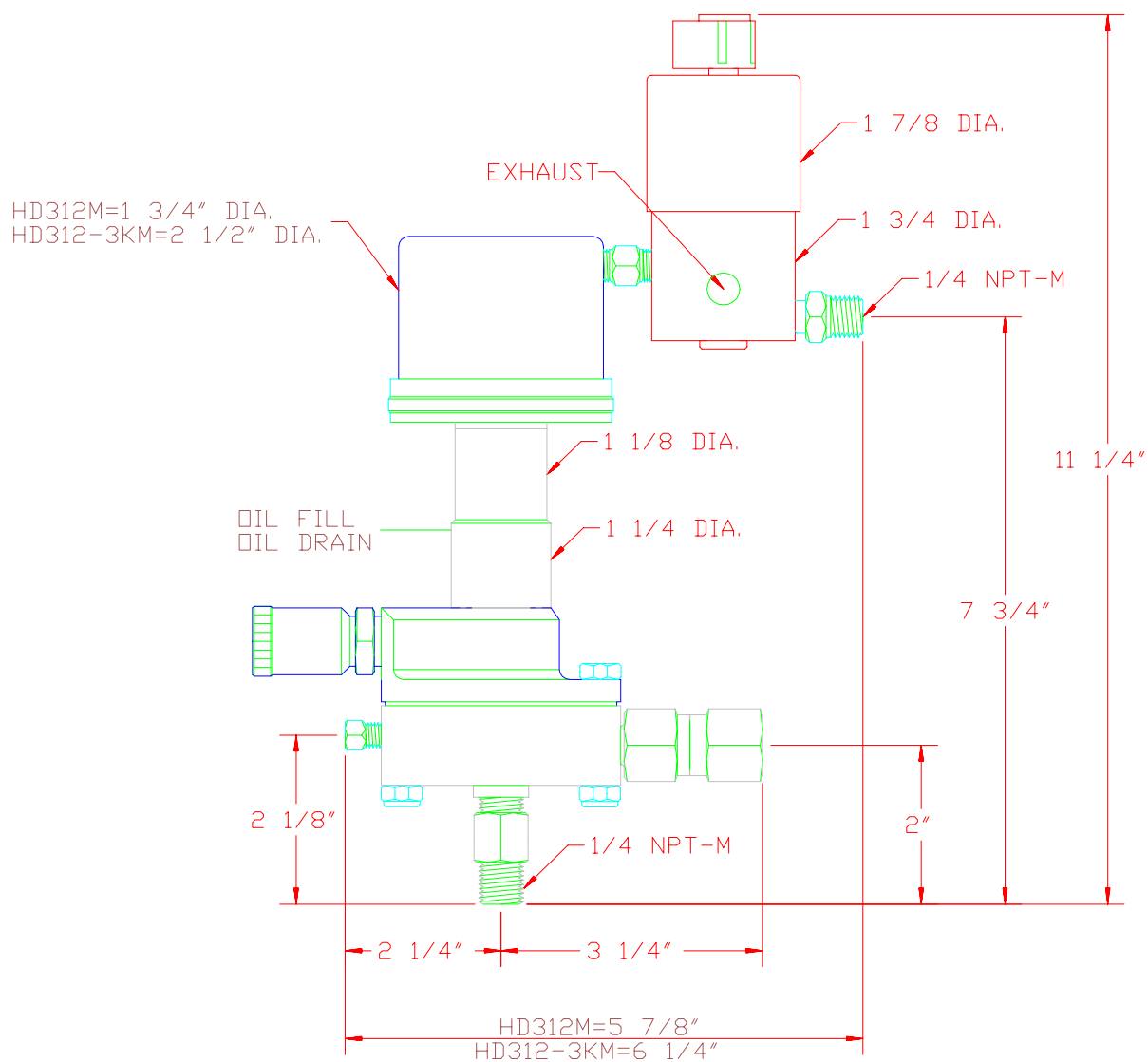


# MORGAN PRODUCTS

PNEUMATIC CHEMICAL PUMPS FOR THE GAS AND OIL INDUSTRIES

## MODEL HD312M / HD312-3KM

AIR ACTUATED HYDRAULIC DIAPHRAGM PUMP



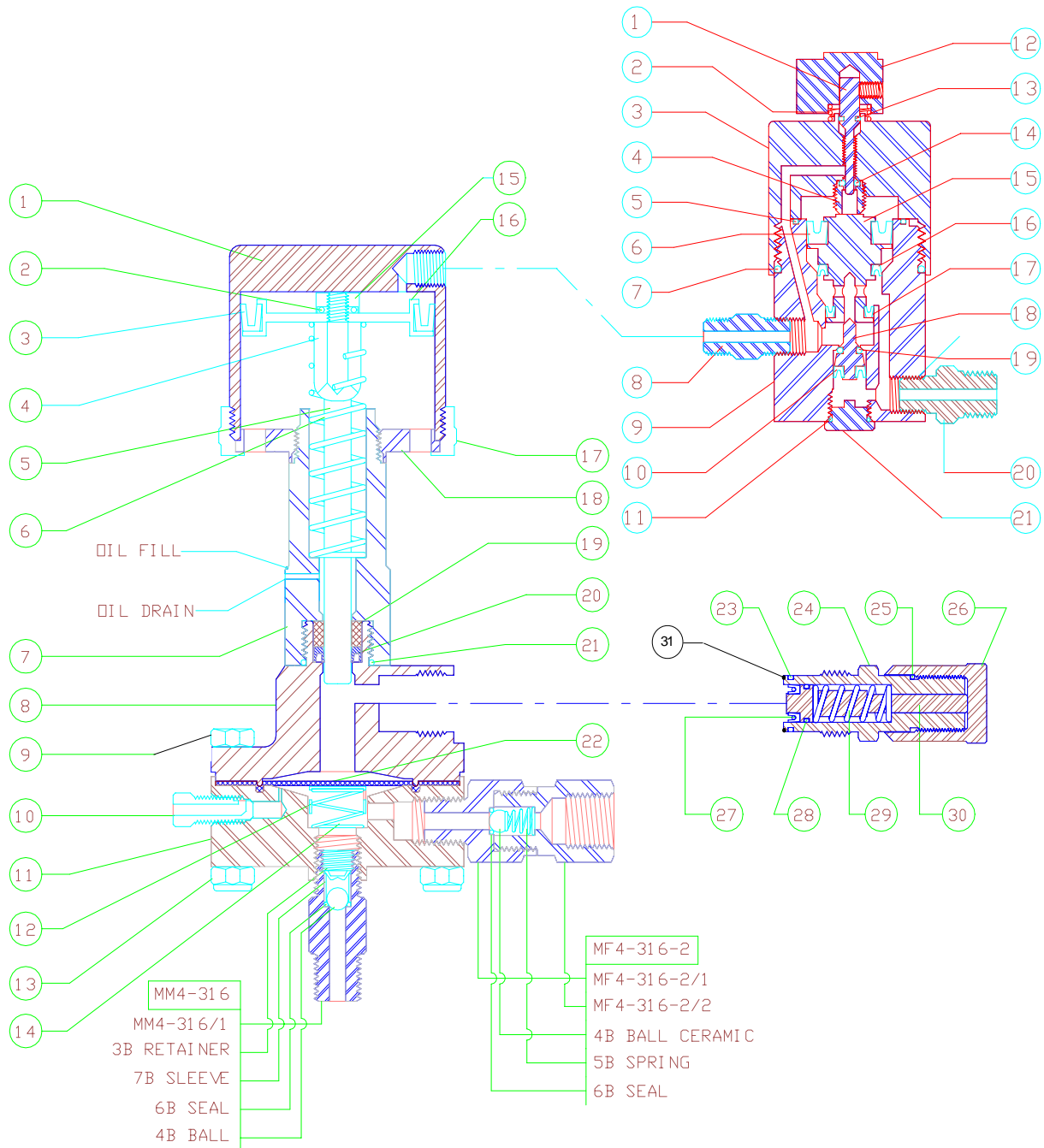
MODEL (WITH TIMER)	DISPLACEMENT	PUMP RATIO	STROKE LENGTH in. - cm.	CONNECTIONS ALL NPT INPUT / OUTPUT	MAXIMUM DISCHARGE PSI - BAR	OUTPUT PER HOUR GAL. / LTS.
HD312M-TR2	.1-1 cc	10:1	1 - 2.5	1/4 - M / 1/4 - F	1000 - 68.9	.01 - .63 / .05 - 2.4
HD312-3KM-TR2	.1-1cc	30:1	1 - 2.5	1/4 - M / 1/4 - F	3000 -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

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# 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	SR2S-15 # *	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

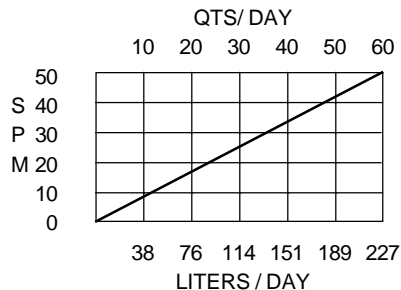
Table constant multiplied by stroke rate = SCFD  
 Example: HD312 (operated at 50 psi) Multiply 6.4 by 20 SPM = 128 SCFD

## 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

