YORK®

REFRIGERANT TRANSFER UNIT AND PUMPOUT RECEIVER

INSTALLATION, OPERATING & MAINTENANCE | Supersedes: Nothing | 380 | Form 160.71-NM3

MODELS RTU-3, RTU-7.5 & RTU-10

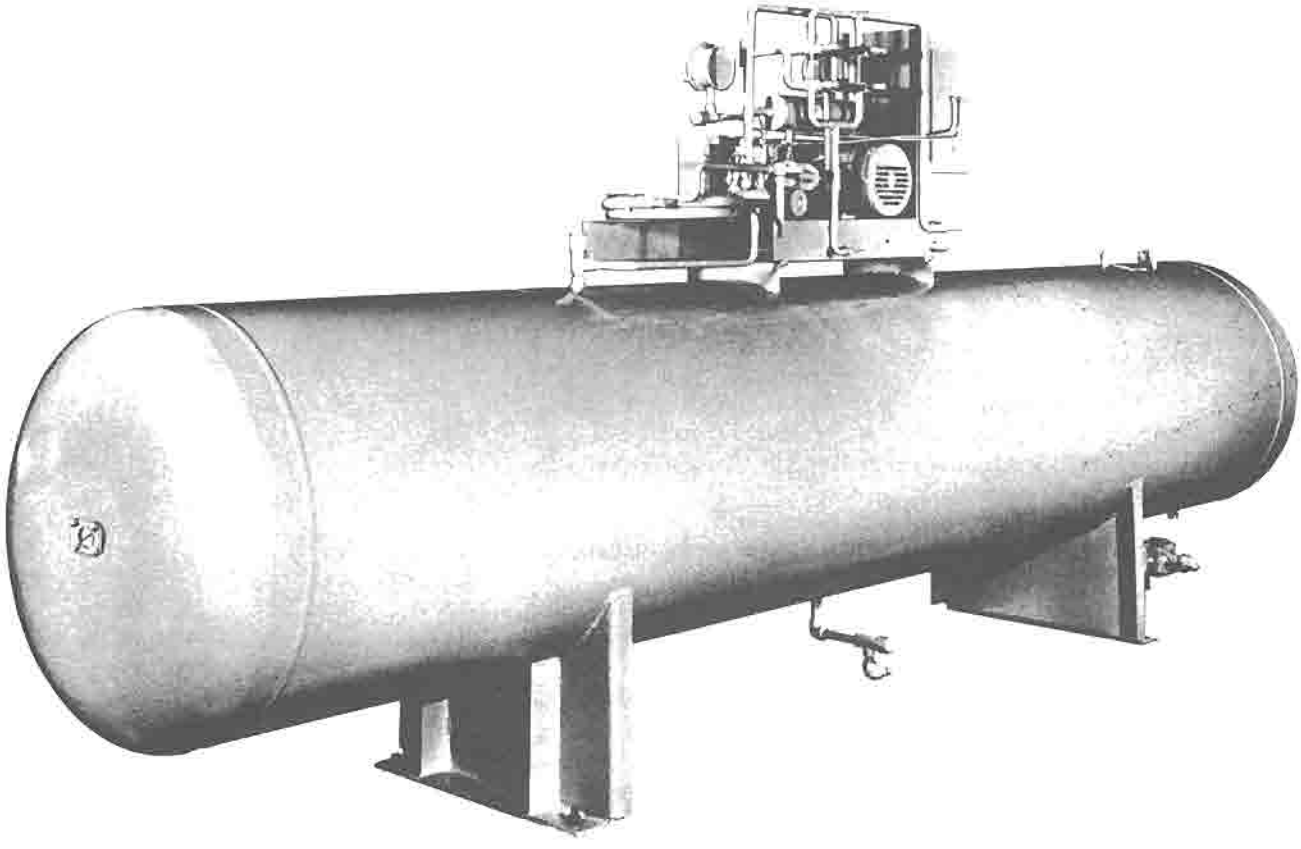


TABLE OF CONTENTS

INTRODUCTION

GENERAL

The York Transfer Unit and Pumpout Receiver may be used for storage of refrigerants R-12, R-500, or R-22 and is designed for remote usage with Turbopaks, OM Turbomaster Units or Yorkpak Units. The transfer unit is available in three models as follows:

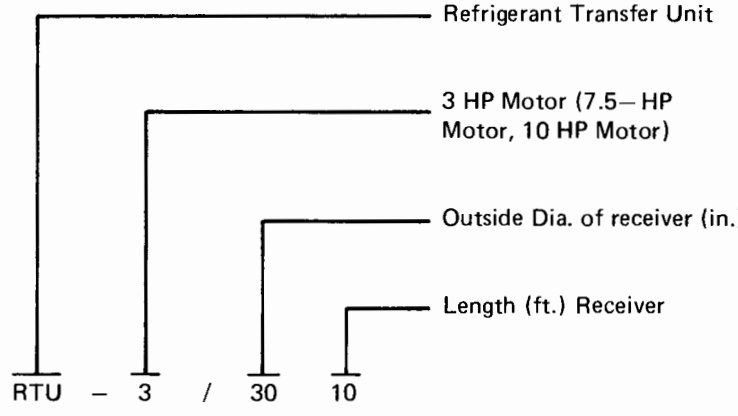
Model RTU-3 – furnished standard for units through 3000 tons.

Model RTU-7.5 – for R-12 or R-500 furnished standard for units above 3000 tons.

Model RTU-10 – for R-22 furnished standard for units above 3000 tons.

Pumpout receivers are available from 30" in dia. to 60" in dia. and from 10' to 26' long.

NOMENCLATURE



INSPECTION–DAMAGE–SHORTAGE

The unit shipment should be checked on arrival to see that all major pieces, boxes and crates are received. The unit should be checked on the trailer or rail car when received, before unloading, for visible signs of damage. Any damage or signs of possible damage should be reported to the transportation company immediately for their inspection, also advise the York Regional or District Office so a York representative can assist in filing damage claims. YORK DIVISION OF BORG-WARNER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE IN SHIPMENT, OR AT JOB SITE, OR LOSS OF PARTS. (Refer to Shipping Damage Claims, Form 50.15-NM.)

If damage is found, York must be notified and action must be taken to prevent further damage or deterioration of the machinery, ie: a slow refrigerant leak, exposure of internal parts to atmosphere, etc.

When received at the job site all containers should be opened and contents checked against the packing list. Any material shortage should be reported to The York Division of Borg-Warner immediately. (Refer to Shipping Damage Claims, Form 50.15-NM.)

LOCATION

The transfer unit and pumpout receiver should be located at a level lower than any other part of the Turbopak, OM Turbomaster unit or Yorkpak unit so that, with unit pressure equalized, the liquid refrigerant will drain into the receiver by gravity.

CLEARANCE

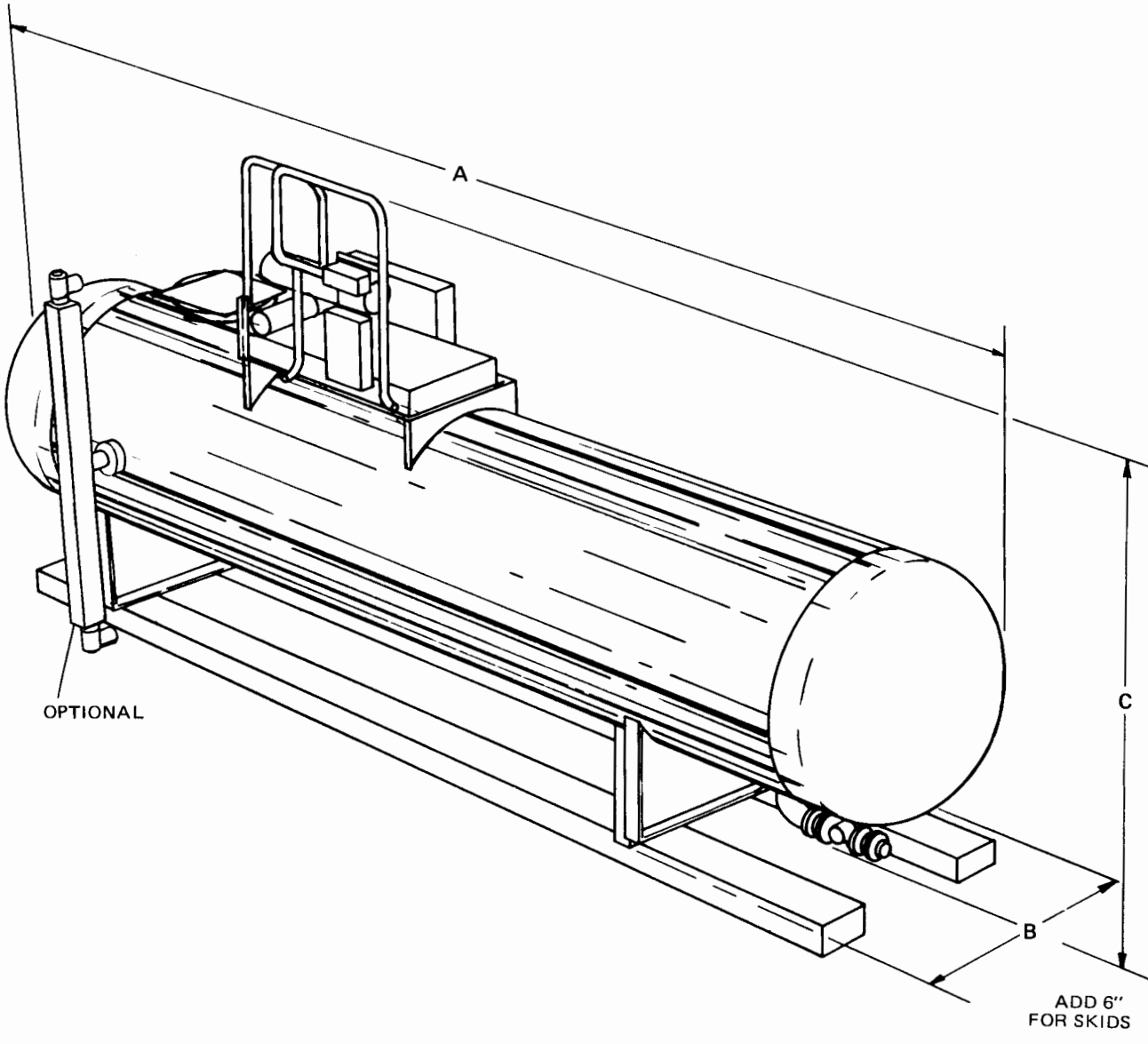
Proper clearance around and above the transfer and pumpout receiver to allow for servicing and operation. The clearances are as follows:

Rear and ends – 2 ft.
Above unit – 2 ft.
Front – 3 ft.

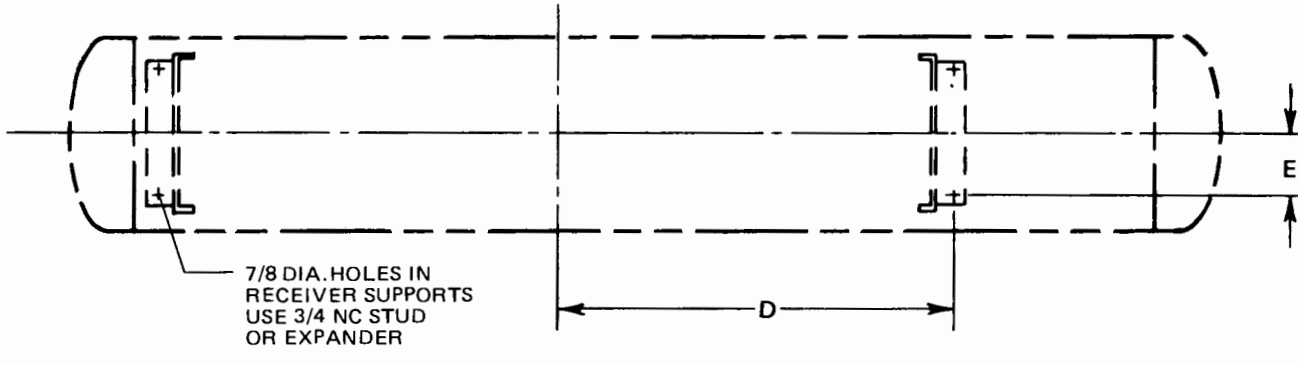
FOUNDATION

A level foundation or substructure capable of supporting the weight of the unit plus the full storage charge. No isolation pads are necessary.

SHIPPING DIMENSIONS, WEIGHTS



FLOOR LAYOUT



SHIPPING DIMENSIONS, WEIGHT & FLOOR LAYOUT

Model		A	B	C†	Floor Layout Mounting Holes D	Floor Layout Mounting Holes E	Shipping Weight R-12—R-500	Shipping Weight R-22
RTU-3/3010		10′—0″	2′—6″	6′—0-1/2″	5′—5″	1′—8″	1650	1850
RTU-3/3012		12′—0″	2′—6″	6′—0-1/2″	6′—5″	1′—8″	1870	2120
RTU-3/3016		16′—0″	2′—6″	6′—0-1/2″	8′—5″	1′—8″	2320	2650
RTU-3/3616		16′—0″	3′—0″	6′—6-1/2″	8′—5″	2′—2″	3000	3420
RTU-3/4216		16′—0″	3′—6″	7′—0-1/2″	8′—5″	2′—6″	3950	4430
RTU-3/4218		18′—0″	3′—6″	7′—0-1/2″	9′—5″	2′—6″	4370	4900
RTU-3/4220		20′—0″	3′—6″	7′—0-1/2″	10′—5″	2′—6″	4780	5400
RTU-3/4620		20′—0″	3′—10″	7′—4-1/2″	10′—5″	2′—10″	5200	6410
RTU-3/4622		22′—0″	3′—10″	7′—4-1/2″	11′—5″	2′—10″	6840	8180
RTU-3/5220		20′—0″	4′—4″	7′—10-1/2″	10′—5″	3′—4″	6460	8440
RTU-3/5222		22′—0″	4′—4″	7′—10-1/2″	11′—5″	3′—4″	8250	10430
RTU-3/5224		24′—0″	4′—4″	7′—10-1/2″	12′—5″	3′—4″	8930	11320
RTU-3/6020		20′—0″	5′—0″	8′—6-1/2″	10′—5″	3′—10″	8170	9790
RTU-3/6022		22′—0″	5′—0″	8′—6-1/2″	11′—5″	3′—10″	10090	11900
RTU-3/6024		24′—0″	5′—0″	8′—6-1/2″	12′—5″	3′—10″	10940	12920
RTU-3/6026		26′—0″	5′—0″	8′—6-1/2″	13′—5″	3′—10″	11780	13970
RTU-7.5/3012*	RTU-10/3012**	12′ 0″	3′—7-5/8″	6′—9″	6′—5″	1′—8″	3060*	3310**
RTU-7.5/3016	RTU-10/3016	16′—0″	3′—7-5/8″	6′—9″	8′—5″	1′—8″	3600*	3940**
RTU-7.5/3616	RTU-10/3616	16′—0″	3′—10″	7′—3″	8′—5″	2′—2″	4290*	4700**
RTU-7.5/4216	RTU-10/4216	16′—0″	4′—1″	7′—9″	8′—5″	2′—6″	5240*	5710**
RTU-7.5/4218	RTU-10/4218	18′—0″	4′—1″	7′—9″	9′—5″	2′—6″	5650*	6190**
RTU-7.5/4220	RTU-10/4220	20′—0″	4′—3″	7′—9″	10′—5″	2′—6″	6070*	6680**
RTU-7.5/4620	RTU-10/4620	20′—0″	4′—3″	6′—1″	10′—5″	2′—10″	6480*	7700**
RTU-7.5/4622	RTU-10/4622	22′—0″	4′—6″	8′—1″	11′—5″	2′—10″	6120*	9470**
RTU-7.5/5220	RTU-10/5220	20′—0″	4′—6″	8′—7″	10′—5″	3′—4″	7750*	9730**
RTU-7.5/5222	RTU-10/5222	22′—0″	4′—6″	8′—7″	11′—5″	3′—4″	9530*	11710**
RTU-7.5/5224	RTU-10/5224	24′—0″	4′—6″	8′—7″	12′—5″	3′—4″	10200*	12600**
RTU-7.5/6020	RTU-10/6020	20′—0″	5′—0″	9′—3″	10′—5″	3′—10″	9440*	11700**
RTU-7.5/6022	RTU-10/6022	22′—0″	5′—0″	9′—3″	11′—5″	3′—10″	11370*	13180**
RTU-7.5/6024	RTU-10/6024	24′—0″	5′—0″	9′—3″	12′—5″	3′—10″	12220*	14210**
RTU-7.5/6026	RTU-10/6026	26′—0″	5′—0″	9′—3″	13′—5″	3′—10″	13060*	15250**
RTU-7.5/7220	RTU-10/7220	20′—0″	6′—0″	10′—3″	10′—5″	4′—8″	12710*	14680**
RTU-7.5/7222	RTU-10/7222	22′—0″	6′—0″	10′—3″	11′—5″	4′—8″	15000*	17180**
RTU-7.5/7224	RTU-10/7224	24′—0″	6′—0″	10′—3″	12′—5″	4′—8″	16240*	18620**
RTU-7.5/7226	RTU-10/7226	26′—0″	6′—0″	10′—3″	13′—5″	4′—8″	17430*	20030**

†ADD 6″ TO DIM. FOR SKIDS

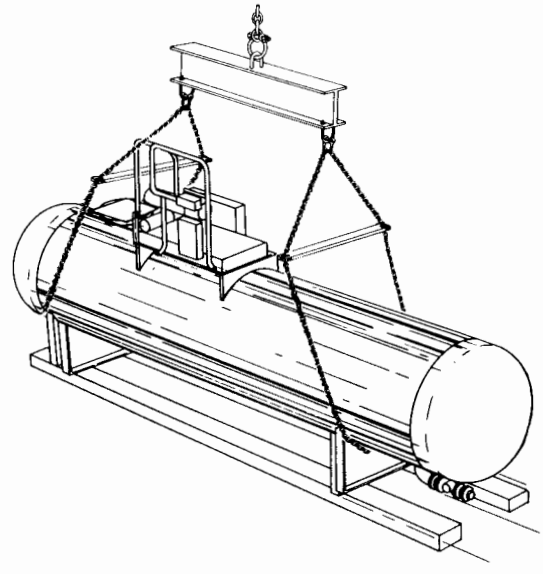


FIG. 3–RIGGING TRANSFER UNIT AND PUMPOUT RECEIVER

RIGGING

The transfer unit and pumpout receiver unit is shipped on skids. When necessary riggers skates or rollers may be used.

The unit may be rigged for lifting as shown in Fig. 3. Care must be taken not to damage the transfer unit.

INSTALLATION

REFRIGERANT TRANSFER AND STORAGE UNIT

A refrigerant transfer unit, with a storage receiver capable of holding the complete refrigerant charge of the largest unit, is installed and connected to the OM Turbomaster, Turbopak or Yorkpak unit to hold the charge while it is open for inspection or repair.

The storage receiver should be located at a level lower than any other part of the unit so that, with unit pressure equalized, the liquid refrigerant will drain into the receiver by gravity.

Each transfer unit is complete with a condensing unit to pump the remaining refrigerant gas from the unit to the receiver after the liquid charge has been drained.

When more than one OM Turbomaster, Turbopak or Yorkpak Units are used on an installation, the pumpout condensing unit is usually connected to each unit so that the charge can be transferred from any of the units to the receiver.

Since refrigerant transfer and storage systems vary in detail to suit the individual installation, these units should be installed in accordance with the drawings furnished.

LOCATING AND MOUNTING UNIT

1. Locate and install mounting studs or expanders in the foundation. The bolt or stud size is 3/4"—NC. For locating dimensions see Product Drawing 160.71-PA1.40 (RTU-3) or 160.71-PA1.42(RTU-7.5 or RTU-10.

2. Rig unit to final location, place over studs or expanders and lower unit in place. Fasten the unit to foundation.

REFRIGERANT PIPING — (See Fig. 5-RTU-3 (Product Drawing 160.71-PA1.41) & Fig. 6 - RTU-7.5 & RTU-10 (Product Drawing 160.71-PA1.43

1. Pipe, tubing, valves and fittings are shipped loose for field assembly. All pipe and tubing to be cut to length, threaded and scarfed for welding or polished for brazing.

2. All piping to be run in a neat workmanship manner and must be supported to withstand the combined weight of

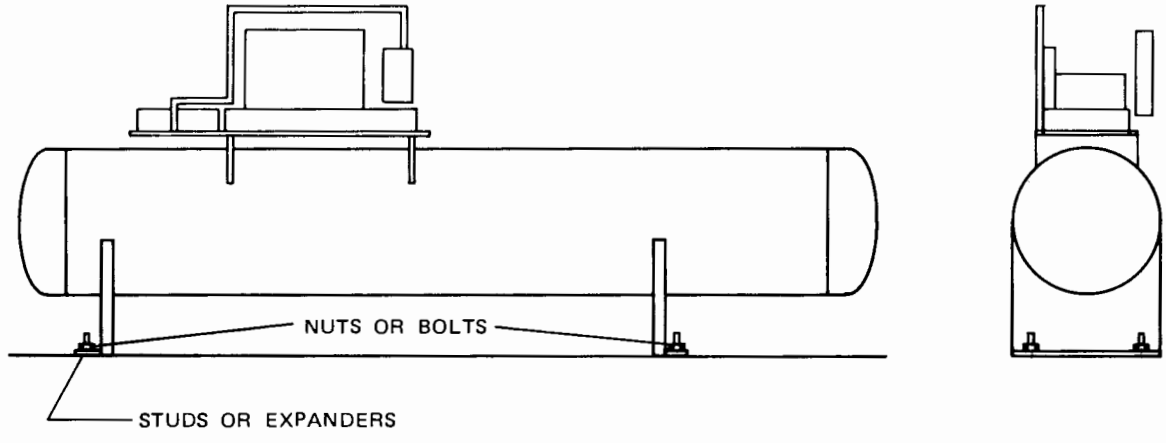
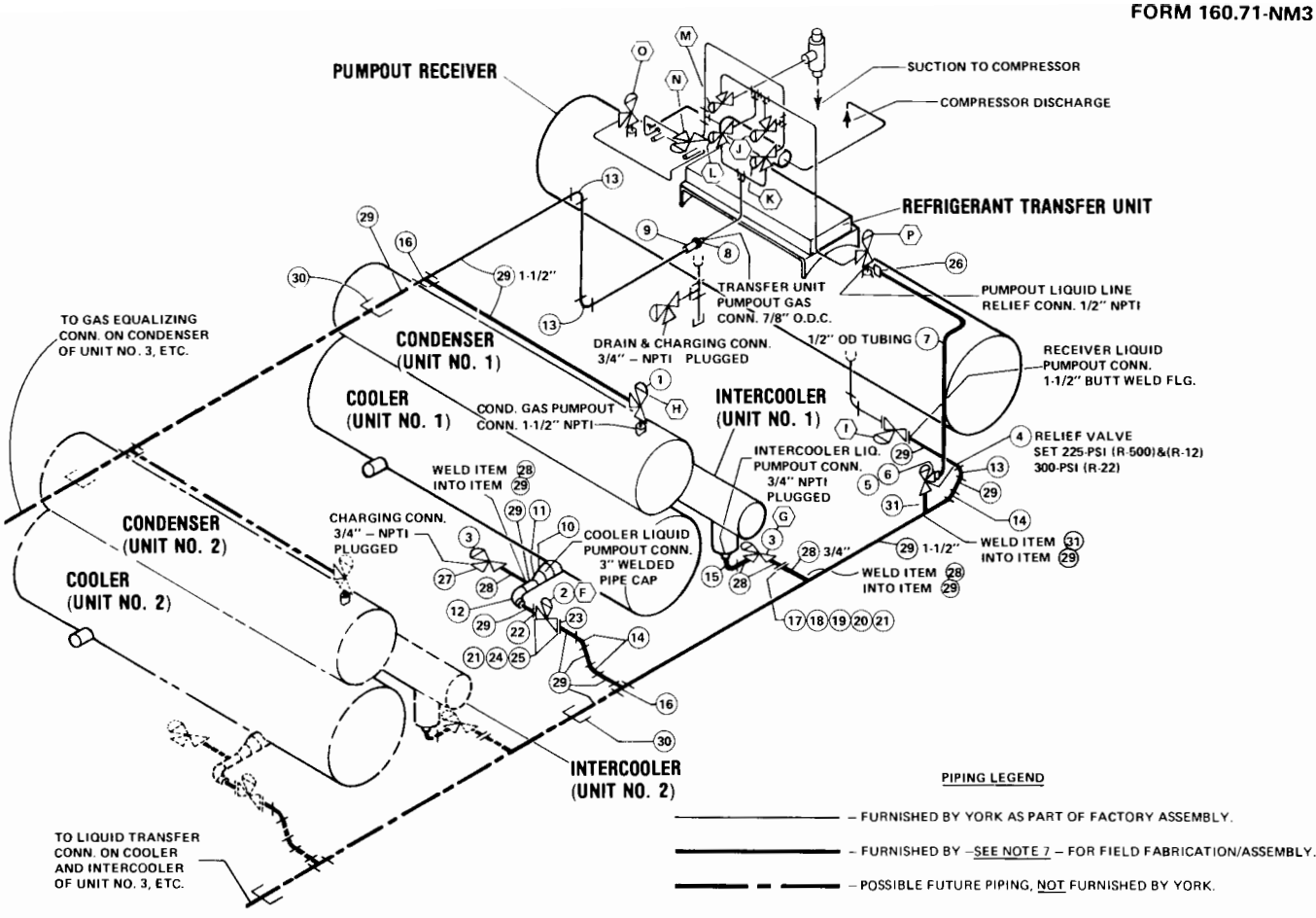


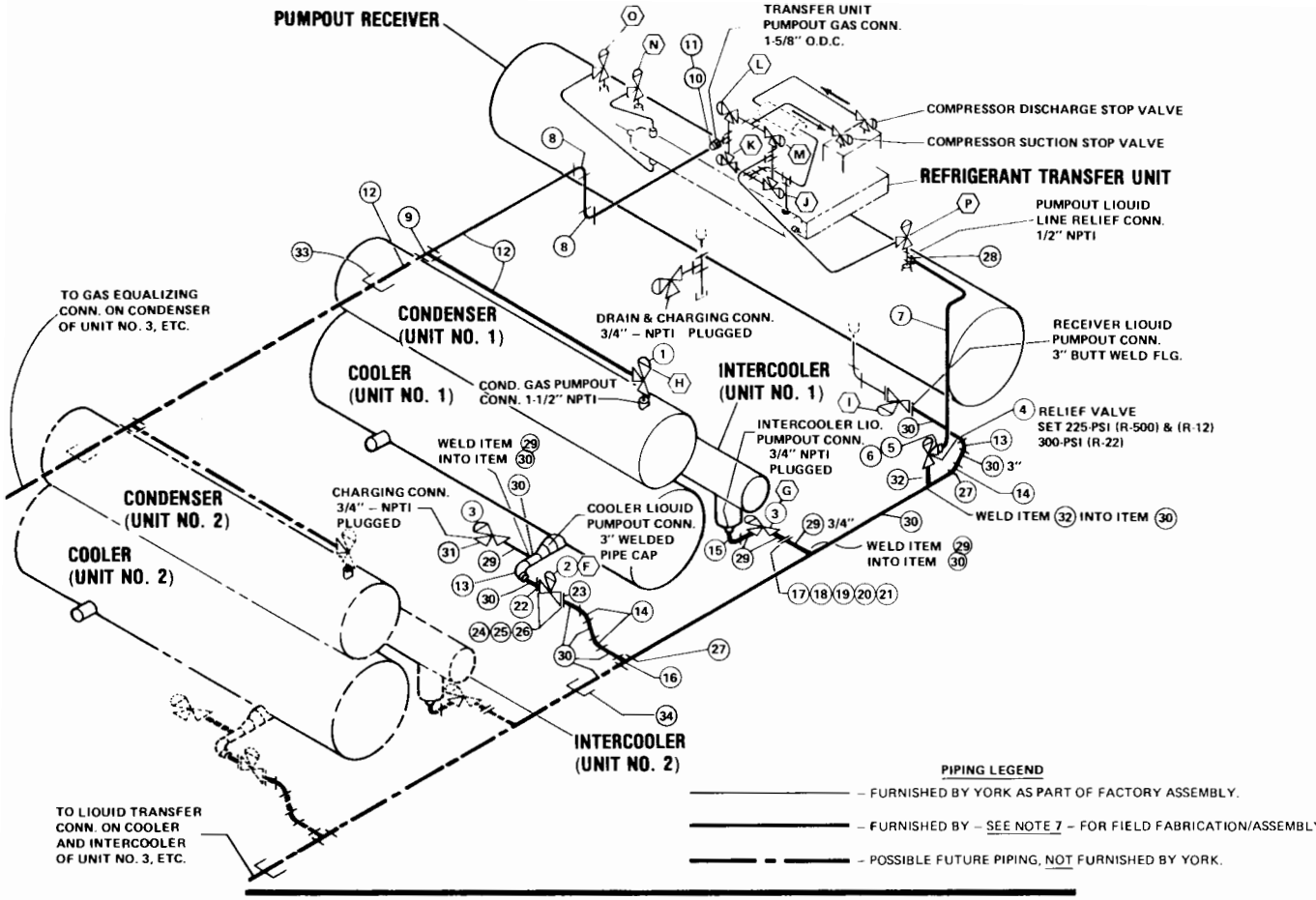
FIG. 4 — MOUNTING UNIT



MATERIAL LIST

ITEM NO.	PARTS DESCRIPTION	QUANTITY	
		FIRST CHILLER UNIT	EACH ADD'L. CHILLER UNIT
1	Valve, Stop, Angle, Seal Cap, 1-1/2" NPTI	1	1
2	Valve, Stop, Globe, Seal Cap, Sq. Flg., Butt Weld; 1-1/2"	1	1
3	Valve, Stop, Angle, Seal Cap; 3/4" NPTI	2	2
4	Valve, Relief, Angle, Screw, 1/2" NPTI	1	–
5	Connector, Flare, Half-Union; 1/2" NPTE x 1/2" Male Flare	1	–
6	Nut, Flare; 1/2" SAE	1	–
7	Tubing, Light Anneal; 1/2" O.D. x .032 Wall	15 Ft.	–
8	Adapter, C x M; 7/8" O.D.C. x 1" NPTE	1	–
9	Coupling, Reducing, Pipe; 1-1/2" x 1" NPTI	1	–
10	Ring, Weld, Back-up; 3"	1	1
11	Reducer, Weld, Butt, Eccentric; 3" x 1-1/2"	1	1
12	Elbow, Eld, Butt, L.R., 90°; 1-1/2"	1	1
13	Elbow, Weld, Socket, 90°; 1-1/2"	7	4
14	Elbow, Weld, Socket, 45°; 1-1/2"	3	2
15	Elbow, Street, 90°; 3/4" NPTE x NPTI	1	1
16	Tee, Weld, Socket; 1-1/2" x 1-1/2" x 1-1/2"	2	2
17	Flange, Screw, Oval; Male; 3/4" NPTI	1	1
18	Flange, Screw, Oval, Female; 3/4" NPTI	1	1
19	Gasket, Oval Flg; 3/4"	1	1
20	Screw, Cap, Hex Head; 5/8"–11UNC x 3" lg.	2	2
21	Nut, Hex; 5/8"–11UNC	10	10
22	Flange, Weld, Butt, Sq., Male; 1-1/2"	1	1
23	Flange, Weld, Butt, Sq., Female; 1-1/2"	1	1
24	Gasket, Sq. Flg.; 1-1/2"	1	1
25	Screw, Cap, Hex Head; 5/8"–11UNC x 3-1/4 lg.	8	8
26	Adapter, C x M; 1/2" O.D.C. x 1/2" NPTE	1	–
27	Plug, Pipe, Screw; 3/4"	1	1
28	Pipe, Black Steel, Sched. 80; 3/4" (20' lgs.)	20 Ft.	20 Ft.
29	Pipe, Black Steel, Sched 40; 1-1/2" (20' lgs.)	100 Ft.	60 Ft.
30	Cap, Weld, Socket; 1-1/2"	2	2
31	Nipple, Pipe, Sched 80: 1/2" x 3" lg.	1	–
32	Elbow, Weld, Socket, 90°, 3/4"	2	2

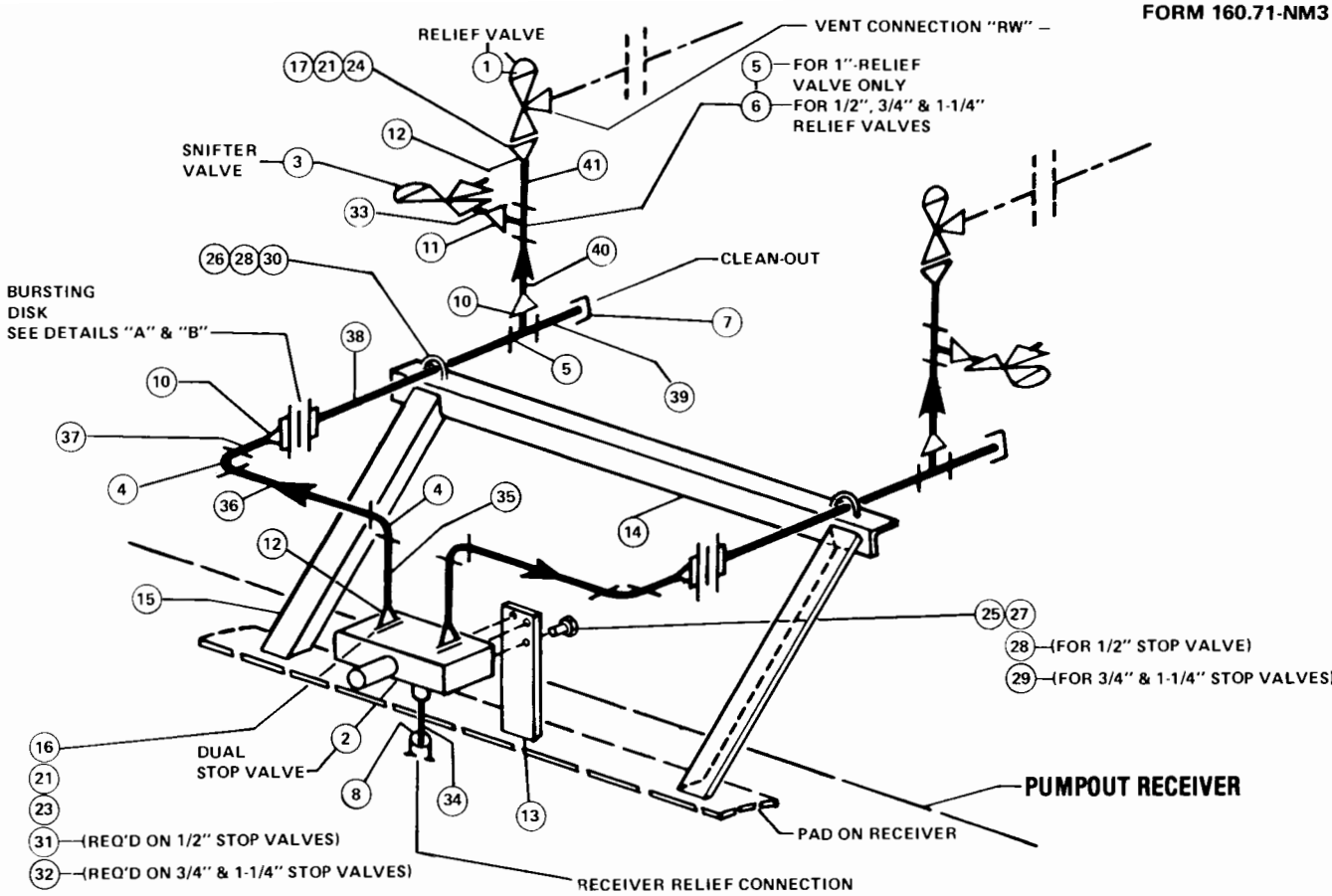
FIG. 5– TYPICAL PIPING – MODEL RTU – 3 TRANSFER UNIT AND RECEIVER



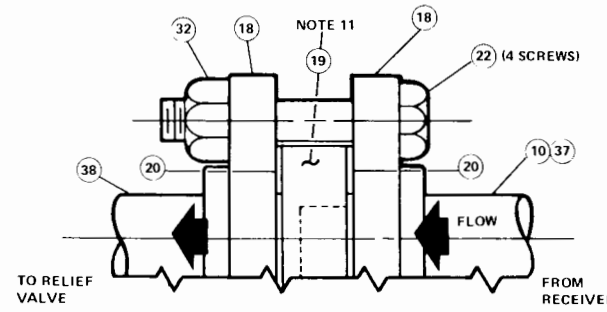
MATERIAL LIST

ITEM NO.	PARTS DESCRIPTION	QUANTITY	
		FIRST CHILLER UNIT	EACH ADD'L. CHILLER UNIT
1	Valve, Stop, Angle; Seal Cap; 1-1/2" NPTI	1	1
2	Valve, Stop, Globe; Seal Cap, Sq. Flg., Butt Weld; 3"	1	1
3	Valve, Stop, Angle, Seal Cap; 3/4" NPTI	2	2
4	Valve, Relief; Angle, Screw; 1/2" NPTI	1	–
5	Connector, Flare, Half Union; 1/2" NPTE x 1/2" Male Flare	1	–
6	Nut, Flare; 1/2" – SAE	1	–
7	Tubing, Light Anneal; 1/2" O.D. x .032 Wall	15 Ft.	–
8	Elbow, Weld, Socket; 90°; 1-1/2"	4	2
9	Tee, Weld, Socket; 1-1/2" x 1-1/2" x 1-1/2"	1	1
10	Adapter, C x M; 1-5/8" O.D.C. x 1-1/2" NPTE	1	–
11	Coupling, Pipe; 1-1/2" NPTI	1	–
12	Pipe, Black Steel, Sched. 40; 1-1/2" (20' lgs.)	60 Ft.	40 Ft.
13	Elbow, Weld, Butt, L.R.; 90°; 3"	4	3
14	Elbow, Weld, Butt, L.R.; 45°; 3"	3	2
15	Elbow, Street, 90°; 3/4" NPTE x NPTI	1	1
16	Tee, Weld, Butt; 3" x 3" x 3"	1	1
17	Flange, Screw, Oval, Male; 3/4" NPTI	1	1
18	Flange, Screw, Oval; Female; 3/4" NPTI	1	1
19	Gasket, Oval Flg.; 3/4"	1	1
20	Screw, Cap, Hex Hd.; 5/8"–11UNC x 3" lg.	2	2
21	Nut, Hex; 5/8"–11UNC	2	2
22	Flange, Weld, Butt, Sq., Male; 3"	1	1
23	Flange, Weld, Butt, Sq., Female; 3"	1	1
24	Gasket, Sq., Flg.; 3"	1	1
25	Screw, Cap, Hex Hd.; 3/4"–10UNC x 4-1/2" lg.	8	8
26	Nut, Hex; 3/4"–10UNC	8	8
27	Ring, Weld, Back-up; 3"	24	20
28	Adapter, C x M; 1/2" O.D.C. x 1/2" NPTE	1	–
29	Pipe, Black Steel, Sched. 80; 3/4" (20' lgs.)	20 Ft.	20 Ft.
30	Pipe, Black Steel, Sched. 40; 3" (20' lgs.)	60 Ft.	40 Ft.
31	Plug, Pipe; 3/4" NPTE	1	1
32	Nipple, Pipe, Sched. 80; 1/2" x 3" lg.	1	–
33	Cap, Weld, Socket; 1-1/2"	1	1
34	Cap, Weld, Butt; 3"	1	1
35	Elbow, Weld, Socket, 90°; 3/4"	2	2

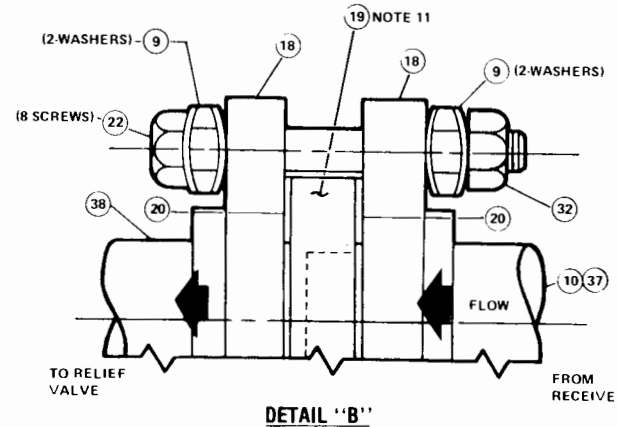
– TYPICAL PIPING – MODEL RTU 7.5 & 10 TRANSFER UNIT AND RECEIVER



ITEM NO.	PARTS DESCRIPTION
1	Valve, Relief, HC; Oval Flg. Fem. x NPTI
2	Valve, Stop, Dual, Seal Cap, NPTI x Oval Flg. Male
3	Valve, Stop, Angle, Seal Cap, Screw, NPTI
4	Elbow, Weld, Socket, 90°
5	Tee, Weld, Socket
6	Tee, Weld, Socket
7	Cap, Pipe, Screw, NPTI
8	Bushing, Pipe, Outside Hex, NPTE x NPTI
9	Washer, Spring (Beltville), 1.25" O.D. x 0.63 I.D. x .062 Th.
10	Insert, Weld, Socket
11	Insert, Weld, Socket
12	Insert, Weld, Socket
13	Bar, Support, 3" x 1/4" x Lg.
14	Angle, Support, 2" x 2" x 1/4" x Lg.
15	Angle, 2" x 2" x 1/4" x Lg.
16	Flange, Weld, Socket, Oval, Female
17	Flange, Weld, Socket, Oval, Male
18	Flange, Weld, Socket, Round, 300 #, Flat Face
19	Disk, Bursting
20	Gasket, O.D. x I.D. x 1/16" Th.
21	Gasket, Oval Flg.
22	Screw Cap, Hex Hd, 5/8" – 11 UNC x Length
23	Screw; Cap, Hex Hd; Size – UNC x Length
24	Screw; Cap, Hex Hd; Size – UNC x Length
25	Screw, Cap, Hex Hd, Size = UNC x Length
26	Bolt, "U", Size – UNC
27	Washer, Plain, O.D. x I.D. x .065" Th.
28	Lockwasher, Spring
29	Lockwasher, Spring
30	Nut, Hex; Size –UNC
31	Nut, Hex; Size–UNC
32	Nut, Hex; Size –UNC
33–41	Pipe, Black Steel (See Notes 6 & 7) 1/2" & 3/4"–Sched 80; 1", 1-1/4" & 2"–Sched 40
33	Pipe; Size x Length (Thread 1 End – NPTE)
34	Pipe; Size x Length (Thread 2 Ends – NPTE)
35	Pipe; Size x Length (Plain both ends)
36	Pipe; Size x Length (Plain both ends)
37	Pipe; Size x Length (Plain both ends)
38	Pipe; Size x Length (Plain both ends)
39	Pipe; Size x Length (Thread 1 End – NPTE)
40	Pipe; Size x Length (Plain both ends)
41	Pipe; Size x Length (Plain both ends)



DETAIL "A"
1" BURSTING DISK ASSEMBLY
(NOTE 11)



DETAIL "B"
2" BURSTING DISK ASSEMBLY
(FOR 171 THRU 300-LB. DWP APPLICATION)
(NOTE 11)

FIG. 7– TYPICAL RELIEF VALVE PIPING

the pipe valves, fittings, refrigerant in pipe and avoid stress or strain in all connections.

3. All slip joints must be brazed or welded use brazing material per ASTM B-260, class B AG 2 (Easy-Flo 35, typical). When brazing copper to brass or bronze use brazing material per ASTM B-260, class BCu P-5 (Sil-Fos, typical) when brazing cooper to copper.

4. All joints should be leak tested.

CONDENSER WATER PIPING

The condenser water piping materials are not supplied by York. The piping should be made up to insure the proper water flow (GPM) against the water pressure drop (Ft. of Water). (Refer to Table 1). Entering water temperature should not exceed 90°F.

RELIEF VALVE PIPING — (Refer to Product Drawing 160.71-PA1.44) Fig. 7.

Assembly bursting discs with arrow pointing in direction of flow. The maximum allowable torque load for flange bolts is 6½-ft. lbs.

Assemble the relief valve piping in accordance with the Product Drawing provided using Fig. 7 as reference.

ELECTRICAL WIRING

All wiring should comply with National and Local Codes and should be wired in accordance with the wiring diagrams for the specific refrigerant transfer unit specified for the job. Refer to Fig's. 8 and 9. Wiring Diagrams for wiring and data pertaining to the Model Transfer Unit used.

Pipe, valves and fittings are shipped loose for field assembly. Straight lengths of pipe are supplied by York to be cut for welding or threaded, when assembly piping. (Refer to Fig. 7, item numbers marked with an asterisk (*) indicates parts to be cut to length and threaded as noted).

TABLE 1 — TRANSFER UNIT CONDENSER DATA

RTU-3–UNIT

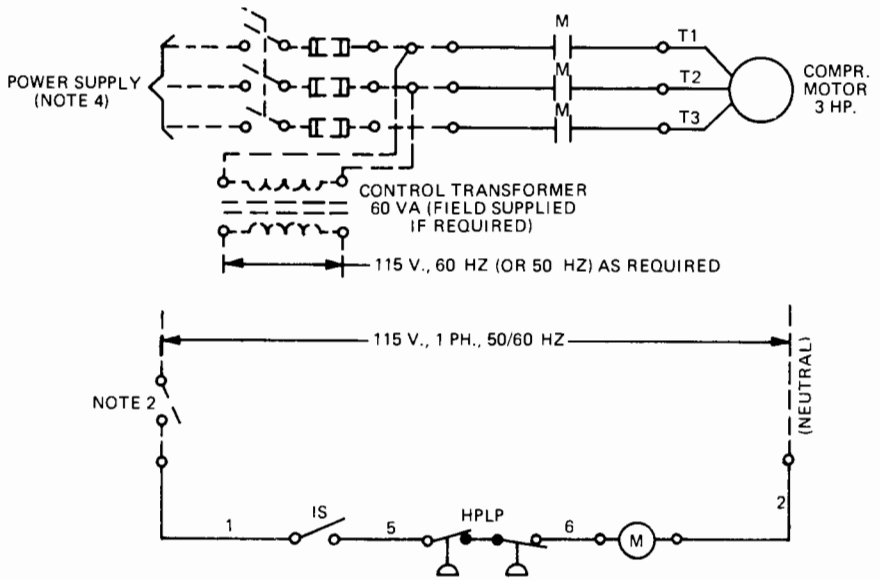
GPM Water	3 HP Unit Water Pressure Drop - Ft. H_2O*
6	0.5
7	6.75
8	8.8
9	11.1
10	13.82

RTU-7.5/10–UNIT

GPM Water	7.5/10 HP Unit Water Pressure Drop - Ft. H_2O
50	3.92
52	4.23
54	4.65
56	5.00
58	5.42
60	5.87

*Transfer system water piping (by others) should be made up to insure a flow of 10 to 12 gpm against the water pressure drops shown in Table 1. A minimum of 10 gpm of water at an entering temperature not exceeding 95° F is required.

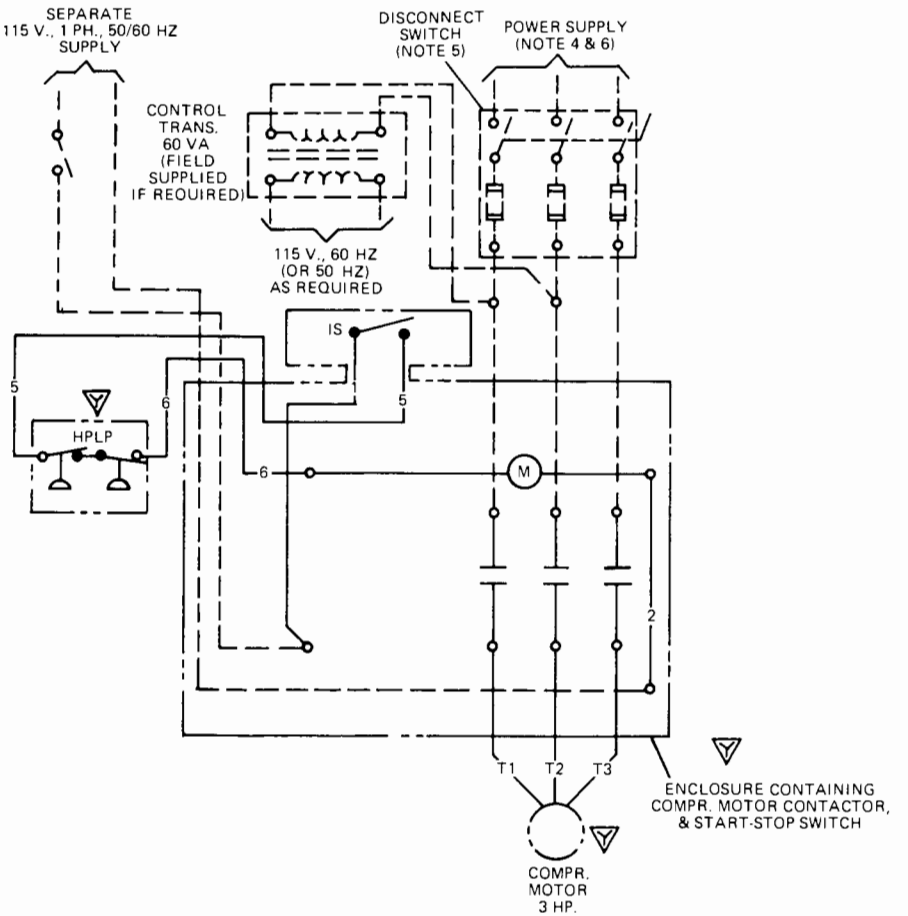
ELEMENTARY DIAGRAM



LEGEND

HPLP — HIGH-LOW PRESSURE CONTROLS
M — COMPRESSOR MOTOR CONTACTOR
IS — START-STOP SWITCH
--- — FIELD WIRING BY OTHERS

CONNECTION DIAGRAM

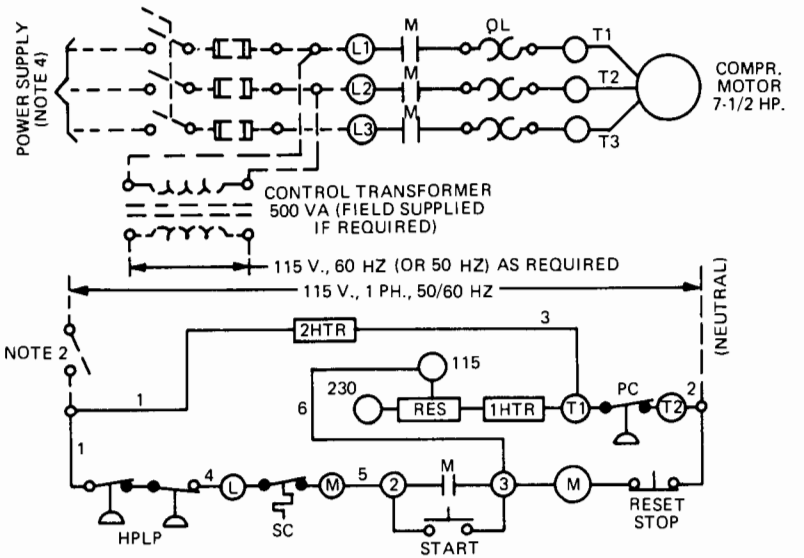


NOTES:

1. ALL WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (N.E.C.)
2. IF CONTROL CIRCUIT IS FROM SEPARATE POWER SOURCE, SWITCH MUST BE LOCATED ADJACENT TO THE MAIN DISCONNECT SWITCH. DO NOT FUSE GROUNDED NEUTRAL.
3. ITEMS SHOWN THUS; ▽ FURNISHED BY YORK.
4. POWER SUPPLY MAY BE ANY ONE OF THE FOLLOWING:
   a. 208, 220, 440 OR 550 V — 3 PH. — 60 HZ
   b. 190, 380, OR 500 V — 3 PH. — 50 HZ
   (TRANSFORMER PRIMARY SELECTED ACCORDINGLY)
5. MAX. DUAL ELEMENT FUSE SIZE AS FOLLOWS:
   a. 15 AMP FOR 208, 220 VOLT (60 HZ) & 190 VOLT (50 HZ).
   b. 8 AMP FOR 440, 550 VOLT (60 HZ) & 380, 500 VOLT (50 HZ).
6. USE #14 AWG WIRE FOR ALL FIELD WIRING.

FIG. 8—WIRING DIAGRAM — MODEL RTU — 3

ELEMENTARY DIAGRAM



LEGEND

HPLP	– HIGH-LOW PRESSURE CONTROL
OL	– OVERLOADS
OP	– OIL PRESSURE SWITCH, CONTAINING PC, SC, 1 HTR & RES
PC	– PRESSURE ACTUATOR CONTACT IN OP
SC	– HEATER ACTUATOR SAFETY CONTACT IN OP
1 HTR	– HEATER IN OP
RES	– DROPPING RESISTOR IN OP
2 HTR	– CRANKCASE HEATER
M	– COMPRESSOR MOTOR STARTER
– – –	– FIELD WIRING BY OTHERS

NOTES:

1. ALL WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (N.E.C.).
2. IF CONTROL CIRCUIT IS FROM SEPARATE POWER SOURCE, SWITCH MUST BE LOCATED ADJACENT TO THE MAIN DISCONNECT SWITCH. DO NOT FUSE GROUNDED NEUTRAL.
3. ITEMS SHOWN THUS; ▽ FURNISHED BY YORK.
4. POWER SUPPLY MAY BY ANY ONE OF THE FOLLOWING:
   a. 208, 220, 230, 240, 440, 460, 480, 550 OR 575 V – 3 PH. – 60 HZ
   b. 190, 220, 380, 400 OR 415 V, 3 PH., 50 HZ.
   . (TRANSFORMER PRIMARY SELECTED ACCORDINGLY)
5. MAX. DUAL ELEMENT FUSE SIZE AS FOLLOWS:
   a. 30 AMP FOR 208, 220, 230, 240 VOLT (60 HZ) & 190 VOLT (50 HZ).
   b. 15 AMP FOR 440, 460, 480, 550, 575 V. (60 HZ) & 380, 400, 415 VOLT (50 HZ).
6. FOR FIELD WIRING USE WIRE SIZE AS FOLLOWS:
   a. #10 AWG FOR 208 THRU 240 VOLT (60 HZ) & 190 VOLT (50 HZ).
   b. #14 AWG FOR 440 THRU 575 VOLT (60 HZ) & 380 THRU 415 VOLT (50 HZ).

CONNECTION DIAGRAM

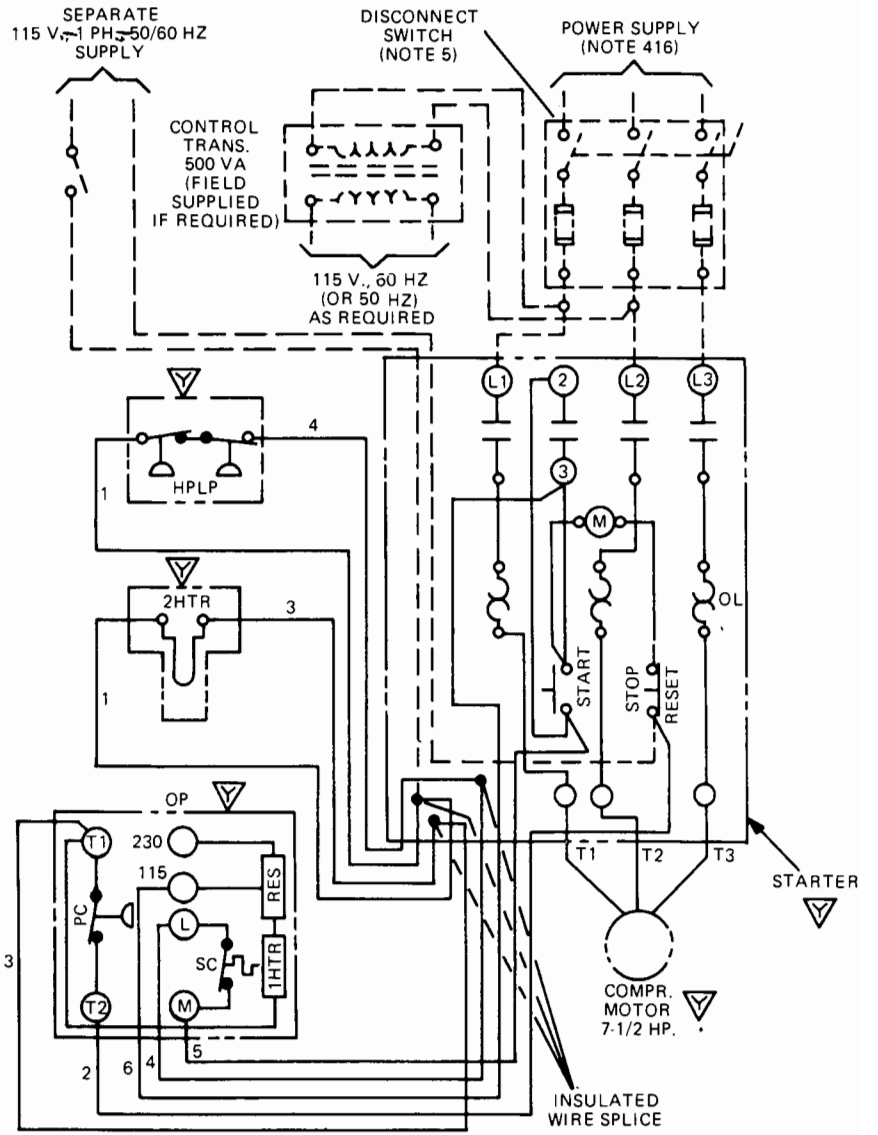


FIG. 9 — WIRING DIAGRAM – MODEL 7.5 & 10

OPERATION

INTRODUCTION

The purpose of a refrigerant transfer and pumpout unit is to remove and store refrigerant from the OM Turbomaster Liquid Chilling Unit during seasonal shutdowns or if the chilling unit needs maintenance. The refrigerants used in liquid chilling units have boiling points below ambient temperature at atmospheric pressure and must be removed from the refrigerant circuit before opening any part of the unit.

CAUTION – The transfer unit is not intended to evacuate air and should never be used for this purpose. Adequate evacuation can not be accomplished and the transfer unit could be damaged due to insufficient cooling.

The transfer unit is connected so a pressure differential can be created between the Liquid Chilling Unit and storage receiver to result in the transfer of liquid refrigerant to the pumpout receiver. Flow direction valves are provided to reverse the application of pressure when refrigerant flow from the storage receiver to the liquid chilling unit is desired during recharging.

The transfer unit is equipped with a water cooled condenser to condense the remaining refrigerant vapor left in the liquid chilling unit after the transfer of refrigerant liquid has been completed. For this duty, the compressor pumps the remaining refrigerant vapor through the condenser and the condensed liquid refrigerant drains by gravity into the storage receiver.

The high-low pressure safety control is connected in the motor control circuit. The high pressure cutout setting conforms to the design working pressure of the transfer unit and is the upper limit for satisfactory condenser and compressor performance. Manual reset is necessary for re-start of unit.

TABLE 2 – TRANSFER UNIT CONTROL SETTINGS

R-12		
Control	Cut-Out	Cut-In
Low Press.	Set as Desired	Set as Desired
High Press.	150 psig	Manual Reset
R-500		
Control	Cut-Out	Cut-In
Low Press.	Set as Desired	Set as Desired
High Press.	180 psig	Manual Reset
R-22		
Control	Cut-Out	Cut-In
Low Press.	Set as Desired	Set as Desired
High Press.	250 psig	Manual Reset

The low pressure cutout should be set to achieve desired refrigerant vapor pressure level. Also see, "Gas Pumpout-System To Receiver – Caution – Note."

The suction line throttling valve restricts compressor flow to correspond to 110% of motor full load rated amps, during the initial phase of gas transfer. Unless large variations in pumpout conditions exist for each transfer operation, one valve setting is required.

REFRIGERANT TRANSFER AND PUMPOUT UNIT DESCRIPTION

The Refrigerant Transfer Unit is self-contained, completely factory assembled, mounted on and piped to the pumpout receiver.

1000 to 3000 Ton OM Turbomaster Units, Turbopaks or Yorkpaks

Model RTU-7.5 or RTU-10 Transfer unit includes; a YORK 3-cylinder reciprocating compressor V-belt driven by a 7.5 HP or 10 HP open drip-proof squirrel cage motor; starting contactor and control switch; combination high and low pressure safety control; water cooled shell and tube condenser; oil float valve and oil separator for complete lubrication.

3000 to 8500 Ton OM Turbomaster Units or Yorkpaks

Model RTU-7.5 or RTU-10 Transfer unit includes; a YORK 3-cylinder reciprocating compressor V-belt driven by a 7.5 HP or 10 HP open drip-proof squirrel cage motor; starting contactor and control switch; combination high and low pressure safety control; water cooled shell and tube condenser; oil float valve and oil separator for complete lubrication.

Pumpout Receiver is horizontal top inlet thru-type designed for R-12–185 DWP or R-500–225 DWP or R-22–300 DWP and includes; necessary connections for refrigerant liquid inlet, equalizing, relief, drain and liquid transfer; receivers up thru 36" OD includes float actuated, magnetic, dial type liquid level gauges; two 2" sight ports for liquid level indication for receivers larger than 36" OD, and float gauges on 36" receivers and smaller; integral supports for factory mounted refrigerant transfer unit and for floor mounting; YORK HC dual relief valve assembly in accordance with ANSI-B9.1 safety code. Receiver is sized for full system charge when 90% full.

TRANSFER UNIT OIL CHARGING AND CHECKING PROCEDURE

Refrigerant Transfer Units are factory charged with YORK Type "C" oil and only this oil should be used when adding or changing oil.

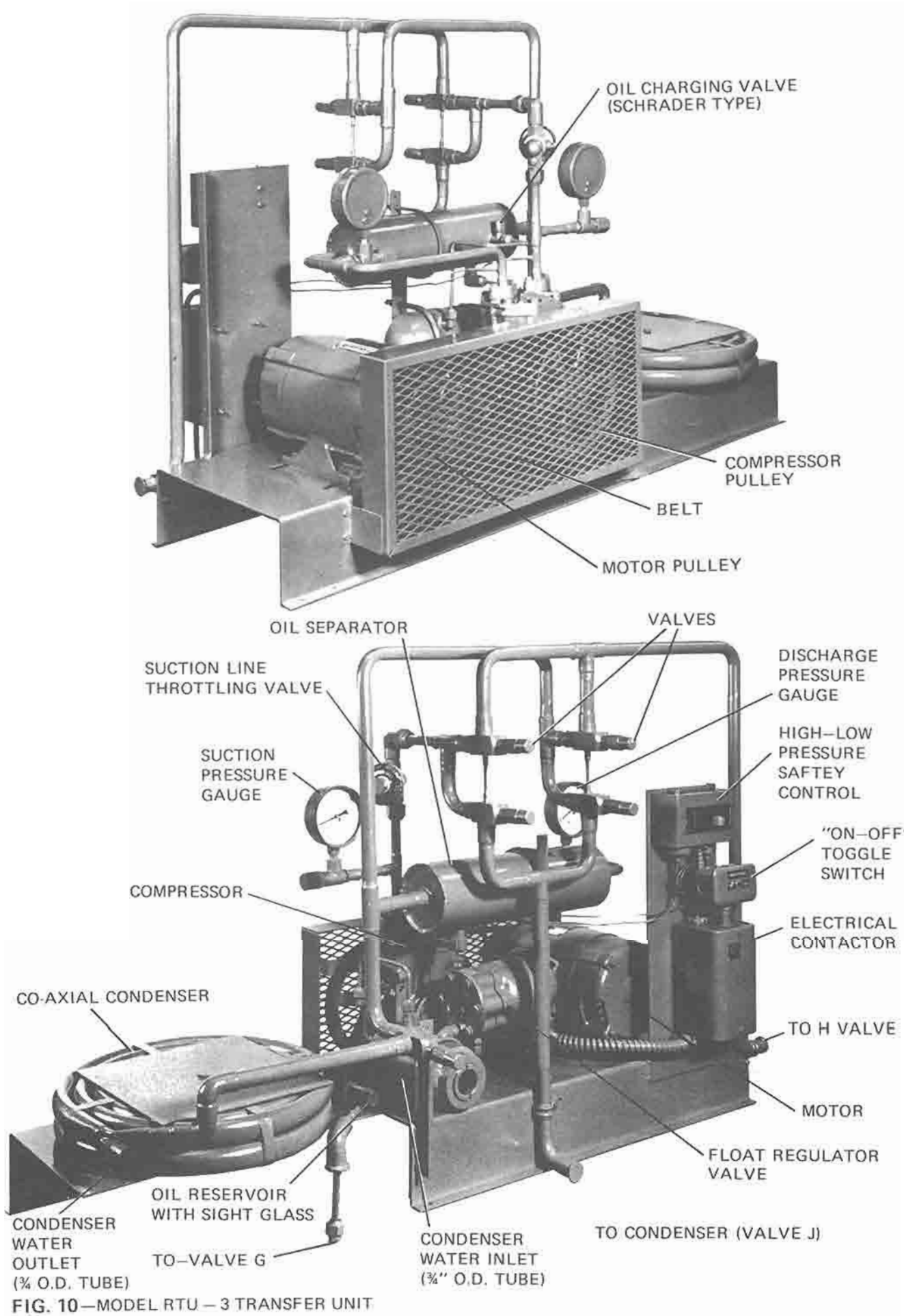


FIG. 10—MODEL RTU – 3 TRANSFER UNIT

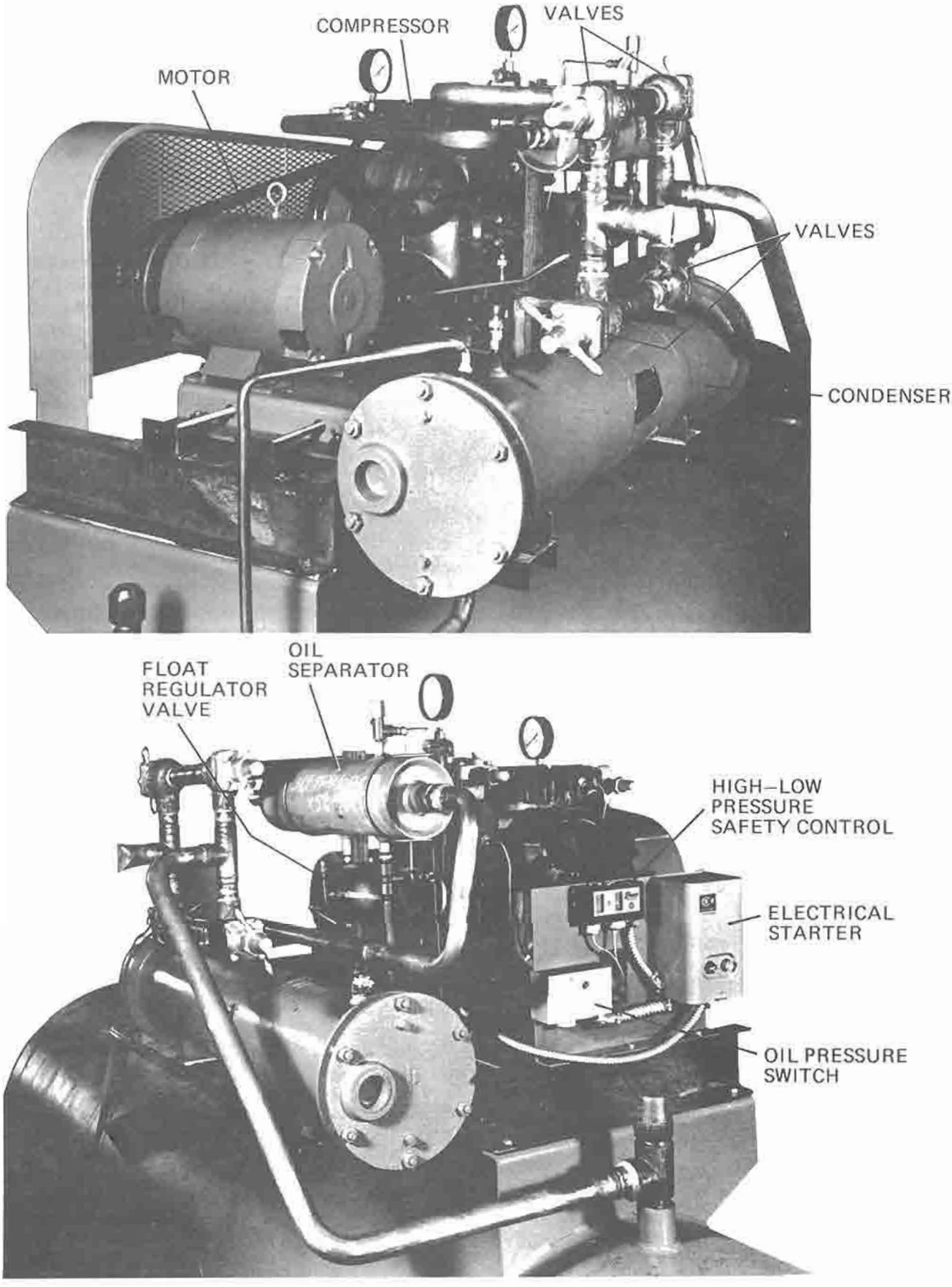


FIG. 11– MODEL RTU – 7.5 & 10 TRANSFER UNIT

Oil is charged via the Schrader valve located in the side of the separator. See Fig. 10. Oil first fills the float valve assembly, then enters the oil reservoir, which supplies oil to the compressor. It is recommended that the reservoir be half full before starting the unit, as viewed through the sight glass. Oil should be added if the level drops below the bottom of the sight glass. During operation, the oil level may drop below the sight glass, which is satisfactory provided oil is entering the reservoir in a steady stream.

The oil separator, connected to the compressor discharge, is provided to separate and return oil from the refrigerant to the lubrication circuit.

OPERATING PROCEDURES FOR TRANSFER UNIT

CAUTION – DO NOT DRAIN LIQUID REFRIGERANT INTO SYSTEM IF PRESSURE IS LOWER THAN THAT CORRESPONDING TO 32°F.

When transferring refrigerant either to or from the storage receiver, open the valves in the equalizing line and the transfer line between the cooler and the storage receiver to permit as much as possible of the refrigerant to flow by gravity or differential pressure. The transfer compressor may then be operated to raise or lower the pressure in either the OM Turbomaster Unit, Turbopak or Yorkpak, or the storage receiver, depending upon which direction the refrigerant is being transferred.

NOTE – The following instructions assume all valves to and from the transfer unit are closed. Valves should be checked prior to proceeding with any transfer operation. For best performance, adjust suction control valve in high head gas transfer mode to obtain 110% of motor full load rated amps.

IMPORTANT – The oil level should be checked in the transfer unit oil reservoir sight glass operating the transfer unit. Add oil if the level drops below the sight glass. (See Transfer Unit Oil Charging and Checking Procedure, page 13). It is not necessary to fill the reservoir level above 1/2 a sight glass. A shortage of oil will result in a failure of the transfer unit compressor.

LIQUID TRANSFER – SYSTEM TO RECEIVER

Pressurizing Method (See Fig's. 12 & 13).

This procedure is recommended for the initial phase of refrigerant transfer when the Pumpout Unit is at the same elevation or higher than the Unit to be evacuated.

1. If the available chilled water (brine) temperature is not above the unit's stand-by saturation pressure-temperature, do not operate the chilled water pump.

2. Open valves I, F, H, P, G, K and M.

3. Start the Transfer Unit by flipping the toggle switch, located above the electrical contactor, to the "on" position.

Operation

When the transfer unit is started, the suction side of the compressor reduces the pressure in the receiver. The discharge side of the compressor, connected to the condenser, pressurizes the system. The pressure forces the liquid in the unit into the receiver. When the liquid is transferred, (determined by noting the receiver liquid level indicator) close Valve I, and stop the transfer unit. Close Valves K, M and P. Proceed to "Gas Pumpout", if desired.

Gravity Method (See Fig's. 14 & 15)

This procedure is recommended for the initial phase of refrigerant transfer when the Pumpout Unit is at a lower elevation than the Unit to be evacuated.

1. If the available chilled water (brine) temperature is not above the Unit's stand-by saturation pressure-temperature, do not operate the chilled water pump.

2. Open valves I, F, H, P, G,and K.

3. Do Not start transfer Unit.

Operation

Liquid refrigerant drains by gravity from the OM Unit into the pumpout receiver. When the liquid is transferred (determined by noting the receiver liquid level indicator) close valves J, K and P. Proceed to "Gas Pumpout", if desired.

GAS PUMPOUT – SYSTEM TO RECEIVER (See Fig's. 16 & 17)

After liquid transfer, previously described above, the following procedure may be used (for economical reasons) to further remove refrigerant.

CAUTION – During the pumpout procedure, while any remaining liquid refrigerant is in contact with the cooler tubes, care must be taken to prevent the cooler saturation pressure-temperature from dropping below the freezing temperature point of the chilled water or brine.

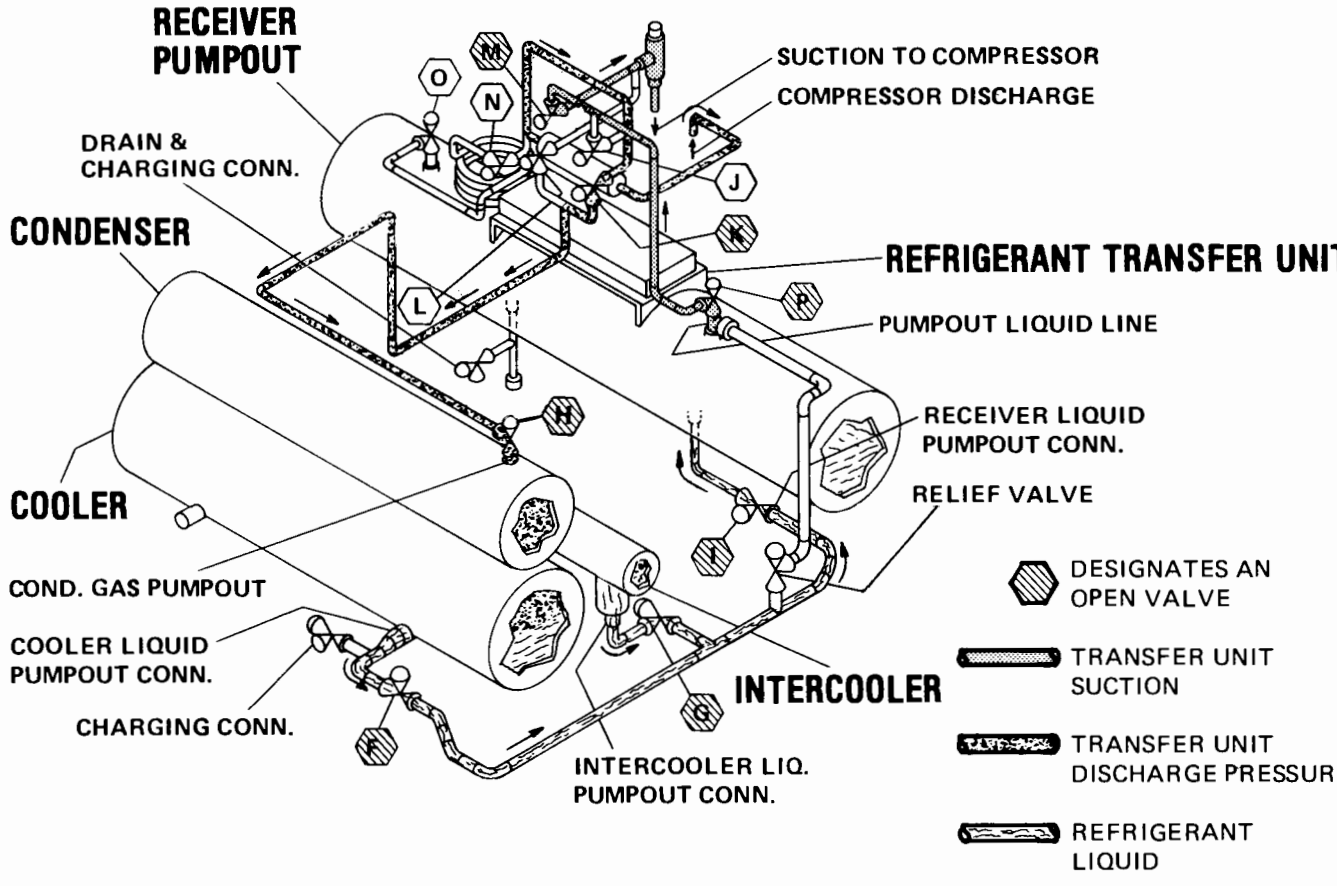


FIG. 12 — LIQUID TRANSFER – SYSTEM TO RECEIVER – PRESSURIZED METHOD – MODEL RTU – 3

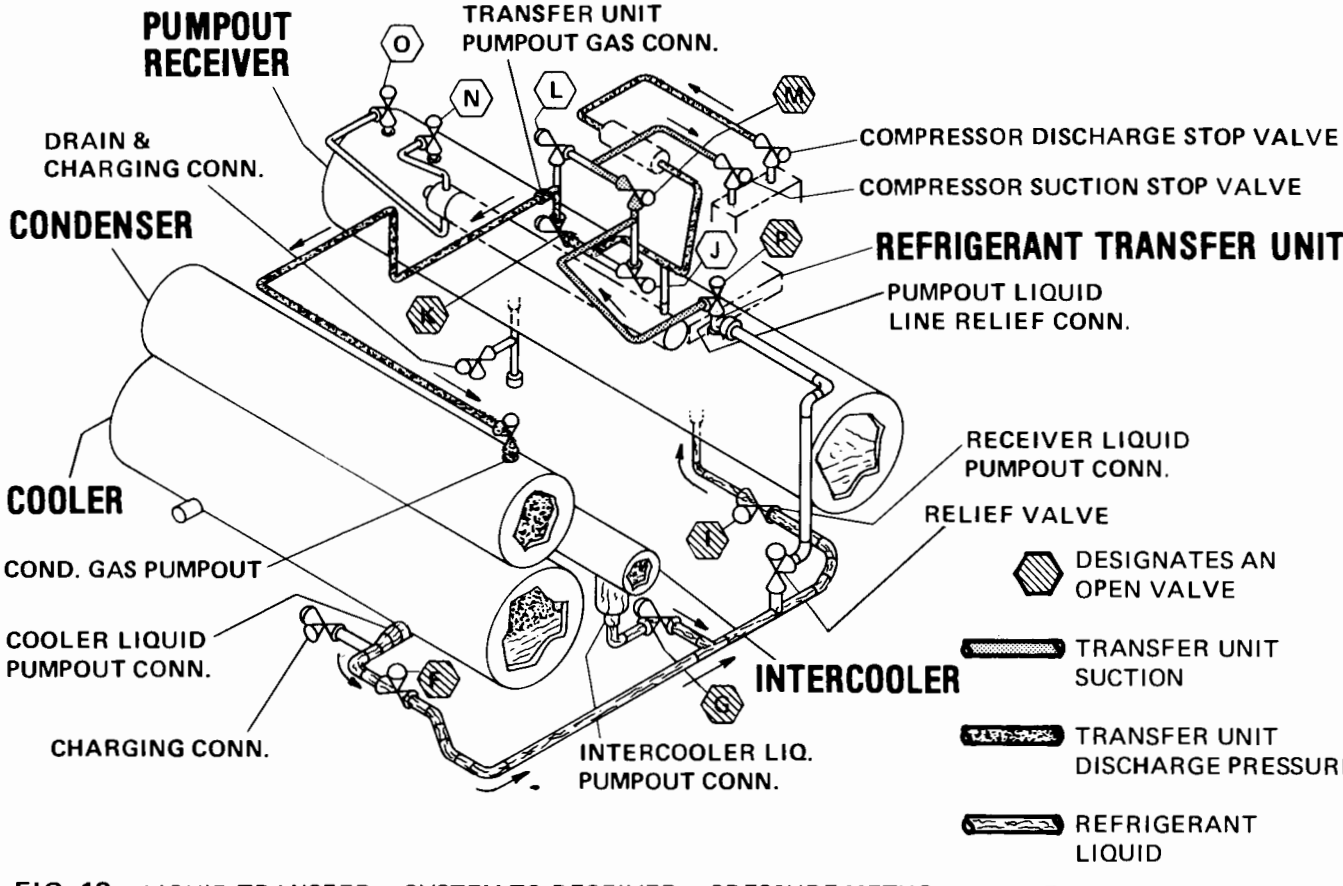


FIG. 13 — LIQUID TRANSFER – SYSTEM TO RECEIVER – PRESSURE METHOD – MODEL RTU – 7.5 & 10

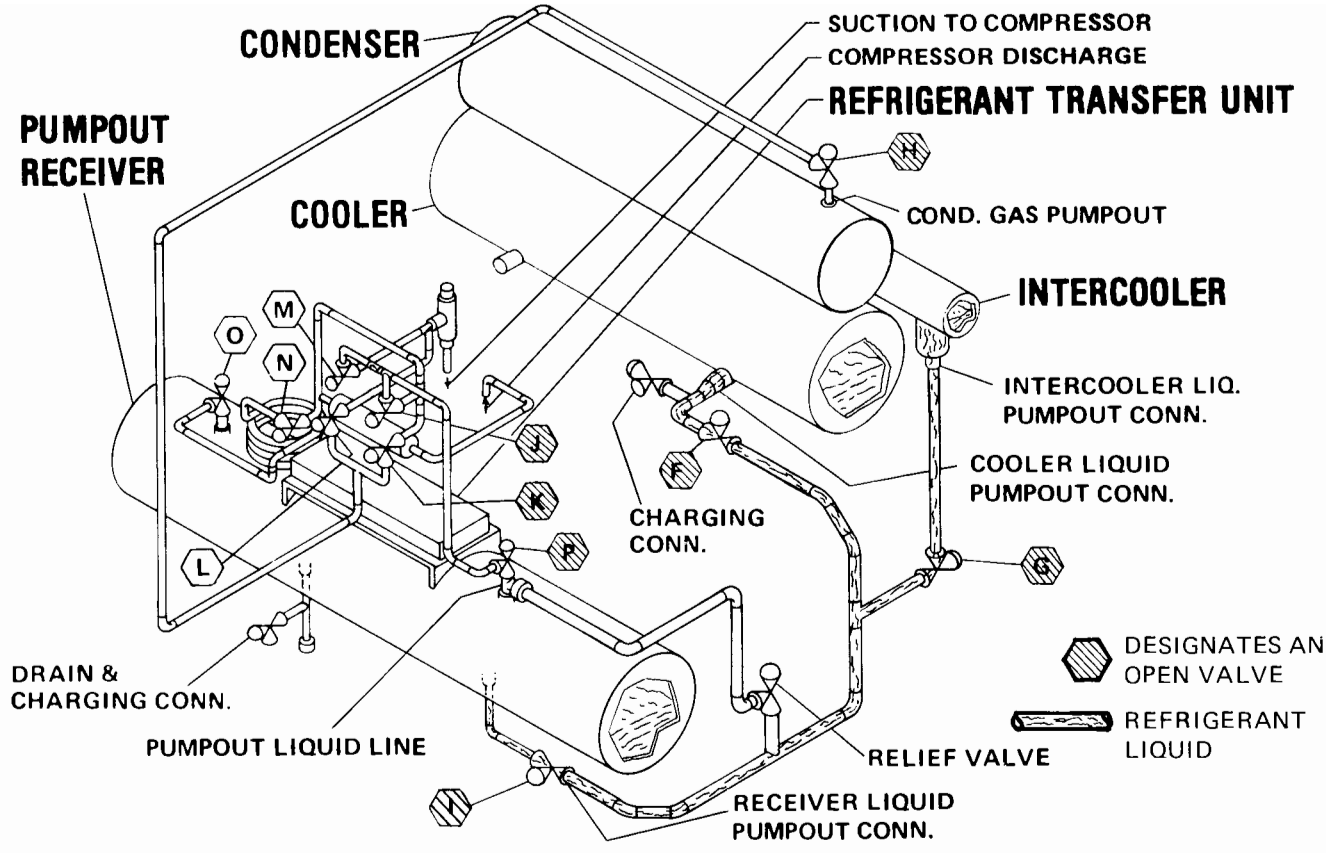


FIG. 14 — LIQUID TRANSFER – SYSTEM TO RECEIVER – GRAVITY METHOD – MODEL RTU – 3

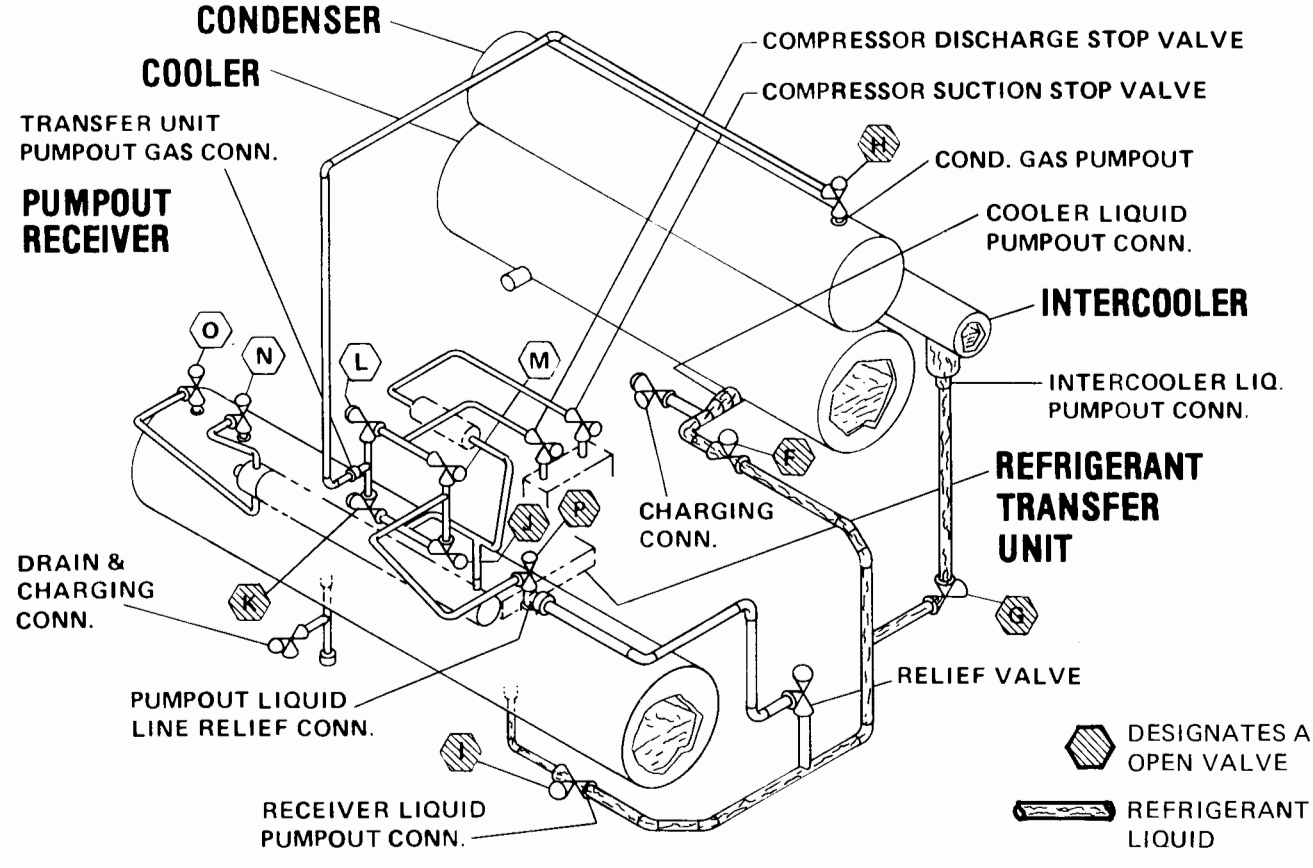


FIG. 15– LIQUID TRANSFER – SYSTEM TO RECEIVER – GRAVITY METHOD – MODEL RTU – 7.5 & 10

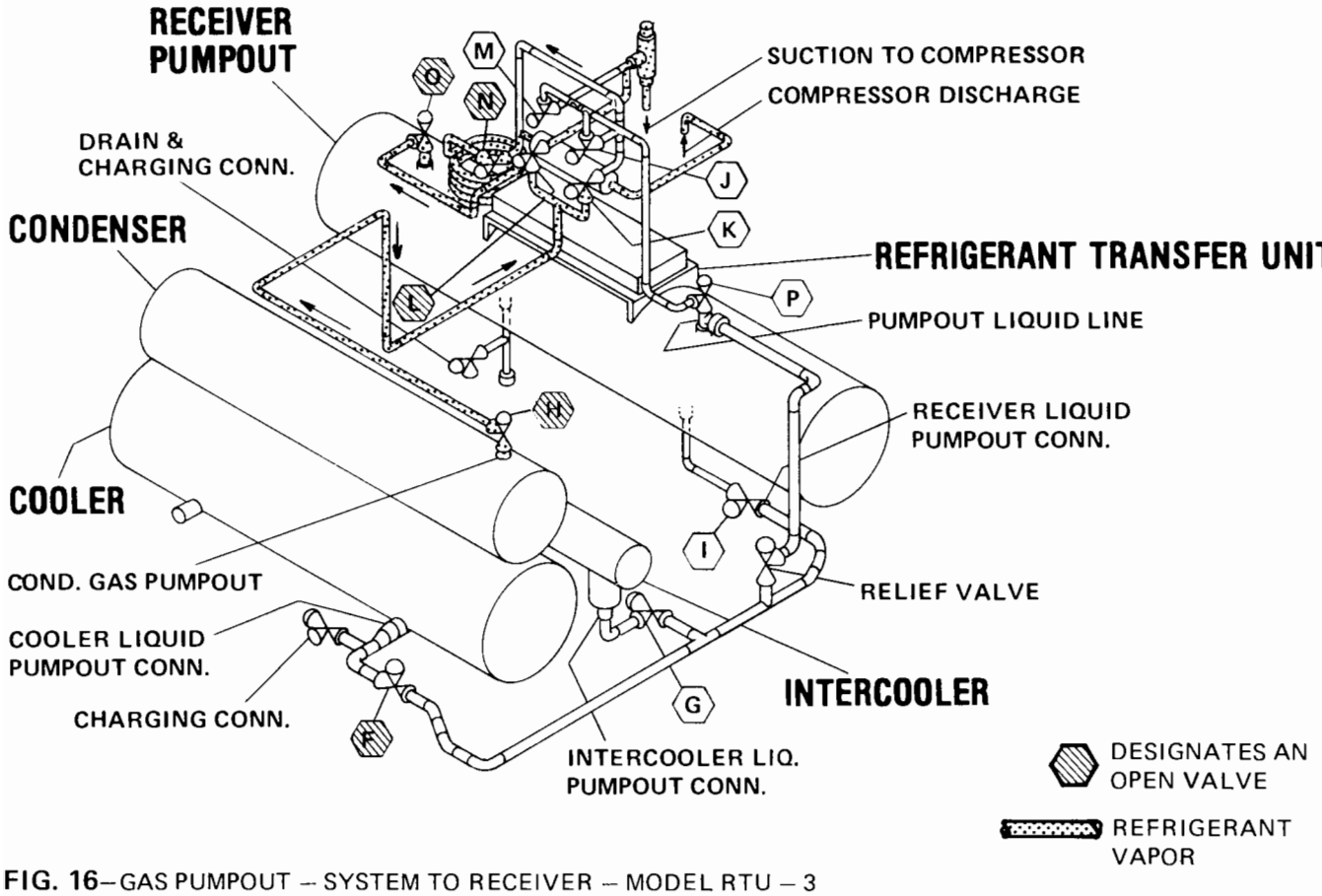


FIG. 16–GAS PUMPOUT – SYSTEM TO RECEIVER – MODEL RTU – 3

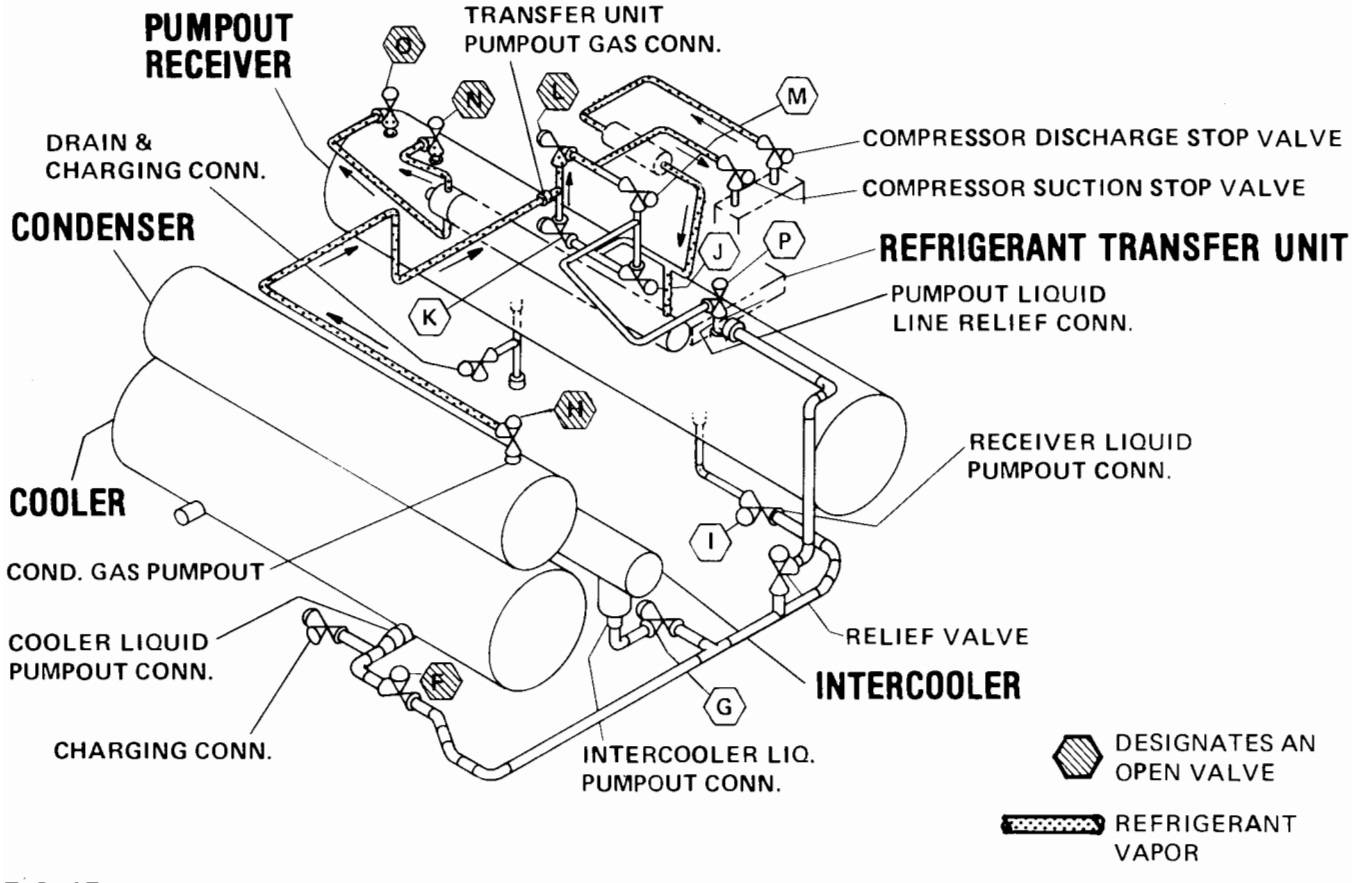


FIG. 17–GAS PUMPOUT – SYSTEM TO RECEIVER – MODEL 7.5 & 10

Gas pumpout should take place after all the liquid is transferred into the receiver.

1. Circulate water (brine) through the cooler by starting the pump.

2. Circulate water to the transfer system condenser.

3. Open Valves L, H, O, F and N.

4. Start the Transfer Unit by flipping the toggle switch, located above the electrical contactor, to the "on" position.

Operation

The Transfer Unit draws refrigerant vapor from the top of the condenser. The vapor liquifies in the Transfer Unit condenser and then drains into the receiver.

This operation should continue until the following conditions are achieved:

1. Winter shutdown – 30 psig system pressure for R-12, 32.9 psig for R-500, or 57.5 psig for R-22 (all pressures at sea levels.) This will prevent inward leakage of air and also avoid possibility of freeze-up from an inadvertent release of liquid to the unit.

2. Maintenance shutdown – pumpout the system until a vacuum of 18–20 in. Hg. is reached

NOTE – If it is not necessary to save all the refrigerant, the system can be pumped down to 0 - 5 psig; then, the system can be opened.

After the required pumpout is achieved, close Valve N tightly. Stop the transfer unit and close Valve L tightly. This completes the gas pumpout operation. SECURE ALL VALVES.

GAS CHARGING – RECEIVER TO SYSTEM (See Fig's. 18 & 19)

The system should be gas charged prior to transferring the liquid into the system. The pressure in the system should be raised to 30–35 psig R-12, 37.9–42 psig R-500, or 59.5 to 64 psig R-22 through gas charging.

1. Operate the chilled water pump during gas charging at system pressure lower than 30 psig-R12, 37.9 psig R-500 or 59.5 psig-R-22.

2. Open Valves P, J, K and H.

Operation

With the proper valves open and the chilled water pumps operating, the gas is forced out of the receiver into the top of the system condenser because of the higher receiver pressure.

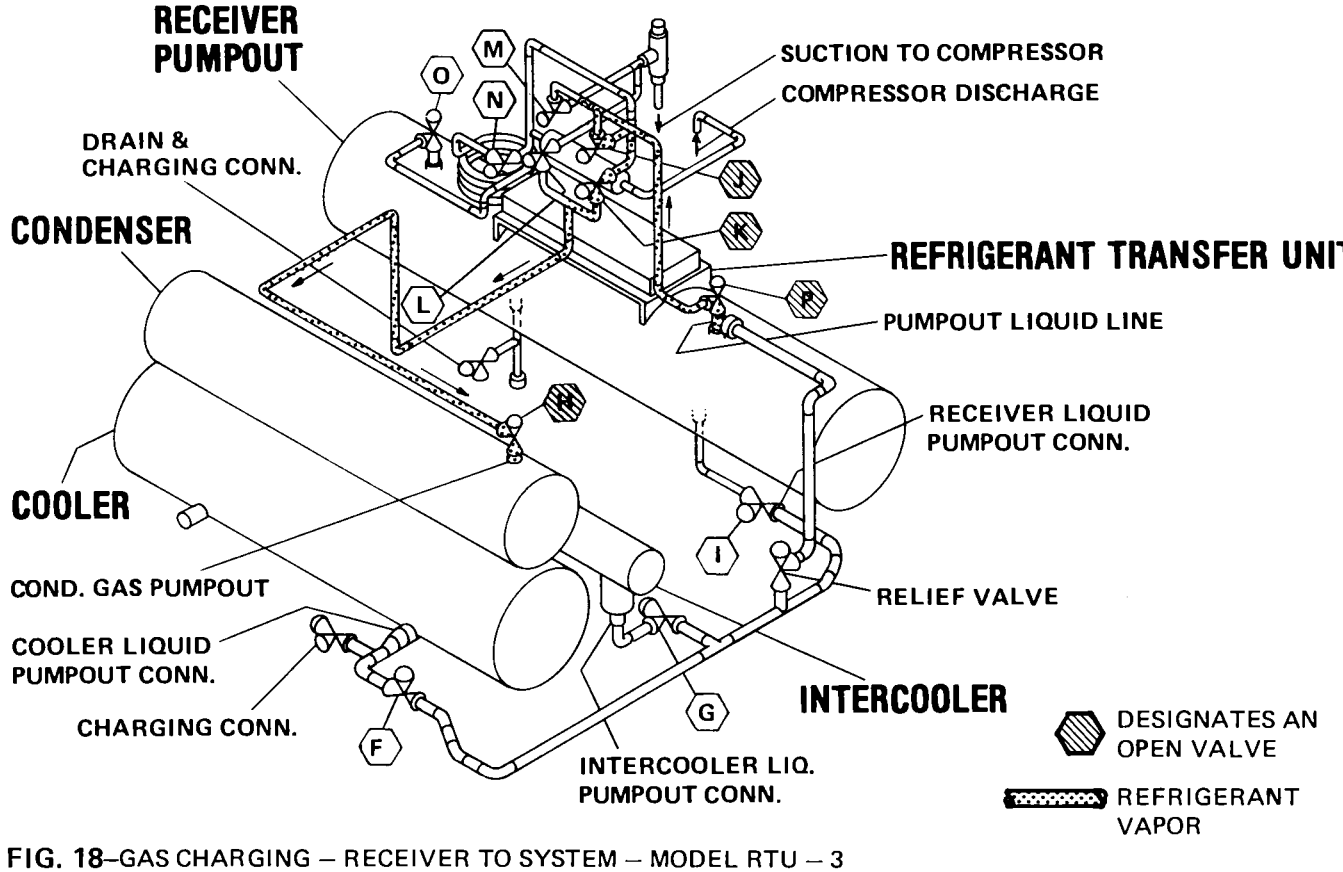


FIG. 18–GAS CHARGING – RECEIVER TO SYSTEM – MODEL RTU – 3

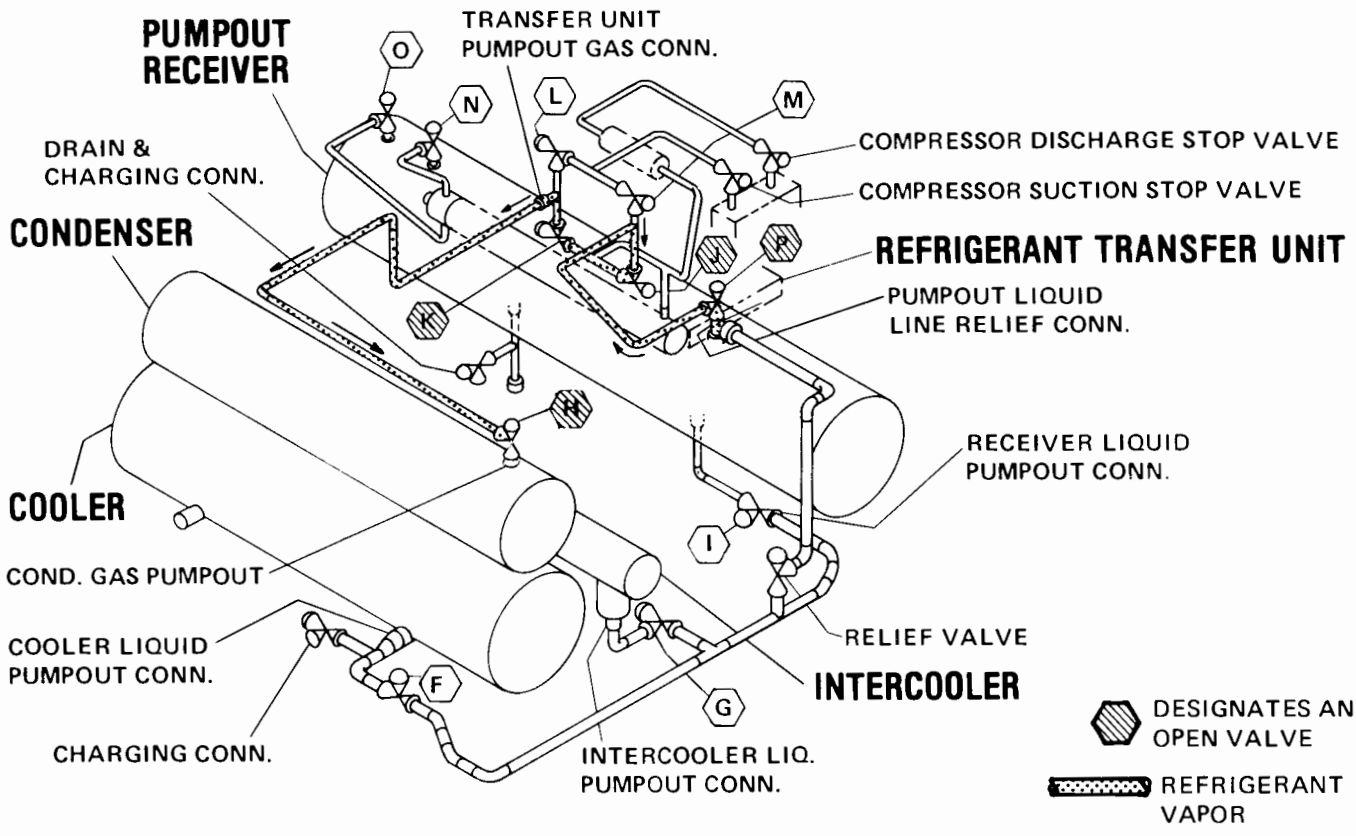


FIG. 19 — GAS CHARGING – RECEIVER TO SYSTEM – MODEL RTU – 7.5 & 10

RECHARGING LIQUID – RECEIVER TO SYSTEM (See Fig's. 20 & 21)

CAUTION –	*Do not charge liquid if Unit standby pressure is lower than 30 psig–R-12, 37.9 psig–R-500 or 57.5–R-22.*

Gravity Drain

This procedure is recommended when the Pumpout Unit is at a higher elevation than the Unit being charged. (See Fig's. 20 & 21). This method is more time consuming than "Pressurized Transfer", see page 21.

1. DO NOT operate Transfer Unit.
2. Circulate water (brine) through the cooler to prevent freezing and rupturing.
3. Open Valves, I, F, J, K, H, and P.
4. The liquid indicator on the end of the storage receiver will indicate when the receiver is empty.
5. Close all valves tightly after receiver is empty. SECURE ALL VALVES.

Pressurized Transfer — Use this method when time is limited. (See Fig's. 22 & 23).

1. Open Valves I, J, L, P, H and F.
2. Circulate water (or brine) through the cooler to prevent freezing and rupturing of tubes.
3. Start the Transfer Unit by flipping the toggle switch, located above the electrical contactor, to the "on" position.
4. The liquid indicator on the end of the storage receiver will indicate when the receiver is empty.
5. When the storage receiver is empty close Valves I, F and H tightly, stop the transfer unit and close Valves J, L, and P completing the transfer of liquid refrigerant into the system.

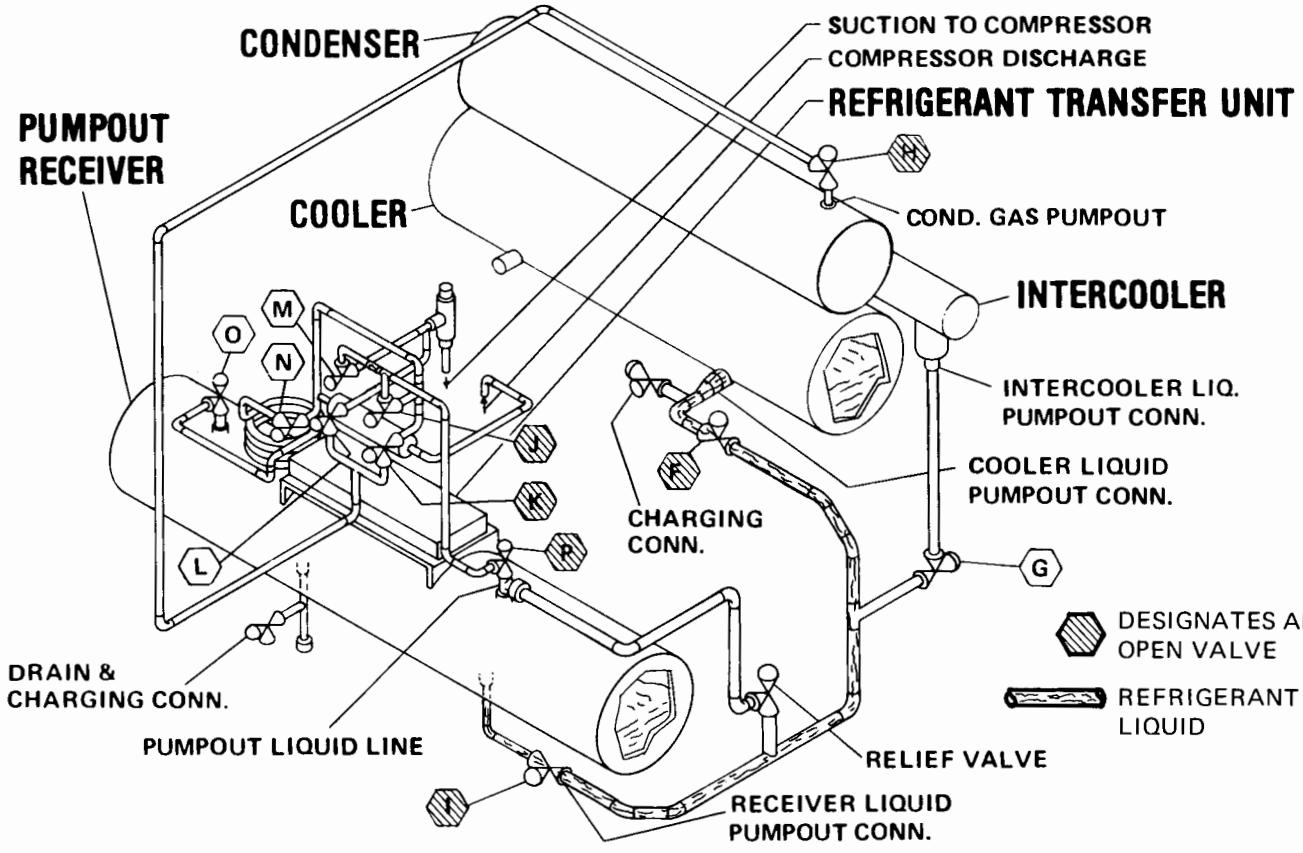


FIG. 20 – RECHARGING LIQUID – RECEIVER TO SYSTEM – GRAVITY METHOD – MODEL RTU – 3

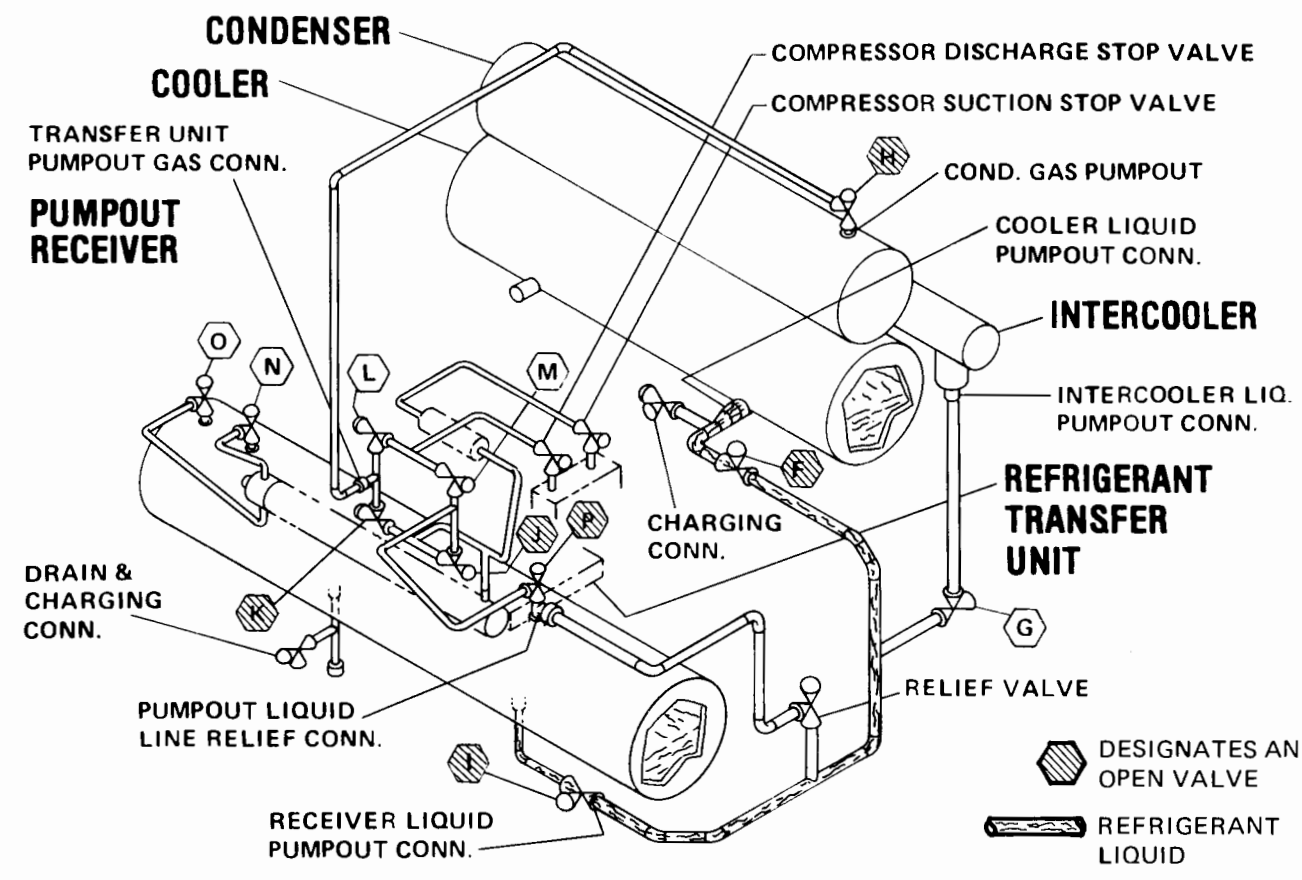


FIG. 21 – RECHARGING LIQUID – RECEIVER TO SYSTEM – GRAVITY METHOD – MODEL RTU – 7.5 & 10

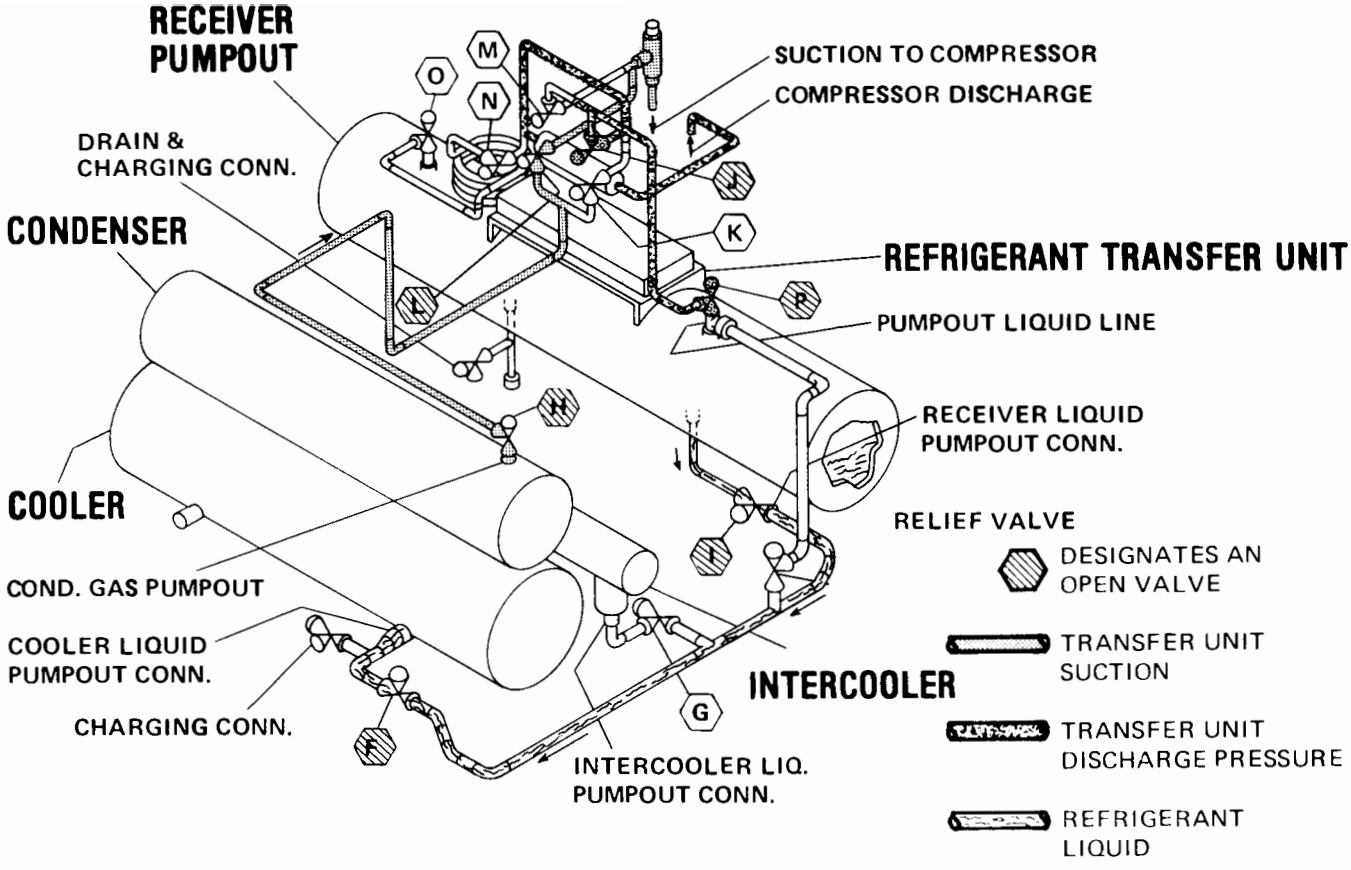


FIG. 22 – PRESSURIZED METHOD – RECHARGING LIQUID – RECEIVER TO SYSTEM – MODEL RTU – 3

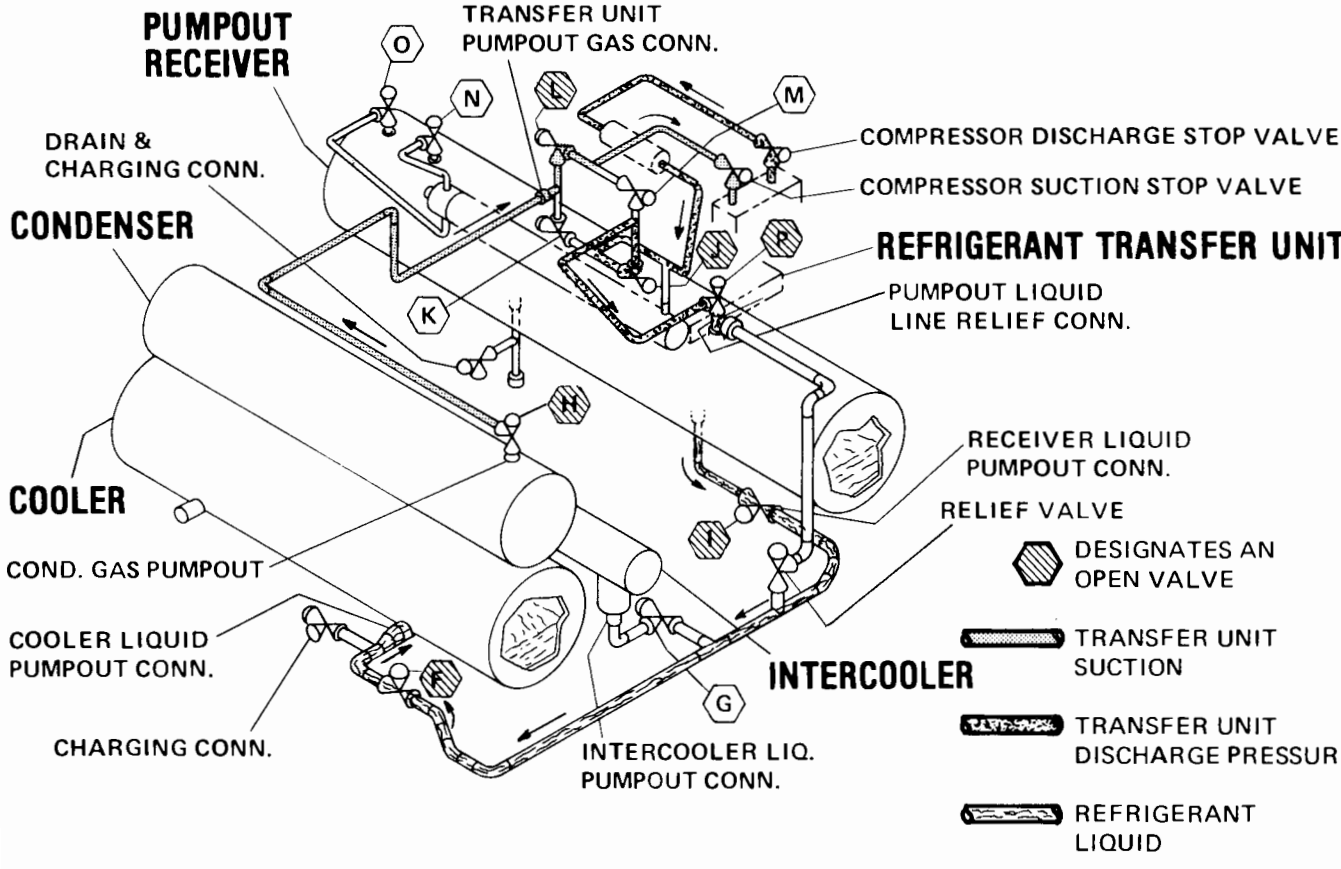


FIG. 23 – PRESSURIZED METHOD – RECHARGING LIQUID – RECEIVER TO SYSTEM – MODEL RTU – 7.5 & 10

LIQUID CHARGING – EXTERNAL REFRIGERANT CYLINDER TO IDLE UNIT (RECEIVER EMPTY, See Fig's. 24 & 25)

CAUTION –	*Do not charge liquid if system standby pressure is lower than 30 psig–R-12, 37.9 psig–R-500 or 57.5 psig–R-22.*

This method should be used to add or completely charge system with refrigerant.

1. Connect the Receiver Charge and Drain Valve to gas connection on cylinder.
2. Connect the System Charge and Drain Valve to liquid connection on cylinder.
3. Open Valves J, L, P, and H System and Receiver Charge and Drain Valves.
4. Operate the Transfer Unit – Start by pressing the switch inside on the right hand side of the auxiliary control box.
5. Charge the system until required charge is attained. (See CHECKING AND TRIMMING REFRIGERANT CHARGE, Form 160.71-O1).
6. When charging is completed, close the Receiver charging and Drain Valve, the System Charging Valve and Valve H, Stop the Transfer Unit and close Valves J, L, & P.
7. SECURE ALL VALVES AND disconnect the refrigerant cylinder connections.

ISOLATE TRANSFER UNIT FROM RECEIVER

To isolate Transfer Unit from receiver – close Valves I, O and P, N.

ISOLATE TRANSFER UNIT FROM SYSTEM

To isolate Transfer Unit from OM Turbomaster Unit, Turbopak or Yorkpak, close valves I, K, L or valves H and F.

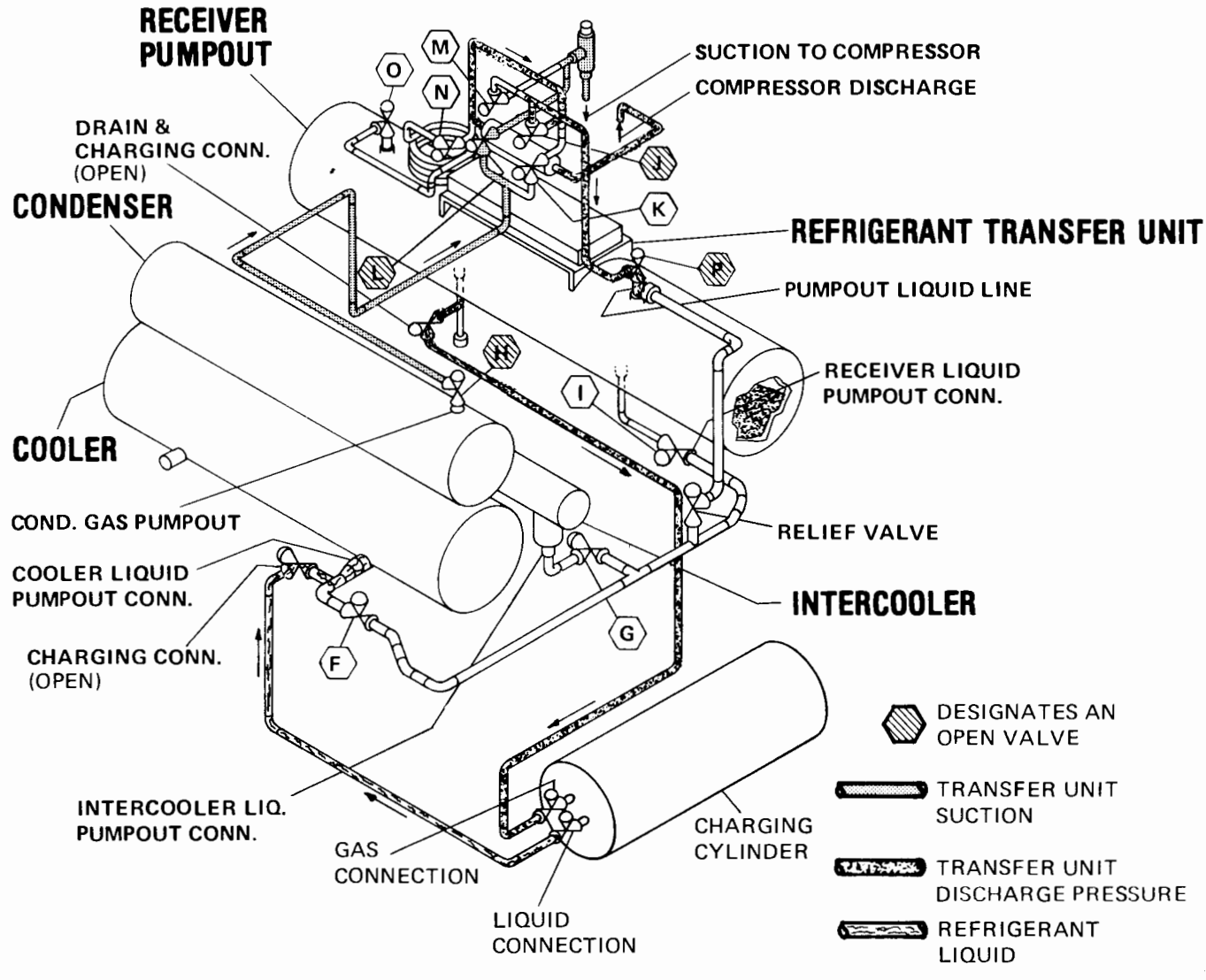


FIG. 24 – RECHARGING LIQUID – RECEIVER TO SYSTEM – MODEL RTU – 3

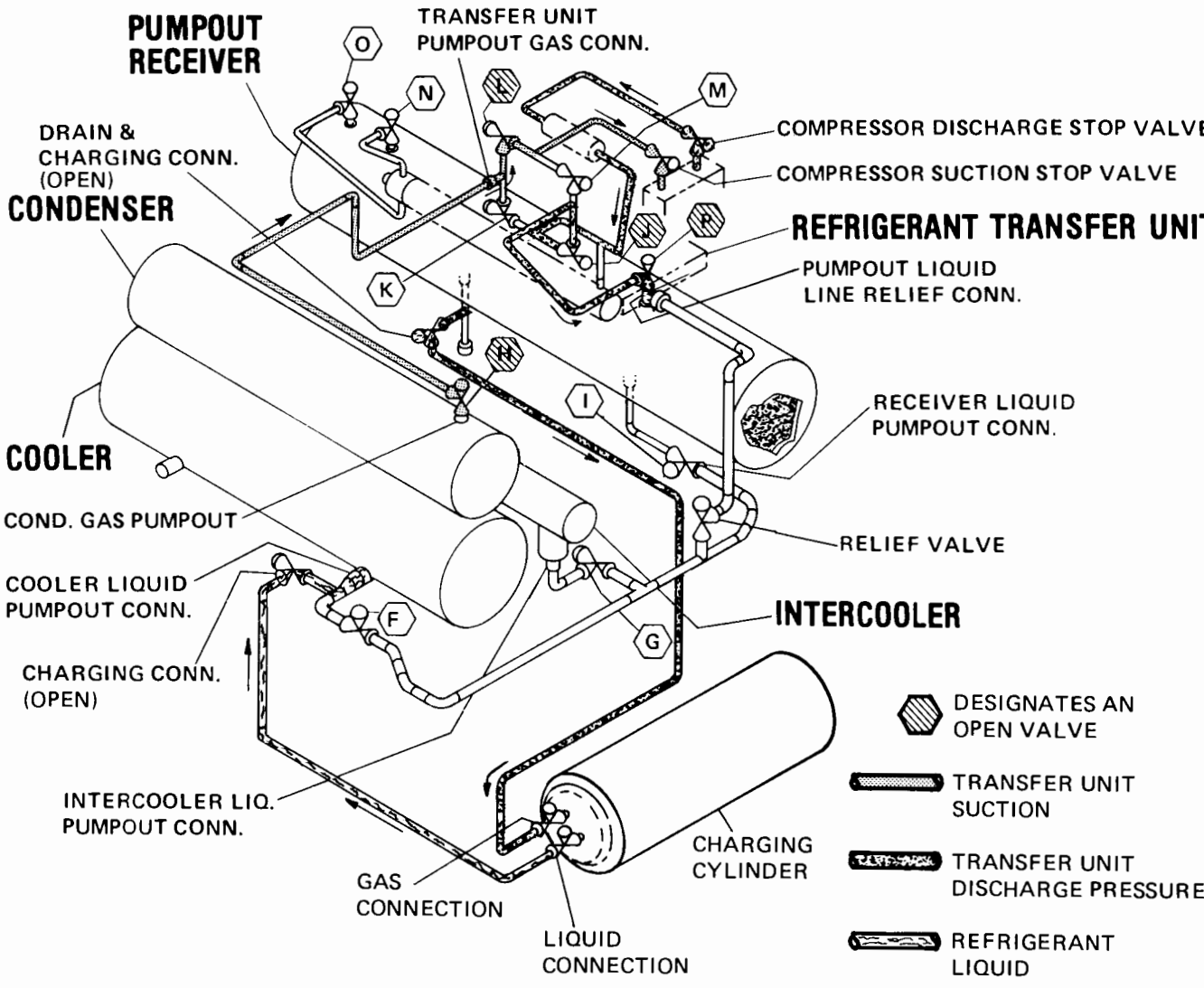


FIG. 25 – RECHARGING LIQUID – RECEIVER TO SYSTEM – MODEL RTU – 7.5 & 10

SERVICE
GENERAL

OIL CHARGE AND CHECKING PROCEDURE

Transfer unit compressors are factory charged with 10 fluid ounces of YORK Type "C" oil and only this oil should be used when adding or changing oil. Refer to Table 3. The compressor oil level must be checked at the time of installation, and again each time the transfer compressor is operated.

TABLE 3–
OIL CHARGE

RTU-3	RTU-75 & 10
10 oz.	4 qt.

It must be remembered that satisfactory operation depends on proper lubrication. A shortage of oil will result in failure of the compressor.

An oil level sight glass is provided on the oil receiver to indicate oil level, Fig's. 10 & 11. The oil level is easily noted. The minimum acceptable level for beginning operation is 1/4" below the center of the sight glass. A lower level is permissible during operation if a steady return of oil from the separator is noted by observation through the oil reservoir sight glass.

Since oil level may vary during operation oil level should be checked with compressor not running. Use the oil charging valve above the oil receiver to charge oil into the oil receiver. All refrigerant valves should be closed when oil charging.

BELTS

The transfer unit compressor drive belt should be checked frequently for excessive wear and tightness. If belt is in bad condition it should be replaced immediately. Correct belt tension prevents the motor pulley from slipping, keeping the transfer unit operating at peak efficiency.

The belt tension adjustment should be made so the belt is taut, but not too taut to create excessive bearing loads. Due to the pulsating load created by the compressor, the belt tension must be greater than for a normal steady load. Belt tension can be accurately determined with the use of a belt tension gauge which gives a direct reading of belt load as determined by. the deflection. A tension of 100 lbs. is considered to be the normal belt tension.

After 36 to 48 hours of operating time, the belt should stretch to a normal operating point and a further check for proper tension should be made. Good alignment and belt tension are important to insure long belt life, quiet operation and to maintain top system performance.

PULLEY ALIGNMENT

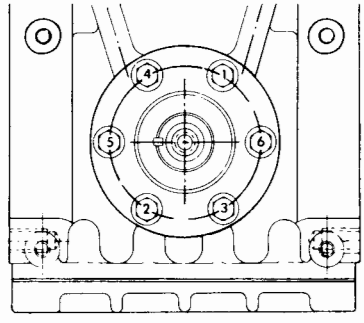
A very important factor in compressor operation is correct pulley alignment. The compressor pulley must be in perfect alignment with the motor pulley and it is important that the shaft key is in place on the shaft and the pulley bolt drawn tight, when installing a pulley. The pulley alignment may be checked by holding a 1/2" rod – 2 or 3 feet long – firmly in the V groove of the compressor drive pulley wheel and making sure the rod falls squarely in the motor pulley grooves. A further check may be made by seeing that the belt, as it goes from pulley to pulley, comes off the pulley grooves perfectly straight and that there are no side-way bends in the belt, as it approaches or leaves the pulleys.

MODEL RTU-3 COMPRESSOR

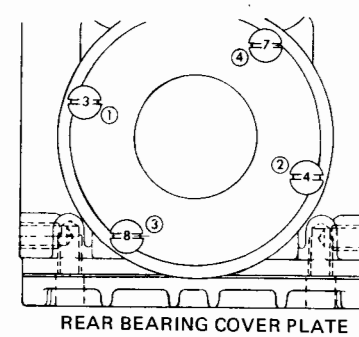
SERVICING COMPRESSOR (Model RTU-3 Transfer unit)

The majority of the compressor parts are made of aluminum alloys and care must be taken when servicing the compressor not to mar, nick or scratch any aluminum parts. All machined surfaces must be free of nicks and burrs to insure proper fit and gasket seating. When replacing parts and re-inserting bolts, the specified torque requirements shown in Fig. 26 should never be exceeded. Bolts should all be run in so the bolt heads make contact, then be tightened in a sequence so bolts diagonally opposite each other are tight and all bolts are evenly drawn to the specified torques. See Fig. 26. Torque complete Transfer Unit.

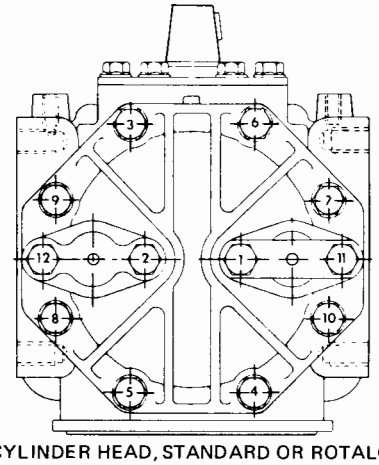
An important factor in compressor servicing is cleanliness and care should be taken to prevent dirt or foreign material from entering the compressor when it is opened. All old gaskets should be removed and replaced. Any gasket material adhering to the parts should be carefully removed and parts to be re-used should be washed in a suitable solvent of petroleum base.



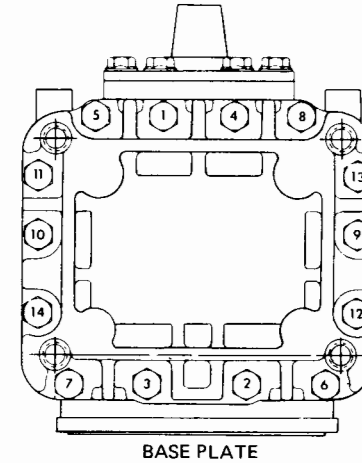
SHAFT SEAL PLATE



REAR BEARING COVER PLATE



CYLINDER HEAD, STANDARD OR ROTALOCK



BASE PLATE

TIGHTEN CAP SCREWS IN ABOVE SEQUENCE AND IN ACCORDANCE WITH TABLE BELOW.

LOCATION	THREAD	HEAD TYPE	TORQUE
BASE PLATE	1/4 20 UNC	HEX	14–22 FT. LBS
CONN. ROD	1/4 20 UNC	12PT.	13–16 FT. LBS
REAR BEARING COVER PLATE	1/4 20 UNC	FLAT	9–17 FT. LBS
CYLINDER HEAD	5/16 18 UNC	HEX	15–23 FT. LBS
SEAL PLATE	1/4 20 UNC	HEX	7–13 FT. LBS
SERVICE VALVE, "O" RING	5/16 18 UNCH	HEX	15–23 FT. LBS
SHIPPING FLANGE	5/16 18 UNC	HEX	8–13 FT. LBS
SEAL CAP	1 14 NS	ROUND	7–10 FT. LBS
ROTALOCK VALVE	1 14 NS	HEX	30–25 FT. LBS
MOUNTING SCREW	3/8 16 UNC	USERS CHOICE	14–17 FT. LBS
OIL FILL PLUG	3/8 14 UNF	HEX	2–6 FT. LBS

FIG. 26 — TORQUE SEQUENCE CHART – COMPRESSOR FOR RTU – 3 TRANSFER UNIT

SHAFT SEAL ASSEMBLY SERVICING

When servicing the shaft seal, extreme care must be taken when removing or installing the parts to prevent damage to the lapped surfaces and other seal parts. The portion of the shaft on which the seal assembly fits must be free of scratches, burrs, and dirt and the entire seal housing cavity must be clean.

Seal Assembly - Removal

1. Remove the flywheel and the woodruff key from the compressor shaft.
2. Remove the seal plate bolts and gently remove the seal plate, being careful not to mar or scratch the flat sealing surfaces or the polished shaft surface.

   When removing the seal plate, a hand should be held in position under the seal housing to catch the carbon ring if it is free.
3. Do not pry or force the carbon ring with a hard sharp object in such a manner as to damage the carbonring. In some cases the carbon ring may be bonded to the retainer.
4. Remove the seal assembly from the shaft by prying behind the drive ring which is that portion of the seal assembly farthest back on the shaft. When prying the seal assembly from the shaft, do not scratch the crankshaft or the seal housing face on the crankcase.
5. All parts to be re-used should be cleaned.

Seal Assembly - Installation:

1. Check the face of the crankshaft front bearing journal in the seal housing to make certain it is free of nicks or burrs. Check shaft surface to be sure it is not cut or scratched.
2. Wash all portions of the seal assembly in clean YORK Refrigeration "C" oil.
3. Push the seal assembly, less the carbon ring if it is free, over the end of the shaft with the carbon ring retainer facing out. Move the assembly in and out on the shaft a few times to insure a good seal between the neoprene ring and the shaft. Push the seal assembly all the way on the shaft.
4. If the carbon ring is separate, place it in the ring retainer so the polished surface is facing out. The carbon ring must engage the driving lugs and be fully seated in the ring retainer.
5. Place a very light film of clean YORK Refrigeration "C" oil on the matching metal faces where the quad ring is to be placed. Place the quad ring in the groove on the seal housing face.
6. Place the seal face plate in position with the polished portion facing the carbon ring and insert the cap screws. Turn in the bolts evenly while rotating the shaft, making sure there is even clearance between the shaft and shaft hole in the face plate. If clearance is not the same all around the shaft, gently tap the seal face plate into a position until there is equal clearance. After equal clearance is obtained, tighten all the bolts by tightening diagonally opposite bolts evenly to the required torque.

HEAD AND VALVE PLATE SERVICING

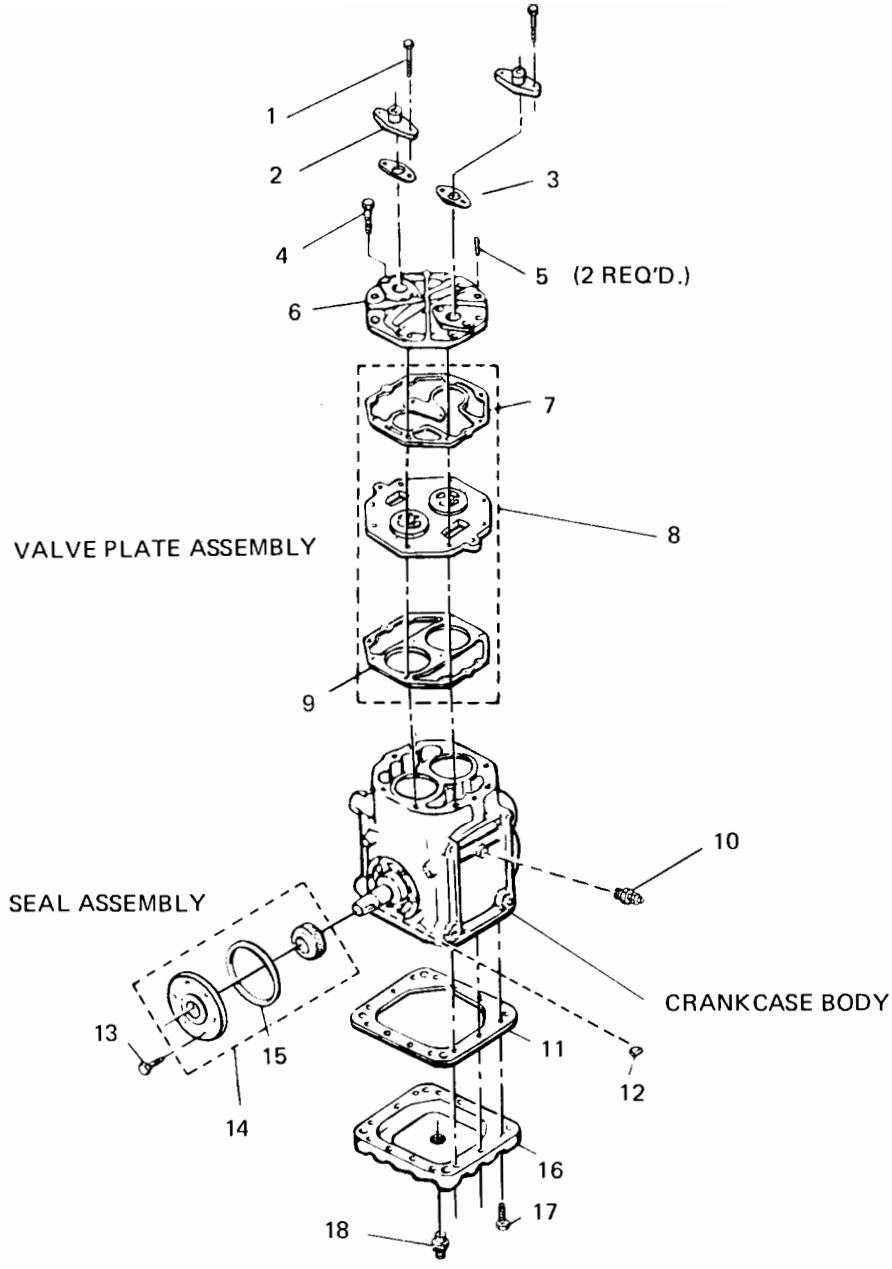
Prior to servicing the head and valve plate, both service valves should be opened to free any gas pressure which may be in the compressor. The cylinder head is made of aluminum and care should be taken when removing it not to damage the sealing surfaces.

Head and Valve Plate - Removal: (See Fig. 26)

1. Remove the four bolts (16) in the oval flanges (17) and remove the oval flanges and gaskets (15) from the cylinder head (13).

NOTE – The four bolts removed are longer in length than the remaining head bolts.)

2. Remove the remaining bolts in the cylinder head and remove the valve plate (7) and cylinder head from the crankcase by tapping lightly under the ears which extend from the valve plate. If the head and valve plate adhere, hold the head and tap the valve plate ears away from the head with a soft hammer. Do not hit or tap the head to separate the head and valve plate because damage to the head may result.
3. If it is necessary to replace the discharge tube, or the suction screen assembly, remove the old discharge tube or suction screen from the service valve ports in the head by forcing their entire length up through the head and out the top, which is the larger end of the tapered ports.
4. All gasket material adhering to the head, valve plate, or cylinder, should be carefully removed in such a manner that the machined sealing surfaces are not scratched or nicked.



Item	Part Description	Quan.
1	Bolt, Hex Hd. 5/16–18 X 1-7/8	4
2	Flange, Oval	2
3	Gasket	2
4	Bolt, Hex Hd. 5/16–18 X 1-3/8	8
5	Dowel Pin, Plate Locating	2
6	Head, Cylinder	1
7	Gasket, Plate To Head	1
8	Valve Plate Assembly, Complete	1
9	Gasket, Plate To Body	1
10	Connector, Adapter	1
11	Gasket, Base Plate	1
12	Key, Shaft	1
13	Bolt, 1/4–20 X 0.70	6
14	Seal Assembly	1
15	Quad Ring	1
16	Plate, Base	1
17	Bolt, 1/4–20 X 0.70	14
18	Connector, Half Union	1

FIG. 27 — TRANSFER UNIT COMPRESSOR PARTS – MODEL RTU – 3

Head and Valve Plate - Installation:

1. Apply a thin film of clean YORK Refrigeration oil on the area of the crankcase to be covered by the cylinder gasket. Place the cylinder gasket in position on the cylinder so the dowel pins in the crankcase go through the dowel pin holes in the cylinder gasket.

2. Apply a thin film of clean YORK Refrigeration oil to the top and bottom valve plate area to be covered by gaskets. Place the valve plate in position on the cylinder gasket so the discharge valve assemblies (i.e. the smaller diameter assemblies with the retainer over the valve reed) are facing up and the locating dowel pins go through the dowel pin holes in the valve plate.

3. Place the head gasket (8) in position on the valve plate (7) so the dowel pins go through the dowel pin holes in the gasket.

4. Apply a light film of clean YORK Refrigeration oil on the machined surface of the cylinder head which matches the head gasket. Place the head on the cylinder head gasket so the dowel pins go into the dowel pin holes in the head.

5. Insert the plain discharge tube in the service valve port marked with a "D" and DISCH and the suction screen in the service valve port marked with an "S" and SUCTION. (If being replaced.)

6. Apply a thin film of clean YORK Refrigeration oil to the service valve flanges on the head and on the service valve flange. Place a service valve gasket in position on the cylinder head service valve flanges. Place the service valve in position on the proper service valve ports and insert the longer bolts through the service valve mounting pads, the head, and valve plate and into the crankcase. Insert the remaining head bolts and run in all the bolts so the bolt heads make contact. Tighten the head and service valve bolts to the required torque, by tightening the service valve bolts first. Then tighten the remaining in a sequence so bolts diagonally opposite each other are evenly drawn to the specified torque.

BOTTOM PLATE GASKET REPLACEMENT

1. Remove the bottom plate bolts (12) and tap the bottom plate (10) loose with a soft hammer, being careful not to damage the sealing surfaces.

2. All adhering gasket material should be carefully removed from the bottom plate and crankcase in such a manner that the sealing surfaces will not be damaged.

3. To install a new bottom plate gasket (11), apply a thin film of clean YORK Refrigeration oil on the matching metal crankcase and bottom plate area which will be covered by the gasket.

4. Place the bottom plate gasket into position on the bottom of the crankcase so all the bolt holes in the crankcase and gasket match.

5. Place the bottom plate into position on the bottom plate gasket so all bolt holes line up.

6. Insert the bottom plate bolts until all the bolt heads make contact. Tighten the bottom plate bolts to the required torque in a sequence so bolts diagonally opposite each other are evenly drawn to the specified torque.

COMPRESSOR REPLACEMENT

If the compressor fails and it is evident that the crankshaft bearings, connecting rods or pistons have been damaged the entire compressor should be replaced.

MODEL RTU-7.5-RTU-10 COMPRESSOR

SERVICING COMPRESSOR
(Model RTU-7.5-RTU-10 transfer unit)

This transfer unit uses a 2-5/8 x 2-1/4, 3-cylinder compressor. Refer to Forms 180.15-M1 and 180.15-RP1 for servicing and compressor replacement of parts.

CONDENSER SHELL

Use same maintenance procedures to clean and replace tubes as shown under Coolers and Condensers Forms 160.71-O1 and 160.71-M1.

YORK®

U S A Official Sponsor of the 1992 U.S. Olympic Team

36USC380

P.O. Box 1592, York, Pennsylvania USA 17405-1592

Form 160.71-NM3 (380)

OSB 1.5M 294 1.60
Code: SJ3B