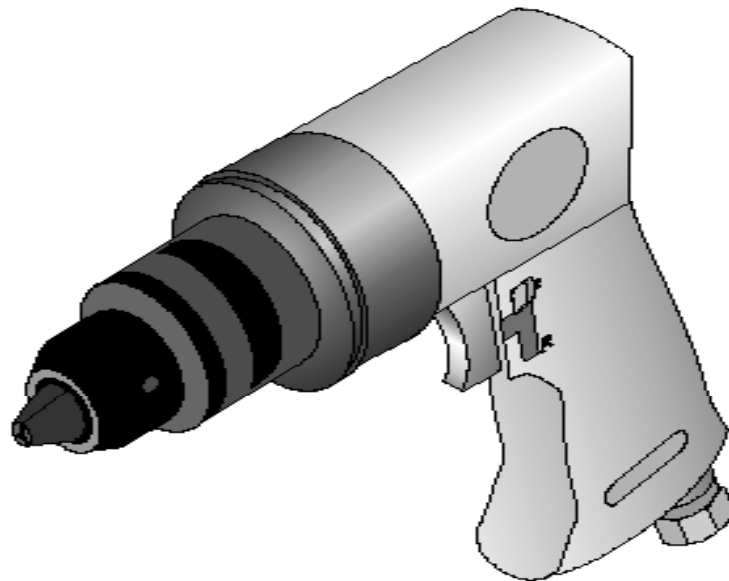




# 3/8" REVERSIBLE AIR DRILL

**Model 94585**



Due to continuing improvement, actual product may differ slightly from the product described herein.

## ASSEMBLY and OPERATING INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our Web Site at [www.harborfreight.com](http://www.harborfreight.com)

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For technical questions and replacement parts please call 1-800-444-3353.  
Manual Revised 11h

## **SPECIFICATIONS**

No Load Speed	1700 RPM
Max. Recommended Air Pressure	90 PSI
Air Consumption	5 CFM
Air Inlet	1/4" -18 NPT
Chuck Type	3 Jaw Keyed Chuck
Chuck Size	3/8"
Weight	2.4 lbs.

## **SAVE THIS MANUAL**

You will need the manual for the safety warnings and cautions, assembly instructions, operating procedures, maintenance procedures, trouble shooting, parts list, and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep both this manual and your invoice in a safe, dry place for future reference.

## **SAFETY WARNING & CAUTIONS**

**WARNING:** When using pneumatic equipment, basic safety precautions should always be followed to reduce the risk of personal injury and hazards due to over pressurization.

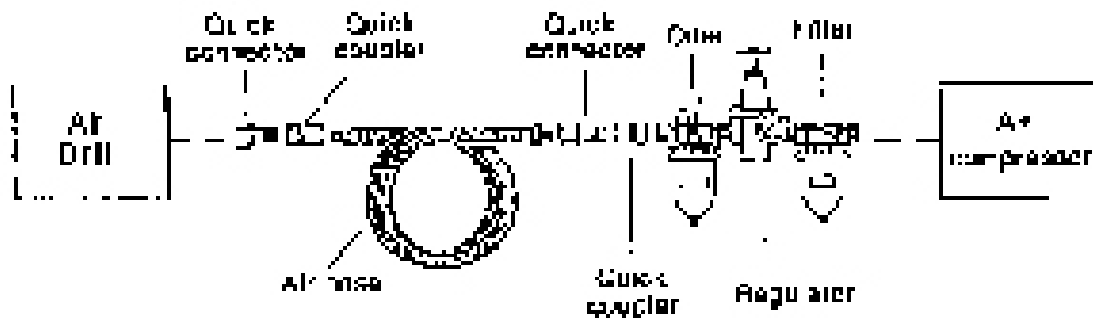
### **READ ALL INSTRUCTIONS BEFORE USING THIS TOOL!**

1. **KEEP WORK AREA CLEAN.** Cluttered, damp or wet areas invite injuries.
2. **KEEP CHILDREN AWAY.** Children must never be allowed in the work area. Do not let them handle machines, tools, or hoses.
3. **STORE IDLE EQUIPMENT.** When not in use, tools must be locked up in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
4. **DO NOT FORCE THE TOOL.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool's capacities.
5. **USE THE RIGHT TOOL FOR THE JOB.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. Do not use a tool for a purpose for which it was not intended.
6. **DRESS SAFELY.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Non-skid footwear is recommended. Wear restrictive hair covering to contain long hair.
7. **USE EYE, BREATHING AND EAR PROTECTION.** Wear ANSI approved impact safety goggles, ANSI approved hearing protectors, and ANSI approved dust mask or respirator when using this product. ANSI approved safety impact eye glasses, hearing protectors, and dust masks and respirators are available from Harbor Freight Tools.

8. **DO NOT ABUSE THE POWER CORD.** Do not yank compressor's cord to disconnect it from the receptacle. Do not carry tools by the cord.
9. **DO NOT OVERREACH.** Keep proper footing and balance at all times. Do not reach over or across running machines.
10. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect compressor's cord periodically and, if damaged, have them repaired by an authorized technician. Inspect all hoses for leaks prior to use. The handles must be kept clean, dry, and free from oil and grease at all times.
11. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make it a habit to check that keys and adjusting wrenches are removed from the tool or machine work surface before plugging it in.
12. **AVOID UNINTENTIONAL STARTING.** Do not carry any tool with your finger on the trigger, whether it is connected to the compressor or not.
13. **STAY ALERT.** Watch what you are doing; use common sense. Do not operate any tool when you are tired.
14. **CHECK DAMAGED PARTS.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn on and off properly.
15. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
16. **DO NOT OPERATE TOOL IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
17. **DRAIN THE COMPRESSOR USED TO POWER THE TOOL EVERY DAY.** Do not allow moisture to build up inside the compressor. Do not allow compressor to sit pressurized for longer than one hour.
18. **MAKE SURE ALL EQUIPMENT IS RATED TO THE APPROPRIATE CAPACITY.** Make sure that regulator is set at least 10 PSI lower than the lowest rated piece of equipment you are using.
19. **MAINTAIN PRODUCT WITH CARE.** Keep clean and dry for better and safer performance.
20. **WARNING:** 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 cannot be built into this product, but must be supplied by the operator.

## SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS

1. **USE CLEAN, DRY, REGULATED COMPRESSED AIR AT 90 PSI.** Do not exceed the recommended 90 PSI. Never use oxygen, carbon dioxide, combustible gases or any other bottled gas as a power source for this tool.
2. **WHEN CONNECTING TO THE AIR SUPPLY:**
  - A. Wrap approximately 4" of Teflon tape around the male threads of a 1/4" NPT Quick Connector (not provided). Then, wrench tighten the Quick Connector into the Air Inlet.
  - B. If an automatic oiler is not used, add two drops of oil into the Quick Connector.
  - C. Turn on the compressor and set the regulator to the pressure recommended for this tool (90 PSI).



*Airline Oiler Assembly*

3. **ALWAYS DISCONNECT TOOL FROM ITS COMPRESSED AIR SUPPLY SOURCE BEFORE PERFORMING ANY SERVICES OR MAINTENANCE** such as cleaning the tool, changing chisels or punches, moving to a different work location, handing the tool to another person, etcetera. **Caution:** After disconnecting the TOOL from the air compressor, the TOOL will still be pressurized. Point the TOOL onto an extra piece of work surface and depress the trigger until all pressure is released.
4. **MAINTAIN A SAFE WORK ENVIRONMENT.** Keep work area well lit. Make sure there is adequate surrounding work space. Use this product in a well ventilated area. Do not operate this product in the presence of flammable liquids, gasses, or dust.
5. **DO NOT FORCE THE EQUIPMENT.** This product will do the work better and safer at the speed and capacity for which it was designed.
6. **AVOID UNINTENTIONAL STARTING.** Make sure you are prepared to begin work before depressing the Trigger.
7. **NEVER POINT TOOL AT PEOPLE OR ANIMALS.**
8. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals

(Continued from page 4)

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.*)

## UNPACKING

Your Air Drill comes completely assembled. Included is a chuck key for use with this tool. Check to make sure everything is included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

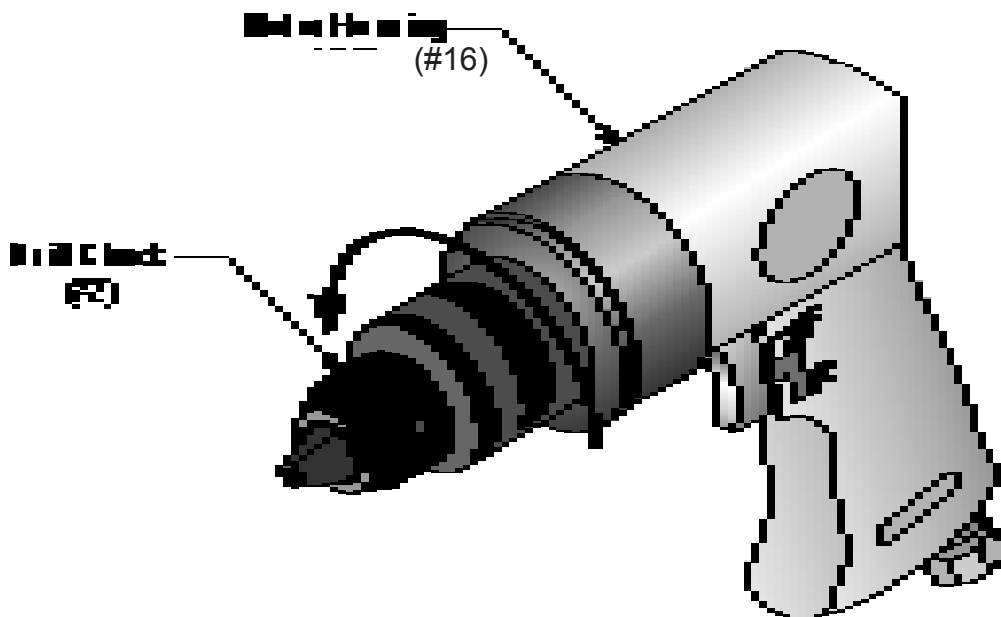
## ASSEMBLY

Your Air Drill is completely assembled. Follow the steps below to install drill bits and prepare for the operation of your Air Drill.

### ***Drill Bit Installation***

Step 1: Select the drill bit needed for the drilling you wish to perform.

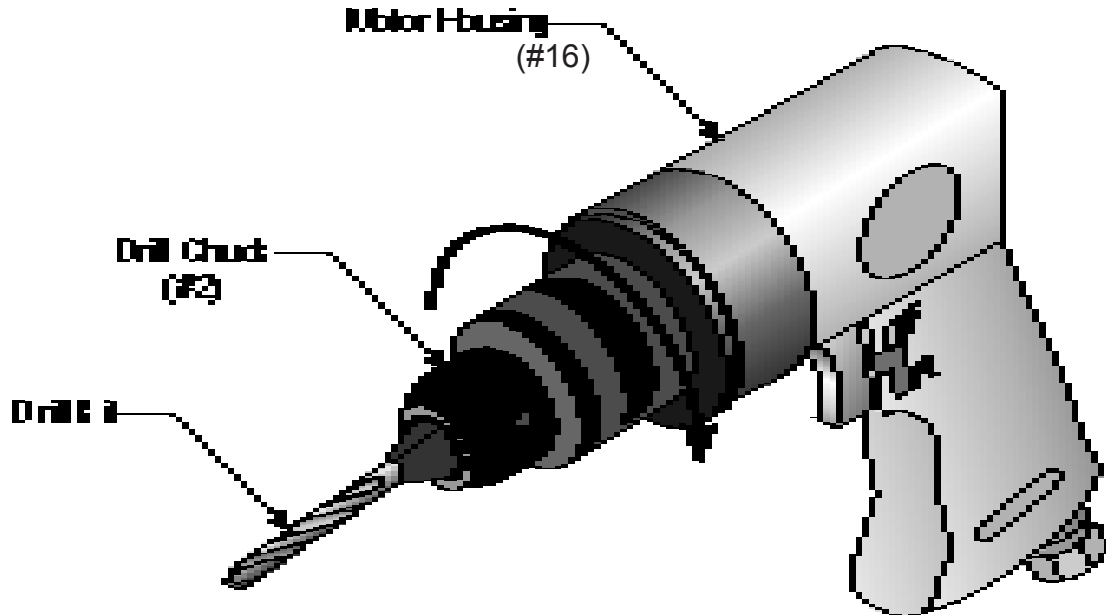
Step 2: Open up the Jaws of the Drill by turning the DRILL CHUCK (#2) as shown in Figure 1.



***Figure 1 — Opening the Jaws***

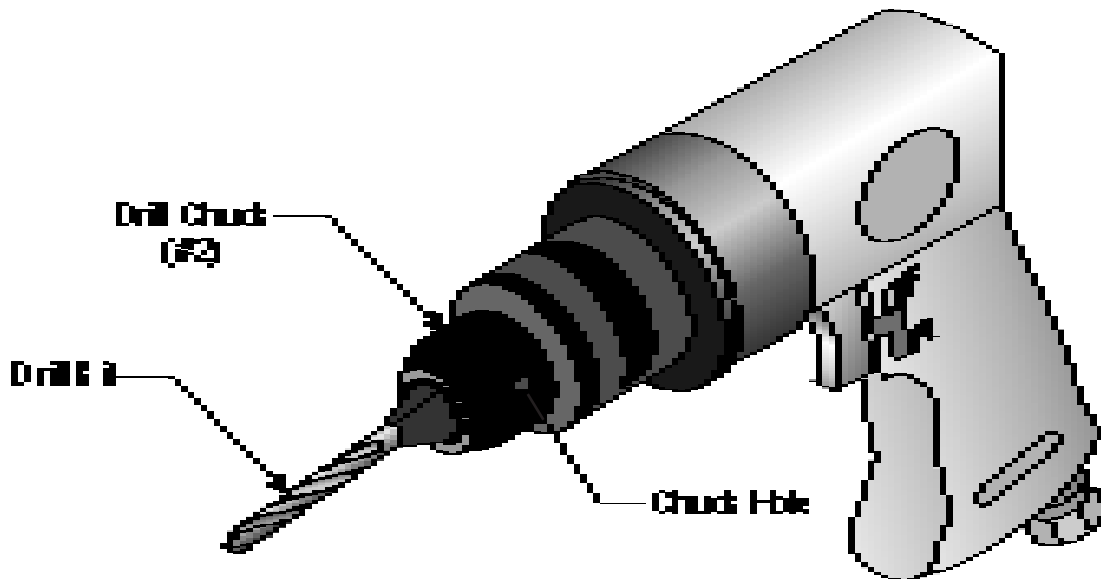
Step 3: When the Jaws are open wide enough to insert the drill bit, slide the bit into the DRILL CHUCK as far as possible.

Step 4: By hand, turn the DRILL CHUCK to tighten the Jaws as shown in Figure 2.



*Figure 2 — Tightening the Jaws*

Step 5: Insert the Chuck Key into one of the three chuck holes in the DRILL CHUCK as shown in Figure 3, mating the teeth of the Chuck Key with the teeth of the DRILL CHUCK.



*Figure 3 — Using the Chuck to Tighten the Jaws*

Step 6: Turn the Chuck Key to tighten the Jaws. Make sure the Jaws are tight.

Step 7: Put the Chuck Key in a safe place. Do not lose the Chuck Key.

## ***Air Connection***

- Step 1: Remove the plastic cap from the AIR INLET (#29).
- Step 2: You will need a Union fitting (sold separately) before you can connect your Air Drill to an air compressor. Attach the Union fitting to the AIR INLET.
- Step 3: Attach an Air Coupler (sold separately) to the Union fitting if desired. This is a useful accessory as it allows quick-coupling action when using a variety of tools with the same air compressor.
- Step 4: Your Air Drill is ready for use.

## **OPERATION**

### ***Setup***

Frequent, but not excessive, lubrication is required for best performance. Oil added through the airline connection will lubricate internal parts. An automatic airline oiler is recommended but oil may be added manually before every operation or after about 1 hour of continuous use. Only a few drops of oil at a time are necessary. Too much oil will collect inside the tool and be blown out during the exhaust cycle. **ONLY USE PNEUMATIC TOOL OIL.** Do not use detergent oil or additives as these lubricants will cause accelerated wear to the seals in the tool.

Dirt and water in the air supply are major causes of pneumatic tool wear. Use a filter/oiler for better performance and longer life. The filter must have adequate flow capacity for the specific application. Consult the manufacturer's instructions for proper maintenance of your filter.

The connector on the tool must not hold pressure when the air supply is disconnected. If the wrong fitting is used, the tool can remain charged with air after being disconnected and still be able to drive a fastener. See Airline Oiler Assembly on page 4 for the recommended accessories and connection order.

## ***Using The Air Drill***

- Step 1: Mark the material you wish to drill at the spot for the hole. Make sure your drill bit is the correct size for the hole you need to make.
- Step 2: Clamp the material in a vise to make sure the material does not move or begin to spin while drilling.
- Step 3: Wear eye protection to guard against flying wood or metal.
- Step 4: Set the compressor's pressure regulator to 90 PSI. Do not set the compressor's outlet regulator over 90 PSI.
- Step 5: Connect the Air Drill to the air compressor's hose. If leaking is detected, disconnect the air hose and repair before use.
- Step 6: Grip the Air Drill firmly. Place the drill bit on the spot marked in Step 1.
- Step 7: To begin drilling, press the TRIGGER (#18).
- Step 8: Your Air Drill has a variable speed for drilling. To vary the speed of the drilling action, vary the pressure on the TRIGGER.
- Step 9: Drill only as deep as necessary. Do not drill deeper than necessary into walls or other areas where you cannot identify any possible hazards behind the drilling surface.
- Step 10: When you have drilled the hole, remove the drill bit from the hole while the Air Drill is still spinning. This is to prevent the drill getting caught in the hole and causing damage.
- Step 11: If the drill bit does get caught while you are drilling, immediately release the TRIGGER.

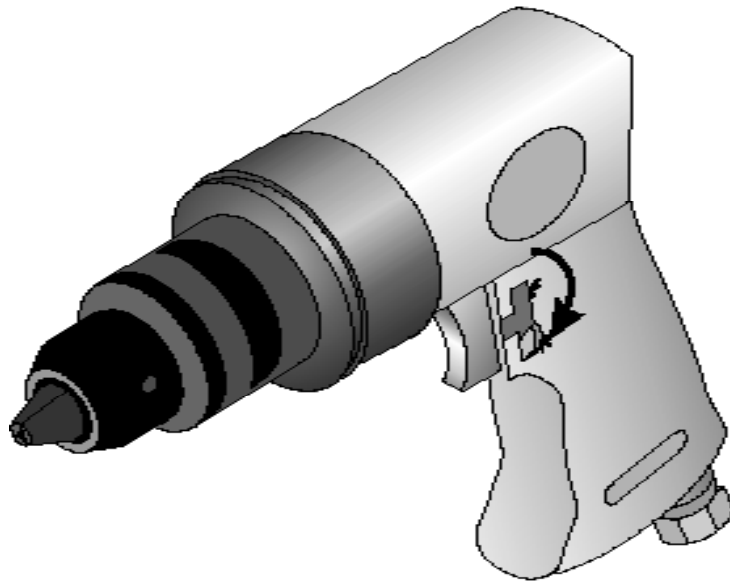
### **CAUTION**

Do not operate the Air Drill before placing the drill bit on the material.

### **WARNING**

Do not touch the DRILL CHUCK or the drill bit while the Air Drill is spinning.

Step 12: Flip the REVERSE VALVE (#20) to the “R” position as shown in Figure 5. This will reverse the rotation of the drill, allowing you to back out your drill bit.



**Figure 5 — Reversing the Rotation of the Drill Bit**

Step 13: Lightly press the TRIGGER until the drill bit spins free. Remove the Air Drill.

Step 14: Flip the REVERSE VALVE back to the “F” position.

### **MAINTENANCE**

It is recommended that you use an Airline Oiler with your Air Drill. If you do not use an Airline Oiler, follow the steps below to maintain and prolong the life of your tool.

Step 1: Disconnect the Air Drill from the air hose.

Step 2: Apply a few drops of **PNEUMATIC TOOL OIL** through the air line before each use, or every hour if used continuously.

Step 3: Apply a few drops of oil to the TRIGGER (#18). Work the TRIGGER a few times to lubricate.

#### **CAUTION**

Do not use detergent oil or additives as these lubricants will cause accelerated wear to the seals in the tool.

Step 4: Twice a month, apply a few drops of oil to the Jaws and REVERSE VALVE (#24) as shown in Figure 6. Open and close the Jaws a few times to lubricate.

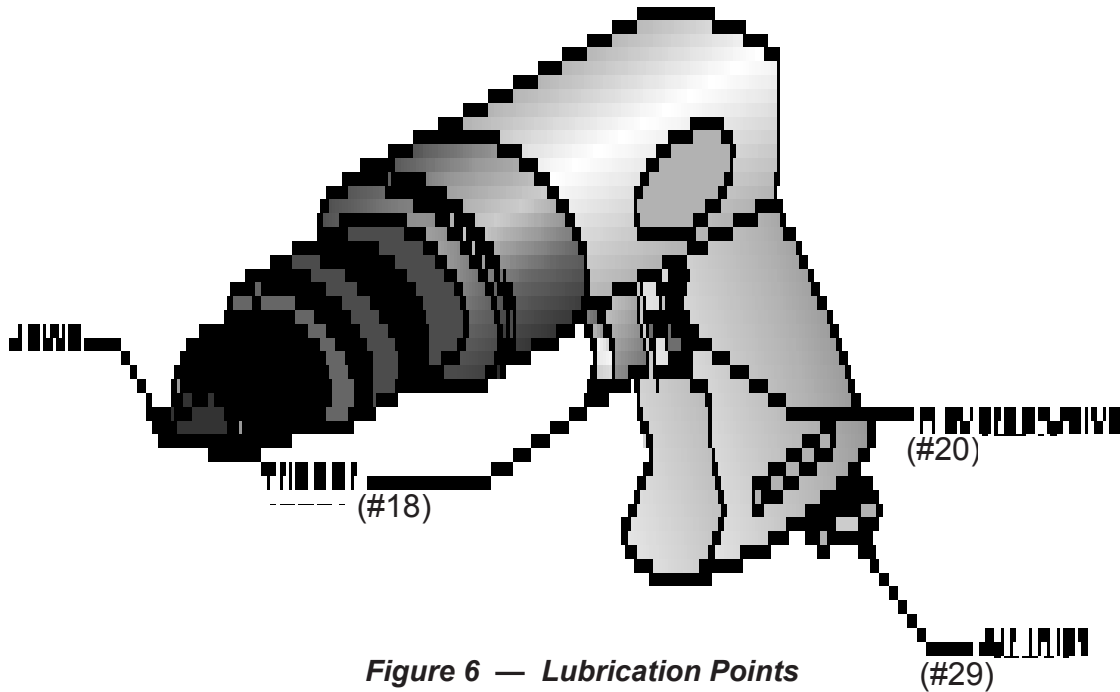


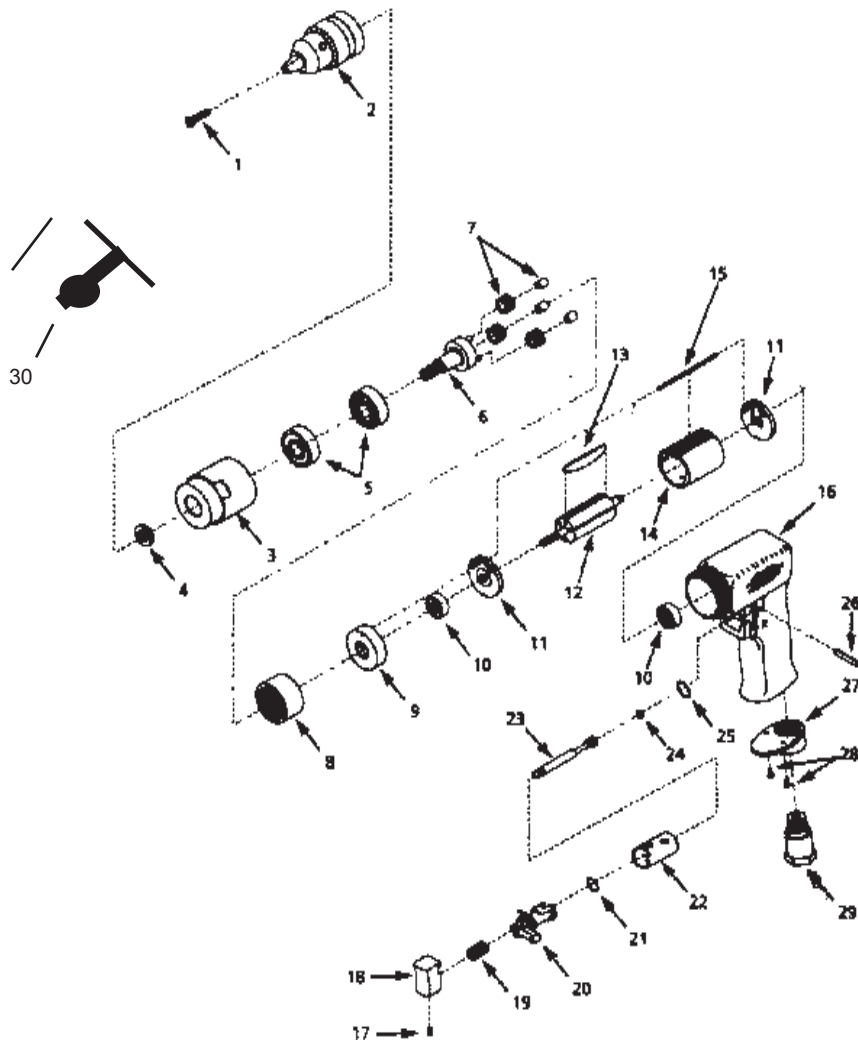
Figure 6 — Lubrication Points

### PARTS LIST

Item	Description	QTY	Item	Description	QTY
1	Flat head socket cap screw	1	16	Motor Housing	1
2	Drill Chuck	1	17	Cup Point Set Screw	1
3	Clamp Nut	1	18	Trigger	1
4	Flat Washer	1	19	Valve Spring	1
5	Ball Bearing	2	20	Reverse Valve	1
6	Planet Gear Carrier	1	21	O-Ring	1
7	Planet Gear with Bushing	3	22	Reverse Valve Bushing	1
8	Internal Gear	1	23	Throttle Valve	1
9	Bearing Case	1	24	O-Ring	1
10	Ball Bearing	2	25	O-Ring	1
11	End Plate	2	26	Roll Pin	1
12	Rotor	1	27	Exhaust Diffuser	1
13	Rotor Blade	5	28	Self-Tapping Button Head Screw	2
14	Cylinder	1	29	Air Inlet with Screen	1
15	Motor Alignment Pin	1	30	Chuck Key	1

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

## ASSEMBLY DIAGRAM



## DISCLAIMER

### PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR 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 THE 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.

## 90 Day Warranty

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.