



## WHIRL-AWAY ROTARY SCARIFIER



## OPERATION & MAINTENANCE



# OPERATION

## Foreword

Thank you for your purchase of the TRELAWNY Whirl-away surface preparation Tool.

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 Whirl-away scarifier, 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.

**DO NOT** use this machine without the vacuum take-off/safety guard securely in position.

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

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 Whirl-away 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.

**CAUTION**  
**DO NOT USE THE WHIRL-AWAY ON SPEEDS ABOVE 3700RPM.** serious injuries may be caused to the operator and others in the vicinity.

## 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

### Star Cutters (fitted as standard)

Heat-treated steel cutters used for the aggressive removal of paint, coatings and rust from steel work, but has a shorter life span than TCT tipped Cutters. *Produces some light marking on steelwork, ideal for roughening rendering or plaster removal.*

### TCT Cutters

Heavy Duty Cutter with tungsten carbide inserts. For the removal of general paint and heavy rust or coatings from concrete and steel. *Produces small indentation marks on steelwork and a rough textured finish on concrete.*

### Solid Tungsten Carbide Cutters

Tungsten blade cutters used for shaving paint and coatings from concrete/plaster etc. *Produces a smooth surface finish. (Not recommended for steel surfaces as the tungsten may shatter)*

## Pre-Start Check (Daily)

Check all bolts and screws for tightness.

Ensure that all fittings are secure.

Check condition of hub assembly, the cutters and cutter pins.

**DO NOT** use the Whirl-away work head on grinder type motors, these can rotate at speeds of 8,000rpm to 12,000rpm and possibly more, which can cause serious injuries to the operator and others in the vicinity.

Only use polisher type motors which are

## Pre start check:

### Air models:

The Whirl-away machines are supplied with either a 2400rpm or 2700rpm air motor dependent on manufacturer.

Whirl-away work heads that are to be fitted to other manufactures air motors must have a maximum rpm of no more than 3700rpm.

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

The Whirl-away machines are supplied with a variable speed electric motor.

Whirl-away work heads that are to be fitted to other manufactures electric motors must have a maximum rpm of no more than 3700rpm.

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 cross-section area. Maximum length of cable 30 metres.

The 230v 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 230v motor requires the minimum of a 13amp, 220v power supply.

# OPERATION & MAINTENANCE

## Machine Operation

Connect a 2000-watt industrial vacuum system to the 38mm vacuum port; for the containment of air borne nuisance dust.

Trelawny recommend a 3500-watt HEPA filtered vacuum system, this will contain 99.97% (DOP test) of all air borne dust when removing toxic or contaminated coatings.

Take care to avoid tripping over or damaging the air hose or electric cables

Safe use of this tool requires a solid stance and secure foothold, the tool may be used in other postures but care must be taken to ensure the operator adopts a firm and stable position.

Maintain contact with the work surface with sufficient pressure to keep the tool from bouncing off the surface. Handled correctly the Trelawny Whirl-away will work quickly and efficiently.

Excessive operator pressure will not improve the tools efficiency but could cause premature tool failure and increase operator fatigue. It could also increase the vibration emission level.

This tool can be used flat so all cutters are in contact with the surface, this is least aggressive method and will produce a smoother surface finish, or using one side of the work head is the most aggressive method and is more effective at removing heavy rust, scale and thick coatings.

**To start the electric motor,** 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** 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.

Do not allow the Whirl-away to run over any protrusions (Bolts, rivets or weld seams etc.) or over the edge of the work surface, this will 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 on electric motors if locked in the on position or release the lever on air motors.

## Replacing Cutters

Turn off and stop the Whirl-away, making sure the work head has come to a complete stand still.

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

### Air Motor

Insert the supplied 19mm spanner in the gap between the air motor collar and the Whirl-away vacuum shroud and locate onto the spindles spanner flats to lock it.

Unscrew the workhead by turning in an anti-clockwise direction.

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 workhead.

### 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 the spindle, then hold in while unscrewing the work head by turning in an anti-clockwise direction.

While the hub is removed, check that the vacuum port is free from blockages and that the vibration mounting bush is in good condition. Also check that the brush seal is in good condition. Replace any damaged, worn or suspect parts.

### Work head

Secure rubber mounting in a soft jaw vice, holding on the steel plate.

Unscrew the centre nut and remove the cutter pin retainer.

Take note of how the cutters and spacers are assembled.

Remove the pins and cutters, replace as required.

Inspect the cutter pins for any wear and if any grooving has taken place, replace all pins.

Inspect the cutter centre holes for any excessive wear (8.2mm new), replace if excessively worn.

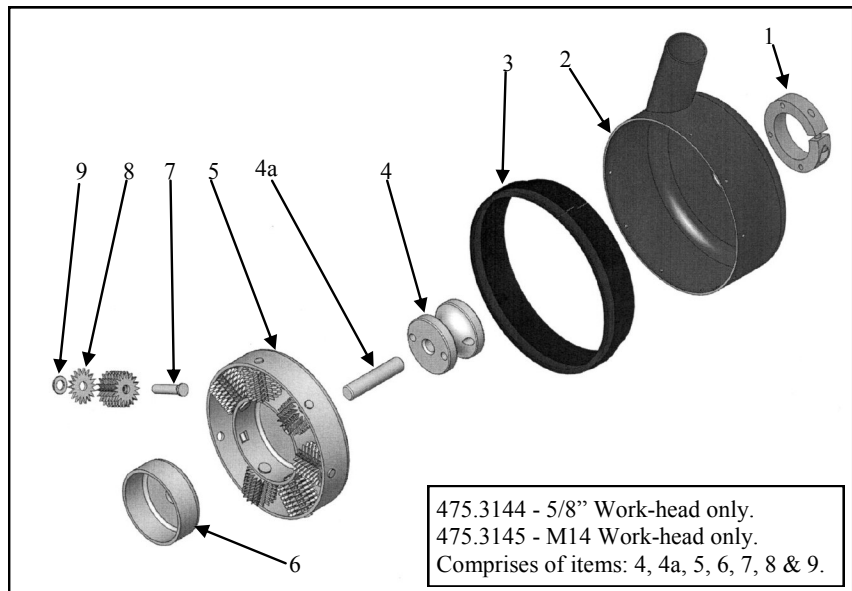
Check the drum cutter axle location holes for wear.

While the work head is removed ensure that all the screws are tight that hold the vacuum shroud onto the aluminium collar.

Re-assembly, fit a star cutter onto the pin followed by a spacer, finishing the row with a spacer.

Refit the hub applying a smear of grease onto the spindle threads. The hub requires no more than screwing on to the spindle and against the flange, the hub will tighten sufficiently in normal use.

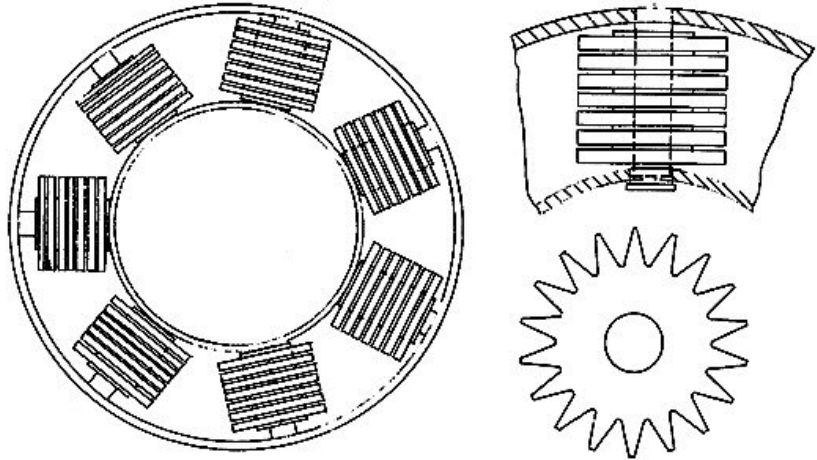
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	475.3278	41mm Collar - inc screw	4	830.3160A	5/8" Alloy mounting
	475.3280	46mm Collar - inc screw		830.3161A	M14 Alloy mounting
	475.3282	51mm Collar - inc screw	5	475.3150A	Work head body
	475.3284	61mm Collar - inc screw	6	675.3151	Pin retainer
	475.3286	74mm Collar - inc screw	7	675.3155	Pin
	314.ARA1	Air motor (Universal)	8	320.3110	Star cutter
	475.3192	Air motor collar		320.3112	TCT insert cutter
	806.0525	M5x25 screw for above		320.3114	Solid TCT cutter
			9	812.1080	Spacer washer
2	437.3165	Vacuum shroud		675.3167	Axle (TCT)
3	731.3166	Skirt (Brush seal)		812.0476	Spacer washer (TCT)



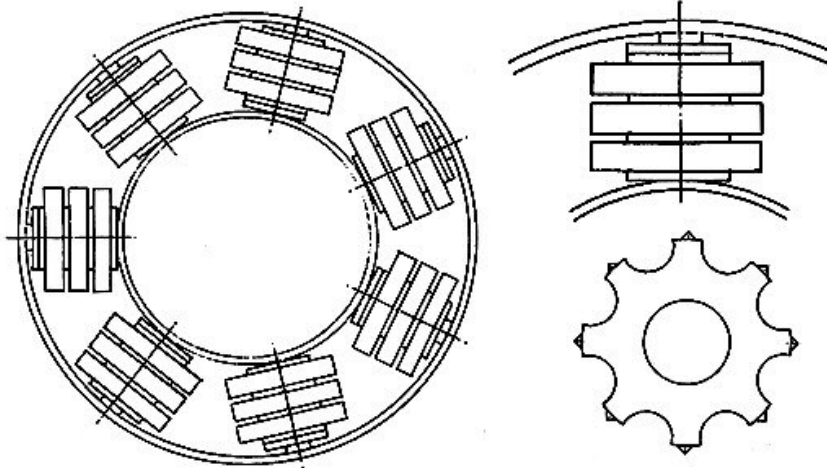
# CUTTER CONFIGURATION

Assemble the pin starting with a cutter, repeat seven times and finish the row with a single spacer.

## WHIRL-AWAY WORK HEAD WITH STAR CUTTERS



## WHIRL-AWAY WORK HEAD WITH FULL LOAD TCT INSERT CUTTERS



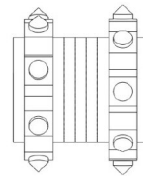
### FULL LOAD

Assemble onto the axle spacer, starting with a spacer, then a cutter followed by a spacer, repeat three times and finish the row with a single spacer. Then slide the assembly into the housing and retain with the pin.

### ECONOMY LOAD

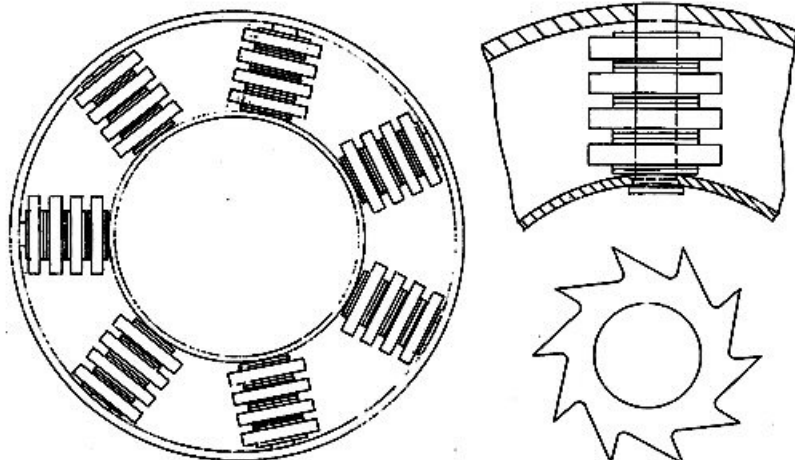
Assemble onto the axle spacer starting with a spacer, then a single cutter followed by five spacers, another cutter and finish the row with a single spacer. Then slide the assembly into the housing and retain with the pin.

### ECONOMY LOAD



Assemble onto the axle spacer starting with a spacer, then a Solid TCT Cutter followed by another spacer, repeat four times and finish the row with a single spacer. Then slide the assembly into the housing and retain with the pin.

## WHIRL-AWAY WORK HEAD WITH SOLID TUNGSTEN CARBIDE CUTTERS



# PARTS LIST

## Servicing Flex electric motor

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

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

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

When the Whirl-away is in use, the carbon brushes may be seen sparking through the rear ventilation slots of the Flex motor.

Regularly blow out the housing interior through the ventilation slots with dry, low pressure (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: (Flex Motors)

If the Whirl-away has been used with the trigger locked in the on position and a power cut occurs, the tool will not start again until the locked button has been released.

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.

# TECHNICAL SPECIFICATIONS

Description	Work Head only with vacuum shroud	Air Motor	Flex electric motor
Part number	475.3146 (M14) - 475.3147 (5/8")	175.3147	175.1349 (110v) - 175.1350 (230v)
Width (vacuum shroud)	190mm/7.5"	190mm/7.5"	190mm/7.5"
Length	240mm including vacuum take-off	390mm/15.4"	460mm/18.0"
Height	95mm	180mm/7.0"	180mm/7.0"
Working distance from wall	20mm/0.79"	20mm/0.79"	20mm/0.79"
Weight (Star cutters)		4.95kg/10.9lbs	6.3kg/13.9lbs
Weight (TCT insert cutters)		5.25kg/11.56lbs	6.6kg/14.6lbs
Weight (Solid TCT cutters)		4.85kg/10.87lbs	6.2kg/13.7lbs
Power requirements		0.79m3/min(28cfm)@90psi (1/4"BSP inlet)	110v (16amp) or 230v (13amp)
Power unit output		0.82kW (1.1hp)	1400watt
No load RPM	MAXIMUM 3700rpm	3000rpm	Min 1100rpm—Max 3700rpm
Vacuum port	38mm (1.5")	38mm (1.5")	38mm (1.5")
Vibration (AEQ)			
Steelwork (star)	Primary hand position	14.76m/s <sup>2</sup> (k)	4.72m/s <sup>2</sup> (k)
	Secondary position	8.58m/s <sup>2</sup> (k)	6.05m/s <sup>2</sup> (k)
Steelwork (TCT Tipped)	Primary hand position	16.15m/s <sup>2</sup> (k)	5.3m/s <sup>2</sup> (k)
	Secondary hand position	12.07m/s <sup>2</sup> (k)	9.65m/s <sup>2</sup> (k)
Steelwork (Solid TCT)	Primary hand position	12.55m/s <sup>2</sup> (k)	6.2m/s <sup>2</sup> (k)
	Secondary hand position	10.38m/s <sup>2</sup> (k)	9.86m/s <sup>2</sup> (k)
Concrete (star)	Primary hand position	16.7m/s <sup>2</sup> (k)	5.49m/s <sup>2</sup> (k)
	Secondary position	15.1m/s <sup>2</sup> (k)	7.41m/s <sup>2</sup> (k)
Concrete (TCT Tipped)	Primary hand position	16.13m/s <sup>2</sup> (k)	6.1m/s <sup>2</sup> (k)
	Secondary hand position	15.65m/s <sup>2</sup> (k)	10.43m/s <sup>2</sup> (k)
Concrete (Solid TCT)	Primary hand position	12.76m/s <sup>2</sup> (k)	7.97m/s <sup>2</sup> (k)
	Secondary hand position	12.73m/s <sup>2</sup> (k)	11.11m/s <sup>2</sup> (k)
Noise			
Noise LpA (Pressure Level)		78.0dB(A)	78.0dB(A)
Noise LwA (Power Level)		91.8dB(A)	91.8dB(A)

This product meets the requirements of the following European Directives: 2006/42/EC - (Machinery Directive), 2006/95/EC - (Low Voltage Directive) 2002/96/EC Waste Electrical and Electronic Equipment EN 60745 in accordance with the regulations of the directives 2004/108/EC, 2006/42/EC

Noise level measured in accordance with EN ISO 15744: 2008

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 28927-3:2012 and EN ISO 20643:2005 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.

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Use only genuine Trelawny spares.

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



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