Universal Tool

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

Universal Air Tool Company Limited
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Tel No **(01494) 883300** Fax No **(01494) 883237**

Product Type
Lever Start-Auto Shut Off Angle Screwdriver

RPM
300
Cycles Per Min

Model No/Nos
UT8961

Serial No

Product Nett Weight		Recommended Use Of Balancer Or Support
3.08	lbs	**No**
1.40	Kg	

Recommended Hose Bore Size - Minimum				Recommended Max. Hose Length			
3/8	Ins	**10**	M/M	**30**	Ft	**10**	M

Air Pressure

Recommended Working	**6.3**	bar	**90**	PSI
Recommended Minimum	**n/a**	bar	**n/a**	PSI
Maximum	**7.0**	bar	**100**	PSI

Noise Level **Sound Pressure Level 78.0 dB(A)**

Test Method **Tested in accordance with Pneurop test code PN8NTC1 and ISO Standard 3744**

Personal Safety Equipment

Use - Safety Glasses **Yes**
Use - Safety Gloves
Use - Safety Boots
Use - Breathing Masks
Use - Ear Protectors

Vibration Level **Less than 2.5** Metres / Sec^2

Test Method **Tested in accordance with ISO standards 8662 Parts1 & 7**

Foreseen Use

These screwdrivers are designed for the tightening and loosening of threaded fasteners within the range as specified by the manufacturer. They should only be used in conjunction with 1/4" male hex shank screwdriver bits and fastener drivers.
Do not use the tool for any other purpose than that specified without consulting the manufacturer or his authorised representative.

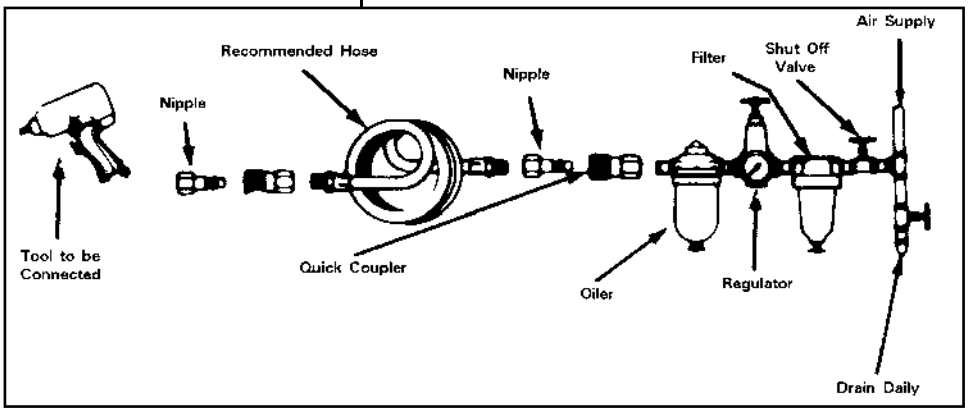
Work Stations

The tool should only be used as a hand held, 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. The operator must adopt a firm grip sufficient to resist the torque reaction of the tool, i.e. the tool will try to turn in the hand. The operator must also be aware that when loosening fasteners, the tool can move quite quickly away from the fastener being undone. An allowance must be made for this rearward movement to avoid hand entrapment. The operator must also make allowance that if the tool does turn in the hand, the hand is not trapped against any rigid object.

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./6.3 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 intake 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. It is recommended that the air pressure at the tool whilst the tool is running is 90 p.s.i./6.3 bar. The tool can run at lower and higher pressures with the maximum permitted working air pressure of 100 p.s.i./7.0 bar.

Operating

Select the correct screwdriver bit or fastener driver to suit the screw or fastener to be tightened or loosened.

This model has an adjustable clutch so that the torque applied to the fastener can be adjusted to give the required tightness within the torque range of the tool. To set the tool to give a particular torque output, first remove the clutch housing - left hand thread and pull out the clutch assembly. Hold the clutch carrier or insert a 1/4 hex Allen key into the work anvil (57) and with a spanner rotate torque ring (72) until it just touches regulation washer (71). This is the clutch set at its lowest output level. Reassemble the tool, try it on the joint to be fastened. If more torque is required to place the fastener repeat the process but rotate the torque ring (72) until there is a gap between it and the sleeve bearing proceeding at approximately one turn of the nut at a time until the correct tightness is achieved. If too high a setting is reached rotate the adjustment nut back a part of a turn at a time.

If the torque ring (72) is rotated too far along the clutch anvil (57) it is possible that the clutch will not slip and a reaction torque against the hands will be felt. In this situation, if the fastener is not sufficiently tightened or cannot be loosened then the tool in adjustable clutch mode has insufficient capacity. Select a more powerful tool. The person setting up the tool must be aware of this torque reaction at high setting levels of the clutch and that the tool will try to turn against the hand. All that is required is a firm grip.

The tool, when the stall torque position has been reached, can still be used to set or loosen fasteners, provided the operator is aware of the need to resist the torque reaction of the tool. Further adjustment of torque ring (72) at this point will not increase the output of the tool. The only thing that will affect the output is a change in the air supply pressure. The output can be increased up to the use of the maximum allowed supply pressure and decreased with a reduction in supply pressure until the tool fails to operate.

It must also be understood that even if the clutch is set to slip it may not do so if the supply air pressure falls below the pressure at which the clutch was set. It is therefore strongly recommended that a pressure control valve is used. Information as to suitable equipment can be obtained from your supplier.

When using the tool keep the screwdriver bit pressed firmly into the screw head to avoid cam out and screw head damage.

Dismantling & Assembly Instructions

Disconnect from air supply.

To dismantle the angle head first unscrew 4 screws (84) and loosen the angle lock nut (82) and turn clockwise and pull the angle assembly out. Grip the tool in a vice fitted with soft jaws on the flats at the rear end of the centre housing (25). Take off soft cover (80).

Remove torque cover (75) take off bit slide (60) torque ring (72) regulation washer (71) and needle pins (70) Unscrew clutch housing (69) left hand thread and remove anvil bushing (67) washer (66) torque spring (65) spring (59) and slide base (60) When removing anvil (57) take care not to lose ball (58).

Take off snap ring (64) and remove ball race (63) ball (51) end clutch (61) centre clutch (55) ball (56) rear clutch (53) pilot pin (52) ball (51) and retainer (50).

Take off C ring (54) and remove ball bearing (26) From the centre housing remove.

third gear cage (23-C) and take off third plant gear (23-B) and third main gear (23-A) then second main gear (21) then remove first gear cage (20) and take off first plant gear (19) and first main gear (18) then remove internal gear (24 & 24-1) and C ring (15).

Take off suspension ring (87) and coloured ring (88) unscrew housing nipple (86) and air inlet bushing (49) remove second silencer (44) spring (43) valve ball (42) O-ring (41) exhaust deflector (29) first silencer (28-1) operating rod (32) and O-ring (27).

Remove set screw (4) and take off switch (5) Unscrew end housing (1) and remove O-ring (2) and valve (3) Pull out air motor from centre housing (25) tap end of rotor (16) and remove front plate (13) take out roll pin (8) and remove end plate (7) Remove from end plate (7) roll pins (9) and bearing (6) Take out rotor (16) from cylinder (10) and remove rotor blades (12).

Reassembly

Clean all components and examine for wear and tear. Look in particular for wear and cuts on O-rings, wear on rotor blades, gears and clutch components.

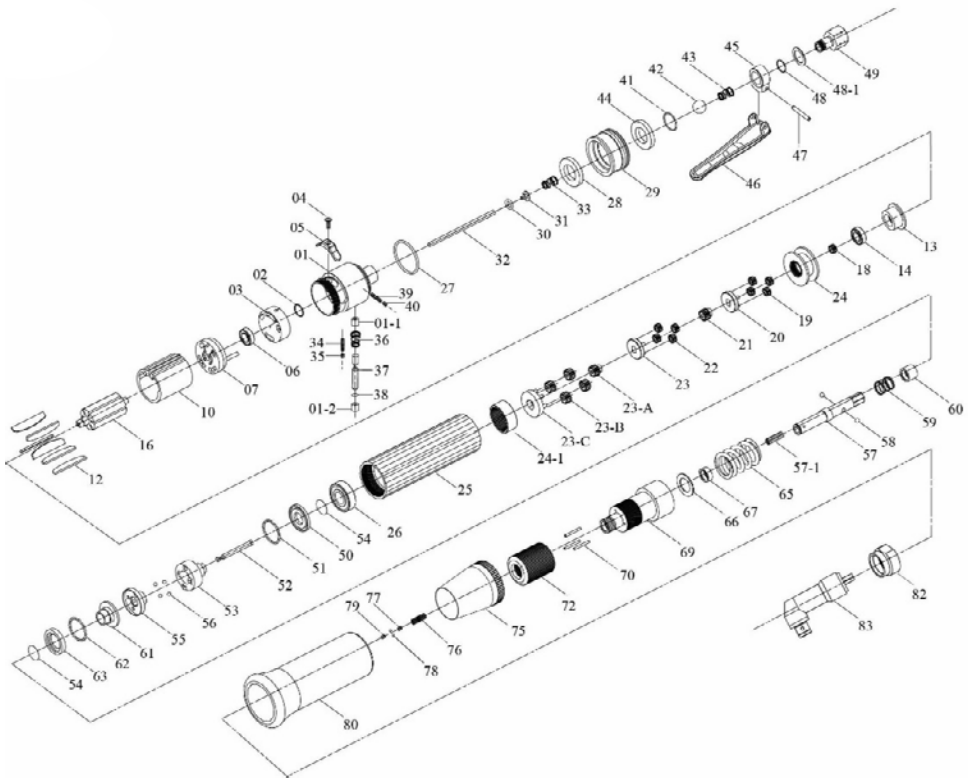
Coat all parts with pneumatic tool lubrication oil, one preferably containing a rust inhibitor and grease all bearings, gears and clutch parts with a molybdenum or lithium based general purpose grease. Before reassembling the motor, make sure that the faces of end plate (7) & (13) that abut cylinder (10) are flat and free from burs. If necessary lap on a flat fine grade of abrasive paper. Reassemble in the reverse order.

When refitting the complete motor assembly to the centre housing (25) first make sure that the motor assembly is clamped tightly together and that the rotor spins freely, slide the motor assembly into the centre housing (25) ensuring that roll pin (8) locates in the motor assembly and in the hole in the bottom of the main bore of centre housing (25) situated between the two main ports.

Reset the clutch as required and /or set the correct air pressure.

Safety Rules For A Screwdriver

1) Read all the instructions before using this tool. All operators must be fully trained in its use and aware of these safety rules.
2) Do not exceed the maximum working air pressure.
3) Use personal safety equipment.
4) Use only compressed air at the recommended conditions.
5) If the tool appears to malfunction remove from use immediately and arrange for service and repair.
6) If the tool is used with a balancer or other support device ensure that it is fixed securely.
7) Always keep hands away from the working attachment fitted to the tool.
8) The tool is not electrically insulated. Never use the tool if there is any chance of it coming into contact with live electricity.
9) Always when using the tool adopt a firm footing and/or position and grip the tool firmly to be able to counteract any forces or reaction forces that may be generated whilst using the tool.
10) Use only correct spare parts. Do not improvise or make temporary repairs.
11) Do not lock, tape, wire, etc. the on/off valve in the run position. The trigger/lever etc. must always be free to return to the 'off' position when it is released.
12) Always shut off the air supply to the tool, and depress the trigger/lever etc. to exhaust air from the feed hose before fitting, adjusting or removing the working attachment.
13) Check hose and fittings regularly for wear. Replace if necessary. Do not carry the tool by its hose and ensure the hand is remote from the on/off control when carrying the tool with the air supply connected.
14) Take care against entanglement of moving parts of the tool with clothing, ties, hair, cleaning rags, etc. This will cause the body to be drawn towards the tool and can be very dangerous.
15) It is expected that users will adopt safe working practices and observe all relevant legal requirements when installing, using or maintaining the tool.
16) Do not install the tool unless an easily accessible and easily operable on/off valve is incorporated in the air supply.
17) Take care that the tool exhaust air does not cause a problem or blows on another person.
18) Never lay a tool down unless the working attachment has stopped moving.



No.	Part No.	Part Name
1	5A6002	End Housing (White)
1-1	2S3010	Inner Bushing
1-2	2S6001	Outer Bushing
2	2Q5001	O Ring
3	2P6000	Valve
4	7S2100	Set Screw And Washer
5	2L6010	Switch
6	7S5002	Ball Bearing
7	1S6001	End Plate
10	1P6005	Cylinder
12	1P6051	Blade (6)
13	1P3012	Front Plate
14	7S2002	Ball Bearing
16	1S6046	6T Rotor
18	1P2274	18T Main Gear
19	1P2110	12T Plate Gear (4)
20	1P2280	Third Gear Cage
21	1P2273	18T Main Gear
22	1P2111	12T Plate Gear (4)
23	1P2280	Third Gear Cage
23-A	1P2096	14T Main Gear
23-B	1P2132-T	14T Plant Gear (4)
23-C	1P2289	Fourth Gear Cage
24	1S6061	Internal Gear
24-1	1S6063	Internal Gear
25	5A6000	Center Housing (White)
26	7S6003	Ball Bearing
27	2Q2003	O Ring
28	2P3021	Silencer
29	2A6001	Exhaust Deflector
30	7Q2006	O Ring
31	6S2021	Valve Plate
32	6S6010	Operating Rod
33	6N2104	Cone Spring
34	6S2030	Screw
35	7S2113	Screw
36	6N5113	Spring
37	2S5019	Valve Pin
38	7Q6112	Valve O-Ring
39	6S2031-1	Screw

No.	Part No.	Part Name
40	7S2150	Screw
41	7Q6100	O Ring
4	7S2103	Ball
43	6N2105	Cone Spring
44	2P3010	Silencer
45	5A2002	Lever Set
46	5L6102	Lever
47	7S2202	Roll pin
48	2Q5001	O Ring
48-1	7L0002	Washer
49	2S2010	Air Inlet Bushing [PT]
50	2S6106	Retainer
51	7S2102	Ball (32)
52	3S5001	Pilot Pin
53	3S5214	Rear Clutch
54	6N2006	C Ring (2)
55	3S5219	Center Clutch
56	7S2112	Ball (4)
57	3S7057	Anvil
20821	7Q2002	Regulate Screw
58	7S2105	Ball (2)
59	6N5110	Spring
60	3S2227	Slide Base
61	3S5221	End Clutch
62	7S2102	Ball (25)
63	3S5235	Ball Race
65	6N3009	Torque Spring
66	7S5121	Washer
67	3S2115	Bushing
69	3S6132	Angle Clutch Housing
70	6S2012	Needle Pin (3)
72	3A6007	Torque Ring
75	5A6517	Torque Cover (Black)
76	6N6001	Spring
77	7S2111	Screw
78	7S2102	Ball (2)
79	7S2111	Screw
80	5L6010	Soft Cover
82	6S2102	Angle Lock Nut
83	5C2025	Angle Head Assembly

Declaration of Conformity

Universal Air Tool Company Limited

Unit 8, Lane End Industrial Park, High Wycombe, Bucks, HP14 3BY, England

declare under our sole responsibility that the product

Model UT8961 Lever Start-Auto Shut Off Angle Screwdriver, 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**

Lane End — Place and date of issue

Arthur Paterson (Operation Director) — Name and signature or equivalent marking of authorised person

19) Always ensure that the reverse button is in the selected position before starting the tool.
20) Do not use bits or sockets with excessive wear to the input and output drives. Make sure the bit, socket, extension is firmly fixed to the tool.
21) When loosening fasteners first ensure that there is sufficient clearance behind the tool to avoid hand entrapment. The tool will move away from the threaded joint as the nut/bolt is loosened and rides up the thread moving the tool with it.

Accessories

Notes

Distributor