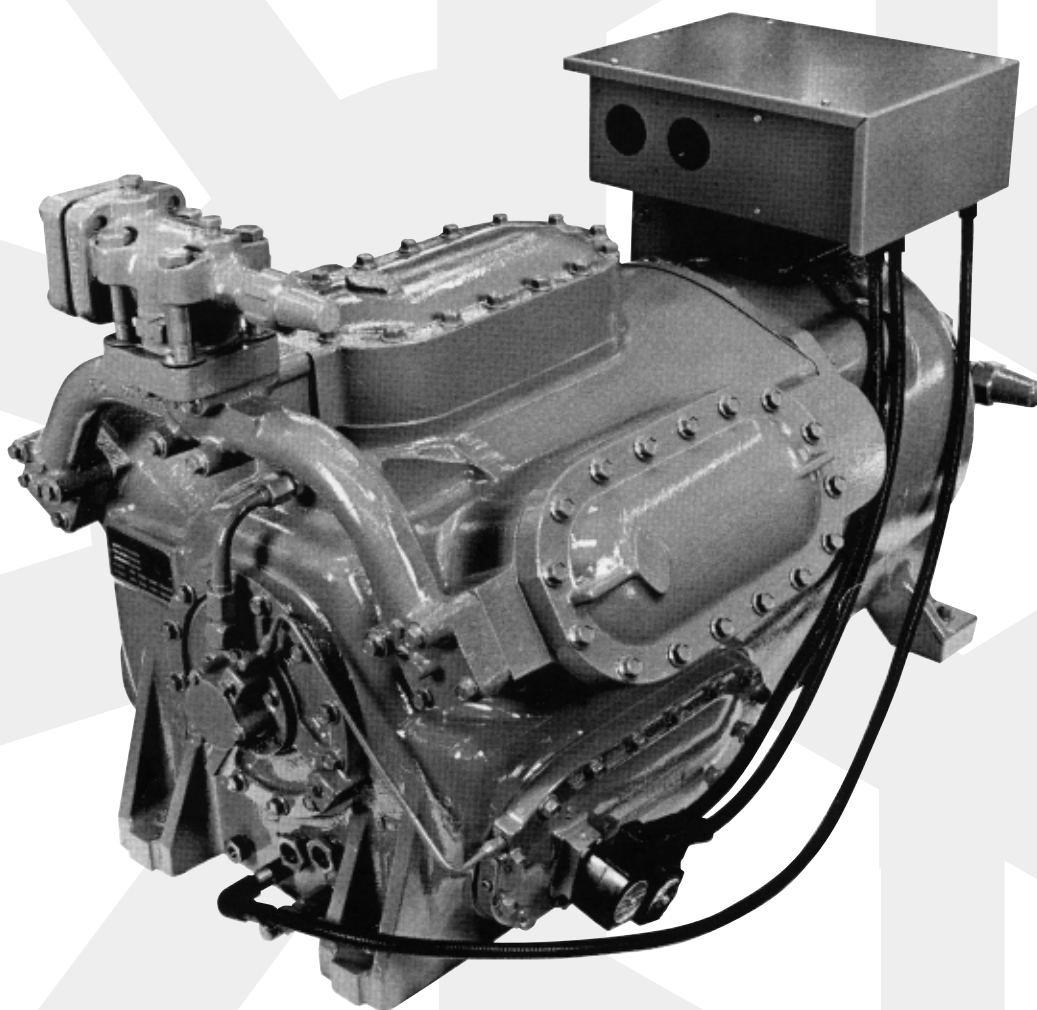


PC

SEMI-HERMETIC COMPRESSORS

MAINTENANCE



MODELS

PC 43, PC 63, PC 83 (SHORT STROKE)

PC 44, PC 64, PC 84 (LONG STROKE)

 **YORK**[®]

INTERNATIONAL

CE

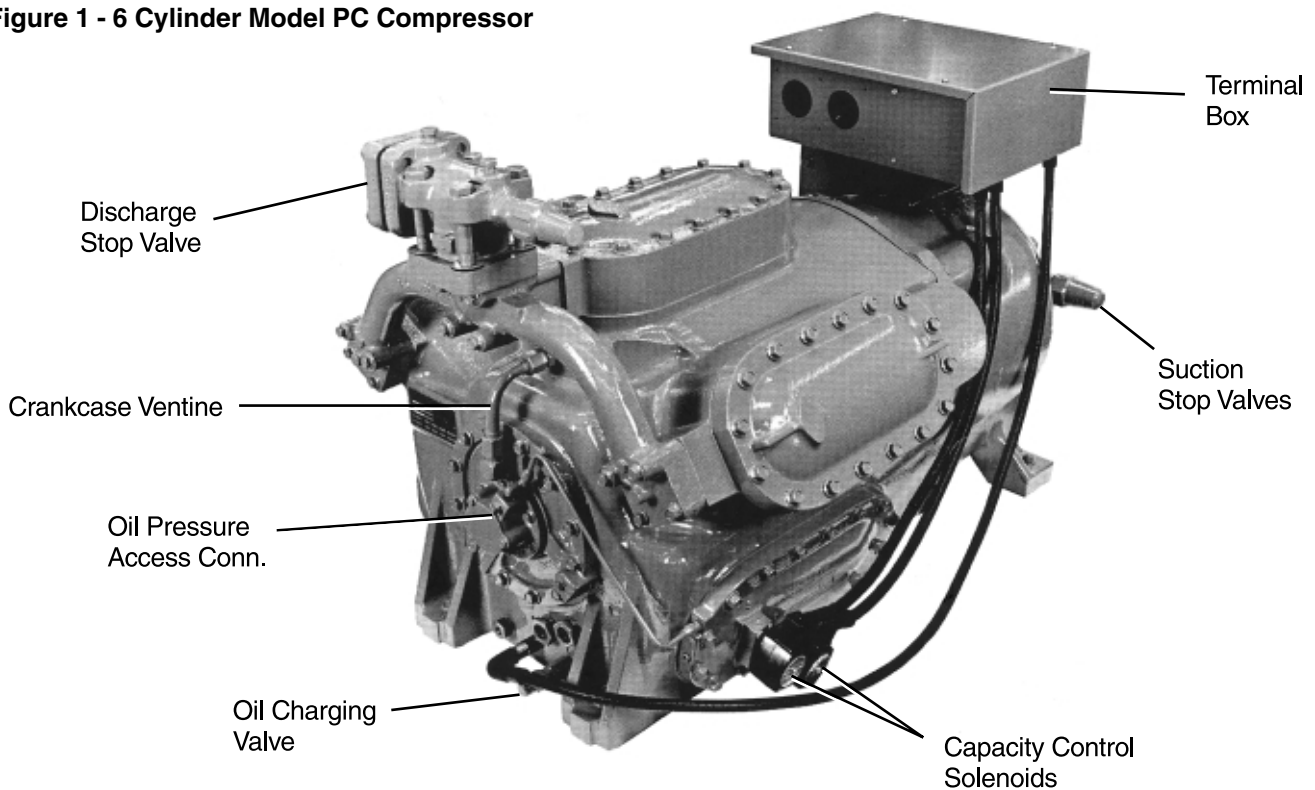
Effective from 12/00

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Figure 1 - 6 Cylinder Model PC Compressor



1 GENERAL

1.1 General Description

YORK Model PC Semi-Hermetic Compressors are designed to meet air conditioning requirements using R22, R134a or R407C. They are available in 4, 6 and 8 cylinder models, each in "short stroke" or "long stroke" versions (see Nomenclature)

Varying steps of capacity control are available utilising solenoid valves. (Control of solenoid valves must be by external device.) Nominal compressor speeds are 1460 ("short stroke") or 1440 ("long stroke") RPM (50 Hz), and 1750 RPM (60 Hz).

1.2 Nomenclature

Compressor Identification

Each compressor is identified by nomenclature as shown below. The nomenclature is stamped on a data plate which is located next to the oil pump as shown in Figure 2. When contacting the factory or ordering renewal parts include the complete Nomenclature, Serial Number and date Code as illustrated. Be sure these numbers are copied accurately.

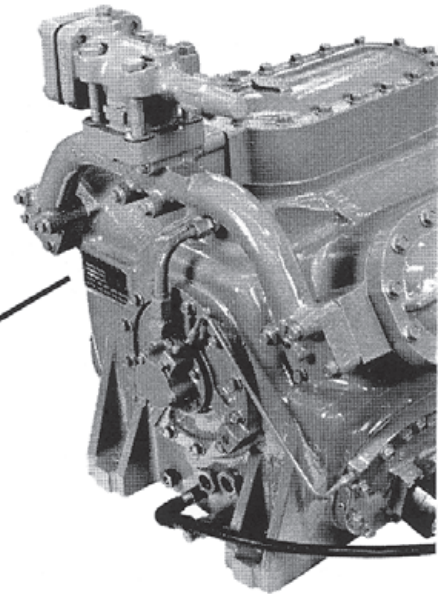
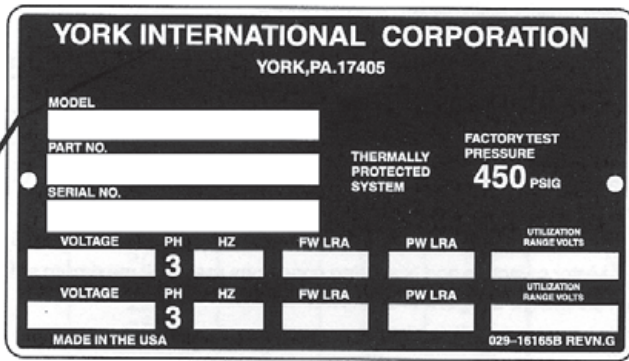
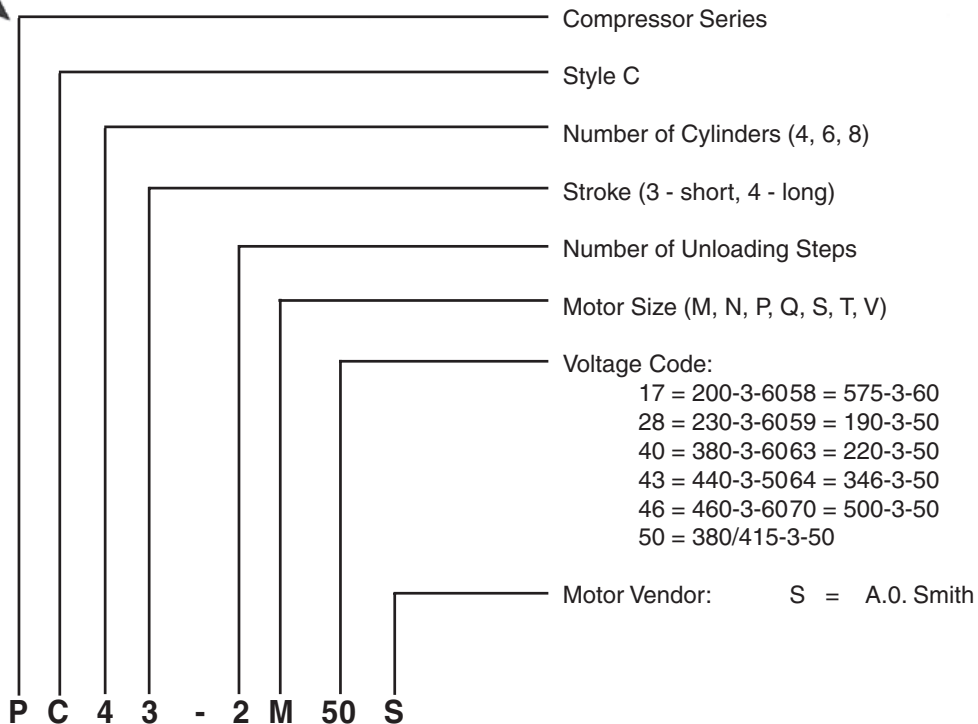


Figure 2 - Compressor Data Plate



1.2 Physical Data

COMPRESSOR MODEL		PC 43	PC 44	PC 63	PC 64	PC 83	PC 84
Number of Cylinders		4	4	6	6	8	8
Nominal Displacement	60 Hz m ³ /h	243	289	342	411	472	562
	50 Hz m ³ /h	202	238	285	338	394	464
Cylinder Bore	mm	95.25	95.25	95.25	95.25	95.25	95.25
Cylinder Stroke	mm	81.28	96.52	76.20	91.44	78.74	93.98
Suction Connection (OD female)	inch	3 1/8	3 1/8	3 1/8	3 1/8	3 5/8	3 5/8
Discharge Connection (OD female)	inch	2 5/8	2 5/8	2 5/8	2 5/8	3 1/8	3 1/8
Oil Charge	ltr.	11	11	11	11	11	11
Weight including drive motor (avg.)	kg	655	655	740	740	875	875

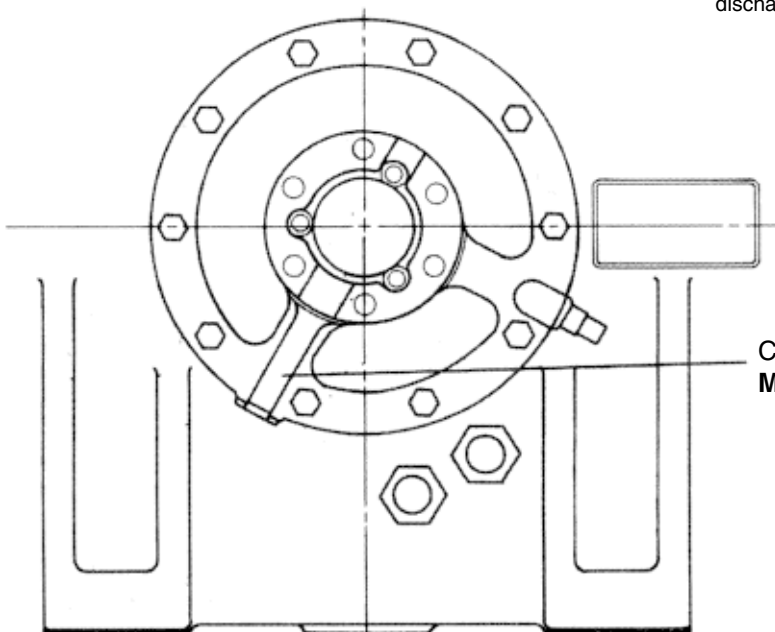
1.3 Limitations

1.3.1 Voltage Limitations

The following voltage limitations are absolute and operation beyond these limits may cause serious damage to the compressor or motor.

Nameplate Voltage	Minimum Voltage	Maximum Voltage
190-3-50	171	208
220-3-50	198	242
346-3-50	311	381
380/415 5-3-50	342	440
440-3-50	396	484
500-3-50	450	550
200-3-60	180	220
230-3-60	207	253
380-3-60	355	415
460-3-60	414	506
575-3-60	517	633

Figure 3 - Checking Oil Temperature



1.3.2 Compressor Operating Limitations

Maximum Compression Ratio	9.5:1
Maximum Operating Differential	22.4 bar
Maximum Suction Pressure	6.55 bar
Maximum Discharge Temperature	135 °C
Superheat (Nominal at compressor)	11 °C
Min. Oil Pressure (above suction pressure)	2.75 bar
Maximum Oil Temperature ¹	71 °C
Maximum Sat. Discharge Temperature ²	65.5 °C
Maximum Ambient Temperature	55 °C
Minimum Ambient Temperature	-18 °C

¹ Measured externally on pump suction boss as shown in Figure 3.

² Motor selection and operating conditions may limit maximum saturated discharge temperature to lower values.

1.4 Electrical Data

Motor Size Code ²	Voltage	Phase	Hertz	Rated Amps	Locked Rotor Amps		Maximum Duel Fuse Size ¹	Minimum Circuit Ampacity	Disconnect Switch Size (Amps) ³
					A/L	PW			
M	190	3	50	177	764	585	225	221	400
	220	3	50	157	731	560	200	196	200
	346	3	50	98	465	343	125	123	200
	380/415	3	50	87	392	290	110	109	200
	500	3	50	68	322	238	90	85	100
	200	3	60	202	913	731	250	253	400
	230	3	60	174	794	636	225	218	400
	380	3	60	105	480	385	125	131	200
	460	3	60	87	397	318	110	109	200
	575	3	60	70	318	254	90	88	100
N	190	3	50	214	895	712	250	268	400
	220	3	50	183	856	635	225	229	400
	346	3	50	115	544	400	150	144	200
	380/415	3	50	104	459	358	125	130	200
	500	3	50	84	377	277	110	105	200
	200	3	60	238	1099	865	300	298	400
	230	3	60	207	956	752	250	259	400
	380	3	60	124	579	412	150	155	200
	460	3	60	104	478	376	125	130	200
	575	3	60	83	382	300	100	104	100
P	190	3	50	251	930	776	300	314	400
	220	3	50	217	876	709	250	271	400
	346	3	50	133	557	412	175	166	200
	380/415	3	50	121	488	400	150	151	200
	500	3	50	97	386	310	125	121	200
	200	3	60	280	1203	950	350	350	400
	230	3	60	244	1046	826	300	305	400
	380	3	60	144	633	467	175	180	200
	460	3	60	122	523	413	150	153	200
	575	3	60	97	418	330	125	121	200
Q	190	3	50	282	1241	964	350	353	400
	220	3	50	244	1187	876	300	305	400
	346	3	50	155	755	557	200	194	200
	380/415	3	50	139	637	470	175	174	200
	500	3	50	108	522	386	125	135	200
	200	3	60	318	1541	1101	400	398	400
	230	3	60	275	1340	976	350	344	400
	380	3	60	166	806	591	200	208	200
	460	3	60	137	670	488	175	171	200
	575	3	60	110	536	390	150	138	200
S	190	3	50	343	1484	1098	400	429	400
	220	3	50	298	1420	1051	400	373	400
	346	3	50	189	903	668	250	236	400
	380/415	3	50	167	761	570	225	205	400
	440	3	50	148	710	526	200	185	200
	500	3	50	131	625	462	175	164	200
	200	3	60	387	1746	1322	500	484	600
	230	3	60	336	1518	1150	450	420	600
	380	3	60	204	919	696	250	255	400
	460	3	60	168	759	575	225	210	400
575	3	60	134	607	460	175	168	200	
T	346	3	50	234	1110	838	300	293	400
	380/415	3	50	207	975	741	250	259	400
	440	3	50	184	873	659	225	230	400
	500	3	50	163	768	580	200	204	200
	380	3	60	247	1143	862	300	309	400
	460	3	60	210	960	724	250	263	400
	575	3	60	168	768	579	200	210	200
V	346	3	50	269	1210	948	350	336	400
	380/415	3	50	243	1077	853	300	304	400
	440	3	50	213	950	721	250	266	400
	500	3	50	191	836	656	250	239	400
	380	3	60	280	1271	997	350	350	400
	460	3	60	238	1050	830	300	298	400
575	3	60	190	840	664	250	238	400	

1. When optional external overloads are used, fuse sizes should be increased to approx. 175% of nameplate amps.

2. Sixth character in compressor model designation. (See NOMENCLATURE)

3. Based on National Electric Code (NEC). Switch is rated for isolating duty only - Do Not Open Under Load.

1.5 Threaded Fastener Torques and Sequence

When assembling a compressor or compressor parts, it is essential to tighten all threaded fasteners to their proper torque, using an accurate torque wrench. Table 1 gives the recommended torque settings for this compressor.

All threads should be LIGHTLY oiled with York 'C' oil or York 'H' oil as appropriate, except where intended for use with a sealing compound.

When tightening the screws on the top heads, hand hole covers, oil pump bearing head, motor cover, and terminal block, it is important that the screws be tightened in the proper sequence. This is essential to eliminate leaks and/or damage to the parts or gaskets. Insert all cap screws or bolts and tighten them lightly. Then, using a torque wrench, tighten each gradually to its proper torque setting following the recommended tightening sequence shown in Figure 4.

It is advisable to "double-check" the torque on all screws before starting the compressor.

Figure 4 - Screw Tightening Sequence

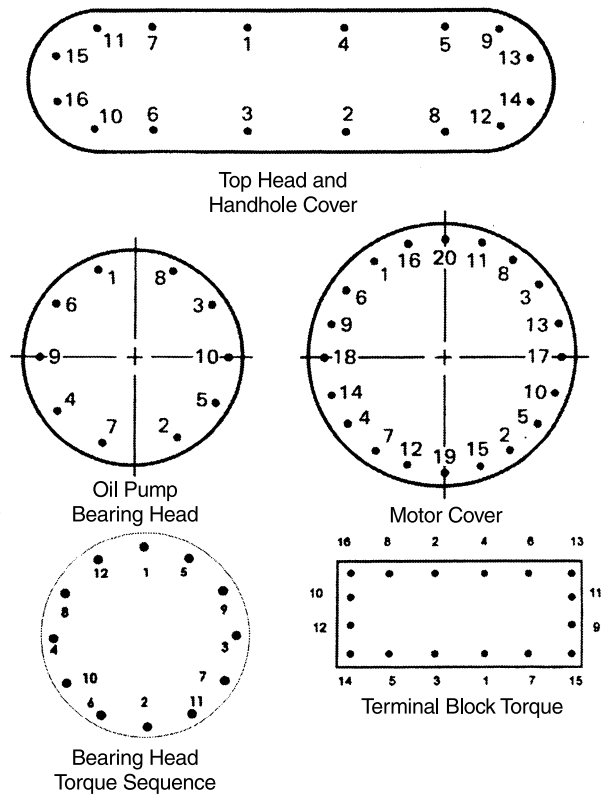
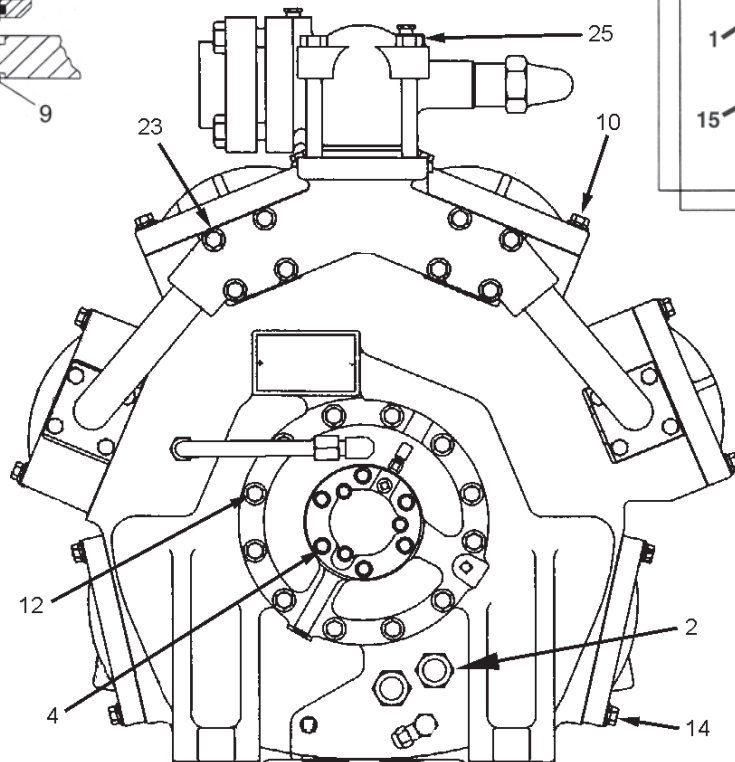
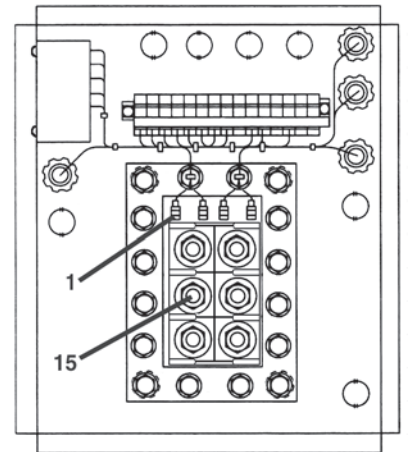
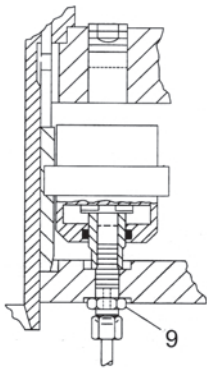
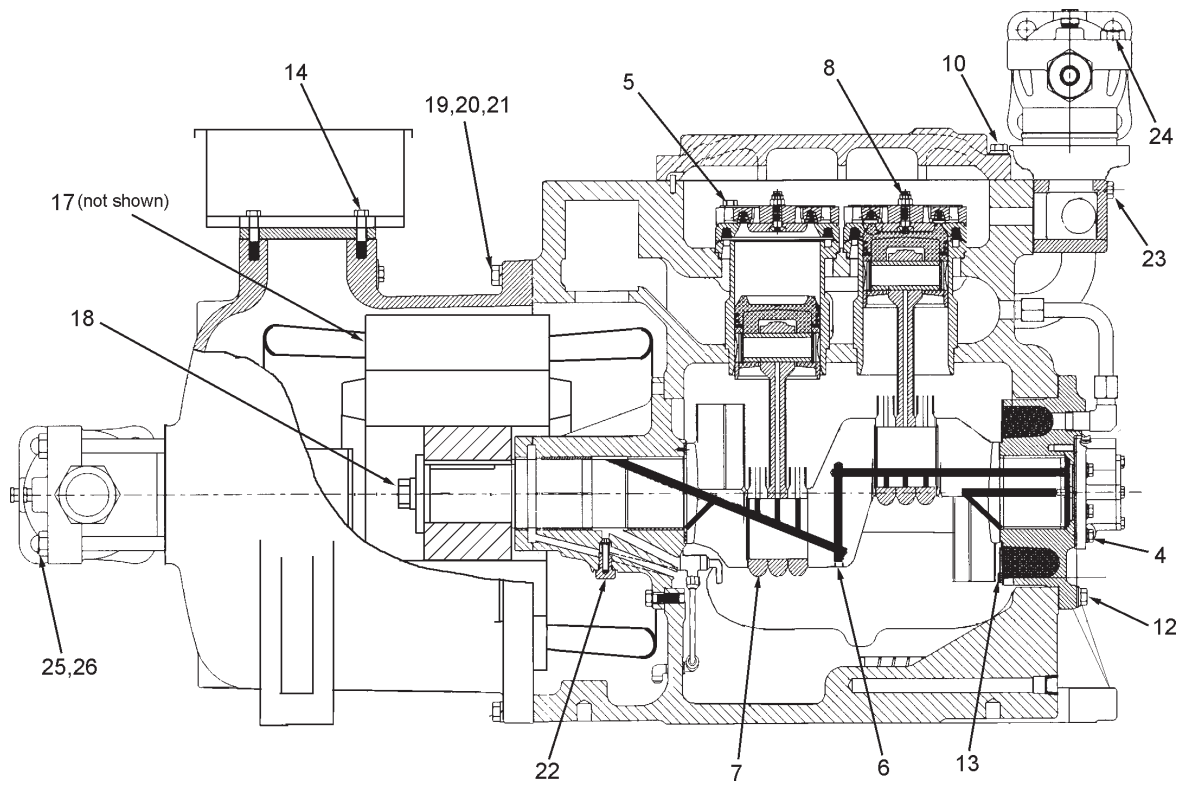


Table 1 - Thread Fastener Torques

ITEM REF.	LOCATION	THREAD	GRADE	RECOMMENDED TORQUE		
				lb-in	lb-ft	Nm
1	Motor Protector Terminal Nut*	No. 8-32 UNC	-	30	-	3.4
2	Sight Glass	1-1/2" NPT	-	-	95-100	129-136
3	Solenoid Valve (on hand hole cover)	1/4" -20 UNC	5	112-129	-	12.6-14.6
4	Oil Pump	3/8" -18 UNC	8	-	27-32	37-44
5	Discharge Valve Assy. Mounting *	3/8 -16 UNC	5	-	30	41
6	Crankshaft Set Screw	3/8 -16 UNC	-	-	12-15	16-20
7	Connecting Rod Screw *	5/16 -18 UNC	5	260	-	29.5
8	Discharge Valve Cage Assembly Nut *	3/8 -24 UNF	-	-	45-48	61-65
9	Unloader Power Assembly.	3/8 -24 UNF	-	-	15	20
10	Access Cover / Top Head	7/16 -14 UNC	8	-	78-90	106-122
11	Motor End Bearing Head	7/16 -14 UNC	5	-	55-64	75-87
12	Pump End Bearing Head	7/16 -14 UNC	8	-	78-90	106-122
13	Precipitator Cover	1/4" -20 UNC	2	73-83	-	8.3-9.4
14	Hand Hole Cover	7/16 -14 UNC	8	-	78-90	106-123
15	Terminal Block	3/8 -16 UNC	5	-	34-40	46-54
16	Terminal Stud Nut	7/16 -20 UNC	-	-	19-22	26-30
17	Stator Mounting Bolt	7/16 -14 UNC	5	-	55-64	75-87
18	Rotor	5/8 -11 UNC	2	-	107-123	146-167
19	Motor Cover Set Screw	1/2 -13 UNC	8	-	119-138	162-188
20	Motor Cover Stud	1/2 -13 UNC	8	-	119-138	162-88
21	Motor Cover Nut	1/2 -13 UNC	5	-	96-110	130-150
22	Oil Pressure Relief Cap	9/16 -18 UNF	-	-	30	41
23	Discharge Manifold	7/16 -14 UNC	5	-	34-40	46-54
24	Discharge Shut-off Valve	5/8-11 UNC	2	-	107-123	145-167
25	Suction Shut-off Valve - bolts up to 6" (150mm)	5/8-11 UNC	2	-	107-123	145-167
26	Suction Shut-off Valve - bolts over 6" (150mm)	5/8-11 UNC	2	-	68-78	92-106

* Critical Items - Torque Only As Specified.



For. Key
Refer to Table 1

1.6 Gaskets and 'O' Rings

It is recommended that new gaskets and/or 'O' rings are installed each time a compressor part is removed or if the compressor is disassembled. When installing gaskets ensure that any holes in the gasket for oil passage etc. are aligned with the matching holes in the related part or parts. Also, check that 'O' rings are not cut or damaged in any way. Gaskets and 'O' rings should be coated LIGHTLY with YORK 'C' oil or YORK 'H' oil, as appropriate, before installation. Do not apply oil to the mating surfaces. Grease must never be applied to gaskets or 'O' rings.

1.7 Handling Compressor Parts

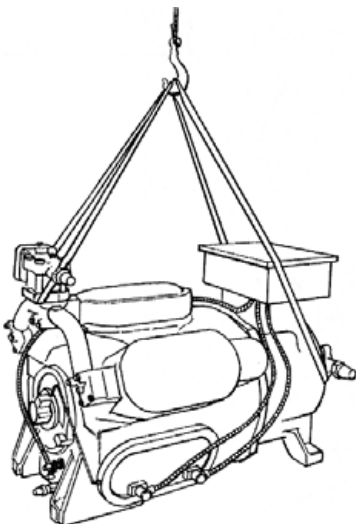
Internal machined parts of the compressor such as valves, pistons, shaft seal and crankshaft, must be protected from damage due to crushing or scratching. They should be coated with oil, wrapped in clean tough paper and stored in a safe place.

Before reassembling any compressor part, it should be thoroughly cleaned by immersing or flushing it with an approved safety solvent and allowing it to dry in air without touching any wearing or contact surfaces. After it is cleaned, each part should be carefully examined to be sure it is free from cracks, flaws, bump marks, burrs or distortion and the part be oiled to prevent damage due to rusting or oxidation. New clean YORK "C" oil or YORK "H" oil, as appropriate, should be applied to the wearing surfaces of any part just before it is installed.

1.8 Rigging the compressor

If it becomes necessary to remove a compressor from a unit or base, proper rigging methods must be used to avoid damage to the equipment and/or injury to service personnel. Portable cranes must be of adequate capacity and properly positioned and blocked to prevent tipping or slipping while lifting the compressor.

Figure 5 - Rigging the Compressor



Do not attempt to lift a compressor with eye-bolts threaded into tapped holes in the compressor casing. Instead, use approved and well maintained slings as illustrated in Figure 5. Be sure slings are of adequate strength to safely lift the compressor. Compressor weights are given in PHYSICAL DATA, page 4. The use of chains or cables is not recommended.

1.9 Compressor Oil System

The compressor oil system has two functions: 1. Lubrication of all moving part, and 2. Providing hydraulic pressure for operation of cylinder unloading system. Item numbers in the text below refer to Fig. 6 on page 9.

ONLY YORK "C" (R22) OR YORK "H" (R134a & R407C) REFRIGERATION OIL SHOULD BE USED IN THESE COMPRESSORS.

OIL PUMP - The internal eccentric lobe type oil pump (1) is connected directly to the crankshaft and is designed to operate in either direction of rotation. Suction to the pump is via internal passages in the bearing and compressor housings (2) and an internal suction tube connected to the oil strainer. The oil strainer consists of a large area wire mesh cylinder with sheet metal ends and an internal spring to prevent collapse of the strainer screen if it should become coated with foreign material.

LUBRICATION, MAIN BEARINGS, OIL PUMP END & MOTOR END - Oil under pressure leaves the oil pump and flows internally through the pump housing to lubricate the pump end bearing. Simultaneously, oil is fed through internal oil ways in the crankshaft to supply oil to the thrust collar and motor end bearings (3).

The thrust collars position the crankshaft longitudinally in the compressor housing and take the thrust forces imposed upon the shaft. Radial grooves for oil are provided on the inner or thrust surface in contact with the crankshaft shoulder and are lubricated via oil ways in the crankshaft (4).

Oil returns to the crankcase from between the motor end main bearings via an oil eductor tee (5) causing suction in the eductor pick up pipe. This is connected to an elbow at the bottom of the motor housing and returns any oil in the housing back to the crankcase.

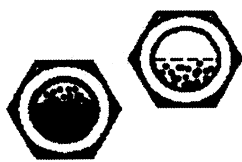
An oil pressure relief valve (6) installed in the motor end bearing housing maintains oil pressure by draining excess oil directly back to the crankcase. Normal oil pressure is 6.5 to 7.2 bar (50 Hz), 8.9 to 10.3 bar (60 Hz) above crankcase (suction) pressure. An oil passage in the oil pump housing connects to an external line which in turn supplies oil pressure to the compressor hand hole cover on which the capacity control solenoid valves are mounted. (Also see following section on CAPACITY CONTROL SYSTEM).

Oil is prevented from draining from the motor end main bearing into the motor casing by an oil control bearing (7) and an associated oil drain port back to the crankcase.

LUBRICATION, CYLINDER WALLS, CONNECTING ROD AND PISTON BEARINGS - Oil under pressure is conducted through drilled oil ways in the crankshaft to the crank pins. Radially drilled holes in the crank pins then supply oil individually to each connecting rod bearing. A drilled oilway up through the centre of each connecting rod supplies oil to the small end bearings.

Lubrication of the cylinder walls and small end piston bearings is accomplished by oil spray from the spaces between the connecting rod small and big end bearings as pressurized oil leaves these bearings.

OIL LEVEL - The compressor oil supply is contained in the crankcase which is provided with two oil sight glasses (8) to permit a visual check of the oil level. It is extremely important that the oil level in the compressor is within the range between the middle of the lower and middle of the upper sight glasses. Overfilling, especially, may cause oil pick-up by the crankcase breather system leading to excessive oil pumping and possible valve damage. When filling or topping up with oil it is still recommended that the compressor is run on full load for a few minutes before adjusting the oil level. If this is not possible, however, DO NOT add 'a bit extra just in case' as the improved oil management within the compressor significantly reduces oil level variation during operation.



Maximum Acceptable Operating Oil Levels



Minimum Acceptable Operating Oil Levels

The compressor oil level must be maintained between the middle of the upper and middle of the lower sight glass at all operating conditions. At part load operating conditions, it is not abnormal for the oil level to be in the lower sight glass.

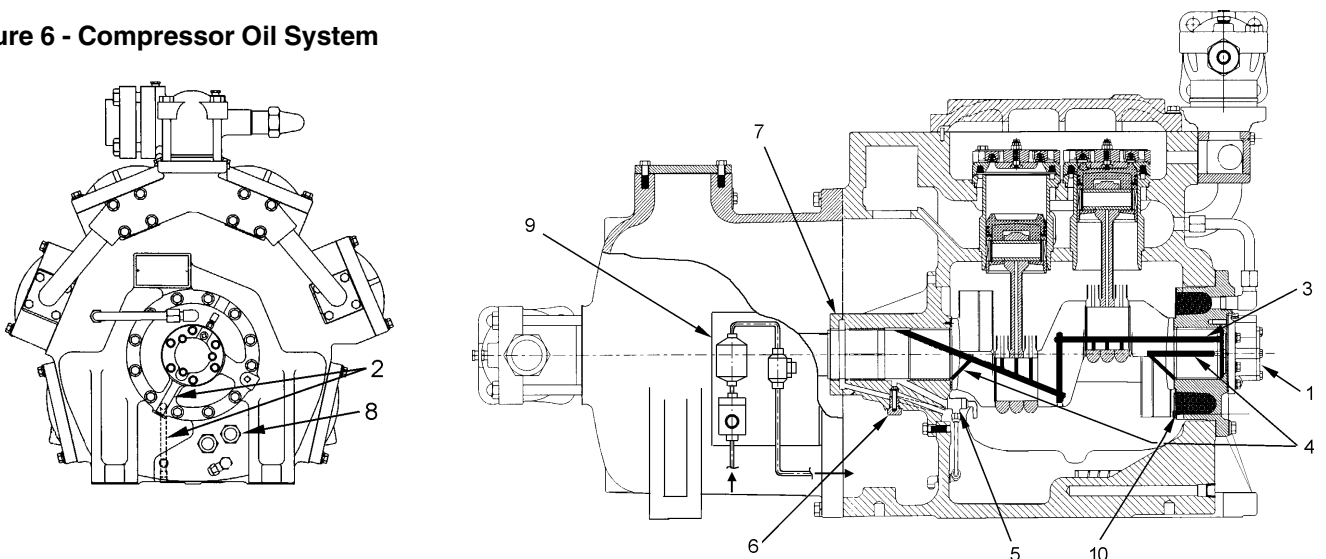
CAPACITY CONTROL OIL PRESSURE - In addition to supplying oil pressure to the compressor lubrication system as described above, the compressor oil pump also provides oil pressure to operate the compressor Capacity Control System.

An oil passage in the oil pump housing connects to an external line which in turn supplies oil pressure to the compressor hand hole cover on which the capacity control solenoid valves are mounted. (Also see following section on CAPACITY CONTROL SYSTEM).

OIL COOLING - Four cylinder compressors which can be unloaded to single cylinder operation and six/eight cylinder compressors which can be unloaded to two cylinder operation are equipped with liquid injection oil cooling. This prevents overheating of the oil during prolonged operation at minimum load step. Liquid refrigerant is taken from the main liquid line via a solenoid valve, filter and isolation valve sub-assembly (9) mounted externally on the compressor. The liquid is then injected via a 1.2 mm orifice into the suction plenum of each bank of unloaded cylinders at the oil pump end of the compressor. The solenoid valve is controlled to maintain oil temperature between 55 °C and 60 °C.

CRANKCASE VENTILATION - To prevent build up of refrigerant, the crankcase is vented to the suction plenum of the permanently loaded pair of cylinders. Ventilation is via a hole on the bottom of the oil pump end bearing housing (10), through the housing and then through an external connection. A wire mesh within the housing minimises oil carry over.

Figure 6 - Compressor Oil System



1.10 Capacity Control System

Capacity of the YORK PC Compressor is controlled automatically. Externally mounted solenoids, controlled by a signal from a remote device provide reliable response to system load and assure that the compressor starts at its minimum step of capacity

Compressor capacity is reduced by unloading one, or more, cylinders as required. Some cylinders are not equipped with unloaders. This prevents the possibility of overheating, since a definite minimum volume of cool refrigerant gas flows through the compressor at all times during operation regardless of load conditions.

Unloading is accomplished by lifting and holding the suction valve off its seat. The gas drawn into the unloaded cylinders on the down stroke of the piston, is pumped back into the suction chamber of the compressor housing, without compression, when the piston returns on its up stroke. All cylinders, equipped with unloaders, will remain unloaded on start-up until the oil fluid pressure has built up to normal, regardless of load conditions.

The compressor capacity control system is actuated by means of high pressure oil fluid. Oil pressure to the power element loads the associated cylinders and release of this pressure unloads them. All piping between the capacity control solenoid valves and the individual power elements is located inside the crankcase.

The unloader power elements are fastened into the compressor deck between the suction gas chamber and the crankcase. This element consists of a stationary piston and a movable cylinder. The movable cylinder engages the unloader sleeve which is free to move up or down on the cylinder sleeve. When oil fluid pressure is admitted to the power element, the movable cylinder pushes the unloader sleeve down and permits the suction valve to operate normally and permit refrigerant gas compression. When oil fluid pressure to the power element is relieved through the capacity control solenoid valves, the spring loaded cylinder moves the unloader sleeve up, raising the suction valve off its seat by means of lift pins. In this position the cylinder is completely unloaded. (See Figure 7)

Solenoid valves are de-energized to load the compressor and energized to unload the compressor.

The compressor handhole cover is stamped 1, 2 and 3 adjacent to the solenoid valves. When wiring the compressor unit, the capacity control solenoid valves should be wired so that solenoid No. 1 is de-energized first, solenoid No. 2 is de-energizes second, and solenoid No. 3 is de-energizes last. They should be energized in the reverse order. This will assure that the compressor cylinders load (and unload) in the proper sequence.

The number of capacity steps varies with each compressor and its application. Figure 8 and the accompanying table show the different arrangements that are available.

Figure 7 - Capacity Control Operations

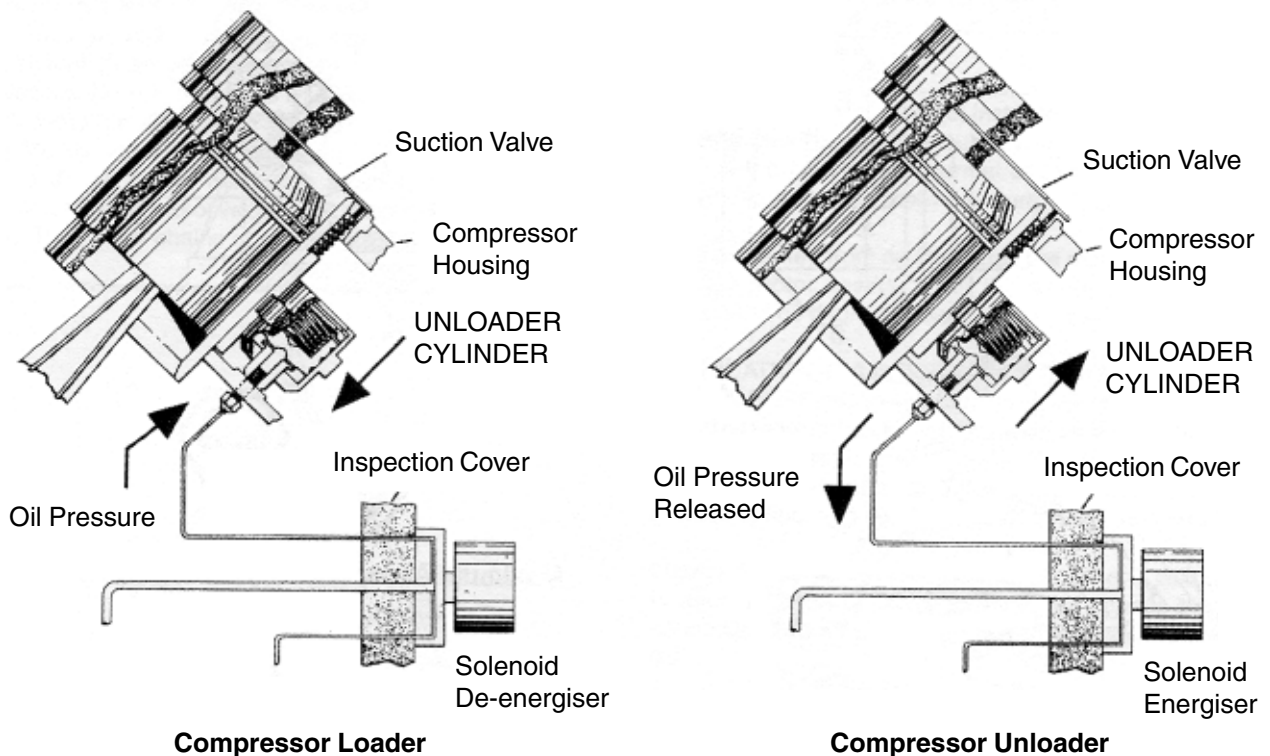
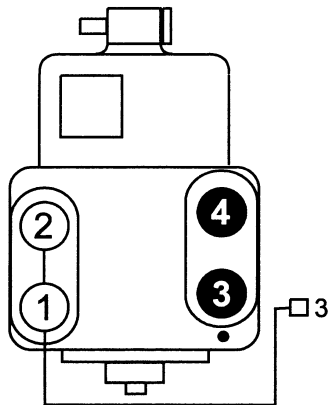
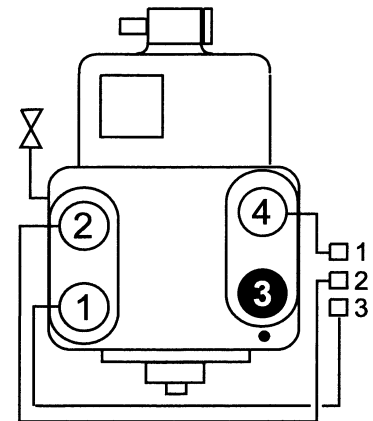


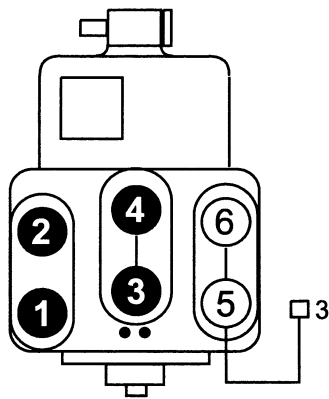
Figure 8 - Cylinder Unloading Steps



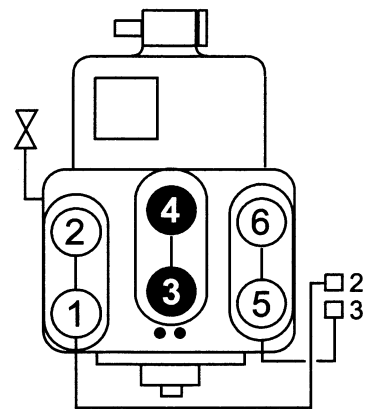
4 Cylinder - 1 Step Unloading
(100%, 50%)



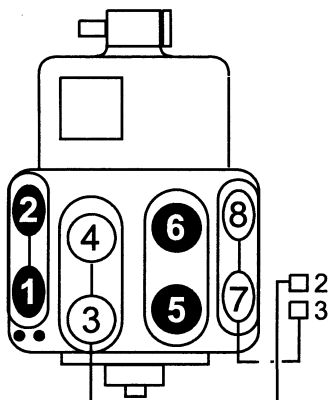
4 Cylinder - 3 Step Unloading



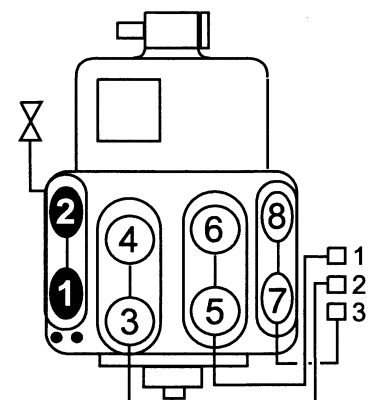
6 Cylinder - 1 Step Unloading
(100%, 66%)



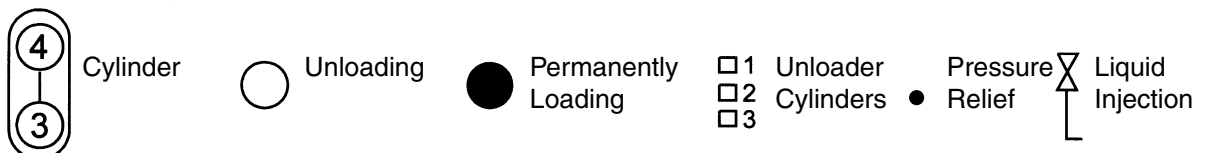
6 Cylinder - 2 Step Unloading



8 Cylinder - 2 Step Unloading
(100%, 75%, 50%)



8 Cylinder - 3 Step Unloading



1.11 Valve Assemblies

York Model PC Compressor cylinders are fitted with wave spring type suction and discharge valve assemblies. These valves are suitable for operation over a wide range of conditions and refrigerant types and are common for all compressors in the range.

1.12 Ordering Renewal Parts

All compressor parts are designed and manufactured for a specific application. They are selected to withstand the pressures normally associated with compressor operation. The substitution of non-standard parts is not recommended as these parts could cause serious damage to the compressor or operator. Parts should be replaced with genuine YORK Renewal Parts. The Renewal Parts Manual Form 180.23-RP4 lists replacement parts for these compressors. When ordering parts be sure to follow all instructions included in the Renewal Parts manual.

1.13 Analysis of Faulty Compressor Valve Operation

The operator soon becomes accustomed to the sound of the compressor when it is running under normal conditions. As long as the compressor runs normally, and the sound does not change, it can safely be assumed that the compressor is operating properly. Any unusual noise within the compressor should be investigated immediately.

External indications of trouble within the compressor are as follows:

1. When operating on suction pressure control, long "on" cycles with short "off" periods may indicate leaking or broken compressor valves, piston rings or both.
2. A definite rise in temperature of the discharge gas may indicate defective suction or discharge valves, or a leaking relief valve, or both.
3. Failure to pull down is a possible indication of a broken suction or discharge valve, or both.
4. Unusual pressure gauge readings.
5. The operator should feel the heads periodically to check for hot spots or one particular head which is running hot. If this condition occurs, it is an indication of broken or leaking valves within that bank of cylinders.

If leaking or broken valves are suspected, the heads should be removed and the valves should be examined for breakage.



Some cylinders are not equipped with unloaders. (See Figure 8.) This prevents the possibility of overheating, since a definite minimum volume of cool refrigerant gas flows through the compressor at all times during operation, regardless of load conditions. The permanently loaded cylinders do not have unloader sleeves, unloader device, or lift pins.

2 DISASSEMBLY & RE-ASSEMBLY

2.1 General

Service on these compressors should be performed only by qualified service personnel, trained in the service of this type of equipment, and equipped with the proper tools and familiar with their use.

Before opening a compressor for repairs, the following paragraphs should be thoroughly checked to aid in locating and correcting the trouble:

1. Check the compressor oil level. (See page 9.)
2. Check the refrigerant charge to be sure the system is fully charged. The unit sight glass should be clean and dry.
3. Be sure the faulty operation of the unit is caused by the compressor and not some other part of the unit. Unit safety and operating controls should be checked for proper operation as explained in the SERVICE INSTRUCTION included with the unit.
4. The voltage at the compressor motor must be within the limits shown on the unit data plate.
5. Check for a burnout in the motor windings. This may be evidenced by discoloration of the compressor oil or by a burnt door. A further check for motor burnout would be to use an ohmmeter and check if the windings are grounded, or check for an open circuit between the motor terminals. These are an indication of motor burnout.
6. Dismantle only the part of the semi-hermetic compressor necessary to correct the fault.
7. Never open any part of a semi-hermetic compressor which is under vacuum; be sure there is some pressure inside the compressor. If the compressor is opened while under a vacuum, moisture laden air may be drawn into the system and rapid corrosion of internal machined parts may result. The refrigerant is an excellent cleaning agent and will remove any natural protective coating from the iron or steel, leaving the raw metal exposed.
8. Internal machined parts of the compressor such as valves, pistons and crankshaft must be immediately protected as they are removed from the compressor. See HANDLING COMPRESSOR PARTS, page 8.
9. Before removing the cylinder heads, each head should be match marked in relation to its position on the housing. When reinstalling a head it is important to fully tighten the head to the discharge manifold BEFORE tightening down the head to the compressor.

10. When assembling a compressor or compressor parts, it is essential to draw all nuts and cap screws to their proper torque, using an accurate torque wrench. See THREADED FASTENER TORQUES & SEQUENCE, page 6.



Before dis-assembling any part of the PC Compressor, be sure the following Safety Precautions are read and observed.

2.2 Handling

When performing service on the compressor it may be convenient to remove it from the unit base. If so, refer to RIGGING THE COMPRESSOR, page 8.

2.3 Disconnect Electrical Supply

Before attempting any service on the compressor, all disconnect switches must be locked out and tagged to prevent accidental starting of the compressor and/or electrical shock.

2.4 Reclaiming Refrigerant before Repairs

Before opening the compressor for repairs, the pressure within the compressor must be relieved. Connect an approved refrigerant reclaim unit to the one or both of the suction and discharge service valve back seat connections. Close both valves fully and if liquid injection oil cooling is fitted also close the injection ball valve. Reclaim the refrigerant within the compressor.

2.5 Evacuation after Repairs

During the compressor repair procedure, the crankcase and oil should be examined for the presence of metal particles. This would indicate wearing of parts within the compressor. New oil should be charged into the compressor using the oil charging valve. (See Physical Data.)

The compressor should be given a thorough lead test as explained in instruction Form 55.05-NM.

If the compressor was open for only a few hours, it should be evacuated to a pressure of 300 microns using a quality vacuum pump and following the procedure outlined in instruction Form 55.05-NM

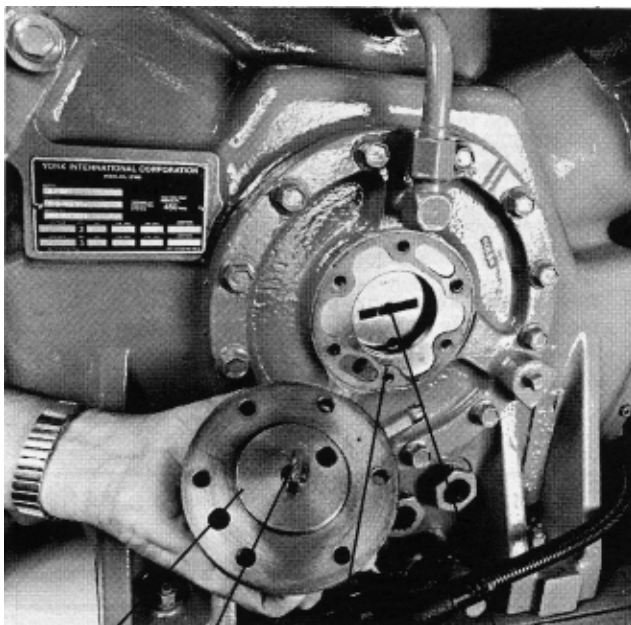
If the compressor was open for more than 24 hours, the compressor should be completely dehydrated; then evacuated to a pressure of 300 microns following the procedures outlined of Form 55-05-NM

2.6 Replacing Oil Pump

If it becomes necessary to replace the oil pump, a complete new pump assembly should be installed. To replace the oil pump, refer to Figure 9 and proceed as follows:

1. Remove the oil pump cover cap screws and pull the pump assembly out of the bearing head.
2. Install the new oil pump assembly using a new gasket. Be sure that the flat end of the pump drive shaft engages the slot in the end of the compressor crankshaft and the word "TOP" is at the top.
3. Tighten the pump cover cap screws evenly by drawing down opposite and alternate pairs.

Figure 9 - Compressor Oil Pump



Oil Pump
Gasket
Pump Drive Shaft
Slot for Pump Drive

2.7 Capacity Control Solenoids

Normally, the coil is the only part of the solenoid valve that requires replacement. To replace the coil, proceed as follows:

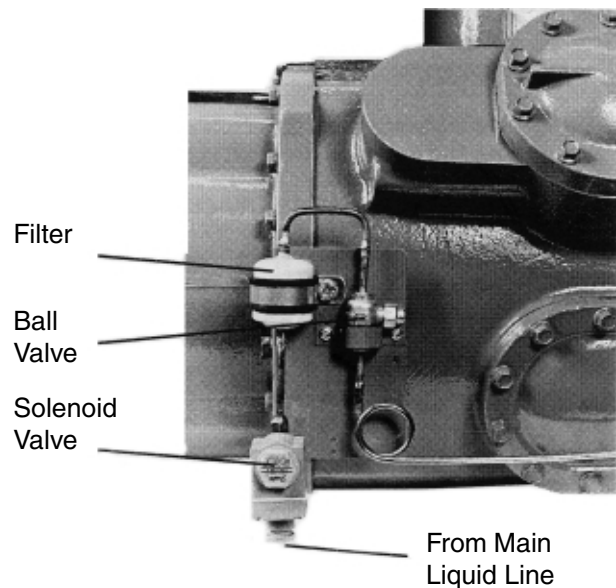
1. Remove the conduit and the wires from the solenoid valve.
2. Remove the screw from the top centre of the valve and remove the coil.
3. Install the new coil. Use caution when reconnecting the conduit to avoid placing stress on the valve. Stress on the valve may deform the stem and cause the valve to malfunction. Reconnect the wires.

If the solenoid valve must be replaced, proceed as follows:

1. Remove the solenoid coil as described above.
2. Place a suitable container below the solenoid valve to catch any oil which may leak out then remove the bolts holding the valve to the hand hole cover plate.
3. Replace the valve.
4. Reinstall the solenoid coil and reconnect the wires and conduit.

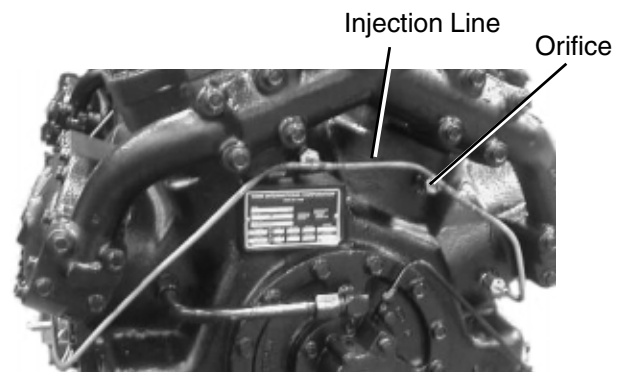
2.8 Injection Cooling System

Some versions of the Model PC compressor are fitted with liquid injection oil cooling - see pages 9 and 11.



Liquid is injected via an orifice in the suction plenum of the unloading cylinder bank(s). If the orifice needs to be replaced proceed as follows :

1. Disconnect the external injection line from the injection orifice and carefully ease the pipe away.
2. Remove the orifice.
3. Clean threads thoroughly. Fit new orifice using LOCTITE 270 thread-lock taking care to avoid any contamination of the orifice hole.



2.8 Crankcase Oil Heater

The crankshaft heater is located on the oil pump end of the compressor. The heater is located within a well in the compressor casing; it is not in direct contact with the refrigerant or oil. To replace the heater, remove the conduit and disconnect the heater wires. Pull the heater from the compressor. (See Figure 10.)

When installing the new heater, coat it with conductive compound. (York Part No., 013-00898)

2.9 Oil Strainer

The compressor oil strainer does not contain a flare fitting in the line between the strainer and the compressor crankcase. The one-piece line is rolled into a hole in the compressor crankcase and therefore is not readily removable in the field.

2.10 Removing Suction Strainer

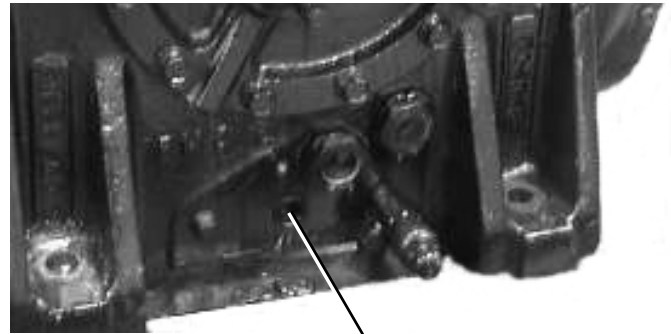
The compressor suction strainer is located in the motor housing cover just under the suction stop valve. (See Figure 11) To clean or replace the suction strainer proceed as follows:

1. Remove the four bolts which hold the suction stop valve to the motor housing cover.
2. Pull the suction strainer out of the housing and clean with an approved safety solvent or install a new strainer if required.
3. Replace the suction strainer using new gaskets. Note that two gaskets are used; one between the suction stop valve and the suction strainer, the other between the suction strainer and the compressor housing.
4. Bolt the suction valve in place, making sure that it seats squarely.

2.11 Replacing Oil Sight Glasses

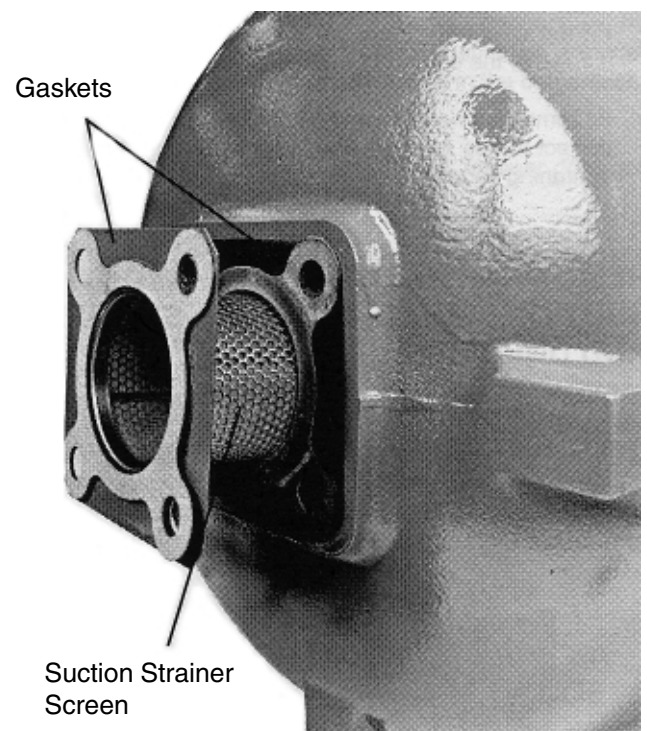
Compressors are equipped with 2 plug type sight glasses located on the pump end of the compressor. (See Figure 12.) If they become broken or damaged in any way, they must be replaced. Proceed as follows:

1. Drain the oil level below the sight glass that is to be replaced.
2. Remove the damaged sight glass(es).
3. Clean the threads in the housing and on the new sight glass with an approved safety solvent.
5. Apply LOCTITE to the threads of the sight glass and screw it into the compressor housing using a socket wrench. Do not over-tighten as this may crack the glass. (See Table 1.)



Crankcase Heater
(Removed)

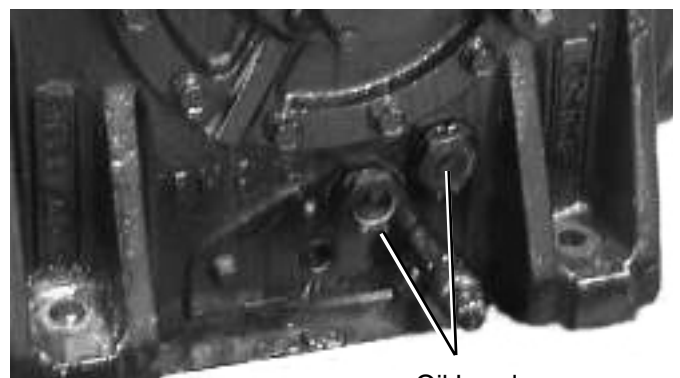
Figure 10 - Crankcase Heater



Gaskets

Suction Strainer
Screen

Figure 11 - Crankcase Heater



Oil Level
Sight Glasses

Figure 12 - Oil Level Sight Glasses

2.12 Removing and Replacing Discharge Manifold and Top Heads

To remove the discharge manifold and the compressor top heads, proceed as follows:

1. Match mark each head in relation to its position on the housing.
2. Disconnect the discharge manifold from the compressor top heads and remove the heads from the compressor.

To replace the discharge manifold and the compressor top heads, proceed as follows:

1. Line up each top head by loosely fitting two or three head screws.
2. Fit the discharge manifold to head and fully tighten the screws to the correct torque - see Table 1
3. Fit remaining head screws and tighten progressively to the correct torque setting - see Table 1. Be sure to use proper tightening sequence as shown in Figure 4.

2.13 Removing the Discharge and Suction Valves, Cylinder Sleeves and Unloader Sleeves

To remove the valve assemblies, cylinder sleeves and unloader sleeves, refer to Figure 13, 14 and 15 and proceed as follows:

1. Disconnect the discharge manifold from the compressor top heads and remove the top heads from the compressor.
2. Remove the four cap screws that secure the discharge valve cage assembly to the housing and lift out this assembly. The inner discharge valve plate, the discharge valve, and the discharge valve springs will come out with the cage as an assembly.
3. Slip the fingers inside the suction valve plate and under the suction valve. Lift off the suction valve plate, the suction valve, and suction valve springs.
4. Lift the cylinder sleeve, with unloader lift pins, out of the compressor housing. The lift pins are fastened in place by a retaining ring at each end. To remove the lift pins, push the pin up against the spring, remove the upper retaining ring and pull the pin and spring out from the bottom.
5. Remove unloader power element then lift the unloader sleeve out of the housing.
6. Disassemble the discharge valve cage assembly. Remove the locking nut and centre screw. Then lift out the inner discharge valve plate, discharge valve and springs.
7. Clean, dry and oil all parts. If it was necessary to remove the lift pins, replace the retaining rings. Inspect the valves for grooves and replace, if necessary.

Figure 13 - Suction and Discharge Valves

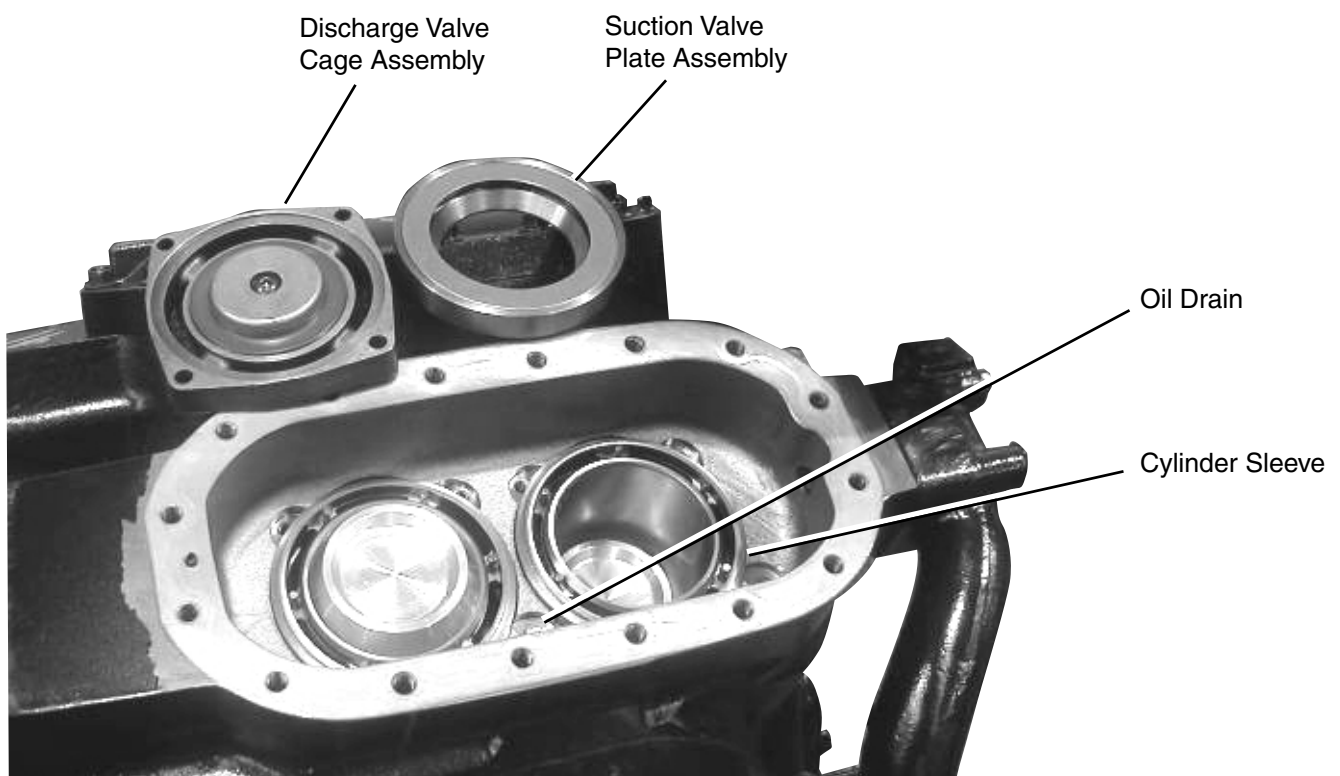


Figure 14 - Discharge Valve Cage Assembly

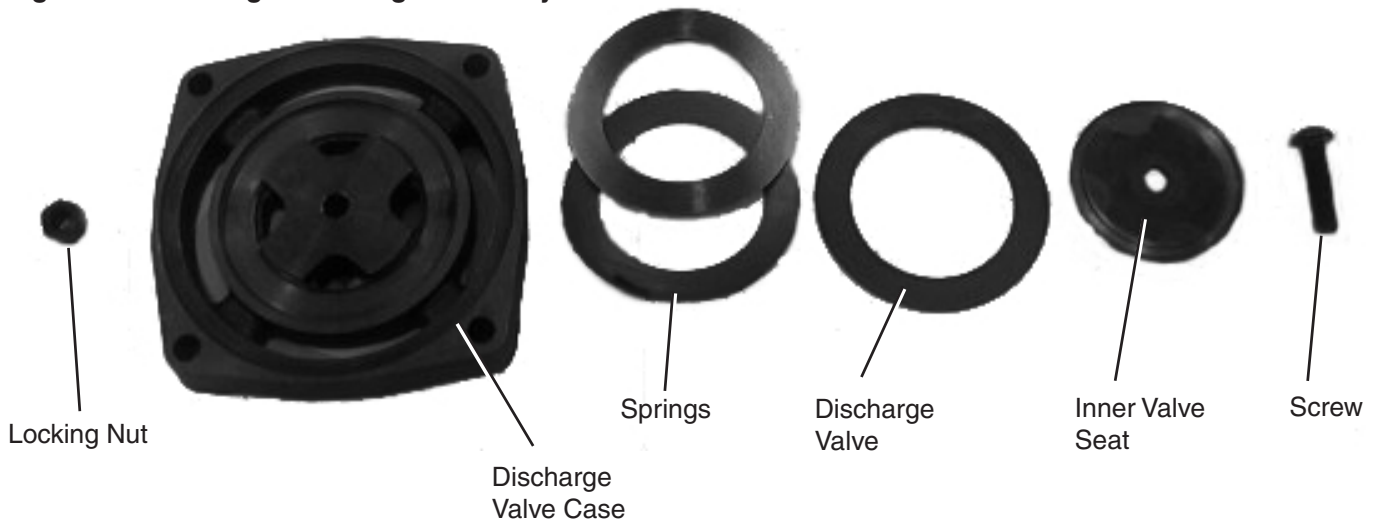
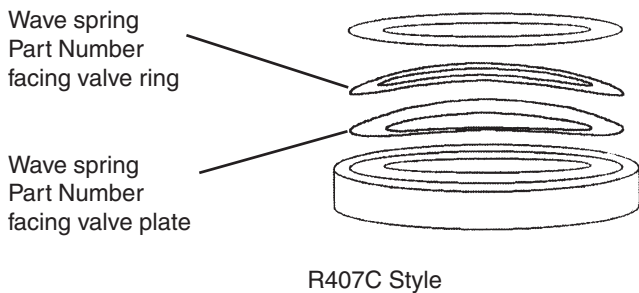


Figure 15 - Suction Valve Assembly



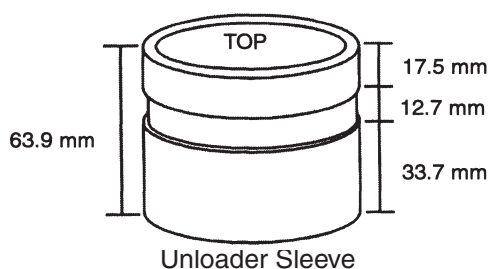
2.14 Installing Unloader Sleeves and Cylinder Sleeves

To install the unloader sleeves and cylinder sleeves refer to Figure 13,14 and 15 and proceed as follows:

1. It is important that the unloader sleeves be installed properly, with the correct end up” (toward the top of the cylinder sleeve) as shown in the illustration below.

Set the unloader sleeve in the compressor housing (with the correct end up) and the notch engaged on the shoulder on the unloader device. Be sure the unloader sleeve is centred in the bored recess in the compressor deck.

2. Be sure the lift pins, with springs and retainer rings are inserted into the cylinder sleeves.



3. Carefully lower the cylinder sleeve over the piston and inside of the unloader sleeve.

Push the cylinder sleeve down until it enters the hole in the lower compressor deck. Do not force the cylinder sleeve. The lower end of the cylinder sleeve is chamfered to facilitate compressing the piston rings and entering the compressor deck. Enter the sleeve squarely into the housing and rotate it as it is being lowered. If the cylinder sleeve is properly seated in the housing, it should not bind but should spring up approximately 3 mm due to the action of the unloader device.

2.15 Installing Suction and Discharge Valves

When reinstalling valves, install as originally removed, mating the seats; do not turn over.

To install the suction and discharge valves refer to Figure 13, 14 and 15, the table on page 12, and proceed as follows:

1. Assemble the suction valve assembly.
 - a. Place the two wave springs together with the part number markings facing away from each other (i.e. on the outside). Rotate the springs against each other until they “nest” together. In the correct position the outer edges should touch each other at most points whilst the inner edges should be separated by a uniform gap of about 3 mm (1/8 inch). Maintaining the correct orientation of the two springs, place them carefully into the recess in the valve plate, followed by the valve ring.
 - b. To hold the suction valve and springs firmly in place during installation, two sheet metal clips should be placed over the suction valve plate and suction valve. These clips may be ordered from the Factory - York Part No. 064-37274.

2. Assemble the discharge valve cage assembly.
 - a. Following the same procedure as given in 1a. for the suction valves, place the two discharge valve wave springs together with the part numbers on the outside. Carefully place them in the recess in the valve cage followed by the discharge valve ring.
 - b. Insert the discharge valve screw through the inner discharge valve plate and the discharge valve cage. Then bolt the assembly together, using the self-locking nut.
3. Install the suction and discharge valve assemblies.

It is important that the suction valve not be pinched during re-assembly. The following steps are recommended.

- a. The piston in the respective cylinder should be close to the bottom of its stroke.



Never rotate the crankshaft when one or more piston and connecting rod assemblies are in place unless the related cylinder sleeve or sleeves are in their proper position in the compressor housing. If this caution is not observed, serious damage could occur.

- b. Pull the cylinder sleeve out of the housing 3 - 5 mm. (Just far enough to allow the lift pins to retract below the top of the cylinder sleeve.)
 - c. Place the suction valve plate, with suction valve clipped in space, on the cylinder sleeve. Using one hand, hold the suction valve plate firmly against the cylinder sleeve, but do not push the cylinder sleeve down against the housing. With your free hand remove the valve clips. A distinct click will be heard as the clips are removed, if the valve is seated properly.
 - d. Holding the suction valve plate in place on top of the cylinder sleeve (do not allow the sleeve to slip down against the compressor housing) place the discharge valve gage assembly on top of the suction valve plate. Insert 2 cap screws through holes in diagonally opposite corners of the discharge valve cage and tighten them "finger-tight".
 - e. Push the discharge valve cage suction valve plate and cylinder sleeve down firmly against the compressor housing. Insert remaining cap screws and progressively tighten all cap screws in a diagonal pattern to their proper torque.
4. Using new gaskets install the compressor top heads and reconnect the discharge manifold to them.

2.16 Replacing the High Pressure Relief Valve

The high pressure relief valve is screwed into the upper machined surface of the cylinder bank under the top head to relieve any abnormally high discharge pressure back to the suction side of the compressor. It is factory set to open at 25.9 bar (375 psi) differential pressure. If leakage of the valve is suspected, replace.

To replace the high pressure relief valve when the compressor is not open for repairs or inspection, proceed as follows:

1. Disconnect the discharge manifold from the proper top head and remove the top head.
2. Unscrew the leaking relief valve and screw in the new valve.
3. Reassemble the top head and the discharge manifold.

2.17 Removal Piston and Connecting Rods

To remove the pistons and connecting rods, refer to Figure 16 and 17 and proceed as follows:



The width of the connecting rods at their large end is greater than the inside diameter of the cylinder sleeve. Before a piston and connecting rod assembly can be removed from the compressor housing, the cylinder sleeve must first be removed. Then the piston and connecting rod assembly can be pulled outward from the compressor.

Figure 16 - Cylinder Sleeve and Unloader Sleeve

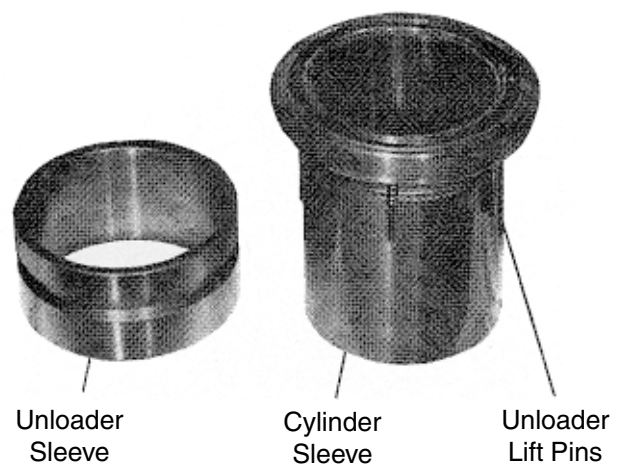
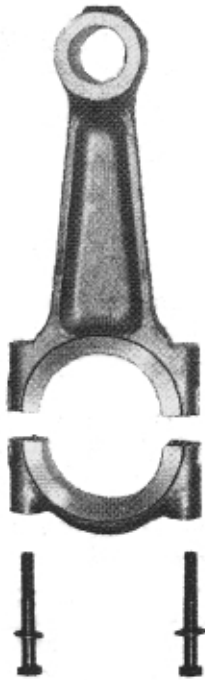


Figure 17 - Connecting Rod


CONNECTING RODS ARE NOT INTERCHANGEABLE. REPLACEMENT ROD MUST MATCH THE REMAINING RODS IN ANY ONE UNIT.

1. Remove the suction and discharge valve assemblies. Allow the Cylinder sleeve and unloader sleeve to remain in place in the housing.
2. Remove the crankcase hand hole cover plate(s).
3. With the cylinder sleeves in place, rotate the crankshaft to a position that will permit ready access to the connecting rod bolts to be removed. Loosen the nuts and remove the lower half of the connecting rod bearing. Note the identification number stamped on the half-bearing just removed.
4. Using care to make certain that the upper half of the connecting rod bearing remains in place on its crankpin, rotate the crankshaft to the point where the piston is very near the top of its stroke.
5. Remove the cylinder sleeve.
6. Lift out the piston and its connecting rod. Note that the identification number stamped on the upper half of the rod bearing, matches the number on the lower half of the rod bearing. These numbers should **ALWAYS** match.



Never rotate the crankshaft when one or more piston and connecting rod assemblies are in place unless the related cylinder sleeve or sleeves are in their proper position in the compressor housing. If this caution is not observed, serious damage could occur. Make certain also that when the bottom half of the rod bearing has been removed and it is necessary to rotate the crankshaft, that the upper half of the rod bearing does not leave its proper place on its crankpin.

7. Remove piston assemblies **ONE AT A TIME**, repeating the above steps 3 through 6 for each piston assembly. Proceed to step 8.
8. Remove the piston pin retaining rings.
9. Push the piston pin out of the piston.
10. Remove the piston rings.
11. Clean, dry and oil all parts.

2.18 Replacing the Unloader Device (Power Units)

If an unloader device (power unit) fails to function, a complete unit will be furnished for replacement purposes. Re-placement can be accomplished most easily when the pistons and connecting rods have been removed as described above.

Then proceed as follows: (See Figure 18).

1. Remove the hex nut which connects the oil supply tubing to the bottom of the unloader device fitting (inside the crankcase).
2. Hold the hex on the bottom of the fitting with a socket wrench, and using a short handled open end wrench, remove the unloader device.
3. When replacing the unloader device **ALWAYS** install a new fitting.
4. Be sure all threads are clean. Apply a thread sealing compound such as **LOCTITE** to the male threads, then install the unloader device and reconnect the oil supply tubing.
5. When an unloader device (power unit) is replaced, the unloader function of the lift pins must be checked. Temporarily replace the cylinder sleeve, and unloader sleeve with the cylinder sleeve clamped securely to the housing. Apply air pressure to the unloader device. The lift pins must retract at least 0.38 mm below the suction valve seat. When air pressure is released the lift pins must extend at least 3.05 mm above the suction valve seat.

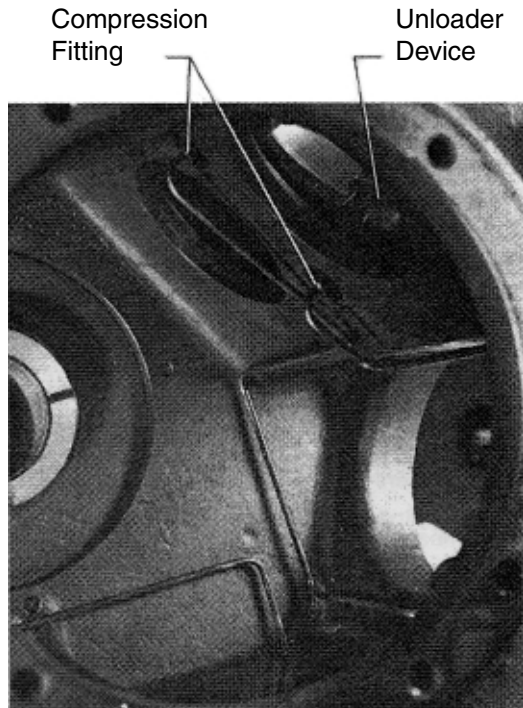


Figure 18 - Unloading Device

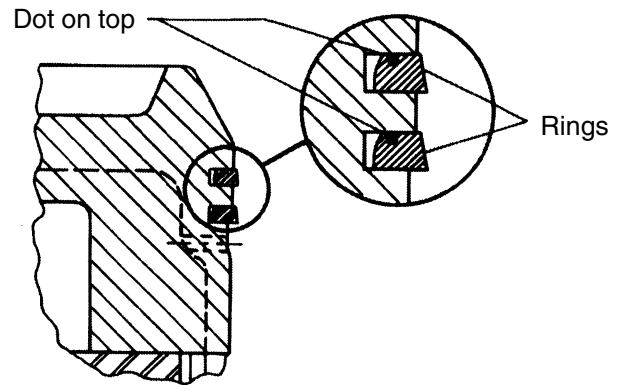
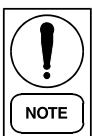


Figure 19 - Piston Ring Installation

2.19 Installing Pistons and Connecting Rods

To install the piston and connecting rod assemblies, refer to Figure 16 and 17 and proceed as follows:

1. Each piston is equipped with two piston rings. When installing the rings, use copper or brass strips under the rings and spread the rings only enough to slide them down over the piston.



Piston rings are tapered and must be installed correctly. The wider part of the ring must be down. The top surface of the ring is stamped with a dot. (See Figure 19).

2. Set the piston with its top surface down on a bench. Insert the small end of the rod into the piston and slide the piston pin into position. The pin is a sliding fit into the piston and rod. Install the retaining rings in each side of the piston.
3. Cylinder sleeves and piston assemblies, when re-used, should be installed in their original locations in the compressor housing.

Remove the lower half of the connecting rod bearing, allowing the connecting rod bolts to remain in position. Check to see that the numbers on the two halves of the bearing are matched and that they are on the same side of the connecting rod. Apply a few drops of oil to the crankpin. Insert the piston and connecting rod assembly through the cylinder bore and carefully position the upper half of the connecting rod bearing on its crankpin.

Insert the unloader sleeve and cylinder sleeve. (Refer to **INSTALLING THE UNLOADER AND CYLINDER SLEEVES.**)

4. Install the lower half of the connecting rod bearing as described in step 3 above. Tighten the nuts (or screws) evenly to the proper torque. (See Table 1.) Hand turn the crankshaft to be sure there is no binding. Install all piston assemblies, turning the shaft after each rod is installed, to be sure that no binding exists.
5. Make sure that the compressor crankcase is clean. Install the crankcase hand hold cover plates. Fill the crankcase to the proper level with new oil.
6. Re-install the suction and discharge valves and the compressor top heads, making sure they are in their original locations and reconnect the discharge manifold and top heads, using new gaskets as required.

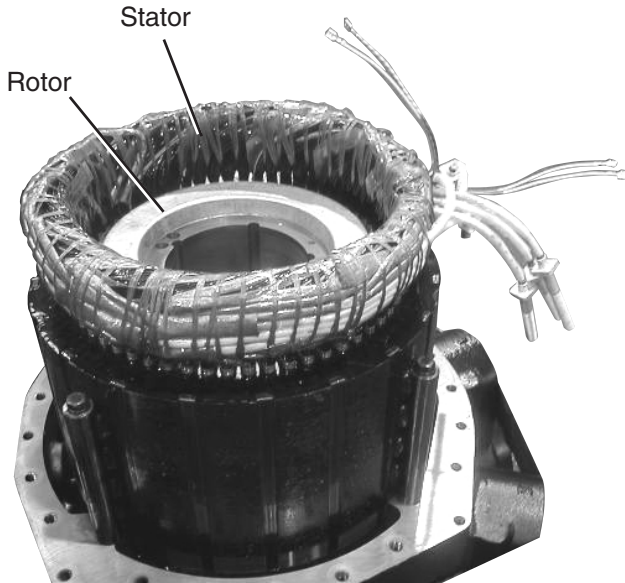
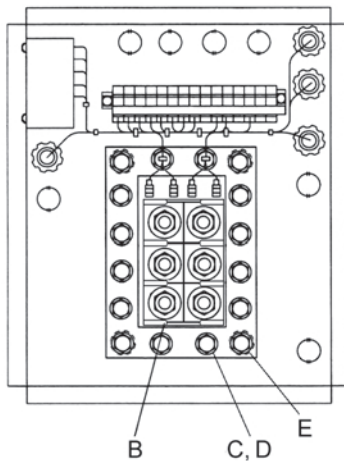


Figure 20 - Motor End of Compressor

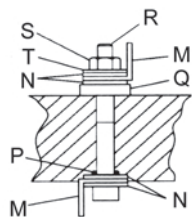
2.20 Removing Rotor

It is necessary to remove the rotor in order to remove the crankshaft and/or motor end bearings. Also, if it becomes necessary to replace the rotor or stator, both rotor & stator must be replaced. To remove the rotor, proceed as follows:

Figure 21 Motor Terminal Plate Detail



ITEM	DESCRIPTION		QUANTITY
A	Gasket, Terminal Block (Not Shown)		1
B	Spacer, Insulating		1
C	Bolt assembly -	Screw, Hex, Flange	16
D	Terminal Block	Washer, Plain 7/8"	16
E	to Compressor	Lockwasher (int. 3/8") (Corner bolts only)	4
F		Lockwasher (int. TH.)	6
H	Bolt Assembly -	Nut, Hexagon 7/16"	18
J	Main Motor	Washer, Plain	6
K	connections	Seal, 'O' Ring 7/16"	12
L		Bolt, Terminal	6
M		Term. Push-on Adpt. 90 Deg.	8
N		Washer, Plain	16
P	Bolt Assembly-	Seal,'O'Ring	4
Q	Motor winding	Washer, Terminal	4
R	sensor	Screw, Cap Hex. Socket Head	4
S	connections	Nut, Hex Mech.	4
T		Lockwasher (int. TH.)	4



Be sure electrical power to the unit has been disconnected

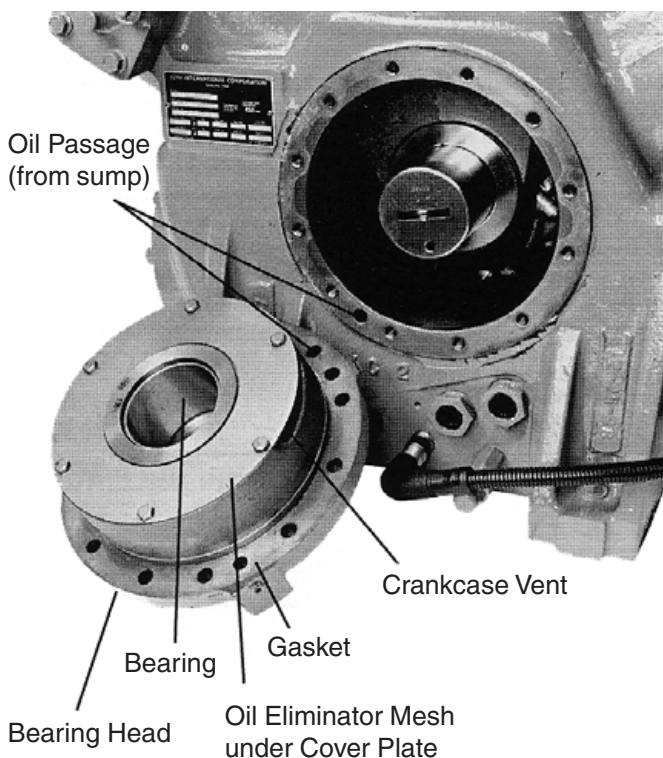
1. Remove the cap screws that hold the suction stop valve to the motor cover. Remove the suction strainer screen and gaskets.
2. Disconnect the power wiring from the motor terminal bolts
3. Mark each terminal bolt with the correct lead number. (Ex. 1,2,3,7,8,9)
4. Mark each overload bolt with the correct numbers. (Ex. S1, S2, S3)
5. Remove the terminal box and terminal block.
6. Remove the nuts from the terminal bolts and the overload bolts and push the bolts down through the holes in the terminal block.
7. Support the main body of the compressor using a crane or other suitable method. Remove, the cap screws and nuts that hold the motor cover to the compressor housing. Do not remove the studs from the compressor housing.
8. Remove the cap screw, lock-washer and flat washer that hold the rotor to the crankshaft.



The main Terminal Bolts (Item L) are manufactured from copper and should be tightened to a torque value of 19-22 lb/ft. These bolts are plated and are very similar in appearance to older J-Series Compressor bolts made from steel, which use a higher torque value. A magnet should be used to confirm the correct bolt material before fitting.

9. Insert two cap screws (9/16"-12) or similar item into the tapped holes in the end of the rotor.
10. It is not advisable to attempt to remove the rotor without using the rotor mandrel (York Part Number 364-37273). Screw the rotor mandrel into the end of the crankshaft and slide the rotor onto it.
11. To re-install the rotor, or to install a new rotor follow steps 7, 8 & 9 in reverse order.
12. Re-install the motor cover using a new gasket. Be sure the motor cover is properly located on the compressor housing.
13. Pull all power terminals and overload connectors up through the terminal box opening.
14. Be sure to place a new terminal block gasket in position before inserting the power terminals and overload connectors into the terminal plate.
15. Re-install the terminal bolts and overload protection bolts using new 'O'-rings. Be sure the terminal bolts are re-installed in the correct holes (1, 2, 3, 7, 8, 9). Refer to Figure 21 to be certain all gaskets, washers, seals, etc., are installed properly.
16. Re-install the terminal plate, terminal box, power wiring and cover.
17. Replace the suction strainer screen, gaskets and stop valve.

Figure 22 - Removing Pump End Bearings



2.21 Pump End Bearing

To remove the pump end bearing refer to Figure 22 and proceed as follows:

1. "Match-mark" the bearing head and compressor housing.
2. Remove the cap screws which hold the bearing head to the housing and remove the bearing head.
3. The YORK Bearing Removal Tool (Part Number 364-37260) is required to remove the bearing from the bearing head (See Figure 23).
4. Using the bearing removal tool as shown in Figure 24 Detail A, pull the old bearing from the bearing head. Note that the back-up plate and the split plates must be installed from the inboard end of the bearing head.
5. Apply clean oil to the outside surface of the new bearing and to the inside portions of the bearing head into which the bearing is to be pressed.
6. Using the bearing removal tool, as shown in Figure 24 Detail B, pull the bearing into the head, taking care that the bearing enters the bearing head squarely. Note that the "split" in the bearing should be at the side of the bearing head at the "3 o'clock" or "9 o'clock" position. Continue to pull the bearing into the bearing head until the bearing is 3.8 mm below the surface on the inboard end of the bearing head.
7. Re-install the bearing head using a new gasket. Be sure the gasket and bearing head are properly aligned with the oil passages. Tighten the cap screws to the proper torque.

2.22 Motor End Bearing

To remove the motor end bearings, refer to Figure 25 and proceed as follows:

1. Drain the oil from the compressor and remove the crankcase cover plates, the motor cover, and the rotor, following procedures described in the applicable sections of this manual.
2. Using suitable timber, support the crankshaft inside the crankcase.
3. Remove the cap screws that hold the bearing head assembly to the compressor housing.
4. Screw the rotor mandrel (YORK Part No. 364-37273) into the end of the crankshaft and pull the bearing head out onto it. Use of the mandrel aids in preventing damage to the stator windings.
5. The motor end thrust collar will possibly come out with the bearing head. If it does not, pull it off the crankshaft. Examine the thrust collar and replace if necessary. A roll pin prevents the thrust collar from turning with the crankshaft.

Figure 23 - Bearing Removal Tool

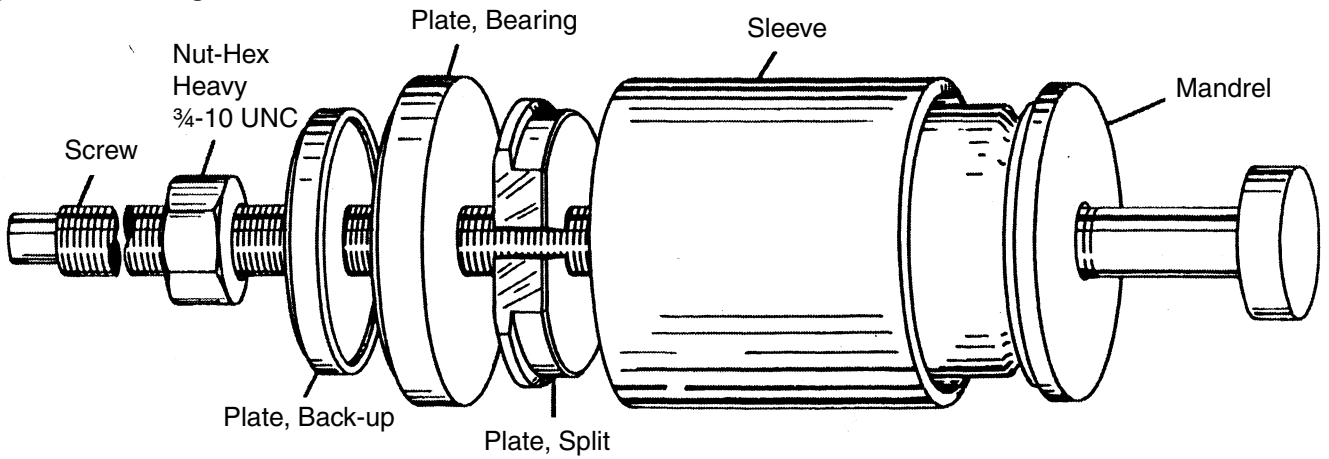
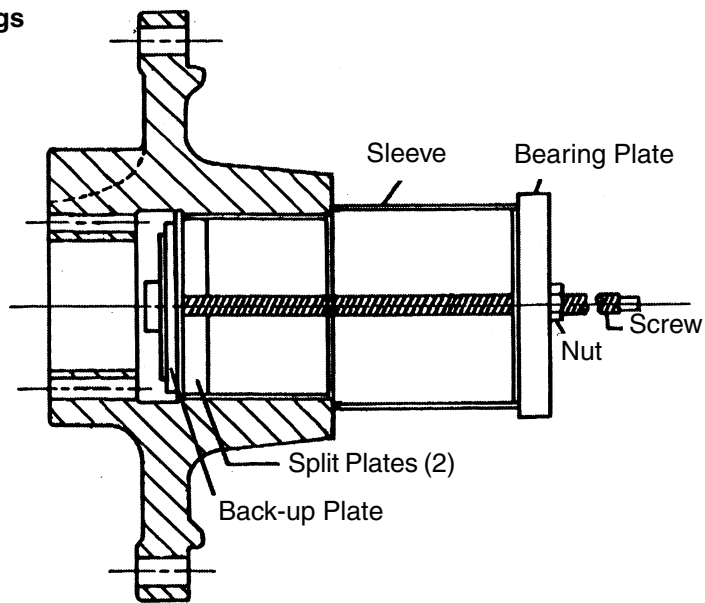
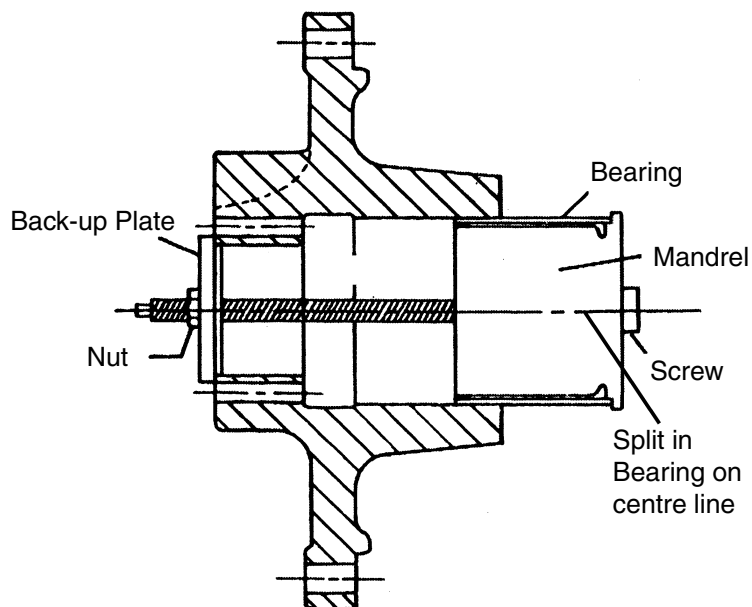


Figure 24 - Pump End Bearings



Detail A - Pump End Bearing (Removal)



Detail B - Pump End Bearing (Installation)

Figure 25 - Motor End Bearing Assembly

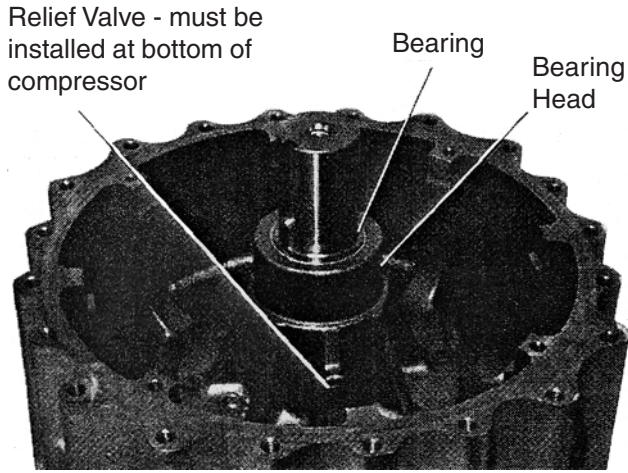
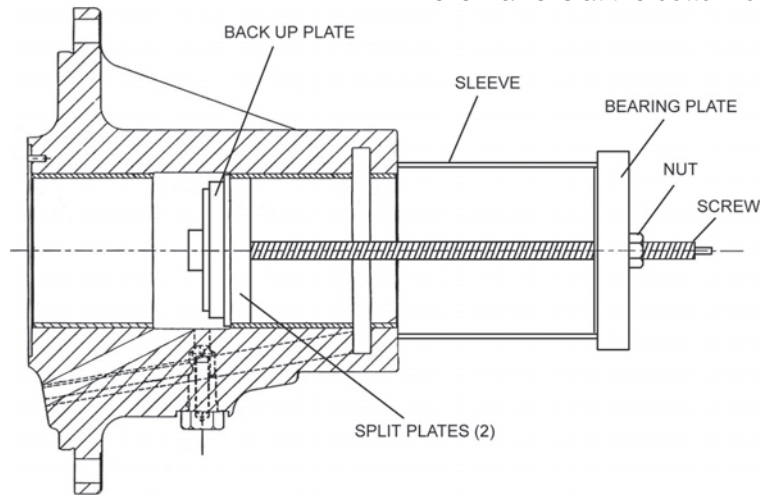
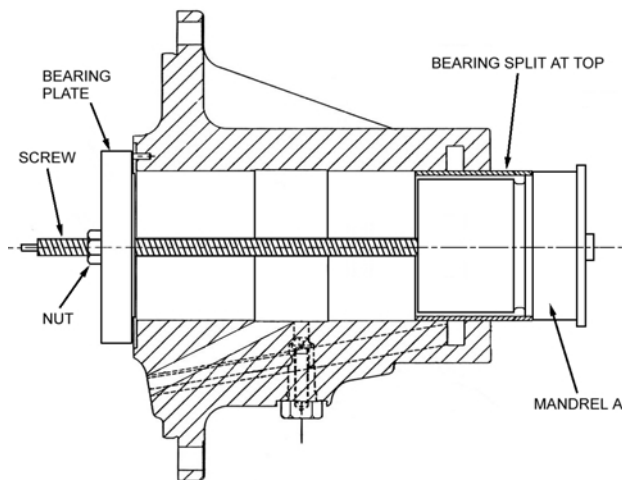


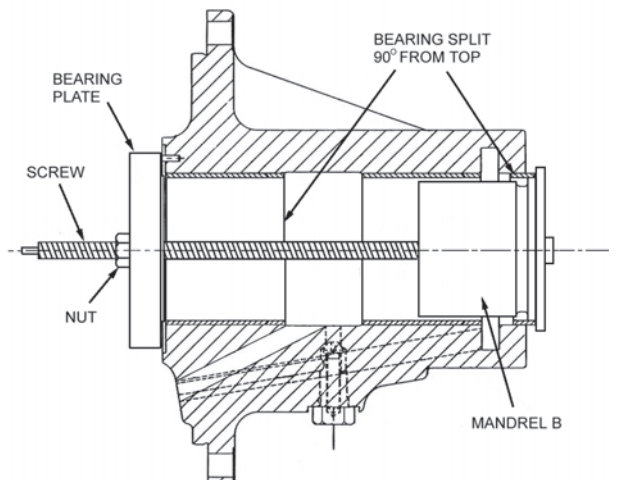
Figure 26 - Motor End Bearing



DETAIL A - MOTOR END BEARING (REMOVAL)



DETAIL B1 - MOTOR END BEARING (OUTER MAIN BEARING INSERTION)



DETAIL B2 - MOTOR END BEARING (INNER MAIN & OIL CONTROL BEARING INSERTION)

6. Using the bearing removal tool as shown in Figure 26 Detail A. Remove the old bearings from the housing. Bearings are removed one at a time in a similar manner from opposite ends of the bearings head.
7. Apply clean oil to the outside surface of the new bearings and to the inside portions of the bearing head into which the bearings are to be pressed.
8. Using the bearing removal tool and mandrel A, as shown in Figure 26 Detail B1, pull the outer main bearing into the head to a depth of 0.92 mm below the surface of the head. The "split" in this bearing should be at the top. Then using mandrel B, as shown in Figure 26, Detail B2, pull the inner main bearing and the oil control bearing into the head to a depth of 22.9 mm below the surface of the head. The "split" in these bearing should be to the side of the bearing head at the "3 o'clock" or "9 o'clock" position.
9. Reassemble the compressor by following steps 1, 2, 3, 4 and 5 above in reverse order. Be sure that the relief valve is at the bottom of the compressor.

2.23 Crankcase

The compressor crankshaft can be removed from either end of the compressor depending on which end is more accessible. To remove the crankshaft, proceed as follows:

1. Drain the oil from the compressor. Remove the crankcase cover plates, discharge manifold, top heads, suction and discharge valve assemblies, pistons and connecting rods, motor cover, and rotor following procedures outlined previously.
2. Using suitable timber, support the crankshaft solidly inside the crankcase.
3. Determine from which end the crankshaft is to be removed and remove the bearing head from that end of the compressor.
4. Screw the rotor mandrel (YORK Part No. 364-37273) into the end of the crankshaft.
5. Using two men, carefully remove the crankshaft from the compressor.
6. If the crankshaft was removed through the pump end, the thrust collar will probably remain in place in the compressor on the motor end. Be sure that this thrust collar is properly positioned on the roll pin before installing the crankshaft.
7. Reassemble the compressor by following the above procedure in reverse order.

2.24 Removing the Stator (see Figure 27)

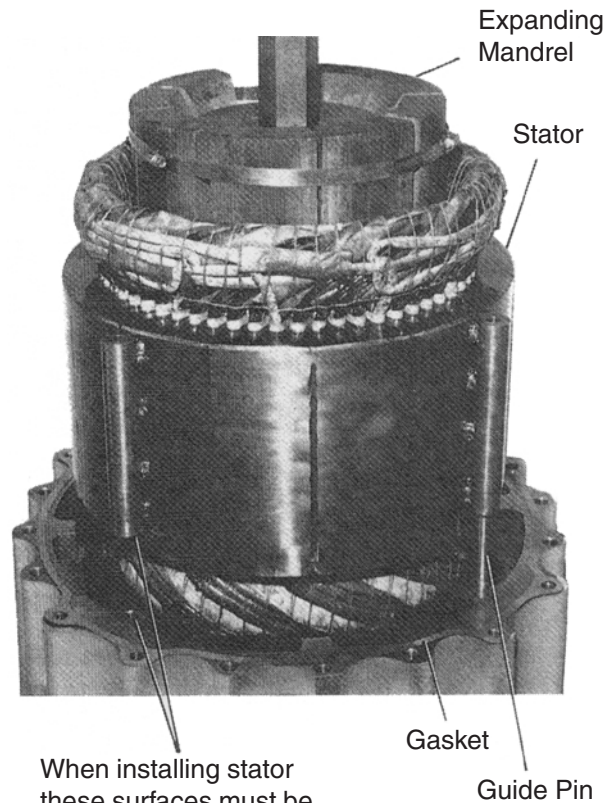
Normally it should not be necessary to replace the stator unless a complete motor failure (burn-out) occurs. If it becomes necessary to replace the stator, a new rotor must also be installed. To replace the stator proceed as follows:

1. It is advisable to remove the compressor from the unit before attempting to remove the stator.
2. Drain the oil from the compressor. Remove the crankcase cover plates, discharge manifold, top heads, suction and discharge valve assemblies, pistons and connecting rods, motor cover and rotor, using procedures outline previously.
3. The compressor should now be placed in a vertical position, on the pump end.



Be sure the compressor is supported and blocked adequately so that it does not tip or fall during the disassembly procedure.

Figure 27 - Removing the Stator



When installing stator these surfaces must be absolutely clean! No varnish, Dirt, Burrs, Chips, etc.

4. Remove the 4 cap screws that hold the stator to the compressor housing. Insert guide pins into 2 diagonally opposite holes (Largest stator weighs approximately 135 kg).
5. Install the expanding mandrel (YORK Part No. 029-13597) inside the stator, and adjust the mandrel so that it is tight within the stator.
6. Using a hoist or crane attached to the mandrel, remove the stator from the housing being careful not to damage the windings. Do not rest the stator on the windings.
7. When installing a stator, the surfaces where the stator rests on the housing must be absolutely clean; free of varnish, dirt, etc. (See Figure 27).
8. Using the mandrel and guide pins, lower the stator into position, being careful not to damage the windings. Be sure the stator is properly positioned with respect to motor leads.
9. Remove the hoist, mandrel and guide pins. Insert the 4 cap screws and tighten them to the proper torque.
10. Reassemble the compressor using procedures described in the respective sections of this manual. Use a new gasket between the motor cover and compressor housing.





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