

Reciprocating Pressure Lubricated Pump Operating Manual





DANGER!

Breathable Air Warning

This compressor/pump is NOT equipped and should NOT be used “as is” to supply breathing quality air. Intake air can cause carbon monoxide or other contaminants. For any application of air for human consumption, you must fit the air compressor/pump with suitable in-line safety and alarm equipment. This additional equipment is necessary to properly filter and purify the air to meet minimal specifications for Grade D breathing as described in Compressed Gas Association Commodity Specification G 7.1 – 1966, OSHA 29 CFR 1910. 134, and/or Canadian Standards Associations (CSA).

DISCLAIMER OF WARRANTIES

In the event the compressor is used for the purpose of breathing air application and proper in-line safety and alarm equipment is not simultaneously used, existing warranties are void, Airbase Industries disclaims any liability whatsoever

▪ **READ INSTRUCTION MANUAL BEFORE OPERATING**

- **RISK OF FIRE OR EXPLOSION** – Do not spray combustible/flammable liquid in a confined area. Spray area must be well ventilated. Do not smoke while spraying or spray where sparks or flame is present. Arching parts – keep compressor at least 20 feet away from spraying area and all explosive vapors.
- **RISK OF INJURY** – Moving parts can cause serious injury. Do not operate with guards removed. Machine may start automatically. Disconnect power before servicing.
- **RISK OF BURSTING** – Bypassing, modifying or removing safety/relief valves can cause serious injury or death. Do NOT bypass, modify or remove safety/relief valves. Do NOT direct stream at body. Rusted tanks can cause explosion and severe injury or death. Drain tank daily or after each use. Use only suitable air handling parts acceptable for pressure of not less than the maximum allowable working pressure of the machine.

- **RISK OF ELECTRICAL SHOCK – HAZARDOUS VOLTAGE:** Can cause serious injury or death. Disconnect power and bleed pressure from the tank before servicing. Lockout/Tagout machine. Compressor must be connected to properly grounded circuit. Do not operate compressor in wet conditions. Store indoors.
- **HOT SURFACE.** Can cause serious injury. Do not operate with guards removed. Disconnect power before servicing. Lockout/Tagout machine

IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME-DELAY FUSE MARKED “D”

COMPLIES WITH CCR462 (L)(2).

DO NOT USE BELOW GARAGE FLOOR OR GRADE LEVEL



IMPORTANT INFORMATION! READ AND FOLLOW THESE INSTRUCTIONS. RETAIN FOR REFERENCE

This manual provides safe and reliable instructions for installation, operation and maintenance of your air compressor pump. In order to receive maximum performance and long life from your compressor, the following instructions should be carefully read and all points regarding installation and operation of the unit should be noted and observed. A careful reading of this manual, prior to connecting anything to the motor of the compressor, will pay dividends in terms of trouble-free operation. If you are uncertain about any of these instructions, please contact our tech department.

RECEIPT & INSPECTION

Upon receiving the compressor check for possible damage or missing parts in transit and see that the pulley turns freely by hand. Report any damage to the carrier at once can note on the delivery receipt. If you discover damage after receiving the unit (concealed damage) the carrier must be notified within 15 days.

- **Ensure adequate lifting equipment is available for unloading and moving to installation location.**
- **Equipment used for lifting must be properly rated for the weight of the unit**
- **Lift unit by the shipping skid.**
- **Lift the pump by lifting eye**
- **Do not work on or walk under the unit while it is suspended**

INSTALLATION

Select a Location

Select a clean, dry, and well-lit location with plenty of space for ventilation. Provide at least 1,000 cubic feet of fresh air per 5 horsepower. Place unit at least 15 inches from walls. Operating temperatures ideally should be between 32F and 100F (0 C and 37.8 C), store in a heated area. If this is not possible, you must protect all safety/relieve valves and drain valves from freezing in cold climates. If temperatures are consistently below 40F (4.4 C), consider installing an external heater block on the crankcase. Insulate cold water or other low temperature pipes that pass overhead to avoid the possible collection and dripping of condensate onto the compressor and motor that could cause rusting or the motor shorting out. DO NOT install the compressor in a boiler room, paint spray room, or area where sandblasting is carried on. If air in the area where the compressor is to be installed is acid or dust laden, the compressor intake should be piped to the outside. This intake pipe should increase in size for every twenty (20) feet of run and the intake filters should be installed at the end of the pipes with a hood to protect them from the elements. Special size filters are required for that pipe.

If installed in unheated areas with large temperature changes excessive moisture is especially likely to occur. Moisture may form in the pump and produce sludge in the lubricant, causing running part to wear out prematurely. Two main signs of excessive humidity are external condensation on the pump when it cools down and milky appearance to the lubricant.



If the compressor has to be located where the motor will be exposed to appreciable quantities of water, dirt, oil, acid, or alkaline fumes, the motor must be of special construction to avoid rapid deterioration; i.e. TEFC

Unless the base is exactly level, shims will be required. Any space between the base and foot of the tank should be shimmed rather than drawing the foot down, thus placing strain on the unit. When properly shimmed, vibration will be at a minimum. Also use a ¼" or less rubber pad under each foot to help with vibration.

Allow sufficient space around the compressor so that it is accessible from all sides for maintenance. Mount the unit with the pulley side toward the wall, but at least 18 inches from it.

Installing the pump

- Mount pump to the deck of the tank. We recommend using angle iron to raise the pump above the deck, to allow for better crankcase cooling. Install mounting bolts, but don't tighten them yet
- Hook up main feed tube from the 3/4" flare fitting to the check valve in the tank.
- Tighten up the mounting bolts now
- Install the belt over the flywheel and motor pulley
- Loosen the bolts on the electric motor and slide the motor back so that there is ½" deflection in the center of the belt for proper belt tension. There should be a ½" of play on the belt tension. Tighten the bolt back up on the motor
- Run ¼" copper tubing from 90-degree elbow (coming out of the front crankcase) to the side of your check valve.
- Don't hook up the ¼" copper tubing on the top of the cylinder heads unless using a pilot valve.
- Make sure there is a tube from the check valve in the tank to the unloader on the pressure switch. This will relieve the head pressure when the compressor stops. This will make it easier for the motor when the compressor goes to restart.
- Fill crankcase with Airbase synthetic oil to the center of the sight glass
- Size the correct pulley for your motor. When using a 7.5 HP motor use a 3 1/2" pulley on a 3450-rpm motor and a 7" pulley on a 1750 rpm motor. When using a 10 HP motor that runs 3450 rpm use a 4 ½" pulley and a 9" pulley when using a 1750 rpm motor.
- Turn on the motor and check for proper rotation. The pump must run counterclockwise when facing the pulley side of the compressor.

Air intake

The compressor pumps are equipped with intake filters that require no piping.

Pipe Connection

A flexible connector should be used between the compressor tank and building piping or connection to after cooler or other similar equipment in order to minimize noise, vibration, vibration damage, and wear and tear.



Caution

- Never install a shut-off valve, such as a globe or gate valve, between the compressor and discharge opening and the receiver unless a safety valve is installed in the line between this valve and the compressor.
- Never operate the pump at pressures or speeds in excess of those recommended by the factory. (900rpm or 175 psi)

Tank

Tank feet should be placed on vibration isolator pads available through your dealer. Anchor bolts should be gently snug, but not tight, to allow for some vibration. Remember, the bolt is only a guide to hold the compressor in place. Do not over tighten the legs of the tank against the pads...it will damage your tank. Caution: Do not set tank on dirt. Over time, the tank will tilt causing the pump to fail from inadequate lubrication.

Starting

- Compressor comes with oil, check the oil level before starting to ensure no oil has been lost
- Turn compressor over a few revolutions by hand to make sure that everything is free.
- Check the belt tension
- Remove tools, rags, and any other objects from the vicinity of the compressor
- Never put hands on the belt of idle units, unless the motor is switched off and locked out
- Note the direction of the arrow on the flywheel and be sure that the direction of rotation is correct when the machine is started. Correct direction is counterclockwise when standing facing the flywheel. Air should be drawn through the intercooler onto the cylinders for maximum cooling.

Operation and Care

Required Maintenance

The compressor is shipped with break in oil and should be changed within the first 50 hours or 30 days of use, whichever comes first. Use our Airbase synthetic oil air compressor oil to extend your warranty. (see warranty section for extended warranty information. Warning!! Under no circumstances should you use AUTOMOTIVE TYPE OIL. Repeat-DO NOT USES AUTOMOTIVE OIL.

- Oil should be changed every 90 days. Oil level should be at the halfway level in the sight glass.
- If oil is milky, it should be changed
- Inspect air filters weekly and change as needed
- Removed and clean re-usable oil filter every oil change

MAINTENANCE CHECKS

DAILY OR BEFORE OPERATION:

- CHECK FOR OIL LEAKS
- CHECK LUBRICANT LEVEL. FILL AS NEEDED
- CHECK FOR UNUSUAL NOISE OR VIBRATION
- ENSURE BELTGUARDS AND COVERS ARE SECURELY IN PLACE
- DRAIN AIR RECEIVER

MONTHLY

- CHECK ALL SAFETY/RELIEF VALVES WHILE THE COMPRESSOR IS RUNNING. REPLACE VALVES THAT DO NOT OPERATE FREELY
- INSPECT FOR AIR LEAKS. SQUIRT SOAPY WATER AROUND LINE CONNECTIONS DURING COMPRESSOR OPERATION AND LOOK FOR BUBBLES
- INSPECT DRIVE BELTS



Maintenance-Trouble Shooting-Repairs

Problem	Check Points
Abnormal Piston, ring or cylinder wear	1,20,21,32,33,36
Compressor does not come up to speed	2,13,22,25,34
Air delivery drops off	3,19,25,27,28,32,38
Compressor is slow to come up to speed	4,18,12,31
Safety/relief valve "pops"	5
High inter stage pressure	5
Low inter stage pressure	6
Compressor runs excessively hot	7,17,23,30,35,37,39,40,41
Compressor will not unload cycle	8,16,4
Oil leaking from shaft seal	9
Moisture in crankcase or "Milky" appearance in oil or rusty in cylinders	10,15,26,
Excessive starting and stopping	11,14,27,29,43
Oil in discharge air (oil pumping)	1,13,21,28,32,9,36
Compressor will not unload when stopped	4,24

Check Points		Possible Solution
1	Lubricant viscosity to low	Drain existing lubricant and refill with proper lubricant
2	Loose belt wheel or motor pulley, excessive end play in motor shaft or loose drive belts	Check belt wheel, motor pulley, crankshaft, drive belt tension and alignment. Repair or replace as required.
3	Clogged or dirty inlet and/or discharge line filter	Clean or replace
4	Leaking or maladjusted centrifugal pilot valve.	Replace pilot valve O-ring. Adjust pilot valve
5	High pressure inlet valve leaking	Inspect, clean or repair as required



6	Low pressure discharge valve leaking.	Inspect, clean or repair as required.
7	Inadequate ventilation around belt wheel	Relocate compressor for better air flow.
8	Leaking, broken or worn inlet unloader parts	Inspect parts and replace as required.
9	Crankshaft seal worn or crankshaft scored.	Replace seal. Install shaft sleeve if required. Install Bearing/Connecting Rod Kit.
10	Detergent type lubricant being used.	Drain existing lubricant and refill with proper lubricant.
11	Air leaks in air discharge piping.	Check tubing and connections. Tighten joints or replace as required.
12	Pressure switch unloader leaks or does not work.	Realign stem or replace.
13	Lubricant level too high.	Drain excess lubricant.
14	Pressure switch differential too narrow.	Adjust pressure switch to increase differential, if differential adjustment is provided. Install pressure switch with differential adjustment feature if differential adjustment is desired.
15	Extremely light duty cycles.	Run compressor for longer duty cycles.
16	valve dirty or seats worn.	Inspect, clean or repair as required.
17	Drive belts too tight or misaligned.	Adjust belts to proper tension and alignment.
18	Leaking check valve or check valve seat blown out.	Replace check valve
19	Lubricant viscosity too high.	Drain existing lubricant and refill with proper lubricant.
20	Lubricant level to low	Add lubricant to crankcase to proper level
21	Detergent type lubricant being used	Drain existing lubricant and refill with proper lubricant.
22	Improper line voltage.	Check line voltage and upgrade lines as required. Contact electrician
23	Compressor valves leaky, broken, carbonized or loose.	Inspect valves. Clean or replace as required. Install Valve/Gasket Kit
24	Pressure switch unloader leaks or does not work	Realign stem or replace
25	Compressor valves leaky, broken, carbonized or loose.	Inspect valves. Clean or replace as required. Install Valve/Gasket Kit
26	Compressor located in damp or humid location.	Relocate compressor or install crankcase heater kit
27	Automatic drain valve clogged, leaking or defective.	Inspect valve and clean, repair or replace as required.
28	Piston rings damaged or worn (broken, rough or scratched). Excessive end gap or side clearance. Piston not seated, are stuck in grooves or end gaps not staggered	Install Ring/Gasket Kit



29	Automatic start and stop mode is not suitable for air demand	Adjust auxiliary valve for constant speed operation.
30	Wrong belt wheel direction of rotation	Check motor wiring for proper connections. Reverse two leads on three-phase motors.
31	Ambient temperature too low.	install crankcase heater kit. Convert to All Season Select lubricant. Relocate compressor to warmer environment.
32	Cylinder or piston worn or scored	Repair or replace as required.
33	Extremely dusty atmosphere	Install remote air inlet piping and route to source of cleaner air. Install more effective filtration.
34	Defective ball bearings on crankshaft or motor shaft.	Inspect bearings and replace if required. I
35	One or more heads valves is failing to seat properly	Inspect parts and replace as required.
36	worn cylinder finish	Inspect parts and replace as required.
37	Blown cylinder head gasket	Inspect parts and replace as required.
38	Defective safety/relief valve	Inspect valve and clean, repair or replace as required.
39	Restriction in head, intercooler, or check valve	Inspect parts and replace as required.
40	Lack of oil- (check oil level)	Add lubricant to crankcase to proper level
41	Poor ventilation and high-room temperature	relocate compressor or add proper ventilation
42	undersized for application	Upgrade compressor to proper specs required
43	Excessive condensate in receiver tank.	Drain receiver tank with manual drain valve or install automatic drain valve

WARRANTY STATEMENT

Airbase Industries Compressor Reciprocating Warranty Statement

IMPORTANT!! You must register your compressor: To register your warranty and find the extended warranty options go to www.emaxwarranty.com. Details and options for our extended warranty will be provided online once you enter the required information.

Airbase Industries makes the following Warranty guarantee:

- **Standard Warranty:** That each compressor unit is free from defects in material, workmanship, and parts for 1 year from the date of delivery. Airbase Industries is not responsible for downtime during warranty service. If downtime is necessary, it is at the owner's discretion, obligation, and expense, to have a redundant compressor. Parts shipped for warranty repairs shall only include ground freight charges for the first 90 days of the warranty period, thereafter owner is responsible for all freight charges of parts shipped for warranty. Any and all express shipping charges of warranty parts would be at the owner's expense. Standard technical assistance is provided at no charge during and after the standard warranty period.

**Standard warranty has no obligation to maintain warranty status, warranty will expire one year from date of delivery. Please see available options below to extend your warranty.*

- **Extended Warranty:** Airbase Industries will extend your standard 1-year warranty to full 5 years when you opt to register for the extended warranty plan that includes using our **SMART OIL™** and following all routine maintenance set forth. Parts shipped for warranty repairs shall only include ground freight charges for the first 90 days of the warranty period, thereafter owner is responsible for all freight charges of parts shipped for warranty. Any and all express shipping charges of warranty parts would be at the owner's expense. Standard technical assistance is provided at no charge during and after the standard warranty period.



Required maintenance Schedule to maintain warranty status

- All units are shipped with break-in oil and must be changed no less than 70 hours to insure gasket seating.
- After the 70 hours of break-in you must change the oil
- Thereafter Oil Should be changed every 6 months or 1000 hours whichever occurs first.
- Always maintain proper oil level in unit. If the unit runs out of oil due to neglect the warranty will be void.
- Use only Airbase Industries approved oils in your compressor, or your warranty is void.

****Extended Limited Lifetime Pump Warranty** With participation in our **SMART OIL™** extended auto ship program Airbase Industries will extend your warranty plan to ****Limited Lifetime Warranty** on the pressure lubricated pump. All other non-wear and tear components to 10 years. **SMART OIL™** not only extends the life of your compressor pump, it also can reduce operating noise levels and can create further energy savings. Warranty repair parts under the Limited Lifetime warranty will not include any shipping charges beyond the Standard Warranty, therefore owner is responsible for all freight charges for warranty parts. This plan includes our advanced technical air support. Smart Tech Support provides you with the highest level of technical support. Smart Tech support is an interactive support team available to you at your fingertips by just downloading a free app. The app provides free remote meetings, interactive touch display, real live personal to assist.

Limited Lifetime Warranty is not prorated and has no hour limits.

****Limited Lifetime Warranty**, non-prorated, no hour limits. In the case the product has been discontinued at any point the Limited lifetime Pump warranty will last five years past the discontinued date. Warrantor has discretion to substitute parts with current model for the five-year duration

***In order to maintain Limited Lifetime Warranty status, the owner must adhere to and purchase from Airbase Industries the required maintenance items as scheduled below utilizing our Smart Whisper Blue Auto Ship program:**

Required maintenance Schedule to maintain warranty status

- All units are shipped with break-in oil and must be changed no less than 70 hours to insure gasket seating.
- After the 70 hours of break-in you must change the oil
- Thereafter Oil Should be changed every 6 months or 1000 hours whichever occurs first using only our Smart Whisper Blue Oil
- Always maintain proper oil level in unit. If the unit runs out of oil due to neglect the warranty will be void.
- Use only Smart Whisper Blue Oil and filters purchased from Airbase Industries in your compressor, or your warranty will be voided.
- Must be an active member of Airbase Industries auto ship program

• Warranty Shall not apply and Airbase Industries shall not be responsible nor liable for:

- Routine service such as oil changes, filter replacements, gasket tightening to correct oil seepage or drive belt tightening and valve cleaning and are not covered under warranty.
- Consequential damages such as but not limited to cost of loss of business, product damage, or down time
- Acts of nature, over abuse, malicious destruction, improper maintenance, undersized equipment
- In the case the product has been discontinued at any point the ***Limited lifetime warranty** will last five years past the discontinue date. Airbase Industries has discretion to substitute parts with current model for the five-year duration.
- Deviation from operating instructions or specifications
- Labor charges for repairs or maintenance made by person(s) other than an authorized, approved service technician or any labor after the 1-year Standard Warranty expires.
- Normal wear and tear parts included but not limited to valves (intake/suction, check, blowdown, thermo, pop off, unloader), and ball valves. Belts, shaft seals, load/unloader solenoids, sensors (temperature or pressure), Electrical contractors and relays, and any parts with a routine maintenance schedule

Warranty shall be voided under the following conditions: Exposing electrical components to rain or water, or installing the unit in a hostile environment such as acid vapors or any caustic or abrasive matter that may be ingested into the pump, or installing the unit in an enclosed area where lack of cooling ventilation is present, such as in boiler or equipment rooms where the ambient air exceeds 100F.

Further exclusions include failure to fully and completely follow the guidelines set forth in the manual. Of specific note is environments where fine dust is common, such as granite, marble or concrete plants, the compressor **MUST** be installed in a separate area with its own dedicated ventilation. **FAILURE TO PROVIDE THIS DUST FREE OPERATING AREA VOIDS THE WARRANTY.**

Parts used for warranty purposes must be supplied by Airbase Industries. Warranty work should be performed by an Airbase Industries approved Technician. If any maintenance (other than routine maintenance) is performed by a non-approved Technician, written pre-approval must be obtained from Airbase Industries, to prevent voiding this warranty. Failure to fully comply with this warranty and fully comply with the manual instructions will void this warranty.

Warranties are non-transferable

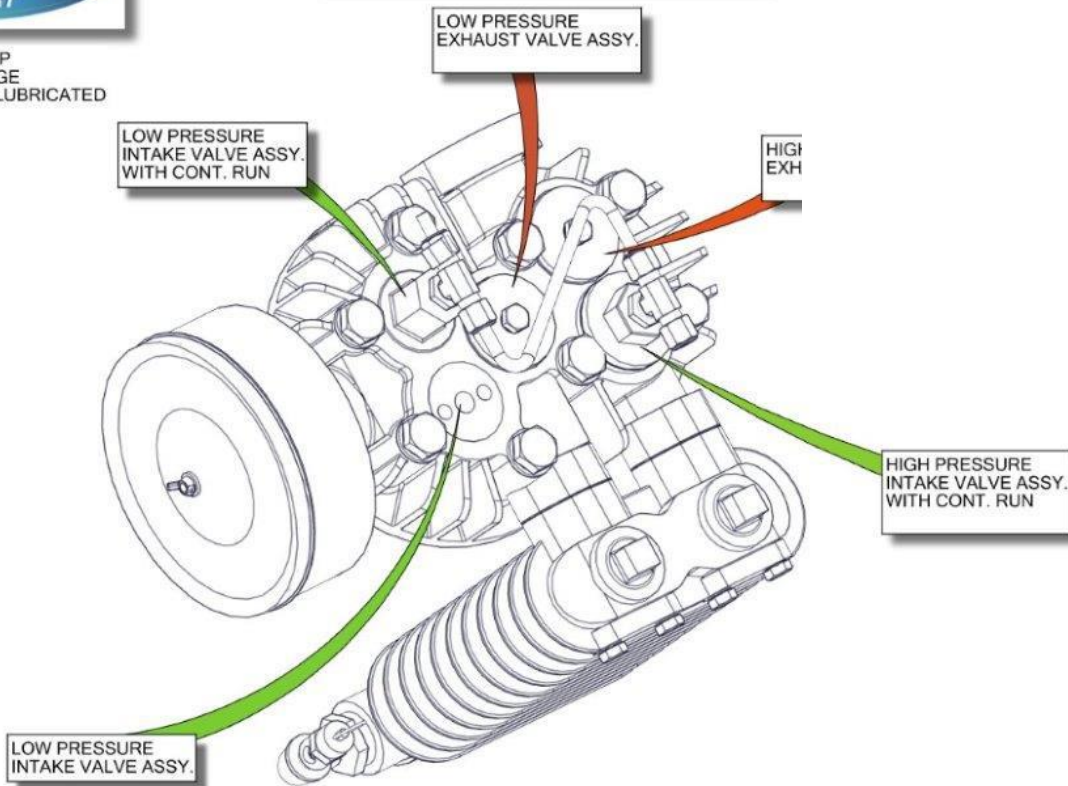
The oil purchase and maintenance program are effective as of Nov. 2019

Parts Breakdown – APP4V1043TP



APP4V1043TP
10 HP 2 STAGE
PRESSURE LUBRICATED

VALVE TRAIN ORIENTATION

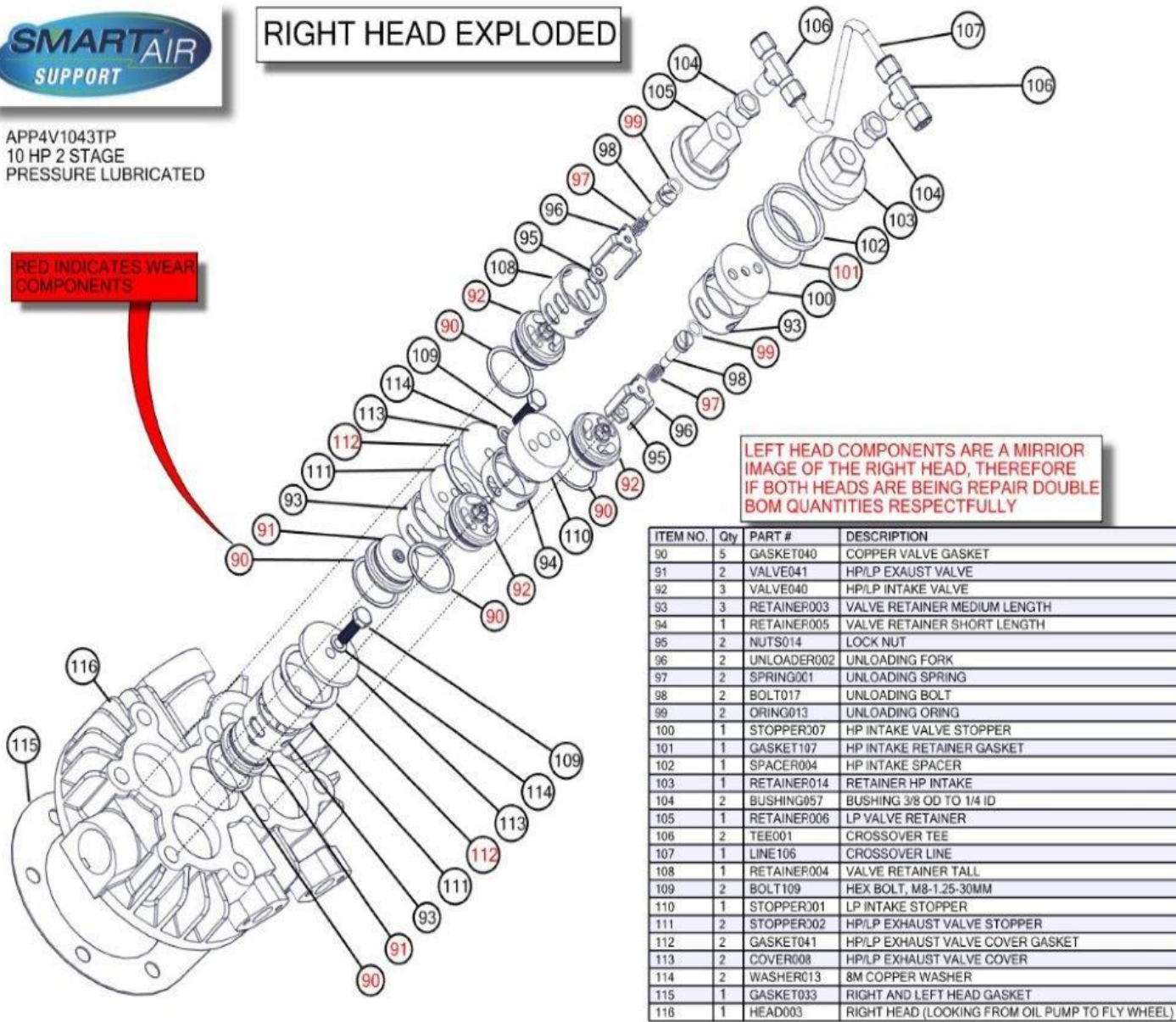




APP4V1043TP
10 HP 2 STAGE
PRESSURE LUBRICATED

RED INDICATES WEAR COMPONENTS

RIGHT HEAD EXPLODED



LEFT HEAD COMPONENTS ARE A MIRROR IMAGE OF THE RIGHT HEAD, THEREFORE IF BOTH HEADS ARE BEING REPAIR DOUBLE BOM QUANTITIES RESPECTFULLY

ITEM NO.	Qty	PART #	DESCRIPTION
90	5	GASKET040	COPPER VALVE GASKET
91	2	VALVE041	HP/LP EXHAUST VALVE
92	3	VALVE040	HP/LP INTAKE VALVE
93	3	RETAINER003	VALVE RETAINER MEDIUM LENGTH
94	1	RETAINER005	VALVE RETAINER SHORT LENGTH
95	2	NUTS014	LOCK NUT
96	2	UNLOADER002	UNLOADING FORK
97	2	SPRING001	UNLOADING SPRING
98	2	BOLT017	UNLOADING BOLT
99	2	ORING013	UNLOADING ORING
100	1	STOPPER007	HP INTAKE VALVE STOPPER
101	1	GASKET107	HP INTAKE RETAINER GASKET
102	1	SPACER004	HP INTAKE SPACER
103	1	RETAINER014	RETAINER HP INTAKE
104	2	BUSHING005	BUSHING 3/8 OD TO 1/4 ID
105	1	RETAINER006	LP VALVE RETAINER
106	2	TEE001	CROSSOVER TEE
107	1	LINE106	CROSSOVER LINE
108	1	RETAINER004	VALVE RETAINER TALL
109	2	BOLT109	HEX BOLT, M8-1.25-30MM
110	1	STOPPER001	LP INTAKE STOPPER
111	2	STOPPER002	HP/LP EXHAUST VALVE STOPPER
112	2	GASKET041	HP/LP EXHAUST VALVE COVER GASKET
113	2	COVER008	HP/LP EXHAUST VALVE COVER
114	2	WASHER013	8M COPPER WASHER
115	1	GASKET033	RIGHT AND LEFT HEAD GASKET
116	1	HEAD003	RIGHT HEAD (LOOKING FROM OIL PUMP TO FLY WHEEL)