



**Operator Instructions**

Includes - Foreseen Use, Work Stations, Putting Into Service, Operating, Dismantling, Assembly and Safety Rules

**Important**

Read these instructions carefully before installing, operating, servicing or repairing this tool. Keep these instructions in a safe accessible place.

Manufacturer/Supplier <b>Sioux Tools Inc.</b> 2901 Floyd Boulevard P.O. Box 507 Sioux City Iowa 51102 U.S.A.  Tel No 712-252-0525 Fax No 712-252-4267	Product Type <b>3/8" Capacity Reversible          Right Angle Drill</b>	RPM <b>1,350</b> Cycles Per Min	
	Model No/Nos <b>5430</b>	Serial No	

Product Net Weight <b>2.12</b> lbs <b>0.96</b> Kg	Recommended Use Of Balancer Or Support  <b>No</b>	Recommended Hose Bore Size - Minimum <b>5/16 Ins 8 M/M</b>	Recommended Max Hose Length <b>30 Ft 10 M</b>
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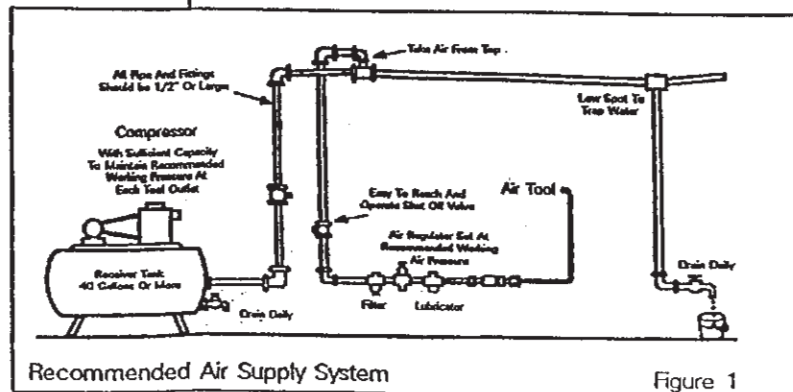
Air Pressure Recommended Working <b>6.2 bar 90 PSI</b> Maximum <b>6.2 bar 90 PSI</b>		Noise Level <b>Sound Pressure Level 84.0 dB(A)</b>  Test Method <b>Tested in accordance with Pneurop          test code PN8NTC1 and ISO Standard 3744</b>
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<b>SAFETY MESSAGES</b>  Personal Safety Equipment Use - Safety Glasses <b>Yes</b> Use - Safety Gloves Use - Safety Boots Use - Breathing Masks Use - Ear Protectors <b>Yes</b>	<p><b>WARNING</b>          Always Read Instructions Before Using Power Tools          Always Wear Safety Goggles          Wear Hearing Protection          Avoid Prolonged Exposure To Vibration</p>	Vibration Level <b>Less than 2.5 Metres / Sec<sup>2</sup></b>  Test Method <b>Tested in accordance with ISO          standard 8662/1</b>
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**Safety rules when using a 5430 Drill**

- Use may produce flying objects. Always use safety goggles.
- Prolonged exposures to vibration can cause injury.
- Use accessories rated at above 1,350 RPM.
- Read all instructions before using this tool. All operators must be fully trained in its use and aware of these safety rules.
- Do not exceed the maximum working air pressure.
- Use personal protection equipment as recommended.
- Use only compressed air at the recommended conditions.
- If the tool appears to malfunction, remove from use immediately and arrange for service and repair. If it is not practical to remove the tool from service, then shut off the air supply to the tool and write or have written a warning note and attach it to the tool.
- If the tool is to be used with a balancer or other suspension device, ensure that the tool is firmly attached to the suspension/support device.
- When operating the tool, always keep the body and particularly the hands away from the working attachment fixed to the tool.
- The tool is not electrically insulated. Never use the tool if there is any chance of coming into contact with live electricity.

- Always when using the tool, adopt a firm footing and/or position and grip the tool sufficiently only to overcome any reaction forces that may result from the tool doing work. Do not overgrip.
- Use only correct spare parts for maintenance and repair. Do not improvise or make temporary repairs. Major servicing and repairs should only be carried out by persons trained to do so.
- Do not lock, tape, wire, etc. the 'On/Off' valve in 'On' position. The trigger lever, etc. must always be free to return to the 'Off' position when released.
- Always shut off the air supply to the tool and press the 'On/Off' valve to exhaust the air from the feed hose before fitting, removing or adjusting the working attachment fitted to the tool.



Recommended Air Supply System

Figure 1

- Before using the tool make sure that a shut off device has been fitted to the supply line and the position is known and easily accessible so that the supply to the tool can be shut off in an emergency.
- Check hose and fittings regularly for wear.
- Take care against entanglement of the moving parts of the tool with clothing, hair, ties, cleaning rags, rings, jewellery, watches, bracelets, etc. This could cause the body or parts of the body to be drawn towards and in contact with the moving parts of the tool and could be very dangerous.
- It is expected that users will adopt safe working practices and observe all local, regional or country legal requirements when installing, using or maintaining the tool.
- Take care that the exhaust air does not point towards any other person or material or substance that could be contaminated by oil droplets. When first lubricating a tool or if the tool exhaust has a high oil content, do not allow the exhaust air to come near very hot surfaces or flames.
- Never lay the tool down until the working attachment has stopped moving.
- When the tool is not in use, shut off the air supply and press trigger/lever to drain the supply line. If the tool is not to be used for a period of time, first lubricate, disconnect from air supply and store in a dry average room temperature environment.
- If the tool is passed from one user to a new or inexperienced user, make sure these instructions are available to be passed with the tool.
- Do not remove any manufacturer fitted safety devices where fitted, i.e. wheel guards, safety trigger, speed governors, etc.
- Where ever possible, secure workpiece with clamps, a vise, etc. to make it rigid so it does not move during the work operation. Keep good balance at all times. Do not stretch or overreach.
- Try to match the tool to the work operation. Do not use a tool that is too light or heavy for the work operation. If in doubt, seek advice.
- In general terms this tool is not suitable for underwater use or use in explosive environments -- seek advice from manufacturer.
- Try to make sure that the work area is clear to enable the work task to be performed safely. If practical and possible, try to clear unnecessary obstructions before starting work.
- Always use air hose and couplings with minimum working pressure ratings at least 1 1/2 times the maximum working pressure rating of the tool.

### Foreseen Use Of Tool

This drill is designed for the purpose of drilling holes in all types of materials, i.e. metals, wood, stone, plastics etc. using drilling bits designed for this purpose. It may be used with other forms of cutting tools, polishing devices or for sanding using coated abrasive products. Before using any such products first check with the manufacturer their suitability for use with this type of drill. Do not use bonded abrasive products (i.e. grinding wheels) or saw blades or any device which has a permitted safe working speed less than the free speed of the drill. Do not use this drill for any other purpose than that specified without consulting the manufacturer or the manufacturer's authorised supplier.

### Work Stations

The tool should only be used as a handheld hand operated tool. It is always recommended that the tool is used when standing on the solid

floor. It can be used in other positions but before any such use, the operator must be in a secure position having a firm grip and footing and be aware that the drill can develop a torque reaction see section "Operating".

### Putting Into Service

#### Air Supply

Use a clean lubricated air supply that will give a measured air pressure at the tool of 90 p.s.i./6.2 bar when the tool is running with the trigger fully depressed. Use recommended hose size and length. It is recommended that the tool is connected to the air supply as shown in figure 1. Do not connect the tool to the air line system without incorporating an easy to reach and operate air shut off valve. The air supply should be lubricated. It is strongly recommended that an air filter, regulator, lubricator (FRL) is used as shown in Figure 1 as this will supply clean, lubricated air at the correct pressure to the tool. Details of such equipment can be obtained from your supplier. If such equipment is not used then the tool should be lubricated by shutting off the air supply to the tool, depressurising the line by pressing the trigger on the tool. Disconnect the air line and pour into the inlet bushing a teaspoonful (5ml) of a suitable pneumatic motor lubricating oil preferably incorporating a rust inhibitor. Reconnect tool to air supply and run tool slowly for a few seconds to allow air to circulate the oil. If tool is used frequently lubricate on daily basis and if tool starts to slow or lose power.

### Operating

Select suitable drill bit, insert the shank into the drill chuck as far as possible and tighten chuck with key supplied making sure that the shank of the device is securely clamped centrally between the three chuck jaws. Remove chuck key.

When drilling holes of all sizes it is advised to use a pointed punch to mark the center at which the hole is to be drilled as this will provide a starting point for the drill tip. This procedure will prevent the drill bit from skidding. ensure that the hole is drilled where intended and help to prevent drill breakage when using small drills. When drilling, particularly with small diameter drills, always try to ensure that load applied to the drill is such that the drill bit is always at right angles to the hole being drilled. Do not force the drill but allow it to cut.

When drilling always adopt a firm posture to be able to counteract any sudden movement of the drill due to torque reaction. Such torque reaction can occur when the drill stalls due to a too heavy load being applied or the material being too hard or tough. The torque reaction can occur when the drill breaks through the material being drilled, particularly on sheet metal. Always use eye protection and hand protection is advised, particularly when drilling holes in metals where the material being removed from the hole is in the form of long sharp strips. Do not tie the drill chuck key to the drill as the attaching device i.e. string or chain could become entangled with the rotating chuck and bit etc.

If using an abrasive device, drilling stone or performing any operation where dust is created, it is recommended to use a breathing mask. Always ensure that the material to be drilled is firmly fixed to prevent its movement.

It is also recommended that when drilling holes of large diameter to first pre drill a hole of smaller diameter as this will reduce effort required to drill the hole and minimise torque reaction.

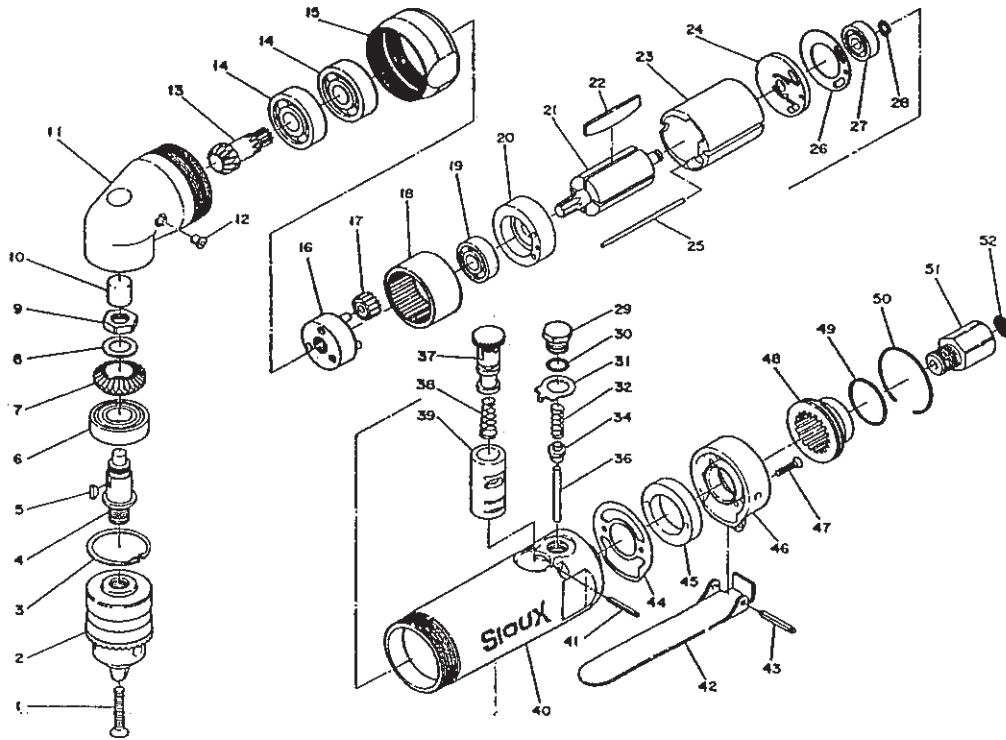
When drilling do not remove drill chips by blowing or wiping with bare hands. Stop the drill completely and use a cloth or brush to remove drill chips. Lubricating the tip of the drill will make drilling easier and improve the drilling action. The lever is the on/off valve for the tool and the tool is capable of being run in either direction of rotation by use of reverse valve (37). Always ensure that the valve is in the chosen position for the operation before using the tool. The reverse valve (37) is located opposite the lever (42). The drill operates in a clockwise direction when the knurled knob is turned counterclockwise and is in the open position. To reverse the direction push the knurled knob in and turn it clockwise to lock it in position.

An air strainer is part of the air inlet assembly. Periodically check this



5430

3/8" Capacity Angle Drill



Ref No	Part No	Description
1	67457	Chuck Screw
2	21133	Chuck 3/8" Capacity
	30002	Chuck Key
3	67458	Retaining Ring
4	67459	Spindle
5	67460	Key
6	67461	Ball Bearing
7	67462	Bevel Gear
8	67463	Washer
9	67464	Nut
10	66548	Needle Bearing
11	67466	Angle Head
12	67467	Grease Plug
13	67468	Pinion Gear
14	67469	Ball Bearing (2) *
15	67470	Lock Ring
16	66516	Planet Gear W/Pin
17	66517	Idler Gear (3) *
18	67471	Internal Gear
19	67472	Ball Bearing
20	67473	Front Plate
21	67474	Rotor
22	67475	Rotor Blade (Set of 4)
23	67428	Cylinder
24	67425	Rear End Plate
25	67429	Pin
26	67441	Motor Gasket

Ref No	Part No	Description
27	66504	Ball Bearing
28	67032	Retaining Ring
29	67476	Valve Screw
30	66800	O-Ring
31	67477	Reverse Retainer
32	67478	Valve Spring
34	67479	Valve
36	67480	Valve Pin
37	67481	Reverse Valve
38	67482	Reverse Spring
39	67483	Reverse Bush
40	67484	Motor Housing
41	67485	Roll Pin
42	67486	Throttle Lever
43	66540	Lever Pin
44	67487	Gasket
45	67488	Muffler
46	67489	Body Cap
47	67490	Screw (2) *
48	67491	Deflector
49	67492	O-Ring
50	67493	Retaining Ring
51	67494	Inlet Bushing
52	67446	Screen
	Not Shown	
	67524	Name Plate
	67411	Warning Label

strainer for blockage or if the drill slows or loses power. It can be easily cleaned by removing the air inlet fitting.

## Dismantling & Assembly Instructions

Disconnect tool from air supply.

To remove chuck (2) first fully open chuck jaws [using the chuck key provided] as far as possible and remove chuck screw (1) [left hand thread]. Place the chuck key securely in the chuck and cover the chuck and key with a cloth and give the chuck key a sharp tap with a non metallic hammer in a direction to loosen a right hand threaded joint, i.e. the direction of rotation of the tool.

Grip motor housing (40) in a vise fitted with soft jaws on the flats at the rear end and drive out pin (43) and remove throttle lever (42). Unscrew inlet bushing (51) complete with screen (52). With a needle pointed tool prise out retaining ring (50) and pull out exhaust sleeve (48) and remove O-ring (49) from exhaust sleeve (48). Unscrew 2 off screws (47) and take off body cap (46), muffler (45) and gasket (44). Unscrew screw (29) together with O-ring (30) and reverse valve retainer (31) and take out spring (32) and pull out valve pin (36) and valve (34).

Pull out reverse valve (37) and take out spring (38). Do not remove either of the brass bushes in the motor housing (40) unless replacements are required. If necessary reverse bushing (39) can be taken out of motor housing (40) by first removing pin (41). With snapping pliers remove retaining ring (3) and pull out the output spindle assembly. Unscrew nut (9), remove washer (8), bevel gear (7) and key (5). Drive spindle (4) through bearing (6). Tap out needle bearing (10) from angle head (11) but do not remove grease plug (12) unless a replacement is required. Slacken locking (15) and unscrew angle head (11) - left hand thread - from main assembly. Take out drive gear assembly and dismantle by pressing pinion gear (13) through 2 off bearings (14). Unscrew completely locking ring (15) and take out planetary cage with pins assembly (16), 3 off idler gears (17) and internal gear (18). Pull out the motor assembly complete with cylinder pin (25) from motor housing (40). Grip the front plate (20) by hand and with a non metallic or soft metal [lead or aluminium] hammer - so as not to damage the splines - tap the splined end of the rotor (21) to drive it through the front plate (20) and bearing (19) assembly. Tap out bearing (19) from front plate (20). Take off cylinder (23) and take out 4 off rotor blades (22) from rotor (21). Take off retaining ring (28) from rotor (21) and support rear end plate (24) in a piece of tube with a bore diameter as close as possible to the maximum diameter of the rotor (21) and tap the non splined end of the rotor (21) to drive the rotor through the rear plate and bearing (27). Take out motor gasket (28) from motor housing (40).

### Reassembly

Clean all component parts and examine for wear before reassembling. Use only manufacturer or distributor supplied parts. Check in particular for wear on bevel gears, O-rings and rotor blades. Lightly coat all parts with a suitable pneumatic tool lubricating oil, preferably one incorporating a rust inhibitor. Pack bearings and grease gears and

bevel gears with a lithium or molybdenum based general purpose grease. Reassemble in the reverse order taking note of the following:

- 1) When fitting gasket (26) make sure that it does not cover the ports and is positioned correctly
- 2) Make sure that the motor locating pin locates correctly in the holes in the motor end plates and in the small hole between the two ports at the bottom of the main bore of the motor housing.
- 3) Check the diameter of the pins in planet gear with pin assembly (16). If the diameter of these pins falls below 0.155" (3.93mm) replace the assembly.
- 4) For the motor assembly, ensure that the motor end plates that abut the cylinder are flat and free from burrs and sharp edges. If necessary lap the faces on a very fine grade of abrasive paper laid on a flat surface. Set the clearance between the rear end plate and the rotor with the components pulled apart by hand to be between 0.0015" [0.040mm] and 0.0025" [0.065mm].

Operation Specification *	
Air Consumption	10 CFM
Torque Output	366-in (4.1Nm) Stall Minimum
Chuck Capacity	1/16" - 3/8" Dia (1.0mm - 9.5mm) Dia
Spindle Thread	3/8 - 24 UNF
Length	8" x 3 - 1/2 (205 x 90 mm)
Air Inlet Thread	1/4-18 NPT

\* at 90 PSIG

### Notes

## Declaration of Conformity

Sioux Tools Inc.

2901 Floyd Boulevard, P.O. Box 507, Sioux City, Iowa 51102, U.S.A.

declare under our sole responsibility that the product

**Model 5430 Right Angle Drill, Serial Number**

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

**EN792 (Draft), EN292 Parts 1 & 2, ISO 8662 Part 1, Pneurop PN8NTC1**

following the provisions of **89/392/EEC as amended by 91/368/EEC & 93/44/EEC Directives**

R. V. Caskey (V.P./General Manager)

Name and signature or equivalent marking of authorised person