

CENTRAL PNEUMATIC®

# 1/4" AIR ANGLE DIE GRINDER

**Model 32046**

## SET UP AND OPERATING INSTRUCTIONS



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.**

Revised 09i

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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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### Safety Alert Symbol and Signal Words

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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## IMPORTANT SAFETY INSTRUCTIONS

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### INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

**WARNING** – When using tools, basic precautions should always be followed, including the following:

#### General

- a. To reduce the risks of electric shock, fire, and injury to persons, read all the instructions before using the tool.

#### Work area

- a. Keep the work area clean and well lighted. Cluttered benches and dark areas increase the risks of electric shock, fire, and injury to persons.
- b. Do not operate the Air Angle Die Grinder in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. The Air Angle Die Grinder is able to create sparks resulting in the ignition of the dust or fumes.

- c. **Keep bystanders, children, and visitors away while operating the Air Angle Die Grinder.** Distractions are able to result in the loss of control of the tool.

### Personal safety

- a. **Stay alert. Watch what you are doing and use common sense when operating the tool. Do not use the tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating the tool increases the risk of injury to persons.
- b. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair increases the risk of injury to persons as a result of being caught in moving parts.
- c. **Avoid unintentional starting. Be sure the switch is off before connecting to the air supply.** Do not carry the Air Angle Die Grinder with your finger on the switch or connect the tool to the air supply with the switch on.
- d. **Remove adjusting keys and wrenches before connecting an air hose to the Air Angle Die Grinder on.** A wrench or a key that is left attached to a rotating part of the tool increases the risk of personal injury.
- e. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.

- f.  **Use safety equipment.** A dust mask, non-skid safety shoes and a hard hat must be used for the applicable conditions. Wear heavy-duty work gloves during use.

- g.  **Always wear eye protection.** Wear ANSI-approved safety goggles.

- h.  **Always wear hearing protection when using the tool.** Prolonged exposure to high intensity noise is able to cause hearing loss.

- i. **Risk of Electric Shock. This Air Angle Die Grinder is not provided with an insulated gripping surface.** Contact with a "live" wire will also make exposed metal parts of the tool "live" and shock the operator.

- j. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.

- k. **Explore the workpiece to avoid contact with hidden wiring.** Thoroughly investigate the workpiece for possible hidden wiring before performing work. Contact with live wiring will shock the operator.

### Tool use and care

- a. **Use clamps or another practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against the body is unstable and is able to lead to loss of control.

- b. **Do not force the tool.** Use the correct tool for the application. The correct Air Angle Die Grinder will do the job better and safer at the rate for which the tool is designed.
- c. **Do not use the tool if the switch does not turn the tool on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- d. **Disconnect the tool from the air source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the Air Angle Die Grinder unintentionally. Turn off and detach the air supply, safely discharge any residual air pressure, and release the throttle and/or turn the switch to its off position before leaving the work area.
- e. **Store the Air Angle Die Grinder when it is idle out of reach of children and other untrained persons.** A die grinder is dangerous in the hands of untrained users.
- f. **Maintain the tool with care.** A properly maintained tool is easier to control.
- g. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that affects the tool's operation.** If damaged, have the Air Angle Die Grinder serviced before using. Many accidents are caused by poorly maintained tools. There is a risk of bursting if the tool is damaged.
- h. **Use only accessories that are identified by the manufacturer for the specific tool model.** Use of an

accessory not intended for use with the specific tool model, increases the risk of injury to persons.

### Service

- a. **Tool service must be performed only by qualified repair personnel.**
- b. **When servicing the Air Angle Die Grinder, use only identical replacement parts. Use only authorized parts.**
- c. **Use only the lubricants supplied with the tool or specified by the manufacturer.**

### Air source

- a.  **Never connect to an air source that is capable of exceeding 200 psi.** Over pressurizing the tool may cause bursting, abnormal operation, breakage of the tool or serious injury to persons. Use only clean, dry, regulated compressed air at the rated pressure or within the rated pressure range as marked on the tool. Always verify prior to using the tool that the air source has been adjusted to the rated air pressure or within the rated air-pressure range.
- b. **Never use oxygen, carbon dioxide, combustible gases or any bottled gas as an air source for the tool.** Such gases are capable of explosion and serious injury to persons.



**SAVE THESE INSTRUCTIONS.**

# SYMBOLS AND SPECIFIC SAFETY INSTRUCTIONS

## Symbol Definitions

Symbol	Property or statement
<b>n<sub>o</sub></b>	No-load speed
<b>.../min</b>	Revolutions or reciprocation per minute
<b>PSI</b>	Pounds per square inch of pressure
<b>ft-lb</b>	Foot-pounds of torque
<b>BPM</b>	Blows per minute
<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
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved eye protection.
	WARNING marking concerning Risk of Hearing Loss. Wear hearing protection.
	WARNING marking concerning Risk of Respiratory Injury. Wear NIOSH-approved dust mask/respirator.
	WARNING marking concerning Risk of Explosion.

## Specific Safety Instructions

1. The warnings and precautions discussed in this 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
2. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
  - Lead from lead-based paints
  - Crystalline silica from bricks and cement or other masonry products
  - Arsenic and chromium from chemically treated lumber
 Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)
 **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.*)
3. Only use with accessories rated to handle the forces exerted by this tool during operation. Other accessories not designed for the forces generated may break and forcefully launch pieces.
4. Attach all accessories properly to the tool before connecting the air supply. A loose accessory may detach or break during operation.

5. Obey the manual for the air compressor used to power this tool.
6. Install an in-line shutoff valve to allow immediate control over the air supply in an emergency, even if a hose is ruptured.
7. Do not lay the Air Angle Die Grinder down until it has come to a complete stop. Moving parts can grab the surface and pull the tool out of your control.
4. Use tools with the lowest vibration when there is a choice between different processes.
5. Include vibration-free periods each day of work.
6. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
7. To reduce vibration, maintain tool as explained in this manual. If abnormal vibration occurs, stop immediately.

### **Vibration Precautions**

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.



**SAVE THESE  
INSTRUCTIONS.**

## FUNCTIONAL DESCRIPTION

### Specifications

Maximum Air Pressure	90 PSI
Air Inlet	1/4" -18 NPT Female
Maximum Speed*	20,000 RPM
Average Air Consumption	3 SCFM @ 90 PSI
Collet	1/4"

\* Maximum speed at stated maximum air pressure. Excess air pressure is hazardous and may cause the tool to exceed stated maximum speed.

### Air Angle Die Grinder Controls

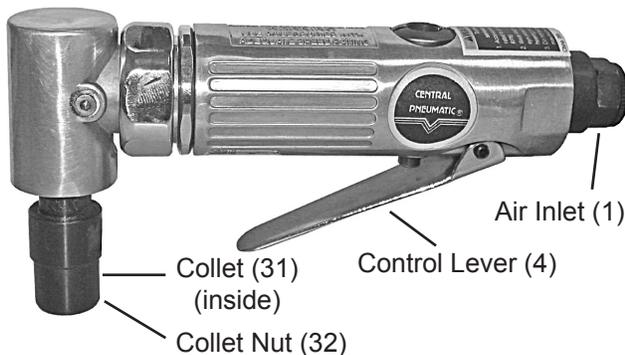


Figure 1

## INITIAL TOOL SET UP



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.

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

## 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 the number shown throughout the manual as soon as possible.

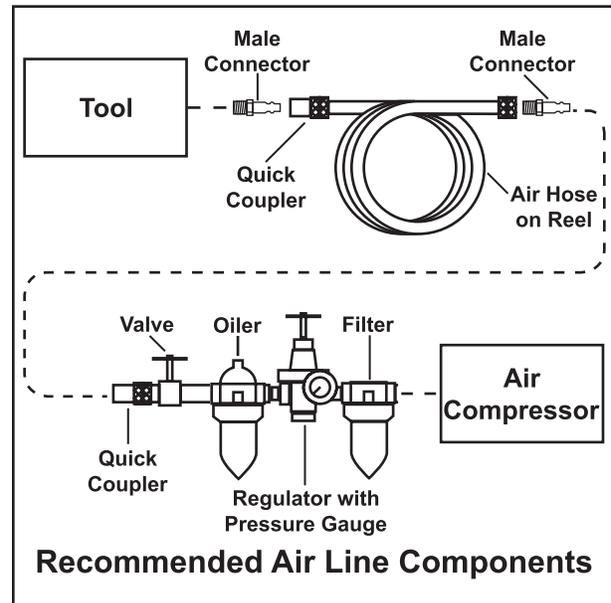
- This air tool may be shipped with a protective plug covering the air inlet. Remove this plug before set up.

## Air Supply

### ⚠ WARNING TO PREVENT EXPLOSION:



Use only clean, dry, regulated, compressed air to power this tool. Do not use oxygen, carbon dioxide, combustible gases, or any other bottled gas as a power source for this tool.



1. Incorporate an in-line oiler, shut-off valve, regulator with pressure gauge, and filter for best service, as shown in the diagram above. **An in-line shut-off valve is an important safety**

**device because it controls the air supply even if the air hose is ruptured.**

**Note:** If an automatic oiler system is not used, add a few drops of Pneumatic Tool Oil to the airline connection before operation. Add a few more drops after each hour of continual use.

2. Attach an air hose to the compressor's air outlet. Connect the air hose to the air inlet of the tool. Other components, such as a connector and quick coupler, will make operation more efficient, but are not required.

** WARNING! TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**

**Do not install a female quick coupler on the tool.** Such a coupler contains an air valve that will allow the air tool to retain pressure and operate accidentally after the air supply is disconnected.

**Note:** Air flow, and therefore Air Angle Die Grinder performance, can be hindered by undersized air supply components.

3. The air hose must be long enough to reach the work area with enough extra length to allow free movement while working.
4. Make sure tool's Control Lever (4) is in the off position; refer to Operation section for description of controls.
5. Close the in-line safety valve between the compressor and the tool.
6. Turn on the air compressor according to the manufacturer's directions and allow it to build up pressure until it cycles off.

7. Adjust the air compressor's output regulator so that the air output is enough to properly power the tool, but the output will not exceed the tool's maximum air pressure at any time. Adjust the pressure gradually, while checking the air output gauge to set the right pressure range.
8. Inspect the air connections for leaks. Repair any leaks found.
9. If the tool will not be used at this time, turn off and detach the air supply, safely discharge any residual air pressure, and release the throttle and/or turn the switch to its off position to prevent accidental operation.

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## **OPERATING INSTRUCTIONS**

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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.

**Inspect tool before use, looking for damaged, loose, or missing parts. If any problems are found, do not use tool until repaired.**

### **Tool Set Up**

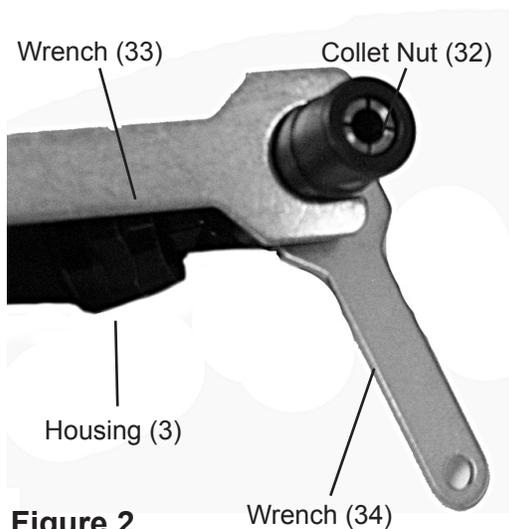
** WARNING TO PREVENT SERIOUS INJURY**

**FROM ACCIDENTAL OPERATION:**

**Detach the air supply, safely discharge any residual air pressure in the tool, before installing bits or making any adjustments to the die grinder.**

## Specific Operating Instructions

1. If an automatic oiler is not used, add a few drops of Pneumatic Tool Oil inside the air inlet before every use.
2. Note: Air Angle Die Grinder is designed to be used with grinding attachments, and sanding discs and other attachments.
3. Use the two Wrenches (33/34) to loosen the Collet (31) and Collet Nut (32) . See Figure 2 below.



**Figure 2**

4. Insert 1/4" diameter shank of a Grinding Accessory (not included) fully into Collet Nut. Then, firmly re-tighten Collet Nut to lock both the Collet and Grinding Accessory in place.
5. Connect air supply hose to Air Inlet (1). Turn on air compressor and set its regulator to the maximum 90 PSI for Die Grinder.
6. **WARNING!** Grip the Die Grinder firmly with **both** hands.
7. Slowly apply hand pressure to the Control Lever (4) until the desired speed is obtained.

**NOTE:** The Die Grinder always turns the Accessory clockwise (reference: while holding the tool as you would when operating it). Always point abrasive material away from you.

8. With a firm grip on the Die Grinder, lightly apply accessory to workpiece, slowly and steadily moving tool to right and left until achieving desired appearance (finish) on workpiece.
9. If Air Angle Die Grinder requires more force to accomplish task, verify that it receives sufficient, unobstructed airflow (CFM) and increase pressure (PSI) output of regulator up to maximum air pressure rating of tool.
10. If the tool still does not have sufficient force at maximum pressure and sufficient airflow, then a larger tool may be required.
11. **CAUTION! TO PREVENT TOOL AND ACCESSORY FAILURE, RESULTING IN INJURY:**  
**Do not exceed the tool's maximum air pressure rating of 90 PSI.**
12. Once work is completed, release hand pressure on Control Lever.
13. Turn off air compressor. Slowly squeeze Control Lever to release any remaining air pressure from Die Grinder. Then disconnect air hose.
14. Remove Accessory from Die Grinder. Store the tool in a clean and dry location out of the reach of children.

## USER-MAINTENANCE INSTRUCTIONS



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 the tool, detach the air supply, safely discharge any residual air pressure in the tool, and release the throttle and/or turn the switch to its off position before performing any inspection, maintenance, or cleaning procedures.

##### TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:

Do not use damaged equipment. If abnormal noise, vibration, or leaking air occurs, have the problem corrected before further use.



##### TO PREVENT EXPLOSION:

Lubricate the tool only with specified lubricants. Lubricate the air inlet using only pneumatic tool oil. Lubricate the internal mechanism using only white lithium grease. Other lubricants may damage the mechanism and may be highly flammable, causing an explosion.

## Cleaning, Maintenance, and Lubrication

**Note:** These procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the air-operated tool.

1. **Daily - Air Supply Maintenance:** Every day, perform maintenance on the air supply according to the component manufacturers' instructions. The lubricator's oil level needs to be maintained and the moisture filter must be regularly drained. Performing routine maintenance on the air supply will allow the tool to operate more safely and will also reduce wear on the tool.

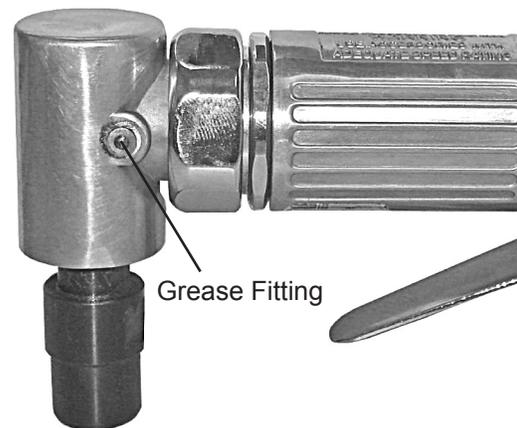


Figure 3

2. **Periodically - Grease Lubrication:** Lubricate the internal mechanism of the tool, using white lithium grease through the grease fittings.
3. Apply a few drops of oil to the Control Lever. Work the Lever a few times to lubricate.

## Troubleshooting

<b>Problem</b>	<b>Possible Causes</b>	<b>Likely Solutions</b>
Decreased output.	<ol style="list-style-type: none"> <li>1. Not enough air pressure and/or air flow.</li> <li>2. Obstructed Control Lever.</li> <li>3. Incorrect lubrication or not enough lubrication.</li> <li>4. Blocked air inlet screen (if equipped).</li> <li>5. Air leaking from loose housing.</li> <li>6. Air connection contaminated.</li> <li>7. Vane wear or damage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for loose connections and make sure that air supply is providing enough air flow (CFM) at required pressure (PSI) to the tool's air inlet. <b>Do not exceed 90 PSI maximum air pressure.</b></li> <li>2. Clean around Control Lever to ensure free movement.</li> <li>3. Lubricate using air tool oil and grease according to directions.</li> <li>4. Clean air inlet screen.</li> <li>5. Make sure housing is properly assembled and tight.</li> <li>6. Have qualified technician clean and lubricate tool. Install in-line filter in air supply as stated in manual.</li> <li>7. Replace all vanes.</li> </ol>
Housing heats up during use.	<ol style="list-style-type: none"> <li>1. Incorrect lubrication or not enough lubrication.</li> <li>2. Worn parts.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lubricate using air tool oil and grease according to directions.</li> <li>2. Have qualified technician inspect internal mechanism and replace parts as needed.</li> </ol>
Severe air leakage. (Slight air leakage is normal, especially on older tools.)	<ol style="list-style-type: none"> <li>1. Cross-threaded housing components.</li> <li>2. Loose housing.</li> <li>3. Damaged valve or housing.</li> <li>4. Dirty, worn or damaged valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for incorrect alignment and uneven gaps. If cross-threaded, disassemble and replace damaged parts before use.</li> <li>2. Tighten housing assembly. If housing cannot tighten properly, internal parts may be misaligned.</li> <li>3. Replace damaged components.</li> <li>4. Clean or replace valve assembly.</li> </ol>
<div style="display: flex; align-items: center;">  <p><b>Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect air supply before service.</b></p> </div>		

## **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.

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

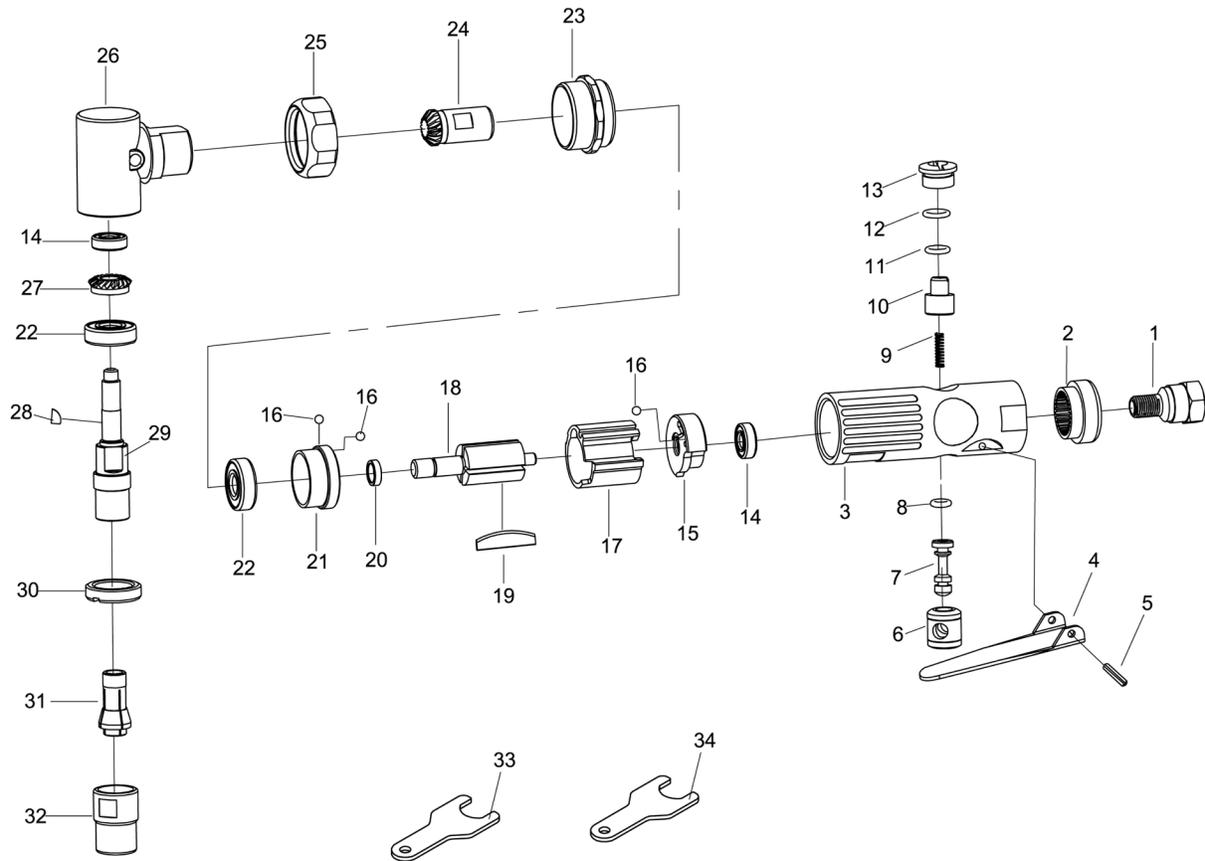
**Note:** If product has no serial number, record month and year of purchase instead.

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

## PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty
1	Air Inlet	1
2	End Cap	1
3	Housing	1
4	Control Lever	1
5	Spring Pin	1
6	Bushing	1
7	Valve	1
8	O-Ring	1
9	Spring	1
10	Speed	1
11	O-Ring	1
12	O-Ring	1
13	Valve	1
14	Ball Bearing	2
15	Rear End Plate	1
16	Ball	3
17	Cylinder	1

Part	Description	Qty
18	Rotor	1
19	Vanes	4
20	Bushing	1
21	Front End Plate	1
22	Ball Bearing	2
23	Nipple	1
24	Bevel Gear	1
25	Nut	1
26	Angle Head	1
27	Bevel Gear	1
28	Key	1
29	Chuck Casing	1
30	Bearing Cap	1
31	Collet	1
32	Collet Nut	1
33	Wrench	1
34	Wrench	1



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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.

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