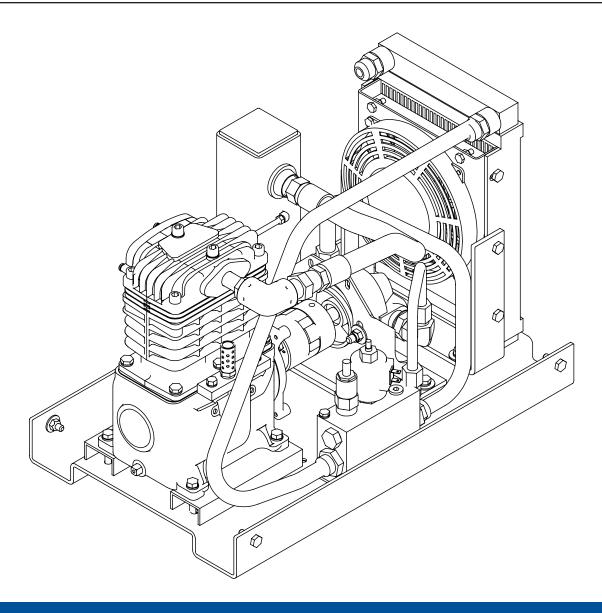


# Model 8P Single-Stage Piston Compressor Manual

### Specifications • Installation • Assembly



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

# P65 Warning - Cold Notice - Serial Tag

# **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.



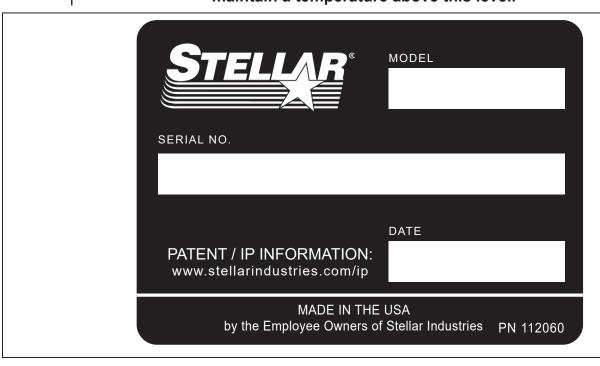
www.p65/warning.ca.gov

# **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<sup>®</sup> 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:

NOTICE

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

**AWARNING** 

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



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

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.

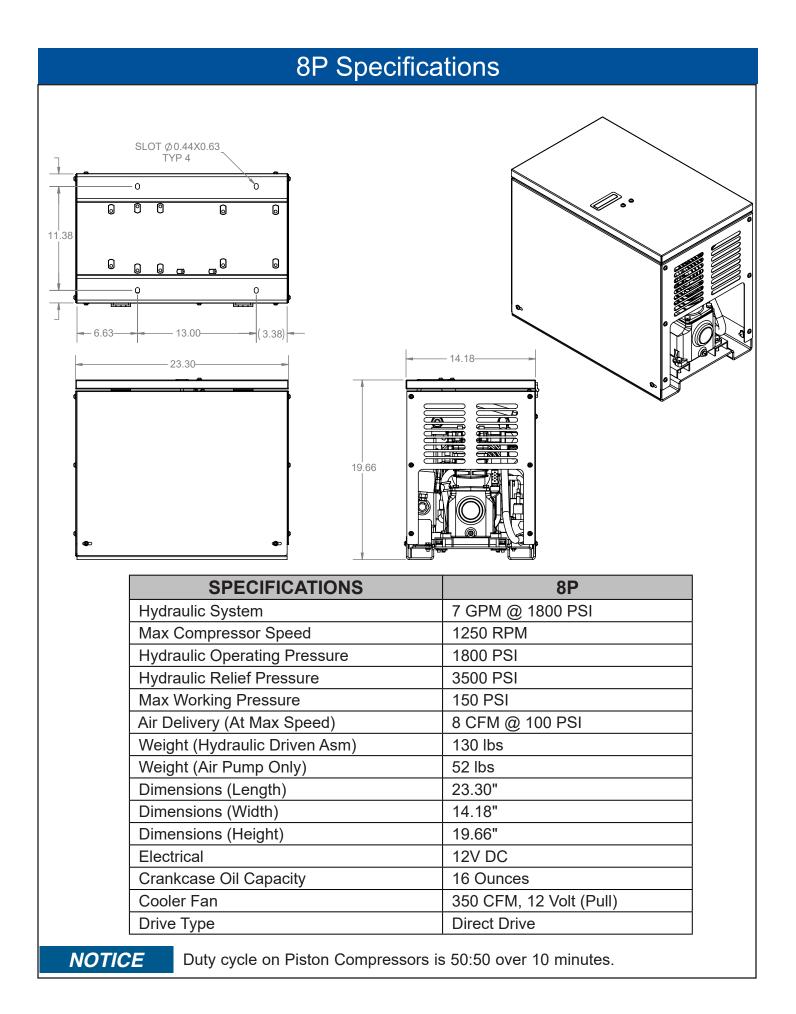
### In closing:

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**

# **Chapter Contents**

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# **Chapter 2 - Installation**

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# **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

Head Assembly:

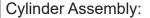
Torque Value: 34 ft-lbs

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.



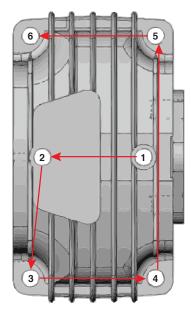
Torque Value: 20 ft-lbs

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 criss-cross 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:

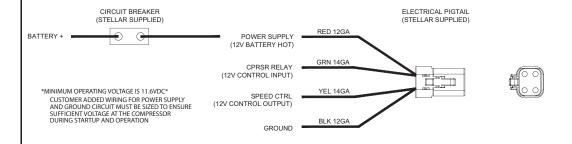
Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model, and year of vehicle. As some trucks may require modification of the transmission cross member and the exhaust system, the manufacturer's instructions should be followed to ensure proper installation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

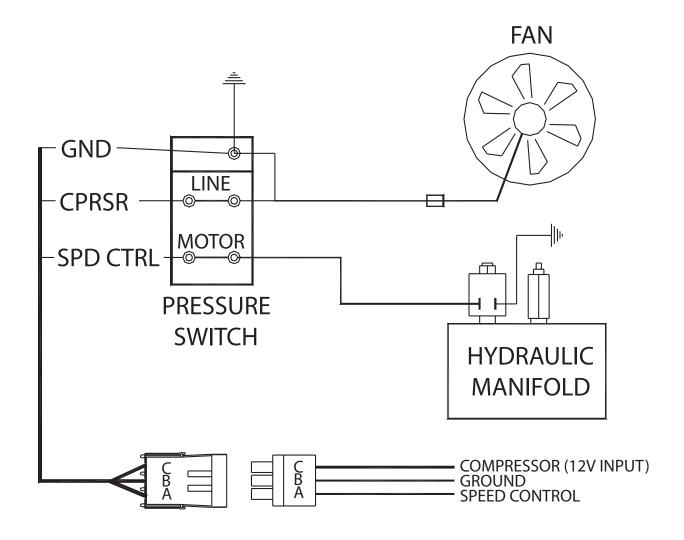
An optional electric or electronic speed control must be used to maintain proper operating speed of the air compressor. The engine speed control will automatically increase from idle to preset speed when engaged and decrease when disengaged.



## **8P 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.



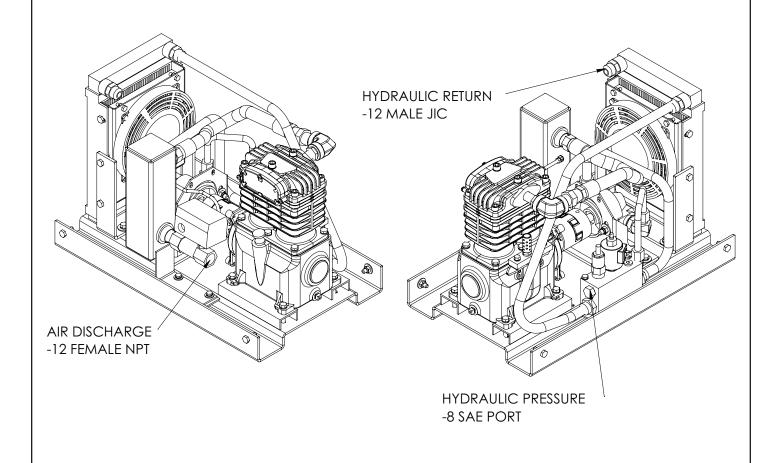
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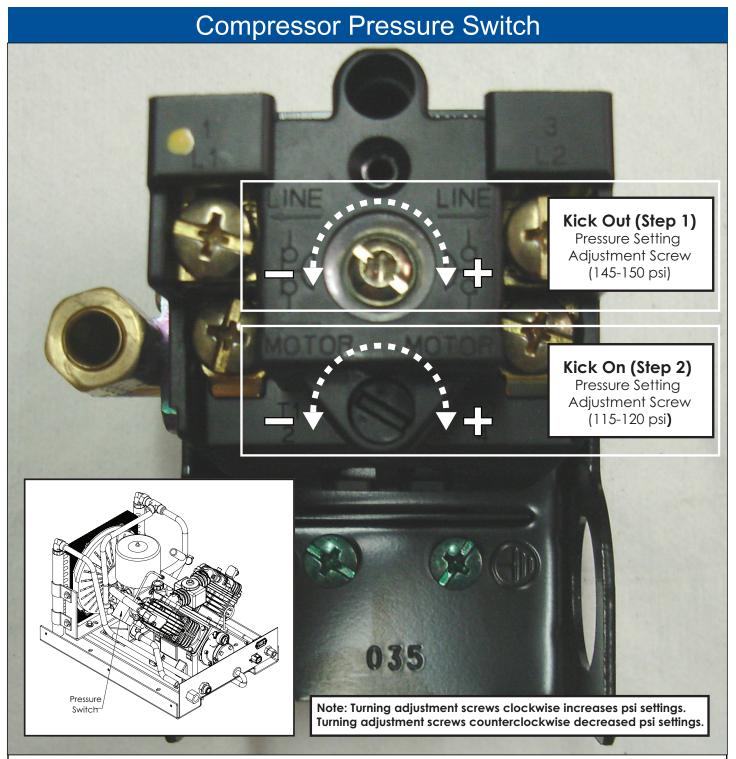
# Hydraulic System

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.





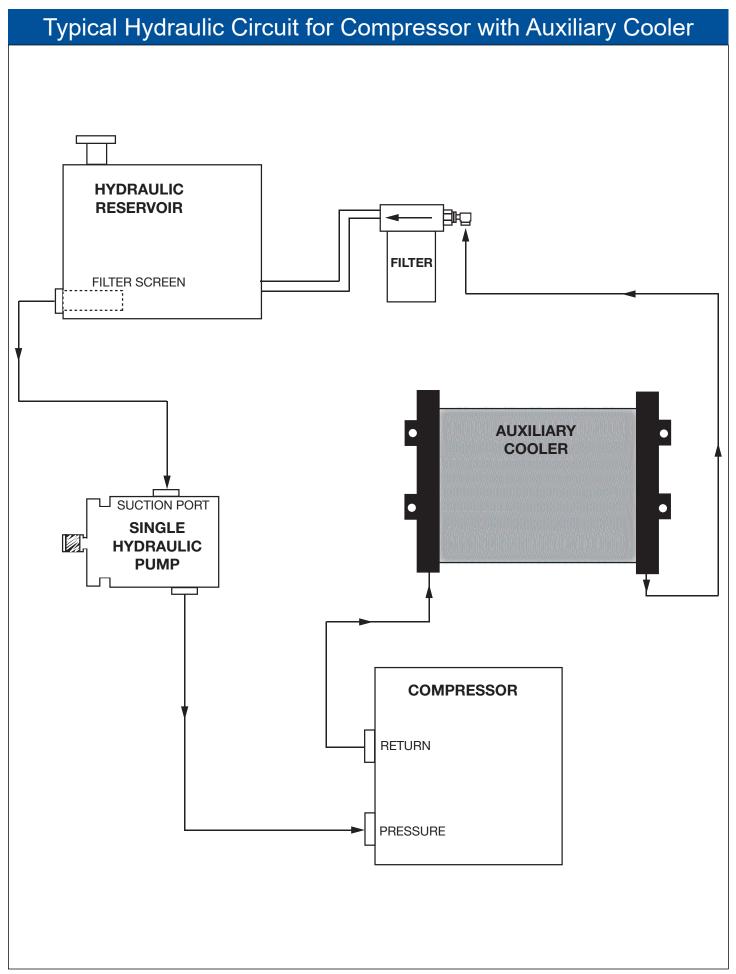
### Pressure Setting Instructions:

- 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 $\bigcirc$ HYDRAULIC RESERVOIR $\bigcirc$ $\bigcirc$ FILTER SCREEN COMPRESSOR RETURN SUCTION LINE FLOW CONTROL OUTRIGGER VALVE BANK VALVE SELECTOR VALVE SINGLE STAGE PUMP STREETSIDE OUTRIGGER CURBSIDE OUTRIGGER

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

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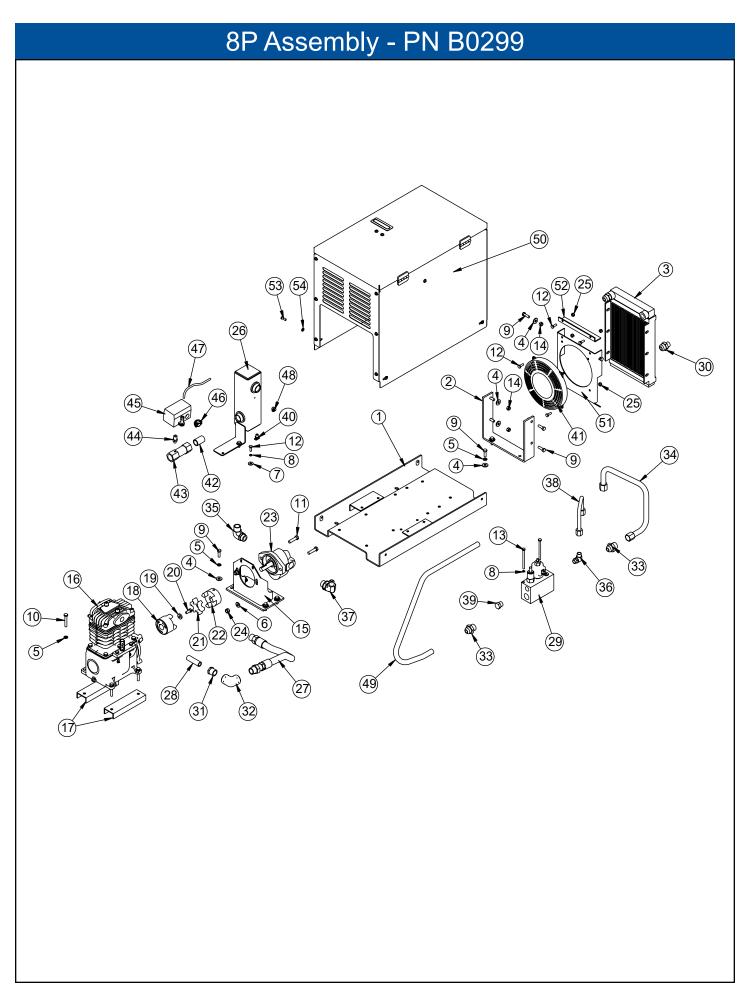


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# **Chapter 3 - Assembly Drawings**

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# 8P Assembly - PN B0299 Parts List

	PN B0299				
ITEM	PART	DESCRIPTION	QTY		
1	109622	BASE WLDMT 8P/13P V2 PC BLACK	1		
2	12809	BRKT COOLER MNT SHD 30/21	1		
3	5472	COOLER OIL SHD30 & SHD21	1		
4	0343	WASHER 0.31 USS FLAT	12		
5	0522	WASHER 0.31 LOCK	10		
6	C6353	WASHER 0.38 SAE FLAT YELLOW GR8	2		
7	0340	WASHER 0.25 USS FLAT	2		
8	0521	WASHER 0.25 LOCK	4		
9	C0922	CAP SCR 0.31-18X1.00 HHGR5	12		
10	0488	CAP SCR 0.31-18X2.00 HHGR5	4		
11	0345	CAP SCR 0.38-16X1.50 HHGR5	2		
12	0479	CAP SCR 0.25-20X0.75 HHGR5	6		
13	0483	CAP SCR 0.25-20X3.50 HHGR5	2		
14	0342	NUT 0.31-18 HHGR5 NYLOC	6		
15	B0800	BRACKET MOTOR MOUNT	1		
16	C1080	CPRSR 143CI4NP	1		
17	5662	SPACER SHD21 CPRSR PC BLACK	2		
18	C3480	COUPG HYD CPRSR TAPER	1		
19	D1465	WASHER 0.31-0.178 THICK	1		
20	C4570	CAP SCR 0.31-24X0.75 HH NF	1		
21	C4779	COUPG SPIDER SUL 99 BLUE URETHANE	1		
22	C4781	COUPLING LOVEJOY 5/8	1		
23	4568	MOTOR HYD 21306 DSE	1		
24	0347	NUT 0.38-16 HHGR5 NYLOC	2		
25	0333	NUT 0.25-20 HHGR5 NYLOC	4		
26	11284	PULSATION TANK SHD30	1		
27	16605	HOSE STEAM 0.75(200PSI)-12MP RIGID-12MP-14.38CL	1		
28	13579	FTG 8-8X2.50 MP-MP NIPPLE STRAIGHT BRASS	1		
29	44645	MANIFOLD ASM SHD60	1		
30	12808	FTG 12-8 MJ-MORB STRAIGHT	2		
31	4582	FTG 0.75-0.50 BUSH RED 44-509	1		
32	C6175	FTG 12-12 FP-FP 90	1		
33	C4498	FTG 12-12 MJ-MORB STRAIGHT	2		
34	C4954	TUBE ASM 0.75 MANIF TO MOTOR SHD60 YZ	1		
35	C6145	FTG 12-12 MJ-MAORB 90	1		
36	C4501	FTG 8-8 MJ-MAORB 90	1		
37	C4671	FTG 8-12 MJ-MAORB 90	1		
38	C2297	TUBE ASM 0.50 MANIF TO MOTOR SHD60 YZ	1		
39	C2322	FTG 8 MORB PLUG	1		
40	C2261	DRAIN COCK	1		
41	4586	FAN 7.50" PULL 12 VOLT SPL 301003	1		
42	D1264	FTG 0.75-CLOSE RED BRASS NIPPLE	1		

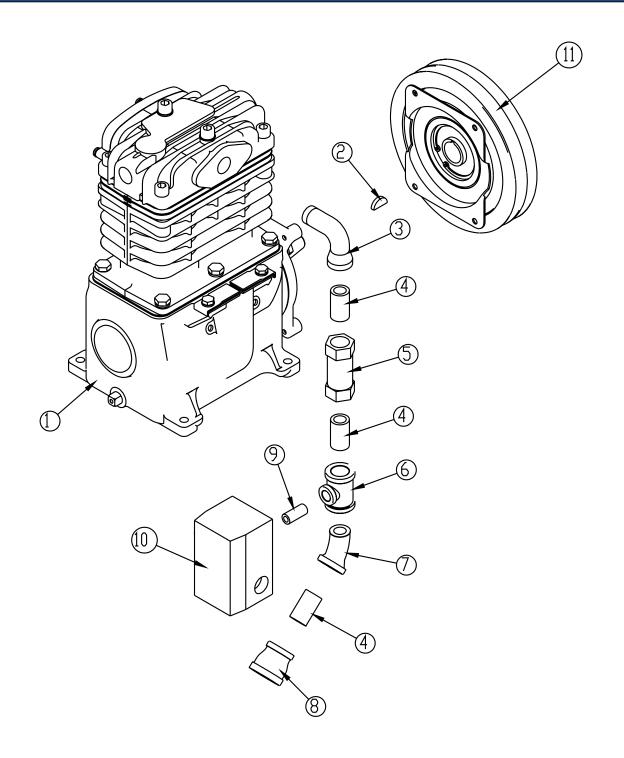
# 8P Assembly - PN B0299 Parts List - Cont.

	PN B0299					
ITEM	PART	DESCRIPTION	QTY			
43	5480	VALVE CHECK 0.75 STANDARD	1			
44	C6101	FTG 4-2 MP-MP HEX NIPPLE	1			
45	C0863	SWITCH PRES COMPRESSOR	1			
46	C5616	CLAMP ROMEX 0.50	1			
47	16641	TUBE COPPER 0.25X9.00	1			
48	D0240	FTG 4-2 CPRSN-MP 90	1			
49	5590	TUBE ASM MANIF TO CLR 0.75 SHD30/21 ZC	1			
50	109457	SHROUD ASM CPRSR 8P/13P	1			
51	29589	PANEL SHROUD FAN SHD21	1			
52	29590	CAP SHROUD FAN SHD21	1			
53	C6021	CAP SCR 0.25-20X0.75 BTNHD SS	4			
54	19592	WASHER 0.25 FLAT NYLON	4			
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	ITEMS NOT SHOWN IN DRAWING				
PART	DESCRIPTION	QTY			
130318	DECAL 8P LS STELLAR	1			
130319	DECAL 8P RS STELLAR	1			
22418	DECAL SHEET CPRSR	1			
C6202	CABLE 14-2 FLAT SAE (RM) BLK & RED PVC	2			
D1416	FTG 12 STANDARD NUT	1			
C4131	LOOM 0.38 ASPHALT COATED FR (RM)	1			
12825	OIL HYD BULK	1			
9586	OIL SYNTHETIC CPRSR BULK	1			
C0860	TERML FORK #8 16-14GA	8			
C1573	TERML ML SPADE	2			
C6004	TERML QC F 0.25 16-14GA	4			
C0072	TERML RING #10 16-14 GA	2			
C4691	WIRE 14GA (RM) BLACK SAE J-1128	1.5			
D1256	WIRE 14GA (RM) BLUE SAE J-1128	1			



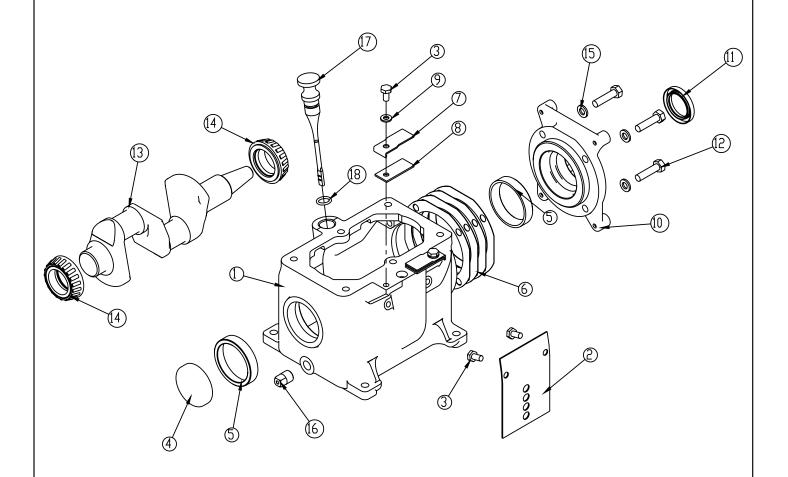
# SUH-21 Compressor Assembly



### **COMPRESSOR ASSEMBLY**

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	C1082	CPRSR 143CWI4NP	1	7	6482	ST EL 0.50 45 DEG BRASS	1
2	C4703	KEY WOODRUFF 5/32 X 3/4 #8	1	8	20464	REDU BUSHING 0.75X0.50 BRASS	1
3	5417	FTG .50X90 DEG ST EL BRASS 44163	1	9	8158	NIPPLE 0.25 X CLOSE BRASS	1
4	4583	NIPPLE 0.50XCLOSE BRASS 40-060	3	10	C0863	SWITCH PRES COMPRESSOR	1
5	C5514	VALVE CHECK .50	1	11		SEE PAGE 15 - CLUTCH OPTIONS	
6	20465	TEE 0.50X0.50X0.25 BRASS	1				

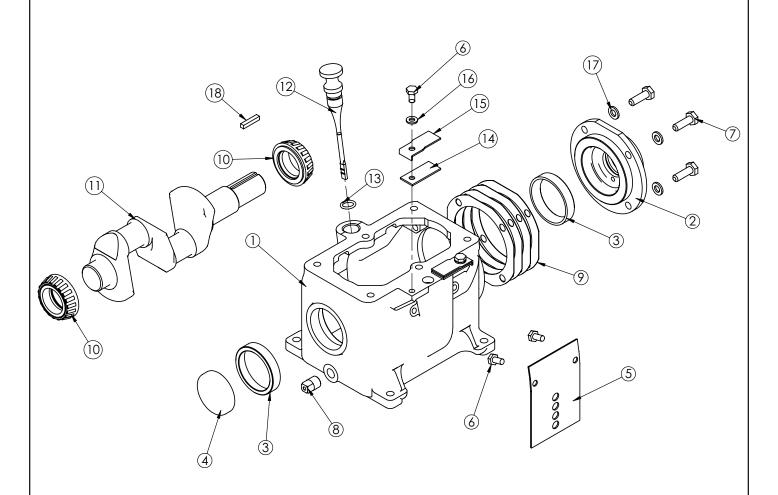
# Crankcase Group (Tapered Shaft)



### **CRANKCASE GROUP**

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	C5425	CRANKCASE 143	1	10	6178	BEARING CARRIER 143 T-SHAFT	1
2	6177	BAFFLE PLATE 143	1	11	C6268	BEARING SEAL V480	1
3	0478	CAP SCR 0.25-20X0.50 HHGR5	4	12	0485	CAP SCR 0.31-18X1.25 HHGR5	4
4	C6266	BEARING HOLE PLUG	1	13	C0497	CRANKSHAFT 143 TAPER	1
5	C1163	BEARING CUP (LM67010)	2	14	C0856	BEARING CONE LM67048	2
6	6076	BEARING PLT GASKET .015" 143	4	15	0522	WASHER 0.31 LOCK	4
7	C6265	BREATHER VALVE BUMPER	2	16	5790	PLUG OIL DRAIN-200	1
8	C6264	BREATHER VALVE 200/SHD30	2	17	C1628	DIPSTICK 143	1
9	0521	WASHER 0.25 LOCK	2	18	C0041	O'RING-112	1

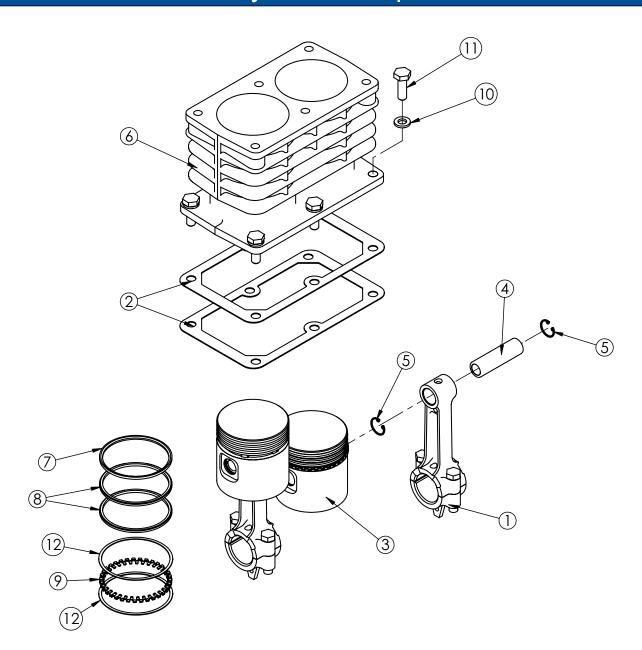
# Crankcase Group (Straight Shaft)



### **CRANKCASE GROUP**

ITEM	PART	DESCRIPTION	QTY.
1	C5425	CRANKCASE 143	1
2	22630	BEARING CARRIER 143 S-SHAFT	1
3	C1163	BEARING CUP (LM67010)	2
4	C6266	BEARING HOLE PLUG	1
5	6177	BAFFLE PLATE 143	1
6	0478	CAP SCR 0.25-20X0.50 HHGR5	4
7	C0922	CAP SCR 0.31-18X1.00 HHGR5	4
8	5790	PLUG 0.25 NPT SQ HD	1
9	6076	BEARING PLT GASKET .015" 143	4
10	C0856	BEARING CONE LM67048	2
11	22832	CRANKSHAFT 143 S	1
12	C1628	DIPSTICK 143	1
13	C0041	O'RING-112	1
14	C6264	BREATHER VALVE 200/SHD30	2
15	C6265	BREATHER VALVE BUMPER	2
16	0521	WASHER 0.25 LOCK	2
17	0522	WASHER 0.31 LOCK	4
18	23048	KEY FLYWHEEL 3/16	1

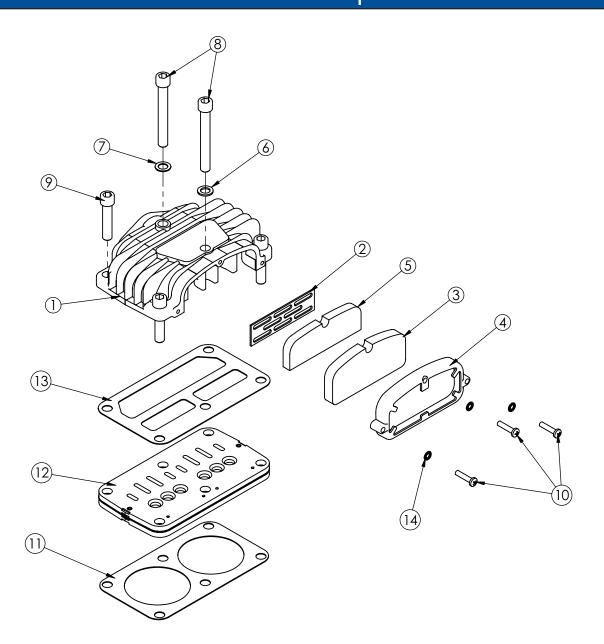
# Cylinder Group



### **CYLINDER GROUP**

ITEM	PART	DESCRIPTION	QTY.
1	C6299	CONNECTING ROD 143	2
2	C0047	CYLINDER GASKET	2
3	C2018	PISTON 2.63 OD	2
4	C1569	PISTON PIN	2
5	C6273	SNAP RING PISTON PIN N5000-62	4
6	C0045	CYLINDER V360	1
7	C0065	RING CPRSN	2
8	6037	RING CPRSN V360 SQ GROOVE	4
9	6036	RING OIL V360 FLEX DIVIDER	2
10	0522	WASHER 0.31 LOCK	6
11	C0922	CAP SCR 0.31-18X1.00 HHGR5	6
12	36367	RING OIL V360 RING RAIL	4

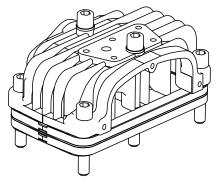
# Head Group



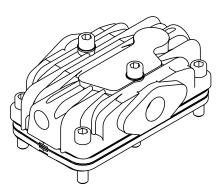
### **HEAD GROUP**

ITEM	PART	DESCRIPTION	QTY.
1	C0046	HEAD A/C 143 O/S	1
2	C0297	FILTER SCREEN	1
3	C0296	FILTER FOAM	1
4	C0294	FILTER RETAINER	1
5	C0715	FILTER FOAM	1
6	C0040	WASHER HD BOLT STL	1
7	5828	WASHER LONG HD BOLT (BRASS)	1
8	C1582	CAP SCR 0.38-16X3.00 SH HEAD BOLT	2
9	C1586	CAP SCR 0.38-16X1.75 SH HEAD BOLT	4
10	C0300	SCREW #10-32X0.88 NF	3
11	C0043	GASKET VALVE PLATE 143/230/360	1
12	24103	VALVE PLATE SUB ASM O/S	1
13	C0310	GASKET HEAD 143/230/360/480	1
14	23875	WASHER #10 STAR CPRSR	3

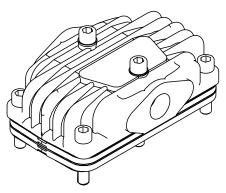
# **Head Options**



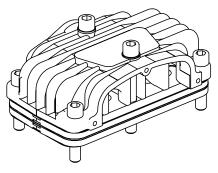
#22939
Cast Iron Air Cooled
Imbedded Filter & 1/2"
Threaded NPT Discharge
with head unloader.



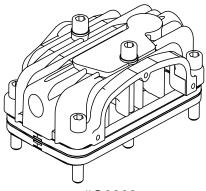
#23054
Cast Iron Water Cooled
3/4" Threaded Inlet & 1/2"
Threaded NPT Discharge



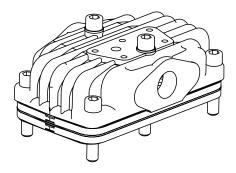
#22940
Cast Iron Air Cooled
3/4" Threaded Inlet & 1/2"
Threaded NPT Discharge



#C0046
Cast Iron Air Cooled
Imbedded Filter & 1/2"
Threaded NPT Discharge

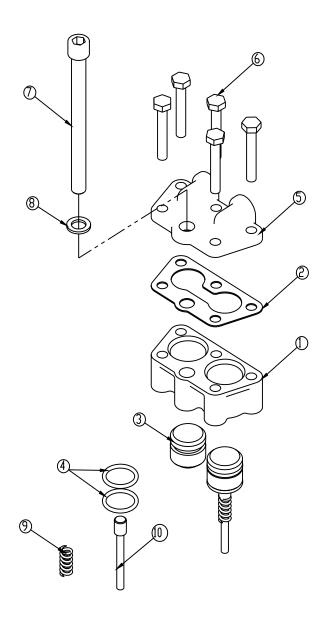


#C6269
Cast Iron Water Cooled imbedded Filter & 1/2"
Threaded NPT Discharge



#22941
Cast Iron Air Cooled
3/4" Threaded Inlet & 1/2"
Threaded NPT Discharge
with head unloader ports

# Optional Head Unloader - PN 23200

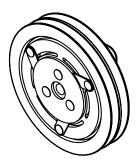


PN 23200

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	22591	BODY HEAD UNLOADER CPRSR	1	6	0220	CAP SCR 0.25-20 X 1.50 HHGR5	5
2	22599	GASKET UNLOADER	1	7	22596	CAP SCR 0.38-16X4.00 SH HEAD BOLT	1
3	22593	PISTON HEAD UNLOADER CPRSR	2	8	C0040	WASHER HD BOLT STL	1
4	22598	O'RING 2-116 HEAD UNLOADER CPRSR	4	9	22597	SPRING PLUNGER PIN UNLOADER CPRSR	2
5	22592	COVER HEAD UNLOADER CPRSR	1	10	22594	PIN PLUNGER HEAD UNLOADER CPRSR	2

# Flywheel Options 23037 10" - B-GROOVE 26036 **12" - B-GROOVE**

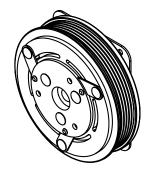
# **Clutch Options**



C4705 7" DUAL V



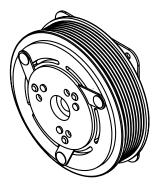
C4704 6" DUAL V



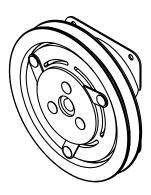
C4723 6" - 8 GROOVE SERPENTINE



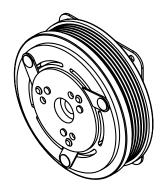
8198 6" - 8 GROOVE 24V SERPENTINE



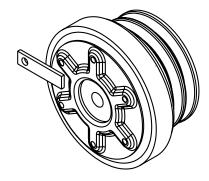
5793 6" - 8 GROOVE 12V SERPENTINE



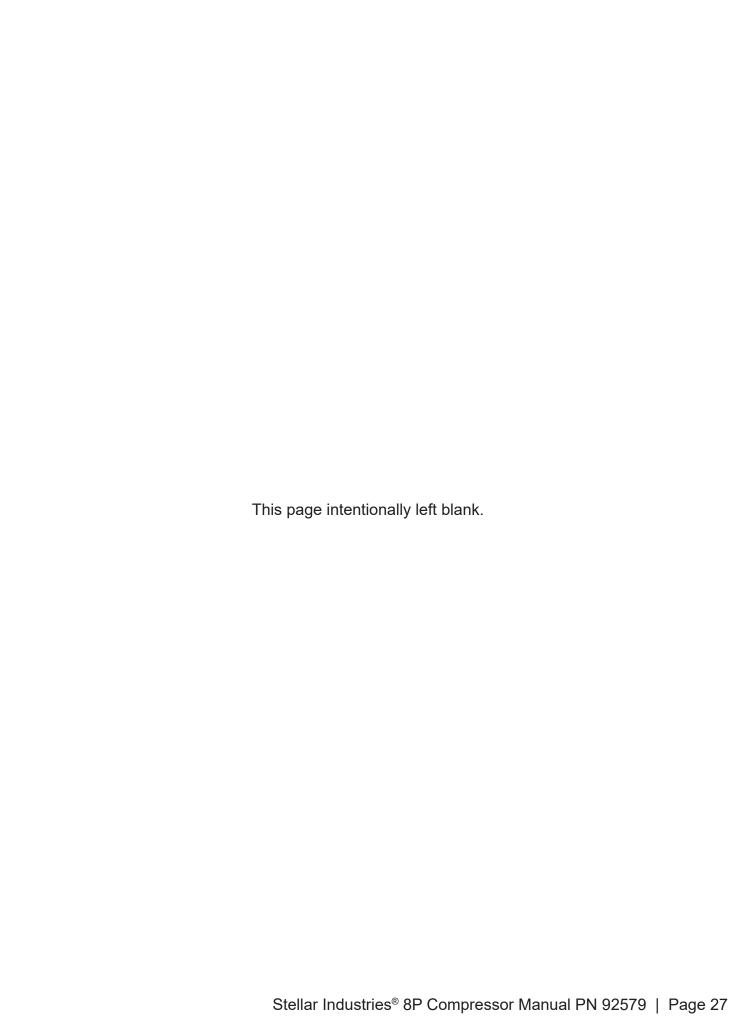
C4775 7" SINGLE V



5774 6" - 6 GROOVE 12V SERPENTINE



C4762 STRAIGHT BORE





Subject to Change without Notification.
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