

Macdonald

GENUINE SPARE PARTS

21/S BREAKER

MAINTENANCE AND REPAIR

SAFETY AND OPERATING INSTRUCTIONS (General)

Attention to a few fundamental points will prolong the life of the tool, keep it in service and ensure maximum working efficiency. Ensure that the operator reads and understands what he is required to do to comply with these points prior to using the tool. Ensure also that he carries out his part of the instructions.

1. Ensure the machine is disconnected from air supply before doing any work on it.
2. Ensure the machine is held firmly in a vice or fixture for dismantling.
3. Correct tools for dismantling and assembling must be used.
4. When using a solvent or cleaner, follow the manufacturer's instructions.
5. Before clearing the machine for use, ensure that all the connections and joints are tight, looseness causes air losses, vibration and general inefficiency.
6. Always blow out the hose before connecting to the tool to prevent dirt or other foreign matters being carried into the working parts of the tool.

Lubrication

All pneumatic tools require regular and adequate lubrication to prevent excessive wear and ensure efficient operation. Particular attention should be paid to lubrication during the initial running in period of a new tool.

The tool works at top speed and full power right from the start, so lack of lubrication during this period, before the tool is loosened, can lead to excessive wear on all working parts.

Where an oil reservoir is incorporated in the tool it should be filled daily.

Before starting work each day, pour a small quantity of the correct grade of oil into the air inlet and blow out the hose to ensure no dirt or moisture is lying in the hose. Couple the hose to the tool and give the tool a short burst. Care must be taken not to over-oil the tool to avoid excess oil blowing from the tool and damaging the working surface.

Only clean oil of the correct grade, as stated, should be used for lubrication. A heavy or dirty oil is useless as it will only serve to "gum up" the tool.

Recommended Oil :

The following oils are recommended for use with Macdonald Tools and these or their equivalents should be used in normal conditions. For abnormal conditions e.g. extreme heat, consult the oil company.

SHELL	Clavus 25
BP	Energol LPT 80
ESSO	Zerice 46
MOBIL	Almo 525

Air Supply

Always ensure that an adequate supply of compressed air at a pressure of 6 bar (90 p.s.i.g.) minimum is available to the tool. Reduced air pressure will affect the performance of the tool adversely.

Use the shortest length of hose possible between the compressor and the tool to avoid undue pressure drop through the hose.

General

The tools require adequate flows of compressed air at around 6 bar pressure for efficient operation. Always blow out the hose carefully before coupling to the tool in case dirt or foreign matter is carried into the tool in the air stream.

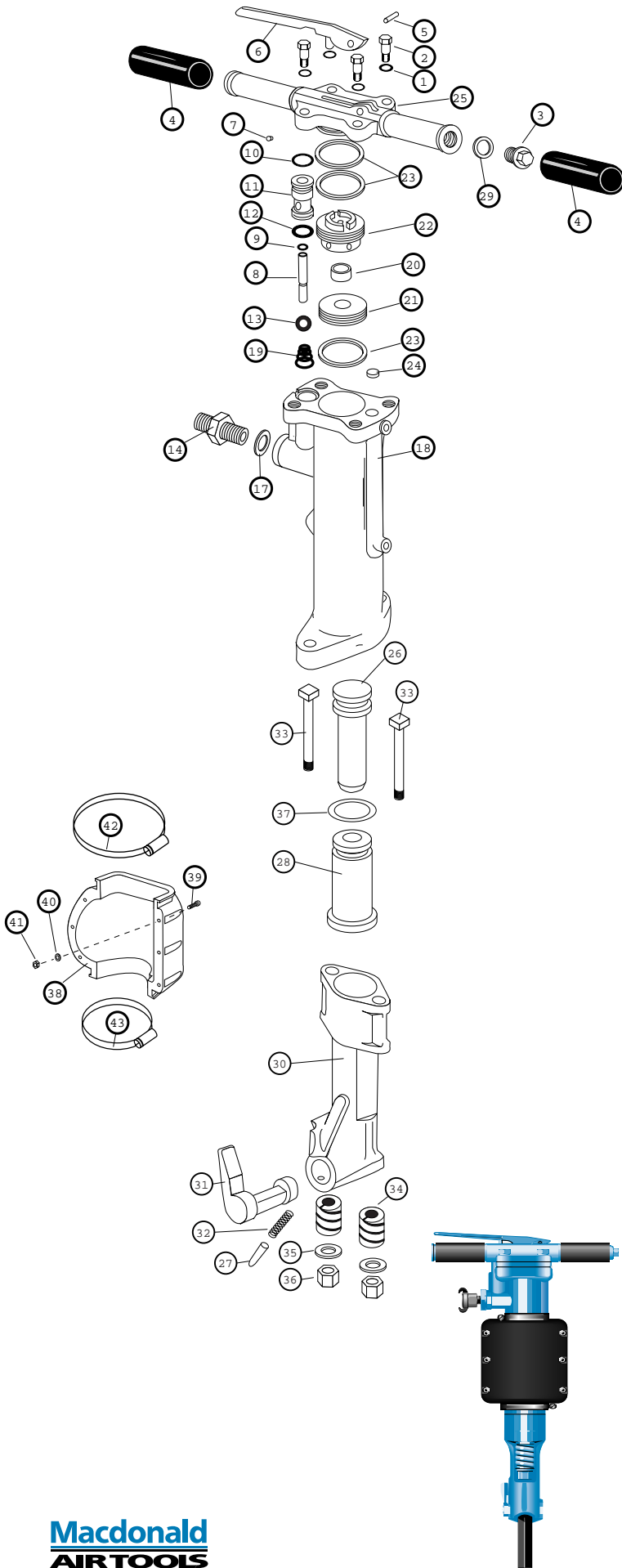
If the tool sticks completely, the most likely cause is dirt or improper or insufficient lubrication. If this happens the tool should be dismantled by a competent engineer, the parts should be thoroughly cleaned in a suitable solvent, lightly oiled and re-assembled. Keep the tool tight, do not allow any fasteners or connections to become loose because this can lead to air losses, vibration, excessive wear and inefficiency.

Always use sharp moils and chisels or spades because dull cutting edges cause the tool to absorb the blow instead of cutting through the workpiece. This results in operator fatigue, chisel breakages and poor productivity.

1. Never exceed the maximum air pressure recommended for the machine, usually this is 7.5 bar (110 p.s.i.g.) for hand held machines.
2. Do not use damaged, frayed or deteriorated hoses and fittings. Always store hoses properly after use away from heat sources or sunlight. A hose failure can cause injury.
3. When blowing out a hose or air line, ensure the open end is held securely, a free end will whip and can cause injury. Open the supply air cock carefully and ensure that any particles are ejected safely. A blocked air hose can become a compressed air gun.
4. Close the air cock at the compressor or the supply line and release the line pressure before disconnecting the hose. The air cock should be within easy reach of the work area.
5. Personal protection such as safety glasses, gloves and safety footwear should be worn by the operator and other personnel where work operation or regulations require their use. Ear defenders should be worn.
6. Depending on the material being worked on, precautions may be required against the generated dust.

USE OF THE MACHINE

1. Use only approved inserted tools.
2. Worn Inserted Tools can promote breakage, reduce work rate and increase vibration. An Inserted tool which breaks can cause injury.
3. Do not use frozen tools. In freezing conditions, store tools undercover, preferably in a warm building. Freezing conditions can make hardened steels brittle and cause breakage.
4. A proper working position should be adopted to ensure stability in the event of a breakage of an Inserted tool.
5. Always turn off compressed air supply and release the air pressure in the hose before changing the Inserted Tool or before disconnecting the hose.
6. Always present the tool as squarely as possible to the working surface to minimise the effects of side loading on the Inserted tool.
7. Do not use in circumstances where the tool may strike a live but possibly concealed electric cable.
8. If the compressed air supply stops during operation of the machine the throttle lever should be released immediately.
9. Never hold onto the Inserted tool, use the bottom sleeve or silencer.



ILL.	Part	Description of Part	qty	
R	1	203026	Lock Washer	4
R	2	242044	Set Screw	4
R	3	003024	Oil Plug	1
R	4	007005	Handle Grip	2
R	5	007003	Throttle Lever Pivot Pin	1
O	6	007002	Throttle Lever	1
O	7	030618	Oilite Bush	1
O	8	060012	Throttle Valve Pin	1
R	9	001006	Throttle Valve Stem Seal	1
R	10	007013	Throttle Valve Bush Seal	1
O	11	060005	Throttle Valve Casing	1
R	12	060008	Seal	1
O	13	023014	Throttle Valve Ball	1
	14	061123	Inlet Connection	1
R	17	003011	Swivel Air Connection Gasket	1
	18	061020	Cylinder	1
R	19	061025	Throttle Valve Spring	1
R	20	061035	Valve	1
R	21	030023	Valve Seat - Delrin	1
		007022	Valve Seat - Steel	1
R	22	030022	Valve Block - Delrin	1
		007047	Valve Block - Steel	1
R	23	007006	Seal	3
	24	057027	Kickport Plug	1
	25	061002	Handle	1
	26	061007	Piston	1
R	27	061026	Steel Retainer Plunger	1
O	28	061003	Liner	1
	30	061021	1" Chuck Housing	1
		061022	1.1/8" Chuck Housing	1
		061023	1.1/4" Chuck Housing	1
O	31	003021	Steel Retainer (for 1" chuck)	1
		057020	Steel Retainer (for 1.1/8" or 1.1/4" chuck)	1
R	32	001044	Steel Retainer Spring	1
O	33	061017	Side Rod (for 1" C.H.)	2
		061018	Side Rod (for 1.1/8" & 1.1/4"CH.)	2
O	34	057048	Side Rod Spring	2
R	35	203045	Side Rod Washer	2
R	36	061019	Side Rod Nut	2
R	37	023055	Tappet Bushing Seal	1
Silencer Parts				
O	38	061008	Silencer	1
R	39	910101	Cap Screw	6
R	40	029013	Washer	12
R	41	029009	Nut	6
O	42	906004	Jubilee Clip	1
O	43	906005	Jubilee Clip	1

Key R = Recommended Spares (ie stock)
O = Occasional Spares (order as required)

Warning

NEVER ATTEMPT TO CHANGE A CHISEL, MOIL, ASPHALT CUTTER OR OTHER ACCESSORY ON A PNEUMATIC TOOL UNLESS THE TOOL HAS BEEN COMPLETELY DISCONNECTED FROM THE AIR SUPPLY.

THE CYLINDER OF THIS TOOL IS HARDENED AND SHOULD NOT BE WELDED UNDER ANY CIRCUMSTANCES. WELDING CAN CAUSE LOCAL SOFTENING.