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	RPM	
3/8 Capacity Pistol Grip Drill	**2600** Cycles Per Min	CE

Model No/Nos	Serial No (if any)
UT8824	

Product Nett Weight	Recommended Use Of Balancer Or Support	Recommended Hose Bore Size - Minimum	Recommended Max. Hose Length
2.2 lbs **1.0** Kg	**No**	**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 85.5 dB(A)**
Sound Power Level 97.1 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 standard 8662/1**

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.

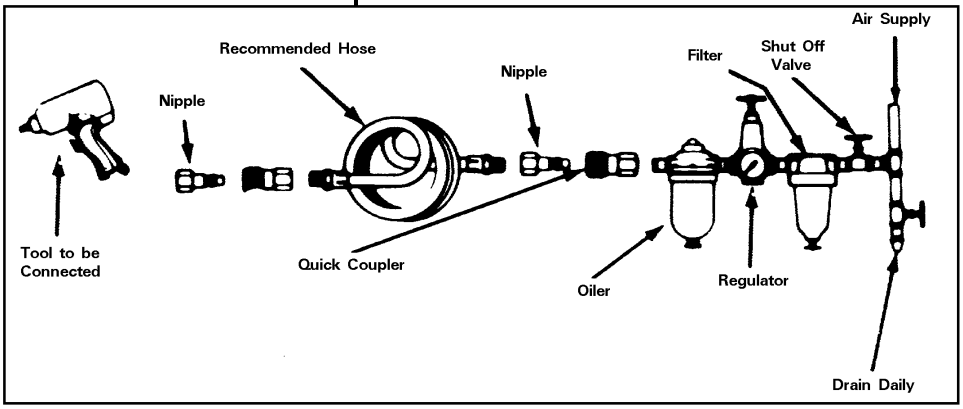
Work Stations

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./6.3 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 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 centre 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.

Dismantling & Assembly Instructions

Disconnect drill from air supply.
The drill chuck (25) may be removed by placing the chuck adjusting key securely in the chuck and giving the key a sharp tap with a hammer in the direction to loosen a right hand threaded joint. If this fails to remove the chuck remove it after the gearbox assembly has been removed from the drill handle. (See later). Place motor housing (1) in a vice fitted with soft jaws with the handle section pointing upwards, unscrew bushing (26), remove screw (4) and exhaust deflector (3). Unscrew locknut (24) to remove gearbox and pull out motor assembly.
If the drill chuck has not been removed as it is too tightly fitted, it can be removed as follows. Pull off ring gear (20) from gearbox and pull off 3 off idler gears (21). Use a suitable square section bar inserted between the pins in idler gear plate (22), pushed up against the face to ensure that contact is made at the bottom of the pins and unscrew the chuck using the chuck key. Do not use a round bar or locate at the outer edge of the pins as this may distort the 3 pins. A length of 8mm (0.312) square bar is ideal for this purpose. Continue to dismantle the gearbox by supporting ball bearings (23) on the gear side in a piece of tube of suitable bore to just clear the largest diameter of idler gear plate (22) and press out idler gear plate from bearings 2 off- (23). It is recommended that the pins in the idler plate (22) are not removed for replacement and the complete idler gear plate (22) is replaced. For information the nominal diameter of the three pins in the idler plate (22) is 0.1574 ins (4 mm). Replacement is required if the pins are badly damaged or worn below 0.155 (3.937 mm) diameter.
To dismantle motor assembly grip the front end plate (19) tightly by hand and tap the gear end of the rotor with a non metallic or soft metal (lead or aluminium) hammer through the front end plate (19) and bearing (13). Remove 4 off rotor blades (17) and cylinder (18). Hook out plastic shield from rear end plate (14). Support rear end plate (14) in a piece of tube with a bore size as close as possible to the largest diameter of the rotor (14) and tap the non splined end of the rotor to remove it from the rear end plate and bearing assembly. Tap out bearing (13) from rear end plate (14) and bearing (13) from front end plate (19).
Tap out trigger retaining pin (2) and pull out trigger assembly. Remove trigger (10) from valve stem (6). Remove valve stem (6) from valve bushing (9) and remove O-Rings (5). Remove 2 off O-Rings (7) and O-ring (8) from valve bushing (9).

Reassembly

Clean all component parts and examine for wear before reassembling. Use only manufacturers or distributor supplied spare parts. Check in particular for wear and cuts on O-Rings and wear on rotor blades. Lightly coat all parts with a suitable pneumatic tool lubricating oil. Pack all bearings and gearbox with a general purpose lithium or molybdenum based general purpose grease.
Assemble in reverse order - see notes below.

Motor Assembly

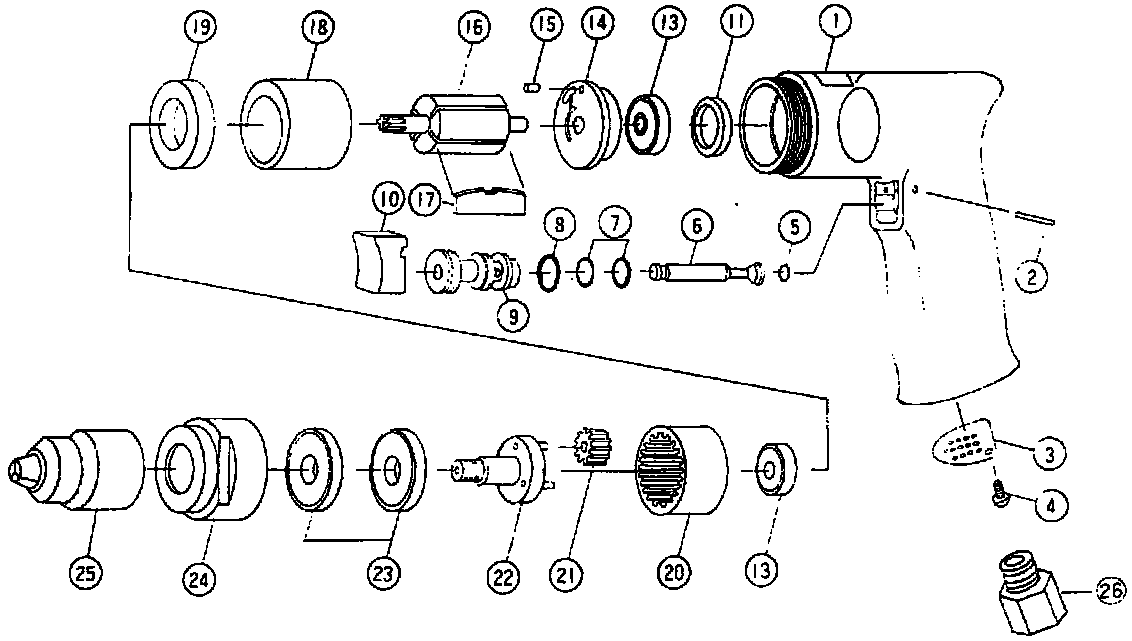
If fitting a new rotor very lightly deburr the edges of the rotor slots. Make sure rotor blade slots are clean. Make sure that the faces of the front and rear end plates (19) and (14) that abut cylinder (18) are free from burrs and surface marking. If necessary lap faces on a flat, very fine grade of abrasive paper.
Press bearing (13) into end plates (14) and (19). Support bearing (13) in rear end plate on the inner race and tap rotor on the gear end with a soft metal or non metallic hammer until the rotor locates against the face of the rear end plate. Support the inner face of the rear end plate in a piece of tube with a bore diameter as close as possible to the largest diameter of the rotor and tap the non splined end until a clearance of 0.040mm (0.0015") to 0.065mm (0.0025") is obtained between the inner face of the rear end plate and the rotor. This clearance to be checked when pulling the rotor by hand away from the rear end plate and bearing assembly.
Spin rotor to ensure that it will spin freely in the rear end plate and bearing assembly. Fit rotor blades and cylinder ensuring that the pin in one end of the rotor cylinder locates in the round hole in the rear end plate. Push on front end plate and check that rotor still rotates freely.
Reassemble tool in reverse order.

Safety Rules When Using A Drill

1) Read all the instructions before using this tool. All operators must be fully trained in its use and aware of these safety rules. All service and repair must be carried out by trained personnel.
2) Always select a suitable cutting, abrasive device suitable for use with this drill.
3) Always shut off the air supply to the drill and depress the trigger to exhaust air from the feed hose before fitting, adjusting or removing the device. Remove drill chuck.
4) Always adopt a firm footing and/or position and be aware of torque reaction developed by the drill.
5) Use only correct spare parts.

Universal Tool

UT8824 3/8 Capacity Pistol Grip Drill



Ref No	Part No	Description
1	900005	Motor Housing
2	732060	Pin
3	732061	Exhaust Deflector
4	732062	Screw
5	732062	O-Ring
6	732064	Valve Stem
7	732065	O-Ring (2)
8	732066	O-Ring
9	732067	Valve Bushing
10	732068	Trigger
11	729178	Bearing Cap
13	729012	Ball Bearing (2)
14	731033	Rear End Plate
15	129182	Pin
16	900006	Rotor
17	732445	Rotor Blade (4)
18	729183	Cylinder
19	900007	Front End Plate
20	732078	Ring Gear
21	900008	Idler Gear (3)
22	732080	Idler Gear Plate
23	732081	Ball Bearing (2)
24	900010	Lock Nut
25	H0019K	Keyless Chuck
26	900009	Bushing

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 UT8824 3/8" Capacity Pistol 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**

Lane End	D.H.Moppett (Man Director)	
Place and date of issue	Name and signature or equivalent marking of authorised person	

6) Check hose and fittings regularly for wear. Do not carry the tool by its hose and ensure that the hand is remote from the on/off valve (trigger) when carrying the tool with air supply connected.
7) Do not exceed maximum recommended air pressure. Avoid low air pressures as this will allow the drill to stall more easily and develop torque reaction.
8) Use safety equipment as recommended.
9) The tool is not electrically insulated. Do not use where there is a possibility of coming into contact with live electricity, gas pipes, water pipes, etc. Check the area of operation before performing the operation.
10) Take care against entanglement of moving parts of the tool with clothing, ties, hair, cleaning rags, etc. This will cause the body to be moved towards the work process and can be very dangerous.
11) Do not attempt to hold or guide the drill chuck when the tool is running. Keep hands clear of the drilling process.
12) Use only compressed air at recommended conditions.
13) Do not attempt to fit attachments, i.e. for sawing, hedge cutting, grinding, chain sawing, etc.
14) If the tool appears to malfunction remove from use immediately and arrange for service and repair.
15) If an additional side handle is fitted to the tool ensure that it is correctly positioned and fixed securely.
16) If the drill is used with a balancer or other suspension device ensure that it is fixed securely.

Accessories

Notes

Distributor