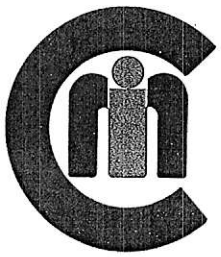
York

6 x 6 to 10 x 10 Compressor

Parts & Maintenance Manual



CENTRAL ICE MACHINE COMPANY
Refrigeration Supplies

6279 S. 118TH STREET ■ OMAHA, NEBRASKA 68137
402-731-4690 ■ 800-228-7213 ■ FAX 402-731-0823

WE CAN SUPPLY ALL YOUR REFRIGERATION NEEDS AND PARTS FOR USE IN THE FOLLOWING...

COMPRESSORS: York - Frick - Vilter - Fuller - Mycom - Sullair - FES - Howe - Crepaco - Grasso - Sabroe - Kobe - Dunham Bush - Stal - Howden

CONTROL VALVES: Refrigerating Specialties - Hansen - Phillips - Hubbell - Alco - Sporlan - Grasso - Danfoss

HAND VALVES: Refrigerating Specialties - Hansen - Herl - Frick - Henry - Shank - Grasso - Danvalve

RELIEF VALVES: Henry - Refrigerating Specialties - Hansen - Shank - Rego

CONDENSERS AND EVAPORATORS: Evapco - Frick - Imeco - Frigid Coil - Krack - Baltimore Air Coil - Vilter - Gebhardt - King

GAUGES: Marsh - Ashcroft - Danton - Duro - McDaniel - Wika

REFRIGERATION CONTROLS: Penn - Mercoid - Honeywell - Barber Coleman - Johnson Controls

REFRIGERATION PUMPS: Cornell - Viking - York IT - Blackmere - Hansen

PURGERS: Hansen - Refrigerating Specialties - Armstrong

MISCELLANEOUS: X-Pando Pipe Joint Compound - MSA Gas Masks - Sulphur Sticks for Ammonia Leak Detection - Litmus Paper - Coalescer Filter Elements

LOW PRICES – HUGE INVENTORY
KNOWLEDGEABLE SALES PEOPLE

File: In K-3 Section of A & S Catalog

Supersedes: K-3, Pages 26 thru 36

YORK Engineered Machinery Sales

RENEWAL PARTS

K-3 Form MS 29

YORK AMMONIA COMPRESSORS

6" x 6" to 10" x 10", Inclusive, Type Y-26 and Later

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

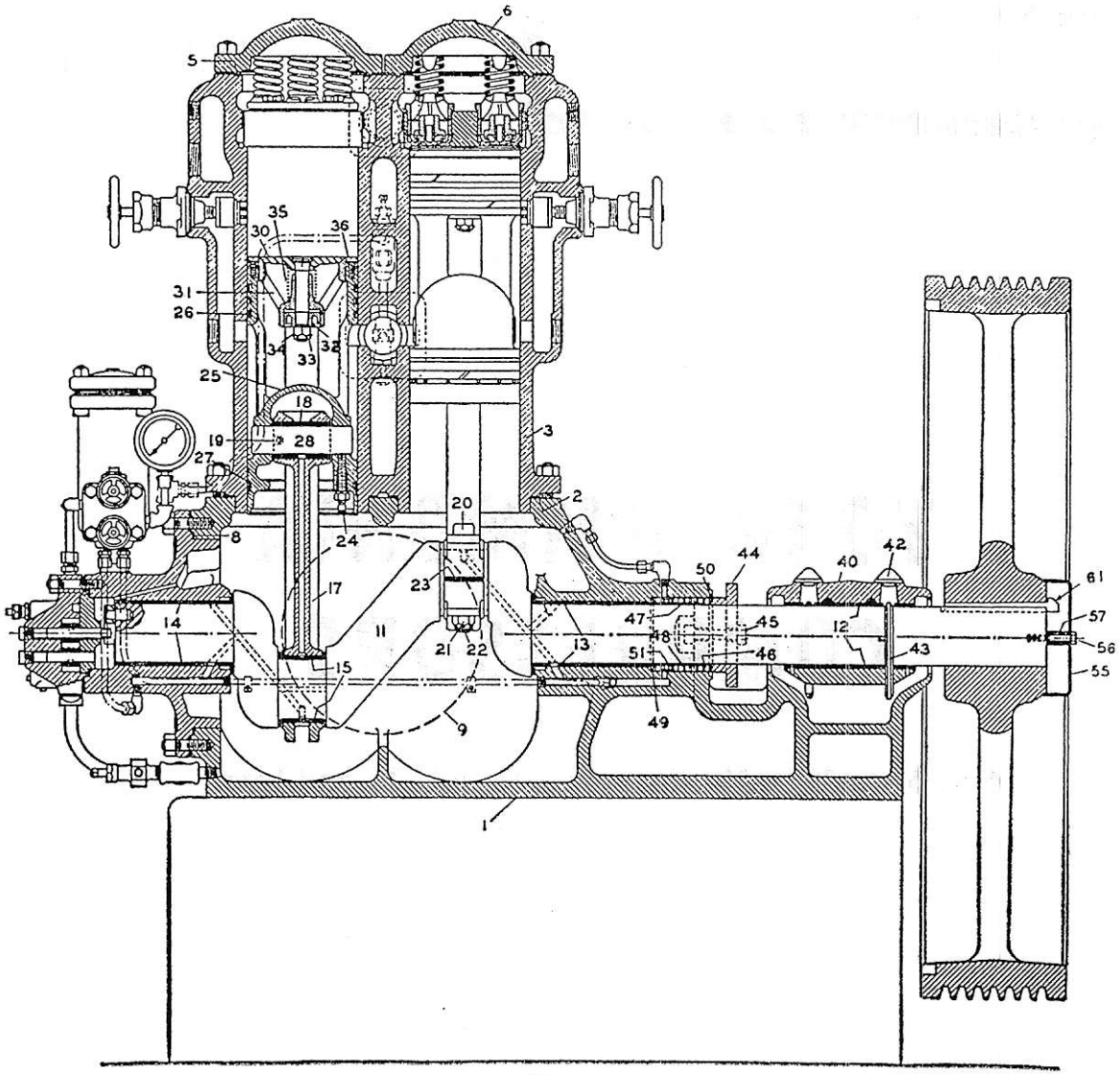


Fig. 1

Approximate Compressor Shop Nos.:		6" x 6" 26681 and Later	6½" x 6½" 26829 and Later	7½" x 7½" 26648 and Later
Ref. No. §	Part Name	Part Number	Part Number	Part Number
2	Gasket, Crankcase to Cylinder	28-820P	28-825P	28-826P
3	Cylinder (without By-Pass) (Y-28 and Later)	64-5558SM	64-5559SM	64-5562SM
3	Cylinder (with By-Pass) (Y-28 and Later)	64-1356SM	64-1583SM	64-5872SM
5	Gasket, Top Head	70-2749PK	70-2749PK	70-2754PK
6	Top Head	64-1407PL [1]	64-1612PL	64-1720PL
8	Gasket, Bearing Head	70-2737PK	70-2727PK	70-2724PK
9	Gasket, Crankcase Cover (Flat Type Joint)	28-829P	28-835P	28-835P
9	Gasket, Crankcase Cover, Tongue and Groove Type Joint [2]	70-2756PK	70-2727PK	70-2727PK
11	Shaft	64-5359PL	64-5360PL	64-5361PL
12	Bearing, Outboard (Set of 4 Pcs.)	64-4221S *	64-4226S ‡	64-4229S
13	Bearing, Stuffing Box End (Set of 2 Pcs.)	64-1426SL	64-1621SL	64-1737SL
14	Bearing, Pump End (Set of 2 Pcs.)	64-1426SL	64-1621SL	64-1737SL

§ Reference Number for Identification only. When Ordering, Specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

Ref. No. §	Part Name	6" x 6" 26681 and Later Part Number	6½" x 6½" 26829 and Later Part Number	7½" x 7½" 26648 and Later Part Number
15–23	Connecting Rod Assembly	64-1375SM	64-1594SN	64-1704SN
15	Bearing, Crank End (Set of 2 Pcs.)	64-1380SL	64-1599SL	64-1709SL
18	Bushing, Wrist Pin	64-1377PK	64-1596PK	64-1706PK
19	Locating Pin, or Screw	64-1571PK	64-1571PK	64-1802PK
20-22	Bolt, with Nut (Set of 2)	64-4220S	64-4225S	64-4228S
22	Wire Keeper	64-1382P	64-1382P	64-1712PK
23	Shim (Laminum Type, 2 Required per Rod)	29-515PK	29-516PK	29-518PK
24	Set Screw and Nut, Wrist Pin	64-1362S	64-1362S	64-1696S
24–35	Piston Assembly (Note 1)	64-1364S	64-1587S	64-1693S
25	Piston, Bare (Note 7)	64-1360PL	64-1588PL	64-1694PL
25	Piston, Bare (Note 7) (Oversize) [6]	64-1550PL	64-1672PL	64-1822PL
25	Piston, Bare (Note 8)	64-1548PL	64-1668PL	64-1821PL
25	Piston, Bare (Note 8) (Oversize) [6]	64-1549PL	—	—
26	Piston Ring, Compression	For Piston Rings, Refer Section K-3, Page 3		
27	Piston Ring, Oil			
28	Wrist Pin	64-1361PK	64-1589PK	64-1695PK
30/36	Suction Valve	See Fig. 2	See Fig. 2	See Fig. 2
37/39	Discharge Valve	See Fig. 3	See Fig. 3	See Fig. 3
40	Bearing Cap	64-1349PL	64-1578PL	64-1677PM
42	Cover, Oil Hole	69-1534PK	69-1778PK	69-1778PK
43	Oiler, Ring	64-1434PK	64-1615PK	64-1734PK
44	Gland, Packing	64-1408PL	64-1613PL	64-1721PL
46–48	Shaft Packing	64-1404S	64-1605S	64-1716S
49	Neck Ring, Back	64-1574PK	64-1624PK	64-1733PK
50	Neck Ring, Front	64-1428PK	64-1609PK	64-1726PK
51	Gland, Lantern	64-1429PK	64-1610PK	64-1727PK
	Ring, Oil Retainer	—	—	—
55–56	Hub Shield, with Bolt	64-1433SK	64-1433SK	64-1732SK
57	Ferrule, Hub Shield	—	—	—
	Manifold	See Fig. 4	See Fig. 4	See Fig. 4
	Suction Strainer Screen	See Fig. 4	See Fig. 4	See Fig. 4
	Valve Bonnet, Manifold	See Fig. 5	See Fig. 5	See Fig. 5
	Oil Pump	See Fig. 6	See Fig. 6	See Fig. 6
	Gauge, Oil Level	See Fig. 7	See Fig. 7	See Fig. 7
	Oil Filter	See Fig. 8	See Fig. 8	See Fig. 8
	Wick Oiler	See Fig. 9	See Fig. 9	See Fig. 9
	Oil Sight-Feed	See Fig. 10	See Fig. 10	See Fig. 10
	Oil Flow Indicator	See Fig. 11	See Fig. 11	See Fig. 11
	Funnel Ring	64-1430PK	64-1622PK	64-1728PK
	Gaskets, Complete Set	64-6386S	64-6385S	64-6384S
61	Key, Flywheel	29-1566	29-1567	29-1568

Ref. No. §	Part Name	8" x 8" 26713 and Later Part Number	9" x 9" 26282 and Later Part Number	10" x 10" 26338 and Later Part Number
2	Gasket, Crankcase to Cylinder	28-833P	28-834P	28-838P
3	Cylinder (without By-Pass) (Y-28 and Later)	64-5611SM	64-5874SM	64-5875SN
3	Cylinder (with By-Pass) (Y-28 and Later)	64-5873SM	64-5563SM	64-5564SN
5	Gasket, Top Head	70-2755PK	70-2736PK	70-2727PK
6	Top Head	64-1919PL	64-2009PL	64-1135PL
8	Gasket, Bearing Head	70-2720PK	70-2719PK	70-2716PK
9	Gasket, Crankcase Cover (Flat Type Joint)	28-842P	28-844P	28-845P
9	Gasket, Crankcase Cover, Tongue and Groove Type Joint [2]	70-2721PK	70-2719PK	70-2716PK
11	Shaft	64-5988PL	64-5362PL	64-5363PL
12	Bearing, Outboard (Set of 4 Pcs.)	64-4233S	64-4247S	64-4218S
13	Bearing, Stuffing Box End, 2-Lug Type (Set of 2 Pcs.)	64-1161SL	64-2725SL [3]	64-2508SL [3]
13	Bearing, Stuffing Box End, 3-Lug Type (Set of 2 Pcs.)	—	64-2016SL [3]	64-1140SL [3]
14	Bearing, Pump End, 2-Lug Type (Set of 2 Pcs.)	64-1161SL	64-2725SL [3]	64-2508SL [3]
14	Bearing, Pump End, 3-Lug Type (Set of 2 Pcs.)	—	64-2016SL [3]	64-1140SL [3]

§ Reference Number for Identification only. When Ordering, Specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

Ref. No. §	Part Name	8" x 8" 26713 and Later Part Number	9" x 9" 26282 and Later Part Number	10" x 10" 26338 and Later Part Number
	Approximate Compressor Shop Nos.:			
15–24	Connecting Rod Assembly	64-1865SN	64-1982SN	64-1118SN
15	Bearing, Crank End (Set of 2 Pcs.)	64-1870SL	64-1987SL	64-1121SL [4]
18	Bushing, Wrist Pin	64-1867PK	64-1984PK	64-1120PK
19	Locating Pin, or Screw	64-1802PK	64-1802PK	64-1127PK
20-22	Bolt, with Nut (Set of 2)	64-4232S	64-4245S	64-4217S [5]
22	Wire Keeper	64-1712PK	64-1989PK	64-1126PK
23	Shim (2 Required per Rod)	29-518PK	29-519PK	29-520PL
24	Set Screw and Nut, Wrist Pin	64-1696S	64-1977S	64-1114S
24–35	Piston Assembly (Note 1)	64-1858S	64-1950S	64-1109S
25	Piston, Bare [7]	64-1859PM	64-1975PM	64-1110PM [9]
25	Piston, Bare [7] (Oversize) [6]	64-1933PM	64-2377PL	64-2362M [9]
25	Piston, Bare [8]	64-1931PL	64-2375PL	—
25	Piston, Bare [8] (Oversize) [6]	—	64-2376PL	—
26	Piston Ring, Compression	For Piston Rings, Refer Section K, Page 3		
27	Piston Ring, Oil			
28	Wrist Pin	64-1860PK	64-1976PK	64-1111PK
30/36	Suction Valve	See Fig. 2	See Fig. 2	See Fig. 2
37/39	Discharge Valve	See Fig. 3	See Fig. 3	See Fig. 3
40	Bearing Cap	64-1847PM	64-2126PM	64-1098PM
42	Cover, Oil Hole	69-1778PK	69-1867PK	69-1867PK
43	Oiler, Ring	64-1925PK	64-2030PK	64-2030PK
44	Gland, Packing	64-1914PL	64-2010PL	64-1103SK [10]
46–48	Shaft Packing	64-1885S	64-2001S	64-1130S
49	Neck Ring, Back	64-1924PK	64-2007PK	64-1146PK
50	Neck Ring, Front	64-1921PK	64-2006PK	64-1145PK
51	Gland, Lantern	64-1922PK	64-2005PK	64-1144PK
	Ring, Oil Retainer	—	—	64-1105PK
55–56	Hub Shield, with Bolt	64-1732SK	64-2020SK	—
57	Ferrule, Hub Shield	—	—	—
	Manifold	See Fig. 4	See Fig. 4	See Fig. 4
	Suction Strainer Screen	See Fig. 4	See Fig. 4	See Fig. 4
	Valve Bonnet, Manifold	See Fig. 5	See Fig. 5	See Fig. 5
	Oil Pump	See Fig. 6	See Fig. 6	See Fig. 6
	Gauge, Oil Level	See Fig. 7	See Fig. 7	See Fig. 7
	Oil Filter	See Fig. 8	See Fig. 8	See Fig. 8
	Wick Oiler	See Fig. 9	See Fig. 9	—
	Oil Sight-Feed	See Fig. 10	See Fig. 10	—
	Oil Flow Indicator	See Fig. 11	See Fig. 11	—
	Funnel Ring	64-1920PK	64-2018PK	64-1148PK
	Gaskets, Complete Set	64-6418S	64-6383S	64-6382S
61	Key, Flywheel	29-1569	29-1570	29-1571

* Originally used with Compressors starting with Shop Number 41416; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Compressors.

† Originally used with Compressors starting with Shop Number 41502; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Compressors.

[1] Used with Compressors starting with Shop Number 52785; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Type Compressors.

[2] Tongue and groove type Gaskets used with Compressors having Shop Numbers lower than the following:
6" x 6"—Shop No. 38577
6½" x 6½"—Shop No. 38603
7½" x 7½"—Shop No. 38792
8" x 8"—Shop No. 38702
9" x 9"—Shop No. 38635
10" x 10"—Shop No. 38703

[3] Early Y-26 bearings have 2 locating lugs. Later Y-26 to Y-42 have 3 locating lugs.

[4] Used with Malleable Iron Connecting Rods; for Forged Steel Rods, order by Part No. 64-2519SM.

[5] Used with Compressors starting with Shop Number 34001; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Type Compressors.

[6] Oversize Pistons rough-turned as follows:
6" x 6"—¼" Oversize
6½" x 6½"—¼" Oversize
7½" x 7½"—¼" Oversize
8" x 8"—⅜" Oversize
9" x 9"—⅜" Oversize
10" x 10"—⅜" Oversize

[7] Slipper Type Piston; do not use in Compressors arranged with Double Suction Connections.

[8] Specify this type Piston for use in Compressors with Double Suction Connections.

[9] Five-Valve Type used with Compressors starting with Shop Number 56073; for Three-Valve Type Piston, specify Part No. 64-2359PM for standard size or 64-2360PM for oversize.

[10] Including Oil Retainer Ring, Part No. 64-1105PK.

§ Reference Number for Identification only. When Ordering, Specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

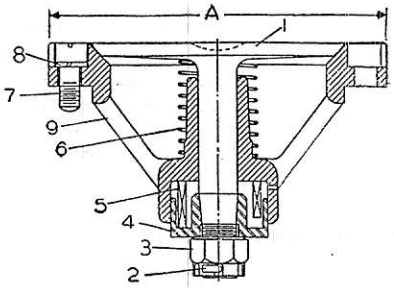


Fig. 2a—Suction Valve (Y-35 Type)

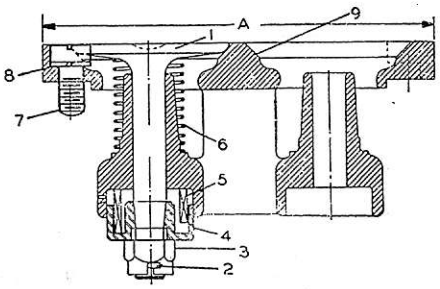


Fig. 2b—Suction Valve (Y-35 Multiple Type)

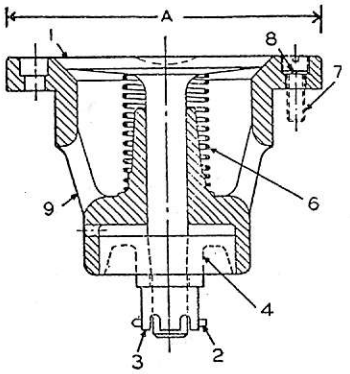


Fig. 2c—Suction Valve (Y-34 Type)

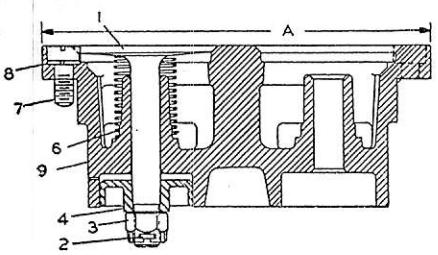


Fig. 2d—Suction Valve (Y-40 Multiple Type)

Dimension Chart—Suction Valve Cage

Compressor Size	Dimension "A" For Standard Valve	Dimension "A" For Oversize Valve
6" x 6"	5 63/64"	6 1/4"
6 1/2" x 6 1/2"	6 31/64"	6 3/4"
7 1/2" x 7 1/2"	7 31/64"	7 3/4"
8" x 8"	7 63/64"	8 3/8"
9" x 9"	8 63/64"	9 3/8"
10" x 10"	9 63/64"	10 3/8"

Table I

Refer to Footnote.

Ref. No. §	Part Name	6" x 6" Part Number	6" x 6" Original Part Number	6 1/2" x 6 1/2" Part Number	6 1/2" x 6 1/2" Original Part Number	7 1/2" x 7 1/2" Part Number	7 1/2" x 7 1/2" Original Part Number
		Y-35 Type Suction Valve, see Fig. 2a		Y-35 Type Suction Valve, see Fig. 2b			
1–9	Suction Valve Assembly	64-1486SL	150015	64-1590SL	150016	—	—
1–9	Suction Valve Assembly (Oversize) [1]	64-1546SL	154075	64-1663SL	154076	—	—
1–6	Valve Assembly, less Cage	—	—	64-1593SK	149951	64-1593SK	149951
5	Spring, Cushion	29-191PK	595	29-191PK	595	29-191PK	595
6	Spring, Valve	29-187PK	591	29-188PK	592	29-188PK	592
7–8	Screws and Lockwasher, Set of	64-1368S	—	64-1368S	—	64-1699S	—
	Number of Screws per Set	4		4		6	
	Number of Valves per Piston	1		2		3	
		Y-35 Type Suction Valve, see Fig. 2b				Y-40 Type Suction Valve, see Fig. 2d	
1–9	Suction Valve Assembly	64-1363SL	167385	—	—	64-1697SL	180055
1–9	Suction Valve Assembly (Oversize) [1]	—	—	—	—	64-1818SK	182995
1–6	Valve Assembly, less Cage	64-1369SK	—	—	—	64-1701SK	180014
5	Spring, Cushion	29-191PK	595	—	—	—	—
6	Spring, Valve	29-188PK	592	—	—	29-93PK	344
7–8	Screws and Lockwasher, Set of	64-1368S	—	—	—	64-1699S	—
	Number of Screws per Set	4		—		6	
	Number of Valves per Piston	2		—		3	

§ Reference Number for Identification. When ordering, specify Part No.

Note: Flex-Loc nut is used on valve stem instead of castellated nut and keeper as shown.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

Ref. No. §	Part Name	8" x 8" Part Number	8" x 8" Original Part Number	9" x 9" Part Number	9" x 9" Original Part Number	10" x 10" Part Number	10" x 10" Original Part Number
						Y-34 Type Suction Valve, see Fig. 2c	
1–9	Suction Valve Assembly	—	—	—	—	64-2348SK	141003
1–6	Valve Assembly, less Cage	—	—	—	—	64-2354SK	—
6	Spring, Valve	—	—	—	—	29-93PK	344
7–8	Screws and Lockwasher, Set of	—	—	—	—	64-2350S	—
	Number of Screws per Set	—	—	—	—	6	
	Number of Valves per Piston	—	—	—	—	3	
				Y-35 Type Suction Valve, see Fig. 2b			
1–6	Valve Assembly, less Cage	64-1593SK	149951	64-1593SK	149951	64-4371S	—
5	Spring, Cushion	29-191PK	595	29-191PK	595	29-219PK	658
6	Spring, Valve	29-188PK	592	29-188PK	592	29-218PK	657
7–8	Screws and Lockwasher, Set of	64-1699S	—	64-1699S	—	64-1115S	—
	Number of Screws per Set	6		6		6	
	Number of Valves per Piston	3		4		5	
				Y-40 Type Suction Valve, see Fig. 2d			
1–9	Suction Valve Assembly	64-1861SL	180053	64-1978SL	179948	64-1112SL	180054
1–9	Suction Valve Assembly (Oversize) [1]	64-1912SL	182996	64-2149SL	181832	64-2355SL	182997
1–6	Valve Assembly, less Cage	64-1701SK	180014	64-1701SK	180014	64-1701SK	180014
6	Spring, Valve	29-93PK	344	29-93PK	344	29-93PK	344
7–8	Screws and Lockwasher, Set of	64-1699S	—	64-1699S	—	64-1115S	—
	Number of Screws per Set	6		6		6	
	Number of Valves per Piston	3		4		5	

[1] See Dimension Chart, Table I.

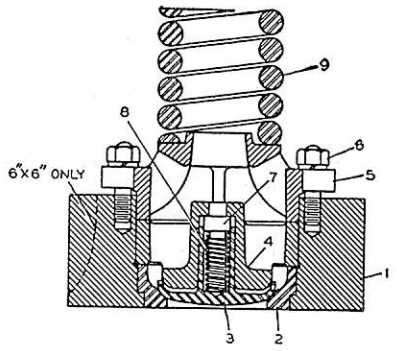


Fig. 3a—Discharge Valve (Y-27 Single Valve Type)

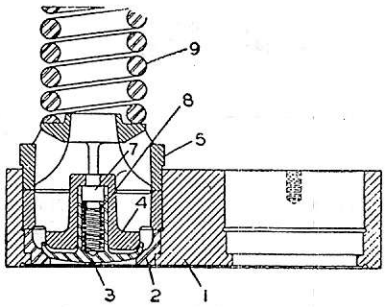


Fig. 3b—Discharge Valve (Y-27 Multiple Valve Type)

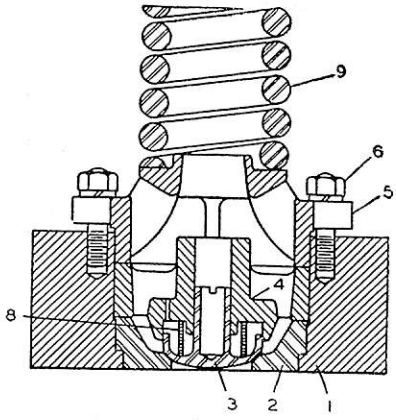


Fig. 3c—Discharge Valve (Y-32 Single Valve Type)

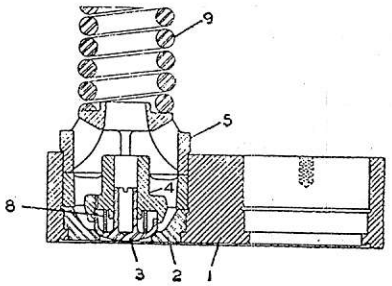


Fig. 3d—Discharge Valve (Y-32 Multiple Valve Type)

§ Reference Number for Identification. When ordering, specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

Ref. No. §	Part Name	6" x 6" Part Number	6½" x 6½" Part Number	7½" x 7½" Part Number
		Y-27 Type *Discharge Valve,* see Fig. 3a	***Y-27 Type Discharge Valve,* see Fig. 3b**	
1–8	Safety Head Assembly	64-1502FL	64-1649FL	64-1811FM
2	Seat, Valve (.008" Oversize)	64-2370PK	64-1435PK	64-1435PK
3	Valve	64-863PK	64-1659PK	64-1659PK
3, 4, 7, 8	Valve Assembly	64-866SK	64-1660SK	64-1660SK
5	Cap, Valve Cage	64-774PL	64-1372PL	64-1372PL
7	Retainer, Spring	64-865PK	64-1650PK	64-1650PK
8	Spring, Valve	29-149PK	29-120PK	29-120PK
9	Spring, Safety Head	29-116PK	29-112PK	29-112PK
	Number of Valves per Cylinder	1	3	4
		Y-32 * Type Discharge Valve, see Fig. 3c		
1–8	Safety Head Assembly	64-1504FL	—	—
2	Seat, Valve (.008" Oversize)	64-840PK	—	—
3	Valve	64-748PK	—	—
3, 4, 8	Valve Assembly	64-776SK	—	—
5	Cap, Valve Cage	64-774PL	—	—
8	Spring, Valve	29-182PK	—	—
9	Spring, Safety Head	29-116PK	—	—
	Number of Valves per Cylinder	1	—	—
		Y-32 * Type Discharge Valve, see Fig. 3d		
1–8	Safety Head Assembly	64-1367FL	64-1625FL	64-1702FM
2	Seat, Valve (.008" Oversize)	64-1435PK	64-1435PK	64-1435PK
3	Valve	64-748PK	64-748PK	64-748PK
3, 4, 8	Valve Assembly	64-1374SK	64-1374SK	64-1374SK
5	Cap, Valve Cage	64-1372PK	64-1372PL	64-1372PL
8	Spring, Valve	29-182PK	29-182PK	29-182PK
9	Spring, Safety Head	29-112PK	29-112PK	29-112PK
	Number of Valves per Cylinder	2	3	4

Ref. No. §	Part Name	8" x 8" Part Number	9" x 9" Part Number	10" x 10" Part Number
		Y-27 Type Discharge Valve, see Fig. 3b		
1–8	Safety Head Assembly	64-1906FM	64-2062FM	64-2346FM
2	Seat, Valve (.008" Oversize)	64-1435PK	64-2370PK	64-2370PK
3	Valve	64-1659PK	64-863PK	64-863PK
3, 4, 7, 8	Valve Assembly	64-1660SK	64-866SK	64-866SK
5	Cap, Valve Cage	64-1372PL	64-774PL	64-774PL
7	Retainer, Spring	64-1650PK	64-865PK	64-865PK
8	Spring, Valve	29-120PK	29-149PK	29-149PK
9	Spring, Safety Head	29-112PK	29-113PK	29-115PK
	Number of Valves per Cylinder	4	3	4
		Y-32 * Type Discharge Valve, see Fig. 3d		
1–8	Safety Head Assembly	64-1863FM	64-1980FM	64-1116FM
2	Seat, Valve (.008" Oversize)	64-1435PK	64-840PK	64-840PK
3	Valve	64-748PK	64-748PK	64-748PK
3, 4, 7, 8	Valve Assembly	64-1374SK	64-776SK	64-776SK
5	Cap, Valve Cage	64-1372PL	64-774PL	64-774PL
8	Spring, Valve	29-182PK	29-182PK	29-182PK
9	Spring, Safety Head	29-112PK	29-113PK	29-115PK
	Number of Valves per Cylinder	4	3	4

* Interchangeable with Y-27 Type Valves when Safety Head Assemblies are furnished.
§ Reference Number for Identification. When ordering, specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

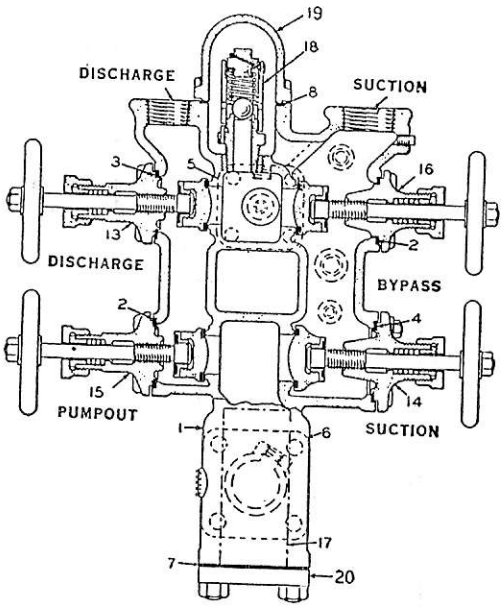


Fig. 4a—Compressor Manifold (Y-28 and Later)

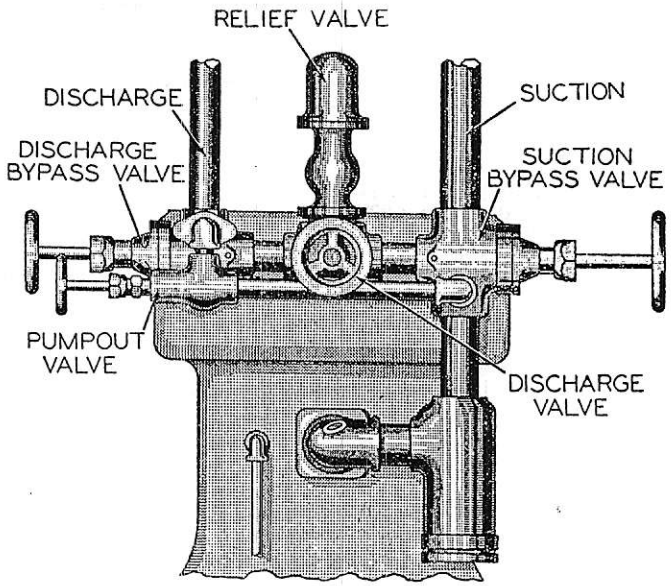


Fig. 4b—Compressor Piping (Y-26)

COMPRESSOR MANIFOLD — See Fig. 4a

Ref. No. §	Part Name	6" x 6" Part Number	6½" x 6½" Part Number	7½" x 7½" Part Number	8" x 8" Part Number	9" x 9" Part Number	10" x 10" Part Number
1–20	Manifold Assembly	64-1386FM	64-1604FM	64-1715FM	64-1881FM	64-1991FM	64-1128FM
1–12	Manifold, less Bonnets and Strainer	64-1384SN	64-1603SN	64-1714SN	64-1882SN	64-1992SN	64-1129SN
2	Gasket, Bonnet (By-Pass or Pumpout)	28-863P	28-863P	28-865P	28-865P	28-865P	28-868P
3	Gasket, Bonnet (Discharge)	28-863P	28-863P	28-865P	28-865P	28-865P	28-868P
4	Gasket, Bonnet (Suction)	28-865PK	28-865P	28-868P	28-868P	28-868P	28-870P
5	Gasket, Manifold to Cylinder (Discharge)	28-540PK	28-540PK	28-864PK	28-864PK	28-864PK	28-867PK
6	Gasket, Manifold to Cylinder (Suction)	28-792P	28-792P	28-797P	28-800P	28-800P	28-803P
7	Gasket, Strainer Cover	28-867PK	28-867PK	28-869PK	28-873PK	28-873PK	28-876PK
8	Gasket, Relief Valve Cover	28-784P	28-784P	28-872P	28-872P	28-872P	28-872P
13	Bonnet Assembly (Discharge)	68-3986FM	68-3986FM	68-5723FM	68-5723FM	68-5723FM	68-5761SM
14	Bonnet Assembly (Suction)	68-3989FM	68-3989FM	68-3990FM	68-3990FM	68-3990FM	68-4251FM
15	Bonnet Assembly (Pumpout)	68-5625FL	68-5625FL	68-5724FM	68-5724FM	68-5724FM	68-5762SM
16	Bonnet Assembly (By-Pass)	68-5624FL	68-5624FL	68-3991FM	68-3991FM	68-3991FM	68-5763SM
17	Strainer Screen	68-1076SL	68-1076SL	68-5351SL	68-5452SL	68-5452SL	68-5450SL
18	Relief Valve (250 Lbs., P.S.I.)	68-2930FL	68-2930FL	68-2941FL	68-2941FL	68-2941FL	68-2941FL

CAPACITY REDUCTION VALVES, HAND OPERATED

Ref. No. §	Part Name	6" x 6", 6½" x 6½" Part Number	7½" x 7½", 8" x 8" Part Number	9" x 9" Part Number	10" x 10" Part Number
	Valve Assembly Complete	64-4715SL	68-4253FM	68-4260FM	68-4261FM
	Bonnet, Bare	68-5766PL	68-5809PL	68-5811PL	68-5804PL
	Valve Stem	68-126PL	68-5655SL	68-5655SL	68-128PL
	Disc and Locknut Assembly	68-5683SK	68-5683SK	68-5683SK	68-8049SK
	Disc Spring	29-145PK	29-145PK	29-145PK	29-145PK
	Packing, Valve Stem (5 Rings required)	28-1089P	28-1089P	28-1089P	28-1090P
	Nut, Packing	68-156PK	68-156PK	68-156PK	68-158PK
	Gland, Packing	68-150PK	68-150PK	68-150PK	68-151PK
	Handwheel	68-168PK	68-168PK	68-169PK	68-170PK
	Gasket, Bonnet	28-540PK	28-540PK	28-540PK	28-865PK

§ Reference Number for Identification. When ordering, specify Part No.

YORK AMMONIA COMPRESSORS

6" x 6" TO 10" x 10", INCLUSIVE, TYPE Y-26 AND LATER

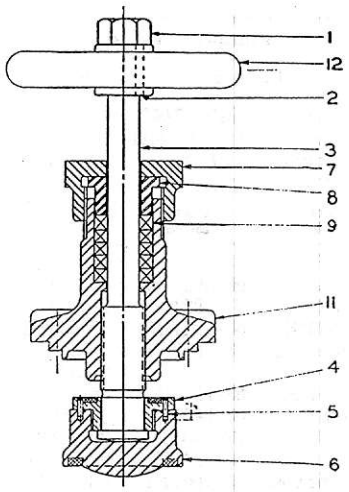


Fig. 5a—Manifold Valve Bonnet (Y-28 and Later)

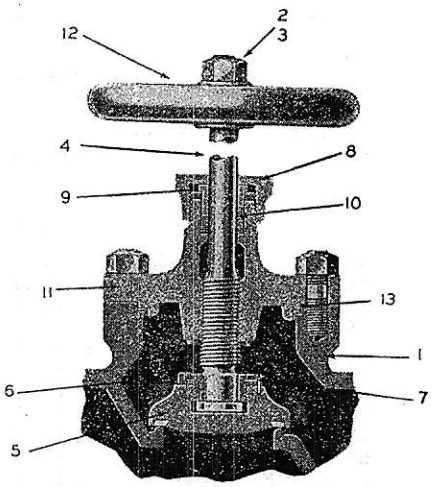


Fig. 5b—Stop Valve (Y-26, Bolted Bonnet)

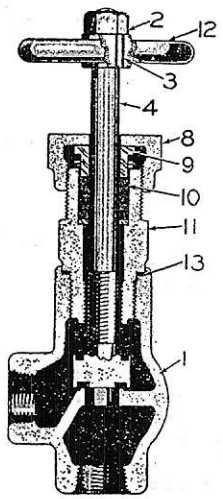


Fig. 5c—Stop Valve (Y-26, Screwed Bonnet)

Ref. No. §	Part Name	Size Compressor: 6" x 6" and 6½" x 6½"	7½" x 7½", 8" x 8" and 9" x 9"	10" x 10"	6" x 6" and 6½" x 6½"	7½" x 7½", 8" x 8" and 9" x 9"	10" x 10"
		Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
		Discharge Valve Bonnet, see Fig. 5a			Suction Valve Bonnet, see Fig. 5a		
1–12	Bonnet Assembly	68-3986FM	68-5723FM	68-5761SM	68-3989FM	68-3990FM	68-4251FM
1–3	Valve Stem	68-5655SL	68-128PL,[1]	68-129PL,[1]	68-5647SL	68-129PL,[1]	68-5648SL
4–6	Valve Button and Locknut Assembly	68-5200SK	68-5205SK	68-5195SK	68-5204SK	68-5195SK	68-5203SK
7	Nut, Packing	68-156PK	68-156PK	68-159PK	68-4202PK	68-159PK	68-159PK
8	Gland, Packing	68-150PK	68-151PK	68-151PK	68-150PK	68-151PK	68-151PK
9	Packing, Valve Stem (5 Required per Set)	28-1089P	28-1090P	28-1090P	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5767PL	68-5768PL	68-5769PL	68-5802PL	68-5803PL	68-5808PL
12	Handwheel	68-5677PK	68-2764PK	68-2764PK	68-5678PK	68-2765PK	68-2765PL
		"Pumpout" Valve Bonnet, see Fig. 5a			"By-Pass" Valve Bonnet, see Fig. 5a		
1–12	Bonnet Assembly	68-5625FL	68-5724FM	68-5762SM	68-5624FL	68-3991FM	68-5763SM
1–3	Valve Stem	68-5655SL	68-128PL,[1]	68-129PL,[1]	68-5647SL	68-129PL,[1]	68-5648SL
4–6	Valve Button and Locknut Assembly	68-5200SK	68-5205SK	68-5195SK	68-5200SK	68-5205SK	68-5195SK
7	Nut, Packing	68-156PK	68-156PK	68-159PK	68-156PK	68-156PK	68-159PK
8	Gland, Packing	68-150PK	68-151PK	68-151PK	68-150PK	68-151PK	68-151PK
9	Packing, Valve Stem (5 Required per Set)	28-1089P	28-1090P	28-1090P	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5767PL	68-5768PL	68-5769PL	68-5814PK	68-5804PL	68-5815PL
12	Handwheel	68-5676PK	68-2763PK	68-2763PK	68-5680PK	68-2762PK	68-2762PK

Ref. No. §	Part Name	Size Compressor: 6" x 6" and 6½" x 6½"	7½" x 7½"	8" x 8" and 9" x 9"	10" x 10"	6" x 6" and 6½" x 6½"	7½" x 7½", 8" x 8" and 9" x 9"	10" x 10"
		Y-26 Compressor Piping, see Fig. 4b						
		Suction By-Pass Valve, Fig. 5b				Discharge By-Pass Valve, Fig. 5b		
		Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
1–12	Valve Assembly	68-7779SM	6951F	6952F	6948F	6953F	6949F	68-7012FM
2–12	Bonnet Assembly	68-3987FM	68-3992FM	68-4067FM	68-5718FM	68-3985FL	68-3987FM	68-3992FM
2	Nut	21-495P	21-495P	21-504P	21-504P	21-482P	21-495P	21-495P
3	Key	68-164PK	68-164PK	68-164PK	68-164PK	68-163PK	68-164PK	68-164PK
4	Stem	68-128PL	68-129PL	68-130PL	68-200PL	68-5655SL,†	68-128PL	68-129PL
5–7	Valve Button and Locknut Assembly	68-5205SK	68-5195SK	68-5196SK	68-5197SK	68-5200SK	68-5205SK	68-5195SK
8	Nut, Packing	68-158PK	68-159PK	68-160PK	68-160PK	68-156PK	68-158PK	68-159PK
9	Gland, Packing	68-151PK	68-151PK	68-152PK	68-152PK	68-150PK	68-151PK	68-151PK
10	Packing, 5 Rings Required	28-1090P	28-1090P	28-2036P	28-1090	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5768PL	68-5769PL	68-5770PL	68-5771PL	68-5767PL	68-5768PL	68-5769PL
12	Handwheel	68-170PK	68-170PK	68-171PK	68-171PK	68-5666PK	68-170PK	68-170PK
13	Gasket	28-865PK	28-868PK	28-870PK	28-874PK	28-863PK	28-865PK	28-868PK

[1] Valve Stem, less Nut and Key.
† Stem with Nut and Key.
§ Reference Number for Identification. When ordering, specify Part No.

Ref. No. §	Part Name	Main Discharge Valve, Fig. 5b			Pumpout Valve Fig. 5c		Pumpout Valve Fig. 5b
	Size Compressor	6" x 6" and 6½" x 6½"	7½" x 7½", 8" x 8" and 9" x 9"	10" x 10"	6" x 6" and 6½" x 6½"	7½" x 7½", 8" x 8" and 9" x 9"	10" x 10"
		Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
1–12	Valve Assembly	6954F	68-6432SM	6947F	68-95SM	68-96SM	68-97SM
2–12	Bonnet Assembly	68-3985FL	68-3987FM	68-3992FM	68-3981FL	68-3982FL	68-3984FM
2	Nut	21-482P	21-495P	21-495P	21-482P	21-482P	21-482P
3	Key	68-163PK	68-164PK	68-164PK	68-162PK	68-162PK	68-163PK
4	Stem	68-5655SL †	68-128PL	68-129PL	68-5652SL †	68-5657SL †	68-5656SL †
5–7	Valve Button and Locknut Assembly	68-5200SK	68-5205SK	68-5195SK	—	—	68-5202SK
8	Nut, Packing	68-156PK	68-158PK	68-159PK	68-155PK	68-156PK	68-156PK
9	Gland, Packing	68-150PK	68-151PK	68-151PK	68-148PK	68-149PK	68-150PK
10	Packing, 5 Rings Required	28-1089P	28-1090P	28-1090P	28-1985P	28-1985P	28-1089P
11	Bonnet, Bare	68-5767PL	68-5768PL	68-5769PL	68-133PK	68-134PK	68-5766PL
12	Handwheel	68-5666PK	68-170PK	68-170PK	68-5662PK	68-5662PK	68-5664PK
13	Gasket	28-863PK	28-865PK	28-868PK	28-857P	28-860P	28-540PK

† Stem with Nut and Key.

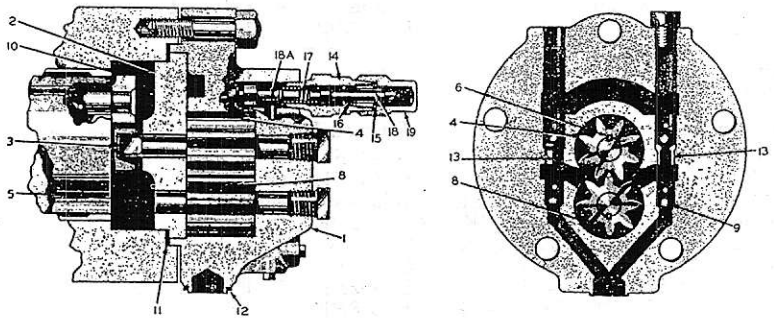


Fig. 6—Gear Oil Pump

Ref. No. §	Part Name	Size Compressor: 6" x 6", 6½" x 6½", 7½" x 7½", and 8" x 8"	Size Compressor: 9" x 9" and 10" x 10"
		Part Number	Part Number
1–19	Oil Pump Assembly	64-1439F	64-1993F
2	Head, Bearing	64-1390PL	64-1390PL
3–6	Gear and Shaft, Driver	64-1393SK	64-2000SK
4	Gear, Driver	64-933PK	64-1996PK
6	Key, Woodruff	29-1554P	29-1554P
5–8	Gear and Shaft, Driven	64-1395SK	64-1999SK
8	Gear, Driven	64-933PK	64-1996PK
9	Ball Check	29-1861P	29-1861P
10	Crank and Pin	64-1396SK	64-1396SK
11	Gasket, Bearing Head	28-804P	28-804P
12	Gasket, Inlet Flange	28-852PK	28-852PK
13	Seat, Ball Check	64-1399PK	64-1399PK
14–19	Valve Assembly, Pressure Regulator	64-1448SK	64-1448SK
15	Gasket, Pressure Regulator Cap	28-1256P	28-1256P
16	Packing, Pressure Regulator	28-1060PK	28-1060PK
17	Spring, Pressure Regulator	29-238PK	29-238PK

§ Reference Number for Identification. When ordering, specify Part No.

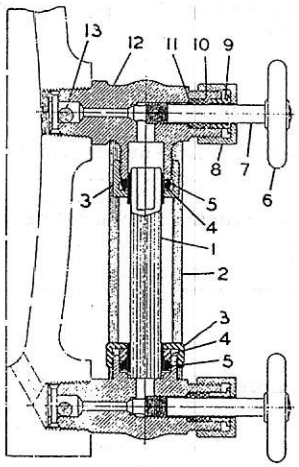


Fig. 7—Oil Level Gauge

Ref. No. §	Part Name	Part Number
1	Gauge Glass (⅝" O.D. x 4¼" lg.)	26-2613P
2	Rod, Guard (3/16" x 6⅞" lg.)	68-4408P
3–13	Gauge Cock (Top)	68-4402SL
3–13	Gauge Cock (Bottom)	68-4403SL
5	Gasket, Bulb Type	28-897P
10	Packing (3 Rings Required)	28-1205P

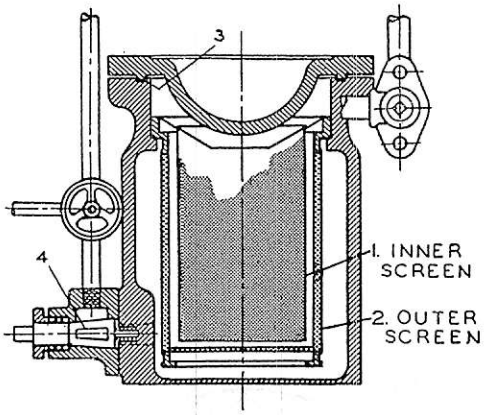


Fig. 8a—Y-26 Type Oil Filter

Ref. No. §	Part Name	Size Compressor 6" x 6", 6½" x 6½", 7½" x 7½", 8" x 8", 9" x 9" and 10" x 10" Part Number
1	Filter Screen, Inner (2 Required) ...	64-1522SL
2	Filter Screen, Outer (2 Required) ...	64-1528SL
3	Gasket, Cover (2 Required)	70-2746PK

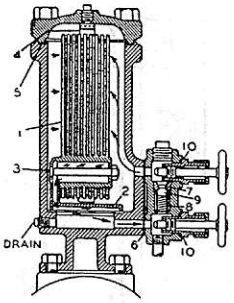


Fig. 8c—Y-28 Type Oil Filter

Ref. No. §	Part Name	Size Compressor 6" x 6", 7½" x 7½" and 8" x 8" Part Number	9" x 9" and 10" x 10" Part Number
1–4	Filter Unit Assembly.	64-1516SL	64-2069SL
1	Filter Bag and Screen Assembly	64-1517SL	64-2070SL
	Filters per Set	9	10
	Filter Bag only	64-1512PL	64-2068PL
5	Gasket, Cover	28-799P	28-807P
6	Gasket, By-Pass Body	28-794PK	28-794PK
7	Seat, Relief Valve ...	64-2929PK	64-2929PK
8	Spring, Relief Valve..	29-147PK	29-147PK
9	Ball Check	29-1858P	29-1858P
10	Gasket, Valve Body ..	28-764P	28-764P
11	Packing, Valve Stem (5 Required per Set)	28-1080P	28-1080P

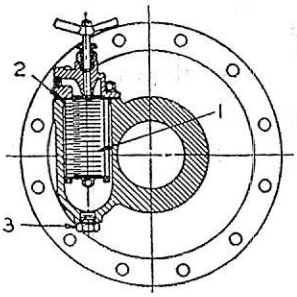


Fig. 8b—Disc Cartridge Type Oil Filter

Ref. No. §	Part Name	Size Compressor 6" x 6", 6½" x 6½" and 7½" x 7½" Part Number	8" x 8", 9" x 9" and 10" x 10" Part Number
1	Filter Cartridge ..	26-1688P	26-1689P
2	Gasket, Cover	28-789P	28-868P
3	Gasket, Drain Plug	28-765P	28-765P

§ Reference Number for Identification. When ordering, specify Part No.

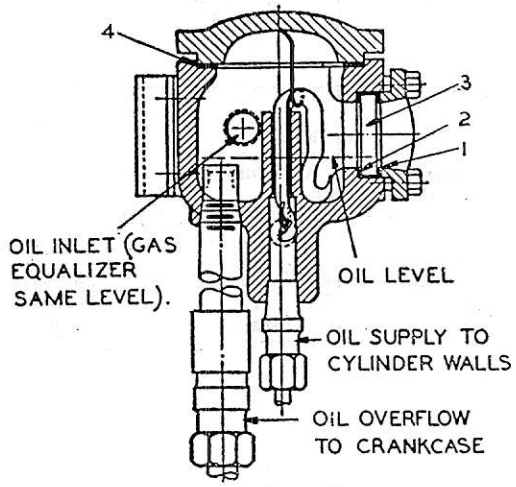


Fig. 9—Wick Oiler

Ref. No. §	Part Name	Part Number
1	Gasket, Sight Glass (Rubber)	70-2419PK
2	Gasket, Sight Glass (Fibre)	70-2420PK
3	Sight Glass	26-2557P
4	Gasket, Cover	28-540PK
5	Wick (4 Required per Set)	64-984SK

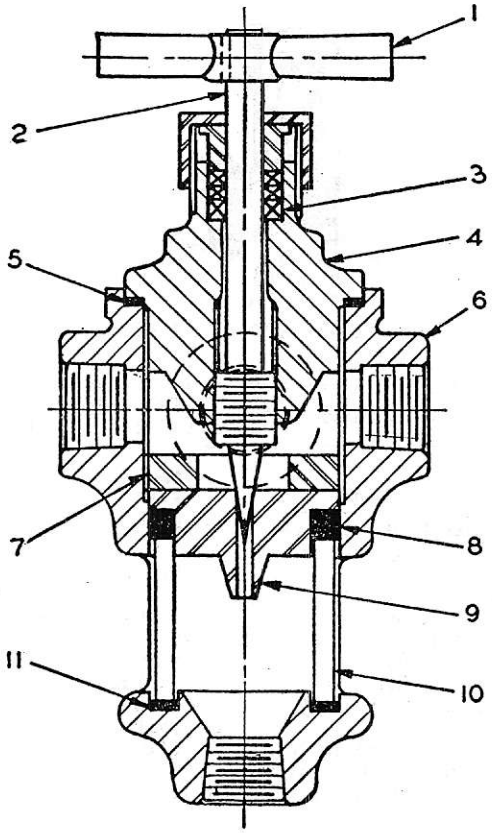


Fig. 10—Oil Sight-Feed Valve (Y-37 Type)

Ref. No. §	Part Name	Part Number
1–4	Bonnet Assembly (Ammonia)	68-5596S
1–11	Oil Sight-Feed Valve	68-4453FL
3	Packing, Valve Stem (3 Required per Set)	28-2123P
5	Gasket, Bonnet	28-771P
8	Gasket, Sight Glass (Upper)	28-999P
10	Sight Glass	26-2633PK
11	Gasket, Sight Glass (Lower)	28-953P

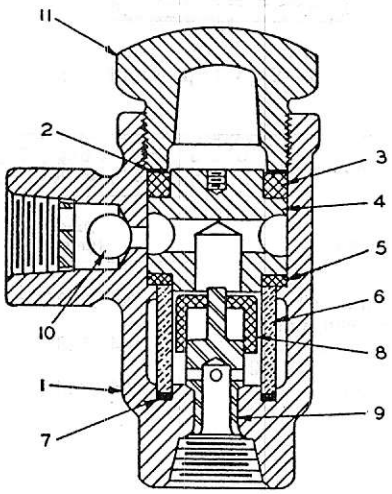


Fig. 11—Oil Flow Indicator

Ref. No. §	Part Name	Part Number
1–11	Oil Flow Indicator	68-4514FK
2	Washer, Cover	68-4512PK
3	Gasket, Cover	28-1003P
5	Gasket, Sight Glass (Upper)	28-891P
6	Sight Glass	26-2633PK
7	Gasket, Sight Glass (Lower)	28-953P
10	Check Ball	29-1861P

§ Reference Number for Identification. When ordering, specify Part No.

Subject to Change Without Notice
Printed in U. S. A.
TP 500 969 .25
K3 Form MS29

433-154-356

Form 250. 10-NM1
(3E)

ENCLOSED AMMONIA COMPRESSORS

TWO CYLINDER 6" x 6" TO 11½" x 10"

INSTRUCTIONS

FOR

INSTALLATION, OPERATION

MAINTENANCE AND SERVICE

DESCRIPTION

PURPOSE

The purpose of this instruction is to provide the necessary information for the installation, operation, maintenance and service of the current two cylinder models of York Enclosed Single-acting Vertical Ammonia Compressors 6" x 6" to 11-1/2" x 10" inclusive. These compressors are arranged for either belt drive, or for direct connection through a flexible coupling to either a synchronous motor or a steam engine.

GENERAL

Fig. 1 shows a 6" x 6" compressor and Fig. 2 shows a 10" x 10" compressor. Figs. 3 and 4 show a 11-1/2" x 10" compressor.

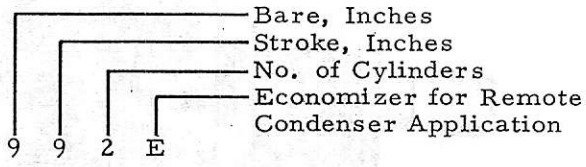
Each compressor consists of a cylinder block, a separate crankcase with outboard bearing as an integral part, and gauges with board.

Compressors covered by this instruction are:

Size	Model No.
6" x 6"	662E
6-1/2" x 6-1/2"	6-1/2 6-1/2 2E
7-1/2" x 7-1/2"	7-1/2 7-1/2 2E
8" x 8"	882E (x)
9" x 9"	992E
10" x 10"	10102E
11" x 10"	11102E (x)(x)
11-1/2" x 10"	11-1/2 102E (x)(x)(x)

(x) Discontinued about Jan. 1942
(x)(x) Started 1938, discontinued early 1940
(x)(x)(x) Started 1940.

NOMENCLATURE



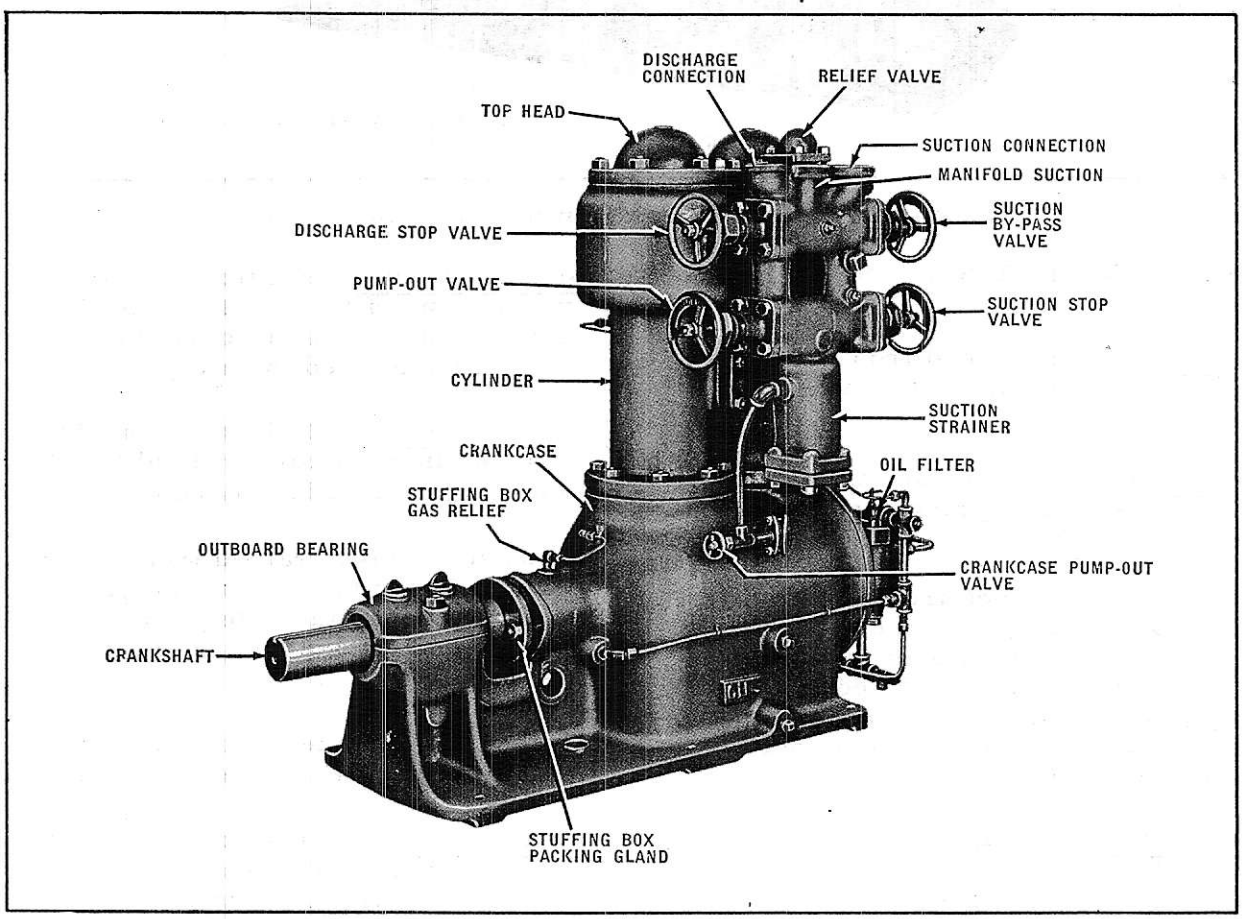


Fig. 1 - 6" x 6" Enclosed Ammonia Compressor

SPECIFICATIONS

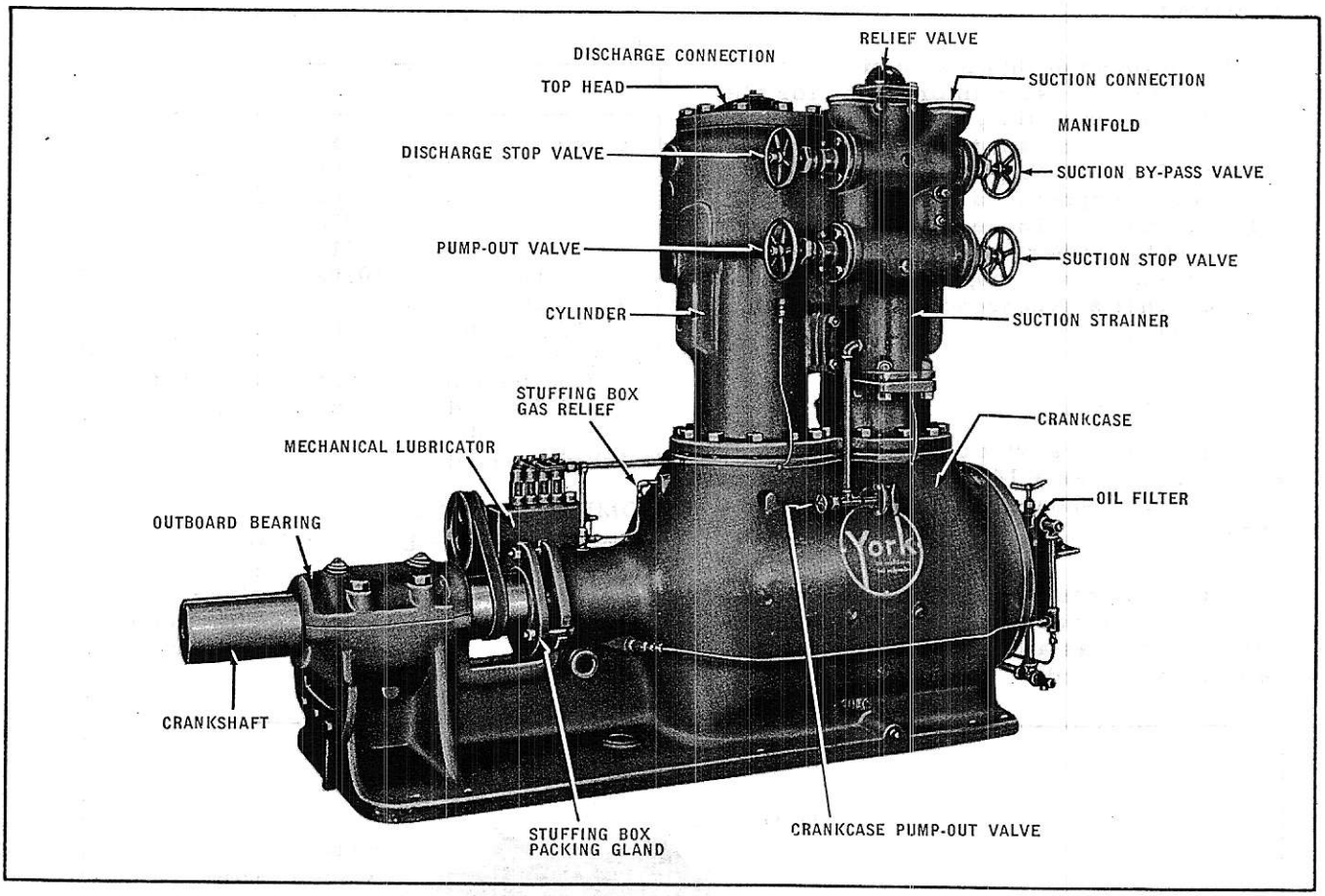


Fig. 2 - 10" x 10" Enclosed Ammonia Compressor

STANDARD COMPRESSOR - SPECIFICATIONS

Cylinders - Close grained iron castings with cored jackets. Detachable from crankcase.

Safety Heads - Close grained iron castings held by steel coil springs, contains the discharge valves.

Pistons - Close grained iron castings, half slipper type for 6" x 6" to 9" x 9" compressors, full slipper type for 10" x 10" to 11-1/2" x 10" compressors, having compression rings above the suction port and beveled oil rings below the suction port.

Suction Valves - Multiple cushioned poppet type of forged steel with low lift, fitted into cages of close grained cast iron, located in top of piston.

Discharge Valves - Multiple cushioned poppet type of forged steel with low lift, fitted in cages of close grained cast iron, located in safety head.

Connecting Rods - Malleable iron "I" section castings. Crank end split with shim adjustment for bearings.

Crankcase - Close grained iron casting with outboard bearing as integral part, equipped with hand hole plate, oil level gauge and oil charging and drain connection.

Crankshaft - Open hearth forged steel of high tensile strength casting, machined.

Shaft Packing - Stuffing box filled with York semi-metallic packing and lantern gland, with oil automatically supplied from the pressure oiling system.

SPECIFICATIONS

Bearings - Wrist pin, phosphor-bronze bushings; connecting rod, main and outboard bearings are removable die case babbitt.

Lubrication - All bearings except the outboard are supplied with oil under pressure through tubing to passages drilled in crankshaft and connecting rods from a geared pump at end of crankshaft. Cartridge-type oil filter (Cuno) on pump discharge. Outboard bearing is oiled by two oiler rings. Cylinder walls are lubricated by a sight feed valve with oil supplied from the pressure system except for the 10" stroke compressors, which have a separate oil pump belted to the crankshaft.

Manifold - On 6" x 6" to 10" x 10" inclusive is a close grained iron casting containing suction and discharge stop valves, hand operated by-pass valve, pump-out valve, relief valve and suction strainer of 35 mesh screen. All relief valves are set to open at 250 lbs. The suction manifold for 11" x 10" and 11-1/2" x 10" compressors has a stop valve and suction strainer, with connections for by-pass and crankcase pump-out valve.

Capacity Reducers - Hand operated capacity reducers are standard on compressors 9" x 9" to 11-1/2" x 10" inclusive.

DRIVE

Direct Type (6" x 6" to 11-1/2" x 10" Compressors)

Shaft extended and keyed for direct connection to motor, or engine.

V-Belt Type (6" x 6" to 11-1/2" x 10" Compressors)

Belts - Multiple, endless "V" type.

Flywheel and Motor Pulley - Cast iron, grooved for necessary belts.

GAUGES AND BOARD

A gauge board containing the discharge and suction pressure gauges is furnished, for wall mounting. Gauges for the 6" x 6" to 7-1/2" x 7-1/2" compressors inclusive are 4-1/2" in diameter; 9" x 9" compressors and larger are furnished with 8-1/2" diameter gauges.

MISCELLANEOUS

Standard compressor includes shop painting, two oil charges, mounted manifold, wrenches and tools.

ACCESSORIES

DOUBLE SUCTION CONNECTIONS

For applications involving operation at two suction pressures can be furnished. Included are extra piping and valves, omission of manifold, rearrangement of suction ports and piston ring changes on high pressure cylinder.

SPECIAL THRUST BEARINGS

Consisting of bronze thrust ring on main bearing and steel thrust ring on shaft to give greater thrust surface can be provided for compressors operating with suction pressures higher than 50 psig.

HIGH OR LOW PRESSURE CUTOUTS

Of adjustment type, to stop compressor when discharge or evaporator pressure reaches a pre-determined point can be supplied when ordered. Most codes require that the system be equipped with high pressure cutouts.

ADDITIONAL STOP VALVES

For installation in suction and discharge mains to allow for emergency service on manifold can be furnished when required.

SPECIFICATIONS

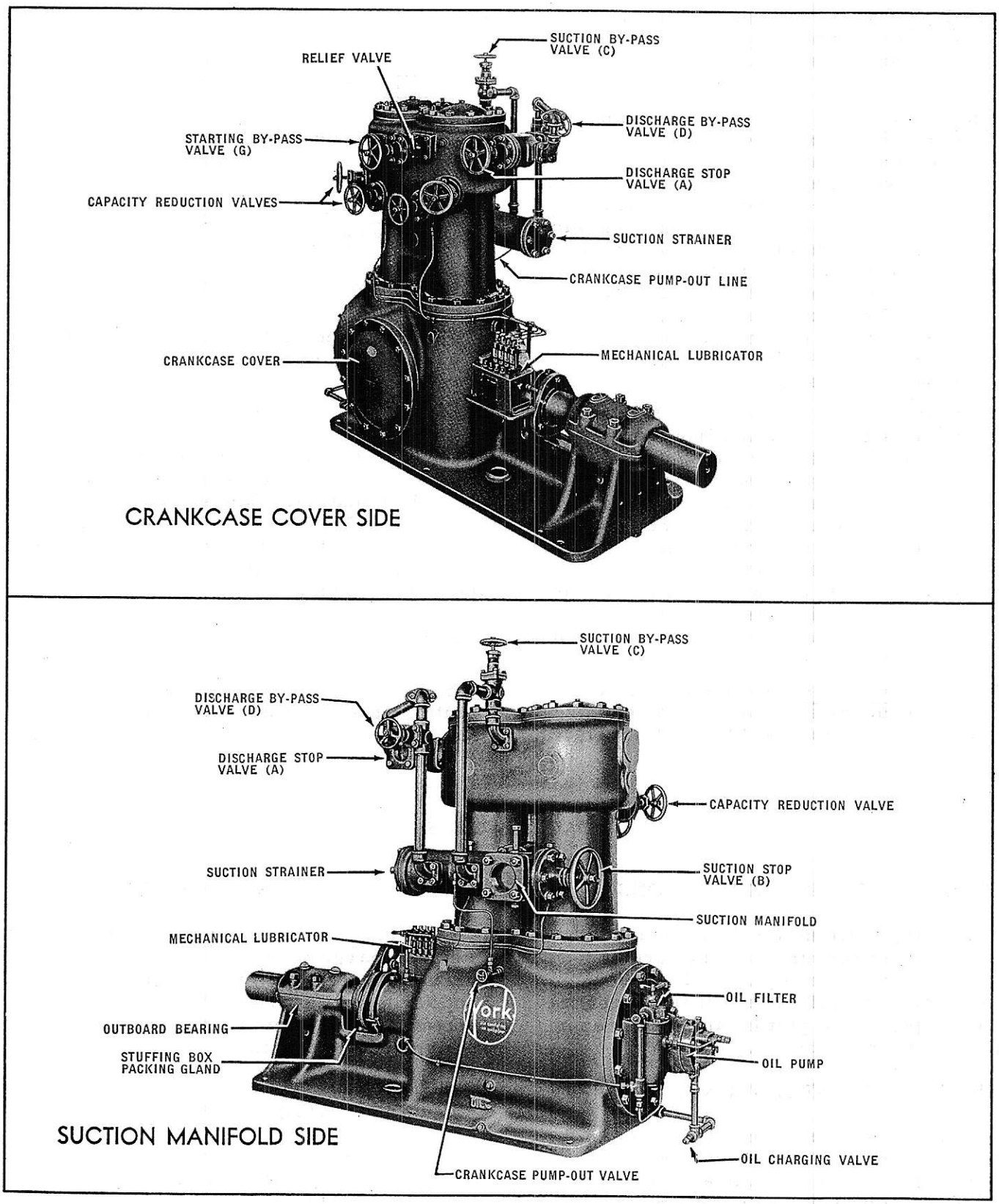


Fig. 3 - 11-1/2" x 10" Enclosed Ammonia Compressor

SPECIFICATIONS

OIL POT WITH CONNECTIONS FOR STUFFING BOX OIL SEAL

To provide oil seal on stuffing box of compressors that operate with crankcase pressures below atmospheric pressure can be furnished when required.

HAND OR AUTOMATIC CAPACITY REDUCERS

Automatic capacity reducers providing 50% capacity reduction for the 6" x 6" to 9" x 9" compressors inclusive and 1/3 and 2/3 reduction for the 10" stroke compressors.

LEFT HAND ARRANGEMENT

Left hand compressors are standard (with flywheel to the left when facing compressor on manifold side). Right hand compressors can be furnished at an additional charge.

WATER SOLENOID VALVE

For compressor water jacket line should be ordered when compressor is used with an economizer for automatic operation. (Jacket water may be used as make-up for economizer).

AUTOMATIC STARTING BYPASS

Arrangement consisting of valves, solenoids and piping can be supplied when required.

MANZEL LUBRICATORS

For 6" x 6" to 9" x 9" compressors can be furnished where suction pressure varies during operation.

FOUNDATION BOLTS AND TEMPLATE

Can be furnished for mounting compressor on field constructed foundations.

INSTALLATION

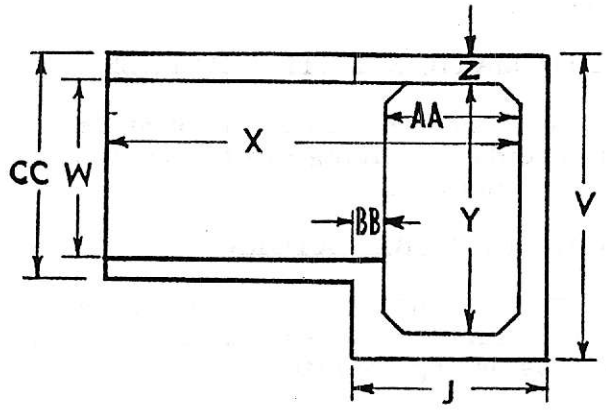
GENERAL

General installation instructions for ammonia systems is given in Instruction 2A and will apply to these compressors.

Since Instruction 2A includes general information for ammonia systems, some of the information found there will not apply to VSA compressors. The following list of headings may be used as a guide for quickly finding installation information which applies to these compressors.

1. LOCATING THE EQUIPMENT
2. HANDLING AND RIGGING
3. COMPRESSOR FOUNDATIONS
4. LEVELING AND ALIGNING
   - (a) Belt Driven Enclosed Compressors
   - (b) Direct Connected Motor Driven Compressors
5. GROUTING
6. GAUGES
7. GENERAL RECOMMENDATIONS FOR PIPING
8. CLEANING AND INSPECTION OF COMPRESSORS
   - (a) Enclosed Compressors, 6" x 6" and Larger
9. PRESSURE TESTING
10. EVACUATING THE SYSTEM
11. CHARGING AMMONIA INTO THE SYSTEM
12. TESTING FOR AMMONIA LEAKS
13. STARTING THE PLANT IN OPERATION
14. EXCESS MATERIAL
15. INSTRUCTIONS TO PURCHASER

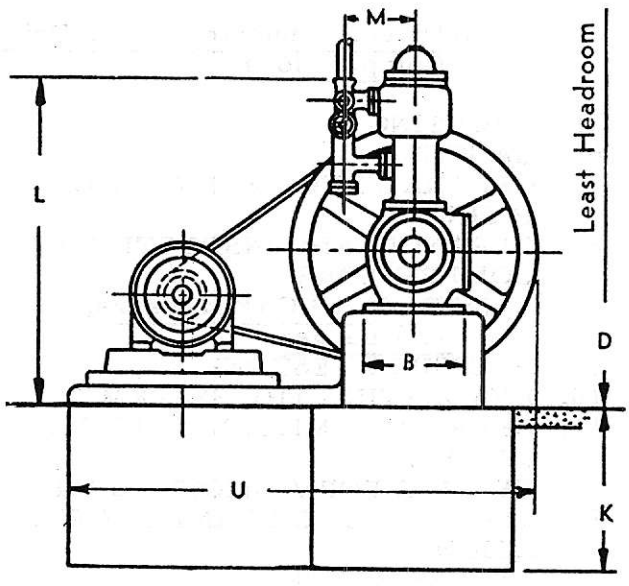
DIMENSIONS



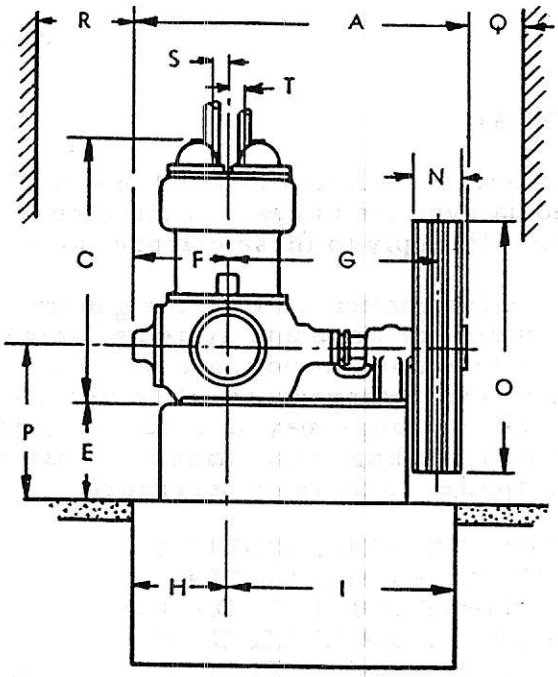
Plan View

Model		662E	6½6½2E	7½7½2E	992E	10102E	10102E
Motor Horsepower		20–30	25–40	30–50	60–75	75–100	125
General Dimensions	A	59¾"	64¾"	71⅞"	91⅝"	105⅝"	105⅞"
	B	18"	21"	23"	26"	32"	32"
	C	44⅞"	48"	53"	63"	70½"	70½"
	D	84"	89"	96"	113"	122"	122"
	E	18½"	18"	18"	18½"	16¼"	16¼"
	F	20⅝"	21⅞"	24¼"	30⅜"	32⅝"	32⅝"
	G	34⅞"	38⅛"	42⅝"	54"	64½"	64½"
	H	16"	17"	19"	23"	25"	25"
	I	40"	43"	48"	64"	71"	71"
	J	34"	36"	38"	45"	48"	48"
	K	30"	30"	30"	39"	48"	48"
	L	61¼"	63⅞"	69⅜"	74"	84½"	84½"
	M	11½"	11⅝"	12⅞"	14⅛"	15⅞"	15⅞"
	N	7"	8"	10"	13"	17¾"	17½"
	O	49"	49"	49"	45"	54½"	45"
	P	29"	29"	29"	27"	32"	32"
	Q	7½"	8½"	10½"	13½"	18¼"	18½"
	R	28"	28"	30"	41"	48"	48"
	S	4¼"	4¼"	5½"	5½"	6½"	6½"
	T	4½"	4¼"	5"	5½"	5½"	5¼"
	U	84¼"	85¾"	88"	98"	118¾"	105"
	V	56"	60"	67"	87"	96"	96"
	W	30"	31"	32½"	32½"	34½"	37½"
	X	71¾"	74¾"	78"	91½"	111"	102"
	Y	42"	45"	50"	64"	74"	74"
	Z	10½"	11¼"	12⅝"	18½"	16¾"	16¾"
	AA	24"	27"	29"	32"	39"	39"
	BB	5"	4½"	4½"	6½"	4½"	4½"
	CC	46¼"	48½"	51⅛"	57"	57¼"	60¼"
Concrete, Cu.Ft.		45	50	60	110	153	153
Isolation Cork, Sq. Ft.		55	60	66	104	135	135

* For 10"x10" with Special Drive for 360 RPM.



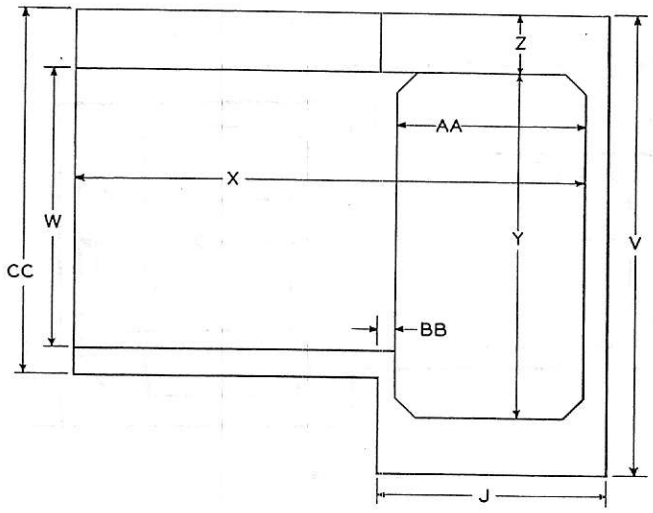
Front Elevation



Side Elevation

Fig. 4 - Dimensions, Belt Driven Compressors - 6" x 6" to 10" x 10" Inclusive

DIMENSIONS



Model		11-1/2 102E
Motor Horsepower		125-150
General Dimensions	A	105-7/8"
	B	32"
	C	71-3/4"
	D	122"
	E	16-1/4"
	F	32-5/8"
	G	64-1/2"
	H	25"
	I	71"
	J	48"
	K	48"
	M	6"
	P	32"
	Q	18-1/2"
	R	48"
	S	24-1/8"
	T	19"
	U	118-3/4"
	V	96"
	W	37-1/2"
	X	111"
	Y	74"
	Z	16-3/4"
	AA	39"
	BB	4-1/2"
	CC	60-1/4"
Concrete, Cu. Ft.		153
Isolation Cork, Sq. Ft.		135

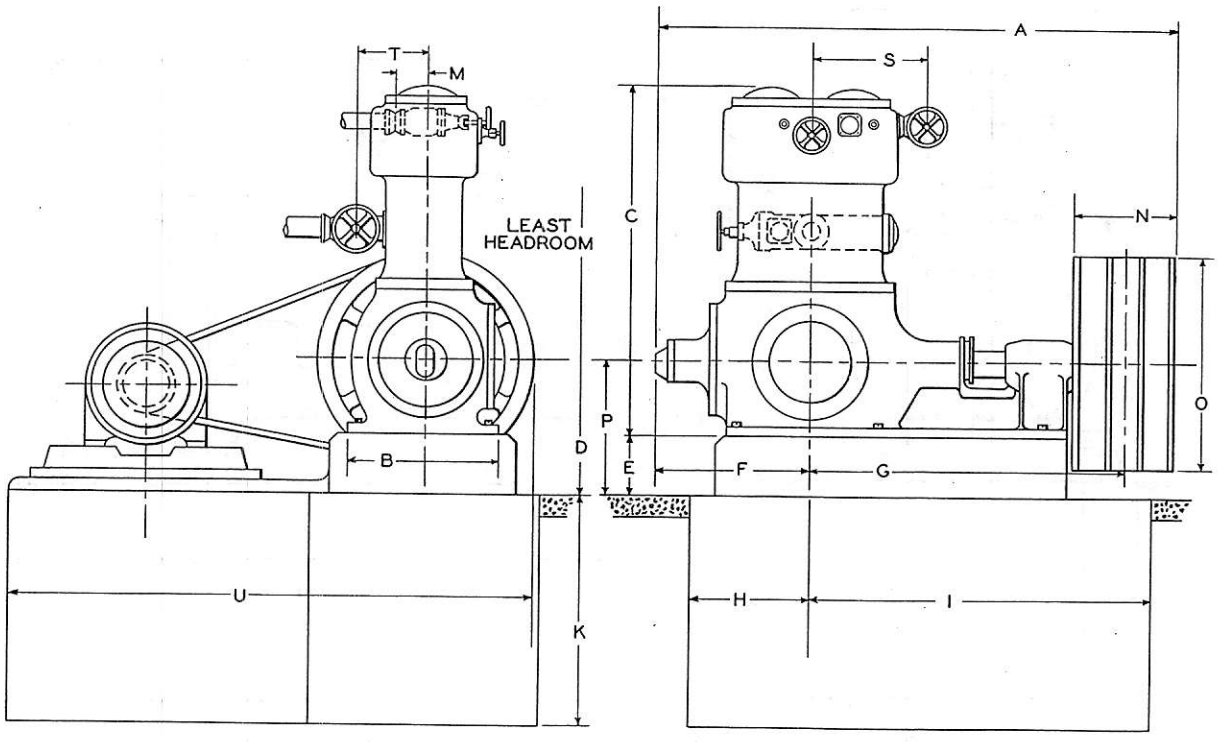
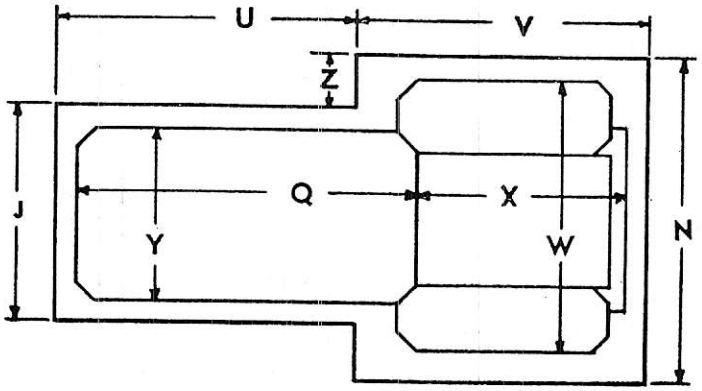


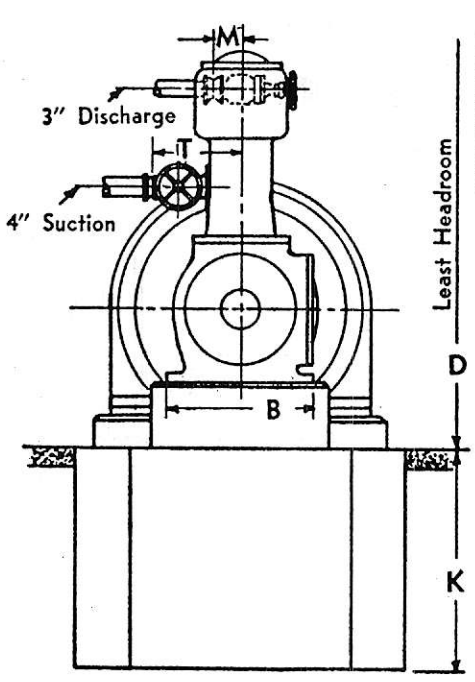
Fig. 5 - Dimensions, Belt Driven Compressor - 11-1/2" x 10"

DIMENSIONS

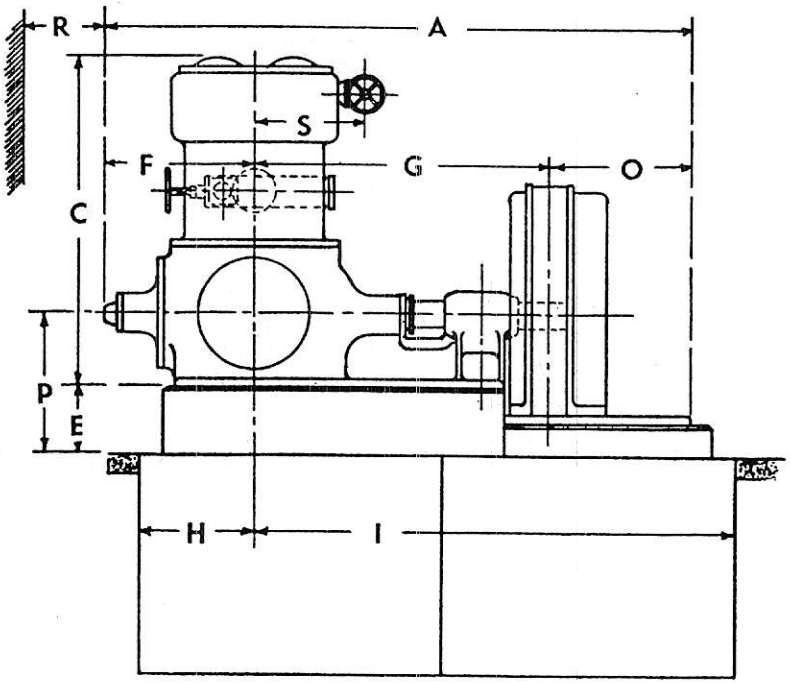
Model		11½102E
Motor Horsepower		125-150
General Dimensions	A	115⅜"
	B	32"
	C	71¾"
	D	122"
	E	14¼"
	F	32⅝"
	G	63¼"
	H	25"
	I	94"
	J	48"
	K	48"
	M	6"
	N	72"
	O	19½"
	P	30"
	Q	74"
	R	48"
	S	24⅛"
	T	19"
	U	66"
	V	53"
	W	65"
	X	35"
	Y	39"
	Z	12"
Concrete, Cu. Ft.		235



Plan View



Front Elevation

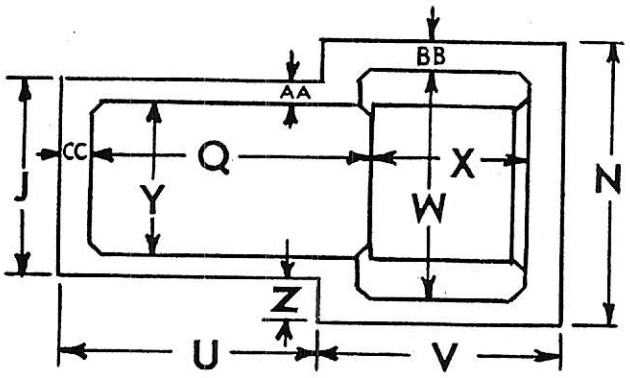


Side Elevation

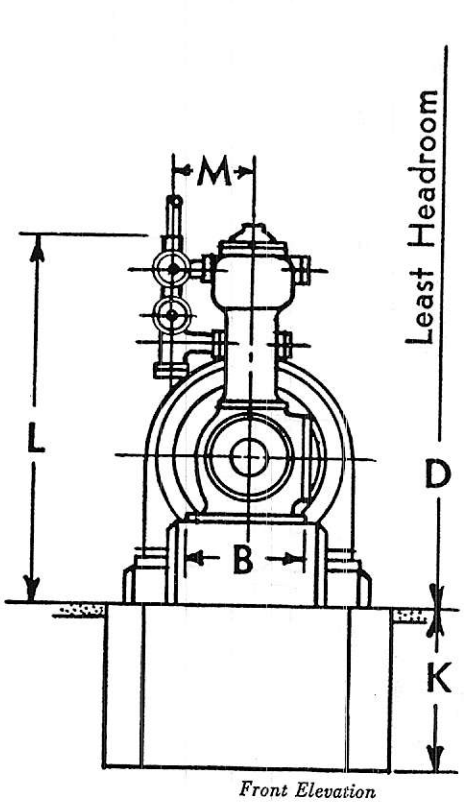
Fig. 6 - Dimensions, Direct Connected Compressors, Motor Driven - 11-1/2" x 10"

DIMENSIONS

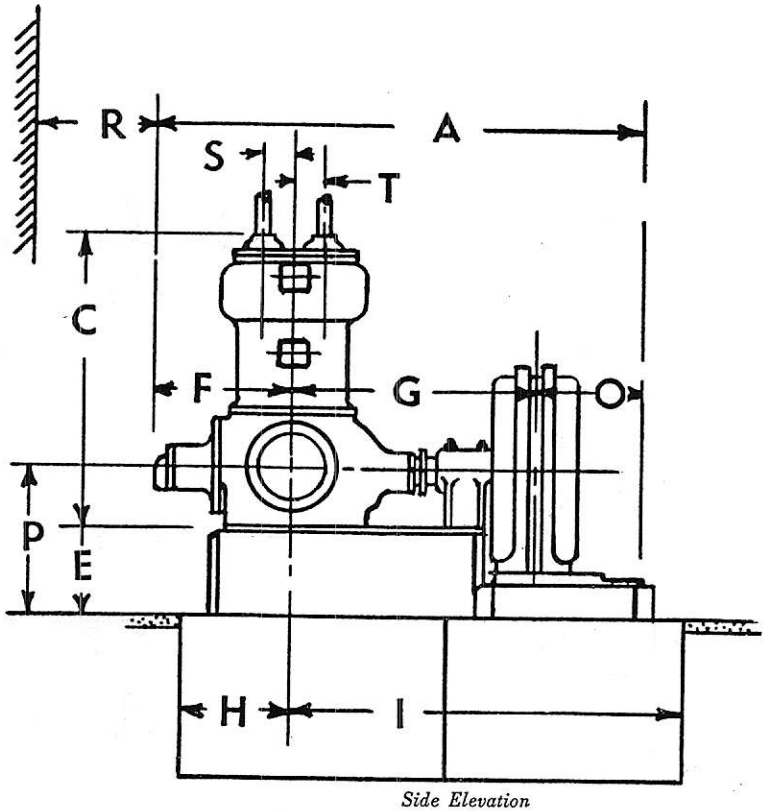
Model		662E	6½6½2E	7½7½2E	992E	10102E
Motor Horsepower		20–30	25–40	40–50	60–100	100–125
General Dimensions	A	75″	78¼″	83⅞″	108⅝″	120⅞″
	B	18″	21″	23″	26″	32″
	C	44⅞″	48″	53″	63″	70½″
	D	79″	84″	91″	107″	120″
	E	13½″	13¼″	13″	12½″	14¼″
	F	20⅞″	21⅞″	24¼″	30⅜″	32⅝″
	G	37″	39½″	43⅜″	54½″	64½″
	H	16″	17″	19″	23″	25″
	I	62″	62″	77″	85″	97″
	J	34″	36″	38″	45″	48″
	K	30″	30″	30″	39″	48″
	L	56⅛″	58⅞″	64⅜″	73″	82½″
	M	11⅛″	11⅝″	13″	14⅛″	15⅞″
	N	48″	48″	62″	72″	72″
	O	17⅜″	16⅞″	16¼″	23¾″	23¾″
	P	24″	24″	24″	26″	30″
	Q	42″	45″	50″	64″	74″
	R	28″	28″	30″	41″	48″
	S	4¼″	4¼″	5½″	5½″	6½″
	T	4¼″	4¼″	5″	5½″	5¼″
	U	36″	38″	43″	57″	67″
	V	42″	41″	53″	51″	55″
	W	41½″	41½″	56″	64″	65″
	X	26⅝″	26⅝″	35″	36″	38″
	Y	24″	27″	29″	32″	39″
		7″	6″	12″	13½″	12″
	AA	5″	4½″	4½″	6½″	4½″
	BB	3¼″	3¼″	3″	4″	3½″
	CC	3¾″	3¾″	4⅜″	4¼″	5¼″
Concrete, Cu. Ft.		60	80	100	160	200
Isolation Cork Sq. Ft.		80	84	100	152	186



Plan View



Front Elevation



Side Elevation

Fig. 7 - Dimensions, Direct Connected Compressors, Motor Driven–
6" x 6" to 10" x 10" Inclusive

DIMENSIONS

SIZE COMPR.	ENGINE STROKE	ENGINE FRAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	CONCRETE CU. FT.
6 x 6	7"	E7	98⅞"	20⅝"	23½"	55¾"	22½"	57"	11⅛"	4¼"	4¼"	28"	86"	43"	95"	54⅝"	56"	76"	34"	3¼"	36"	20½"	78½"	105
6½ x 6½	7"	E7	105⅝"	21⅞"	23½"	61¼"	25"	61¾"	11⅝"	4¼"	4¼"	30"	95"	51"	97"	59⅝"	64"	80"	34"	3¼"	36"	21¾"	86¼"	110
7½ x 7½	8"	E8	116¼"	24¼"	27½"	64½"	26"	68"	12⅞"	5"	5½"	32"	102"	51"	100"	66¾"	64"	88"	37"	3½"	38"	23 "	92 "	135
9 x 9	10"	E10	146"	30⅜"	31½"	84½"	30"	79½"	14⅛"	5½"	5½"	40"	124"	55"	111"	77"	69"	101"	48"	4"	42"	28½"	104½"	160
10 x 10	12"	ST12	179"	32⅝"	44⅛"	101½"	34"	88¾"	15⅞"	5¼"	6½"	51"	146"	57"	138"	86½"	72"	127¾"	60"	7"	42"	29 "	127 "	265

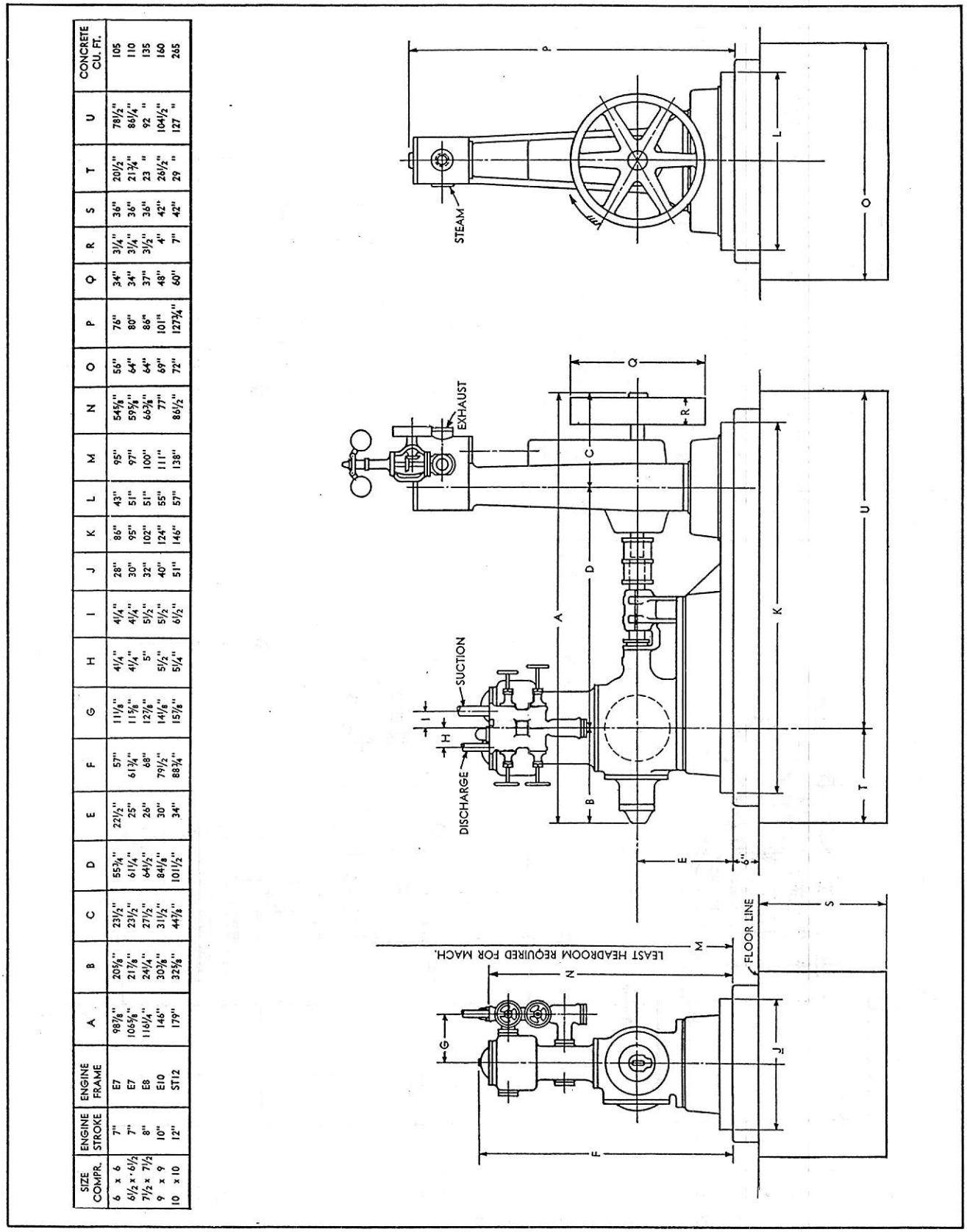


Fig. 8 - Dimensions, Direct Connected Compressors, Engberg Steam Engine Driven - 6" x 6" to 10" x 10" Inclusive

PHYSICAL DATA

DIRECT CONNECTED MOTOR DRIVEN COMPRESSORS
6" x 6" to 10" x 10" Inclusive

		Model	662E	6½6½2E	7½7½2E	992E	10102E
	Nominal Rating	Standard Speeds—rpm hp (95°F Cond. Temp. 5°F Suct. Temp.)	300 360 400 20 25 30	300 360 400 25 30 40	300 360 400 40 50 50	300 360 75 100	300 360 100 125
Compressor Data	Cylinders	Number Bore Stroke	2 6" 6"	2 6½" 6½"	2 7½" 7½"	2 9" 9"	2 10" 10"
	Pistons	No. Compression Rings No. Oil Seal Rings Diameter Pin Length Pin	3 1 1½" 2⅞"	3 1 1⅝" 3⅜"	3 1 1⅞" 3⅞"	3 1 2¼" 4⅝"	3 1 3" 5"
	Valves Per Cylinder	Suction Discharge	2 2	2 3	3 4	4 3	5 4
	Conn. Rods	C. to C. of Crank & Wrist Pin	13½"	14⅝"	16⅞"	20¼"	22½"
	Crankshaft	Diameter Length of End Bearings Length of O. B. Bearings Keyway—Width Keyway—Depth	3" 6" 7" ¾" 7/32"	3½" 7" 8" ⅞" ¼"	4" 8" 9" 1" 9/32"	5½" 11½" 12" 1⅜" ⅜"	6" 12" 14" 1½" ½"
	Crank Pin	Diameter Length	3" 2¾"	3½" 2¾"	4" 3¼"	5½" 3½"	6" 4"
	Weight of Reciprocating Parts—Lbs.	One Piston—Complete One Conn. Rod—Complete	40 19	49 22	75 34	107 54	145 135
	Piping Connections	Discharge Suction Water Jacket	1½" 2" ¾"	1½" 2" 1"	2" 2½" 1"	2" 3" 1¼"	2½" 3½" 1¼"
	Foundation Bolts	No. of Bolts Diameter Length Thread Length	6 ¾" 3'-6" 3"	6 ¾" 3'-6" 3"	6 ¾" 3'-6" 3"	6 ⅞" 3'-9" 3"	6 1" 4'-6" 3"
	Tank Steel Anchor Plates for Foundation Bolts	No. of Plates Length Width Thickness Size Square Hole	6 4" 4" ¼" 13/16"	6 4" 4" ¼" 13/16"	6 4" 4" ¼" 13/16"	6 4" 4" ¼" 15/16"	6 4" 4" ¼" 1 1/16"
	Oil	Charge, Gallons	8¼	8¼	9	11¾	16½
	Overall Dimensions	Length Width Height	6'-3" 3'-5½" 4'-10⅜"	6'-6¼" 3'-5½" 5'-1¼"	6'-11⅞" 4'-8" 5'-6"	9'-0⅝" 5'-4" 6'-3½"	10'-0⅞" 5'-5" 7'-0¾"
	Weight In Lbs.	Maximum Wt. (Motor Included)	3800	4400	5400	8200	10,600

PHYSICAL DATA

BELT DRIVEN COMPRESSORS, 6" X 6" to 10" X 10" INCL.

		Model	662E	6½6½2E	7½7½2E	992E	10102E
	Nominal Rating	Standard (60 Cycle) Speeds—rpm	300 360 400	222 300 360 400	236 300 360 400	277 300 360	192 237 257 300 360
		hp—(95°F Cond. Temp. 5°F Suct. Temp.)	20 25 30	15 25 30 40	30 40 50 50	60 75 100	60 75 100 100 125
	Motor Data	Standard rpm (60 cycle)	1750 1750 1750	1150 1750 1750 1750	870 1150 1150 1150	870 1150 1150	870 870 1150 1150 1150
		Motor Frame No.	364 364 365	364 364 365 404	444 444 445 445	505 505 623ES	505 623F 623ES 623ES 623FS
Drive Data	Motor Pulley	Pulley Diameter	9" 10½" 11¾"	10" 9" 10¾" 11¾"	14" 13½" 16" 17¾"	15" 12½" 14¾"	12¾" 15½" 12¾" 14¾" 14¾"
		Face (Width)	7¼"	8¼"	9½"	12½"	15" 16¾"
	V-Belts	Number	6	7	6	8	13 11
		Type Section	C	C	D	D	C D
		Nominal Inside Length	195"	195"	195" 195" 195" 210"	195"	225" 210"
	Flywheel	Diameter	49"	49"	49"	45"	54½" 45"
		Face	7"	8"	10"	13"	17¾" 17½"
		Weight—Lbs.	710	904	1061	2420	1990 2760
	Shaft Keyway	Width	¾"	⅞"	1"	1⅜"	1½"
		Depth	1/16"	¼"	9/16"	⅜"	½"
Compressor Data	Cylinders	Number	2	2	2	2	2
		Bore	6"	6½"	7½"	9"	10"
		Stroke	6"	6½"	7½"	9"	10"
	Pistons	No. Compression Rings	3	3	3	3	3
		No. Oil Seal Rings	1	1	1	1	1
		Diameter Pin	1½"	1⅝"	1⅞"	2¼"	3"
		Length Pin	2⅞"	3⅜"	3⅞"	4⅝"	5"
	Valves Per Cylinder	Suction	2	2	3	4	5
		Discharge	2	3	4	3	4
	Connecting Rods	C. to C. of Crank & Wrist Pins	13½"	14⅝"	16⅞"	20¼"	22½"
	Crankshaft	Diameter	3"	3½"	4"	5½"	6"
		Length of End Bearings	6"	7"	8"	11½"	12"
		Length of O.B. Bearings	7"	8"	9"	12"	14"
	Crank Pin	Diameter	3"	3½"	4"	5½"	6"
		Length	2¾"	2¾"	3¼"	3½"	4"
	Piping Connections	Discharge	1½"	1½"	2"	2"	2½"
		Suction	2"	2"	2½"	3"	3½"
		Water Jacket	¾"	1"	1"	1¼"	1¼"
	Foundation Bolts	No. of Bolts	6	6	6	6	6
		Diameter	¾"	¾"	¾"	⅞"	1"
		Length	3'-6"	3'-6"	3'-6"	3'-9"	4'-6"
		Thread Length	3"	3"	3"	3"	3"
	Tank Steel Anchor Plates For Foundation Bolts	No. of Plates	6	6	6	6	6
		Length	4"	4"	4"	4"	4"
		Width	4"	4"	4"	4"	4"
		Thickness	¼"	¼"	¼"	¼"	¼"
		Size Square Hole	13/16"	13/16"	13/16"	15/16"	1 1/16"
	Oil	Charge, Gallons	8¼	8¼	9	11¾	16½
	Overall Dimensions	Length	7'-0¼"	7'-1¾"	7'-4"	8'-2"	9'-10¾"
		Width	4'-11¾"	5'-4¾"	5'-11⅞"	7'-7⅝"	8'-9⅝"
		Height	5'-3½"	5'-6"	5'-11"	6'-9½"	7'-2¾"
	Weight In Lbs.	Maximum Operating Wt. (Motor Included)	4000	4600	6600	10,500	16,000

PHYSICAL DATA

DIRECT CONNECTED MOTOR DRIVEN COMPRESSORS
11-1/2" X 10"

		Model	11-1/2 102E
	Nominal Rating	Standard Speeds-rpm hp (95°F Cond. Temp. 5°F Suct. Temp.)	300 360 125 150
Compressor Data	Cylinders	Number Bore Stroke	2 11-1/2" 10"
	Pistons	No. Compression Rings No. Oil Seal Rings Diameter Pin Length Pin	3 1 3" 6"
	Valves Per Cylinder	Suction Discharge	6 5
	Conn. Rods	C. to C. of Crank & Wrist Pin	22-1/2"
	Crankshaft	Diameter Length of End Bearings Length of O.B. Bearings Keyway-Width Keyway-Depth	6" 12" 14" 1-1/2" 1/2"
	Crank Pin	Diameter Length	6" 4-3/4"
	Weight of Reciprocating Parts-Lbs.	One Piston--Complete One Conn. Rod--Complete	225 150
	Piping Connections	Discharge Suction Water Jacket	3" 4" 1-1/4"
	Oil	Charge, Gallons	16-1/2
	Overall Dimensions	Length Width Height	9'-7-3/8" 5'-5" 7'-1-3/4"
	Weight In Lbs.	Maximum Wt. (Motor Included)	12,300

PHYSICAL DATA

BELT DRIVEN COMPRESSORS
11-1/2" X 10"

Model			11-1/2 102E
Compressor Data	Cylinders	Number Bore Stroke	2 11-1/2" 10"
	Pistons	No. Compression Rings No. Oil Seal Rings Diameter Pin Length Pin	3 1 3" 5"
	Valves Per Cylinder	Suction Discharge	5 4
	Connecting Rods	C. to C. of Crank & Wrist Pins	22-1/2"
	Crankshaft	Diameter Length of End Bearings Length of O.B. Bearings	6" 12" 14"
	Crank Pin	Diameter Length	6" 4"
	Piping Connections	Discharge Suction Water Jacket	3" 4" 1-1/4"
	Oil	Charge, Gallons	16-1/2
	Overall Dimensions	Length Width Height	9'-10-3/4" 8'-9-5/8" 7'-2-3/4"
	Weight In Lbs.	Maximum Operating Wt. (Motor Included)	16,000

OPERATION

GENERAL

General operating instructions for ammonia systems is given in Instruction 2A and will apply to these compressors. Also, additional operation information pertaining to these compressors is given in this instruction.

Since Instruction 2A includes general information for ammonia systems, some of the information found there will not apply to VSA compressors. The following list of headings may be used as a guide for quickly finding operation information which applies to these compressors.

1. STARTING AND STOPPING
   (a) Starting Enclosed Compressors 6" x 6" and Larger
   (b) To stop the Compressor
2. SAFETY PRECAUTIONS

OPERATION

TABLE 1

MAX. AND MIN. OPERATING SPEEDS

Compressor Size	Max. R. P. M.	Min. R. P. M.
6" x 6", 6-1/2" x 6-1/2"	400	130
7-1/2" x 7-1/2"	400	150
9" x 9", 10" x 10") and 11-1/2" x 10")	360	150

OPERATING SPEEDS

Table 1 gives the recommended maximum and minimum operating speeds of enclosed ammonia compressors 6" x 6" to 11-1/2" x 10".

SHAFT PACKING

The shaft packing is York Semi-metallic type, with a combination of wax impregnated flax rings lined with lead rings, and an outer ring of graphited canvas. A lantern gland properly spaced introduces oil under pressure from the oil pump.

The gas pressure in the crankcase forces plenty of oil into the packing. The oil seals the stuffing box against gas leakage, and provides lubrication for the packing.

Give the packing a chance to wear in. If it heats up excessively, remove the outer seal ring, split it in halves circumferentially, then set the two halves back in the stuffing box, staggering the joints.

LUBRICATION

These compressors are equipped with automatic bearing and cylinder wall lubrication. The main oil circulating system, using York Ammonia Oil, provides lubrication for all bearings except the outboard bearings, and on the 6" to 9" compressors for the cylinder walls through the oil sight feed valve. The 10" stroke compressors are equipped with an independent force feed lubricating system for cylinder wall lubrication. The outboard bearing on all compressors is lubricated by ring oilers, with the reservoir cast in the bearing pedestal, also using York Ammonia Oil.

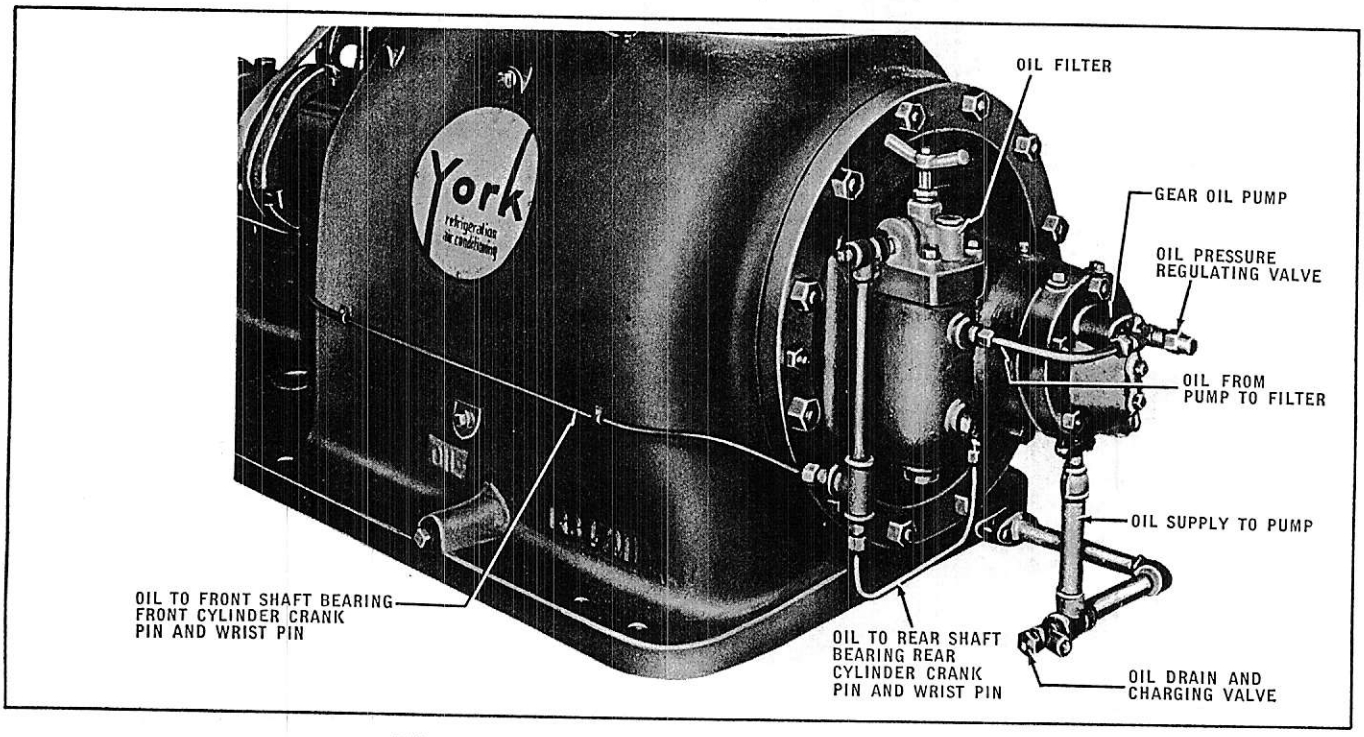


Fig. 9 - Main Oil Circulating System

OPERATION

Main Oil Circulating System (See Fig. 9.)

The gear oil pump, located at the rear of the compressor and driven direct from the crankshaft, takes oil from the crankcase and forces it through the cartridge type oil filter to each main shaft bearing and to the shaft packing, through external pipe connections. Drilled oil ways in the shaft conduct the oil from the main bearing to the adjacent crank pins. Tubes in the connecting rods conduct the oil from the crank pin bearings to the corresponding wrist pins. A gauge is provided on the outlet side of the filter to indicate the pressure of oil to the bearings. A gradual decrease in oil pressure during normal operation of the compressor indicates that the filter needs cleaning.

When starting the compressor, always make sure the oil pump is functioning properly as evidenced by the oil pressure gauge. The oil pressure must be higher than the suction pressure. If the oil pressure does not build up, screw in on the oil pressure regulating valve with a small screw driver. The oil pressure in increased by screwing in, and decreased by screwing out on the slotted pressure regulating valve stem.

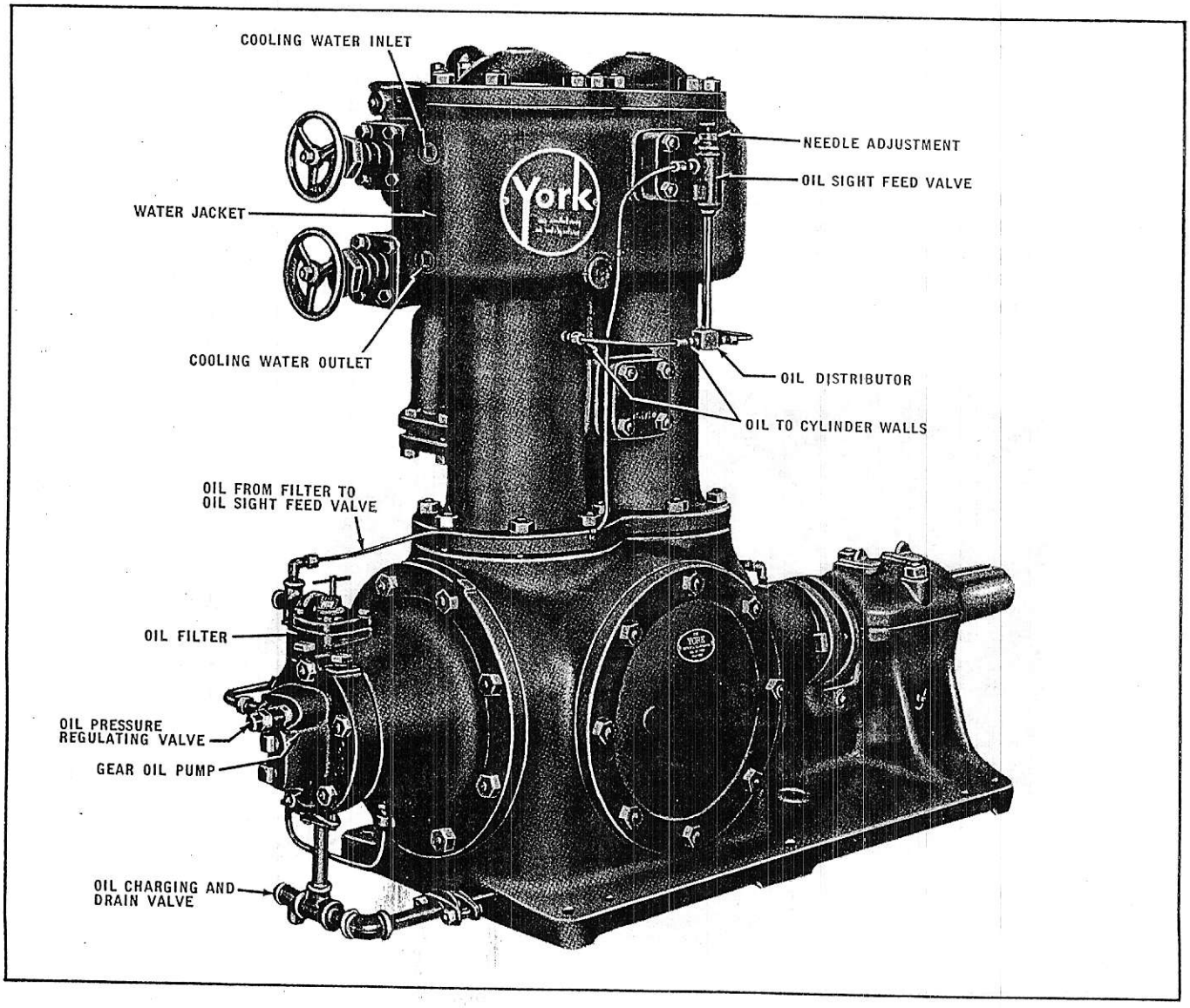


Fig. 10 - Cylinder Wall Lubrication - 6" to 9" Compressors

OPERATION

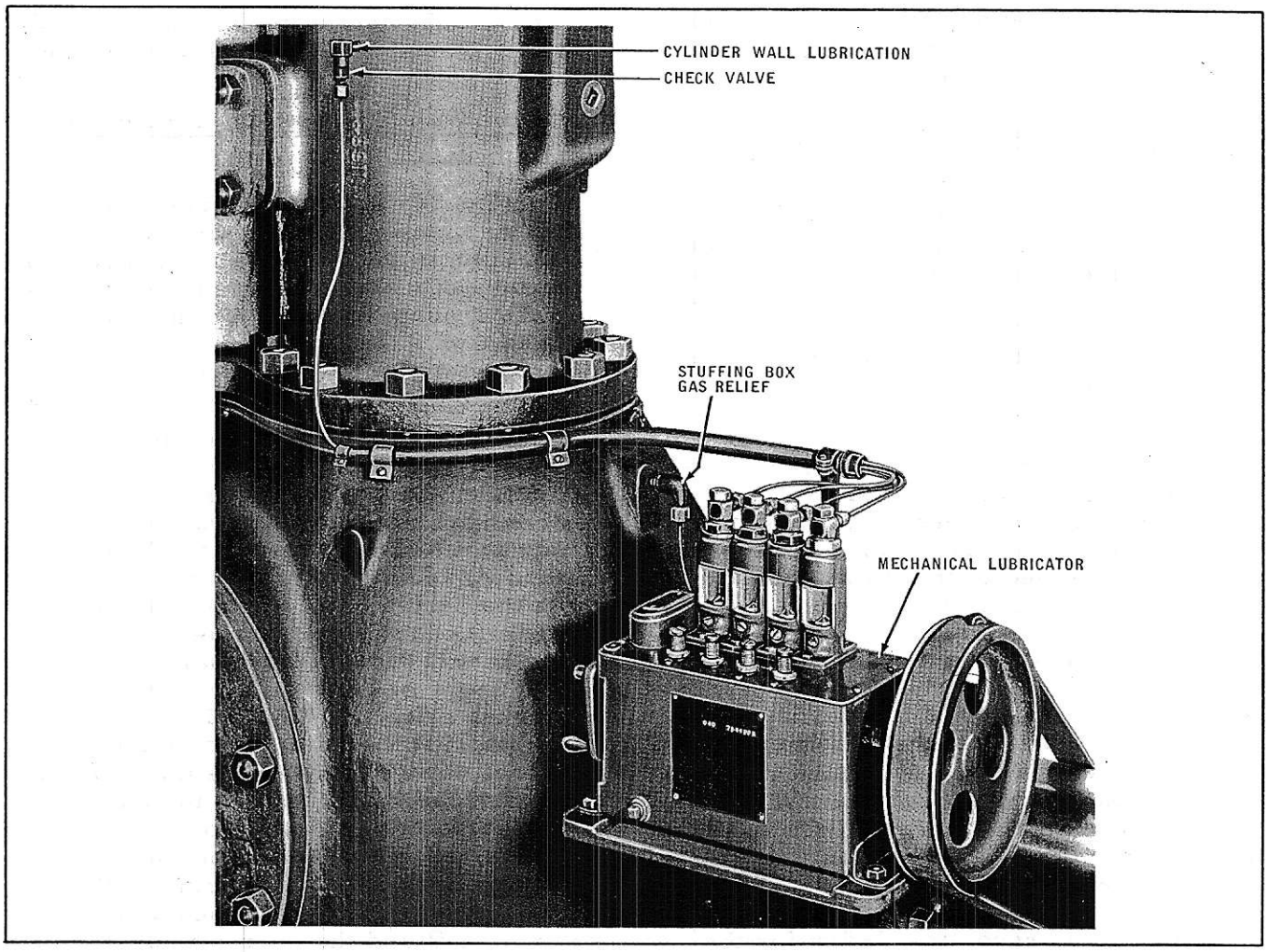


Fig. 11 - Cylinder Wall Lubrication, Manzel Pump, 10" x 10" and 11-1/2" x 10" Compressors

The oil pressure for a new compressor should be 15 to 20 pounds above the suction pressure. If too much oil is being carried over into the system, this pressure can be reduced to from 8 to 10 pounds above the suction pressure after the compressor has been run in well. If too much oil continues to be carried over, carry a lower oil level in the crankcase. This level can be as low as 1/4 inch above the bottom oil gauge glass packing nut.

After the first week of operation, the oil should be removed from the crankcase and the crankcase thoroughly cleaned with rags (not waste), and filled with clean York Ammonia Compressor Oil. The oil removed from the crankcase may be filtered and thus reclaimed for future use.

Adding Oil to Crankcase

To add fresh oil to the crankcase, use the hose connection provided for this purpose, and attach it to the 3/8 inch steel angle oil charging valve located between the crankcase and the oil pump. Close the suction valve and pump a slight vacuum in the crankcase, insert the hose connection to the bottom of the oil container, and open the oil charging valve. The oil will be sucked into the pump. Use care to close the oil charging valve before the end of the hose is entirely uncovered, to prevent the entrance of air into the system.

OPERATION

If a hand oil pump, Part No. 70-5714SL, is used, it will not be necessary to pump a vacuum in the crankcase.

Cylinder Wall Lubrication, 6" to 9" Compressors

Cylinder wall lubrication for compressors 6" to 9" bore inclusive, is automatic. A branch from the bearing oiling system line leaving the filter is piped to the inlet side of a sight drip valve. The outlet from the drip valve is conducted to a distributor, from which it goes to the cylinder walls. (See Fig. 10).

Compressors 6" x 6" and 6-1/2" x 6-1/2" have one feed to the thrust side of each cylinder. Compressors 7-1/2", 8" and 9" bore respectively, have two feeds to each cylinder; one feed to the thrust side and one to the side opposite the thrust.

Fig. 12 shows a section through the oil sight feed valve. By means of the needle adjustment, the rate of oil feed can be regulated to suit the conditions of operation. It is advisable to give new cylinders plenty of oil during the first few weeks of operation. After the cylinder walls have begun to take on a glazed appearance, the rate of feed can be gradually reduced.

A minimum recommendation for the number of drops through the oil sight glass is:

6" and 6-1/2" cylinders 10 drops per min. 7-1/2", 8" and 9" cylinders 20 drops per min.

Cylinder Wall Lubrication, Manzel Pump Type, Fig. 11

For the 10" stroke compressors, (smaller sizes when specially ordered) lubrication is supplied to the cylinder walls by means of a Manzel forced-feed mechanical oil pump driven from the crankshaft by means of a flat belt. This lubricator has adjustable feeds and forces the desired quantity of fresh oil directly to the cylinders.

IMPORTANT: The thrust side of the compressor cylinder requires more lubrication than the non-thrust side; therefore the compressor should operate in the direction which will permit the Manzel lubricator to feed the greater quantity of oil to the thrust side. If each side of the cylinder has the same number of connections, it will then be necessary to adjust the oil feeds so as to supply more oil to the thrust side. To determine the thrust side, stand at the motor and face the compressor; when the compressor is rotating clockwise the thrust side is to your right. If the lubricator has seven or more pumping units, each connection on the compressor may be traced by referring to the identification number stamped below each pumping unit and the corresponding number stamped on the check valve attached to the compressor.

TABLE 2

LUBRICATOR DROPS PER MINUTE

	150 RPM		225 RPM		360 RPM	
	Thrust Side	Opposite Side	Thrust Side	Opposite Side	Thrust Side	Opposite Side
1st 3 Weeks	5	5	6	6	7	7
4th Week	4	4	5	5	6	5
5th Week	3	2	4	3	5	3
6th Week on	2	1	3	2	4	2

OPERATION

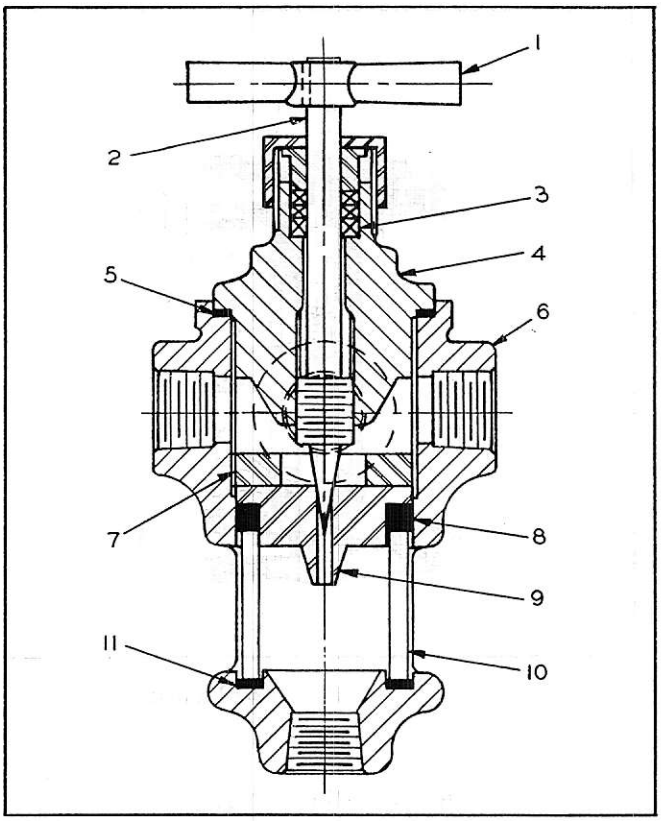


Fig. 12 - Oil Sight Feed Valve

The larger Manzel lubricators are equipped with an additional feed to inject make up oil into the crankcase continually. If the oil level in the crankcase tends to build up, this make-up connection may be shut off.

Always keep the lubricator filled with new York Ammonia Compressor Oil. Never use filtered or reclaimed oil. Adjust the rate of feed for normal operating conditions according to the schedule given in Table 2. If the compressor is operating with a high discharge temperature, the rate of feed can be increased slightly until the cylinders are well glazed. It is during the first weeks of operation that the compressor needs the most oil. After the cylinder walls begin to take on a glazed appearance, the amount of oil can be gradually reduced. The cylinders should be inspected occasionally to determine if the lubrication provided by the adjusted rate of feed is adequate for the prevailing operating conditions.

PARTS LIST, Fig. 12

Oil Sight Feed Valve
6" to 9" Compressors

Ref. No.	Part Name	Part Number
1-4	Bonnet Assembly	68-5596S
1-11	Oil Sight Feed Valve	68-4453FL
3	Packing, Valve Stem (3 Rings per Set)	28-2123P
5	Gasket, Bonnet	28-771P
8	Gasket, Sight Glass (Upper)	28-999P
10	Sight Glass	26-2633PK
11	Gasket, Sight Glass (Lower)	28-953P

The recommended rate of feed in drops per minute for each feed for normal operating conditions at various speeds, is given in Table 2.

If one cylinder runs considerably warmer than the other, increase the feed to that cylinder until the excess warmth disappears.

OIL SIGHT FEED VALVE

The oil sight feed valve assembly as shown in Fig. 12 is used with compressors 6" x 6" to 9" x 9" inclusive.

MAINTENANCE AND SERVICE

GENERAL

General maintenance and service instructions for Ammonia Systems as given in Instruction 2A will apply to these compressors. Also, additional maintenance and service information pertaining to these compressors is given in this instruction.

Since Instruction 2A includes general information for ammonia systems, some of the information found there will not apply to VSA compressors. The following list of headings may be used as a guide for quickly finding maintenance and service information which applies to these compressors.

1. AMMONIA LEAKS
2. PUMPING OUT THE EVAPORATOR
3. PUMPING OUT THE CONDENSER
4. PUMPING OUT THE LIQUID RECEIVER
5. PUMPING OUT THE COMPRESSOR
6. CHECKING THE REFRIGERANT CHARGE
7. REMOVING AMMONIA FROM THE SYSTEM
8. CHECKING SHAFT ALIGNMENT
9. HOT BEARINGS
10. REPLACING THE END BEARING HEAD
11. REPLACING THE COMPRESSOR RELIEF VALVE
12. REPLACING SNAP RINGS
13. OIL PUMPING
14. AMMONIA VALVES.

MAINTENANCE

The compressor should be opened up once a year at least, more often if necessary, and all parts thoroughly cleaned, and the suction and discharge valves reground. York service engineers are equipped to do this kind of work.

The outboard bearing should be carefully watched, and York Ammonia Compressor Oil added at regular intervals as required.

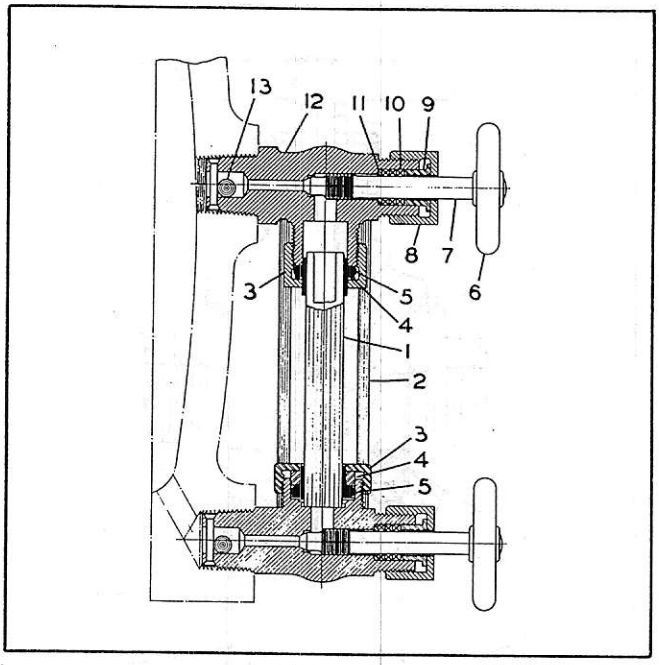


Fig. 13 - Oil Level Gauge

PARTS LIST, Fig. 13

Oil Level Gauge

Ref. No.	Part	Part Number
1	Gauge Glass 5/8" O.D. x 4-1/4" Lg.	26-2613P
2	Rod, Guard, 3/16" x 6-7/8" Lg.	68-4408P
3-13	Gauge Cock, Top	68-4402SL
3-13	Gauge Cock, Bottom	68-4403SL
5	Gasket, Bulb Type	28-897P
10	Packing, Valve Stem (3 Rings Required)	28-1205P

SUCTION STRAINER

The compressor suction strainer should be cleaned after the first week of operation of a new plant, and yearly thereafter until conditions indicate that longer intervals are permissable. To clean the suction strainer:

MAINTENANCE AND SERVICE

(a) Close the suction stop valve, open the crankcase pump-out valve, and pump the crankcase pressure down to zero pounds gauge.

(b) Stop the compressor and close the discharge stop valve.

(c) Remove the nuts which hold the cap to the bottom of the strainer body and remove the cap and strainer screen.

(d) Clean the screen thoroughly. To do this, blow it out with air and then clean with an approved safety solvent. The screen should then be dried and replaced in the strainer body and the strainer cap bolted fast.

OIL FILTER, DISC CARTRIDGE TYPE

The disc cartridge type of oil filter is used on these compressors. The filtering element is inserted in a recess in the bearing head, and consists of a series of thin perforated discs and very thin spacers placed alternately, sealed on the bottom by an unperforated plate, and mounted on a control shaft which extends through the filter cover, with an external handle to revolve the filtering cartridge. (See Fig. 14)

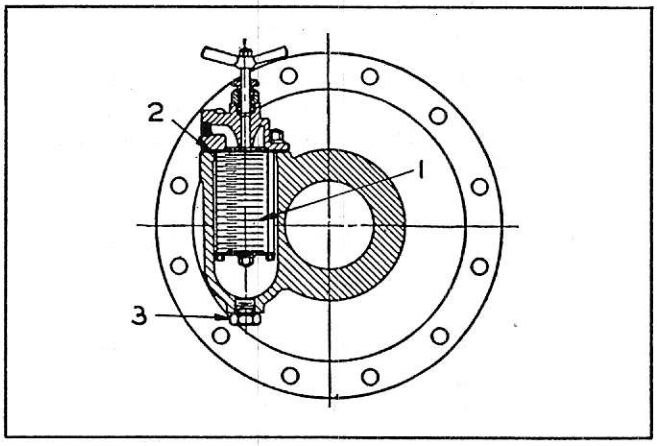


Fig. 14 - Disc Cartridge Type Oil Filter

Oil on the outside of the cartridge is forced through the fine spaces between the discs, and up through the internal perforations in the discs, to the outlet in the filter cover.

Mounted on a separate stationary post is a stack of cleaning blades one extending through each space between the filtering discs. These cleaning blades are so shaped that when the filtering cartridge is turned in either direction, any particles of grit or dirt between the discs will be scraped outward and drop down into the recess in the head, from which it may be drained at intervals.

During normal operation, the handles should be turned one or more revolutions daily for cleaning, but if through neglect the filter becomes congested, it may be difficult to turn the handle. To free the discs, turn the handle back and forth by hand until it can be turned a full revolution. Do not use a wrench.

If the filter has been neglected to such an extent that the handle cannot be loosened by hand, then the crankcase must be pumped out, and the filter cartridge dismantled and cleaned with an approved safe-

PARTS LIST, Fig. 14

Oil Filter Disc Cartridge Type Compressors

Ref. No.	Part	6" X 6", 6-1/2" X 6-1/2" and 7-1/2" X7-1/2" Part No.	8" X 8", 9" X 9", 10" X 10", 11" X 10" and 11-1/2" X 10" Part No.
1	Filter Cartridge	26-1688P	26-1689P
2	Gasket, Cover	28-789P	28-868P
3	Gasket, Drain Plug	28-765P	28-765P

MAINTENANCE AND SERVICE

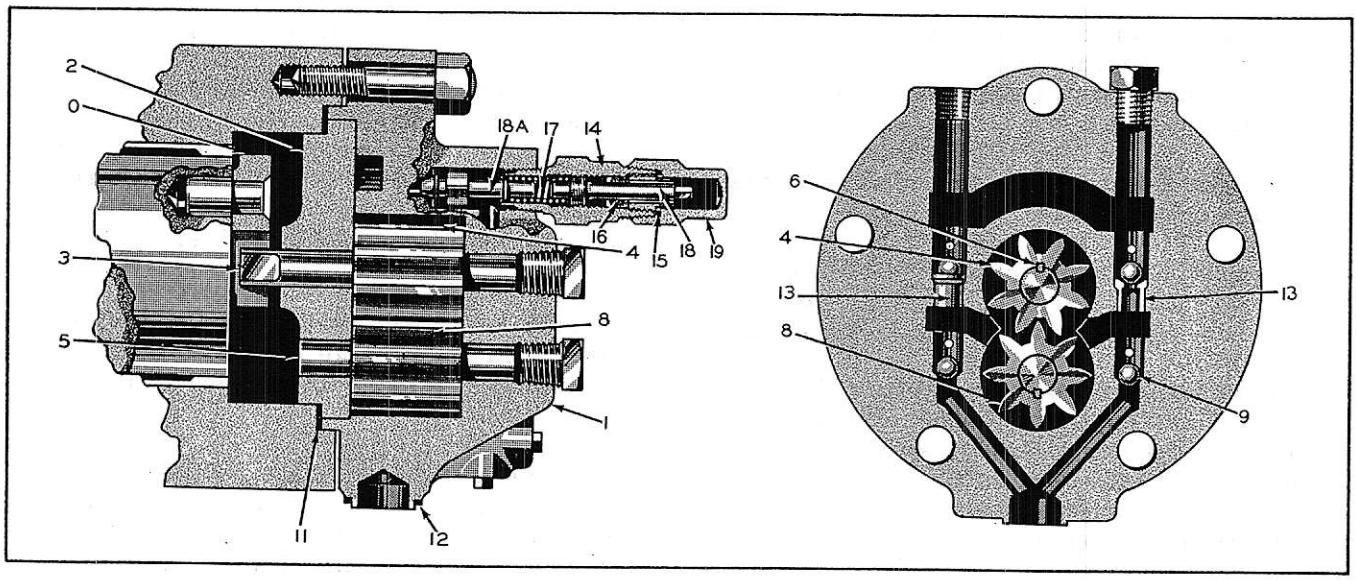


Fig. 15 - Gear Oil Pump

ty solvent. To clean the filter, proceed as follows:

(a) Close the compressor suction stop valve, open crankcase pump-out valve, and pump the crankcase pressure down to zero pounds gauge.

(b) Stop the compressor, and close the discharge stop valve.

(c) To relieve any pressure remaining in the crankcase, remove the flange from the bottom of the suction strainer.

(d) Disconnect the flare joints in the oil lines from the filter and unbolt the filter cover from the compressor bearing head.

(e) The filter cartridge is attached to the filter cover; do not take it apart.

PARTS LIST, Fig. 15

Ref. No.	Part	6"x6" to 7-1/2"x7-1/2" Inclusive	9"x9" to 11-1/2"x10" Inclusive
1-19	Oil Pump Assembly	64-1439F	64-1993F
2	Head, Bearing	64-1390PL	64-1390PL
3-6	Gear and Shaft, Driver	64-1393SK	64-2000SK
4	Gear, Driver	64-933PK	64-1996PK
6	Key, Woodruff	29-1554P	29-1554P
5-8	Gear and Shaft, Driven	64-1395SK	64-1999SK
8	Gear, Driven	64-933PK	64-1996PK
9	Ball Check	29-1853P	29-1853P
10	Crank and Pin	64-1396SK	64-1396SK
11	Gasket, Bearing Head	28-804P	28-804P
12	Gasket, Inlet Flange	28-852PK	28-852PK
13	Seat, Ball Check	64-1399PK	64-1399PK
14-19	Valve Assy. Press. Regulator	64-1448SK	64-1448SK
15	Gasket, Press. Regulator Cap	28-1256P	28-1256P
16	Packing, Press. Regulator	28-1060PK	28-1060PK
17	Spring, Press. Regulator	29-238PK	29-238PK

MAINTENANCE AND SERVICE

PARTS LIST, Fig. 16

Multiple Type Suction Valve
6" & 6-1/2" Compressors

Ref. No.		6" x 6" Part No.	6-1/2" x 6-1/2" Part No.
1-9	Suction Valve Assy.	64-1363SL	64-1590SL
1-9	Suction Valve Assy. (Oversize)	-	64-1663SL
1-6	Valve Assy., Less Cage	64-1369SK	64-1593SK
4	Piston, Cushion	64-719PK	64-719PK
5	Spring, Cushion	29-191PK	29-191PK
6	Spring, Valve	29-188PK	29-188PK
7-8	Screws & Lockwashers	64-1368S	64-1368S
	No. of Screws Per Set	4	4
	No. of Valves Per Piston	2	2

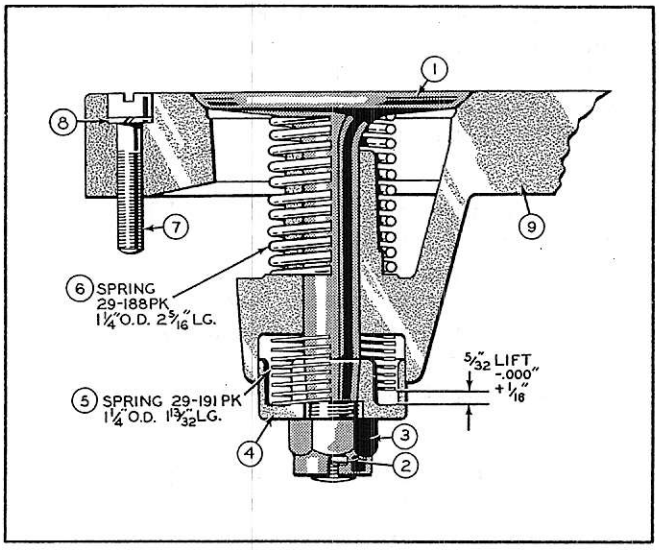


Fig. 16 - Suction Valve and Cushion Plunger Assembly - 6" x 6-1/2" Compressors

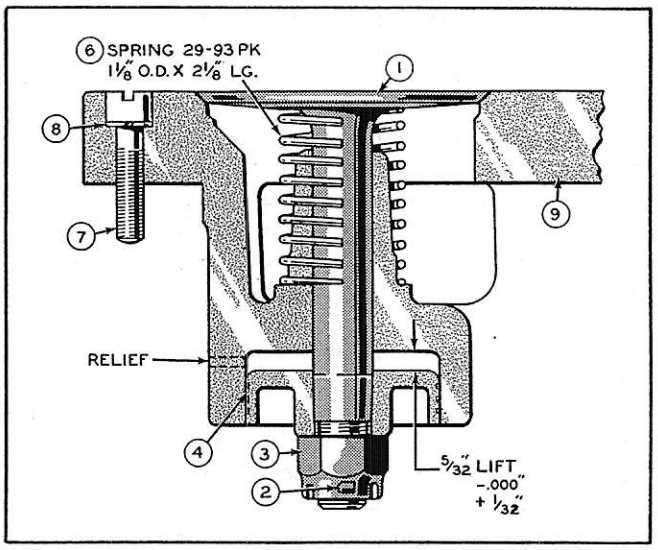


Fig. 17 - Suction Valve and Cushion Plunger Assembly - 7-1/2" to 11-1/2" Compressors

PARTS LIST, Fig. 17
Multiple Type Suction Valve
7-1/2" to 11-1/2" Compressors, Inc.

Ref. No.	Part	7-1/2" x 7-1/2" Part No.	8" x 8" Part No.	9" x 9" Part No.	10" x 10" Part No.	11" x 10" Part No.	11-1/2" x 10" Part No.
1-9	Suction Valve Assy.	64-1697SL	64-1861SL	64-1978SL	64-1112SL	64-3405SM	64-2175SM
1-9	Suction Valve Assy. (Oversize)	64-1818SK	64-1912SL	64-2149SL	64-2355SL		
1-6	Valve Assy., Less Cage	64-1701SK	64-1701SK	64-1701SK	64-1701SK	64-1701SK	64-1701SK
4	Piston, Cushion	64-1700PK	64-1700PK	64-1700PK	64-1700PK	64-1700PK	64-1700PK
6	Spring, Valve	29-93PK	29-93PK	29-93PK	29-93PK	29-93PK	29-93PK
7-8	Screws & Lockwashers, Set	64-1699S	64-1699S	64-1699S	64-1115S	64-2178S	64-2178S
	No. of Screws Per Set	6	6	6	6	8	8
	No. of Valves Per Piston	3	3	4	5	6	6

MAINTENANCE AND SERVICE

(f) Clean the filter cartridge in an approved safety solvent, and allow it to thoroughly dry before it is again assembled in the filter chamber.

(g) Drain the sediment from the filter chamber.

GEAR OIL PUMP

Forced lubrications is provided for all compressors. This pump is located in the compressor bearing head and is driven by a drag crank from a pin inserted in the end of the crankshaft. (See Fig. 15).

SUCTION VALVES

The suction valves (poppet type) are cushioned to insure quiet action and are fitted with springs designed to enable the valve to float on its seat when not in operation.

To test the suction valve for tightness, invert it and pour kerosene in the space between the valve and its seat meanwhile firmly pressing the valve to the seat by thumb pressure. It should retain the kerosene without leakage.

To re-grind the suction valve, dismantle it, taking away the spring and cushion plunger, then put valve grinding compound on the seat and insert the valve in the cage. Using a spanner inserted in the two 1/4" holes in the upper surface of the valve, spin it back and forth on the seat until tightness is secured. Be sure to clean the valve and cage thoroughly with an approved safety solvent and wipe dry before reassembling.

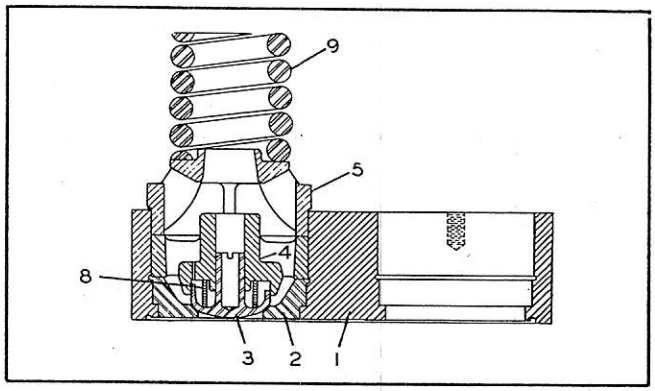


Fig. 18 - Multiple Type Discharge Valve

Compressors 6" and 6-1/2" are equipped with suction valve assemblies as shown in Fig. 16. Each valve is made up with two springs; one above and one below to maintain a balance.

On compressors 7-1/2" to 10" the suction valve assembly uses only one spring as illustrated in Fig. 17. This arrangement climinates the spring in the cushion chamber and provides an upper spring with the proper tension to balance the valve on its seat.

Accordingly, when replacing springs in the suction valves, be sure to use the ones specified for Figs. 16 and 17. Spring 29-93PK cannot be used in place of spring 29-188PK and vice versa.

PARTS LIST, Fig. 18
Multiple Type Discharge Valve
6" to 11-1/2" Compressors, Incl.

Ref. No.	Part	6" x 6" Part No.	6-1/2"x6-1/2" Part No.	7-1/2"x7-1/2" Part No.	8" x 8" Part No.	9" x 9" Part No.	10"x10" Part No.	11"x10" Part No.	11-1/2"x10" Part No.
1-8	Safety Head Assy. (x)	64-1367FL	64-1625FL	64-1702FM	64-1863FM	64-1980FM	64-1116FM		64-2179FM
2	Seat Valve (.008" Oversize)	64-1435PK	64-1435PK	64-1435PK	64-1435PK	64-840PK	64-840PK	64-840PK	64-840PK
3	Valve	64-748PK	64-748PK	64-748PK	64-748PK	64-748PK	64-748PK	64-748PK	64-748PK
3,4 & 8	Valve Assy.	64-1374PK	64-1374SK	64-1374SK	64-1374SK	64-776SK	64-776SK	64-776SK	64-776SK
5	Cap, Valve Cage	64-1372PK	64-1372PL	64-1372PL	64-1372PL	64-774PL	64-774PL	64-774PL	64-774PL
8	Spring Valve	29-182PK	29-182PK	29-182PK	29-182PK	29-182PK	29-182PK	29-182PK	29-182PK
9	Spring, Safety Head	29-112PK	29-112PK	29-112PK	29-112PK	29-113PK	29-115PK	29-74PK	29-74PK
	No. of Valves Per Cyl.	2	3	4	4	3	4	5	5

(x) Interchangeable with 4-27 type valves when safety head assemblies are furnished.

MAINTENANCE AND SERVICE

DISCHARGE VALVES

The discharge valves are cushioned to secure a minimum of noise when opening, and they are promptly returned to their seats by spring action. (See Fig. 18).

When a discharge valve is removed from the compressor for the "running-in" operation, or for any other purpose, test the valve action by pressing the valve off its seat with the thumbs, and allowing it to return. If any valve shows a tendency to stick, or to work sluggishly, remove it from the cage and dress down the stem with crocus cloth or fine emery cloth.

To test the valve assembly for tightness, pour kerosene in the space above the seat. It should retain the kerosene without leakage. To re-grind the valve to its seat, remove the spring, put valve grinding compound on the seating surface, and spin the valve back and forth by hand. Fig. 16 shows the use of a valve grinding tool for Y-27 and later types of discharge valves. Be sure to wash the valve and seat after re-grinding, with an approved safety solvent and dry in the air before reassembling.

PISTONS (Fig. 20)

Pistons for these compressors are either the double trunk type, half slipper type or full slipper type. (See Fig. 20) The half slipper type is standard on compressors 6" to 9" stroke and the full slipper type is standard on 10" compressors. The double trunk type of piston has bands or bearing surfaces at each end only, and must be used for compressors where double suction is provided. The slipper type piston has additional bearing surface (thrust side) against the cylinder walls and cannot be used when a compressor is arranged for double suction connections.

Full slipper type pistons have bearing surface the entire length with exception of the portions above the wrist-pins, which are open to admit suction gas. On pistons 11-1/2" diameter this surface is "metal-layed" with babbitt.

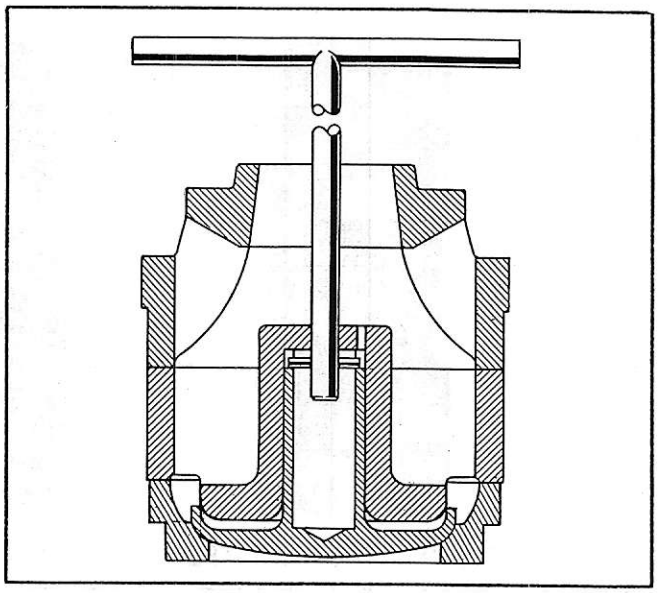


Fig. 19 - Discharge Valve Grinding Tool

OVER SIZE PISTONS

Bare-oversize pistons shipped from York are finished except for the outside diameter, oil return holes, step cut, and oil grooves. These latter operations cannot be completed until the final outside diameter is finished. These operations must therefore be completed in the field.

After the pistons are machined to the correct outside diameter, it is necessary to use the original pistons as models for machining oil grooves, step cut, and the drilling of the oil return holes, so that the new oversize pistons incorporate all outside features, the same as the original pistons. If the original pistons are not available, a blue print of them should be secured from York.

Parts numbers for pistons are included in "Replacement Parts" for Fig. 27.

PISTON RINGS

Piston rings are, "compression type" above the piston pin, and "bevelled type" oil rings below the pin.

The "compression rings" are called "KS" and have a band of copper peened in-

MAINTENANCE AND SERVICE

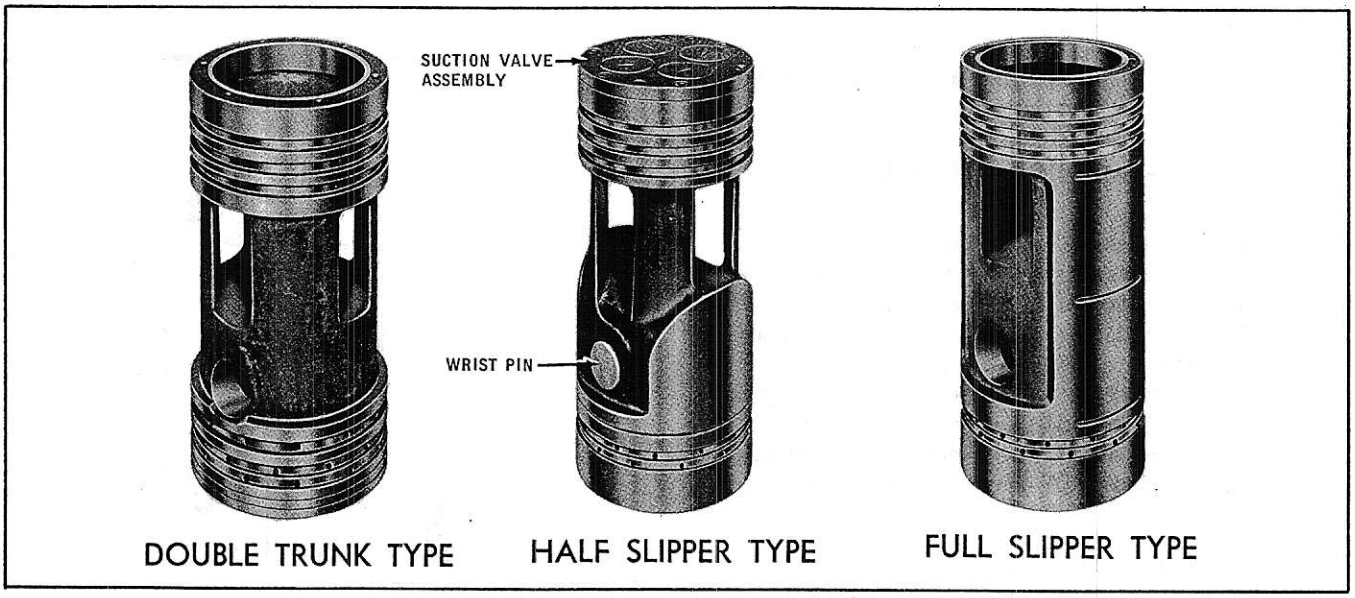


Fig. 20 - Ammonia Pistons

to a groove in the face of the ring, with the copper band machined slightly larger in diameter than the face of the ring.

The bevelled oil rings have the upper half of the face of the ring machined slightly conically, to permit the ring to ride over the film of oil on the cylinder walls at the up stroke of the piston. The lower edge of the ring being square against the cylinder wall tends to scrape off the oil, on the down stroke of the piston. The piston ring groove is machined with a step cut, with a series of holes drilled diagonally to the interior of the piston, to assist in returning the oil to the crankcase.

Parts numbers for Rings are included in "Replacement Parts" for Fig. 28.

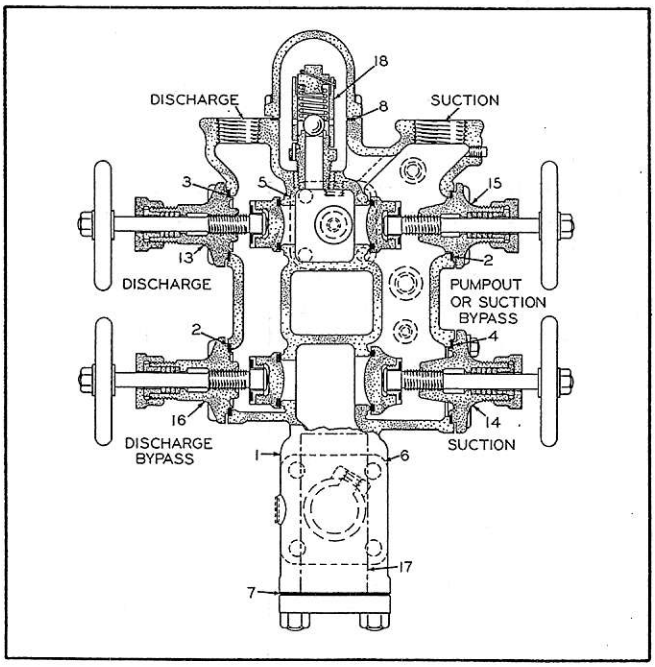


Fig. 21 - Compressor Manifold - 6" x 6" to 10" x 10"

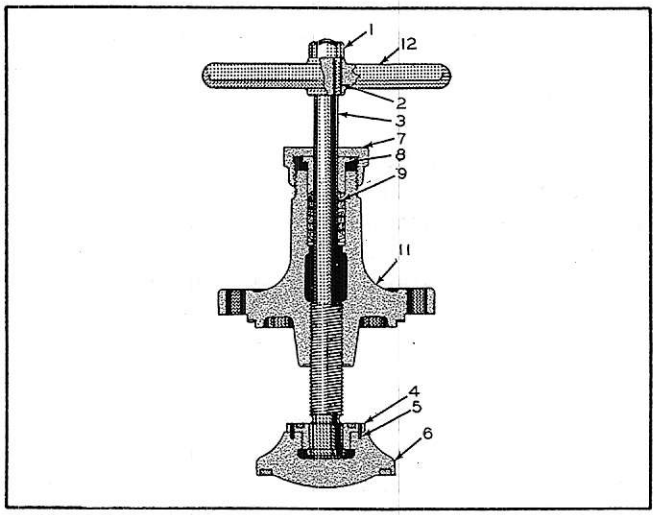


Fig. 22 - Manifold Valve Bonnet Assembly

MAINTENANCE AND SERVICE

PARTS LIST, Fig. 21
Compressor Manifold, 6" x 6" to 10" x 10" Incl.

Ref. No.	Part Name	Part Numbers					
		6" x 6"	6-1/2"x6-1/2"	7-1/2"x7-1/2"	8" x 8"	9" x 9"	10" x 10"
1-20	Manifold Assembly	64-1386FM	64-1604FM	64-1715FM	64-1881FM	64-1991FM	64-1128FM
1-12	Manifold, less Bonnets and Strainer	64-1384SN	64-1603SN	64-1714SN	64-1882SN	64-1992SN	64-1129SN
2	Gasket, Bonnet (By-Pass or Pumpout)	28-863P	28-863P	28-865P	28-865P	28-865P	28-868P
3	Gasket, Bonnet (Discharge)	28-863P	28-863P	28-865P	28-865P	28-865P	28-868P
4	Gasket, Bonnet (Suction)	28-865PK	28-865P	28-868P	28-868P	28-868P	28-870P
5	Gasket, Manifold to Cylinder (Discharge)	28-540PK	28-540PK	28-864PK	28-864PK	28-864PK	28-867PK
6	Gasket, Manifold to Cylinder (Suction)	28-792P	28-792P	28-797P	28-800P	28-800P	28-803P
7	Gasket, Strainer Cover	28-867PK	28-867PK	28-869PK	28-873PK	28-873PK	28-876PK
8	Gasket, Relief Valve Cover	28-784P	28-784P	28-872P	28-872P	28-872P	28-872P
13	Bonnet Assembly (Discharge) (x)	68-3986FM	68-3986FM	68-5723FM	68-5723FM	68-5723FM	68-5761SM
14	Bonnet Assembly (Suction) (x)	68-3989FM	68-3989FM	68-3990FM	68-3990FM	68-3990FM	68-4251FM
15	Bonnet Assembly (Pumpout) (x)	68-5625FL	68-5625FL	68-5724FM	68-5724FM	68-5724FM	68-5762SM
16	Bonnet Assembly (By-Pass) (x)	68-5624FL	68-5624FL	68-3991FM	68-3991FM	68-3991FM	68-5763SM
17	Strainer Screen	68-1076SL	68-1076SL	68-5351SL	68-5452SL	68-5452SL	68-5450SL
18	Relief Valve (250 Lbs., P.S.I.) Assembly	68-2930FL	68-2930FL	68-2941FL	68-2941FL	68-2941FL	68-2941FL

(x) See Fig. 22 for Details.

PARTS LIST, Fig. 22

Ref. No.	Part Name	6" x 6" and 6-1/2"x6-1/2"	7-1/2"x7-1/2" 8" x 8" and 9" x 9"	10" x 10"	6" x 6" and 6-1/2"x6-1/2"	7-1/2"x7-1/2" 8" x 8" and 9" x 9"	10" x 10"
		Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
		DISCHARGE VALVE BONNET			SUCTION VALVE BONNET		
1-12	Bonnet Assembly (Discharge)	68-3986FM	68-5723FM	68-5761SM	68-3989FM	68-3990FM	68-4251FM
1-3	Valve Stem	68-5655SL	68-128PL (1)	68-129PL (1)	68-5647SL	68-129PL (1)	68-5648SL
4-6	Valve Button and Locknut Assembly	68-5200SK	68-5205SK	68-5195SK	68-5204SK	68-5195SK	68-5203SK
7	Nut, Packing	68-156PK	68-156PK	68-159PK	68-4202PK	68-159PK	68-159PK
8	Gland, Packing	68-150PK	68-151PK	68-151PK	68-150PK	68-151PK	68-151PK
9	Packing, Valve Stem (5 Required per Set)	28-1089P	28-1090P	28-1090P	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5767PL	68-5768PL	68-5769PL	68-5802PL	68-5803PL	68-5808PL
12	Handwheel	68-5677PK	68-2764PK	68-2764PK	68-5678PK	68-2765PK	68-2765PL
		"PUMPOUT" VALVE BONNET			"BY-PASS" VALVE BONNET		
1-12	Bonnet Assembly (Pumpout)	68-5625FL	68-5724FM	68-5762SM	68-5624FL	68-3991FM	68-5763SM
1-3	Valve Stem	68-5655SL	68-128PL (1)	68-129PL (1)	68-5647SL	68-129PL (1)	68-5648SL
4-6	Valve Button and Locknut Assembly	68-5200SK	68-5205SK	68-5195SK	68-5200SK	68-5205SK	68-5195SK
7	Nut, Packing	68-156PK	68-156PK	68-159PK	68-156PK	68-156PK	68-159PK
8	Gland, Packing	68-150PK	68-151PK	68-151PK	68-150PK	68-151PK	68-151PK
9	Packing, Valve Stem (5 Required per Set)	28-1089P	28-1090P	28-1090P	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5767PL	68-5768PL	68-5769PL	68-5814PK	68-5804PL	68-5815PL
12	Handwheel	68-5676PK	68-2763PK	68-2763PK	68-5680PK	68-2762PK	68-2762PK

STUFFING BOX OIL POT

When ammonia machines are operated under vacuum it is necessary to provide an oil pot, (reservoir) to maintain an oil head on the stuffing box during shut down and prevent air backage into system.

The installation of oil pot is completed at the factory (when ordered). Gas equalizing line on standard compressor is relocated to the top of the oil pot.

MAINTENANCE AND SERVICE

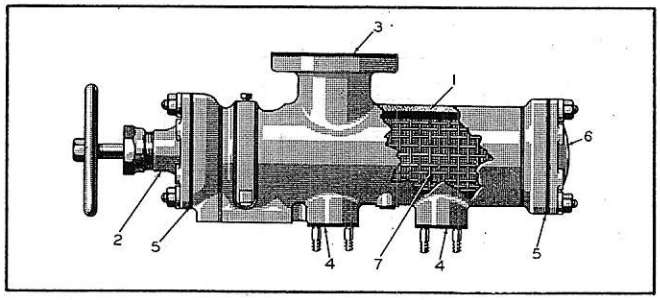


Fig. 23 - Suction Manifold - 11-1/2" x 10" Compressor

PARTS LIST, Fig. 23

Ref. No.	Part Name	Part Number
1-7	Manifold Assembly	64-2187FL
1	Manifold, Bare	64-2188SM
2	Suction Valve Bonnet Assembly	68-5919FM
3	Gasket	28-811P
4	Gasket	28-782P
5	Gasket	28-877P
6	Cover	64-2189PK
7	Strainer Assembly	64-2190SL

COMPRESSOR MANIFOLD (6" x 6" to 10" x 10" inclusive)

The compressor manifold illustrated in Fig. 21 is used on all 6" to 10" compressors. This style manifold contains the suction strainer, high pressure relief valve, suction stop valve, discharge stop valves, compressor pump-out valve and compressor by-pass valve.

SUCTION MANIFOLD (11" x 10" and 11-1/2" x 10")

The suction manifold for 11" x 10" and 11-1/2" x 10" compressors is shown in Fig. 23. It contains the suction strainer, suction stop valve, and flanged connections for by-pass and pump-out valves; also female threaded connections for crankcase pump-out, thermometer socket, and suction gauge. Piping is shown in Fig. 3.

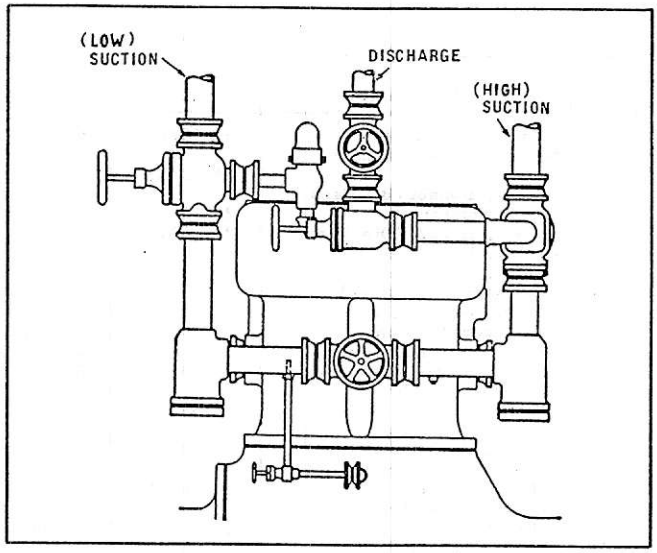


Fig. 24 - Double Suction Connections - 6" to 10" Compressors

DOUBLE SUCTION ARRANGEMENT (6" x 6" to 10" x 10")

In special cases it is necessary that the compressor operate at two different suction pressures simultaneously.

This is accomplished by alterations to the compressor and connections, at the factory. The manifold is removed, the pistons are changed, separate suction stop valves for each compressor are provided (See Fig. 24) and special piston rings are used in the cylinder operating at the higher suction pressure. Details are as follows:

(a) A "Cook-tite" oil ring is used in the groove below the wrist pin, in the piston operating on the high suction pressure. No oil relief holes are provided in the piston ring groove where this ring is located.

(b) "Ventilated" (wide channeled) oil ring with a continuous under-cut channel around the outside face and a series of slots extending through the ring from the base of the channel, is used in the piston operating at low suction pressure. Oil relief holes are provided in the piston ring groove where this ring is located.

MAINTENANCE AND SERVICE

(c) Pistons of the double trunk type (See Fig. 20) must be used.

(d) The crankcase equalizing line is connected to the low suction pressure. Operate with this valve only partly open, say one turn of the valve stem.

(e) Standard "KS" compression rings are used in the grooves above the wrist-pins in all pistons.

DOUBLE SUCTION ARRANGEMENT
11-1/2" x 10" compressor

This also is accomplished by alterations to the compressor at the factory. The cylinders and pistons are changed; separate suction stop valves for each compressor cylinder are provided, and special piston rings are used in the cylinder operating at the higher suction pressure. Details are as follows:

(a) The low pressure suction enters the cylinder at the shaft stuffing box end of the compressor through the standard suction manifold (See Fig. 23), and the high pressure suction gas enters the cylinder at the oil pump end of the compressor through a standard 4" globe valve and an angle type strainer.

(b) The common discharge is from the cylinder at the shaft stuffing box end of the compressor.

(c) Accordingly the by-pass and pump-out connections are the same as for a standard compressor. (See Fig. 3)

(d) A "Cook-tite" oil ring is used in the groove below the wrist pin, in the piston operating on the high suction pressure. No oil relief holes are provided in the piston ring groove where this ring is located.

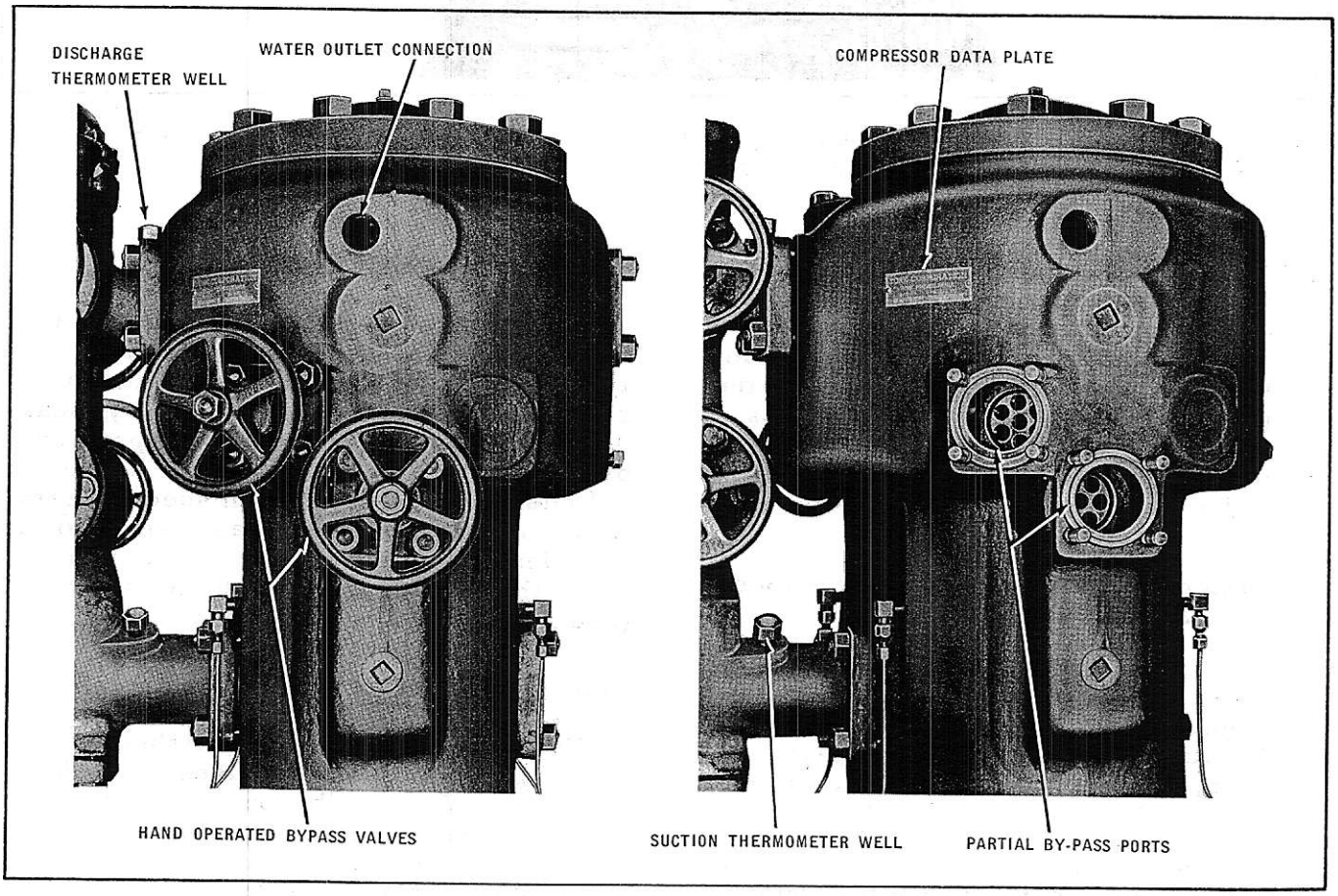


Fig. 25 - Hand Operated Partial By-pass Capacity Reduction

MAINTENANCE AND SERVICE

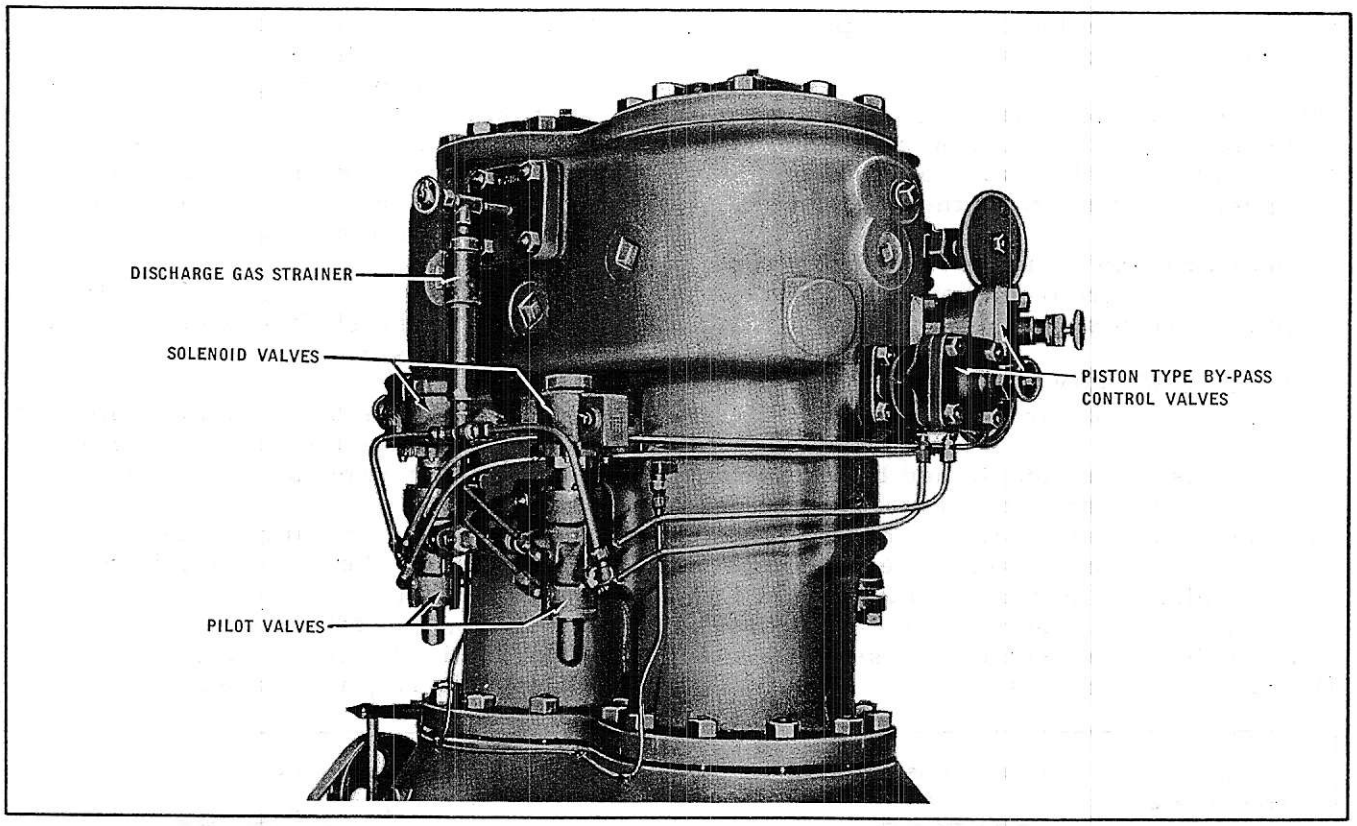


Fig. 26 - Automatic Capacity Reduction and Partial By-pass Control - 10" x 10" Compressor

(e) "Ventilated" (wide channeled) oil ring with a continuous under-cut channel around the outside face and a series of slots extending through the ring from the base of the channel, is used in the piston operating at low suction pressure. Oil relief holes are provided in the piston ring groove where this ring is located.

(f) Pistons of the double trunk type (See Fig. 20) must be used.

(g) The crankcase equalizing line is connected to the low suction pressure. Operate with this valve only partly open, say one turn of the valve stem.

(h) Standard "KS" compression rings are used in the grooves above the wrist-pins in all pistons.

CAPACITY REDUCERS

When operation of the compressor at reduced loads is necessary capacity reduction can be accomplished without changing the compressor speed, by means of either hand or automatically operated by-pass valves on each cylinder. The cylinders are equipped with special ports which permit part of the gas taken into the cylinder during the suction stroke to re-enter the suction side below the piston (See Fig. 25).

Hand Operated Capacity Reduction

Hand operation is accomplished by means of hand operated valves on each cylinder. When the by-pass valve is opened, there is an open passage between the cylinder and the compressor suction port. As the piston starts on the compression stroke, gas passes back into the

suction port and compression does not begin until the piston overtravels the by-pass valve port. Compressors equipped with partial by-pass control should only be operated with equal reduction on each cylinder so as to maintain a balanced crank effort.

Automatically Operated Capacity Reduction (See Fig. 26)

Automatic operation is accomplished by means of special by-pass valves controlling the same port arrangement in the cylinder as the hand operated. The valve takes the form of a modified piston valve, being held in either open or closed position by discharge gas pressure.

The control of the discharge pressure is accomplished by means of a pressure operated distribution or pilot valve which in turn is controlled by a solenoid operated needle valve, the solenoid of which is in electrical connection with any form of thermostat or pressure switch.

For full information for installing and servicing automatic capacity reduction, See Instruction 6-K.

AUTOMATIC STARTING BY-PASS CONTROL

The automatic starting by-pass control provides means to automatically unload the compressor during starting, and apply the load when the compressor is up to speed. It is also arranged to unload the compressor if a synchronous motor is pulled out of synchronous speed, and again apply the load when the normal motor speed is resumed. This is accomplished by means of a pressure operated by-pass valve, the opening of which permits the gas from the discharge side of the compressor to return to the compressor suction.

For full information for installing and servicing automatic starting by-pass valves, See Instruction 6-L.

REPLACEMENT PISTON RINGS

To simplify ordering of replacement piston rings for single acting vertical, ammonia compressors (6" x 6" to 11-1/2" x 10" inclusive), piston rings (compression and oil) are now available in standard sizes and three increments of oversize for each compressor as shown in TABLE 4.

TABLE 3

COMPRESSOR CLEARANCES
DESIGN TOLERANCES

TOLERANCES		6" x 6"	6-1/2"x 6-1/2"	7-1/2"x 7-1/2"	8" x 8"	9" x 9"	10" x 10"	11" x 10"	11-1/2"x 10"
Clearance (Diametral) Piston to Cylinder	Y15-Y39 C.I. Pistons	.005"-.0085"	.005"-.0085"	.007"-.010"	.006"-.010"	.012"-.016"	.013"-.017"	.013"-.017"	
	Y39 & Later, Babbit. Pist.					.004"-.010"	.005"-011"	.005"-.011"	.005"-.011"
Piston to Safety Head	Y15-Y26	1/32"	1/32"	1/32"	1/32"	1/32"	1/16"		
	Y28-Y38	1/16"	1/16"	1/16"	1/16"	1/16"	3/32"	3/32"	3/32"
Wrist Pin To Bushing	Y15-Y26	.0018"-.003"	.0018"-.003"	.0018"-.003"	.0018"-.003"	.0018"-.003"			
	Y28-Y38	.0008"-.0015"	.0008"-.0015"	.0008"-.002"	.0008"-.002"	.0013"-.0025"	.0018"-.003"	.0018"-.003"	.0018"-.003"
Suction Valve Lift	Y15	3/16" to 7/32"	7/32" to 1/4"	3/32"	1/8"	1/8"	3/16"		
	Y26	5/32" to 7/32"	5/32" to 3/16"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 7/32"		
	Y28-Y38	5/32" to 7/32"	5/32" to 3/16"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 7/32"	
	Y40			5/32" to 3/16"	5/32" to 7/32"	5/32" to 7/32"	5/32" to 3/16"		5/32" to 3/16"
Discharge Valve Lift	Y15	3/32"	1/16"	1/16"	1/16"	3/32"	3/32"		
	Y26	3/32"	1/16"	1/16"	1/16"	3/32"	3/32"		
	Y28-Y38	1/8"	1/8"	1/8"	1/8"	3/16"	3/16"	3/16"	3/16"
Snap Ring Gap	(Inches)	.010"-.020"	.010"-.020"	.025"-.035"	.015"-.025"	.030"-.040"	.030"-.045"	.030"-.045"	.030"-.045"
Reboring Limit	(Inches)	6-1/8"	6-5/8"	7-5/8"	8-1/4"	9-1/4"	10-1/4"	11-1/4"	11-3/4"

MAINTENANCE AND SERVICE

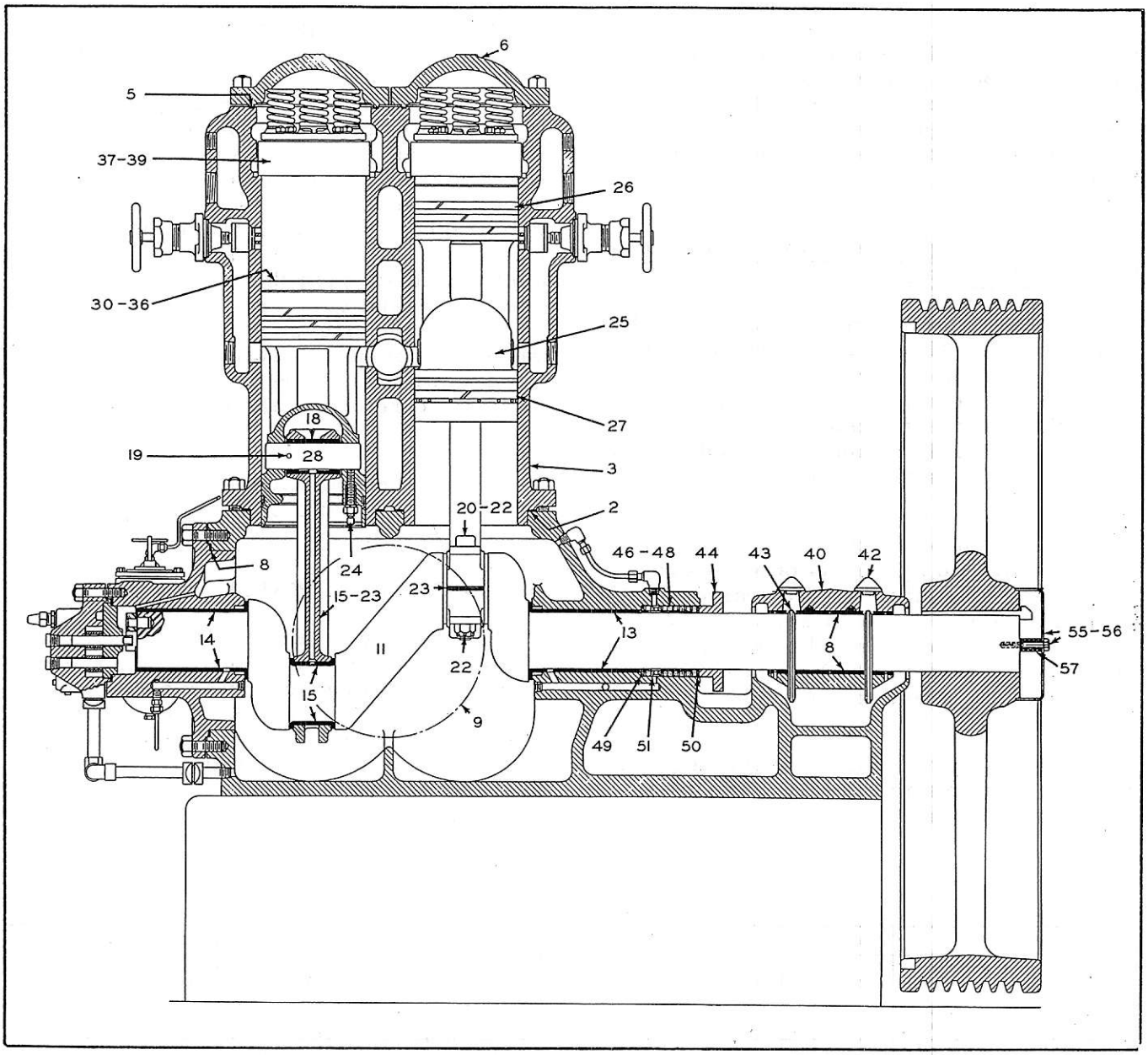


Fig. 27 - Sectional View, Enclosed, Two Cylinder Compressor

PISTON RINGS

New 6" to 11-1/2" bore compressor pistons utilize Gold Seal rings in the ring grooves above the wrist pin. This design ring is fitted with soft metal inserts which contact the cylinder wall providing a tight seal against compression losses while, at the same time, offering every inducement to rapid cylinder polishing and glazing.

The oil ring groove below the wrist pin is fitted with the following type rings.

6" & 6-1/2"	- Bevel Type
7-1/2" to 10"	- Gold Seal Type
11-1/2"	- Oil Cutter Type

Selection of oil ring design for new compressors has been based on the established fact that a new compressor must be given the opportunity to acquire a cylinder glaze during early stages of operation. A reasonable amount of oil pumping can be tolerated and will pay dividends in the long run.

New compressors or rebored compressors should be run in with the heads removed as explained in Instruction 2A, pages 12 and 13, to promote cylinder glazing.

MAINTENANCE AND SERVICE

REPLACEMENT PISTON RINGS

(A) Routine replacement, no rebore.

1. If compressor operation has been satisfactory from the standpoint of oil consumption, replace all existing rings with rings of the same design.

   When measuring a worn cylinder for replacement piston rings, accurate inside micrometer readings should be taken at the top center and bottom of the cylinder. Two readings should be taken at each of the three positions - one reading parallel with the compressor shaft and one reading transversely to the shaft. An average of the six readings should then be used to select the oversize replacement rings.

   For 6" & 6-1/2" compressors a standard diameter ring is suitable for use in cylinders up to and including .019" oversize. For 7-1/2" to 11-1/2" compressors a standard diameter ring is suitable for use in cylinders up to and including .029" oversize. NOTE: If the cylinder is worn so that a shoulder exists from the top of the upper compression ring travel to the top of the cylinder, this shoulder should be dressed out with an oil stone or a hand scraper. The top set of cylinder readings should always be taken below this shoulder.

2. If oil consumption has been abnormally high, replace the oil rings (below the piston pin) with Dual Type oil rings as described below.

(B) Rebored Compressors

Rebored compressors must be placed in initial operation under the same recommendations as a new compressor to permit the cylinders to acquire a glaze. The quality of a field rebore job may not equal a factory bore and hone job so that even greater care must be exercised when the rebored compressor is put on the line.

NOTE:

For the rebored compressor, we recommend the use of Gold Seal rings in both compression and oil ring grooves for the initial startup. After the cylinders have acquired a glaze, Dual oil rings may be installed if oil consumption is higher than normal expectancy.

DUAL OIL RINGS

For replacement purposes, dual oil rings are now available. These dual rings are designed especially to reduce oil pumping to a minimum after new cylinders have become worn or have been rebored and have had a chance to glaze. They consist of two separate rings installed in each oil ring groove as shown in Fig. 28.

When ordering dual oil rings, be sure that two rings are ordered to replace each original single oil ring.

Dual oil rings as well as Gold Seal compression rings are available from stock in a number of increments of oversizes. Refer to Table 4 and Replacement Parts List at top of page 34.

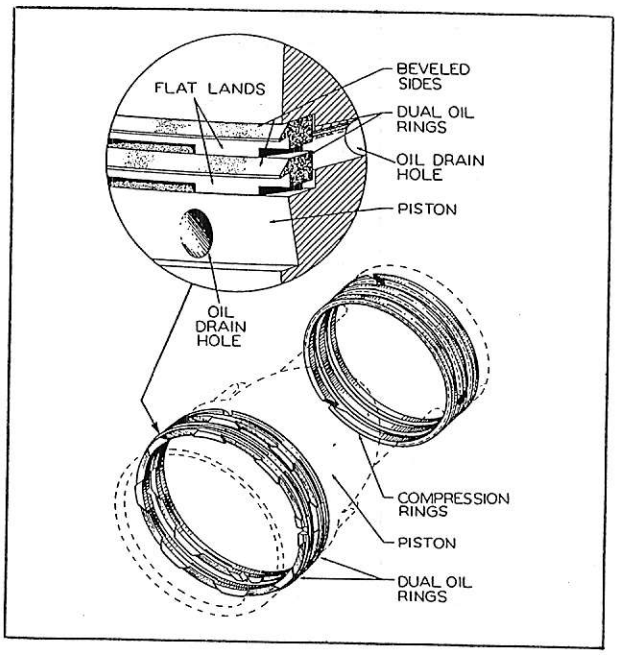


Fig. 28 - Dual Oil Ring Installation

TABLE 4

Compressor Bore	Available Increments of Oversize			
6" to 6-1/2" Inclusive	.000"	.020"	.040"	.060"
7-1/2" to 11-1/2" Incl.	.000"	.030"	.060"	.090"

SELECTING DUAL OIL RINGS

Example 1: If new rings are required for a 9" cylinder which has been rebored, or worn, to a diameter of 9.016", select standard 9" rings (compression and oil) which are not oversize (See Replacement Parts List Page 34)

Example 2: If new rings are required for a 9" cylinder which has been rebored, or worn, to a diameter of 9.072", select 9" rings (compression and oil) from the oversize range of .060" to .089".

If the cylinder diameter exceeds the ranges shown in the Replacement Parts List, a special order must be placed for oversize rings as required.

Before installing replacement rings (oil or compression) remove any burrs from the sides of each ring, using a fine file. After the rings are installed in their grooves, be sure each ring is free to turn without binding.

The dual oil rings must be installed on the piston (two rings to a groove) with the beveled side of each ring up and the flat lands down as shown in Fig. 28. The gaps of the two rings in each groove should be staggered 180° apart.

The compression rings should be fitted and installed in their grooves with gaps staggered equally, depending upon the number of compression rings on each piston.

MAINTENANCE AND SERVICE

REPLACEMENT PARTS LIST
COMPRESSION RINGS

Compressor Bore (in.)	Part Numbers Oversize Range			
	.000" - .019"	.020" - .039"	.040" - .059"	.060" - .080"
6"	29-3550PK	29-6546PK	29-6547PK	29-6548PK
6-1/2"	29-3551PK	29-6549PK	29-6550PK	29-6551PK
	.000 - .029"	.030" - .059"	.060" - .089"	.090" - .120"
7-1/2"	29-3578PK	29-6552PK	29-6553PK	29-6554PK
8"	29-3553PK	29-6555PK	29-6556PK	29-6557PK
9"	29-3555PK	29-6558PK	29-6559PK	29-6560PK
10"	29-3556PK	29-6561PK	29-6562PK	29-6563PK
11"	29-3558PK	29-6800PK	29-6801PK	29-6802PK
11-1/2"	29-3559PK	29-6815PK	29-6816PK	29-6817PK

REPLACEMENT PARTS LIST
DUAL OIL RINGS

Compressor Bore (in.)	Part Numbers Oversize Range			
	.000" - .019"	.020" - .039"	.040" - .059"	.060" - .080"
6"	29-6572PK	29-6573PK	29-6574PK	29-6575PK
6-1/2"	29-6576PK	29-6577PK	29-6578PK	29-6579PK
	.000" - .029"	.030" - .059"	.060" - .089"	.090" - .120"
7-1/2"	29-6580PK	29-6581PK	29-6582PK	29-6583PK
8"	29-6584PK	29-6585PK	29-6586PK	29-6587PK
9"	29-6588PK	29-6589PK	29-6590PK	29-6591PK
10"	29-6592PK	29-6593PK	29-6594PK	29-6595PK
11"	29-6822PK	29-6823PK	29-6824PK	29-6825PK
11-1/2"	29-6826PK	29-6827PK	29-6828PK	29-6829PK

REPLACEMENT PARTS LIST, Fig. 27

Approximate Compressor Shop Nos.:		6" x 6" 26681 and Later	6-1/2" x 6-1/2" 26829 and Later	7-1/2" x 7-1/2" 26648 and Later	8" x 8" 26713 and Later
Ref. No.	Part Name	Part Number	Part Number	Part Number	Part Number
2	Gasket, Crankcase to Cylinder	28-820P	28-825P	28-826P	28-833P
3	Cylinder (without By-Pass) (Y-28 and Later)	64-5558SM	64-5559SM	64-5562SM	64-5611SM
3	Cylinder (with By-Pass) (Y-28 and Later)	64-1356SM	64-1583SM	64-5872SM	64-5873SM
5	Gasket, Top Head	70-2749PK	70-2749PK	70-2754PK	70-2755PK
6	Top Head	64-1407PL (1)	64-1612PL	64-1720PL	64-1919PL
8	Gasket, Bearing Head	70-2737PK	70-2727PK	70-2724PK	70-2720PK
9	Gasket, Crankcase Cover (Flat Type Joint)	28-829P	28-835P	28-835P	28-842P
9	Gasket, Crankcase Cover, Tongue and Groove Type Joint (2)	70-2756PK	70-2727PK	70-2727PK	70-2721PK
11	Shaft	64-5359PL	64-5360PL	64-5361PL	64-5988PL
12	Bearing, Outboard (Set of 4 Pcs.)	64-4221S *	64-4226S **	64-4229S	64-4233S
13	Bearing, Stuffing Box End (Set of 2 Pcs.) (13)	64-1426SL	64-1621SL	64-1737SL	64-1161SL
14	Bearing, Pump End (Set of 2 Pcs.) (13)	64-1426SL	64-1621SL	64-1737SL	64-1161SL
15-23	Connecting Rod Assembly	64-1375SM	64-1594SN	64-1704SN	64-1865SN
15	Bearing, Crank End (Set of 2 Pcs.)	64-1380SL	64-1599SL	64-1709SL	64-1870SL
18	Bushing, Wrist Pin	64-1377PK	64-1596PK	64-1706PK	64-1867PK
19	Locating Pin, or Screw	64-1571PK	64-1571PK	64-1571PK	64-1802PK
20-22	Bolt, with Nut and Keeper (Set of 2)	64-4220S	64-4225S	64-4228S	64-4232S
22	Wire Keeper	64-1382P	64-1382P	64-1712PK	64-1712PK
23	Shim (Laminum Type, 2 Required per Rod)	29-515PK	29-516PK	29-518PK	29-518PK
24	Set Screw and Nut, Wrist Pin	64-1362S	64-1362S	64-1696S	64-1696S
24-35	Piston Assembly (1)	64-1364S	64-1587S	64-1693S	64-1858S
25	Piston, Bare (7)	64-1360PL	64-1588PL	64-1694PL	64-1859PM
25	Piston, Bare (7) (Oversize) (6)	64-1550PL	64-1672PL	64-1822PL	64-1933PM
25	Piston, Bare (8)	64-1548PL	64-1668PL	64-1821PL	64-1931PL
25	Piston, Bare (8) (Oversize) (6)	64-1549PL	-	-	-
26	Piston Ring, Compression		Refer to pages 32 and 33		
27	Piston Ring, Oil		Refer to pages 32 and 33		
	Piston Ring Casting		Not Available		
28	Wrist Pin	64-1361PK	64-1589PK	64-1695PK	64-1860PK
30-36	Suction Valve Assembly	See Fig. 16	See Fig. 16	See Fig. 17	See Fig. 16
37-39	Safety Head and Discharge Valve Assembly	See Fig. 18	See Fig. 18	See Fig. 18	See Fig. 18
40	Bearing Cap	64-1349PL	64-1578PL	64-1677PM	64-1847PM
42	Cover, Oil Hole	69-1534PK	69-1778PK	69-1778PK	69-1778PK
43	Oiler, Ring	64-1434PK	64-1615PK	64-1734PK	64-1925PK
44	Gland, Packing	64-1408PL	64-1613PL	64-1721PL	64-1914PL
46-48	Shaft Packing	64-1404S	64-1605S	64-1716S	64-1885S
49	Neck Ring, Back	64-1574PK	64-1624PK	64-1733PK	64-1924PK
50	Neck Ring, Front	64-1428PK	64-1609PK	64-1726PK	64-1921PK
51	Gland, Lantern	64-1429PK	64-1610PK	64-1727PK	64-1922PK
55-56	Hub Shield, with Bolt	64-1433SK	64-1433SK	64-1732SK	64-1732SK
	Manifold	See Fig. 21	See Fig. 21	See Fig. 21	See Fig. 21
	Suction Strainer Screen	See Fig. 21	See Fig. 21	See Fig. 21	See Fig. 21
	Valve Bonnet, Manifold	See Fig. 21	See Fig. 21	See Fig. 21	See Fig. 21
	Oil Pump	See Fig. 15	See Fig. 15	See Fig. 15	See Fig. 15
	Gauge, Oil Level	See Fig. 13	See Fig. 13	See Fig. 13	See Fig. 13
	Oil Filter	See Fig. 14	See Fig. 14	See Fig. 14	See Fig. 14
	Oil Sight-Feed	See Fig. 12	See Fig. 12	See Fig. 12	See Fig. 12
	Funnel Ring	64-1430PK	64-1622PK	64-1728PK	64-1920PK

MAINTENANCE AND SERVICE

REPLACEMENT PARTS LIST, Fig. 27 (Continued)

Approximate Compressor Shop Nos.:		9" x 9" 26282 and Later	10" x 10" 26338 and Later	11" x 10"	11-1/2" x 10"
Ref. No.	Part Name	Part Number	Part Number	Part Number	Part Number
2	Gasket, Crankcase to Cylinder	28-834P	28-838P	70-2486PL	70-2486PL
3	Cylinder (without By-Pass)	64-5874SM	64-5875SN	13878M	64-2164-5SN
3	Cylinder (with By-Pass)	64-5563SM	64-5564SN	13878MA	64-2166-7SN
5	Gasket, Top Head	70-2736PK	70-2727PK	70-2723PK	70-2723PK
6	Top Head	64-2009PL	64-1135PL	64-2196PL	64-2196PL
8	Gasket, Bearing Head	70-2719PK	70-2716PK	70-2716PK	70-2716PK
9	Gasket, Crankcase Cover (Flat Type Joint)	28-844P	28-845P	28-845PK	28-845PK
9	Gasket, Crankcase Cover, Tongue and Groove Type Joint (2)	70-2719PK	70-2716PK	-	-
11	Shaft	64-5362PL	64-5363PL	64-2324PL	64-2324PL
12	Bearing, Outboard (Set of 4 Pcs.)	64-4247S	64-4218S	64-4218S	64-4218S
13	Bearing, Stuffing Box End, 2-Lug Type (Set of 2 Pcs.) (11)	64-2725SL (3)	64-2508SL (3)	-	-
13	Bearing, Stuffing Box End, 3-Lug Type (Set of 2 Pcs.) (11)	64-2016SL (3)	64-1140SL (3)	64-1140SL (3)	64-1140SL (3)
14	Bearing, Pump End, 2-Lug Type (Set of 2 Pcs.) (11)	64-2725SL (3)	64-2508SL (3)	-	-
14	Bearing, Pump End, 3-Lug Type (Set of 2 Pcs.) (11)	64-2016SL (3)	64-1140SL (3)	64-1140SL (3)	64-1140SL (3)
15-23	Connecting Rod Assembly	64-1982SN	64-1118SN	64-2181SM	64-2181SM
15	Bearing, Crank End (Set of 2 Pcs.)	64-1987SL	64-1121SL (4)	64-2184SL	64-2184SL
18	Bushing, Wrist Pin	64-1984PK	64-1120PK	64-2183PK	64-2183PK
19	Locating Pin, or Screw	64-1802PK	64-1127PK	64-1127PK	64-1127PK
20-22	Bolt, with Nut and Keeper (Set of 2)	64-4245S	64-4217S (5)	64-4217S	64-4217S
22	Wire Keeper	64-1989PK	64-1126PK	64-1126PK	64-1126PK
23	Shim (Laminum Type, 2 Required per Rod)	29-519PK	29-520PL	29-3877PK	29-3877PK
24	Set Screw and Nut, Wrist Pin	64-1977S	64-1114S	64-1977S	64-1977S
24-35	Piston Assembly (1)	64-1950S	64-1109S	173945	64-2172S
25	Piston, Bare (7)	64-1975PM	64-1110PM (9)	13498MA	64-2173SM
25	Piston, Bare (7) (Oversize) (6)	64-2377PL	64-2362M (9)	-	B13498M
25	Piston, Bare (8)	64-2375PL	-	-	-
25	Piston, Bare (8) (Oversize) (6)	64-2376PL	-	-	-
26	Piston Ring, Compression		Refer to pages 32 and 33		
27	Piston Ring, Oil		Refer to pages 32 and 33		
	Piston Ring Casting		Not Available		
28	Wrist Pin	64-1976PK	64-1111PK	64-2174PK	64-2174PK
30-36	Suction Valve Assembly	See Fig. 16	See Fig. 16	See Fig. 17	See Fig. 17
37-39	Discharge Valve and Safety Head Assembly	See Fig. 18	See Fig. 18	See Fig. 18	See Fig. 18
40	Bearing Cap, Outboard	64-2126PM	64-1098PM	64-1677PM	64-1677PM
42	Cover, Oil Hole	69-1867PK	69-1867PK	69-1778PK	69-1778PK
43	Oiler, Ring	64-2030PK	64-2030PK	64-1734PK	64-1734PK
44	Gland, Packing	64-2010PL	64-1103SK (10)	64-1103SK (10)	64-1103SK (10)
46-48	Shaft Packing	64-2001S	64-1130S	64-1130S	64-1130S
49	Neck Ring, Back	64-2007PK	64-1146PK	64-1146PK	64-1146PK
50	Neck Ring, Front	64-2006PK	64-1145PK	64-1145PK	64-1145PK
51	Gland, Lantern	64-2005PK	64-1144PK	64-1144PK	64-1144PK
	Ring, Oil Retainer	-	64-1105PK	-	-
55-56	Hub Shield, with Bolt	64-2020SK	-	-	-
	Manifold	See Fig. 21	See Fig. 21	See Fig. 22	See Fig. 22
	Suction Strainer Screen	See Fig. 21	See Fig. 21	-	-
	Valve Bonnet, Manifold	See Fig. 21	See Fig. 21	-	-
57	Ferrule, Hub Shield	-	-	-	-
	Suction Manifold	-	-	See Fig. 22	See Fig. 22
	Oil Pump	See Fig. 15	See Fig. 15	See Fig. 15	See Fig. 15
	Gauge, Oil Level	See Fig. 13	See Fig. 13	See Fig. 13	See Fig. 13
	Oil Filter	See Fig. 14	See Fig. 14	See Fig. 14	See Fig. 14
	Oil Sight-Feed	See Fig. 12	-	-	-
	Funnel Ring	64-2018PK	64-1148PK	64-2971PK	64-2323PK

NOTES FOR PARTS LIST, Fig. 27

* Originally used with Compressors starting with Shop Number 41416; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Compressors.

** Originally used with Compressors starting with Shop Number 41502; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Compressors.

(1) Used with Compressors starting with Shop Number 52785; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Type Compressors.

(2) Tongue and groove type Gaskets used with Compressors having Shop Numbers lower than the following:
6" x 6" - Shop No. 38577 7-1/2" x 7-1/2" - Shop No. 38792 9" x 9" - Shop No. 38635
6-1/2" x 6-1/2" - Shop No. 38603 8" x 8" - Shop No. 38702 10" x 10" - Shop No. 38703

(3) Early Y-26 bearings have 2 locating lugs. Later Y-26 to Y-42 have 3 locating lugs.

MAINTENANCE AND SERVICE

(4) Used with Malleable Iron Connecting Rods; for Forged Steel Rods, order by Part No. 64-2519SM.
(5) Used with Compressors starting with Shop Number 34001; for Compressors with lower Shop Numbers, refer to Parts List for Y-15 Type Compressors.
(6) Oversize Pistons rough-turned as follows:

6" x 6" - 1/4" Oversize	7-1/2" x 7-1/2" - 1/4" Oversize	9" x 9" - 3/8" Oversize
6-1/2" x 6-1/2" - 1/4" Oversize	8" x 8" - 3/8" Oversize	10" x 10" and 11-1/2" x 10" -3/8" Oversize

(7) Slipper Type Piston; do not use in Compressors arranged with Double Suction Connections.
(8) Specify this type Piston for use in Compressors with Double Suction Connections.
(9) Five-Valve Type used with Compressors starting with Shop Number 56073; for Three-Valve Type Piston, specify Part No. 64-2359PM for standard size or 64-2360PM for oversize.
(10) Including Oil Retainer Ring, Part No. 64-1105PK.
(11) Changed to one lug Oct. 28, 1954.

DESIGN HISTORY

GENERAL

This part of Instruction 3E follows the development of these compressors from the Y-15 styles to the current styles which were covered in the first part of Instruction 3E. The following paragraphs and tabulations describe briefly the changes and lists replacement parts for the various styles.

Table 5 lists the approximate shop numbers for compressor styles Y-15, Y-26, Y-28 and later. Table 6 lists the compressor size manufactured for various compressor styles ranging from Y-08 to Y-42.

Since compressors Y-08 thru Y-12 were manufactured between the years 1908 and 1912 and today may not have their original working parts they will not be further mentioned in this instruction.

Table 6 gives the recommended maximum and minimum operating speeds of enclosed ammonia compressors 6" x 6" to 11-1/2" x 10" styles Y-12, Y-15, Y-26 and later.

TABLE 5

IDENTIFICATION OF AMMONIA COMPRESSORS BY SHOP NUMBERS

Size Compressor	SHOP NUMBERS		
	Y-15	Y-26	Y-28 & Later
6" x 6"	5059 to 26680	26681 to 35692	35693 to
6-1/2" x 6-1/2"	5055 to 26828	26829 to 34695	34696 to
7-1/2" x 7-1/2"	5171 to 26647	26648 to 35446	35447 to
8" x 8"	7836 to 26712	26713 to 34237	34238 to (x)
9" x 9"	5262 to 26281	26282 to 34381	34382 to
10" x 10"	10459 to 26337	26338 to 33852	33853 to
11" x 10"			(x) (x)
11-1/2" x 10"			(x) (x) (x)

(x) Discontinued about Jan. 1942
(x) (x) Started 1938, discontinued early 1940.
(x) (x) (x) Started 1940.

TABLE 6

STYLE IDENTIFICATION OF VARIOUS SIZE COMPRESSORS

Compressor Style	COMPRESSOR SIZE							
	6" x 6"	6-1/2" x 6-1/2"	7-1/2" x 7-1/2"	8" x 8"	9" x 9"	10" x 10"	11" x 10"	11-1/2" x 10"
Y-08		X	X					
Y-10		X	X		X			
Y-11		X	X		X			
Y-12	X	X	X	X	X			
Y-15	X	X	X	X	X	X		
Y-16						X		
Y-26	X	X	X	X	X	X		
Y-28	X	X	X	X	X	X		
Y-32	X			X	X	X		
Y-33	X	X	X	X	X	X		
Y-34	X	X	X	X	X	X		
Y-35	X	X		X	X			
Y-36	X	X	X	X	X	X		
Y-38	X	X	X	X	X	X	X	
Y-40	X	X	X	X	X	X	X	X
Y-41	X	X	X	X	X	X		X
Y-42	X	X	X	X	X	X		X

DESIGN HISTORY

TABLE 7

MAX. AND MIN. OPERATING SPEEDS

Compressor Size	Y-12 Type RPM			Y-15 Type RPM			Y-26 and Later Types RPM	
	MAX.	MIN.	"A"	MAX.	MIN.	"B"	MAX.	MIN.
6" x 6"	155	150	250	165	150	250	400	130
6-1/2" x 6-1/2"	155	145	250	165	150	250	400	130
7-1/2" x 7-1/2"	152	140	225	165	145	225	400	150
8" x 8"				165	130	225	360	150
9" x 9"	146	125	210	165	130	210	360	150
10" x 10"				165	130	200	360	150
11" x 10" and 11-1/2" x 10"							360	150

"A" - Maximum speed when equipped with Y-15 Style Piston Assemblies, Y-40 Multiple Suction Valves, Y-32 type Safety Head and Discharge Valves, Top Heads, Safety Head Springs, and a Y-15 Style Gear Oil Pump Oiling System to provide Oil Spray Lubrication for Wrist Pins and Cylinder Walls.

"B" - Maximum speed when equipped with Y-40 Multiple Suction Valves, Y-32 Type Safety Head and Discharge Valves, Top Heads, Safety Head Springs, and a Y-15 Style Gear Oil Pump Oiling System to provide Oil Spray Lubrication for Wrist Pins and Cylinder Walls.

COMPRESSOR CASTING

All compressors built up to and including Y-26 style had cylinders, crankcase and outboard bearing cast integrally and are inseparable. Compressors Y-28 style and later have cylinders cast separate from the crankcase and outboard bearing.

PISTONS (See Fig. 20)

Double trunk type pistons were used on all standard compressors 6" to 9" inclusive Y-26 and earlier. Also, 10" standard compressors Y-26 and earlier were equipped with half slipper type pistons. All standard 6" to 9" compressors Y-28 to present are equipped with half slipper type pistons and all standard 10" compressors Y-28 to present are equipped with full slipper type pistons. 11-1/2" x 10" pistons are babbitt lined.

LUBRICATION

Lubrication of the Y-15 style compressors, 6" x 6" to 8" x 8" inclusive was by "splash" from oil carried at a level in the crankcase high enough to allow the connecting rods and cranks to dip into the oil and splash it to the bearings and cylinder walls. Y-15 style gear oil pumps were installed on Y-15 compressors 6" x 6" to 8" x 8" when specially ordered.

Oil Pumps, Gear Type (Figs. 15 and 29)

Forced lubrication is provided for Y-15 compressors 9" x 9" and 10" x 10" and for all compressors Y-26 model and later. This pump is located in the compressor bearing head and is driven by a drag crank from a pin inserted in the end of the crankshaft.

The pump for Y-15 models is shown in Fig. 29 and the Y-26 model is shown in Fig. 15.

OIL FILTERS, Figs. 30 and 31

The original Y-15 and Y-26 oil filters were located on the foundation below the

DESIGN HISTORY

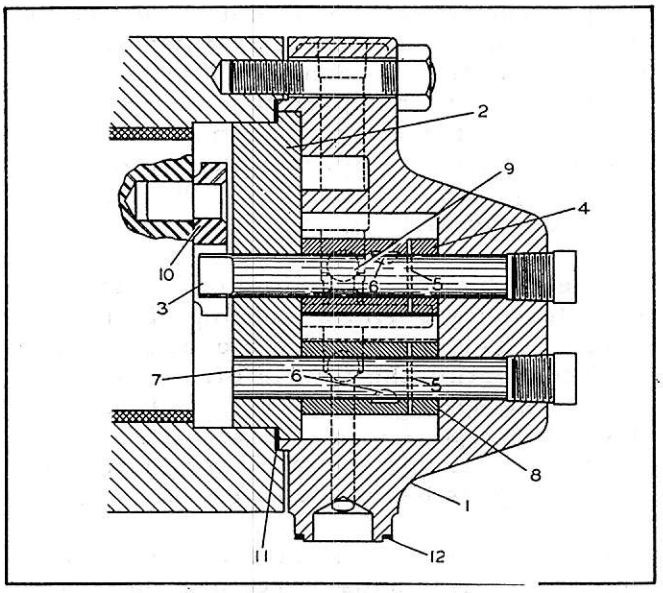


Fig. 29 - Gear Oil Pump, Y-15 Type

PARTS LIST, Fig. 29

Gear Oil Pump-Y-15 Type

Ref. No.	Part	Part No.
*1-12	Oil Pump Assy. (6" x 6", Y-15)	64-3916F
*1-12	Oil Pump Assy. (6-1/2" x 6-1/2" or 7-1/2" x 7-1/2" Y-15)	64-3917F
*1-12	Oil Pump Assy. (8" x 8", 9" x 9" or 10" x 10", Y-15)	64-1438F
2	Head, Bearing	64-1401PL
3-6	Gear and Shaft, Driver	64-1416SL
4	Gear, Driver	64-1418PL
5	Pin	64-1419PK
6	Key, Woodruff	29-1557P
5-8	Gear and Shaft, Driven	64-1420SL
8	Gear, Driven	64-1418PL
9	Ball Check	29-1859P
* 10	Crank and Pin (6" x 6", Y-15)	64-3911SK
* 10	Crank and Pin (6-1/2" x 6-1/2" or 7-1/2" x 7-1/2" Y-15)	64-3910SK
* 10	Crank and Pin (8" x 8", 9" x 9" or 10" x 10", Y-15)	64-1413SK
11	Gasket, Bearing Head	70-2605PK
12	Gasket, Inlet Flange	28-853PK

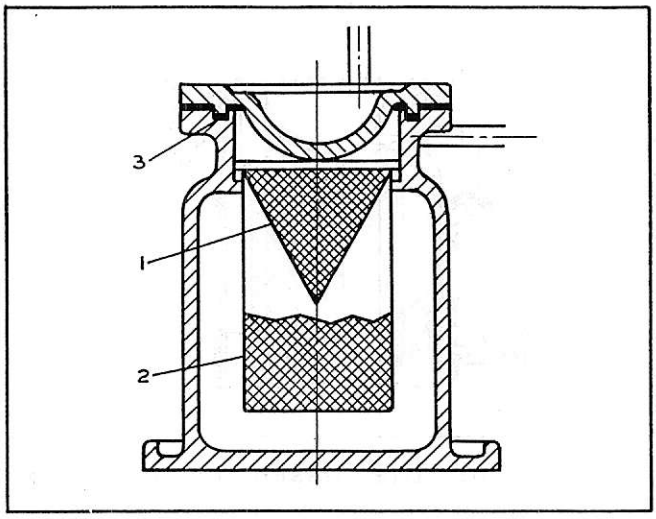


Fig. 30 - Oil Filter, Y-15 Type - 9" and 10" Compressors

PARTS LIST, Fig. 30

Y-15 Type Oil Filter
9" and 10" Compressors

Ref. No.	Part	Part No.
1	Filter Screen, Conical	64-1542SL
2	Filter Screen Cylindrical	64-1538SL
3	Gasket, Cover	70-2743PK

bearing head. Y-15 oil filters (Fig. 30) contain a conical screen mounted inside of a cylindrical screen.

The Y-26 filtering elements were originally cloth bags, but these were changed to cylindrical monel metal screens about January 1928. (Fig. 31) The monel metal screens listed may be used as replacements for the cloth bags.

6" to 8" compressors prior to Y-26 were splash lubricated and of course had no oil filter, unless specially ordered.

Oil Filter, Y-28 Type (Fig. 32)

During the year 1928 York introduced the flat cloth cell type of oil filter Y-28 type. This filter, shown in Fig. 32 is mounted on the bearing head above the oil

DESIGN HISTORY

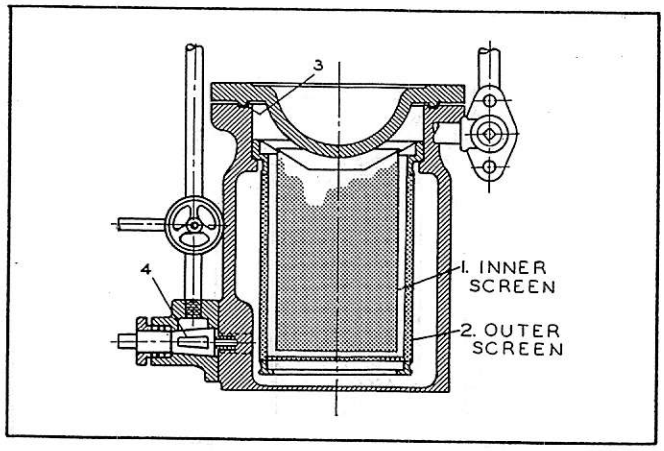


Fig. 31 - Oil Filter Assembly, Y-26 Type

PARTS LIST, Fig. 31

Oil Filter Assy. - Y-26 Type
6" to 10" Compressors

Ref. No.	Part	Part No.
1	Filter Screen Inner (2 Req.)	64-1522SL
2	Filter Screen Outer (2 Req.)	64-1528SL
3	Gasket, Cover (2 Req.)	70-2746PK

pump. The filtering element is an assembly of flannel pads supported internally by perforated steel screens. Oil from the pump passes through the filter pads and emerges from the lower portion of the assembly, and the by-pass manifold, to external piping to the cylinder walls, bearings and stuffing box.

The oil by-pass manifold on the side of the filter body permits shutting off the filter for examination and cleaning, without interrupting the flow of oil to the bearings. The spring loaded relief valve inside this by-pass manifold will open and permit the circulation of oil to continue if the filter pads become congested.

It is advisable to clean the cloth cell type of oil filter pads at regular intervals. A gradual decrease in the oil pressure while the compressor is in operation indicates that the filter pads need cleaning. When a compressor is first put into operation, the filter will require frequent cleaning. To clean the filter, close both the inlet and outlet valves on the filter by-pass manifold. The filter body is then shut off; however, oil will continue to circulate through the internal ball check valve and on to the bearings. Then carefully open the oil drain plug on the filter and drain

PARTS LIST, Fig. 32

Y-28 Oil Filter, Cloth Cell Type
6" to 10" Compressors

Ref. No.	Part	6" x 6", 7-1/2" x 7-1/2" and 8" x 8" Part Number	9" x 9" and 10" x 10" Part Number
1-4	Filter Unit Assembly	64-1516SL	64-2069SL
1	Filter Bag and Screen Assembly	64-1517SL	64-2070SL
	Filters per Set	9	10
	Filter Bag only	64-1512PL	64-2068PL
5	Gasket, Cover	28-799P	28-807P
6	Gasket, By-Pass Body	28-794PK	28-794PK
7	Seat, Relief Valve	64-2929PK	64-2929PK
8	Spring, Relief Valve	29-147PK	29-147PK
9	Ball Check	29-1858P	29-1858P
10	Gasket, Valve Body	28-764P	28-764P
11	Packing, Valve Stem (5 Req. per Set)	28-1080P	28-1080P

out the oil. Then remove the cap and lift out the filter pad assembly. To clean the pads, dismantle the pad assembly and clean each pad with an approved safety solvent.

These pads must be thoroughly dried before they are re-assembled and placed back in the filter body.

No damage should result to the bearings due to operating a short time without the use of the filter. However, the filter should be put back into operation as soon as possible after cleaning.

Oil Filter, Disc Cartridge Type

The disc cartridge type of oil filter was adopted in 1934 and is still being used. Refer to Fig. 14 and the MAINTENANCE and SERVICE section of this instruction for information on the disc cartridge type oil filter.

CYLINDER WALL LUBRICATION

Oil under pressure from the oil pump for the bearings, is also supplied for lubrication of the cylinder walls on 6" to 9" compressors. Various designs have been used, as described in the following paragraphs.

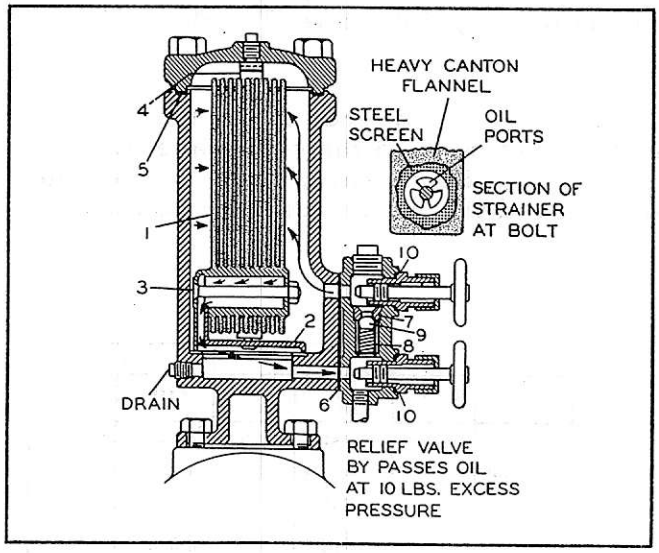


Fig. 32 - Oil Filter, Y-28, Cloth Cell Type

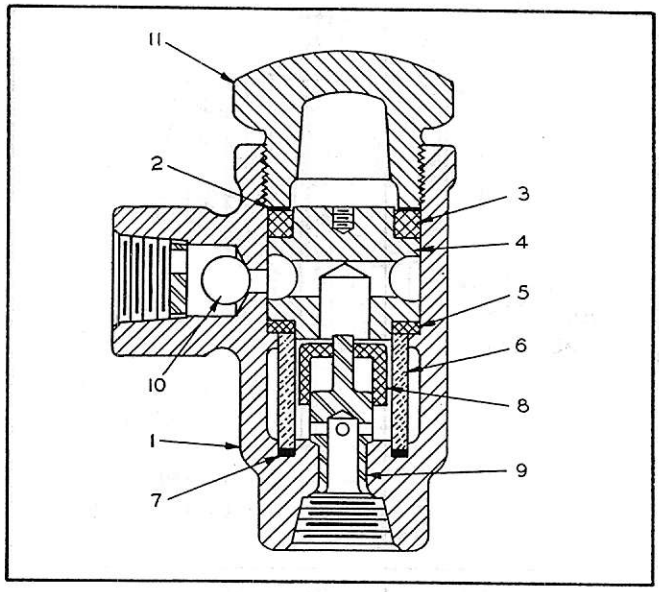


Fig. 33 - Oil Check Valve - 6" to 9" Compressors

PARTS LIST, Fig. 33

Oil Check Valve
6" to 9" Compressors

Ref. No.	Part	Part No.
1-11	Oil Check Valve	68-4514PK
2	Washer, Cover	68-4512PK
3	Gasket, Cover	28-1003P
5	Gasket, Sight Glass (Upper)	28-891P
6	Sight Glass	26-2633PK
7	Gasket, Sight Glass (Lower)	28-953P
10	Check Ball	29-1853P

Oil Check Valve (Fig. 33)

With the Y-26 type oil filter and piping, an oil check valve was used. This device is shown in Fig. 33, and contained an aluminum float, visible inside of a sight glass. Oil pressure from the pump lifts the float off its seat. When the pump stops the float returns to its seat.

Oil Sight Feed Valve (Fig. 12)

The oil sight feed valve assembly as shown in Fig. 12 was used with compres-

DESIGN HISTORY

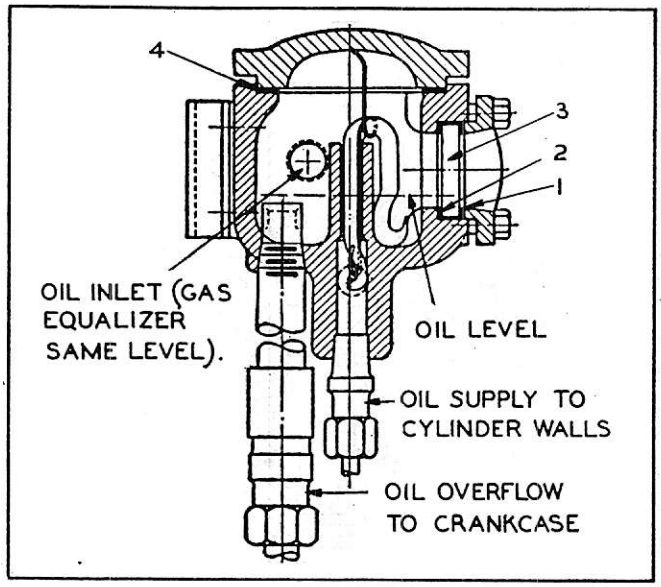


Fig. 34 - Wick Oiler

PARTS LIST, Fig. 34

Wick Oiler
6" to 9" Compressors

Ref. No.	Part	Part No.
1	Gasket, Sight Glass, Rubber	70-2419PK
2	Gasket, Sight Glass, Fiber	70-2420PK
3	Sight Glass	26-2557P
4	Gasket, Cover	28-540PK
5	Wick (4 Req. per Set)	64-984SK

sors 6" x 6" to 9" x 9" inclusive, Y-28 model and again on compressors 6" x 6" to 9" x 9" inclusive Y-38 to present models. All compressors built between

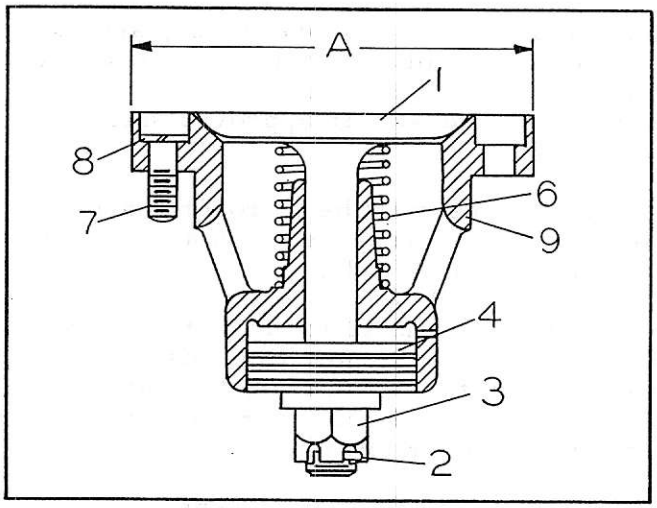


Fig. 35 - Suction Valve, Y-15 Type - 6" to 10" Compressors

these models were equipped with wick oilers.

Wick Oiler (Fig. 34)

Wick oilers, were used on compressors 6" x 6" to 9" x 9" inclusive, models Y-33, 34, 35, and 36. Oil under pressure from the oil pump is delivered to the oiler body. U-shaped wicks, one for each feed, carry the oil over a dam in the oiler body by capillary attraction, to drop into corresponding drilled ports in the oiler body, from which it flows by gravity through tubing to the points of feed in the cylinder walls.

Excess oil delivered to the lubricator body is returned to the crankcase by a gravity overflow located so as to keep the oil level in the lubricator body below the

PARTS LIST, Fig. 35

Y-15 Type Suction Valve
6" to 10" Compressors
One Valve Per Piston

Ref. No.	Part	6" x 6"		6-1/2" x 6-1/2"		7-1/2" x 7-1/2"		8" x 8"		9" x 9"		10" x 10"	
		Part No.	Dim. "A"	Part No.	Dim. "A"	Part No.	Dim. "A"	Part No.	Dim. "A"	Part No.	Dim. "A"	Part No.	Dim. "A"
1-9	Suction Valve Assy. (Standard Speed)	64-1506SL	5-63/64"	64-1637SL	6-31/64"	64-1755SL	7-31/64"	64-1896SL	7-63/64"	64-2041SL	8-63/64"	64-2325SL	9-63/64"
1-9	Suction Valve Assy. (Oversize)	64-1565SL	6-1/4"	64-1665SL	6-3/4"	64-1816SL	7-3/4"	64-1907SL	8-3/8"	64-2147SL	9-3/8"	64-2331SL	10-3/8"
1-6	Valve Assy., Less Cage	-		64-1641SK		64-1815SK		-		64-2146SL		-	
1	Valve	64-2134SL		64-2135SL		64-2140SL		64-2141SL		64-2145SL		64-2328SL	
6	Spring, Valve	29-92PK		29-92PK		29-91PK		29-91PK		29-97PK		29-96PK	
7-8	Screws & Lockwashers	64-1368S		64-1368S		64-1699S		64-1699S		64-1699S		64-1115S	
	No. of Screws per Set	4		4		6		6		6		6	

DESIGN HISTORY

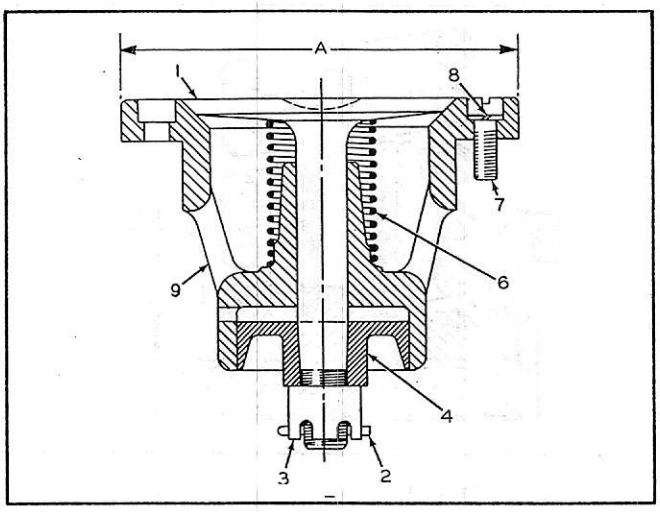


Fig. 36 - Suction Valve, Y-34 Type - 10" x 10" Compressors

dam. A gas equalizing line is provided to maintain the pressure in the lubricator body equal to the crankcase pressure.

A throttle valve is provided in the supply line to the lubricator to regulate the flow of oil if necessary. The rate of flow is proper when the oil level is about 1/4 inch above the bottom of the bull's - eye sight glass in the side of the lubricator body. Usually with normal oil pressure from 8 to 10 pounds above the suction pressure no regulation is required.

PARTS LIST, Fig. 36

Y-34 Single Type Suction Valve
10" x 10" Compressor

Ref. No.	Part	10" x 10" Part No.	Dim. "A"
1-9	Suction Valve Assy.	64-2348SK	9-63/64"
1-6	Valve Assy. Less Cage	64-2354SK	
4	Piston, Cushion	64-653PK	
6	Spring	29-93PK	
7-8	Screws & Lock Washers	64-2350S	
	No. Screws per Set	6	
	No. Valves per Piston	3	

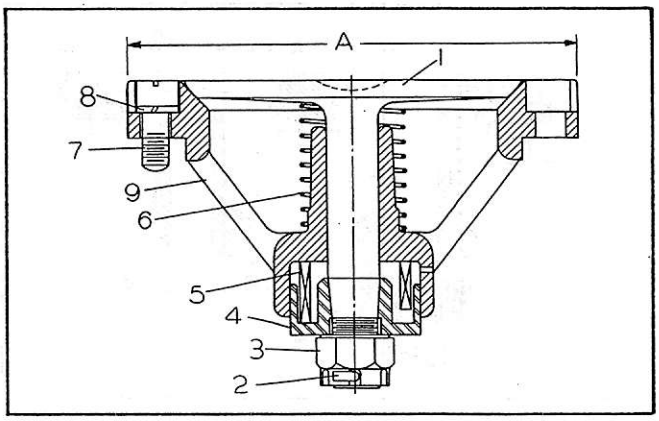


Fig. 37 - Suction Valve, Single Style, Y-35 Type, 6" x 6" Compressors

SUCTION VALVES

All compressors Y-15 to Y-34 (6" to 10") were equipped with Y-15 type single suction valve assemblies with the exception of the Y-34 10" compressor which was equipped with a Y-34 style single suction valve assembly. (See Figs. 35 and 36)

Compressors 6" to 10" inclusive produced between 1935 and 1940 were equipped with Y-35 and Y-38 multiple style suction valve assemblies. . (See Fig. 38) Early Y-35 6" x 6" compressors were equipped with single Y-35 suction valves as shown in Fig. 37. All valves were made up with two springs; one above and one below to maintain a balance.

PARTS LIST, Fig. 37

Y-35 Single Type Suction Valve
6" x 6" Compressor

Ref. No.	Part	6" x 6" Part No.	Dim. "A"
1-9	Suction Valve Assy.	64-1486SL	5-63/64"
1-9	Suction Valve Assy. Oversize	64-1546SL	6-1/4"
4	Piston, Cushion	64-719PK	
5	Spring, Cushion	29-191PK	
6	Spring, Valve	29-187PK	
7-8	Screws & Lockwashers	64-1368S	
	No. of Screws per Set	4	
	No. of Valves per Piston	1	

DESIGN HISTORY

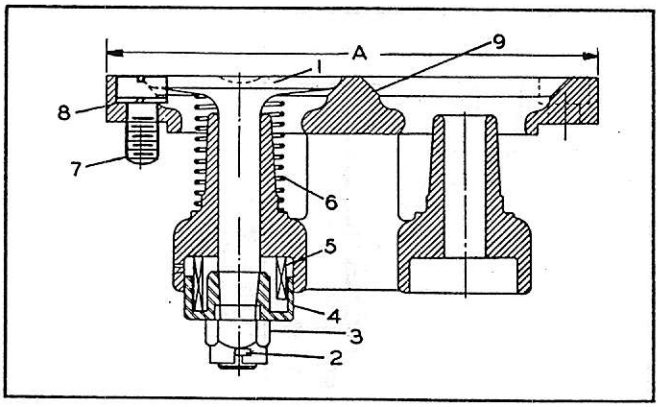


Fig. 38 - Suction Valve, Multiple Style, Y-35 and Y-38 Type, 6" to 11" Compressors

Starting in 1940 the Y-35 and Y-38 style suction valve assemblies were discontinued on compressors 7-1/2" to 10" and replaced by the Y-40 valve assembly using only one spring. This new arrangement eliminates the spring in the cushion chamber and provides a new upper spring with the proper tension to balance the valve on its seat. Compressors 6" x 6" and 6-1/2" x 6-1/2" Y-38 and later are equipped with the Y-38 multiple type suction valve.

Both the Y-38 style multiple suction valve for 6" and 6-1/2", Y-38 compressors and the Y-40 style multiple suction valve for 7-1/2" to 10" Y-40 compressors are covered in the MAINTENANCE AND SERVICE section of this instruction.

Fig. 16 illustrates the Y-35 and Y-38 style multiple suction valve and Fig. 17 illustrates the Y-40 style multiple suction valve.

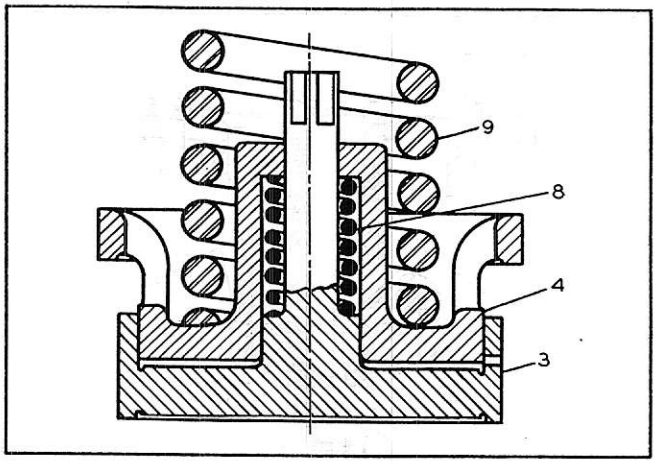


Fig. 39 - Discharge Valve, Y-12 Type - 6" and 6-1/2" Compressors

PARTS LIST, Fig. 39

Y-12 Type Discharge Valve
6" and 6-1/2" Compressors

Ref. No.	Part	6" x 6" Part No.	6-1/2" x 6-1/2" Part No.
3, 4 & 8	Valve Assy.	64-1440SL	64-1632SL
4	Cage	-	64-1633PL
8	Spring, Valve	29-10PK	29-10PK
9	Spring, Safety	29-17PK	29-11PK
	Head		
	No. of Valves per Cyl.	1	1

DISCHARGE VALVES

The following tabulations list safety head and discharge valve assemblies, Y-12, Y-17 and Y-27. Compressors 6" x 6" Y-32 to Y-38 were equipped with Y-32 single

PARTS LIST, Fig. 38

Y-35 and Y-38 Multiple Type Suction Valve
* 6" to 11-1/2" x 10" Compressors

Ref. No.	Part	7-1/2" x 7-1/2" and 8" x 8"	9" x 9"	10" x 10"	11" x 10" and 11-1/2" x 10"
1-6	Valve Assy., Less Cage				
	Less Cage	64-1593SK	64-1593SK	64-4371S	64-4371S
4	Piston, Cushion	64-719PK	64-719PK	64-719PK	64-719PK
5	Spring, Cushion	29-191PK	29-191PK	29-219PK	29-219PK
6	Spring, Valve	29-188PK	29-188PK	29-218PK	29-218PK
7-8	Screws & Lockwashers	64-1699S	64-1699S	64-1115S	29-2178SM
	No. of Screws per Set	6	6	6	8
	No. of Valves per Piston	3	4	5	6

* Parts for 6" and 6-1/2" compressor are listed under MAINTENANCE AND SERVICE, (See Fig. 16)

DESIGN HISTORY

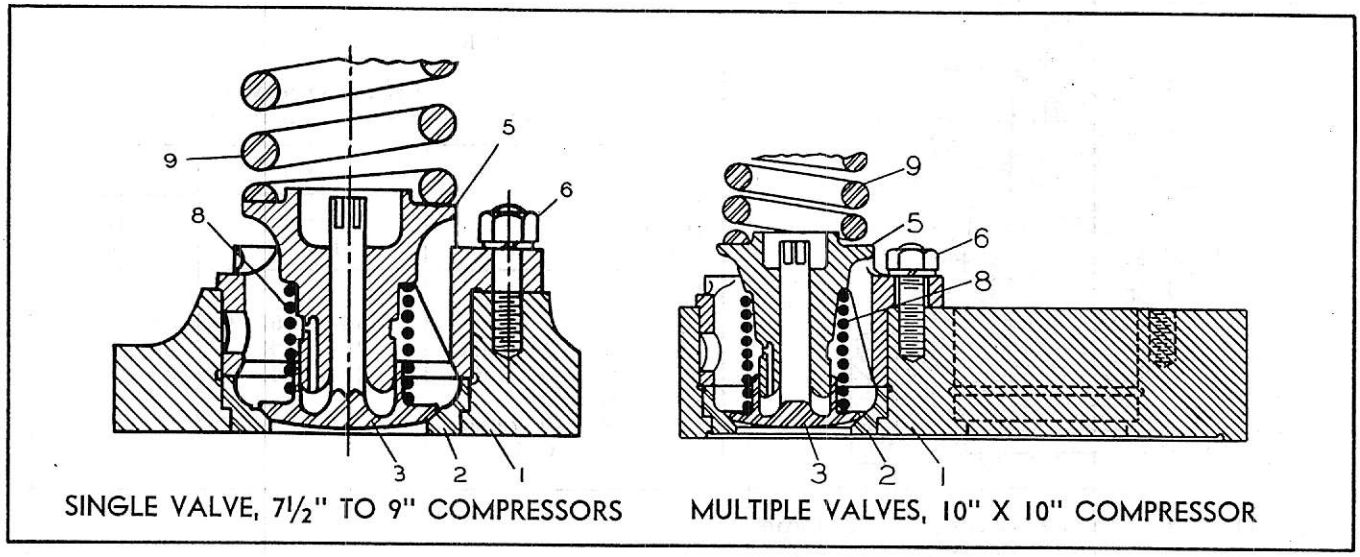


Fig. 40 - Discharge Valve, Y-17 Type, 7-1/2" to 10" Compressors

PARTS LIST, Fig. 40

Y-17 Type Discharge Valve
Single Valve 7-1/2" to 9" Compressors
Multiple Valve 10" x 10" Compressor

Ref. No.	Part	7-1/2" x 7-1/2" Part No.	8" x 8" Part No.	9" x 9" Part No.	10" x 10" Part No.
1-8	Safety Head Assembly	64-1803FM	64-1901FM	64-2046FM	64-2336FM
2	Seat, Valve, 2" (.008" Oversize)	-	-	-	64-2370PK
2	Seat, Valve, 2-1/4"	64-1825PK	-	-	64-2507PK
2	Seat, Valve, 2-1/4" (.008" Oversize)	-	-	-	64-2370PK
2	Seat, Valve, 2-3/4" (.008" Oversize)	64-1829PK	-	-	-
2	Seat, Valve, 3" (.008" Oversize)	-	64-1934PK	64-1934PK	-
2	Seat, Valve, 3-1/2" (.008" Oversize)	-	64-1935PK	64-1935PK	-
3	Valve, 2" Size	-	-	-	64-2344PL
3	Valve, 2-1/4" Size	64-1809PL	-	-	64-2339PL
3	Valve, 2-3/4" Size	64-1806PL	-	-	-
3	Valve, 3" Size	-	64-1910PL	64-1910PL	-
3	Valve, 3-1/2" Size	-	64-1904PL	64-1904PL	-
3,5 & 8	Valve Assembly, 2-1/4" Size	64-1808SK	-	-	64-2340SK
3,5 & 8	Valve Assembly, 2-3/4" Size	64-1810SK	-	-	-
3,5 & 8	Valve Assembly, 3" Size	-	64-1909SK	64-1909SK	-
3,5 & 8	Valve Assembly, 3-1/2" Size	-	64-1911SK	64-1911SK	-
8	Spring, Valve	29-84PK	29-79PK	29-79PK	29-82PK
9	Spring, Safety Head	29-73PK	29-73PK	29-73PK	29-74PK
	No. of Valves per Cyl.	1	1	1	3

DESIGN HISTORY

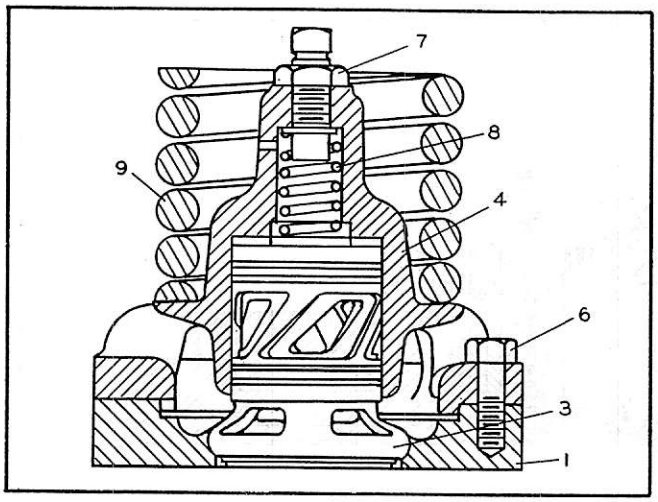


Fig. 41 - Discharge Valve, Y-12 Type, 7-1/2" and 9" Compressors

PARTS LIST, Fig. 41

Y-12 Type Discharge Valve
7-1/2" and 9" Compressors

Ref. No.	Part	7-1/2" x 7-1/2" Part No.	9" x 9" Part No.
1-8	Safety Head Assy.	64-1746FM	64-2037FM
8	Spring, Valve	29-20PK	29-20PK
9	Spring, Safety Head	29-52PK	29-2378PK
	No. of Valves per Cyl.	1	1

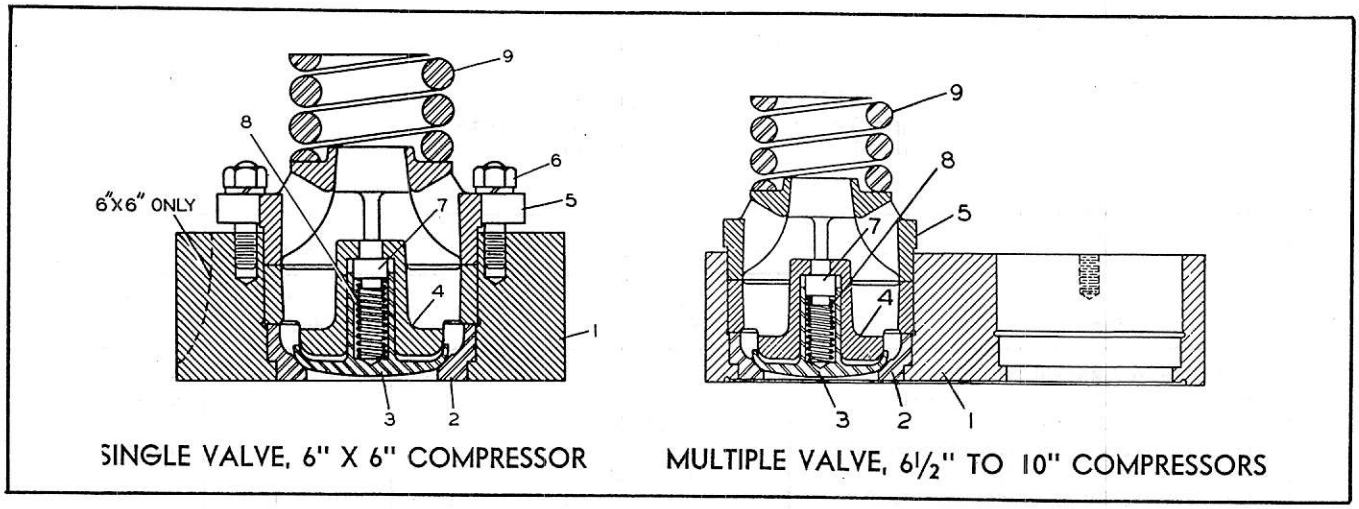


Fig. 42 - Discharge Valve, Y-27 Type - 6" to 10" Compressors

PARTS LIST, Fig. 42

Y-27 Type Discharge Valve (See Note 2)
Single Valve 6" x 6" Compressor
Multiple Valve 6-1/2" to 10" Compressors

Ref. No.	Part	6" x 6" Part No.	6-1/2" x 6-1/2" Part No.	7-1/2" x 7-1/2" Part No.	8" x 8" Part No.	9" x 9" Part No.	10" x 10" Part No.
1-8	Safety Head (Assy.) (1)	64-1502FL	64-1649FL	64-1811FM	64-1906FM	64-2062FM	64-2346FM
2	Seat, Valve (.008" Oversize)	64-2370PK	64-1435PK	64-1435PK	64-1435PK	64-2370PK	64-2370PK
3	Valve	64-863PN	64-1659PK	64-1659PK	64-1659PK	64-863PK	64-863PK
3, 4, 7 & 8	Valve Assembly	64-866SK	64-1660SK	64-1660SK	64-1660SK	64-866SK	64-866SK
5	Cap, Valve Cage	64-774PL	64-1372PL	64-1372PL	64-1372PL	64-774PL	64-774PL
7	Retainer, Spring	64-865PK	64-1650PK	64-1650PK	64-1650PK	64-865PK	64-865PK
8	Spring, Valve	29-149PK	29-120PK	29-120PK	29-120PK	29-149PK	29-149PK
9	Spring, Safety Head	29-114PK	29-112PK	29-112PK	29-112PK	29-113PK	29-115PK
	No. of Valves per Cyl.	1	3	4	4	3	4

DESIGN HISTORY

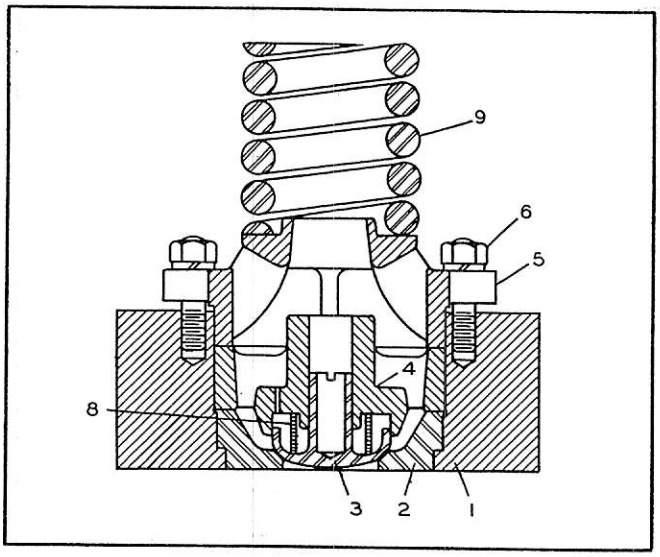


Fig. 43 - Discharge Valve, Single Style, Y-32 Type - 6" x 6" Compressors

type discharge valves (See Fig. 43). Compressors 6" x 6" Y-38, 6-1/2" and 7-1/2" Y-33 and 8" to 10" Y-32 were equipped with Y-32 multiple type discharge valves.

The Y-32 multiple type discharge valve is the present type and is covered in the MAINTENANCE AND SERVICE section of this instruction and illustrated in Fig. 18.

NOTES:

1 - Y-27 valves and Y-32 valves are interchangeable with Y-12 or Y-17 type valves only when furnished complete with top heads, safety head assemblies and safety head springs.

2 - Y-32 valves are interchangeable with Y-27 type valves when safety head assemblies are furnished.

3 - Safety head assemblies for Y-17 type valves are furnished with valve seats as follows:

Size Compressor	Diameter of Valve Seat
7-1/2" x 7-1/2"	2-3/4"
8" x 8"	3-1/2"
9" x 9"	3-1/2"
10" x 10"	2-1/4"

PARTS LIST, Fig. 43

Y-32 Single Type Discharge Valve
6" x 6" Compressors
See Notes 1 & 2 of PARTS LIST, Fig. 27

Ref. No.		Replacement For Y-12 and Y-17 Type Discharge Valve	Replacement For Y-27 Type Discharge Valve
		Part No.	Part No.
1-8	Safety Head Assembly	64-1575FL	64-1504FL
2	Seat, Valve (.008" Oversize)	64-840PK	64-840PK
3	Valve	64-748PK	64-748PK
3, 4 & 7	Valve Assembly	64-776SK	64-776SK
5	Cap, Valve Cage	64-774PL	64-774PL
8	Spring, Valve	29-182PK	29-182PK
9	Spring, Safety Head	29-114PK	29-116PK
	No. of Valves per Cyl.	1	1

DESIGN HISTORY

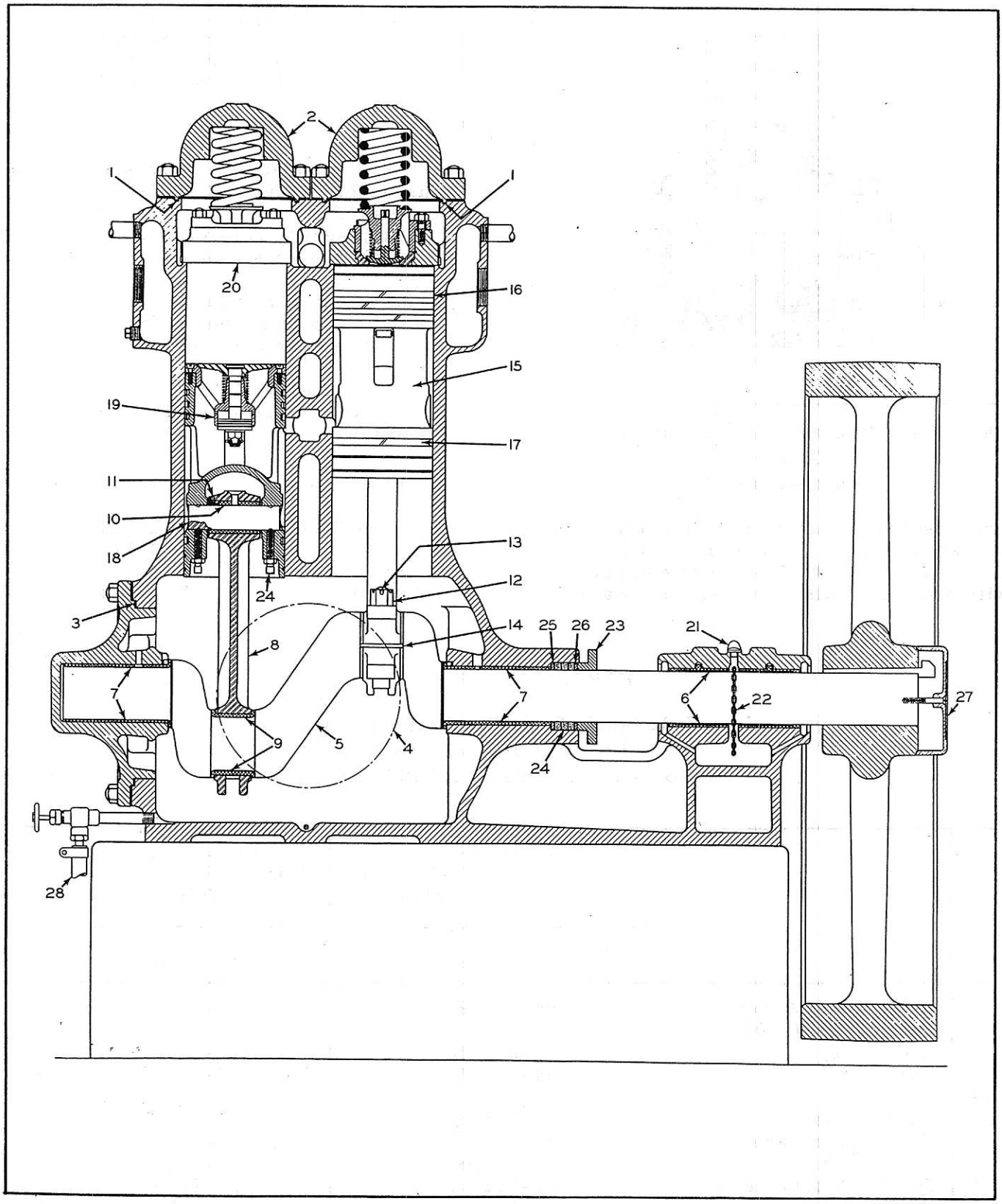


Fig. 44 - Sectional View, Y-15 Compressor

DESIGN HISTORY

REPLACEMENT PARTS LIST

Y-15 COMPRESSORS 6" x 6" to 10" x 10"
(See Fig. 46)

Approx. Compr. Shop Nos.		6" x 6" 5050 to 26680	6-1/2"x6-1/2" 5055 to 26828	7-1/2"x7-1/2" 5171 to 26647	8" x 8" 7836 to 26712	9" x 9" 5262 to 26281	10" x 10" 10459 to 26337
Ref. No.	Part	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
1	Gasket, Top Head	70-2749PK	70-2748PK	70-2754PK	70-2755PK	70-2736PK	70-2727PK
2	Top Head	Part No. Identified by Compressor Shop No.			Part No. Identified by Compr. Shop No.		
3	Gasket, Bearing Head	70-2724PK	70-2727PK	70-2724PK	70-2720PK	70-2716PK	70-2713PK
4	Gasket, Crankcase Cover	70-2726PK	70-2726PK	70-2726PK	70-2721PK	70-2716PK	70-2714PK
5	Shaft	64-1431SL	64-1623PL	64-1730PL	64-1929PL	64-2380PL	64-2368PL
6	Bearing, Solid Outboard	64-4223S	64-4254S	64-4230S	64-3951P	64-3952P	-
6	Bearing, Split Outboard (Set of 4 Pcs.)	64-4224S	64-4227S	64-4231S	64-4234S	64-4253S	64-4251S
7	Bearing, Crankshaft (Set of 2 Pcs.)	64-4236S	64-1678SL	64-1831SL	64-4235S	64-2723SL	64-2510SL
8-14	Connecting Rod Assembly	64-1490SM	64-1642SM	64-1760SN	64-1889SN	64-2053SL (3)	-
9	Bearing, Crank End (Set of 2 Pcs.)	64-1496SL	64-1646SL	64-1801SL	64-1893SL	64-2052SL	64-2518SM
10	Bushing, Wrist Pin	64-1492PK	64-1644PK	64-1799PK	64-1891PK	64-2050PK	64-2515SM
	Liner, Wrist Pin Bushing (2 required)	-	-	-	-	-	30-2673PK
11	Locating Pin, Wrist Pin Bushing	64-1493PK	64-1571PK	64-1802PK	64-1802PK	64-1802PK	-
12-13	Bolt, Nut & Keeper (Set of 2)	64-4222S	64-4225S	64-4228S	64-4232S	64-4245S	64-4250S
13	Wire Keeper	64-1382PK	64-1382PK	64-1712PK	64-1712PK	64-1989PK	21-3460P
14	Shim (Laminum Type, 2 Req. Per Rod)	29-515PK	29-516PK	29-518PK	29-518PK	29-519PK	-
14	Shims, Set Per Rod	-	-	-	-	-	64-4370F
	Wedge Bolt, Connecting Rod	-	-	-	-	-	64-2365SK
	Wedge, Connecting Rod	-	-	-	-	-	64-2369SK
15	Piston, Bare	64-1484PM	64-1636PM	64-1752PL	64-1895PL	64-2373PL	64-2334PM
15	Piston, Bare (Oversize) (1)	64-1545PN	64-1669PM	64-1820PL	64-1930PL	64-2374PL	64-2358PM
16	Piston Ring, Compression	Refer to pages 32 and 33					
17	Piston Ring, Oil	Refer to pages 32 and 33					
	Piston Ring, Casting (2)	Not Available					
18	Wrist Pin (Locking Pin Type)	64-2926PL	64-1671PK	64-1827PK	-	64-2381PK	-
18	Wrist Pin (Locking Set Screw Type)	64-1361PK	64-1589PK	64-1695PK	64-1860PK	64-1976PK	64-2335PK
19	Suction Valve	Fig. 37	Fig. 37	Fig. 37	Fig. 37	Fig. 37	Fig. 37
20	Safety Head & Discharge Valve	Fig. 42, 43	Fig. 39, 42	Fig. 41, 42	Fig. 40, 42	Fig. 40, 41, 42	Fig. 40, 42
21	Cover, Oil Hole	69-1582PK	69-1778PK	69-1778PK	69-1778PK	69-2025PK	69-2025PK
22	Oiler, Chain	64-3940PK	64-3491PK	64-3942PK	64-3943PK	64-3944PK	64-3945PK
23	Gland, Packing	64-1408PL	64-1613PL	64-1721PL	64-1914PK	64-2379PL	-
24	Shaft Packing	64-1404S	64-1605S	64-1716S	64-1885S	64-2001S	64-1130S
25	Neck Ring, Back	64-1574PK	64-1624PK	64-1733PK	64-1924PK	64-2007PK	64-1146PK
26	Neck Ring, Front	64-1428PK	64-1609PK	64-1726PK	64-1921PK	64-2006PK	64-1145PK
27	Hub Shield	64-1433SK	64-1433SK	64-1732SK	64-1732SK	64-2020SK	64-2020SK
28	Oil Hose, Nipple & Clamp	64-468S	64-468S	64-468S	64-468S	64-468S	64-468S
	Oil Pump (4)	Fig. 27	Fig. 27	Fig. 27	Fig. 27	Fig. 27	Fig. 27
	Oil Filter (4)	Fig. 28	Fig. 28	Fig. 28	Fig. 28	Fig. 28	Fig. 28
	Nozzle Cleaner	-	-	-	-	Dwg 100668	-
	Oil Check Valve (4)	68-4513PK	68-4513PK	68-4513PK	68-4513PK	68-4513PK	68-4513PK
	Gauge, Oil Level	Fig. 13	Fig. 13	Fig. 12	Fig. 13	Fig. 13	Fig. 13
	Suction Screen	64-1520FL	64-1661FL	64-1812FL	64-1883FL	64-2114FL	64-2351FL
	Funnel Ring	64-1430PK	64-1622PK	64-1728PK	64-1920PK	64-2018PK	64-1148PK
	Wrench, Connecting Rod Bolt	64-1436PL	64-1436PL	64-1729PL	64-1729PL	-	-

(1) Oversize Pistons rough-turned as follows: 6" x 6", 6-1/2" x 6-1/2", & 7-1/2" x 7-1/2" 1/4" - Oversize; 9" x 9" & 10" x 10" - 3/8" Oversize

(2) Piston ring castings not available. Select oversize rings from table on page 34.

(3) Part No. 64-2053SL complete with Oil Pipe to Wrist Pin; when Oil Pipe is not required, order Part No. 64-2048SL.

(4) When specially ordered for 6" x 6" to 8" x 8" inclusive.

DESIGN HISTORY

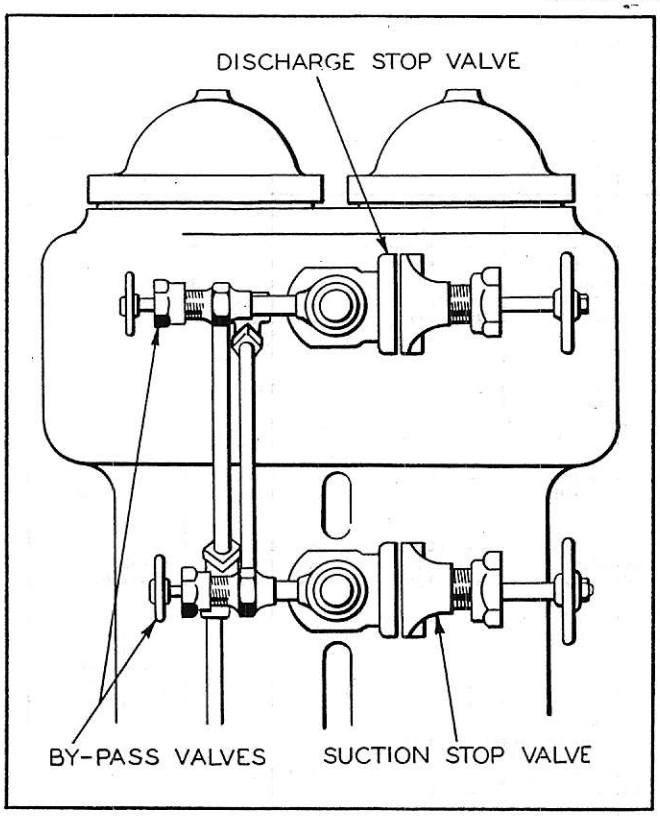


Fig. 45 - Compressor Piping, Y-15 Style

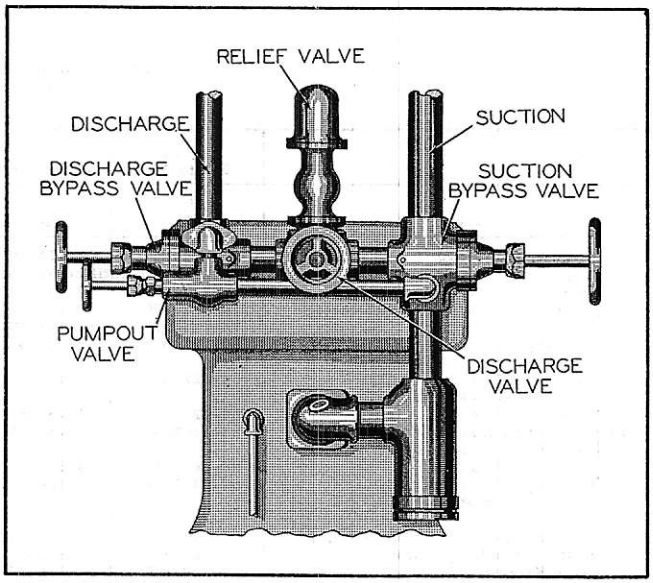


Fig. 46 - Compressor Piping, Y-26 Style

COMPRESSOR PIPING

Prior to 1928, compressors were equipped with piping containing separate suction, discharge, by-pass, pump-out, and relief valves, also a separate suction strainer. The present model manifold embodying all these features in one enclosure was adopted in 1928. Fig. 45 illustrates the Y-15 style compressor piping and Fig. 46 illustrates the Y-26 style compressor piping. For compressors Y-28 and later refer to the MAINTENANCE AND SERVICE section of this instruction and Fig. 18.

The small hex steel bodied angle By-Pass valves for the Y-15 type compressor piping are obsolete; for replacement, use corresponding size forged steel angle valves, female pipe threads above and below the seats.

PARTS LIST, Fig. 46

		Suction By-Pass Valve				Discharge By-Pass Valve		
		6" x 6" and 6-1/2"x6-1/2"	7-1/2"x7-1/2"	8" x 8" and 9" x 9"	10" x 10"	6" x 6" and 6-1/2"x6-1/2"	7-1/2"x7-1/2" 8" x 8" and 9" x 9"	10" x 10"
Ref. No. #		Part Number	Part Number	Part Number	Part Number	Part Number	Part Number	Part Number
1-12	Valve Assembly (2)	68-7779SM	6951F	6952F	6948F	6953F	6949F	68-7012FM
2-12	Bonnet Assembly	68-3987FM	68-3992FM	68-4067FM	68-5718FM	68-3985FL	68-3987FM	68-3992FM
2	Nut	21-495P	21-495P	21-504P	21-504P	21-482P	21-495P	21-495P
3	Key	68-164PK	68-164PK	68-164PK	68-164PK	68-163PK	68-164PK	68-164PK
4	Stem	68-128PL	68-129PL	68-130PL	68-200PL	68-5655SL (*)	68-128PL	68-129PL
5-7	Valve Button and Locknut Assembly	68-5205SK	68-5195SK	68-5196SK	68-5197SK	68-5200SK	68-5205SK	68-5195SK
8	Nut, Packing	68-158PK	68-159PK	68-160PK	68-160PK	68-156PK	68-158PK	68-159PK
9	Gland, Packing	68-151PK	68-151PK	68-152PK	68-152PK	68-150PK	68-151PK	68-151PK
10	Packing, 5 Rings Required	28-1090P	28-1090P	28-2036P	28-2036P	28-1089P	28-1090P	28-1090P
11	Bonnet, Bare	68-5768PL	68-5769PL	68-5770PL	68-5771PL	68-5767PL	68-5768PL	68-5769PL
12	Handwheel	68-170PK	68-170PK	68-171PK	68-171PK	68-5666PK	68-170PK	68-170PK
13	Gasket	28-865PK	28-868PK	28-870PK	28-874PK	28-863PK	28-865PK	28-868PK

(1) Valve Stem, less Nut and Key.
(*) Stem with Nut and Key.
(#) Reference Number for Identification. When ordering, specify Part No.
(2) Suction and Discharge By-Pass Valves are "Back Outlet" Globe Valves.

SUBJECT TO CHANGE WITHOUT NOTICE
PRINTED IN U.S.A.
PPC 500 474 1.20
Form 250.10-NM1
(3E)