



®

LONGHORN



REVOLUTION

GRINDER

INSTRUCTION MANUAL

CONTENTS

INTRODUCTION

These instructions must be read by any person intending to use or maintain this machine.

PURPOSE OF USE

This equipment is expressly designed for the sharpening of combs and cutters that are used in shearing handpieces.

All maintenance should be carried out by suitably trained personnel.

CONTENTS

Safety Information	3
What's Included	4
Grinder Set Up	5
Setting Grinding Papers	6-7
Fitting Discs	8
Pendulum Set Up	9-10
Grinding	11-13
Grinder Care	14
Technical Drawing	15
Parts List	16-17
Wiring Diagram	18
Specification	19



Improper use or incorrect set up of this machine can lead to serious injury.

- It is recommended that a circuit protection device such as an RCD or GFCI is used with this machine.
- Any person operating this equipment must be competent to do so.
- Adequate PPE should be worn at all times whilst the machine is in operation. Eye, hearing and respiratory protection are essential.
- The machine should be used in a dry and tidy environment.
- Before use ensure that the grinder is set up correctly and that the safety guards are in place.
- Always check that the nuts are tight and the discs are secure before turning the grinder on.
- Ensure that the grinding papers are well adhered to the grinding discs and that there are no air bubbles or loose edges.
- Do not use grinding papers that are heavily worn, damaged or too big.
- Disconnect the grinder from the power supply before carrying out any maintenance.
- Never leave the grinder running unattended.
- Only use the grinder on a firm, level surface where it cannot move.
- Never wear loose clothing while using the grinder. Tuck away loose cords on hoodies etc. and tie back long hair.
- The machine should only be used in a well ventilated area - ideally with mechanical extraction.

WHAT'S INCLUDED

LIST OF CONTENTS

- **1 x Grinder Motor Unit pre-fitted with:**
 - *2 x Discs*
 - *2 x Outer Guards*
 - *2 x Disc Washers*
 - *1 x M24 Left Hand Nut*
 - *1 x M24 Right Hand Nut*
- **1 x Pendulum**
- **1 x Clamp Plate**
- **1 x Clamp Bolt, Nut and Pair of Washers**
- **1 x Longhorn Grinding Paper Multi-Pack**
(5 x 40 grit & 5 x 80 grit)
- **1 x 250ml ShearGrip® Adhesive and Applicator**
- **1 x 36mm Spanner**

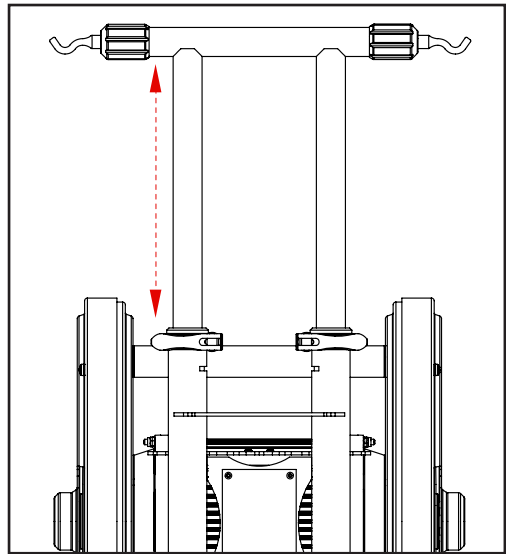


LOCATION

- The grinder should be positioned on a sturdy, flat and level surface, to ensure that it does not move during use.
- The grinder should be positioned on a work surface at a height to suit the user. It is recommended that when sharpening combs and cutters your forearm is close to level, so when holding the pendulum you are pushing straight towards the grinder disc.

PENDULUM SUPPORT

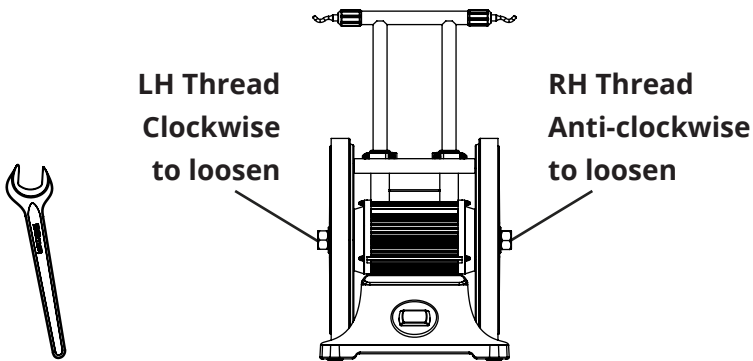
- The Pendulum Support height can be adjusted between transport and operational height by opening the two quick release clamps at the back of the grinder and lifting the cross bar of the Pendulum Support.
- The Pendulum Support should be set at the highest point in its travel when in use.
- Make sure the Pendulum Support is fully extended and the clamps are closed securely, so that it cannot move up or down before setting up your pendulum.



SETTING GRINDING PAPERS

PREPARATION

- Remove the two outer guards, using a screwdriver to unscrew the four fixings on each.
- Using the spanner provided, unscrew the motor shaft nuts and remove the washers. Please note, the right side is a standard right-handed thread, but the left side is a left-handed thread.



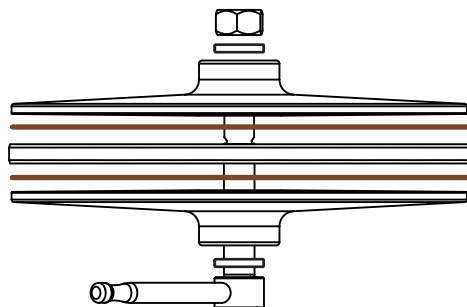
- Begin to remove the discs by pushing on them with your fingers through the access holes in the inner guards, then pulling from the front once there is room to get your fingers between the disc and the guard. Take care to use even pressure across the disc, to avoid damaging the disc or shaft.
- If replacing worn grinding papers, ensure that the discs are completely free of contaminants before applying new papers. Degrease with hot soapy water and a brush if necessary. Any residue left on the disc will cause the new grinding papers to wear unevenly, leaving an uneven finish on the combs and cutters, and could result in the paper tearing.

SETTING GRINDING PAPERS

SETTING GRINDING PAPERS

- Position the handle of the bolt on a flat clean surface, with the bolt pointing vertically. Place a washer on the bolt, followed by one of the discs, flat face up.
- Apply a thin, even layer of ShearGrip® adhesive to the flat face of the disc using the supplied applicator.
- Place a 40 grit grinding paper smooth side down, over the bolt.

- Take the clamp plate and place it over the bolt on top of the grinding paper.



- Place an 80 grit grinding paper, smooth side up, over the bolt.
- Apply a thin, even layer of ShearGrip® adhesive to the flat face of the next disc using the applicator provided.
- Place this disc, with the adhesive-covered flat face down, over the bolt and onto the grinding paper.
- Put the second washer over the bolt, then thread the nut onto the bolt and tighten firmly using the spanner provided.
- Allow the glue to set for approximately 24 hours in a warm, dry environment and keep level until dry. Take care to clean off any excess glue from the back of the disc, as this can affect the balance, causing vibration.

FITTING DISCS

RE-FITTING THE DISCS

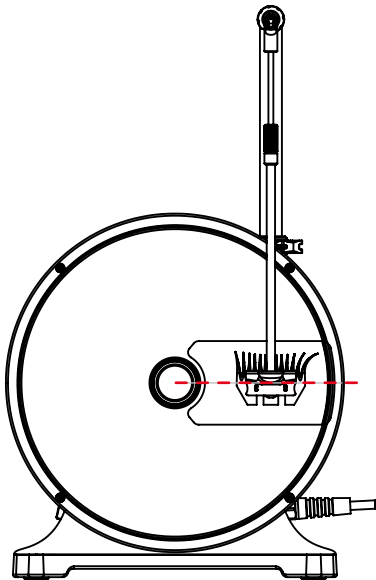
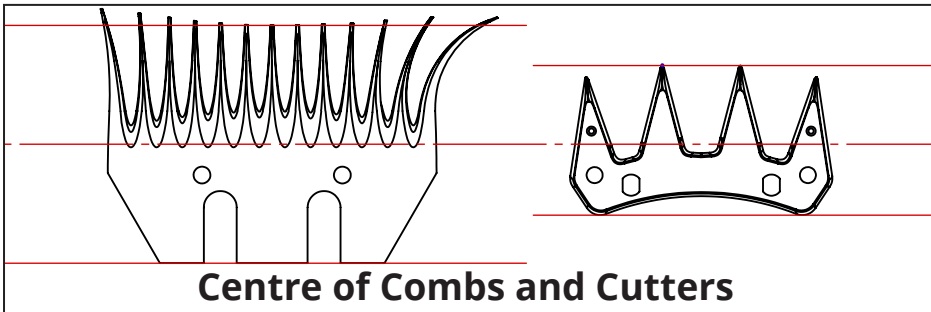
- Once the grinding papers have set, remove the discs from the clamp plate.
- Before re-fitting the discs, always make sure that the motor shaft, bush, washers, and mating surfaces of the disc are clean of grit and dirt, as this can cause damage or make it hard to remove the disc.
- Once clean, apply a small amount of lightweight oil, such as shearing oil, to the shaft. Slide a disc onto the motor shaft until it sits against the shaft bush.
- Place the washer onto the shaft, ensuring it is located centrally on the shaft and flat against the disc.
- Thread the corresponding nut onto the shaft by hand (see diagram on page 6 for details of right and left handed nut).
- Tighten the nut firmly using the supplied spanner. Hold the disc with one hand and the spanner with the other to stop it rotating while tightening.
- Check the discs are tight by placing a hand on the top of each disc and try to rotate against each other. If there is any movement, make sure to re-tighten the nuts with the spanner.
- Always replace the front guards before use.

TURNING ON THE GRINDER

- To turn on the grinder press the green button on the switch firmly.
- To turn off the grinder press the red button.
- The grinder features a no volt release (NVR) feature. If the power is interrupted the machine is turned off and will not start until the green button is pressed again.

SETTING THE PENDULUM LENGTH

- With the grinder switched off, hang the pendulum from the pendulum hook.
- Rotate the pendulum swivel block to the “COMB” setting.
- Position a comb over the pendulum pins.
- With the pendulum positioned towards the edge of the disc (where you will finish the grind), adjust the pendulum so that the comb lines up horizontally with the centre of the motor shaft/disc.

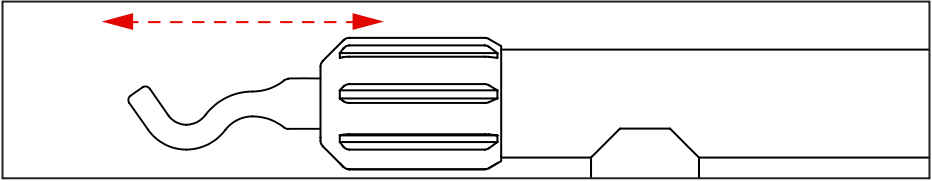


- Setting the correct position is crucial to achieving a high quality grind, as this will affect where the hollow is ground into the comb or cutter.
- When the pendulum length is set correctly, the sparks should travel straight up.
- Under good lighting you can check a comb or cutter to make sure the pendulum length is correct. The grinding marks should run vertically from the tip to the heel. This indicates that the comb or cutter is in the optimal position, and the hollow is correct.

PENDULUM SET UP

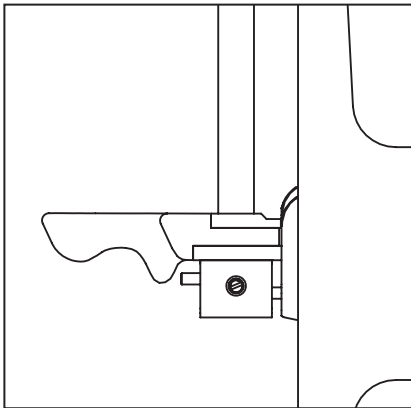
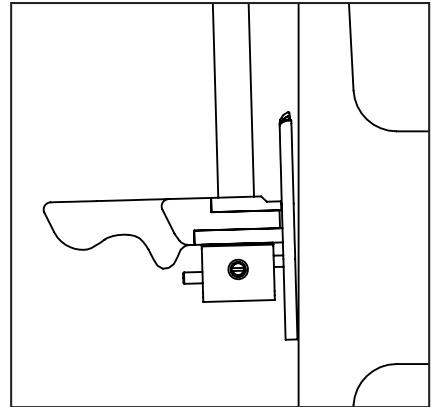
SETTING THE PENDULUM HOOK

To achieve the optimal grind, and ensure maximum performance of cutters and combs, the pendulum hook should be adjusted correctly. To begin with, make sure the grinder is switched off and the pendulum length set. The hook can be moved in and out by loosening the lock nut, adjusting the position and then re-tightening.



COMBS

Set the pendulum to the “COMB” setting, then hang the pendulum from the pendulum hook. Place a comb over the pendulum pins. The hook should be adjusted so that when the comb is against the grinding paper, the heel makes contact first. There should be approximately a 1.5mm gap between the tip and the paper.



CUTTERS

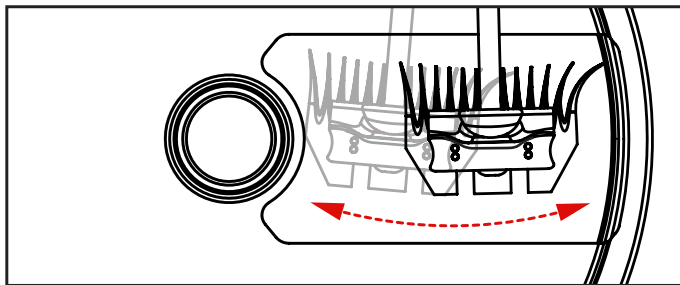
Set the pendulum to the “CUTTER” setting, then hang the pendulum from the pendulum hook. Place a cutter over the pendulum pins. The hook should be adjusted so that when the cutter is against the grinding paper, it makes full contact. You may set the heel forward slightly to make contact first if preferred.

GRINDING COMBS

- Set the pendulum for sharpening combs (see page 10).
- We suggest using Longhorn® 40 grit grinding papers for combs.
- Place a clean comb on the pendulum, sharp side facing towards the grinding paper, with the teeth pointing upwards. It will locate over the two pins and be held in place magnetically. The pins should not stick out past the comb.
- Ensure that the grinder is switched on and running at full speed before grinding.
- Holding the pendulum between your thumb and bent index finger, push firmly to make contact with the grinding paper, as close to the centre as possible, ensuring even pressure and equal contact across the width of the comb.
- If the pendulum is set up correctly, the heel of the comb should touch the grinding paper first.
- There are two common methods of grinding combs; it is down to personal preference which you use.

ON THE DISC TECHNIQUE

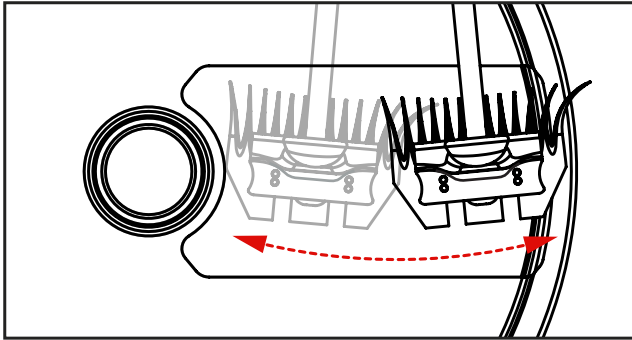
- While maintaining firm but even pressure, move the pendulum from side to side utilising the whole area of the grinding paper. Moving from nearly touching the centre washer, right to the edge of the disc.



- After three to four strokes, finish near the edge of the disc, press firmly for one second and then pull away smoothly.

OFF THE EDGE TECHNIQUE

- While maintaining firm but even pressure, move the pendulum from side to side. Moving from nearly touching the centre washer, to just over the edge of the disc. You should take the tips of three teeth past the edge of the disc.



- After three to four strokes, finish near to the edge of the disc, without overlapping the edge, press firmly for one second and then pull away smoothly.

CHECKING THE COMB

- Under good lighting, inspect the ground surface.
- Check for dull tips or white lines along the edge of the teeth. Dull tips or white lines will show on the comb when it is partially ground. If these are visible, repeat the preferred grinding process until the whole comb surface is uniform in appearance.

GRINDING CUTTERS

- Set the pendulum for sharpening cutters (**see page 10**).
- We suggest using Longhorn® 80 grit grinding papers for cutters.
- Place a clean cutter on the pendulum, sharp side facing towards the grinding paper, with the teeth pointing upwards. It will locate over the two pins and be held in place magnetically. The pins should not stick out past the cutter.
- Ensure that the grinder is switched on and running at full speed before grinding.
- Holding the pendulum between your thumb and bent index finger, push firmly to make contact with the grinding paper, as close to the centre as possible. Ensuring even pressure and equal contact across the whole cutter.
- If the pendulum is set up correctly, the cutter should sit flat against the disc or, if preferred, with the heel just making contact first.
- While maintaining firm but even pressure, move the pendulum from side to side utilising the whole area of the grinding paper.
- Be aware that it is easy for a cutter to get too hot by using a worn grinding paper or applying too much pressure. You should still push firmly but use less pressure than you would for a comb.
- After three to four strokes, finish near to the edge of the disc, hold firmly for one second and then pull away smoothly.
- Under good lighting, inspect the ground surface. Check for dull or smooth tips, re-grind until the whole surface has the same appearance; there should be a small burr along the tips when the cutter is sharp.

GRINDER CARE

GRINDER DISCS

- Discs are best kept either on the grinder or on the clamp plate. Discs can be damaged by careless handling or dropping and can then become hazardous.
- Never use damaged discs.
- Ensure adhesive and grinding papers are removed before storing for long periods of time.

GRINDER MOTOR UNIT

- Avoid areas with high moisture levels.
- Prevent a build up of dust by regularly cleaning the grinder.
- Keep cables out of the way of danger to avoid damage.

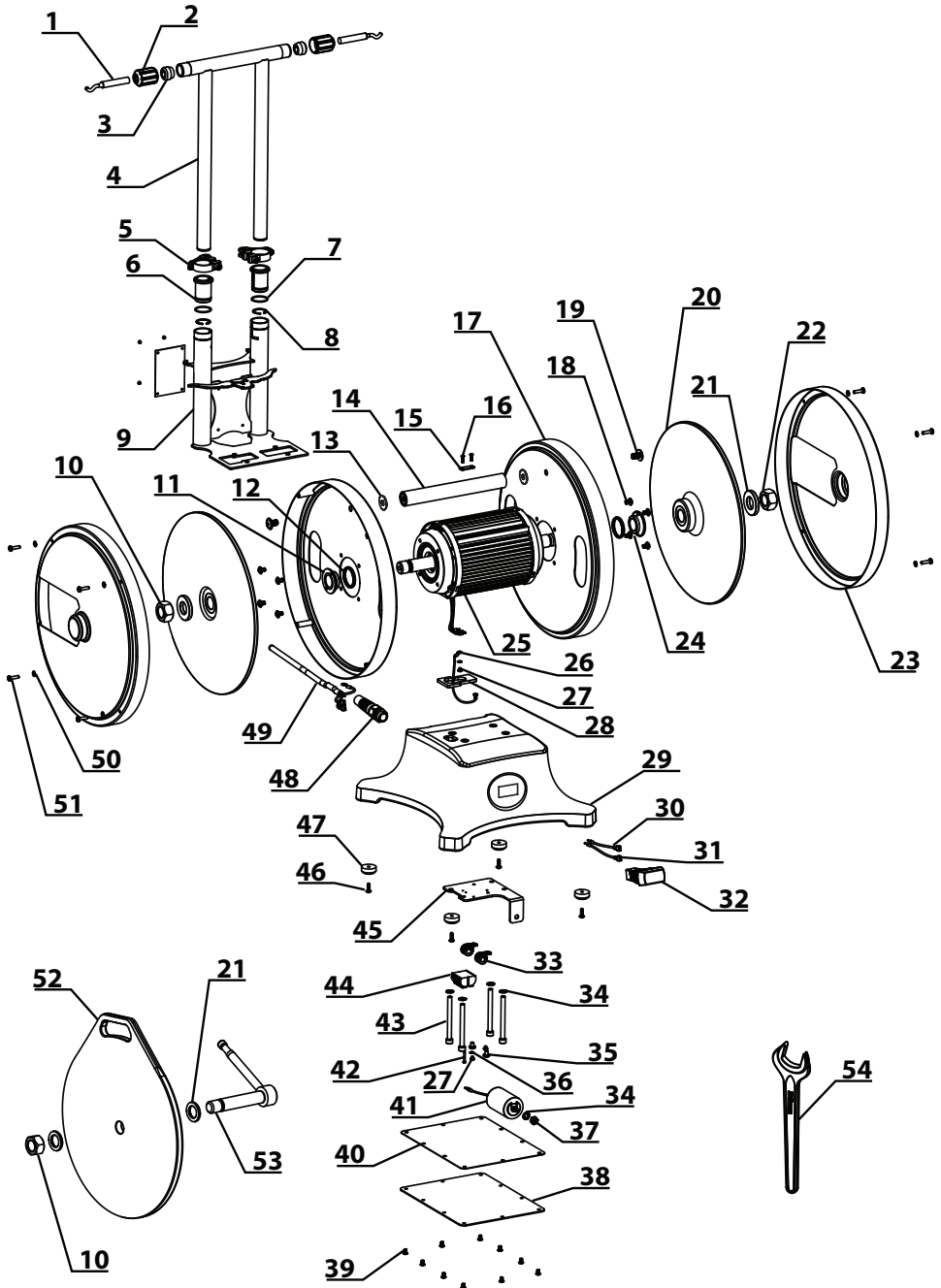
PENDULUM

- The pendulum is best stored on the grinder, hooked into the pendulum rest.
- A damaged pendulum plate will result in uneven pressure being exerted on the comb/cutter, causing an inferior cut.
- Pendulum plates are available to purchase as spares.

Part Numbers: Upper Plate H70-984, Lower Plate H70-985.

ADHESIVE & GRINDING PAPERS

- Ensure that grinding adhesive is kept at room temperature in the sealed bottle, this will ensure a smooth and even application and give the adhesive a longer lifespan.
- Grinding papers should be stored in a clean, dry environment and be kept flat.



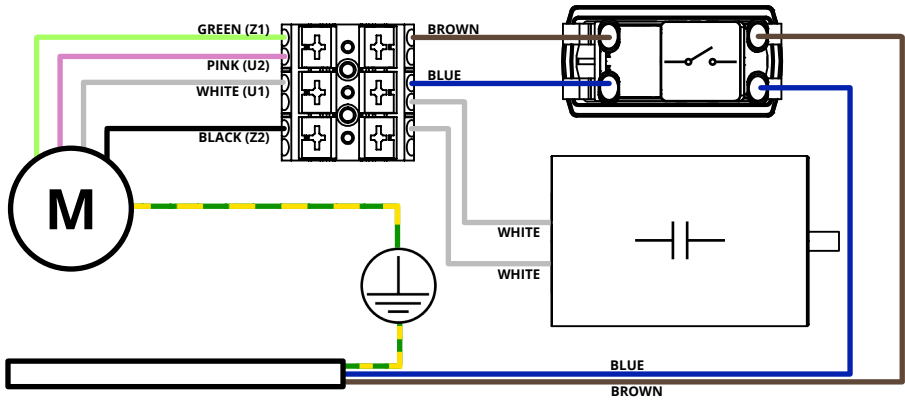
PARTS LIST

	PART NUMBER	DESCRIPTION
1	H71-010	Pendulum Hook
2	H71-011	Lock Nut
3	H71-012	Pendulum Hook Split Bush
4	H71-013	Pendulum Support - Inner and Cross Bar
5	H71-014	Clamp Assembly
6	H71-015	Reduction Sleeve
7	H71-016	Reduction Sleeve Retainer
8	H71-065	Pendulum Support - Circlip
9	H71-017	Pendulum Support – Outer
10	H71-029	M24 Left Hand Nut
11	H71-031	Shaft Bush Long (24.8mm)
12	H71-020	Dust Seal
13	H71-064	Handle Washer
14	H71-021	Carry Handle
15	H71-022	Pendulum Outer Retaining Plate
16	H71-023	M4 x 12 Pendulum Outer Retaining Plate Screw
17	H71-024	Inner Guard
18	H71-025	M6 x 10 Inner Guard Screw
19	H71-026	M10 x 16 Carry Handle Screw
20	H71-027	Grinder Disc
21	H71-028	Disc Washer (24.8mm)
22	H71-018	M24 Right Hand Nut
23	H71-030	Outer Guard
24	H71-019	Shaft Bush Short (24.8mm)
25A	H71-032A	220 - 240 Volt Motor (24.8mm)
25B	H71-032B	110 - 130 Volt Motor (24.8mm)
26	H71-033	Earth Fly Lead
27	H71-040	M4 x 5 Earth Screw
28	H71-034	Pendulum Support Gasket
29	H71-035	Base Moulding

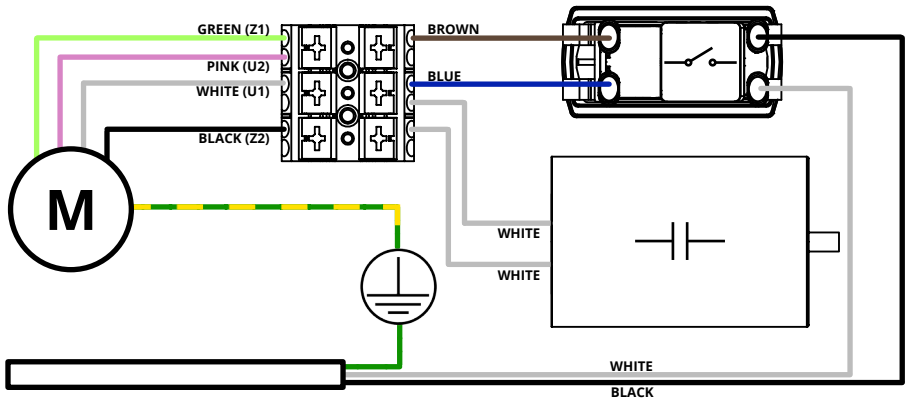
	PART NUMBER	DESCRIPTION
30	H71-036	Switched Live Wire
31	H71-037	Switched Neutral Wire
32A	H71-038A	Switch 220 - 240 Volt
32B	H71-038B	Switch 110 - 130 Volt
33	H16-028	Electric Flex Clip
34	H71-066	M8 Shakeproof Washer
35	H71-039	M6 x 8 P Clip Screw
36	H71-063	M4 Earth Screw Washer
37	H71-041	M8 Nut
38	H71-042	Electrical Cover
39	H71-043	M5 x 10 Electrical Cover Fixing
40	H71-044	Electrical Cover Gasket
41A	H71-045A	30 μ F Capacitor
41B	H71-045B	100 μ F Capacitor (US)
42	H71-046	M3 x 20 Power Distribution Block Fixing
43	H71-047	M8 x 90 Motor Fixing Screw
44	H71-048	Power Distribution Block
45	H71-049	Capacitor Mounting Bracket
46	H71-050	Rubber Foot Fixing
47	H71-051	Rubber Foot
48	H16-009	M20 Gland
49A	H16-043	UK Mains Lead
49B	H16-044	EU Mains Lead
49C	H16-055	AU Mains Lead
49D	H16-045	US Mains Lead
50	H71-052	Outer Guard Fixing Washer
51	H71-053	M5 x 20 Outer Guard Fixing Screw
52	H71-055	Clamp Plate (24.8mm)
53	H71-056	Clamp Bolt (24.8mm)
54	H71-054	36mm Spanner

WIRING DIAGRAM

Wiring Diagram (50Hz Motor)



Wiring Diagram (60Hz Motor US)



50Hz Motor Specification

Supply: Single Phase

Voltage: 220 - 240v

Frequency: 50 Hz

Output Power: 750 watts/1.0 HP

Speed: 2800 rpm

Capacitor: 30 μ F

Switch NVR Unit: 220 - 240v

60Hz Motor Specification (US)

Supply: Single Phase

Voltage: 110 - 130v

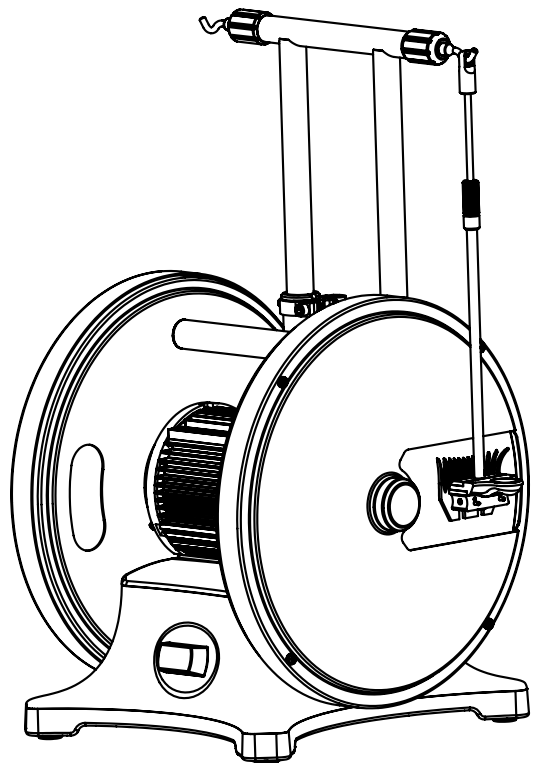
Frequency: 60 Hz

Output Power: 750 watts/1.0 HP

Speed: 3350 rpm

Capacitor: 100 μ F

Switch NVR Unit: 110 - 130v





UK
CA CE

REVOLUTION GRINDER

HORNER SHEARING • LANE SIDE • GRINDLETON ROAD • WEST BRADFORD • CLITHEROE • BB7 4QH • UK