

SET UP INSTRUCTIONS

SCORPION GRINDER

Serial Numbers 001-010



FIRE PANTS FABRICATION

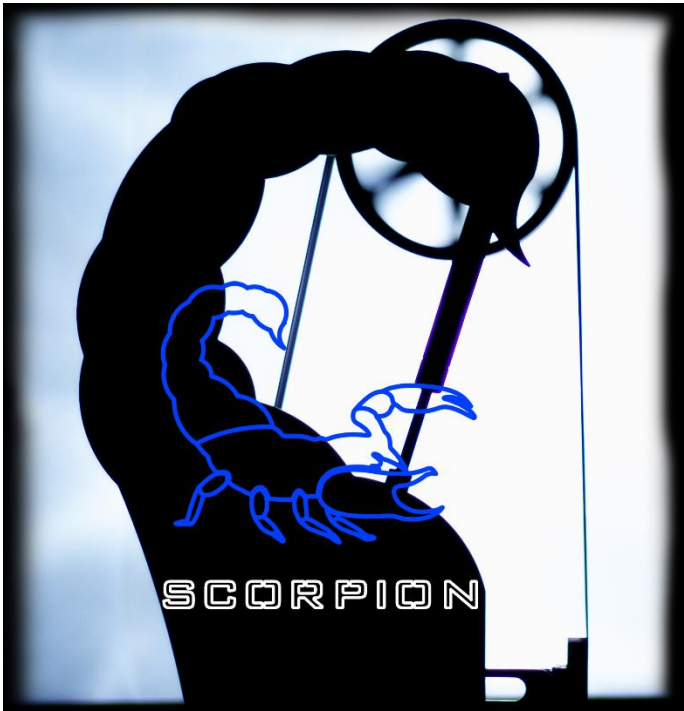
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1. INTRODUCTION

The Scorpion known for its fast acting, effective sting; this grinder is no different. With more power, more speed, big platen and small footprint; the Scorpion grinder is in a league of its own. Perfect for both beginners and professionals.

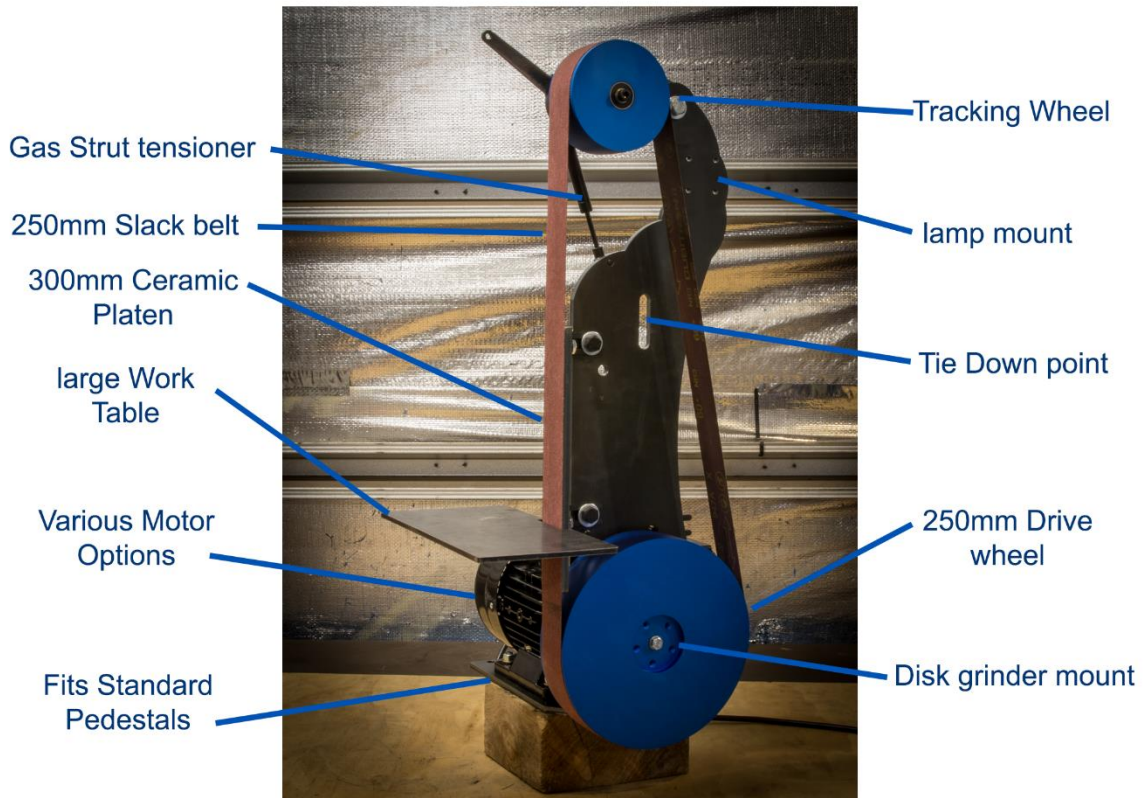
Features include:

- 2 x 72" or 2 x 48" Belt Capacity
- Solid 10mm steel frame, laser cut for accuracy
- Ceramic platen backrest
- 6061 aluminium tracking and drive wheels
- Huge 250mm drive wheel coupled with 2hp and 3hp motors ultimate performance
- The only grinder in its class built to run the Cubitron II belts from 3M
- Extended length platen backrest for greater control
- Move from a 300mm flat platen to a 250mm slack belt without even stopping or making adjustments
- 150 – 350mm contact wheel capability
- Australian designed and built

NOTE: PLEASE DO NOT OPERATE THE SCORPION GRINDER UNTIL YOU HAVE READ THESE INSTRUCTIONS AND ARE FAMILIAR WITH ITS CONTROLS. THE SCORPION GRINDER IS INTENDED FOR USE ONLY BY TRAINED PERSONNEL.

2. SPECIFICATIONS

Model	SC72 Frame	SC72 2hp	SC72 3hp	SC72 VSD
Dimension of Frame (LxWxH)	250 x 400 x 850mm	250 x 400 x 850mm	250 x 400 x 850mm	250 x 400 x 850mm
Weight	Approx. 20kg	Approx. 35kg	Approx. 35kg	Approx. 40kg
Electrical Specifications	-	240v 10a	240v 15a	240v 10a
Belt Size	2 x 72"	2 x 72"	2 x 72"	2 x 72"
Belt Speed	-	7500sfm fixed	7500sfm fixed	750 – 7500sfm
Environment	-	IP55	IP55	IP55 (indoor only)
Motor	No Motor	2 hp, 2 pole	3hp, 2 pole	2hp, 4pole
Switchgear	-	DOL Starter	DOL Starter	VSD control





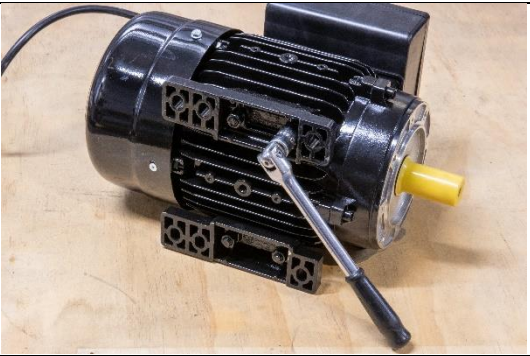

3. UNPACKING

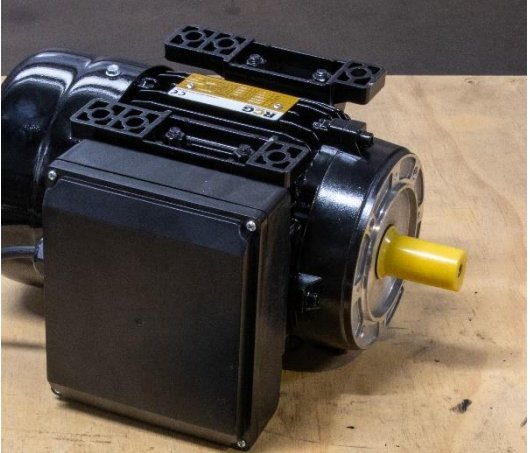
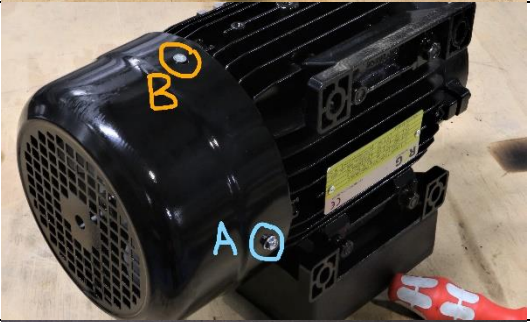
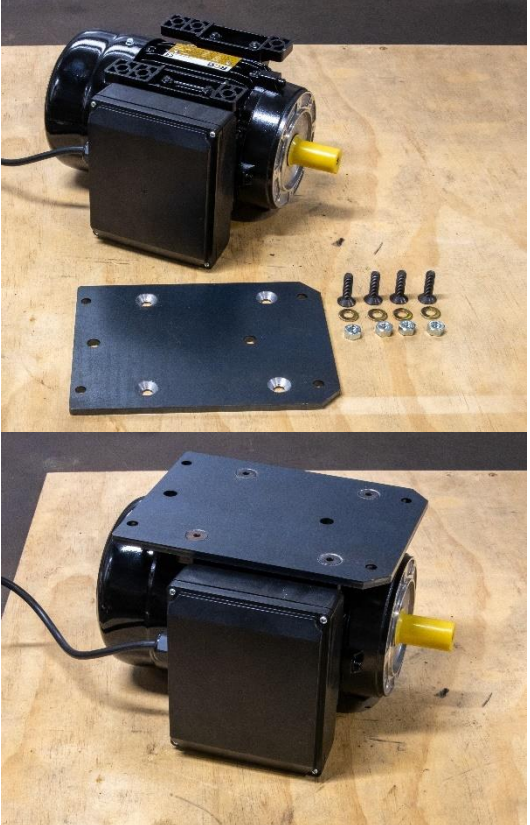
Carefully inspect the exterior of the packing box. Any visible damage should immediately be reported to Fire Pants Fabrication. Remove all packing documents from the interior of the box and file in your records. Remove the shipping box, the foam packaging material, and the Scorpion Grinder. Open the top flaps of the packing box to remove the Scorpion Grinder from the base of the box. Grasp the Scorpion Grinder on both sides, using proper lifting techniques, and place it on a stable bench top. Visually check the Scorpion Grinder to ensure that no damage occurred during shipping.

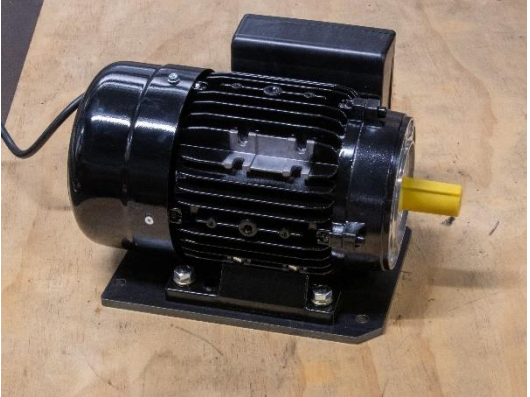
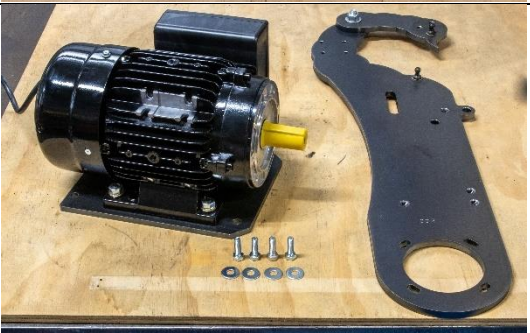

4. SETTING UP

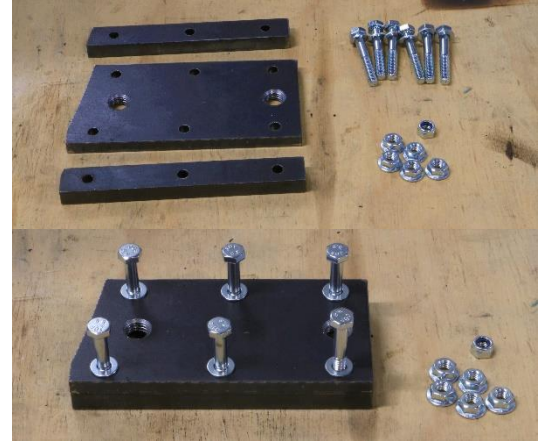
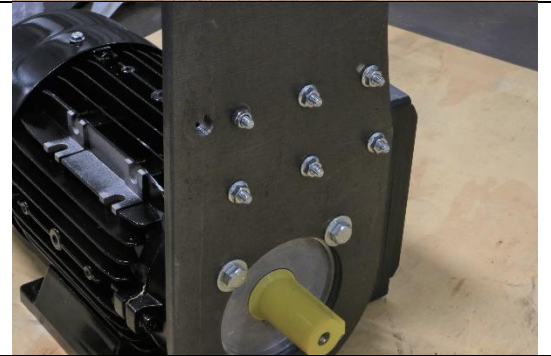
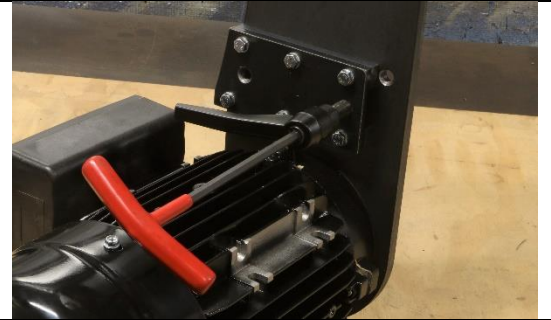

Tools required:

- 5mm Allen key
- 6mm Allen key
- 10mm spanner (or socket) x2
- 13mm spanner (or socket)
- 16mm spanner (or socket)
- 17mm spanner (or socket)
- 18mm spanner (or socket)
- Combination square or small spirit level
- Torque wrench (recommended)




<p>Step 1</p>	<p>Unpack the contents of all packages.</p> <p>One package will contain the grinder frame and parts, the other will have the motor and VSD / Switchgear (if applicable).</p> <p>First find the bag of bolts and confirm the contents.</p> <p>Refer to contents list on bag for correct hardware.</p>	
<p>Step 2</p>	<p>Unpack motor onto bench, flip it onto its back, use a 13mm socket to remove the motor feet. Retain feet and hardware.</p>	
		
<p>Step 3</p>	<p>Place motor in position shown in picture, Reinstall the feet using the original hardware on the side facing up. The feet will be on the same side as the data plate. Tighten to 15 ft/lb</p>	



	<p>*You may have to clean the paint on the bolt head if it does not seat fully into its position.</p>	
<p>Step 3.1</p>	<p>To allow the base to bolt down properly, use a #2 Philips screwdriver to:</p> <p>For <u>Fixed speed</u> machines: swap bolts A and B.</p> <p>For <u>Variable speed</u> machines: remove bolt A and place in the empty position B.</p>	
<p>Step 4</p>	<p>While in this position, locate the base plate, and the 4 x M8*40mm countersunk bolts, washers and nuts. Use a 6mm allen key and 13mm spanner and 5mm Allen key to install the base plate. (If installing on a pedestal, you may need to preinstall the bolts).</p>	



<p>Step 5</p>	<p>Place motor on its feet as shown, at this point you should secure the grinder on a bench or pedestal where it will be used. Do NOT connect the motor to a power until the assembly is completed.</p>	
<p>Step 6</p>	<p>locate the 4 x M8*25mm bolts, Large washers, Scorpion frame.</p>	
<p>Step 7</p>	<p>Place the frame on the motor face mount in an upright position, install the 4 bolts by hand into the slotted holes into the motor face. Use a spirit level on the front vertical face of the frame and adjust plumb before tightening to 20 ft/lb with 13mm socket.</p>	



<p>Step 8</p>	<p>Use the 6 x M6x40 bolts, washers, flange nuts, and nyloc nut to assemble the tool holder.</p> <p>Assemble as shown, with the nyloc nut closest to the M12 threaded hole in the frame. Align the flats of the nut horizontally to allow the platen bracket to slide over it.</p>	
		
<p>Step 8.1</p>	<p>Install one of the locking handles to the tool holder.</p> <p>Use an Allen key in the back, while pulling the lever back to allow you to rotate the centre easily.</p>	
<p>Step 9</p>	<p>Locate the platen, angle brackets, 2 x 10*16mm bolts & washers, 2 x M12*20mm bolts & washers.</p> <p>Install angle brackets to platen by hand, then the assembly to the frame. Lightly nip up the bolts using a 16mm and 18mm spanner to hold in place, final adjustment will come later.</p> <p>The platen mount holes are offset, the default position is to have the 'Long' end down (as shown), but it can be reversed to give more platen above the work rest, and a shorter 'Slack' belt area.</p>	

<p>Step 10</p>	<p>Next assemble the work rest to the tool arm using 1 x M12*35mm bolt and washer and 1 locking handle with a washer.</p> <p>Tighten the bolt just enough to allow some movement when the locking handle has been released.</p>	

<p>Step 10.1</p>	<p>Install tool arm to the frame by sliding the tool arm into the slot. Tighten with the locking handle on the side.</p> <p>*The angle of the locking handles can be adjusted by pulling the handle out and rotating to another position. The spring will lock them in the new position.</p>	
<p>Step 11</p>	<p>Locate the tensioner handle, hinge assembly, tracking adjuster, tracking wheel (125mm), 2 x M8*25mm Socket head bolt, 1 x M8*20mm socket head bolt.</p>	
<p>Step 12</p>	<p>Place the two (2) 25mm long bolts through the holes shown, and place through the holes on the tracking arm, then secure the hinge assembly to the other side. Tighten to 20 ft/lb.</p>	

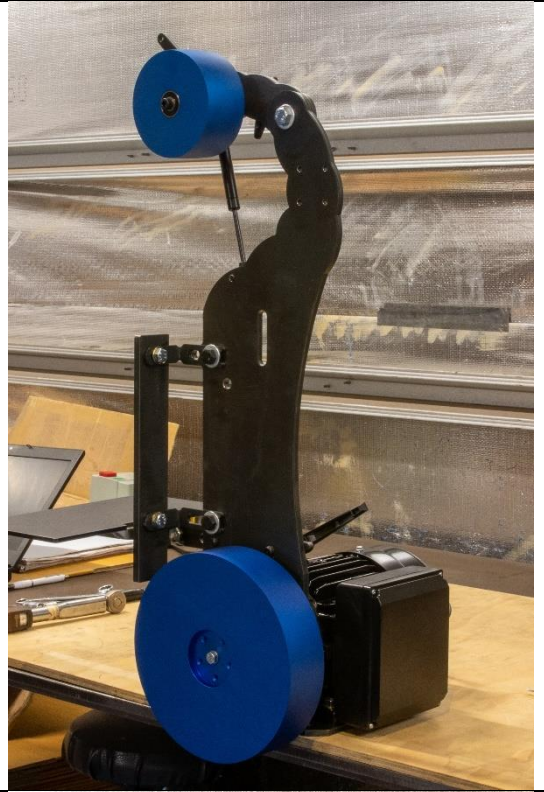
		
Step 13	<p>Install the M10 Nut on the T handle thread, then install the tracking adjuster T handle until it contacts the back of the hinge.</p> <p>*the nut is there to help lock the handle in place, it should not need a spanner to tighten it enough to lock the adjuster in place.</p>	

<p>Step 14</p>	<p>Locate the gas strut, Install the balls onto the frame and tensioner as shown, with a M8 washer under each.</p> <p>Remove the locking clip from the gas strut (if required) and press the ends firmly onto the mounts on the frame. The rod should be facing down. Replace clips.</p>	
<p>Step 15</p>	<p>Then slide the tracking wheel over the axle on the hinge assembly. You may need to use a small screwdriver to lift the bearing spacer inside the wheel to get it to slide on. Secure using the 20mm long socket head bolt and washer, tighten to 20ft/lb.</p>	

<p>Step 15.1</p>	<p>Locate the guard, M10 x 35mm bolt, 2 x M10 washers, and M10 Nyloc Nut.</p> <p>Install guard on tensioner arm as shown. Tighten nut and bolt enough to be able to rotate the guard by hand, but not so loose that it moves on its own.</p> <p>The guard can be lifted up out of the way for belt changes, but should always be in the down position while the grinder is in use.</p> <p>(Guard is not shown in the following steps)</p>	
<p>Step 16</p>	<p>Locate the drive wheel, and M8*40mm bolt. Remove the protective cover from the motor shaft, line up the keyway on the shaft and the wheel, carefully slide the drive wheel onto the shaft.</p> <p>The wheel should be snug, but not require any more than some light taps with a rubber hammer to slide it on.</p> <p>If it does not slide on, remove the key from the shaft, and using some fine emery gently work around the shaft to remove any high spots. If it still does not slide on, contact Fire Pants Fab for further instructions.</p>	

Step 17

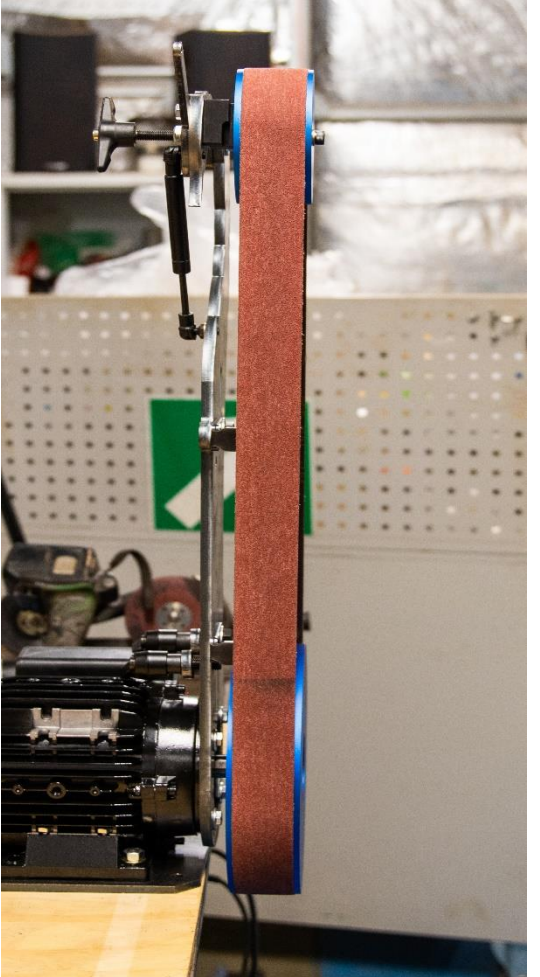
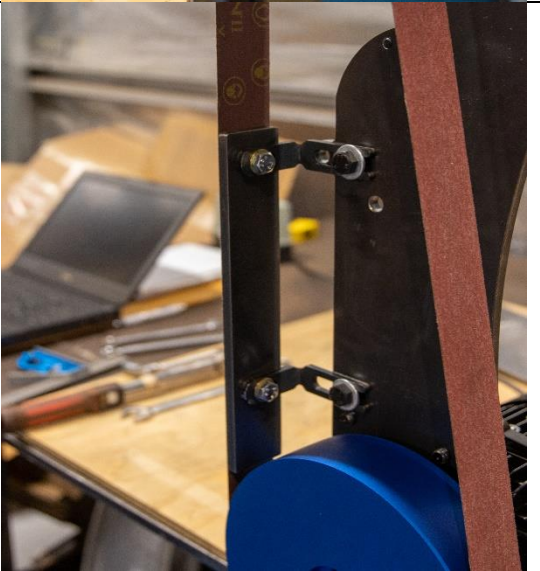
Once the wheel is seated on the shaft, secure with the bolt, tighten to 20ft/lb.

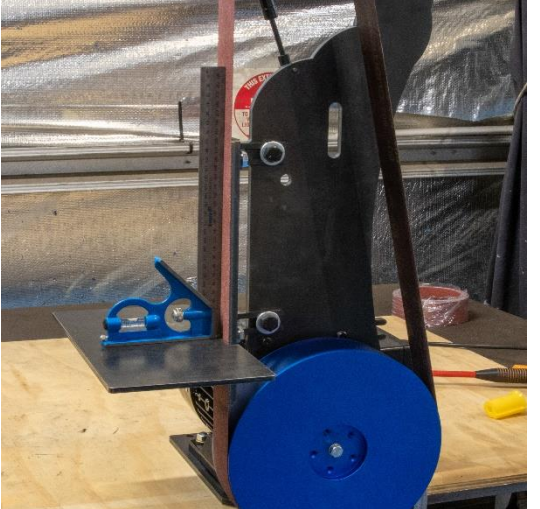
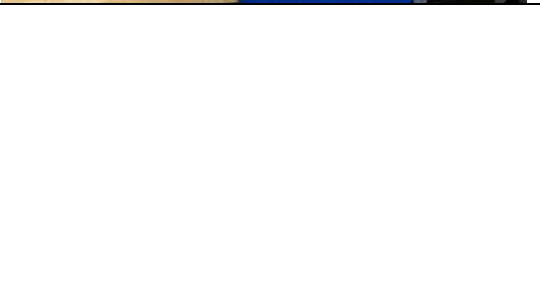
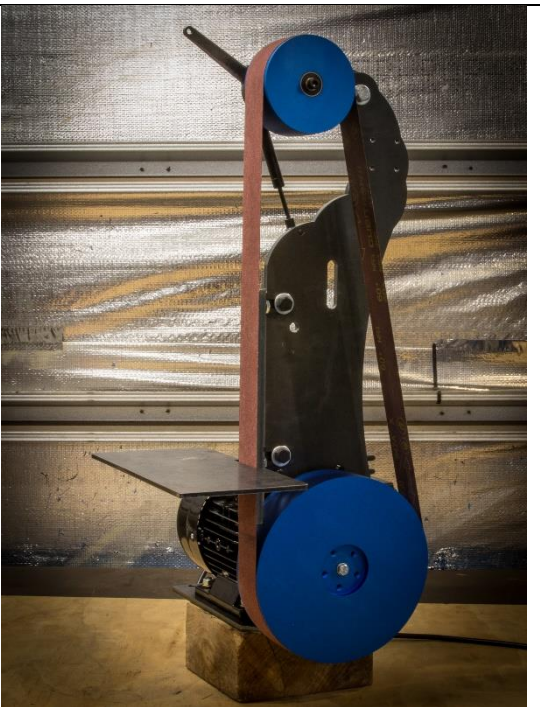


Step 18

Locate the supplied belt and hang it over the top wheel. Pull down on the tensioner handle to hook it under the drive wheel. Pay attention to the belt orientation, some can only be used in one direction.



<p>Step 19</p>	<p>Rotate the belt by hand in an anticlockwise direction (viewed from the drive wheel end), while using the tracking adjuster handle to align the belt as close to centre as possible on both wheels.</p>	
<p>Step 20</p>	<p>Once the belt is aligned, adjust the platen fore/aft position by loosening the M12 bolts on the frame, the platen should protrude into the belt by 1-2mm. Use a spirit level or measure off the frame to get it even. Tighten adjuster bolts.</p> <p>Adjust the platen left or right to be centred on the belt by loosening the M10 bolts on the back of the platen. Tighten adjuster bolts.</p> <p>Adjust the platen left or right to be centred on the belt by loosening the M10 bolts on the back of the platen. Tighten adjuster bolts.</p>	

<p>Step 21</p>	<p>Use a square to adjust the worktable, set it to 90° to the platen. Remember to tighten both work rest locks before loosening or tightening the worktable.</p>	
<p>Step 22</p>	<p>Mount the VSD / DOL Starter securely.</p> <p>Follow the instructions in the VSD manual for air gap and other mounting requirements.</p> <p>Mounting hardware not included.</p>	
<p>Step 23</p>	<p>Your Scorpion grinder is now assembled and ready to use. Plug it in to a suitable power source and refer to the Operating instruction section.</p>	

IMPORTANT: THE BOLTS AND WASHERS SUPPLIED WITH THE SCORPION GRINDER MUST BE USED.

For Variable speed model grinders only	
<i>If your motor and drive has come prewired:</i> <ul style="list-style-type: none">• Plug the 3-pin electrical cord into a 240v power source.• Turn isolating switch on.• Ensure the forward light is flashing.• Use the potentiometer next to the keypad to adjust motor to its lowest speed, it should display approx. 700 feet per minute.• Push the run button to start the motor.• Check tracking of belt on the Scorpion Grinder.• See instruction manual for use on the Variable Speed Drive.	<i>If your motor and drive has not come prewired:</i> <p>Contact a qualified electrician to wire up the motor and variable speed drive.</p> <ul style="list-style-type: none">• Plug the 3-pin electrical cord into a 240v power source.• Turn isolating switch on.• Ensure the forward light is flashing.• Use the potentiometer next to the keypad to adjust motor to its lowest speed, it should display approx. 700 feet per minute.• Push the run button to start the motor.• Check tracking of belt on the Scorpion Grinder.• See instruction manual for use on the Variable Speed Drive.

NOTE: ALL VARIABLE SPEED DRIVES SUPPLIED BY FIRE PANTS FABRICATION; WIRED OR NOT; HAVE BEEN PROGRAMMED TO SUIT THE SCORPION GRINDER.

Operation Instructions:

1. Inspect machine prior to and during use for loose bolts, worn parts, noisy bearings, damage to electrical cables.
2. Install the belt by pulling down on the tensioner handle and carefully slipping it around both wheels.
3. Rotate slowly by hand to confirm the tracking.
4. Adjust tracking using the adjuster handle on the top.
5. Set up the worktable to the desired angle / position
6. Stand back from the belt
7. If variable speed, set to desired speed.
8. Press the Start (green) button.
9. Confirm the belt tracking again.
10. Wait until the belt is up to speed before grinding.
11. When finished press the Stop (Red) button and wait while the belt slows down to a stop, do not continue to grind as the belt is slowing as you will prematurely wear the belt.
12. When finished, turn off Isolator switch (variable speed only), remove belt. Turn off power source.
13. Inspect machine for loose bolts, worn parts, noisy bearings, damage to electrical cables after use.

General Machinery Safety Instructions

Fire Pants Fabrication requires all users of their machines to read, understand and comply with this entire manual before using this machine.

1. Read the entire Manual before starting machinery. Machinery may cause serious injury if not correctly used.	2. Use correct amperage extension cords. Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
3. Always use correct hearing protection when operating machinery. Machinery noise may cause permanent hearing damage.	4. Keep machine well maintained. Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
5. Machinery must never be used when tired, or under the influence of drugs or alcohol. When running machinery, you must always be alert	6. Keep machine well-guarded. Make sure guards on machine are in place and are all working correctly.
7. Wear correct Clothing. At all times remove all loose clothing, necklaces, rings, jewellery, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.	8. Do not overreach. Always keep proper footing and balance
9. Always wear correct respirators around fumes or dust when operating machinery. Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.	10. Secure workpiece. Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
11. Always wear correct safety glasses. When machining you must use the correct eye protection to prevent injuring your eyes.	12. Check machine over before operating. Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may affect the machines operation. Repair and replace damaged parts.
13. Keep work clean and make sure you have good lighting. Cluttered and dark shadows may cause accidents.	14. Use recommended accessories. Refer to instruction manual or ask manufacturer when using accessories. The use of improper accessories may cause the risk of injury.
15. Personnel must be properly trained or well supervised when operating machinery. Make sure you have clear and safe understanding of the machine you are operating.	16. Do not force machinery. Work at the speed and capacity at which the machine or accessory was designed.
17. Keep children and visitors away. Make sure children and visitors are at a safe distance for you work area.	18. Use correct lifting practice. Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
19. Keep your workshop childproof. Use padlocks, turn off master power switches and remove start switch keys.	20. Lock mobile bases. Make sure any mobile bases are locked before using machine
21. Never leave machine unattended. Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.	22. Allergic reactions. Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
23. Make a safe working environment. Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.	24. Call for help. If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.
25. Disconnect main power before service machine. Make sure power switch is in the off position before re-connecting.	

Belt Grinder Safety Instructions

Fire Pants Fabrication requires all users of their machines to read, understand and comply with this entire manual before using this machine.

1. Maintenance. Make sure the grinder is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.	2. Hearing protection and hazards. Always wear hearing protection as noise generated from grinder and workpiece vibration can cause permanent hearing loss over time.
3. Grinder Condition. Grinder must be maintained for a proper working condition. Never operate a grinder that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.	4. Dust hazards. Always wear dust mask or respirator and eye protection when sanding. Use a dust collector as well to keep dust to a minimum.
5. Disc/Belt Condition. Never operate a grinder with a damaged or badly worn disc or belt. Replace if required.	6. Feeding material. Always feed material evenly and smoothly against the direction of rotation. Never use excessive force when sanding or serious injury can occur.
7. Disc/Belt Rotation. Be aware of the Disc and Belt rotation when sanding.	8. Job Material. Check material prior to sanding for nails, staple and other objects that make cause any danger when sanding.
9. Hand Hazard. Keep hands and fingers clear from moving parts. Serious injury can occur.	10. Starting position/speed. Never turn the grinder on when the workpiece is resting on the disc or belt. Allow disc and belt to reach full speed before sanding.
11. Leaving a grinder Unattended. Always turn the grinder off and make sure all moving parts have come to a complete stop before leaving the grinder. Do not leave grinder running unattended for any reason.	12. Disc sanding. Keep workpiece down toward the table whilst sanding. Workpiece may cause serious injury if not held correctly.
13. Avoiding Entanglement. Grinder guards must always be used. Remove loose clothing, belts, or jewellery items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the grinder moving parts.	14. Guards. Do not operate grinder without the correct guards in place, If applicable.
15. Understand the machines controls. Make sure you understand the use and operation of all controls.	16. Stopping the Disc/Belt. Do not stop or slow the Disc or Belt with your hand or workpiece. Allow the machine to stop on its own.
17. Power outage. In the event of a power failure during use of the Linisher, turn off all switches to avoid possible sudden start up once power is restored.	18. Wood dust may cause allergic reactions. Make sure you know what type of dust you are exposed to as it may cause you an allergic reaction. Always wear an approved respirator.
19. Work area hazards. Keep the area around the grinder clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.	20. Call for help. If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.
21. Workpiece Handling. Never hold small workpieces with your fingers during a cut. Always support/feed the workpiece with push stick, table support, vice, or some sort of clamping fixture.	

Plant Risk Assessment

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Belt Grinder / Disk grinder

This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace (WHS 2011 No10)

Item Number	Hazard Identification	Hazard assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	Entanglement	High	Eliminate, avoid loose clothing / Long hair etc.
C D	Cutting, Stabbing, Puncturing, Shearing	Medium Medium	Isolate power to machine prior to any checks or maintenance being carried out Do not adjust or clean machine until the machine has fully stopped. Always keep gap between table and disc to a minimum. Make sure all guard are secured shut when machine is on.
E	Friction	Medium	Keep hands and body clear from sanding disc/belt.
F	Striking	Medium	Wear appropriate protective clothing. Wear safety glasses. Stand clear of moving parts on machine. Remove all loose objects around moving parts. Ensure belts are in good condition and at correct tension. Always sand on the down stroke of the disc's rotation.
H	Electrical	Medium	All electrical enclosures should only be opened with a tool that is not to be kept with the machine.
O	Other Hazards, Noise, Dust	Low	Wear hearing protection as required. Should be connected to a dust extraction. Respirator or PAPR system to be used.

Plant Safety Program to be read in conjunction with manufactures instructions

Troubleshooting and repair

Issue	Probable cause	Solution
The machine will not start	<ol style="list-style-type: none"> 1. Not connected to power supply 2. Circuit protector has tripped 3. Power cord is damaged 	<ol style="list-style-type: none"> 1. Check all plug connections 2. Replace fuse or reset circuit breaker 3. Replace power cord
Belt does not come up to speed	<ol style="list-style-type: none"> 1. Extension cord too light, or too long 2. Motor is not wired for correct voltage 3. Low available current 	<ol style="list-style-type: none"> 1. Replace with adequate, proper length cord 2. Contact a qualified electrician 3. Contact a qualified electrician
Machine vibrates excessively	<ol style="list-style-type: none"> 1. Stand is on uneven floor 2. Motor mounts are loose 3. Wheels or belt are unbalanced / loose 	<ol style="list-style-type: none"> 1. Adjust base to sit evenly on the floor 2. Tighten motor mount bolts 3. Inspect belts and wheels for damage, replace or repair as required.
Abrasive belts keep tearing	<ol style="list-style-type: none"> 1. Belt is running in the wrong direction 2. Platen it too far forward 	<ol style="list-style-type: none"> 1. Ensure unidirectional belts are running in direction shown on the label 2. Adjust platen to correct position or round off the top and bottom corners.
Edge not cutting square	<ol style="list-style-type: none"> 1. Worktable is not square to platen 	<ol style="list-style-type: none"> 1. Adjust table to platen
Belt tracking is not consistent	<ol style="list-style-type: none"> 1. Machine is vibrating 2. Belt tension is weak 3. Belt has been used in other direction 4. Belt is not cut straight 	<ol style="list-style-type: none"> 1. Refer to above 2. Replace gas strut 3. Flip belt to run in other direction 4. Replace belt
Belt wobbles side to side	<ol style="list-style-type: none"> 1. Belt not cut straight 	<ol style="list-style-type: none"> 1. Run belt at high speed to straighten 2. Replace belt

Contact Fire Pants Fabrication before proceeding if you are unsure about the condition or operation of the machine. For the most prompt and accurate response, please email admin@firepantsfab.com.au and attach as much information and pictures / video as possible.