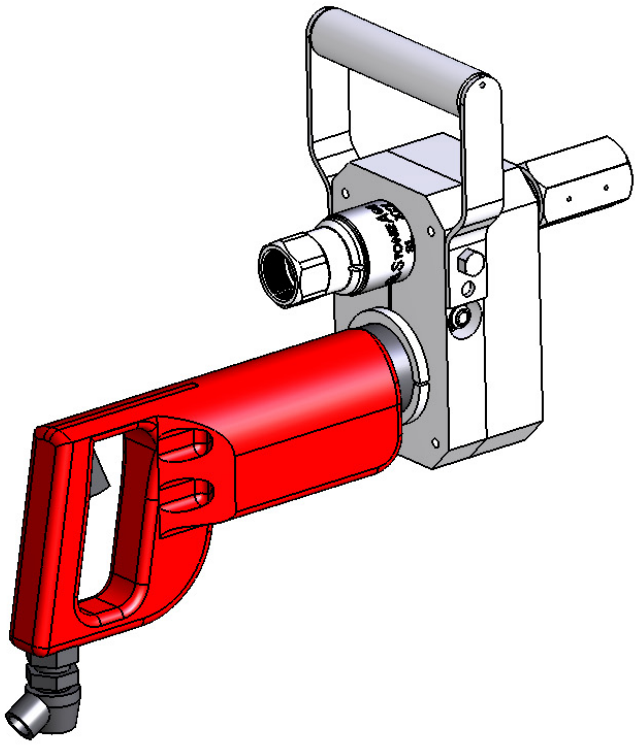
AIR POWERED ROTARY HAND-LANCING TOOL

SA 1940

OPERATION AND MAINTENANCE MANUAL



StoneAge®
WATERBLAST TOOLS

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1.0 INTRODUCTION

This manual was prepared to provide the operator with the basic information needed to operate and service this equipment. The operating recommendations in the manual will ensure that you receive satisfactory performance. All operating personnel responsible for the care of this equipment should be familiar with the information in this manual.

If you have any questions or problems with this equipment, please contact the distributor you obtained the product from, or the manufacturer:

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www.stoneagetools.com

2.0 SAFETY WARNING

Operations with high pressure water can be potentially dangerous if caution is not exercised. Please read and follow all of these instructions, in addition to the guidelines in the WJTA Recommended Practices handbook.

2.1 Only competent and trained persons should operate this equipment.
2.2 Do not exceed the maximum operating pressure specified for any component in a system.
2.3 This equipment should always be used with an operator controlled dump mechanism to release the high pressure water.
2.4 The immediate work area should be marked off to keep out untrained persons.
2.5 All personnel in the area should wear eye and hearing protection, as well as other protective clothing in accordance with specific conditions.
2.6 Inspect the equipment for visible signs of deterioration, damage, or improper assembly. Do not operate until repaired. Make sure all threaded connections are tight and leak free.
2.7 Check to see that all control functions work properly before going to high pressure.
2.8 If it is necessary to have a person work near the cleaning jets, then it is this person who should have control of the pressure dump mechanism.
2.9 The tool should be securely supported. Strong back thrust is created by waterjets and these forces can become unbalanced if a nozzle should become plugged.

3.0 DESCRIPTION

The **SA 1940** is an air powered rotary tool for high pressure fluids use. It can apply the power of water jets to drilling or cleaning jobs.

The tool is designed to be used with all common waterblast pumps and compressed air systems. The unit consists of two main components: the air motor and the water swivel. The tool can be used with all standard lace rods and nozzle tips. Special cutting bits with jets are available.

The input port for the SA 1940 is Female Autoclave Engineering 9/16 High Pressure.

The output shaft for the SA 1949 is Male Autoclave Engineering 9/16 High Pressure. Couplings for the SA 1940 are available to fit 3/8 and 9/16 High Pressure lances.

A 1/8" NPT air port on the bottom of the air motor is provided for customer to install a trigger-actuated pilot air signal. This port provides 20 psi minimum; an additional pneumatic control valve may be required to operate a tumble box dump valve.

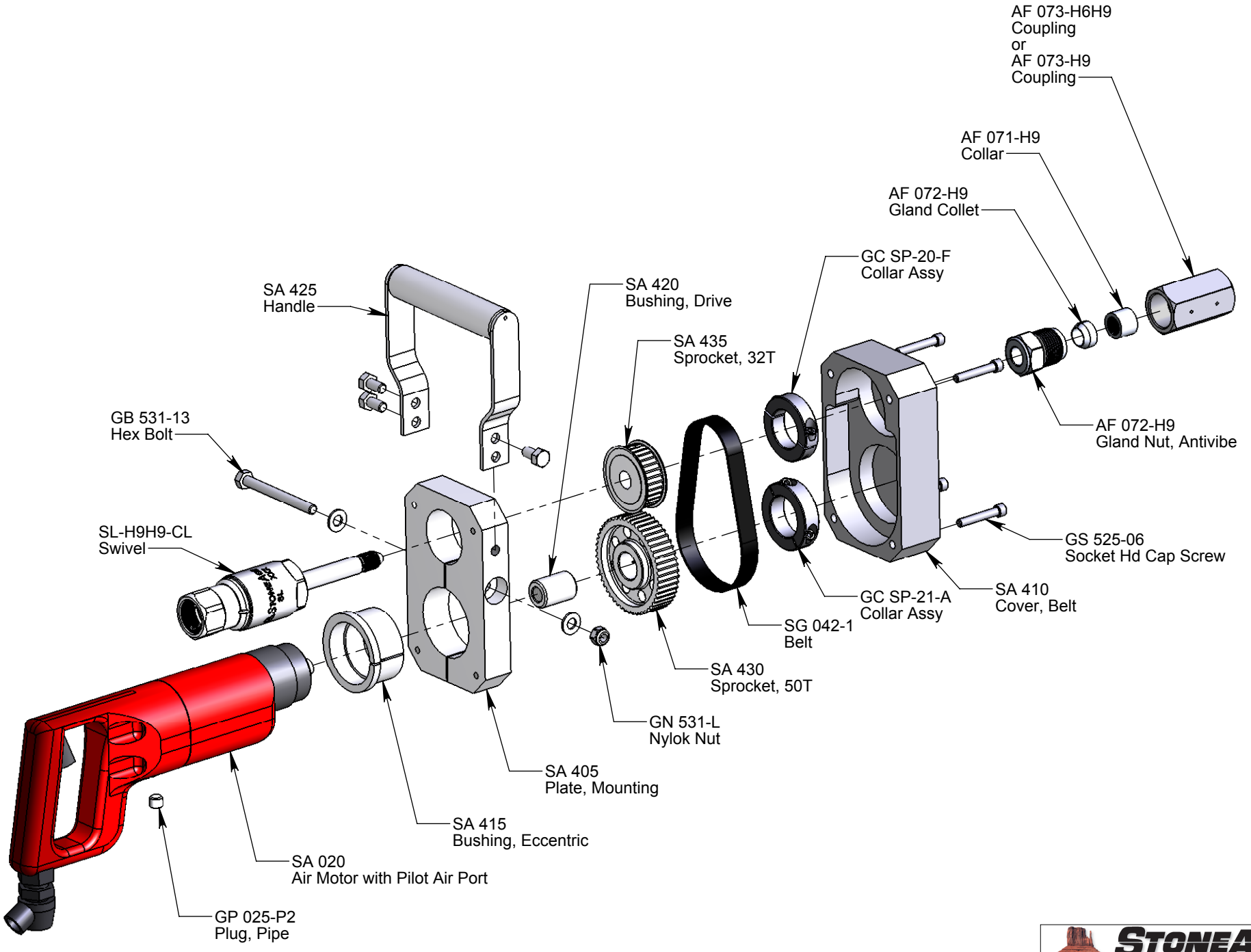
4.0 PARTS LIST

SA 1940

Part #	Description	Qty
AF 071-H9	Collar	1
AF 072-H9	Gland Nut & Collet, Antivibe	1
AF 073-H6H9	Coupling, H6 H9	1*
AF 073-H9	Coupling, H9 H9	1*
GB 531-13	Hex Bolt, 5/16-18 UNC x 3 1/4" Long	1
GC SP-20-F	Collar, 2 Piece	1
GC SP-21-A	Collar, 2 Piece	1
GN 531-L	Nylok Nut, 5/16-18 UNC	1
GP 025-P2	Plug, Hex Pipe	1
SA 020	Air Motor with Pilot Air Port	1
SA 405	Plate, Mounting	1
SA 410	Cover, Belt	1
SA 415	Bushing, Eccentric	1
SA 420	Bushing, Drive	1
SA 425	Handle Assy	1
SA 430	Sprocket, 50T	1
SA 435	Sprocket, 32T	1
SG 042-1	Drive Belt	1
SL-H9H9-CL	Swivel, 40K	1

* Denotes Optional

5.0 SA 1940 EXPLODED ASSEMBLY



StoneAge WATERBLAST TOOLS

6.0 MAINTENANCE

This tool has been designed to require a minimum amount of attention by the operator. However, some guidelines should be followed to obtain top performance and a long, useful life.

This tool is capable of fairly high rpm, but it is recommended that a valve be installed in the airline to regulate the top speed. For many applications lower rpm may improve performance. It will definitely be easier on the motor and swivel.

Refer to the SL Manual for more detailed information on swivel maintenance.

DRIVE BELT REPLACEMENT

1. Remove the four bolts holding the aluminum cover to the mounting plate.
2. Separate halves. It may be necessary to loosen the clamp bolt on the side of the mounting plate in order to loosen the drive belt by pivoting the eccentric on the motor. Loosen the collar in front of the swivel sprocket and remove the collar, sprocket & drive belt. Inspect sprockets for foreign material buildup.
3. Place new drive belt over swivel sprocket and motor sprocket and slide the swivel sprocket back onto the swivel shaft. Place the clamp collar back on the swivel shaft and tighten, taking care to insure that the belt is centered on the motor sprocket.
4. If necessary, adjust belt tension by pivoting the motor eccentric and re-tighten the clamp bolt.
5. Remount the cover to the mounting plate and tighten the four bolts to hold the halves together.

AIR MOTOR

1. The air supply should be filtered and use a line oiler to supply lubrication.
2. For added protection when preparing to store the tools, pour a few ounces of oil or diesel directly into the port and run briefly.
3. Keep the control handle clean and working properly.
4. Always blow out the airline before connecting hardware.

Repairs to the air drill are straight forward and require only standard metric wrenches. The most common problems are worn and sticking vanes. Clean all components and lubricate thoroughly before reassembling.

7.0 LIMITED WARRANTY

StoneAge, Inc. warrants to the extent herein provided the products of its own manufacture against defects in material and workmanship under normal use and service for which the products were designed for a period of six months after shipment from the factory. If such products should fail through defect in workmanship or material and specific written notice of failure is made within six months after date of shipment from factory, StoneAge, Inc. will either repair or replace any such items, F.O.B. its factory without charge. StoneAge, Inc. shall not be liable for expense incurred in repairs or alterations made outside the factory without the proper and prior authorization. StoneAge, Inc. shall have the option of requiring the return of the defective products to its factory, with transportation charges prepaid, to establish the claim. StoneAge, Inc. shall in no event be held liable for damages or delay resulting from or arising out of defective products nor for consequential damages or otherwise except for repair or replacement of items of defective material or workmanship aforesaid.

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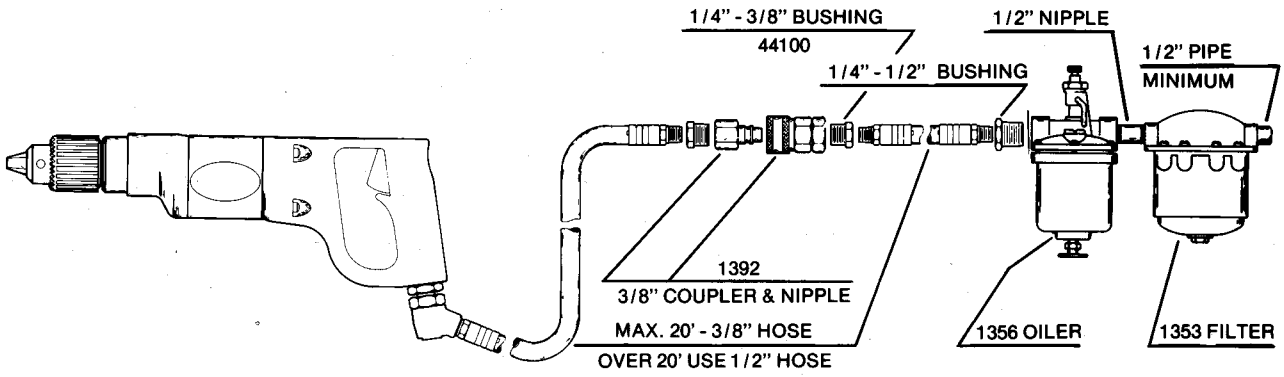
SIOUX TOOLS INC.
2901 FLOYD BOULEVARD ■ SIOUX CITY, IOWA 51102 ■

Form A221
Dated 11/89

INSTRUCTIONS

For No's. 1464, 1465, 1466, 1467
SIOUX 3/8" & 1/2" AIR DRILLS



AIR SUPPLY

The tool is designed to operate at approximately 90 pounds per square inch air pressure at the inlet. A 7½ h.p. compressor at 100 lbs. per sq. in. with an air tank of 60 gal. or larger is recommended. Pipe and fittings should be a minimum of ½ inch diameter. The above illustration gives additional information. Note that hose fittings must have inlet holes 9/32 inch or larger. The tool is designed for use with filter and lubricator.

LUBRICATION

Fill the lubricator with Sioux No. 288 Air Motor Oil and set lubricator to 1-2 drops per minute. The gear case is filled with ½ oz. of Sioux No. 1207 Grease. Replace grease if necessary after 100 hrs. of operation.

PLACING TOOL IN OPERATION

Drain water from the air compressor and blow condensation from the air lines before each day's operation.

Place 20 to 30 drops of Sioux No. 288 Air Motor Oil into the ⅜ inch inlet hose before using and twice daily thereafter.

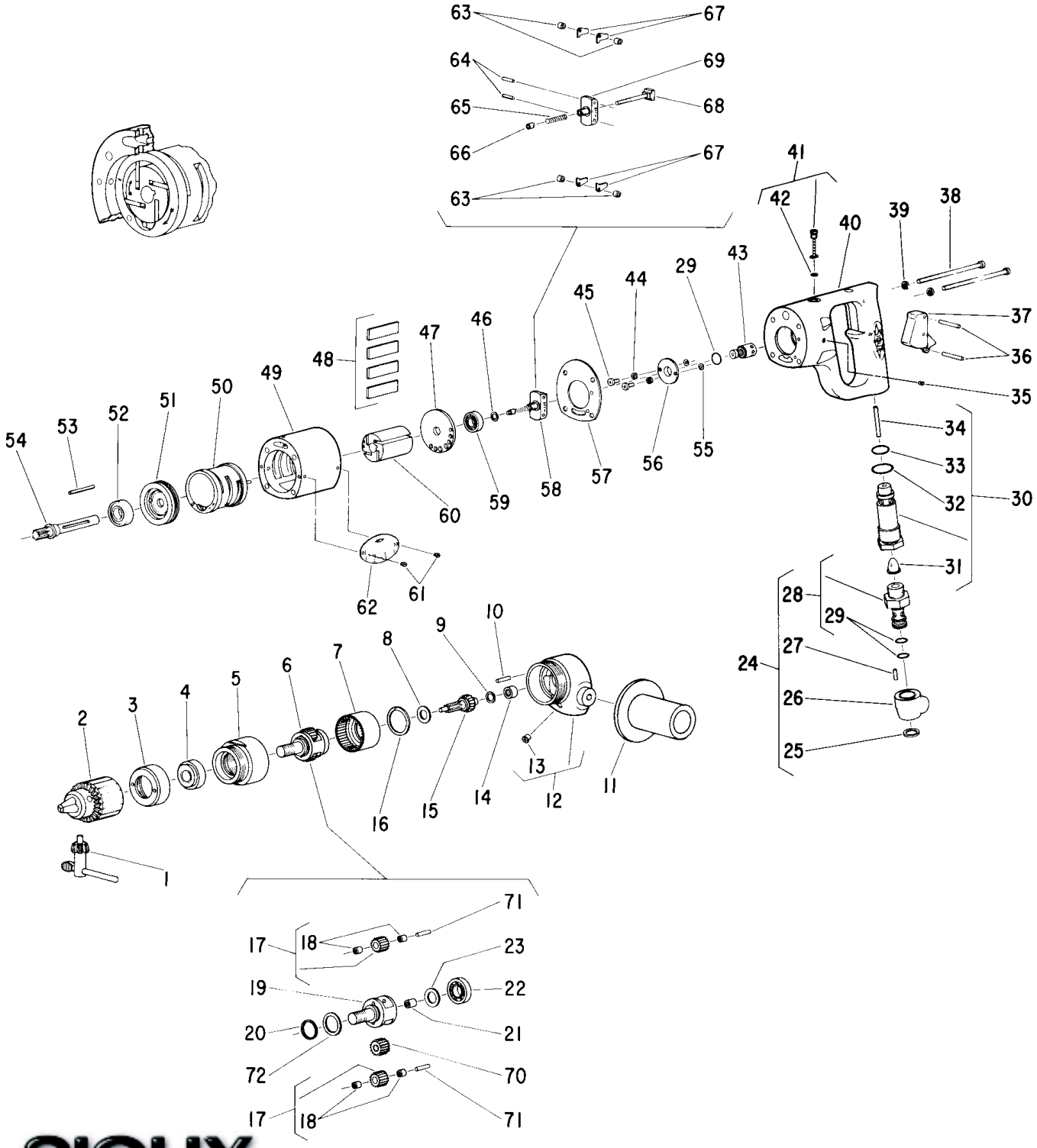
LOSS OF POWER

Filter and inlet screen clogged.
Use of fittings with too small an inlet.
Use of an undersize hose.
Loss of air pressure.
Dirt in the tool.
Tool not lubricated.
Stuck governor.
Worn motor parts (vanes, end plates, cylinder) vanes worn to 13/32 inch in depth should be replaced.

PRINTED IN U.S.A.

PARTS LIST FOR
1464, 1465, 1465-1/2, 1466, & 1467 AIR DRILL

(SERIAL 11221 UP TO B)
(SERIAL B100 & UP)



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PARTS LIST FOR
1464, 1465, 1465-1/2, 1466, & 1467 AIR DRILL

(SERIAL 11221 UP TO B)
(SERIAL B100 & UP)

Fig. No.	Part No.	Description
1.	30011	Key-Chuck
2.	21002	Chuck-3/8" Capacity (1465)
	21137	Chuck-1/2" Capacity (1464, 1465-1/2, 1466, 1467)
3.	44493	Retainer
4.	10198	Bearing-Ball
5.	44494	Support-Spindle
6.	43327	Ass'y-Planetary Gear (1465, 1466,1467)
	63583	Ass'y-Planetary Gear (1464)
7.	19197	Gear-Ring
8.	35128	Washer
9.	35134	Washer
10.	30467	Pin
11.	63349	Ass'y-Side Handle
12.	12299	Case-Gear
13.	30356	Fitting-Grease
14.	10042	Bearing-Needle
15.	19461	Gear & Pinion (1465)
	19462	Gear & Pinion (i466, 1467)
	19493	Gear & Pinion (1464)
16.	21531	Ring-Lock
17.	19324	Ass'y-Gear & Bearing (2)*(1465, 1466, 1467)
	19325	Ass'y-Gear & Bearing (2)*(1464)
18.	10028	Bearing-Needle (4)*
19.	22640	Spindle-Chuck (1465, 1466, 1467)
	64184	Spindle-Chuck (1464)
20.	21524	Ring-Retaining (Used on Some Models)
	21753	Ring-Retaining (1464)
21.	10044	Bearing-Needle
22.	10203	Bearing-Ball
23.	25976	Washer
24.	43133	Ass'y-Swivel
25.	21523	Ring-Retaining
26.	13201	Swivel
27.	34819	Pin
28.	43334	Ass'y-Swivel Body
29.	14312	Ring-"O" (3)*
30.	33998	Ass'y-Throttle Valve
31.	33993	Ass'y-Air Screen
32.	14307	Ring-"O"
33.	14274	Ring-"O"
34.	30424	Pin
35.	30375	Fitting-Grease
36.	30347	Pin (2)*
37.	33967	Ass'y-Trigger
38.	07129	Screw (4)*
39.	Q9724	Washer-Lock (4)*
40.	43073	Ass'y-Handle (Incl. Fig. 24-37, 41-45, 55, 56)
41.	44253	Oiler Screw & "O" Ring
42.	14369	Ring-"O"
43.	43664	Ass'y-Governor Valve
44.	09704	Washer-Lock (2)*
45.	06325	Screw (2)*
46.	35067	Washer-Wave
47.	10520	End Plate-Rear
48.	33997	Vane-Rotor (Set of 4)
49.	12276	Housing
50.	33979	Cylinder
51.	10521	Plate-Front End (Up to Ser. No. B)
	10531	Plate-Front End (Ser. No. B -100 & up)
52.	10203	Bearing-Ball (Up to Ser. No. B)
	10228	Bearing-Ball (Ser. No. B -100 & up)
53.	44219	Key-Rotor
54.	22641	Spindle-Rotor (1464, 1465)
	22642	Spindle-Rotor (1466, 1467)
55.	14750	Retainer-Screw (2)*
56.	44245	Retainer-Governor Valve
57.	14751	Gasket
58.	43672	Ass'y-Governor (1464, 1465, & 1466)
	43670	Ass'y-Governor (1467)
59.	10241	Bearing-Ball
60.	44220	Rotor
61.	06000	Screw (2)*
62.	20368R	Plate-Name
63.	44379	Spacer-Governor (1465, 1466, 1464)(4)*
	44218	Spacer-Governor (1467)(4)*
64.	30336	Pin-Roll (2)*
65.	21411	Spring-Governor (Red)(1465, 1466, 1464)
	21416	Spring-Governor (Green)(1467)
66.	13183	Nut-Governor Adjusting
67.	35069	Weight-Governor (1465, 1464, 1466)(4)*(1467)(6)*
68.	43666	Ass'y-Bearing Support & Spindle
69.	44222	Frame-Governor
70.	19206	Gear-Pinion (1464)
71.	30467	Pin (1465, 1466, 1467)(2)*
	30369	Pin (1464)(2)*
72.	35260	Washer (1464)

*Order Quantity As Required

AL, AND MODEL NUMBER WHEN
RING PARTS

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