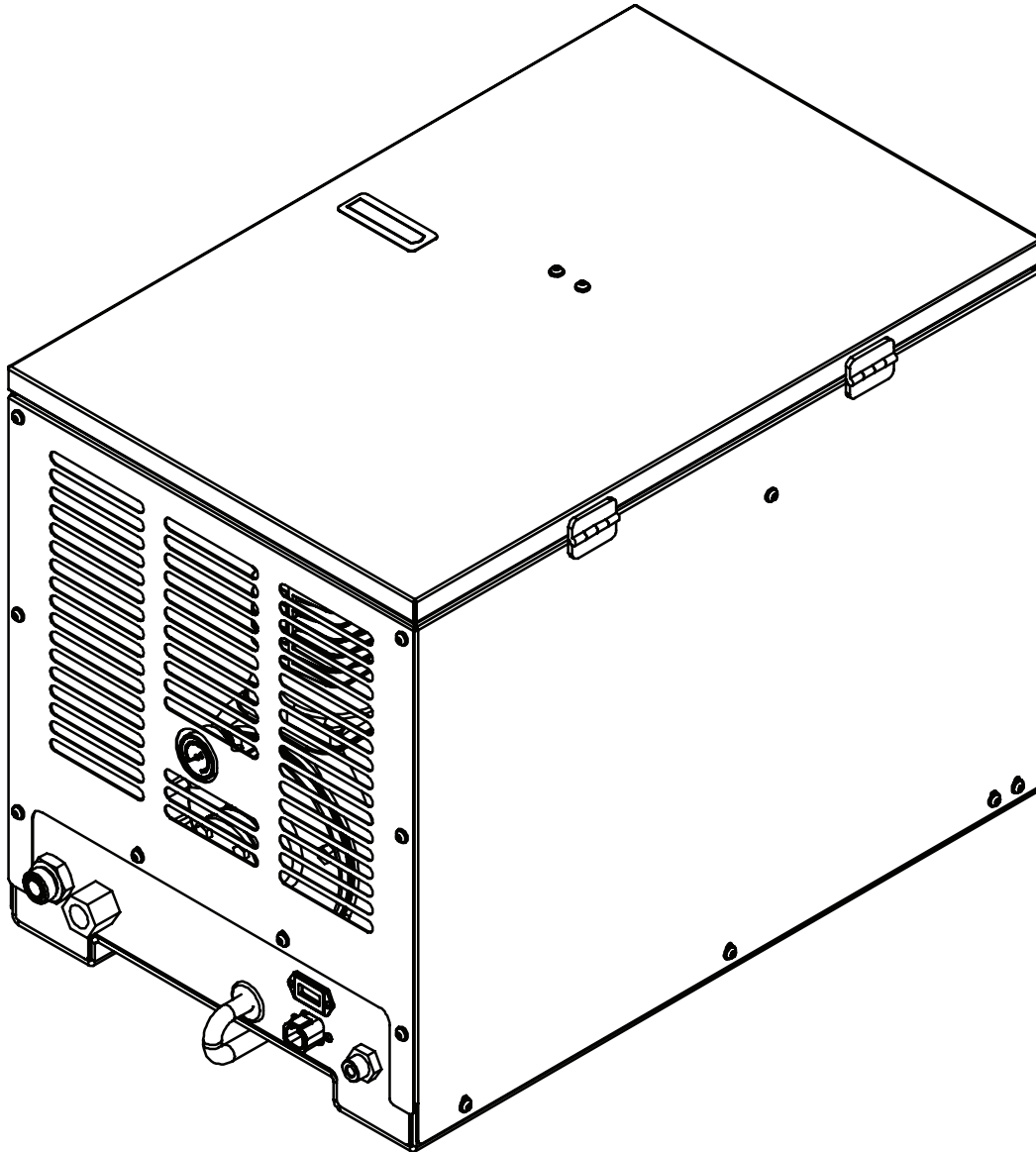


# Model 40P Single-Stage Piston Compressor Manual

Specifications • Installation • Assembly



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# Model 40P Manual Revisions

Date of Revision	Section Revised	Description of Revision



**MODEL**

**SERIAL NO.**

**DATE**

**PATENT / IP INFORMATION:**  
[www.stellarindustries.com/ip](http://www.stellarindustries.com/ip)

**MADE IN THE USA**  
by the Employee Owners of Stellar Industries PN 112060

# Table of Contents

Introduction .....	iv
<b>Chapter 1 - Specifications .....</b>	<b>1</b>
<b>Chapter 2 - Installation.....</b>	<b>3</b>
Component Installation.....	3
Component Installation, continued .....	4
40P Electrical Schematic.....	5
Hydraulic System.....	6
Air System .....	6
Compressor Pressure Switch .....	7
Typical Hydraulic Circuit for Single-Section Pump .....	8
Typical Hydraulic Circuit for Tandem (Two Part) Pump .....	9
Typical Hydraulic Circuit for Compressor with Auxiliary Cooler .....	10
<b>Chapter 3 - Assembly Drawings.....</b>	<b>11</b>
40P Case Assembly - PN 100358 .....	11
40P Complete Assembly - PN 100355 .....	12
Manifold Assembly - PN 44645 .....	13
HV30 Compressor Assembly - PN 98537 .....	14

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

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Technical Questions, and Information:

[service@stellarindustries.com](mailto:service@stellarindustries.com)

Order Parts:

[parts@stellarindustries.com](mailto:parts@stellarindustries.com)

Warranty Information:

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# 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.

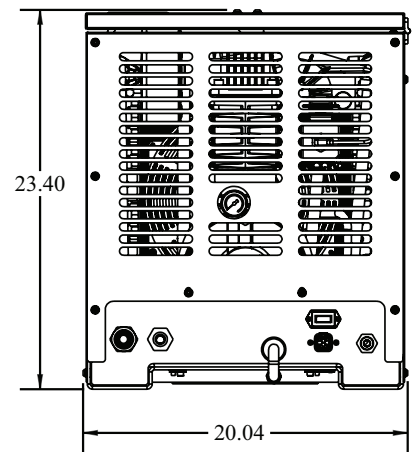
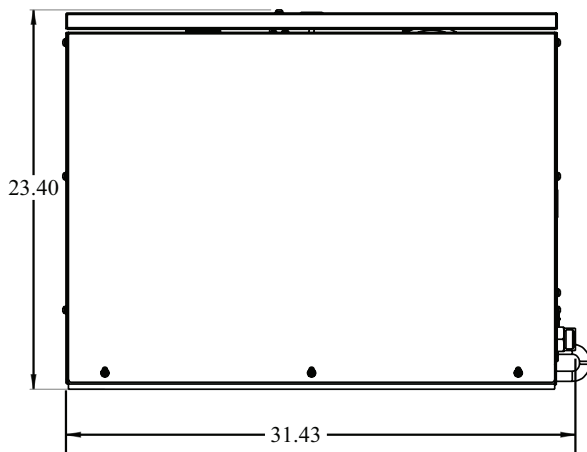
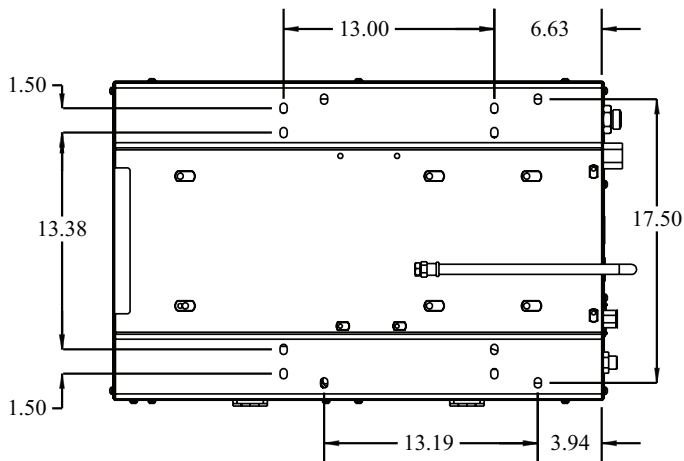
Information contained within this manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. Please be aware that some sections of this manual contain information pertaining to Stellar Industries® manufactured air compressors in general and may or may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

# Chapter 1 - Specifications



SPECIFICATIONS	40P
Hydraulic System	12 GPM @ 2200 PSI
Max Compressor Speed	1450 RPM
Hydraulic Operating Pressure	2200 PSI
Hydraulic Relief Pressure	3500 PSI
Max Working Pressure	150 PSI
Air Delivery (At Max Speed)	40 CFM @ 100 PSI
Weight (Hydraulic Driven Asm)	245 lbs.
Dimensions (Length)	31.63"
Dimensions (Width)	19.68"
Dimensions (Height)	23.40"
Electrical	12V DC
Crankcase Oil Capacity	1.38 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:

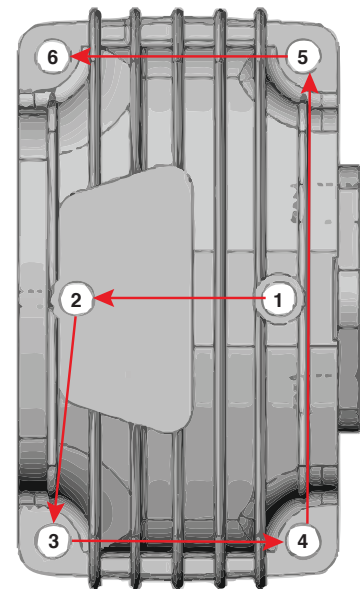
Torque Value: 20 ft-lbs

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 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:

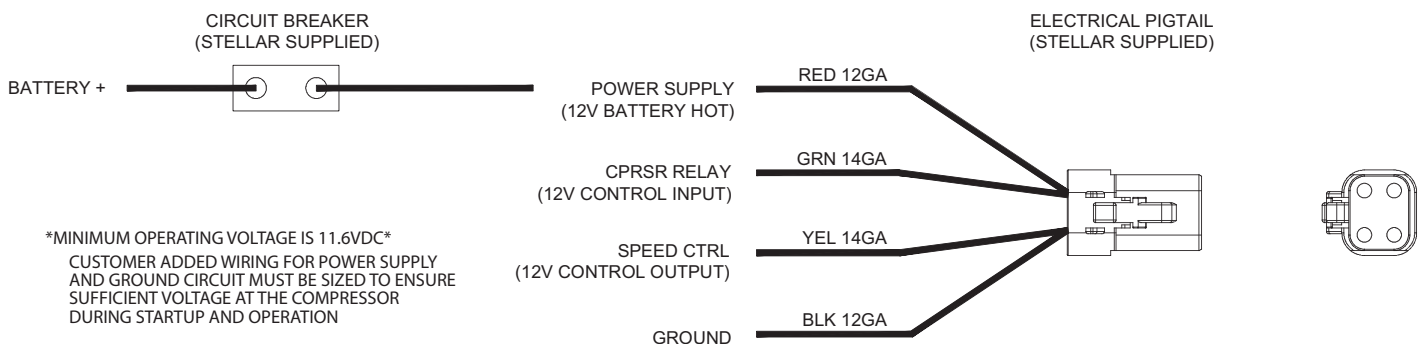
Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model, and year of vehicle. As some trucks may require modification of the transmission cross member and the exhaust system, the manufacturer's instructions should be followed to ensure proper installation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





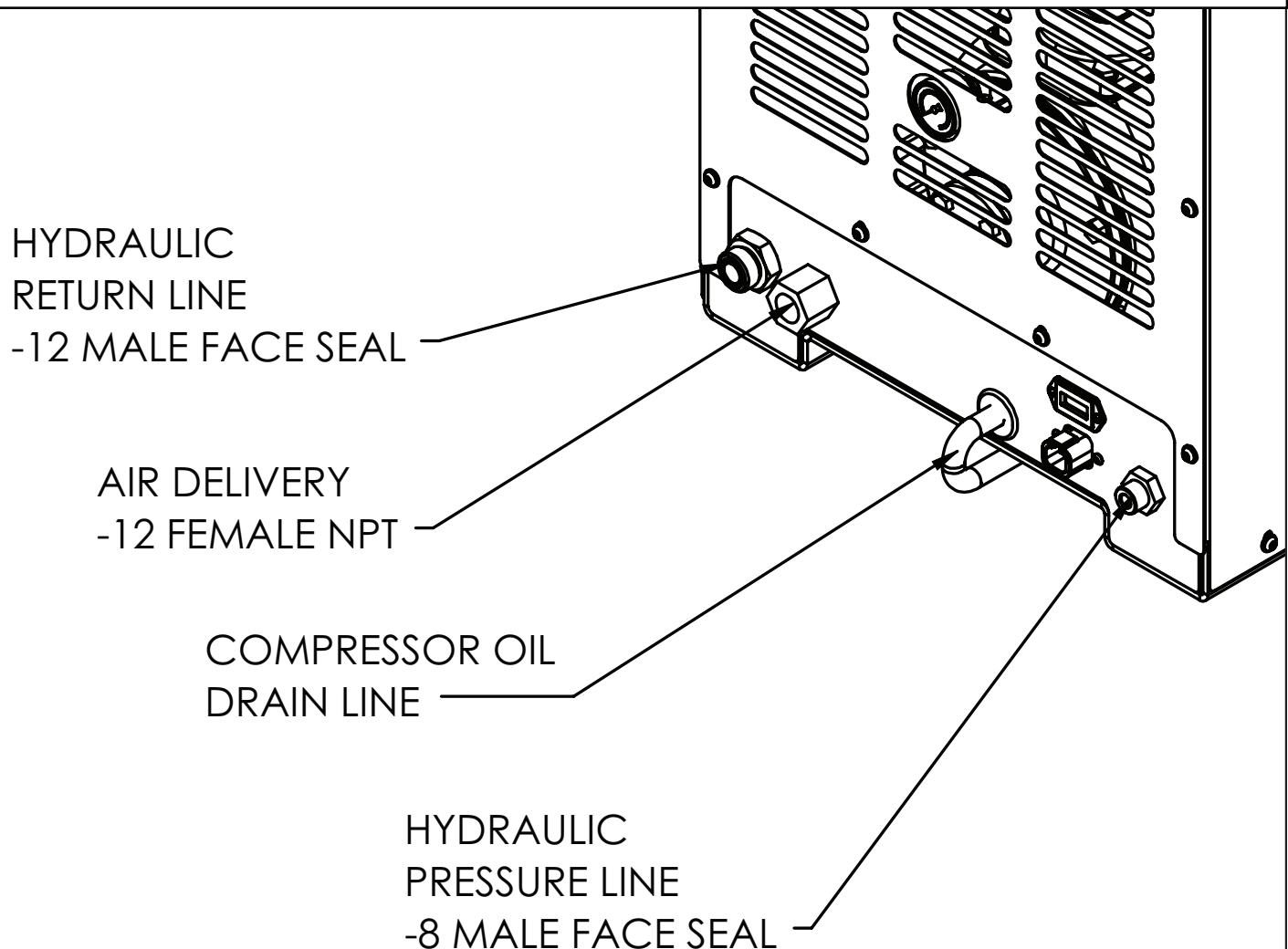


## Hydraulic System

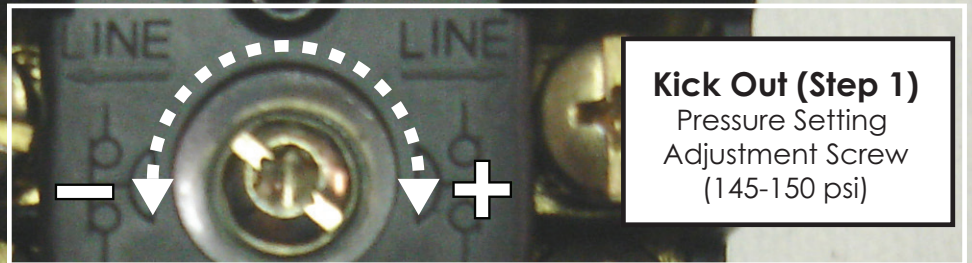
The hydraulic system consists of the oil reservoir, pump, manifold, motor, filters, and hoses. A  $\frac{1}{2}$ " 3000psi pressure line should be connected to the pressure line fitting on the bulkhead. This line is plumbed through an internal manifold block, and then to the motor. After the motor there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

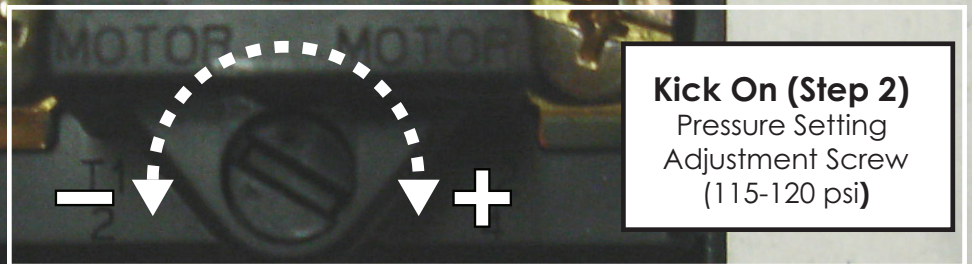
The airline is routed using a  $\frac{3}{4}$ " 200 psi air/steam hose. This delivery line should be free from all obstructions. Note: There should be no check valve installed between the compressor and the air tank (One is already included in the compressor package). Stellar Industries recommends the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



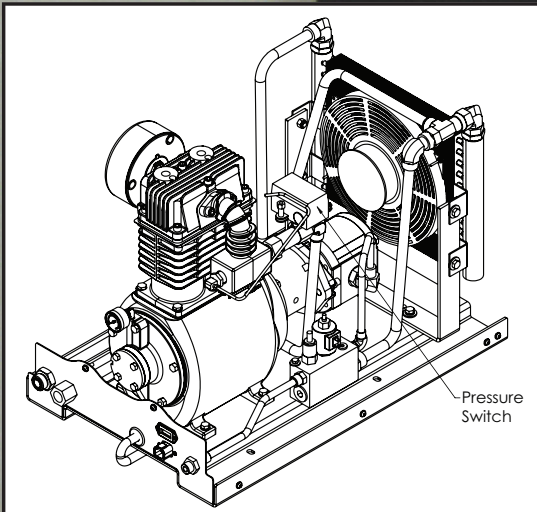
# Compressor Pressure Switch



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



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

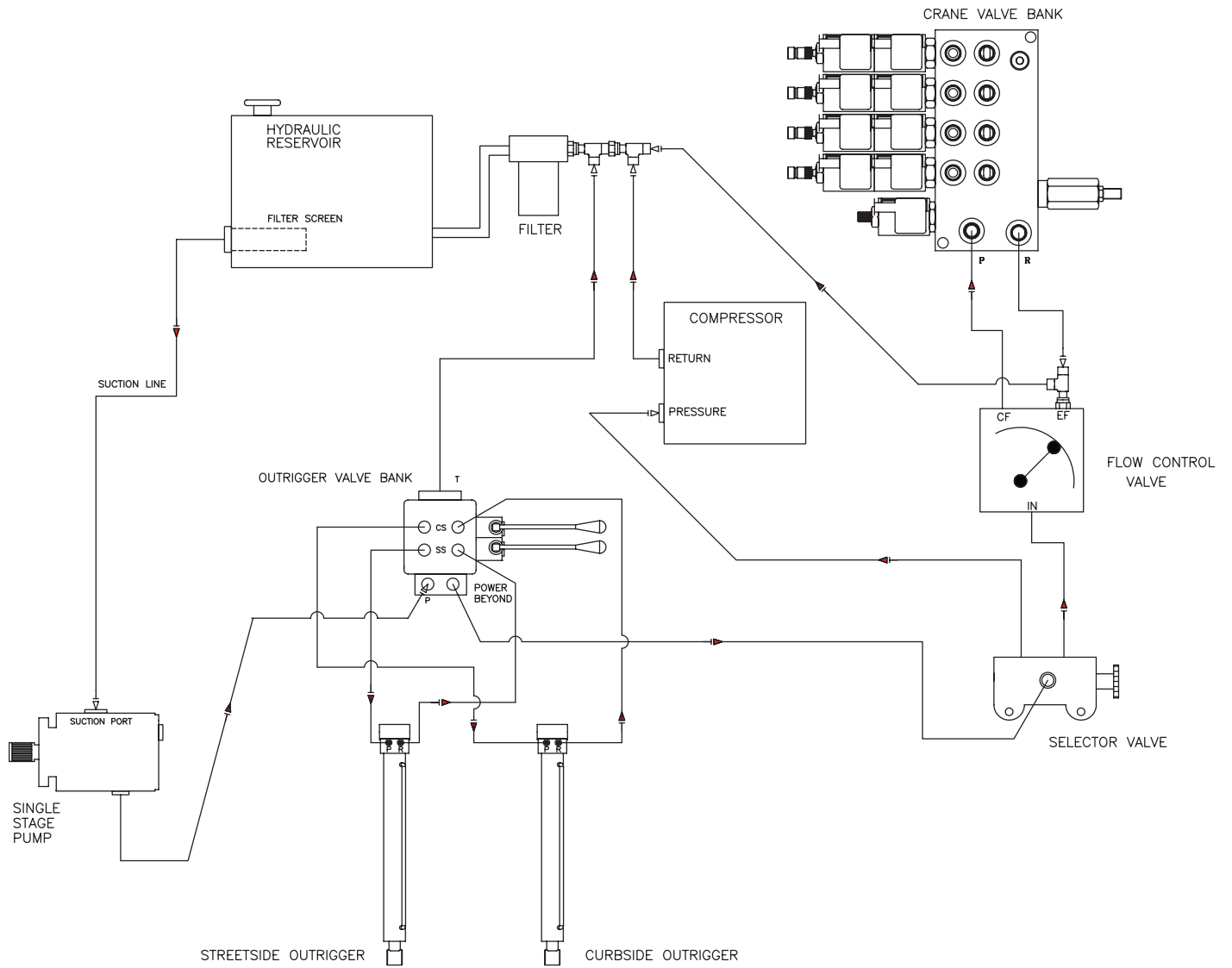


**Note:** Turning adjustment screws clockwise increases psi settings.  
Turning adjustment screws counterclockwise decreased psi settings.

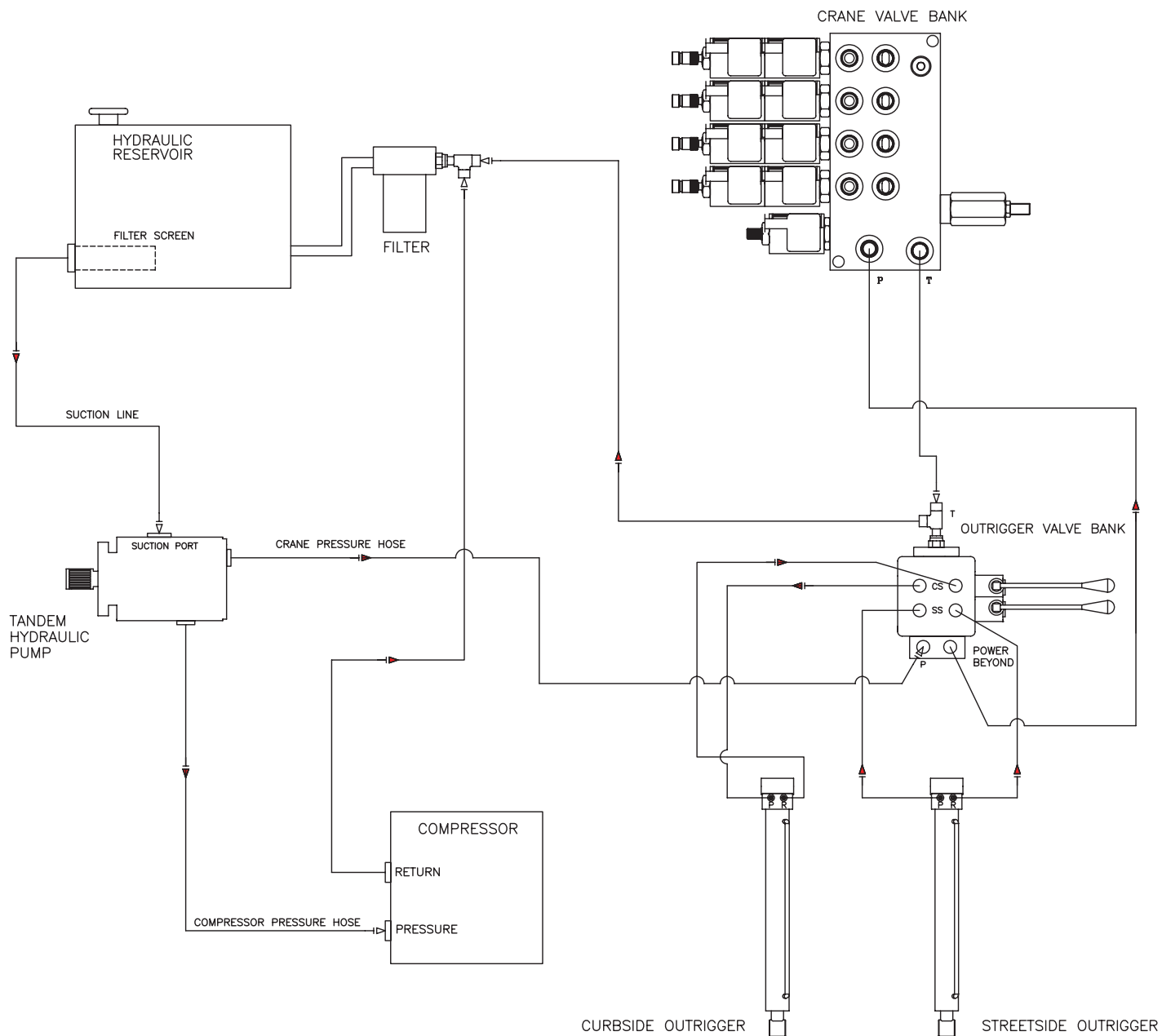
## Pressure Setting Instructions:

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.

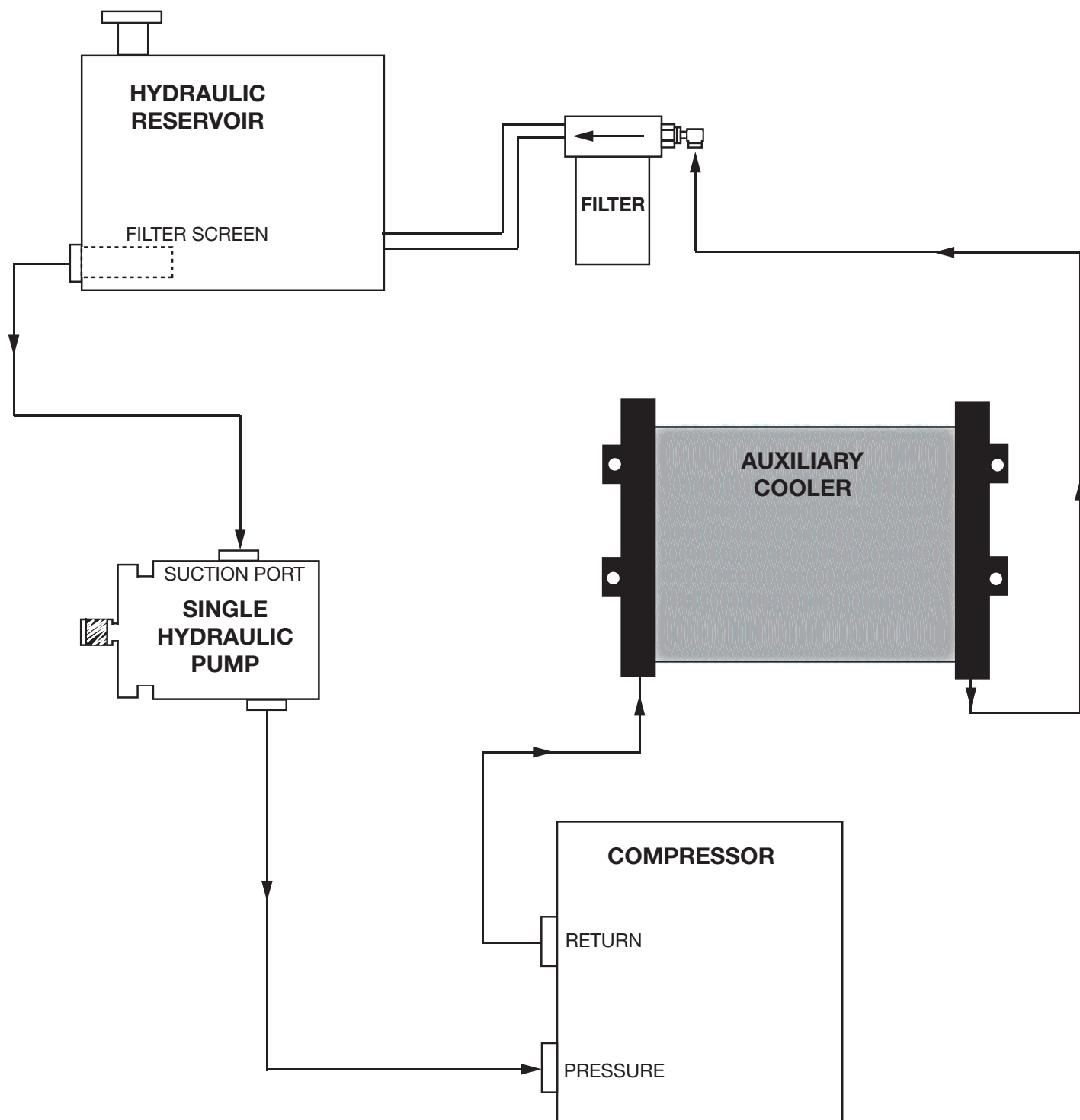
# Typical Hydraulic Circuit for Single-Section Pump



# Typical Hydraulic Circuit for Tandem (Two Part) Pump



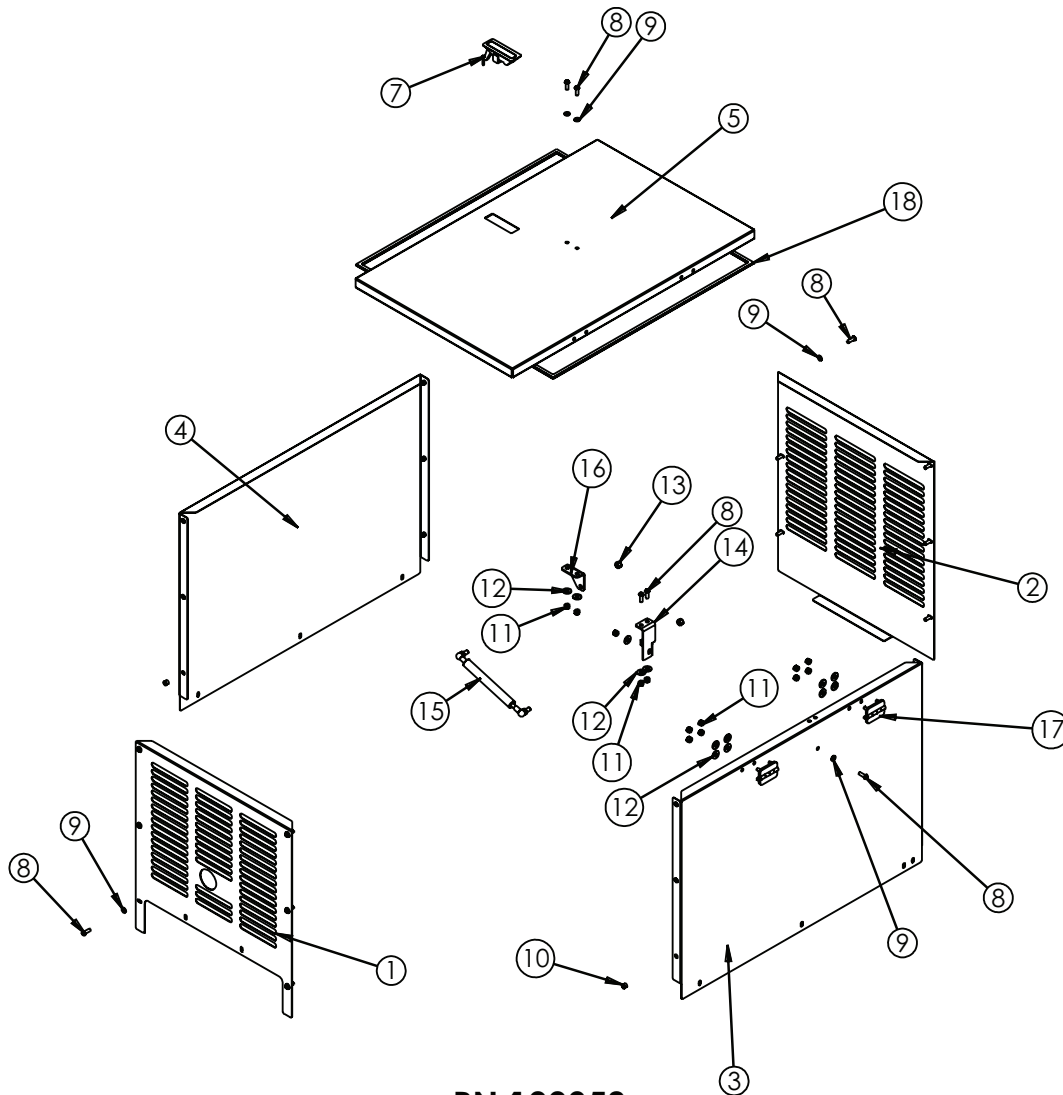
# Typical Hydraulic Circuit for Compressor with Auxiliary Cooler





# Chapter 3 - Assembly Drawings

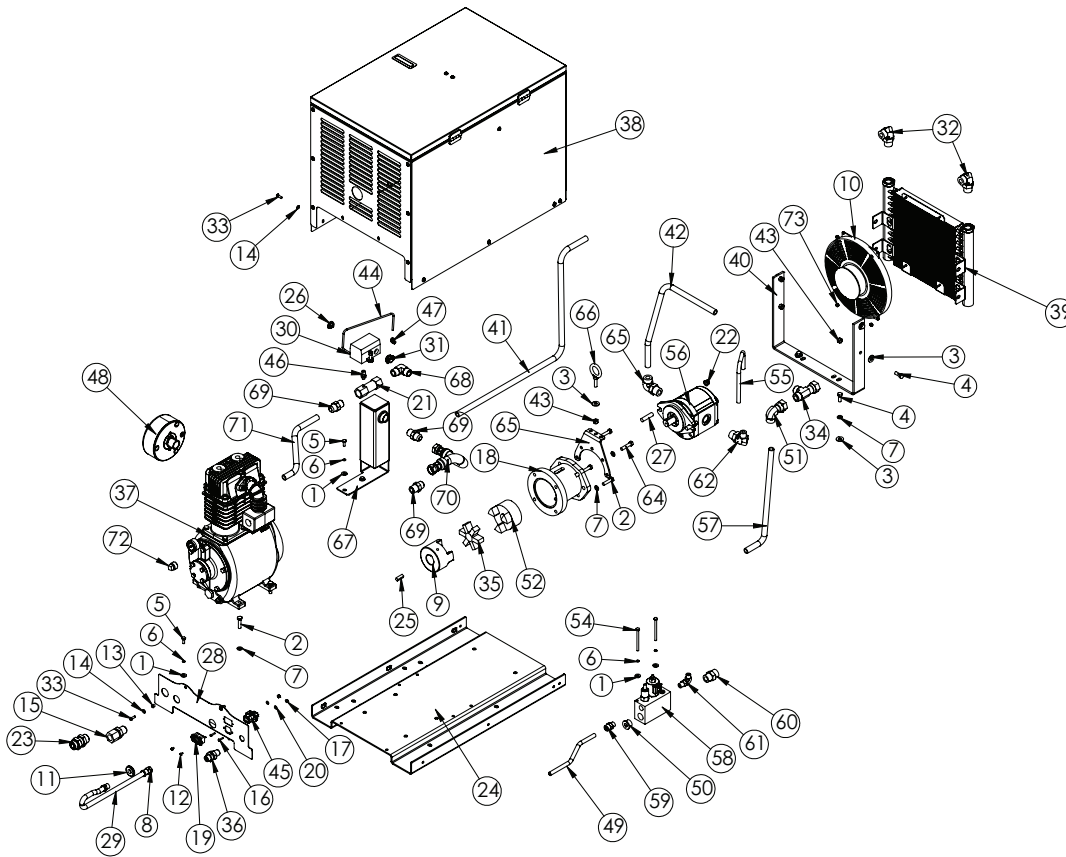
## 40P Case Assembly - PN 100358



**PN 100358**

ITEM	PART	DESCRIPTION	QTY.
1	100361	PANEL FRONT CPRSR 40P SHROUD PC WHITE	1
2	100362	PANEL BACK CPRSR 40P SHROUD PC WHITE	1
3	100360	PANEL SIDE RH 40P SHROUD PC WHITE	1
4	100359	PANEL SIDE LH 40P SHROUD PC WHITE	1
5	100363	PANEL LID CPRSR 40P SHROUD PC WHITE	1
6	70379	HINGE ZINC BLK FLUSH SURFACE MNT DC-50-P8	1
7	69101	LATCH SWING LEVER FLUSH TRIGGER 0.91-1.81	1
8	C6021	CAP SCR 0.25-20X0.75 BTNHD SS	17
9	19592	WASHER 0.25 FLAT NYLON	15
10	19589	NUT SERT 0.25-20X0.38 OD	12
11	0333	NUT 0.25-20 HHGR5 NYLOC	13
12	D0917	WASHER 0.25 FLAT SS	13
13	0342	NUT 0.31-18 HHGR5 NYLOC	2
14	73653	BRKT LOWER GASPROP CPRSR SHROUD V2 PC BLACK	1
15	69103	GAS SPRING 7.50-12.00 30# FORCE	1
16	73654	BRKT LID GASPROP CPRSR SHROUD V2 PC BLACK	1
17	70379	HINGE ZINC BLK FLUSH SURFACE MNT DC-50-P8	1
18	76683	WEATHERSTRIP RIBBED 0.38X0.13X98	1

# 40P Complete Assembly - PN 100355

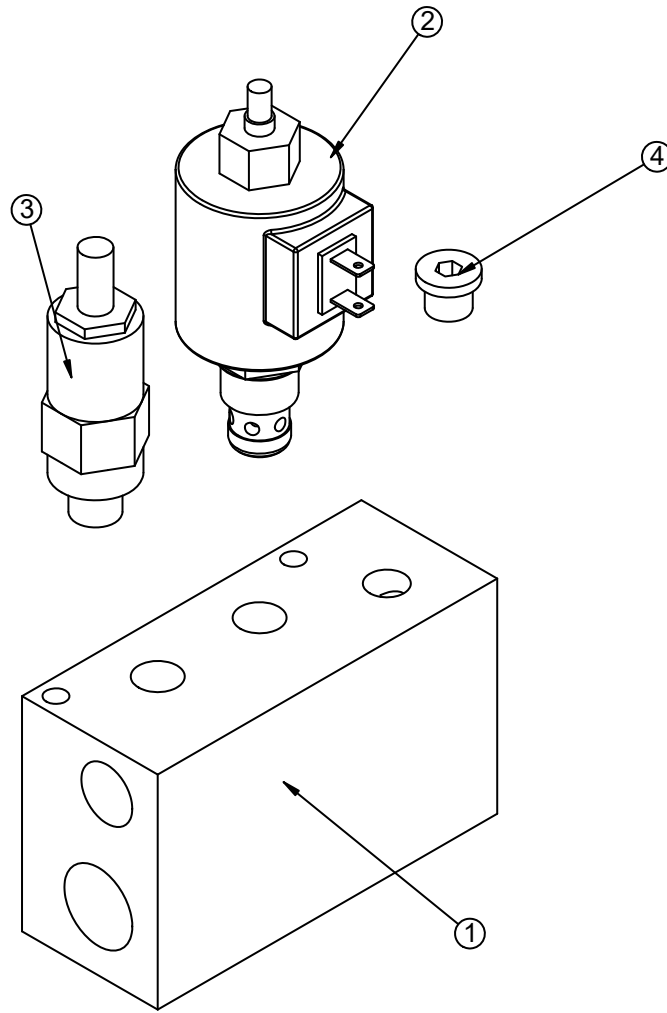


## PN 100355

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	0340	WASHER 0.25 USS FLAT	6	38	100358	SHROUD ASM CPRSR 40P	1
2	0345	CAP SCR 0.38-16X1.50 HHGR5	2	39	106185	COOLER OIL 30P & 40P	1
3	0346	WASHER 0.38 USS FLAT	7	40	104201	BRKT COOLER MOUNT 40P PC BLACK	1
4	0351	CAP SCR 0.38-16X1.00 HHGR5	6	41	104558	TUBE ASM 0.75 COOLER TO BLKHEAD 40P ZC	1
5	0479	CAP SCR 0.25-20X0.75 HHGR5	4	42	104561	TUBE ASM 0.75 MOTOR TO COOLER 40P ZC	1
6	0521	WASHER 0.25 LOCK	6	43	0347	NUT 0.38-16 HHGR5 NYLOC	5
7	0523	WASHER 0.38 LOCK	10	44	17021	TUBING COPPER SHD132 CPRSR	1
8	0560	FTG 6 MFS PLUG	1	45	75774	WIRE HARNESS CPRSR RLY 8P-30P	1
9	10078	COUPG 3/8 KW L150 1.438	1	46	C6101	FTG 4-2 MP-MP HEX NIPPLE	1
10	10084	FAN 12.00 PULL 12 VOLT 132A COMP	1	47	D0240	FTG 4-2 CPRSN-MP 90	1
11	12813	GROMMET 1.50ODX1.25GD X0.13X0.63ID	1	48	106182	FILTER AIR INLET CPRSR FS15P100	1
12	18611	SCREW #6-32X0.38 HH MACH SELF TAP	2	49	106757	TUBE ASM 0.50 BLKHEAD TO MANIFLD 40P ZC V2	1
13	19589	NUT SERT 0.25-20X0.38 OD	2	50	4591	FTG 12 MORB PLUG HOLLOW HEX	1
14	19592	WASHER 0.25 FLAT NYLON	9	51	c4903	FTG 12-12 MFS-FFSS 90	1
15	21393	FTG 12-12 FP-MJ BULKHEAD STRAIGHT	1	52	D0791	COUPG 1/4 KW L150-1.00	1
16	22183	SCREW #8-32X0.75 BTNHD SS	2	53	0335	CAP SCR 0.38-16X1.25 HHGR5	4
17	22186	NUT #8-32 HH NYLOC SS	2	54	0483	CAP SCR 0.25-20X3.50 HHGR5	2
18	10081	MOTOR MOUNT M056522B 132A CPRSR	1	55	106754	TUBE ASM 0.50 MANIFLD TO MOTOR 40P ZC	1
19	28855	HOUR METER 12VDC TST 180-1911	1	56	106755	MOTOR HYD RONZIO 03ZMBG30M370SN 30CC	1
20	5290	WASHER #8 SAE FLAT	2	57	106756	TUBE ASM 0.75 MANIFLD TO COOLER 40P ZC V2	1
21	5480	VALVE CHECK 0.75 STANDARD	1	58	44645	MANIFOLD ASM SHD60	1
22	61470	NUT 0.50-13 HHGR8 DISC LOCK	2	59	1554	FTG 8-8 MFS-MORB STRAIGHT	1
23	65025	FTG 12-12 MFS-MFS BULKHEAD UNION	1	60	C2142	FTG 12-12 MFS-MORB STRAIGHT	1
24	100356	BASE WLDMT 40P BULKHEAD PC BLACK	1	61	1556	FTG 8-8 MFS-MAORB 90	1
25	71374	KEY FLYWHEEL 3/8 X 1.125	1	62	C4227	FTG 8-12 MFS-MAORB 90	1
26	73652	PLUG NICKEL PLATED BUTON 0.88	1	65	22063	FTG 12-16 MFS-MAORB 90	1
27	73722	STUD 0.50-13X2.00 SELF LOCKING	2	64	C0944	CAP SCR 0.38-16X1.75 HHGR5	2
28	100364	PANEL BULKHEAD 40P PC BLACK	1	65	74091	BRKT LIFTING CPRSR SHD132 PC BLACK	1
29	78190	HOSE 0.38(200PSI)-6PL SHORT-6PL STRAIGHT-23.5CL	1	66	12122	BOLT 0.38X1.00 EYE 567-23-ZN	1
30	C0863	SWITCH PRES COMPRESSOR	1	67	123400	PULSATION TANK 40P	1
31	C5616	CLAMP ROMEX 0.50	1	68	114858	FTG 12-12 MP-MP 90	1
32	C5968	FTG 12-12 MFS-MAORB 90	2	69	C4286	FTG 12-12 MJ-MP STRAIGHT	3
33	C6021	CAP SCR 0.25-20X0.75 BTNHD SS	9	70	77443	HOSE STEAM 0.75-12FJS SHORT-12FJS SHORT-10.625CL STST	1
34	D0525	FTG 12-12-12 MFS-FFSS-MFS RUN TEE	1	71	123565	TUBE ASM 0.75 CHECK VALVE TO BLKHEAD 40P ZC	1
35	D0793	COUPG SPIDER L150-U BLUE URETHANE	1	72	20327	PLUG 0.75 NPT SQ HD BRASS	1
36	D1318	FTG 8-8 MFS-MFS BULKHEAD UNION	1	73	26034	NUT #10-24 HH NYLOC	4
37	98537	CPRSR HV30A88NP	1				

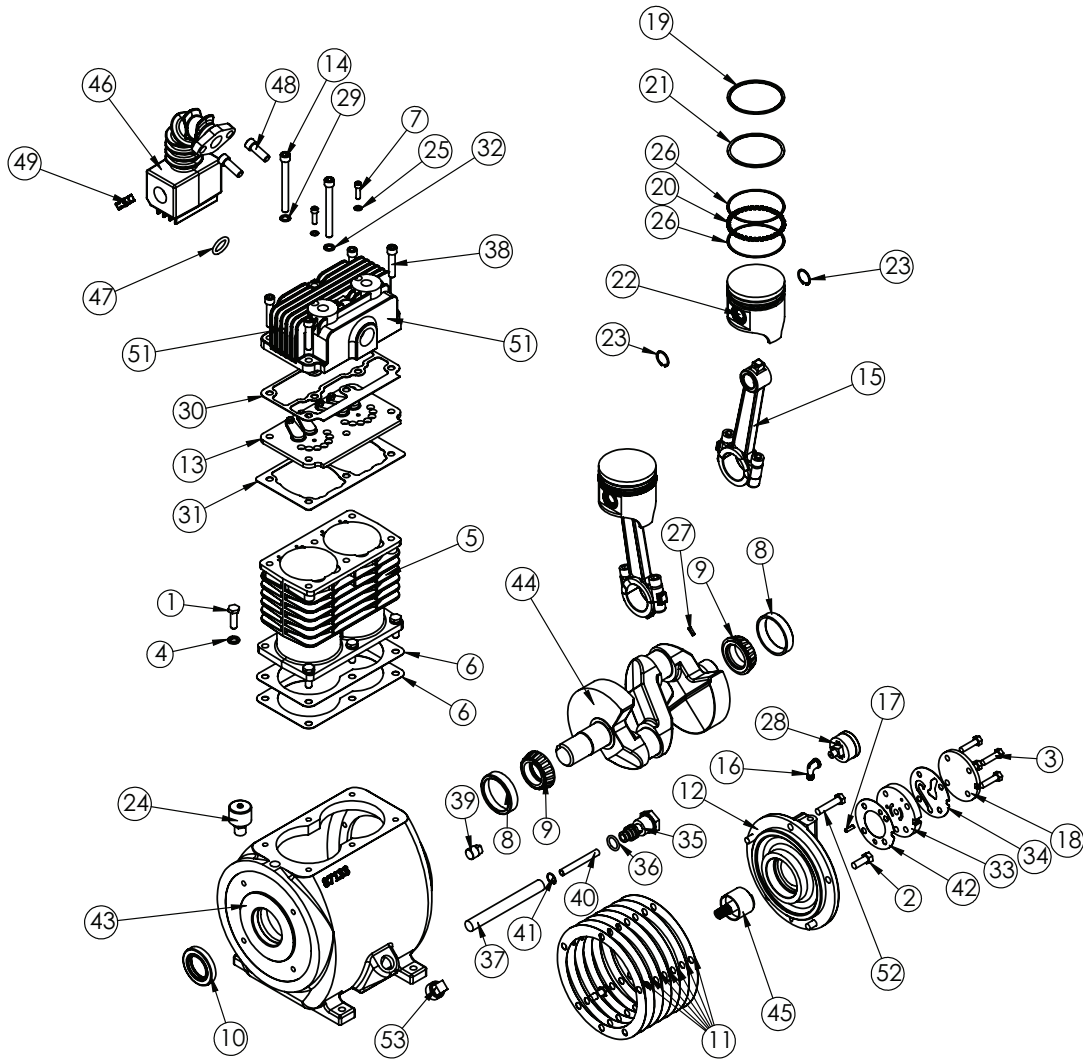


# Manifold Assembly - PN 44645



PN 44645			
ITEM	PART	DESCRIPTION	QTY
1	C3558	MANIFOLD BLOCK SHD60	1
2	C4499	VALVE SOLND	1
3	C4914	VALVE RELIEF CP-200-1-B-0-A-C	1
4	C4961	FTG 6 MORB PLUG HOLLOW HEX	1

# HV30 Compressor Assembly - PN 98537



**PN 98537**

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	0335	CAP SCR 0.38-16X1.25 HHGR5	6	32	C0040	WASHER HD BOLT STL	1
2	0351	CAP SCR 0.38-16X1.00 HHGR5	4	33	C0052	PORT PLATE MACHINED	1
3	0485	CAP SCR 0.31-18X1.25 HHGR5	4	34	C0054	PORT PLATE COVER GASKET (SMALL)	1
4	0523	WASHER 0.38 LOCK	6	35	C0055	OIL INTAKE PLUG	1
5	11877	CYLINDER HV60 O/S	1	36	C0057	O'RING 2-115 FOR OIL PICKUP TUBE	1
6	11884	GASKET CYLINDER BASE HV60	2	37	C0058	OIL INTAKE FILTER SCREEN	1
7	11886	CAP SCR 0.25-28X0.88 SH	2	38	C1586	CAP SCR 0.38-16X1.75 SH HEAD BOLT	4
8	11888	BEARING CUP HV60	2	39	C4841	PLUG 0.38 NPT SQ HD BLK	1
9	11889	BEARING CONE	2	40	C5416	TUBE OIL INTAKE .38ODX3.00	1
10	11890	BEARING SEAL HV60	1	41	C6273	SNAP RING PISTON PIN N5000-62	1
11	11891	BEARING CARRIER GASKET .015 HV60	7	42	C6275	PORT PLATE GASKET	1
12	11893	BEARING CARRIER HV60	1	43	87133	CRANKCASE HV30	1
13	11897	VALVE PLATE ASSEMBLY HV60	1	44	98536	CRANKSHAFT HV30	1
14	11898	CAP SCR 0.38-16X3.75 SH HEAD BOLT	2	45	27107	OIL PUMP ASM CPRSR	1
15	11907	CONNECTING ROD HV60 O/S	2	46	99262	MANIFOLD HV30 DISCHARGE O/S	1
16	20451	FTG 2-2 MP-FP STREET ELBOW 90 BRASS	1	47	C0291	O'RING-214 VITON 9009-75	1
17	22209	ROLL PIN 0.19X.63	1	48	D1292	CAP SCR 0.44-14X1.25 SHGR5 BLK	2
18	22626	PORT PLATE COVER	1	49	5797	DRAIN COCK-V480	1
19	23042	RING COMPRESSION UPPER HV 60	2	50	C2220	FTG 12-4 MP-FP REDUCER BUSHING	1
20	23043	RING OIL HV 60 FLEX DIVIDER	2	51	11896	HEAD A/C HV60 W/THRD	1
21	23044	RING COMPRESSION LOWER HV 60	2	52	C0944	CAP SCR 0.38-16X1.75 HHGR5	1
22	26076	PISTON W/PIN HV60 ENGROSS	2	53	20327	PLUG 0.75 NPT SQ HD BRASS	1
23	23481	SNAP RING PISTON HV60	4				
24	23483	BREATHER CPRSR .38NPT BF6	1				
25	26032	WASHER 0.255 ID BRASS	2				
26	36369	RING OIL HV 60 RING RAIL	4				
27	5817	ROLL PIN 0.19X.50	1				
28	5819	GAUGE OIL PSI 1.5	1				
29	5828	WASHER LONG HD BOLT (BRASS)	1				
30	9979	GASKET CYL HEAD (VALVE PLATE) HV-60	1				
31	9980	GASKET CYL HEAD HV-60	1				

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