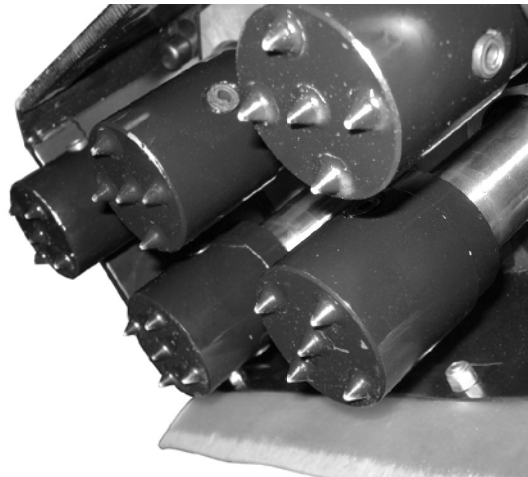




MHS 5 MULTI-HEADED SCABBLER



OPERATION & MAINTENANCE



OPERATION

General Information

Thank you for your purchase of the MHS 5 Multi-headed Scabber.

Before operating the Scabber, this manual must be read and understood by the operator, if in any doubt ask your supervisor before using this equipment. Failure to follow these instructions could result in damage to the Scabber and/or personal injury.

Trelawny SPT Ltd disclaims all responsibility for damage to persons or objects arising as a consequence of incorrect handling of the tool, failure to inspect the tool prior to starting work for damage or other faults that may influence the operation or safe working of the tool, or failure to follow the safety regulations or applicable to the job site.

The tool is primarily designed for concrete reduction, and can be used for the removal of laitance from concrete floors, but may also be used for the removal of heavy paint or epoxy floor coatings, it can be used both indoors and out.

Note:

Operators should be familiar with the data given in the specification section.

Please keep these instructions in a safe and accessible place.

This tool must not be used in potentially explosive atmospheres. Where a vacuum shroud assembly is supplied separately, see the instructions under "Servicing" for fitting.

ASSEMBLY

Remove 4 x M8 and the 1 x 6mm screws from the upper handle.

Insert the top handle into the lower handle and secure with the 4 x M8 Screws.

Attach the hose clip to the upper handle with the 1 x M6 screw.

Do not over tighten.

**ALWAYS DISCONNECT
THE TOOL FROM THE AIR
SUPPLY BEFORE
CARRYING OUT ANY
SERVICING OR
MAINTENANCE
OPERATIONS.**

Manual Handling

The complete tool weighs approximately 114kg (251.5lbs).

Where possible use a hoist with correctly rated lifting equipment to connect to the supplied lifting eyebolt, which is fitted on the top of the MHS5 Scabber.

Ensure that the eyebolt is screwed down to its shoulder and has been tightened using a bar no longer than 150mm (6.00").

Do not use the handle as a lifting point during any lifting operation.

Always apply local health and safety regulations with regard to manual handling.

Safety Precautions

Do wear Personal Protective Equipment including safety goggles, footwear, ear defenders and gloves. In some environments it will be necessary to wear facemasks or breathing apparatus.

Do be aware that this tool is not electrically insulated.

Do ensure that this tool is lubricated **daily**.

Do be aware that this tool can create dust and flying debris.

Do be aware of others working around you.

Do keep hands and clothing away from moving parts.

Always observe safe working practices and local safety regulations at all times.

Do not allow the tool to run unattended.

Do not use this tool to prepare walls.

Do not allow the tool to run continuously whilst not in contact with the surface being prepared.

Do not modify this tool in any way, as this will invalidate the warranty and could lead to serious injury.

Do not use this tool in potentially explosive environments.

Do not drag this tool by the air hose.

Do not use petrol (gasoline), thinners or any other high flash point solvent to clean the tool.

Please note: Unrestrained hoses can whip if they become detached.

Ensure that the work place is well ventilated. Avoid operating engine-powered compressors in an enclosed area, since engine exhaust gases are poisonous.

Recommended lubricants

Oil the tool daily before use. Put a liberal quantity of one of the following air tool lubricants through the air inlet.

SHELL Naturelle HF
CASTROL Carelube HTG 22

Cleaning

At intervals of no more than 100 hours use, or if operation becomes unproductive, or if any of the pistons shows signs of sticking, dismantle and clean with highly refined paraffin. Replace any worn components as necessary.

Immediately after cleaning, thoroughly oil the tool with one of the recommended lubricants.

Risk of Hand-arm Vibration injury

These tools may cause Hand-arm Vibration Syndrome injury if their use is not adequately managed. We advise you to carry out a risk assessment and to implement measures such as; limiting exposure time [i.e. actual trigger time, not total time at work], job rotation, ensuring the tools are used correctly, ensuring the tools are maintained according to our recommendations, and ensuring that the operators wear personal protective equipment [PPE] **particularly gloves and clothing** to keep them warm and dry.

Employers should consider setting up a programme of health surveillance to establish a benchmark for each operator and to detect any early symptoms of vibration injury.

We are not aware of any PPE that provides protection against vibration injury by attenuating vibration emissions.

See 'Specifications' section for vibration emission data.

Further advice is available from our Technical Department.

SERVICING

Pre-Start Check

The compressed air supply must be free from water and dirt. The installation of a filter/regulator/lubricator air preparation set (with moisture trap) adjacent to the tool is **strongly recommended**. Always clear the air hose before connection to the tool. Ensure that no moisture (condensation) is present in the air hose. Ensure that a minimum 19mm (3/4") bore air hose is used and that all couplings are secure; leak free and in good condition. Limit the length of air hose to 15M (50ft). Where extra length is necessary, for each additional 15M (50ft) of air hose used, the pressure drop is approximately 0.16bar (3psi).

Correct operating pressure is 6.2bar (90 psi).

Do not let the operating pressure fall below 5.5bar (80p.s.i.) or rise above 6.9bar (100 psi) absolute maximum.

Preferably, the compressor should be able to supply a **minimum** of 57L/s (120cfm) of free air.

Some compressor manufactures give a displaced air figure which generally produces a much lower air output.

In particularly cold weather it is recommended that a proprietary anti-freeze lubricating oil be used.

Starting Work

Prior to operating the tool check: -

That all fittings are secure, free from leaks and air hoses are in good condition.

That all parts of the tool are fully screwed together and secure, if in any doubt ask your supervisor before using this equipment.

That a liberal amount of lubricant has been put into the air inlet of the tool. (See recommended lubricants)

Adjust the handle bar to a comfortable working height for the operator by slackening off the 4 x M8 caphead bolts on the handle bar caps, and the single M8 caphead bolt on the handle bar side quadrant. Note that the handle bar will be slightly lower when the tool is in use. Adjust and retighten all bolts.

Safe use of this tool requires a solid stance and secure foothold; the operator must adopt a firm and stable position at all times. To operate the tool pull the lever on the handle bar and immediately start to move the tool back and forth. Keeping the lever depressed, continue until the desired finish is achieved. Never run the tool continuously in the same place, as the cutterheads will dig into the surface.

To switch off,

Simply release the lever on the handle whilst continuing to move the tool back and forth. Complete a small area noting the performance; stop the tool, inspect the finish produced. Handled correctly the MHS 5 Multi-headed Scabblers will work quickly and efficiently.

Gloves and personal protective equipment **must** be worn when using this tool. The tool will ride irregularities of up to 13mm (1/2"). Anything greater will risk cutterhead damage.

Care must be taken to avoid damaging or tripping over the air hose.

Servicing

Only a competent person, in a suitably equipped workshop, must carry out maintenance.

Always disconnect the tool from the air supply before carrying out any of the following operations.

Dismantling

After ensuring that the air supply is turned off, remove the tool from the airline. Thoroughly clean the outside of the tool prior to dismantling.

Scabblers Head Removal

Remove the eyebolt (7) from the block (1). Take extreme care against trapping your fingers when lifting or turning the tool over. Using the handle, pull the tool over until it rests on the handle bars and the cylinder block top face; remove the supplied punch (33) from the left hand side handle bar by removing the "blanking cap" part of the punch with a small screw driver.

Follow next section if vacuum shroud is fitted, then continue with:-

Using a medium hammer and the supplied punch knock out the spiral roll pin (14) from each cutterhead (10).

Remove the cutterhead from the piston, in some extreme cases it may be necessary to warm the cutterhead to ease removal from the piston, especially if they have been in situ for some time.

Exhaust Chamber & Vacuum shroud removal

Remove the plastic caps protecting the caphead bolts, unscrew the 5 x bolts using a short extension and 8mm Allen key socket.

Remove the vacuum shroud (3) if fitted and the exhaust chamber (2) and clean out any dust that may have accumulated inside the chamber.

It is wise to replace the cylinder dust seals (4) which are situated in recesses in the exhaust chamber and also replace if fitted, the rear vacuum shroud seal (5) at this point also.

Piston and Cylinder removal

Start with unscrewing the two outer of the front three cylinders (9) using a 54mm or 1 1/4" Witworth spanner, followed by one of the back row and then the centre front.

The cylinders are retained using a thread locking adhesive and may require a sharp blow on the spanner to break the bond.

Once the cylinders have been removed from the block (1), remove the piston (8) from its cylinder. Remove the wiper seal (13) from its recess using a small screw driver and remove both of the cylinders O'Rings (12) & (11). Inspect both the piston and cylinder for any sign of wear or grooving paying particular attention to the small bore of the cylinder. Replace the piston, pushing it to the bottom of the cylinder bore, if there is excessive play between the piston and cylinder, the cylinder and possibly the piston will require replacing.

SERVICING continued

Removing Sub-Frame from Cylinder Block

With the tool in an upright position, disconnect the air hose (48) from the adaptor (15) at the cylinder block. Unscrew the M6 bolt retaining the hose clip (31) on the side of the main handle (21/22). Unscrew the 4 x M8 retaining bolts from the mid section of the main handle using a 13mm spanner.

Using the remaining section of handle (21) pull the tool onto its front face.

Check that both wheels (25) spin freely and that the bearings feel smooth and that there is no excessive play. If they show signs of excessive play or if the tyre tread is badly worn replace by knocking out the spiral retaining pins with a pin punch to remove the wheels.

Removal of Handle from Sub-Frame

Unscrew the 4 x 10mm bolts using two 17mm (11/16"AF) spanners.

Check that the vibration reducing vibro-mount bushes (28) are in good condition, replace if there are signs of deterioration either from the vibro-mount bushes from cracking or perishing.

Only use Trelawny manufactured vibro-mount bushes, otherwise an increase in the vibration emission may occur.

Remove the 8 x M10 Nyloc nuts securing the sub-frame to the Isolastic bushes using a 17mm spanner.

Valve Body Removal/Service

Remove the valve body (35) from the handle (23) if required. Disconnect the air hose (48) from the valve body and unscrew the valve body from the T-connector (46).

If removed, secure the valve body assembly in a vice, holding on the main body.

Using a 30mm spanner unscrew the valve cap (38) from the valve body, remove the spring (40) and retrieve the valve stem (39) with its O'Rings

and (42). Using a 6mm punch, drive out the throttle lever pivot pin and withdraw the throttle lever (36).

ASSEMBLY

Assembly is generally the reverse of dismantling. Before any assembly takes place, ensure all internal parts are clean and have a film of air tool oil lubrication unless otherwise state.

Avoid lubricating oil or grease contaminating the threads of the cylinder (9) and the corresponding threads in the block (1). These will require securing with a thread-locking adhesive.

Replace any parts that show signs of wear. If the tool is being fully serviced it is recommended to change the 8 x vibro-mount vibration reducing bushes (28), the 8 x Isolastic bushes (16) and all of the O'Rings (4), (11), (12), (34), (41) and (42). It is also good practice to replace the M10 nyloc nuts during assembly.

Valve Body Removal/Service

Apply general-purpose bearing grease to the valve stem (39). Insert valve stem with its O'Rings (41) and (42) into the valve guide hole in the valve body, followed by the spring (40). Screw in the valve cap (38) by hand and using a 30mm spanner fully tighten. Using a 6mm punch align the hole in the valve body (35) with the holes in the throttle lever (36). Using a small hammer fit the throttle lever pin (7).

Piston and Cylinder Assembly.

Fit new wiper seals (13) and new O'Rings (11) and (12) to the appropriate small and large grooves on the cylinders (9).

Insert a piston (8) into each cylinder, ensure that the piston moves freely and does not stick or is tight at any point in the bore.

Fit the scabbler head (10) until it butts up against the front face of the piston (8).

Align the holes in the piston (8) with the Scabbler head (10). The shank of a new 12.5mm drill bit or 7/16" Allen Key is a good fit for this purpose or use a suitable piece of dowelling.

Support the scabbler head on a stable surface. Holding the spiral pin (14) with a pair of pliers to avoid hitting the fingers. Using a medium size hammer, drive in the spiral pin until central in the scabbler head (10).

Ensure that the threads of the cylinder and body (18) are clean and free of oil; apply a bead of Loctite 243 or similar to the first few threads of the cylinder.

Put a liberal amount of recommended lubricating oil on top of each piston.

The sequence of replacing the cylinders are:-

Starting with the central front cylinder. Screw in the cylinder by hand and complete the procedure on each cylinder assembly one at a time, tighten to a recommended torque of 135Nm (100 lbs/ft) using a suitable crowfoot wrench on the spanner flats. Followed by the back cylinders, and finally the two outer front cylinders.

Assembly of Exhaust Chamber /Vacuum Shroud

Place the block (1) on to its top face. Check that the cylinder seals (4) have been fitted into the recesses in the exhaust chamber and that all the cutterhead retaining pins (14) are central, otherwise the exhaust chamber seals could become damaged.

Apply a small amount of grease around the outside of all the cylinders to help the seals (4) slide over. Lower the exhaust chamber (2) into position with the exhaust chambers cavity nearest the block. Apply a bead of Loctite 243 or similar to the first few threads. Insert the 5 x 10mm caphead bolts through the vacuum shroud and/or exhaust chamber and into cylinder block (1), with a 8mm Allen socket. Tighten to 80 Nm (60lb/ft.)

Sub-frame to Cylinder Block

Fit new Isolastic anti-vibration bushes (16) into the block (1) and tighten by hand. Align the mounting holes in the sub-frame (20) with the holes in the block.

Secure using 8 x M10 Nyloc nuts. Tighten down to a torque of 54Nm (40lbs/ft)

SERVICING continued

Wheel to Sub-Frame

Grease the wheel bearings with a general purpose bearing grease. Fit a wheel spacer (26) on to the axle spindle, followed by a wheel (25) and a second wheel spacer, and secure with a spiral pin (14). Repeat for the other wheel.

Handle to Sub-Frame

Prior to refitting the lower handle (21) to the sub-frame check the vibro-mountings (28) for any signs of deterioration, replace all of the mountings if one shows signs of deterioration.

Tool Storage

Short period storage: up to 3months.

Clean the outside of the tool and inspect the cutter heads for wear, replace any worn parts as required.

Remove any build up of material from the cutter head area.

Insert a liberal quantity of air tool oil through the air inlet and run briefly to ensure that internal components are coated with oil. (See recommended lubricants)

Cover the tool to protect it.

Store the tool in a dry place.

Long period storage: over 3months

Clean outside of tool, inspect the scabblers heads for wear; replace any worn parts as required.

Remove any build up of material from the cutter head area.

Insert a liberal quantity of air tool oil through the air inlet and briefly run to ensure that internal components are coated with oil. Lubricate the exposed part of the piston and cylinder. (See recommended lubricants)

Cover the tool to protect it.

Store the tool in a dry place.

After 6 months have elapsed, check the condition of the hose then insert a liberal quantity of air tool oil into the air inlet as previously described and briefly run to ensure that internal components are coated with oil.

Prior to using the tool again check the condition of the hose (48) and the isolastic mountings (16) and the vibro-mountings (28) for signs of perishing etc, replace if suspect.

When next used, continue as per "Pre-Start Check" section.

Disposal

Dismantle into component form for disposal according to material composition and dispose of using waste recycling processes specified by local regulations.

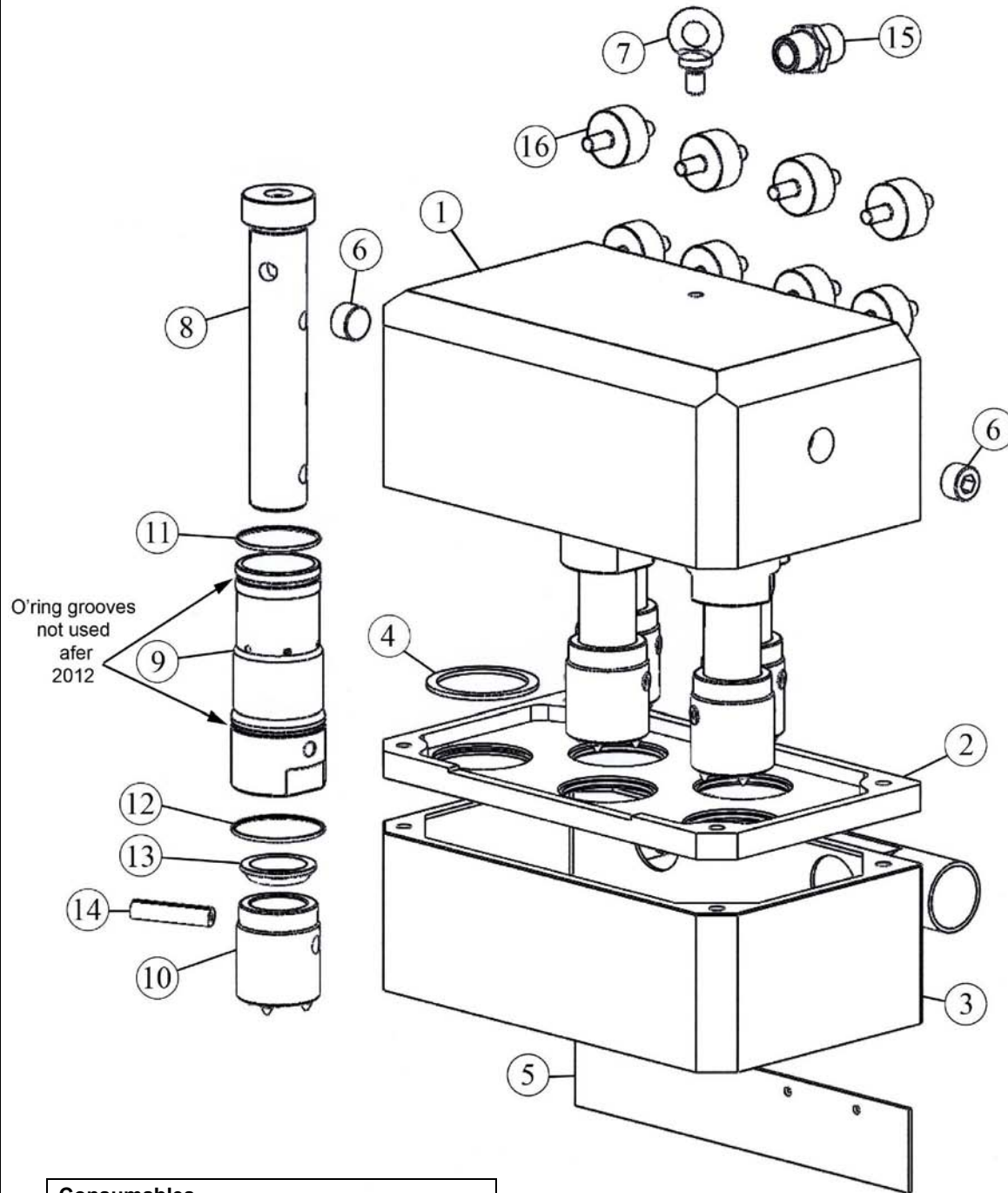
Note: Flammable material such as plastic, rubber or composite materials must not be incinerated but should be disposed of using normal industrial waste disposal processes.

Trouble Shooting

FAULT	CAUSE	ACTION
Tool bounces in use	Air pressure to high.	Ensure that the air pressure is set at 90psi. (6.2bar).
Tool performance slow	Worn Cutter Heads	Replace Cutter Heads (Cutter Head life is approximately 100hrs)
Tool drags on floor	Insufficient air supply	Ensure that the compressor can supply at least 57L/s (100cfm) of free air at 90psi in order to avoid air supply problems. See also Pre-Start Check section
	Hose bore too small	Ensure that the hose bore is 3/4" (19mm).
	Hose run too long	Each 50 ft. (15 mtrs) of airline used, may drop the pressure by a 3psi.
	Worn Pistons and/or cylinders.	Replace piston and cylinders
If problem has not been cured by any of the above actions, contact your local dealership or agent for assistance.		

SERVICING continued

Exploded View 1

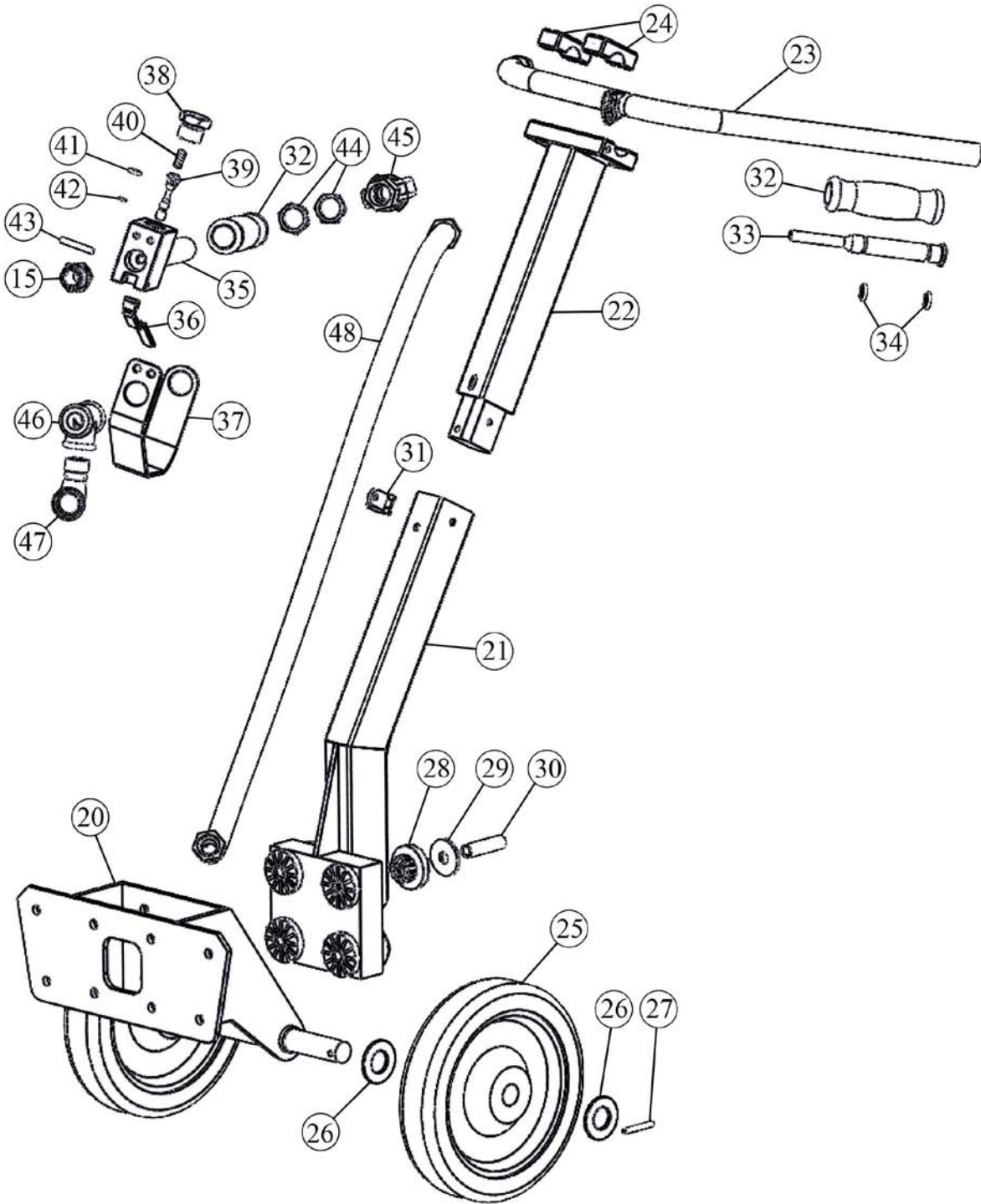


Consumables		
5	731.5059	Rear Vacuum Shroud Seal
10	426.5359	TCT Bush Cutterhead
14	813.1050	Roll Pin

SEE PAGE (10) FOR LIST OF ALL COMPONENTS

SERVICING continued

Exploded View 2



PART NUMBER LIST

Item No	Part No	Description
1	611.5050	Block
2	654.5050	Exhaust Chamber
3	652.5050	Vacuum Shroud
4	726.5050	Exhaust Chamber Seal
5	731.5059	Vacuum Shroud Seal
6	818.0750	3/4" Blanking Plug (Block)
7	831.4120	Eye Bolt
8	612.5005	Piston
9	613.5001	Cylinder (O'Ring grooves used for item 11 & 12 were removed after 2012)
10	426.5359	TCT Cutterhead (Bush) five point
	426.5369	TCT Cutterhead (Bush) nine point
11	809.6599	O'Ring Cylinder (Small) (No longer used after 2012)
12	809.6619	O'Ring Cylinder (Large) (No longer used after 2012)
13	829.5001	Wiper Seal
14	813.1050	Roll Pin (Cutterhead Retaining)
15	826.5004	3/4" Adapter (Block & Valve body)
16	830.5050	Isolastic Bushes (Block to Sub-frame)
17-19		Not assigned
20	440.5050	Sub-Frame
21	422.5050	Lower Handle
22	422.5055	Top Handle
23	422.5060	Handle Bar
24	422.5065	Handle Bar Clamp
25	833.5050	Wheel
26	655.5050	Wheel Spacer
27	813.0645	Roll Pin (Wheel Retaining)
28	830.1000	Vibro-mount bushes (Sub-frame to Lower Handle)
29	620.5050	Insert (Vibro-mount bushes)
30	617.5050	Washer (Vibro-mount bushes)
31	815.5050	P-Clip (Hose Retaining)
32	822.2000	Rubber Grip
33	633.5050	Pin Punch
34	809.6165	O'Ring (Punch)
35	422.5005	Valve Body
36	649.5011	Lever
37	665.5011	Lever Guard
38	634.5011	Valve Cap
39	618.5025	Valve Stem
40	712.5001	Valve Spring
41	809.5599	O'Ring (Valve Seat)
42	809.0069	O'Ring (Valve Stem)
43	813.0636	Roll Pin (Lever)
44	625.5011	Locknut
45	843.0765	Claw Coupling
46	819.2380	T - Connector
47	342.HY13	90° Elbow Connector
48	719.5050	Armoured Hose
	831.0620	M6 x 20 Hexagon Head Screw (Vacuum Skirt)
	831.0616	M6 x 16 Hexagon Head Screw (Hose Clip)
	824.0600	M6 Nyloc Nut
	812.2060	M6 Large Washer (Vacuum Skirt)
	852.0812	M8 x Button Head Screw (Lever Guard)
	831.0825	M8 x 25 Hexagon Headed Screw (Lower /Upper Handle)
	806.0830	M8 x 30 Caphead Bolt (Handle bar clamp/Quadrant)
	806.1040	M10 x 40 Caphead Bolt
	831.1080	M10 x 80 Caphead Bolt
	824.1000	M10 Nyloc Nut
	812.0710	M10 Plain Washer

SERVICING continued

Technical Specifications

Height overhaul / working height Block	970 (38.18") / 300 (11.81")
Width at handle bar / Block width	720 (28.34") / 346 (13.62")
Length	110 (43.3")
Blows per minute	1300 x 5
Air consumption	38.0 l/s (80.0 cfm)
Working height	940mm (37.0")
Tool Weight	114kg (251.5lbs)
Air hose bore - (Inlet Coupling 3/4" BSP claw)	19mm (0.75")
Removal rate *	30m ² /hr (323ft ² /hr)
Depth of cut (Average)*	3.0mm (1/8"), dependent on operator
Cutting Width	290mm (11.4")
Closest cut to wall	25 (.98")
Noise L _{PA} SPL	94.7 dB (A)
Vibration (AEQ)** (Primary hand position)	16.5m/s ² (K= +40% -0%)
Vibration (AEQ)** (Secondary hand position)	23.1m/s ² (K= +40% -0%)

Trelawny SPT Ltd operates a policy of continuous product development and refinement and therefore reserves the right to change technical specifications and product designs without giving prior notice.

*These values are guidelines only. Test concrete surface was at least 20 year old.

**The readings given in the above table for the MHS5 Scabblers is carried out on 40N concrete.

Noise and Vibration Declaration Statement

Declared vibration emission values are in accordance with **BS EN 12096: 1997**

(K) Equals the factor of uncertainty, which allows for variations in measurement and production.

Vibration data figures are **tri-axial**, which gives total vibration emission.

Risk of Hand Arm Injury

Because of various factors, the range of vibration emission during intended use of this tool is expected to be between 23.1m/s² – 32.34m/s².

The vibration is dependent on the task, the operators grip, and feed force employed etc.

Noise level measured in accordance with EN ISO 15744: 1999

Vibration measured in accordance with
BS EN ISO 8662 Parts 1 & 14
BS EN ISO 5349-1: 2001
BS EN ISO 5349-2: 2002

Machinery Directive Information

This tool has been designed and produced in accordance with the following directives:

2006/42/EC Machinery Directive
and applicable harmonised standard: EN ISO 1 1148-4:2010

If your company has any problem with our products or would like to discuss the possibility of an improvement being made to them, then please do not hesitate to contact us. Your comments are both important and appreciated.



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