

YORK[®]

S SERIES SINGLE STAGE COMPRESSORS 2-5/8" BORE—HERMETIC TYPE REFRIGERANT-22

MAINTENANCE

Supersedes: Nothing

484

Form 180.40-M2

STYLE C "BLOCKED SUCTION"

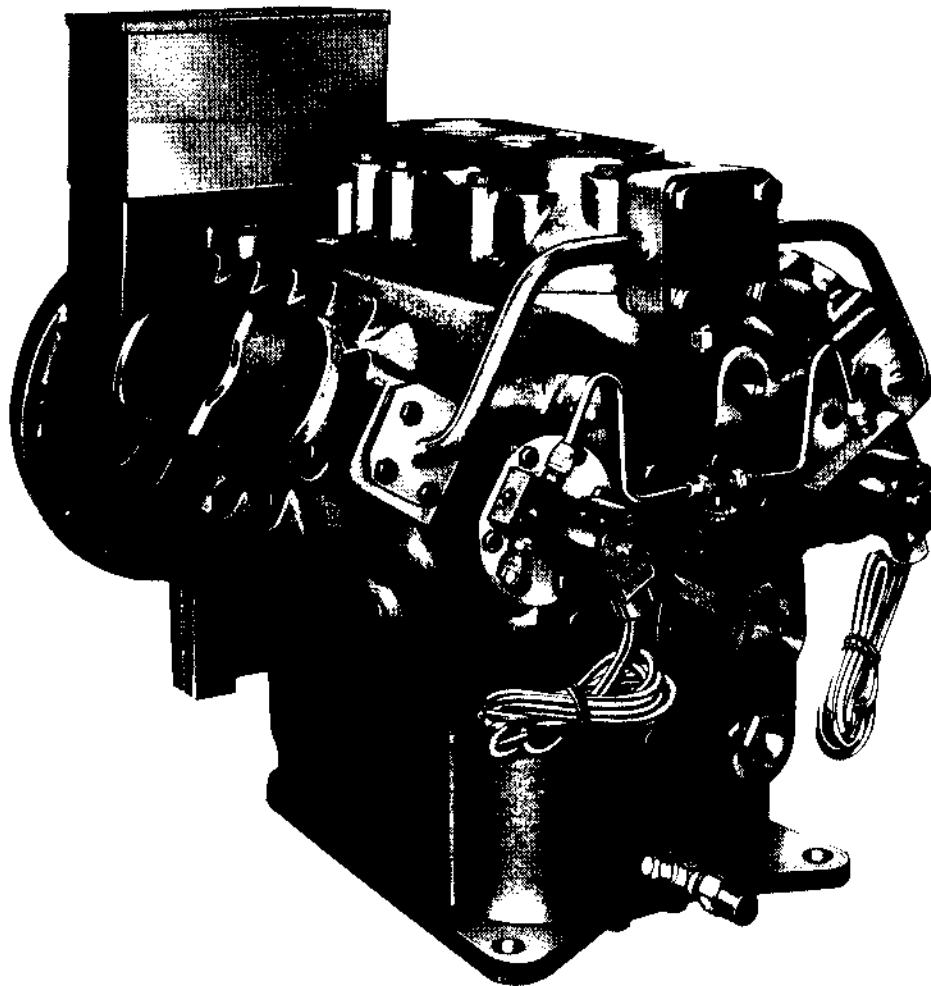


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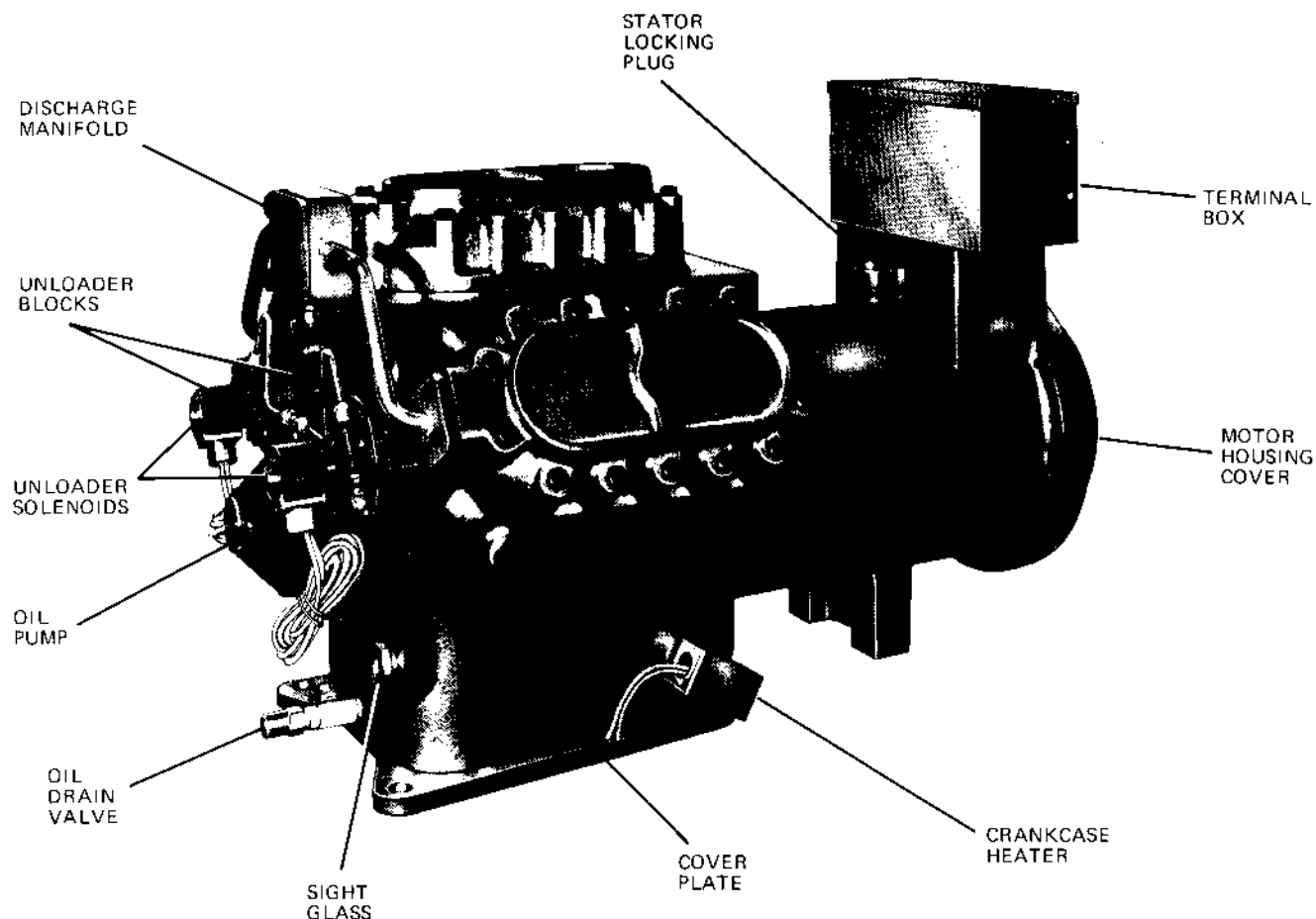


FIG. 1 — 6 CYLINDER S SERIES COMPRESSOR

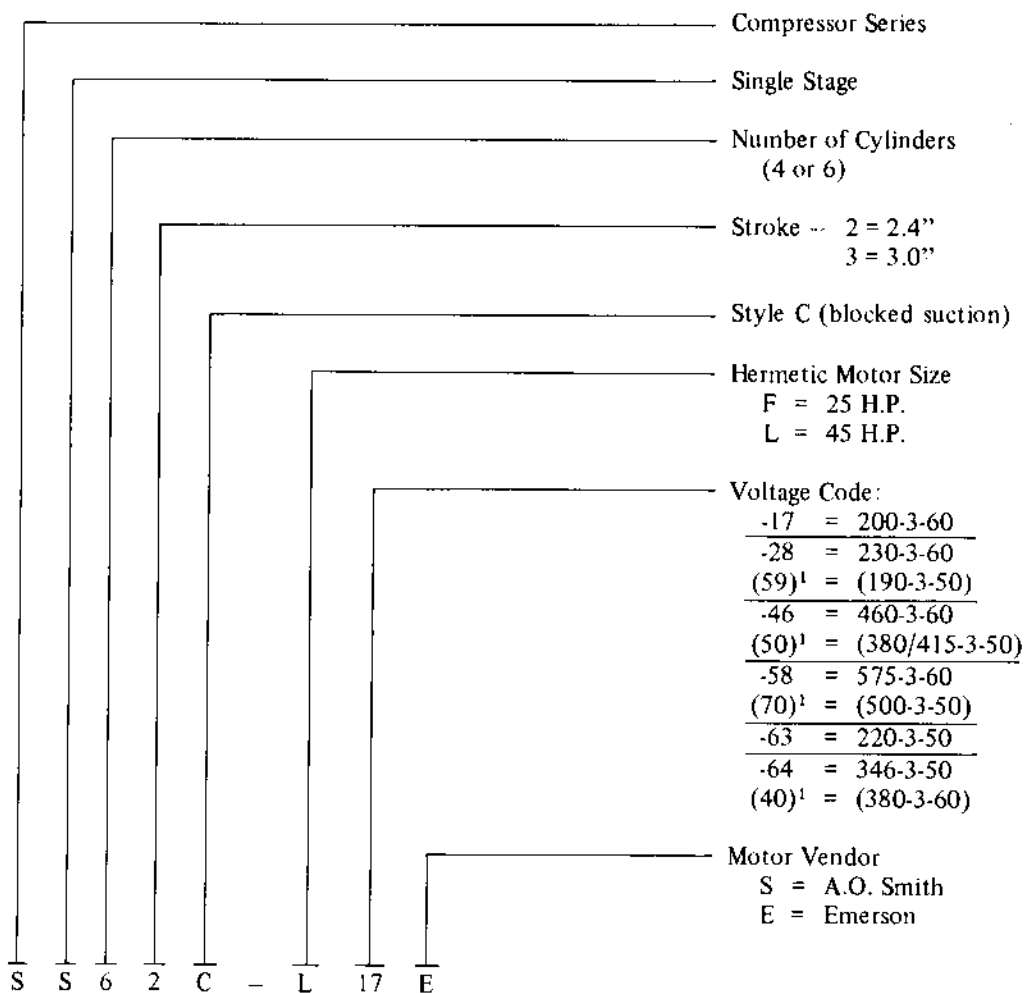
GENERAL DESCRIPTION

York Style C (blocked suction), "S" Series, single stage, V/W hermetic compressors are designed to meet air conditioning requirements in the range of 20 to 40 tons with R-22.

The hermetic motor compressor is furnished in 4 or 6 cylinder sizes, 2-5/8" bore. 4 cylinder model is 2.4" stroke; 6 cylinder models are 2.4" or 3.0" stroke. (See NOMENCLATURE.)

TURE.) The compressor is direct-connected to a 1725 RPM hermetic motor with built-in protection; both enclosed in a single cast iron housing. Capacity control is accomplished by blocking the flow of suction gas to individual cylinder bank(s). The capacity control system is actuated by high pressure oil from the compressor oil pump. Solenoid valves control the flow of oil to the unloader pistons mounted on the pump end of the compressor.

NOMENCLATURE



¹ Voltage codes in () do not appear in Model Number. They are shown here for information only. The comparable electrical characteristic is stamped on the second line of the data plate.

PHYSICAL DATA

COMPRESSOR MODEL	SS42	SS62	SS63
Number of Cylinders	4	6	6
CFM Displacement at 1725 RPM	52	78	97
Bore (inches)	2-5/8	2-5/8	2-5/8
Stroke (inches)	2.4	2.4	3.0
Suction Connection (ODF)	1-5/8	2-1/8	2-5/8
Discharge Connection (ODF)	1-1/8	1-5/8	1-5/8
Oil Charge (gal.)*	1.2	1.4	1.4
Weight (lbs.)	480	620	620

*York Type "C"

LIMITATIONS

The "S" compressor is designed for air conditioning duty only.

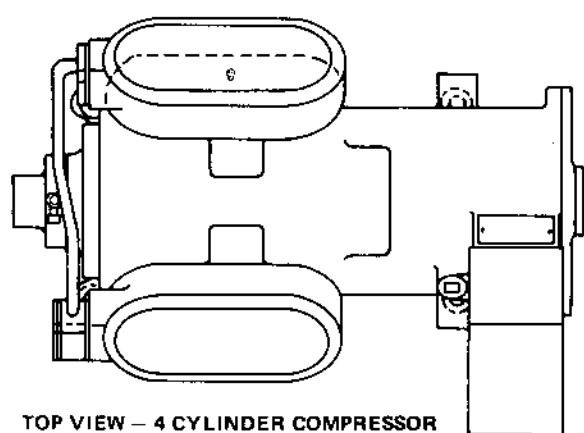
1. Maximum operating differential: 340 psi
2. Maximum discharge temperature: 275°F
3. Maximum oil temperature (crankcase): 150°F
4. Maximum saturated condensing temperature:
150°F (384.6 psig)
5. Minimum saturated evaporating temperature:
+10°F (32.9 psig)
6. Maximum superheat: 25°F
7. Minimum ambient temperature: 0°F
8. Maximum ambient temperature: 120°F
9. Electrical limitations on voltage: (See MOTOR DATA)
10. Lubrication system pressure 30 psi min. above crankcase pressure.

MOTOR DATA

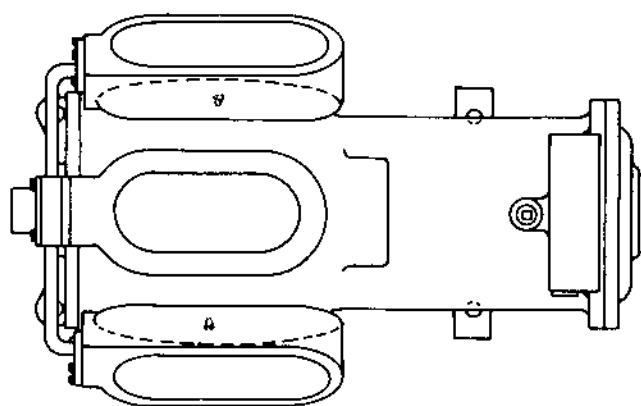
COMPRESSOR	HP	VOLTAGE			TYPE START	LOCKED ROTOR AMPS
		NAMEPLATE	MIN.	MAX.		
SS42	25	200	180	220	AL	350
		230	207	253	AL	304
		460	414	506	AL	152
		575	517	633	AL	122
SS62 & SS63	45	200	180	220	AL	619
		230	207	253	AL	512
		460	414	506	AL	268
		575	517	633	AL	214

LEGEND FOR FIG. 2

1 DISCHARGE STOP VALVE	10 ROTOR
2 SUCTION - DISCHARGE VALVE ASSEMBLY	11 SUCTION STRAINER GASKETS
3 PISTON	12 SUCTION STRAINER SCREEN
4 CYLINDER SLEEVE	13 MOTOR HOUSING COVER
5 COMPRESSOR TOP HEAD	14 CRANKSHAFT
6 RELIEF VALVE (375 PSI)	15 OIL CHARGING VALVE
7 MOTOR TERMINAL BOX	16 OIL PUMP
8 STATOR LOCKING PLUG	17 BEARING HEAD
9 STATOR	



TOP VIEW — 4 CYLINDER COMPRESSOR



TOP VIEW — 6 CYLINDER COMPRESSOR

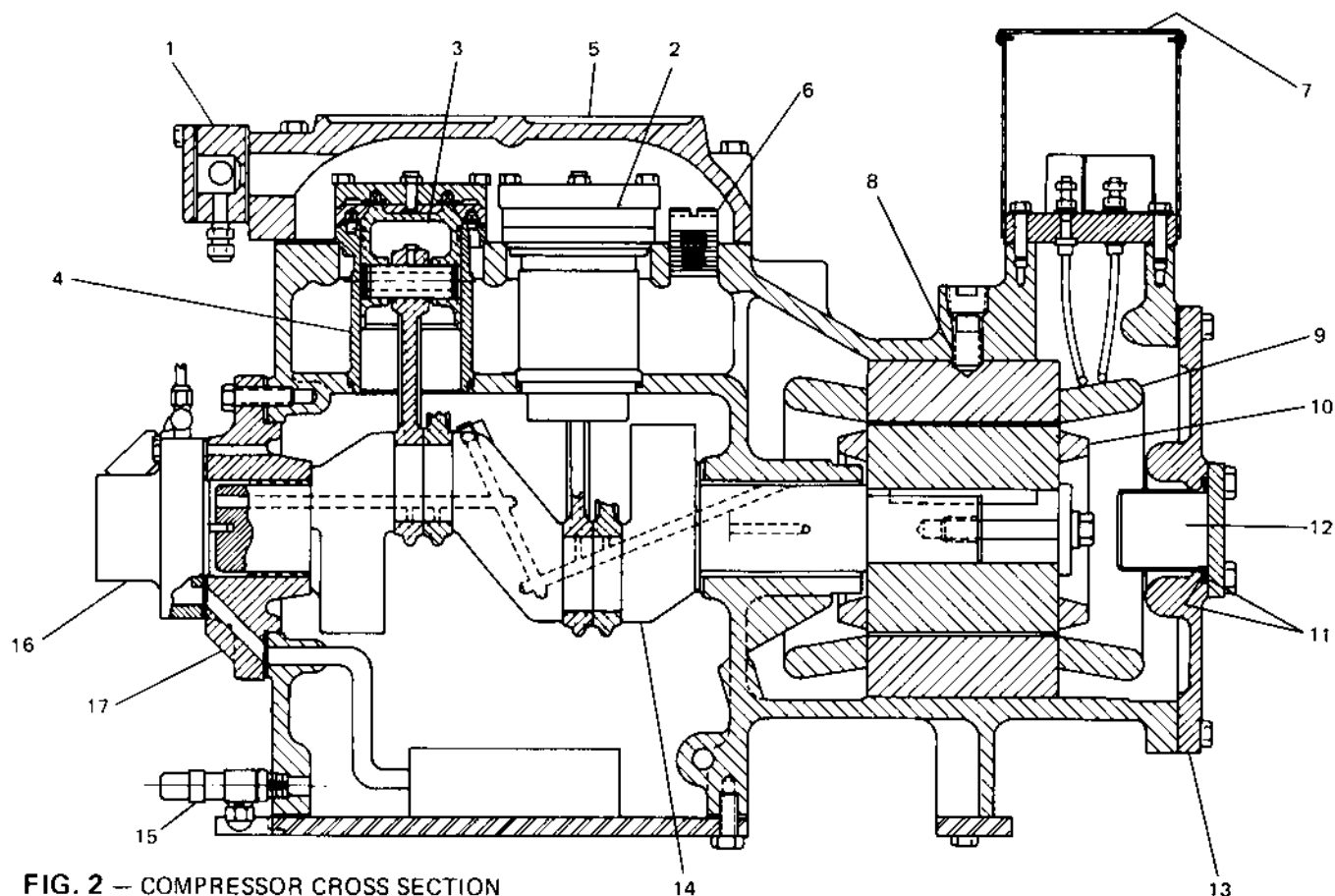


FIG. 2 — COMPRESSOR CROSS SECTION

SERVICE

GENERAL

Service on these compressors should be attempted 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 compressor oil level. The ideal time for checking the oil level is after a period of operation, because then

there will be the least amount of refrigerant mixed with the oil. The compressor should have been in operation for at least 1/2 hour and the crankcase should feel warm or hot to the hand. During the period of operation, the refrigerant will be pumped out of the oil until only the normal quantity of oil remains.

The compressor is equipped with an oil sight glass, located in the pump end of the compressor for checking the oil level.

THE OIL LEVEL IN THE COMPRESSOR IS CORRECT WHEN LIQUID OIL CAN BE SEEN IN THE BULL'S-EYE.

The compressor can be operated safely as long as the oil level remains in sight in the bull's-eye. In fact, it is not unusual for this level to drop to the bottom of the bull's-eye or slightly lower, especially when first starting up after a prolonged shutdown. This is due to the accumulated refrigerant being pumped out of the oil.

It is also normal for the oil level to drop to the bottom of the sight glass or slightly lower, when the compressor is fully unloaded. This oil will be returned to the crankcase when the compressor is again fully loaded and a level in the sight glass will be re-established as the oil is swept back from the system.

If the oil level, checked as above, is lower than the bottom of the bull's-eye, add oil.

CAUTION: Do not operate the compressor continuously with low oil level. Do not remove oil from the crankcase because of an apparent high level unless you know that too much oil has previously been added.

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 odor. 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. If this occurs, the entire motor-compressor should be replaced.
6. Dismantle only the part of the hermetic compressor necessary to correct the fault.
7. Never open any part of a hermetic compressor which is under vacuum or pressure. See **VENTING THE COMPRESSOR**. Be sure the pressure is atmospheric. 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, and labeled for location on reassembly. Coat the parts with oil and wrap them in clean paper.

9. Before removing the cylinder heads, each head should be match marked in relation to its position on the housing.
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. Table 1 shows the recommended torques for this compressor. Insert all cap screws and tighten them lightly. Then using the torque wrench, tighten one cap screw or nut first; and the opposite one next. Then tighten two more on a center line at right angles to the first two. Proceed to draw down opposite and alternate pairs around the flange of the cylinder head or bearing head until all are tightened to the proper torque.

TABLE 1 — TORQUE VALUES — CAP SCREWS & NUTS

LOCATION	SIZE	TORQUE
Oil Pump	1/4 — 20	9 ft. lbs.
Connecting Rod	5/16 — 24	15 ft. lbs.
Discharge Valve Cage	3/8 — 16	15 ft. lbs.
Top Head	7/16 — 14	55 ft. lbs.
Oil Pump Bearing Head	7/16 — 14	55 ft. lbs.
Discharge Stop Valve	7/16 — 14	55 ft. lbs.
Base Cover	7/16 — 14	55 ft. lbs.
Suction Stop Valve	1/2 — 13	70 ft. lbs.
Terminal Bolts (Motor)	—	10 ft. lbs.
Terminal Bolts (Control)	—	15 ft. lbs.
Stator Locking Plug (Inner)	—	70 ft. lbs.

HANDLING

The compressor should be handled using proper rigging methods as shown in Form 180.02-NO1.

VENTING THE COMPRESSOR

Before opening the compressor for repairs, close the suction and discharge stop valves. Loosen the pressure tap next to the adjusting stem on the suction stop valve and vent the compressor to the atmosphere. (See Fig. 3).

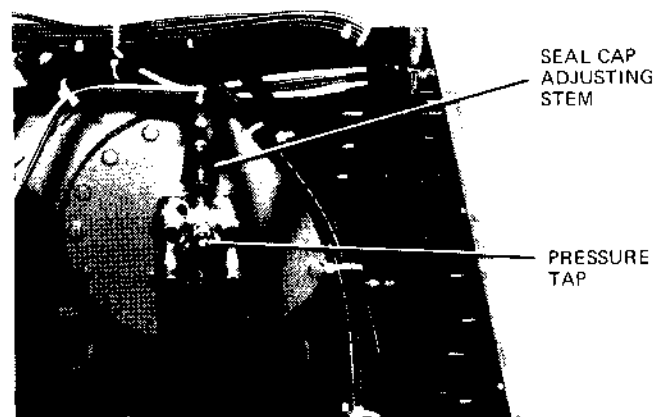


FIG. 3 — SUCTION STOP VALVE — COMPRESSOR INSTALLED IN UNIT

REPLACING THE OIL PUMP

If it becomes necessary to replace the oil pump, a complete new pump assembly, Part No. 026-20297 should be ordered. To replace the oil pump, refer to Fig. 4 and proceed as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Remove the oil pump cover cap screws and pull the pump assembly out of the bearing head.
3. 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.
4. Tighten the pump cover cap screws evenly by drawing down opposite and alternate pairs.
5. Evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

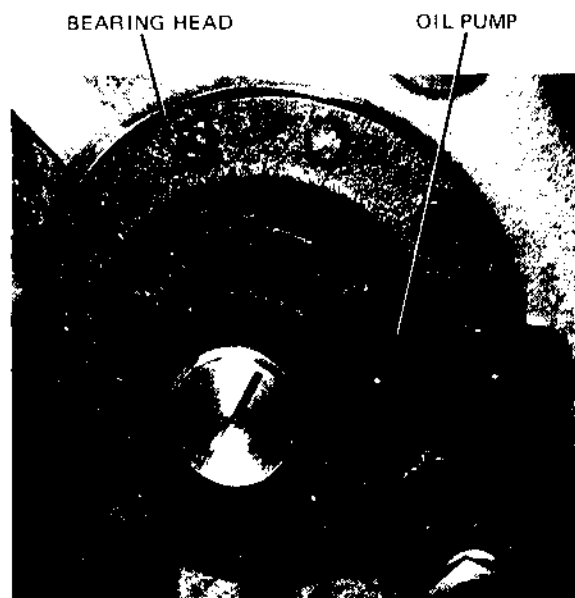


FIG. 4 — OIL PUMP

UNLOADERS

The compressor unloader solenoids and blocks are located on the oil pump end of the compressor. (See Fig. 1.) *The solenoid is de-energized to load the compressor.* The solenoid valve(s) and unloader block(s) can be removed for inspection or servicing as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Disconnect the wiring to the solenoid. Remove the coil from the valve.

3. Disconnect the oil feed line from the solenoid valve, and remove the valve body from the unloader block. Note the gasket between the solenoid valve and the unloader block.
4. Remove the unloader block from the compressor housing. Be sure the coil spring is removed also.
5. Dis-assemble the components of the unloader block. (See Fig. 5.) Examine all parts for signs of wear and replace parts as necessary. The teflon seat should be turned over when re-installed. If both sides have been used, install a new seat. Never re-use a used seat. Apply a light coating of oil to the unloader piston when re-installing into the unloader block, and check that it moves freely.
6. Re-install the unloader block on to the compressor housing using a new gasket if necessary. Be sure the spring remains in its proper position.
7. Re-install the solenoid valve using a new gasket if necessary. Be sure the oil line connection is in the proper position. Re-connect the oil feed line.
8. Re-install the solenoid coil, re-connect the wiring, and evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

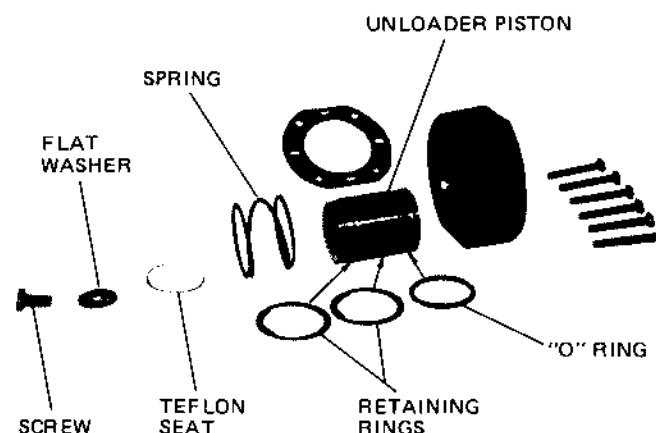
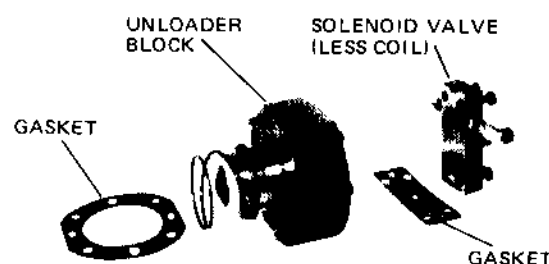


FIG. 5 — UNLOADER MECHANISM

CRANKCASE OIL HEATER

The crankcase heater is located on the side of the compressor. (See Fig. 1) 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 cover from the heater electrical box and disconnect the heater wires. Remove the 1/4" Dia. screw holding the electrical box to the compressor casing and pull the box and the heater from the compressor.

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

REMOVING THE SUCTION STRAINER

The compressor suction strainer is located in the motor housing cover just under the suction stop valve. (See Fig. 6.) To clean or replace the suction strainer proceed as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Remove the four bolts which hold the suction stop valve to the motor housing cover.
3. Pull the suction strainer out of the housing and clean with an approved safety solvent or install a new strainer if required.
4. 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.
5. Bolt the suction valve in place, making sure that it seats squarely.
6. Evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

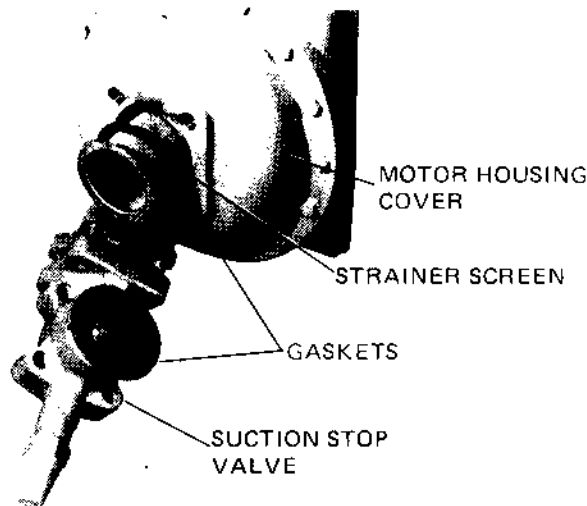


FIG. 6 — COMPRESSOR SUCTION STRAINER

REPLACING THE OIL SIGHT GLASS

Each compressor is equipped with an oil level sight glass located on the pump end of the compressor. If the sight glass becomes broken or damaged it must be replaced. Proceed as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Drain the oil level below the sight glass.
3. Remove the damaged sight glass.
4. Clean the threads in the housing and on the new sight glass with an approved safety solvent.
5. Apply LOC-TITE 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. (Max. torque 100 ft. lb.)
6. Fill the crankcase with clean oil and evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

ANALYSIS OF FAULTY COMPRESSOR VALVE OPERATION

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

External indications of trouble within the compressor are as follows:

1. Insufficient capacity.
2. Unusual pressure gauge readings.
3. Unusual noise at various or full load conditions.
4. Unusually hot compressor head.

If trouble is suspected within the compressor the following procedure should be followed before removing the top heads to check suction and discharge valves.

1. Check the temperature in the air conditioned space.
2. Check and determine operating pressures and temperatures.
3. If the compressor is not making unusual or excessive noise, close the suction stop valve and operate the compressor, letting it pump down until it shuts off on the low pressure cut-out. If the compressor will not pump down to this setting, it may be an indication of broken compressor valves.

REMOVING THE DISCHARGE AND SUCTION VALVE AND CYLINDER SLEEVES

To remove the valve assemblies and cylinder sleeves, refer to Fig. 7 and proceed as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Disconnect the discharge manifold from the compressor top heads and remove the top heads from the compressor.
3. Remove the four cap screws which 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.
4. Remove the discharge valve screw and its beveled gasket. Then lift out the inner discharge valve plate, discharge valve and springs. (See Fig. 7.)
5. Lift off the discharge valve plate, the suction valve springs, and the suction valve.

6. Lift the cylinder sleeve and "O" ring out of the compressor housing.
7. Clean, dry and oil all parts. Inspect the valves for grooves and renew, if necessary.

INSTALLING THE CYLINDER SLEEVES

To install the cylinder sleeves, refer to Figs. 7 and 8 and proceed as follows:

1. Apply a light coating of oil to the inside of the cylinder sleeve.
2. Place the "O" ring into its recess in the compressor deck.
3. Carefully lower the cylinder sleeve over the piston. Push the cylinder sleeve down until it rests firmly on the "O" ring. Do not force the cylinder sleeve. The lower end of the sleeve is chamfered to facilitate entering the "O" ring. Enter the sleeve squarely into the housing and rotate the sleeve as it is being lowered.

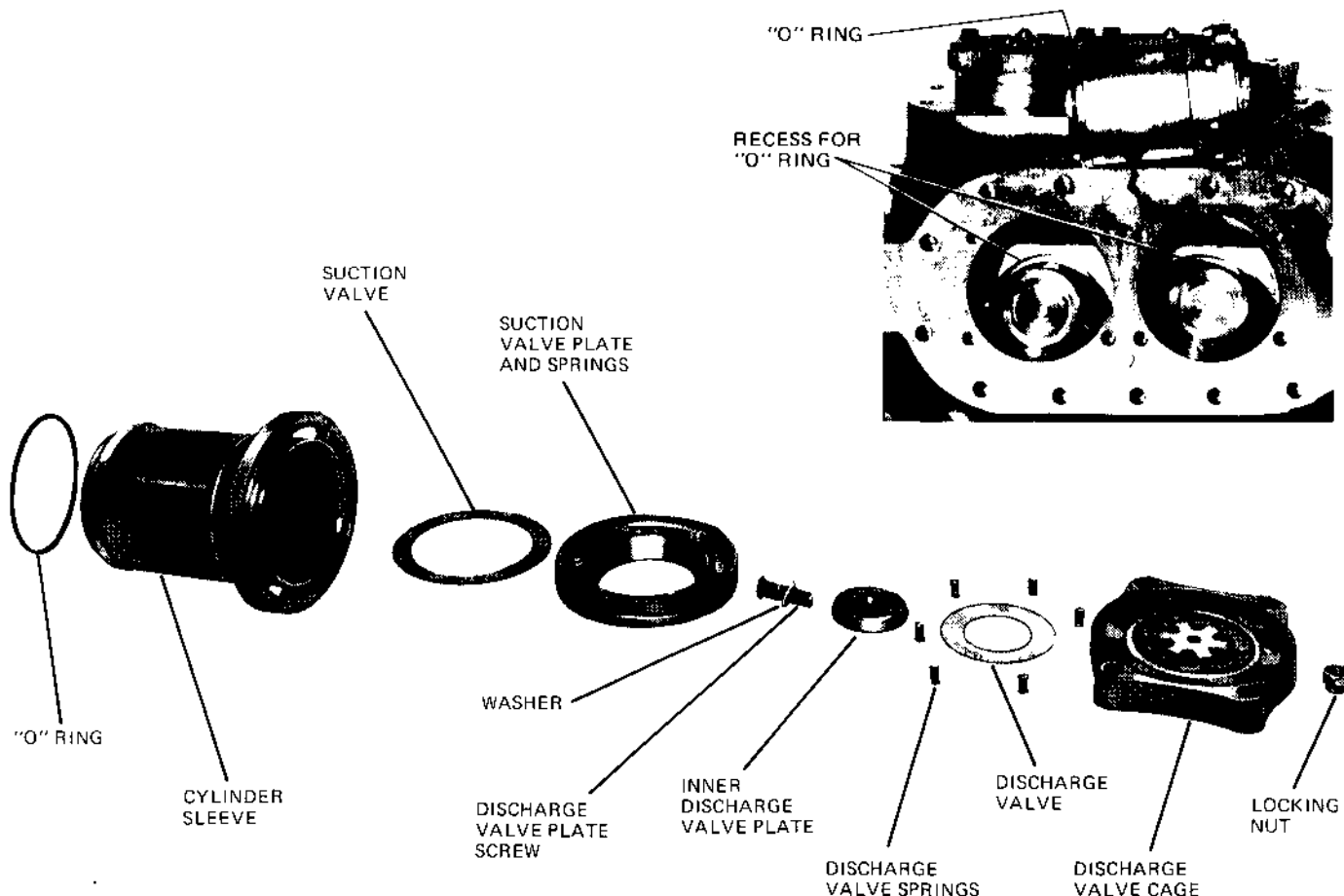


FIG. 7 — REMOVING VALVES AND CYLINDER SLEEVES

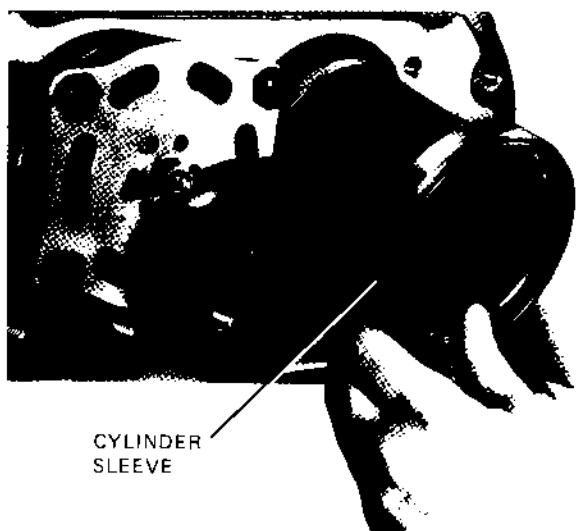


FIG. 8 — REPLACING CYLINDER SLEEVE

INSTALLING SUCTION AND DISCHARGE VALVES

To install the suction and discharge valves, refer to Figs. 7 and 9 and proceed as follows:

1. With the spring pocket side of the discharge valve plate up, assemble the suction valve springs in their pockets and set the suction valve in place.
2. To hold the suction valve and springs firmly in place during installation, make up two sheet metal clips to be placed over the discharge valve plate and suction valve as shown in Fig. 9. These clips may be ordered from the Factory - York Part No. 065-01670.
3. Assemble the discharge valve cage assembly.
 - a. Insert the discharge valve springs in their recesses in the valve cage and set the discharge valve in place.
 - b. Insert the discharge valve screw, with beveled gasket, through the inner discharge valve plate.

Then bolt the assembly together, using the self locking nut.
4. Set the suction valve plate, with suction valve clipped in place, on the cylinder sleeve. Then remove the two metal clips.
5. Holding the suction valve plate in place, set the valve cage assembly on the valve plate and bolt the entire assembly (cylinder sleeve, valve plate and valve cage) to the housing using the cap screws.

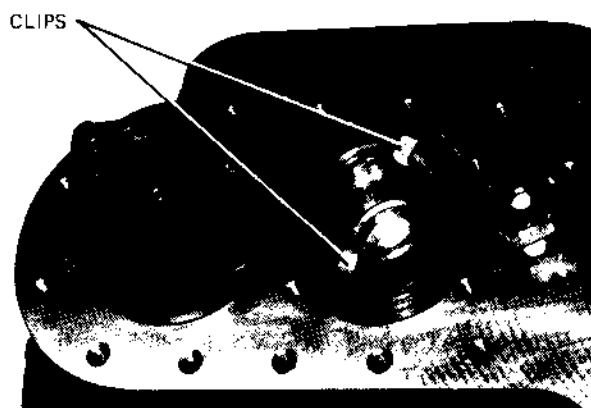


FIG. 9 — INSTALLING SUCTION VALVE

6. Using new gaskets if required, install the compressor heads and re-connect the discharge manifold.
7. Evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

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 (see Fig. 7). It is factory set to open at 375 psi differential pressure. The high pressure relief valve may best be checked for leakage when the compressor is open for repairs or inspection.

To test the relief valve for leakage, remove the valve, and apply air pressure to the valve. Pour an approved safety solvent into the opening through which the valve discharges. If bubbles appear before the solvent evaporates, replace the valve.

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

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Remove the discharge manifold and the top head. The relief valve is located under the top head with the discharge valve.
3. Unscrew the leaking relief valve and screw in the new valve.

4. Re-assemble the top head and the discharge manifold using new gaskets.
5. Evacuate the compressor. (See EVACUATION AFTER REPAIRS.)

PISTONS, PISTON RINGS AND CONNECTING RODS

Pistons and piston rings can be replaced from the top of the compressor (without removing crankcase base cover). However, if connecting rods are to be removed also, it will be easier to remove the connecting rod and piston as an assembly.

To remove the piston and/or piston rings only, proceed as follows:

1. Vent the compressor as explained in VENTING THE COMPRESSOR.
2. Remove the discharge manifold, top heads, oil pump, discharge valve cages and suction valve plates. Do not remove cylinder sleeves at this time.
3. Using a "T" bar or large screwdriver inserted into the end of the crankshaft rotate the crankshaft until one piston is at the top of its stroke. Use care that the cylinder sleeves do not raise out of the housing as the crankshaft is turned.
4. Remove both cylinder sleeves and "O" rings from the bank where the piston has been raised to the top of its stroke.
5. Piston rings can now be removed from the raised piston. Each piston is equipped with two piston rings. The plain (compression) ring sets in the upper groove and the ventilated (oil) ring sets in the lower groove. When installing rings, install the ventilated ring first; then the plain ring. Use copper or brass shims under the rings and spread the rings only enough to slide them down over the piston.
6. It is possible to replace rings on one piston at a time as described in step 5 above.

CAUTION: Do not rotate the crankshaft when cylinder sleeves are removed from more than one bank of cylinders. Also be careful that the pistons do not catch on the compressor deck as the crankshaft is rotated.

7. Pistons can now be removed by first following steps 1 thru 4 above. However it is necessary to position pistons so that the piston pin can be removed without interference from the compressor housing or the adjacent piston. Then using an angled snap ring pliers, remove the retaining ring from one side of the piston and push the piston pin out of the piston and connecting rod. Examine the piston, piston pin and upper end of the con-

necting rod. If the connecting rod needs replacement proceed to step 1 below. It is suggested that pistons be removed and replaced one at a time.

8. If the piston and/or the piston pin are new, check that the pin slides easily into the piston before attempting to install the piston in the compressor. When re-installing the piston, oil the upper bore of the connecting rod, the inside of the piston, and the piston pin. Install the retaining ring on one side of the piston. Carefully slide the piston pin into position in the piston and connecting rod. Center the piston pin and insert the piston pin retaining ring.

To remove connecting rods, proceed as follows:

NOTE: 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.

1. Vent the compressor as explained in VENTING THE COMPRESSOR and drain the oil from the crankcase.
2. Remove the discharge manifold, top heads, motor housing cover, discharge valve cages and suction valve plates. Allow the cylinder sleeves to remain in place in the housing.
3. The compressor must now be placed in a vertical position. The compressor can be lifted by a crane and eye bolts as shown in Fig. 10 and rested on blocks of wood on the motor end. Do not rest on stator.

WARNING: Be sure the compressor is supported and blocked adequately so that it does not tip or fall during the dis-assembly procedure. A hoist, if used, should remain attached to the compressor.

4. Remove the bottom cover plate and gasket from the compressor.
5. 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.
6. 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.
7. Remove the cylinder sleeve and "O" ring.

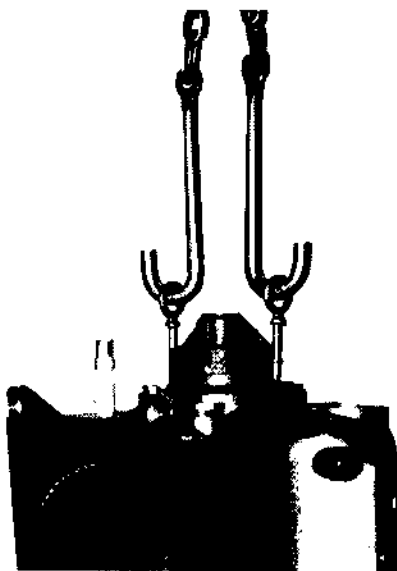


FIG. 10 — COMPRESSOR IN VERTICAL POSITION

8. 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 must **ALWAYS** match.

***CAUTION:** 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.*

9. Remove piston assemblies **ONE AT A TIME**, repeating the above steps (5) through (8) for each piston assembly.

INSTALLING PISTONS AND CONNECTING ROD ASSEMBLIES

To install the piston and connecting rod assemblies, proceed as follows:

1. Install piston rings on pistons and pistons on connecting rods following procedures outlined previously.
2. Cylinder sleeves and piston assemblies, when reused, 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. The connecting rods should be installed so that these numbers are toward

the drive end of the compressor. Apply a few drops of oil to the crankpin and to the piston. 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.

Place the "O" ring into its recess in the compressor deck.

Insert the cylinder sleeve into its position in the compressor housing and push it down over the piston. The chamfer on the lower end of the cylinder sleeve permits easy entrance for the piston and its rings. Be sure the sleeve seats properly on the "O" ring.

3. Install the lower half of the connecting rod bearing as described in step (2) above. Tighten the nuts evenly to a torque of 15 foot pounds. 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.
4. Make sure that the compressor crankcase is clean. Install the crankcase base cover plate. Return the compressor to a horizontal position. Fill the crankcase to the proper level with new oil.
5. Re-install the suction and discharge valves, motor cover and the compressor top heads, using procedures outlined previously, making sure they are in their original locations. Re-connect the discharge manifold, using new gaskets as required.
6. Evacuate the compressor of air. (See **EVACUATION AFTER REPAIRS.**)

REMOVING THE CRANKSHAFT

Normally, it is not considered advisable to replace the crankshaft in the field, since trouble sufficient to warrant replacement of this item would undoubtedly involve replacing the compressor motor as well. Instead, it is recommended that an exchange motor-compressor be installed and the damaged unit be returned for credit to the nearest hermetic repair station or to the factory.

However, the crankshaft may be removed in the field for inspection if it is so desired. Refer to Fig. 2 and proceed as follows:

1. Vent the compressor as explained in **VENTING THE COMPRESSOR** and drain the crankcase.
2. Disconnect the suction and discharge lines, as well as any other piping connected to the compressor.
3. Remove the compressor from the unit base and place in a location to provide adequate working clearance.
4. Remove the oil pump, discharge manifold, top heads, the discharge and suction valve assemblies, motor housing cover, and the piston and connecting rod assemblies as outlined previously.

5. Remove the rotor from the crankshaft. The rotor is held in position by means of a long cap screw, a spring lock washer, and the shaft coupling washer. (See Fig. 2.) The rotor is provided with two tapped holes, which, in conjunction with two bolts and a suitable metal bar or block, may be used to pull it free of the crankshaft. Remove the key. Use care to prevent dropping the rotor and any sudden or harsh contact with the stator, particularly the exposed stator windings.
6. Remove the cap screws which secure the pump end bearing head to the housing and remove the bearing head. (See Fig. 4.)
7. Carefully pull the crankshaft out of the compressor through the opening for the pump end bearing head.
8. The thrust collar will probably remain in place on the inboard end of the motor end main bearing. Remove thrust collar from the main bearing.
9. Re-assemble the compressor by following the above procedure in reverse order.

REMOVING MAIN BEARINGS

Normally, it is not considered advisable to replace main bearings in the field, since trouble sufficient to warrant bearing replacement would undoubtedly involve replacing the compressor motor as well. Instead, it is recommended that an exchange motor-compressor be installed and the damaged unit be returned for credit to the nearest hermetic repair station or to the factory.

However, if required, main bearings may be replaced in the field. Refer to Figs. 11 and 12 and proceed as follows:

1. Vent the compressor as explained under VENTING THE COMPRESSOR.
2. Follow steps 1 thru 8 under REMOVING THE CRANKSHAFT.

3. Using the bearing replacing tool (See Fig. 11) pull the worn bearings out of both the pump end bearing head and the compressor bearing housing. Since the outboard opening of the pump end bearing head is smaller than the diameter of the bearing, this bearing must be removed and replaced through the inboard opening using the bearing bar as illustrated in Fig. 12, Detail A. Both bearings at the motor end of the compressor should be removed simultaneously using the bearing plug. (See Fig. 12, Detail B.)

INSTALLING MAIN BEARINGS

Before installing new bearings, apply clean oil to the outside surface of the bearings and to the inside portions of the pump end bearing head and the compressor bearing housing into which the bearings are to be pressed.

PUMP END BEARING

Using the bearing replacing tool as shown in Fig. 12, Detail C; pull the pump end bearing into the pump end bearing head, taking care to enter the bearing evenly and squarely. Note that the bearing must be drawn in 1/8" below the inside of the bearing head.

MOTOR END BEARINGS

The **OUTBOARD** bearing must be installed before installing the inboard bearing. Using the bearing replacing tool as shown in Fig. 12, Detail D; install the **OUTBOARD** bearing, pulling it in evenly and squarely until it is flush with the bearing housing. After the outboard bearing is installed properly, install the inboard bearing (using the bearing replacing tool as shown in Fig. 12, Detail E) drawing it in evenly and squarely until it protrudes 1/16" beyond the inside of the bearing housing. This 1/16" serves to locate the thrust collar.

Coat the bearings with clean oil and install the thrust collar.

NOTE: Slot in thrust collar must face crankshaft thrust face.

Re-assemble the compressor by following the preceding disassembly procedures in reverse order.

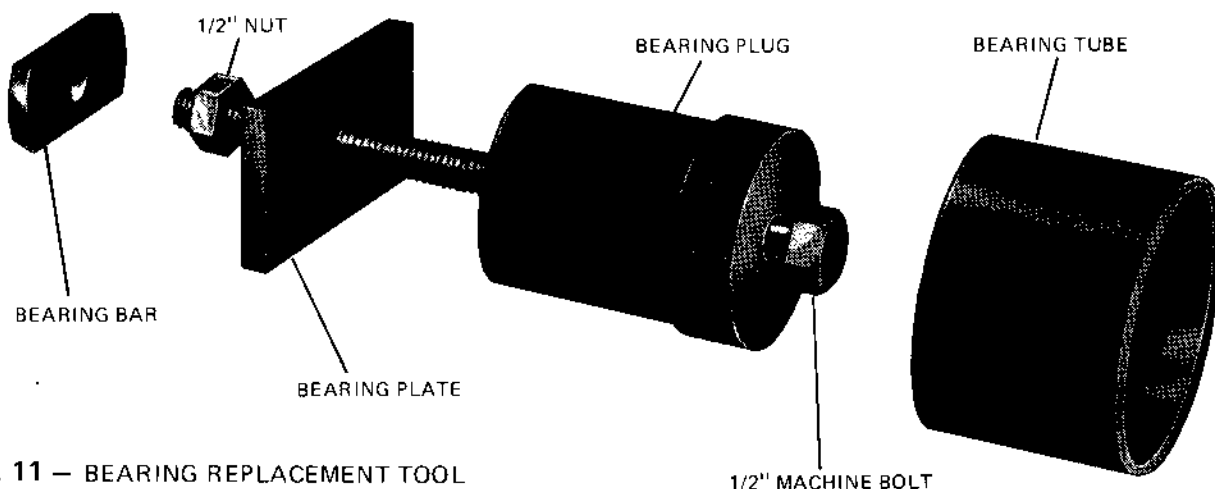
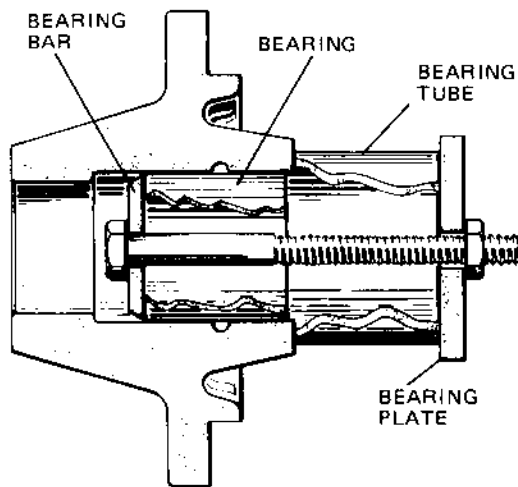
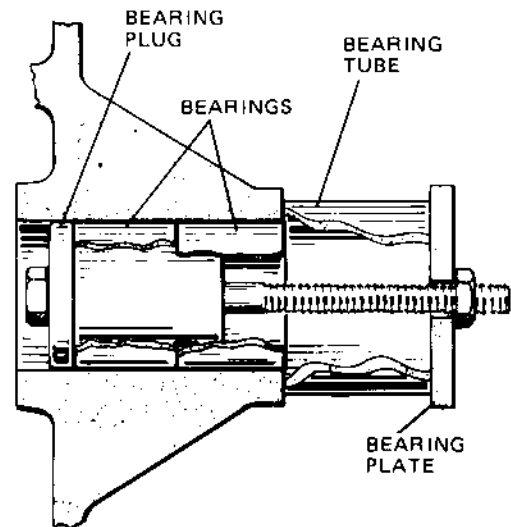


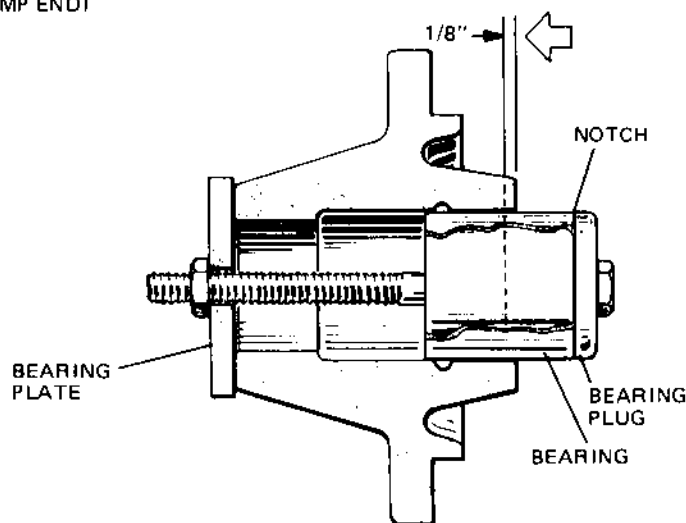
FIG. 11 — BEARING REPLACEMENT TOOL



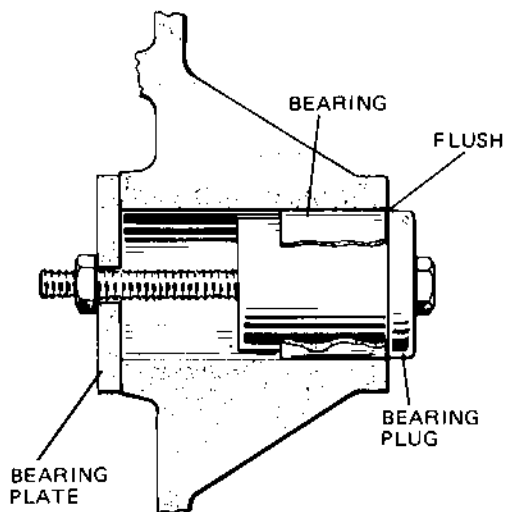
**DETAIL A – BEARING REMOVAL
(PUMP END)**



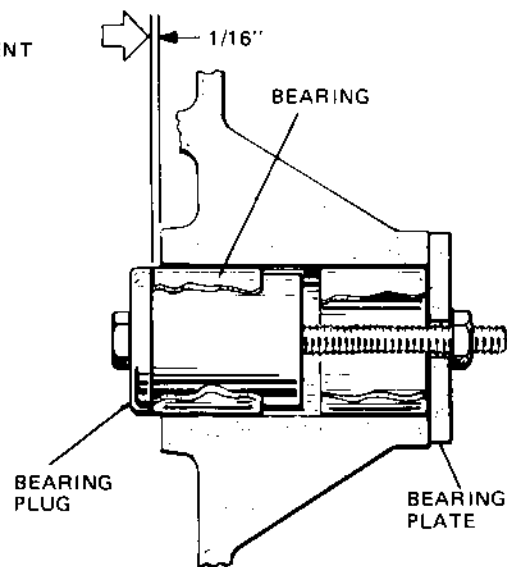
**DETAIL B – BEARING REMOVAL
(MOTOR END)**



**DETAIL C – BEARING REPLACEMENT
(PUMP END)**



**DETAIL D – OUTBOARD BEARING REPLACEMENT
(MOTOR END)**



**DETAIL E – INBOARD BEARING REPLACEMENT
(MOTOR END)**

FIG. 12 – BEARING REMOVAL AND REPLACEMENT



File in SRC Manual(s).

SERVICE BULLETIN

Supersedes: Nothing

1294

Form 180.11-RP (SB1)

94-29

File with Forms: 180.11-RP, 180.15-RP1, 180.40-RP1 & 2, 185.10-RP, 185.15-RP1 (SB1)

DATE: December 19, 1994
TO: A. S. Service Districts
FROM: D. C. Bull - 36BE
SUBJECT: * DISCHARGE VALVE CENTER BOLT
 021-01068 2 5/8 COMPRESSOR

The subject bolt is part of Discharge Valve Cage Assembly 365-24678-000. Engineering has changed the torque requirement for this bolt to 20-22 ft. lbs. Exceeding this requirement may result in damage to the bolt and a failure of the compressor.

Please distribute this information to your Service Technicians and mark your manuals accordingly.

* Compressors where used:
 FN, F, H, S, FC & HC


D. C. Bull - 36BE

EVACUATION AFTER REPAIRS

During the compressor repair procedure the crankshaft and oil should be examined for the presence of metal particles. This could indicate wearing of parts within the compressor or system contamination. New oil should be charged into the compressor using the oil charging valve. (See **PHYSICAL DATA**.)

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

The compressor should then be evacuated to a pressure of 300 microns using a quality vacuum pump and following the procedure outlined in instruction Form 55.05-NM.

ISOLATORS

York designed springs, color coded, are to be used with the S compressor are as follows:

COMPRESSOR SIZE	PUMP END	MOTOR END
SS42	Green (2 Req'd.)	Brown (2 Req'd.)
SS62	Gray (2 Req'd.)	Brown (2 Req'd.)
SS63	Gray (2 Req'd.)	Brown (2 Req'd.)