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

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Tel No **(01494) 883300** Fax No **(01494) 883237**

Product Type	RPM	
Mini Ratchet Wrench	**200** Cycles Per Min	CE

Model No/Nos	Serial No
UT8000SR-B **3/8 Sq Drive**	

Product Nett Weight		Recommended Use Of Balancer Or Support
1.19	lbs	
0.54	Kg	**No**

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	**10.0**	PSI

Noise Level **Sound Pressure Level 88.0 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 **8.71** Metres / Sec^2

Test Method **Tested in accordance with ISO standards 8662 Parts 1 & 7**

Foreseen Use Of The Tool

The tool is designed to be used only for the purpose of driving, tightening and loosening of threaded fasteners, usually nuts and bolts, when fitted with a suitable drive socket.
It is allowed to use suitable extension bars, universal joints and socket adaptors between the square output drive of the ratchet wrench 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 authorised supplier. To do so may be dangerous.
Never use the ratchet wrench as a hammer to dislodge or straighten cross threaded fasteners. Never attempt to modify the tool for other uses and never modify the tool even to be used as a ratchet wrench.

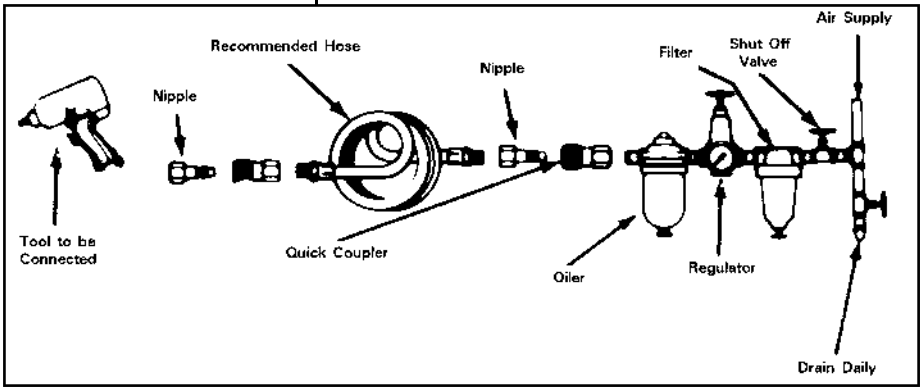
Work Stations

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 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 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 bar.

Operating

Fit securely to the tool the socket or attachment required to perform the operation. Ensure that the reverse button situated on the opposite side to the square drive output shaft is in the correct position for tightening or loosening the fastener.
The nut/bolt can then be run down the thread using the power drive of the tool. When the tool stops the handle of the tool can be used as a ratchet lever and operated to give the required tightness of the joint.
For loosening a joint the tool can be used in the reverse sequence.

Dismantling & Assembling Instructions

Disconnect tool from air supply.
First, take off the boot (46), then place the motor housing (9) with housing cover (1) on its flats in a vice fitted with soft jaws and unscrew inlet bushing (3) with O-ring (4) and bushing retainer (2).Tap out pin (11) to remove throttle lever (13) and pull off housing cover (1) from motor housing (9). Remove retaining-ring (45). By moving the yoke (33) from side to side, it is possible to push out the front end drive assembly. Take off thrust washer (44) and remove 2 thrust washer springs (43) from 3/8" Sq. anvil assembly (42). Push out pin (38) to release ratchet pawl (39) and take out lock pin (40) and spring (41) from anvil assembly (42). Unscrew counter sink (34) to release reverse dial (35) and thrust washer (37) with pin (38) from anvil assembly (42). Do not remove ball from 3/8" Sq. drive on ratchet anvil (42) unless replacement is needed. Look through the slot in the side of ratchet housing (30) and centre the pin end of crank shaft (31) in the slot. This will enable the yoke (33) and drive bushing (32) to slide out of ratchet housing (30). Loosen clamp nut (28). It will then be possible to unscrew ratchet housing (30) (left hand thread) from clamp nut (28). Crank shaft (31) and drive bushing (32) can be removed from ratchet housing (30). Needle bearing (29) may be pressed out of ratchet housing (30). Unscrew and remove clamp nut (28). Remove retaining-ring (27) and pull out idler gear plate with 3 pins (26) and 3 idler gears (25). At this time, it is necessary to unscrew internal gear (24) from motor housing (9) located in the teeth of the internal gear, requiring the use of a special wrench. Seek advice from your distributor or repair agent. Note: Sometimes it is necessary to provide some heating locally to the internal gear to break the adhesive seal on the thread to assist in the removal of the internal gear. Pull out the motor assembly from motor housing (9). Grip the front end plate (21) by hand and with a non-metallic or soft metal (lead or aluminium) hammer so not to damage the splines, tap the splined end of rotor (19) to drive it through the front end plate (21) and bearing (23) assembly. Take off cylinder (20) and remove 4 rotor blades (18) from rotor (19). Note how the cylinder (20) locates on dowel pin (17) in rear end plate (16) for reassembly. Rear end plate (16) and needle bearing (14) can be removed from the rotor (19) by taking off retaining ring (15) from non-splined end of rotor (19). With a suitable punch, tap out the bearing (23) from front end plate (21) with pin (22). Unscrew regulator (5) and remove O-ring (6), throttle spring (7), throttle valve (8).

Reassembly

Clean all parts and examine for wear before reassembling. Look particularly for wear and cracks on ratchet pawl (39), ratchet anvil (42) and yoke (33). It is good practice to replace 2 of the springs (43) and spring (41) if the reverse dial slips or is inclined to slip. Do not attempt to remove the 3 pins from idler gear plate (26). These pins measure 0.1574" (4mm) when new. Replace the complete idler gear with pins if the pins have worn below 0.155" (3.937mm) diameter. Lightly coat all parts in oil and pack bearings, gears and ratchet drive mechanism with a lithium or molybdenum based general purpose grease.

Motor Assembly

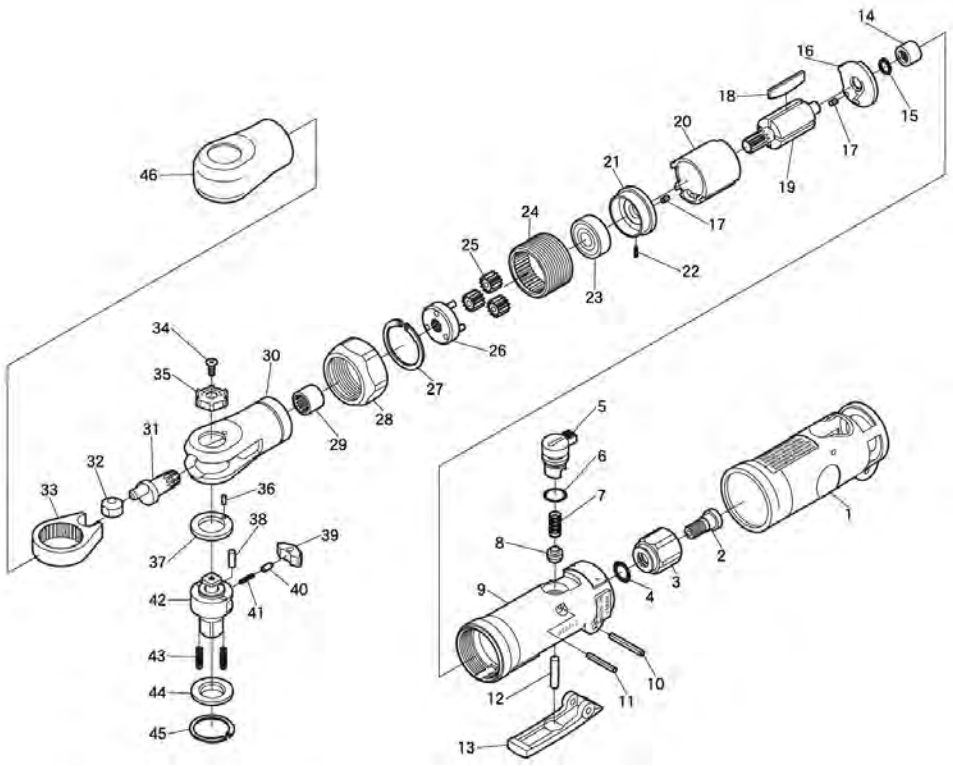
If fitting a new rotor, very lightly deburr the edges of the rotor slots and make sure the rotor blade slots are clean. Make sure the faces of end plates (21) and (16) that abut cylinder (20) are free from burrs and surface marking. If necessary, lap faces on a flat very fine grade of abrasive paper. Press bearing (23) into front plate (21) and bearing (14) into rear plate (16). Support bearing (14) in rear plate (16) on the inner race and locate rotor (19) and tap the spline end of the rotor with a non-metallic or soft metal hammer until the rotor locates up against the face of the end plate. Support the inner face of the rear plate in a piece of tube with a bore diameter as close as possible to the maximum diameter of the rotor and tap the non-splined end of the rotor (19) until a clearance of 0.04mm (0.0015") to 0.065mm (0.0025") is obtained between the inner face of the rear plate and the rotor. Note: This clearance to be checked when pulling the rotor (19) by hand away from rear plate (16) and bearing (14) assembly. Spin the rotor to ensure that it will spin freely in the rear plate and bearing assembly. Fit rotor blades and locate cylinder and push on front plate and bearing assembly making sure the cylinder is tightly located between the end plates. Check that rotor still spins freely.

Safety Rules For A Ratchet Wrench

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.
19) Always ensure that the reverse button is in the selected position before starting the tool.
20) Do not use sockets with excessive wear to the input and output drives. Periodically check the square drive on the ratchet wrench. Make sure the 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.

Universal Tool

UT8000SR-B 3/8 SQ Drive Ratchet Wrench



Ref No	Part No	Description
1	901514	Housing Cover
2	901515	Bushing Retainer
3	900992	Inlet Bushing
4	729088	O-Ring
5	901516	Regulator
6	900990	O-Ring
7	729163	Throttle Spring
8	729165	Throttle Valve
9	901517	Motor Housing inc Bush
10	729167	Pin
11	731930	Pin
12	900270	Valve Pin
13	901298	Throttle Lever
14	731956	Needle Bearing
15	731957	Rotor Retainer
16	731958	Rear End Plate
17	731959	Roll Pin (2)
18	731269	Rotor Blade (4)
19	731960	Rotor
20	731268	Cylinder
21	731964	Front End Plate
22	729182	Pin
23	731274	Ball Bearing

Ref No	Part No	Description
24	731968	Internal Gear
25	731969	Idler Gear (3)
26	731970	Idler Gear Plate inc Pins
27	900507	Retaining Ring
28	900504	Clamp Nut
29	731972	Needle Bearing
30	901518	Ratchet Housing
31	900503	Crank Shaft
32	731976	Drive Bushing
33	731975	Yoke
34	901372	Counter Sink
35	901373	Reverse Dial
36	901519	Dowel Pin
37	901520	Thrust Washer
38	731982	Pin
39	900509	Ratchet Pawl
40	731979	Lock Pin
41	731980	Spring
42	901521	3/8" Sq Anvil Assembly
43	901522	Thrust Washer Spring (2)
44	900190	Thrust Washer
45	900799	Retaining Ring
46	900985	Boot

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 UT8000SR-B Mini Ratchet Wrench, 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	**D.H.Moppett (Man. Director)**	
Place and date of issue	Name and signature or equivalent marking of authorised person	

Accessories

Notes

Distributor