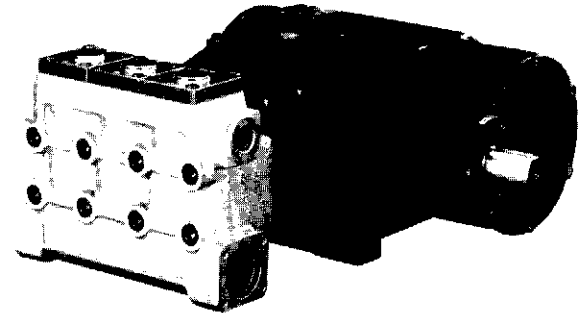


APPLICATIONS

The MSS55 pump with built-in gear reducer is designed for the demanding requirements of sewer cleaning equipment and a wide range of industrial applications which include high pressure cleaning systems, hydrostatic test equipment and water purification systems.

FEATURES

- Built-in gear reducer (2.0 ratio)
- Heavy cast iron crankcase
- Nickel-treated nodular cast iron manifold
- Optional stainless steel manifold
- Self-adjusting shaft bearings with double roller rim
- Double projection, gas-nitride, hardened steel crankshaft
- Anti-friction bronze connecting rods
- Stainless steel valves
- Ceramic-coated stainless steel plungers



PERFORMANCE DATA

RPM	FLOW (GPM)
1000	55.9
1200	66.7
1400	77.6
1500	83.4
MAX PSI	2000

HORSEPOWER FORMULA	
$\frac{\text{GPM} \times \text{PSI}}{1460}$	= REQUIRED BRAKE H.P.
RPM FORMULA	
$\frac{\text{RATED RPM} \times \text{DESIRED GPM}}{\text{RATED GPM}}$	= PUMP RPM

Performance data stated at 100% volumetric efficiency. Based on inlet water conditions, pump volumetric efficiency is 95% or greater.

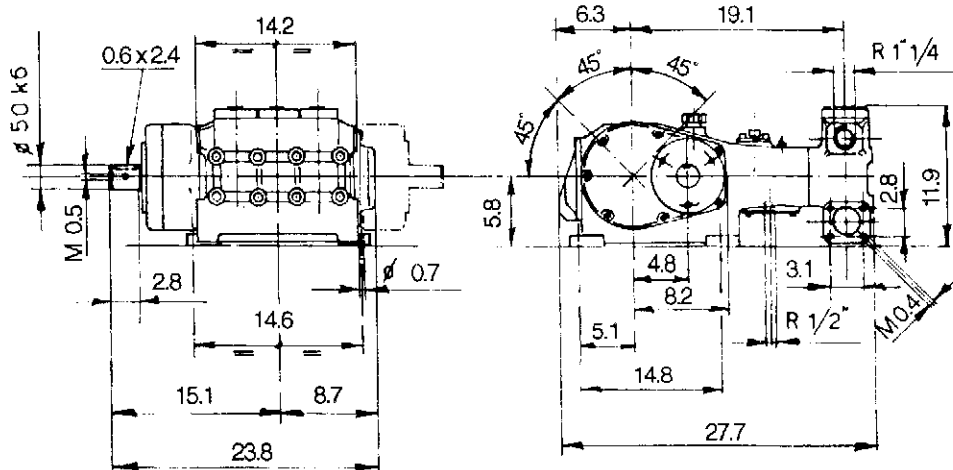
SPECIFICATIONS

Volumes	up to 83.4 GPM
Discharge Pressure	2000 PSI Max.
Max. Inlet Pressure	Flooded to 45 PSI Max.
Fluid Temperature	150°F Max.*
Crankcase Capacity	132 oz.
Inlet	Hosebarb for 3 in. ID Hose
DischargePort	1-1/4 in. BGT
Discharge Fitting	1-1/4 in. NPT M
Shaft Diameter	50 mm
Weight	520 lbs.
Dimensions	27.7 in. L x 19.5 in. W x 11.9 in. H

*See Fluid Temperature Section

SIDE VIEW

END VIEW





DESIGN CRITERIA

General Industrial MS Series Triplex Plunger Pumps with gear box are designed and manufactured to pump water and other liquids of similar viscosity compatible with the construction materials used in the pump.

Durable by design, MS Series Pumps with gear box are ideal for a wide variety of high-pressure applications including intermittent or continuous duty high-pressure cleaning and water sandblasting.

Optimum pump performance can only be achieved if the entire fluid system is designed and built using properly sized plumbing and accessories. General MS Industrial Pumps with gear box are positive displacement pumps and require the use of a properly designed pressure relief mechanism in the discharge plumbing of any system using these pumps.

Failure to install a relief mechanism could result in personal injury or damage to the system.

General Pump, Inc. does not assume any liability or responsibility for the design and operation of a customer's high-pressure system.

PUMP SELECTION - NORMAL DUTY

The General Industrial MS Series Pumps with gear box offers a wide range of flow, pressure and drive options. Pump performances indicated for the MS Series Pumps with gear box (RPM, GPM, PSI, fluid temperature) are the designed maximum for pumps operated on a **normal intermittent duty cycle**.

PUMP SELECTION - CONTINUOUS DUTY

Most MS pumps with gear box can be re-rated for continuous duty by reducing the pump RPM by 25% minimum and by installing a feed pump capable of delivering two times the operating flow rate at 45 PSI maximum. In selecting a pump for continuous duty, optimal performance is accomplished by using the largest plunger diameter practical and reducing the RPM to deliver the desired flow. **Do not exceed the maximum rated discharge pressure of this pump.**

Example: Customer requirement is 35.6 GPM @ 3500 PSI. According to the catalogue, the MS 36 operated at 1500 RPM would be the proper pump for intermittent duty. For continuous duty select the MS Series pump with gear box that allows for the most reduction in crankshaft speed. The MS 40 operated at 1200 RPM will deliver the desired performance on a continuous duty basis. The MS 40 was selected instead of the MS 50, because the MS 50 would have to be operated at 770 RPM to produce the desired flow. Through the gear reducer this would result in a crankshaft speed of 385 RPM (too slow for proper lubrication).

Proper splash lubrication requires a 500 RPM minimum internal crankshaft speed.

PUMP INSTALLATION

When designing a system, **keep the inlet plumbing as simple as possible using a minimum amount of fittings or elbows with no elbows within 12" of pump inlet.**

Pump life is considerably influenced by the condition of the fluid supplied to the inlet of the pump. **Inlet plumbing should be flexible reinforced hose, 1.5 to 2 times larger than the specified inlet port size.** Inlet and discharge fittings are furnished with each pump.

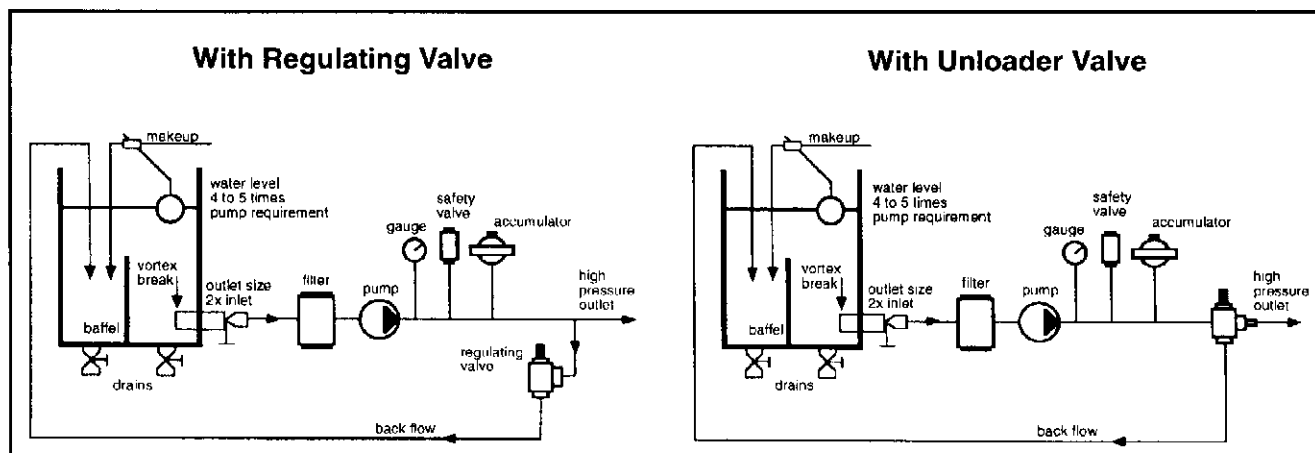
It is critical to provide airtight inlet plumbing sized to deliver an adequate volume of settled fluid to the pump (**minimum 2 times the operating flow rate**). This is best accomplished with a pressurized feed at 30-45 PSI or a flooded inlet.

Do not let pump self prime.

When using an inlet holding tank (float tank), size it according to the maximum rated output of the pump. Provide a **minimum of 5 times the operating flow rate (a 10 GPM pump requires a 50 GPM tank)**. The feed tank should contain sufficient baffling to eliminate air bubbles and turbulence. Feed tanks should be mounted so the water level in the tank is always higher than the feed lines and the inlet port of the pump (flooded inlet). Diffusers should be installed on all return lines to the tank. (See diagram.)



Typical Installation diagram:



FLUID TEMPERATURE

MS Series Pumps with gear box are rated for 150°F maximum fluid temperature. However, **when operating with fluid temperatures exceeding 110°F, a pressurized inlet is required.** Install a feed pump capable of delivering two times the operating flow rate at 45 PSI maximum, and follow continuous duty parameters.

FILTERS

Install an inlet filter on all systems. The filter should be positioned as close as possible to the inlet of the pump. **The inlet filter capacity must be a minimum of three times the rated output of the pump.** Filter media of 50 to 80 microns is recommended for most systems.

PUMP MOUNTING

The pump must be mounted in a horizontal position on a rigid base in a manner to permit drainage of crankcase oil. The pump should be flat with no more than a 5 degree incline. Pumps can be operated using pulley or direct drive. **Observe the specified pump rotation indicated by the arrows on the crankcase.** General Industrial Pumps are splash lubricated. By observing the proper rotation and crankshaft speed (500 RPM minimum), the crank mechanism puts oil in circulation through internal crankcase grooves so the connecting rods, bearings, piston guides and other surfaces requiring lubrication receive proper coverage.

Crankcase oil should be checked frequently and changed as follows: Initial oil change between the first 50 and 100 hours of operation; then after each successive 500 hours of operation. Use General Pump Oil P/N 100217, Pennzoil RO 220 or equivalent.

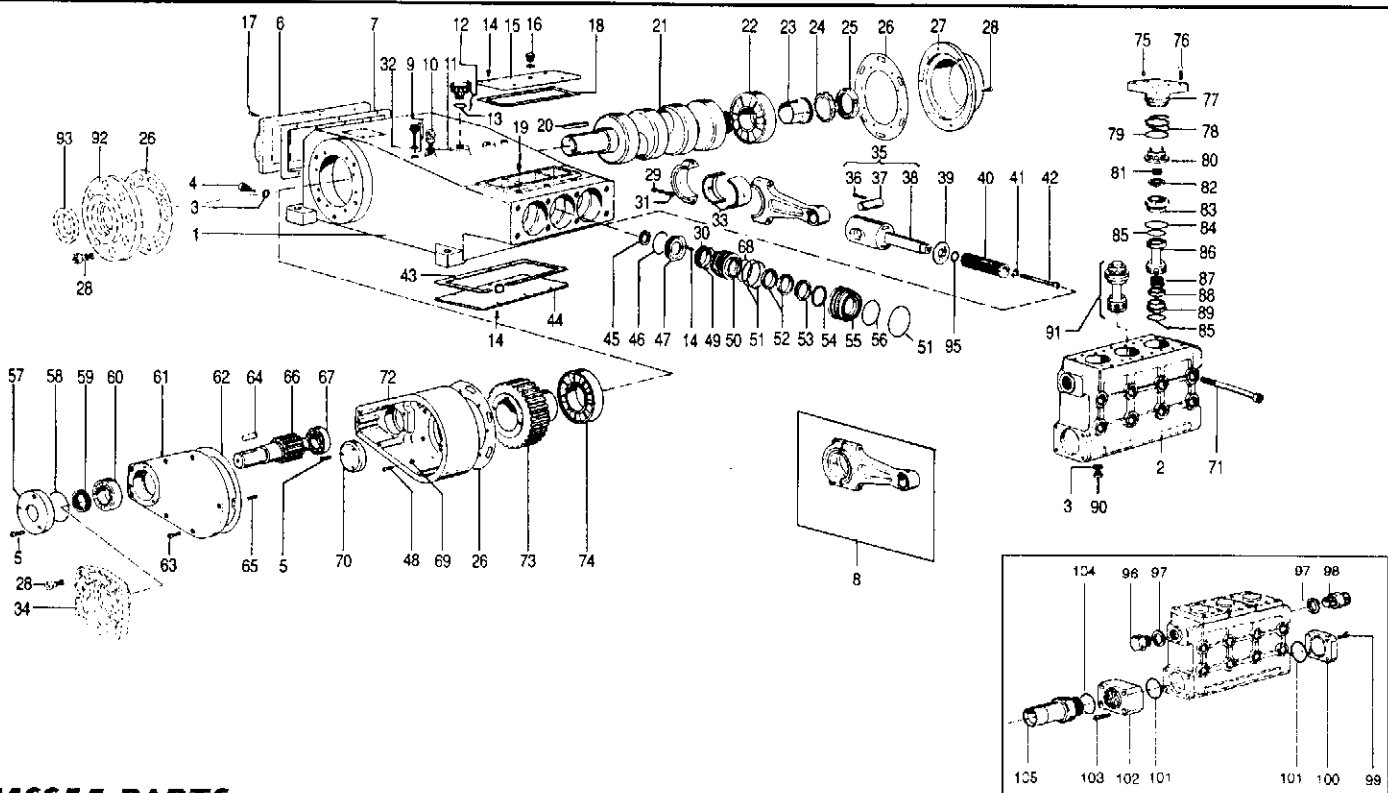
MS Series Pumps with gear box are equipped with grease fittings (Position 29). Greasing should be done prior to initial start-up and after every 100 hours of operation. Using a hand grease gun, apply a high grade silicon grease with a penetration coefficient of 290 (General Pump Silicon Grease P/N 100278). **Caution — Do Not Overlubricate — Stop At The First Sign Of Back Pressure To Avoid Damage To Packings.**

START-UP

Check oil prior to start-up, and open all inlet and discharge valves. **Always start the pump in a zero pressure condition. Never let pump run dry.**

WARRANTY

General Pump products are warranted by the manufacturer to be free from defects in material and workmanship. Period of warranty shall be 1 year from date product is received by original buyer. Liability of manufacturer under the foregoing warranty is limited to **repair or replacement** at the option of manufacturer of that product which according to the manufacturer's investigation was deemed defective at time of shipment. Damage resulting from neglect, abuse, tampering or misapplication voids the warranty. This warranty is in lieu of all other warranties, expressed or implied, including any warranty of merchantability and or any and all other obligations or liabilities on the part of the manufacturer.



MSS55 PARTS

Pos. Code	Description	Qty.	Pos. Code	Description	Qty.	Pos. Code	Description	Qty.
1	F060100220	1	36	F872142016	3	70	F030000090	1
2	F064100260	1	37	F071000060	3	71	F871145120	1
3	F872043002	4	38	F020100070	3	72	F060100240	1
4	F801057002	1	39	F041500010	3	73	F052000100	1
5	F871125105	6	40	F024200380	3	74	F811100016	1
6	F063400540	1	41	F872040004	3	75	F871245358	1
7	F080600100	1	42	F871135510	3	76	F871135103	12
8	F250000020	3	43	F080600130	1	77	F063100110	3
9	F001000010	2	44	F040000070	1	78	F881112002	3
10	F872026003	2	45	F881081000	3	79	F881010219	3
11	F030000030	2	46	F881010127	3	80	F021300110	3
12	F801054027	1	47	F063400560	1	81	F090200090	3
13	F881010116	1	48	F871125108	3	82	F062200110	3
14	F871115102	16	49	F881010014	3	83	F081200130	3
15	F040000050	1	50	F022300380	3	84	F881011166	3
16	F801056002	1	51	F881011052	3	85	F881011159	6
17	F871121103	6	52	F881020015	6	86	F021300090	3
18	F080600120	1	53	F031200220	3	87	F090200080	3
19	F801077003	3	54	F031300140	3	88	F062200100	3
20	F872100005	1	55	F062200250	3	89	F081200120	3
21	F050000100	1	56	F881011164	3	90	F084000010	3
22	F811110008	1	57	F063100190	1	91	F208005040	3
23	F811920004	1	58	F881010131	1	95	F881012115	1
24	F872069012	1	59	F881080026	1	96	F821201057	3
25	F872020012	1	60	F811100010	1	97	F881101004	1
26	F080600110	2	61	F063100150	1	98	F821020017	2
27	F063400580	1	62	F080600140	1	99	F871125106	4
28	F871125106	8	63	F871125101	7	100	F063100130	1
29	F871350001	6	64	F872097009	1	101	F881011253	2
30	F881061019	3	65	F872126004	2	102	F073100030	1
31	F872046006	6	66	F052000110	1	103	F871125112	4
32	F872041501	2	67	F811101008	1	104	F881011170	1
33	F812000001	3	68	F881011167	3	105	F073000020	1
35	F250001060	3	69	F872047005	8			

REPAIR KITS

POSITIONS INCLUDED	N.PCS.	MSS55
30 49 52 68	3-6	KIT 487
50 51	3-6	KIT 493
53	3	KIT 496
30 49 50 51 52 53 54 68	1-2	KIT 502
80 81 82 83 84 85 86 87 88 89 (91)	1-2	KIT 504
45	3	KIT 505
3 13 32 41 46 51 56 58 78 79 84 85 95	3-20	KIT 507

TORQUE SPECS*

Position	Ft./lbs.
29	50
42	65
71	180
76	87

*Decrease torque by 20% if threads are lubricated.

GENERAL PUMP INCORPORATED

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