buna - N	Viton
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Spring Cup	316 SS	
Diaphragm Spring	Inconel	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	

**AIR / GAS USAGE
SCF/DAY AT 1 STROKE PER MINUTE**

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD312	3.9	6.4	8.9	11.3	13.8	16.2
HD312-3K	8.9	14.4	19.9	25.5	31.0	36.5
HD312-5K	15.7	25.6	35.4	45.3	55.1	64.9

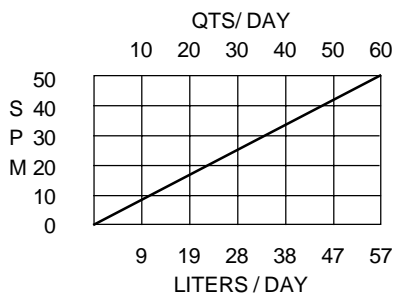
Table constant multiplied by stroke rate = SCFD
 Example: HD312 (operated at 50 psi) Multiply 6.4 by 20 SPM = 128 SCFD

INSTALLATION INSTRUCTIONS

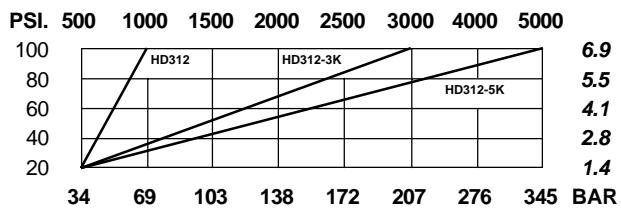
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided, until oil flows out of the bleed hole.
 ** This must be done BEFORE start up. **
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate in strokes per minute.
 (See volume graph)

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

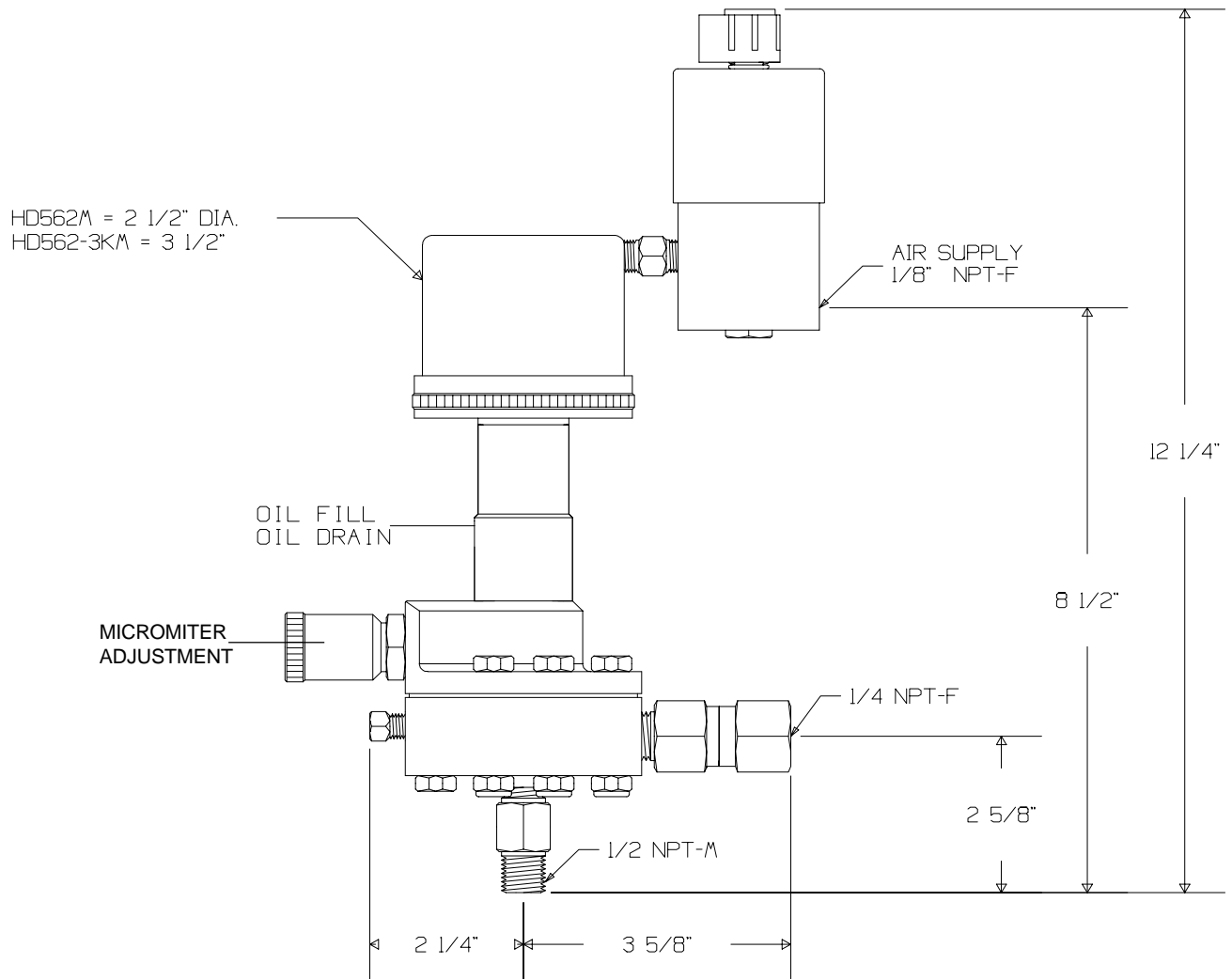


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD562M / HD562-3KM

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD562M-TR2	.5-3.5 cc	10:1	1 - 2.5	1/2 - M / 1/4 - F	1000 - 68.9	.06 - 2.5 / .24 - 9.5
HD562-3KM-TR2	.5-3.5cc	30:1	1 - 2.5	1/2 - M / 1/4 - F	3000 - 207	.06 - 2.5 / .24 - 9.5

High Pressure Technologies, LLC.

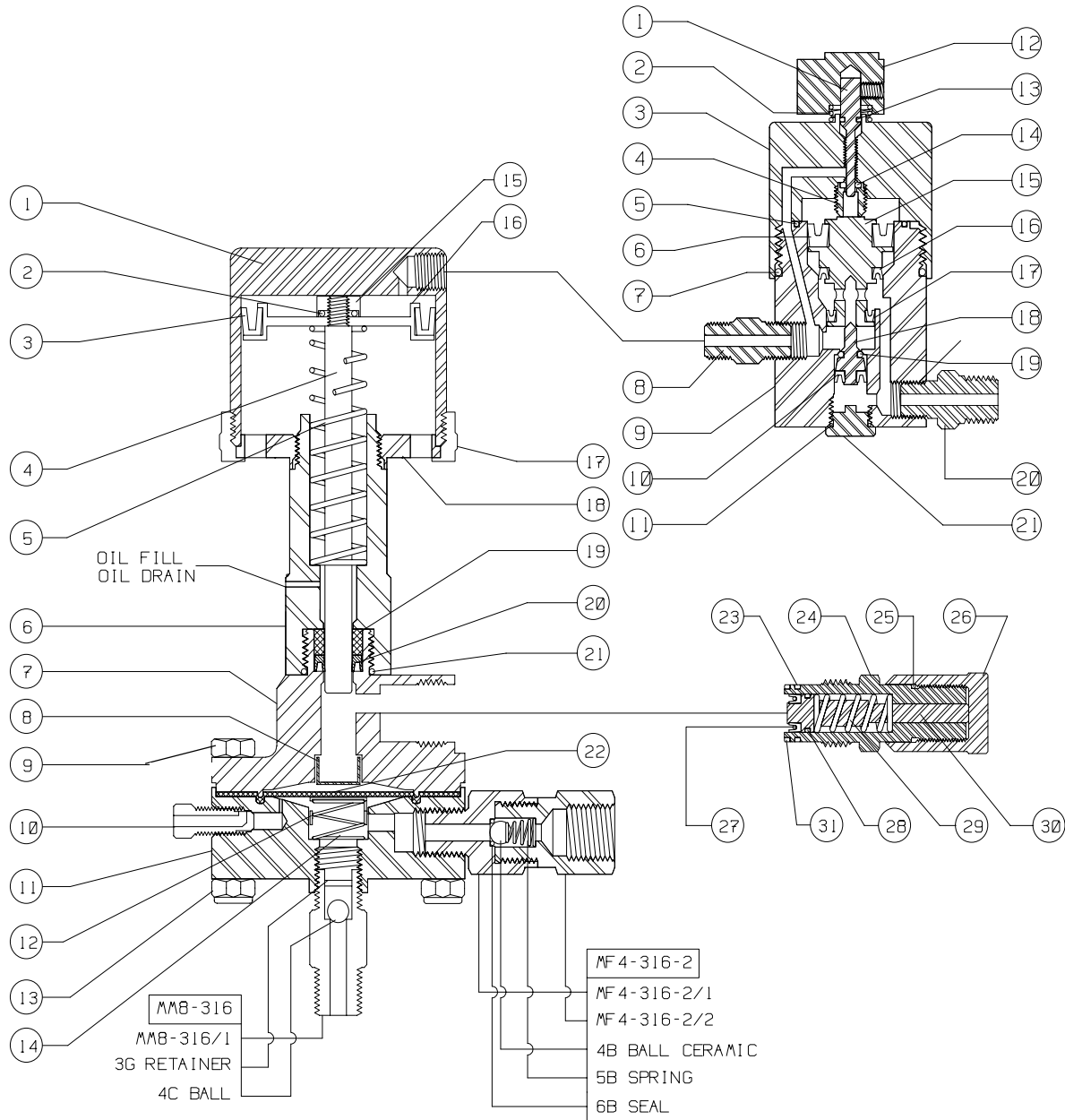
24895 Avenue RockefellerValencia, CA 91355

www.highpressuretech.com

Telephone: (661) 257-7600, Fax: (661) 257-7062

HD562M / HD562-3KM

TR2



To order check valve parts. Use check valve designation & dash number.
 EXAMPLE: Ball for MF4-316-2 Order MF4-316-2/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD562M / HD562-3KM
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Air Chambers	HD312-3KM-4 HD312-5KM-4	HD562M HD562-3KM
2	O-Ring Seal	100-11 *	ALL
3	Piston Seals	200-9 * 300-9 *	HD562M HD562-3KM
4	Plunger	HD562-15 *	ALL
5	Return Spring	HD562-13 *	ALL
6	Oiler Housings	HD562-14	ALL
7	Hydraulic Chamber	HD562M-29	ALL
8	Spring Cup	HD312-35	ALL
9	Chamber Bolt	D40-PVC-10 (6)	ALL
10	Bleeder	125-22	ALL
11	Pressure Chamber	HD562-23	ALL
12	Spring Cup	HD562-35	ALL
13	Locknut	D40-9 (6)	ALL
14	Diaphragm Spring	HD312-36 *	ALL
15	Piston Locknut	100-7	ALL
16	Pistons	200-8 300-8	HD562M HD562-3KM
17	Air Chamber Rings	200-5 300-5	HD562M HD562-3KM
18	Faceplates	HD562-6 HD562-3K-6	HD562M HD562-3KM
19	Back Up Ring	HD562-19 * +	ALL
20	Pressure Seal	HD562-20 * +	ALL
21	O-Ring Seal	100-21 *	ALL
22	Diaphragm	HD562-32 *	ALL
23	O-Ring Seal	HD562M-7 *	ALL
24	Oil Chamber	HD562M-1	ALL
25	O-Ring Seal	50-21 *	ALL
26	Adjuster Knob	HD312M-2	ALL
27	Pressure Seal	HD562M-4 *	ALL
28	O-Ring Seal	HD562M-5 *	ALL
29	Spring	HD562M-6 *	ALL
30	Plunger	HD562M-3	ALL
31	Teflon Seal	HD562M-11 *	ALL
	Short Chamber Bolt	HD312M-10 (2)	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

* = Included in Repair Kit + = Included in Seal Set

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD562M-50	REPAIR KIT	HD562M
HD562-3KM-50	REPAIR KIT	HD562-3KM
HD562-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

MATERIAL SPECIFICATIONS

NAME	STANDARD	OPTION
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Spring Cup	316 SS	
Diaphragm Spring	Inconel	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

AIR / GAS USAGE SCF/DAY AT 1 STROKE PER MINUTE

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD562M	8.9	14.4	19.9	25.5	30.0	36.5
HD562-3KM	15.7	25.6	35.4	45.3	55.1	64.9

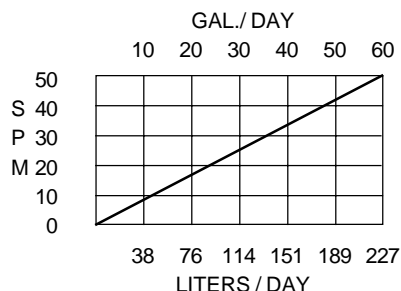
Table constant multiplied by stroke rate = SCFD
 Example: HD562 (operated at 50 psi) Multiply 14.4 by 20 SPM =288 SCFD

INSTALLATION INSTRUCTIONS

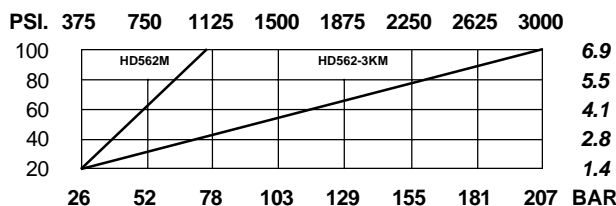
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill pump with oil provided, oil will flow out of the bleed hole to regulate oil level.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate for approximate strokes per minute.
 (See volume graph)
9. Further adjust volume per stroke using the metering knob on the side of the pump.

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

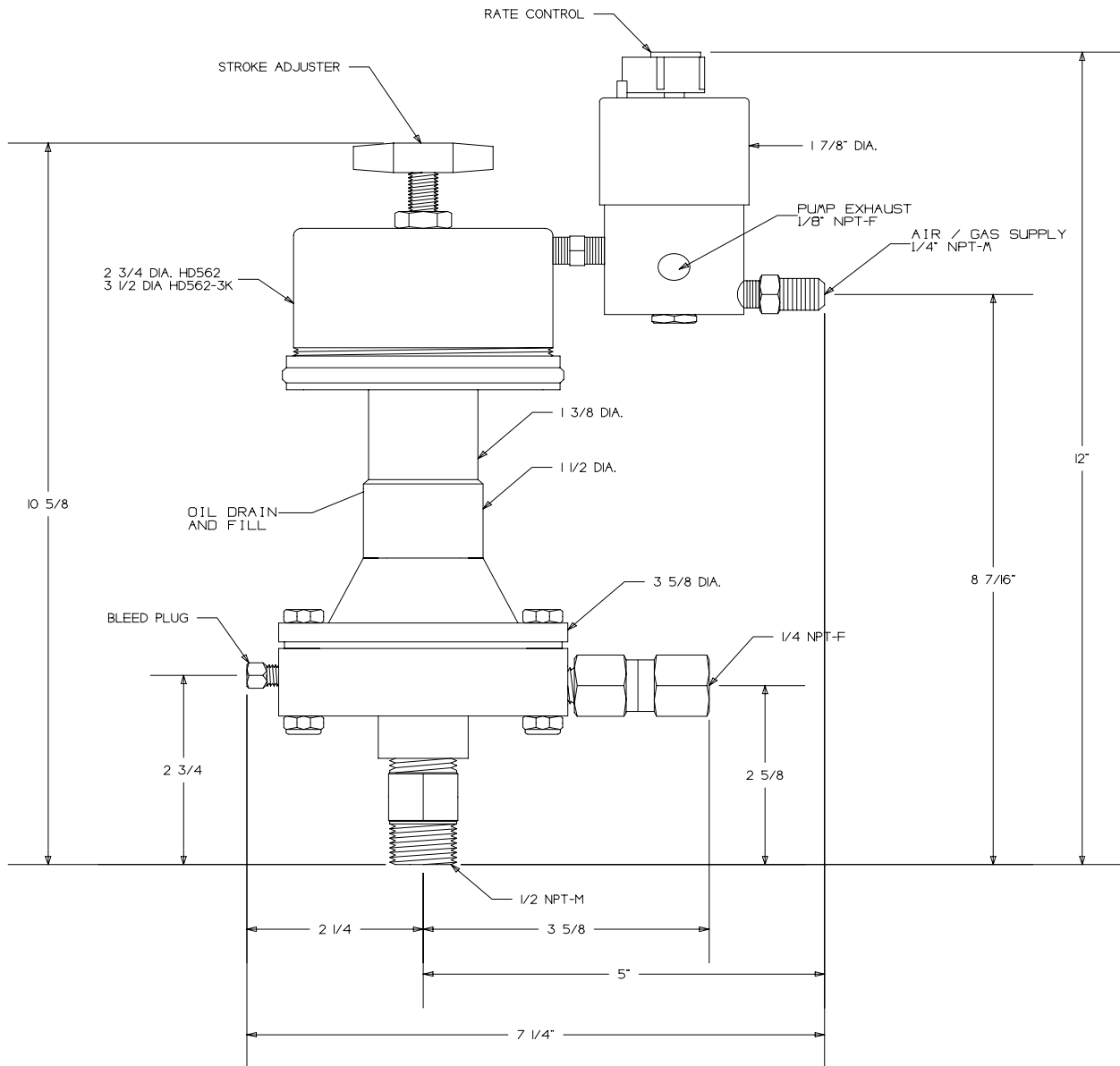


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD562 / HD562-3K

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



NETWEIGHT:

HD562-TR2 -----9 POUNDS / 4 KILO.

HD562-3K-TR2 -----10 POUNDS / 4.5 KILO.

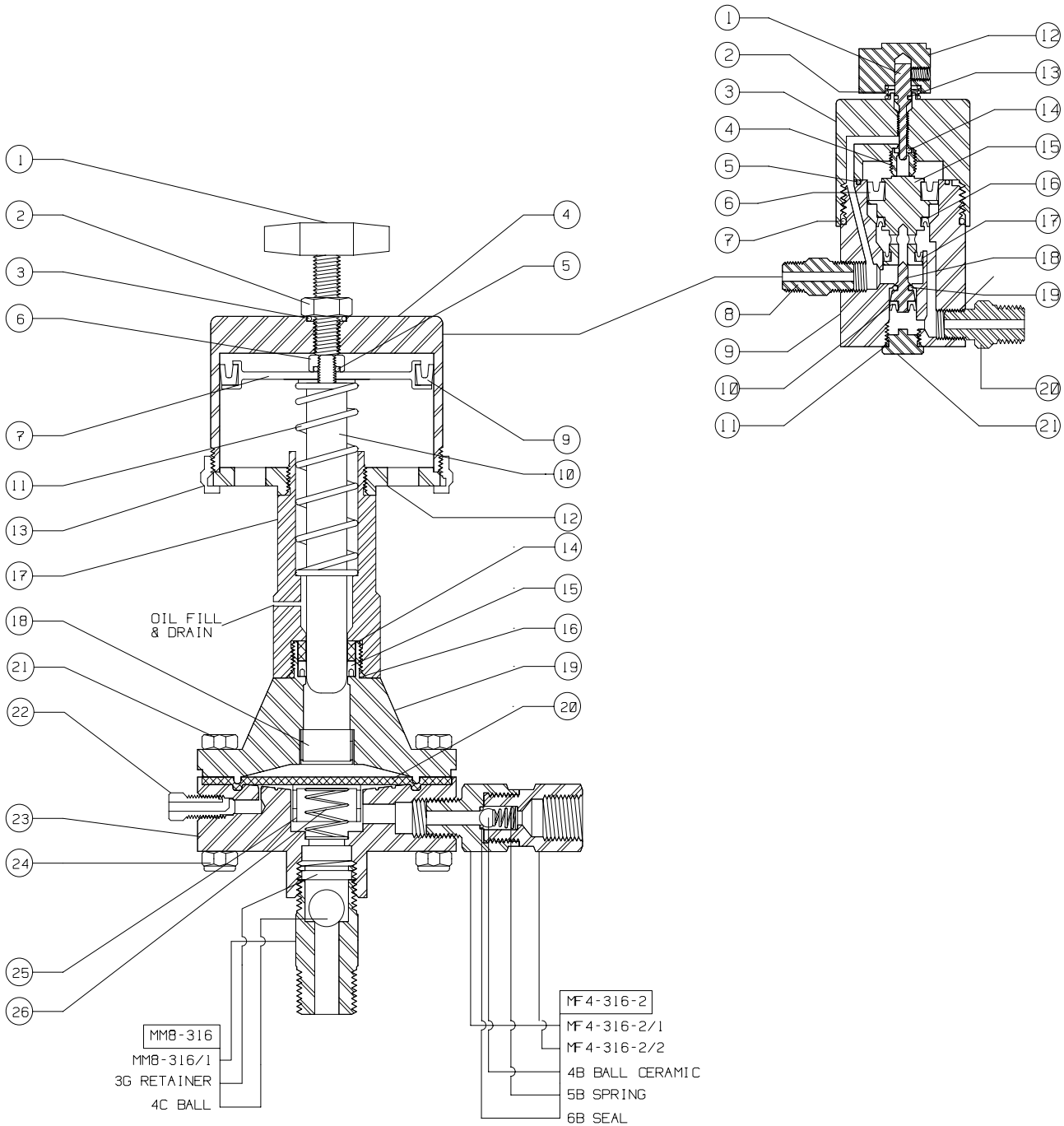
MAX. SUPPLY PRESSURE 150 PSI / 10.3 BAR

MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD562-TR2	3.5 cc	10:1	1 - 2.5	1/2 - M / 1/4 - F	1000 - 68.9	.25 - 2.5 / 1 - 9.5
HD562-3K-TR2	3.5 cc	30:1	1 - 2.5	1/2 - M / 1/4 - F	3000 - 207	.25 - 2.5 / 1 - 9.5

High Pressure Technologies, LLC.
 24895 Avenue RockefellerValencia, CA 91355
www.highpressuretech.com
 Telephone: (661) 257-7600, Fax: (661) 257-7062

HD562 / HD562-3K

TR2



To order check valve parts, use check valve designation & dash number.

EXAMPLE: Ball for MF4-316-2 Order MF4-316-2/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD562/ HD562-3K
PARTS LIST**

NO	NAME	PART NO.	MODEL
1	Stroke Adjuster	HD312-1	ALL
2	Lock Nut	100-2	ALL
3	O-Ring Seal	100-3 *	ALL
4	Air Chambers	200-4	HD562
		300-4	HD562-3K
5	O-Ring Seal	100-11 *	ALL
9	Piston Seals	200-9 *	HD562
		300-9 *	HD562-3K
10	Plunger	HD562-15 *	ALL
11	Return Spring	HD562-13 *	ALL
17	Oiler Housings	HD562-14	ALL
19	Hydraulic Chamber	HD562-29	ALL
18	Spring Cup	HD312-35	ALL
21	Chamber Bolt	D40-PVC-10 (8)	ALL
22	Bleeder	125-22	ALL
23	Pressure Chamber	HD562-23	ALL
25	Spring Cup	HD562-35	ALL
24	Locknut	D40-9 (8)	ALL
26	Diaphragm Spring	HD312-36 *	ALL
6	Piston Locknut	100-7	ALL
7	Pistons	200-8	HD562
		300-8	HD562-3K
13	Air Chamber Rings	200-5	HD562
		300-5	HD562-3K
12	Faceplates	HD562-6	HD562
		HD562-3K-6	HD562-3K
14	Back Up Ring	HD562-19 * +	ALL
15	Pressure Seal	HD562-20 * +	ALL
16	O-Ring Seal	100-21 *	ALL
20	Diaphragm	HD562-32 *	ALL
	1oz. Grease	*	ALL
	1oz. Oil	HD187-24 *	ALL

* = Included in Repair Kit

+ = Included in Seal Set

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD562-50	REPAIR KIT	HD562
HD562-3K-50	REPAIR KIT	HD562-3K
HD562-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

MATERIAL SPECIFICATIONS

NAME	STANDARD	OPTION
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Spring Cup	316 SS	
Diaphragm Spring	Inconel	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

AIR / GAS USAGE SCF/DAY AT 1 STROKE PER MINUTE

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD562	8.9	14.4	19.9	25.5	30.0	36.5
HD562-3K	15.7	25.6	35.4	45.3	55.1	64.9

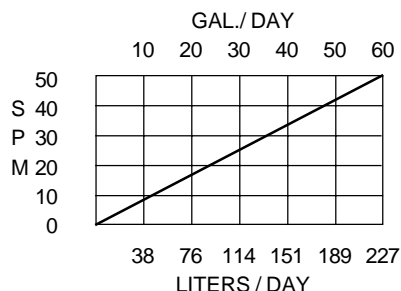
Table constant multiplied by stroke rate = SCFD
 Example: HD562 (operated at 50 psi) Multiply 14.4 by 20 SPM = 288 SCFD

INSTALLATION INSTRUCTIONS

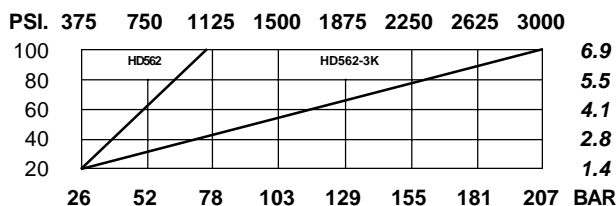
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill pump with oil provided, oil will flow out of the bleed hole to regulate oil level.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate for approximate strokes per minute.
 (See volume graph)

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

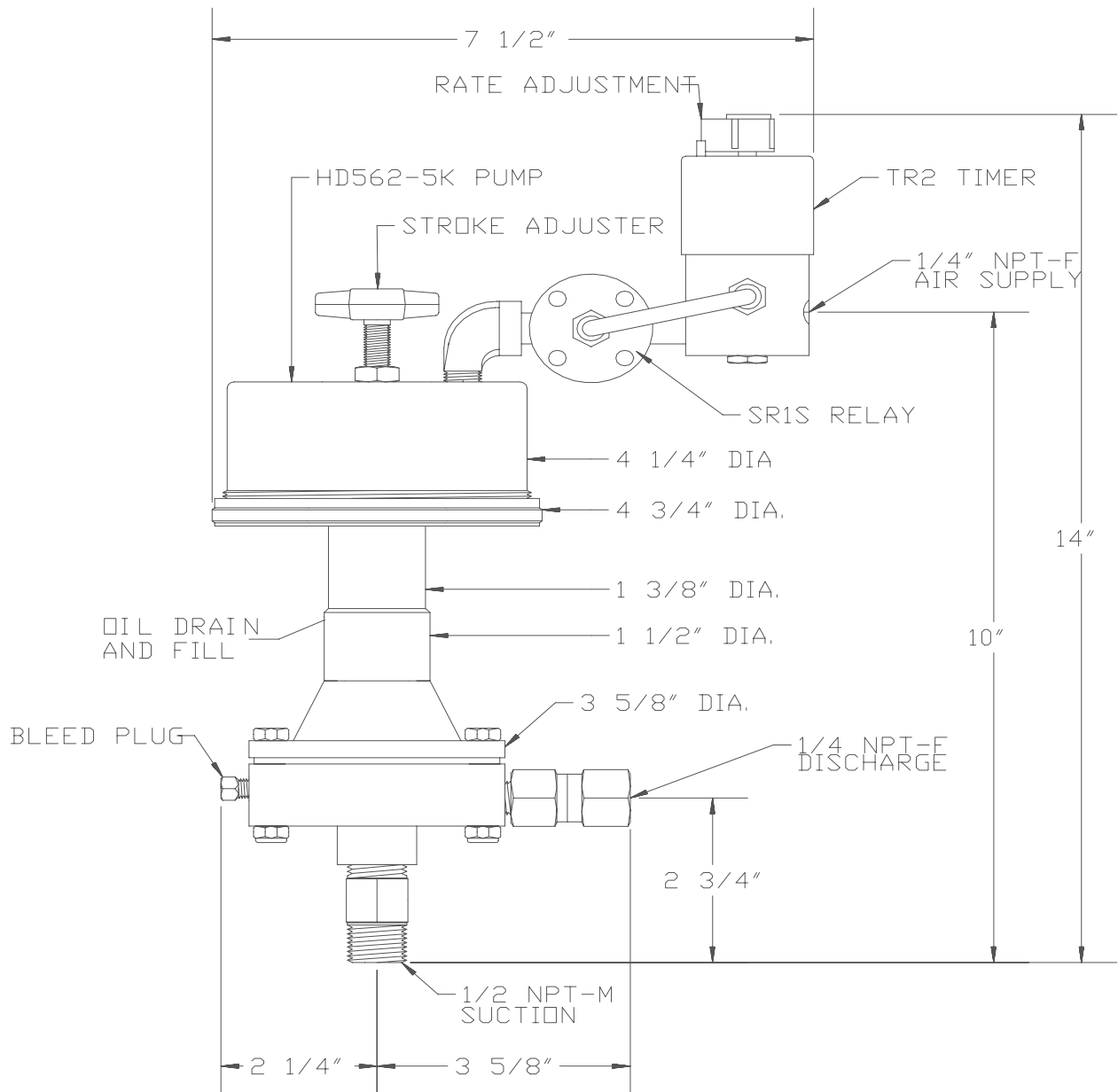


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD562-5K-TR2-SR1S

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP

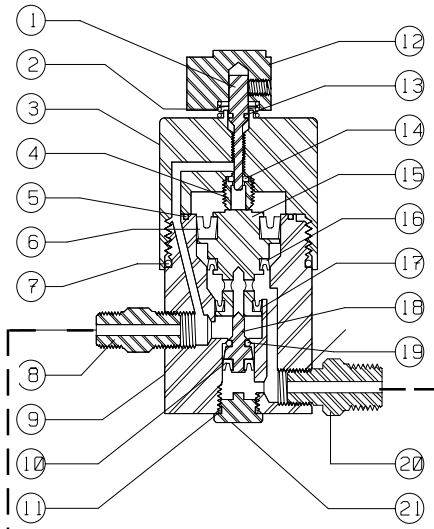
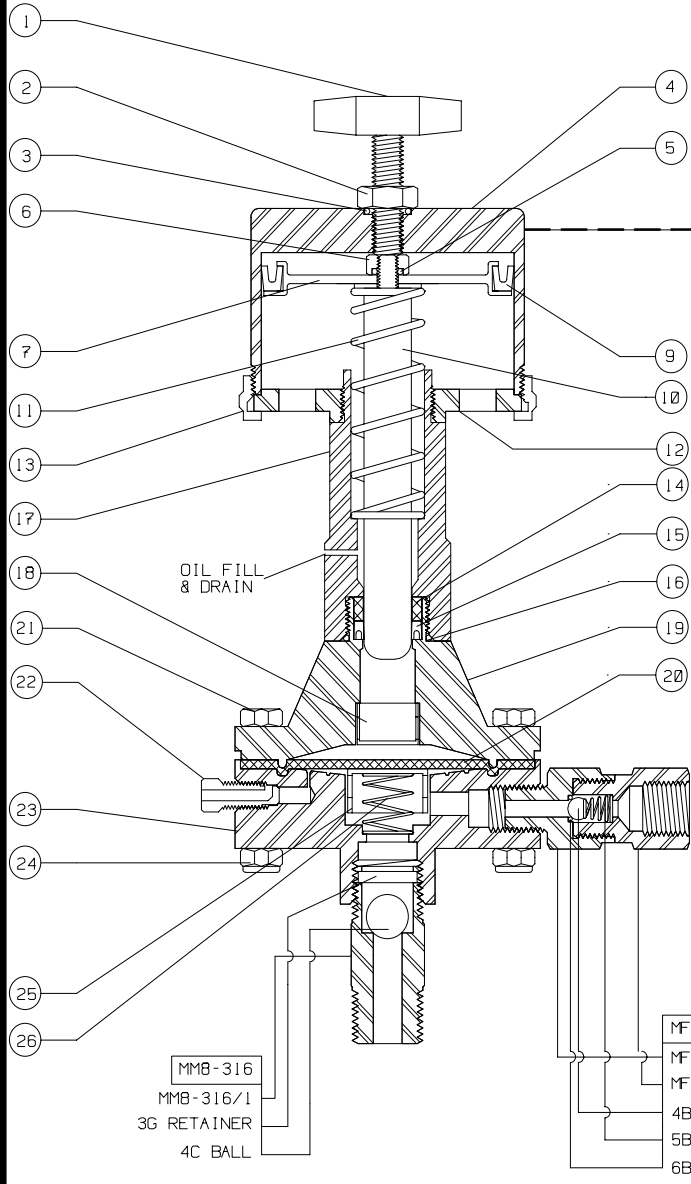


MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD562-5K	3.5 cc	50:1	1 - 2.5	1/2 - M / 1/4 - F	5000 - 345	.25 - 2.5 / 1 / 9.5

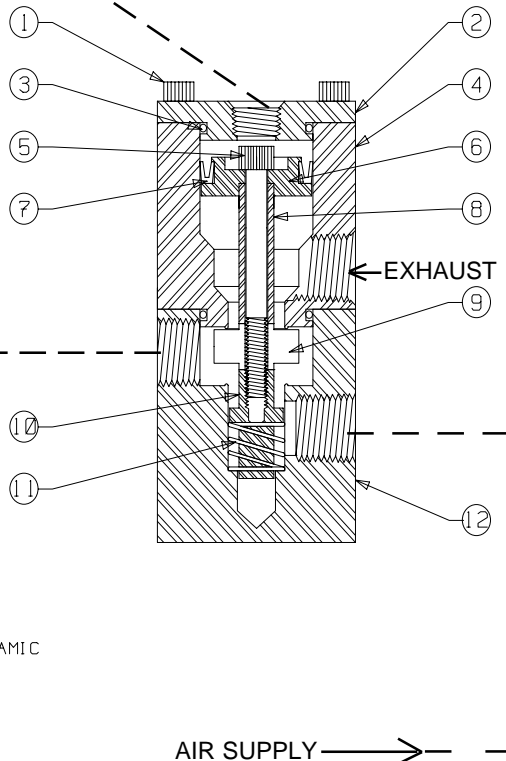
High Pressure Technologies, LLC.
 24895 Avenue RockefellerValencia, CA 91355
www.highpressuretech.com
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HD562-5K

TR2



SR1S



MMB-316
MMB-316/1
3G RETAINER
4C BALL

MF4-316-2
MF4-316-2/1
MF4-316-2/2
4B BALL CERAMIC
5B SPRING
6B SEAL

To order check valve parts; use check valve designation & dash number.
EXAMPLE: Ball for MF4-316-2 Order MF4-316-2/4

Keep all rubber goods lubricated with Morgan Products grease or equivalent.

**MODEL HD562-5K
PARTS LIST**

NO	NAME	PART NO.
1	Stroke Adjuster	HD312-1
2	Lock Nut	100-2
3	O-Ring Seal	100-3 *
4	Air Chamber	400-4
5	O-Ring Seal	100-11 *
6	Piston Locknut	100-7
7	Piston	400-8
9	Piston Seals	400-9 *
10	Plunger	HD562-15 *
11	Return Spring	HD562-13 *
12	Faceplate	HD562-5K-6
13	Air Chamber Ring	400-5
14	Back Up Ring	HD562-19 * +
15	Pressure Seal	HD562-20 * +
16	O-Ring Seal	100-21 *
17	Oiler Housings	HD562-14
18	Spring Cup	HD312-35
19	Hydraulic Chamber	HD562-29
20	Diaphragm	HD562-32 *
21	Chamber Bolt	HD-5K-36 (8)
22	Bleeder	125-22
23	Pressure Chamber	HD562-23
24	Locknut	HD-5K-37 (8)
25	Spring Cup	HD562-35
26	Diaphragm Spring	HD312-36 *
	1oz. Grease	*
	1oz. Oil	HD187-24 *

* = Included in Repair Kit

+ = Included in Seal Set

MATERIAL SPECIFICATIONS

NAME	STANDARD	OPTION
Piston Seals	Buna - N	Viton
Plunger	17-4 SS	
Return Spring	Teflon Coated Inconel	
Back Up Ring	PVC	
Pressure Seal	Graphite Filled Teflon	
Diaphragm	Teflon Faced Buna-N	
Chamber Bolt	18-8 SS	
Bleeder	316 SS	
Pressure Chamber	316 SS	
Spring Cup	316 SS	
Diaphragm Spring	Inconel	
Check Valve Bodies	316 SS	
Check Valve Seals	Teflon	
Check Valve Balls	Ceramic	
Check Valve Springs	Inconel	
All Other Parts	303 or 304 SS	

**MODEL TR2
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Metering Valve	TR2-3	303 SS
2	Knob Spring	TR2-2	302 SS
3	Upper Body	TR2-5	303 SS
4	Metering Seat	TR2-6	18-8 SS
5	O-Ring	TR2-13 *	BUNA-N
6	Upper Seal	TR2-10 *	VITON
7	O-Ring	TR2-14 *	BUNA-N
8	1/8" NPT Nipple	TR2-22	303 SS
9	Lower Body	TR2-8	303 SS
10	Poppet Seal	TR2-17 *	VITON
11	Plug Seal	TR2-18 *	BUNA-N
12	Knob	TR2-1	PLASTIC
13	O-Ring	TR2-4 *	BUNA-N
14	Teflon Seal	TR2-7 *	TEFLON
15	Piston	TR2-9	NYLON
16	Middle Seal	TR2-11 *	VITON
17	Lower Seal	TR2-12 *	VITON
18	Poppet	TR2-15	PVC
19	Poppet O-Ring	TR2-16 *	VITON
20	1/8 x 1/4 NPT Nipple	TR2-21	303 SS
21	Plug	TR2-19	303 SS
	1oz. Grease	*	

* = Included in Repair Kit

**MODEL SR1S
PARTS LIST**

NO	NAME	PART NO.	MATERIAL
1	Cap Screw	SR1S-1 (4)	18-8 SS
2	Cap	SR1S-2	303 SS
3	O-Ring	SR1S-3 (2)*	Buna-N
4	Upper Valve Body	SR1S-4	303-SS
5	Bolt	SR1S-5	18-8 SS
6	Drive Piston	SR1S-6	303 SS
7	Piston Seal	SR1S-7 *	Buna-N
8	Upper Shaft	SR1S-9	304 SS
9	Valve Seat	SR1S-11*	Buna-N & Alum.
10	Lower Shaft	SR1S-14	303 SS
11	Spring	SR1S-15*	302 SS
12	Lower Valve Body	SR1S-16	303 SS

* = Included in Repair Kit

REPAIR KITS AND SEAL SET

PART NO.	DESCRIPTION	MODEL
HD562-5K-50	REPAIR KIT	HD562-5K
HD562-48	SEAL SET	ALL
TR2-50	REPAIR KIT	TR2
SR1S-50	REPAIR KIT	SR1S

**AIR / GAS USAGE
SCF/DAY AT 1 STROKE PER MINUTE**

MODEL	25 psi	50 psi	75 psi	100 psi	125psi	150 psi
HD562-5K	28.0	45.5	63.0	80.5	98.0	115.5

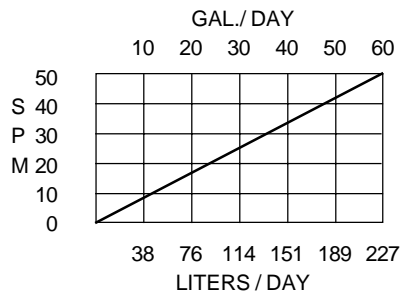
Table constant multiplied by stroke rate = SCFD
 Example: HD562-5K (operated at 50 psi) Multiply 45.5 by 20 SPM = 910 SCFD

INSTALLATION INSTRUCTIONS

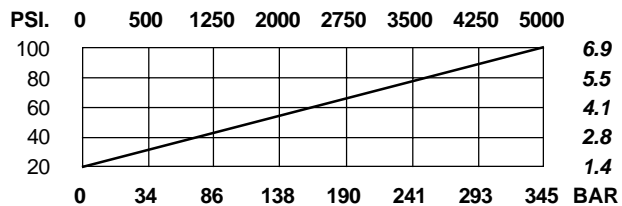
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill pump with oil provided, oil will flow out of the bleed hole to regulate oil level.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See Discharge pressure graph.)
8. Set cycle rate for approximate strokes per minute.
 (See volume graph)

CAUTION: Use only light hydraulic oil.

VOLUME



DISCHARGE PRESSURE

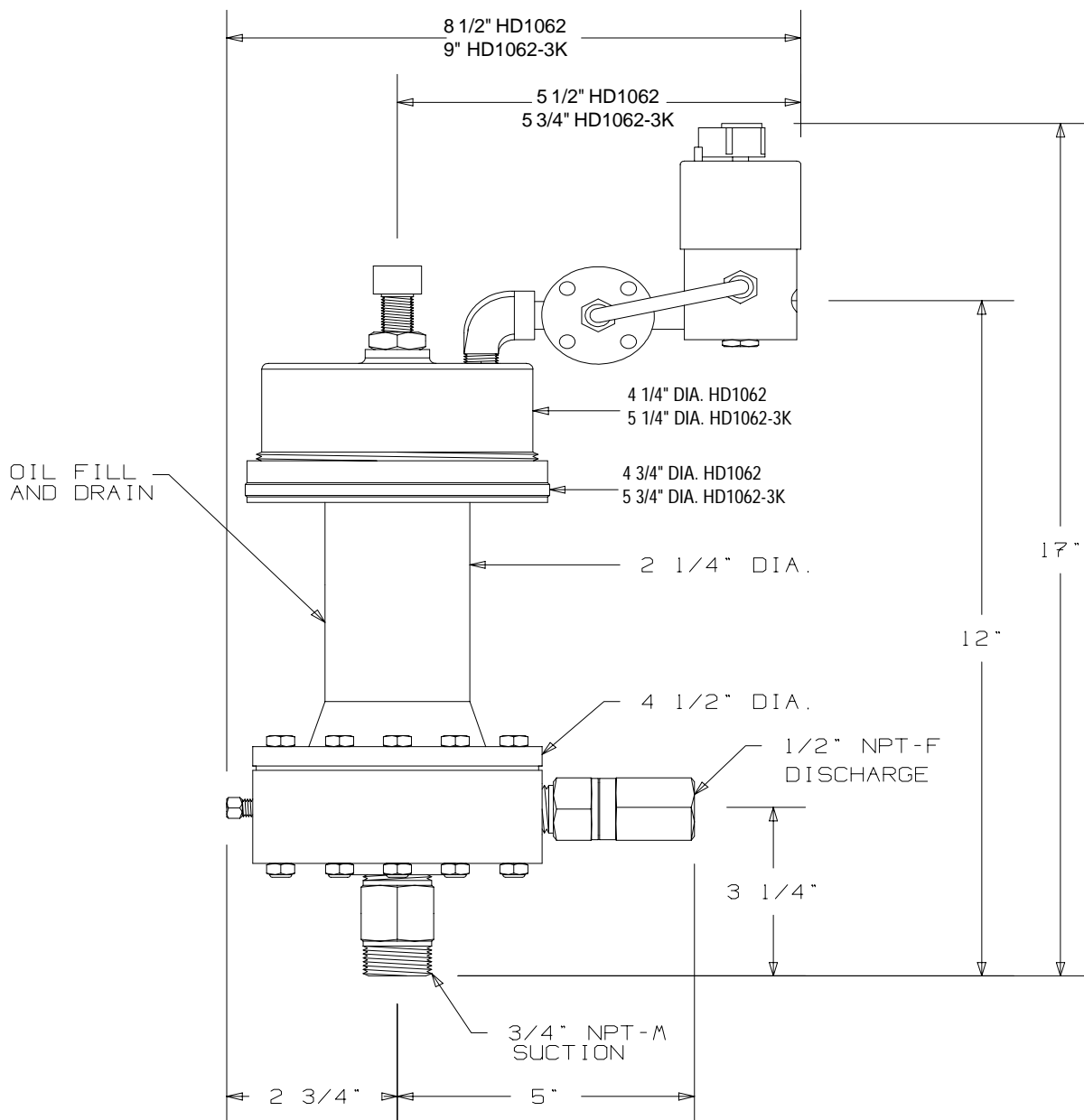


MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL HD1062-TR2-SR1S / HD1062-3K-SR1S-TR2

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



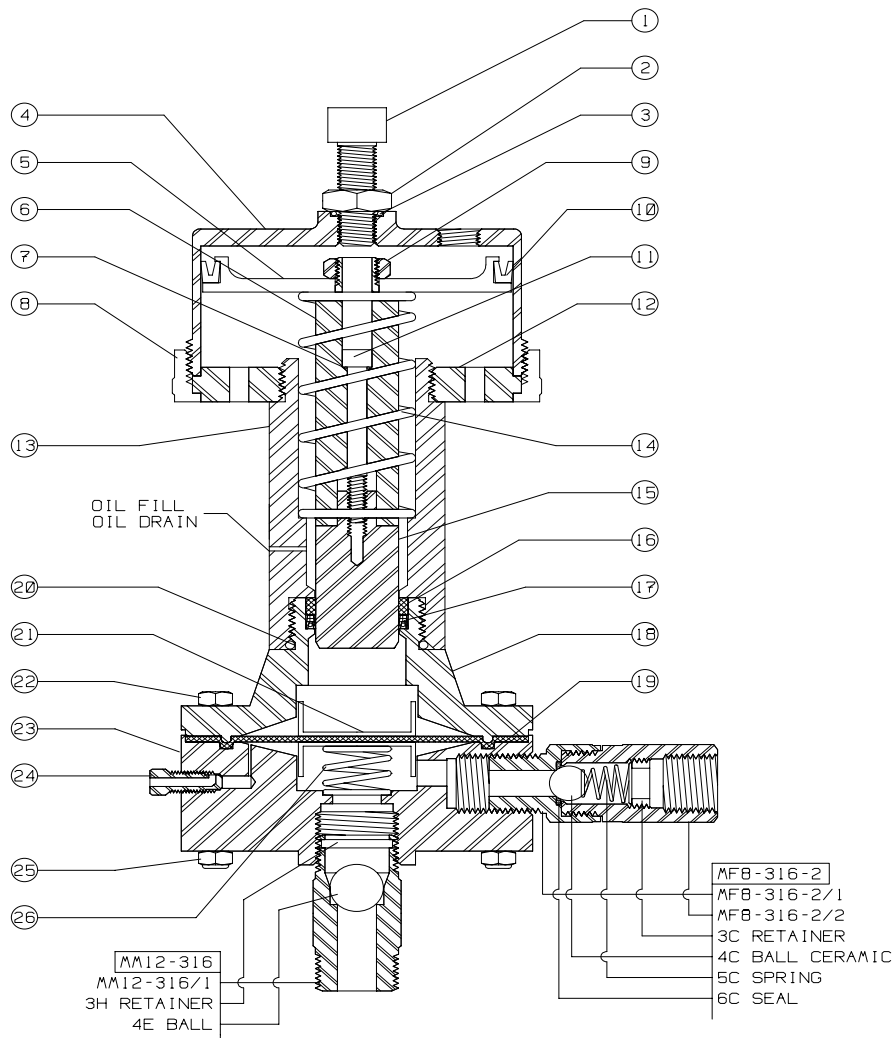
MODEL	PUMP	STROKE	CONNECTIONS	MAXIMUM	OUTPUT
(WITH TIMER)	DISPLACEMENT	LENGTH	ALL NPT	DISCHARGE	PER HOUR
		in. - cm.	INPUT / OUTPUT	PSI - BAR	GAL. / LTS.
HD1062-TR2-SR1S	12.8 cc	10:1	3/4 - M / 1/2 - F	1000 - 68.9	1 - 10.4 / 3.9 - 39
HD1062-3K-TR2-SR1S	12.8 cc	20:1	3/4 - M / 1/2 - F	3000 - 206.8	1 - 10.4 / 3.9 - 39

High Pressure Technologies, LLC.
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model HD1062



NO	NAME	PART NO.
1	Stroke Adjuster	3000-1
2	Locknut	3000-2
3	O-Ring Seal	3000-3 *
4	Air Chamber	4000-4
5	Piston	4000-8
6	Plunger Guide	HD1062-10
7	O-Ring Seal	100-11 *
8	Air Chamber Ring	4000-5
9	Piston Locknut	3000-7
10	Piston Seal	400-9 *
11	Plunger Bolt	3000-26
12	Faceplate	4000-6
13	Oiler Housing	HD1062-14
14	Return Spring	3000-13 *
15	Plunger	HD1062-15*
16	Back-up Ring	HD1062-19*
17	Pressure Seal	HD1062-20*
18	Hydraulic Chamber	HD1062-29
19	Diaphragm	HD1062-32*
20	Body O-Ring Seal	3000-21 *
21	Spring Cup	HD1062-35(2)
22	Chamber Bolt	HD1062-30(10)
23	Fluid Chamber	HD1062-23
24	Bleeder	125-22
25	Locknut	D40-9 (10)
26	Diaphragm Spring	HD1062-36*
N/S	4 oz. Oil	HD1062-24*
N/S	Elbow	3000-27
N/S	1oz. Grease	*
N/S	1/4-20 Cap Screw	4000-28
N/S	1/4 Washer	4000-29
	Repair Kit	HD1062-50
	Seal Set	HD1062-48

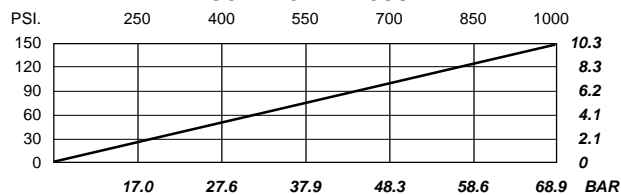
* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

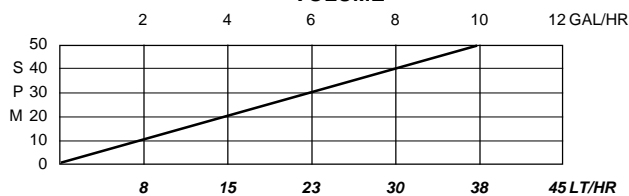
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided, until oil flows out of bleed hole.** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required. (See Discharge pressure graph.)
8. Set cycle rate in strokes per minute. (See volume graph)

CAUTION: Use only light hydraulic oil.

DISCHARGE PRESSURE



VOLUME

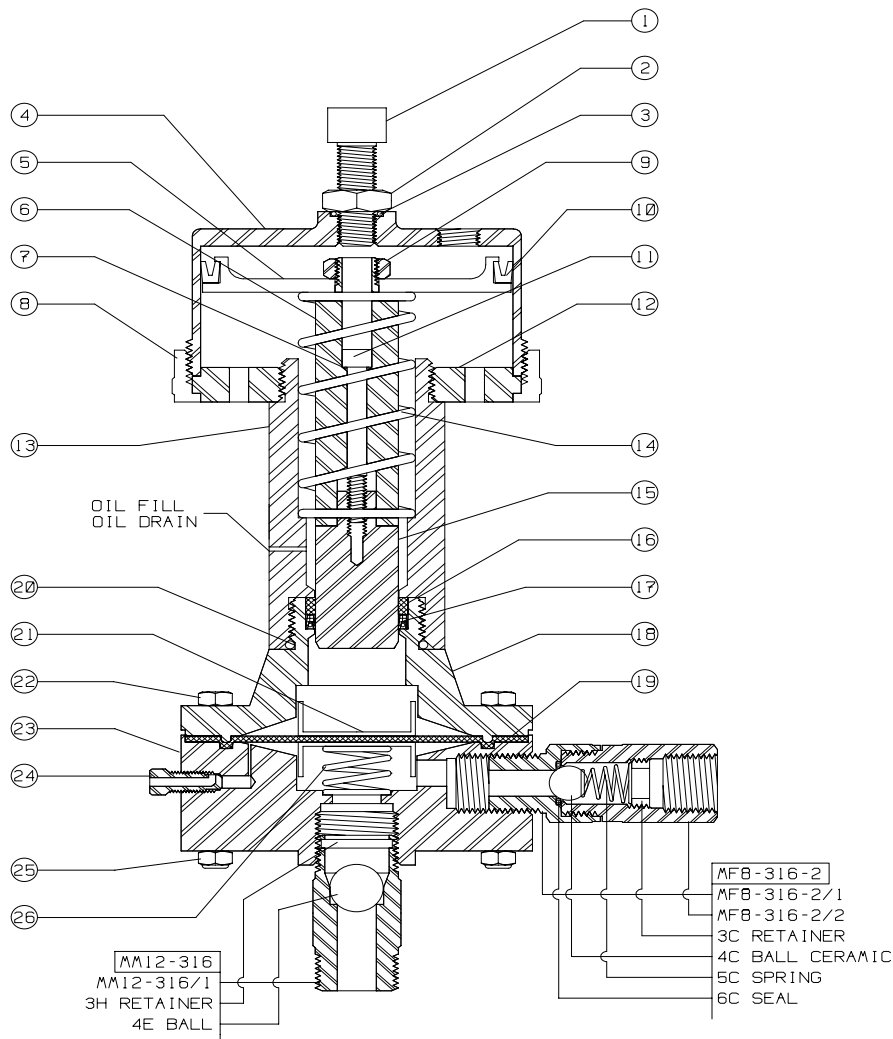


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model HD1062-3K



NO	NAME	PART NO.
1	Stroke Adjuster	3000-1
2	Locknut	3000-2
3	O-Ring Seal	3000-3 *
4	Air Chamber	HD1062-3K-4
5	Piston	HD1062-3K-8
6	Plunger Guide	HD1062-10
7	O-Ring Seal	100-11 *
8	Air Chamber Ring	HD1062-3K-5
9	Piston Locknut	3000-7
10	Piston Seal	HD1062-3K-9*
11	Plunger Bolt	3000-26
12	Faceplate	HD1062-3K-6
13	Oiler Housing	HD1062-14
14	Return Spring	3000-13 *
15	Plunger	HD1062-15*
16	Back Up Ring	HD1062-19*
17	Pressure Seal	HD1062-20*
18	Hydraulic Chamber	HD1062-29
19	Diaphragm	HD1062-32*
20	O-Ring Seal	3000-21 *
21	Spring Cup	HD1062-35(2)
22	Chamber Bolt	HD1062-30(10)
23	Fluid Chamber	HD1062-23
24	Bleeder	125-22
25	Locknut	D40-9 (10)
26	Diaphragm Spring	HD1062-36*
N/S	4 oz. Oil	HD1062-24*
N/S	Elbow	3000-27
N/S	1oz. Grease	*
N/S	1/4-20 Cap Screw	4000-28
N/S	1/4 Washer	4000-29
	Repair Kit	HD1062-3K-50
	Seal Set	HD1062-48

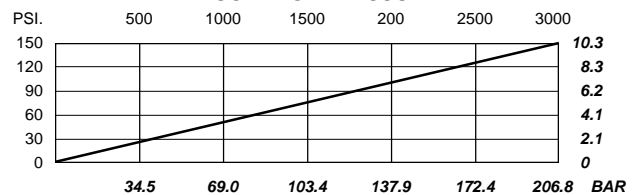
* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

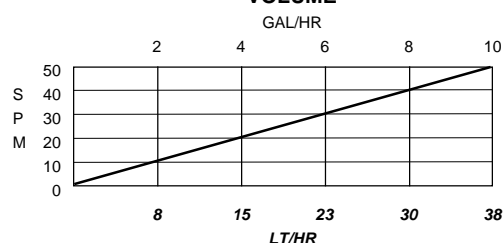
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided, until oil flows out of bleed hole.** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required. (See Discharge pressure graph.)
8. Set cycle rate in strokes per minute. (See volume graph)

CAUTION: Use only light hydraulic oil.

DISCHARGE PRESSURE



VOLUME



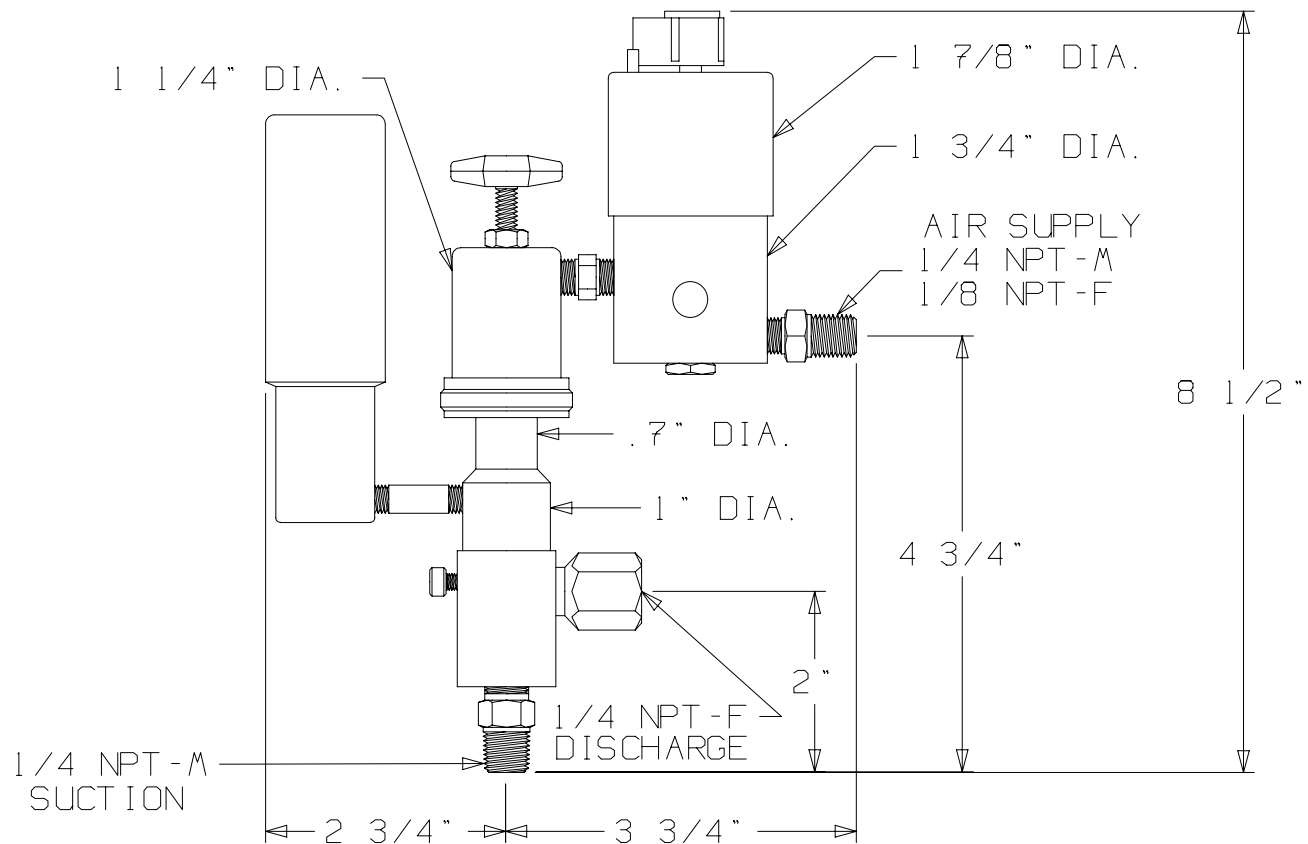
High Pressure Technologies, LLC.
 24895 Avenue RockefellerValencia, CA 91355
 Telephone: (661) 257-7600, Fax: (661) 257-7062

MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 55DS-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Net Weight 5 Pounds
2.3 Kilograms

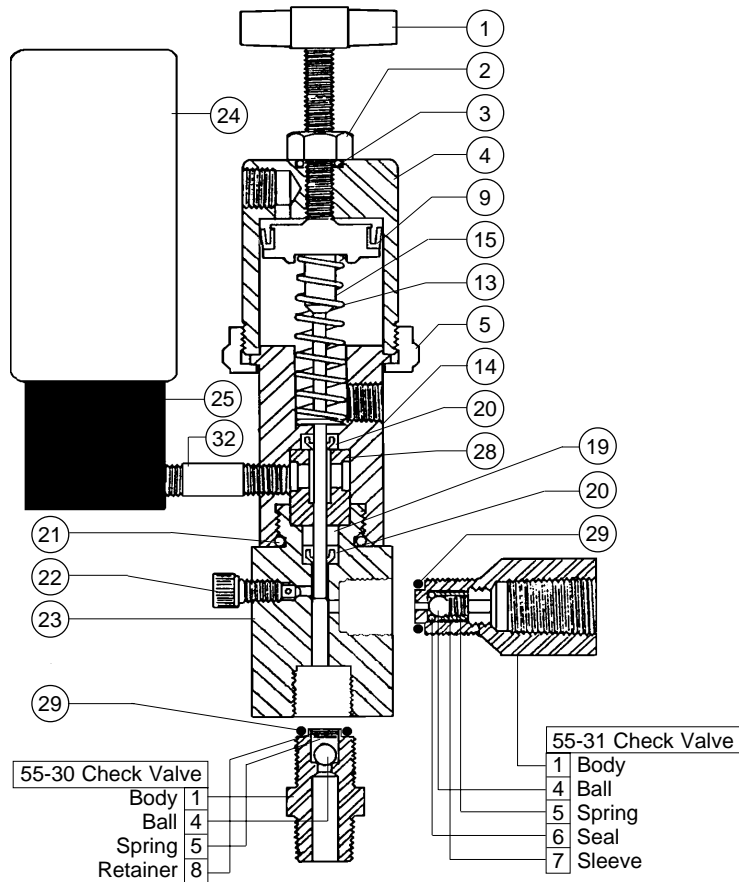
MODEL (WITH TIMER)	PUMP DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
55DS -TR2	.2cc	54:1	3/4 - 1.91	1/4 - M / 1/4 - F	8100 - 558	.01 - .12 / .05 - .46

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 55DS



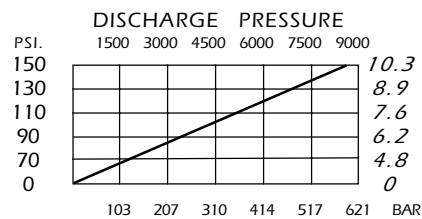
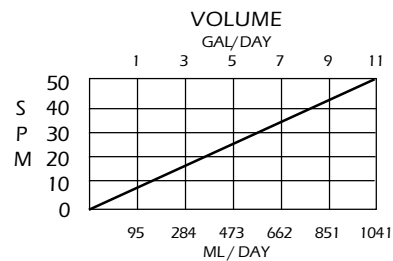
NO	NAME	PART NO.
1	Stroke Adjuster	50-1
2	Locknut	50-2
3	O-Ring Seal	100-11 *
4	Air Chamber	50-4
5	Chamber Ring	50-5
9	Piston Seal	50-9 *
13	Return Spring	50-13 *
14	Oil Chamber	55-14
15	Plunger 17-4TN	50-15 *
	Optional Material Plunger 316 SS	55-17
19	Back-up Ring	50-19 * +
20	Pressure Seal	50-20 *+(2)
21	O-Ring	50-21 *
22	Bleeder	50-22
23	Fluid Chamber	55-23
24	2 oz. Oil	100-24 *
25	Reservoir	100-25
28	Seal Retainer	50-28
29	Check Valve Seal	50-29 * (2)
32	Nipple	100-32
	1oz. Grease	*
	Repair Kit: W/ 17-4TN Plunger	50-50
	W/ 316 SS Plunger	55-50
	Seal Sets:	
	TG	50-48
	Buna-N	50-48B
	Viton	50-48V
	Fluoraz	50-48F

* = Included in Repair Kit

+ = Included in Seal Set

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay
5. Fill oil reservoir with oil provided.
6. Open bleeder until chemical flows from bleeder.
7. Set regulator at 10 - 15 psi ABOVE the pressure required (See discharge pressure graph).
8. Set cycle rate in strokes per minute (See volume graph).



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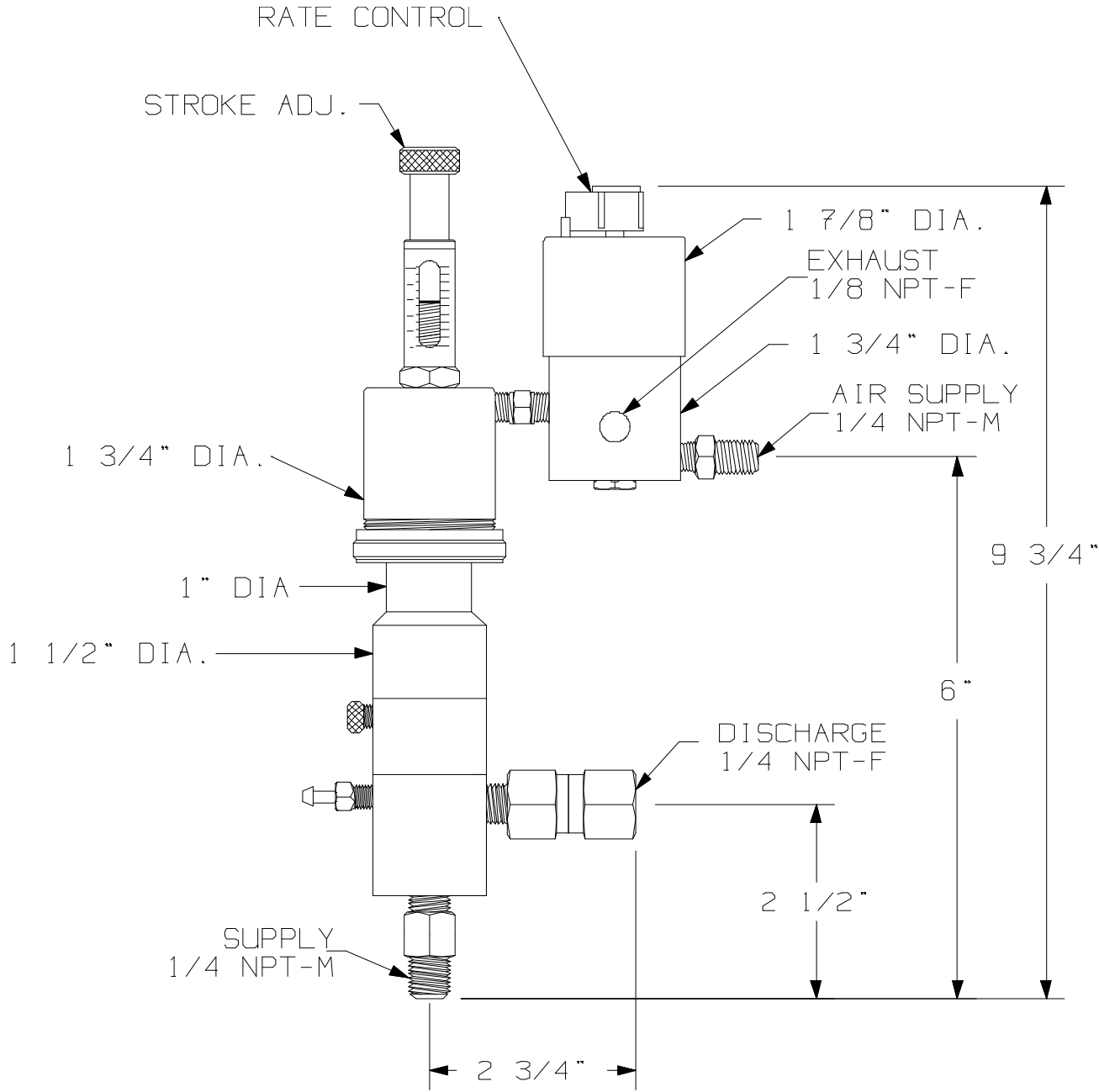
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 125DS-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH 1n. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. - LTS
225DS-TR2	.8 cc	31:1	1 - 2.54	1/4-M / 1/4-F	4650 - 320	.06-.63 / .24-2.4

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MORGAN PRODUCTS

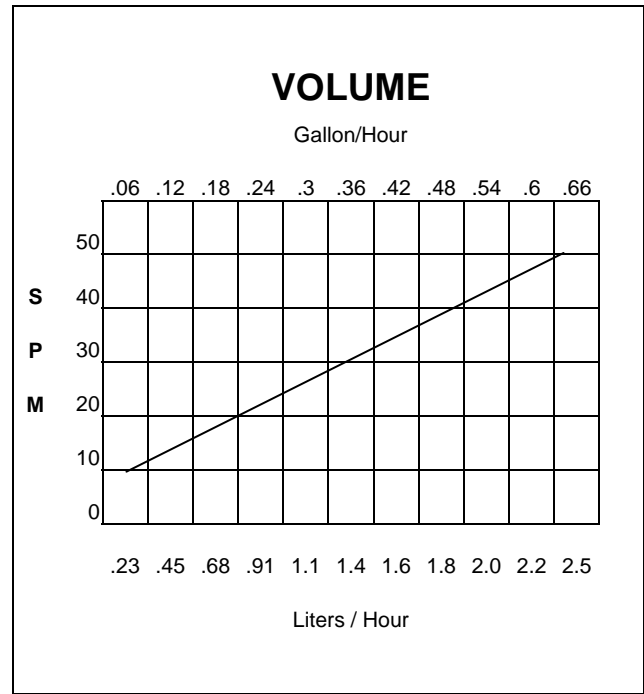
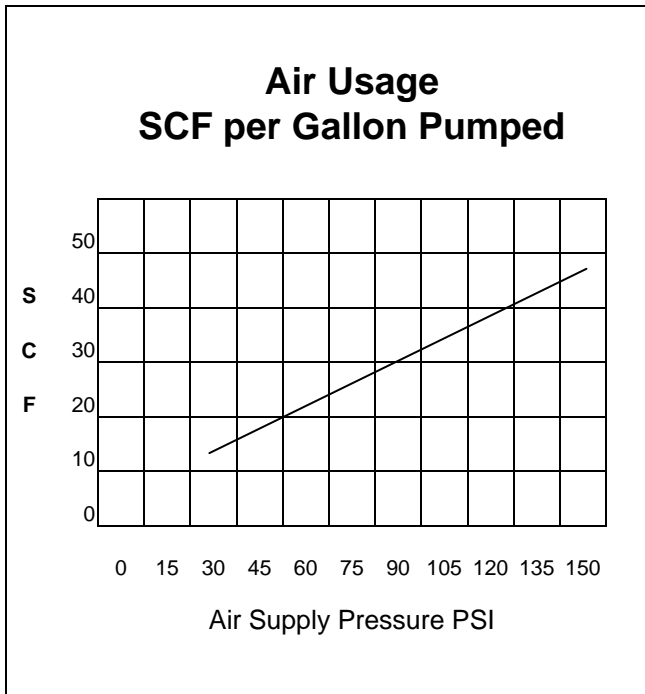
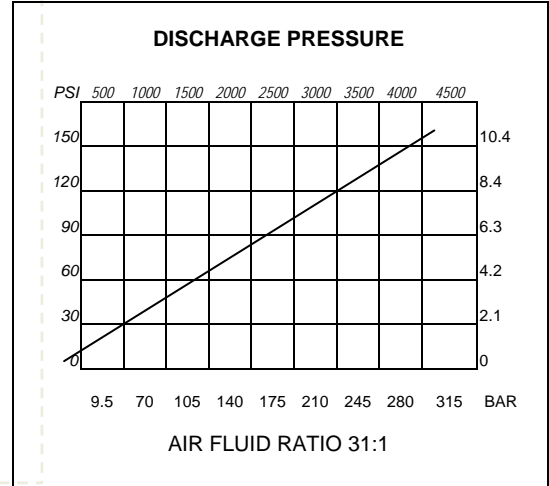
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 125DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

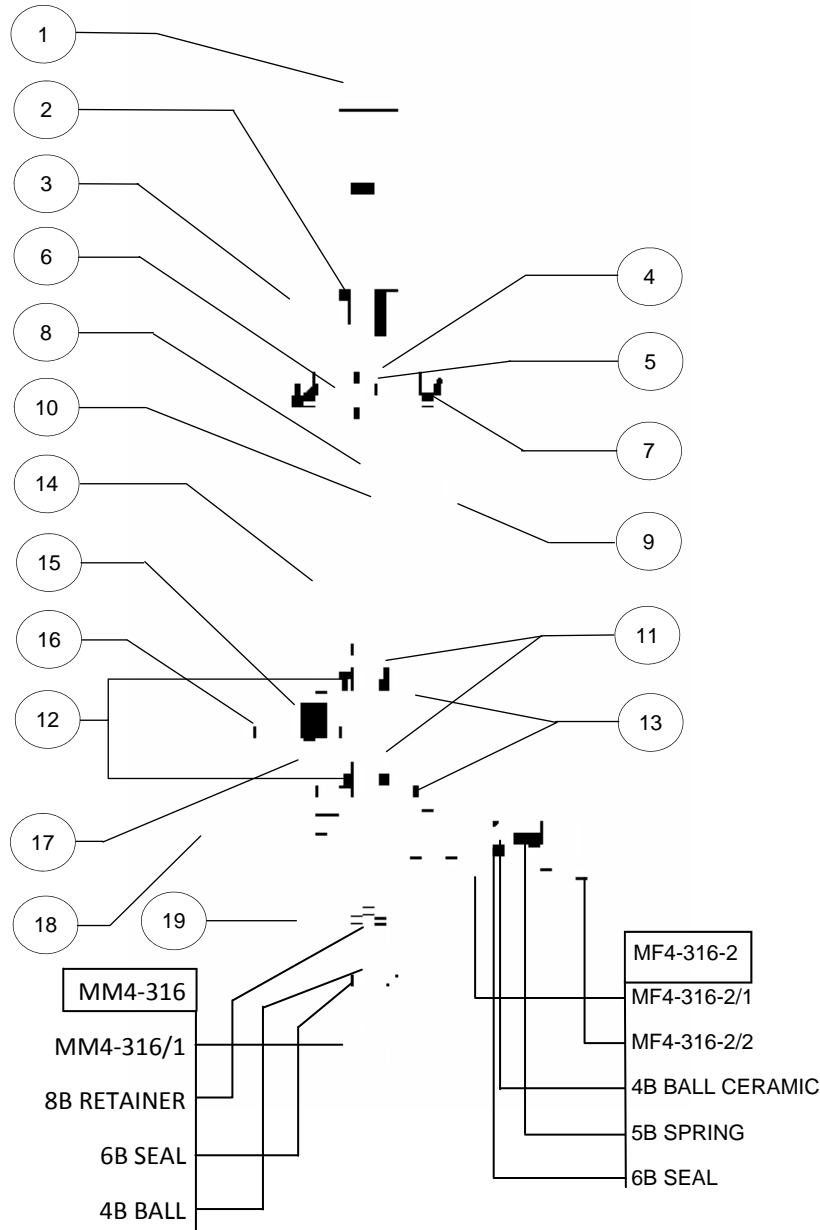
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.



MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 125DS



NO	NAME	PART NO.
1	Stroke Adjuster	100-1B
2	O-Ring Seal	100-3 *
3	Air Chamber	100-4
4	Piston Locknut	100-7
5	O-Ring Seal	100-11 *
6	Piston	100-8
7	Piston Seal	100-9 *
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	100-65 * 125-65 100-68
9	Air Chamber Ring	100-5
10	Return Spring	100-13 *
11	Back Up Ring	100-19 *(2)
12	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	100-20 +*(2) 100-20B 100-20V 100-20F
13	O-Ring Seal	100-21 *(2)
14	Oil Chamber	100-14
15	O-Ring Seal	100-30*
16	Grease Plug	125-31
17	Double Seal Body	125-64
18	Bleeder Plug	125-22
19	Fluid Chamber	125-23
	1/3 oz. Grease	*
	Repair Kits: 17-4TN Plunger 316 Plunger	100-70 125-70
	Seal Sets: TG Buna-N Viton Fluoraz	100-48 100-48B 100-48V 100-48F

* = Included in Repair Kit

+ = Included in Seal Set

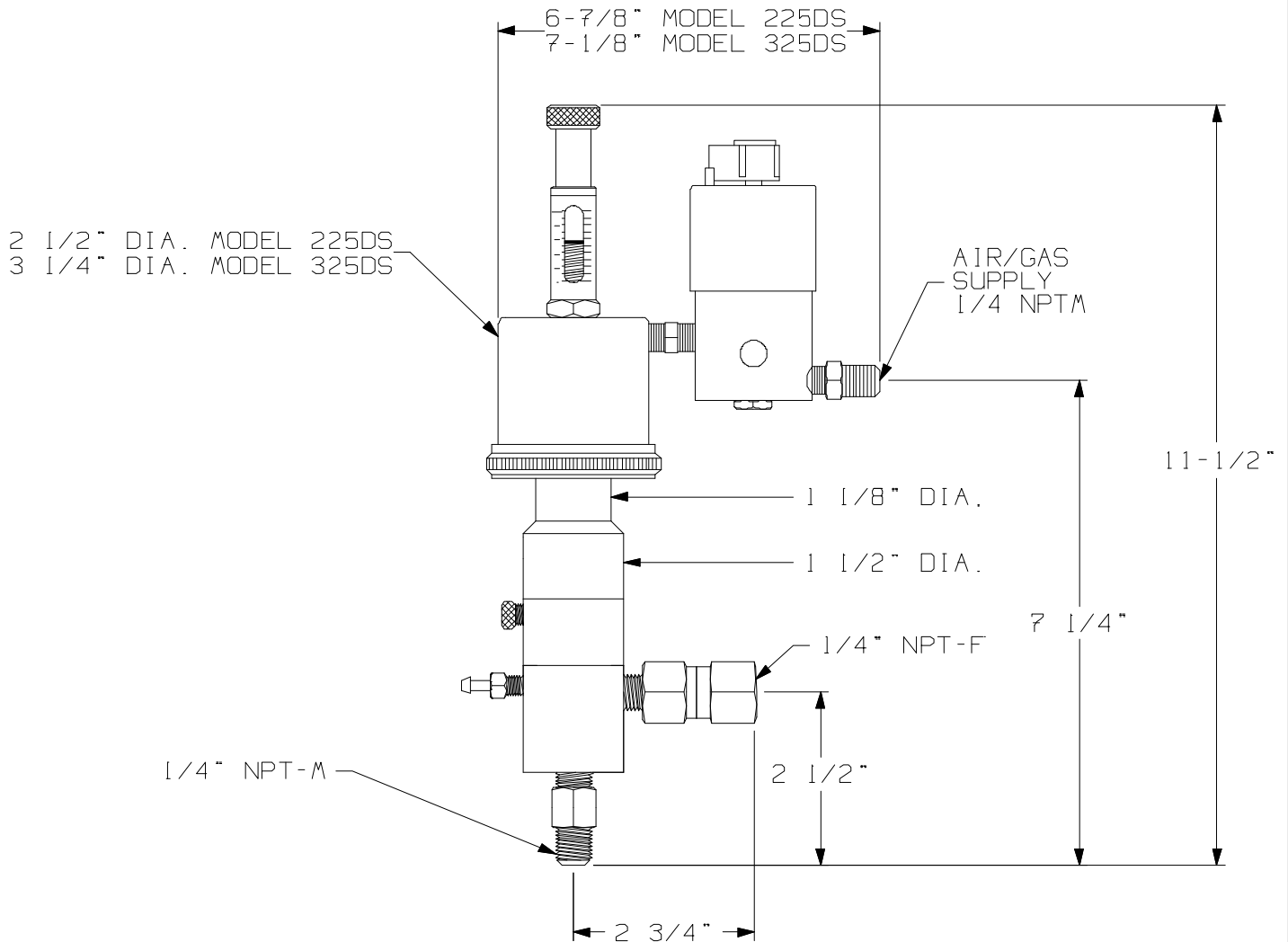
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 225DS / 235DS-TR2 AND 325DS/335DS-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH 1in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. - LTS
225DS-TR2	.8 cc	69:1	1 - 2.54	1/4-M / 1/4-F	10000 - 689	.06-.63 / .24-2.4
325DS-TR2	.8 cc	122:1	1 - 2.54	1/4-M / 1/4-F	15000 - 1034	.06-.63 / .24-2.4
235DS-TR2	1.8 cc	31:1	1 - 2.54	1/4-M / 1/4-F	4650 - 320	.15-1.5/.55-5.5
335DS-TR2	1.8 cc	54:1	1 - 2.54	1/4-M / 1/4-F	8100 - 558	.15-1.5/.55-5.5

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MORGAN PRODUCTS

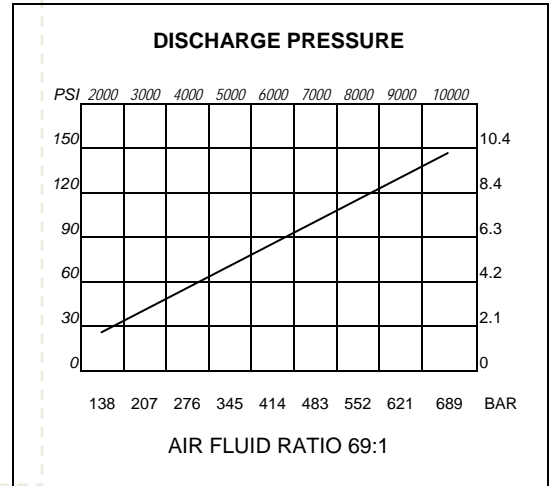
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 225DS

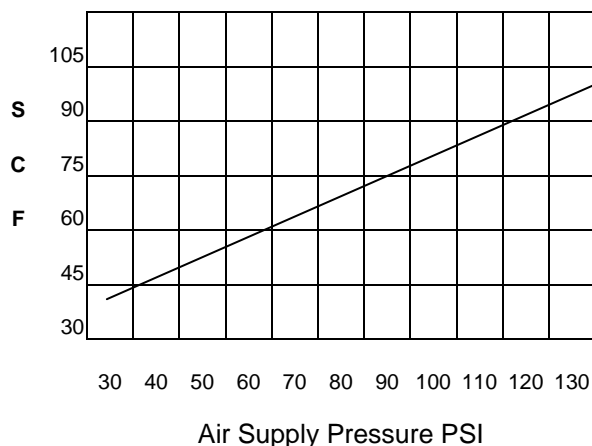
All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

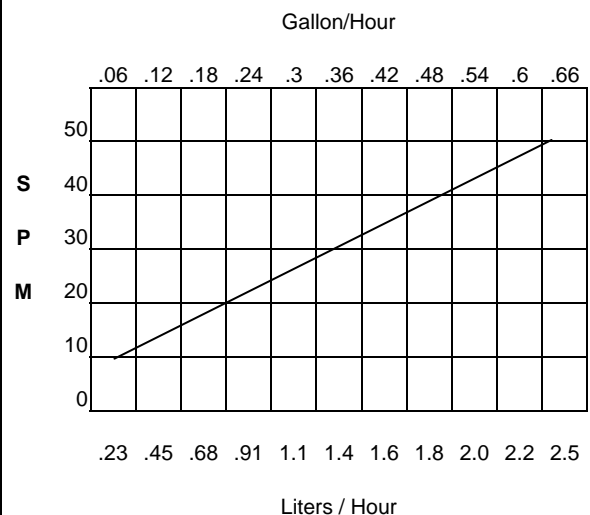
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.



Air Usage SCF per Gallon Pumped



VOLUME

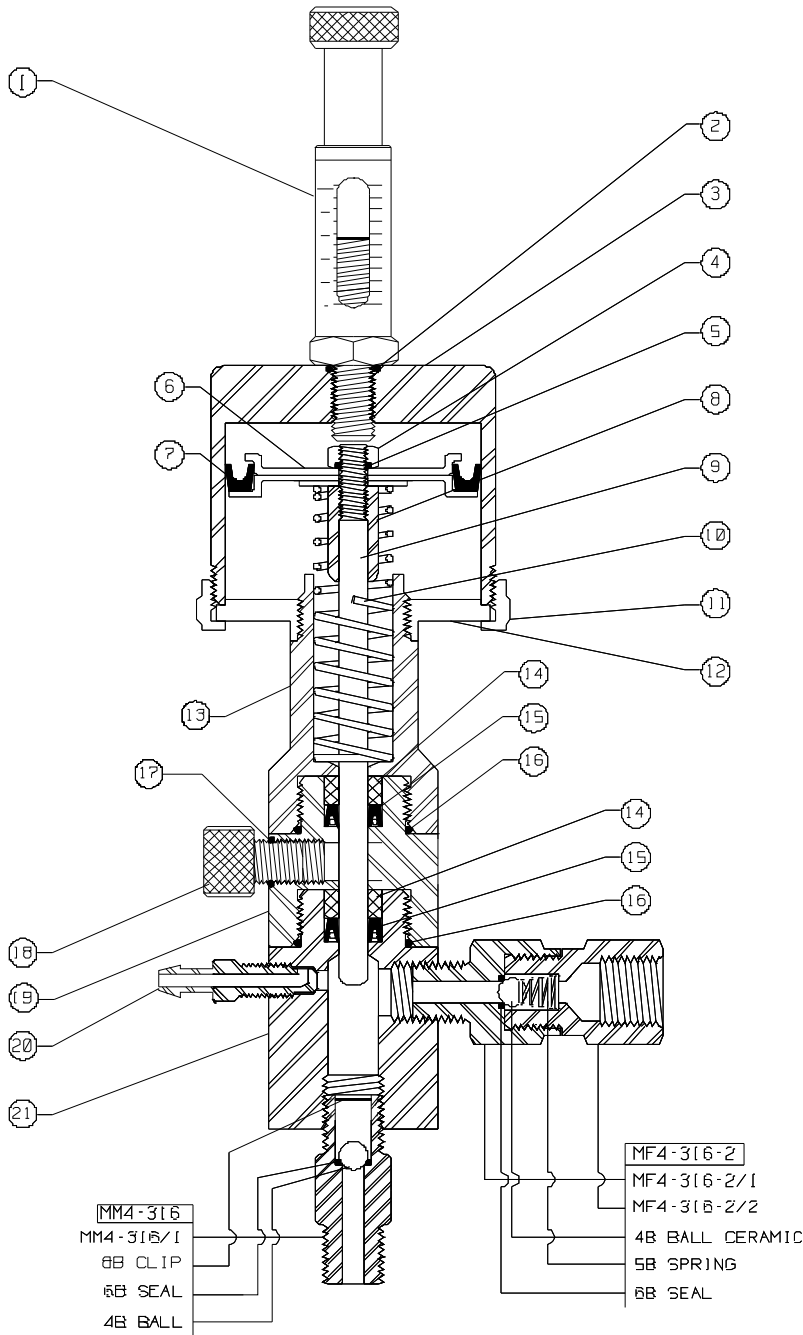


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 225DS / 325DS / 425DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	225DS 325DS 425DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	225DS 325DS 425DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	225DS 325DS 425DS
8	Spring Guide	200-10	ALL
9	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	100-65 * 125-65 100-68	ALL
10	Return Spring	200-13 *	ALL
11	Air Chamber Ring	200-5 300-5 400-5	225DS 325DS 425DS
12	Face Plates	200-6 300-6 400-6	225DS 325DS 425DS
13	Oil Chamber	200-14	ALL
14	Back Up Ring	100-19 *(2)	ALL
15	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	100-20 +(2) 100-20B 100-20V 100-20F	ALL
16	O-Ring Seal	100-21 *(2)	ALL
17	O-Ring Seal	100-30*	ALL
18	Grease Plug	125-31	ALL
19	Double Seal Body	125-64	ALL
20	Bleeder Plug	125-22	ALL
21	Fluid Chamber	125-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	425DS
	Lock Screw	400-28 (2)	425DS
	1/4" Washer	400-29 (2)	425DS
	Repair Kits: 17-4TN Plunger 316 Plunger	200-70 300-70 400-70 225-70 325-70 425-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	100-48 100-48B 100-48V 100-48F	+ = Included in Seal Set

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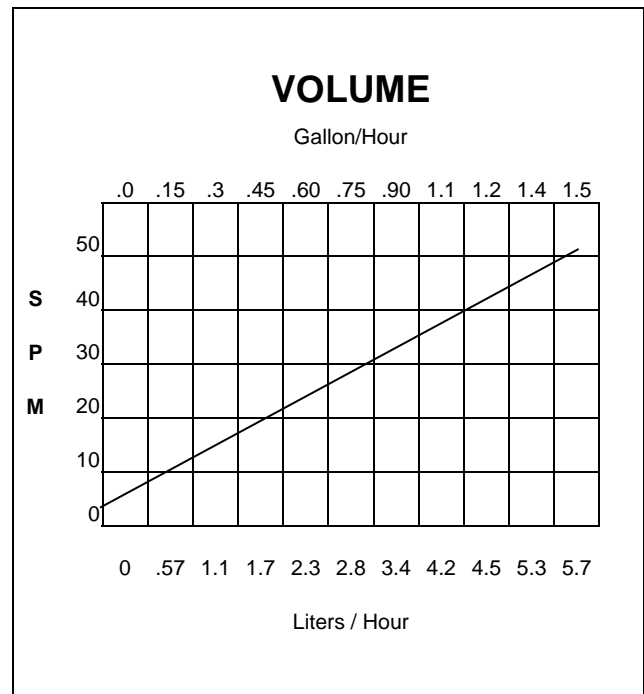
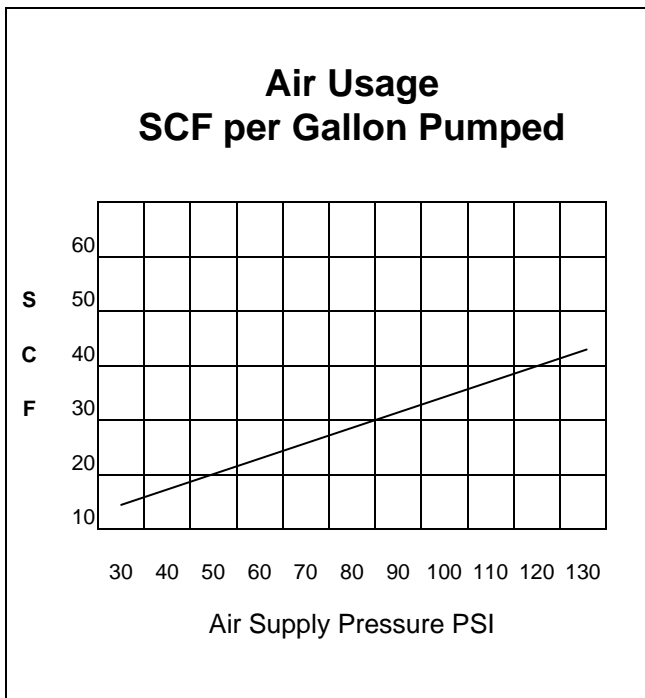
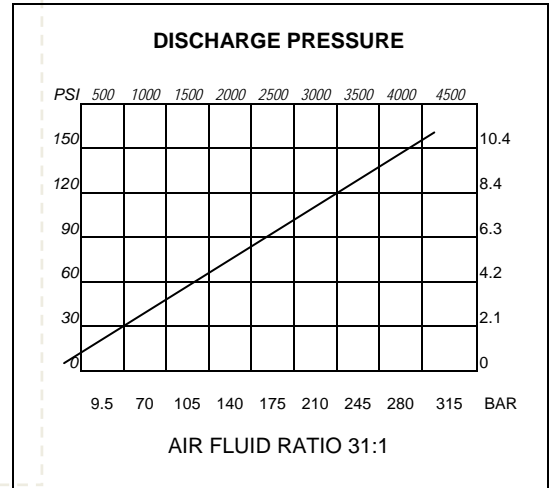
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 235DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

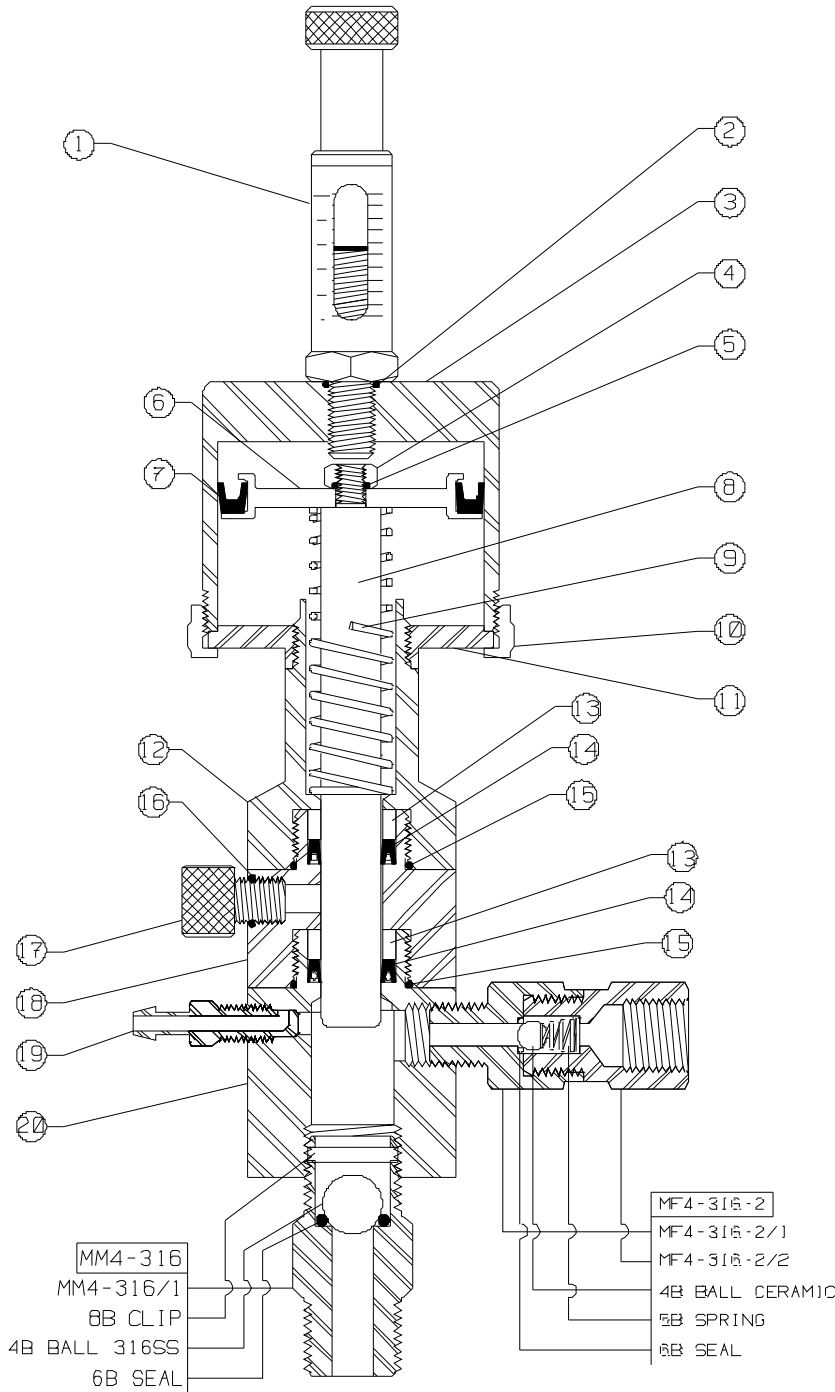
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.



MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 235DS / 335DS / 435DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	235DS 335DS 435DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8	235DS
7	Piston Seals	200-9 * 300-9 *	235DS 335DS
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	230-65 *	ALL
9	Return Spring	200-13 *	ALL
10	Air Chamber Ring	200-5 300-5	235DS 335DS
11	Face Plates	200-6 300-6	235DS 335DS
12	Oil Chamber	230-14	ALL
13	Back Up Ring	230-19 *(2)	ALL
14	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	230-20 +*(2) 230-20B 203-20V 203-20F	ALL
15	O-Ring Seal	100-21 *(2)	ALL
16	O-Ring Seal	100-30*	ALL
17	Grease Plug	125-30*	ALL
18	Double Seal Body	235-64	ALL
19	Bleeder Plug	125-22	ALL
20	Fluid Chamber	235-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	435DS
	Lock Screw	400-28 (2)	435DS
	1/4" Washer	400-29 (2)	435DS
	Repair Kits: 17-4TN Plunger	230-70 330-70 430-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton	230-48 230-48B 230-48V	+ = Included in Seal Set

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MORGAN PRODUCTS

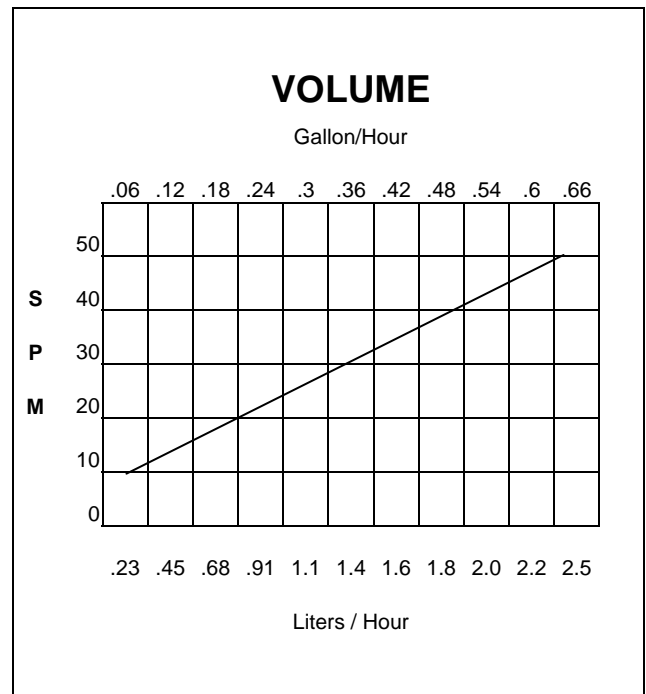
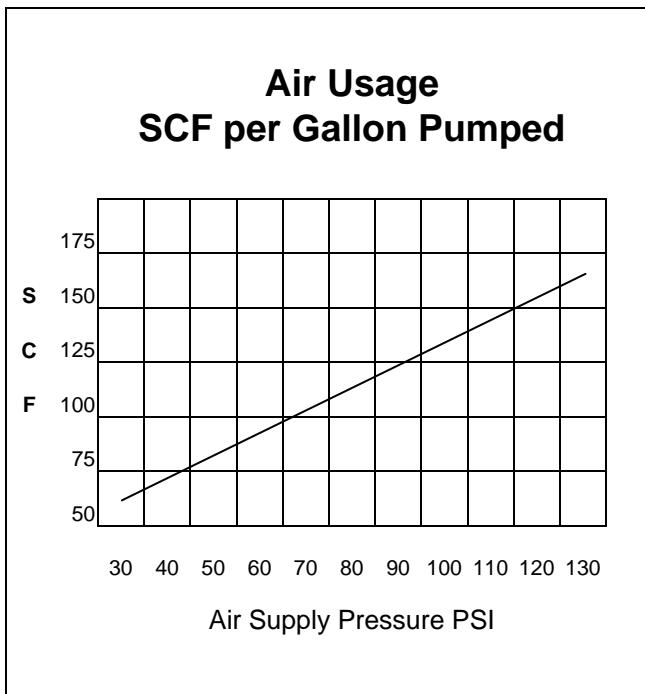
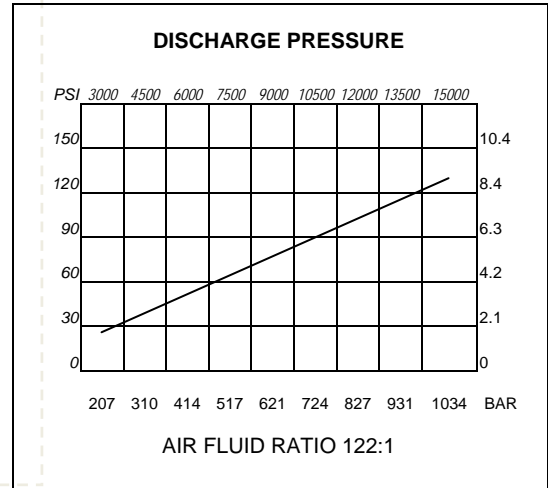
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 325DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.

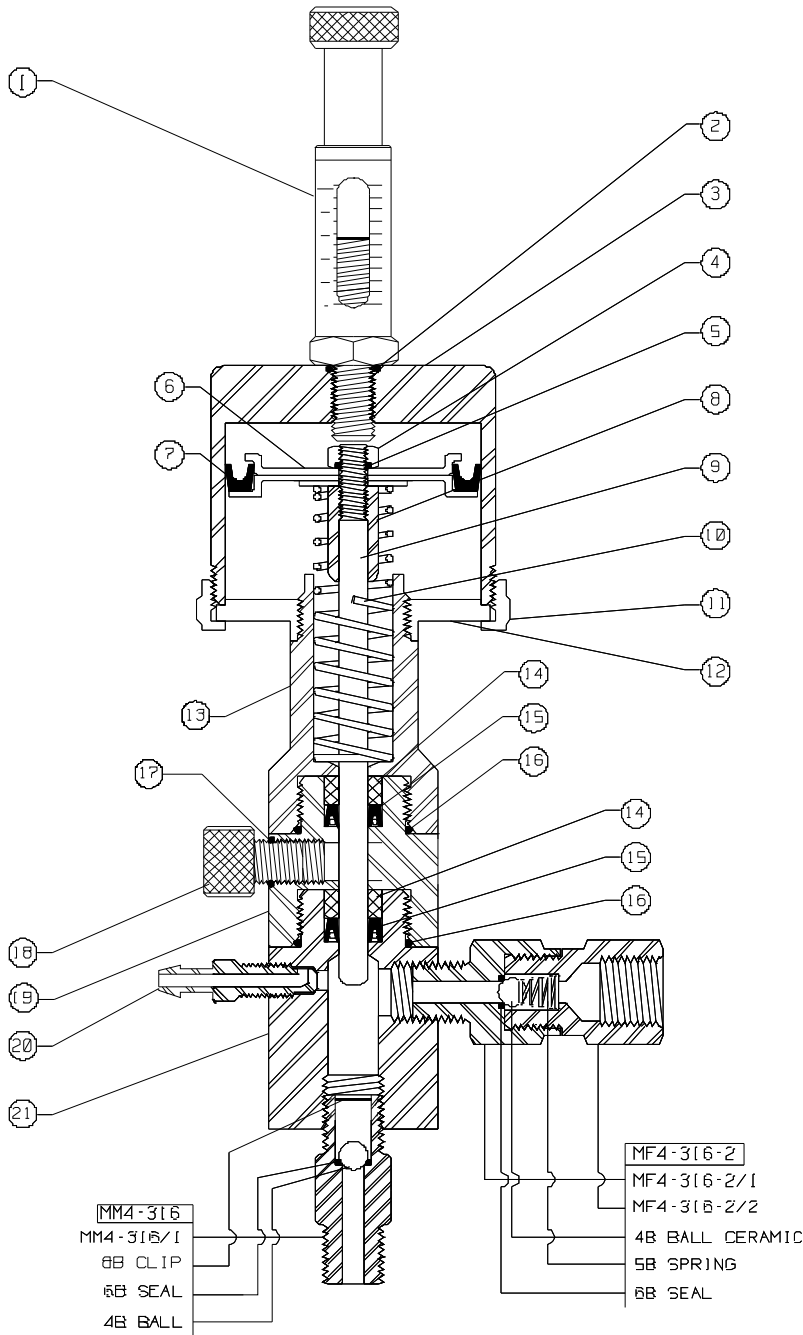


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 225DS / 325DS / 425DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	225DS 325DS 425DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	225DS 325DS 425DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	225DS 325DS 425DS
8	Spring Guide	200-10	ALL
9	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	100-65 * 125-65 100-68	ALL
10	Return Spring	200-13 *	ALL
11	Air Chamber Ring	200-5 300-5 400-5	225DS 325DS 425DS
12	Face Plates	200-6 300-6 400-6	225DS 325DS 425DS
13	Oil Chamber	200-14	ALL
14	Back Up Ring	100-19 *(2)	ALL
15	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	100-20 +*(2) 100-20B 100-20V 100-20F	ALL
16	O-Ring Seal	100-21 *(2)	ALL
17	O-Ring Seal	100-30*	ALL
18	Grease Plug	125-31	ALL
19	Double Seal Body	125-64	ALL
20	Bleeder Plug	125-22	ALL
21	Fluid Chamber	125-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	425DS
	Lock Screw	400-28 (2)	425DS
	1/4" Washer	400-29 (2)	425DS
	Repair Kits: 17-4TN Plunger 316 Plunger	200-70 300-70 400-70 225-70 325-70 425-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	100-48 100-48B 100-48V 100-48F	+ = Included in Seal Set

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MORGAN PRODUCTS

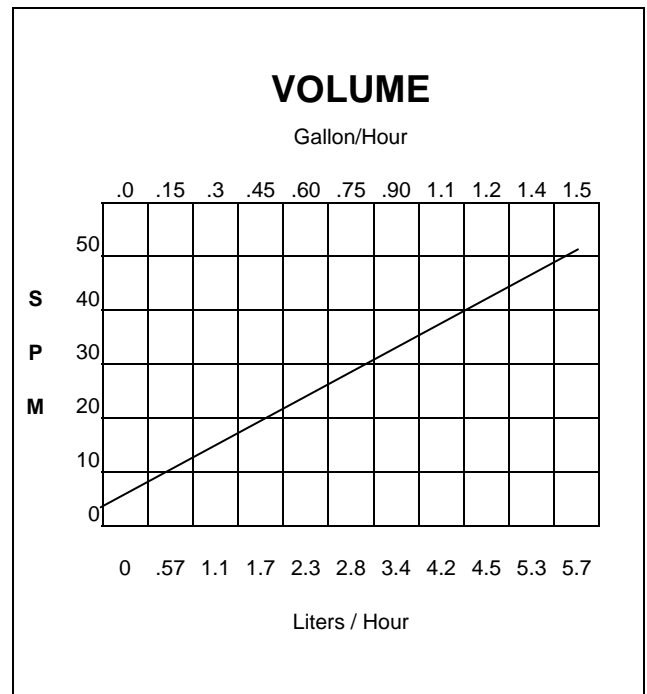
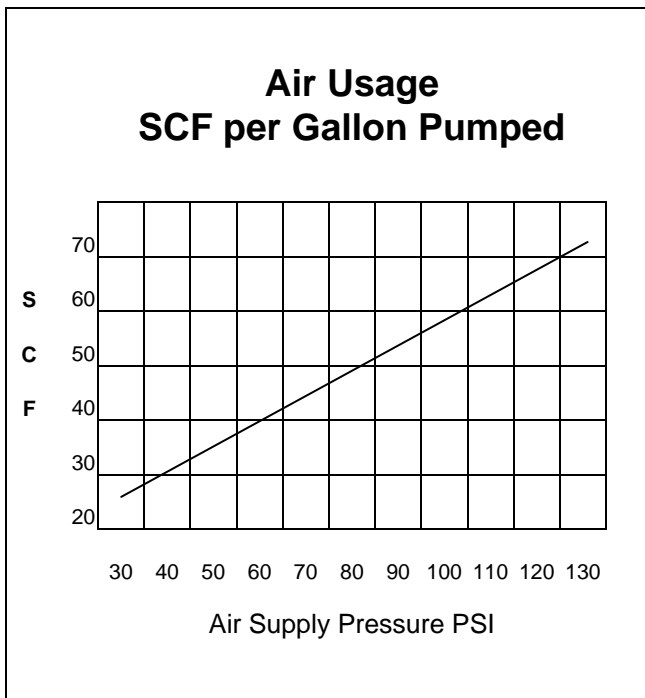
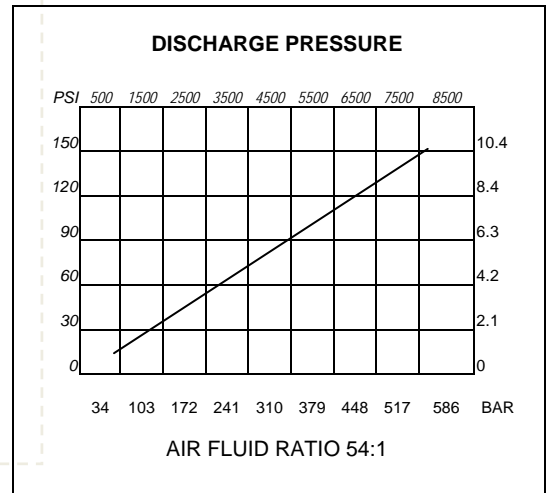
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 335DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

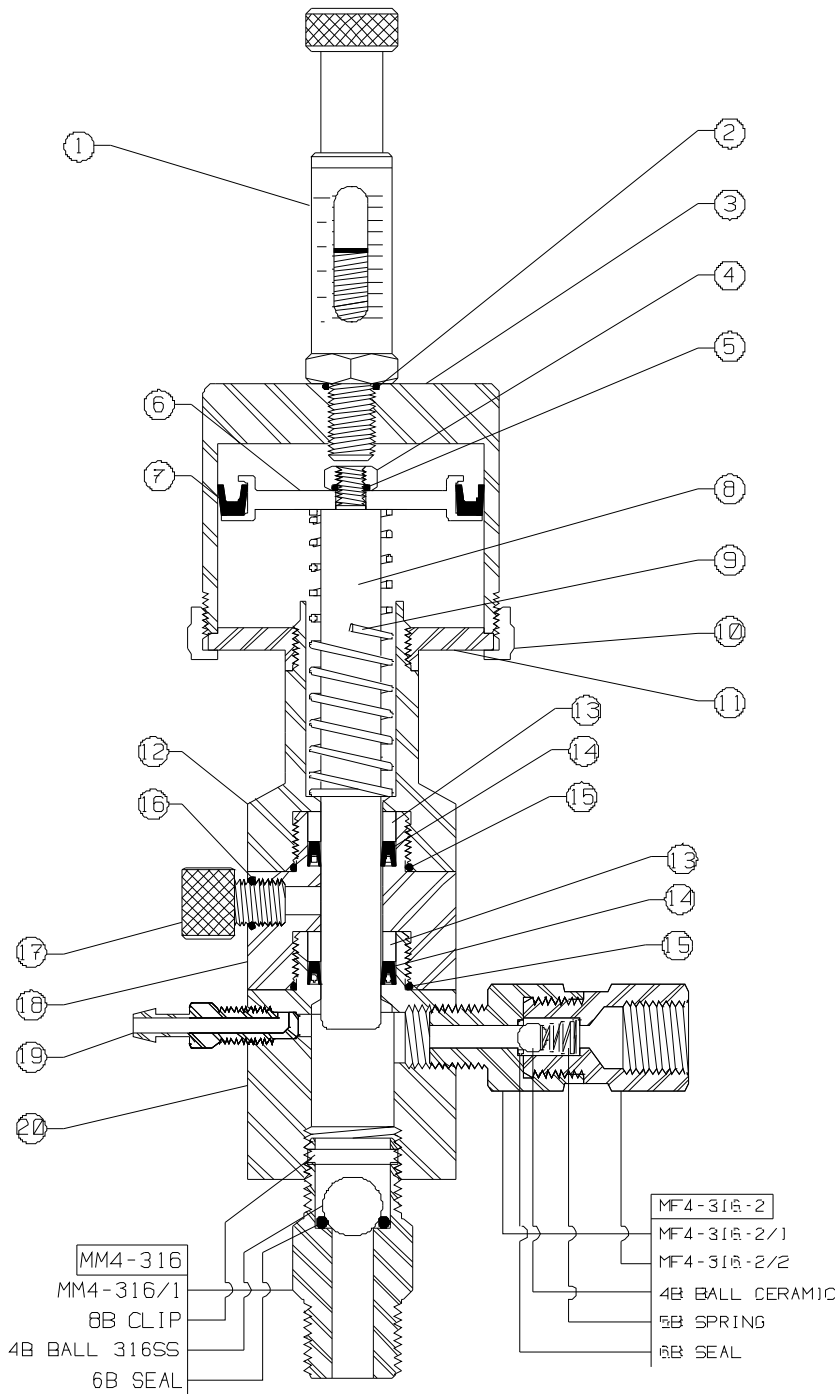
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.



MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 235DS / 335DS / 435DS



NO	NAME	PART NO.	PUMP MODEL	
1	Stroke Adjuster	100-1B	ALL	
2	O-Ring Seal	100-3 *	ALL	
3	Air Chambers	200-4 300-4 400-4	235DS 335DS 435DS	
4	Piston Locknut	100-7	ALL	
5	O-Ring Seal	100-11 *	ALL	
6	Pistons	200-8 300-8 400-8	235DS 335DS 435DS	
7	Piston Seals	200-9 * 300-9 * 400-9 *	235DS 335DS 435DS	
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	230-65 *	ALL	
9	Return Spring	200-13 *	ALL	
10	Air Chamber Ring	200-5 300-5 400-5	235DS 335DS 435DS	
11	Face Plates	200-6 300-6 400-6	235DS 335DS 435DS	
12	Oil Chamber	230-14	ALL	
13	Back Up Ring	230-19 *(2)	ALL	
14	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	230-20 +*(2) 230-20B 203-20V 203-20F	ALL	
15	O-Ring Seal	100-21 *(2)	ALL	
16	O-Ring Seal	100-30*	ALL	
17	Grease Plug	125-31	ALL	
18	Double Seal Body	235-64	ALL	
19	Bleeder Plug	125-22	ALL	
20	Fluid Chamber	235-23	ALL	
	1/3 oz. Grease	*	ALL	
	Elbow	400-27	435DS	
	Lock Screw	400-28 (2)	435DS	
	1/4" Washer	400-29 (2)	435DS	
	Repair Kits: 17-4TN Plunger	230-70 330-70 430-70	* = Included in Repair Kit	
	316 Plunger	235-70 335-70 435-70		
	Seal Sets: TG Buna-N Viton Fluoraz	230-48 230-48B 230-48V 230-48F		+ = Included in Seal Set

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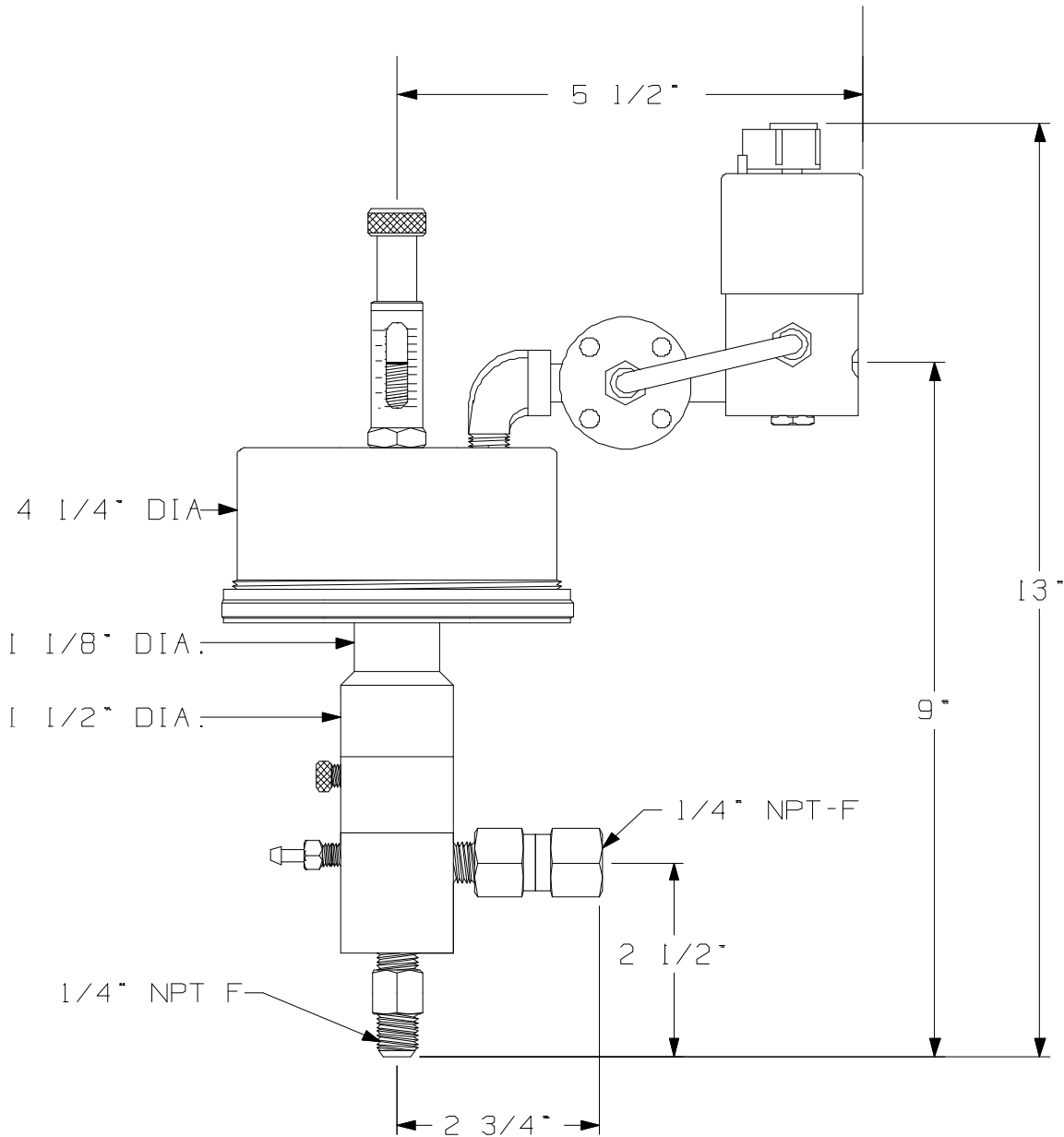
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 425DS-TR2-SR1S AND 435DS-TR2-SR1S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH 1n. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. - LTS
425DS-TR2-SR1S	.8 cc	217:1	1 - 2.54	1/4-M / 1/4-F	15000 - 1064	.06-.63 / .24-2.4
435DS-TR2-SR1S	1.8 cc	97:1	1 - 2.54	1/4-M / 1/4-F	10000 - 689	.15-1.5 / .55-5.5

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MORGAN PRODUCTS

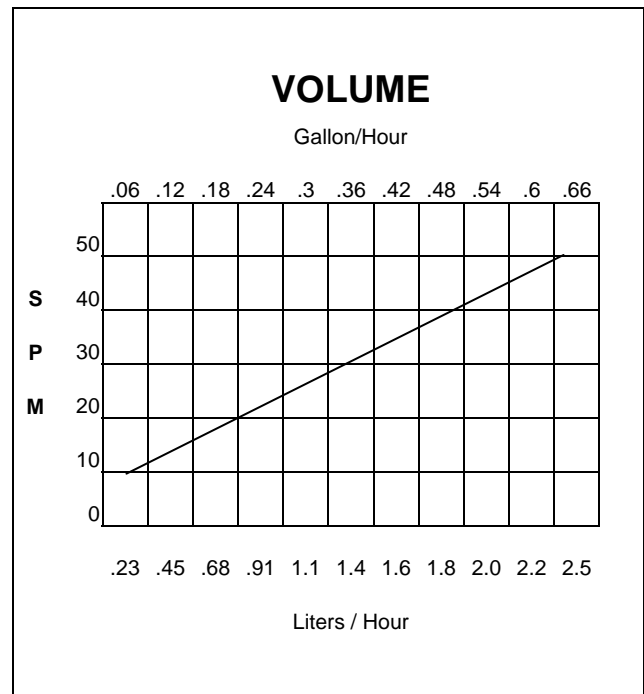
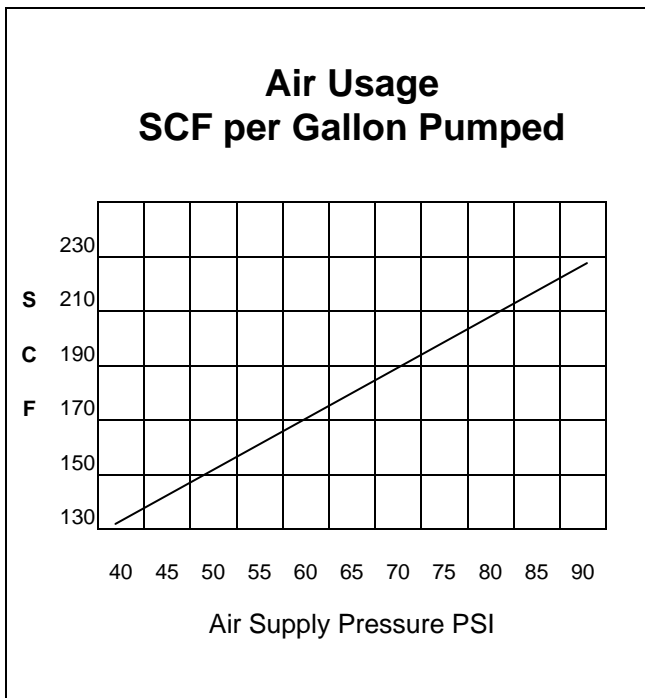
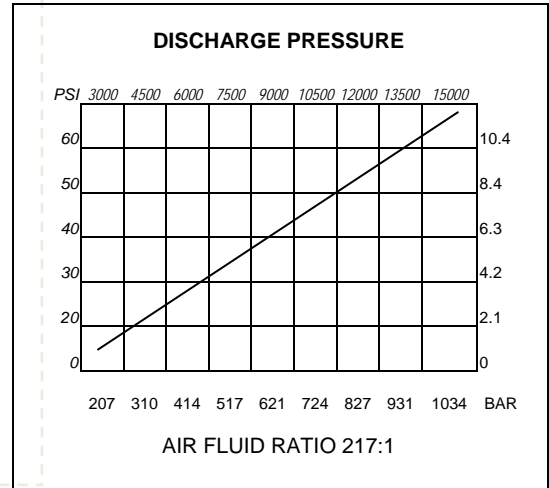
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 425DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.

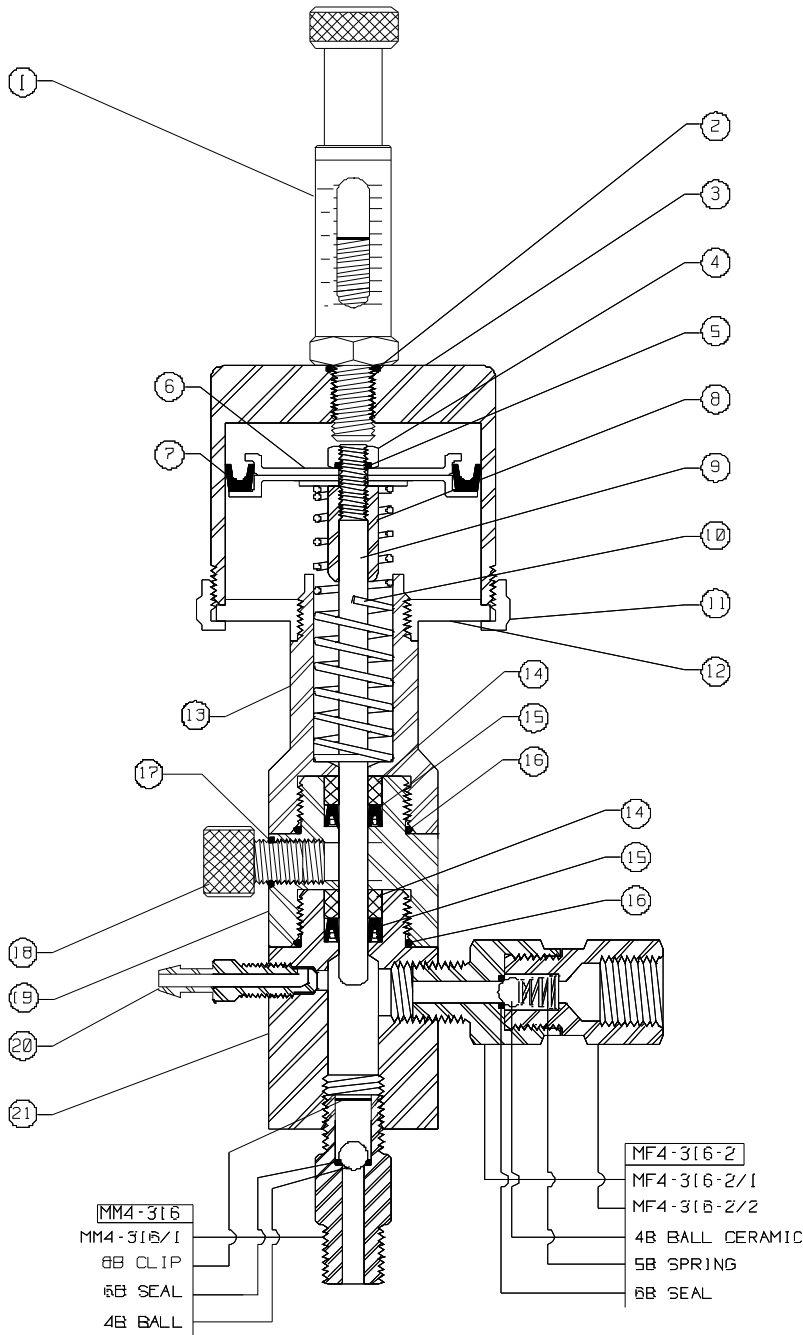


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 225DS / 325DS / 425DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	225DS 325DS 425DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	225DS 325DS 425DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	225DS 325DS 425DS
8	Spring Guide	200-10	ALL
9	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	100-65 * 125-65 100-68	ALL
10	Return Spring	200-13 *	ALL
11	Air Chamber Ring	200-5 300-5 400-5	225DS 325DS 425DS
12	Face Plates	200-6 300-6 400-6	225DS 325DS 425DS
13	Oil Chamber	200-14	ALL
14	Back Up Ring	100-19 *(2)	ALL
15	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	100-20 +*(2) 100-20B 100-20V 100-20F	ALL
16	O-Ring Seal	100-21 *(2)	ALL
17	O-Ring Seal	100-30*	ALL
18	Grease Plug	125-31	ALL
19	Double Seal Body	125-64	ALL
20	Bleeder Plug	125-22	ALL
21	Fluid Chamber	125-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	425DS
	Lock Screw	400-28 (2)	425DS
	1/4" Washer	400-29 (2)	425DS
	Repair Kits: 17-4TN Plunger 316 Plunger	200-70 300-70 400-70 225-70 325-70 425-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	100-48 100-48B 100-48V 100-48F	+ = Included in Seal Set

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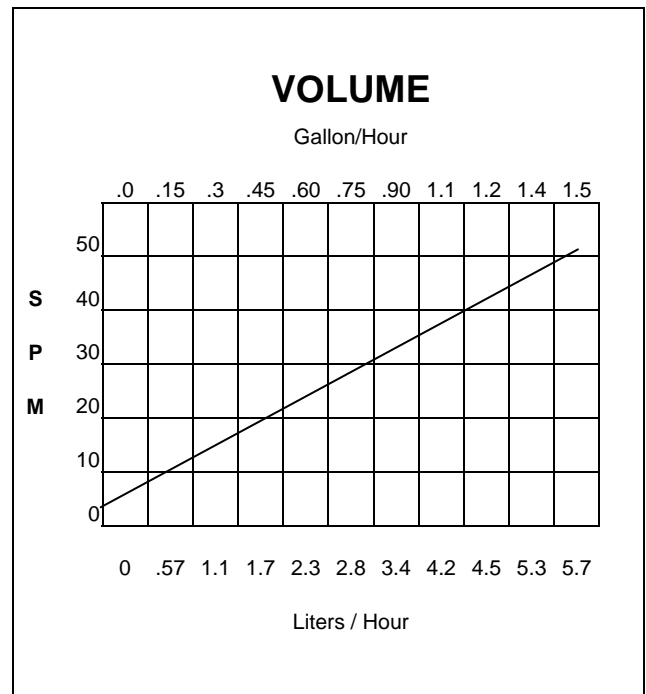
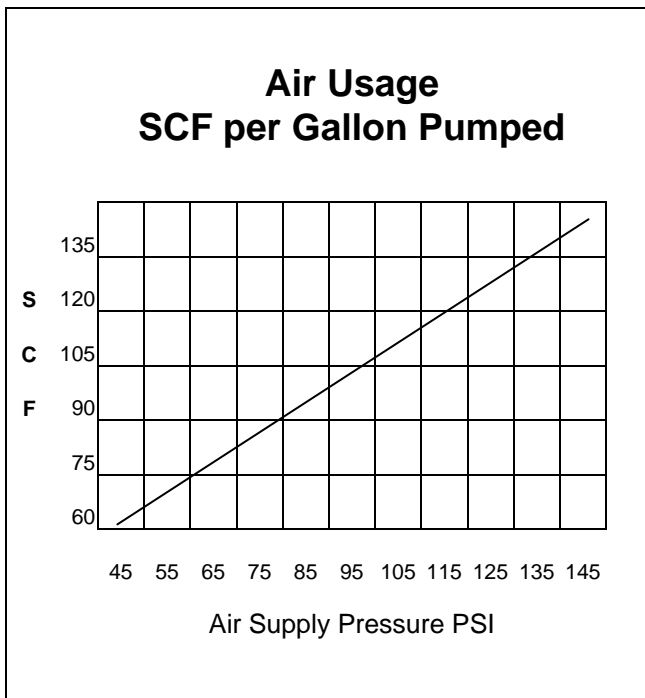
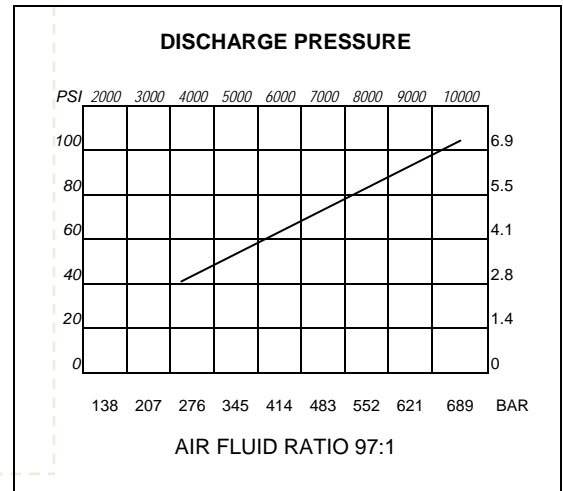
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 435DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

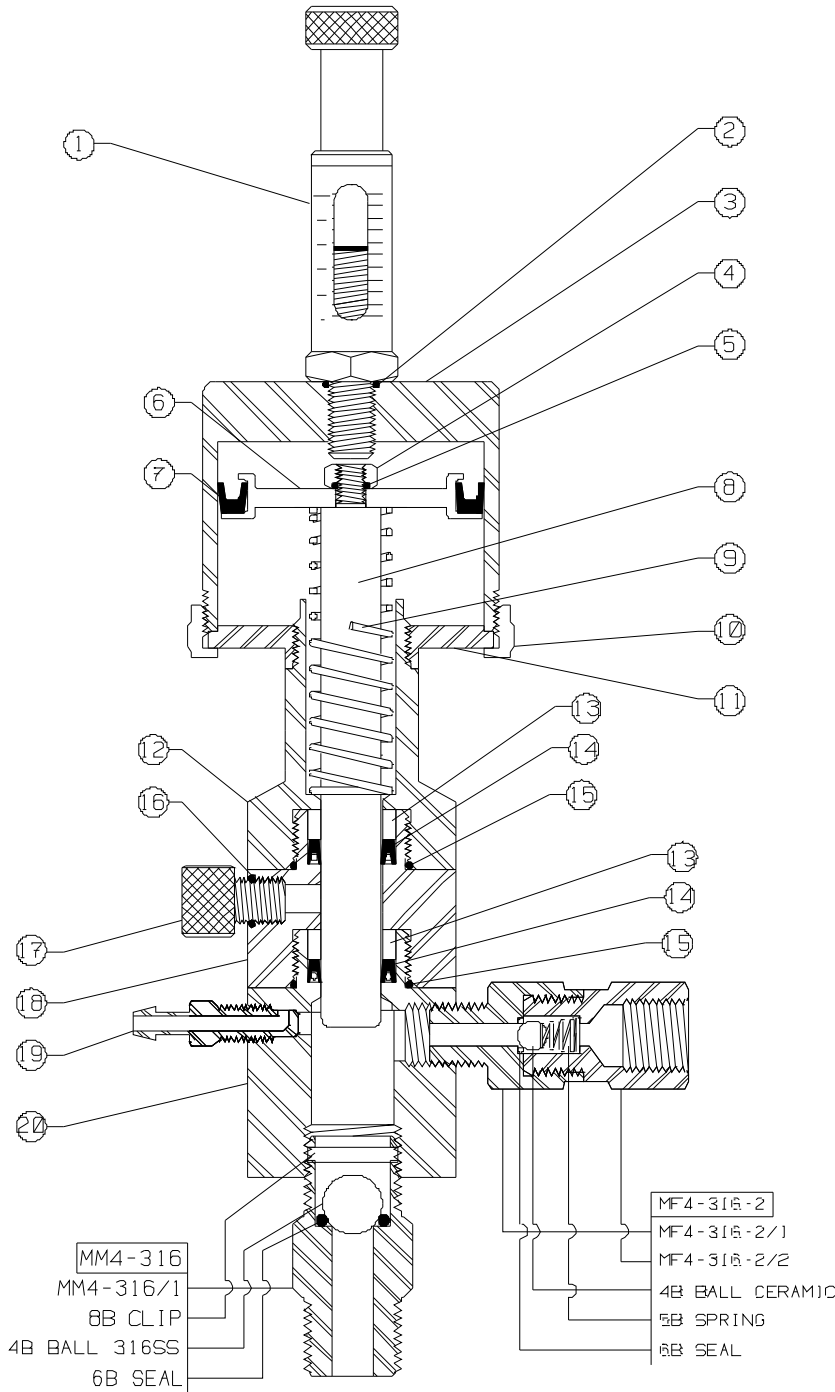
1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.



MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 235DS / 335DS / 435DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4	235DS 335DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8	235DS
7	Piston Seals	200-9 *	235DS
8	Plungers: 17-4 TN Standard Optional	230-65 *	ALL
9	Return Spring	200-13 *	ALL
10	Air Chamber Ring	200-5	235DS
11	Face Plates	200-6	235DS
12	Oil Chamber	230-14	ALL
13	Back Up Ring	230-19 *(2)	ALL
14	Pressure Seals: TG Standard Optional	230-20 +*(2)	ALL
15	O-Ring Seal	100-21 *(2)	ALL
16	O-Ring Seal	100-30*	ALL
17	Grease Plug	125-31	ALL
18	Double Seal Body	235-64	ALL
19	Bleeder Plug	125-22	ALL
20	Fluid Chamber	235-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	435DS
	Lock Screw	400-28 (2)	435DS
	1/4" Washer	400-29 (2)	435DS
	Repair Kits: 17-4TN Plunger	230-70	* = Included in Repair Kit
	Seal Sets: TG	230-48	+ = Included in Seal Set

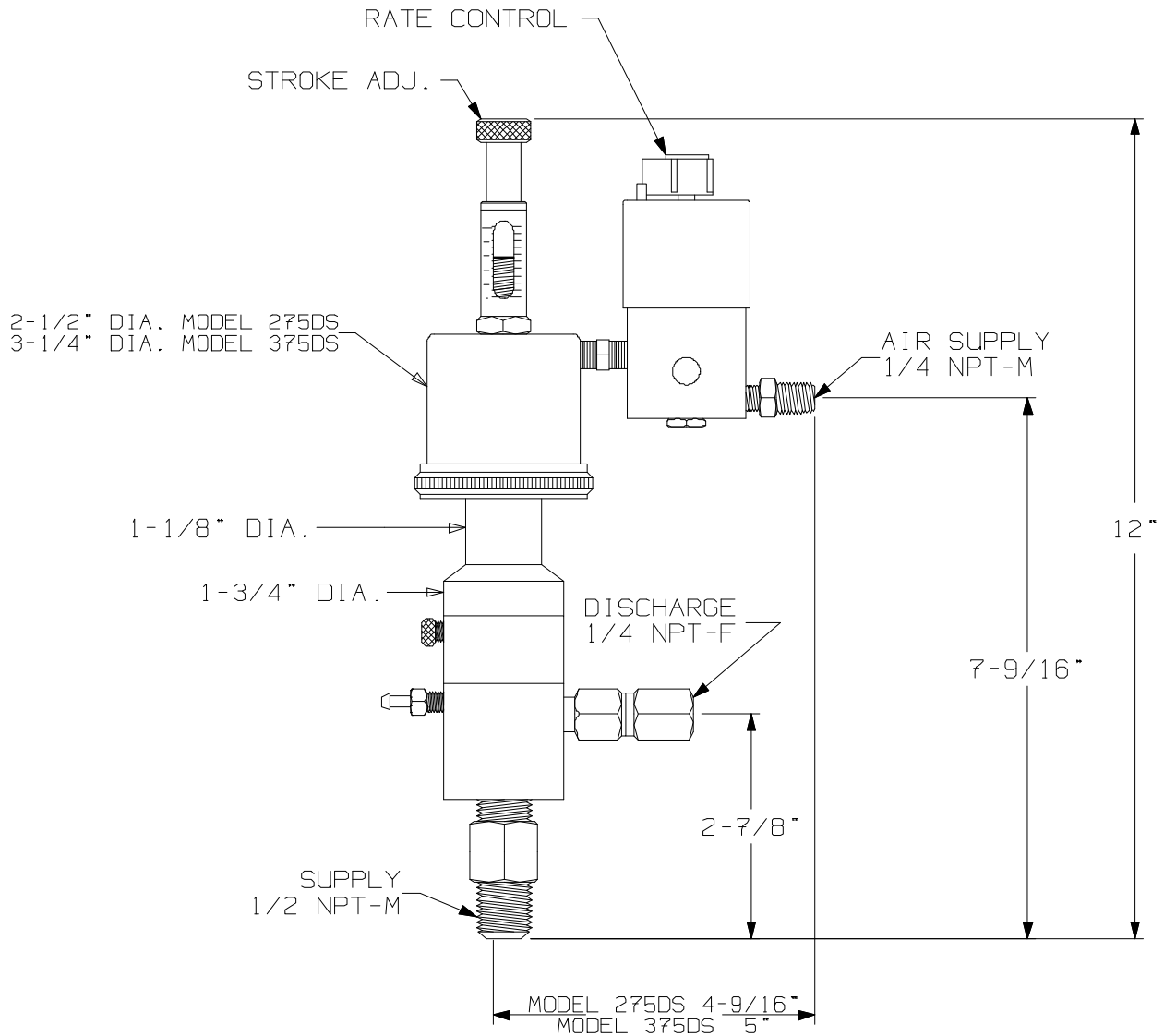
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 275DS/375DS-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH 1n. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. - LTS
275DS-TR2	3.2 cc	17:1	1 - 2.54	1/2-M / 1/4-F	2550 - 175	.25-2.5 / .95-9.5
375DS-TR2	3.2 cc	31:1	1 - 2.54	1/2-M / 1/4-F	4650 - 320	.25-2.5 / .95-9.5

MORGAN PRODUCTS

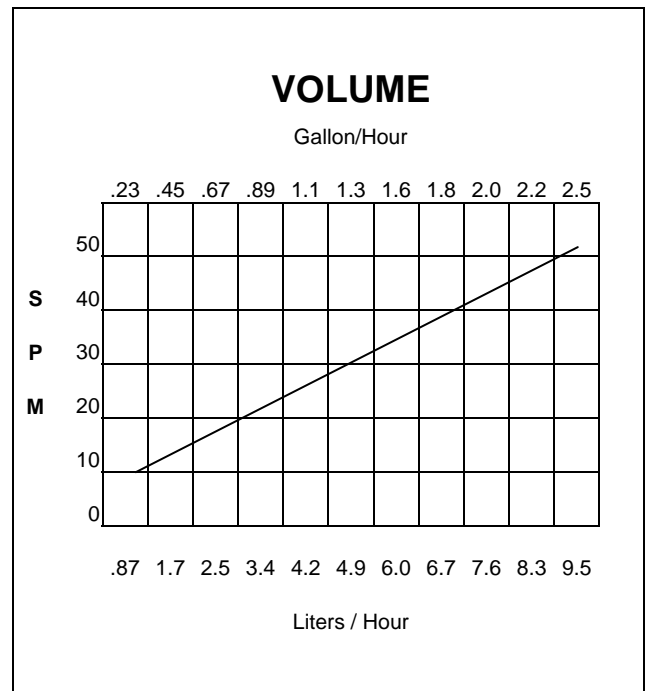
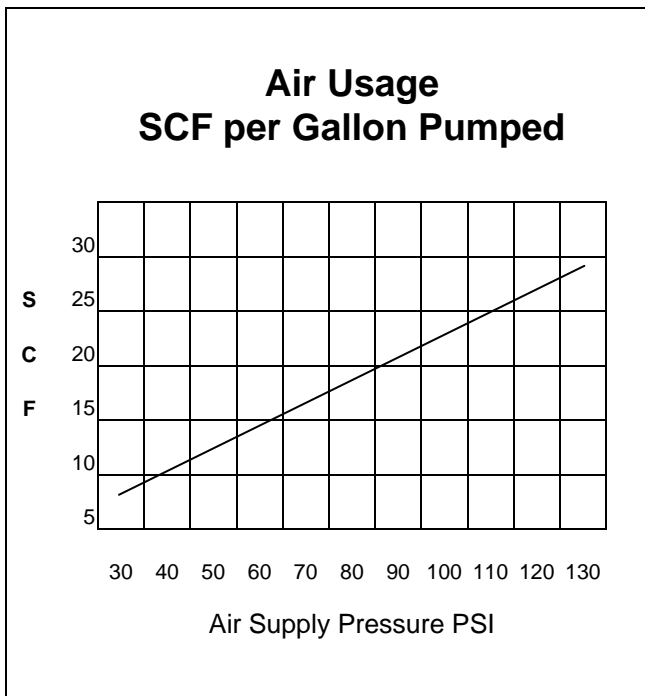
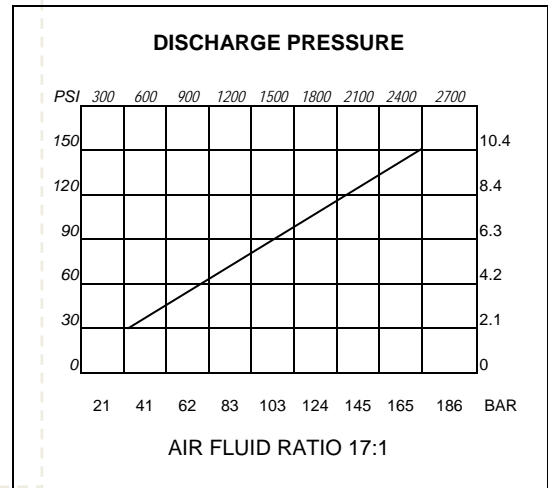
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 275DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.

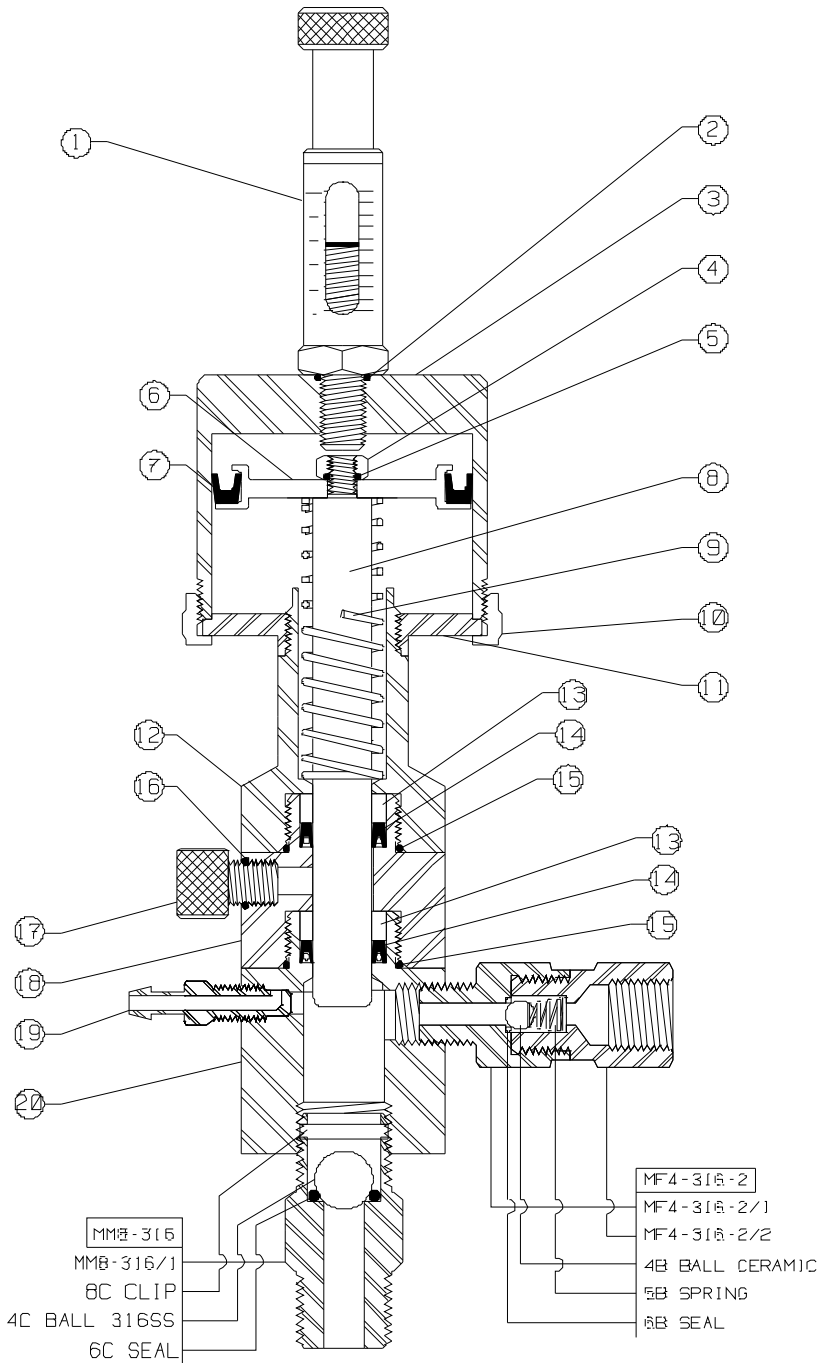


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 275DS / 375DS / 475DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	275DS 375DS 475DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	275DS 375DS 475DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	275DS 375DS 475DS
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	250-65 *	ALL
9	Return Spring	250-13 *	ALL
10	Air Chamber Ring	200-5 300-5 400-5	275DS 375DS 475DS
11	Face Plates	220-6 300-6 400-6	275DS 375DS 475DS
12	Oil Chamber	250-14	ALL
13	Back Up Ring	250-19 *(2)	ALL
14	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	250-20 +*(2) 250-20B 250-20V 250-20F	ALL
15	O-Ring Seal	100-21 *(2)	ALL
16	O-Ring Seal	100-30*	ALL
17	Grease Plug	125-31	ALL
18	Double Seal Body	275-64	ALL
19	Bleeder Plug	125-22	ALL
20	Fluid Chamber	275-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	475DS
	Lock Screw	400-28 (2)	475DS
	1/4" Washer	400-29 (2)	475DS
	Repair Kits: 17-4TN Plunger 316 Plunger	250-70 350-70 450-70 275-70 375-70 475-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	250-48 250-48B 250-48V 250-48F	+ = Included in Seal Set

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

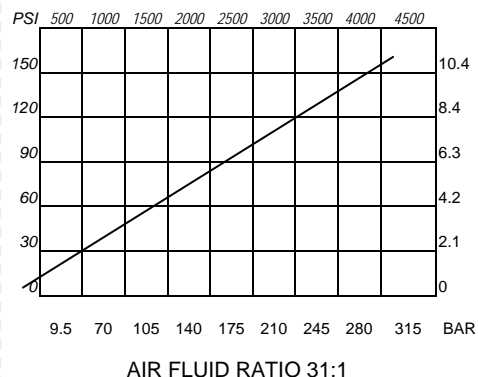
Setup and Features Model 375DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

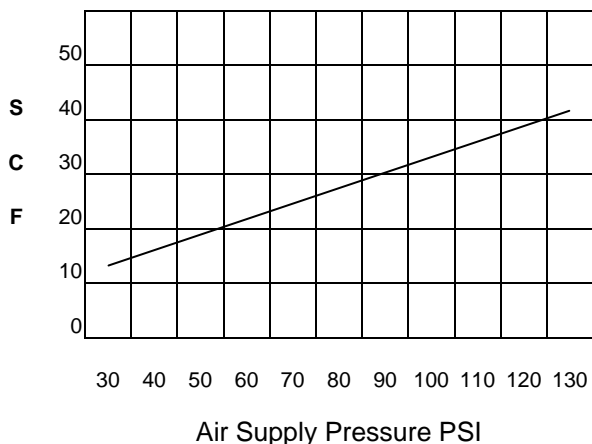
INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.

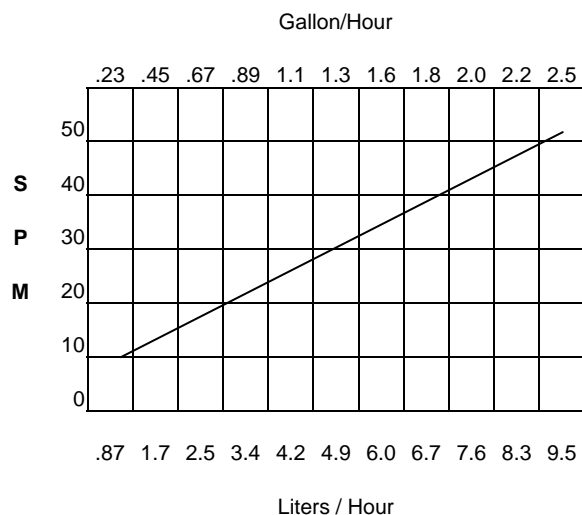
DISCHARGE PRESSURE



Air Usage SCF per Gallon Pumped



VOLUME

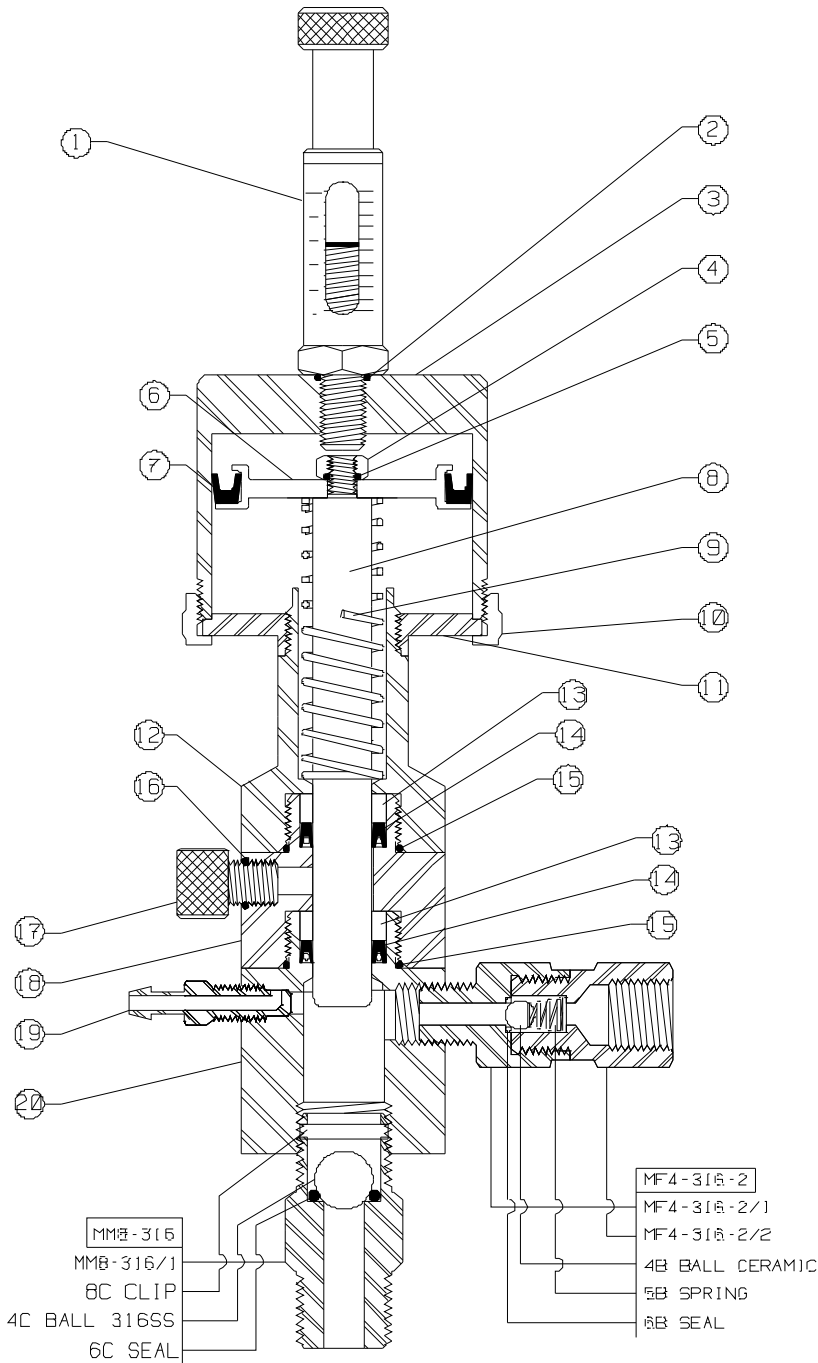


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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 275DS / 375DS / 475DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	275DS 375DS 475DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	275DS 375DS 475DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	275DS 375DS 475DS
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	250-65 *	ALL
9	Return Spring	250-13 *	ALL
10	Air Chamber Ring	200-5 300-5 400-5	275DS 375DS 475DS
11	Face Plates	220-6 300-6 400-6	275DS 375DS 475DS
12	Oil Chamber	250-14	ALL
13	Back Up Ring	250-19 *(2)	ALL
14	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	250-20 +*(2) 250-20B 250-20V 250-20F	ALL
15	O-Ring Seal	100-21 *(2)	ALL
16	O-Ring Seal	100-30*	ALL
17	Grease Plug	125-31	ALL
18	Double Seal Body	275-64	ALL
19	Bleeder Plug	125-22	ALL
20	Fluid Chamber	275-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	475DS
	Lock Screw	400-28 (2)	475DS
	1/4" Washer	400-29 (2)	475DS
	Repair Kits: 17-4TN Plunger 316 Plunger	250-70 350-70 450-70 275-70 375-70 475-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	250-48 250-48B 250-48V 250-48F	+ = Included in Seal Set

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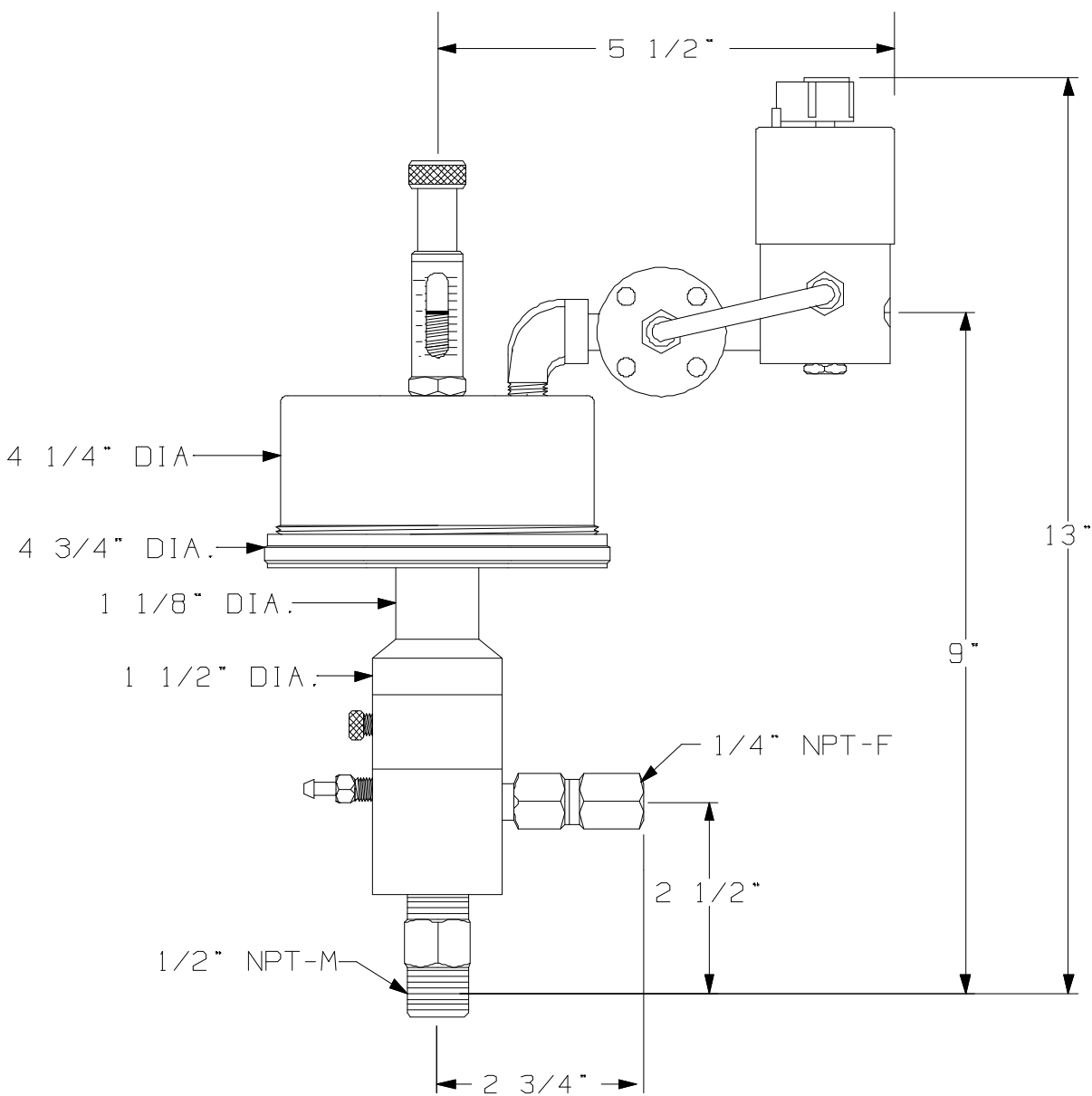
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 475DS-TR2-SR1S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH 1n. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. - LTS
475DS-TR2-SR1S	3.2 cc	54:1	1 - 2.54	1/2-M / 1/4-F	8100 - 558	.25-2.5 / .95-9.5

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MORGAN PRODUCTS

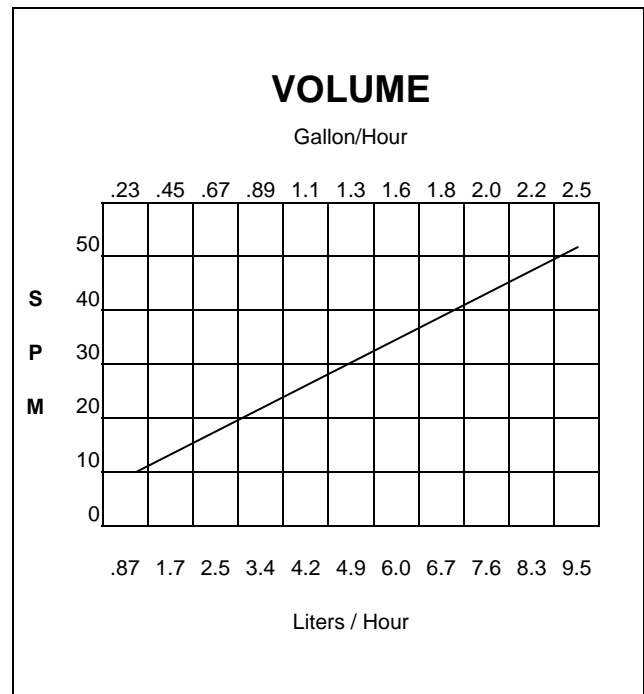
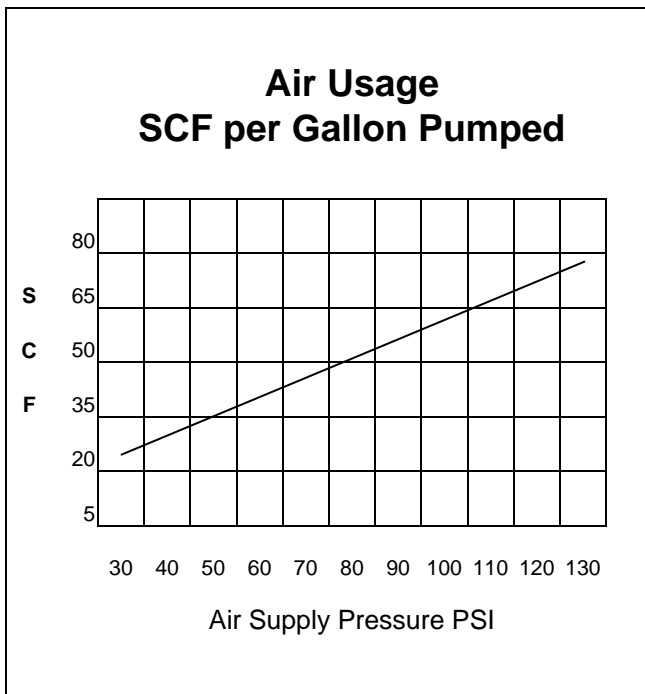
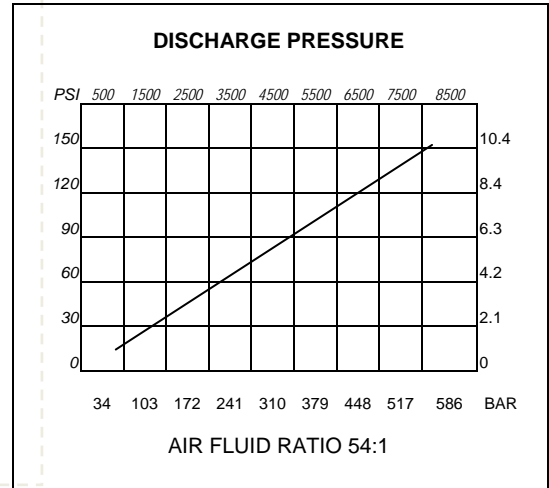
PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Setup and Features Model 475DS

All stainless steel construction. Standard plunger material is 17-4 stainless with Titanium Nitride coating. Titanium Nitride is an extremely hard ceramic material. All fluid components are 316 SS, air drive is a mix of 300 series stainless. Standard pressure seal is Graphite filled Teflon. Check valves have Teflon seats. Piston return spring is Teflon coated for increased performance. All pumps are individually tested for performance and quality.

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Open bleeder valve until chemical flows from bleeder.
6. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
7. Set cycle rate in strokes per minute.

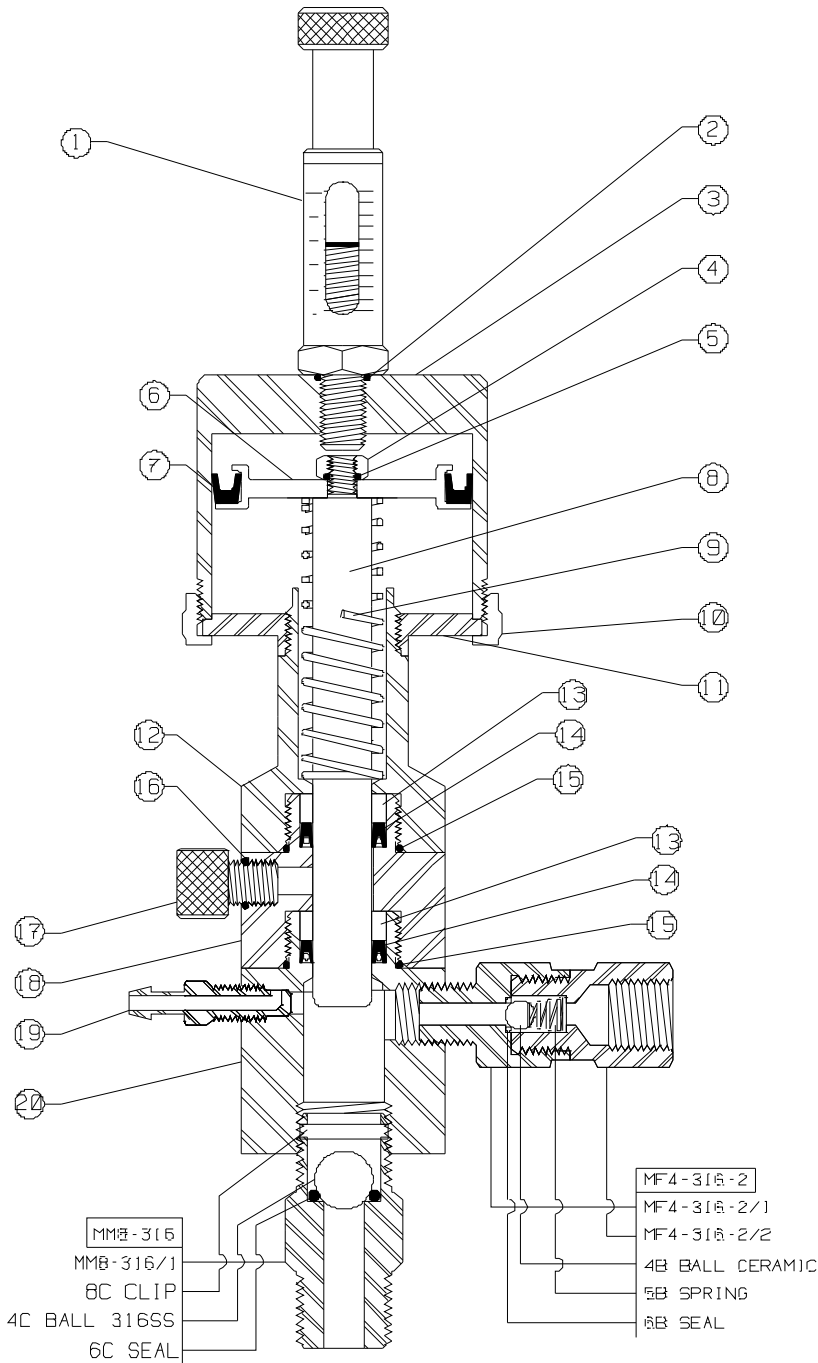


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PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 275DS / 375DS / 475DS



NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	100-1B	ALL
2	O-Ring Seal	100-3 *	ALL
3	Air Chambers	200-4 300-4 400-4	275DS 375DS 475DS
4	Piston Locknut	100-7	ALL
5	O-Ring Seal	100-11 *	ALL
6	Pistons	200-8 300-8 400-8	275DS 375DS 475DS
7	Piston Seals	200-9 * 300-9 * 400-9 *	275DS 375DS 475DS
8	Plungers: 17-4 TN Standard Optional 316 SS Carpenter 20	250-65 *	ALL
9	Return Spring	250-13 *	ALL
10	Air Chamber Ring	200-5 300-5 400-5	275DS 375DS 475DS
11	Face Plates	220-6 300-6 400-6	275DS 375DS 475DS
12	Oil Chamber	250-14	ALL
13	Back Up Ring	250-19 *(2)	ALL
14	Pressure Seals: TG Standard Optional Buna-N Viton Fluoraz	250-20 +(2) 250-20B 250-20V 250-20F	ALL
15	O-Ring Seal	100-21 *(2)	ALL
16	O-Ring Seal	100-30*	ALL
17	Grease Plug	125-31	ALL
18	Double Seal Body	275-64	ALL
19	Bleeder Plug	125-22	ALL
20	Fluid Chamber	275-23	ALL
	1/3 oz. Grease	*	ALL
	Elbow	400-27	475DS
	Lock Screw	400-28 (2)	475DS
	1/4" Washer	400-29 (2)	475DS
	Repair Kits: 17-4TN Plunger 316 Plunger	250-70 350-70 450-70 275-70 375-70 475-70	* = Included in Repair Kit
	Seal Sets: TG Buna-N Viton Fluoraz	250-48 250-48B 250-48V 250-48F	+ = Included in Seal Set

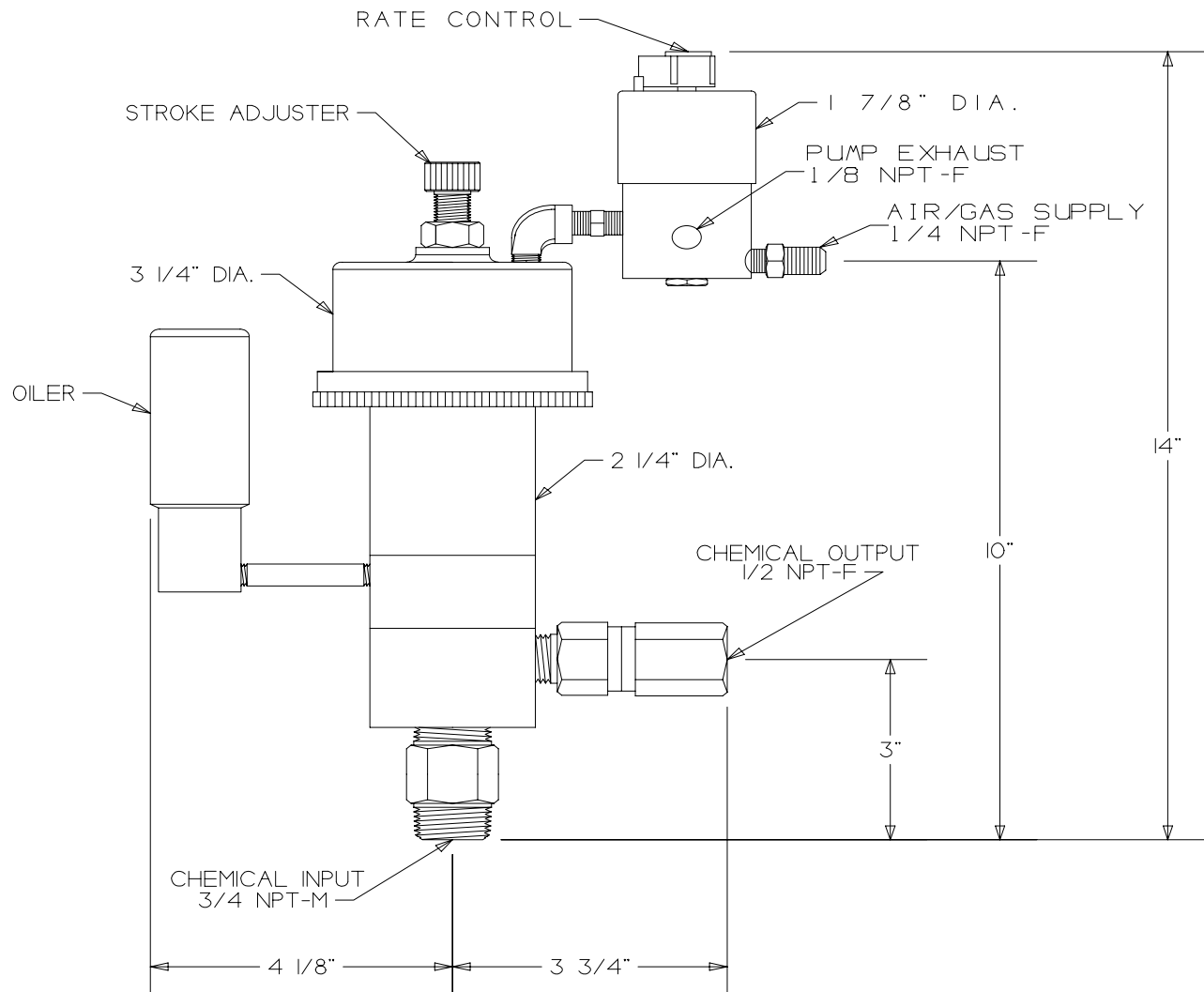
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 3755DS-TR2 / 3500DS-TR2

AIR ACTUATED POSITIVE DISPLACEMENT PUMP

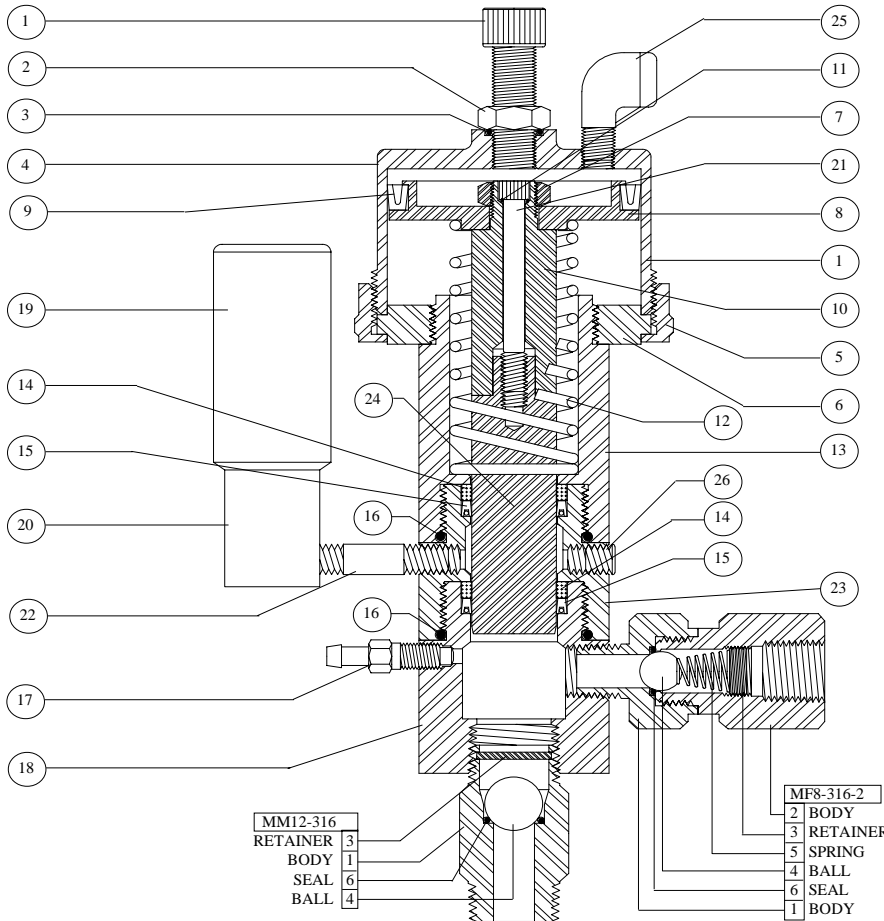


MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
3755DS-TR2	7.2 cc	14:1	1 - 2.54	3/4 - M / 1/2 - F	2100 - 144	.56 - 5.6 / 2.1 - 21
3500DS-TR2	12.8 cc	8:1	1 - 2.54	3/4 - M / 1/2 - F	1200 - 83	1 - 10 / 3.9 - 39

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES Parts List Model 3500DS and 4500DS



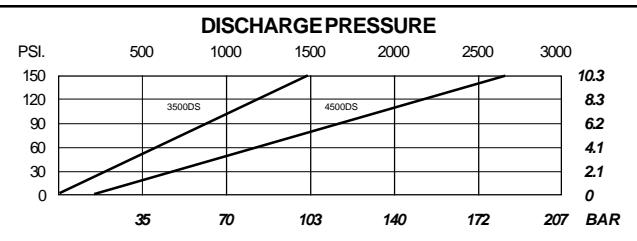
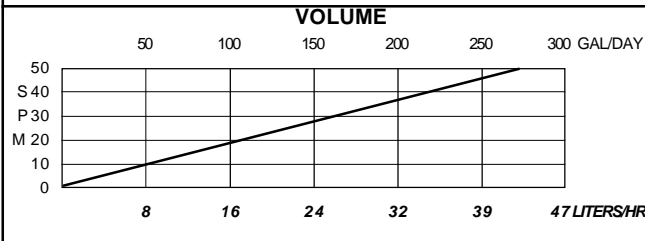
NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	3000-1	ALL
2	Locknut	3000-2	ALL
3	O-Ring Seal	3000-3 *	ALL
4	Air Chamber	3000-4 4000-4	3500DS 4500DS
5	Air Chamber Ring	3000-5 4000-5	3500DS 4500DS
6	Faceplate	3000-6 4000-6	3500DS 4500DS
7	Piston Locknut	3000-7	ALL
8	Piston	3000-8 4000-8	3500DS 4500DS
9	Piston Seal	300-9 * 400-9 *	3500DS 4500DS
10	Plunger Guide	3000-10	ALL
11	O-Ring Seal	100-11 *	ALL
12	Return Spring	3000-13 *	ALL
13	Oil Chamber	3000-14	ALL
14	Back-Up Ring	3000-19 *(2)	ALL
15	Pressure Seal:		
	TG	3000-20 *(2)	ALL
	Buna-N	3000-20B	Optional
	Viton	3000-20V	Optional
	Fluoraz	3000-20F	Optional
16	Body O-Ring Seal	3000-21 *(2)	ALL
17	Bleeder	125-22	ALL
18	Fluid Chamber	3500-23	ALL
19	2 oz. Oil	100-24	ALL
20	Reservoir	3000-25	ALL
21	Plunger Bolt	3000-26	ALL
22	Nipple	3000-32 4000-32	3500DS 4500DS
23	Double Seal Body	3500-64	ALL
24	Plunger 17-4TN	3000-65 *	ALL
	Optional Material: Plunger 316 SS	3500-67	Optional
25	Elbow	3000-27 4000-27	3500DS 4500DS
26	1/8 NPT Plug	5000-38	ALL
N/S	1oz. Grease	*	ALL
N/S	1/4-20 Cap Screw	4000-28 (2)	4500DS
N/S	1/4 Washer	4000-29 (2)	4500DS
	Repair Kits:		
	W/ 17-4TN Plunger	3000-70 4000-70	3500DS 4500DS
	W/ 316 SS Plunger	3500-70 4500-70	3500DS 4500DS
	Seal Sets:		
	TG	3000-48	ALL
	Buna-N	3000-48B	ALL
	Viton	3000-48V	ALL
	Fluoraz	3000-48F	ALL

MMI2-316
RETAINER 3
BODY 1
SEAL 6
BALL 4

MF8-316-2
2 BODY
3 RETAINER
5 SPRING
4 BALL
6 SEAL
1 BODY

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided.
** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
8. Set cycle rate in strokes per minute.
(See volume graph)

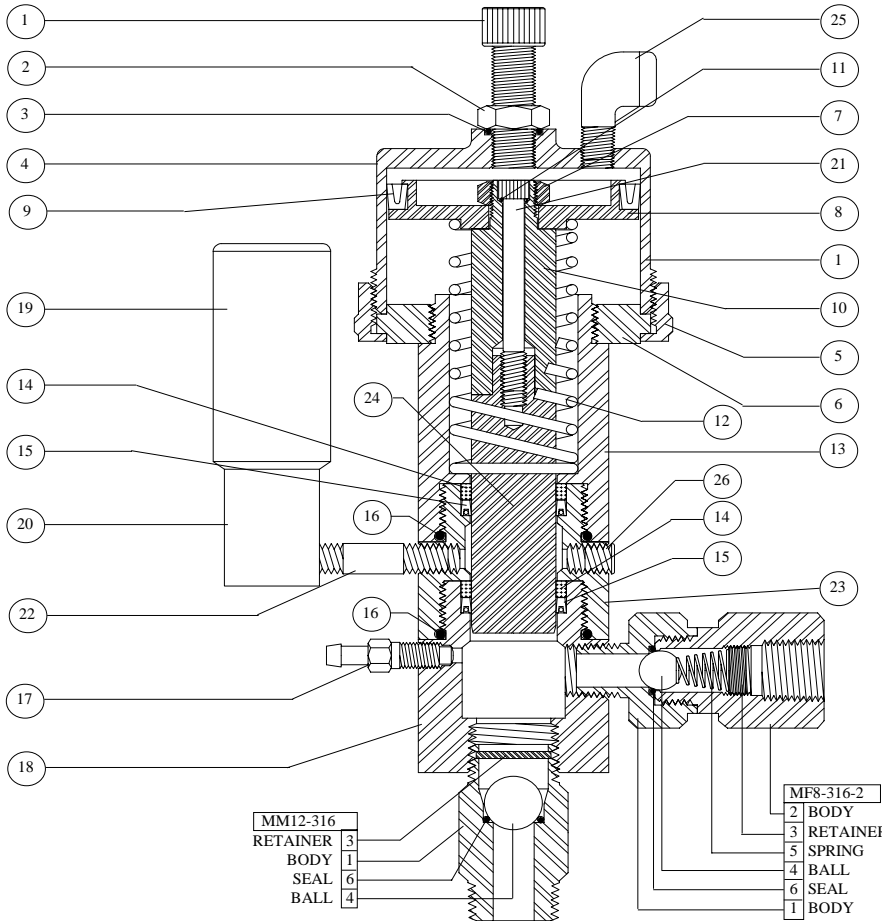


* = Included in Repair Kit
+ = Included in Seal Set

MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 3755DS and 4755DS

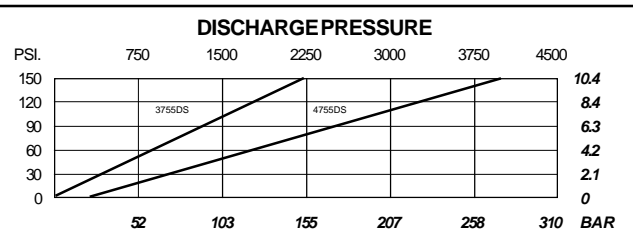
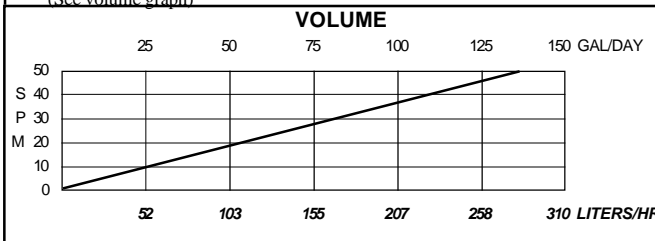


NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	3000-1	ALL
2	Locknut	3000-2	ALL
3	O-Ring Seal	3000-3 *	ALL
4	Air chamber	3000-4	3755DS
		4000-4	4755DS
5	Air Chamber Ring	3000-5	3755DS
		4000-5	4755DS
6	Faceplate	3000-6	3755DS
		4000-6	4755DS
7	Piston Locknut	3000-7	ALL
8	Piston	3750-8	3755DS
		4750-8	4755DS
9	Piston Seal	300-9 *	3755DS
		400-9 *	4755DS
10	Plunger Guide	3750-10	ALL
11	O-Ring Seal	100-11 *	ALL
12	Return Spring	3750-13 *	ALL
13	Oil Chamber	3750-14	ALL
14	Back-up Ring	3750-19 *+ (2)	ALL
15	Pressure Seal:		
	TG	3750-20 *+ (2)	ALL
	Buna-N	3750-20B +	Optional
	Viton	3750-20V +	Optional
	Fluoraz	3750-20F +	Optional
16	Body O-Ring Seal	3000-21 *+ (2)	ALL
17	Bleeder	125-22	ALL
18	Fluid Chamber	3755-23	ALL
19	2 oz. Oil	100-24	ALL
20	Reservoir	3000-25	ALL
21	Plunger Bolt	3000-26	ALL
22	Nipple	3000-32	3755DS
		4000-32	4755DS
23	Double Seal Body	3755-64	ALL
24	Plunger 17-4TN	3750-65 *	ALL
	Plunger 316 SS	3755-67	Optional
25	Elbow	3000-27	3755DS
		4000-27	4755DS
26	1/8 NPT Plug	5000-38	ALL
N/S	1oz. Grease	*	ALL
N/S	1/4-20 Cap Screw	4000-28 (2)	4755DS
N/S	1/4 Washer	4000-29 (2)	4755DS
	Repair Kits:		
	W/ 17-4TN Plunger	3750-70	3755DS
		4750-70	4755DS
	W/ 316 SS Plunger	3755-70	3755DS
		4755-70	4755DS
	Seal Sets:		
	TG	3750-48	ALL
	Buna-N	3750-48B	ALL
	Viton	3750-48V	ALL
	Fluoraz	3750-48F	ALL

* = Included in Repair Kit
 + = Included in Seal Set

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided.
 ** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
 (See discharge pressure graph).
8. Set cycle rate in strokes per minute.
 (See volume graph)



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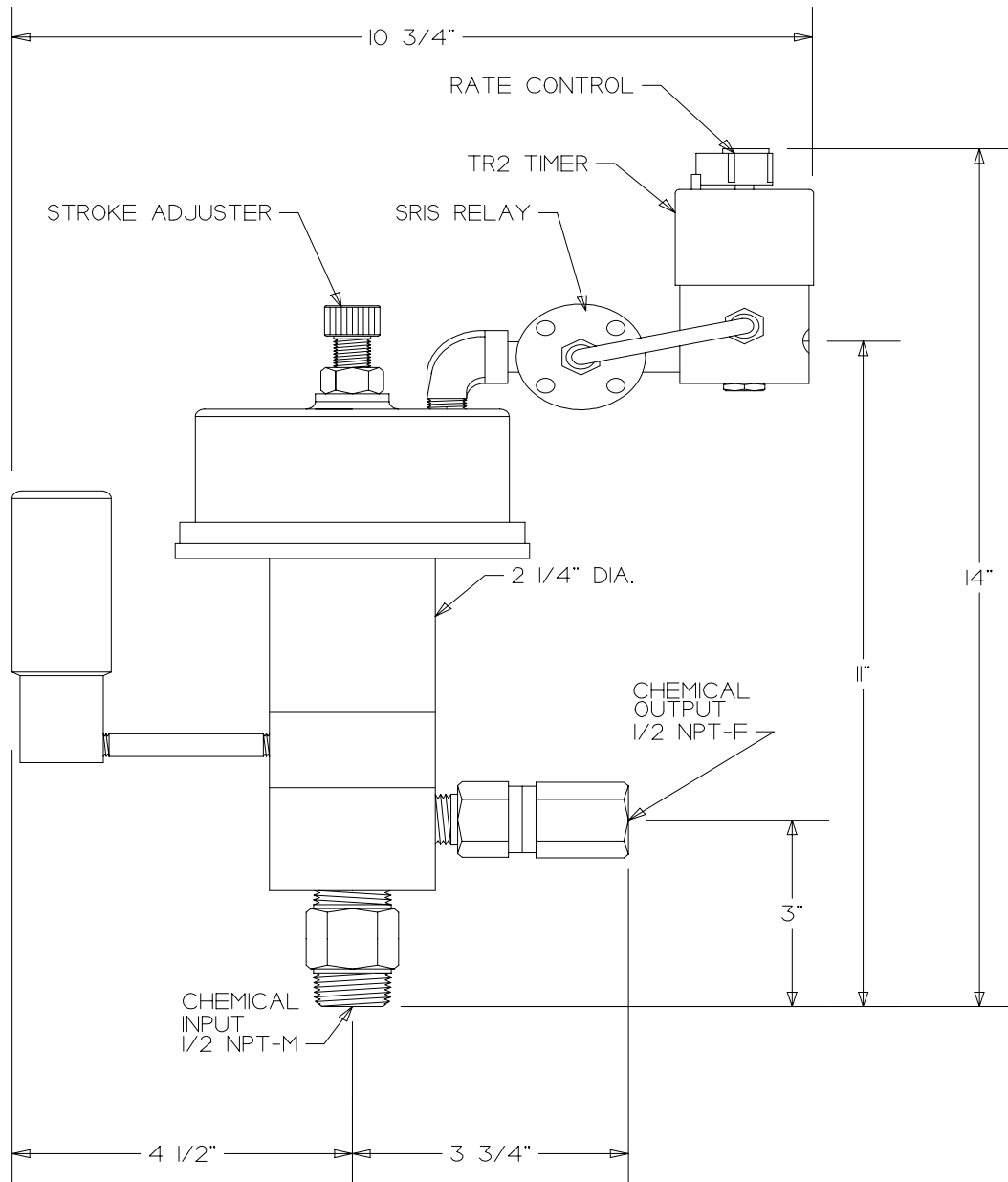
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 4755DS-TR2-SR1S / 4500DS-TR2-SR1S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP

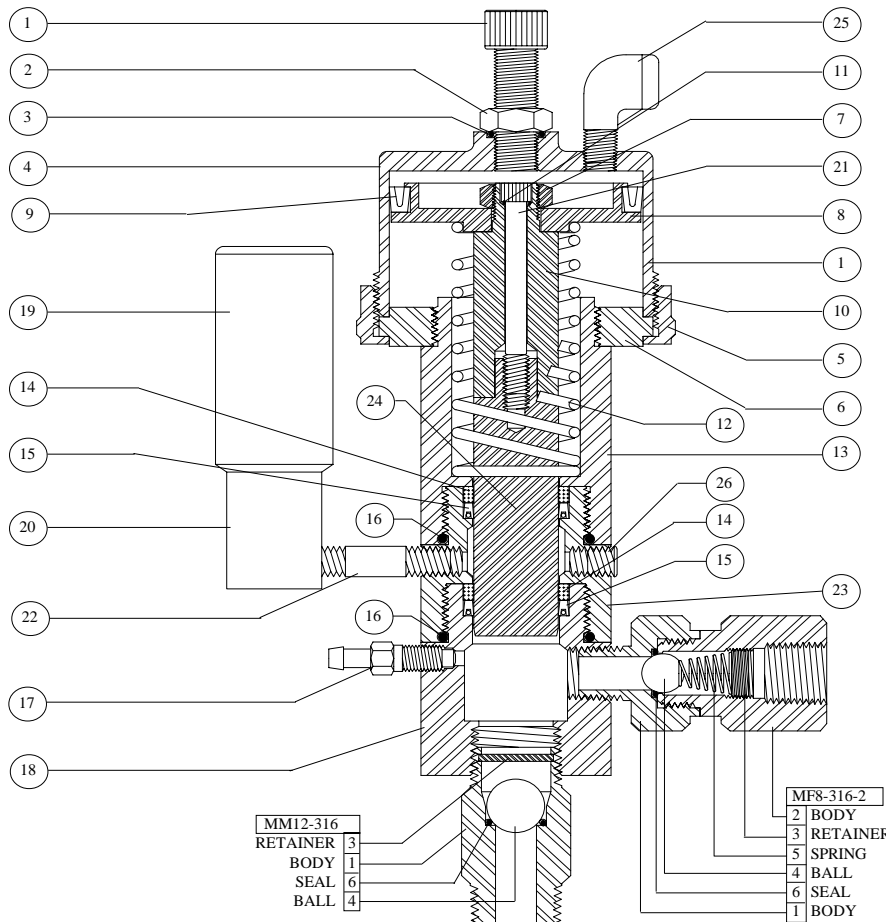


MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
4755DS-TR2-SR1S	7.2 cc	24:1	1 - 2.54	3/4 - M / 1/2 - F	3600 - 248	.56 - 5.6 / 2.1 - 21
4500DS-TR2-SR1S	12.8 cc	14:1	1 - 2.54	3/4 - M / 1/2 - F	2100 - 144	1 - 10 / 3.9 - 39

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PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES Parts List Model 3500DS and 4500DS

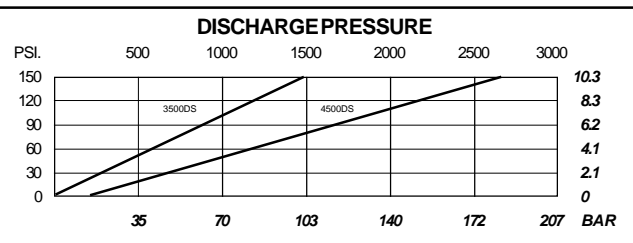
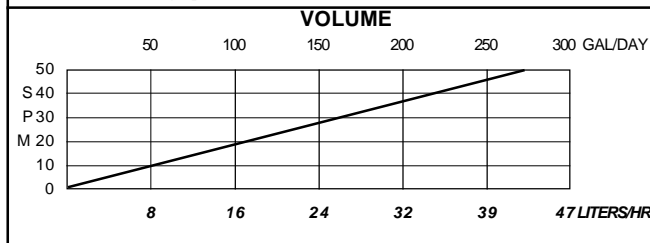


NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	3000-1	ALL
2	Locknut	3000-2	ALL
3	O-Ring Seal	3000-3 *	ALL
4	Air Chamber	3000-4 4000-4	3500DS 4500DS
5	Air Chamber Ring	3000-5 4000-5	3500DS 4500DS
6	Faceplate	3000-6 4000-6	3500DS 4500DS
7	Piston Locknut	3000-7	ALL
8	Piston	3000-8 4000-8	3500DS 4500DS
9	Piston Seal	300-9 * 400-9 *	3500DS 4500DS
10	Plunger Guide	3000-10	ALL
11	O-Ring Seal	100-11 *	ALL
12	Return Spring	3000-13 *	ALL
13	Oil Chamber	3000-14	ALL
14	Back-Up Ring	3000-19 * (2)	ALL
15	Pressure Seal:		
	TG	3000-20 * (2)	ALL
	Buna-N	3000-20B	Optional
	Viton	3000-20V	Optional
	Fluoraz	3000-20F	Optional
16	Body O-Ring Seal	3000-21 * (2)	ALL
17	Bleeder	125-22	ALL
18	Fluid Chamber	3500-23	ALL
19	2 oz. Oil	100-24	ALL
20	Reservoir	3000-25	ALL
21	Plunger Bolt	3000-26	ALL
22	Nipple	3000-32 4000-32	3500DS 4500DS
23	Double Seal Body	3500-64	ALL
24	Plunger 17-4TN	3000-65 *	ALL
	Optional Material: Plunger 316 SS	3500-67	Optional
25	Elbow	3000-27 4000-27	3500DS 4500DS
26	1/8 NPT Plug	5000-38	ALL
N/S	1oz. Grease	*	ALL
N/S	1/4-20 Cap Screw	4000-28 (2)	4500DS
N/S	1/4 Washer	4000-29 (2)	4500DS
	Repair Kits:		
	W/ 17-4TN Plunger	3000-70 4000-70	3500DS 4500DS
	W/ 316 SS Plunger	3500-70 4500-70	3500DS 4500DS
	Seal Sets:		
	TG	3000-48	ALL
	Buna-N	3000-48B	ALL
	Viton	3000-48V	ALL
	Fluoraz	3000-48F	ALL

* = Included in Repair Kit
+ = Included in Seal Set

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided.
** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
8. Set cycle rate in strokes per minute.
(See volume graph)

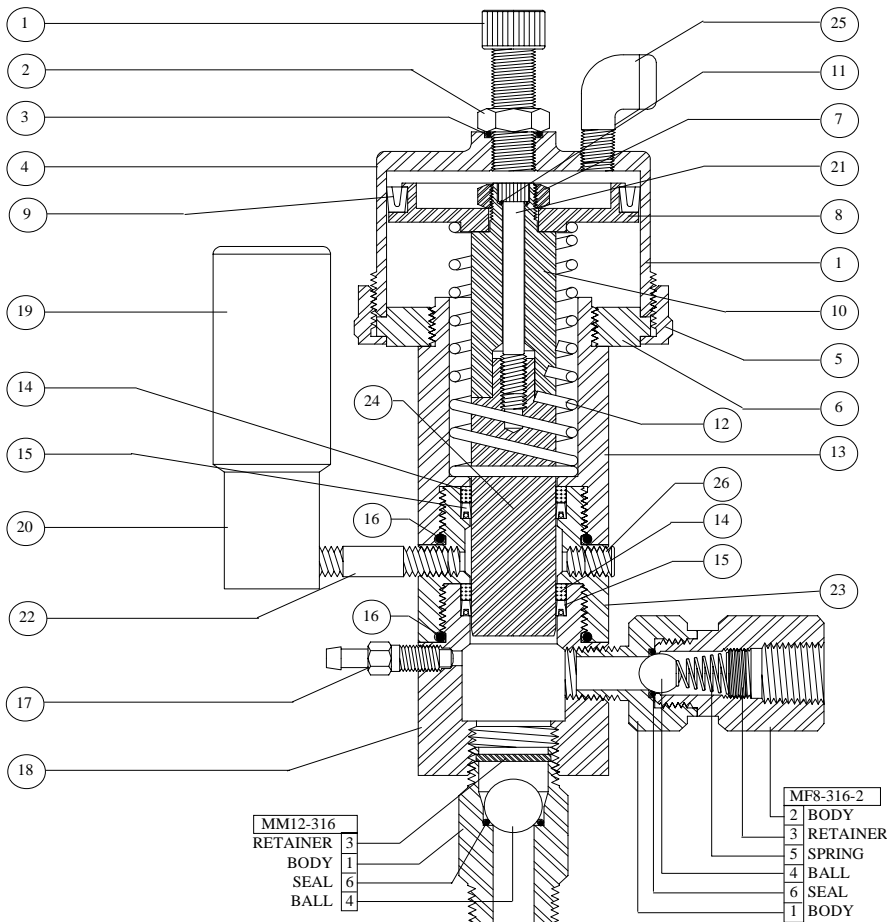


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PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 3755DS and 4755DS

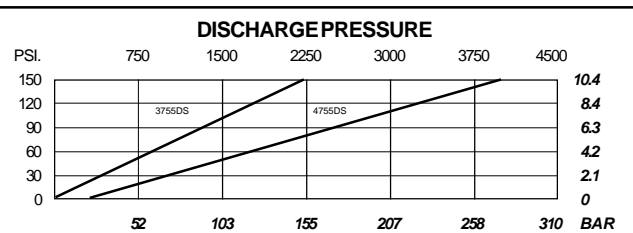
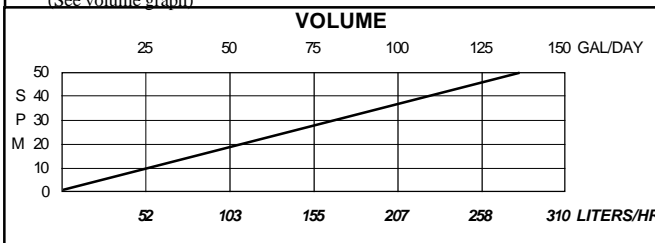


NO	NAME	PART NO.	PUMP MODEL
1	Stroke Adjuster	3000-1	ALL
2	Locknut	3000-2	ALL
3	O-Ring Seal	3000-3 *	ALL
4	Air chamber	3000-4 4000-4	3755DS 4755DS
5	Air Chamber Ring	3000-5 4000-5	3755DS 4755DS
6	Faceplate	3000-6 4000-6	3755DS 4755DS
7	Piston Locknut	3000-7	ALL
8	Piston	3750-8 4750-8	3755DS 4755DS
9	Piston Seal	300-9 400-9 *	3755DS 4755DS
10	Plunger Guide	3750-10	ALL
11	O-Ring Seal	100-11 *	ALL
12	Return Spring	3750-13 *	ALL
13	Oil Chamber	3750-14	ALL
14	Back-up Ring	3750-19	*+ (2)
15	Pressure Seal:		
	TG	3750-20	*+ (2) ALL
	Buna-N	3750-20B	+ Optional
	Viton	3750-20V	+ Optional
	Fluoraz	3750-20F	+ Optional
16	Body O-Ring Seal	3000-21	* (2) ALL
17	Bleeder	125-22	ALL
18	Fluid Chamber	3755-23	ALL
19	2 oz. Oil	100-24	ALL
20	Reservoir	3000-25	ALL
21	Plunger Bolt	3000-26	ALL
22	Nipple	3000-32 4000-32	3755DS 4755DS
23	Double Seal Body	3755-64	ALL
24	Plunger 17-4TN	3750-65	* ALL
	Plunger 316 SS	3755-67	Optional
25	Elbow	3000-27 4000-27	3755DS 4755DS
26	1/8 NPT Plug	5000-38	ALL
N/S	1oz. Grease		* ALL
N/S	1/4-20 Cap Screw	4000-28 (2)	4755DS
N/S	1/4 Washer	4000-29 (2)	4755DS
	Repair Kits:		
	W/ 17-4TN Plunger	3750-70	3755DS
		4750-70	4755DS
	W/ 316 SS Plunger	3755-70	3755DS
		4755-70	4755DS
	Seal Sets:		
	TG	3750-48	ALL
	Buna-N	3750-48B	ALL
	Viton	3750-48V	ALL
	Fluoraz	3750-48F	ALL

* = Included in Repair Kit
+ = Included in Seal Set

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical source.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay.
5. Fill oil reservoir with oil provided.
** This must be done BEFORE start up.**
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 to 15 psi ABOVE the pressure required.
(See discharge pressure graph).
8. Set cycle rate in strokes per minute.
(See volume graph)



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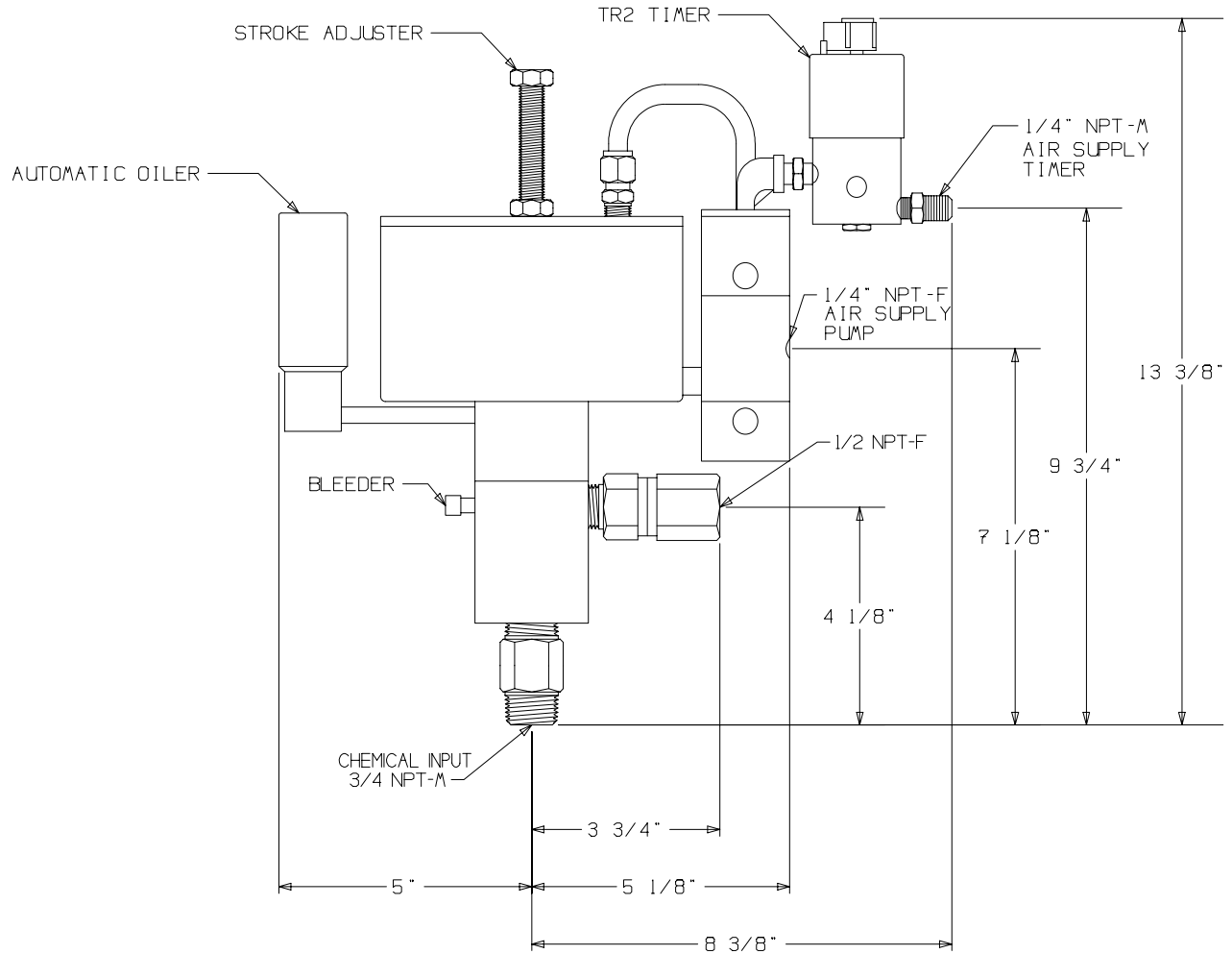
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 880DS-TR2-SR2S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



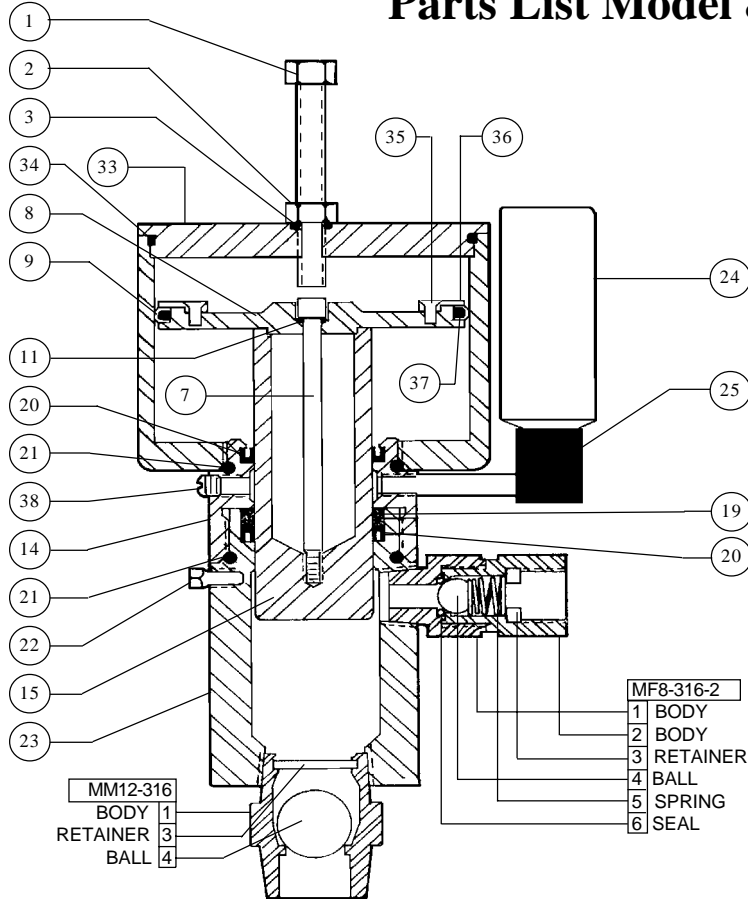
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
880DS-TR2-SR2S	19.7 cc	31:1	2 - 5.10	3/4 - M / 1/2 - F	4650 - 320	1.1 - 11 / 4.1 - 41

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 880DS

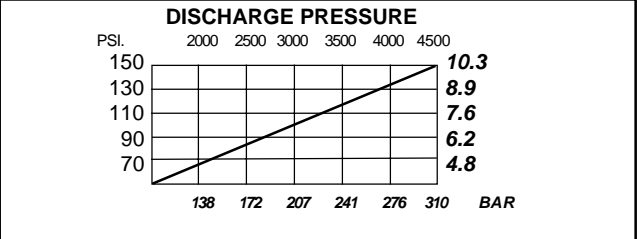
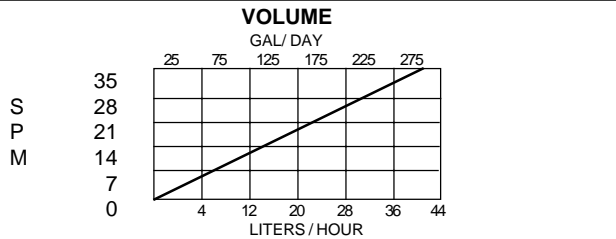


NO	NAME	PART NO.
1	Stroke Adjuster	5000-1
2	Locknut	3000-2
3	O-Ring Seal	3000-3 *
4	Air chamber	875-4
7	Piston Bolt	5000-7
8	Piston	875-8
9	Piston Seal	5000-9 *
11	O-Ring Seal	100-3 *
14	Oil Chamber	875-14
15	Plunger Ceramic	875-16 *
19	Back-up Ring	875-19 *
20	Pressure Seal	875-20 *(2)
21	Body O-Ring Seal	3000-21 *(2)
22	Bleeder	125-22
23	Fluid Chamber	875-23
24	4 oz. Oil	5000-24 *
25	Reservoir	3000-25
27	Elbow	5000-27
32	Nipple	3000-32
33	Air Chamber Cap	5000-33
34	Cap O-Ring	5000-34 *
35	Screw	5000-35 (8)
36	Seal Retainer	5000-36
37	Piston O-Ring	5000-37 *
38	1/8 NPT Plug	5000-38
	1oz. Grease	*
	Repair Kit	
	W/ Ceramic Plunger	880-50
	Seal Sets	
	T/G Seals	875-48
	Buna-N Seals	875-48B
	Viton Seals	875-48V
	Fluoraz Seals	875-48F

* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay and SR2S Relay.
5. Fill oil reservoir with oil provided.
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 - 15 psi ABOVE the pressure required. (See discharge pressure graph).
8. Set cycle rate in strokes per minute. (See volume graph).



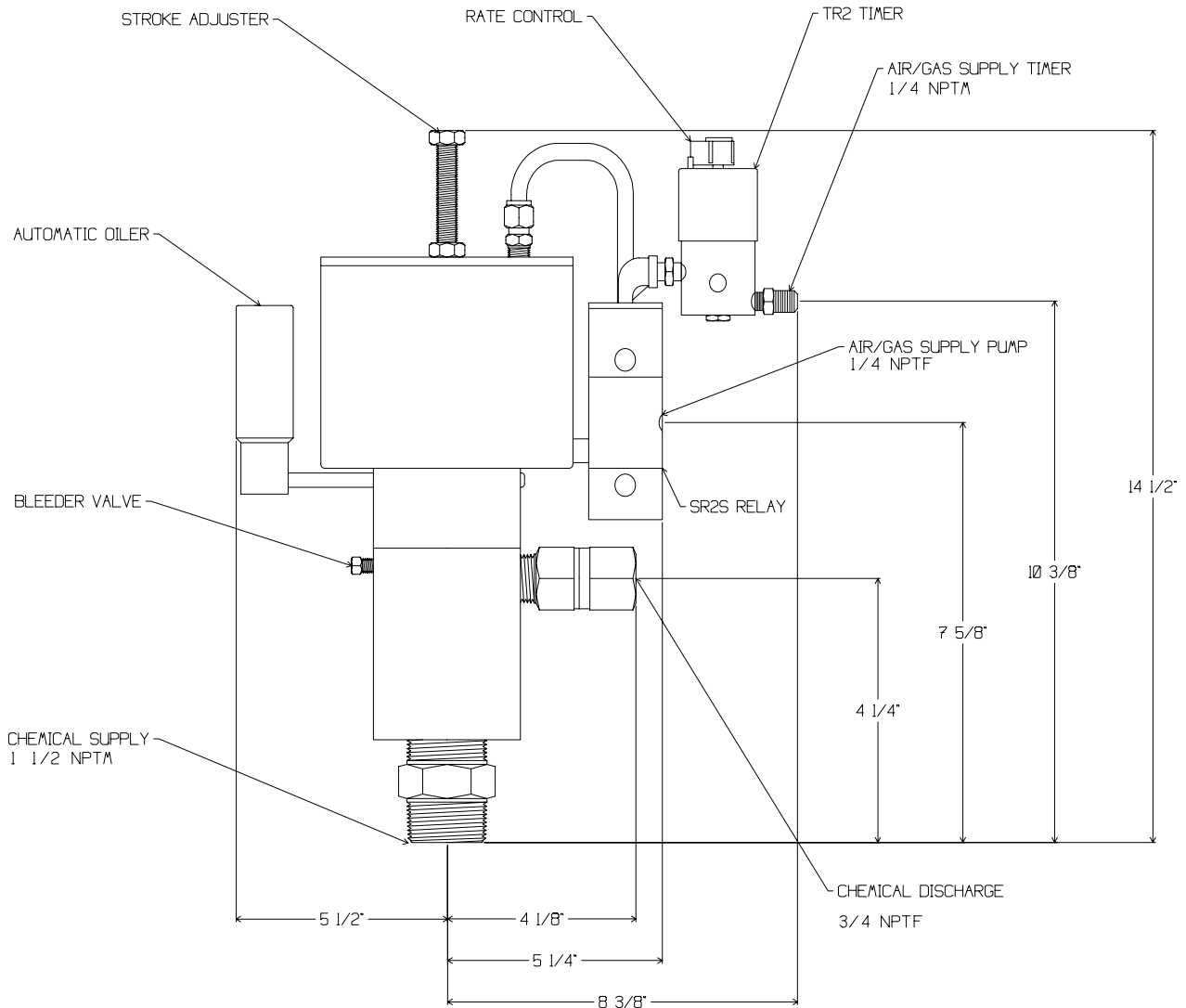
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 1255DS-TR2-SR2S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



Net Weight 30 Pounds
13.6 Kilograms

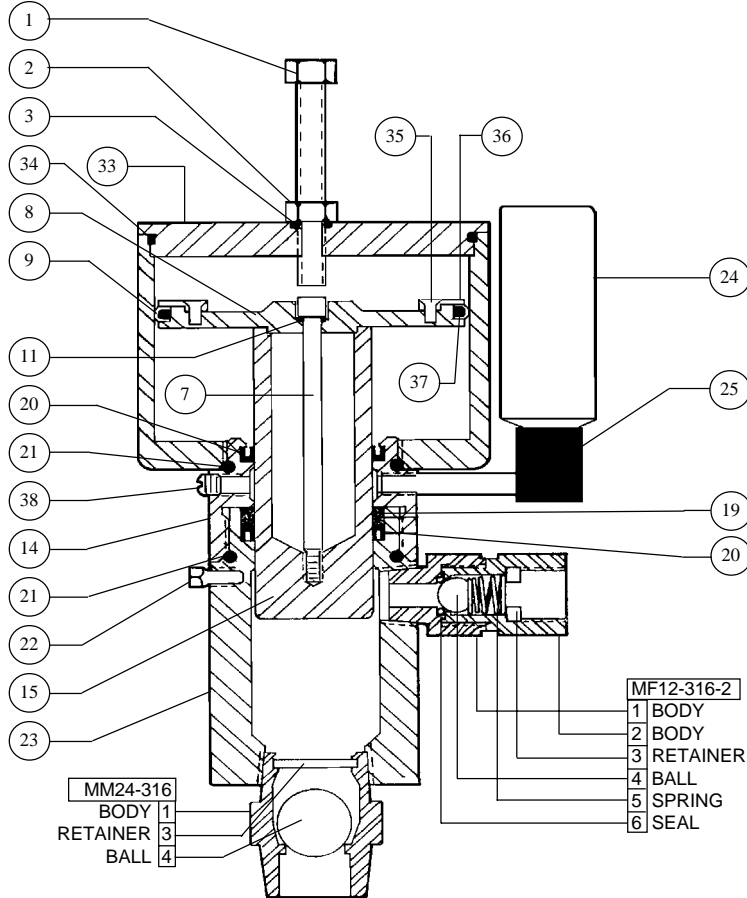
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
1255DS-TR2-SR2S	40.0cc	14:1	2 - 5.10	1 1/2 - M / 3/4 - F	2550-175	2.2 - 22 / 8.4 - 84

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 1255DS

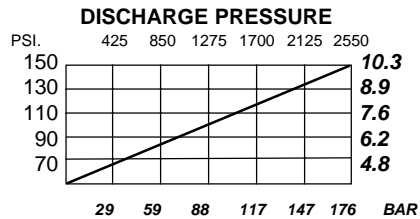
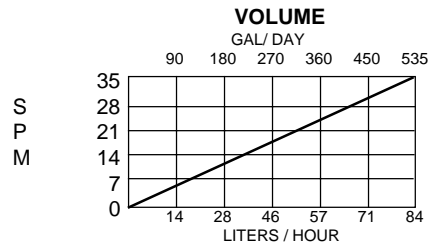


NO	NAME	PART NO.
1	Stroke Adjuster	5000-1
2	Locknut	3000-2
3	O-Ring Seal	3000-3 *
4	Air chamber	1255-4
7	Piston Bolt	5000-7
8	Piston	1255-8
9	Piston Seal	5000-9 *
11	O-Ring Seal	100-3 *
14	Oil Chamber	1255-14
15	Plunger 17-4TN	1250-15 *
	Optional Material	
	Plunger 316 SS	1255-17
19	Back-up Ring	1255-19 *
20	Pressure Seal	1255-20 * (2)
21	Body O-Ring Seal	1255-21 * (2)
22	Bleeder	125-22
23	Fluid Chamber	1255-23
24	4 oz. Oil	5000-24 *
25	Reservoir	3000-25
27	Elbow	5000-27
32	Nipple	3000-32
33	Air Chamber Cap	5000-33
34	Cap O-Ring	5000-34 *
35	Screw	5000-35 (8)
36	Seal Retainer	5000-36
37	Piston O-Ring	5000-37 *
38	1/8 NPT Plug	5000-38
	1oz. Grease	*
	Repair Kit	
	W/ 17-4TN Plunger	1250-50
	W/ 316 SS Plunger	1255-50

* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay and SR1S Relay.
5. Fill oil reservoir with oil provided.
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 - 15 psi ABOVE the pressure required. (See discharge pressure graph).
8. Set cycle rate in strokes per minute. (See volume graph).



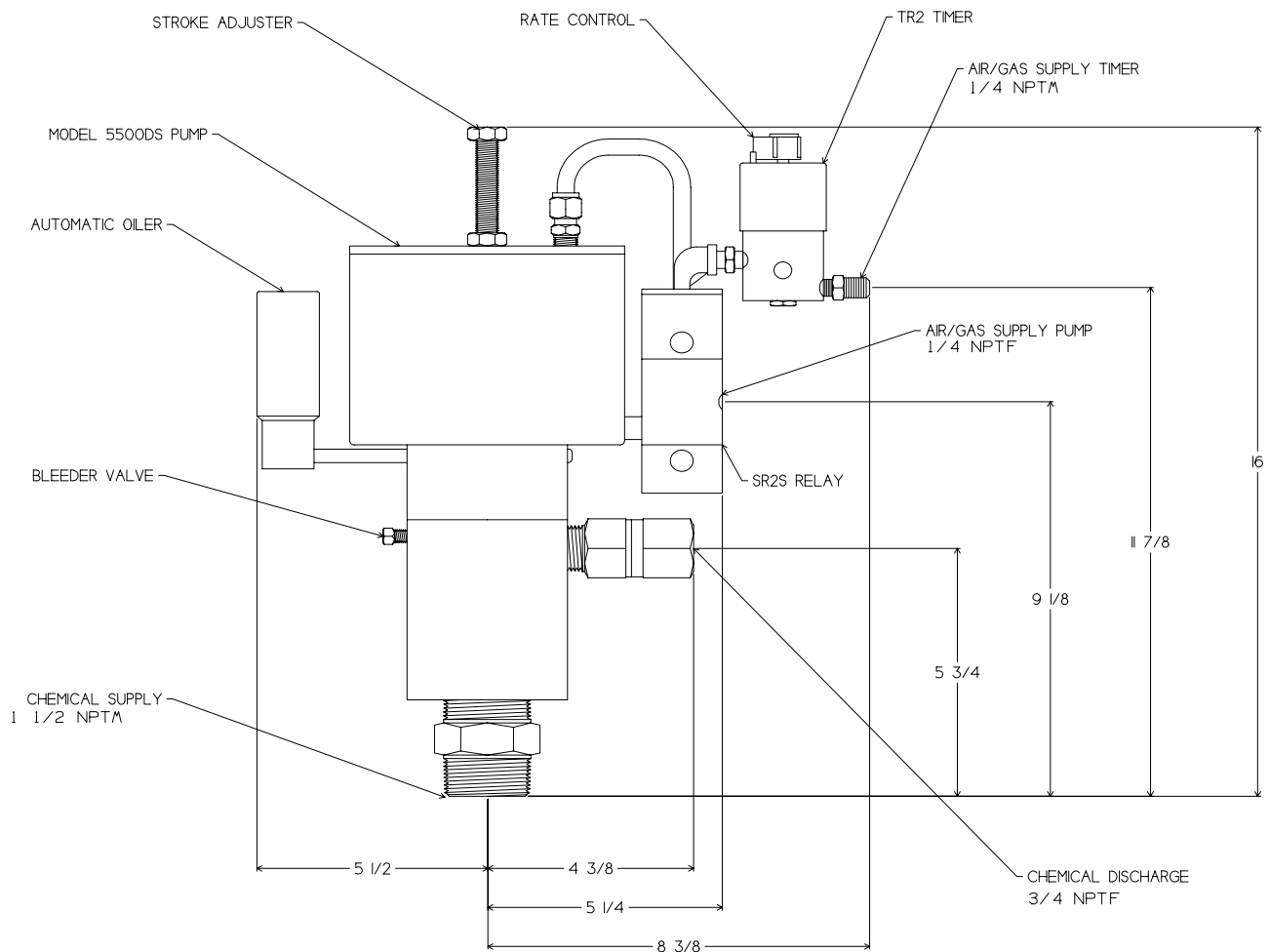
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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

MODEL 5500DS-TR2-SR2S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP



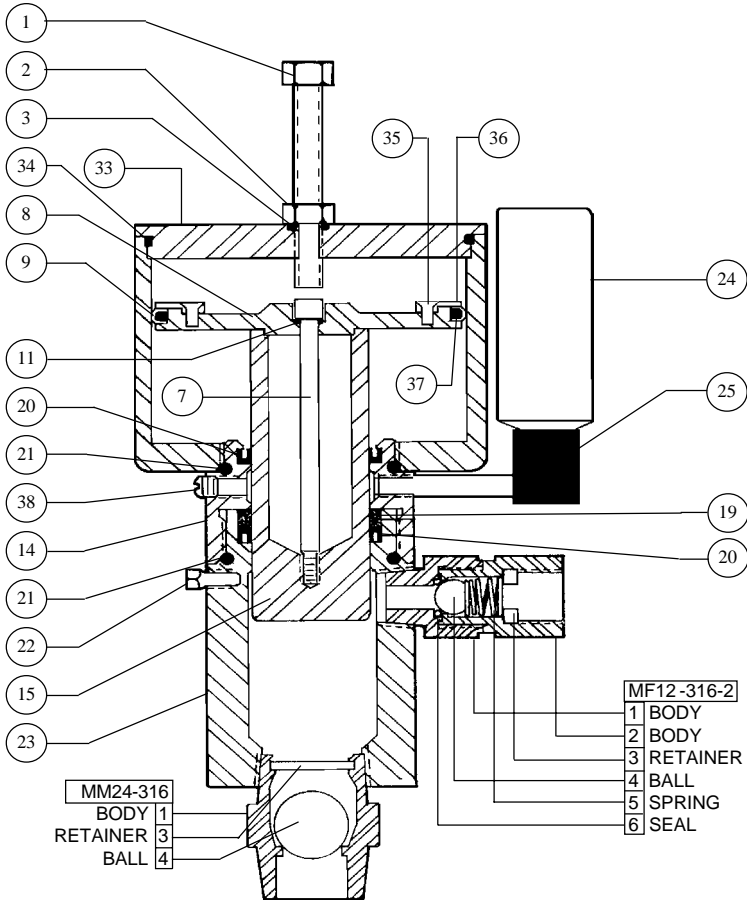
MODEL (WITH TIMER)	PUMP DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
5500DS-TR2-SR2S	154.0 cc	6:1	3.1 - 7.87	1 1/2 - M / 3/4 - F	900 - 62	9 - 90 / 34 - 341

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

Parts List Model 5500DS

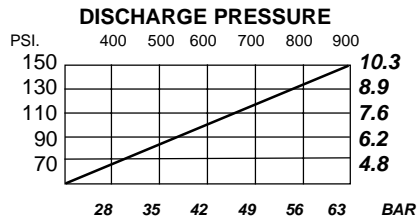
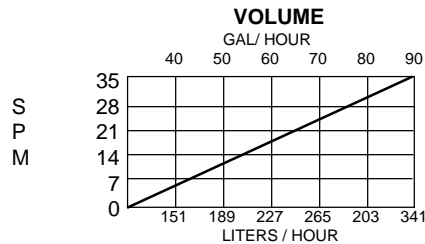


NO	NAME	PART NO.
1	Stroke Adjuster	5000-1
2	Locknut	3000-2
3	O-Ring Seal	3000-3 *
4	Air chamber	5000-4
7	Piston Bolt	5000-7
8	Piston	5000-8
9	Piston Seal	5000-9 *
11	O-Ring Seal	100-3 *
14	Oil Chamber	5000-14
15	Plunger 17-4TN	5000-15 *
	Optional Material	
	Plunger 316 SS	5500-17
19	Back-up Ring	5000-19 *
20	Pressure Seal	5000-20 * (2)
21	Body O-Ring Seal	5000-21 * (2)
22	Bleeder	125-22
23	Fluid Chamber	5000-23
24	4 oz. Oil	5000-24 *
25	Reservoir	3000-25
27	Elbow	5000-27
32	Nipple	3000-32
33	Air Chamber Cap	5000-33
34	Cap O-Ring	5000-34 *
35	Screw	5000-35 (8)
36	Seal Retainer	5000-36
37	Piston O-Ring	5000-37 *
38	1/8 NPT Plug	5000-38 *
	1oz. Grease	*
	Repair Kit	
	W/ 17-4TN Plunger	5000-50
	W/ 316 SS Plunger	5500-50

* = Included in Repair Kit

INSTALLATION INSTRUCTIONS

1. Discard all red plastic closures.
2. Connect suction check valve, to a gravity fed chemical.
3. Connect discharge check valve, to process line.
4. Connect a regulated air or gas supply, to the timing relay and SR1S Relay.
5. Fill oil reservoir with oil provided.
6. Open bleeder valve until chemical flows from bleeder.
7. Set regulator at 10 - 15 psi ABOVE the pressure required. (See discharge pressure graph).
8. Set cycle rate in strokes per minute. (See volume graph).



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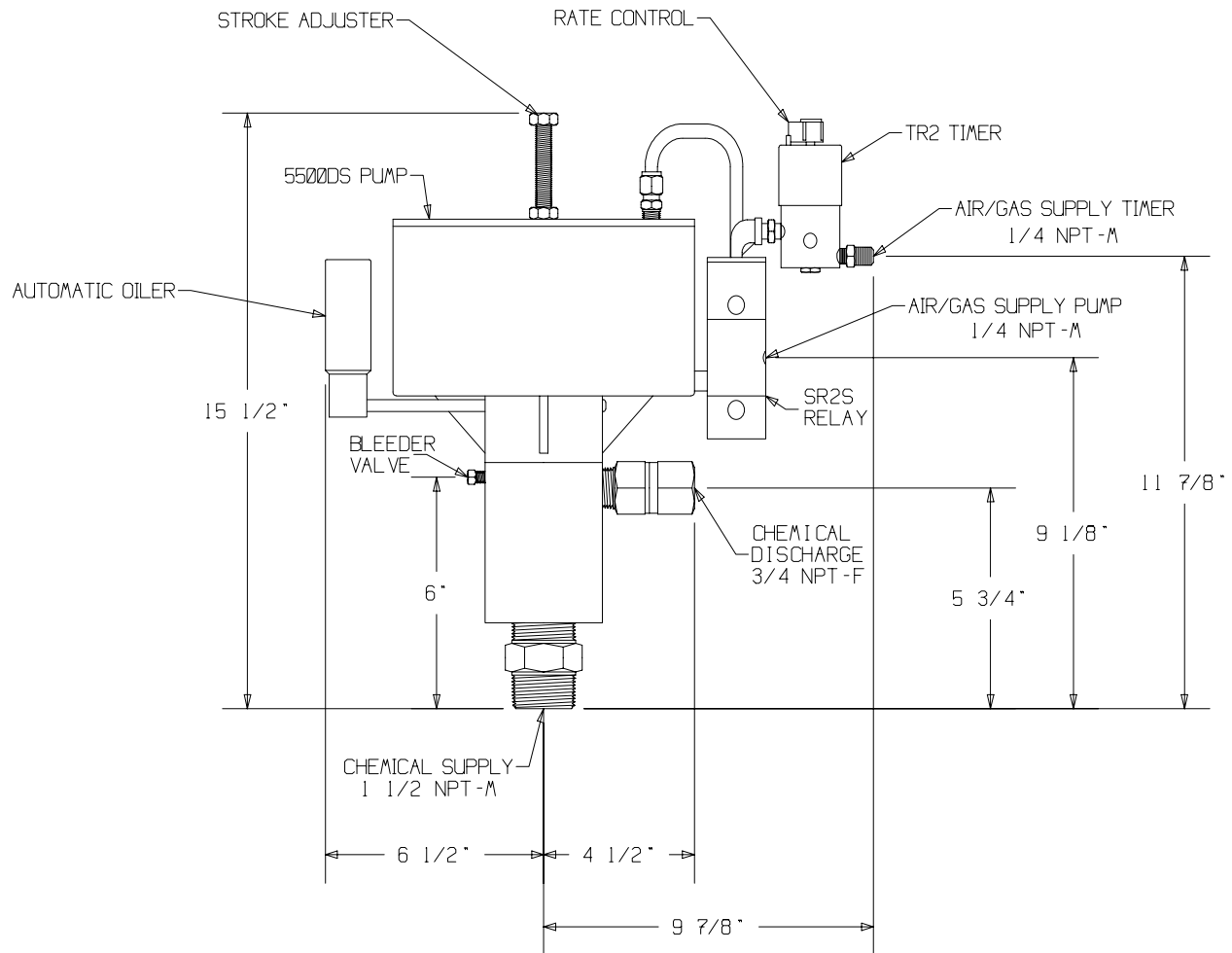
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MORGAN PRODUCTS

MODEL 8500DS-TR2-SR2S

AIR ACTUATED POSITIVE DISPLACEMENT PUMP

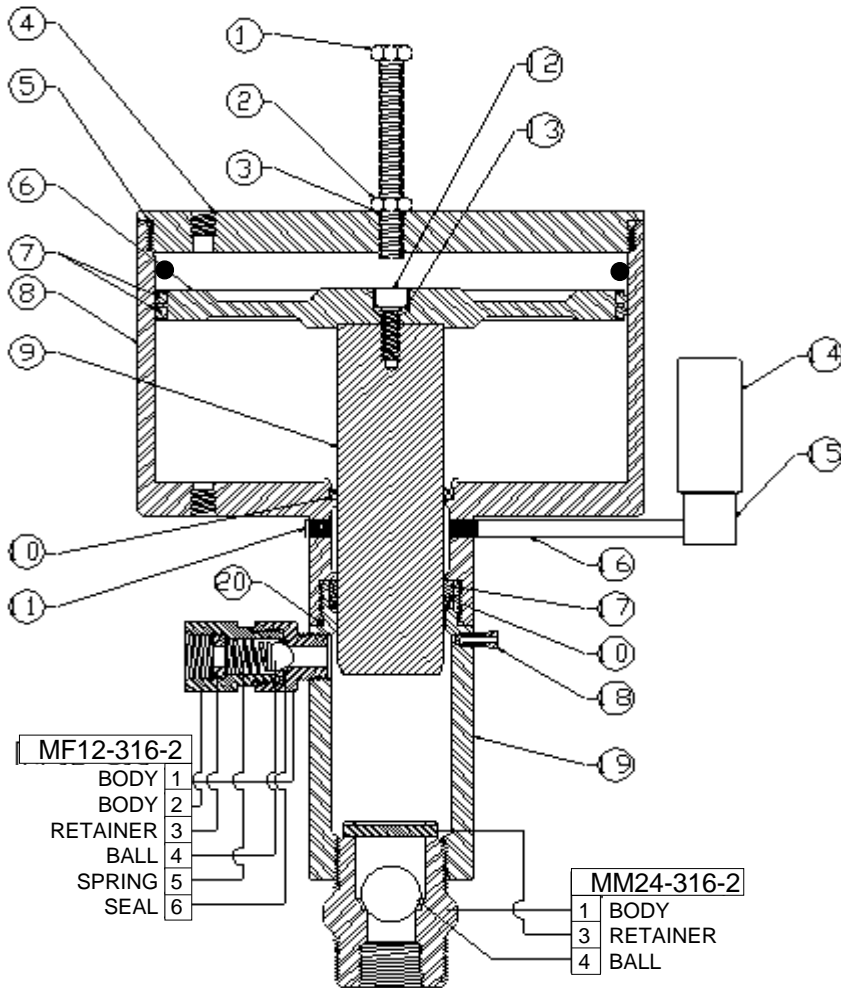


MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
8500DS-TR2-SR2S	154.0 cc	14:1	3.1 - 7.87	1 1/2 - M / 3/4 - F	2100 - 144	9 - 90 / 34 - 341

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MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES PARTS LIST MODEL 8500DS



No.	Name	Part No.
1	Stroke Adjuster	5000-1
2	Locknut	3000-2
3	O-Ring	3000-3 *
4	Air Chamber Cap	8000-33
5	O-Ring	8000-34 *
6	Piston	8000-8 *
7	Piston Seal	8000-9 *
8	Air Chamber	8000-4
9	Plunger 17-4 TN	5000-15 *
	Optional Plungers	
	316 ss	5500-17
	Carpenter 20	5000-18
10	Pressure Seal	
	Standard TG	5000-20 *+(2)
	Optional	
	Buna-N	5000-20B
	Viton	5000-20V
	Fluoraz	5000-20F
11	1/8 npt Plug	5000-38
12	Piston Bolt	5000-7
13	O-Ring	100-3
14	4oz. Oil	5000-24
15	Oil Reservoir	3000-25
16	Nipple	8000-32
17	Back-Up Ring	5000-19 *+
18	Bleeder	125-22
19	Fluid Chamber	5000-23
20	O-Ring	5000-21 *
	1oz Grease	*
	Repair Kits:	
	17-4 TN Plunger	5000-50
	316 ss Plunger	5500-50
	Seal Sets:	
	TG	5000-48
	Buna-N	5000-48B
	Viton	5000-48V
	Fluoraz	5000-48F

* = Included in Repair Kit

+ = Included in Seal Set

To order check valve parts, use check valve designation & dash number. Example: Ball for MF12-316-2 Order MF12-316-2/4
Keep all rubber goods lubricated with Morgan Products grease or equivalent.



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HPT

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