

**SULLAIR C SERIES PARTS MANUAL P/N 250042-466  
IN PDF FORMAT**

**REVISED BY MID-STATES REFRIGERATION SUPPLY, INC.**

**THE ORIGINAL PARTS MANUAL HAD SEVERAL ERRORS, WE HOPE THAT WE  
HAVE CORRECTED MOST OF THEM. WE HAVE ALSO MADE UPGRADES TO  
WHAT IS AVAILABLE AT THE PRESENT TIME.**

**WE HAVE ALSO ADDED ADDITIONAL PAGES OF INFORMATION FOR EASE  
OF SERVICING THE SULLAIR PACKAGES.**

**IT IS VERY HELPFUL TO HAVE AND PROVIDE THE PACKAGE MODEL  
NUMBER AND SERIAL NUMBER WHEN ORDERING PARTS FOR THE  
PACKAGE.**

**WHEN ORDERING PARTS FOR THE COMPRESSOR UNIT PLEASE HAVE AND  
PROVIDE THE COMPRESSOR UNIT PART NUMBER AND SERIAL NUMBER.**

**MAY 2010**

ADDITIONAL INFORMATION HAS BEEN INSERTED

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C SERIES PACKAGE SPECIFICATIONS

COMPRESSOR SIZE IDENTIFICATION

DUPLEX FILTER COMMUTER VALVE INFO

ELECTRO-MECHANICAL DOOR CONTROLS  
WIRING AND PARTS LAYOUT

CAPACITY CONTROL VALVE PART NUMBERS

AC EVA KITS AND INFORMATION

AC EVA BRAKE ASSEMBLY PARTS

3/4 HP AUX OIL PUMP PARTS

DETAIL LISTING OF SHAFT DRIVEN OIL PUMP PARTS

THRUST BEARING KITS & SLEEVE BEARINGS FOR  
COMPRESSOR UNITS

# Section 3 SPECIFICATIONS

Figure 3-1 Package Dimensions

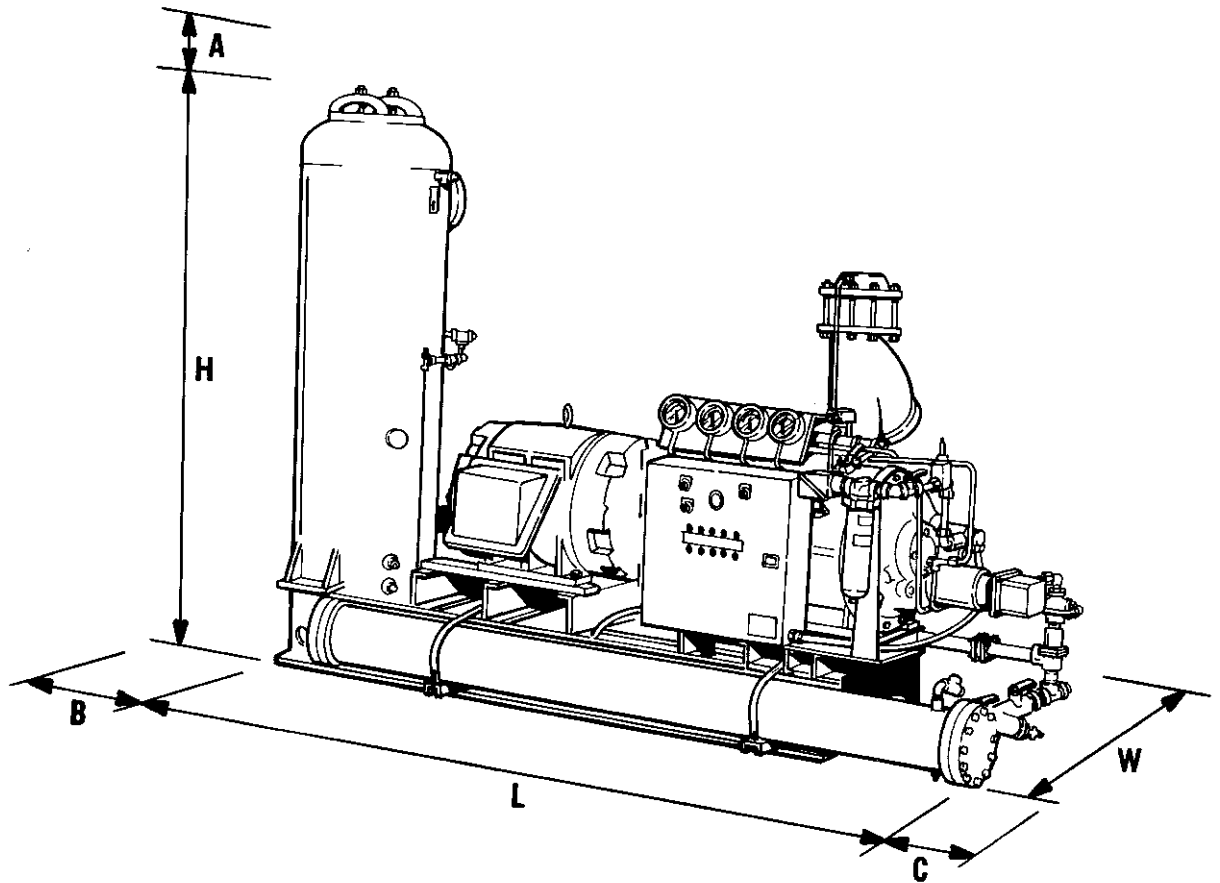
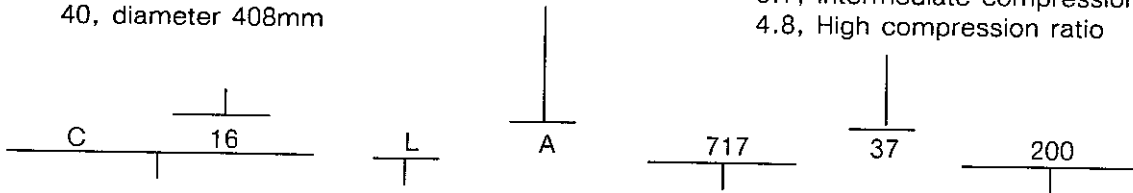


Figure 3-2 Model Number Nomenclature

**Rotor Diameter:**  
 16, diameter 163mm  
 20, diameter 204mm  
 25, diameter 255mm  
 40, diameter 408mm

**Type of Operation:**  
 A, high stage or single stage  
 B, booster or low stage

**Volume Ratio:**  
 2.2, Ultra Low Compression Ratio  
 2.6, Low compression ratio  
 3.7, Intermediate compression ratio  
 4.8, High compression ratio



**Compressor: Series**

**Rotor Length:**  
 L, rotor  $\frac{\text{length}}{\text{dia.}} = 1.7$   
 M, rotor  $\frac{\text{length}}{\text{dia.}} = 1.25$   
 S, rotor  $\frac{\text{length}}{\text{dia.}} = 1.15$

**Refrigerant:**  
 012, R12  
 022, R22  
 717, ammonia

**Motor Power:**  
 200, Motor HP

# Section 3 SPECIFICATIONS

**TABLE 4**  
**PACKAGE DIMENSIONS** Refer to Figure 3-1.

MODEL	DIMENSIONS											
	LENGTH		WIDTH		HEIGHT		A (I)		B (II)		C (II)	
	in	m	in	m	in	m	in	m	in	m	in	m
C16LA	123	3.12	40	1.02	88	2.24	20	0.51	135	3.43	120	3.05
C16LB	123	3.12	40	1.02	88	2.24	26	0.66	135	3.43	120	3.05
C20SA	136	3.45	41	1.04	95	2.41	20	0.51	116	2.95	122	3.10
C20SB	123	3.12	41	1.04	95	2.41	20	0.51	108	2.74	132	3.35
C20LA	136	3.45	44	1.12	95	2.41	20	0.51	95	2.41	106	2.69
C20LB	127	3.23	41	1.04	95	2.41	26	0.66	108	2.74	132	3.35
C25SA	165	4.19	56	1.42	102	2.59	20	0.51	83	2.11	126	3.20
C25SB (III)	165	4.19	54	1.37	102	2.59	26	0.66	63	1.60	117	2.97
C25MA	165	4.19	57	1.45	102	2.64	20	0.51	80	2.03	126	3.20
C25MB (III)	165	4.19	54	1.37	102	2.59	26	0.66	63	1.60	117	2.97
C25LA	172	4.37	56	1.42	115	2.92	26	0.66	107	2.72	144	3.66
C25LB (IV)	172	4.37	56	1.42	115	2.92	33	0.84	38	0.96	105	2.67
C40LA	267	6.78	78	1.98	130	3.30	33	0.84	100	2.54	130	3.30
C40LB	243	6.17	78	1.98	130	3.30	33	0.84	100	2.54	130	3.30

(I) Height needed to remove oil separator elements.

(II) Clearance for oil cooler tube cleaning (need only one, as tubes can be cleaned from either end).

(III) Prior to 1987, dimension 165 (4.19) was 135 (3.43) and dimension 63 (1.60) was 102 (2.59).

(IV) Prior to 1987, dimension 172 (4.37) was 145 (3.68) and dimension 38 (0.96) was 90 (2.29).

MODEL	CONNECTIONS/VALVES (VI)							APPROX. WEIGHT WITH MOTOR (VIII)		NOMINAL FLUID CHARGE		
	REFRIGERANT (V)					WATER						
	SUCTION		DISCHARGE		LIQUID (VII)		OIL COOLER		lb	kg	gal	L
	in	mm	in	mm	in	mm	in	mm				
C16LA	5/4	127/102	3	76	1/2	13	2	51	5000	2300	30	114
C16LB	5/4	127/102	3	76	1/2	13	2	51	5000	2300	30	114
C20SA	6/5	152/127	4/3	102/76	3/4	19	2	51	6200	2800	35	132
C20SB	6/5	152/127	4/3	102/76	1/2	13	2	51	6200	2800	35	132
C20LA	6/5	152/127	4	102	3/4	19	2 1/2	64	6500	3000	40	151
C20LB	6/5	152/127	4	102	1/2	13	2	51	6500	3000	35	132
C25SA	6	152	5/4	127/102	3/4	19	2 1/2	64	10000	4500	60	227
C25SB	6	152	5/4	127/102	1/2	13	2 1/2	64	10000	4500	55	208
C25MA	6	152	5/4	127/102	3/4	19	2 1/2	64	11500	5200	60	227
C25MB	6	152	5/4	127/102	1/2	13	2 1/2	64	11500	5200	55	208
C25LA	8	203	5	127	1	25	2 1/2	64	11500	5200	90	341
C25LB	8	203	5	127	3/4	19	2 1/2	64	11500	5200	85	322
C40LA	10	254	6	152	1 1/4	32	3	76	23000	10500	120	454
C40LB	10	254	6	152	3/4	19	2 1/2	64	27000	12000	100	379

(V) Recommended customer minimum line sizes for Sullistage are:  
 C16L: 1 inch (25mm), C20S: 1 1/4 inches (32mm), C20L: 1 1/2 inches (38mm),  
 C25S: 2 inches (51mm), C25M: 2 inches (51mm), C25L: 2 inches (51mm), C40L: 3 inches (76mm)

(VI) Connection/Valve sizes are for NH<sub>3</sub> refrigerants. Sizes may vary for other refrigerants.

(VII) Recommended customer minimum line size. Sullair liquid injection size from customer line to compressor connection is 3/4 in (19mm) for all compressors except 1/2 inch (13mm) for C16LB and C20SB, and 1 inch (25mm) for C40L.

(VIII) Larger motors may increase weight 25%.

## HOW TO TELL THE SIZE OF YOUR SULLAIR "C" SERIES UNIT

IF THE STATOR (ROTOR) HOUSING

WIDTH "A" IS:

10-3/4" = C16L

9-3/8" = C20S

13-5/8" = C20L

11-9/16" = C25S

12-1/2" = C25M

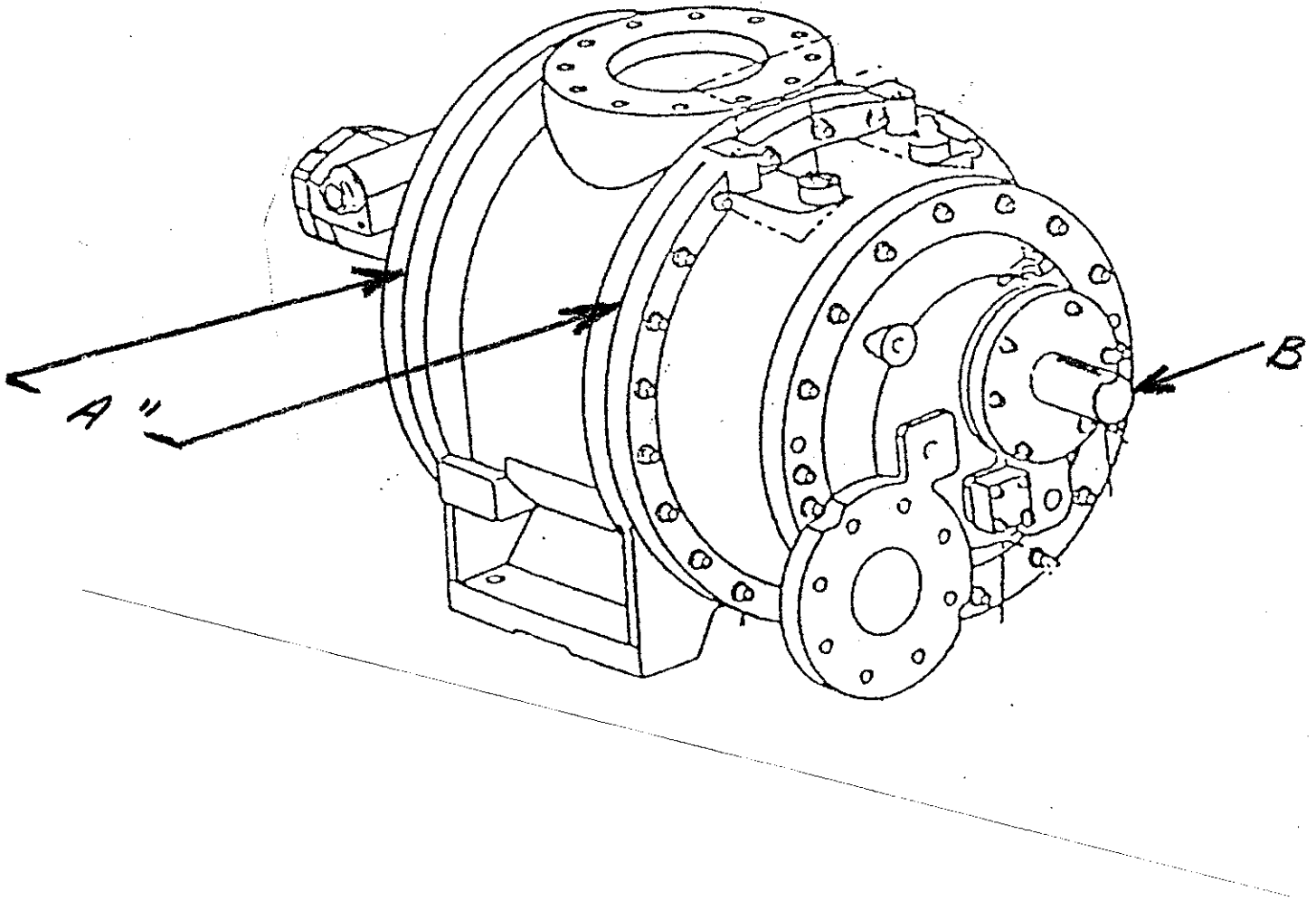
17-1/16" = C25L

IF THE SHAFT DIA. "B" IS:

1.75" = C16

2.25" = C20

2.75" = C25

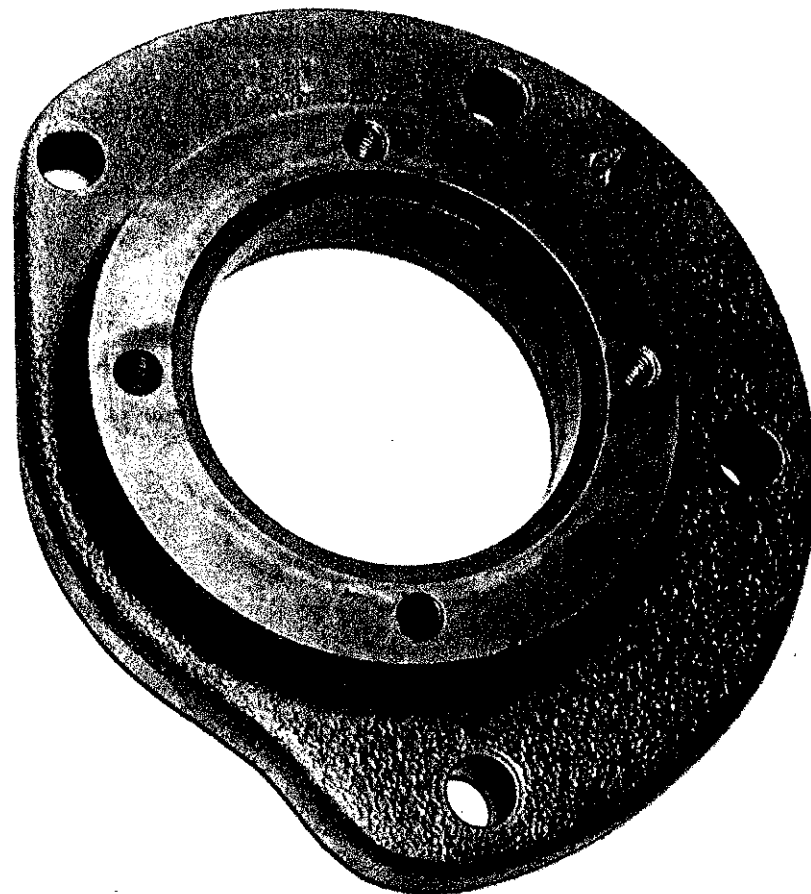
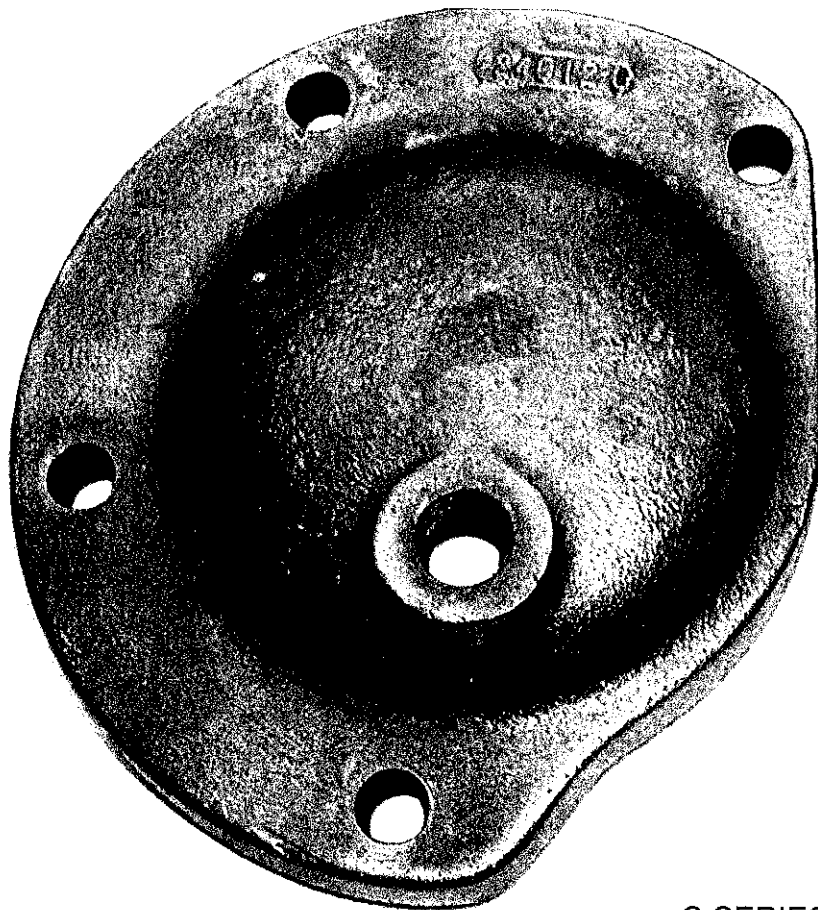


C SERIES MALE ROTOR INLET COVER, ALSO BALANCE PISTON COVER

C16, P/N 022744, USE O-RING P/N 826202-242

C20, P/N 024012, USE O-RING P/N 826202-252

C25, P/N 022913, USE O-RING P/N 826202-260



C SERIES FEMALE ROTOR OIL PUMP ADAPTER

C16, P/N 022745, USE O-RING P/N 826202-242, WAVE SPRING P/N 248247

C20, P/N 024013, USE O-RING P/N 826202-252, WAVE SPRING P/N 248180

C25, P/N 022914, USE O-RING P/N 826202-260, WAVE SPRING P/N 248248



# **SULLAIR**

## **C SERIES COMPRESSOR PACKAGE**

### **PARTS MANUAL**

revised by Mid-States Refrig 10-2004

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Part Number 250042-466  
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## TABLE OF CONTENTS

### Section 1 ILLUSTRATIONS AND PARTS LISTS

PAGE	
1	1.1 PROCEDURE FOR ORDERING PARTS
4	1.2 COMPRESSOR PACKAGE COMPONENTS
18	1.3 SINGLE FILTER ASSEMBLY
20	1.4 SINGLE FILTER ASSEMBLY (PRIOR TO DEC., 1984)
22	1.5 DUPLEX FILTER ASSEMBLY
24	1.6 DUAL FILTER ASSEMBLY (PRIOR TO DEC., 1984)
26	1.7 ELECTRICAL CONTROLS (JUNE, 1978 TO CURRENT)
28	1.8 ELECTRICAL CONTROLS (PRIOR TO JUNE, 1978)
30	1.9 ELECTRICAL PANEL WITH A.C. ELECTRICAL VALVE ACTUATOR – A.C. (INSIDE) (AFTER JUNE, 1985)
32	1.10 ELECTRICAL CONTROLS (JUNE, 1978 TO JAN., 1985)
34	1.11 ELECTRICAL CONTROLS (PRIOR TO JUNE, 1978)
36	1.12 SHAFT SEAL ASSEMBLY – TYPE 8
38	1.13 SHAFT SEAL ASSEMBLY – TYPE 9
40	1.14 COUPLING ASSEMBLY – STYLE 1
41	1.14 COUPLING ASSEMBLY – STYLE 2
46	1.15 CAPACITY CONTROL SHAFT SEALS AND VALVE ASSEMBLY
50	1.16 ELECTRIC VALVE ACTUATOR ASSEMBLY – AC PRIOR TO JUNE, 1991
54	1.17 ELECTRIC VALVE ACTUATOR ASSEMBLY – AC AFTER TO JUNE, 1991
58	1.18 ELECTRIC VALVE ACTUATOR ASSEMBLY – DC
62	1.19 ELECTRIC VALVE ACTUATOR MOTOR ASSEMBLY – DC
64	1.20 FIRST GEAR AND SLIP CLUTCH ASSEMBLY (P/N 013501)
66	1.21 LIQUID INJECTION COOLED
70	1.22 SEPARATOR ELEMENTS
72	1.23 OIL PUMP ASSEMBLY – COMPRESSOR MOUNTED

### Section 2 CONVERSION KITS

74	2.1 LIQUID INJECTION
74	2.2 DUPLEX FILTER
74	2.3 FILTER (OLD STYLE FILTER CONVERSION)
74	2.4 AUXILIARY OIL PUMP – 3/4HP, 60 HZ
75	2.5 ELECTRIC VALVE ACTUATOR – DC TO AC
75	2.6 BALANCE PISTON PIPING
75	2.7 DUPLEX STRAINER
76	2.8 SERVICE KITS
77	2.9 INSTALLATION OR SERVICE KIT REQUIREMENTS

### Section 3 DECAL GROUP

80	3.0 DECAL GROUP
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## ILLUSTRATIONS AND PARTS LIST

### 1.1 PROCEDURE FOR ORDERING PARTS

Parts should be ordered from the nearest Sullair Representative or the Representative from whom the compressor was purchased. If for any reason parts cannot be obtained in this manner, contact the factory directly at the address or phone numbers listed below.

When ordering parts always indicate the **Serial Number** of the compressor. This can be obtained from the Bill of Lading for the compressor or from the Serial Number Plate located on the compressor. Use part numbers listed in Tables when placing your order.

The genuine Sullair service parts listed meet or exceed the demands of this compressor. Use of replacement parts other than those approved by Sullair Corporation may lead to hazardous conditions over which Sullair Corporation has no control. Such conditions include, but are not limited to, bodily injury and compressor failure.

**SULLAIR CORPORATION**  
Subsidiary of Sundstrand Corporation  
3700 East Michigan Boulevard  
Michigan City, Indiana 46360 U.S.A.  
Telephone: 1-800-SULLAIR or  
1-219-879-5451  
FAX: (219) 874-1273

**SULLAIR CORPORATION**  
Parts Distribution Division and Service Department  
1625 E. Second Street  
Michigan City, Indiana 46360 U.S.A.  
Telephone: 1-800-SULLAIR or  
1-219-879-5451  
FAX: (219) 874-1835 (Parts)  
FAX: (219) 874-1805 (Service)

Mid-States Refrigeration Supply, Inc.  
7001 North State Road 39  
La Porte, IN 46350  
Phone: 219-325-0414  
Fax: 219-324-5424  
Website: [www.midstatesrefrig.com](http://www.midstatesrefrig.com)  
Email: [mrs@midstatesrefrig.com](mailto:mrs@midstatesrefrig.com)

TABLE 1

RECOMMENDED SPARE PARTS LIST (For Units Built after June, 1991, Refer to Manual for Packages Built Earlier)

ITEM DESCRIPTION	MIN. REQ.	QTY.	C16L A/B	C20S A/B	C20L A/B	C25SA & MA C25LA	C25SB & MB C25LB	C40L A/B
element, oil filter	X	4	250008-955	250008-955	250008-955	250008-955	250008-955	250008-955
element, oil separator	X	A/R	←		See Fig. 1.22			→
gasket, oil separator element	X	A/R	026427	026427	026427	026427	026427	026427
adhesive, element gasket		1	240179	240179	240179	240179	240179	240179
gasket, oil separator cover		1	240177	240177	240177	240177	240177	240177
screen, oil strainer 3" y-type	X	1	_____	_____	_____	250038-924	_____	250038-924
gasket, oil strainer cap 3" y-type	X	6	_____	_____	_____	250038-944	_____	250038-944
screen, oil strainer 2" y-type	X	1	_____	_____	_____	_____	250038-922	_____
gasket, oil strainer cap 2" y-type	X	6	_____	_____	_____	_____	250038-942	_____
screen, oil strainer 1 1/2" y-type	X	1	250038-921	250038-921	250038-921	*	*	*
gasket, oil strainer cap 1 1/2" y-type	X	6	250038-941	250038-941	250038-941	*	*	*
screen, oil strainer 3/8" y-type	X	1	250038-916	250038-916	250038-916	250038-916	250038-916	250038-916
gasket, oil strainer cap 3/8" y-type	X	6	250038-936	250038-936	250038-936	250038-936	250038-936	250038-936
regulator valve, oil pressure		1	042475	042475	042475	042475	042475	042475
relief valve, oil pressure		1	042476	042476	042476	042476	042476	None
pin, shear compressor oil pump	X	4	024710	024710	024710	024710	024710	None
packing, temperature regulator **	X	1	240710	240710	240710	240710	240710	240710
gasket, oil cooler - water cooled		2	←		See Table #3			→
gasket, oil cooler thermosiphon		2	←		See Table #4			→
switch, oil pressure		1	042464	042464	042464	042464	042464	042464
switch, low suction/high discharge ****	X	1	042465	042465	042465	042465	-----	042465
switch, low suction ***	X	1	047138					→
switch, high discharge ***	X	1	408788					→
switch, low intermediate ***	X	1	042888					→
switch, temperature	X	1	045417	045417	045417	045417	045417	045417
switch, P1/P2	X	1	047607	047607	047607	047607	047607	047607
switch, HSP	X	1	042888	042888	042888	042888	-----	042888

Section 1  
ILLUSTRATIONS AND PARTS LIST

\* Requires 1-1/2" sizes for thermosiphon packages.  
 \*\* Liquid Injection only.  
 \*\*\* Booster compressors only.  
 \*\*\*\* High Stage Only  
 A/R - As required for package.

TABLE 1

## RECOMMENDED SPARE PARTS LIST (continued)

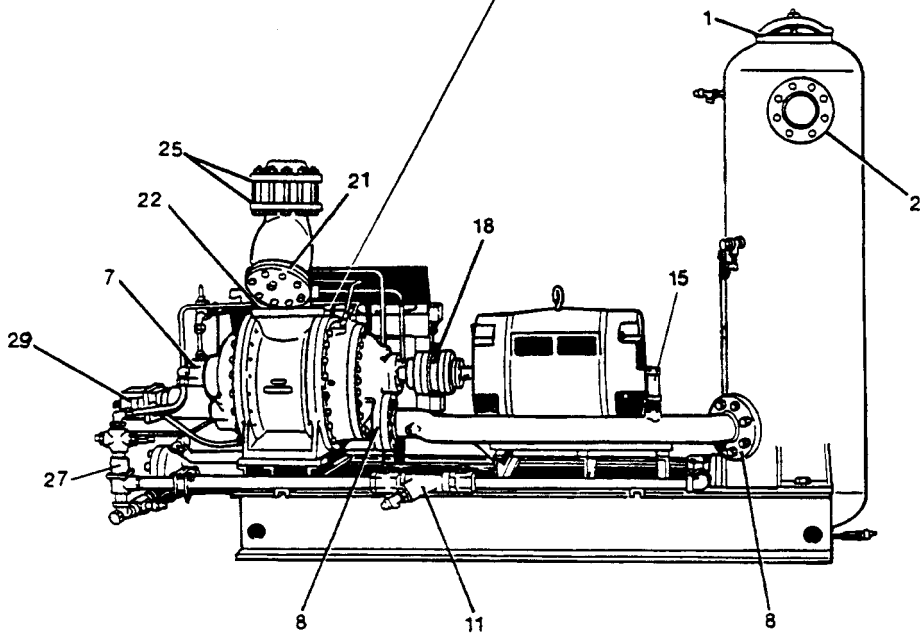
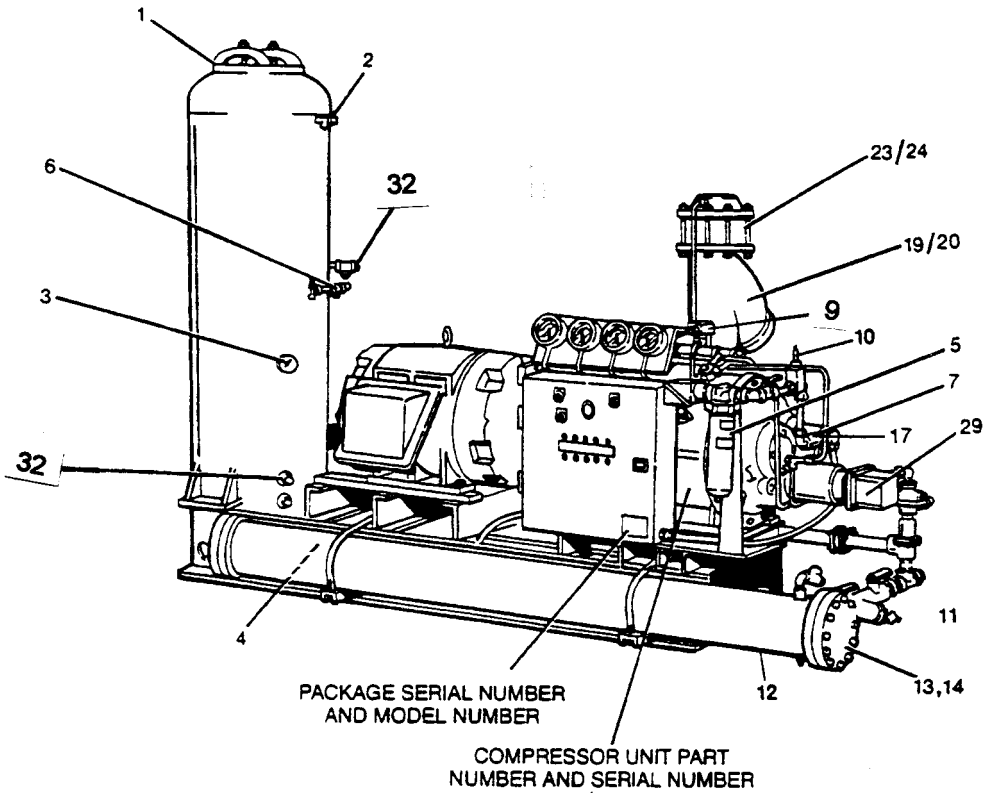
ITEM DESCRIPTION	MIN. REQ.	QTY.	C16L A/B	C20S A/B	C20L A/B	C25SA & MA C25LA	C25SB & MB C25LB	C40L A/B
timer, 3TR		1	047087	047087	047087	047087	047087	047087
timer, 1TR	X	1	406422-002					
resistor, for timer P/N 046176	X	1	047090	047090	047090	047090	047090	047090
lamp, pilot light	X	6	043386	043386	043386	043386	043386	043386
resistor, pilot light		1	044846	044846	044846	044846	044846	044846
lens, red – pilot light		2	043384	043384	043384	043384	043384	043384
lens, green – pilot light		2	043385	043385	043385	043385	043385	043385
gear box, electric valve actuator		1	←		See Table #6			→
brake shoe, electric valve actuator	X	2	250014-504	250014-504	250014-504	250014-504	250014-504	250014-504
capacitor, electric valve actuator		1	←		See Section 1.10			→
motor, electric valve actuator		1	250014-494	250014-494	250014-494	250014-494	250014-494	250014-494
kit, oil pump – compressor 60Hz		1	001095B	001095B	001095B	001095C	001095C	None
kit, oil pump – compressor 50Hz		1	001095C	001095C	001095C	01937-018	01937-018	None
kit, shaft seal – compressor	X	1	001807A	001808A	001808A	001809A	001809A	****

\*\*\*\* Refer to factory for part number.

A/R – As required for package.

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.2 COMPRESSOR PACKAGE COMPONENTS



## 1.2 COMPRESSOR PACKAGE (Continued)

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.	
15	relief valve, discharge pipe	150 PSI (1034kPa) Current	All Booster	250004-384	1
		Prior to June, 1983	All C16 & C20 Booster	044993	1
		Prior to June, 1983	All C25 Booster	043069	1
		300 PSI (2068kPa) Current	All High Stage	250004-383	1
		Prior to June, 1983	All C16 & C20 High Stage	044993	1
		Prior to June, 1983	All C25 High Stage	043069	1
16	dual relief valves, oil separator (not shown)				
		150 PSI (1034kPa) relief valve	All Booster	250041-565	2
		300 PSI (2068kPa) relief valve	All High Stage	250041-566	2
		1/2" three-way valve	All	409108-003	1
		Prior to July 30, 1991			
		150 PSI (1034kPa) relief valve	All Booster	250008-376	2
		300 PSI (2068kPa) relief valve	All High Stage	250004-385	2
		3/4" three-way valve	All	409108-004	1
		Prior to May, 1984			
		<u>Ammonia</u>			
		150 PSI (1034kPa) relief valve	All Booster	240693	2
		300 PSI (2068kPa) relief valve	All High Stage	044990	2
		shut-off valve	All	409108-003	1
		<u>Freon</u>			
		300 PSI (2068kPa) relief valve	All	046249	2
	shut-off valve	All	409108-003	1	
17	check valve, compressor oil pump   1"		All	250016-852	1
		Prior to February, 1986	All	042615	1
18	coupling, compressor to motor		C16L and C20	See Sect./1.14	1
			C25	See Sect./1.14	1
			C40L	*	1
		Prior to November, 1982	C16L	240040	1
		Prior to November, 1982	C20	240041	1

\* Refer to factory for part number.

## 1.2 COMPRESSOR PACKAGE (Continued)

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.	
19	strainer, suction	See Table 2	See Table 2	1	
20	screen, suction strainer (not shown)	See Table 2	See Table 2	1	
21	gasket, suction strainer screen cover (not shown)	All	*	1	
22	gasket, suction adapter flange to compressor (not shown)	All	*		
	Prior to June, 1991	C20S	023991	1	
	Prior to June, 1991	C25S and C25M	022941	1	
	Ammonia Only	C25L	045002	1	
		C40L	248357	1	
	Prior to July, 1978	C20L	023991	1	
23	check valve, suction	See Table 6	See Table 6	1	
24	spring, suction check valve (not shown)	See Table 6	See Table 6	1	
25	gasket, suction line 5" - 300#	Ammonia	C16L	045183	3
	6" - 300#	C20, C25S and C25M	045000	3	
	8" - 300#	C25L	045001	3	
	10" - 150#	C40LB	240621-14	3	
	10" - 300#	C40LA	045002	3	
	5" - 300#	Freon	C16L	045183	3
	6" - 300#		C20S	045000	3
	8" - 300#		C20L, C25S and C25M	045001	3
	10" - 300#		C25L	045002	3
	12" - 150#		C40LB	240621-15	3
	12" - 300#		C40LA	240620-15	3
	Prior to April, 1982				
	Ammonia and Freon		C16L	045183	3
			C20, C25S and C25M	045000	3
			C25L	045001	3
			C40LB	240621-14	3
			C40LA	045002	3

\* Refer to factory for part number.

\*\* Field fabricate gaskets from 1/16" sheet stock Klinger C-5401, or equivalent.

**1.2 COMPRESSOR PACKAGE (Continued)**

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.
26A	oil pump, auxiliary 3/4HP – Complete (not shown)	All Except C40	045625	1
	pump without motor		240870	1
	motor without pump – 3/4HP		050484	1
	coupling – pump to motor		250026–891	1
	spring – pump relief valve		250033–947	1
	shaft seal – pump		240317	1
26B	oil pump, full run 5HP – Complete (not shown)	C40LA	*	1
	pump		249033	1
	motor – 5HP 3/60/460		040895	1
	coupling – pump to motor		045836	1
	shaft seal – pump		046105	1
	coupling guard		224302	1
27	valve, thermosiphon 1 1/2" NPT	All Except C40	250008–915	1
	element, replacement 110 °F	All Except C40	250011–224	1
28	valve, regulating – water (not shown)			
	1 1/2" 2–way	C16L,C20SB & C20LB	02250053–450	1
	2" 2–way	C25SA,C25MA & C25LA	240611	1
	2 1/2" 2–way	C20SA,C20LA & C25SB	02250053–452	1
	2 1/2" 2–way	C25MB & C25LB	02250053–452	1
	element, replacement			
	1 1/2" 2–way	C16L,C20SB & C20LB	240154	1
	2" 2–way	C25SA,C25MA & C25LA	240708	1
	2 1/2" 2–way	C20SA,C20LA & C25SB	240173	1
	2 1/2" 2–way	C25MB & C25LB	240173	1
	bulbwell			
	1 1/2" 2 way	C16L, C20SB & C20LB	043474	1
	bulbwell			
	2" 2 way	C25SA,C25MA & C25LA	240709	1
	bulbwell			
	2 1/2" 2 way	C20SA,C20LA, C25SB	043474	1
		C25MB & C25LB		
29	actuator, electric valve – complete	See Table 7	See Table 7	1
			*	

\* Refer to factory for part number.

## 1.2 COMPRESSOR PACKAGE (Continued)

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.	
30	valve, check female inj. (not shown) 1/2"	C16	250016-851	1	
	1/2"	C16LA/B, C20SA/B,	250016-851		
		C20LA/B, C20	250016-851		
	1"	C25SA/B, C25MA/B,	250016-852		
		C25LA/B, C40LA/B, C25	250016-852	1	
	valve, check male inj. (not shown) 1/2"	C16, C20, C25	250016-851		
31	orifice, female inj. (not shown)	C40LA/B			
	water cooled/thermosyphon .200"	C16LA/B	025057	1	
	.310"	C20SA/B	025091	1	
	.310"	C20LA/B	025091	1	
	.343"	C25SA/MA	025074	1	
	.310"	C25SB/MB	234536	1	
	.343"	C25LA	025074	1	
	.310"	C25LB	234536	1	
		C40LA/B	*	1	
	liquid injection cooler .200"	C16LA/B	025057	1	
	.343"	C20SA/B	234461	1	
	.343"	C20LA/B	234461	1	
	.343"	C25SA/B	234461	1	
	.343"	C25MA/B	234461	1	
	.343"	C25LA/B	234461	1	
		C40LA	*	1	
	.310"	C40LB	234536	1	
	32	oil sight glass	all	041327	4

\* Refer to factory for part number.



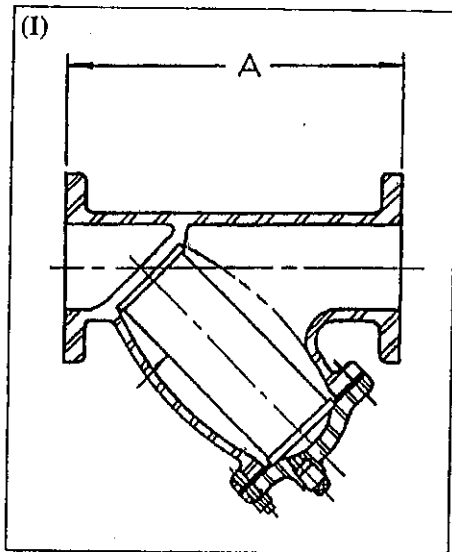
**TABLE 2 – SUCTION STRAINER REFERENCE (KEY NO. 19)**

PACKAGE MODEL NUMBER	STRAINER SIZE (FLANGED)	COMPLETE STRAINER PART NUMBER	SCREEN PART NUMBER	
			CURRENT MODEL (I)	EARLY MODEL (I)
<b>AMMONIA</b>			MUELLER	SPECIAL ORDER
C16L	5 inch	044986	240237	240730
C20, C25S, C25M	6 inch	044987	240238	240731
C25L	8 inch	044988	240239	240732
C40LA	10 inch	044989	240240	240733
C40LB	10 inch	045749	240828-10	240825-10
<b>FREON</b>				
C16L	5 inch	044986	240237	240730
C20S	6 inch	044987	240238	240731
C20L, C25S, C25M	8 inch	044988	240239	240732
C25L	10 inch	044989	240240	240733
C40LA	12 inch	*	*	*
C40LB	12 inch	25000-956	240828-11	240825-11

MUELLER  
GASKET  
P/N

240248  
240249  
240250

\* Refer to factory for part number.



SIZE (A)	STRAINER	
	CURRENT MODEL	EARLY MODEL
5	18 1/4	19 / 19 1/16
6	20 3/16	21 / 21 1/16
8	25 1/8	23
10	29 1/8	28
12	33 3/4	32 1/2 / 32 5/8

**TABLE 3 – OIL STRAINER REFERENCE (KEY NO. 10)**

STRAINER SIZE (NPT)	COMPLETE STRAINER PART NUMBER	SCREEN ONLY PART NUMBER	GASKET ONLY PART NUMBER	CAP ONLY PART NUMBER
1/4"	250038-904	250038-915	250038-935	250038-925
3/8" Current Prior to Dec. 1990	250038-906 043325	250038-916 044055	250038-936 044060	250038-926 240004
1/2" Current Prior to Dec. 1990	250038-907 043056	250038-917 044056	250038-937 044060	250038-927 240003
3/4"	250038-908	250038-918	250038-938	250038-928
1" Current Prior to Jan. 1991	250038-909 240278	250038-919 240281	250038-939 240280	250038-929 240279
1 1/4" Current Prior to Jan. 1991	250038-910 049471	250038-920 049473	250038-940 049472	250038-930 N/A
1 1/2" Current Prior to Aug. 1990	250038-911 042473	250038-921 044057	250038-941 044061	250038-931 240002
2" Current Prior to Jan. 1991	250038-912 045459	250038-922 045460	250038-942 045461	250038-932 240001
2 1/2" Current Prior to Jan. 1991	250038-913 250033-813	250038-923 250038-126	250038-943 250038-125	250038-933 250038-124
3" Current Prior to Jan. 1991	250038-914 043071	250038-924 044058	250038-944 044062	250038-934 240000

C107  
C108  
C109  
C110  
C111  
C112  
C113  
C114  
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C195  
C196  
C197  
C198  
C199  
C200

**TABLE 4 – WATER-COOLED OIL COOLER REFERENCE TABLE (KEY NO. 12)  
(5/8" O.D. STEEL DESIGN ONLY)\***

PACKAGE MODEL NUMBER	OIL COOLER PART NUMBER	IN/OUT HEAD GASKET	REVERSING HEAD GASKET	INLET/OUTLET HEAD	REVERSING HEAD	SHELL DIA. 6"
C16LA, C16LB & C20SA	045703	410162-001	043913	410164-001	410165-001	6" X 108"
C20SB & C20LB	045703	410162-001	043913	410164-001	410165-001	6" X 108"
C25SB & C25MB	045703	410162-001	043913	410164-001	410165-001	6" X 108"
C20LA & C25LB	045704	410162-002	240156-002	410164-002	410165-002	8" X 96"
C25SA & C25MA	045705	410162-002	240156-002	410164-002	410165-002	8" X 108"
C25LA	045995	410162-002	240156-002	410164-002	410165-002	8" X 132"
C40LB	**	**	**	**	**	
C40LA	**	**	**	**	**	

**PRIOR TO OCTOBER, 1979**

PACKAGE MODEL NUMBER	OIL COOLER PART NUMBER	IN/OUT HEAD GASKET	REVERSING HEAD GASKET	INLET/OUTLET HEAD	REVERSING HEAD	SHELL
C16LA, C16LB & C20SA	***	046317	046320	240130	240131	6" X 108"
C20SB & C20LB	***	046317	046320	240130	240131	6" X 108"
C25SB & C25MB	***	046317	046320	240130	240131	6" X 108"
C20LA & C25LB	***	046316	240156	240138	240139	8" X 96"
C25SA & C25MA	***	046316	240156	240138	240139	8" X 108"
C25LA	***	046316	240156	240138	240139	8" X 132"
C40LB	**	**	**	**	**	
C40LA	**	**	**	**	**	

\* For other than 5/8" O.D. steel tube oil coolers, consult Sullair Corporation for information about oil cooler part numbers and quantities. Part number is shown on nameplate of oil cooler. If unavailable, obtain cooler O.D., length, and coolant in addition to serial number of package.

\*\* Refer to factory for part number.

\*\*\* Cooler must be replaced with current part-numbered models.

**TABLE 5 – THERMOSIPHON OIL COOLER REFERENCE TABLE (KEY NO. 12)  
(5/8" O.D. STEEL TUBE – LOW FIN DESIGN ONLY)\***

PACKAGE MODEL NUMBER	OIL COOLER PART NUMBER	INLET HEAD GASKET	OUTLET HEAD GASKET	INLET HEAD PART NUMBER	OUTLET HEAD PART NUMBER	SHELL
C16LA, C25SB & C25MB	407941	046320	046320	**	**	6" X 108"
C25LB	407941	046320	046320	**	**	6" X 108"
C20LA	407942	240156-001	240156-001	**	**	8" X 108"
C20SA	407943	240156-001	240156-001	250009-532	250009-506	8" X 96"
C16LB, C20SB & C20LB	250028-938	046320	046320	**	**	6" X 96"
C25LA	250029-273	240156-001	240156-001	250009-532	250009-506	8" X 144"
C25SA & C25MA	250041-559	240156-001	240156-001	250009-506	250009-532	8" X 120"
C40LB	**	**	**	**	**	
C40LA	**	**	**	**	**	

\* For other than 5/8" O.D. steel tube oil coolers, consult Sullair Corporation for information about oil cooler part numbers and quantities. Part number is shown on nameplate of oil cooler. If unavailable, obtain cooler O.D., length, and coolant in addition to serial number of package.

\*\* Refer to factory for part number.

**ILLUSTRATIONS AND PARTS LIST****TABLE 6 – SUCTION CHECK VALVE REFERENCE TABLE (KEY NO. 23)**

PACKAGE MODEL NUMBER	CHECK VALVE PART NUMBER	SPRING PART NUMBER	GASKET PART NUMBER
<b>AMMONIA</b>			
C16L	250016-158	*	045183
C20, C25S, C25M	250016-159	*	045000
C25L	250016-160	*	045001
C40LB	250014-880	*	240621-14
C40LA	250016-161	*	045002
<b>FREON</b>			
C16L	250016-158	*	045183
C20S	250016-159	*	045000
C20L, C25S, C25M	250016-160	*	045001
C25L	250016-161	*	045002
C40LB	*	*	*
C40LA	*	*	*

**PRIOR TO APRIL, 1986**

PACKAGE MODEL NUMBER	CHECK VALVE PART NUMBER	SPRING PART NUMBER	GASKET PART NUMBER
<b>AMMONIA</b>			
C16L	407383	*	045183
C20, C25S, C25M	409985-002	*	045000
C25L	044984	024062	045001
C40LB	045745	024062	240621-14
C40LA	044985	024062	045002
<b>FREON</b>			
C16L	407383	*	045183
C20S	409985-002	*	045000
C20I, C25S, C25M	044984	024062	045001
C25L	044985	024062	045002
C40LB	045745	024062	240621-14
C40LA	044985	024062	045002

**PRIOR TO JANUARY, 1984**

PACKAGE MODEL NUMBER	CHECK VALVE PART NUMBER	SPRING PART NUMBER	GASKET PART NUMBER
<b>AMMONIA &amp; FREON</b>			
C16L	044982	042616	045183
C20, C25S	044983	024732	045000

\* Refer to factory for part number.

Section 1

# ILLUSTRATIONS AND PARTS LIST

**TABLE 7 – ELECTRIC VALVE ACTUATOR REFERENCE TABLE (KEY NO. 29)**

PACKAGE MODEL NO.	VOLUME RATIO	ELECTRIC VALVE ACTUATOR P/N
C16L	26,37 & 48	250009-325
C20S	26,37 & 48	250009-325
C20L	26,37 & 48	250004-049
C25S	26,37 & 48	250009-325
C25M	26,37 & 48	250009-325
C25L	26,37 & 48	250004-049
C40L	26,37 & 50	250004-049

**PRIOR TO JANUARY, 1983**

PACKAGE MODEL NO.	VOLUME RATIO	ELECTRIC VALVE ACTUATOR P/N	FIFTH GEAR P/N	NUMBER OF TEETH	FIFTH TO FOURTH GEAR SHAFT NO.
C16L	26,37 & 48	012759C	042301-3	26	022978-2
C20S	26,37 & 48	012759B	023071	32	022978-1
C20L	26,37 & 48	012759D	042301-2	20	022978-3
C25S	26,37 & 48	012759C	042301-3	26	022978-2
C25M	26,37 & 48	012759C	042301-3	26	022978-2
C25L	26 & 37	012759E	042301-1	18	022978-4
C25L	48	012759D	042301-2	20	022978-3
C40L	26 & 37	012759-162	042301-1	18	022978-4
C40L	48	012759E	042301-2	20	022978-3

**TABLE 8 – DUPLEX BASKET OIL STRAINER REFERENCE (KEY NO..)**

BRAND NAME AND RATING	STRAINER SIZE	COMPLETE STRAINER PART NUMBER		BASKET/SCREEN PART NUMBER	BASKET COVER PART NUMBER	COVER GASKET PART NUMBER
		FLANGED	THREADED (NPT)			
400# PRIOR TO 3/89	1 1/2 inch	240894	240637	241575-001	406839-001	250007-477
	2 inch	240895	240859	241575-002	406839-002	250007-478
	2 1/2 inch	240896	240608	241575-002	406839-002	250007-478
	3 inch	*	*	*	*	*
	4 inch	*	*	*	*	*
125# AFTER 3/89	1 1/2 inch	250035-787	*	250031-564	02250043-655	250031-567
	2 inch	250035-789	*	250031-569	250031-570	250031-572
	2 1/2 inch	250035-791	*	250031-569	250041-549	250031-572
	3 inch	250035-793	*	02250043-649	250041-456	02250043-651
	4 inch	*	*			
250# AFTER 3/89	1 1/2 inch	250035-549	250031-535	250031-564	250031-565	250031-567
	2 inch	250035-790	*	250031-569	250031-570	250031-572
	2 1/2 inch	250031-677	250031-536	250031-569	250031-570	250031-572
	3 inch	250035-794	*	02250043-649	250041-456	02250043-651
	4 inch		*			
300# AFTER 3/89	1 1/2 inch	250035-788	*	250031-564	02250043-655	250031-567
	2 inch	02250043-658	*	250041-569	250041-549	250031-572
	2 1/2 inch	250035-792	250031-536	250031-569	250041-549	250031-572
	3 inch	250041-784	*	02250043-649	02250043-650	02250043-651
	4 inch	250035-795	*	250041-458	250041-459	250041-461

\* Refer to factory for part number.

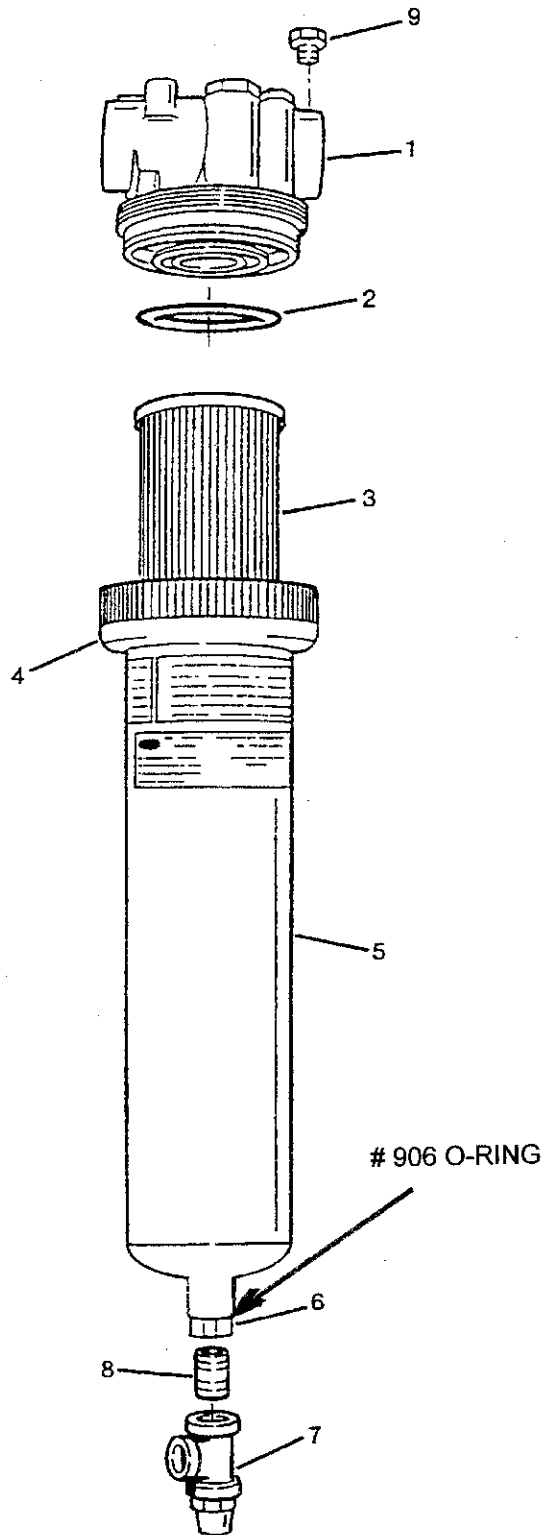
# ILLUSTRATIONS AND PARTS LIST

## NOTES



# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.3 SINGLE FILTER ASSEMBLY



Section 1

# ILLUSTRATIONS AND PARTS LIST

## 1.3 SINGLE FILTER ASSEMBLY

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	filter, head (I)	N/A	1
2	o-ring, oil filter canister (I) (II)	826202-153	1
3	element, oil filter (I)	250008-955	1
4	ring, rotolock - oil filter (I)	250033-099	1
5	canister, oil filter (I)	250033-101	1
6	adaptor, oil filter drain $\frac{3}{8}$ " x $\frac{1}{4}$ "	250009-865	1
7	valve, oil filter drain $\frac{1}{4}$ "	044996	1
8	nipple, pipe - oil filter $\frac{1}{4}$ "	822204-000	1
9	adaptor, oil filter pressure port	250009-864	1
11	assembly, filter (complete)	250008-954	1

(I) Included within the complete filter assembly. (Key No. 11)

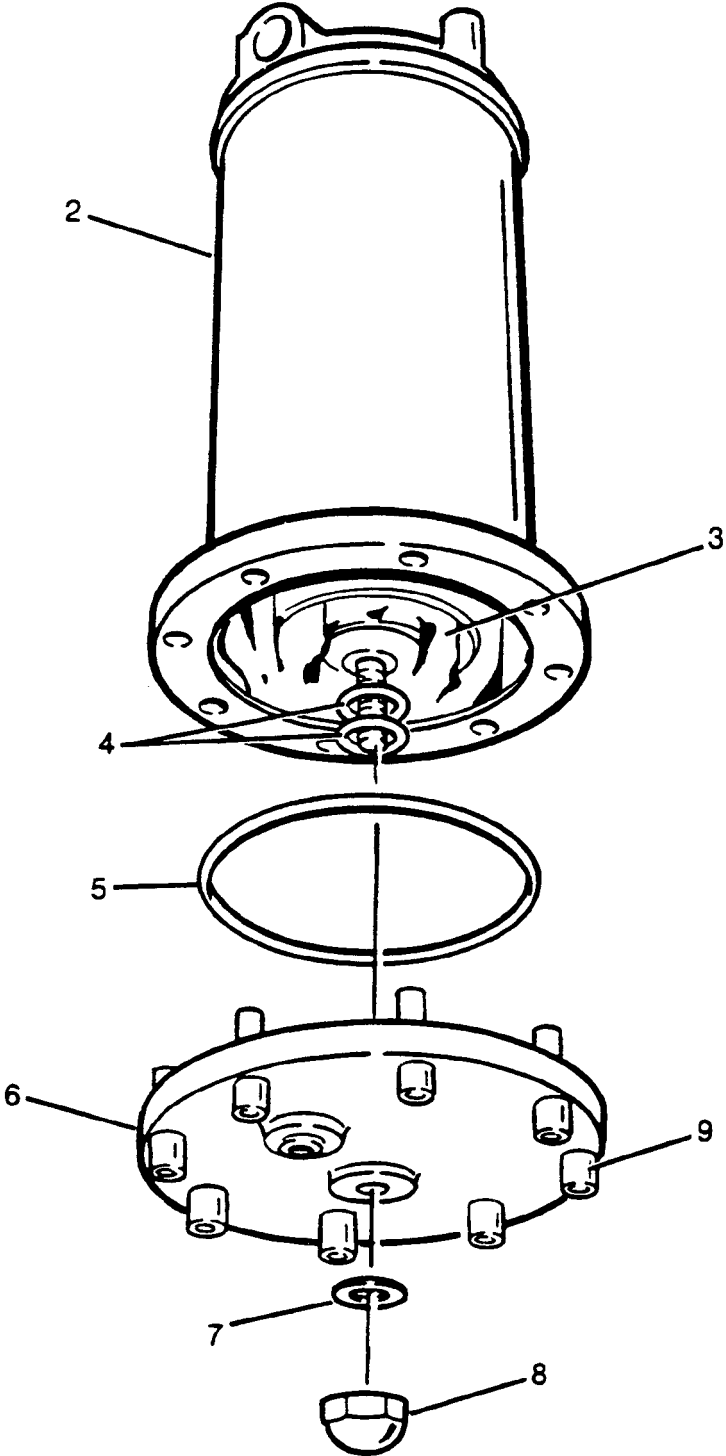
(II) Included with oil filter element (Key No. 3).

---

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# ILLUSTRATIONS AND PARTS LIST

## 1.4 SINGLE FILTER ASSEMBLY (Prior to December, 1984)



**ILLUSTRATIONS AND PARTS LIST****1.4 SINGLE FILTER ASSEMBLY (Prior to December, 1984)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	filter assembly (complete) (Key 2-9)	042463	1
2	housing, oil filter	N/A	1
3	cartridge, filter element	042712	1
4	washer, felt (I)	N/A	2
5	o-ring, oil filter (I)	826202-259	1
6	cover, oil filter	N/A	1
7	washer, fiber -- oil filter nut (I)	N/A	1
8	nut, oil filter cover -- cap	N/A	1
9	screw, hex socket head 1/2"-20 X 1-1/2" (II)		8

(I) Included within the filter element cartridge (Key No. 3).

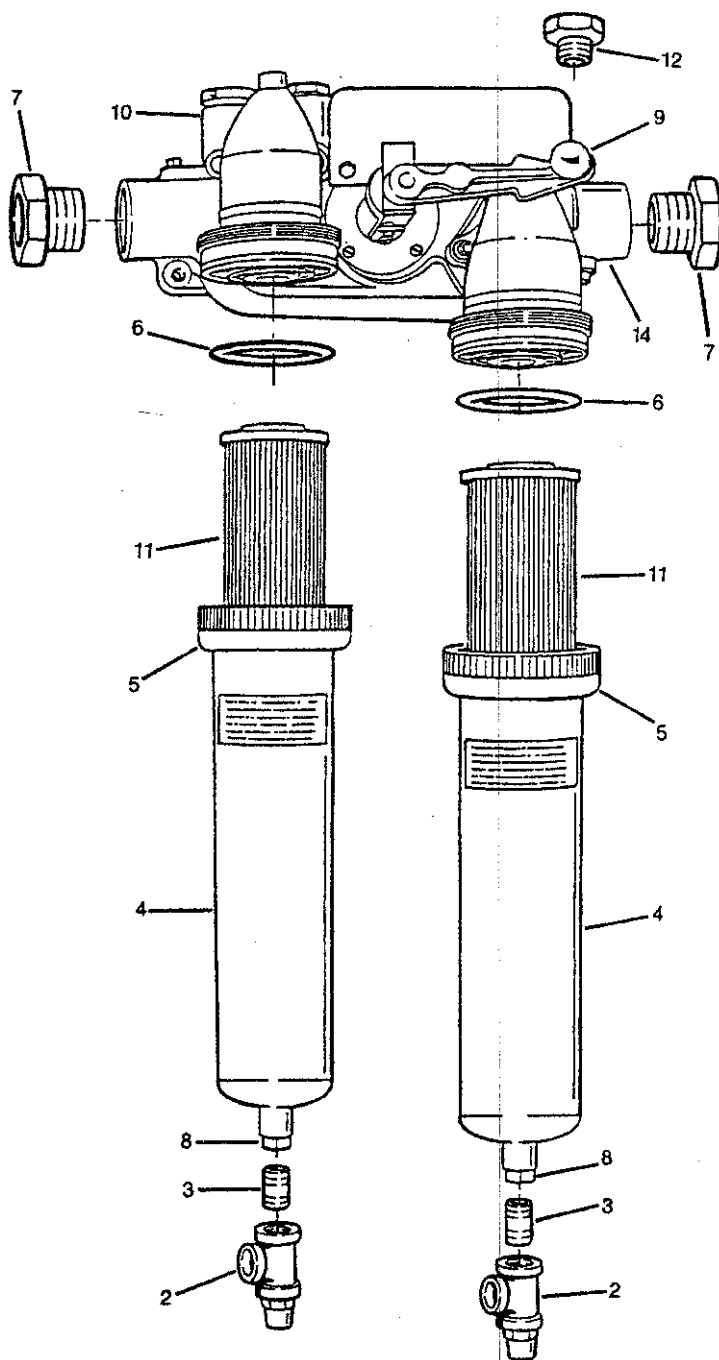
(II) Standard hardware item, may be purchased locally.

---

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.5 DUPLEX FILTER ASSEMBLY



## ILLUSTRATIONS AND PARTS LIST

## 1.5 DUPLEX FILTER ASSEMBLY

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	duplex filter assembly (complete)	250008-953	1
2	valve, oil filter drain 1/4"	044996	2
3	nipple, pipe oil filter 1/4"	822204-000	2
4	canister, oil filter (I)	250033-101	1
5	ring, rotolock - oil filter (I)	250033-099	1
6	o-ring, oil filter canister (I) (II)	826202-153	2
7	adaptor, oil filter	250009-872	2
8	adaptor, oil filter drain 3/8" x 1/4"	250009-865	1
9	handle, duplex filter valve (I)	250033-098	1
10	valve, commuter (I)	250033-097	1
11	element, oil filter (I)	250008-955	2
12	adaptor, oil filter pressure	250009-864	1
14	valve, oil filter transfer (I)	-----	1

(I) Included within the complete filter assembly (Key No. 1).

(II) Included with filter element (Key No. 11).

---

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

**7.0 = COMMUTER VALVE  
SULLAIR P/N 250033-097**

**9.1 = O-RING  
1300093-908**

**9.7 = O-RING  
1300091-014**

**STEM O-RING  
1300096-008  
Maybe 2 required**

**Valve Stem**

**COMMUTER VALVE  
SCREWED DOWN IS CLOSED**

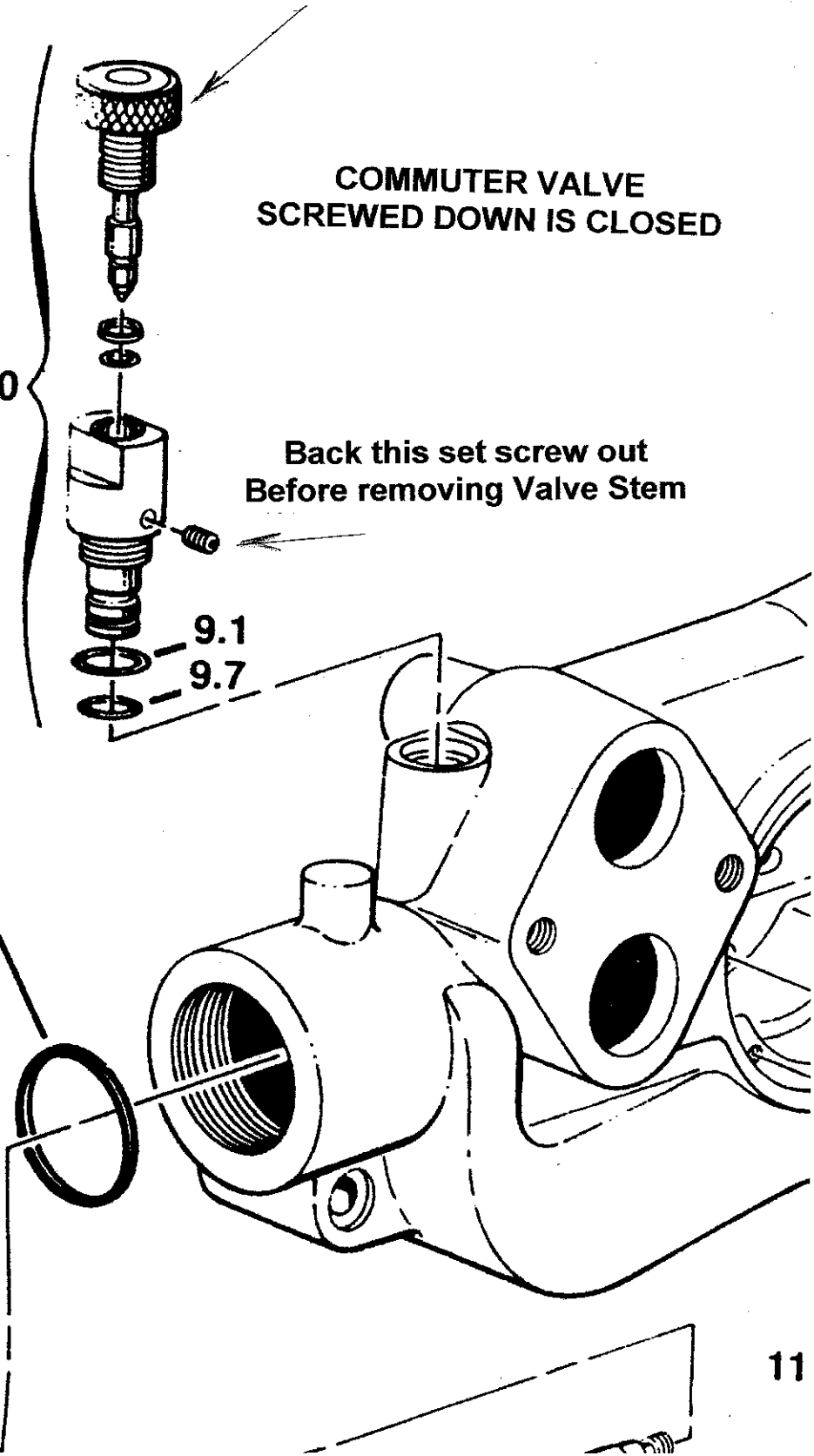
**Back this set screw out  
Before removing Valve Stem**

7.0

9.1

9.7

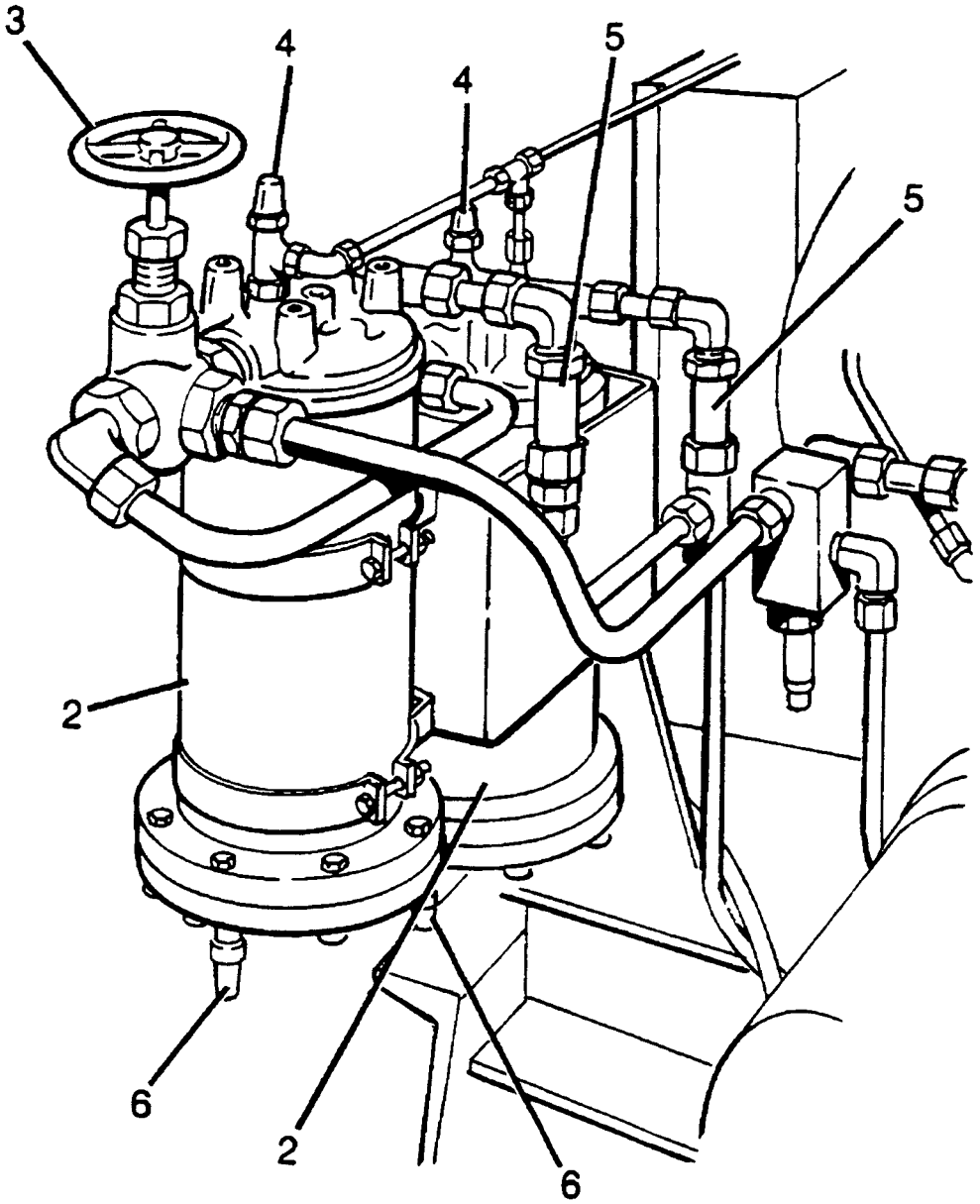
9.2



Section 1

# ILLUSTRATIONS AND PARTS LIST

## 1.6 DUAL FILTER ASSEMBLY (Prior to December, 1984)





Section 1

# ILLUSTRATIONS AND PARTS LIST

## 1.6 DUAL FILTER ASSEMBLY (Prior to December, 1984)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	dual filter assembly (complete)	N/A	1
2	filter, oil (Key 2-9, Section 1.3)	042463	2
3	valve, 3-way	043436	1
4	valve, angle seal cap $\frac{1}{4}$ "	044996	2
5	valve, check $\frac{3}{4}$ "	042615	2
6	valve, angle seal cap $\frac{3}{8}$ "	044997	2

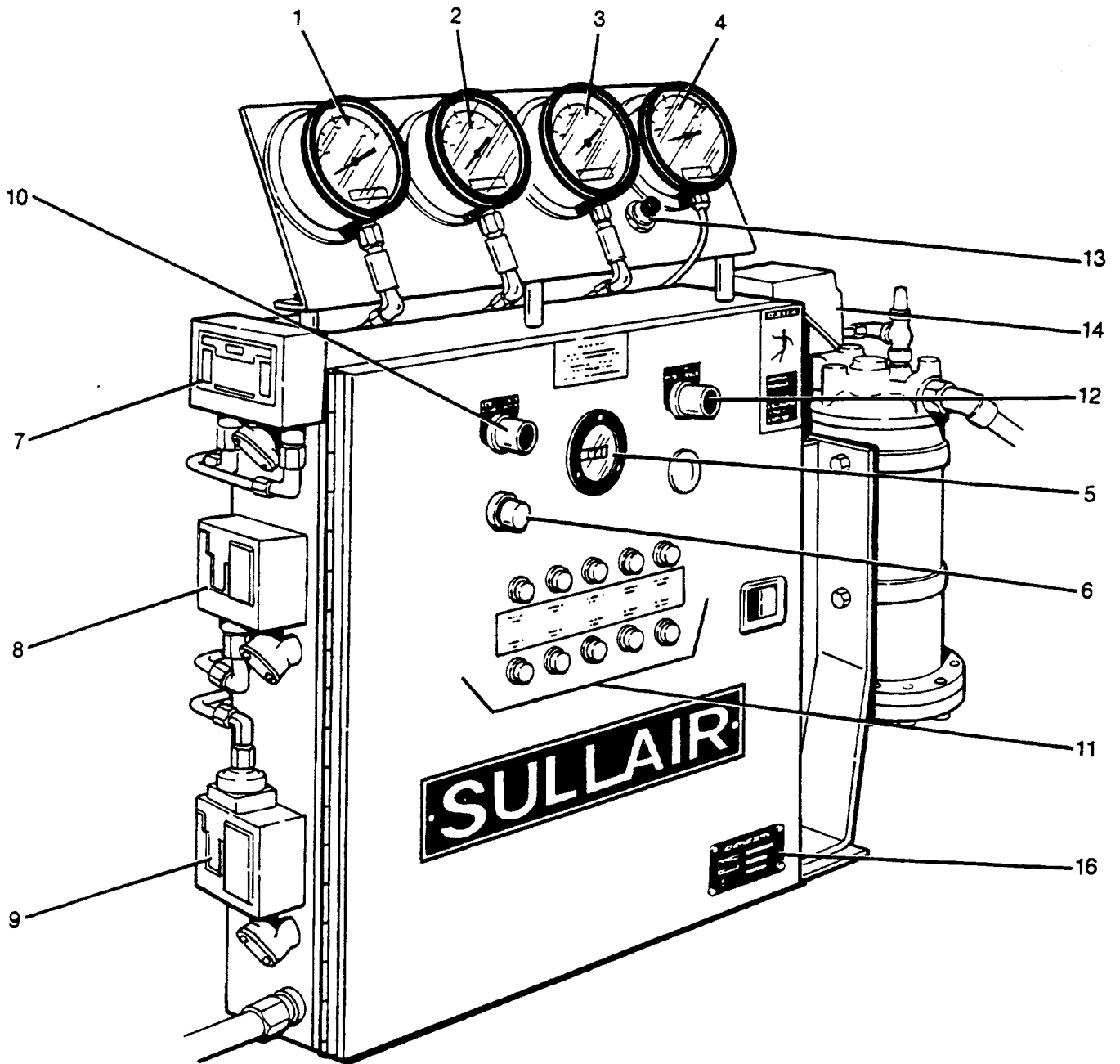
See Section 1.4 for internal parts.

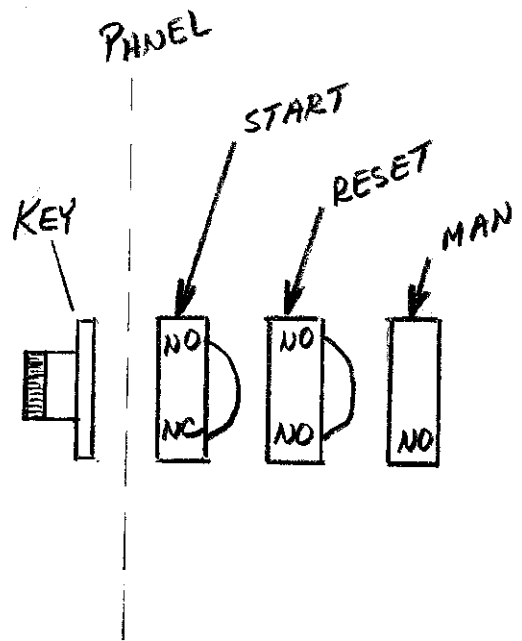
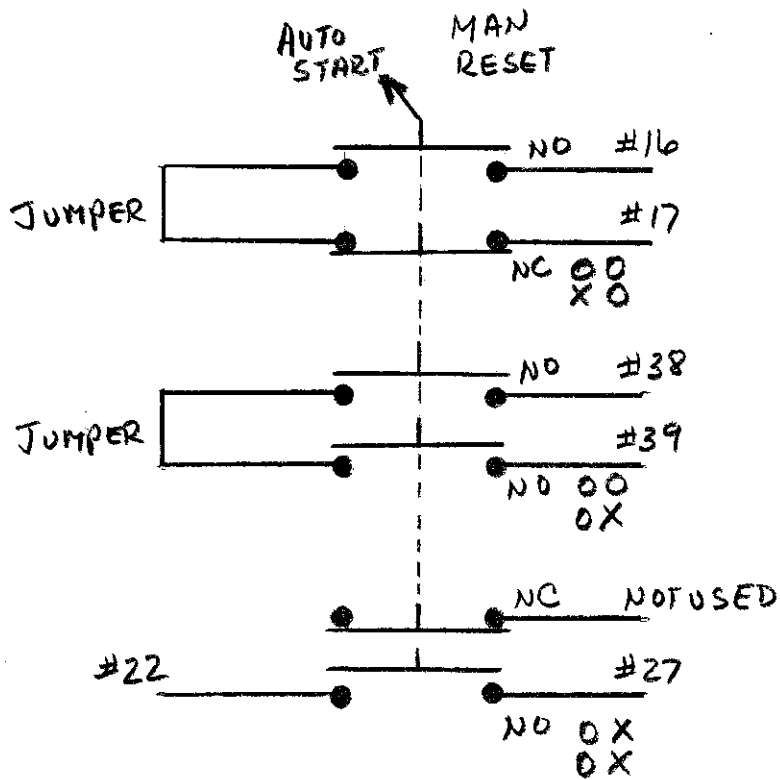
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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 1  
**ILLUSTRATIONS AND PARTS LIST**

**1.7 ELECTRICAL CONTROLS (From June, 1978 to Current)**

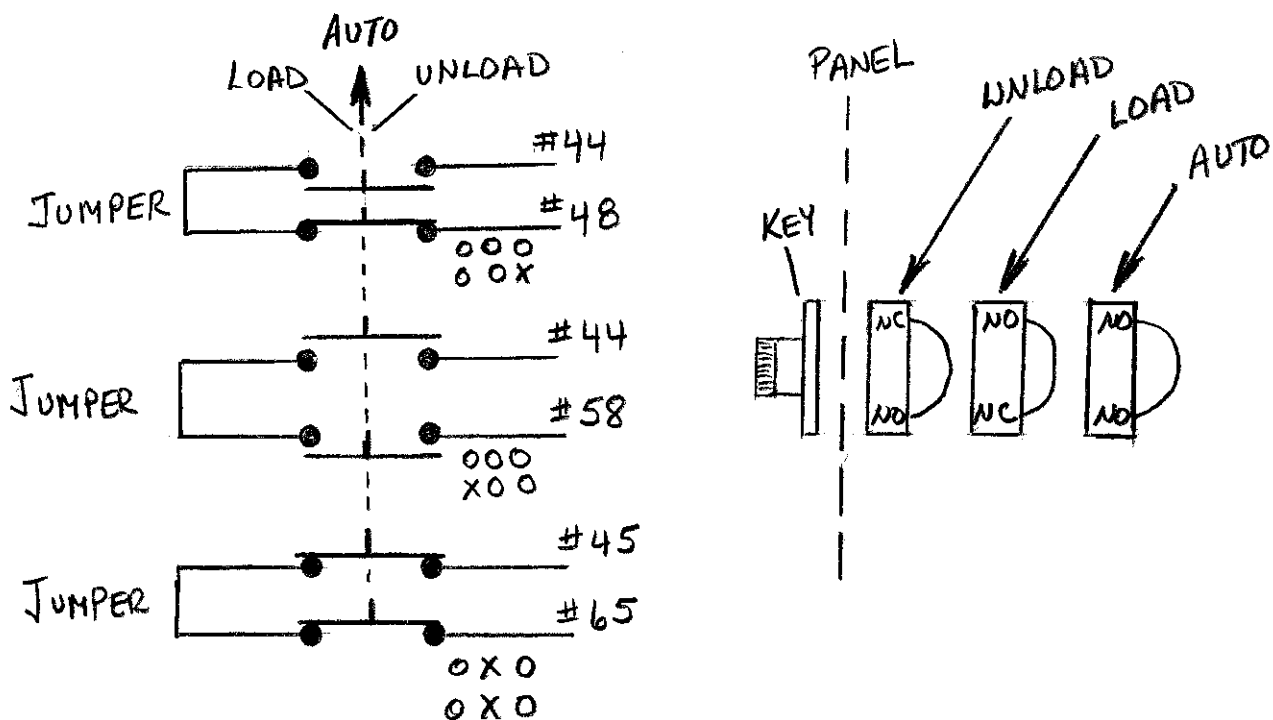




P/N 047092 NAMEPLATE  
 P/N 047097 SWITCH OPERATOR  
 P/N 047096 CONTACT BLOCK NO/NO  
 P/N 047095 CONTACT BLOCK NO/NC

NOTE: CENTER OF SWITCH MUST BE PUSHED FOR RESET TO FUNCTION

SWITCH SHOWN IN CENTER (AUTO) POSITION



P/N 047091 NAMEPLATE  
 P/N 047088 SWITCH OPERATOR  
 P/N 047096 CONTACT BLOCK NO/NO  
 P/N 047095 CONTACT BLOCK NO/NC

NOTE: CENTER OF SWITCH MUST BE PUSHED IN THE LOAD OR UNLOAD POSITION FOR CONTACT CLOSURE

## ILLUSTRATIONS AND PARTS LIST

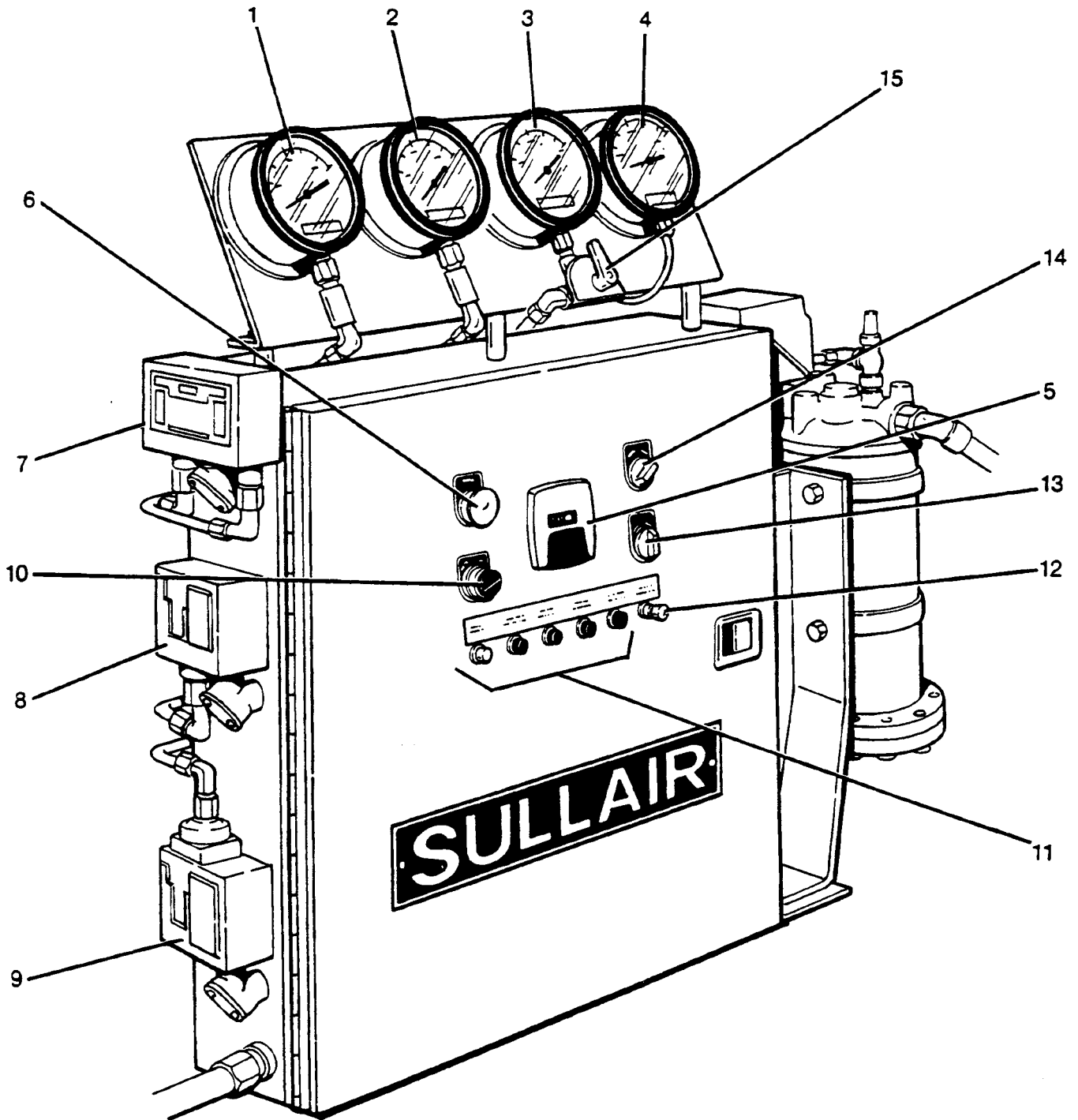
## 1.7 ELECTRICAL CONTROLS (From June, 1978 to Current)

key number	description	part number	quantity
1	gauge, suction pressure – high stage and booster • 30" vacuum 150 PSI (1034kPa) – NH3 • 30" vacuum 150 PSI (1034kPa) – R22	043556 240032	1 1
2	gauge, discharge pressure – high stage • 30" vacuum 300 PSI (2068kPa) – NH3 • 30" vacuum 300 PSI (2068kPa) – R22 gauge, discharge pressure – booster • 30" vacuum 150 PSI (1034kPa) – NH3 • 30" vacuum 150 PSI (1034kPa) – R22	042469 240031 043556 240032	1 1 1 1
3	gauge, oil pressure – high stage • 30" vacuum 300 PSI (2068kPa) – NH3 • 30" vacuum 300 PSI (2068kPa) – R22 gauge, oil pressure – booster • 30" vacuum 150 PSI (1034kPa) – NH3 • 30" vacuum 150 PSI (1034kPa) – R22	042469 240031 043556 240032	1 1 1 1
4	gauge, oil temperature – all compressors	042471.	1
5	hourmeter, – all machines	02250043–008	1
6	pushbutton, STOP	045494	1
7	switch, HDP and LSP protective manual reset (high discharge, low suction pressure)	042465	1
7A	switch, HDP (not shown) (for boosters only)	408788	1
7B	switch, LSP (not shown) (for boosters only)	047138	1
8	switch, HSP (L.P.) automatic machine START/STOP	042888	1
8A	switch, LIP (not shown) (for boosters only)	042888	1
9	switch, LOP protective (low oil pressure)	042464	1
10	switch, selector "AUTO/MAN" push to START and RESET	047097	1
11	light, pilot – lamp holder • light, pilot – lamp • light, pilot – lens (red) • light, pilot – lens (green) • light, pilot – lens (amber)	043383 043386 043384 043385 047016	10 10 5 1 4
12	switch, selector "load/auto/unload"	047088	1
13	pushbutton, valve oil pressure gauge	241239	1
14	switch, P <sub>1</sub> /P <sub>2</sub> auto capacity control	047607	1
15	switch, SOP start–up oil pressure w/aux. oil pump option (not shown)	046923	1
16	nameplate	–	–

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

Section 1  
**ILLUSTRATIONS AND PARTS LIST**

1.8 ELECTRICAL CONTROLS (Prior to June, 1978)



## ILLUSTRATIONS AND PARTS LIST

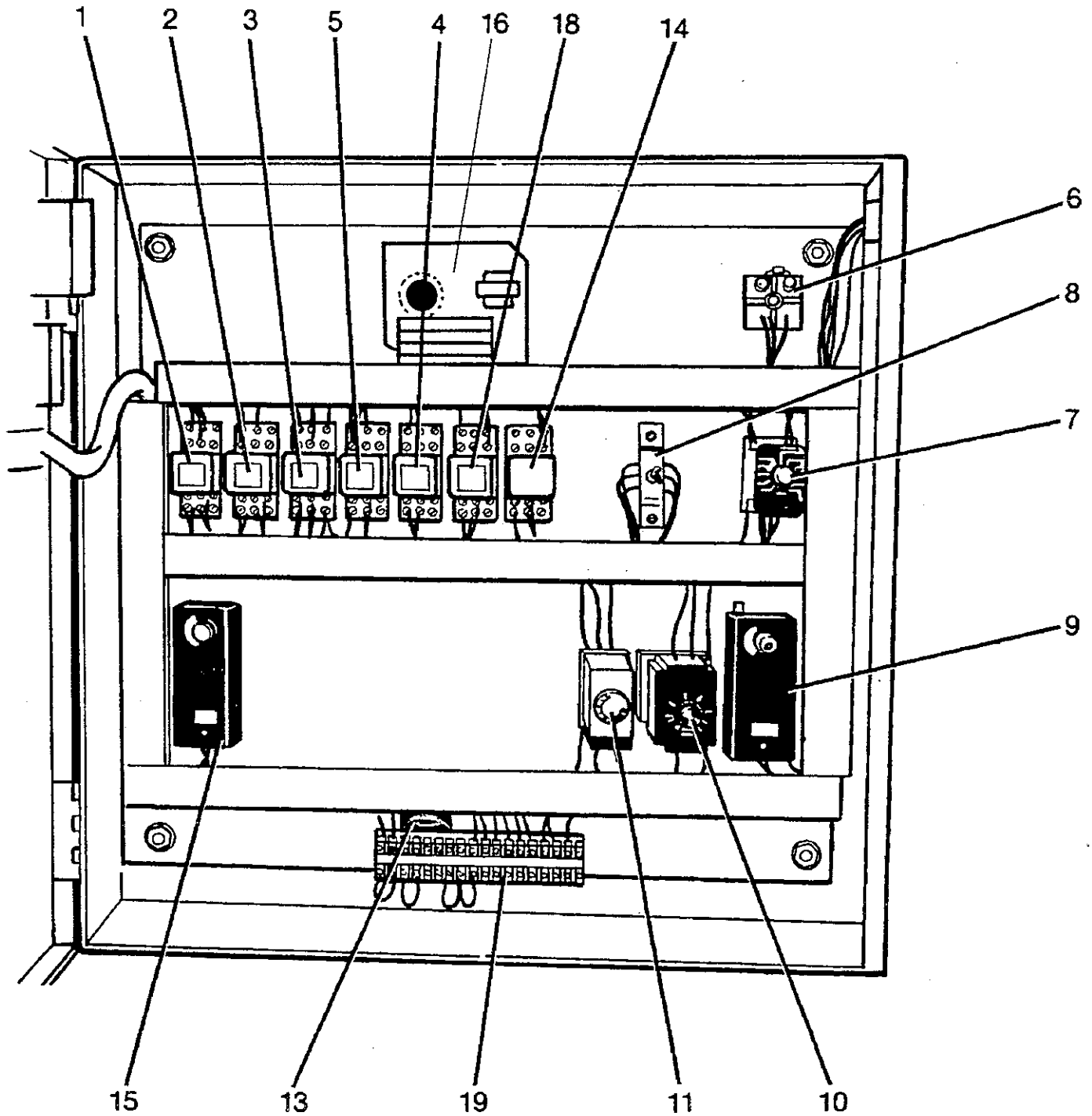
## 1.8 ELECTRICAL CONTROLS (Prior to June, 1978)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	gauge, intermediate pressure (all high stage) and evaporating pressure gauge (all booster) – NH3 • 30" vacuum 150 PSI (1034kPa) – R22	043556 240032	1 1
2	gauge, condensing pressure (all high stage) • 30" vacuum 300 PSI (1034kPa) – NH3 • 30" vacuum 300 PSI (1034kPa) – R22	042469 240031	1 1
	gauge, intermediate pressure (all booster) • 30" vacuum – 150 PSI 1034kPa – NH3 • 30" vacuum 300 PSI (1034kPa) – R22	043556 240032	1 1
3	gauge, oil pressure – high stage • 30" vacuum 300 PSI (2068kPa) – NH3 • 30" vacuum 300 PSI (2068kPa) – R22	042469 240031	1 1
	gauge, oil pressure – booster • 30" vacuum 150 PSI (1034kPa) – NH3 • 30" vacuum 150 PSI (1034kPa) – R22	043556 240032	1 1
4	gauge, oil temperature – all compressors	042471	1
5	hourmeter, – all machines • replaced by: kit, replacement – hourmeter	obsolete 001101	1 1
6	pushbutton, STOP	045494	1
7	switch, HDP and LSP protective manual reset • automatic reset (not shown)	042465 043717	1 1
7A	switch, HDP (Booster) (not shown)	408788	1
7B	switch, LSP (Booster) (not shown)	047138	1
8	switch, HSP (L.P) START/STOP – automatic machine	042888	1
8A	switch, LIP (Booster) (not shown)	042888	1
9	switch, LOP protective	042464	1
10	switch, selector "hand/auto" • replaced by: kit	250028–661	1
11	light, pilot – lamp holder only • light, pilot – lamp • light, pilot – lens (red) • light, pilot – lens (green)	043383 043386 043384 043385	5 5 5 1
12	pushbutton, RESET	043382	1
13	switch, selector "load/unload"	obsolete	
14	switch, selector "auto/manual" Items 13 and 14 replaced by: • switch, selector • block, contact • block, contact	047088 047095 047096	1 1 1
15	gauge, oil valve pressure – 3–way • replaced by: kit, replacement – push valve	obsolete 001882	1

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 1 ILLUSTRATIONS AND PARTS LIST

1.9 ELECTRICAL PANEL WITH A.C. ELECTRICAL VALVE ACTUATOR – A.C. (Inside) (After June, 1985)





**ILLUSTRATIONS AND PARTS LIST****1.9 ELECTRICAL PANEL WITH A.C. ELECTRICAL VALVE ACTUATOR – A.C. (Inside) (After June, 1985)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	relay, protective circuit control – 1CR	045496	1
2	relay, low oil pressure delay control – 1TRA	045496	1
3	relay, motor start control – 4CR	045496	1
4	relay, unload – 10CR	045496	1
5	relay, low oil pressure – 9CR	045496	1
6	relay, delay timing – 1TR • with resistor ¼" watt	406422-002 047090	1 1
7	relay, capacity control timing – 3TR	047087	1
8	switch, test	042531	1
9	switch, protective HOT	045417	1
10	timer, anti-cycle (ART)	250023-402	1
11	relay, load limiting timing – 4TR (I)	250023-403	1
12	terminal block and track	041493	14
13	resistor, 12W 2000 Ohm	044846	1
14	relay, maximum position latching – 12CRL	047734	1
15	switch, high discharge temperature protective	045417	1
16	control, liquid solenoid (LDT)	046546	1
17	thermistor, probe for liquid solenoid control (not shown)	046521	1
18	relay, minimum position latching – 11CRL	047734	1

**NOTE**

Special ordered compressors may cause variations in components, locations and quantities.

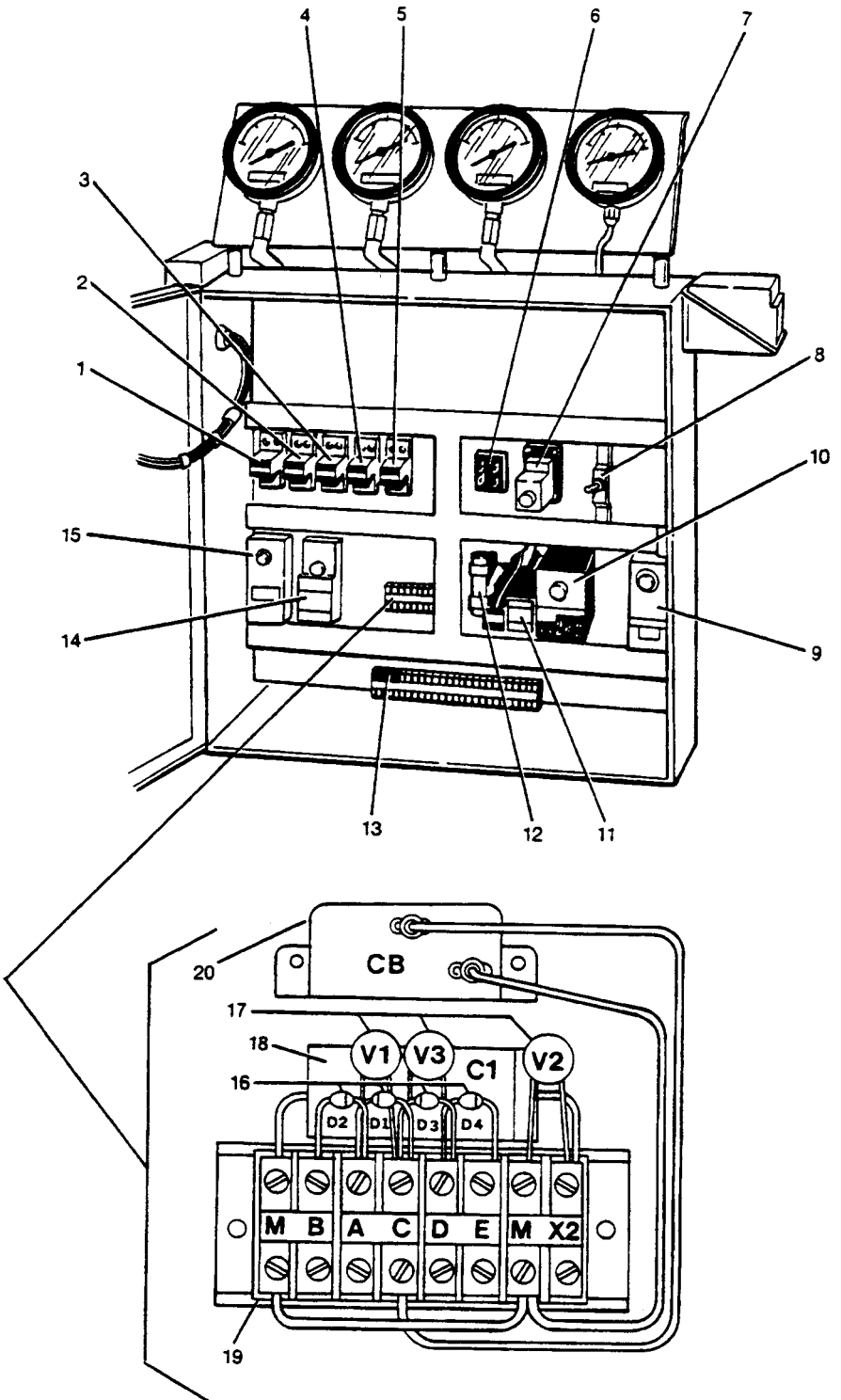
(I) Replaced by kit no. 02250044-491 timer and relay.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# ILLUSTRATIONS AND PARTS LIST

## 1.10 ELECTRICAL CONTROLS (From June, 1978 to January, 1985)



**ILLUSTRATIONS AND PARTS LIST****1.10 ELECTRICAL CONTROLS (From June, 1978 to January, 1985) (I)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	relay, protective circuit control – 1CR	045496	1
2	relay, low oil pressure delay control – 1TRA	045496	1
3	relay, motor start control – 4CR	045496	1
4	relay, low oil pressure – 9CR	045496	1
5	relay, unloading control – 10CR liquid injection (I)	045496	1
6	relay, delay timing – 1TR • with resistor ¼" watt	406422-002 047090	1 1
7	relay, capacity control timing – 3TR	047087	1
8	switch, test	042531	1
9	switch, protective HOT	045417	1
10	timer, anti-cycle (ART)	046177	1
11	relay, load limiting timing – 4TR • head, timing – 4TR	045437 046362	1 1
12	fuse, control circuit	046151	1
13	resistor, 12W 2000 Ohm	044846	1
14	switch, low discharge temperature (liquid injection) (I) • probe, (liquid injection (not shown)	046546 046521	1 1
15	switch, protective high discharge temperature	045417	1
16	rectifier, diode (water cooled) • rectifier, diode (liquid injection)	046846 046846	4 2
17	suppressor, varistor arc	046847	3
18	capacitor	047086	1
19	terminal block and track	041493	14
20	breaker, circuit	045042	1

(I) For liquid refrigerant cooling of oil design, see Section 1.20.

**NOTE**

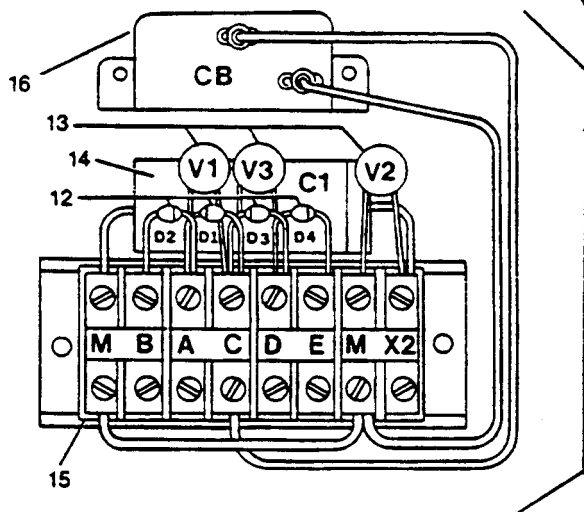
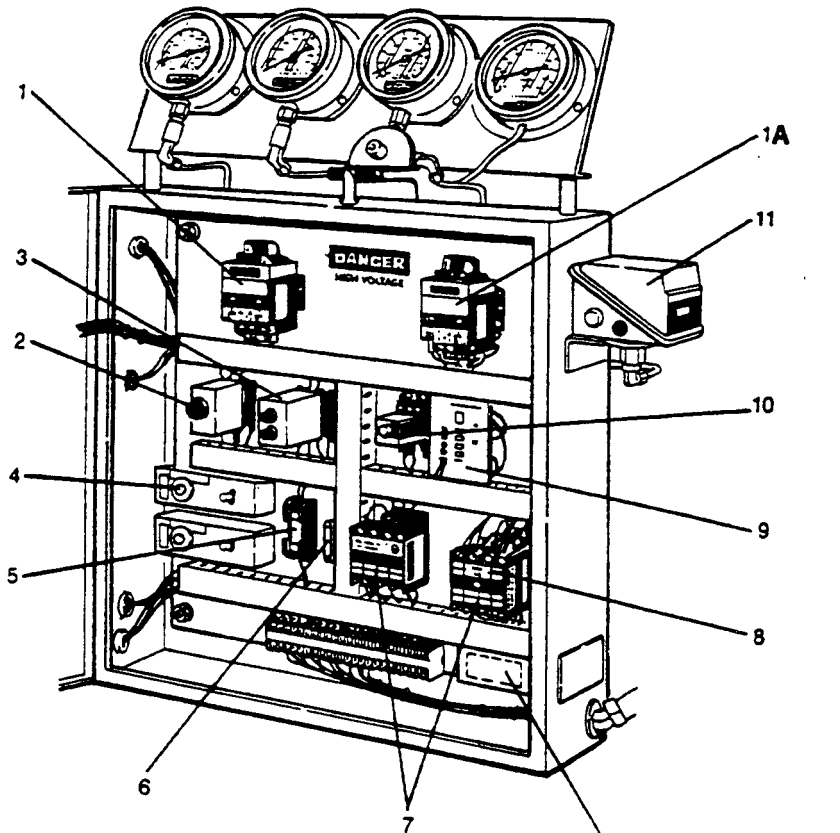
Special ordered compressors may cause variations in components, locations and quantities.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.11 ELECTRICAL CONTROLS (Prior to June, 1978)



# ILLUSTRATIONS AND PARTS LIST

## 1.11 ELECTRICAL CONTROLS (Prior to June, 1978) (I)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	relay, timing anti-recycle timer 0 to 30 minutes – Agastat	040836	1
	• relay, timing anti-recycle timer 0 to 30 minutes – Eagle	046177	1
1a	relay, timing 4TR 0 to 10 minutes – Old style	obsolete	1
	• replaced by: relay, timing	045437	1
	• replaced by: head, timing	046362	1
2	relay, timing 1TR 0 to 10 seconds		
	• relay, timing (socket only)	043388	1
	• relay, timing (P/N 047090 resistor required)	406422-002	1
3	relay, timing 3TR dual range	047087	1
	• relay, timing (socket only)	043388	1
4	switch, temperature – high discharge temperature, protection, high oil temperature, “manual reset”	045417	2
	• “auto reset” (not shown)	042589	2
5	fuse, control circuit	046151	1
6	resistor, 12 watt 2200 ohm	044846	1
7	relay, control 4–pole (used only on some compressors built before July, 1977)	042090	1
	• contacts, normally open/normally closed reversible	042091	4
8	deck, top extra 4–pole for control relay	042640	1
9	light, indicator pilot (used on some compressors built before July, 1977)	045503	4
10	relay, control (9CR, 1CR, 4CR, 1TRA)	045496	4
	• relay, control (socket only)	045497	4
11	switch, pressure automatic capacity control 20” vacuum to 50 PSI (345kPa)	047607	1
	0 to 100 PSIG (689kPa) (all high stage)	043939	1
	• microswitch, for P/Ns 043939 and 047607 above	046178	1
	diaphragm, for P/Ns 043939 and 043361 above	049325	1
12	rectifier	046846	4
13	varistor	046847	3
14	capacitor	047086	1
15	terminal block and track	041493	4
16	circuit breaker	045042	1

(I) For liquid refrigerant cooling of oil design, see Section 1.20.

### NOTE

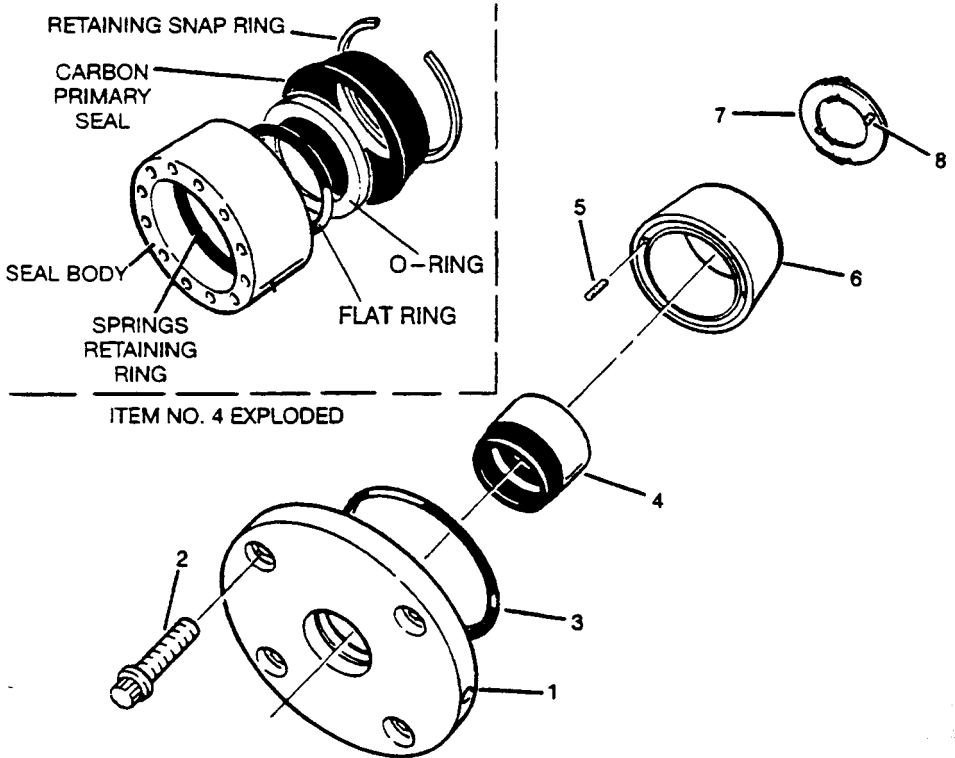
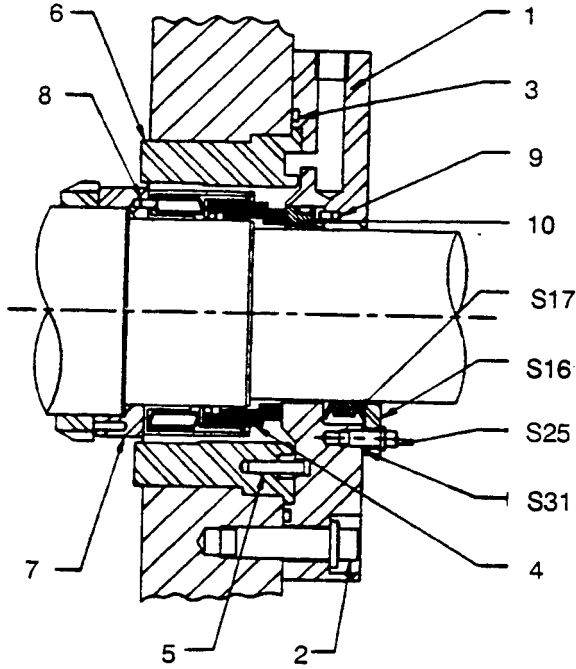
Special ordered compressors may cause variations in components, locations and quantities.

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PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# ILLUSTRATIONS AND PARTS LIST

## 1.12 SHAFT SEAL ASSEMBLY - TYPE 8



FROM GEARS

# ILLUSTRATIONS AND PARTS LIST

## 1.12 SHAFT SEAL ASSEMBLY – TYPE 8

key number	description	these are C25 part numbers only	
		part number	quantity
1	cover, shaft seal	027900	1
	•cover, shaft seal	022912	1
2	capscrew, ferry head $\frac{1}{2}$ " – 13 x $1\frac{3}{4}$ "	828408–175	8
3	o–ring, neoprene $6\frac{1}{2}$ " x $\frac{1}{8}$ "	826202–260	1
	•o–ring, viton $6\frac{1}{2}$ " x $\frac{1}{8}$ "	826502–260	1
4	seal, 3.00 8B1 n/seat neoprene	250026–936	1
	•seal, 3.00 8B1 n/sesat viton	250026–937	1
5	pin, roll unfinished $\frac{3}{16}$ " x $\frac{7}{8}$ "	827403–088	1
6	housing, seal	022935	1
7	disc, oil blkg–seal	250014–083	1
8	pin, roll unfinished $\frac{1}{8}$ " x $\frac{3}{8}$ "	827402–038	1
9	pin, roll unfinished $\frac{1}{8}$ " x $\frac{1}{2}$ "	827402–050	1
10	seal, seat 3.00 tungsten	042376–001	1

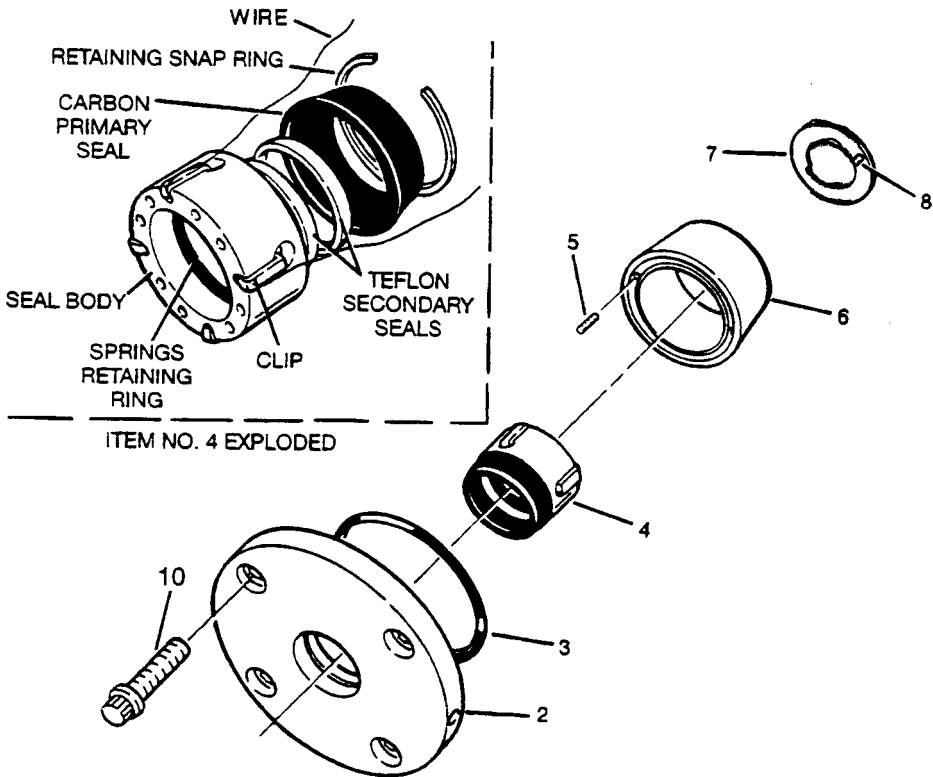
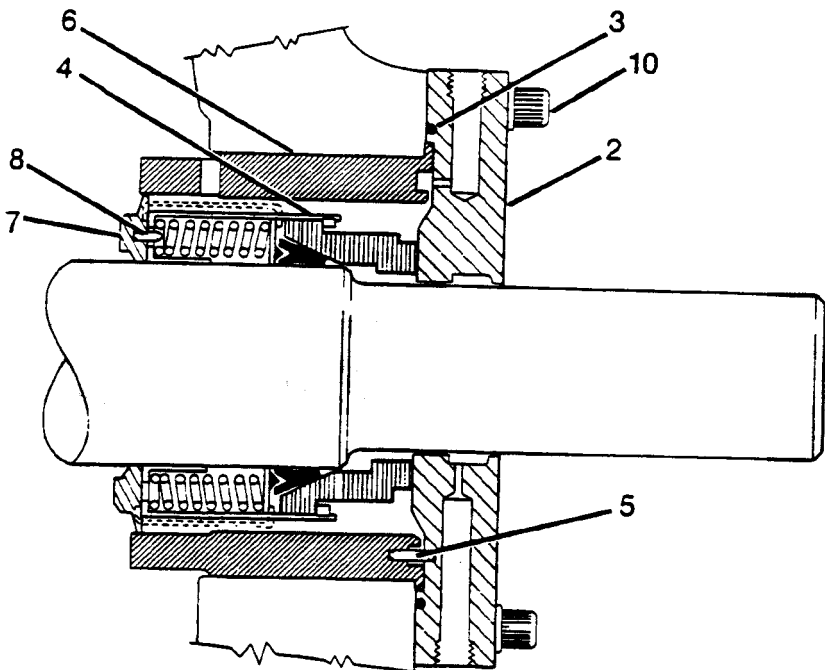
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

### SHAFT SEAL KIT NUMBERS WITH TYPE 8 SEAL

C16	P/N 001807A
C20	P/N 001808A
C25	P/N 001809A

# ILLUSTRATIONS AND PARTS LIST

## 1.13 SHAFT SEAL ASSEMBLY - TYPE 9





## ILLUSTRATIONS AND PARTS LIST

## 1.13 SHAFT SEAL ASSEMBLY – TYPE 9

**TYPE 9 SEAL CONTACT MID-STATES REFRIGERATION**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	repair kit, shaft seal (includes Items 2,3,4,5, and 8)		
	• shaft O.D. seal – 2" (C16 package)	001807A	1
	• shaft O.D. seal – 2½" (C20 package)	001808A	1
	• shaft O.D. seal – 3" (C25 package)	001809A	1
2	plate, shaft seal cover (I)		
3	o-ring (I)		
4	seal, shaft (I)		
5	pin, roll ⅜" (I)		
6	housing, seal		
	• shaft O.D. seal – 2" (C16 package)	023031	1
	• shaft O.D. seal – 2½" (C20 package)	024030	1
	• shaft O.D. seal – 3" (C25 package)	022935	1
7	ring, drive		
	• shaft O.D. seal – 2" (C16 package)	call	1
	• shaft O.D. seal – 2½" (C20 package)	call	1
	• shaft O.D. seal – 3" (C25 package)	call	1
8	pin, roll ⅙" (I)		
9	pin, drive		
	• shaft O.D. seal – 2" (C16 package)	023041	1
	• shaft O.D. seal – 2½" (C20 package)	024019	1
	• shaft O.D. seal – 3" (C25 package)	022936	1
10	capscrew, ferry head ½"-13 (II)		
	• shaft O.D. seal – 2" (C16 package)	828408-125	4
	• shaft O.D. seal – 2½" (C20 package)	828408-150	4
	• shaft O.D. seal – 3" (C25 package)	828408-150	4

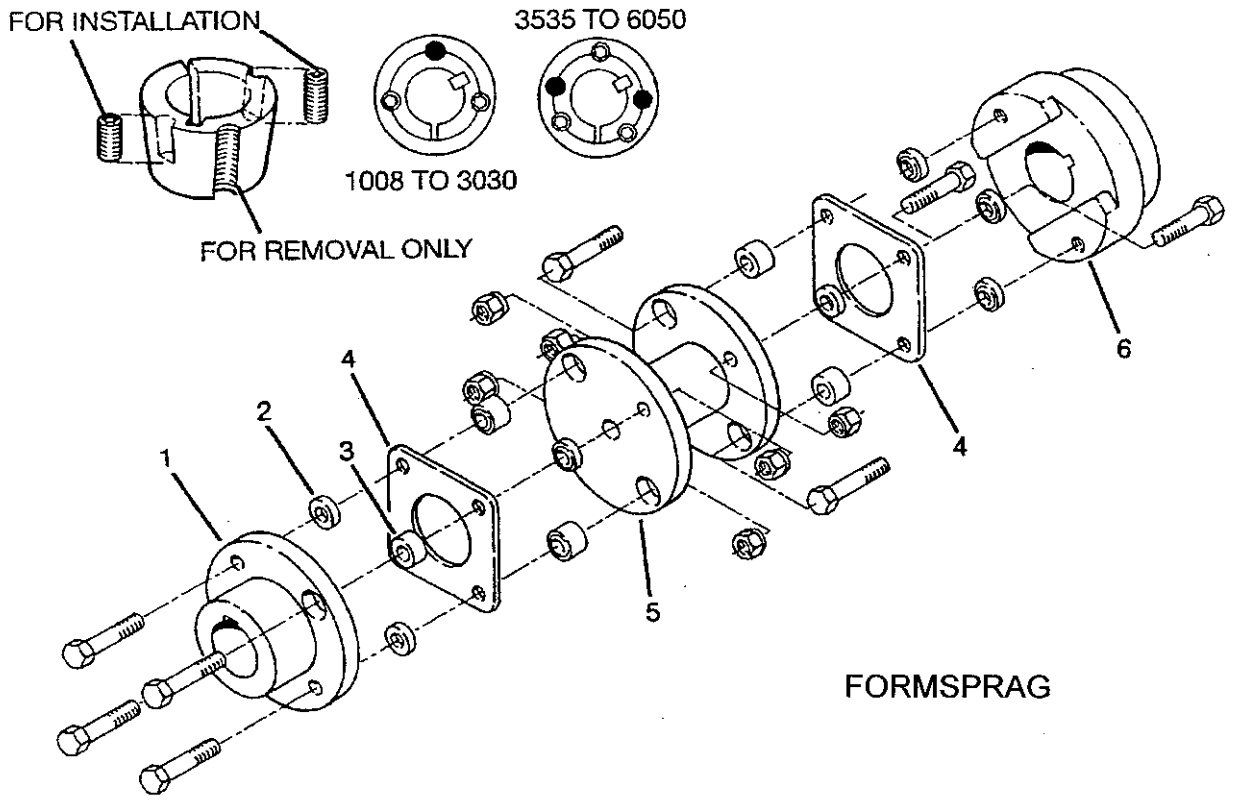
(I) Key numbers 2, 3, 4, 5 and 8 are only sold in repair kit (Key No. 1).

(II) Standard hardware item, may be purchased locally.

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.14 COUPLING ASSEMBLY – STYLE 1 FORMSPRAG



FORMSPRAG

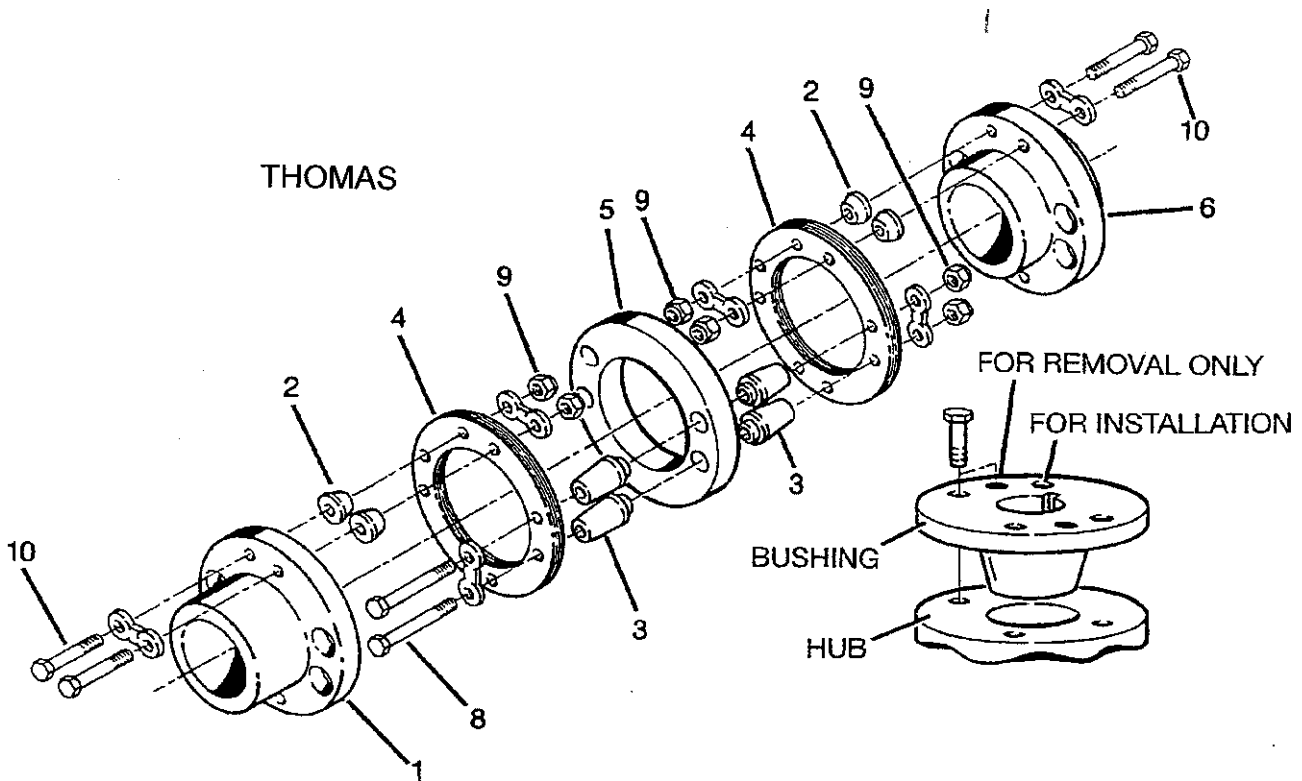
HUB STYLES WILL DIFFER FROM ONE MODEL SERIES TO THE NEXT.  
 C16 SERIES HUBS ARE AS ITEM NO. 1 WITH Q.D. TAPERED BUSHINGS.  
 C20 SERIES HUBS ARE AS ITEM NO. 1 WITH Q.D. TAPERED BUSHINGS.  
 C25 SERIES HUBS ARE AS ITEMS NO. 6. WITH TAPERLOCK BUSHINGS.

### TAPERLOCK BUSHING TIGHTENING TORQUES

BUSHING NO.	SCREWS	TORQUE	
		lb.-in.	Nm
1008, 1108	¼" Set Screws	55	6
1210, 1215, 1310	⅜" Set Screws	175	20
1610, 1615	⅜" Set Screws	175	20
2012	⅞" Set Screws	280	30
2517, 2525	½" Set Screws	438	50
3020, 3030	⅝" Set Screws	800	90
3535	½" Cap Screws	1000	115

# ILLUSTRATIONS AND PARTS LIST

## 1.14 COUPLING ASSEMBLY (Cont'd.) – STYLE 2 THOMAS

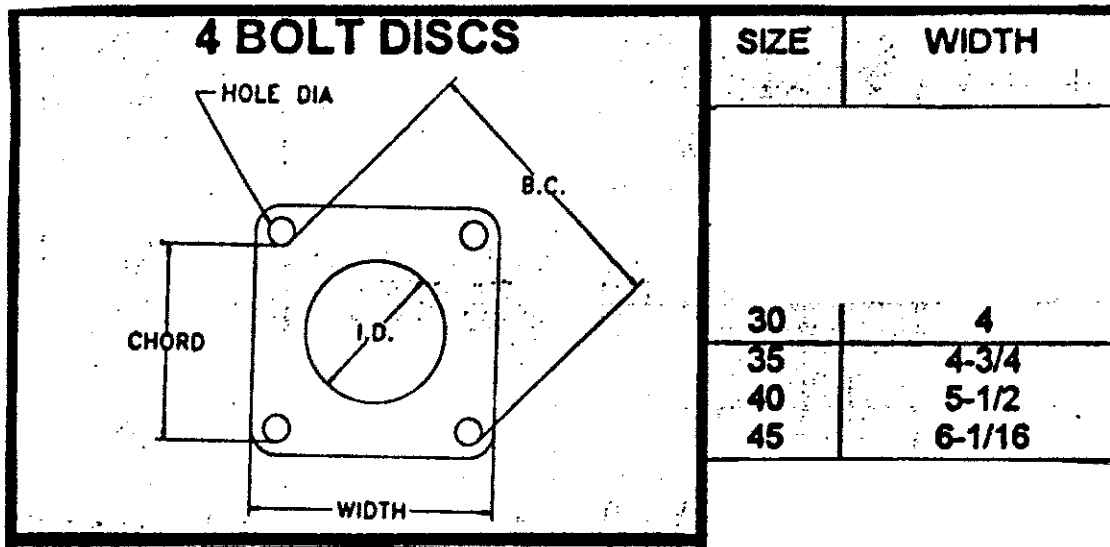


**QD BUSHING TIGHTENING TORQUES**

BUSHING NO.	SCREWS	TORQUE	
		LB.-IN.	Nm
SD	1/4 x 1-7/8	108	12
SK	5/16 x 2	180	20
SF	3/8 x 2	360	41
E	1/2 x 2-3/4	720	81
F	7/16 x 3-5/8	900	102

**FORMSPRAG COUPLING**

**HOW TO DETERMINE THE SIZE**



**FORMSPRAG COUPLING COMPLETE REPAIR KIT**

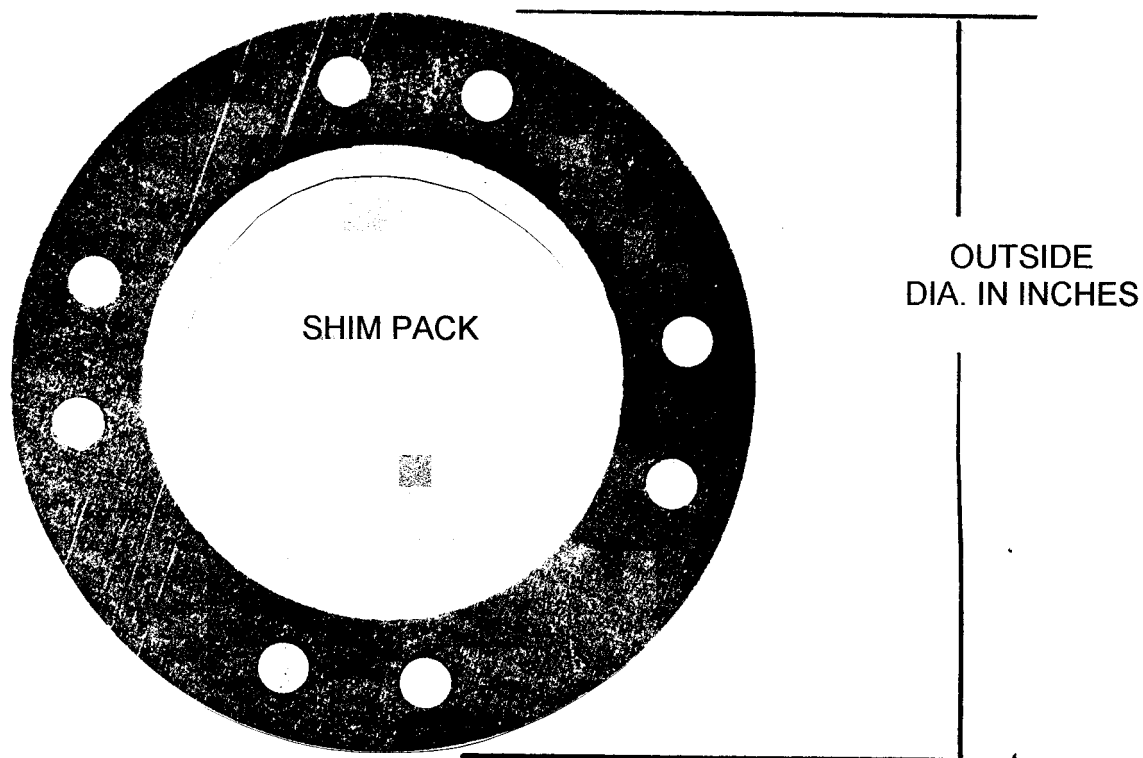
SIZE	KIT PART NO.
30	018654-001
35	018654-002
40	018654-003

**FORMSPRAG SHIM PACK ONLY (NEED 2 PER COUPLING)**

SIZE	PART NO.
30	240089
35	240090
40	240091

# THOMAS COUPLING HAS A ROUND SHIM PACK

## HOW TO DETERMINE THE SIZE



SHIM PACK DIA. IN INCHES	SIZE
5-3/4"	226
7-3/4"	301
9-1/8"	351

COUPLING DIA. IN INCHES	SIZE
6.06"	226
8.0"	301
9.38"	351

### THOMAS COUPLING REPAIR KIT

SIZE	PART NO.
226	018655-001
301	018655-002
351	018655-003

### THOMAS SHIM PACK ONLY ( NEED 2 PER COUPLING)

SIZE	PART NO.
226	242326
301	242327
351	242328

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	STYLE 1 QD TYPE PART NO.	QTY.	STYLE 1 TAPERLOCK TYPE PART NO.	QTY.	STYLE 2 TAPERLOCK TYPE PART NO.	QTY.	
1	Hub, Coupling	C16&C20	250001-537	1	--	-	--	-	
		C25	--	-	240100	1	--	-	
		C40	--	-	*	-	--	-	
		Prior to November, 1981	C16	--	-	240105	1	242330	1
		C20	--	-	240099	1	242332	1	
		C25	--	-	240100	1	242333	1	
2	Washer, Element - Thin	C16&C20	250001-539 **	8	--	-	--	-	
		C25	--	-	**	12	--	-	
		C40	--	-	*	-	--	-	
		Prior to November, 1981	C16	--	-	240095 **	10	242335 **	16
		C20	--	-	240096 **	8	242329 **	12	
		C25	--	-	240097 **	12	242331 **	12	
3	Washer, Element - Thick	C16&C20	250001-540 **	8	--	-	--	-	
		C25	--	-	**	4	--	-	
		C40	--	-	*	-	--	-	
		Prior to November, 1981	C16	--	-	240092 **	6	--	-
		C20	--	-	240093 **	8	--	-	
		C25	--	-	240094 **	4	--	-	
4	Pack, Flex Element ***	C16&C20	250001-543 **	2	--	-	--	-	
		C25	--	-	**	2	--	-	
		C40	--	-	*	-	--	-	
		Prior to November, 1981	C16	--	-	240089 **	2	242326 **	2
		C20	--	-	240090 **	2	242327 **	2	
		C25	--	-	240091 **	2	242328 **	2	

\* For information on C40 coupling, contact Sullair Corporation in Michigan City, Indiana.

\*\* Not available as an individual part. Included in flexible element replacement kit.

\*\*\* For replacing flexible elements (Key Number 4), two (2) elements are required.

Each pack contains thin flexible blades, all of which must be assembled as a pack.

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	STYLE 1 QD TYPE PART NO.	QTY.	STYLE 1 TAPERLOCK TYPE PART NO.	QTY.	STYLE 2 TAPERLOCK TYPE PART NO.	QTY.
5	Spacer	C16&C20	250001-542	1	--	-	--	-
		C25	--	-	240103	1	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	240101	1	242334	1
		C20	--	-	240102	1	242337	1
		C25	--	-	240103	1	242336	1
6	Hub, Coupling	C16&C20	250001-537	1	--	-	--	-
		C25	--	-	240100	1	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	240098	1	242338	1
		C20	--	-	240099	1	242332	1
		C25	--	-	240100	1	242339	1
7	Bolt, (flex element to spacer)	C16&C20	--	-	--	-	--	-
		C25	--	-	**	4	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	**	2	--	-
		C20	--	-	**	4	--	-
		C25	--	-	**	4	--	-
8	Bolt, (flex element to spacer)	C16&C20	250001-538	4	--	-	--	-
		C25	--	-	**	4	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	**	2	**	8
		C20	--	-	**	4	**	8
		C25	--	-	**	4	**	8

\* For information on C40 coupling, contact Sullair Corporation in Michigan City, Indiana.

\*\* Not available as an individual part. Included in flexible element replacement kit.

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	STYLE 1 QD TYPE PART NO.	QTY.	STYLE 1 TAPERLOCK TYPE PART NO.	QTY.	STYLE 2 TAPERLOCK TYPE PART NO.	QTY.
9	Nut, (flex element to spacer)	C16&C20	250001-541	4	--	-	--	-
		C25	--	-	**	4	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	**	2	**	8
		C20	--	-	**	4	**	8
		C25	--	-	**	4	**	8
10	Bolt, (hub to flex element)	C16&C20	250001-538	4	--	-	--	-
		C25	--	-	**	4	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	**	4	**	8
		C20	--	-	**	4	**	4
		C25	--	-	**	4	**	4
11	Nut, (hub to flex element)	C16&C20	250001-541	4	--	-	--	-
		C25	--	-	**	4	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	**	4	**	8
		C20	--	-	**	4	**	4
		C25	--	-	**	4	**	4
12	Coupling, Complete	C16&C20	408999	1	--	-	--	-
	(includes Key Numbers 1 through 11)	C25	--	-	02250052-674	1	02250052-675	1
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	240040	1	240040	1
		C20	--	-	240041	1	240041	1
		C25	--	-	046001	1	046001	1

\* For information on C40 coupling, contact Sullair Corporation in Michigan City, Indiana.

\*\* Not available as an individual part. Included in flexible element replacement kit.



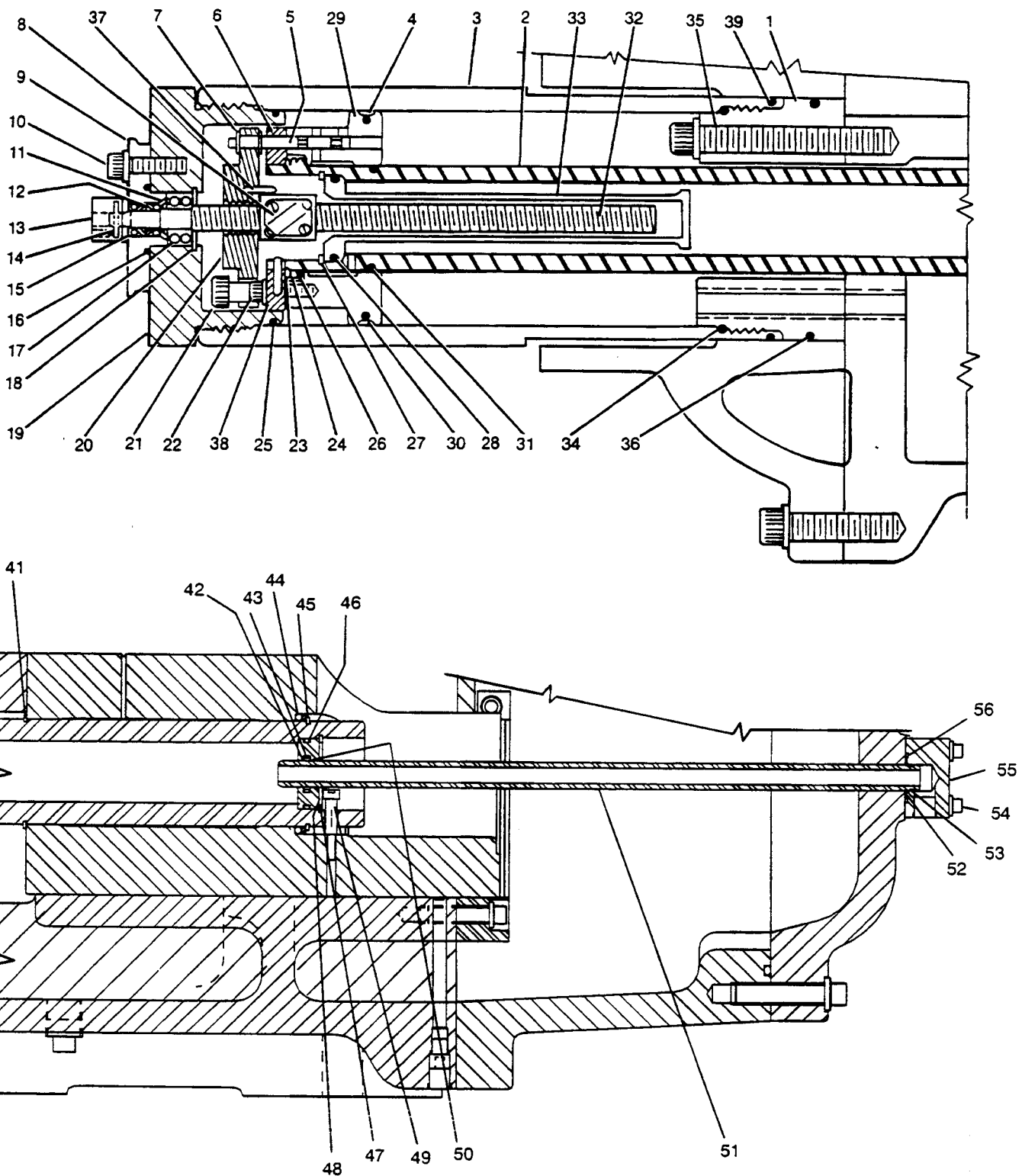
**1.14**

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	STYLE 1 QD TYPE PART NO.	QTY.	STYLE 1 TAPERLOCK TYPE PART NO.	QTY.	STYLE 2 TAPERLOCK TYPE PART NO.	QTY.
13	Kit, Replacement Flex Element							
	(includes Key Numbers 2,3,4,7,8,9,10&11)	C16&C20	250040-191	1	--	-	--	-
		C25	--	-	****	1	--	-
		C40	--	-	*	-	--	-
	Prior to November, 1981	C16	--	-	001906	1	001903	1
		C20	--	-	001907	1	001904	1
		C25	--	-	001905	1	001902	1

\* For information on C40 coupling, contact Sullair Corporation in Michigan City, Indiana.  
 \*\*\*\* Refer to factory for part number.

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.15 CAPACITY CONTROL SHAFT SEALS AND VALVE ASSEMBLY



## Key # 2

### PISTON RODS PART #S FOR SULLAIR COMP

<b>C16L</b>	<b>022752</b>	<b>2" DIA</b>	<b>APPOX 22" LONG</b>
<b>C20S</b>	<b>023992</b>	<b>2-1/2" DIA</b>	<b>18.87" LONG</b>
<b>C20L</b>	<b>024020</b>	<b>2-1/2" DIA</b>	<b>24.67" LONG</b>
<b>C25S</b>	<b>022944</b>	<b>3" DIA</b>	<b>APPOX 22" LONG</b>
<b>C25M</b>	<b>233220</b>	<b>3" DIA</b>	<b>APPOX 23" LONG</b>
<b>C25L</b>	<b>022922</b>	<b>3" DIA</b>	<b>APPOX 29-1/2" LONG</b>

**KEY # 51**

**HIGH PRESSURE OIL TUBES**

<b>C16 &amp; C20S</b>	<b>P/N 023993</b>	<b>14.25" LONG</b>
<b>C25S, C25M &amp; C20L</b>	<b>P/N 022943</b>	<b>17.0" LONG</b>
<b>C25L</b>	<b>P/N 022921</b>	<b>18.5" LONG</b>

KEY NO.	ITEM DESCRIPTION	C16 PKG	QTY.	C20 PKG	QTY.	C25 PKG	QTY.
1	base, cylinder	022747	1	024018	1	022920	1
2	rod, piston - C16L	022752	1				
	rod, piston - C20S			023992	1		
	rod, piston - C20L			024020	1		
	rod, piston - C25S					022944	1
	rod, piston - C25M					233220	1
	rod, piston - C25L					022922	1
3	cylinder, valve	022746	1	024017	1	022919	1
4	ring, slide	042360	1	043181	1	042378	1
5	spool, valve	022751	1	022926	1	022926	1
6	retainer, piston	022755	1	024024	1	022928	1
7	ring, external "e"	042198-25	2	042198-31	2	042198-31	2
8	nut, ball	042273	1	042273	1	042273	1
9	holder, ball screw	234525	1	234525	1	234525	1
10	screw, ferry head cap 3/8" - 16 x 1"	828406-100	3	828406-100	3	828406-100	3
11	ring, support	022939	1	022939	1	022939	1
12	nut, bearing lock	824101-323	1	824101-323	1	824101-323	1
13	coupling, shaft	023856	1	023856	1	023856	1
14	pin, roll 1/8"	827402-100	1	827402-100	1	827402-100	1
15	seal, ball screw shaft	042874	2	042874	2	042874	2
16	o-ring, neoprene 1-5/16" x 1/8"	826202-219	1	826202-219	1	826202-219	1
17	bearing, ball screw	499002-201	1	499002-201	1	499002-201	1
18	ring, retaining internal 1-1/4"	836150-125	1	836150-125	1	836150-125	1
19	cover, cylinder end	023044	1	024021	1	023045	1
20	plate, valve	022750	1	024023	1	022927	1
21	screw, machine shoulder	830505-100	3	830508-125	3	830508-125	3
22	screw, ferry head cap	828405-100	3	828406-100	3	828408-125	3
23	ring, retaining external	836470-200	1	836470-250	1	836470-300	1

Section 1  
**ILLUSTRATIONS AND PARTS LIST**

1.15 CAPACITY CONTROL SHAFT SEAL AND VALVE ASSEMBLY (Cont'd)

KEY NO.	ITEM DESCRIPTION	C16 PKG	QTY.	C20 PKG	QTY.	C25 PKG	QTY.
24	shim, spacer	022956	1	024028	2	022934	2
25	o-ring, neoprene	826202-240	1	826202-248	1	826202-362	1
26	o-ring, neoprene	826202-226	1	826202-333	1	826202-337	1
27	ring, retaining - internal	836150-168	1	836369-206	1	836369-250	1
28	o-ring, neoprene	826202-221	1	826202-224	1	826202-227	1
29	piston, capacity control	022749	1	024022	1	022925	1
30	o-ring, neoprene	826202-238	1	826202-246	1	826202-258	1
31	o-ring, neoprene	826202-133	1	826202-228	1	826202-232	1
32	screw, ball	250009-204	1	250009-205	1	250009-206	1
33	sleeve, ball screw	011906	1	011915	1	011910	1
34	o-ring, neoprene	826202-240	1	826202-248	1		
35	screw, ferry head cap	828408-400	4	828410-350	4	828410-400	4
36	o-ring, neoprene	826202-244	1	826202-252	1		
37	pin, roll 3/16" x 7/8"	827403-088	1	827403-088	1	827403-088	1
38	pin, roll 1/4" x 3/4"	827404-075	1	827404-075	1	827404-075	1
39	o-ring, neoprene 6-3/4" x 1/8"					826202-261	1
40	kit, ball screw repair (includes items #5, 7, 8, 9, 11, 12, 15, 16, 17, 18, 20, 21, 25, 32 and 37)	001814A	1	001815A	1	001816A	1
41	ring, retaining - external	836470-200	1	836470-250	1	836470-300	1
42	o-ring, neoprene 13/16" x 1/8"	826202-211	1	826202-211	1	826202-211	1
43	o-ring, neoprene	826202-329	1	826202-333	1	826202-337	1
44	spacer & o-ring	023035 & 826202-329	1	024028 & 826202-333	1	022934 & 826202-337	1
45	ring, retaining - external	836470-200	1	836470-250	1	836470-300	1
46	o-ring, neoprene	826202-221	1	826202-224	1	826202-227	1
47	guide, capacity control oil tube	022757	1	024025	1	022930	1
48	ring, retaining - internal	836150-168	1	836369-206	1	836369-250	1
49	screw, machine shoulder	828304-050	1	830505-075	1	830505-100	1

KEY NO.	ITEM DESCRIPTION	C16 PKG	QTY.	C20 PKG	QTY.	C25 PKG	QTY.
50	ring, clyd 0.75" x .149"	043182	1	043182	1	043182	1
51	tube, oil supply	023993	1	SEE BELOW	1	SEE BELOW	1
52	o-ring, neoprene 4-1/4" x 1/8"	826202-124	1	826202-124	1	826202-124	1
53	o-ring, neoprene 5/8" x 1/16"	826202-016	1	826202-016	1	826202-016	1
54	screw, ferry cap 1/2"-13 x 1-1/4"	828406-175	4	828406-175	4	828406-175	4
55	cap, oil tube	023029	1	023029	1	023029	1
56	ring, retaining - external 3/4"	836251-075	1	836251-075	1	836251-075	1

## KEY NO. 51 TUBE, OIL SUPPLY

C16L & C20S            USE P/N 023993 (15.25" LONG)  
C25S, C25M, C20L    USE P/N 022943 (17.0" LONG)  
C25L                    USE P/N 022921 (18.5" LONG)

CAPACITY CONTROL BALL SCREW REPAIR KITS

QTY	DESCRIPTION	C16 001814A	C20 001815A	C25 001816A
* 1	SPOOL VALVE	022751	022926	022926
* 2	RING, RETAINING	042198-25	042198-31	042198-31
* 1	NUT, BALL	042273	042273	042273
1	HOLDER, BALL SCREW	234525	234525	234525
* 1	RING SUPPORT	022939	022939	022939
* 1	NUT, BEARING LOCK	824101-323	824101-323	824101-323
2	SEAL, BALL SCREW	042874	042874	042874
1	O-RING	826202-219	826202-219	826202-219
* 1	BEARING, BALL SCREW	499002-201	499002-201	499002-201
1	RING, RETAINING INTERNAL	836150-125	836150-125	836150-125
* 1	PLATE, VALVE	022750	024023	022927
1	O-RING	826202-240	826202-248	826202-362
* 1	SCREW, BALL	250009-204	250009-205	250009-206
* 1	PIN, ROLL	827403-088	827403-088	827403-088
3	SCREW, MACHINE SHOULDER	830505-100	830508-125	830508-125
1	INSTRUCTIONS, REPLACE BALL SCREW	-----	068893	-----
* 1	PARTS INCLUDED IN ASSEMBLY	018251A	018252A	018253A



## CAPACITY CONTROL VALVE PART #S

<b>C16L 2.6</b>	<b>P/N 022740</b>
<b>C16L 3.7</b>	<b>P/N 022741</b>
<b>C16L 4.8</b>	<b>P/N 022742</b>
<b>C20S 2.6</b>	<b>P/N 024000</b>
<b>C20S 3.7</b>	<b>P/N 024001</b>
<b>C20S 4.8</b>	<b>P/N 024002</b>
<b>C20L 2.6</b>	<b>P/N 024009</b>
<b>C20L 3.7</b>	<b>P/N 024010</b>
<b>C20L 4.8</b>	<b>P/N 024011</b>
<b>C25S &amp; C25M 2.6</b>	<b>P/N 022947</b>
<b>C25S &amp; C25M 3.7</b>	<b>P/N 022948</b>
<b>C25S &amp; C25M 4.8</b>	<b>P/N 022949</b>
<b>C25L 2.6</b>	<b>P/N 022909</b>
<b>C25L 3.7</b>	<b>P/N 022910</b>
<b>C25L 4.8</b>	<b>P/N 022911</b>

## AC EVA KITS AND INFO

CONVERT FROM DC ACTUATOR TO AC ACTUATOR

**30 TURN AC ACTUATOR KIT, SULLAIR P/N 250023-497**

**62 TURN AC ACTUATOR KIT, SULLAIR P/N 250023-498**

COMP. MODEL NUMBER	2.2, 2.6 & 3.7 VOLUME RATIO	4.8 VOLUME RATIO
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STARTING AT ONE TURN FROM MAXIMUM PHYSICAL STOP

	EVA TURNS	EVA TURNS
C16L	25	18
C20S	19	14
C20L	30	23
C25S	25	18
C25M	25	18
C25L	38	29
C40L	54	40

TURNING BALL SCREW CLOCKWISE WILL BE GOING TOWARD MAXIMUM (FULLY LOADED)

NOTE: ON 29 TURNS OR MORE, USE 62 TURN ACTUATOR

AC ACTUATOR ONLY: 30 TURN P/N 250009-325

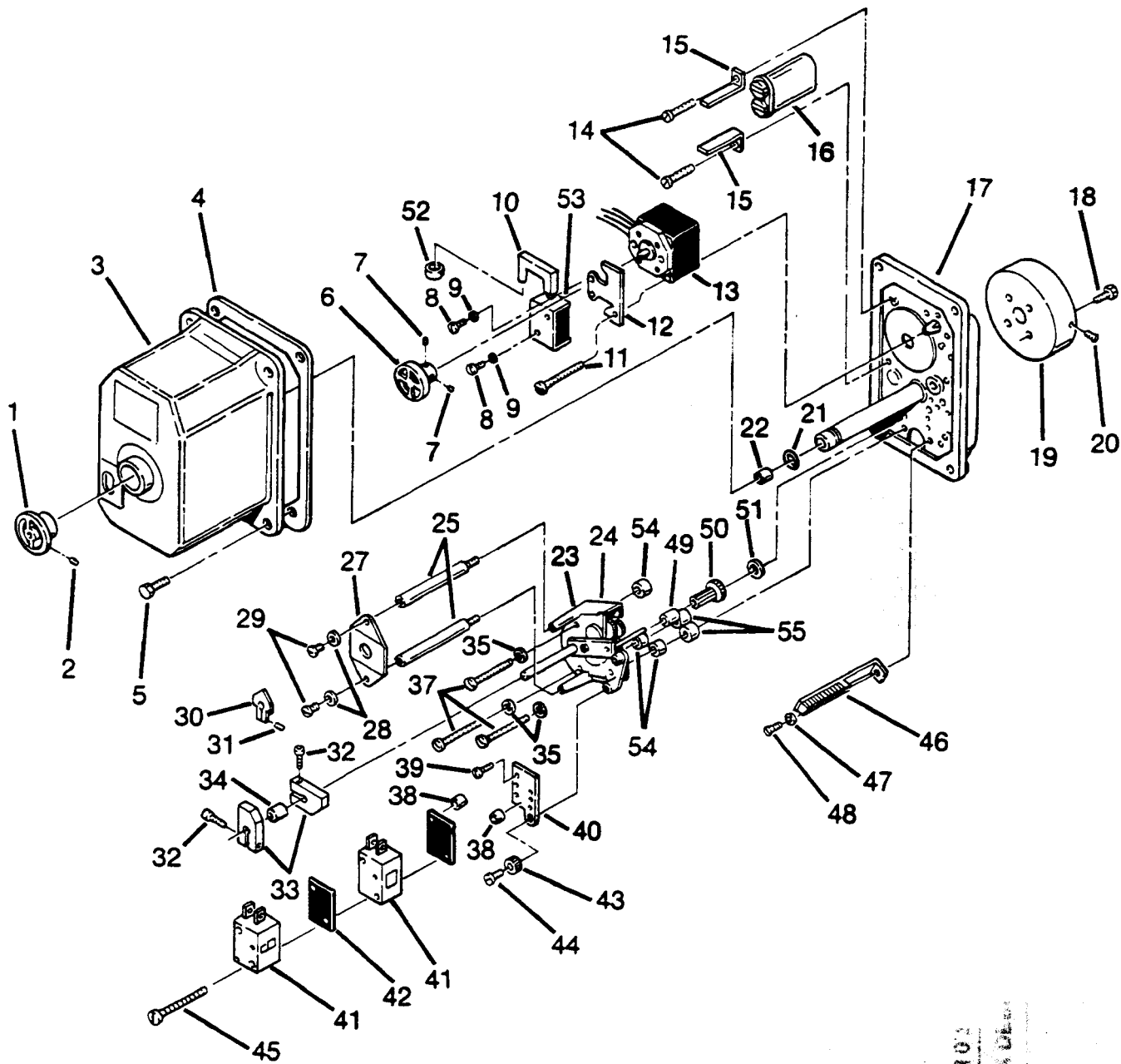
62 TURN P/N 250004-049

AC ACTUATOR 1 K OHM FEEDBACK POT KIT, P/N 250034-282

1 K OHM, 1 TURN FEEDBACK POT ONLY P/N 250015-580

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.16 ELECTRIC VALVE ACTUATOR ASSEMBLY - AC (PRIOR TO 6/91)



11 1100 01 01  
1100 01 01  
1100 01 01  
1100 01 01

**ILLUSTRATIONS AND PARTS LIST****1.16 ELECTRIC VALVE ACTUATOR ASSEMBLY—AC (PRIOR TO 6/91)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	knob, shaft	250014-493	1
2	setscrew, #10-24 x 1/2"	(I)	1
3	cover, electric valve actuator	-	1
4	cover, gasket	250014-509	1
5	screw, hex cap 1/4" - 20 x 3/4"	(I)	4
6	brake, wheel - motor	250014-503	1
7	setscrew, #6-32 x 1/4"	(I)	2
8	screw, machine round head #6-32 x 3/16"	(I)	2
9	washer, serrated #6	(I)	2
10	arm, brake	250030-673	1
11	screw, hex machine #6-32 x 1 3/4"	(I)	4
12	bracket, brake assembly	250033-054	1
13	motor, electric 120V	250014-494	1
14	screw, machine round head #6-32 x 2"	(I)	2
15	clamp, bracket - capacitor (Prior to 6/91)	250033-060	2
16	capacitor, 9MFD oil filled (Prior to 6/91)	250014-495	1
17	base, electric valve actuator	250014-492	1
18	screw, hex socket head 5/16" - 18 x 5/8"	(I)	1
19	adapter, electric valve actuator to compressor	250004-269	1
20	setscrew, 1/4" - 20 x 3/4"	(I)	3
21	o-ring, shaft/cover	250014-510	1
22	spacer, knob	-	1
23	box, gear 30 turn	250014-805	1
24	box, gear 62 turn	250014-806	1
25	spacer, indicator plate	250014-808	2
26	actuator, complete - 30 turn	250009-325	1
	• actuator, complete - 62 turn	250004-049	1
27	plate, indicator	250014-807	
	• decal, indicator - 30 turn	250014-502	1
	• decal, indicator - 62 turn	250014-501	1
28	lockwasher, #6	(I)	2
29	screw, machine round head #6-32 x 1/2"	(I)	2
30	indicator, turn	250031-671	1
31	setscrew, #6-32 x 3/8"	(I)	2
32	screw, machine socket head #4-40 x 1/2"	(I)	2
33	cam, roller switch	250014-508	2

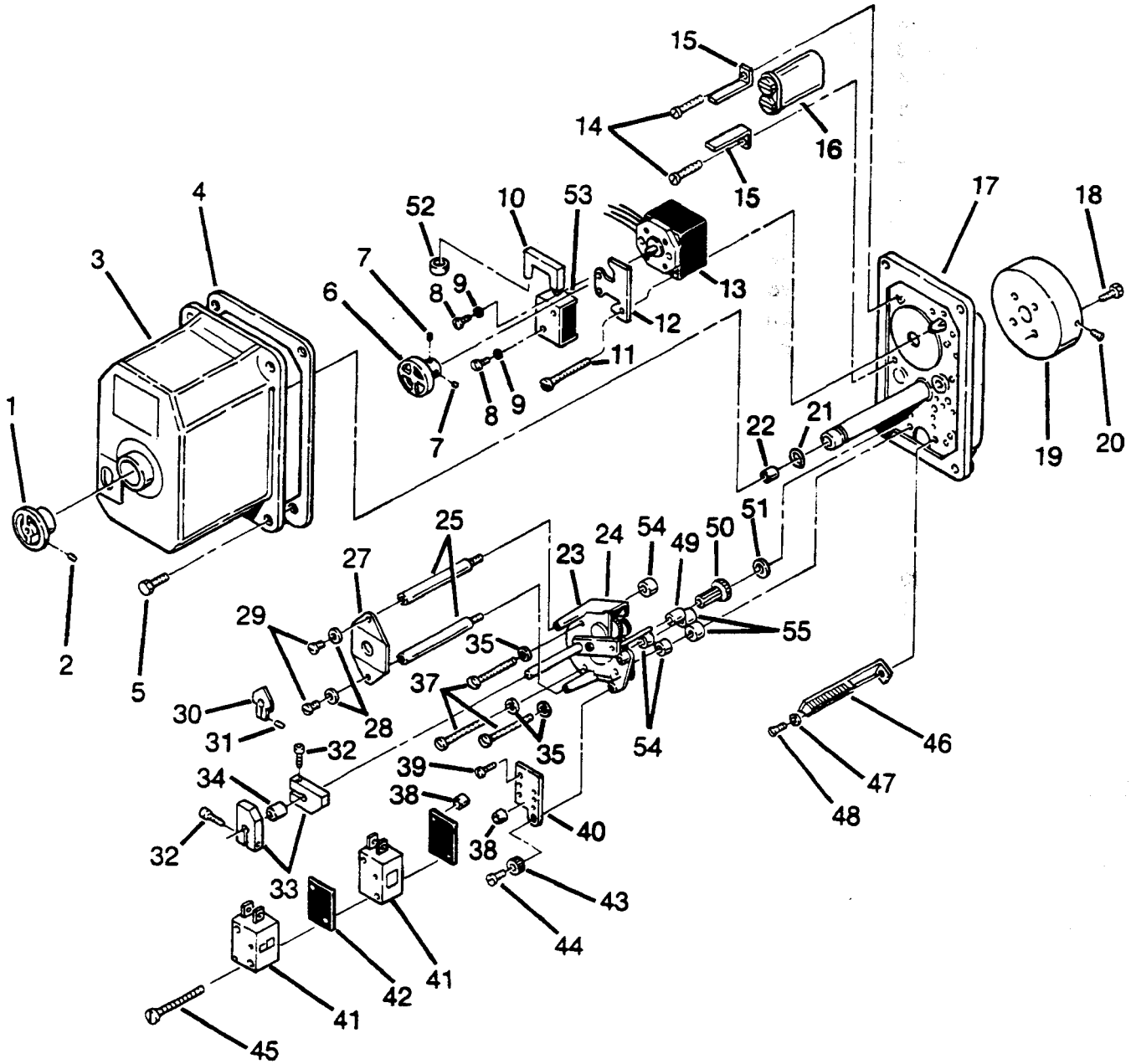
(continued on Page 53)

(I) Standard hardware item, may be purchased locally.

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# ILLUSTRATIONS AND PARTS LIST

## 1.16 ELECTRIC VALVE ACTUATOR ASSEMBLY – AC (PRIOR TO 6/91)



PLEASE NOTE: WHEN ORDERING

## ILLUSTRATIONS AND PARTS LIST

## 1.16 ELECTRIC VALVE ACTUATOR ASSEMBLY - AC (PRIOR TO 6/91) (continued)

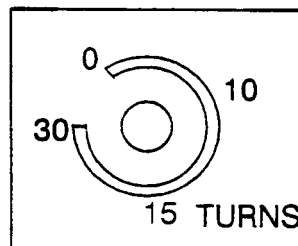
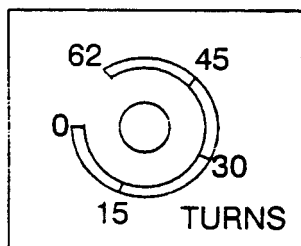
key number	description	part number	quantity
34	spacer, gear box $5\frac{1}{2}$ "	250035-845	2
35	lockwasher, #8	(I)	3
36	spacer, gear box $\frac{1}{8}$ "	250035-844	3
37	screw, machine round head #8-32 x $1\frac{7}{16}$ "	(I)	2
38	spacer, switch to plate $\frac{1}{8}$ "	250035-843	2
39	screw, machine round head #4-40 x $\frac{3}{8}$ "	(I)	1
40	plate, switch	250033-057	1
41	switch, roller	250014-230	2
42	insulator, switch	250033-056	2
43	knob, plate adjuster	250033-055	1
44	screw, machine round head #4-40 x $\frac{3}{8}$ "	(I)	1
45	screw, machine round head #4-40 x 1"	(I)	2
46	block, terminal and bracket	250014-496	1
47	lockwasher, #8	(I)	1
48	screw, machine round head #8-32 x $\frac{3}{8}$ "	(I)	1
49	spacer, gear	250035-846	1
50	gear	250035-847	1
51	shim, gear	250035-848	1
52	shoe, brake	250014-504	1
53	solenoid, brake	250014-505	1

(I) Standard hardware item, may be purchased locally.

**NOTE:** See Figure 1.16B. Standard EVA gear boxes are 30 turns for C16L, C20S, C25S & C25M, and 62 turns for C20L, C25L, and C40L. Earlier compressors and special orders may have varied from above. The correct number of turns can be determined from the decal or the rotation. Rotation of the gear box shaft is opposite the main shaft for 62 turns and the same for 30 turns.

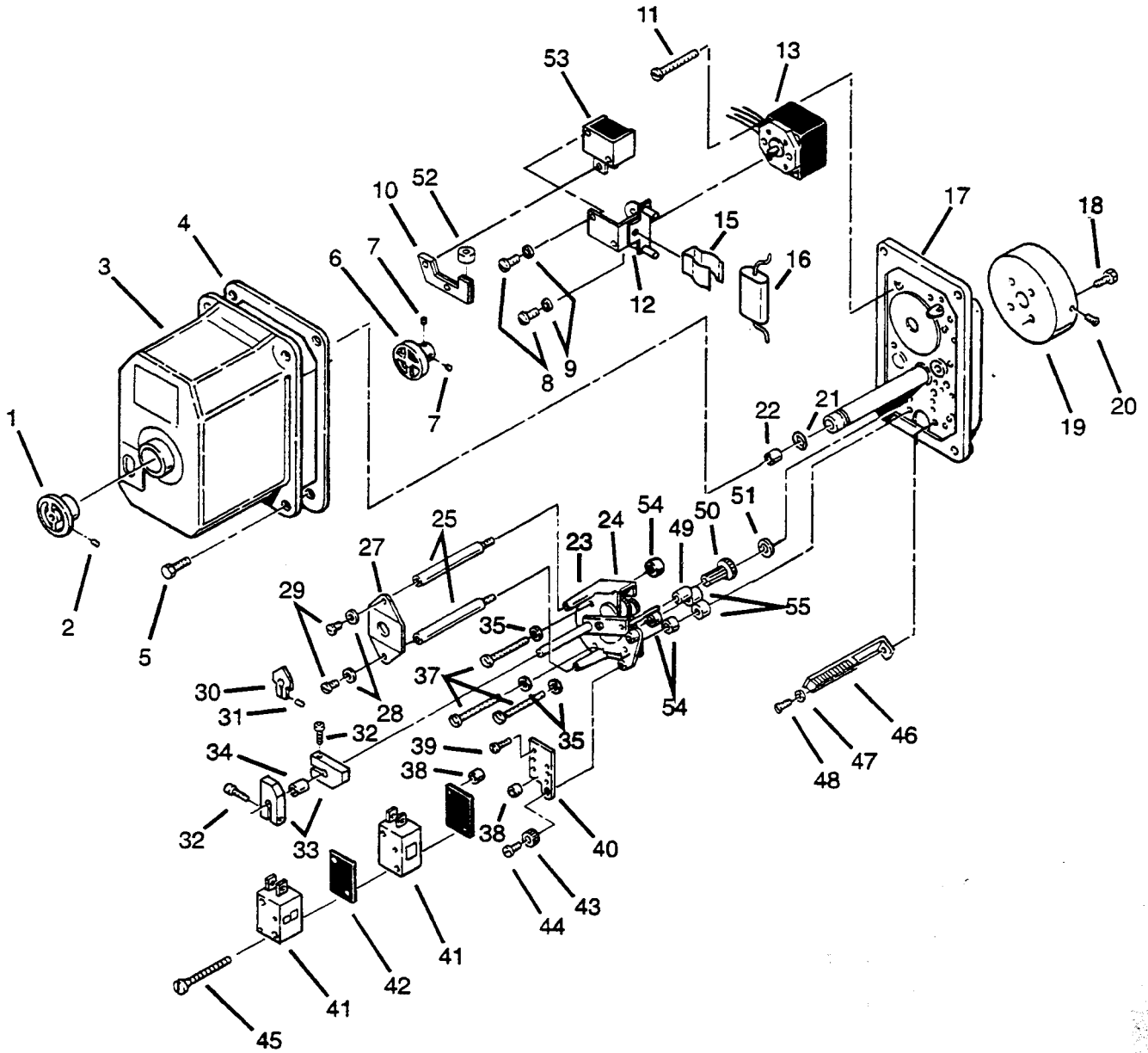
**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Figure 1.16B Standard EVA Gear Boxes



# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.17 ELECTRIC VALVE ACTUATOR ASSEMBLY - AC (AFTER 6/91)



## ILLUSTRATIONS AND PARTS LIST

## 1.17 ELECTRIC VALVE ACTUATOR ASSEMBLY—AC (AFTER 6/91)

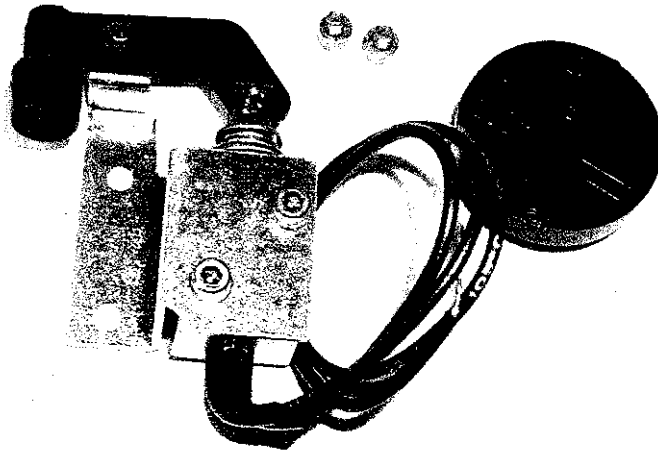
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	knob, shaft	250014-493	1
2	setscrew, #10-24 x 1/2"	(I)	1
3	cover, electric valve actuator	-	1
4	cover, gasket	250014-509	1
5	screw, hex cap 1/4" - 20 x 3/4"	(I)	4
6	brake, wheel - motor	250014-503	1
7	setscrew, #6-32 x 1/4"	(I)	2
8	screw, machine round head #6-32 x 3/16"	(I)	2
9	washer, serrated #6	(I)	2
10	arm, brake	250030-673	1
11	screw, hex machine #6-32 x 1 3/4"	(I)	4
12	bracket, brake assembly	250033-054	1
13	motor, electric 120V	250014-494	1
14	screw, machine round head #6-32 x 2"	(I)	2
15	clamp, bracket - capacitor (Prior to 6/91)	250033-060	2
16	capacitor, 9MFD dry (not shown) (Used after 6/91)	02250046-435	1
17	base, electric valve actuator	250014-492	1
18	screw, hex socket head 5/16"-18 x 5/8"	(I)	1
19	adapter, electric valve actuator to compressor	250004-269	1
20	setscrew, 1/4"-20 x 3/4"	(I)	3
21	o-ring, shaft/cover	250014-510	1
22	spacer, knob	-	1
23	box, gear 30 turn	250014-805	1
24	box, gear 62 turn	250014-806	1
25	spacer, indicator plate	250014-808	2
26	actuator, complete - 30 turn	250009-325	1
	• actuator, complete - 62 turn	250004-049	1
27	plate, indicator	250014-807	
	• decal, indicator - 30 turn	250014-502	1
	• decal, indicator - 62 turn	250014-501	1
28	lockwasher, #6	(I)	2
29	screw, machine round head #6-32 x 1/2"	(I)	2
30	indicator, turn	250031-671	1
31	setscrew, #6-32 x 3/8"	(I)	2
32	screw, machine socket head #4-40 x 1/2"	(I)	2
33	cam, roller switch	250014-508	2

(continued on Page 57)

(I) Standard hardware item, may be purchased locally.

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR





P/N 250026-731, BRAKE ASSEMBLY KIT

PARTS INCLUDED:

P/N 250014-503, BRAKE WHEEL W/SETSCREW

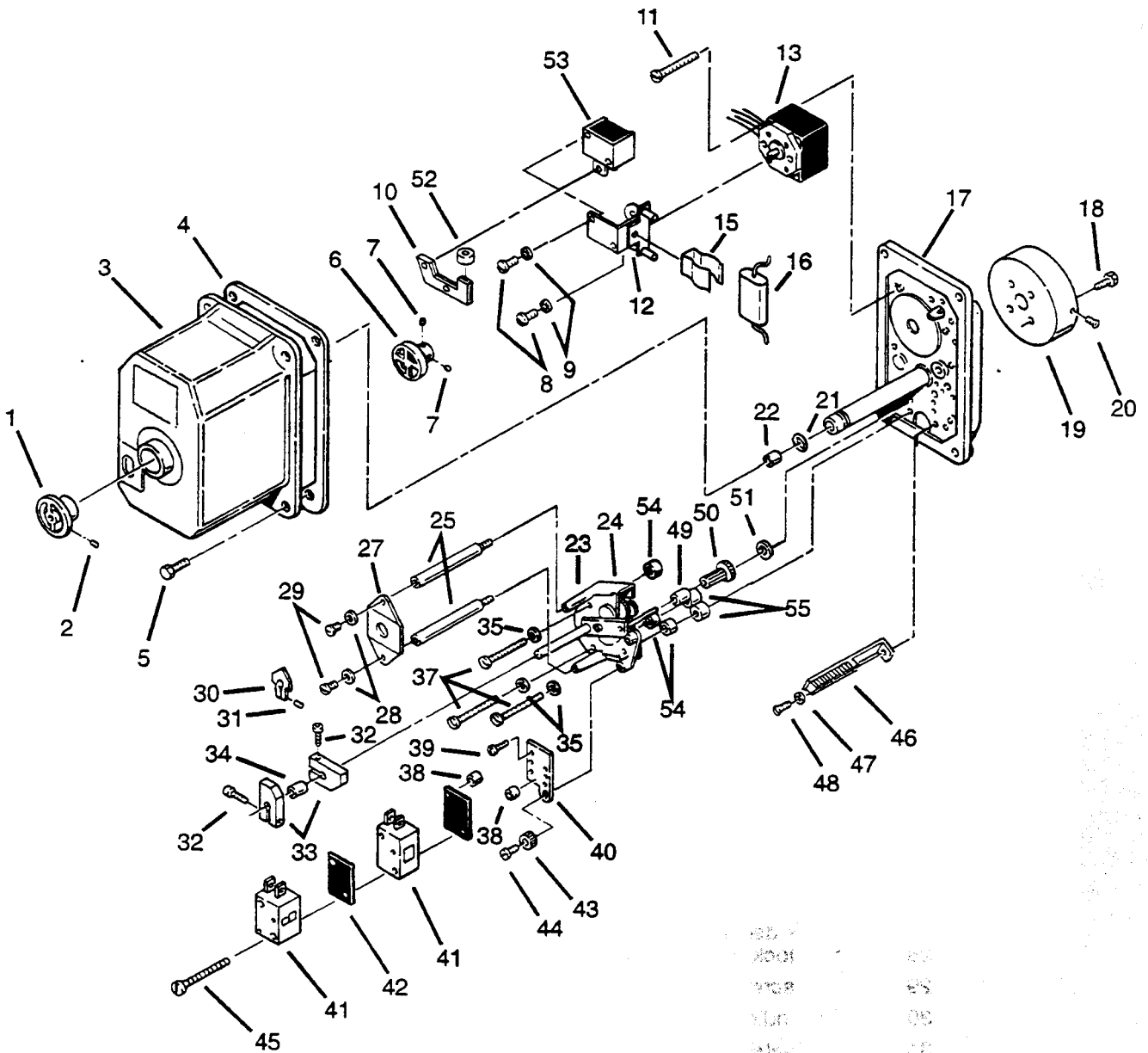
P/N 250030-673, BRAKE ARM W/E-CLIP

P/N 250014-504, BRAKE SHOE

P/N 250014-505, BRAKE SOLENOID

# ILLUSTRATIONS AND PARTS LIST

## 1.17 ELECTRIC VALVE ACTUATOR ASSEMBLY – AC (AFTER 6/91)



1	10	20
2	11	21
3	12	22
4	13	23
5	14	24
6	15	25
7	16	26
8	17	27
9	18	28
10	19	29
11	20	30
12	21	31
13	22	32
14	23	33
15	24	34
16	25	35
17	26	36
18	27	37
19	28	38
20	29	39
21	30	40
22	31	41
23	32	42
24	33	43
25	34	44
26	35	45
27	36	46
28	37	47
29	38	48
30	39	49
31	40	50
32	41	51
33	42	52
34	43	53
35	44	54
36	45	55

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE THE PART NUMBER AND QUANTITY REQUIRED.

## ILLUSTRATIONS AND PARTS LIST

## 1.17 ELECTRIC VALVE ACTUATOR ASSEMBLY – AC (AFTER 6/91) (continued)

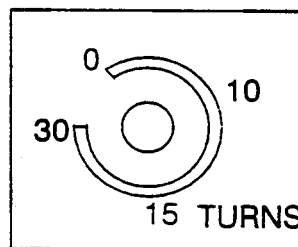
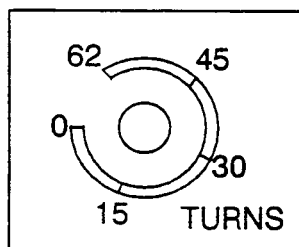
key number	description	part number	quantity
34	spacer, gear box $\frac{5}{32}$ "	250035-845	2
35	lockwasher, #8	(I)	3
36	spacer, gear box $\frac{1}{8}$ "	250035-844	3
37	screw, machine round head #8-32 x $1\frac{1}{16}$ "	(I)	2
38	spacer, switch to plate $\frac{1}{8}$ "	250035-843	2
39	screw, machine round head #4-40 x $\frac{3}{8}$ "	(I)	1
40	plate, switch	250033-057	1
41	switch, roller	250014-230	2
42	insulator, switch	250033-056	2
43	knob, plate adjuster	250033-055	1
44	screw, machine round head #4-40 x $\frac{3}{8}$ "	(I)	1
45	screw, machine round head #4-40 x 1"	(I)	2
46	block, terminal and bracket	250014-496	1
47	lockwasher, #8	(I)	1
48	screw, machine round head #8-32 x $\frac{3}{8}$ "	(I)	1
49	spacer, gear	250035-846	1
50	gear	250035-847	1
51	shim, gear	250035-848	1
52	shoe, brake	250014-504	1
53	solenoid, brake	250014-505	1

(I) Standard hardware item, may be purchased locally.

**NOTE:** See Figure 1.16B. Standard EVA gear boxes are 30 turns for C16L, C20S, C25S & C25M, and 62 turns for C20L, C25L, and C40L. Earlier compressors and special orders may have varied from above. The correct number of turns can be determined from the decal or the rotation. Rotation of the gear box shaft is opposite the main shaft for 62 turns and the same for 30 turns.

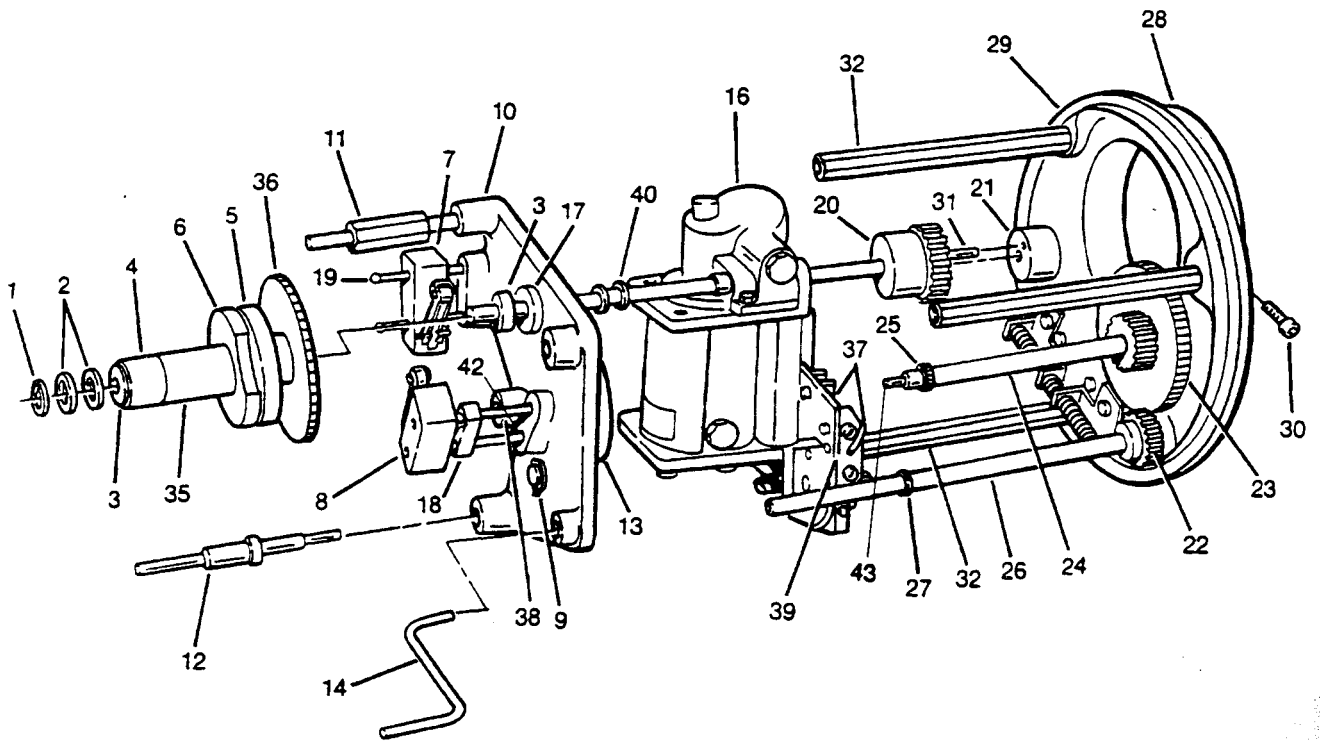
**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Figure 1.17B Standard EVA Gear Boxes



# ILLUSTRATIONS AND PARTS LIST

## 1.18 ELECTRIC VALVE ACTUATOR ASSEMBLY – DC



## ILLUSTRATIONS AND PARTS LIST

## 1.18 ELECTRIC VALVE ACTUATOR ASSEMBLY—DC

key number	description	part number	quantity
1	ring, retaining external	836251-031	2
2	washer, flat $\frac{5}{16}$ " I.D. x $\frac{5}{8}$ " O.D. x $\frac{1}{32}$ " thick	023971	3
3	bearing, cam shaft	022980	2
4	decal, capacity	023804	1
5	cam, limit (I)	023370	1
6	cam, limit (I)	023370	1
7	switch, roller DPDT (I)	042305	1
8	switch, roller DPDT (I)	042305	1
9	washer, special	023808	1
10	plate, bearing	022989	1
11	bolt, spacer	023066	2
12	pilot, spacer bolt	023078	1
13	gear, fourth	042300	1
14	crank, hand	026357	1
15	bearing, shaft	022983-2	4
16	motor, electric valve actuator assembly (see Assembly Section Fig. 1.19) <b>001024 OBSOLETE</b>		1
17	bearing, motor shaft	022981	2
18	shim, maximum position roller switch mounting	023371	1
19	stud	023800	4
20	clutch, first gear and slip assembly (internal slip clutch parts not shown) (see Assembly Section Fig. 1-14)	013501	1
21	coupling, ball screw to first gear	023856	1
21A	$\frac{1}{8}$ " x 1" roll pin	827402-100	1
22	gear, crank	023071	1
23	gear, second	042298	1
24	shaft, reduction primary	022979	1
25	gear, third	042299	1
26	shaft, crank	012848	1
27	ring, external retaining	836251-037	1
28	support, motor shaft	023051	1
29	cover, o-ring seal (not shown)	826102-169	1
30	capscrew, socket head $\frac{1}{4}$ "-20 UNC x 1"	828304-100	2
31	pin, roll $\frac{3}{16}$ " x $\frac{7}{8}$ "	827403-088	1
32	pin, distance	023142	3

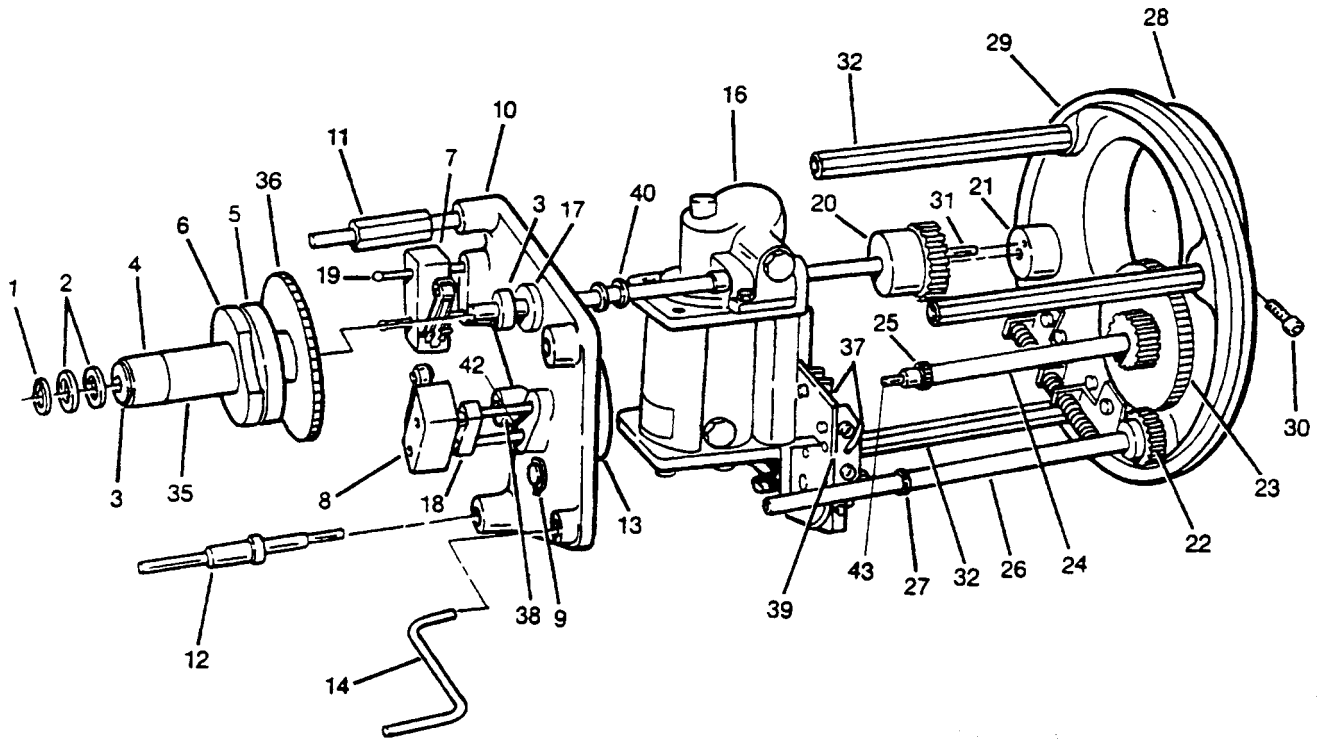
(continued on Page 61)

(I) A third (40%) cam and roller switch is used for multiple machine sequencing, (cam P/N 024902, roller switch P/N 042305).

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.18 ELECTRIC VALVE ACTUATOR ASSEMBLY - DC



Part No.	Description	QTY
1	Motor Housing	1
2	Motor Shaft	1
3	Motor End Cap	1
4	Motor Mounting Flange	1
5	Motor Mounting Nut	1
6	Motor Mounting Washer	1
7	Intermediate Gear	1
8	Intermediate Gear Shaft	1
9	Intermediate Gear Nut	1
10	Intermediate Gear Housing	1
11	Intermediate Gear Key	1
12	Valve Stem	1
13	Valve Stem Nut	1
14	Valve Stem Handle	1
15	Valve Stem Key	1
16	Motor Housing	1
17	Motor Housing Nut	1
18	Motor Housing Washer	1
19	Output Gear	1
20	Output Gear Shaft	1
21	Output Gear Nut	1
22	Output Gear Housing	1
23	Output Gear Key	1
24	Output Gear Washer	1
25	Output Gear Nut	1
26	Output Gear Washer	1
27	Output Gear Key	1
28	Output Gear	1
29	Output Gear Shaft	1
30	Output Gear Nut	1
31	Output Gear Washer	1
32	Output Gear Housing	1
33	Output Gear Key	1
34	Output Gear Washer	1
35	Output Gear Nut	1
36	Output Gear Washer	1
37	Output Gear Key	1
38	Output Gear Washer	1
39	Output Gear Nut	1
40	Output Gear Washer	1
41	Output Gear Key	1
42	Output Gear Washer	1
43	Output Gear Nut	1

WHEN ORDERING PARTS INDICATE DATE OF CO. 19

**ILLUSTRATIONS AND PARTS LIST****1.18 ELECTRIC VALVE ACTUATOR ASSEMBLY – DC (continued)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
33	nut (not shown)	043430	4
34	cover, (not shown)	012207	1
35	camshaft	023389	1
36	gear, sixth	023146	1
37	switch, torque	043429	2
38	shaft, variable ratio fifth gear and fifth to fourth gear shaft. (See Reference Table below for correct gear and shaft for individual compressor packages).		
39	bracket, motor	025363	1
40	screw, ball assembly – C16L (not shown)	001814A	1
	• screw, ball assembly – C20S and C20L	001815A	1
	• screw, ball assembly – C25S and C25L	001816A	1
41	plate, pivot – fourth gear (not shown)	011864	1
42	bushing, bearing– fifth to fourth gear	022983–1	1
43	bushing, bearing – second to third gear shaft (not shown)	022983–3	1

**REFERENCE TABLE – KEY NUMBER 38 VARIABLE RATIO FIFTH GEAR AND SHAFT**

<b>PACKAGE MODEL</b>	<b>FIFTH GEAR P/N</b>	<b>NUMBER OF TEETH</b>	<b>FIFTH TO FOURTH GEAR SHAFT PART NUMBER</b>
C25L, 26,37	042301–1	18	022978–4
C25L, 48	042301–2	20	022978–3
C20L, 26, 37 and 48	042301–2	20	022978–3
C25S, 26, 37 and 48	042301–3	26	022978–2
C16L, 26, 37 and 48	042301–3	26	022978–2
C20S, 26, 37 and 48	023071	32	022978–1

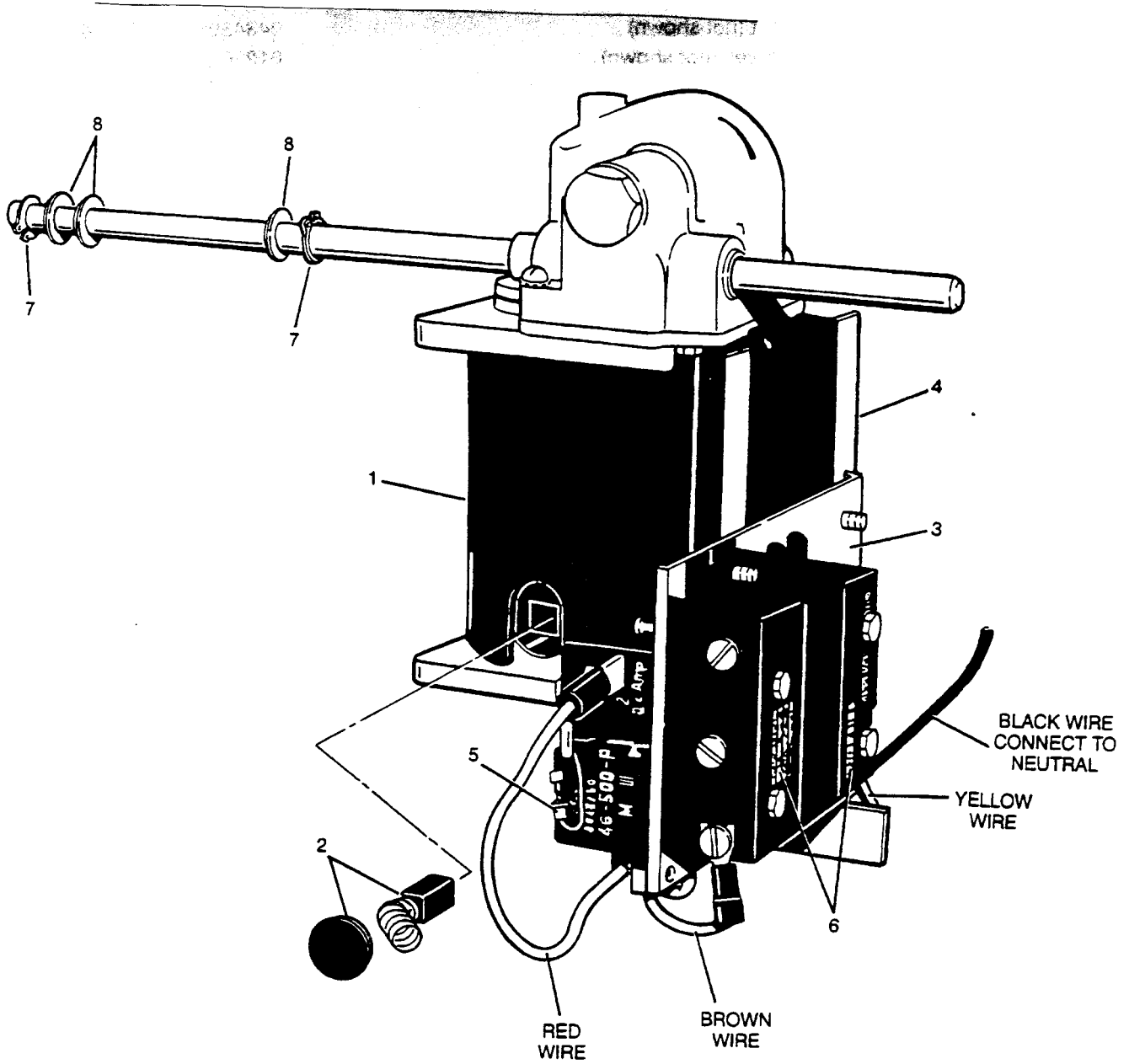
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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.19 ELECTRIC VALVE ACTUATOR MOTOR ASSEMBLY - DC

NO LONGER AVAILABLE AS AN ASSEMBLY





## ILLUSTRATIONS AND PARTS LIST

**1.19 ELECTRIC VALVE ACTUATOR MOTOR ASSEMBLY – DC**  
**NO LONGER AVAILABLE AS AN ASSEMBLY**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	motor, electric valve actuator 115VDC	044560	1
2	kit, replacement motor brush (I)	001036	1
3	bracket, motor	012391	1
4	bracket	025363	1
5	breaker, rectifier and circuit assembly (II)	—	—
6	switch, torque	043429	2
7	ring, retaining external	836251-031	2
8	washer, flat $\frac{5}{16}$ " x $\frac{5}{8}$ " o.d. x 0.032 thick	023971	3

(I) Includes two (2) motor brush assemblies (P/N 045427) and two (2) brush caps (P/N 045428).

(II) This design was used on machines built prior to February 1, 1976. Kit no. 080016-005 is available for field conversion of water-cooled oil cooling to latest DC/EVA design. Kit no. 080016-007 is available for field conversion of refrigerant cooled oil cooling to latest DC/EVA design.

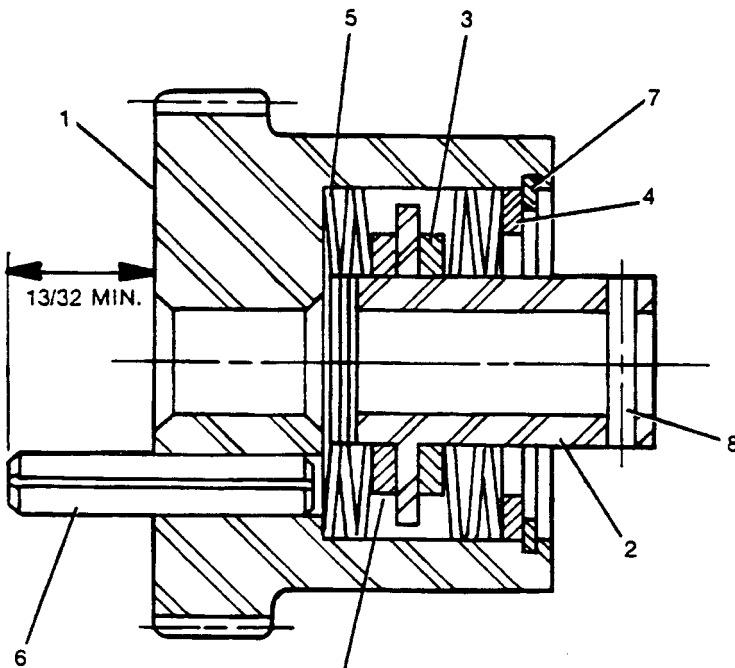
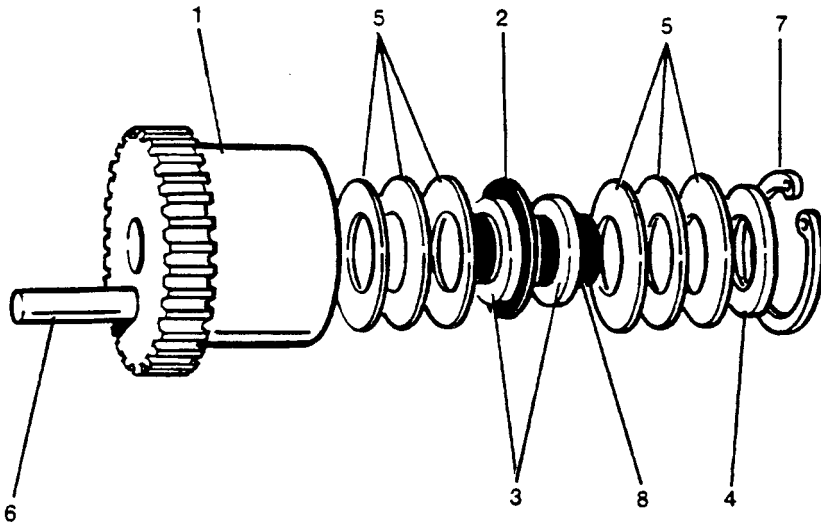
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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 1

# ILLUSTRATIONS AND PARTS LIST

## 1.20 FIRST GEAR AND SLIP CLUTCH ASSEMBLY (P/N 013501)



DOW CORNING MOLYKOTE "G" ®  
PASTE TO BE APPLIED  
LIBERALLY TO BOTH SURFACES  
OF FRICTION DISCS.

## ILLUSTRATIONS AND PARTS LIST

## 1.20 FIRST GEAR AND SLIP CLUTCH ASSEMBLY (P/N 013501)

key number	description	part number	quantity
1	gear, first	022955	1
2	coupling	022758	1
3	disc, friction	022759	2
4	shim, coupling friction	042759	1
5	washer, spring	042310	6
6	pin, roll $\frac{3}{16}$ " x $\frac{7}{8}$ "	827403-088	1
7	ring, internal retaining	836150-100	1
8	pin, roll $\frac{3}{32}$ " x $\frac{1}{2}$ "	827401-050	1

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

**REASSEMBLY OF FIRST GEAR AND SLIP CLUTCH ASSEMBLY**

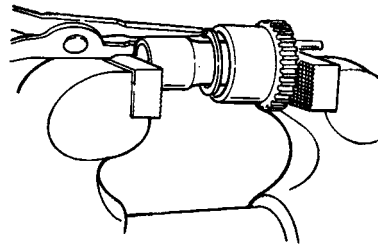
Coat all internal components with light machine oil. Apply a liberal coat of molybdenum disulphide grease (e.g. Dow Corning Molykote "G") to both surfaces of all friction discs (3). Reassemble the slip clutch in the order shown in Figure 7-21.

**⚠ WARNING**

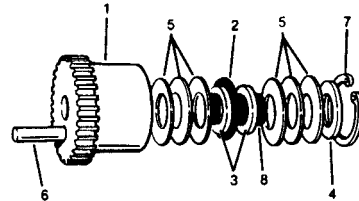
Make certain the spring washers (5) are oriented as shown in Figure 7-21. When correct, the outer face of the washer (4) will be flush with the face of the first gear (1) prior to inserting the internal snap ring (7). If not correct, disassemble and recheck the orientation of the spring washers (5). If necessary, replace the spring washers.

Insert the sleeve over the coupling half (2) and clamp the assembly in a vise (shown in A). Apply enough tension to compress the spring washers far enough to insert the internal snap ring (7).

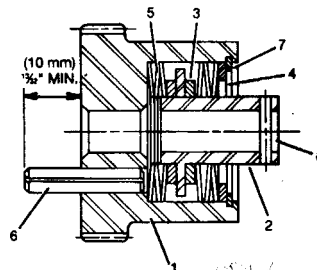
Insert the internal snap ring. Make sure the snap ring is properly seated and release the vise tension slowly.



**A**



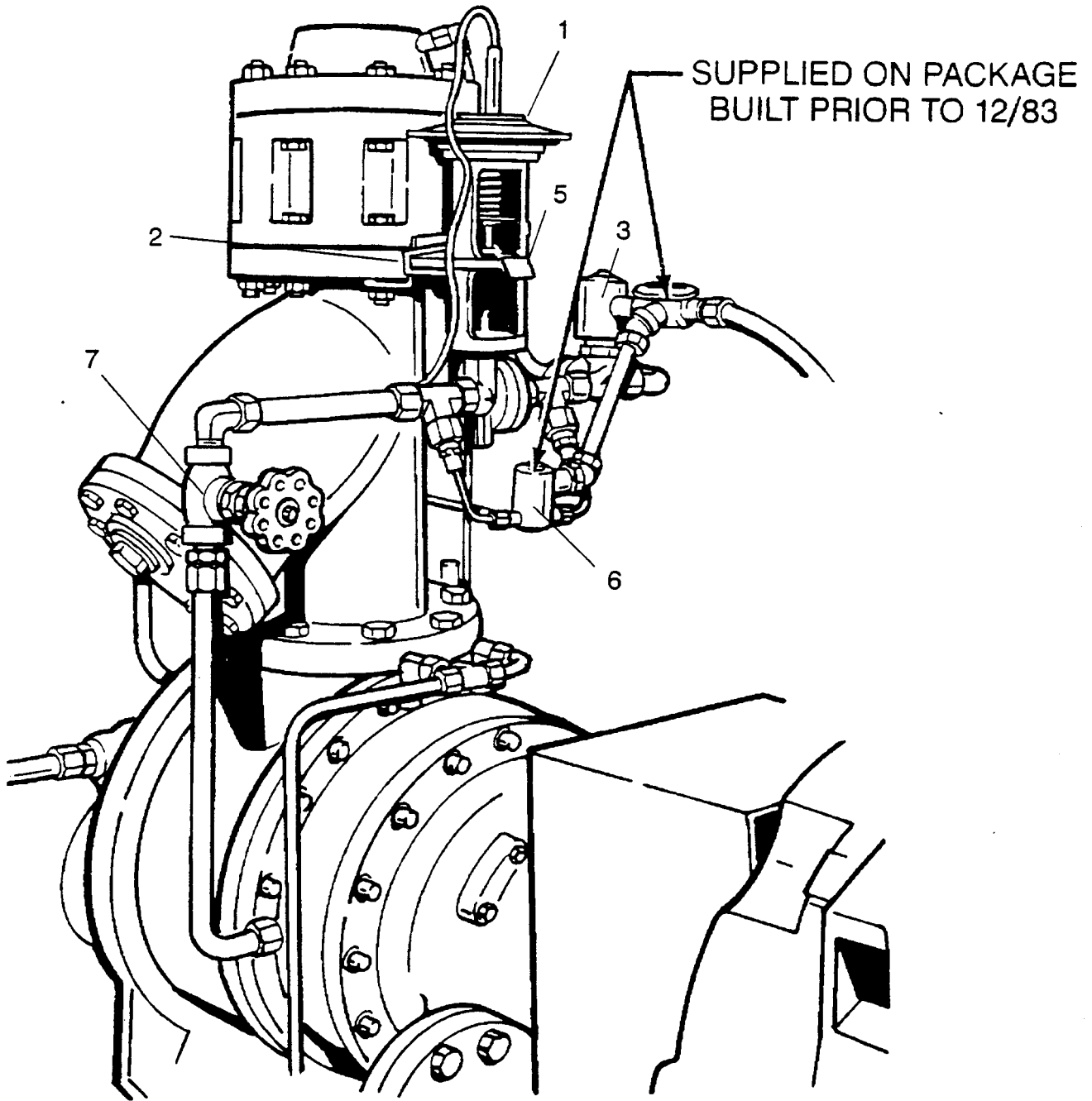
**B**



**C**

# ILLUSTRATIONS AND PARTS LIST

## 1.21 LIQUID INJECTION COOLED



KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.
1A	regulator, refrigerant (complete) 80° F to 140° F (27° C to 60° C) (Standard)	C16LB & C20SB	02250057-303	1
		C16LA, C20SA & C20LB	02250057-305	1
		C20LA, C25S & C25M	02250057-304	1
		C25LA	02250057-308	1
		C40LB	02250057-304	1
		C40LA	02250057-306	1
	Replacement Parts:			
	Regulator Valve Seats: CV=.21	C16LB & C20SB	02250057-312	1
	CV=.42	C16LA, C20SA & C20LB	02250057-401	1
	CV=.84	C20LA, C25S & C25M	02250057-313	1
	CV=1.6	C25LA	02250057-314	1
	CV=.84	C40LB	02250057-313	1
	CV=2.5	C40LA	02250057-315	1
	Regulator Thermal System 80° F to 140° F (27° C to 60° C)	ALL	240282	1
	Regulator Valve Stem Packing	ALL	240710	1
1B	regulator, refrigerant (complete) 160° F to 225° F (71° C to 107° C) (Special)	ALL	*	1
	Replacement Parts:			
	Regulator Valve Seats:			
	Regulator Thermal System 160° F to 225° F (71° C to 107° C)	ALL	250005-439	1
	Regulator Valve Stem Packing	ALL	240710	1

\* Refer to factory for part number.

Section 1  
**ILLUSTRATIONS AND PARTS LIST**

1.21 LIQUID INJECTION COOLED

KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.	
2	bracket, regulator	C16L	220167	1	
		C20, C25S & C25M	220168	1	
		C40LB	220168	1	
		C25L	220169	1	
		C40LA	227345	1	
3	valve, solenoid with strainer (complete)	C16LB & C20SB	410047-001	1	
		C16LA, C20SA & C20L	410047-002	1	
		C25 & C40L	410047-002	1	
	Replacement Parts:	Solenoid Valve	C16LB & C20SB	240228	1
			C16LA, C20SA & C20L	046185	1
			C25 & C40L	046185	1
		Strainer	C16LB & C20SB	240226	1
			C16LA, C20SA & C20L	046186	1
			C25 & C40L	046186	1
		Strainer Screen	C16LB & C20SB	248014-003	1
			C16LA, C20SA & C20L	248018-002	1
			C25 & C40L	248018-002	1
		Strainer Gasket	C16LB & C20SB	248013-003	1
			C16LA, C20SA & C20L	248016-002	1
			C25 & C40L	248016-002	1
		Strainer Plug (cap)	C16LB & C20SB	248015-003	1
			Strainer Cover	C16LA, C20SA & C20L	248017-002
				C25 & C40L	248017-002
		4	bracket, solenoid valve with strainer (not shown)	C16L	250018-990
C20, C25 & C40L	220172			1	
5	clamp, regulator 3 1/2"	ALL	040284	1	
6	solenoid, bypass * Prior to August, 1983	ALL	240037	1	

\* Not supplied after August, 1983; located at refrigerant regulator.

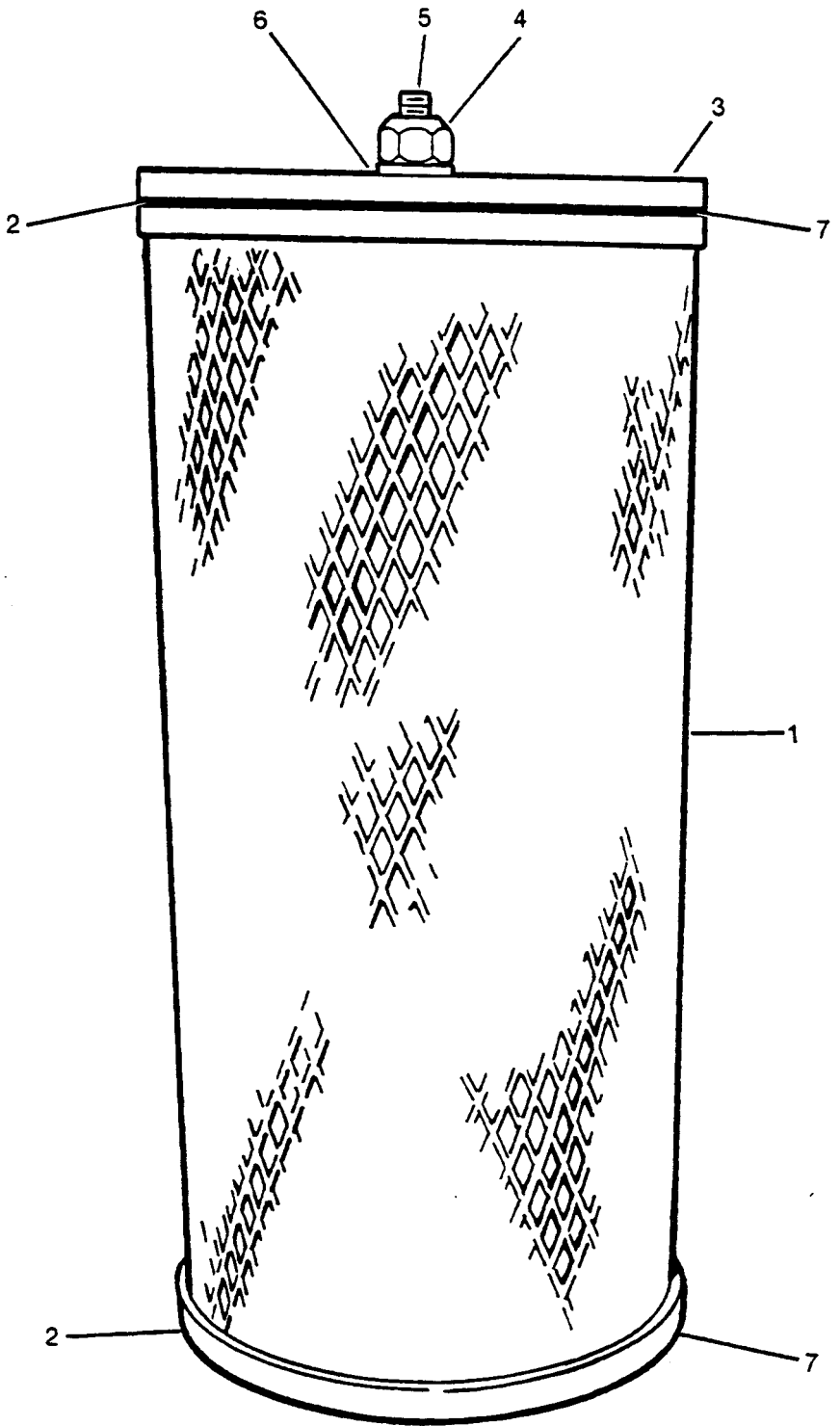
KEY No.	DESCRIPTION	PACKAGE MODEL NUMBER	PART NUMBER	QTY.
7	valve, globe shut-off 1/2"	C16LB & C20SB	045626	1
	valve, globe shut-off 3/4"	C16LA, C20SA & C20L	046116	1
		C25 & C40L	046116	1
8	bulbwell, liquid injection (not shown)**	ALL	240027	1
9	thermistor, liquid injection (not shown)**	ALL	046521	1
10	controller, low discharge temperature (LDT)   see page 30, item 16	ALL	046546	1
11	relay, 10CR (not shown)*** Prior to August, 1983	ALL	045496	1
12	socket, relay 10CR (not shown)*** Prior to August, 1983	ALL	045497	1

\*\* Mounted in discharge pipe (compressor to separator).

\*\*\* Not supplied after August, 1983; located in control center.

# ILLUSTRATIONS AND PARTS LIST

## 1.22 SEPARATOR ELEMENTS





# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.22 SEPARATOR ELEMENTS

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	element, gas/oil separator – ammonia		
	• C16LA – 20"	044038	1
	• C16LB – 26"	043930	1
	• C20SA – 20"	044038	2
	• C20SB – 20"	044038	2
	• C20LA – 20"	044038	2
	• C20LB – 26"	043930	2
	• C25SA – 20"	044038	3
	• C25MA – 20"	044038	3
	• C25SB – 26"	043930	2
	• C25SB – 20"	044038	1
	• C25MB – 26"	043930	2
	• C25MB – 20"	044038	1
	• C25LA – 26"	043930	3
	• C25LB – 33"	044306	2
	• C25LB – 26"	043930	1
	• C40LB – 33"	044306	3
	• C40LA – 33"	044306	6
	element, gas/oil separator – freon	(V)	
2	gasket, separator element (I)	026427	2 per element
3	cover, plate separator element	024371	1 per element
4	nut, ½" – 13 unc (IV)	–	2 per element
5	rod, ½" – 13 unc thread (part of separator tank)	–	1 per element
6	washer, flat ½" (IV)	–	1 per element
7	adhesive, separator element gasket (II)	240179	1
8	nut, coupling ½" – 13 unc (not shown) (III)	045186	1 per element
9	rod, threaded ½" x 6½" (not shown) (III)	835508–065	1 per element

(I) New elements (replacements) have gaskets cemented to both ends.

(II) Use Sullair part no. 240179 adhesive or Loctite® no. 04E or Loctite® no. 404.

(III) Coupling nut and rod are required for 33" elements only.

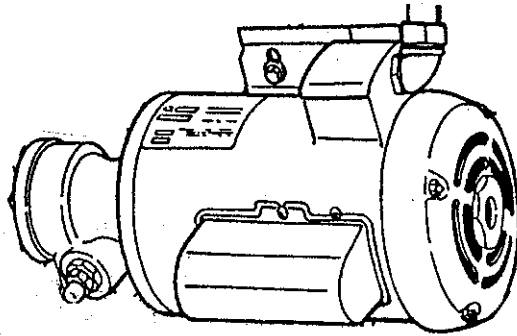
(IV) Standard hardware item. May be purchased locally.

(V) Refer to factory for part number.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

## 3/4 HP AUX OIL PUMP



P/N 045625, PUMP & 3/4 HP MOTOR COMPLETE

P/N 240870, PUMP ONLY (CCW ROTATION)

P/N 050484, 3/4 HP MOTOR ONLY

P/N 240317, PUMP SHAFT SEAL ONLY

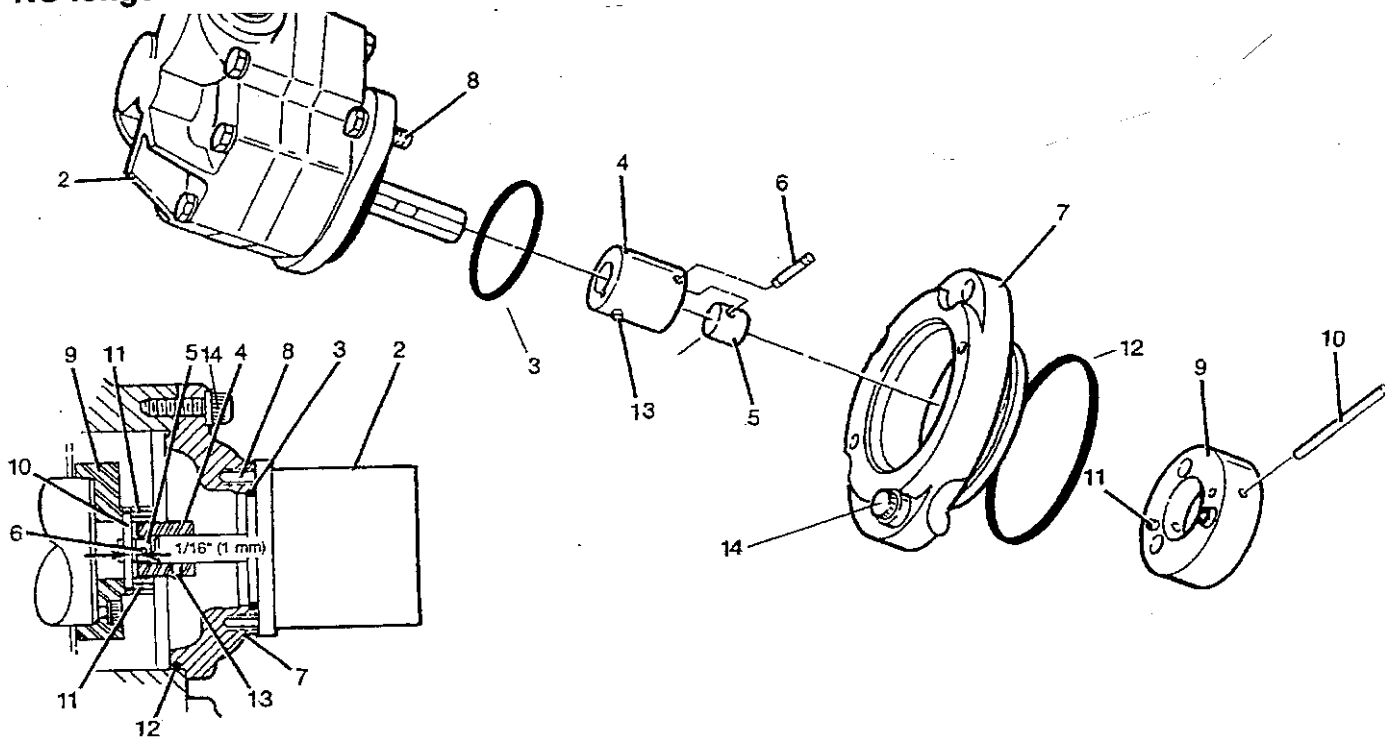
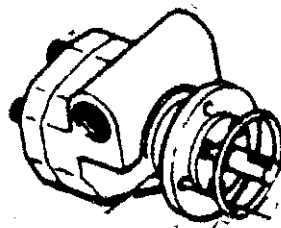
P/N 250026-891, COUPLING FOR MOTOR/PUMP

# Section 1 ILLUSTRATIONS AND PARTS LIST

## 1.23 OIL PUMP ASSEMBLY – COMPRESSOR MOUNTED

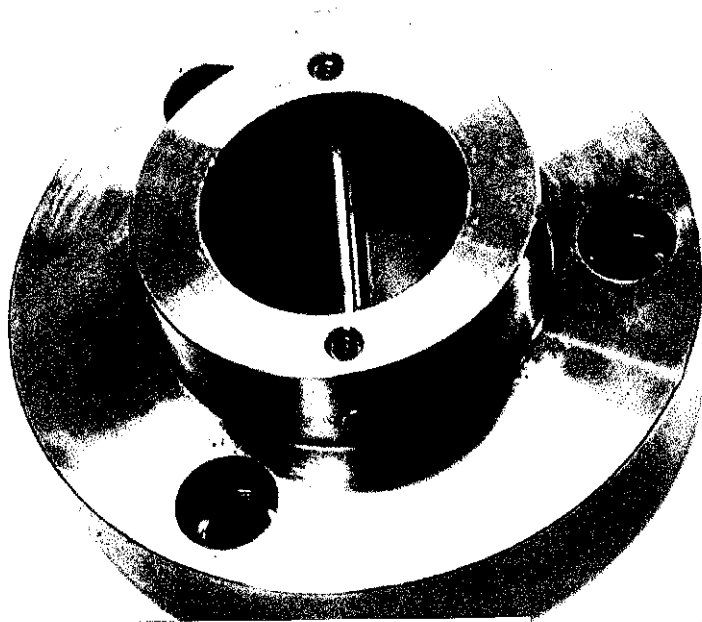
Sullair built oil pump now used

This style of pump is **OBSOLETE**  
NO longer available

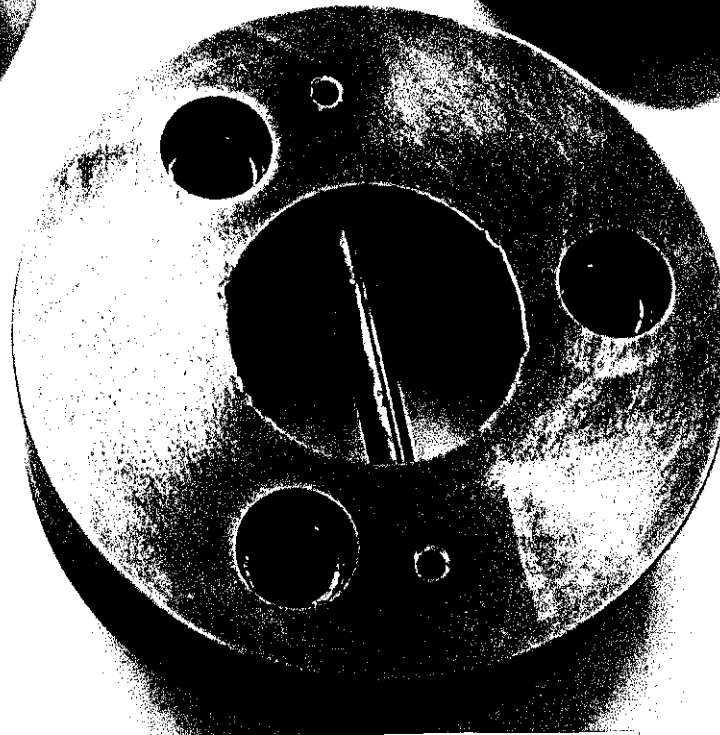
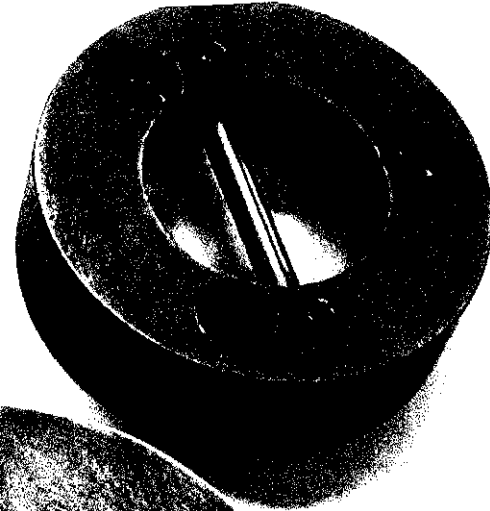


C SERIES OIL PUMP DRIVE DISCS

C16 DRIVE DISC P/N 023032  
DOWEL PIN P/N 827204-300  
SET SCREW P/N 832204-031



C25 DRIVE DISC P/N 022932  
DOWEL PIN P/N 827204-250  
SET SCREW P/N 832204-031



C20 DRIVE DISC P/N 024027  
DOWEL PIN P/N 827204-300  
SET SCREW P/N 832204-031

## C SERIES OIL PUMP INFO 3550 RPM

ITEM	DESCRIPTION	PART NO.	QUANTITY
1	C16 OIL PUMP KIT	02250136-770	1
	C20 OIL PUMP KIT (16 GPM)	001095B	1
	C25 OIL PUMP KIT (20 GPM)	001937B	1
	(KIT INCLUDES ITEMS 1,2,3,4,5 & 6)		
2	OIL PUMPS SOLD IN KITS ONLY		
	C16		
	C20 USES P/N 018560A SULLAIR ASSEMBLED		
	C25 USES P/N 018560B SULLAIR ASSEMBLED		
3	O-RING	826202-236	1
4	HUB, DRIVE	023033	1
5	CONNECTOR	023034	1
	C16 NEW STYLE WITH 7/8" BORE	02250135-931	1
6	PIN, SHEAR	024710	1
7	ADAPTER		
	C16	022745	1
	C20	024013	
	C25	022914	1
8	CAPSCREW, FERRY HD, 3/8"-16 X 1"	828406-100	2 OR 4
9	DISC, DRIVE		
	C16	023032	1
	C20	024027	1
	C25	022932	1
10	PIN, DOWEL		
	C16 & C20	827204-300	1
	C25	827204-250	1
11	SCREW, SET 1/4"-20 X 5/16"	832204-031	2
12	O-RING		
	C16	826202-242	1
	C20	826202-252	1
	C25	826202-260	1
13	SCREW, SET 1/4"-20 X 5/16"	832204-031	2
14	SCREW, FERRY HD: C16 1/2"-13 X 1-1/2"	828408-150	4
	C20 1/2"-13 X 1-1/2"	828408-150	4
	C25 5/8"-11 X 1-3/4"	828410-175	4
NOT SHOWN			
	WAVE SPRING: C16	248247	1
	C20	248180	1
	C25	248248	1
	OIL PUMP CAVITY BLANK COVER	221265	1
	BEARING SPACER (SLEEVE WITH O-RING, USE ITEM 12)		
	C16	227050	1
	C20	227029	1
	C25	227053	1
	DISC, DRIVE SCREWS: C16 FERRY HD, 3/8"-16 X 1"	828406-100	3
	C20 FERRY HD, 3/8"-16 X 1-1/2"	828406-150	3
	C25 FERRY HD, 3/8"-16 X 1-1/4"	828406-125	3

## ILLUSTRATIONS AND PARTS LIST

## 1.23 OIL PUMP ASSEMBLY - COMPRESSOR-MOUNTED

key number	description	part number	quantity
1	kit, replacement oil pump C25 (includes key no.'s 2,3,4,5 and 6) (I)	001937B	1
	• kit, replacement oil pump - C25 (Prior to 6/91)	001095B	1
	(includes key no.'s 2,3,4,5 and 6) (II)		1
	• kit, replacement oil pump C16 (III) & C20 (II) (includes key no.'s 2,3,4,5 and 6)	02250136-770	1
2	pump, oil C16 (III) & C20 (II)	use above kit	1
	• pump, oil C25 (Prior to 6/91) (II)	use above kit	1
	• pump, oil C25 (I)	use above kit	1
3	o-ring	826202-236	1
4	hub, drive	023033	1
5	connector	023034	1
6	pin, shear	024710	1
7	adaptor		
	• C16	022745	1
	• C20	024013	1
	• C25	022914	1
8	capscrew, ferry head $\frac{3}{8}$ "-16 unc x 1" oil pump to adaptor (IV)	828406-100	2
9	disc, drive		
	• C16	023032	1
	• C20	024027	1
	• C25	022932	1
10	pin, dowel		
	• C16	827204-300	1
	• C20 and C25	827204-250	1
11	screw, set		
	• C16 and C25	832204-031	2
	• C20	832204-062	2
12	o-ring		
	• C16	826202-242	1
	• C20	826202-252	1
	• C25	826202-260	1
13	screw, set cup $\frac{1}{4}$ "-20 x $\frac{5}{16}$ " (IV)	832204-031	4
14	capscrew, ferry $\frac{3}{8}$ "-16 x 1" (IV)	828406-100	3

(I) For 2950 RPM motor, use unit pump kit no. 001937-018 (50 Hertz).

(II) For 2950 RPM motor duty, C20 & C25 (prior to 6/91), use kit no. 001937B (50 Hertz).

(III) For 2950 RPM motor duty, C16 use kit no. (50 Hertz).

(IV) Standard hardware item. May be purchased locally.

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

Section 2  
**KITS**

**SECTION 2 CONVERSION KITS**

**2.1 LIQUID INJECTION**

PACKAGE MODEL NUMBER	STANDARD KIT PART NUMBER	QTY.	HIGH TEMPERATURE KIT PART NUMBER
C16LA	001869	1	*
C16LB	001870	1	*
C20SA	001913	1	*
C20SB	001873	1	*
C20LA	001878	1	*
C20LB	001872	1	*
C25SA	001871	1	*
C25SB	001879	1	*
C25MA	001871	1	*
C25MB	001879	1	*
C25LA	001874	1	*
C25LB	001875	1	*
C40LA	001876	1	*
C40LB	001877	1	*

\* Refer to factory for part number.

**2.2 DUPLEX FILTER**

PACKAGE MODEL NUMBER	SINGLE TO DUAL KIT PART NUMBER	QTY.
C16, C20 & C25	250020-274	1
C40	250020-274	2

**2.3 FILTER \*\***

PACKAGE MODEL NUMBER	SINGLE KIT PART NUMBER	QTY.	DUAL KIT PART NUMBER	QTY.
C16 ALL	250020-277	1	250020-273	1
C20 ALL	250020-277	1	250020-273	1
C25 ALL	250020-277	1	250020-273	1
C40 ALL	250020-277	2	250020-273	2

**2.4 AUXILIARY OIL PUMP - 3/4HP, 60HZ**

PACKAGE MODEL NUMBER	PUMP KIT PART NUMBER	QTY.
C16 & C20	001894	1
C25	001893	1
C40	NONE	-

\*\* Old style filter conversion.

SECTION 2 – CONVERSION KITS

2.5 ELECTRIC VALVE ACTUATOR – DC TO AC

PACKAGE MODEL NUMBER	E.V.A. KIT PART NUMBER	QTY.
C16L – ALL	250023–497	1
C20S – ALL	250023–497	1
C20L – 26	250023–498	1
C20L – 37	250023–498	1
C20L – 48	250023–497	1
C25S – ALL	250023–497	1
C25M – ALL	250023–497	1
C25L – ALL	250023–498	1
C40L – ALL	250023–498	1

2.7 DUPLEX STRAINER

PACKAGE MODEL NUMBER	STRAINER KIT PART NUMBER	QTY.
C16L	250030–944	1
C20S	250030–944	1
C20L	250030–944	1
C25SA	250030–945	1
C25SB	250030–944	1
C25MA	250030–945	1
C25MB	250030–944	1
C25LA	250023–945	1
C25LB	250023–944	1
C40LA	*	1
C40LB	250030–945	1

2.6 BALANCE PISTON PIPING

PACKAGE MODEL NUMBER	PIPING KIT PART NUMBER	QTY.
ALL		
With 1/2" Tubing	001915	1
ALL		
With 3/4" Tubing	001916	1

\* Refer to factory for part number.





2.9 INSTALLATION OR SERVICE KIT REQUIREMENTS

The following listings contain the jobs which require more than one service kit to complete the installation of service.

A step by step instruction on how to disassemble and assemble parts is outlined in the service manual with designated numbers referring to numbers on associated illustrations.

The service kits **DO NOT** contain standard tools, wrenches, screwdrivers, etc., which are required to disassemble the compressor.

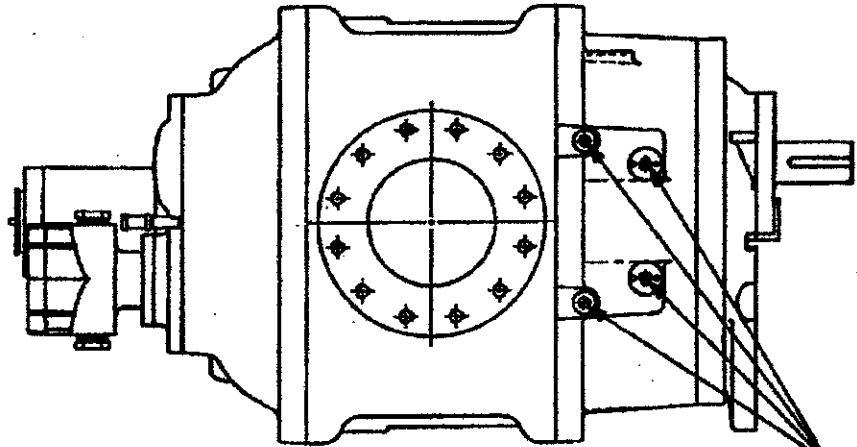
Job No.	Kit(s) Required
1	KIT 10001
2	KIT 10002
3	KIT 10003
4	KIT 10004
5	KIT 10005
6	KIT 10006
7	KIT 10007
8	KIT 10008
9	KIT 10009
10	KIT 10010
11	KIT 10011
12	KIT 10012
13	KIT 10013
14	KIT 10014
15	KIT 10015
16	KIT 10016
17	KIT 10017
18	KIT 10018
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90	KIT 10090
91	KIT 10091
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94	KIT 10094
95	KIT 10095
96	KIT 10096
97	KIT 10097
98	KIT 10098
99	KIT 10099
100	KIT 10100

## THRUST BEARING KITS & SLEEVE BEARINGS

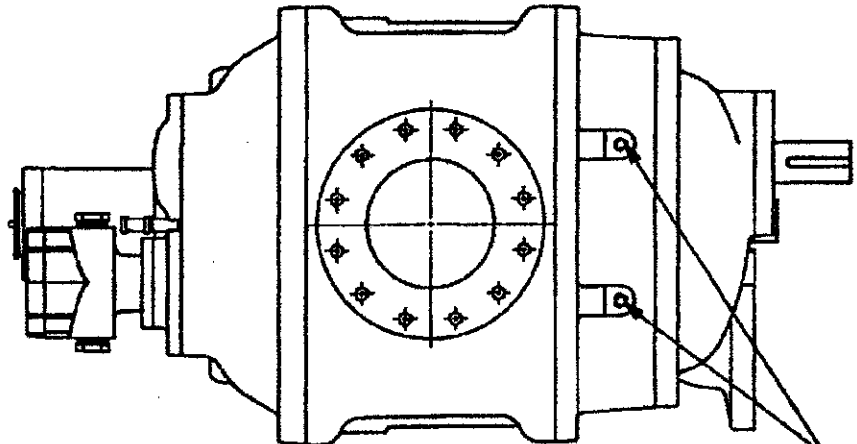
THRUST BEARING KITS  
C20 P/N 608434-002  
C25 P/N 605803-001

THRUST BEARING KITS  
C16 P/N 604467-002  
C20 P/N 604468-001  
C25 P/N 604469-001

### DISTINGUISHING BETWEEN EXPOSED AND ISOLATED BEARING MACHINES



ISOLATED BEARING UNITS HAVE 4 OIL PORTS  
(LOCATED ON TOP SIDE OF OUTLET HSG.)



EXPOSED BEARING UNITS HAVE 2 OIL PORTS  
(LOCATED ON TOP SIDE OF OUTLET HSG.)

**FIGURE 4**

### SLEEVE BEARINGS

C16 P/N 023026  
C20 P/N 250025-551  
C25 P/N 250027-181

2.9 INSTALLATION OR SERVICE KIT REQUIREMENTS

JOB	REQUIRED SERVICE KIT					
	C16 PACKAGE	QTY.	C20 PACKAGE	QTY.	C25 PACKAGE	QTY.
<b>Replacing Thrust Bearing:</b>						
Kit, thrust bearing repair				1		1
Kit, thrust bearing repair (Prior to June, 1991)		1		1		1
Kit, thrust bearing repair (Prior to Jan., 1988)		1		1		1
Kit, compressor outlet cover repair	001830A	1	001831A	1	001832A	1
Kit, shaft seal repair -- or --	001807A	1	001808A	1	001809A	1
Kit, shaft seal and v--ring repair	-----	-	001808B	1	001809B	1
Kit, bearing puller tool kit	001850	1	001850	1		
<b>Checking Rotor End Play:</b>						
Kit, rotor end play C20 and C25	-----	-	02250057-556	1	02250057-556	1
Kit, rotor end play tool -- w/indicator	001851A	1	(I) 001851B	1	(I) 001851C	1
Kit, rotor end play tool -- w/o indicator	001851D	1	(I) 001851E	1	(I) 001851F	1
O--ring -- neoprene	826202-242	2	826202-252	2	826202-260	2
<b>Installing Valve Guide:</b>						
Kit, valve guide repair	001841A	1	001842A	1	001843A	1
Kit, compressor outlet cover repair	001830A	1	001831A	1	001832A	1
Kit, shaft seal repair -- or --	001807A	1	001808A	1	001809A	1
Kit, shaft seal and v--ring repair	-----	-	001808B	1	001809B	1
<b>Overhauling Capacity Control Valve:</b>						
Kit, capacity control valve repair	001838A	1	001839A	1	001840A	1
Kit, compressor outlet cover repair	001830A	1	001831A	1	001832A	1
Kit, shaft seal repair -- or --	001807A	1	001808A	1	001809A	1
Kit, shaft seal and v--ring repair	-----	-	001808B	1	001809B	1
Kit, valve guide repair	001841A	1	001842A	1	001843A	1
<b>Replacing O--Ring's:</b>						
Kit, compressor spare parts -- standard	001887A	1	001888A	1	001889A	1

NOTE: All "prior to dates" are approximate.

# NOTES

# ILLUSTRATIONS AND PARTS LIST

## 3.0 DECAL GROUP

**OIL TEMPERATURE**

1

**OIL PRESSURE  
FILTER CHECK**

2

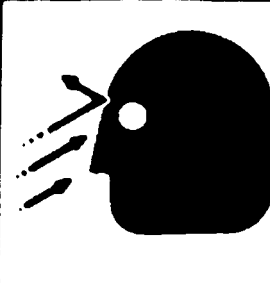
**SUCTION PRESSURE**

3

**DISCHARGE PRESSURE**

4

**⚠ WARNING**



Do not remove caps, plugs, or other components when compressor is running or pressurized. Stop compressor and relieve all internal pressure before doing so.

4985

6

**⚠ DANGER**




**Lethal Shock hazard inside.**  
**Disconnect all power at source before opening or servicing**

49850

7

**⚠ WARNING**



Use equipment grounding connector in accordance with the National Electrical Code, and all Federal State, and Local Codes, to help avoid possible ground fault shock hazard.

10622

8

**⚠ WARNING**



Disconnect all power at source, before attempting maintenance or adjustments.

49855

9

**⚠ CAUTION**



**Slip hazard.**  
**Do not step or stand on this surface.**

41014

10

**ILLUSTRATIONS AND PARTS LIST**

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**3.0 DECAL GROUP**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	decal, oil temperature	042968	1
2	decal, oil pressure filter check	241317	1
3	decal, suction pressure	250003-228	1
4	decal, discharge pressure	250003-229	1
5	decal, Sullair logo – white (not shown)	Consult Factory	5
6	sign, warning compressor oil fill cap	049685	1
7	sign, danger electrocution	049850	1
8	sign, warning ground fault	049852	1
9	sign, warning – sever fan	049855	1
10	sign, caution – slip hazard	041041	1

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# WORLDWIDE SALES AND SERVICE



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