



# Model 5090A & 5090AL

## 1" Square Drive Pistol Grip Impact Tools



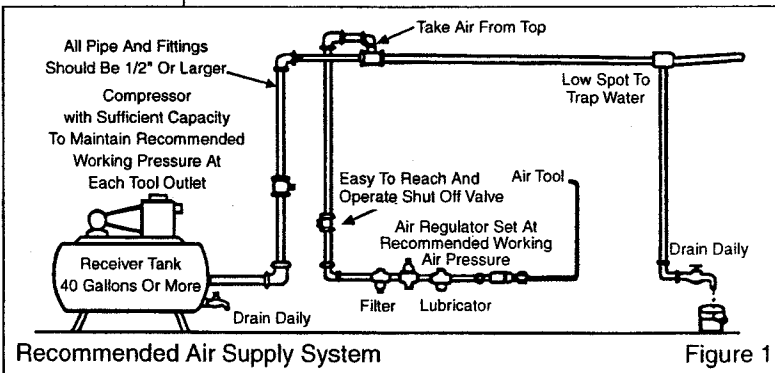
### IMPORTANT

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

SAFETY MESSAGES		WARNING	Operator Instructions
Personal Safety Equipment		Always Read Instructions Before Using Power Tools	<b>Includes:</b> Safety Rules Foreseen Use Work Stations Putting Into Service Operating Dismantling and Assembly.
Use – Safety Glasses	YES	Always Wear Safety Goggles	
Use – Safety Gloves		Wear Hearing Protection	
Use – Safety Boots		Avoid Prolonged Exposure To Vibration	
Use – Breathing Masks			
Use – Ear Protectors	YES		

### Safety rules when using a 5090A or 5090AL Impact Tool

- Use only impact sockets and extensions, universal joints, etc., rated as being suitable for use with impact tools.
- Prolonged exposure to vibration may cause injury.
- 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.
- Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects and other reproductive harm.
- Use compressed air only 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 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 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 throttle 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.
- 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 air 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, jewelry, 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 throttle 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.
- Wherever 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 The Tool – 5090A and 5090AL

The impact tool is designed for the tightening and loosening of threaded fastener within the range as specified by the manufacturer. It should only be used in conjunction with suitable impact type 1" square female drive nut running sockets. Only use sockets which are of the impact type. It is allowed to use suitable extension bars, universal joints and socket adaptors between the square output drive of the impact tool and the female square drive of the socket. Do not use the tool for any other purpose than that specified without consulting the manufacturer or the manufacturer's authorized supplier. To do so may be dangerous. Never use an impact tool as a hammer to dislodge or straighten cross threaded fasteners. Never attempt to modify the tool for other uses and never modify the tool for even its recommended use as a nutrunner.

## 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 a 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 when loosening fasteners the tool can move quite quickly away from the fastener being undone. An allowance must always be made for this rearward movement so as to avoid the possibility of hand/arm/body entrapment.

## Putting Into Service

### Air Supply

Use a clean lubricated air supply that will give a measured air pressure at the tool of 90 PSIG (6.2 bar) when the tool is running with the trigger/lever 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, depressurizing the line by pressing the trigger on the tool. Disconnect the air line and pour into the hose adaptor 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. It is recommended that joint tightness of the threaded fastener assembly be checked with a torque tool. It is recommended that the air pressure at the tool while the tool is running is 90 PSI/6.2 bar.

## Operating

The output of the impact tool in prime working condition is governed by mainly three factors:

- a) the input air pressure;
- b) the time the impact tool is operated on the joint. Normal time for joints of average tension requirement 3 to 5 seconds;
- c) the setting of the air regulator for a given joint at a given pressure operated for a given time.

The air regulator (33) can be used to regulate the output of the impact tool if no other means of control is available. It is strongly recommended that an external pressure regulator, ideally as part of a filter/regulator/lubricator (FRL), is used to control air inlet pressure so that the pressure can be set to help control the tension required to be applied to the threaded fastener joint.

There is no consistent, reliable torque adjustment on an impact tool of this type. However, the air regulator can be used to adjust torque to the approximate tightness of a known threaded joint. To set the tool to the desired torque, select a nut or screw of known tightness of the same size, thread pitch and thread condition as those on the job. Turn air regulator to low position, apply tool to nut and gradually increase power (turn regulator to admit more air) until nut moves slightly in the direction it was originally set. The tool is now set to duplicate that tightness, note regulator setting for future use. When tightening nuts not requiring critical torque values, run nut up flush and then tighten an additional one-quarter to one-half turn (slight additional turning is necessary if gaskets are being clamped). For additional power needed on disassembly work, turn regulator to its fully open position. This impact tool is rated a 1" bolt size.

Rating must be downgraded for spring U bolts, tie bolts, long cap screws, double depth nuts, badly rusted conditions and spring fasteners as they absorb much of the impact power. When possible, clamp or wedge the bolt to prevent springback.

Soak rusted nuts in penetrating oil and break rust seal before removing with impact tool. If nut does not start to move in three to five seconds use a larger size impact tool. Do not use impact tool beyond rated capacity as this will drastically reduce tool life.

NOTE: Actual torque on a fastener is directly related to joint hardness, tool speed, condition of socket and the time the tool is allowed to impact. Use the simplest possible tool-to-socket hook up. Every connection absorbs energy and reduces power.

The trigger/regulator valve regulates the power of the impact blows and the frequency. The trigger/regulator valve is located underneath the forward and reverse lever. It has four positions: 0, 1, 2 and 3. "0" is the off position and "3" the most powerful. Always check that the reverse lever is in the appropriate position to suit the direction of rotation required before using the tool. The position "F" is for tightening a right hand threaded joint and "R" for loosening.

For best results:

- 1) Always use the correct size impact type socket.
- 2) Use extra deep sockets in place of extension bars where possible.
- 3) Do not use oversized, worn or cracked sockets.
- 4) Hold the tool so the socket fits squarely on the fastener. Hold the tool firmly, but not too tightly, pressing slightly forward.

## Dismantling & Assembly Instructions

Disconnect tool from air supply.

Models 5090A and 5090AL are identical except for the anvil (52/53). Model 5090A has a short anvil and Model 5090AL has a 6" extension anvil.

If fitted, first remove the dead handle by removing 2 cap screws (15). Remove handle band (59) and dead handle (60).

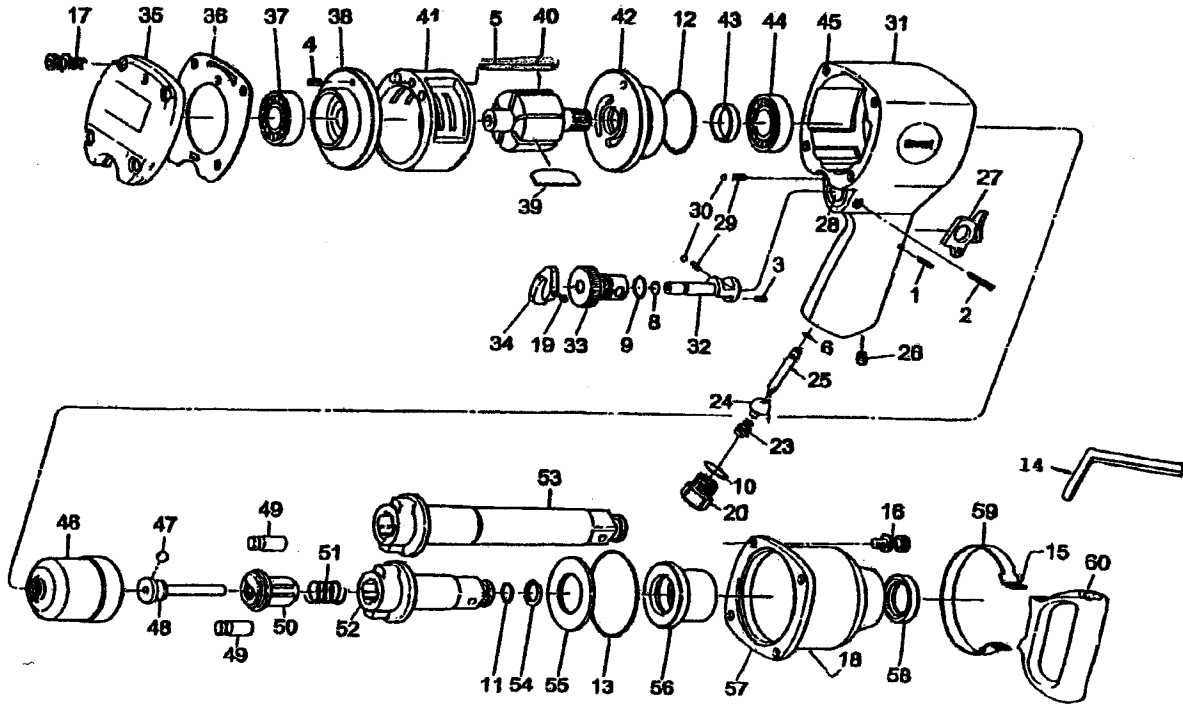
Remove plug (18) from hammer housing (57) and drain the oil into a suitable container. Grip motor housing (31) in a vise fitted with soft jaws and remove 4 cap screws with lock washers (16). Hammer housing (57) can be lifted clear of the tool complete with oil seal (58) and anvil bushing (56). Oil seal (58) may be hooked out of the front end of hammer housing (57) and anvil bushing (56) may be pressed out. Remove O-ring (13) from front end of motor housing (31). Remove anvil (52) or (53), anvil spacer (55), cam (50), 2 hammer pins (49), ball (47), pilot shaft (48) and spring (51). Lift off hammer cage (46). Retaining ring (54) and O-ring (11) may be pried off of anvil (52) or (53).

Remove 4 cap screws and lock washers (17) to remove end cap (35) and gasket (36). The motor housing assembly may be dismantled by tapping the splined end of the rotor (40) and this will slide through the motor housing (31) complete with 6 rotor blades (39) and rear end plate and bearing assembly. Remove 6 rotor blades (39) from rotor (40). Support the rotor (40) in a piece of tube with a bore just slightly larger than the largest diameter of rotor (40) and tap the non splined end of the rotor through the rear end plate and bearing assembly. Bearing (37) may be tapped out of rear end plate (38) with a suitable punch. Support the motor housing (31) at the rear end so that the outside diameter of the cylinder (41) is clear and push out cylinder (41) complete with pin (5), front end plate (42) complete with bearing (44) and oil seal (43). Remove O-ring (12). Bearing (44) may be removed from front end plate (42) using a suitable punch and oil seal (43) may also be removed. NOTE: do not attempt to remove helicoil inserts (45) from motor housing (31).

To dismantle the motor housing assembly, first tap out pin (1) and remove trigger (27). Unscrew hose adaptor (20) and O-ring (10). Remove spring (23), valve ball (24), valve pin (25) complete with O-ring (6). O-ring (6) may be carefully pried off of valve pin (25). Drive out pin (2) and pull out reverse valve and regulator assembly taking care not to lose ball (30) and spring (29). Unscrew plug (19) through reversing lever (34) and pull off reversing lever (34). Reversing valve (32) complete with O-ring (8) can be pushed through air regulator (33). O-ring (9) can be pried off of air regulator (33) and O-ring (8) from reversing valve (32). Do not attempt to remove ball (30) and spring (29) from reversing valve (32) and only remove spring pin (3) if a replacement is required. Do not remove bushing (28) from motor housing (31).



**5090A 1" Square Drive Impact Tool**  
**5090AL 1" Square Drive Impact Tool with 6" Extension Anvil**



Ref. No.	Part No.	Description
1	66599	Spring Pin
2	505193	Spring Pin
3	505194	Spring Pin
4	505195	Spring Pin
5	505631	Guide Pin
6	505197	O-Ring
8	66593	O-Ring
9	505199	O-Ring
10	505293	O-Ring
11	505201	O-Ring (5090A & 5090AL)
12	505202	O-Ring
13	505203	O-Ring
14	505632	Hex Wrench
15	505633	Cap Screw with Washer(4)*
16	505207	Cap Screw with Washer (4)*
17	505208	Cap Screw with Washer (4)*
18	505209	Plug
19	505210	Plug
20	505257	Hose Adaptor
23	505256	Throttle Spring
24	505255	Valve Ball
25	505634	Valve Pin
26	505217	Plug
27	505218	Trigger
28	505219	Bushing
29	505220	Spring (2)*
30	505221	Steel Ball (2)*
31	505635	Motor Housing
32	505223	Reversing Valve
33	505224	Air Regulator
34	505225	Reversing Lever

Ref. No.	Part No.	Description
35	505636	End Cap
36	505227	Gasket
37	505228	Ball Bearing
38	505229	Rear Plate
39	505230	Rotor Blade (Set of 6)
40	505231	Rotor
41	505232	Cylinder
42	505233	Front Plate
43	505234	Oil Seal
44	505235	Ball Bearing
45	505236	Helicoil Insert (8)*
46	505237	Hammer Cage
47	505238	Steel Ball
48	505239	Pilot Shaft
49	505240	Hammer Pin (2)*
50	505241	Cam
51	505242	Cam Release Spring
52	505243	Assy Anvil (5090A) (Includes Fig. 11 & 54)
53	505244	Assy Anvil (5090AL) (Includes Fig. 11 & 54)
54	505245	Retainer Ring (5090A & 5090AL)
55	505246	Anvil Spacer
56	505247	Anvil Bushing
57	505248	Hammer Housing
58	505249	Oil Seal
59	505250	Handle Band
60	505637	Dead Handle
Not Shown	505001	Label Warning
Not Shown	505744	Number Plate (5090A)
Not Shown	505746	Number Plate (5090AL)
Not Shown	67255	Number Plate Screws (2)*

\*Order Quantity as Needed

## Reassembly



Clean all parts and examine for wear and cracks, etc. before reassembling. Look in particular for wear and cuts on all O-rings and seals, wear on rotor blades and wear and cracks on anvils (52) or (53), pilot (48), cam (50) and pins (49). Check in particular the area of the square drive on anvils (52) or (53) and make sure that retaining (54) and O-ring (11) on anvils (52) and (53) still provide adequate socket retention.. Make sure that the faces of front and rear plates (38) and (42) that abut the cylinder (41) are flat and free from burrs. If necessary, lap faces on a flat very fine grade of abrasive paper. Use only manufacturer or distributor supplied replacement parts. Lightly coat all parts with a suitable pneumatic tool lubricating oil and reassemble in the reverse order. See note below.

When reassembling the reverse valve and regulator assembly into the handle, make sure that the pin (3) in reversing valve (32) locates in the smaller, deeper "D" shaped recess in the handle.

When reassembling the motor assembly, first build up motor assembly locating pins in end plate in holes in cylinder. Locate pin (4) in rear end plate (38) through gasket (36) into small hole in end cap. Press on motor housing locating the tapped holes in the motor housing with the four holes in the end plate.

On completing assembly, make sure that all parts are locked tight and that the anvil rotates and the trigger, air regulator and reverse valve operate freely. Remove oil plug (18) from hammer housing (57) and pour in 4 fluid ozs. (100cc) of an SAE10 or SAE20 grade oil. Do not overfill as this will result in a reduction in power of the tool. With the trigger depressed, pour into the hose adaptor 10ml of a suitable pneumatic tool lubricating oil (preferably one containing a rust inhibitor) and release the trigger. Connect to a suitable air supply and run tool slowly for 2 to 3 seconds to allow the oil to circulate. Reset tool for operation - refer to section "Operating".

Operation Specification		
	5090A	5090AL
Air Consumption	10 cfm (71.4 scfm)	
Operating Torque	1000 lbs ft (1365Nm)	900 lbs ft (1220Nm)
Air Inlet Thread	3/8-18NPT	
Overall Length	11.6" (294mm)	16.5" (420mm)
Average at 90 PSIG/6.2 bar		

<b>Manufacturer/Supplier</b>  <b>Sioux Tools, Inc.</b> <b>117 Levi Drive</b> <b>Murphy, NC 28906</b> <b>U.S.A.</b> <b>Tel No. 828-835-9765 Fax No. 828-835-9685</b>		<b>Product Type</b> <b>1" Square Drive Pistol Grip</b> <b>Impact Tool</b>		RPM <b>3,800</b> Cycles Per Min.	
		<b>Model No/Nos</b> <b>5090A - Std. Anvil</b> <b>5090AL - 6" Ext. Anvil</b>		Serial No.	
<b>Product Net Weight</b> 5090A    5090AL 22.7    25.0 lbs 10.3    11.4 Kg	<b>Recommended Use Of</b> <b>Balancer Or Support</b> <b>YES</b>		<b>Recommended Hose Bore</b> Size - Minimum <b>1/2 Ins    13 M/M</b>	<b>Recommended Max.</b> <b>Hose Length</b> <b>30 Ft    10 M</b>	
<b>Air Pressure</b>  Recommended Working <b>6.2 bar    90 PSI</b> Maximum <b>6.2 bar    90 PSI</b>			<b>Noise Level: Sound Pressure Level 92.0 dB(A)</b> <b>Sound Power Level 103.0 dB(A)</b>  <b>Test Method: Tested in accordance with Pneurop</b> <b>test code PN8NTC1 and ISO Standard 3744</b>		
<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>		 <b>WARNING</b> Always Read Instructions Before Using Power Tools Always Wear Safety Goggles Wear Hearing Protection Avoid Prolonged Exposure To Vibration		<b>Vibration Level</b> <b>5.1 Meters / Sec<sup>2</sup></b>  <b>Test Method: Tested in accordance with ISO standards 8662 Parts 1 &amp; 7</b>	



### Declaration of Conformity

**Sioux Tools Inc.**

**117 Levi Drive, Murphy, NC 28906, U.S.A.**

declare under our sole responsibility that the product

**Models 5090A and 5090AL 1" Impact Tools, 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 Parts 1 & 7, Pneurop PN8NTC1**

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

  
**Gerald E. Seebeck (President)**

Name and signature or equivalent marking of authorized person