



## 2" & 4" ROTOPEEN PEENING PREPERATION TOOLS



## OPERATION & MAINTENANCE



**TRELAWNY**<sup>TM</sup>

SURFACE PREPARATION TECHNOLOGY

[www.trelawnyspt.com](http://www.trelawnyspt.com)

# 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 5.5bar (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

### ROTOPEEN 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 than 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 clear 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.

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

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 Rotopeen 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 2.5mm<sup>2</sup> 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.

# OPERATION

## 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 air borne nuisance dust.

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

**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 tool 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.

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 air borne 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 ¼" UNC bolt (62) from the side plate (61C) using a 7/16" AF or 11mm spanner, 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.

### Electric Motor

On the back of the electric motor is a small button, depress this lightly and slowly rotate the hub or drum until it engages and locks, then hold in.

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

While the hub is removed, check that the vacuum port is free from blockages and that the sealing strip at the base of the vacuum port is in good condition. Replace any damaged, worn or suspect parts.

Ensure that all the bolts are tight at all times, recheck at regular intervals.

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

## 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.

# 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.

## Servicing

A Stripping and Assembly tool kit (Part Number 312.A529) is available for the air motor which includes the stripping and assembly instructions.

A suitable revolution counter may also be required to check the spindle speed once repairs have been completed.

A competent person should only carry out maintenance, in a suitably equipped workshop.

# TROUBLE SHOOTING

FAULT	CAUSE	ACTION
High wear rate of flaps	Both rollers have not been in contact with the surface.	Ensure operators maintain correct impact height for flaps.
	Low air pressure or low air supply.	Correct air pressure is 90psi and requires a minimum of 30cfm, check hose bore 13mm min.
	Flaps fitted wrong way to direction or rotation.	Ensure the writing on the flaps face towards the vacuum take-off.
Flaps straps have torn	Tool has been run on the edge of steelwork or over welded joints, or over rivet heads etc.	Ensure flaps are only used on flat surfaces.
Edges of carbide tips have worn	Tool has been started up then applied to surface.	Prior to starting ensure motor is started with both rollers in contact with surface to be worked.
	Air pressure too high or too low.	Check air pressure is correct at 90 psi.
	Motor speed too fast or too slow.	Check that RPM is correct at 2700rpm for Air Motors and 2000rpm for Electric.
Flaps have worn on front or rear edge of flaps	Air pressure too high or too low.	Check air pressure is correct at 90 psi.
	Motor speed too fast or too slow.	Check that RPM is correct at 2700rpm for Air Motors and 2000rpm for Electric.
Flaps have burnt/melted around carbide tips	Vacuum not attached or poor vacuum flow.	Connect a 3000-watt industrial vacuum system and ensure that the vacuum hose is clear.

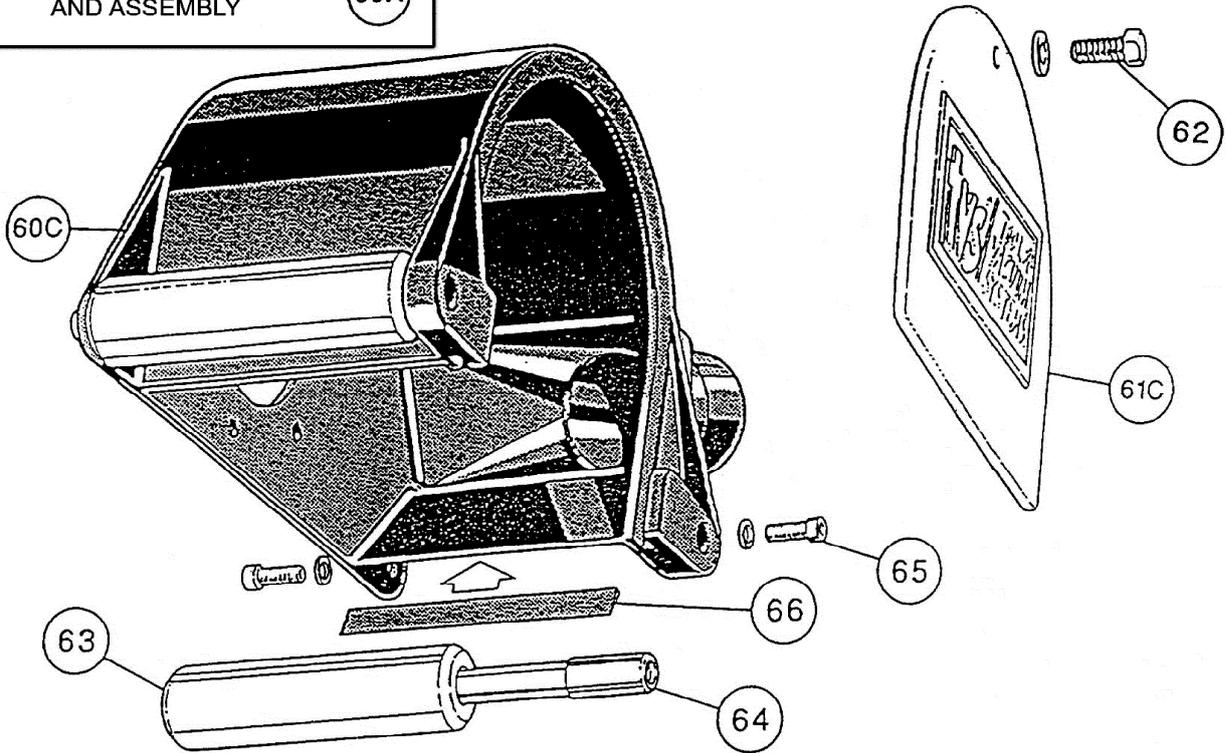
# TECHNICAL SPECIFICATIONS

Description	2" Air	2" Electric	4" Air	4" Electric
Width (inc Motor)	170mm/6.690"	195mm/8.66"	220mm/6.690"	250mm/9.840"
Length	345mm/13.580"	420mm/16.53"	345mm/13.580"	420mm/16.53"
Height	150mm/5.900"	170mm/6.69"	150mm/5.900"	170mm/6.69"
Working distance from wall (Hub side)	55mm/2.165"	55mm/2.165"	55mm/2.165"	55mm/2.165"
Working distance from wall (Motor side)	85mm/3.345"	115mm/4.530"	85mm/3.345"	115mm/4.530"
Weight (Flaps)	4.28kg/9.5lbs	4.61kg/10.2lbs	4.89kg/10.8lbs	5.23kg/11.50lbs
Weight (Star Cutters)	5.77kg/12.7lbs		6.47kg/14.26lbs	
Power requirements	30cfm@90psi (1/4"BSP inlet)	110v/220v/50/60hz	30cfm@90psi	110v/220v/50/60hz
Power unit output	1.2hp	1300watts-11.4 / 6.2amp	1.2hp	1300watts-11.4 / 6.2amp
No load RPM	2700	2000	2700	2000
Cutting width (Flaps)	55mm/2.165"	55mm/2.165"	110mm/4.330"	110mm/4.330"
Cutting width (Star Cutters)	50mm/2.00"	N/A	100mm/4.00"	N/A
<b>Vibration (AEQ)</b>	<b>2" Air</b>	<b>2" Electric</b>	<b>4" Air</b>	<b>4" Electric</b>
Fitted with Flaps	Primary hand position (trigger position)	1.70m/s <sup>2</sup> (k)	3.6m/s <sup>2</sup> (k)	4.3m/s <sup>2</sup> (k)
	Secondary position	3.6m/s <sup>2</sup> (k)	4.5m/s <sup>2</sup> (k)	4.5m/s <sup>2</sup> (k)
Fitted with Star Cutters	Primary hand position (Trigger position)	3.5m/s <sup>2</sup> (k)		3.0m/s <sup>2</sup> (k)
	Secondary position	9.8m/s <sup>2</sup> (k)		4.7m/s <sup>2</sup> (k)
<b>Noise</b>				
Noise LpA (Pressure Level)		78.0dB(A)		76.0dB(A)
Noise LwA (Power Level)		91.8dB(A)		90.45dB(A)

# EXPLODED VIEW

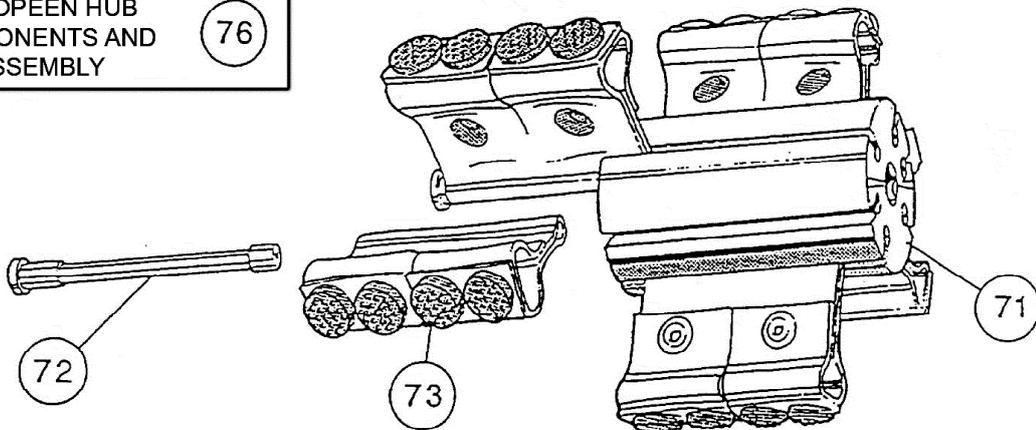
## SHROUD COMPONENTS AND ASSEMBLY

60A



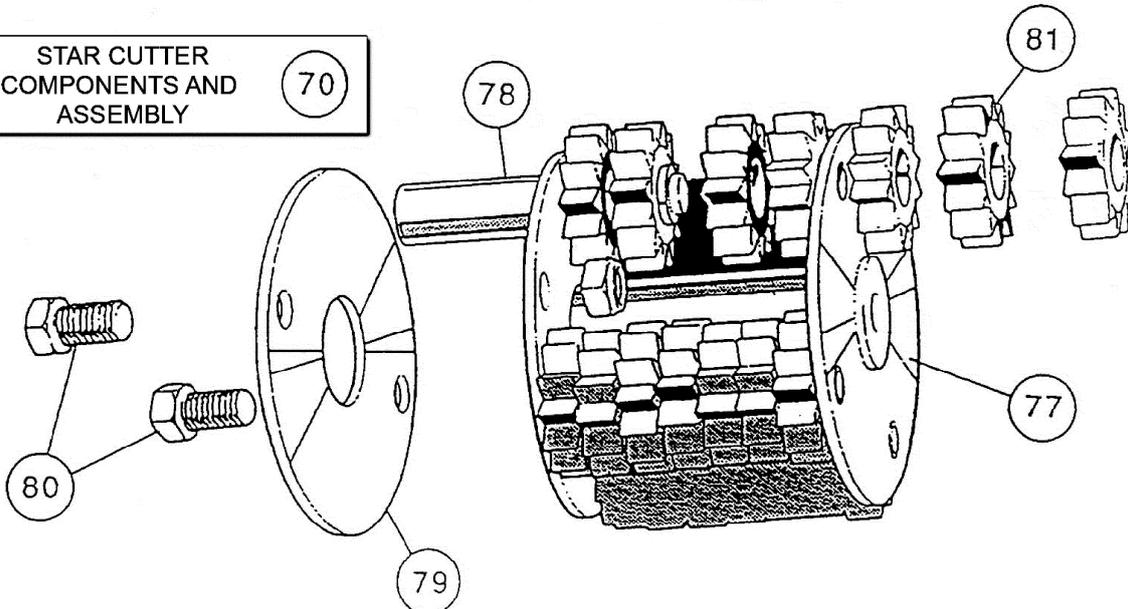
## ROTOPEEN HUB COMPONENTS AND ASSEMBLY

76



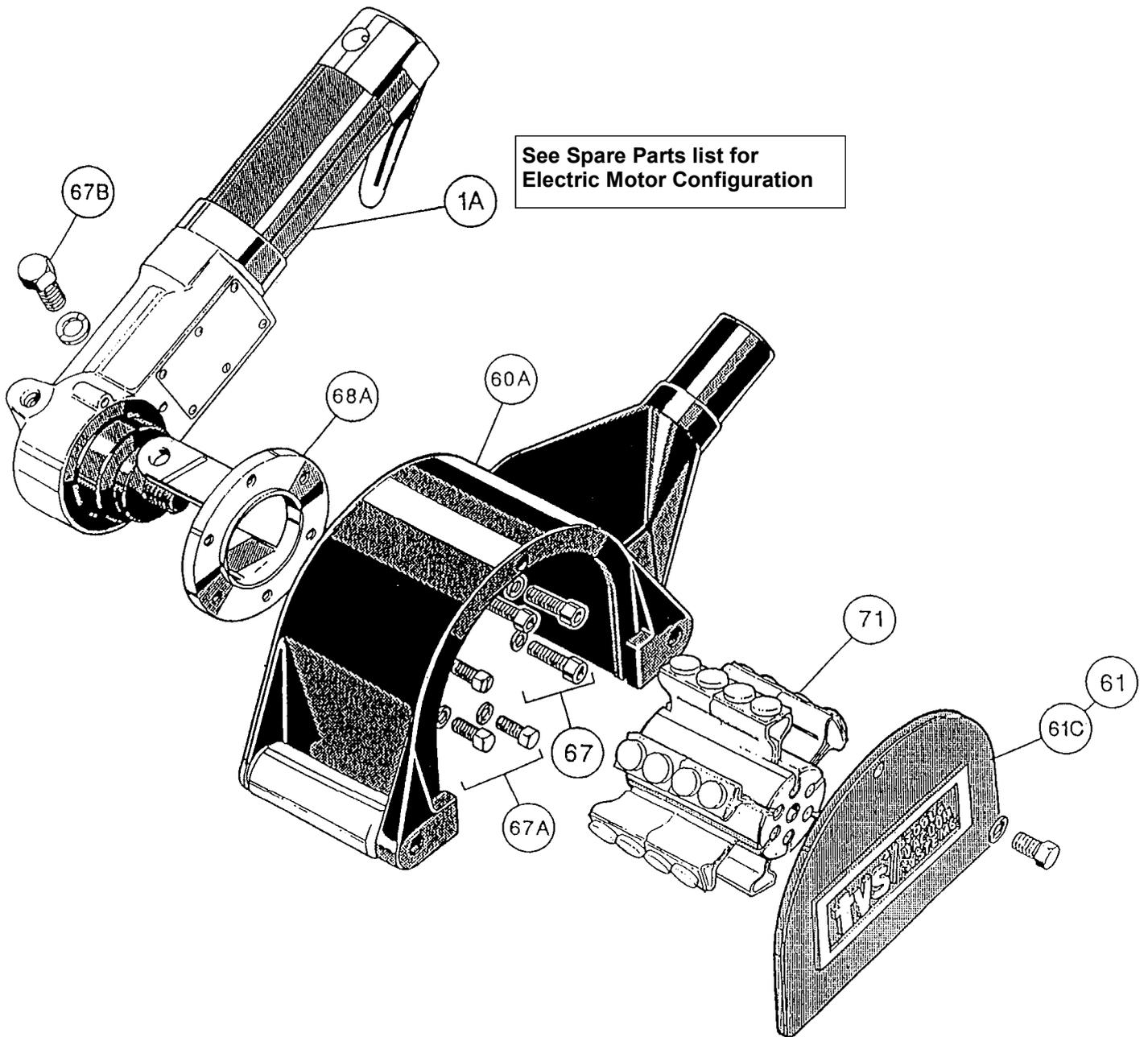
## STAR CUTTER COMPONENTS AND ASSEMBLY

70



# EXPLODED VIEW

2" PPT & Air Motor  
shown in diagram



# PARTS LIST

Item	Part No	Description	Item	Part No	Description
1A	314.ARA2	Air Motor	68A	312.D219	Collar (Air motor)
	312.1510	Electric Motor 110v		312.T200A	Collar (Electric motor)
	312.1520	Electric Motor 220v		312.2335A	Spacer
			69		<i>Not Assigned</i>
2-59		<i>Not Assigned</i>	70	438.0209	Star Cutter Hub assembly 2" includes pins
				438.0409	Star Cutter Hub assembly 4" includes pins
60A	437.0205	Shroud S/Assembly 2"	71	428.0205	Rotopeen Hub 2" includes pins
	437.0405	Shroud S/Assembly 4"		438.0405	Rotopeen Hub 4" includes pins
60C	312.Q210	Shroud body 2"	72	312.D213	Pin set (Flap retaining) 2"
	312.Q400	Shroud body 4"		312.D413	Pin set (Flap retaining) 4"
61C	312.Q201	Shroud end plate	73	312.MRPC	Rotopeen flap (Type C)
62	508.D216	Socket screw set (End Plate to Shroud)		312.MRPD	Rotopeen flap (Type D)
63	312.G200	Roller 2"	74-75		<i>Not Assigned</i>
	312.G400	Roller 4"	76	438.0205	Rotopeen Hub assembly 2"
64	312.D201	Axle set 2"		438.0405	Rotopeen Hub assembly 4"
	312.D401	Axle set 4"	77	438.0205	Star Cutter Hub 2"
65	Not sold separately	M5 Socket screw set (Rollers) - (Part of axle sets)		438.0405	Star Cutter Hub 4"
66	312.D215	2" Gasket PPT shroud (skirt)	78	312.D210	Axle (Cutter) 2"
	312.D415	4" Gasket PPT shroud (skirt)		312.D410	Axle (Cutter) 4"
67	508.D218	Socket screw (Shroud to Collar)	79	312.D211	Plate (Axle retaining)
67A	508.0205	Hex screw kit (Shroud to Collar)	80	508.D212	Hex screw set
67B	508.D221	M8 Hex screw kit (Collar to Air & Electric Motor Head)	81	312.S200	Star Cutter
				312.R200	Beam Cutter
67C	508.D230	M5 Fixing kit (Shroud to Collar - Electric Motor)			
67D	508.D235	M6 Fixing kit (Shroud to Collar - Electric Motor)		805.0140	Allen key 1/4" AF

A Stripping and Assembly tool kit (Part Number 312.A529) is available for the **air motor** which includes **stripping and assembly instructions**.

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: 98/37/EC, 89/392/EC - (Safety Directive), 73/23/EC - (Low Voltage Directive), and 89/336/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 and EN55014-2:1997

Noise level measured in accordance with EN ISO 15744: 1999  
Vibration measured in accordance with: EN ISO 28927 and EN ISO 20643

NOTE: The above vibration levels were obtained from tri-axial measurements to comply with the requirements of "The Control of Vibration at Work Regulations 2005" and to EN ISO 28927 and EN ISO 20643 series of standards. 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.

© Copyright 2009, Trelawny SPT Limited, CV31 1XT. UK All rights reserved. Any unauthorised use or copying of the contents or part thereof is prohibited. This applies to trademarks, model denominations, part numbers and drawings.

Use only genuine Trelawny spares.

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



# TRELAWNY

**SURFACE PREPARATION TECHNOLOGY**



Trelawny SPT Limited  
Trelawny House, 13 Highdown Road, Sydenham Industrial Estate,  
Leamington Spa, Warwickshire, CV31 1XT, United Kingdom  
Telephone: +44 (0)1926 883781 Fax: +44 (0)1926 450352 Email: sales@trelawny.co.uk  
Website: www.trelawnyspt.com