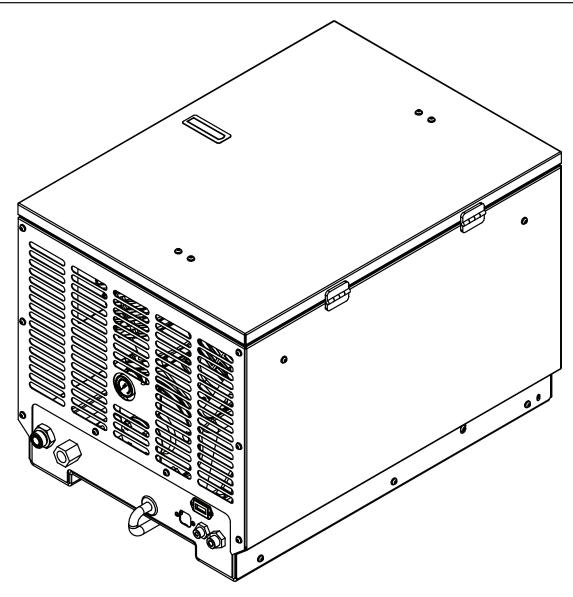


# Model 70P Single-Stage Piston Compressor Manual

Specifications • Installation • Assembly



Stellar Industries, Inc. 740 North State Street PO Box 169 Garner, IA 50438 800-392-3015 www.stellarindustries.com

# P65 Warning / Serial Tag / Cold Weather

### **WARNING**

Operating, maintaining, and servicing a Stellar product may expose you to chemicals including, but not limited to, engine exhaust, carbon monoxide, phthalates, and lead. These chemicals are known to the State of California to cause cancer and birth defects (or other reproductive harm). To keep your exposure to a minimum, be sure to avoid breathing exhaust and service your Stellar product in a well-ventilated area while wearing gloves or washing your hands frequently. For more information, go to www.P65Warnings.ca.gov/passenger-vehicle.



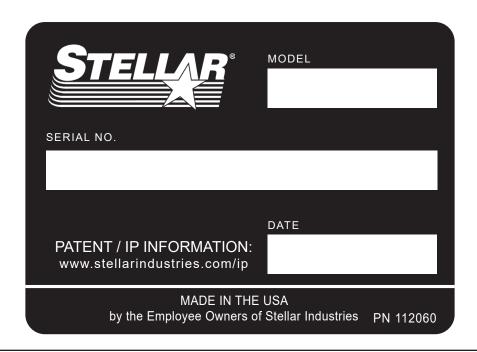
www.p65warnings.ca.gov

## NOTICE

#### **Cold Weather Performance**

Although clear data on cold weather performance from every steel manufacturer is not available for all types and thicknesses of steel, Stellar Industries is confident that the weldments on our products will operate to 100% of their intended purpose to temperatures down to -40° F / C.

It is recommended it Stellar manufactured equipment needs to be used in temperatures below -40° F / C, the operator should pull the unit into a climate-controlled area and allow the weldments to warm up to and then maintain a temperature above this level.



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For Technical Questions, Information, Parts, or Warranty, Call Toll-Free at 800-321-3741

Hours: Monday - Friday, 8:00 a.m. - 5:00 p.m. CST

Or email at the following addresses:

Technical Questions, and Information: service@stellarindustries.com

Order Parts: parts@stellarindustries.com

Warranty Information: warranty@stellarindustries.com

#### Introduction

Stellar Industries® Air Compressors are designed to provide safe and dependable service for a variety of operations. With proper use and maintenance, these air compressors will operate at peak performance for many years.

To promote this longevity, carefully study the information contained in this manual before putting the equipment into service. Though it is not intended to be a training manual for beginners, this manual should provide solid guidelines for the safe and proper usage of the air compressor.

Once you feel comfortable with the material contained in this manual, strive to exercise your knowledge as you safely operate and maintain the air compressor. This process is vital to the proper use of the unit.

#### A few notes on this manual:

A copy of this manual is provided with every air compressor and can be found in the hard plastic manual case that is installed on the chassis. A copy of this manual shall remain with the air compressor at all times.

Throughout the manual, three signal words will be used to bring attention to important items:

A NOTICE signal word indicates a practice not related to physical injury.



A WARNING signal word indicates a hazardous situation which, if not avoided, could result in death or serious injury.



A DANGER signal word indicates a hazardous situation which, if not avoided, will result in death or serious injury.

#### **▲** DANGER

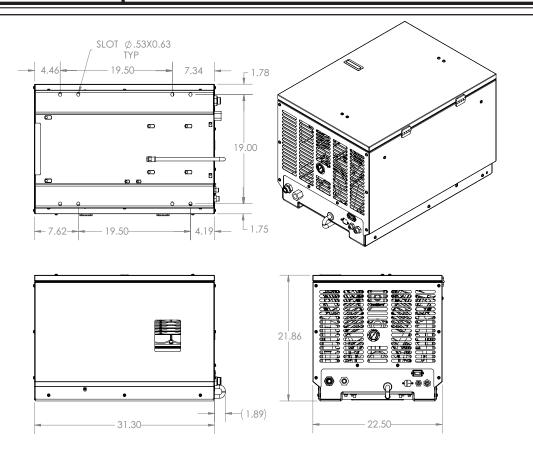
Information contained within this manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. Please be aware that some sections of this manual contain information pertaining to Stellar Industries® manufactured air compressors in general and may or may not apply to your specific model.

This manual is not binding. Stellar Industries reserves the right to change, at any time, any or all of the items, components, and parts deemed necessary for product improvement or commercial/production purposes. This right is kept with no requirement or obligation for immediate mandatory updating of this manual.

#### In closing:

If more information is required or technical assistance is needed, or if you feel that any part of this manual is unclear or incorrect, please contact the Stellar Industries Customer Service Department by phone at 800-392-3015 or email at service@stellarindustries.com.

# Chapter 1 - Specifications



SPECIFICATIONS	70P
Hydraulic System	18 GPM @ 2650 PSI
Max Compressor Speed	1200 RPM
Hydraulic Operating Pressure	2650 PSI
Hydraulic Relief Pressure	3500 PSI
Max Working Pressure	150 PSI
Air Delivery (At Max Speed)	70 CFM @ 100 PSI
Weight (Hydraulic Driven Asm)	325 lbs.
Weight (Air Pump Only)	117 lbs.
Dimensions (Length)	33.19"
Dimensions (Width)	22.5"
Dimensions (Height)	21.88"
Electrical	12V DC
Crankcase Oil Capacity	2 Quarts
Cooler Fan	1200 CFM, 12 Volt (Pull)
Drive Type	Direct Driven

**NOTICE** 

Duty cycle on Piston Compressors is 50:50 over 10 minutes.

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# Chapter 2 - Installation

#### **Component Installation**

This section pertains to the installation of the air compressor, PTO, pump and other related items. The instructions are intended as a guide to assist you with particular installation. These instructions will provide only general information.

#### Compressor Torque Procedure

**Pulsation Chamber Assembly:** 

Torque Value: 31 ft-lbs

Procedure: See Head Assembly Procedure

Head Assembly:

Torque Value: 34 ft-lbs

Procedure: Assemble head on the cylinder with head bolts started only, not tight. Working in the pattern shown, torque three times,

increasing the torque each time as follows:

First Torque: 10 ft-lbs Second Torque: 20 ft-lbs Third Torque: 34 ft-lbs

After five hours of use re-torque bolts to 34 ft-lbs.

Cylinder Assembly:

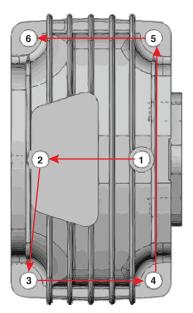
Torque Value: 20 ft-lbs

Procedure: After assembling cylinder over pistons and setting into place, tighten (6) cap screws finger tight. In a criss-cross pattern, tighten bolts evenly so all bolts are hand snug. Again in a crisscross pattern torque each bolt to 20 ft-lbs, checking each bolt twice. After five hours of use, retorque bolts to 20 ft-lbs.

Connecting Rod Control:

Torque Value: 18 ft-lbs

Procedure: Assemble rod onto the crankshaft taking care to align the machined surfaces together and tighten cap screws finger tight. Tighten bolts until hand tight and torque to 18 ft-lbs. Check twice the torque reading before final assembly of the cylinders.



#### Component Installation, continued

#### Pump Assembly:

The pump assembly may either be installed directly on the PTO or as an optional method, may be driven by a driveline from the PTO. Pump manufacturers provide specific installation information for their products and should be consulted if questions arise. Note: A dual or tandem hydraulic pump is recommended when additional hydraulically operated equipment are added to the hydraulic system.

#### PTO Assembly:

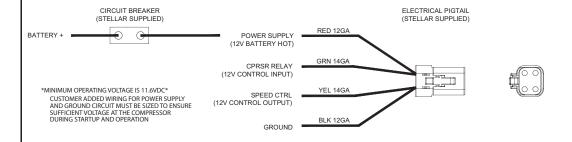
Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model, and year of vehicle. As some trucks may require modification of the transmission cross member and the exhaust system, the manufacturer's instructions should be followed to ensure proper installation of the PTO.

#### Compressor Assembly:

Prepare the mounting location of the compressor by locating and drilling four (4) holes, 1/2" diameter as per the mounting pattern of the air compressor base. Using four (4) 3/8" x 1.25 GR-5 cap screws, 3/8" flat washer, and 3/8" nyloc nut, secure the compressor in place. The compressor is air cooled, and must have a clean supply of cooling air to the fan with minimum restrictions. Adequate space must be provided for proper circulation of air.

#### Electric Speed Control:

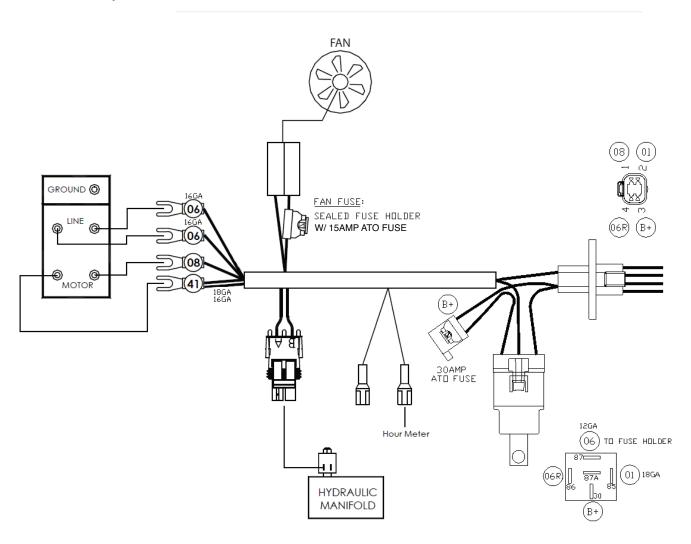
An optional electric or electronic speed control must be used to maintain proper operating speed of the air compressor. The engine speed control will automatically increase from idle to preset speed when engaged and decrease when disengaged.



#### **70P Electrical Schematic**

#### **Electrical Connections:**

Supplied with the compressor is a wire harness pigtail which has 4 leads coming off of it. Connect the black wire to the vehicle frame or other suitable ground. Connect the red lead to a fused power source. Mount a single throw toggle switch in a convenient location and connect the green wire from the compressor to this switch. Connect the other switch terminal to a fuse holder and then to a 12V power supply. The yellow wire is required from the compressor when connecting the speed control into the system.



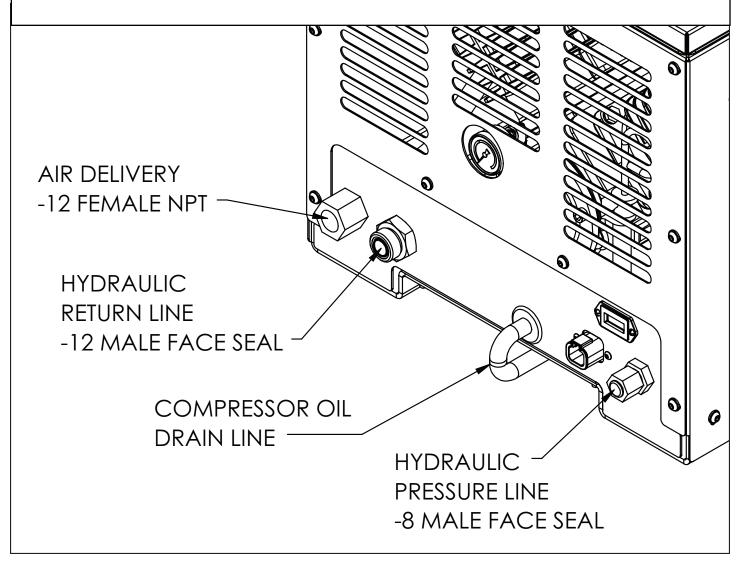
CIRCUIT #	CIRCUIT	WIRE GA	WIRE COLOR
01	GROUND	SEE DWG	BLACK WITH WHITE TEXT
06	COMPRESSOR	SEE DWG	GREEN WITH BLACK TEXT
06R	CPRSR RLY	14GA	GREEN WITH BLACK TEXT
B+	BAT POS	12GA	RED WITH BLACK TEXT
08	SPEED CNTRL	14GA	GREEN WITH BLACK TEXT
41	HYDRAULIC SOLENOID	SEE DWG	GREEN WITH BLACK TEXT

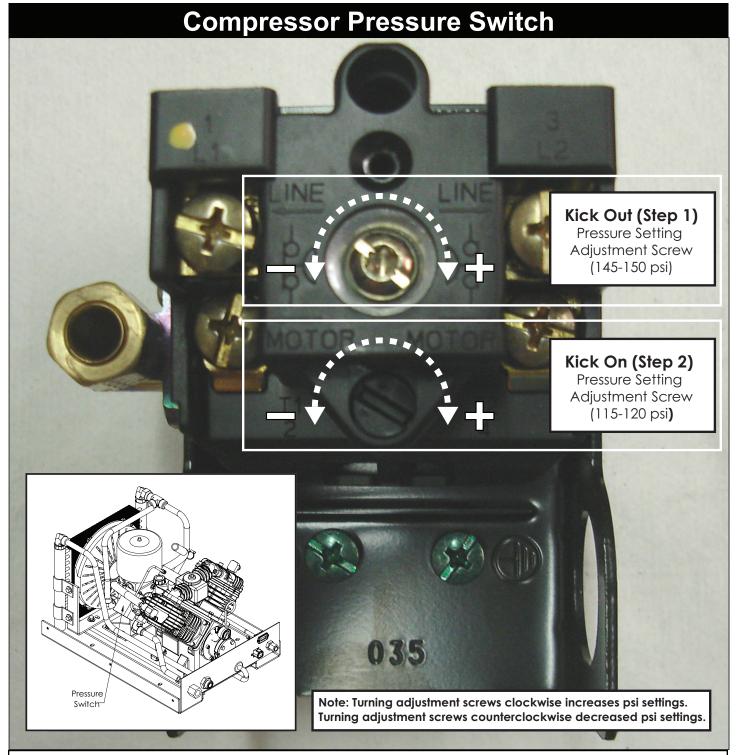
#### Hydraulic System

The hydraulic system consists of the oil reservoir, pump, manifold, motor, filters, and hoses. A ½" 3000psi pressure line should be connected to the pressure line fitting on the bulkhead. This line is plumbed though an internal manifold block, and then to the motor. After the motor there is an internal cooler which the oil passes through before going to the return line bulkhead fitting. A ¾" minimum low-pressure return line is to connect to the return bulkhead fitting and filter before being returned to the oil reservoir. Stellar Industries recommends a sufficiently-sized reservoir be provided that includes the proper suction and return filters. The cooler on the compressor is designed and sized to cool the air compressor efficiently. An auxiliary oil cooler is required when additional hydraulically operated equipment is added to the hydraulic system. Pressure on the return line exceeding 200PSI can and will cause damage to the filter, cooler, and components of the compressor's hydraulic system.

#### **Air System**

The airline is routed using a ¾" 200 psi air/steam hose. This delivery line should be free from all obstructions. Note: There should be no check valve installed between the compressor and the air tank (One is already included in the compressor package). Stellar Industries recommends the installation of a ten-gallon air tank (minimum) to maintain proper operation of the air compressor.





#### Pressure Setting Instructions:

- 1. Always set the kick out pressure setting first. Adjust the kick out screw setting to 145 psi minimum/150 psi maximum.
- 2. After kick out pressure is set, adjust the kick on screw setting to 115 psi minimum/120 psi maximum.
- 3. Cycle compressor to verify correct settings.
- 4. For questions about this procedure, please contact Stellar Industries Customer Service at 800-321-3741.

# **Typical Hydraulic Circuit for Single-Section Pump** CRANE VALVE BANK 000 $\bigcirc$ HYDRAULIC RESERVOIR $\bigcirc$ $\bigcirc$ FILTER SCREEN **(** COMPRESSOR RETURN SUCTION LINE PRESSURE FLOW CONTROL OUTRIGGER VALVE BANK VALVE POWER BEYOND SELECTOR VALVE SINGLE STAGE PUMP STREETSIDE OUTRIGGER CURBSIDE OUTRIGGER

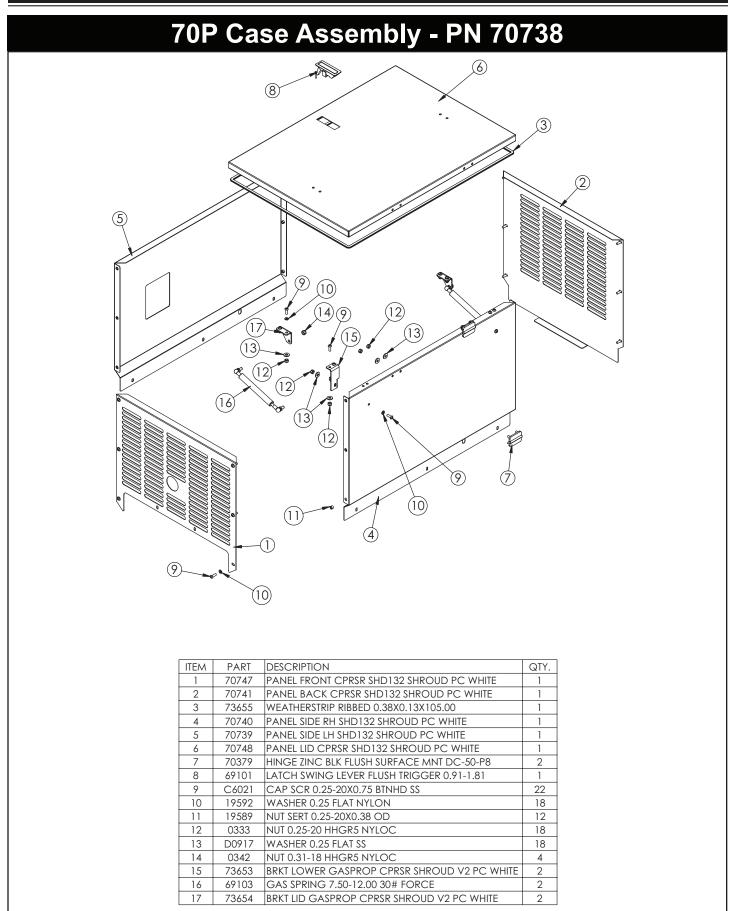
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# Typical Hydraulic Circuit for Tandem (Two-Part) Pump CRANE VALVE BANK $\bigcirc$ HYDRAULIC RESERVOIR $\bigcirc$ FILTER SCREEN FILTER SUCTION LINE OUTRIGGER VALVE BANK CRANE PRESSURE HOSE SUCTION PORT TANDEM HYDRAULIC PUMP Q Q COMPRESSOR RETURN COMPRESSOR PRESSURE HOSE PRESSURE CURBSIDE OUTRIGGER STREETSIDE OUTRIGGER

# Typical Hyd. Circuit for Compressor with Aux. Cooler **HYDRAULIC RESERVOIR FILTER** FILTER SCREEN **AUXILIARY** COOLER ☐ SUCTION PORT SINGLE **HYDRAULIC PUMP COMPRESSOR RETURN** PRESSURE

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# Chapter 3 - Assembly Drawings

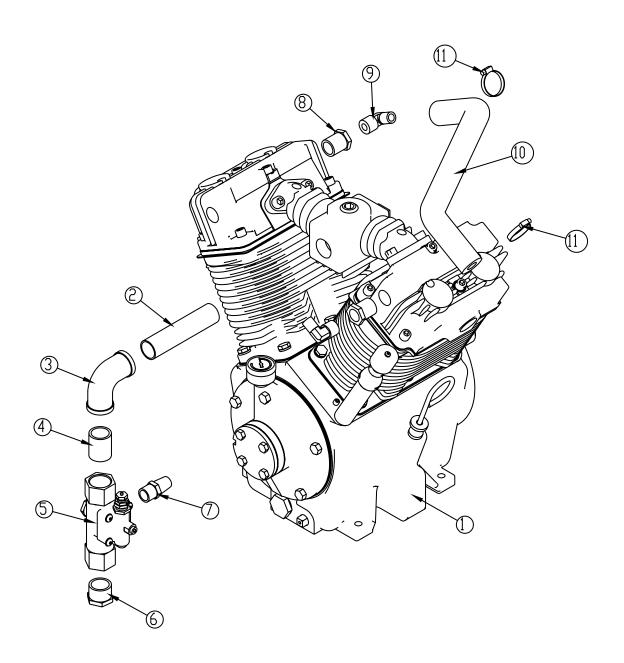


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# 70P Assembly Bill - PN 70734

QTY.	-	-	-	· м	-	2	-	-	4	-	-	2	80	2	2	2	-	_ .			- -		_												
ITEM   PART   DESCRIPTION	29	C0082	C0863	C0944 CAP SCR 0.38	C1129		+	$\vdash$	C4659	C4909	77 C5616 CLAMP ROMEX 0.50	78 C5968 FTG 12-12 MFS-MAORB 90	79 C6021 CAP SCR 0.25-20X0.75 BTNHD SS	C6022	D0075	D0076 NUT #6-32 HH NYLOC	D0525	D0791	D0793	86 D126/ FIG. /5X90 DEG S1 EL BRASS 44164	01277	D1318	87   C49U3   FIG   Z-12 MF3-FF33 9U			CHANGE FAN FUSE FROM 4470 TO 4471	(20 AMP TO 25 AMP)								
QTY.	_	_	_	4	_	_	-   -	-]	-	_	_	-  -	-[-	- 0	1 -	_	_	_	_	_	<u></u>	_ [	-[	-	-	_	_	_	_	4		_	_	_	-
ITEM   PART   DESCRIPTION	5480 VALVE CHECK 0.75 STANDARD	55200	60187	61470 NUT	1	70472 MAI	+	40   70735   BLACK	41 70738 SHROUD ASM CPRSR SHD132	42   70749   TUBE ASM 0.50 BLKHEAD TO MANIFLD	43 70753 TUBE ASM 0.75 COOLER TO BLKHEAD	707.57	70750	70750 ETG 16-15 HB-MP 90	70764	+	+	50 71374 KEY FLYWHEEL 3/8 X 1.125	72382	52 72383 HOSE STEAM 0.75-12FJ SHORT-12MP	1000	/3363	7351	55   73646   POSE 0.7 3 3000 F317-1 ZFF33 3FF0 RI-1 ZFF33	56   73647   FTG 16-12 MP-MP HEX NIPPLE STRAIGHT	57   73649   HOSE 0.75(3000PSI)-12FFSS SHORT-12FFSS	58 73650 HOSE PL 0.38X24.00 MULTIPURPOSE BLACK	73651	73652	+		63 74091 BRKT LIFTING CPRSR SHD132 PC BLACK	77506 PANEL BULKHEAD 70P PC WHITE	65   78190   HOSE 0.38(200PSI)-6PL SHORT-6PL	
QTY. IT	9		4	+	<del> </del>	4	7 7	Н		7	4	2	-	_	-  -	-  -	<u> </u>	-	-  -	- 2	$\perp$	$\top$	$\perp$	<u> </u>	2	7		_   -	- 2	1	2	8	Ľ		
ITEM   PART   DESCRIPTION   C	0333 NUT 0.25-20 HHGR5 NYLOC	1			1	0347 NUT 0.38-16 HHGR5 NYLOC	0351 CAP SCR 0.38-16X1.00 HHGR5		1	10 0483 CAP SCR 0.25-20X3.50 HHGR5	0521 WASHER 0.25 LOCK	12 0523 WASHER 0.38 LOCK	13 0535 NUT 0.38-16 HHGR5	14 0560 FTG 6 MFS PLUG	15 10078 COUPG 3/8 KW L150 1.438	16 10084 FAN 12.00 PULL 12 VOLT 132A COMP	17 12122 BOLT 0.38X1.00 EYE 567-23-ZN	18   12813   GROMMET 1.250DX0.125X0.625ID	1554	18611		_	-	1	25   22183   SCREW #8-32X0.75 BTNHD SS	22186	27718	28 28855 HOUR METER 12VDC 15T 180-1911	34498	4570		33   5290   WASHER #8 SAE FLAT			

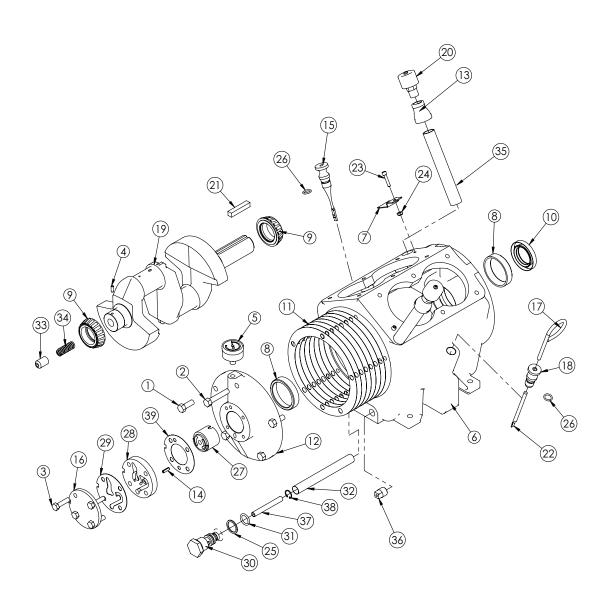
# **SUH-132 Compressor Assembly**



#### **COMPRESSOR ASSEMBLY**

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	10365	CPRSR HV60W88NP	1	7	10082	MUFFLER EXHAUST AIR 0.50 NPT 1A328	1
2	24096	NIPPLE 1.00X5.00 SS 304	1	8	C2236	FTG .7550 BUSH HEX BLK	2
3	4555	ELBOW 1.00 90 DEG BRASS	1	9	C6235	FTG BRASS ELL 90 DEG A/C	2
4	D1450	NIPPLE 1.00XCLOSE BRASS 40-100	1	10	25450	HOSE 0.63X18.00	1
5	10155	UNLOADER-CHECK VALVE NL-14 CONRDR	1	11	C4665	HOSE CLAMP #8 SS	2
6	D1273	FTG 1.00-0.75 BUSH RED BRASS	1				

# **Crankcase Group (Straight Shaft)**

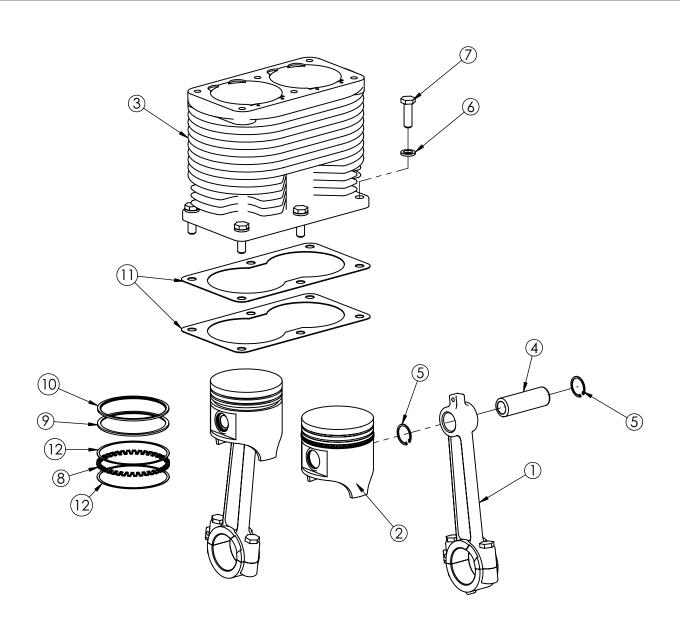


#### **CRANKCASE GROUP**

ITEM	PART	DESCRIPTION	QTY.
1	0351	CAP SCR 0.38-16X1.00 HHGR5	4
2	0353	CAP SCR 0.38-16X2.00 HHGR5	1
3	0485	CAP SCR 0.31-18X1.25 HHGR5	4
4	5817	ROLL PIN 0.19X.50	1
5	5819	GAUGE OIL PSI 1.5	1
6	11878	CRANKCASE HV60	1
7	11885	BREATHER BAFFLE HV60	2
8	11888	BEARING CUP HV60	2
9	11889	BEARING CONE	2
10	11890	BEARING SEAL HV60	1
11	11891	BEARING CARRIER GASKET .015 HV60	7
12	11893	BEARING CARRIER HV60	1
13	21659	REDU BUSHING 0.75X0.38 BRASS	2
14	22209	ROLL PIN 0.19X.63	1
15	22210	DIPSTICK OIL CHECK V480	1
16	22626	PORT PLATE COVER	1
17	22686	HANDLE DIPSTICK OIL CHECK V480	1
18	23050	DIPSTICK BODY (200)	1
19	23368	CRANKSHAFT HV60	1

ITEM	PART	DESCRIPTION	QTY.
20	23483	BREATHER CPRSR .38NPT BF6	2
21	23669	KEY FLYWHEEL 3/8 X 2	1
22	23685	DIPSTICK ROD HV60	1
23	26033	CAP SCR #10-24X1.00 SH	2
24	26034	NUT #10-24 HH NYLOC	2
25	50389	WASHER 0.885X1.115X0.064 COPPER	1
26	C0041	O'RING-112	2
27	C0050	OIL PUMP	1
28	C0052	PORT PLATE MACHINED	1
29	C0054	PORT PLATE COVER GASKET (SMALL)	1
30	C0055	OIL INTAKE PLUG	1
31	C0057	O'RING 2-115 FOR OIL PICKUP TUBE	1
32	C0058	OIL INTAKE FILTER SCREEN	1
33	C0059	OIL PUMP TRANSFER BUSHING	1
34	C0060	SPRING OIL PUMP	1
35	C1054	FTG 12-12X6.00 MP-MP NIPPLE STRAIGHT BLK	2
36	C4841	PLUG 0.38 NPT SQ HD BLK	1
37	C5416	TUBE OIL INTAKE .38ODX3.00	1
38	C6273	SNAP RING PISTON PIN N5000-62	1
39	C6275	PORT PLATE GASKET	1

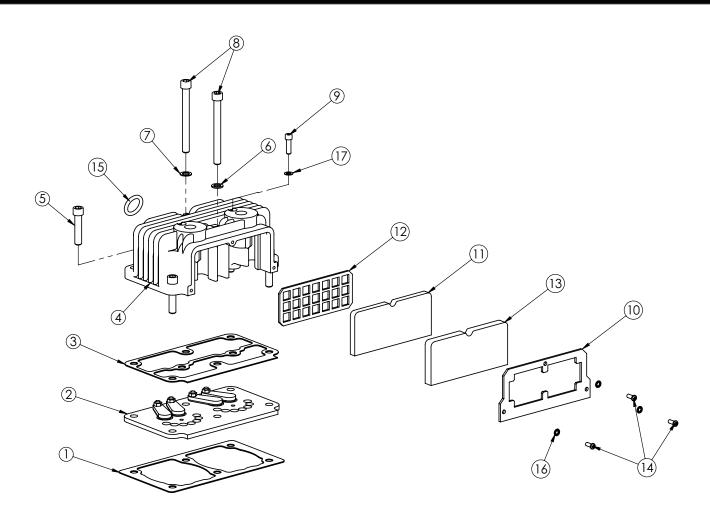
# **Cylinder Group**



#### **CYLINDER GROUP**

ITEM	PART	DESCRIPTION	QTY.
1	11907	CONNECTING ROD HV60 O/S	2
2	23369	PISTON HV60	2
3	11877	CYLINDER HV60	1
4	23370	PISTON PIN HV60	2
5	23481	SNAP RING PISTON HV60	4
6	0523	WASHER 0.38 LOCK	6
7	0335	CAP SCR 0.38-16X1.25 HHGR5	6
8	23043	RING OIL HV 60 FLEX DIVIDER	2
9	23044	RING COMPRESSION LOWER HV 60	2
10	23042	RING COMPRESSION UPPER HV 60	2
11	11884	GASKET CYLINDER BASE HV60	2
12	36369	RING OIL HV 60 RING RAIL	4

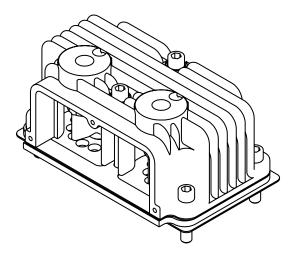
# **Head Group**



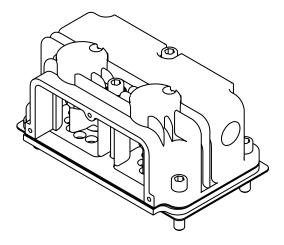
#### **HEAD GROUP**

_			
ITEM	PART	DESCRIPTION	QTY.
1	9980	GASKET CYL HEAD HV-60	1
2	11897	VALVE PLATE ASSEMBLY HV60	1
3	9979	GASKET CYL HEAD (VALVE PLATE) HV-60	1
4	11894	HEAD A/C HV60	1
5	C1586	CAP SCR 0.38-16X1.75 SH HEAD BOLT	4
6	C0040	WASHER HD BOLT STL	1
7	5828	WASHER LONG HD BOLT (BRASS)	1
8	11898	CAP SCR 0.38-16X3.75 SH HEAD BOLT	2
9	11886	CAP SCR 0.25-28X0.88 SH	2
10	11900	FILTER RETAINER HV60	1
11	11901	FILTER INNER ELEMENT HV60	1
12	11903	FILTER SCREEN HV60	1
13	11902	FILTER OUTER ELEMENT HV60	1
14	6684	CAP SCR #10-32X0.50 SH	3
15	C0291	O'RING-214 VITON 9009-75	1
16	23875	WASHER #10 STAR CPRSR	3
17	26032	WASHER 0.255 ID BRASS	2

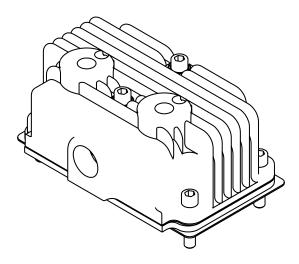
# Head Options



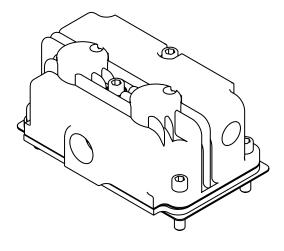
#11894
Aluminum Air Cooled
Imbedded Filter & 1"
Threaded NPT Discharge



#11895
Aluminum Water Cooled
Imbedded Filter & 1"
Threaded NPT Discharge



#11896
Aluminum Air Cooled
1" Threaded Inlet & 1"
Threaded NPT Discharge



#10381 Aluminum Water Cooled 1" Threaded Inlet & 1" Threaded NPT Discharge

# Flywheel Options 28688 14" B-DUAL GROOVE

