

OWNER'S MANUAL

Safety, Installation, Maintenance, and Operation

Model 143 Compressor
Model SUH 21 Compressor
Model SHD 21 Compressor



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Class 1 Compressor Manual Revisions

Date of Revision	Section Revised	Description of Revision

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Introduction

American Eagle Compressors are designed to provide safe and dependable service for a variety of operations. With proper use and maintenance, American Eagle Compressors will operate at peak performance for many years.

This manual contains information vital to the safe use and efficient operation of this unit. Following the information provided within this manual can ensure the longevity of the compressor. Carefully read and study the operator's manual before using the unit. Failure to adhere to the instructions could result in property damage or even serious bodily injury to the operator or others close to the compressor.

A copy of this manual is provided with every compressor and shall remain with the compressor at all times. Information contained within this manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. This manual is not binding.

American Eagle 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.

This product manual is not intended as a training manual for beginners or unskilled operators. This manual offers guidelines for correct and safe usage of the compressor, maintenance, and troubleshooting. If more information is required or technical assistance is needed, please contact AE Technical Support.

Some sections of this manual contain information pertaining to all American Eagle manufactured compressors and may or may not apply to your specific model.

If this manual becomes damaged, misplaced, or unreadable at any point, or if you feel that any part of this manual is unclear or incorrect, please contact AE Technical Support at 800-321-3741 or email at service@americaneagleacc.com

**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@americaneagleacc.com

Order Parts

parts@americaneagleacc.com

Warranty Information

warranty@americaneagleacc.com

Safety

This manual contains vital information for the safe use and efficient operation of this unit. Carefully read the operators manual before starting the unit. Failure to adhere to the instructions could result in serious bodily injury or property damage.

Every American Eagle Compressor will provide safe and dependable service if operated according to instructions. Read and understand the safety precautions given in this manual and on the decals attached to the shields. Failure to do so can result in personal injury or equipment damage.

Operators and maintenance personnel must always comply with the safety precautions. These precautions are given here for your safety. Review them carefully before operating the compressor and before performing maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations.

Precautions

Always wear safety equipment such as goggles, ear plugs and head protection at all times when operating the compressor.

Do not inspect or clean the compressor while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.

Before performing any maintenance on the compressor, place a warning tag on the hydraulic power source or disconnect the hoses from the compressor motor to prevent accidental startup of the compressor.

Always connect hoses to the compressor

before energizing the hydraulic power source. Be sure all hose connections are tight, both air and hydraulic.

Establish a training program for all operators to ensure safe operation.

Do not operate the compressor unless thoroughly trained or under the supervision of an instructor.

Do not operate the compressor if it is damaged, improperly adjusted or not completely or properly assembled.

Never operate the compressor with any of the guards removed.

Do not attempt to adjust or disable the compressors air pressure relief valve. This valve limits the air pressure to 150 PSI.

The surface of the air compressor and the plumbing between the compressor and the cooler may reach temperatures above 150 degrees. Touching these surfaces during operation can cause burns.

The air taken in by the air compressor must be free of flammable fumes and vapors.

Compressor speed should not exceed 1300 RPM.

Use and operate this air compressor only in full compliance with all pertinent O.S.H.A. requirements and all Federal, State and Local codes or requirements.

Specifications

Compressor System Description

- | | |
|--------------------------------------|---------------------------------|
| • Cast Iron Crankcase Casting | • Heavy Duty Journal Bushings |
| • Cast Iron Cylinder Head | • Heavy Ductile Iron Crankshaft |
| • High Temperature Precision Pistons | • Micro-honed Connecting Rods |
| • Stainless Steel Reed Valves | • Splash Lubricated System |

SHD-21 Drive System Description

- | | |
|--------------------------------------|---------------------------------|
| • 7 GPM Hydraulic System | • 1800 PSI System Pressure |
| • 2500 PSI Pressure Relief Setting | • 12 VDC Solenoid Control Valve |
| • All Steel Plumbing W/ JIC Fittings | • Oil Cooler |
| • 12 Volt Cooler Fan | • 6061 Aluminum Manifold |
| • Direct Drive Coupling | • Air Pressure Control Valve |

General Specifications

- | | |
|-----------------------------|----------------------------|
| • Model: | 143 |
| • Weight: | 52 lbs (SHD-21: 125 lbs) |
| • Delivery: | 8 CFM @ 100 PSI |
| • Maximum Working Pressure: | 150 PSI |
| • Dimensions: (SHD-21) | 23"L x 14.5"W x 17"H |
| • Electrical: | 12 VDC |
| • Oil Capacity: | 16 Ounces |
| • Cylinders: | Two Cylinder(Single Stage) |
| • Maximum Compressor Speed: | 1250 RPM |

Operation

General Operation Notes

Each compressor is bench tested under load at the factory to ensure proper break-in and operation. While it is not necessary to follow any break-in procedure, the following checks should be made before putting the unit into service and periodically during use.

Before Start-Up

Check the oil level in the compressor with the dipstick on the unit. If oil is needed, use American Eagle synthetic compressor oil (P/N C0087) or an equivalent 10W20 synthetic oil.

Note: There may be oil left in the crankcase from the factory bench test. Overfilling may cause the compressor to back blow oil. Always check the oil level and fill to the designated marking on the dipstick before putting the unit into service.

Check the air intake filters on each head to make certain that they are clean and unobstructed. Dirty air filters are a possible cause of reduced air output.

To use the compressor, start the engine and engage the hydraulic system with the compressor toggle switch. Through the hydraulic valve manifold, the system will now function automatically. Once engaged, adjust the engine speed control to ensure that the compressor speed does not exceed 1300 RPM under load.

SHD-21 Operation Notes

If adjustment is necessary for cable operated speed controls, loosen the jam nut on the cable end, make the adjustment and retighten the jam nut.

For electronic operated speed controls, adjust speed adjustment screw as needed to set RPM.

For setting engine RPM through the chassis ECM, contact local chassis dealer.

When the air pressure falls below 120 PSI, the 12 volt electric solenoid opens allowing hydraulic oil to flow to the hydraulic drive motor then back to the manifold and through the oil cooler assembly. Once the air pressure reaches 150 PSI the solenoid closes shutting off the oil flow to the motor and diverts the oil to the oil cooler.

With the compressor engaged, the main cooling system, which consists of an oil cooler, electric fan motor and fan continually runs drawing ambient air through the cooler fins and across the fan assembly discharging heated air past the compressor and out the cover assembly.

Maintenance

The following table is a list of routine maintenance items, including service intervals. Service intervals are listed as hours, days, or weeks, whichever occurs first. American Eagle recommends that these service intervals be followed.

Service Intervals				
Maintenance operation	Daily	Weekly	Monthly	Hourly
Drain air tanks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Check crankcase oil level	<input checked="" type="checkbox"/>			
Check fittings and airlines	<input checked="" type="checkbox"/>			
Check hydraulic fluid level	<input checked="" type="checkbox"/>			
Inspect and clean air intake filters		<input checked="" type="checkbox"/>		
Clean and operate safety valves		<input checked="" type="checkbox"/>		
Clean cooling fins on radiator		<input checked="" type="checkbox"/>		
Inspect check valve		<input checked="" type="checkbox"/>		
Inspect and clean compressor valves			6	
Replace hydraulic filter			6	
Replace air filters			3	
Tighten all fittings and fasteners			3	
Check all electrical connections			3	
Check compressor reed valves				250
Inspect and clean air check valve				250
CHANGE CRANKCASE OIL (see footnote below)				

Under normal operating conditions, oil changes are required every 3 months. When operating in a dirty environment, change the oil more frequently as your particular operating condition dictates.

**USE AE SYNTHETIC COMPRESSOR OIL (OR 10W20 EQUIVALENT) P/N C0087.
COMPRESSOR CRANKCASE CAPACITY IS 16 OUNCES.**

General preventative maintenance includes maintaining proper fluid level in both systems and the general cleanliness of the equipment. Proper fluids according to the specifications are required.

Installation

Compressor 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.

Torque and Procedure Chart

Head Assembly

Torque Value: 31 FT. LBS.

Procedure: Assemble head on the cylinder with head bolts started only, not tight. Snug (6) head bolts to light torque. Tighten (6) head bolts to 31 Ft-lbs. torque, doing the (2) long center bolts first and the (4) short bolts last. After five hours of use re-torque bolts to 31 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 Assembly

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.

SHD-21 Installation

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.

PTO Assembly:

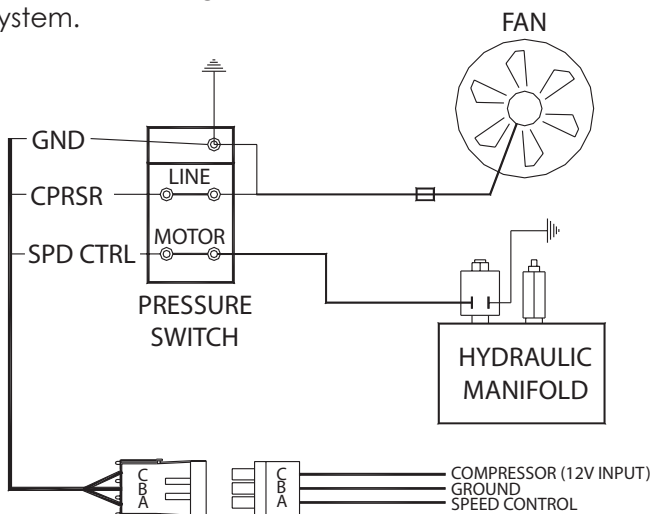
Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model, and year of vehicle. As some trucks may require modification of the transmission cross member and the exhaust system, the manufacturer's instructions should be followed to insure proper installation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

Compressor Assembly:

Prepare the mounting location of the compressor by locating and drilling four (4) holes, 7/16" 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 washers, and 3/8" nyloc nuts, 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.

Electrical Connections:

From the air pressure switch there are two (2) wires, red and black, running to the outside of the compressor housing. Connect the black wire to the vehicle frame or other suitable ground. Mount a single throw toggle switch in a convenient location and connect the red wire from the compressor to this switch. Connect the other switch terminal to a fuse holder and then to a 12-volt power supply. A third wire is required from the air compressor switch when connecting the speed control into the system.

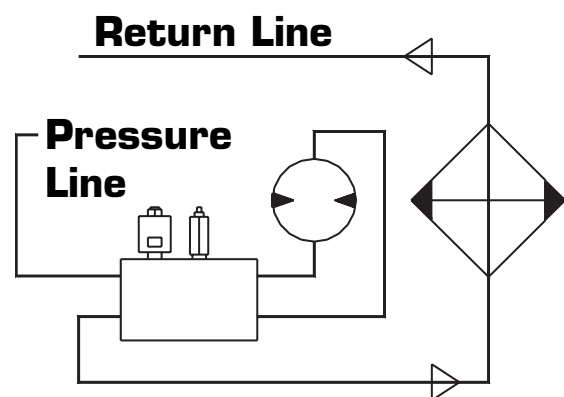


Electric speed control:

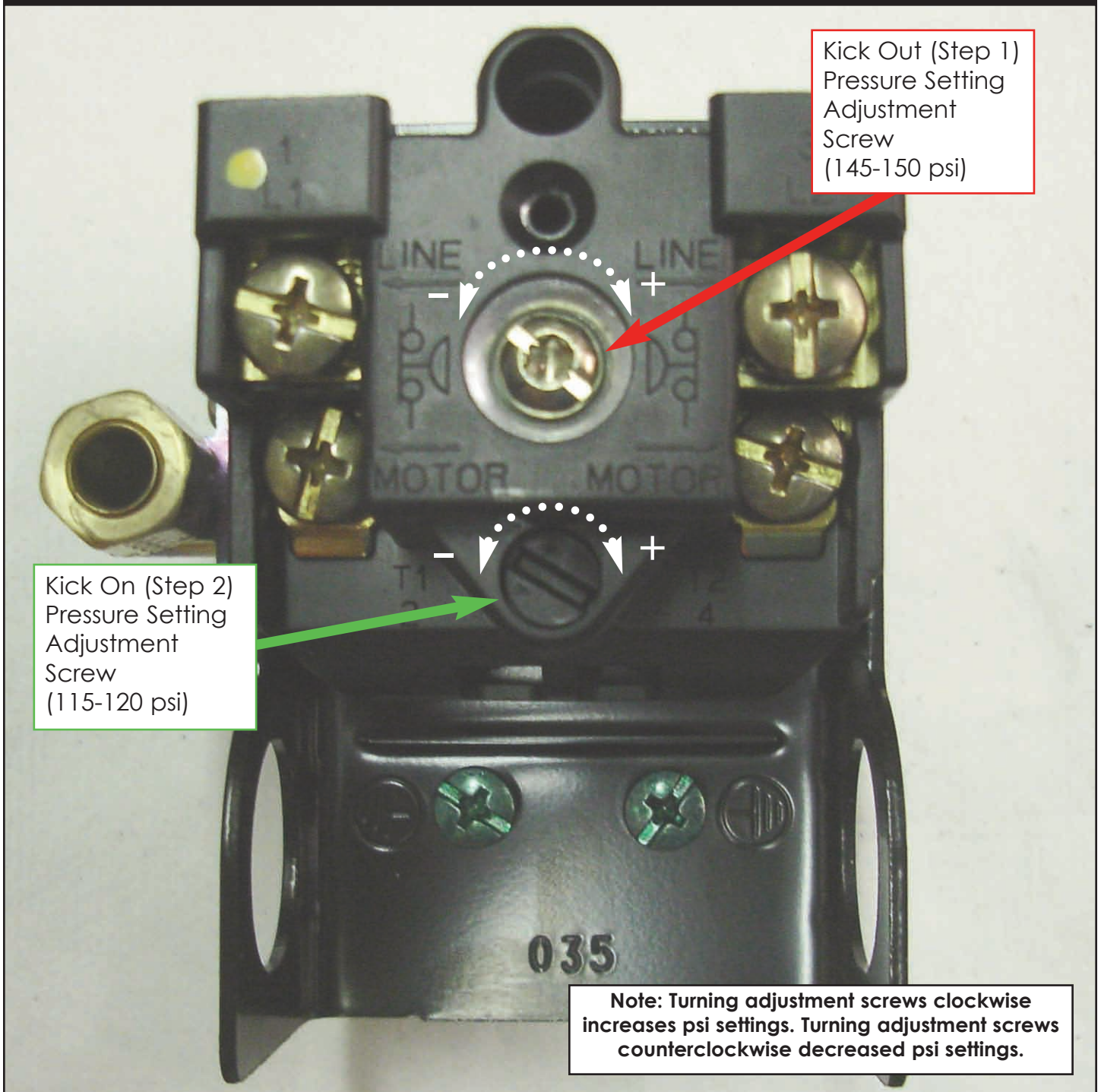
An optional electric or electronic speed control must be used to maintain proper operating speed of the air compressor. The engine speed control will automatically increase from idle to preset speed when engaged and decrease when disengaged. The electric cable pull speed control (American Eagle P/N 25740) is used on most gasoline engines. The electronic speed controls are used only on Ford 7.3 and 6.0L diesel engines. Proper installation instructions are provided with each system.

Hydraulic System:

The hydraulic system consists of the pump, oil reservoir, filters and hoses. Installed on the compressor is a valve block assembly that controls the flow to the hydraulic motor. To this block, a 1/2" high-pressure hose must be attached. This hose comes from the hydraulic pumps pressure side. A 3/4" minimum low-pressure return line is connected to the oil cooler outlet and is routed to the oil reservoir. American Eagle recommends a sufficient sized reservoir be provided which 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 are added to the hydraulic system. Pressure on the return line exceeding 200 PSI can and will cause damage to the filter, cooler, and components of the compressor hydraulic system.



Pressure Setting Instructions



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

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

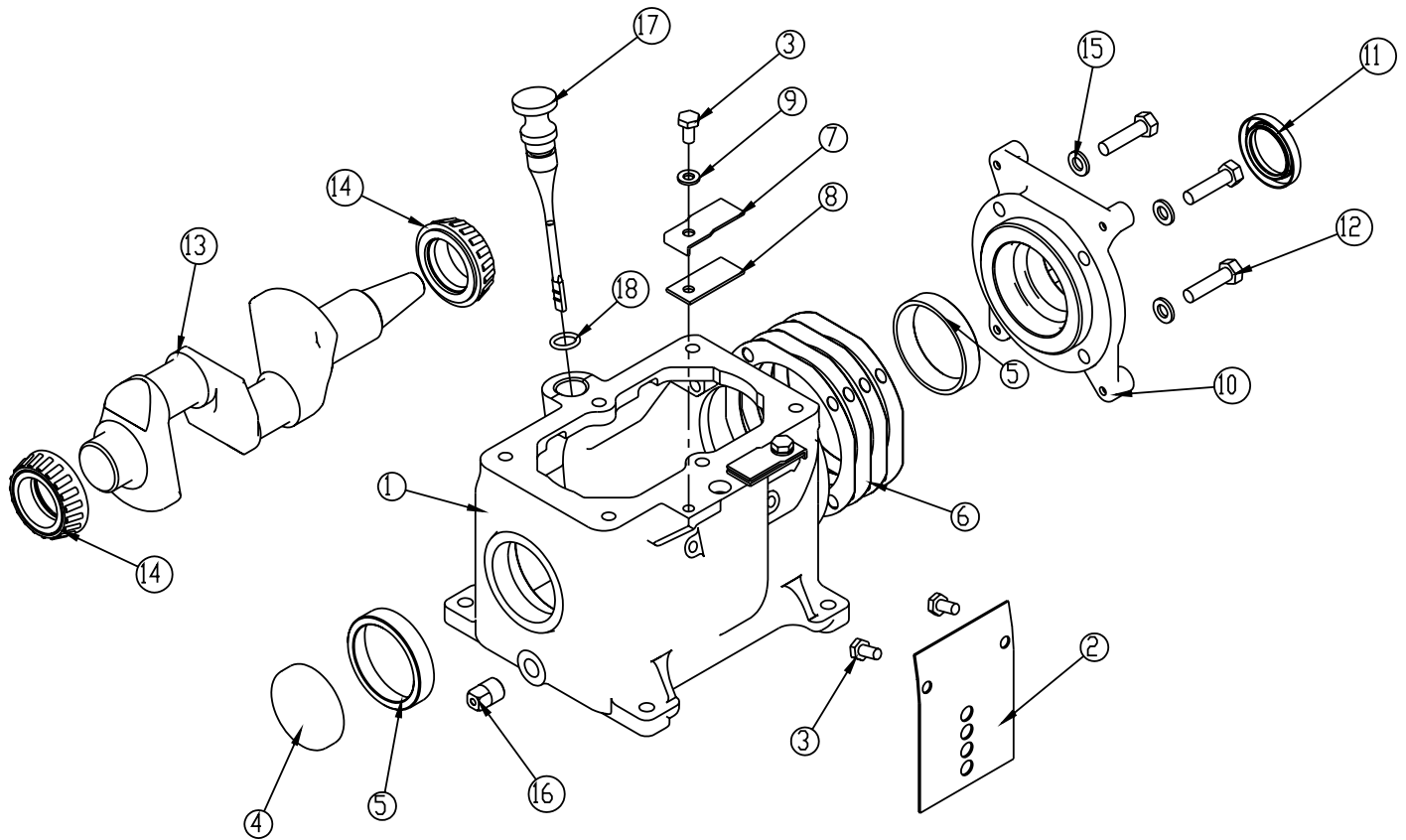
Note: Turning adjustment screws clockwise increases psi settings. Turning adjustment screws counterclockwise decreased psi settings.

Pressure Setting Instructions:

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

Assembly Drawings

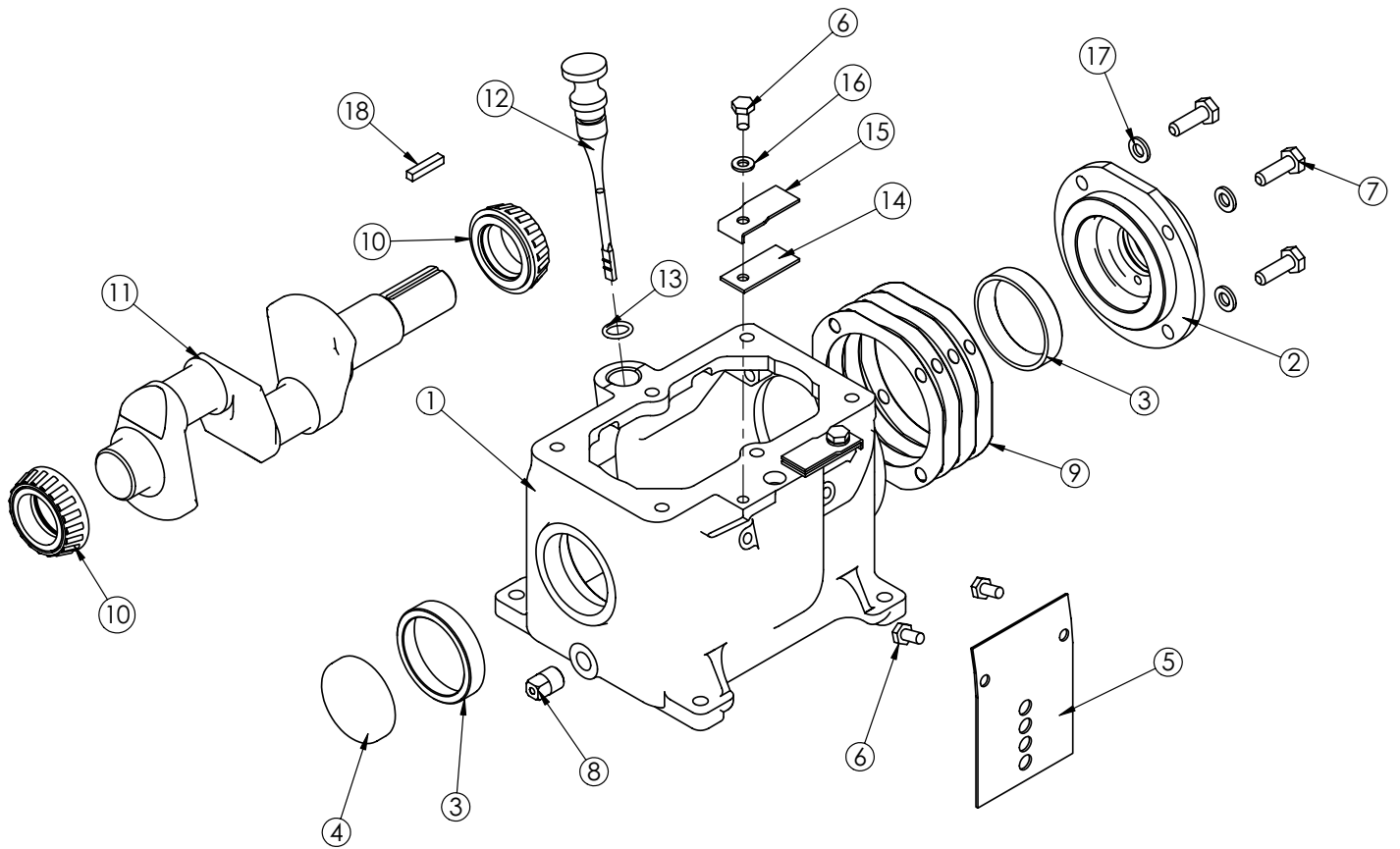
Crankcase Group (Tapered Shaft)



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

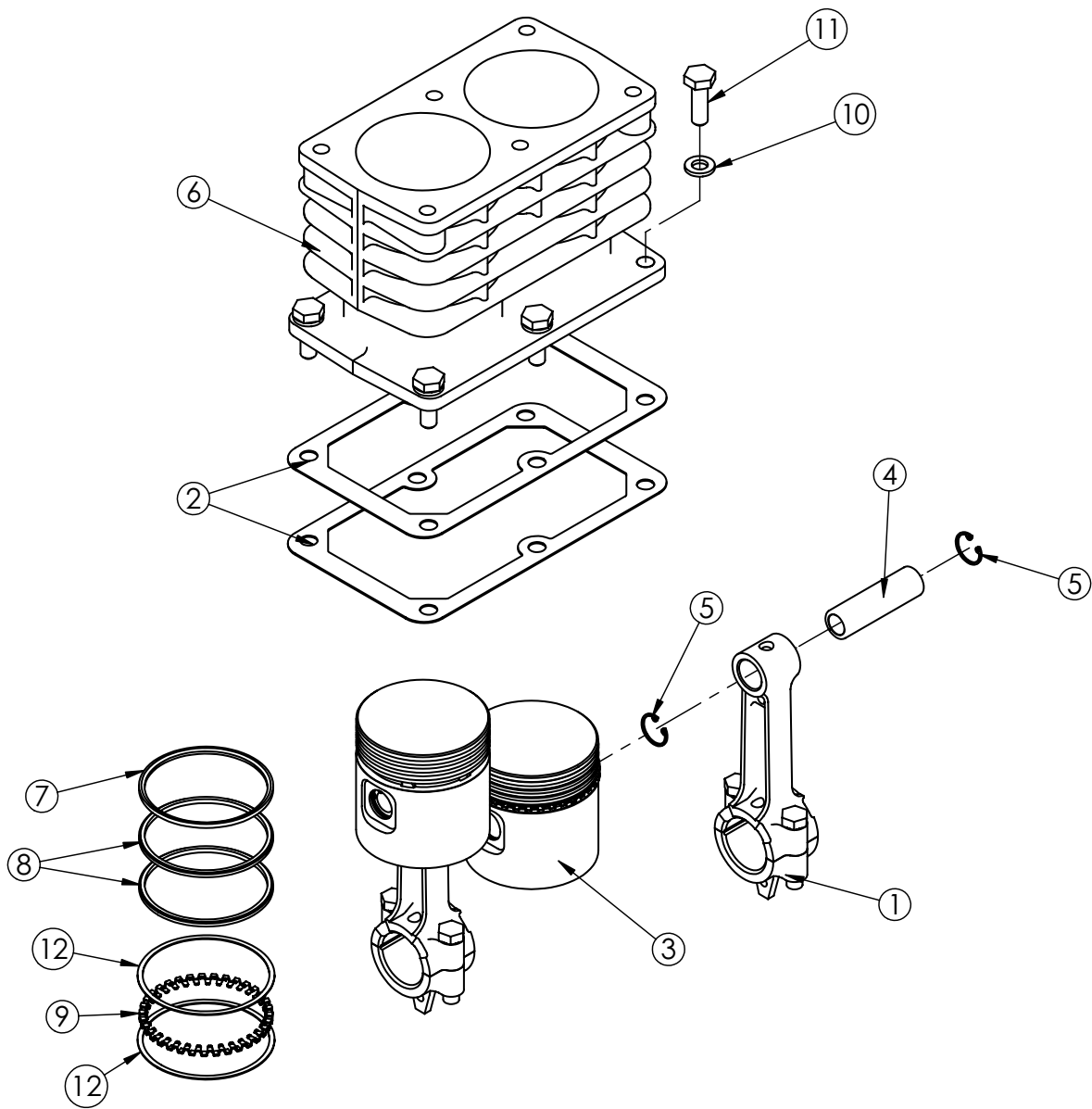
Crankcase Group (Straight Shaft)



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

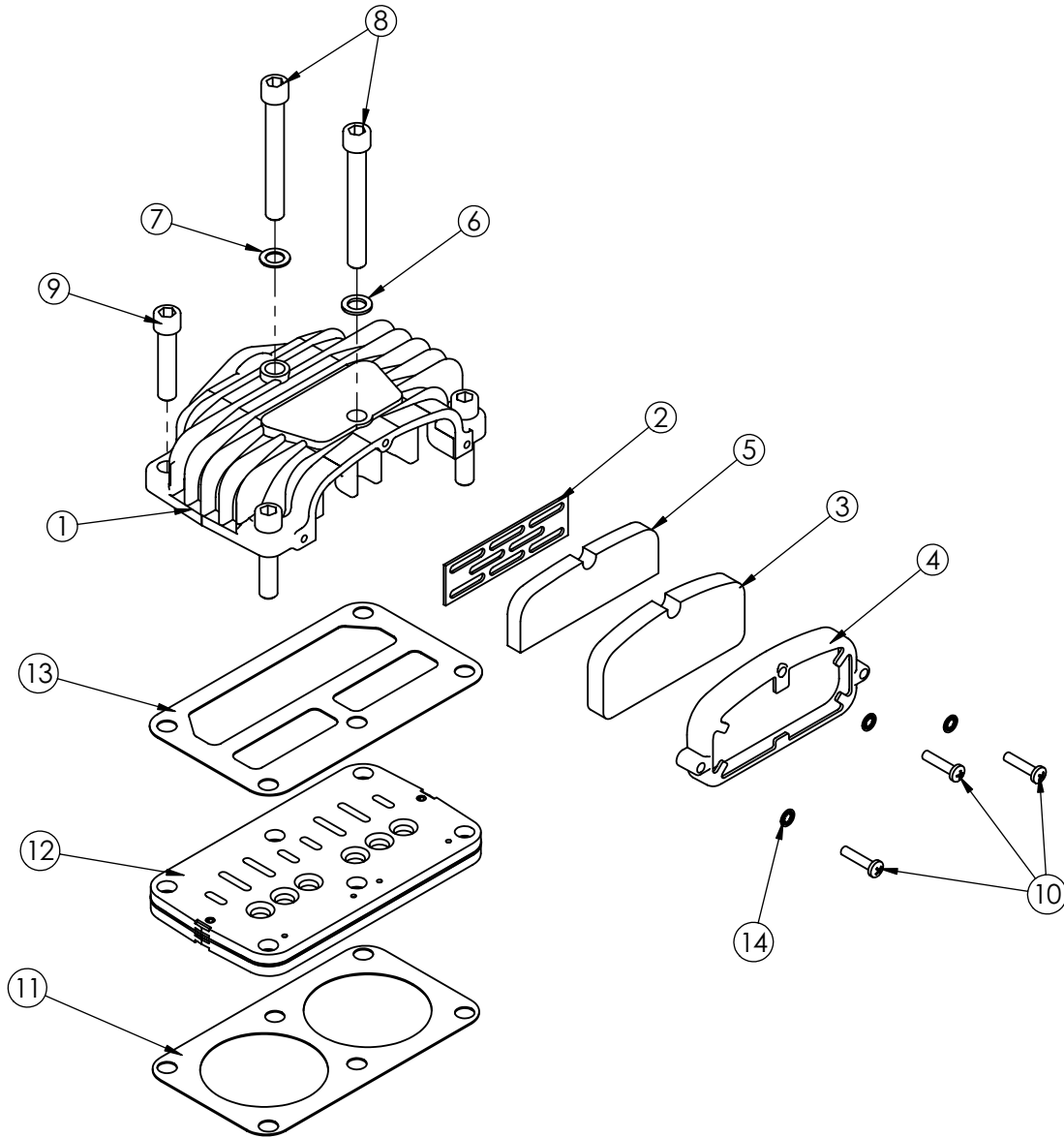
Cylinder Group



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

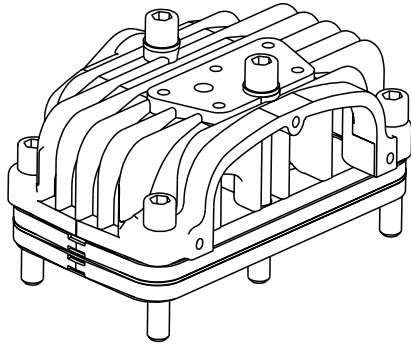
Head Group



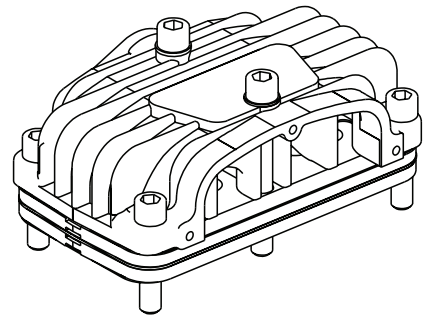
HEAD GROUP

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

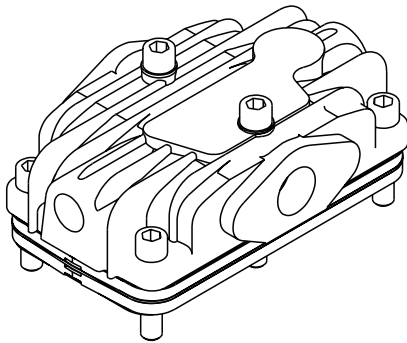
Head Options



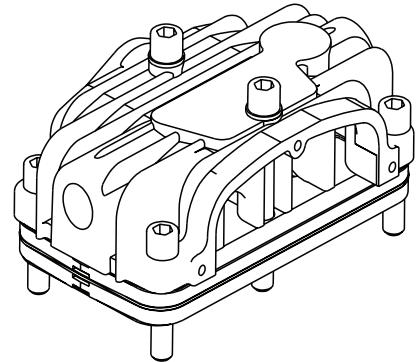
#22939
Cast Iron Air Cooled
Imbedded Filter & 1/2"
Threaded NPT Discharge
with head unloader.



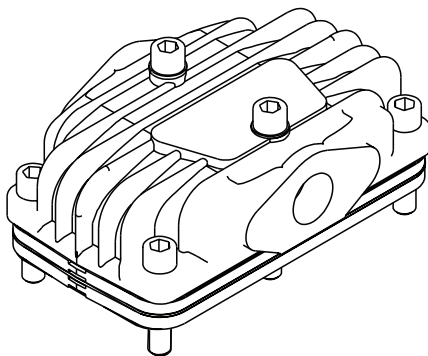
#C0046
Cast Iron Air Cooled
Imbedded Filter & 1/2"
Threaded NPT Discharge



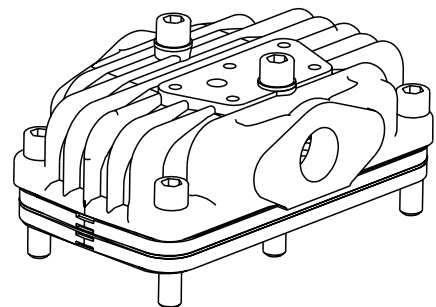
#23054
Cast Iron Water Cooled
3/4" Threaded Inlet & 1/2"
Threaded NPT Discharge



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

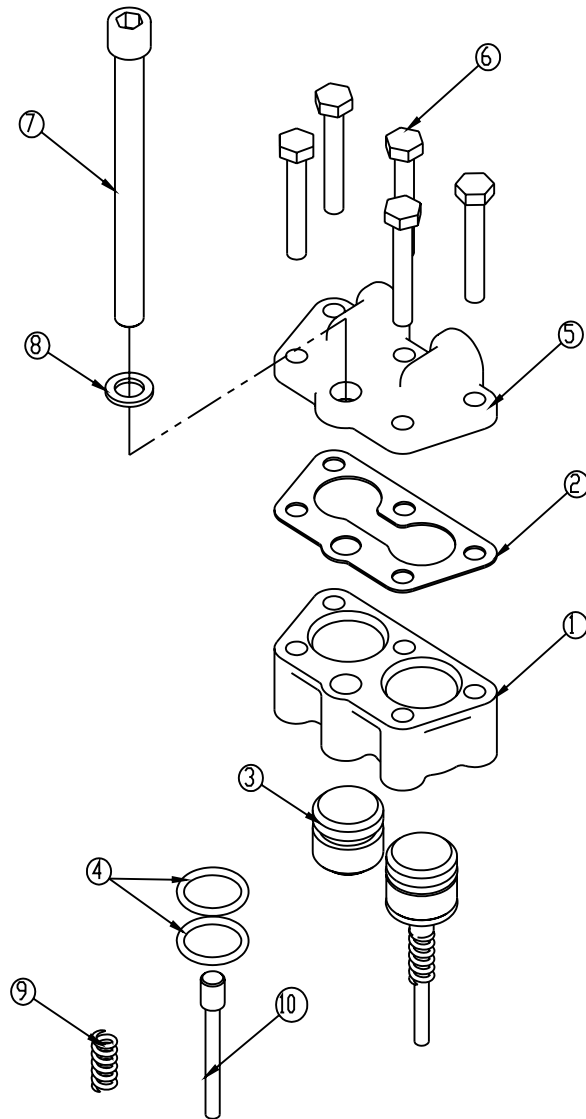


#22940
Cast Iron Air Cooled
3/4" Threaded Inlet & 1/2"
Threaded NPT Discharge



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

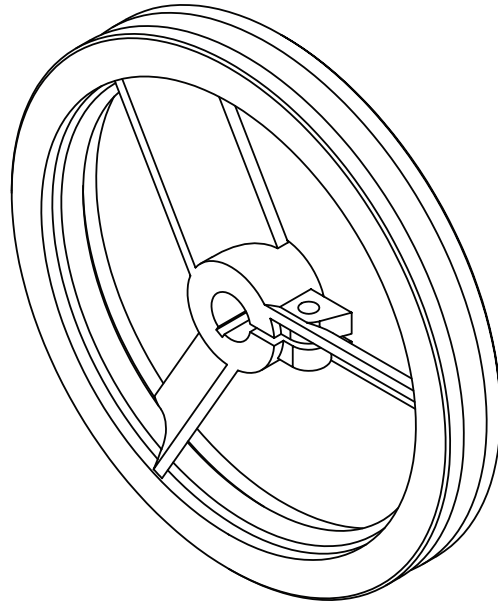
Optional Head Unloader



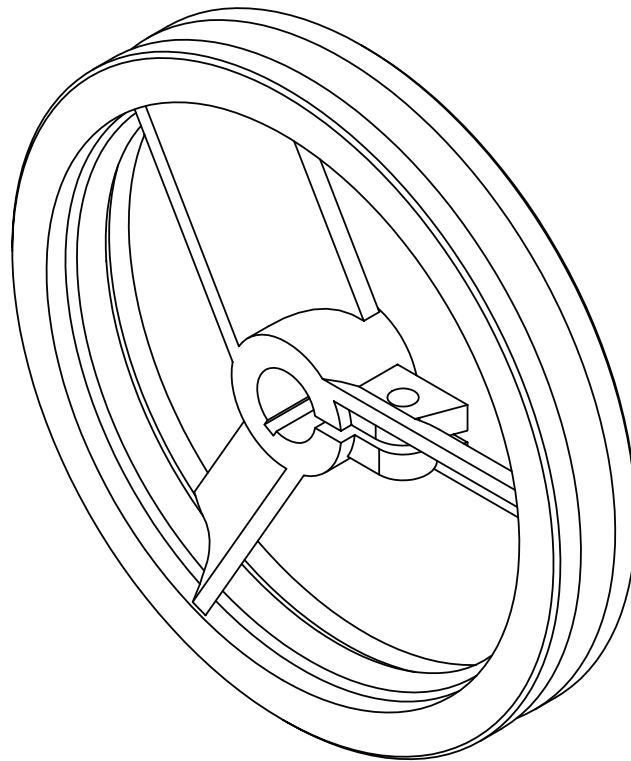
PN 23200

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

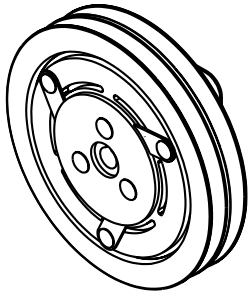


23037
10" - B-GROOVE

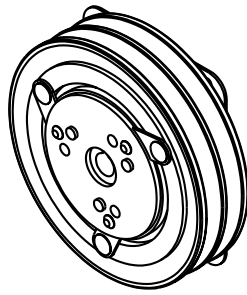


26036
12" - B-GROOVE

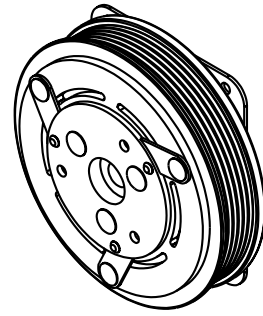
Clutch Options



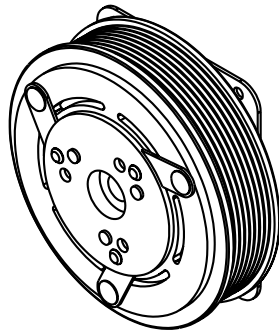
C4705
7" DUAL V



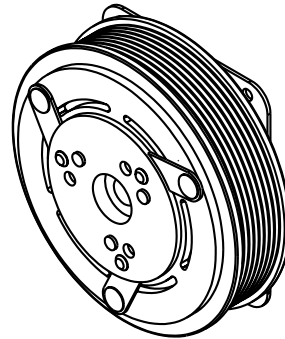
C4704
6" DUAL V



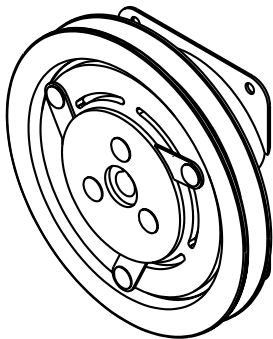
C4723
6" - 8 GROOVE
SERPENTINE



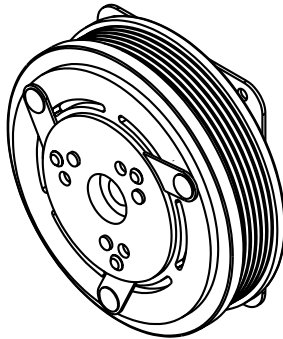
8198
6" - 8 GROOVE
24V SERPENTINE



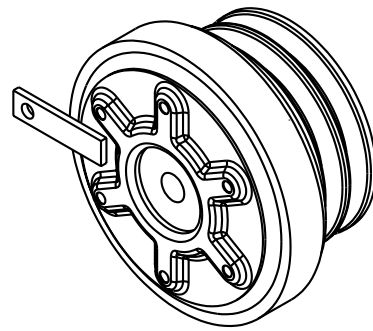
5793
6" - 8 GROOVE
12V SERPENTINE



C4775
7" SINGLE V

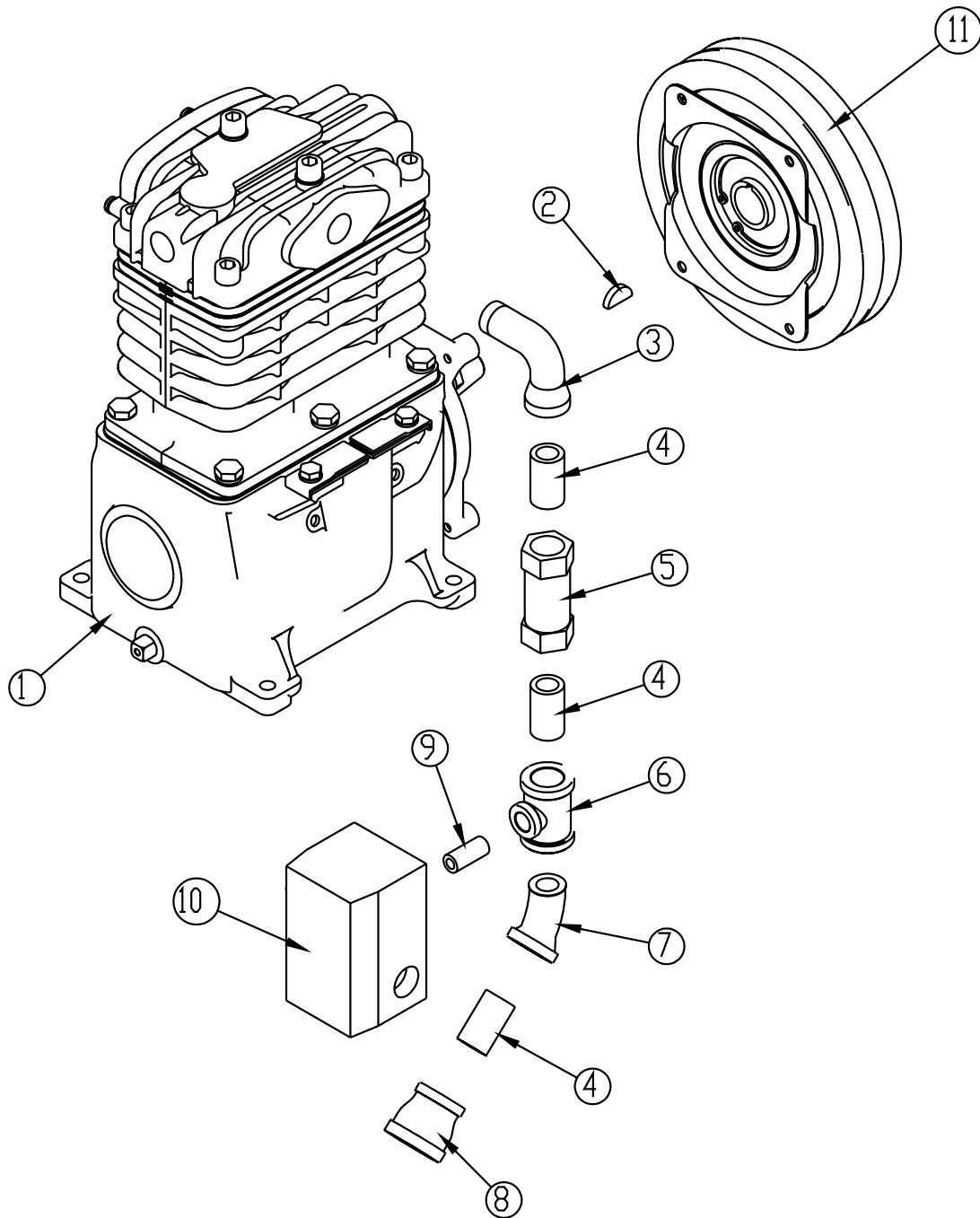


5774
6" - 6 GROOVE
12V SERPENTINE



C4762
STRAIGHT BORE

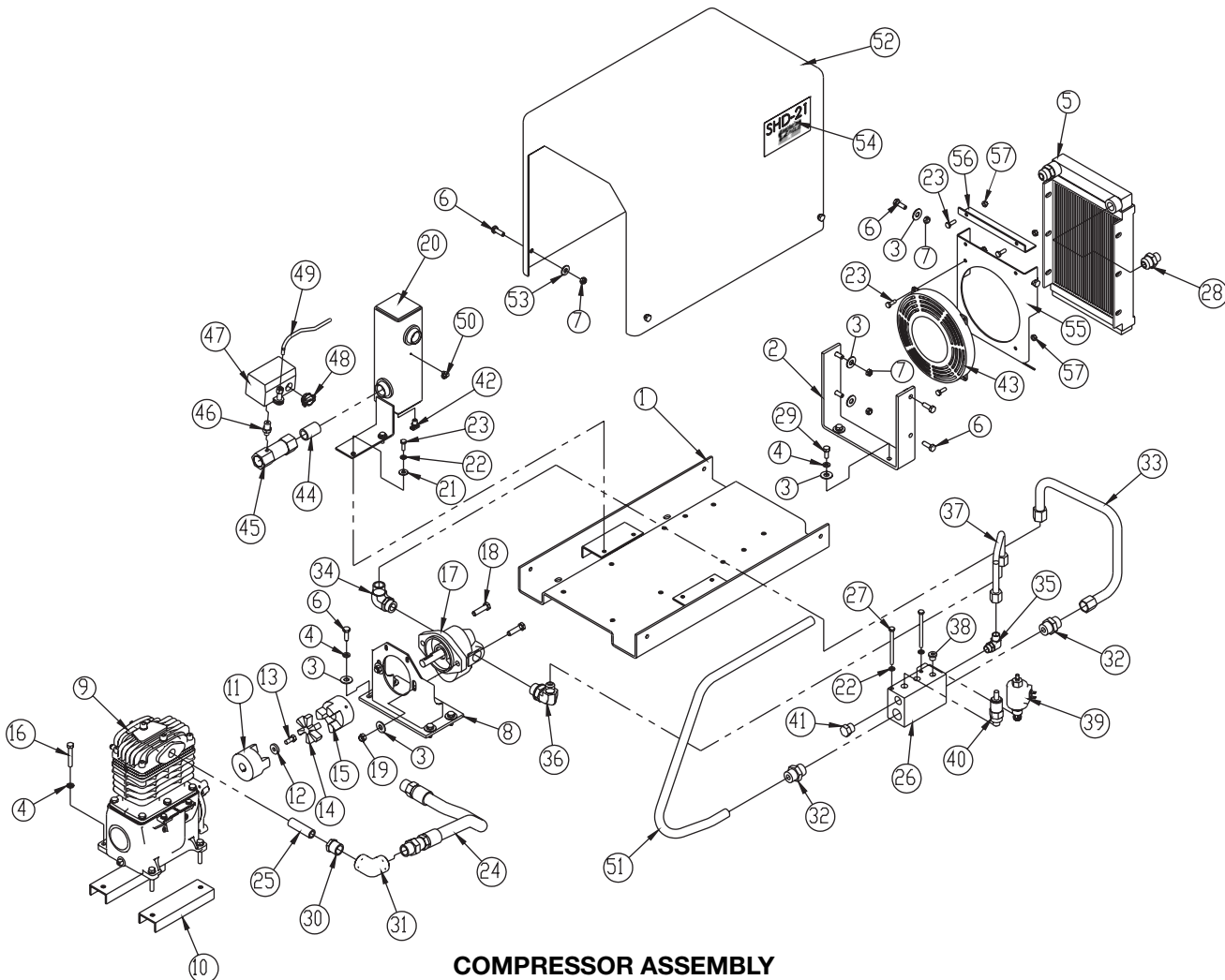
SUH-21 Compressor Assembly



COMPRESSOR ASSEMBLY

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	C1082	CPRSR 143CW14NP	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				

SHD-21 Compressor Assembly

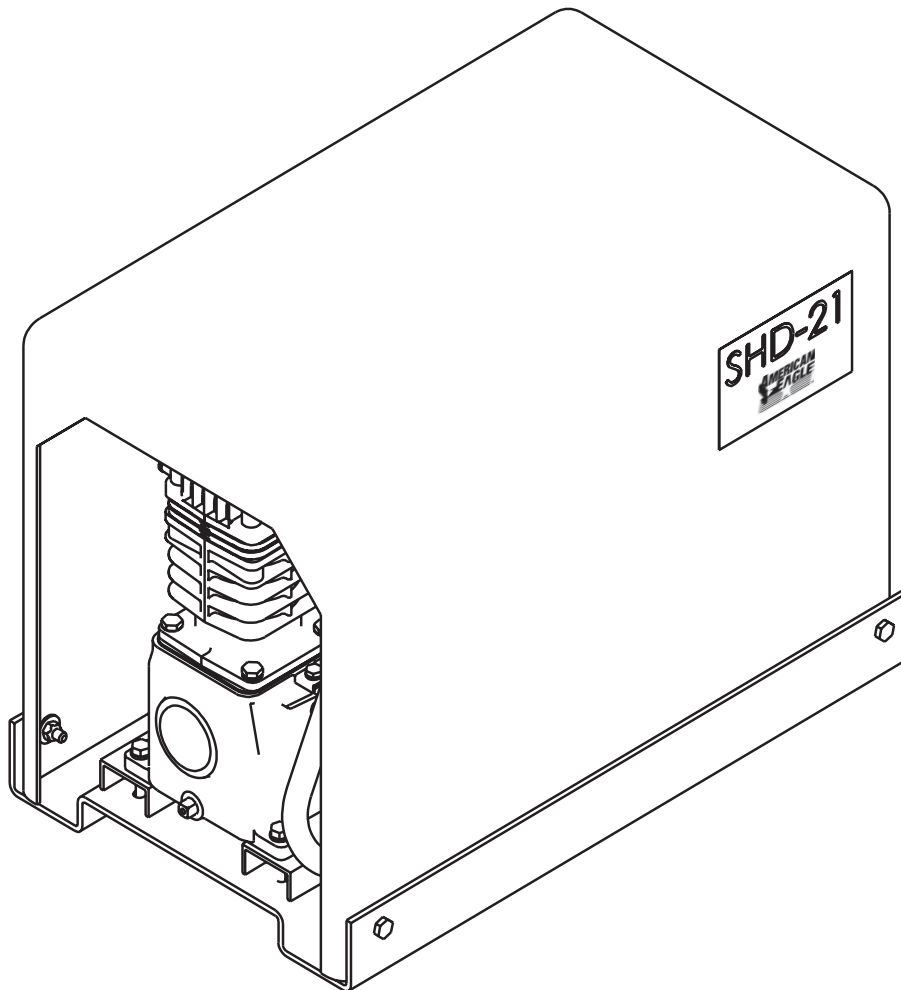
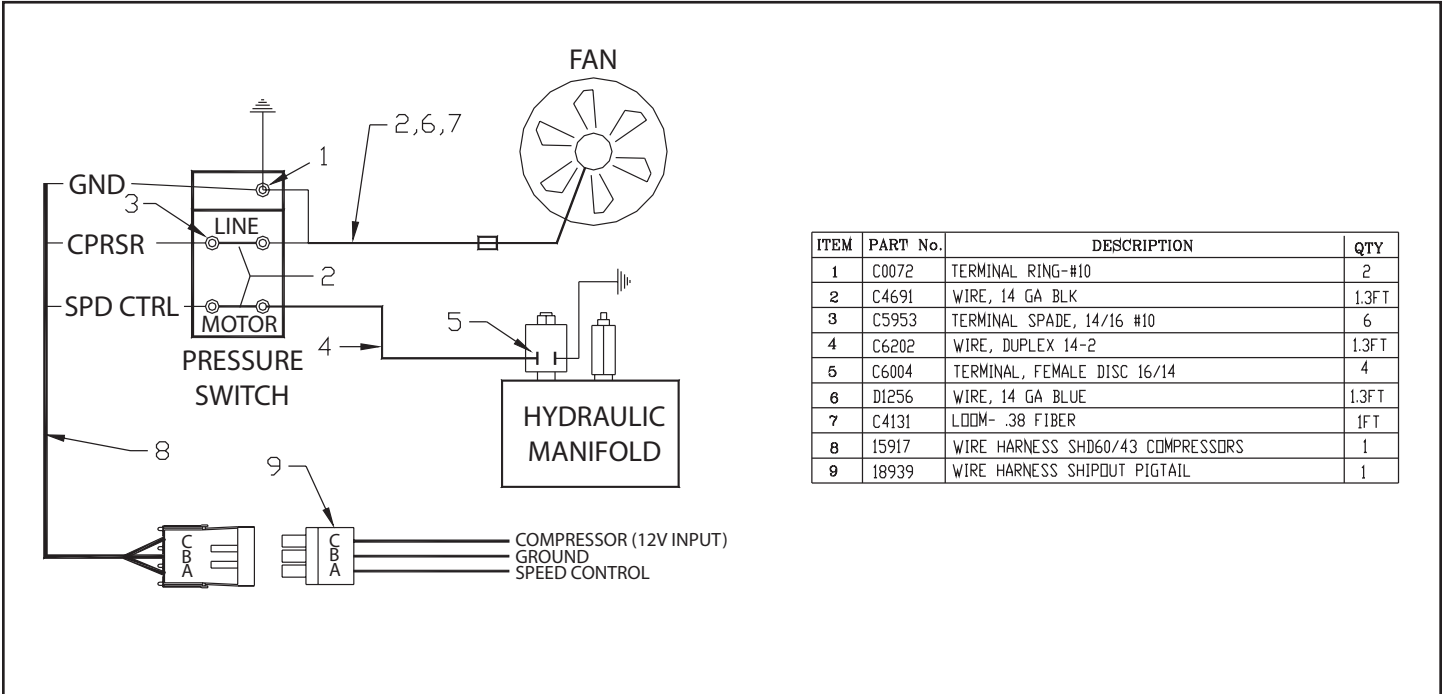


COMPRESSOR ASSEMBLY

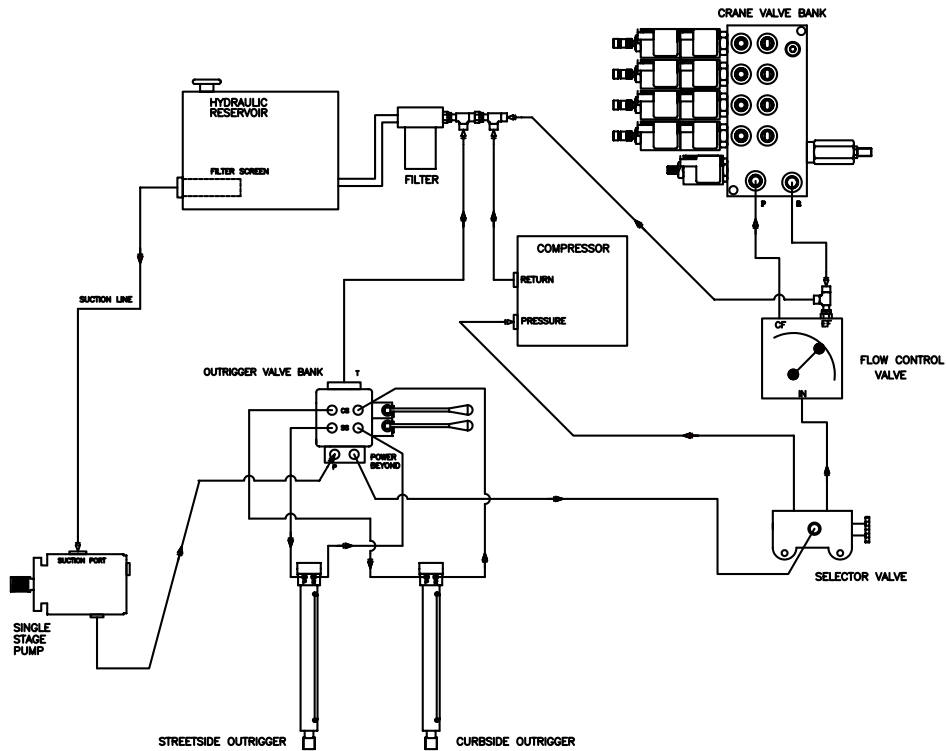
ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	4156	BASE WLDMT SHD30 L BASE	1	30	4582	FTG 0.75-0.50 BUSH RED 44-509	1
2	12809	Brkt Cooler Mount Shd30/21	1	31	C6175	ELBOW 90 DEG FM PIPE 3/4-DD	1
3	C6353	WASHER 0.38 FLAT GR8	14	32	C4498	FTG ORB/JIC STRT CONNT 12-F5OX-S	2
4	0522	WASHER 0.31 LOCK	10	33	C4954	TUBE ASM 0.50 MANIF TO MOTOR SHD60	1
5	5472	COOLER OIL SHD30 & SHD21	1	34	C6145	FTG 90 DEG	1
6	C0922	CAP SCR 0.31-18X1.00 HHGR5	14	35	C4501	FTG 8 C50X 90 DEG ELL	1
7	0342	NUT 0.31-18 HH NYLOC	10	36	C4671	FTG 8-12 C50X JIC 90 DEG	1
8	B0800	BRACKET MOTOR MOUNT	1	37	C2297	TUBE ASM 0.50 MANIF TO MOTOR SHD60	1
9	C1080	CPRSR 143CI4NP	1	38	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	1
10	5662	SPACER SHD21 CPRSR	2	39	C4499	VALVE SOLND	1
11	C3480	COUPLG HYD CPRSR TAPER	1	40	C4914	VALVE RELIEF CP-200-1-B-0-A-C	1
12	D1465	WASHER 0.31-0.178 THICK	1	41	C2322	PLUG 1/2 STR THRD 8-P5ON-S	1
13	C4570	CAP SCR 0.31-24X0.75 HH NF	1	42	C2261	DRAIN COCK	1
14	C4779	COUPLG SPIDER SUL 99 BLUE URETHANE	1	43	4586	FAN 7.50" PULL 12 VOLT SPL 301003	1
15	C4781	COUPLING LOVEJOY 5/8	1	44	D1264	FTG 0.75-CLOSE RED BRASS NIPPLE	1
16	0488	CAP SCR 0.31-18X2.00 HHGR5	4	45	5480	VALVE CHECK 0.75 STANDARD	1
17	4568	MOTOR HYD 21306 DSE	1	46	C6101	FTG 0.25-0.13 FF HEX NIPPLE	1
18	0345	CAP SCR 0.38-16X1.50 HHGR5	2	47	C0863	SWITCH PRES COMPRESSOR	1
19	0347	NUT 0.38-16 HH NYLOC	2	48	C5616	CLAMP ROMEX 0.50	1
20	11284	PULSATION TANK SHD30	1	49	16641	TUBE COPPER 0.25X9.00	1
21	0340	WASHER 0.25 FLAT	2	50	D0240	FTG ELL 0.13 CPRSN TUBE TO NPT	1
22	0521	WASHER 0.25 LOCK	4	51	5590	TUBE-ASM	1
23	0479	CAP SCR 0.25-20X0.75 HHGR5	6	52	5139	HOOD F/G SHD30	1
24	16605	HOSE ASM SHD30 AIR	1	53	0343	WASHER 0.31 USS FLAT ZINC	4
25	13579	NIPPLE 0.50X2.50 BRASS 80300-0825	1	54	5658	DECAL SHD21	2
26	C3558	MANIFOLD BLOCK SHD60	1	55	29589	PANEL SHROUD FAN SHD21	1
27	0483	CAP SCR 0.25-20 X 3.50 HHGR5	2	56	29590	CAP SHROUD FAN SHD21	1
28	12808	FTG ADAPT MSTR/MJIC 0503 8-12	2	57	0333	NUT 0.25-20 HHGR5 NYLOC	4
29	0420	CAP SCR 0.31-18X0.75 HHGR5	2				

Hydraulics/Electrical

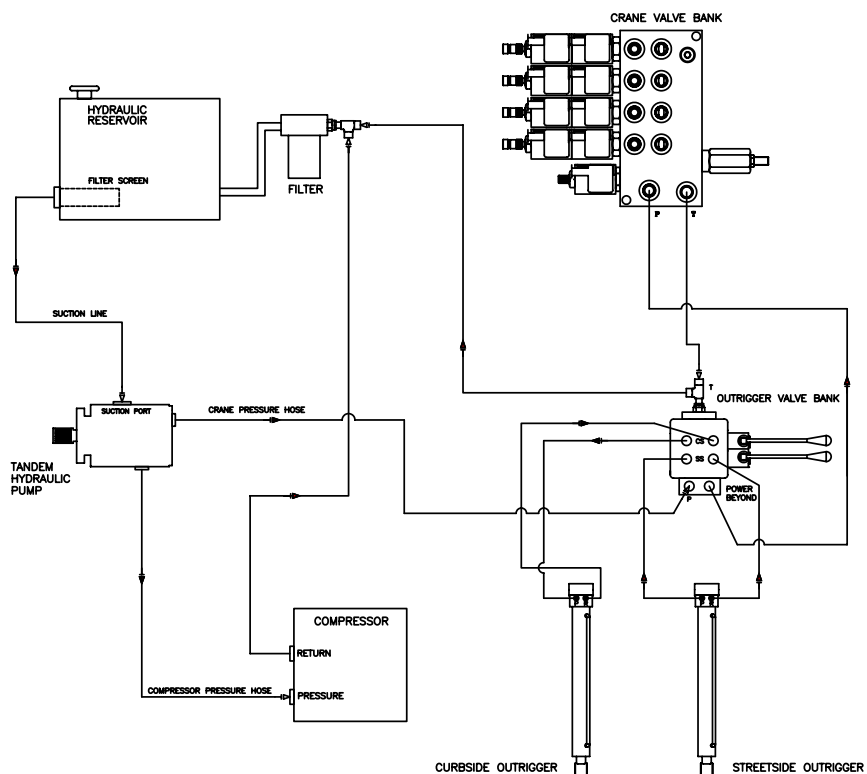
SHD-21 Control Kit



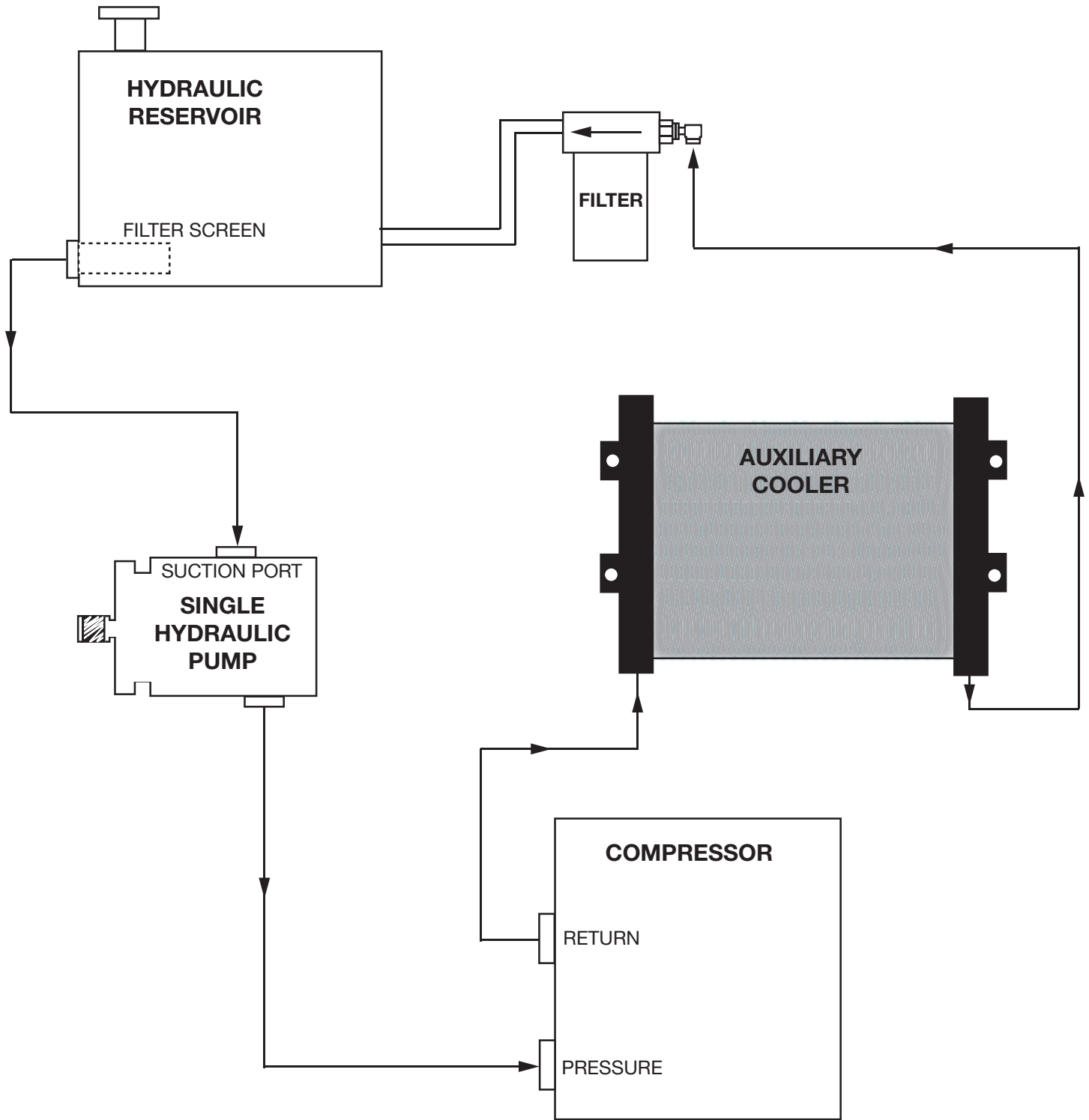
Typical Hydraulic Circuit for Single Stage Pump with Multiple Components



Typical Hydraulic Circuit for Tandem (Two Part) Pump with Multiple Components



Typical Hydraulic Circuit for Compressor with Auxiliary Cooler



Replacement Parts

Overhaul Kit - P/N: 5382

Consisting of: Gasket Set (1)
Ring Set (1)
Valve Plate (1)
Bearing Oil Seal (1)
Oil- 1 Qt
Inner Filter (1)
Outer Filter (1)

Gasket Set Complete - P/N: C0489**Ring Set Complete - P/N: 6184****Valve Plate Assembly - P/N: C0314**

Consisting of: Valve Plate (1)
Top Head Gasket (1)
Bottom Head Gasket (1)

Crankshaft With Bearings:

Tapered Shaft - P/N: 23688

Straight Shaft - P/N: 23687

Canister Filter - P/N: 22867**Replacement Motor Oil - P/N: C0087 (10W20)**

Call 800-321-3741 to Order

Troubleshooting

General Troubleshooting

Problem	Possible Cause	Solution
Compressor runs hot	Check compressor rotation Compressor reed valves Dirty intake filter Low oil Level Check valve leaking	Check fittings on hydraulic motor Inspect, clean or replace valves Clean filter assembly Level Add oil if needed Disassemble, clean, and re-install
Compressor does not run	No 12 Volt Power to Compressor Air reservoir full Hydraulic lines not connected Couplers or hoses blocked Air load against compressor Hydraulic pump not working Hydraulic motor not working Check valve leaking	Check Fuse Drain and activate pressure switch Connect lines Locate and remove restriction Relieve air pressure Check flow and pressure settings Inspect and repair Disassemble, clean, and reinstall or replace
Compressor runs too slow	Compressor reed valves Check for hose leaks Hydraulic flow too low Hydraulic motor worn Power unit relief set too low Hydraulic system too hot Speed control not working	Inspect, clean or replace valves Tighten any hose fitting leaking Check and reset flow Replace with new motor Readjust relief valve Reservoir too small. Add cooler to system. Check power supply and readjust
Compressor will not stop	Air pressure switch set wrong Leaking hoses or fittings	Check points and setting on switch Tighten all fittings and hoses
Air output too low (air pressure okay)	Low compressor speed Air filter dirty Airlines leaking Check valve plugged	Refer to compressor too slow Clean or Replace Filters Retighten hoses Remove and clean check valve
Compressor cycles (air not being used)	Leaks in air line Air pressure switch set wrong Dirt in solenoid valve	Tighten hoses and fittings Check cut-in and cutout settings Remove and clean
Air Output low (Air Pressure Low)	Dirty air filter Intake reed valves malfunction Insufficient torque on head bolts	Inspect and clean filter If air back-flows from air filter, reed valve is faulty and needs to be replaced. Tighten bolts to required torque
Air pressure too low	Air pressure switch set wrong Air line leak Air consumption exceeds Compressor capacity Intake or exhaust valves damaged	Readjust high pressure setting Inspect and tighten loose hoses Check air demand for items using the air supply Inspect and replace
Air pressure too high	Pressure switch not operating Internal contamination Pressure switch not adjusted	Inspect and clean Inspect and clean Readjust to lower pressure
High crankcase oil usage	Oil level too high Oil leaks Piston rings worn or broken	Check oil level and drain if needed Inspect and repair gaskets or seals Replace rings
Blowing oil from crankcase breather	Blown head gasket Piston rings worn or broken Oil level in crankcase too high Hole in piston	Replace gasket Replace rings Check oil level and drain Replace piston
No lubricating oil pressure	Air lock in oil pump No oil in crankcase Pump suction blocked	Loosen oil gauge while compressor is running. When oil begins to flow from fitting, tighten oil gauge. Check oil level and add Remove oil intake plug and inspect intake and screen. Clean blockage.

SHD-21 Troubleshooting

If symptoms of poor performance develop, the following chart can be used as a guide to investigate and correct the problem. When diagnosing faults in operations of the air compressor, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure that is listed in the compressor specification section of this manual. **Note: To Operate, the American Eagle SHD-21A Compressor needs 7 GPM and 1800 PSI System Pressure.**

Problem	Possible Cause	Solution
Compressor locks up at 110 psi and higher while under load: Note: When checking hydraulic pump flow, make sure the air tank is closed and the compressor is running.	Weak Hydraulic Motor.	If the Hydraulic pump is supplying the recommended amount of fluid to the hydraulic motor, replace the hydraulic motor.
	Faulty Hydraulic Pump.	If the pump pressure is below the recommended GPM, replace the Hydraulic pump if necessary.
	Oil Pressure is low.	If the oil pressure gauge is reading in the red area, the oil pressure is low. See the Low Oil Pressure entry in this troubleshooting section.
Compressor will not operate:	Air receiver is full.	Drain and activate pressure switch.
	12 Volt power is not going to the line side of the pressure switch.	If there is no power going to the line side of the pressure switch, trace the wire back to the power source.
	Faulty Pressure Switch.	If there is no power going to the solenoid valve, replace the pressure switch.
	Hydraulic Lines not installed correctly.	Reinstall hydraulic lines.
	Air Couplers or hoses are blocked.	Locate and remove restriction.
	Inline Check-Valve is leaking.	Disassemble, clean, and reinstall or replace.
	Faulty Solenoid Valve.	If there is power going to the pressure switch, press down on the solenoid valve bypass button. If the compressor starts to operate, replace the solenoid valve.
	Compressor is locked up.	Remove the coupler and lovejoy between the compressor pump and the hydraulic motor. Turn the compressor over by hand. If the compressor turns over freely, the pump is ok. This indicates there is a possible hydraulic problem.
	Hydraulic motor malfunctioning.	Inspect and repair.
Hydraulic pump malfunctioning.	Check flow and pressure settings.	

Problem	Possible Cause	Solution
Compressor runs hot:	Dirty intake filter.	Clean filter assembly.
	Low oil Level.	Add oil if needed.
	Inline check-valve leaking.	Disassemble, clean, and re-install.
	Blown Head or Reed Valve Gasket.	Replace Gasket.
	Malfunctioning reed valve.	Inspect, clean or replace valves.
Compressor runs too slow:	Speed control not working.	Check power supply and readjust.
	Check for air hose leaks.	Tighten any hose fitting leaking.
	Hydraulic system too hot.	Reservoir too small. Add cooler to system.
	Power unit relief set too low.	Readjust relief valve.
	Hydraulic motor worn.	Replace with new motor.
	Hydraulic flow too low.	Check and reset flow.
	Malfunctioning reed valves.	Inspect, clean, or replace valves.
Compressor hesitates or stumbles at restart (115 PSI): Note: Compressor kicks out at 150 PSI and kicks back in at 115 PSI	Weak Hydraulic Pump.	If the hydraulic pump pressure is below the recommended GPM to the hydraulic motor, the hydraulic pump could be weak and needs to be replaced.
	Weak Hydraulic Motor.	If the hydraulic pump is supplying the recommended GPM to the hydraulic motor, the hydraulic motor could be weak and needs to be replaced.
No lubricating oil pressure:	No oil in crankcase.	Add oil.
	Pump suction blocked.	Remove oil intake plug and inspect intake screen. Clean blockage.
	Air lock in oil pump.	Loosen oil gauge while the compressor is running. When oil begins to flow, tighten the gauge.
	Oil pump pin is broken.	Replace pin.
	Malfunctioning oil pump.	If the oil pressure gauge indicator is reading in the red area, use a 1/4" lock washer and point it flat. Remove the oil pump housing cover and place the lock washer inside the oil pump transfer bushing so it is between the pump spring and the transfer bushing. If oil pressure is still low, add one more lock washer. If two lock washers don't increase the oil pressure, replace the oil pump.

Problem	Possible Cause	
Air Output low: (Air Pressure Low)	Dirty air filter.	Inspect and clean filter.
	Insufficient torque on head bolts.	Tighten bolts to required torque.
	Intake reed valves malfunction.	If air back-flows from air filter, reed valve is faulty and needs to be replaced.
Air pressure too low:	Air line leaking.	Inspect and tighten loose hoses.
	Air consumption exceeds Compressor capacity.	Check air demand for items using the air supply.
	Air pressure switch set incorrectly.	Readjust high pressure setting.
	Intake or exhaust reed valves damaged.	Inspect and replace.
Air pressure too high:	Pressure switch not functioning correctly.	Inspect and clean.
	Internal contamination.	Inspect and clean.
	Pressure switch not adjusted correctly.	Readjust to lower pressure.
High crankcase oil usage:	External oil leaks.	Inspect and repair gaskets or seals.
	Oil level too high.	Check oil level and drain if needed.
	Piston rings worn or broken.	Replace rings.
Blowing oil from crankcase breather:	Oil level in crankcase too high.	Check oil level and drain.
	Blown head gasket.	Replace gasket.
	Piston rings worn or broken.	Replace ring.
	Hole in piston.	Replace piston.
Compressor will not stop:	Air pressure switch set incorrectly .	Check points and setting on switch.
	Leaking air hoses or fittings.	Tighten all fittings and hoses.



Limited Warranty Statement

American Eagle warrants products designed and manufactured by Stellar to be free from defects in material and workmanship under proper use and maintenance. Products must be installed and operated in accordance with Stellar's written instructions and capacities. The warranty period shall cover the following:

Twelve (12) month warranty on parts and
Twelve (12) month repair labor

The warranty period shall begin from the date recorded by American Eagle as the in-service date. This date will be derived from the completed warranty registration card. In the event a warranty registration card is not received by American Eagle, the factory ship date will be used. New compressors will be issued on all returns within 90 days of this factory ship date. After 90 days, American Eagle reserves the right to issue remanufactured compressors. Regardless of in-service date, warranty coverage does not extend beyond twenty-four (24) months from date of manufacture.

American Eagle's obligation under this warranty is limited to, and the sole remedy for any such defect shall be, the repair and/or replacement (at American Eagle's option) of the unaltered part and/or component in question. American Eagle after-sales service personnel must be notified by telephone, fax, or letter of any warranty-applicable damage within fourteen (14) days of its occurrence. If at all possible, American Eagle will ship the replacement part within 24-hours of notification by the most economical, yet expedient, means possible. Expedited freight delivery will be at the expense of the owner.

Warranty claims must be submitted and shall be processed in accordance with American Eagle's established warranty claim procedure. American Eagle after-sales service personnel must be contacted prior to any warranty claim. A return materials authorization (RMA) account number must be issued to the claiming party prior to the return of any warranty parts. Parts returned without prior authorization will not be recognized for warranty consideration. All damaged parts must be returned to American Eagle freight prepaid; freight collect returns will be refused. Freight reimbursement of returned parts will be considered as part of the warranty claim.

Warranty service will be performed by any American Eagle new equipment distributor, or by any American Eagle-recognized service center authorized to service the type of product involved, or by the American Eagle factory in the event of a direct sale. At the time of requesting warranty service, the owner must present evidence of date of delivery of the product. The owner shall be obligated to pay for any overtime labor requested of the servicing company by the owner, any field service call charges, and any towing and/or transportation charges associated with moving the equipment to the designated repair/service provider.

All obligations of American Eagle and its authorized dealers and service providers shall be voided if someone other than an authorized American Eagle dealer provides other than routine maintenance service without prior written approval from American Eagle. In the case repair work is performed on a American Eagle-manufactured product, original American Eagle parts must be used to keep the warranty in force. The warranty may also be voided if the product is modified or altered in any way not approved, in writing, by American Eagle.

The owner/operator is responsible for furnishing proof of the date of original purchase of the American Eagle product in question. Warranty registration is the ultimate responsibility of the owner and may be accomplished by the completion and return of the American Eagle product registration card provided with the product. If the owner is not sure of registration, he is encouraged to contact American Eagle at the address below to confirm registration of the product in question. This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear and tear, accident, mishap, untrained operators, or improper or unintended use. The owner has the obligation of performing routine care and maintenance duties as stated in American Eagle's written instructions, recommendations, and specifications. Any damage resulting from owner/operator failure to perform such duties shall void the coverage of this warranty. The owner will pay the cost of labor and supplies associated with routine maintenance.

The only remedies the owner has in connection with the breach or performance of any warranty on the American Eagle product specified are those set above. In no event will American Eagle, the American Eagle distributor/dealer, or any company affiliated with American Eagle be liable for business interruptions, costs of delay, or for any special, indirect, incidental, or consequential costs or damages. Such costs may include, but are not limited to, loss of time, loss of revenue, loss of use, wages, salaries, commissions, lodging, meals, towing, hydraulic fluid, or any other incidental cost.

All products purchased by American Eagle from outside vendors shall be covered by the warranty offered by that respective manufacturer only. American Eagle does not participate in, or obligate itself to, any such warranty.

American Eagle reserves the right to make changes in design or improvement upon its products without imposing upon itself the same upon its products theretofore manufactured.

This warranty will apply to all American Eagle Drawer Sets and Compressed Air Systems shipped from American Eagle's factory after July 1, 2005. The warranty is for the use of the original owner only and is not transferable without prior written permission from American Eagle.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. REMEDIES UNDER THIS WARRANTY ARE LIMITED TO THE PROVISION OF MATERIAL AND SERVICES, AS SPECIFIED HEREIN. AMERICAN EAGLE INDUSTRIES, INC. IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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