



4" ANGLE GRINDER



OPERATION & MAINTENANCE



TRELAWNYTM

SURFACE PREPARATION TECHNOLOGY

www.trelawnyspt.com

OPERATION

Foreword

Thank you for your purchase of the TRELAWNY 4" Angle Grinder
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 Angle Grinder, 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.

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

ONLY YOUR SUPERVISOR OR AUTHORISED MAINTENANCE ENGINEER should adjust the speed control setting within the air motor; although this has been set to the optimum speed during manufacture, the speed should be checked on a daily basis.

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 angle grinder is switched off, the work head will continue to rotate briefly.

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.

Grinding Discs, Flap Wheels & Applications

Grinding Discs

851.4050 - for use on steel.

Flap Wheel

For the removal aggressive removal of paint and coatings and heavy rust from steel work, leaving a bright finish on steel work.

851.4075 - 120 Grit flap wheel
851.4080 - 60 Grit flap wheel
851.4085 - 36 Grit flap wheel

Wire Cup Brush

For the removal of light paint and coatings and rust from steel work.

851.4055 - 75mm dia - Crimped wire brush.
851.4060 - 75mm dia - Twisted knot wire brush.

Use of tool

This angle grinder is designed for use with reinforced resin bonded depressed centre grinding wheels that have a permitted rotational speed in excess of 12,000rpm.

The tool is designed for light grinding and dressing of welds, etc, but not for cutting off.

The grinder must never be used without a wheel guard fitted.

The air supply should be lubricated. It is strongly recommended that an air filter, regulator, lubricator is used, this will supply clean, lubricated air at the correct pressure to the tool.

Details of such equipment can be obtained from your supplier.

If such equipment is not used then the tool should be lubricated by shutting off the air supply to the tool, depressurising the line by pressing the trigger on the tool.

Disconnect the air line and pour into the air intake a teaspoonful (5ml) of a suitable pneumatic motor lubricating oil preferably incorporating a rust inhibitor.

Reconnect tool to air supply and run tool slowly for a few seconds to allow air to circulate the oil. If tool is used frequently lubricate on daily basis and if tool starts to slow or lose power.

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.

The air motor speed is preset at the factory to 12,000 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 10cfm of air.

The Maximum air pressure is 100psi (7bar) the air consumption will increase as the air pressure rises.

It is recommended that the compressor is capable of supplying at least 30cfm 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.

OPERATION

Putting into service

Remove plastic bung from air inlet using a pair of pliers.

Use a clean lubricated air supply that will give a measured air pressure to the tool of 6.3bar (90psi).

It is recommended a air filter/regulator/lubricator is used which can be obtained from air tool supplier.

Operating

With the grinder correctly connected to the air supply, check the speed of the grinder with an inlet pressure of 100 psi/7.0 bar measured at the tool inlet. Check with a calibrated tachometer.

Check that the guard is in position and securely fixed.

Check that the grinding wheel is of correct dimensions, is not cracked or chipped and has a permitted speed rating higher than the maximum permissible running speed of the grinder which is 12,000 RPM.

Check that item (5) disc receiver is the correct type as parts list and is screwed tightly to the shaft and locates the bore of the grinding wheel on the spigot of the disc receiver and screw on disc nut item (4) using the spanners provided.

Do not over tighten as this could crack the wheel. It should be tight enough to prevent wheel spin off when the air supply is shut off.

When first starting the grinder with a new or changed wheel fitted, the grinder should first be started in a protected area, i.e. such as under a heavy bench well away from other persons and run for one minute.

This will provide protection if the wheel should break because of a fault that was not visibly detected

Always use eye protection and wear protective gloves if there are sharp edges in the working area.

The tool and the grinding process can create a noise level such that ear protectors should be worn.

If the grinding process creates dust then use a suitable breathing mask.

Check that the material being worked will not cause harmful dust or fumes. If this is so then special breathing apparatus may be required. Seek advice before starting work.

If the grinder vibrates when first fitting the wheel or during use, remove from service immediately and arrange for the fault to be corrected before continuing to use.

Do not apply excessive pressure as this will reduce the cutting efficiency.

Apply light loads and allow the wheel to cut.

Handle the grinder with care.

If the grinder is dropped, carefully examine the wheel for damage and replace if necessary.

Start the machine as if for the first time of fitting a wheel, i.e. under a bench.

Make sure the object to be ground is in a firm fixed position.

Dismantling & Assembly Instructions

Disconnect tool from air supply.

Grip gear shaft (11) with spanner (41) and insert spanner (40) into the holes in disc nut (4), unscrew disc nut (4) and take off grinding disc (34) and disc receiver (5), remove 4 off screws (37) and take off disc cover (3), retainer (7) and gasket (8).

Pull out the drive shaft assembly from body (1). Unscrew grip (6) from body (1) and remove 2 off screws (16) and take off exhaust cover (48).

Remove spacer (14).

Support bearing (14) and tap the non threaded end of the gear shaft (11) to drive it through the bearing (14).

Take off retaining ring (13) from gear shaft (11) and support bearing (9) on the threaded shaft side and press the non threaded end of gear shaft (11) through the assembly to separate gear shaft (11), key (12), bearing (9), bevel gear (10) and wave washer (43).

By holding body (1) in a vice fitted with soft jaws the control head assembly may be removed from body (1) by unscrewing lock ring (50). It is then possible to pull out the motor and governor assembly from the body (1).

Pull off pinion assembly from motor assembly and press apart pinion (15) and bearing (18).

Grip the front plate (20) by hand and with a non metallic or soft metal (lead or aluminium) hammer tap the splined end of rotor (24) to drive the rotor and the remainder of the motor and governor assembly through the front plate and bearing assembly.

Take off the cylinder (23) noting its orientation for reassembly and take out 4 off rotor blades (25) from rotor (24). Spring pin (22) may be pulled out of cylinder (23) if a replacement is required.

Grip rotor (24) in a vice with soft jaws and unscrew the governor assembly from the rotor - left hand thread.

Support the rear end plate (26) in a piece of tube with a bore as close as possible to the maximum diameter of the rotor and very carefully so as not to damage the thread, tap the rotor through the rear end plate (26) and bearing assembly.

With a suitable punch tap out bearing (17) from rear end plate (26) and bearing (17) from front plate (20).

To dismantle the governor assembly first unscrew adjust screw (42) assembly.

Take off spring (28). Drive out 2 off spring pins (47) and take out 8 off pendulums (45) from governor (44).

When removing the pendulums take special note of the orientation to the governor (45) to ensure they are fitted the same way on reassembly.

This is very important.

Grip valve housing (56) in a vice and remove O-ring (39) from lock ring (50).

Drive out pin (58) and take off safety throttle lever (60).

Do not dismantle the throttle lever (60). Unscrew bushing (57).

Unscrew valve nut (52) and remove with O-ring (53), spring (54), valve (59) and O-ring (55).

Unscrew coupling nut (51) - left hand thread - from valve housing (56) and unscrew lock ring (50) from coupling nut (51) and unscrew lock ring (50) from coupling nut (51).

MAINTENANCE

Reassembly

Clean all parts and examine for wear.

Use only distributor or manufacturer supplied spare parts.

Particularly examine O-rings, bearings and gears. Coat all parts in a pneumatic tool lubricating oil, one preferably containing a rust inhibitor.

Grease bearings and gears with a molybdenum or lithium based general purpose grease.

Reassemble in the reverse order.

For the motor make sure that the end plates that abut the cylinder are free from burrs and sharp edges and if necessary lap on a flat fine grade of abrasive paper.

Press bearing (17) into rear case (26) and support the inner race of bearing (17) and press the non splined end of rotor (24) into the assembly.

Tap the rotor relative to the rear case and bearing assembly until a clearance of approx. 0.0025" (0.065mm) is achieved between the rotor and the rear case.

Ensure the rotor spins freely before assembling the rest of the motor assembly.

This machine has a speed controller or governor, parts (21), (28), (42), (44), (45) and (46).

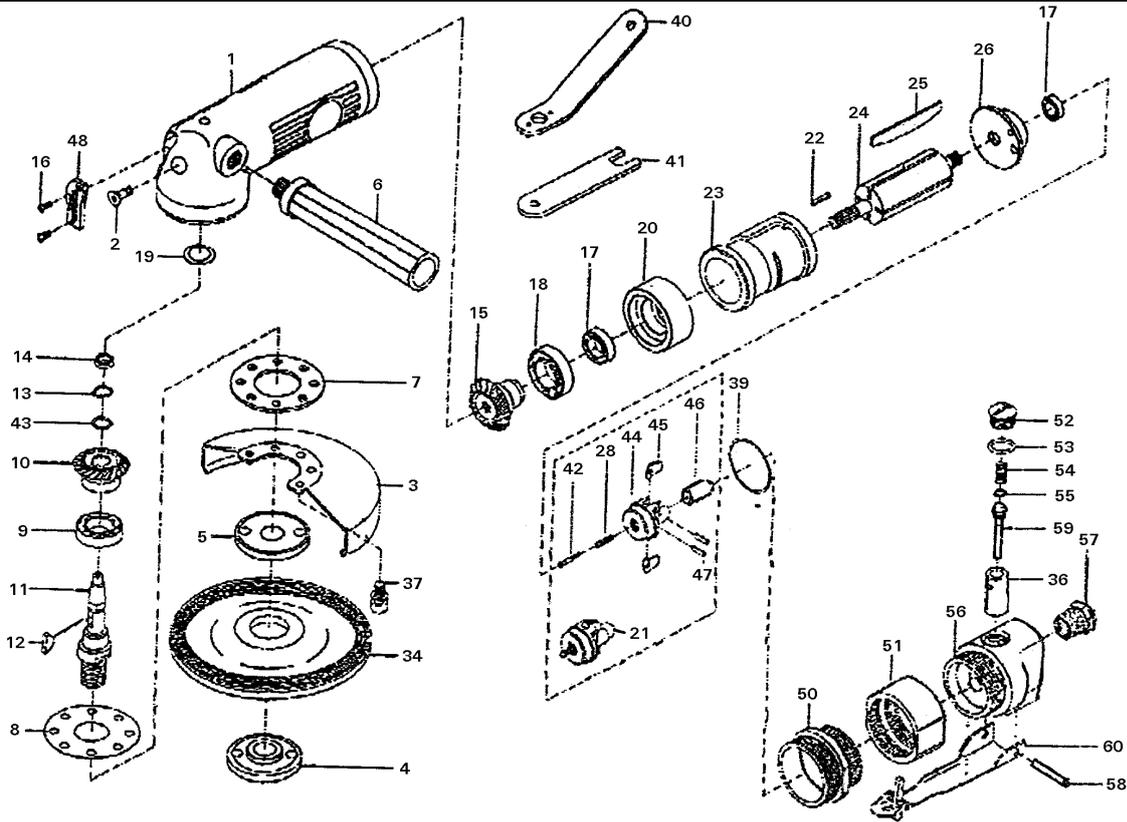
The correct setting of this speed controller is critical to the safety of the tool and should only be carried out by a trained competent person.

The speed is set by assembling the speed controller, measuring the output spindle gear shaft (11) speed with a calibrated tachometer.

Adjustment to the spindle speed can be made by rotating adjust screw (42).

The speed of the grinder running free with an air inlet pressure of 100 psi (7 bar) measured at air inlet (57) must not exceed 12,000 RPM.

EXPLODED VIEW



TECHNICAL SPECIFICATIONS

Description	4" Air
Weight	1.76kg/3.87lbs
Spindle dia	M10
Power requirements	10cfm@90psi (1/4"BSP inlet)
Maximum air pressure	7 bar (100psi)
No load RPM	12,000 RPM
Recommended hose bore - to a max length 10 metres	10mm (3/8")
Vibration (AEQ)	
Primary hand position (trigger position)	5.1m/s ² (k)
Test method in accordance with ISO standards 8662/1 & 8662/4	
Noise	
Noise LpA (Pressure Level)	82.9dB(A)
Test method in accordance with Pneurop test code PN8NTC1 & ISO Standard 3744	

SAFETY RULES

Safety Rules for a Grinder

- 1) Read all the instructions before using this tool. All operators must be fully trained in its use and aware of these safety rules.
- 2) Do not exceed the maximum working air pressure.
- 3) Use personal protective safety equipment.
- 5) If the tool appears to malfunction remove from use immediately and arrange for service and repair.
- 6) If the tool is used with a balancer or other support device ensure that it is fixed securely.
- 7) Always keep hands away from the working attachment fitted to the tool.
- 8) The tool is not electrically insulated. Never use the tool if there is any chance of it coming into contact with a live electrical source.
- 9) Always when using the tool adopt a firm footing and/or position and grip the tool firmly to be able to counteract any forces or reaction forces that may be generated whilst using the tool.
- 10) Use only correct spare parts. Do not improvise or make temporary repairs.
- 11) Do not lock, tape, wire, etc. the on/off valve in the run position. The trigger/lever etc. must always be free to return to the 'off' position when it is released.
- 12) Always shut off the air supply to the tool, and depress the trigger/lever etc. to release air from the feed hose before fitting, adjusting or removing the working attachment.
- 13) Check hose and fittings regularly for wear. Replace if necessary. Do not carry the tool by its hose and ensure the hand is remote from the on/off control when carrying the tool with the air supply connected.
- 14) Take care against entanglement of moving parts of the tool with clothing, ties, hair, cleaning rags, etc. This will cause the body to be drawn towards the tool and can be very dangerous.
- 15) Users will adopt safe working practices and observe all relevant legal requirements when installing, using or maintaining the tool.
- 16) Do not install the tool unless an easily accessible and easily operable on/off valve is incorporated in the air supply.
- 17) Take care that the tool exhaust air does not cause a problem or blows on another person.
- 18) Never lay a tool down unless the working attachment has stopped moving.
- 19) A grinding wheel should only be fitted by a competent person trained to do so. The wheel must be of the correct size and speed rating.
- 20) Check the speed of the grinder at least once per week, if it is in regular use, with an accurate tachometer.
- 21) The tool must only be used with the grinding wheels as set out in section "Use of the Tool" and shown on parts list. Never fit any other device.
- 22) Carry out the instructions as set out in "Putting into Service".
- 23) Many countries have local or national rules re the use and fitting of grinding wheels. Make sure such rules are observed.
- 24) Use a barrier to prevent sparks causing a hazard to the operator, any other person or anything within the vicinity of the sparks.
- 25) If a wheel guard becomes damaged or has withstood a wheel breakage, the guard must be changed.
- 26) Do not use chipped or cracked grinding wheels.
- 27) Always wear impact resistant eye protection.
- 28) Use only the disc plates, Items (4) and (5) provided with the grinder for locating and clamping the wheel. Never use substitutes. Use the paper blotter fixed to the wheel as this ensures even tightness when the wheel is secured.
- 29) Tighten the wheel plates sufficiently to prevent wheel spin off when the grinder is turned off. Do not tighten excessively as this may crack the wheel.
- 30) The noise from the tool or the process noise of the grinding operation may be such that hearing protection should be worn.
- 31) Avoid inhaling dust from the grinding process. Wearing of a breathing mask is recommended. Grinder certain materials may mean that special breathing precautions are necessary. Seek advice before using the tool.
- 32) Always ensure that the work piece is firmly supported so that it cannot move during the grinding process.
- 33) If the grinder is dropped do not use unless the wheel is first checked for damage by a competent person.
- 34) When not in use the grinder should be stored in a safe place where it will not be damaged. If a tool has not been used for a period of time check the tool as for the first time of using.
- 35) Be aware that if the grinding process causes high vibration, special precautions should be taken.
- 36) The operator should be aware that the grinding wheel will continue to rotate after the power supply has been shut off. This could cause a hazard.
- 37) Always store grinding wheels in accordance with the manufacturer's instructions.
- 38) Check frequently that the spindle thread has not become damaged or worn.
- 39) Always ensure that the grinding wheel has a higher permissible running speed to the speed of the grinder.

PARTS LIST

Ref	Part No	Description
1	370.25001A	Body
2	370.250002	Screw
3	370.250003	Disc cover
4	370.250004	Disc nut
5	370.250005	Disc receiver
6	370.250006	Handle
	370.5G619753	Vibration reduced handle
7	370.250007	Retainer
8	370.250008	Gasket
9	370.250009	Ball bearing
10	370.250010	Bevel gear
11	370.250011	Gear shaft
12	370.250012	Key
13	370.250013	Retaining ring
14	370.250014	Ball bearing
15	370.250015	Pinion gear
16	370.250016	Screw (2)
17	370.250017	Ball bearing (2)
18	370.250018	Ball bearing
19	370.250020	Spacer
20	370.250021	Front plate
21	370.832H01	Governor assembly
22	370.250024	Sprint pin
23	370.250025	Cylinder
24	370.250026	Rotor
25	370.250027	Rotor blades (4)
26	370.250028	Rear plate
28	370.250030	Spring

Ref	Part No	Description
34	851.4060	75mm twisted knot cup brush
	851.4050	Disc wheel (For use on steel)
	491.4050	Pack of 5 x Disc wheel
	851.4075	120grit Flap wheel
	851.4080	60grit Flap wheel
	851.4085	36grit Flap wheel
36	370.250061A	Valve bushing
37	370.250039	Cap screw (4)
39	370.250041	O'Ring
40	370.250042	Disc spanner
41	370.250043	Stop spanner
42	370.250044	Adjuster screw
43	370.250045	Wave washer
44	370.250046	Governor
45	370.250047	Pendulum (8)
46	370.250048	Plunger
47	370.250049	Spring pin (2)
48	370.250050	Exhaust cover
50	370.250052	Lock ring
51	370.250053	Coupling ring
52	370.250054	Valve screw
53	370.250055	O'Ring
54	370.250056	Valve spring
55	370.250057	O'Ring
56	370.250058	Valve housing
57	370.250059	Hose adaptor
58	370.250080	Spring pin
59	370.250061	Valve pin
60	370.250062	Complete lever assembly

Trelawny tools are thoroughly tested under specified conditions in accordance with applicable internationally recognised standards. When a tool is used on site the conditions may not be the same as those used in our tests

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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