

# CENTRALPNEUMATIC®

## 145 PSI 5 HP TWIN CYLINDER AIR COMPRESSOR PUMP

**Model 67698**

### SET UP AND OPERATING INSTRUCTIONS



#### ⚠ WARNING



**To prevent serious injury and death from improper installation:** ONLY a qualified engineer with appropriate certifications may attempt designing a new compressor to ensure that all required safety and control elements are in place and will work together properly and safely. This compressor pump is intended ONLY as a replacement for a similarly rated pump on an existing compressor that includes all other needed components. Constructing a new compressor using this pump is not covered by the manual.

Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

Manual Revised 10h

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## SAVE THIS MANUAL

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Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

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## IMPORTANT SAFETY INFORMATION

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In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

### **WARNING**

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

### **CAUTION**

**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### **NOTICE**

**NOTICE** is used to address practices not related to personal injury.

### **CAUTION**

**CAUTION**, without the safety alert symbol, is used to address practices not related to personal injury.

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## General Compressor Safety Warnings



**WARNING** Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*

Save all warnings and instructions for future reference.

1. **Work area safety**
  - a. **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
  - b. **Do not operate the Compressor Pump in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Compressor Pump motors produce sparks which may ignite the dust or fumes.
  - c. **Keep children and bystanders away from an operating compressor pump.**
2. **Personal safety**
  - a. **Stay alert, watch what you are doing and use common sense when operating this compressor pump. Do not use this compressor pump while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating a compressor pump may result in serious personal injury.
  - b. **Use personal protective equipment. Always wear ANSI-approved eye protection during setup and use.** Safety equipment such as a dust mask,

non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

### 3. Compressor Pump use and care

- a. **Disconnect the plug of the compressor from the power source before making any adjustments, changing accessories, or storing the compressor pump.** Such preventive safety measures reduce the risk of starting the unit accidentally.
- b. **Store an idle compressor pump out of the reach of children and do not allow persons unfamiliar with the compressor pump or these instructions to operate it.** A compressor pump is dangerous in the hands of untrained users.
- c. **Maintain the compressor pump. Keep the compressor pump clean for better and safer performance. Follow instructions for lubricating and changing accessories. Keep the outside surfaces dry, clean and free from oil and grease. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the compressor's operation. If damaged, have the compressor repaired before use.** Many accidents are caused by a poorly maintained compressor pump.
- d. **Use the compressor pump in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the compressor pump for operations different from those intended could result in a hazardous situation.

### 4. Service

- a. **Have your compressor pump serviced by a qualified repair person**

**using only identical replacement parts.** This will ensure that the safety of the compressor pump is maintained.

## Compressor Pump Safety Warnings

1. Wear ANSI-approved safety goggles during use.
2. Install pulley and belt safety guard before use.
3. **Before first and every use, verify Pump has sufficient oil.**
4. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
5. **Misalignment between Motor and Pump can damage the Belt Wheel.** Use a straight edge, such as a yardstick, to check and adjust alignment as needed.
6. **Use proper size motor and motor pulley.** This air compressor Pump must be installed with a 5 HP electric motor and pulley (both not supplied) which can turn the Air Compressor Belt Wheel at approximately 1050 rpm.
7. **Install motor, pulley belt and pulley belt cover securely.** Be sure to use the proper size bolts to install your motor (not included). The belt and belt cover (not included) must be strong enough to prevent breaking and possible injury.
8. **Be sure all equipment is rated to the appropriate capacity of this pump.** Make sure that the lowest rated piece of equipment you are using can handle the maximum pressure of the Air Compressor Pump (see Specifications).
9. **Do not direct the air outlet at any person or animal.**

10. **Use Safety Guard for Pulleys.** The Air Compressor Pump Pulley (58), V-belt (not supplied), and motor pulley (not supplied) must be covered by a safety guard (not supplied) covering all moving elements before operation.
11. **Avoid burns.** The Cylinder (22), Cylinder Head (6) and Air Outlet components become very hot during operation. Do not touch.
9. Do not remove the valve cover or adjust internal components.
10. Compressor head gets hot during operation. Do not touch it or allow children nearby during or immediately following operation.
11. Do not use the air hose to move the compressor.
12. Release the pressure in the storage tank before moving.

### **Air Compressor Safety Warnings**

1. **Risk of fire or explosion - do not spray flammable liquid in a confined area or towards a hot surface. Spray area must be well-ventilated. Do not smoke while spraying or spray where spark or flame is present. Arcing parts - keep compressor at least 20 feet away from explosive vapors, such as when spraying with a spray gun.**
2. **Risk of bursting - do not adjust regulator higher than marked maximum pressure of attachment.**
3. **Risk of injury - do not direct air stream at people or animals.**
4. **Do not use to supply breathing air.**
5. **Do not leave compressor unattended for an extended period while plugged in. Unplug compressor after working.**
6. **Keep compressor well-ventilated. Do not cover compressor during use.**
7. Drain Compressor Tank daily and after use. Internal rust causes tank failure and explosion.
8. Add correct amount of compressor oil before first use and every use. Operating with low or no oil causes permanent damage and voids warranty.

13. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
14. All air line components, including hoses, pipe, connectors, filters, etc., must be rated for a minimum working pressure of 150 PSI, or 150% of the maximum system pressure, whichever is greater.
15. **USE OF AN EXTENSION CORD IS NOT RECOMMENDED.** If you choose to use an extension cord, use the following guidelines:

<b>RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)</b>				
<b>NAMEPLATE AMPERES (at full load)</b>	<b>EXTENSION CORD LENGTH</b>			
	<b>25'</b>	<b>50'</b>	<b>100'</b>	<b>150'</b>
0 – 6	18	16	16	14
6.1 – 10	18	16	<b>Do not use.</b>	
10.1 – 12	16	16	<b>Do not use.</b>	
12.1 – 16	14	12	<b>Do not use.</b>	

**TABLE A**

- a. Make sure your extension cord is in good condition.
- b. Be sure to use an extension cord which is heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and

overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

16. Industrial applications must follow OSHA guidelines.
17. Maintain labels and nameplates on the compressor. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
18. This product is not a toy. Keep it out of reach of children.
19. Operate unit on level surface. Check oil level daily and fill to marked level if needed.
20. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
21. **WARNING:** The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code § 25249.5, *et seq.*).
22. By supplying this air compressor pump, Harbor Freight Tools makes no representations and accepts no responsibility for the motor, V-belt, enclosure or mounting surface not supplied by HFT which may be used in the installation. You are strongly advised to have this pump properly installed by a qualified service technician using appropriate components in good condition.

23. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



## **SAVE THESE INSTRUCTIONS.**

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### **GROUNDING**

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**WARNING**

**TO PREVENT ELECTRIC SHOCK**

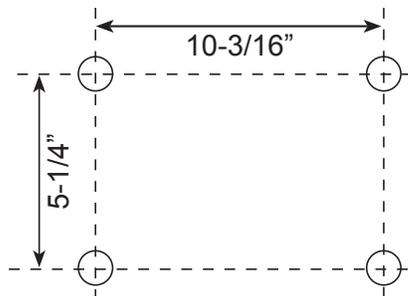
**AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:**



**Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the compressor. Never remove the grounding prong from the plug. Do not use the compressor if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.**

## Symbology

<b>PSI</b>	Pounds per square inch of pressure
<b>CFM</b>	Cubic Feet per Minute flow
<b>SCFM</b>	Cubic Feet per Minute flow at standard conditions
<b>NPT</b>	National pipe thread, tapered
<b>NPS</b>	National pipe thread, straight
	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
<b>V~</b>	Volts Alternating Current
<b>A</b>	Amperes



**Mounting Hole Pattern**

## SPECIFICATIONS

Compressor Type	Single Stage Twin Cylinder; Oil Lube Pump
Required HP	5 HP motor
Rated Air Pressure	145 PSI
Maximum Speed	1050 RPM
Outlet	1" - 16UN
Air Delivery (@ 655 RPM)*	12.1 SCFM @ 40 PSI 11.5 SCFM @ 90 PSI
Air Delivery (@ 1050 RPM)*	17.5 SCFM @ 40 PSI 15.2 SCFM @ 90 PSI
Lubrication	Splash Type with Oil Level Window
Oil Type	SAE 30W non-detergent Air Compressor Oil (Sold separately) (SKU 95048)
Pump Pulley	14-1/2" dia. with dual V-groove
Belt Type	A 1600
Mounting Hole Pattern	5-1/4" x 10-3/16" (center-to-center)
Recommended Mounting Bolts	3/8" dia., grade 5 or better
Overall Dimensions	17-3/4" L x 12-1/4" W x 15" H
Sound Level	89 dB @ 1m (including motor noise)

\* For most applications it is recommended to run this unit at the lower RPM.

## UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

# INSTRUCTIONS FOR PUTTING INTO USE



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

## ⚠️ WARNING

**TO PREVENT SERIOUS INJURY**

**FROM ACCIDENTAL OPERATION:**

Turn off and disable the motor before assembling or making any adjustments to the compressor pump.

## ⚠️ WARNING

**TO PREVENT SERIOUS INJURY**



**AND DEATH FROM IMPROPER INSTALLATION:**

**ONLY** a qualified engineer with appropriate certifications may attempt designing a new compressor to ensure that all required safety and control elements are in place and will work together properly and safely. This compressor pump is intended **ONLY** as a replacement for a similarly rated pump on an existing compressor that includes all other needed components. Constructing a new compressor using this pump is not covered by this manual.

**Note:** For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

# Components

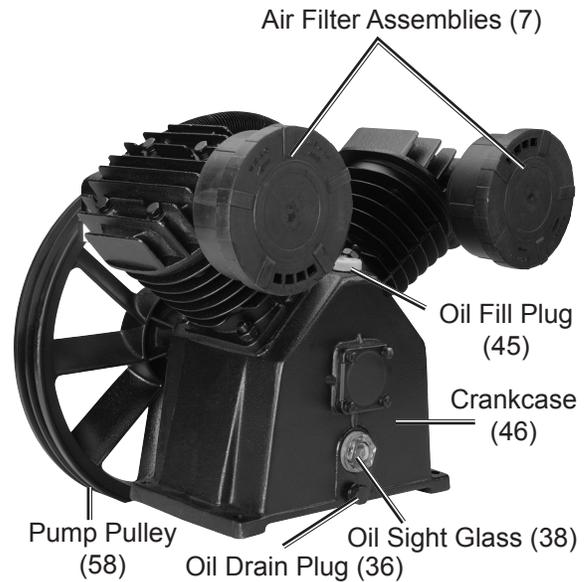


Figure 1

# Assembly

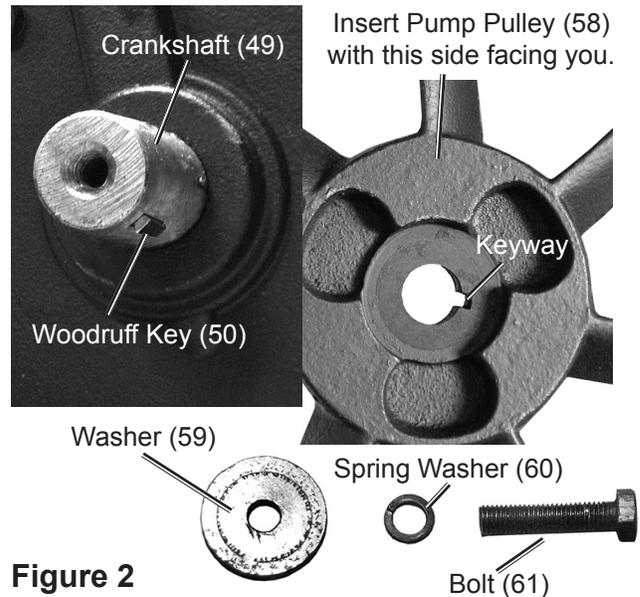


Figure 2

1. Place a small amount of grease in the slot at the tapered end of the Crankshaft (49) and insert the Woodruff Key (50) into the slot.
2. Make sure that the center hole and the keyway on the Pump Pulley (58) are clean and free of burrs and rough edges.

- Apply a thin layer of grease to the hole and keyway, then, with the indented side of the Pulley center facing you, align the keyway with the Woodruff Key (50) and slide the Pump Pulley (58) over the Crankshaft.

**WARNING! Do not force or hammer the Pump Pulley onto the Crankshaft.**

- Slide the Spring Washer (60) and Washer (59) onto the Bolt (61) and insert the Bolt through Pump Pulley and thread into the Crankshaft. Tighten using a wrench (not included).

**Note: The Bolt is a left-hand thread. To fasten, turn Bolt counterclockwise.**

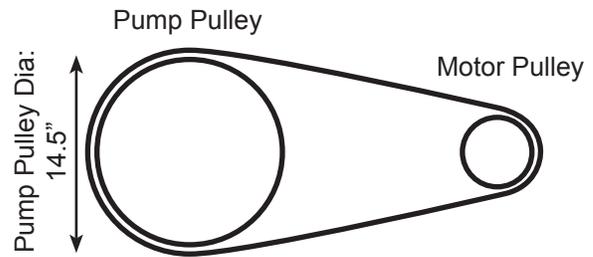
### Installation

**Note: Depending on your level of expertise, you may wish to have a qualified technician perform this installation.**

**CAUTION:** Avoid damage to the Air Compressor Pump and other equipment. The Compressor Pump mounting platform should be flat, level, and strong enough to support the combined weight of the Pump, electric motor or engine, and related hardware and equipment. It must also be capable of withstanding the vibration and tension of the drive belts. It must incorporate easy access to the Oil Drain Plug (36).

- Place the Air Compressor Pump on the mounting surface at the same level as the 5 HP motor used to drive it.

**Note:** Use a motor with the appropriate size pulley to get the needed Pump RPM. For most applications it is recommended to run this unit at the lower RPM.



#### Calculation for Motor Pulley:

$$\frac{9,497.5}{(14.5" \text{ Pump Pulley Dia.} \times 655 \text{ Pump RPM})} = \text{Motor Pulley Dia.}$$

**Motor RPM**

To calculate the motor and motor pulley needed to power the pump, multiply the Pump Pulley diameter (14.5") times the pump working RPM (1050), then divide by the engine RPM. This will determine the motor pulley diameter (in inches) needed to run the unit.

For example: If you have a 1725 RPM motor, to calculate the pulley diameter needed, multiply 14.5 x 655, then divide by 1725, which equals the motor pulley size of 5.5". Use the pulley size closest to this figure.

$$\frac{9,497.5}{1725} = 5.5"$$

Or, use the following equation if you have a 3450 RPM motor:

$$\frac{9,497.5}{3450} = 2.75"$$

- The 14-1/2 inch V-groove Pump Pulley (58) must be in perfect alignment with the motor pulley (not included).

**Note:** Ensure the Pump Pulley is installed for counter-clockwise rotation when facing the pulley side of the Pump.

**CAUTION: Misalignment between the Motor and the Pump can cause damage to both the motor and the compressor pump.** Use a straight edge, such as a yardstick, to check and adjust alignment as needed.

3. Verify that the Pump Pulley turns freely where it overhangs the mounting surface.
4. Place two V-groove belts (not included) over the Pump Pulley (58) and the motor pulley.
5. Pull the Compressor Pump until properly aligned, and the belts are tight. Recheck the motor pulley, V-groove belts, and Pump Pulley alignment.
6. Use a pencil to mark through the Air Compressor Pump mounting holes onto the mounting surface.
7. Move Air Compressor Pump and drill four 3/8" holes in the mounting surface.
8. Move the Air Compressor Pump back to its mounting position.
9. Secure each corner of base with a 3/8" diameter grade 5 or better bolt, washer, lock washer, and nut (all not supplied).
10. Make final alignment and belt tightness adjustments from the motor. It may be necessary to loosen the motor mounting bolts to adjust the motor location. To test the proper tension on the V-belts, press down on the belts, there should be 1/2" deflection or less at mid span. Tighten all mounting hardware.
11. Connect plumbing hardware (not supplied) from the 3/4" Air Outlet (Elbow (1)) to the air destination (i.e., air pressure tank of the compressor, not supplied), routing the tubing in the shortest possible path.
12. Install a safety guard (not supplied) that surrounds the Motor Pulley, V-belts, and Pump Pulley. This safety guard must cover all sides of the moving belts and pulleys. It should have a clearance of about one inch from the moving parts.

The safety guard must be sturdy enough to prevent injury.

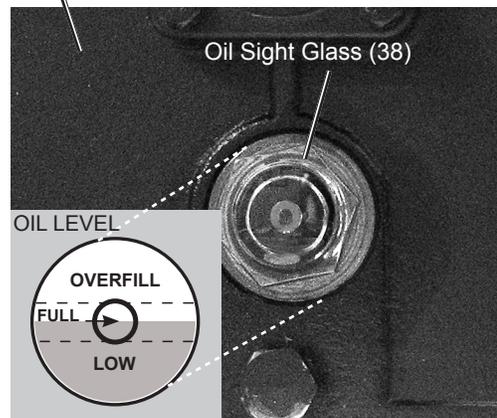
**WARNING!** Avoid serious injuries. Do not operate this Air Compressor Pump without a pulley guard in place.

### Checking the Oil

**Check the oil level before operation. Fill the Pump Crankcase with SAE 30W non-detergent air compressor oil (sold separately).**

**IMPORTANT:** Running the Air Compressor Pump with the incorrect amount of oil will cause damage to the equipment and void the warranty. To prevent damage, do not use with overfilled or low oil. Slowly fill to full line, wait 2 minutes and fill back up to full line. The Compressor Pump has small passages that will fill slowly.

Crankcase (46)



**Figure 3**

The oil level should be at the center of the "full" level on the oil level sight glass, as shown above. Add oil as needed to maintain this level. Do not let the oil level go below the center dot (LOW as shown above) and do not overfill the oil so that it is above the center dot (OVERFILL as shown above) on the sight glass.

To add oil:

- a. Remove the Oil Fill Plug (45).
- b. Using a funnel to avoid spills, pour enough oil into the Pump Crankcase to reach the “full” level in the Oil Sight Glass.
- c. Replace the Oil Fill Plug.

### **Cold Weather Operation**

Premium quality 30-weight, non-detergent air compressor oil (sold separately) is recommended for use with this compressor pump. Start the compressor pump in a heated area if outdoor temperatures drop below 32° F. If this is not practical, drain out the old pump oil and use SAE 10W Non-detergent Air Compressor Oil in the pump crankcase instead whenever the compressor pump’s temperature will fall below 40°. Do not use multi-viscosity oil (such as 10W-30), they leave carbon deposits on pump components and lead to accelerated failure. Heavy operation may require heavier viscosity oil.

If uncertain which oil to use, please call Harbor Freight Tools customer service at 1-800-444-3353 for assistance.

**WARNING!** To prevent serious injury from burns: Do not add or change the oil while the motor is in operation. Allow the components to cool before replacing oil.

**After filling with oil, follow your air compressor operation instructions and safety warnings.**

**Change the compressor oil after the first hour of use to remove any debris.**

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## MAINTENANCE AND SERVICING

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Procedures not specifically explained in this manual must be performed only by a qualified technician.

### **!WARNING**

#### TO PREVENT SERIOUS INJURY

#### FROM ACCIDENTAL OPERATION:

Turn off and disable the motor before performing any inspection, maintenance, or cleaning procedures.

**TO PREVENT SERIOUS INJURY FROM COMPRESSOR FAILURE:**  
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

**Note:** The following service instructions are for this Pump installed on a complete compressor, including all needed components (all sold separately).

### Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE**, inspect the general condition of the Air Compressor. Check for loose hardware, misalignment or binding of moving parts, damaged belts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.
2. **AFTER USE**, wipe external surfaces of the unit with a clean cloth.

### Maintenance Schedule

Following are general guidelines for maintenance checks of the unit.

**Note:** The environment and frequency of use can affect how often you will need to check components and perform maintenance procedures.

#### Daily:

- a. Check oil level.
- b. Check for oil leaks.
- c. Make sure all nuts and bolts are tight.
- d. Check for abnormal noise or vibration.
- e. Inspect belt.

#### Weekly:

- a. Inspect Air Filters.
- b. Inspect Oil Breather Plug.

#### Monthly:

Check belt adjustment.

#### Every 6 months or 100 Operation Hours:

Replace Pump oil.\*

### Oil Maintenance

Check the oil periodically for clarity. Replace oil if it appears milky or if debris is present, or every 6 months, or 100 hours of run time, whichever comes first. In harsh environments such as high heat or high humidity, you will need to replace the oil more frequently.

**WARNING:** Risk of personal injury hazard. Allow Air Compressor to cool before changing the oil.

#### To drain the oil from the Pump Crankcase:

- a. Place a container under the Oil Drain Plug (36).
- b. Remove the Oil Fill Plug (45) to allow air flow into the Pump.

\* Use Air Compressor Oil only (sold separately - SKU 95048).

- c. Remove the Oil Drain Plug, allowing the oil to drain into the container.
- d. When the oil is completely drained from the Pump, replace the Oil Drain Plug.
- e. Fill the Pump with new compressor oil to the FULL level on the Oil Sight Glass.
- f. Replace and tighten the Oil Fill Plug.
- g. Discard the old oil according to local, state and federal regulations.

## Air Filter Maintenance

Check the Air Filters weekly to see if they need replacement. If working in dirty environments, you may need to replace the filters more often. To replace the Air Filters:

- a. Remove any cover that blocks access to the Air Filters.
- b. Remove the Air Filters.
- c. Replace with new Air Filters.
- d. Replace the cover.

## Troubleshooting

Problem	Possible Causes	Likely Solutions
Compressor builds pressure too slowly	<ul style="list-style-type: none"> <li>1. Crankcase overfilled with oil or oil too thick.</li> <li>2. Working environment too cold.</li> <li>3. Loose fittings.</li> </ul>	<ul style="list-style-type: none"> <li>1. Drain oil and refill to proper level with recommended oil.</li> <li>2. Move unit to a warmer location. Check that recommended oil is in crankcase.</li> <li>3. Reduce air pressure, then check all fittings with a soap solution for air leaks and tighten as needed. Do not overtighten.</li> </ul>
Compressor not building enough air pressure	<ul style="list-style-type: none"> <li>1. Filters need cleaning/replacing.</li> <li>2. Crankcase oil too thick.</li> <li>3. Loose fittings.</li> </ul>	<ul style="list-style-type: none"> <li>1. Check inlet and outlet filters. Clean and/or replace as needed.</li> <li>2. Drain oil and refill to proper level with recommended oil.</li> <li>3. Reduce air pressure, then check all fittings with a soap solution for air leaks and tighten as needed. Do not overtighten.</li> </ul>
High Oil Consumption	<ul style="list-style-type: none"> <li>1. Crankcase oil too thin.</li> <li>2. Unit not on level surface.</li> <li>3. Crankcase vent clogged.</li> </ul>	<ul style="list-style-type: none"> <li>1. Drain oil and refill to proper level with recommended oil.</li> <li>2. Reposition unit on a level surface.</li> <li>3. Clean Crankcase vent.</li> </ul>
Overheating	<ul style="list-style-type: none"> <li>1. Filters need cleaning/replacing.</li> <li>2. Crankcase oil incorrect type and/or thickness.</li> <li>3. Crankcase oil level too low.</li> <li>4. Unusually dusty environment.</li> </ul>	<ul style="list-style-type: none"> <li>1. Check inlet and outlet filters. Clean and/or replace as needed.</li> <li>2. Drain oil and refill to proper level with recommended oil.</li> <li>3. Add oil to proper level, check for leaks.</li> <li>4. Clean and/or replace filters more often or move unit to cleaner environment.</li> </ul>
Excessive noise	<ul style="list-style-type: none"> <li>1. Crankcase overfilled with oil or oil is incorrect thickness or type.</li> <li>2. Crankcase oil level too low.</li> <li>3. Loose or damaged belt guard.</li> <li>4. Loose fittings.</li> <li>5. Unit not on level surface.</li> </ul>	<ul style="list-style-type: none"> <li>1. Drain oil and refill to proper level with recommended oil.</li> <li>2. Add oil to proper level, check for leaks.</li> <li>3. Replace belt guard.</li> <li>4. Reduce air pressure, then check all fittings with a soap solution for air leaks and tighten as needed. Do not overtighten.</li> <li>5. Reposition unit on a level surface.</li> </ul>
Oil in discharge air	<ul style="list-style-type: none"> <li>1. Crankcase oil too thin or crankcase overfilled with oil.</li> <li>2. Crankcase vent clogged.</li> </ul>	<ul style="list-style-type: none"> <li>1. Drain oil and refill to proper level with recommended oil.</li> <li>2. Clean Crankcase vent.</li> </ul>
Air leaks from pump or fittings	Loose fittings.	Reduce air pressure, then check all fittings with a soap solution for air leaks and tighten as needed. Do not overtighten.



**Follow all safety precautions whenever diagnosing or servicing the compressor. Disconnect power supply before service.**

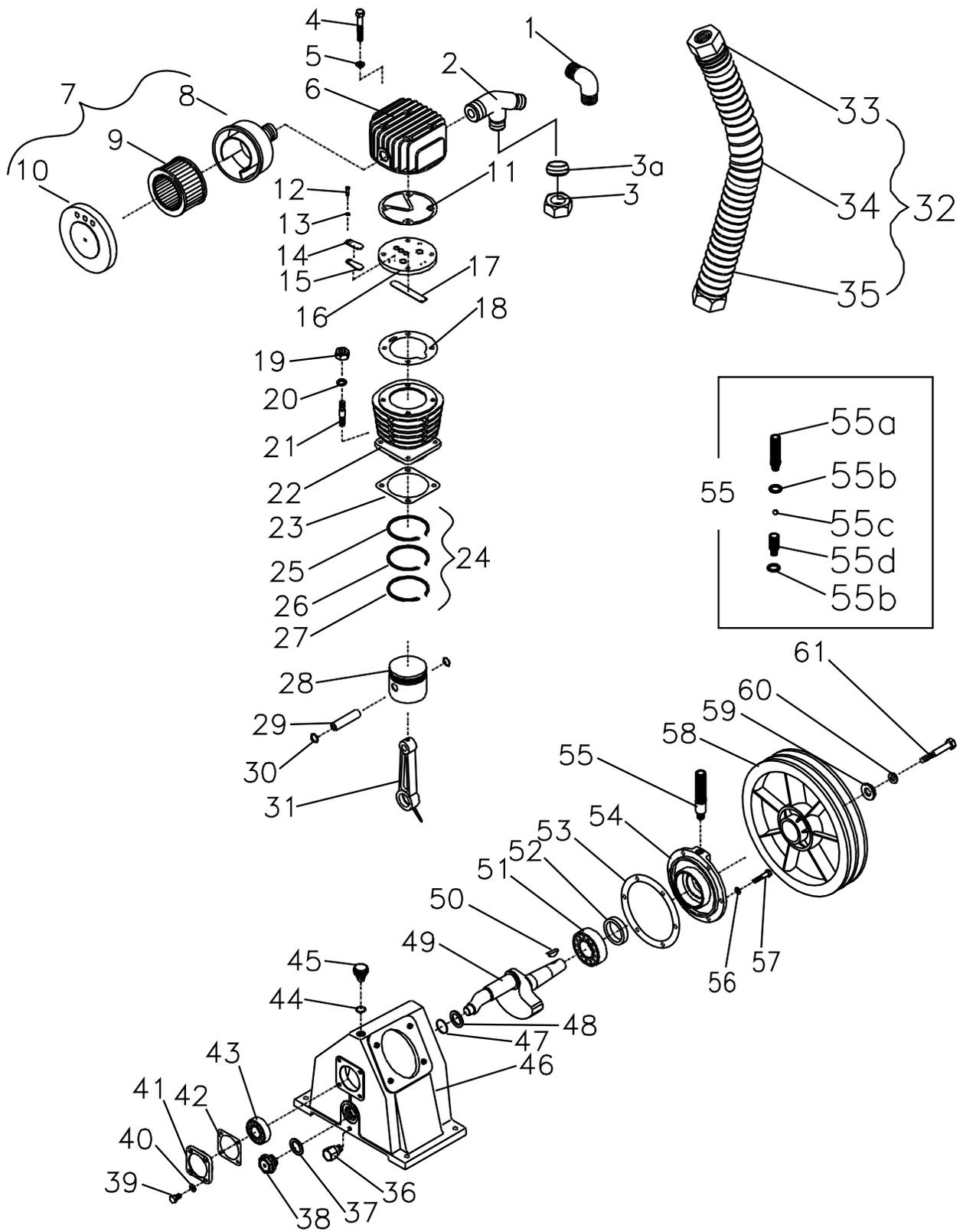
## PARTS LIST

Part	Description	Qty	Part	Description	Qty
1	Exhaust Elbow	1	33	Exhaust Nut	2
2	Exhaust 3-way	1	34	Exhaust Copper Pipe	1
3	Nut	1	35	Collar	1
3a	Clamp Ring	1	36	Oil Drain Plug	1
4	Bolt	8	37	O-Ring	1
5	Spring Washer	8	38	Oil Sight Glass	1
6	Cylinder Head	2	39	Bolt	4
7	Air Filter Assembly	2	40	Spring Washer	4
8	Air Filter Rear Cover	2	41	Bearing Cover	1
9	Air Filter Element	2	42	Bearing Cover Gasket	1
10	Air Filter Front Cover	2	43	Bearing	1
11	Cylinder Head Gasket	2	44	O-Ring	1
12	Screw	12	45	Oil Fill Plug	1
13	Spring Washer	12	46	Crankcase	1
14	Outlet Valve Guard	4	47	Circlip for Shaft	1
15	Valve Plate	2	48	Washer	1
16	Valve Seat	2	49	Crankshaft	1
17	Valve Plate	2	50	Woodruff Key	1
18	Cylinder Gasket	2	51	Bearing	1
19	Nut	8	52	Oil Seal	1
20	Spring Washer	8	53	Bearing Seat Gasket	1
21	Stud	8	54	Bearing Seat	1
22	Cylinder	2	55	Breather Assembly	1
23	Cylinder Gasket	2	55a	Breather	1
24	Piston Ring Set	2	55b	Washer	2
25	Compression Ring	2	55c	Ball	1
26	Compression Ring	2	55d	Breather Rod	1
27	Oil Ring	2	56	Spring Washer	6
28	Piston	2	57	Bolt	6
29	Piston Pin	2	58	Pump Pulley	1
30	Circlip for Hole	4	59	Washer	1
31	Connecting Rod	2	60	Spring Washer	1
32	Exhaust Copper Pipe Assembly	1	61	Bolt	1

### **PLEASE READ THE FOLLOWING CAREFULLY**

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

# ASSEMBLY DIAGRAM



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## LIMITED 90 DAY WARRANTY

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353**

**Record Product's Serial Number Here:** \_\_\_\_\_

**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.