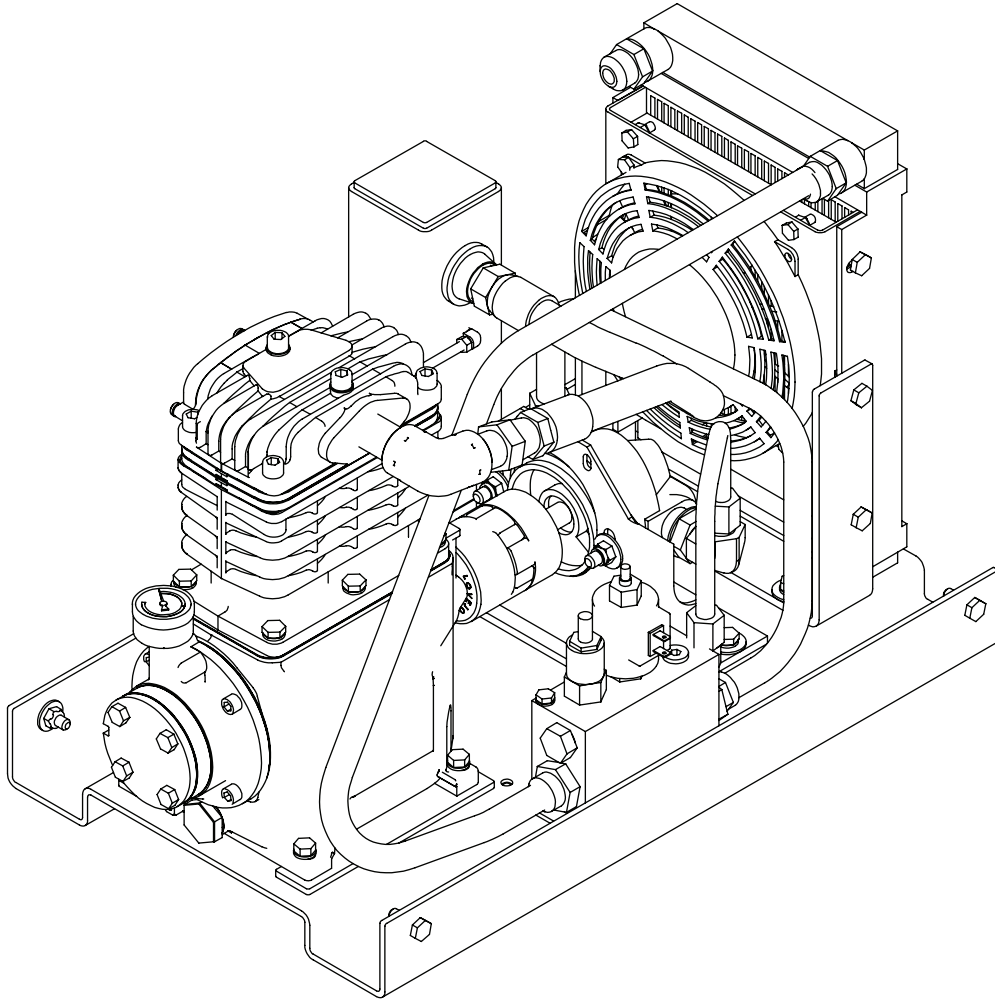


Model 13P

Single-Stage Piston Compressor Manual

Specifications • Installation • Assembly




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Model 13P Manual Revisions

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SERIAL NO.

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DATE

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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:

NOTICE

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

⚠ WARNING

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.

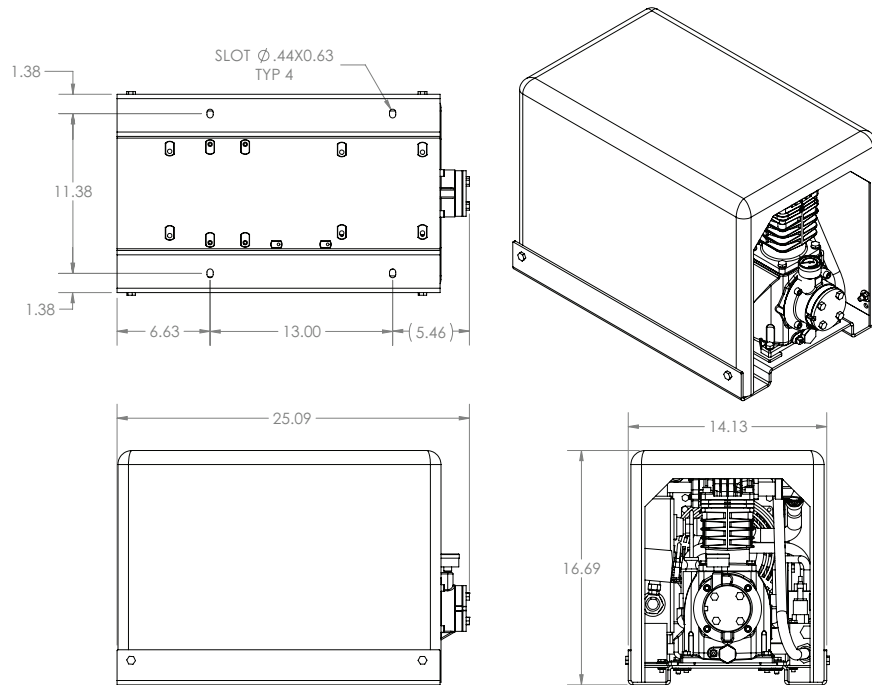
Information contained within this manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. Please be aware that some sections of this manual contain information pertaining to Stellar Industries® manufactured air compressors in general and may or may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



SPECIFICATIONS	13P
Hydraulic System	7 GPM @ 1800 PSI
Max Compressor Speed	1300 RPM
Hydraulic Operating Pressure	1800 PSI
Hydraulic Relief Pressure	2500 PSI
Max Air Pressure	150 PSI
Air Delivery (At Max Speed)	13 CFM @ 100 PSI
Max Working Pressure	150 PSI
Weight (Hydraulic Driven Asm)	135 lbs.
Weight (Air Pump Only)	60 lbs.
Dimensions (Length)	25.09"
Dimensions (Width)	14.13"
Dimensions (Height)	16.69"
Electrical	12V DC
Crankcase Oil Capacity	24 Ounces
Cooler Fan	350 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

Head Assembly:

Torque Value: 34 ft-lbs

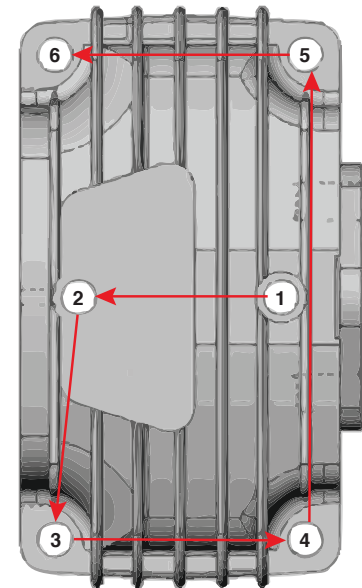
Procedure: Assemble head on the cylinder with head bolts started only, not tight. Working in the pattern shown, torque three times, increasing the torque each time as follows:

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 criss-cross pattern torque each bolt to 20 ft-lbs, checking each bolt twice. After five hours of use, re-torque 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:

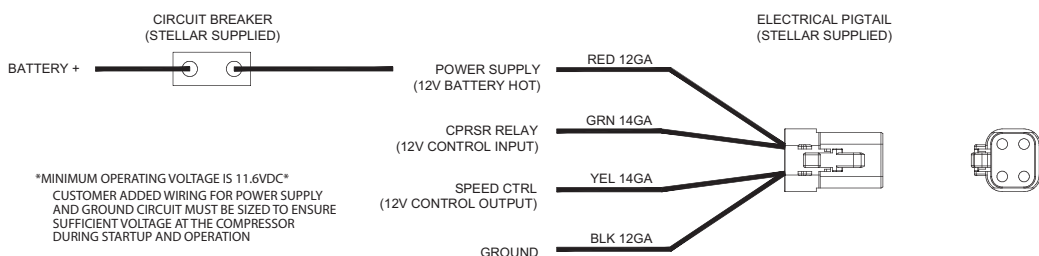
Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model, and year of vehicle. As some trucks may require modification of the transmission cross member and the exhaust system, the manufacturer's instructions should be followed to ensure proper installation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

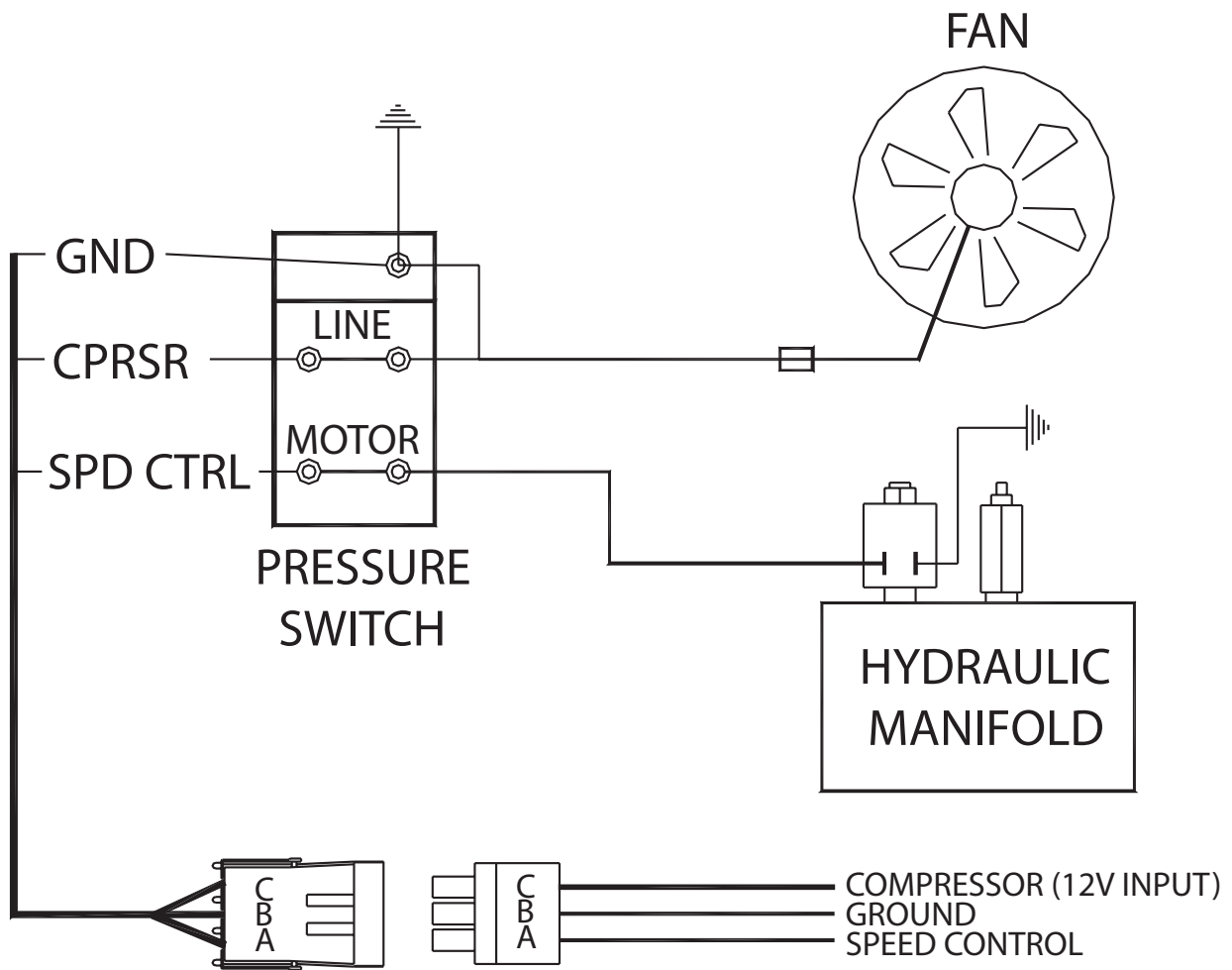
An optional electric or electronic speed control must be used to maintain proper operating speed of the air compressor. The engine speed control will automatically increase from idle to preset speed when engaged and decrease when disengaged.



13P 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.

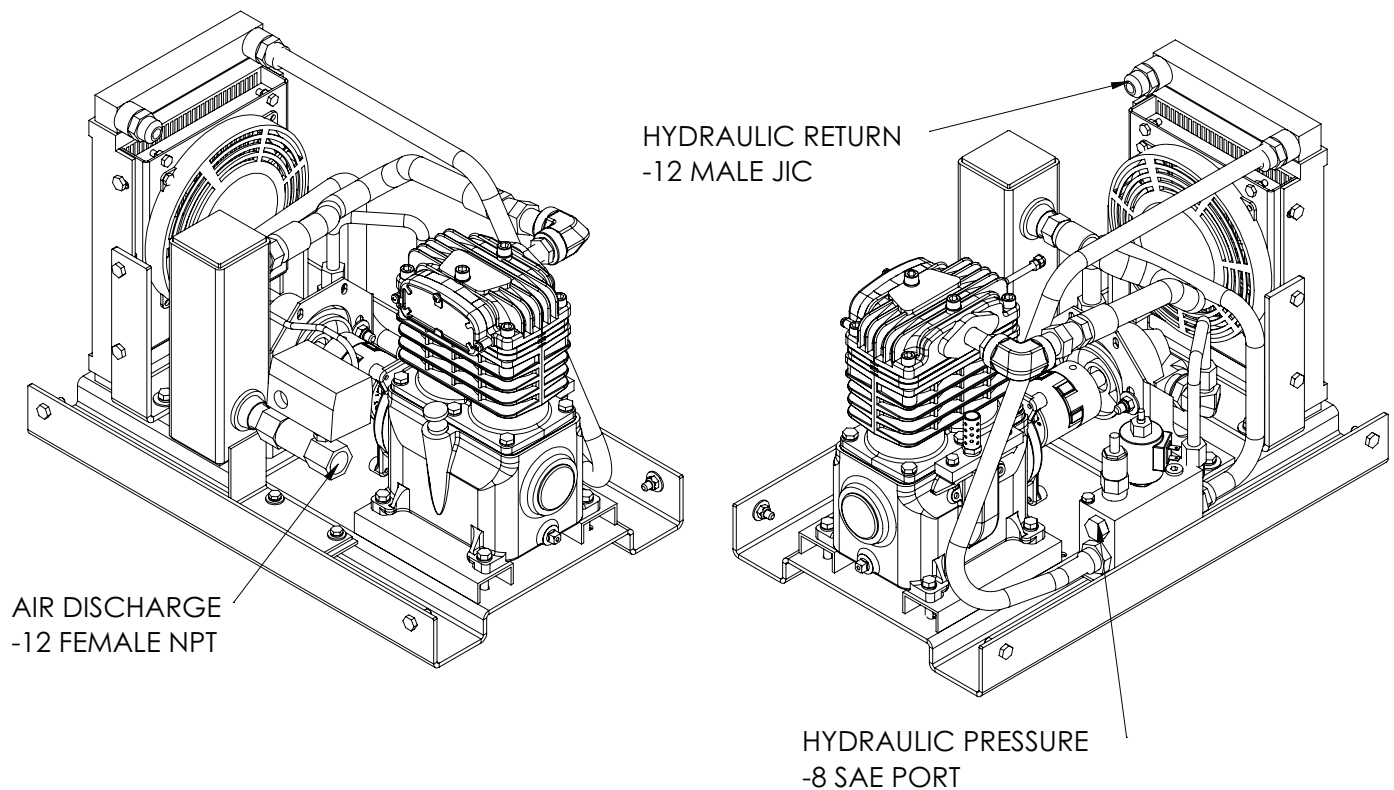


Hydraulic System

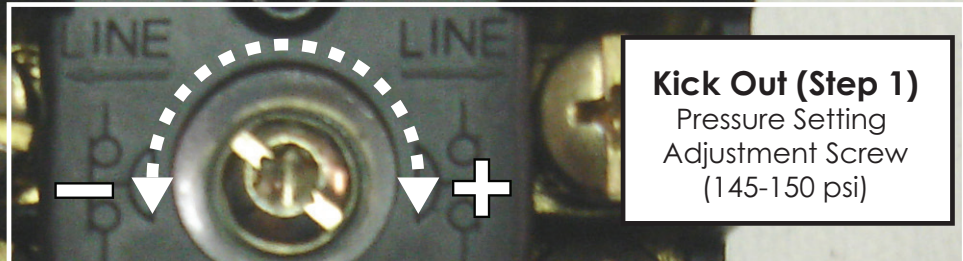
The hydraulic system consists of the oil reservoir, pump, manifold, motor, filters, and hoses. A $\frac{1}{2}$ " 3000psi pressure line should be connected to the pressure line fitting on the bulkhead. This line is plumbed through an internal manifold block, and then to the motor. After the motor there is an internal cooler which the oil passes through before going to the return line bulkhead fitting. A $\frac{3}{4}$ " 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

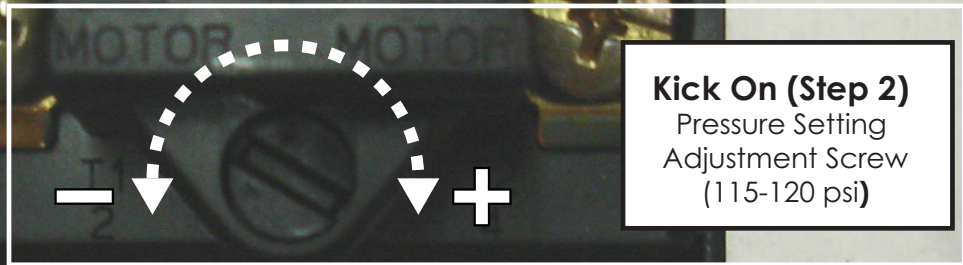
The airline is routed using a $\frac{3}{4}$ " 200 psi air/steam hose. This delivery line should be free from all obstructions. Note: There should be no check valve installed between the compressor and the air tank (One is already included in the compressor package). Stellar Industries recommends the installation of a ten-gallon air tank (minimum) to maintain proper operation of the air compressor.



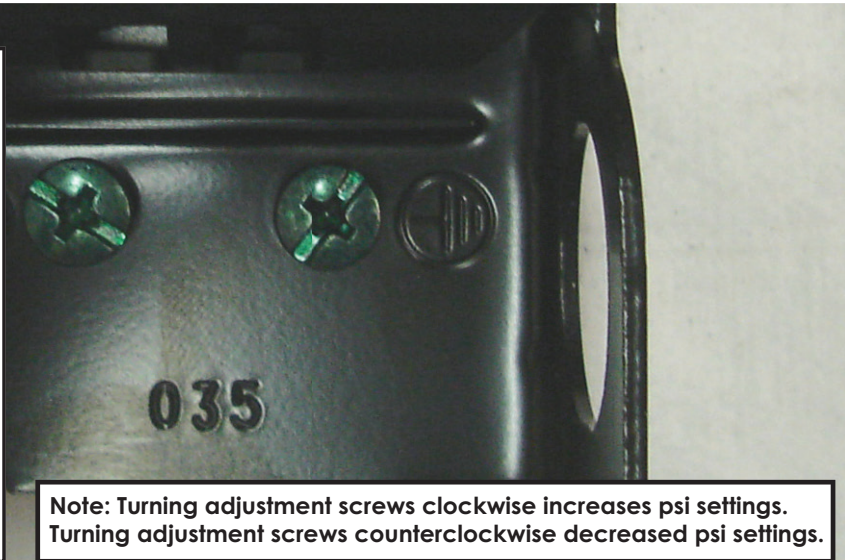
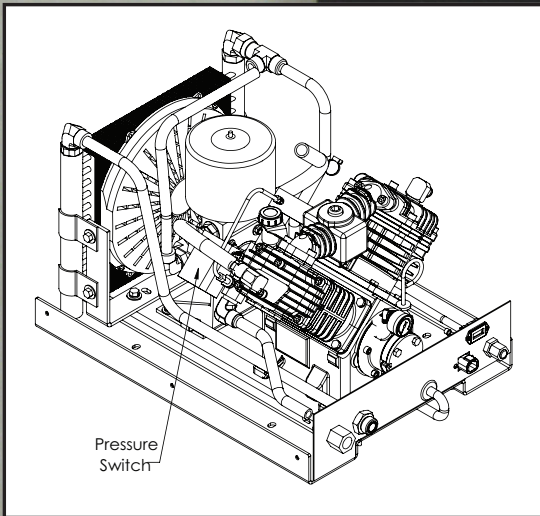
Compressor Pressure Switch



Kick Out (Step 1)
Pressure Setting
Adjustment Screw
(145-150 psi)



Kick On (Step 2)
Pressure Setting
Adjustment Screw
(115-120 psi)

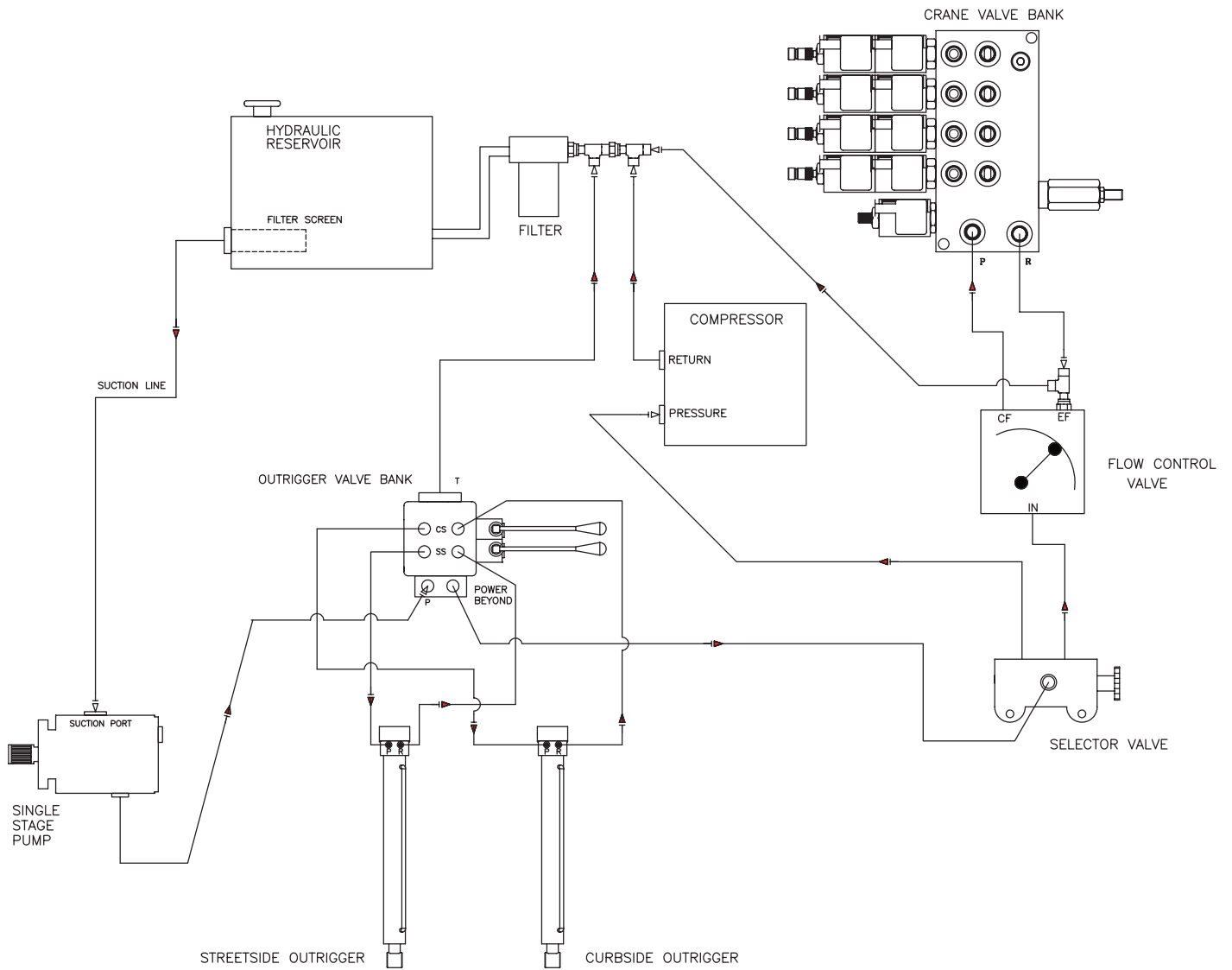


Note: Turning adjustment screws clockwise increases psi settings.
Turning adjustment screws counterclockwise decreased psi settings.

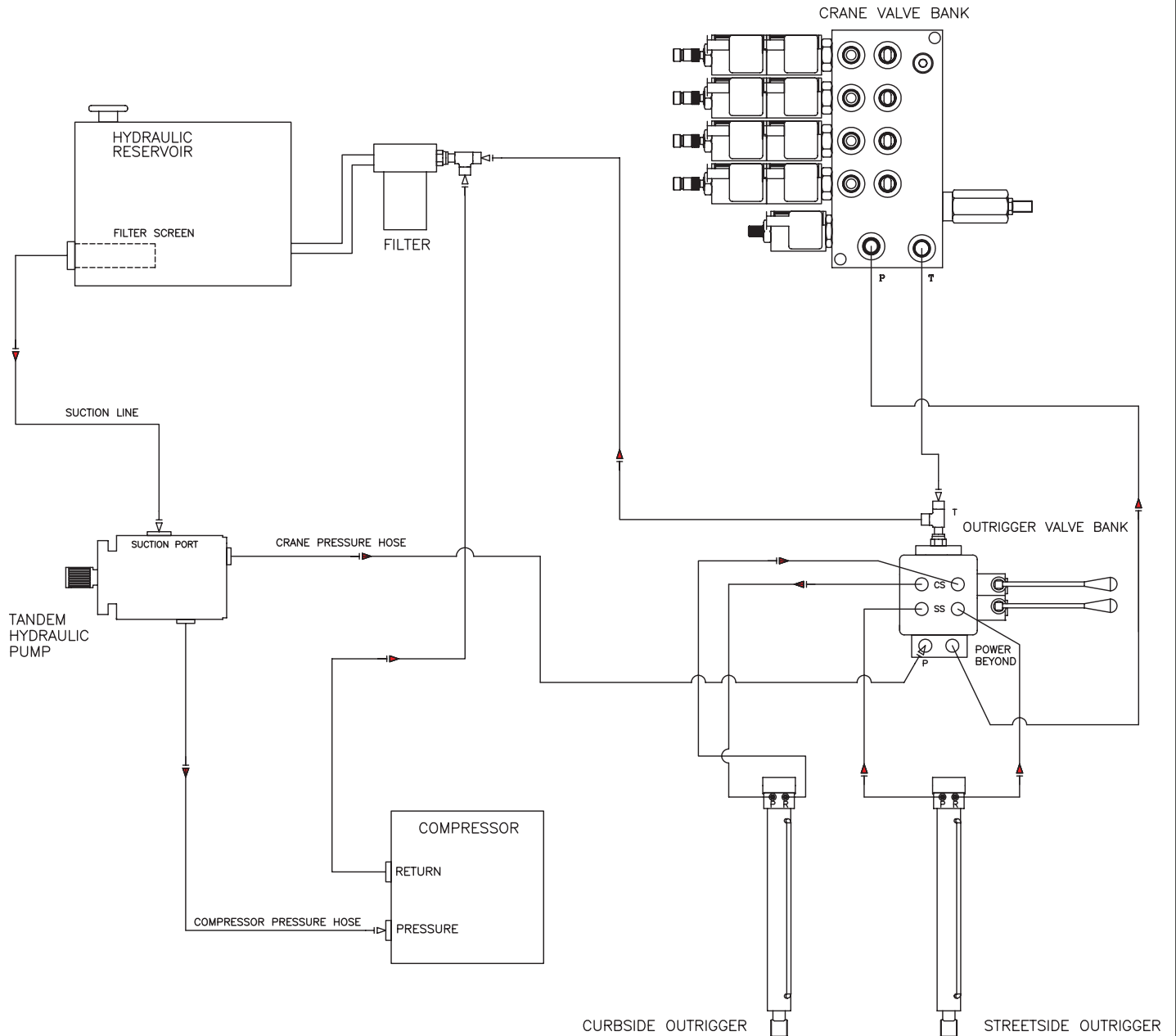
Pressure Setting Instructions:

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.

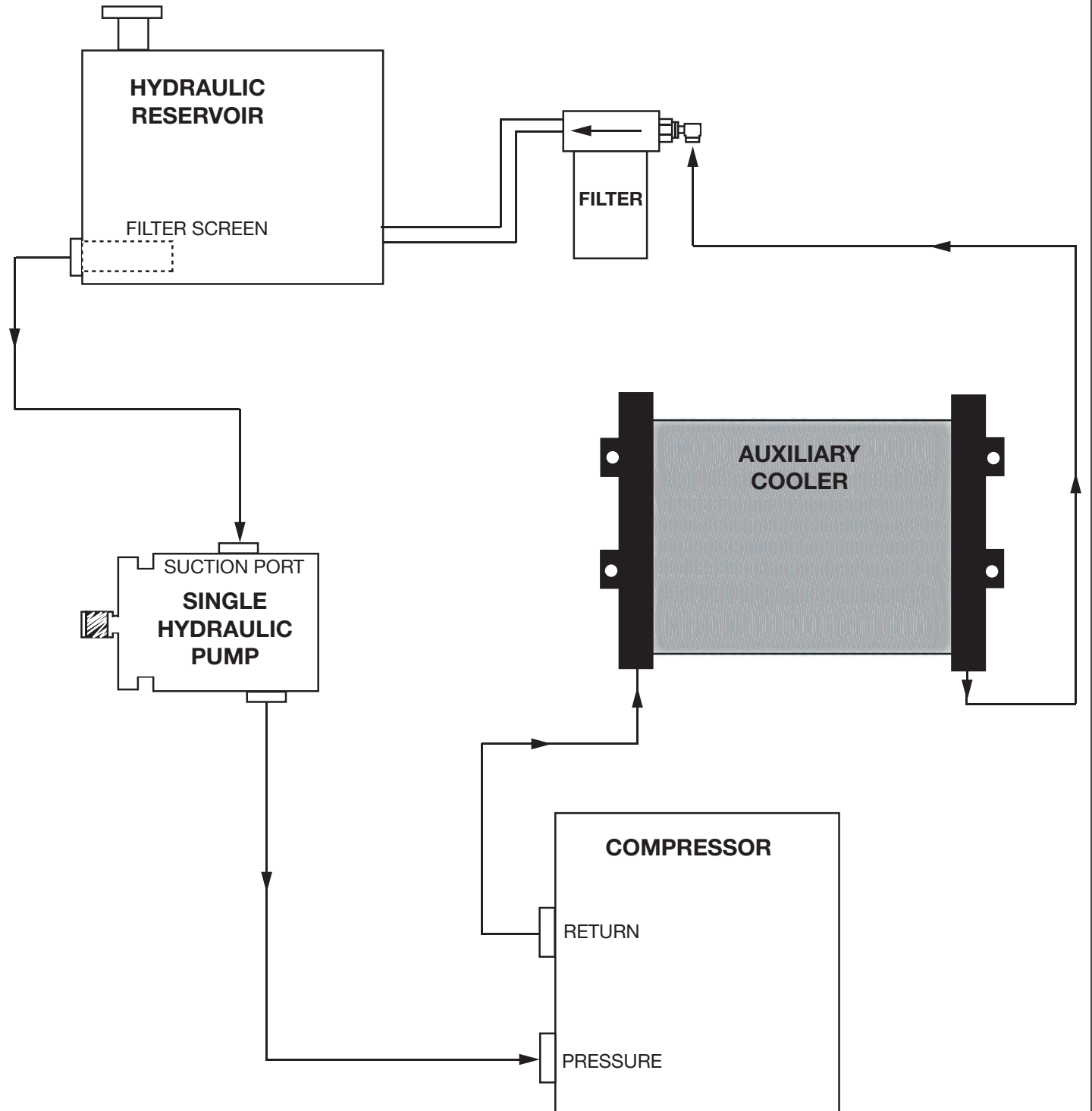
Typical Hydraulic Circuit for Single-Section Pump



Typical Hydraulic Circuit for Tandem (Two Part) Pump

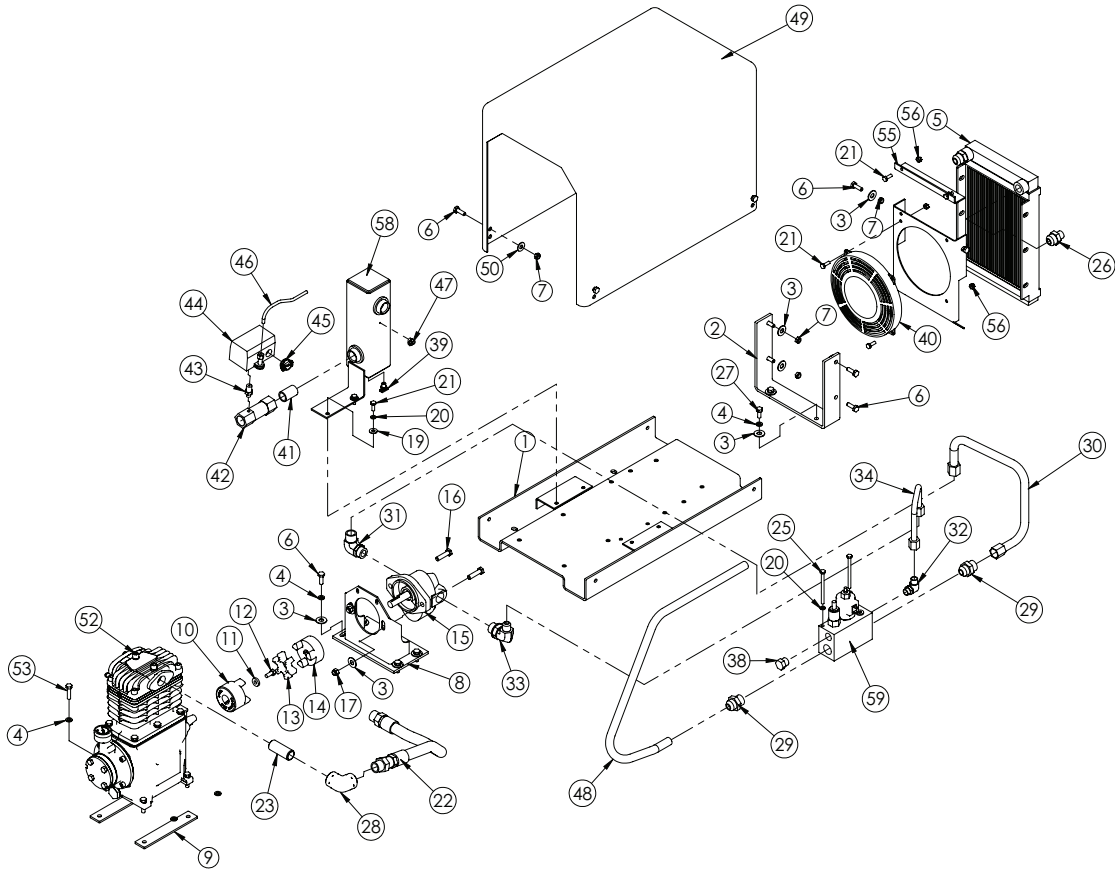


Typical Hydraulic Circuit for Compressor with Auxiliary Cooler



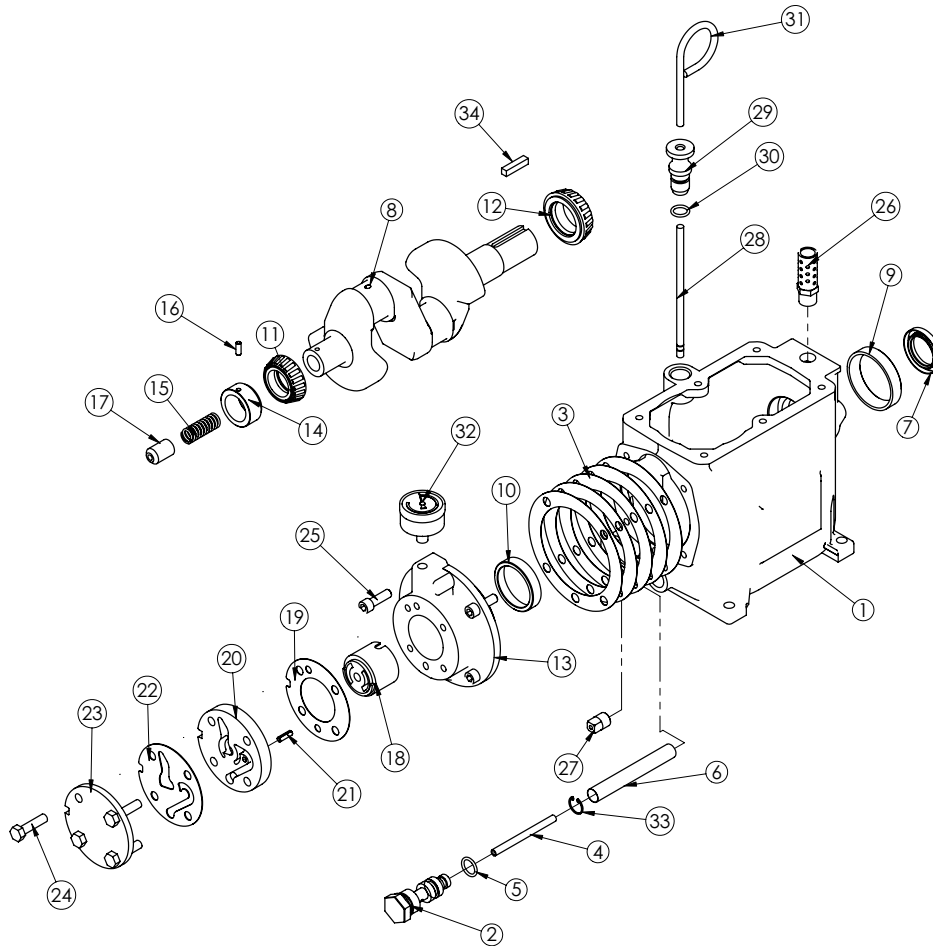
Chapter 3 - Assembly Drawings

13P Assembly - PN D1829



ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	4156	BASE WLDMT SHD30 L BASE	1	21	0479	CAP SCR 0.25-20X0.75 HHGR5	6	44	C0863	SWITCH PRES COMPRESSOR	1
2	12809	BRKT COOLER MNT SHD 30/21	1	22	16605	HOSE STEAM 0.75(200PSI)-12MP RIGID-12M	1	45	C5616	CLAMP ROMEX 0.50	1
3	C6353	WASHER 0.38 FLAT GR8	14	23	5425	FTG 12-12X2.50 MP-MP NIPPLE STRAIGHT B	1	46	16641	TUBE COPPER 0.25X9.00	1
4	0522	WASHER 0.31 LOCK	10	25	0483	CAP SCR 0.25-20 X 3.50 HHGR5	2	47	D0240	FTG 4-2 CPRSN-MP 90	1
5	5472	COOLER OIL SHD30 & SHD21	1	26	12808	FTG 12-8 MJ-MORB STRAIGHT	2	48	5590	TUBE ASM MANIF TO CLR 0.75 SHD30/21 ZC	1
6	C0922	CAP SCR 0.31-18X1.00 HHGR5	14	27	0420	CAP SCR 0.31-18X0.75 HHGR5	2	49	5139	HOOD F/G SHD30	1
7	0342	NUT 0.31-18 HH NYLOC	10	28	C6175	FTG 12-12 FP-FP 90	1	50	0343	WASHER 0.31 USS FLAT ZINC	4
8	B0800	BRACKET MOTOR MOUNT	1	29	C4498	FTG 12-12 MJ-MORB STRAIGHT	2	52	3860	CPRSR 200CI6NP	1
9	5661	SPACER SHD30 CPRSR	2	30	C4954	TUBE ASM 0.50 MANIF TO MOTOR SHD60 YZ	1	53	0485	CAP SCR 0.31-18X1.25 HHGR5	4
10	C3480	COUPG HYD CPRSR TAPER	1	31	C6145	FTG 12-12 MJ-MAORB 90	1	54	29589	PANEL SHROUD FAN SHD21	1
11	D1465	WASHER 0.31-0.178 THICK	1	32	C4501	FTG 8-8 MJ-MAORB 90	1	55	29590	CAP SHROUD FAN SHD21	1
12	C4570	CAP SCR 0.31-24X0.75 HH NF	1	33	C4671	FTG 8-12 MJ-MAORB 90	1	56	0333	NUT 0.25-20 HHGR5 NYLOC	4
13	C4779	COUPG SPIDER SUL 99 BLUE URETHANE	1	34	C2297	TUBE ASM 0.50 MANIF TO MOTOR SHD60 YZ	1	58	11284	PULSATION TANK SHD30	1
14	C4781	COUPLING LOVEJOY 5/8	1	38	C2322	FTG 8 MORB PLUG	1	59	44645	MANIFOLD ASM SHD60	1
15	4568	MOTOR HYD 21306 DSE	1	39	C2261	DRAIN COCK	1				
16	0345	CAP SCR 0.38-16X1.50 HHGR5	2	40	4586	FAN 7.50" PULL 12 VOLT SPL 301003	1				
17	0347	NUT 0.38-16 HH NYLOC	2	41	D1264	FTG 0.75-CLOSE RED BRASS NIPPLE	1				
19	0340	WASHER 0.25 FLAT	2	42	5480	VALVE CHECK 0.75 STANDARD	1				
20	0521	WASHER 0.25 LOCK	4	43	C6101	FTG 4-2 MP-MP HEX NIPPLE	1				

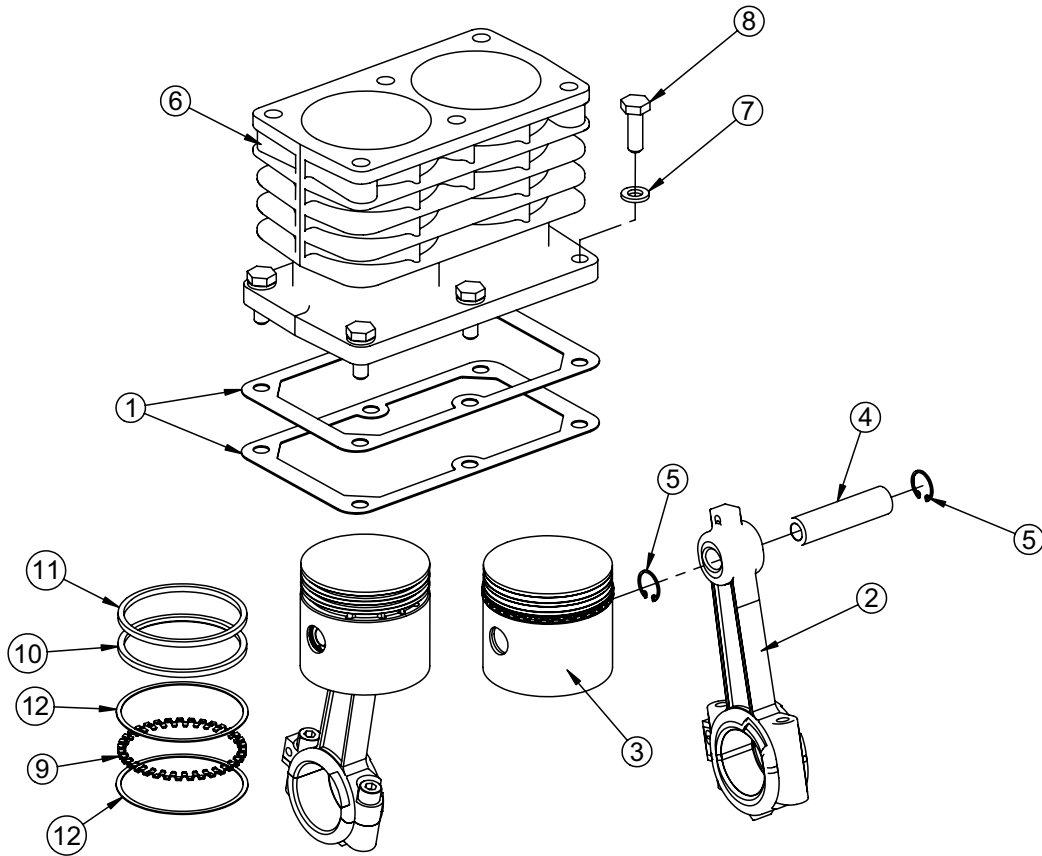
Crankcase Group (Straight Shaft)



CRANKCASE GROUP

ITEM	PART	DESCRIPTION	QTY.
1	5791	CRANKCASE 200 O/S	1
2	5788	PLUG OIL INTAKE FILTER-200	1
3	5811	GASKET BEARING CARRIER-200 (.015)	5
4	5785	TUBE OIL INTAKE .25 X 3.00	1
5	5787	O'RING OIL INTAKE FILTER-200	1
6	5784	SCREEN OIL INTAKE FILTER-200	1
7	C6268	BEARING SEAL V480	1
8	22836	CRANKSHAFT V200 S	1
9	C1163	BEARING CUP (LM67010)	1
10	C1164	BEARING CUP (L44610)	1
11	C0855	BEARING CONE	1
12	C0856	BEARING CONE LM67048	1
13	6835	BEARING CARRIER 200	1
14	5820	OIL PUMP DRIVE SLEEVE V480/V360/200	1
15	C0060	SPRING OIL PUMP	1
16	5817	ROLL PIN 0.19X.50	1
17	C0059	OIL PUMP TRANSFER BUSHING	1
18	C0050	OIL PUMP	1
19	C6275	PORT PLATE GASKET	1
20	C0052	PORT PLATE MACHINED	1
21	22209	ROLL PIN 0.19X.63	1
22	C0054	PORT PLATE COVER GASKET (SMALL)	1
23	22626	PORT PLATE COVER	1
24	0485	CAP SCR 0.31-18X1.25 HHGR5	4
25	6034	SCREW 0.31-18X1.00 SHC	4
26	20683	BREATHER CPRSR .38NPT B38 200	1
27	5790	PLUG 0.25 NPT SQ HD	1
28	23049	DIPSTICK ROD (200)	1
29	23050	DIPSTICK BODY (200)	1
30	C0041	O'RING-112	1
31	22686	HANDLE DIPSTICK OIL CHECK V480	1
32	5819	GAUGE OIL PSI 1.5	1
33	C6273	SNAP RING PISTON PIN N5000-62	1
34	23047	KEY FLYWHEEL 1/4	1

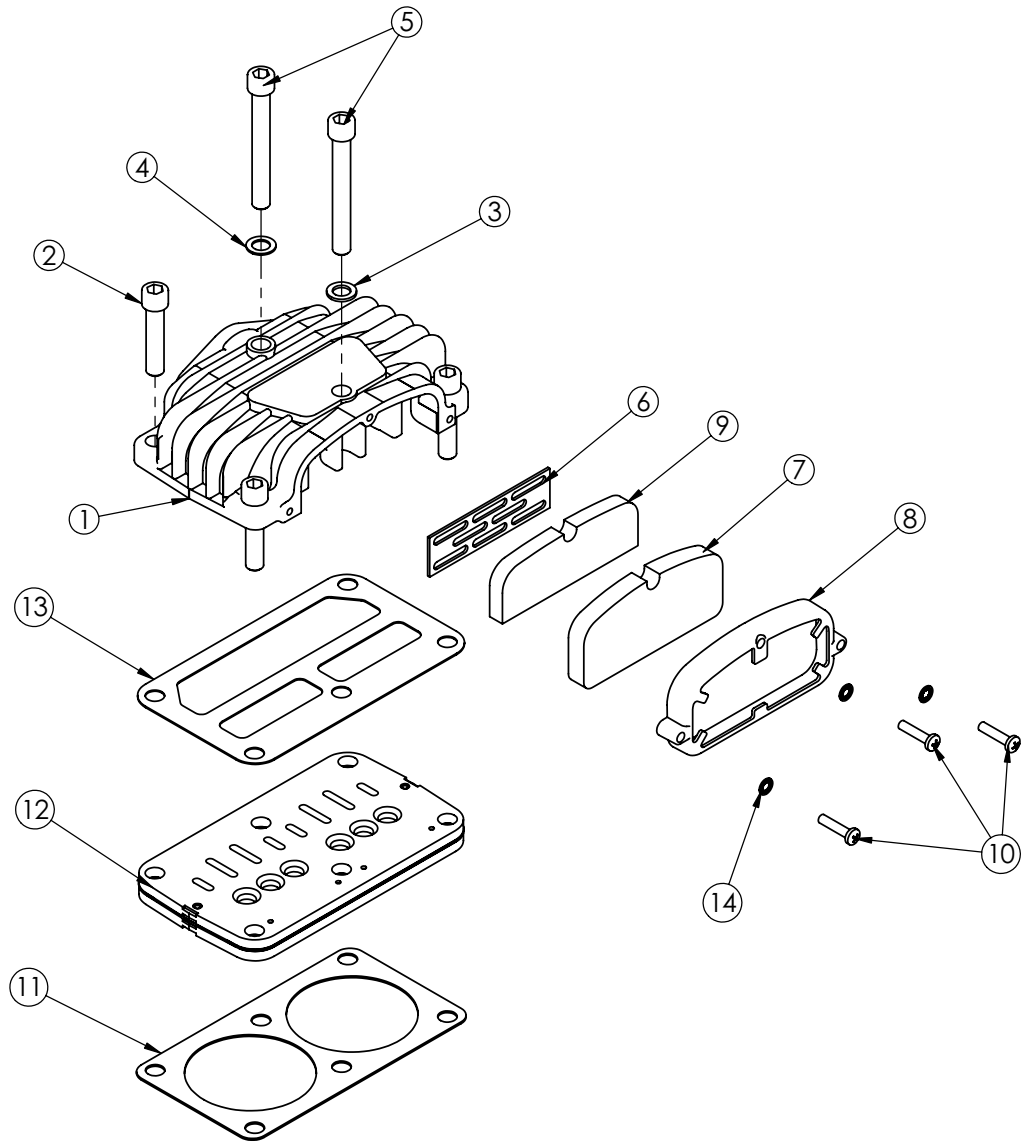
Cylinder Group



CYLINDER GROUP

ITEM	PART	DESCRIPTION	QTY.
1	C0047	CYLINDER GASKET	2
2	C6364	CONNECTING ROD 200/V480 O/S	2
3	5767	PISTON 200/V480	2
4	C6367	PISTON PIN 200/V480	2
5	C6273	SNAP RING PISTON PIN N5000-62	4
6	C6360	CYLINDER V480 FINISHED O/S	1
7	0522	WASHER 0.31 LOCK	6
8	C0922	CAP SCR 0.31-18X1.00 HHGR5	6
9	5827	RING OIL V480/200 FLEX DIVIDER	2
10	32931	RING SCRAPER V480/200 H#48638	2
11	32930	RING CPRSN V480/200 BARREL H#38347	2
12	36368	RING OIL V480/200 RING RAIL	4

Head Group



HEAD GROUP

ITEM	PART	DESCRIPTION	QTY.
1	5738	HEAD A/C 200 O/S	1
2	C1586	CAP SCR 0.38-16X1.75 SH HEAD BOLT	4
3	C0040	WASHER HD BOLT STL	1
4	5828	WASHER LONG HD BOLT (BRASS)	1
5	C1582	CAP SCR 0.38-16X3.00 SH HEAD BOLT	2
6	C0297	FILTER SCREEN	1
7	C0296	FILTER FOAM	1
8	C0294	FILTER RETAINER	1
9	C0715	FILTER FOAM	1
10	C0300	SCREW #10-32X0.88 NF	3
11	D0887	GASKET VALVE PLATE 200/480	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

Chapter 4 - Replacement Parts

Assembly Items		
Part Number	Description	Kit Contents (If Applicable)
4468	Overhaul Kit	Gasket Set (Qty 1), Ring Set (Qty 1), Valve Plate (Qty 1), Bearing Oil Seal (Qty 1), Oil (1 Quart), Inner Filter (Qty 1), Outer Filter (Qty 1)
5773	Gasket Set Complete	
23366	Ring Set Complete	
D1489	Valve Plate Assembly	Valve Plate (Qty 1), Top Head Gasket (Qty 1), Bottom Head Gasket (Qty 1)
5783	Crankshaft with Bearings - Straight Shaft	
23198	Crankshaft with Bearings - Tapered Shaft	

Maintenance Items		
Part Number	Description	Kit Contents (If Applicable)
4562	Canister Filter Element Only	
22867	Canister Filter Assembly	
C0297	Embedded Filter Screen	
C0296	Embedded Filter Foam - Outer	
C0715	Embedded Filter Foam - Inner	
C0294	Embedded Filter Retainer	
C0087	Synthetic Compressor Oil (Quart)	
7259	Synthetic Compressor Oil (Case of 12 Quarts)	



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