2" & 4" ROTOPEEN
PEENING PREPARATION TOOLS

OPERATION & MAINTENANCE
OPERATION

Foreword
Thank you for your purchase of the TRELAWNY Peening Preparation Tool (PPT).

This manual contains the necessary maintenance information for you to ensure proper operation and care for this machine.

It is essential for you to read through this manual thoroughly.

In the unlikely event that you experience problems with your Peening Preparation Tool, please do not hesitate to contact your local Trelawny dealer or agent.

We always welcome feedback and comments from our valued customers.

Safety Precautions
WEAR SAFETY BOOTS, FACE MASK, SHATTERPROOF GLASSES, HELMET, GLOVES and any other personal protective equipment required for the working conditions. Avoid loose clothing; this may become trapped in moving parts and cause serious injury.

AIR MOTORS ARE NOT ELECTRICALLY INSULATED.

ELECTRIC MOTORS ARE NOT WATERPROOF.

ENSURE THAT HANDS and clothing are kept away from rotating parts.

FOR 99.97% CONTAINMENT OF AIR BORN DUST, connect a Trelawny approved HEPA filtered vacuum system to the 38mm (1.5”) vacuum port.

DO NOT TAMPER WITH THE SPEED CONTROL SETTING within the electric motor; this has been set to the optimum speed during manufacture.

ENSURE THAT THE WORK PLACE IS WELL VENTILATED. Avoid operating engine-powered compressors in an enclosed area, since engine exhaust gases are poisonous.

BE AWARE, when the PPT is switched off, the work head will continue to rotate briefly.

This machine must not be used in a fixture.

Do not let the operating pressure fall below 5.8bar (80p.s.i.) or rise above 6.9bar (100 psi) absolute maximum.

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.

Ensure 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.

Cutter Types & Applications

ROTOPEN FLAPS
Heavy Duty (Type C) flaps fitted with tungsten carbide inserts. For the removal of general paint and rust, leaving a SA2.5 profile on most steel work. (It may be necessary to use more that one type of cleaning device to achieve a near SA2.5 finish).

Heavy Duty (Type A) flaps fitted with tungsten carbide inserts. For the removal of paint and laitance from concrete surfaces.

STAR
Heat-treated steel cutters used for the aggressive removal of paint and coatings and heavy rust from steel work, but with a shorter life span than Beam Cutters. Produces some marking on steelwork.

BEAM
Heat-treated steel cutters used for the removal of paint and coatings from steel work, not as aggressive as Star Cutters. Produces slight marks on steelwork.

Pre-Start Check (Daily)
Check all bolts and screws for tightness. Ensure that all fittings are secure. Check condition of hub or drum assembly and replace flaps, cutters or axles if required.

Air models:
The air motor speed is preset at the factory to 2700 rpm (free running). Always keep the air hose before connection to the machine.

Ensure that no moisture (condensation) is present in the air hose.

Check the security of all hoses clamps and fittings, and that the air pressure is correct at 90psi (6.2bar). The air motor uses approximately 30cfm of air.

Recommended lubricants
Oil the tool daily during use. Put a few drops of one of the following biodegradable air tool lubricants through the air inlet.

SHELL Naturelle HF
CASTROL Carelube HTG 22

Always use clean oil from a sealed container.

It is recommended that the compressor is capable of supplying at least 40cfm supply of free air (not displaced, as given by some compressor manufacturers).

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

Electric Models
PPT machines supplied with an electric motor, have been set at manufacture for the optimum revolutions for use with Rotopen flaps. These are set at 2000 rpm (free running) this must not be tampered with under any circumstances.

In the event of malfunction on a new machine, the owner should first check that the power supply on site is the correct voltage and of adequate supply.

All cables should be fully uncoiled and never left wrapped around cable reels or tied in loops.

110v Motor
If using a transformer, ensure that it is centre tapped, with a continuous rated output of at least 1500va. In practice this means that a minimum 3.3kva transformer should be used. All transformers and output cables should be fitted with 16amp plugs and sockets.

Always use the shortest possible length of extension cable. To avoid voltage drop the cable must be a minimum of 2.5mm2 cross-section area. Maximum length of cable 30 metres. The 240v supply to the 110v transformers should be rated to 13amp.

240v Motors
Take particular care when using 240v machines; ensure that the electrical supply is earthed and that a residual current circuit breaker is fitted tripping at 30mA, check also that the correct fuse is fitted for the loading.

The 240v motor requires the minimum of a 13amp, 220v power supply.
Machine Operation

Fitted with Rotopeen Flaps

Important: Connect a 3000-watt industrial vacuum system to the 38mm vacuum port; this is required to provide a cooling airflow over the tungsten carbide tips of the Rotopeen Flaps, and for the containment of airborne nuisance dust.

A Trelawny recommended HEPA filtered vacuum system is available, which will contain 99.97% (DOP) of all airborne when removing toxic or contaminated products.

Important: check that the Rotopeen shroud as been set with the retaining screws in the upper part of the slot position for flaps.

To start the electric motor PPT fitted with Rotopeen flaps, ensure that both rollers are in constant contact with the surface being prepared, on electric motors depress the switch fully, and start to move the machine slowly over the work surface.

The switch can be locked in the on position.

To start the air motor PPT fitted with Rotopeen flaps, ensure that both rollers are in constant contact with the surface being prepared.

With tools fitted with a safety lever, slide the outer sleeve down the lever and depress the lever towards the body and start to move the machine slowly over the work surface.

The machine can be used in a backwards and forwards movement if required, each pass should be overlapped to produce a uniform finish.

It is important to keep both rollers in contact with the surface at all times, these control the correct strike height of the Rotopeen Flaps.

Do not allow the PPT to run over any protrusions (Bolts, rivets or weld seams etc.) or over the edge of the work surface, this will tear the flaps or damage the tungsten carbide tips and can create a dangerous working condition.

The resulting damage to the flaps or machine will not be covered under warranty.

To stop the machine simply press the rear of the switch if locked in position on electric motors or release the lever on air motors.

Fitted with Cutter Drum

To start the air motor PPT fitted with a cutter drum, ensure that only the rear roller is in contact with the surface being prepared and that the cutters are not in contact with the surface.

Important: check that the Rotopeen shroud as been set with the retaining screws in the lower part of the slot position for drum use.

For tools fitted with a safety lever, slide the outer sleeve down the lever and depress the lever towards the body.

Once up to speed, slowly start to lower the cutter drum until contact is made with the surface.

Apply only sufficient pressure to prevent the tool from bouncing.

The machine can be use in a backwards and forwards movement if required, each pass should be overlapped to produce a uniform finish.

Please note: Only the rear roller is in contact with the surface being prepared when using a cutter drum.

See Cutter Types & Applications for advice on cutter recommendations.

To stop the machine simply release the lever.

Complete a small area observing the performance; inspect the finish produced.

Nuisance dust can be removed by connecting an industrial vacuum cleaner (3000 watts) to the 38mm port at the rear of the machine.

Use a Trelawny recommended HEPA filtered vacuum system during the removal of toxic or contaminated products, these will contain at source of production 99.97% of all airborne dust down to 0.3 microns (DOP).

Changing Rotopeen Hub or Cutter Drum

Turn off and stop the Peening Prep Tool (PPT), making sure the cutter drum has come to a complete stand still.

Whether electric or air powered, disconnect the machine from its power source.

Remove the M8 bolt, or if fitted the earlier ¼ UNC bolt (62) from the side plate (61C) using a 13mm or 7/16" AF spanner respectively, and slide the plate from the PPT housing.

Air Motor

Insert the supplied spanner between the air motor and Rotopeen hub or drum and locate onto the spindles spanner flats to lock it.

For Rotopeen hubs, insert a ¼"AF Allen key into the end of the hub and unscrew in an anti-clockwise direction.

If fitted with a drum, a suitable bar inserted between the cutters and turned in an anti-clockwise direction should break the bond.

If it has been in situ for some time it may require a light tap on the cutters from a soft face hammer to release the drum.

Important: Check that the Rotopeen shroud as been set with the retaining screws in the higher slot position for flaps use and in the lower position for drum use.

Top of slot for flaps

Lower part of slot for drums.

Rotopeen Flap & Cutter Replacement

The removal of the Rotopeen or star cutter hub is slightly different between the electric motor and air motor.

See the previous section on Changing Rotopeen Hub or Cutter Drum for instructions.

Rotopeen Flaps Replacement

With the hub assembly (71) removed from the drive spindle, slide the pins (72) and flap (73) assembly from the six slots.

The retaining pins have two different length shoulders, these have been designed to stagger the flaps, so that alternate flaps are 6mm (¼”) offset to one another to provide a smooth overlap.

The flaps have writing on one side, these need to be fitted with the writing facing the direction of rotation, (anticlockwise as you look at the end of the spindle).

Insert a flap with the retaining pin with a long shoulder fitted in the flap, into a slot from the threaded hole side of the hub.

Important: Check that the Rotopeen shroud as been set with the retaining screws in the higher slot position for flaps use and in the lower position for drum use.
MAINTENANCE

The strap may need to be pinched together with the fingers close to the pin in order for the assembly to slide into the slot.

Fit the next flap and pin with a short shoulder into the next slot ensuring that the flaps are staggered.

Once the hub has been filled with alternating flaps check that all pins are fully located.

Cutter Replacement

With the drum removed from the drive spindle, using two 7/16" AF or 11mm spanners, remove the two bolts and nyloc nuts retaining the end plate on the drum.

At the opposite end of the drum there are four small holes, a pin or punch can be inserted in to the hole to push the cutter axle out of the drum.

Inspect the cutter axle for any wear and if any grooving has taken place or the ends of the axles have reduced in diameter, replace, all axles.

Check the drum cutter axle location holes for wear.

If a new cutter axle is loose in the location holes or if the holes appear to be elongated, replace the drum and fit new cutter axles.

To replace the cutters stand the drum without the cutter axles in situ, and with the threaded hole to the top.

Make a stack of star or beam cutters, and slide into the drum, secure with a cutter axle.

Repeat with the other three axles. Replace the end plate and using two 7/16" AF or 11mm spanners, secure using new bolts and nyloc nuts (80).

Refitting the hub or drum requires no more than screwing on to the spindle and nipping against the flange, the hub or drum will tighten sufficiently in normal use.

Servicing electric motor

Trelawny SPT Ltd or an authorised customer service centre may only carry out warranty repairs.

The PPT electric motor features cut-off carbon brushes. When the wear limit of the carbon brushes has been reached, the electric motor will stop automatically.

When the PPT is in use the carbon brushes may be seen sparking through the rear ventilation slots.

Regularly blow out the housing interior through the ventilation slots with dry, low-pressured (2 bar/30 psi) compressed air.

If excessive sparking from the brushes occurs, switch off the electric motor immediately and take it to an authorised customer service centre.

Note: If the PPT has been used with the trigger locked off and a power cut occurs, the tool will not start again until the locked button has been released.

TROUBLE SHOOTING

<table>
<thead>
<tr>
<th>FAULT</th>
<th>CAUSE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>High wear rate of flaps</td>
<td>Both rollers have not been in contact with the surface.</td>
<td>Ensure operators maintain correct impact height for flaps.</td>
</tr>
<tr>
<td>Flaps have burnt/melted</td>
<td>Air pressure too high or too low.</td>
<td>Check air pressure is correct at 90 psi.</td>
</tr>
<tr>
<td>No load RPM</td>
<td>Motor speed too fast or too slow.</td>
<td>Check that RPM is correct at 2100rpm for Air Motors and 2000rpm for Electric.</td>
</tr>
<tr>
<td>Servicing electric motor</td>
<td>Motor speed too low or too slow.</td>
<td>Check that RPM is correct at 2000rpm for Air Motors and 2000rpm for Electric.</td>
</tr>
<tr>
<td>Flaps have been started up then applied to surface</td>
<td>Air pressure too high or too low.</td>
<td>Check air pressure is correct at 90 psi.</td>
</tr>
<tr>
<td>Flaps have worn on front or rear edge of flaps</td>
<td>Air pressure too high or too low.</td>
<td>Check air pressure is correct at 90 psi.</td>
</tr>
<tr>
<td>Flaps have burnt/melted around carbide tips</td>
<td>Vacuum not attached or poor vacuum flow.</td>
<td>Connect a 3000-watt industrial vacuum system and ensure that the vacuum hose is clear.</td>
</tr>
</tbody>
</table>

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>2° Air</th>
<th>2° Electric</th>
<th>4° Air</th>
<th>4° Electric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (inc Motor)</td>
<td>170mm/6.69&quot;</td>
<td>195mm/6.66&quot;</td>
<td>220mm/6.69&quot;</td>
<td>250mm/9.840&quot;</td>
</tr>
<tr>
<td>Height</td>
<td>150mm/5.907&quot;</td>
<td>170mm/6.69&quot;</td>
<td>150mm/5.907&quot;</td>
<td>170mm/6.69&quot;</td>
</tr>
<tr>
<td>Working distance from wall (Hub side)</td>
<td>55mm/2.165</td>
<td>55mm/2.165</td>
<td>55mm/2.165</td>
<td>55mm/2.165</td>
</tr>
<tr>
<td>Working distance from wall (Motor side)</td>
<td>85mm/3.345&quot;</td>
<td>115mm/4.530&quot;</td>
<td>85mm/3.345&quot;</td>
<td>115mm/4.530&quot;</td>
</tr>
<tr>
<td>Weight (Flaps)</td>
<td>4.29kg/9.38lbs</td>
<td>4.68kg/10.32lbs</td>
<td>4.88kg/10.88lbs</td>
<td>5.23kg/11.53lbs</td>
</tr>
<tr>
<td>Weight (Star Cutters)</td>
<td>5.77kg/12.78lbs</td>
<td>4.58kg/10.09lbs</td>
<td>6.42kg/14.15lbs</td>
<td>6.62kg/14.51lbs</td>
</tr>
<tr>
<td>Power requirements</td>
<td>30dm³g/900ps (1/4HP Set motor)</td>
<td>110v/220v/50/60Hz</td>
<td>30dm³g/900ps</td>
<td>110v/220v/50/60Hz</td>
</tr>
<tr>
<td>Power unit output</td>
<td>1.2hp</td>
<td>1300 watts-11.4 / 6.2amp</td>
<td>1.2hp</td>
<td>1300 watts-11.4 / 6.2amp</td>
</tr>
<tr>
<td>No load RPM</td>
<td>2100</td>
<td>2000</td>
<td>2700</td>
<td>2000</td>
</tr>
<tr>
<td>Cutting width (Flaps)</td>
<td>55mm/2.165</td>
<td>55mm/2.165</td>
<td>110mm/4.330</td>
<td>110mm/4.330</td>
</tr>
<tr>
<td>Cutting width (Star Cutters)</td>
<td>50mm/2.00&quot;</td>
<td>N/A</td>
<td>100mm/4.00&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>Vibration (Aeq)</td>
<td>2° Air</td>
<td>2° Electric</td>
<td>4° Air</td>
<td>4° Electric</td>
</tr>
<tr>
<td>Fitted with Flaps</td>
<td>Primary hand position (Trigger position)</td>
<td>1.70m/s² (k)</td>
<td>3.69m/s² (k)</td>
<td>4.3m/s² (k)</td>
</tr>
<tr>
<td>Secondary position</td>
<td>3.69m/s² (k)</td>
<td>4.59m/s² (k)</td>
<td>4.5m/s² (k)</td>
<td>4.5m/s² (k)</td>
</tr>
<tr>
<td>Fitted with Star Cutters</td>
<td>Primary hand position (Trigger position)</td>
<td>3.59m/s² (k)</td>
<td>3.0m/s² (k)</td>
<td>N/A</td>
</tr>
<tr>
<td>Secondary position</td>
<td>9.89m/s² (k)</td>
<td>4.7m/s² (k)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Noise

Noise LpA (Pressure Level) | 78.0dB(A) | 76.0dB(A) |
Noise LWA (Power Level) | 91.8dB(A) | 90.45dB(A) |
EXPLODED VIEW

2” PPT & Air Motor
shown in diagram

See Spare Parts list for
Electric Motor Configuration
A separate Flex electric motor service layout may have been supplied with this Operation and Maintenance manual, it is supplied for use by trained electrical engineers and authorised repair shops only.

This product meets the requirements of the following European Directives:
- 2006/42/EC - (Safety Directive)
- 2006/95/EC - (Low Voltage Directive)
- 2004/108/EC - (Electromagnetic Compatibility)

It meets the requirements of the following Standards:
- EN50144-1:2001
- EN55014-1:1997
- EN61000-3-2:1995
- EN61000-3-3:1995
- EN55014-2:1997

Noise level measured in accordance with EN ISO 15744: 2002
Vibration measured in accordance with EN ISO 28927-3:2012 and EN ISO 20643:2005

NOTE: The above vibration levels were obtained from tri-dimensional measurements. These values are at least 1.4 times larger than the values obtained from single axis measurements.

Trelawny Surface Preparation Technology 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.

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The use of non-Trelawny spare parts invalidates the warranty.