

BT Paversaw Electric PSAWM



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Introduction

Welcome

Congratulations on your purchase of the BT Engineering Paversaw and welcome to the family. BT Engineering has spent the last 50 years working with brickies and landscapers like yourself to develop a product that will work as hard and as long as you do. This is the why are the name brickies trust.

This operation manual contains important information relating to the safe operation and maintenance of your BT Paver saw. Please take the time to carefully read this manual prior to using the equipment.

General Safety

The BT Paversaw is designed to give you safe and reliable cutting if operated and maintained in accordance with this manual. Please ensure that the following general safety measures are taken prior to every cut.

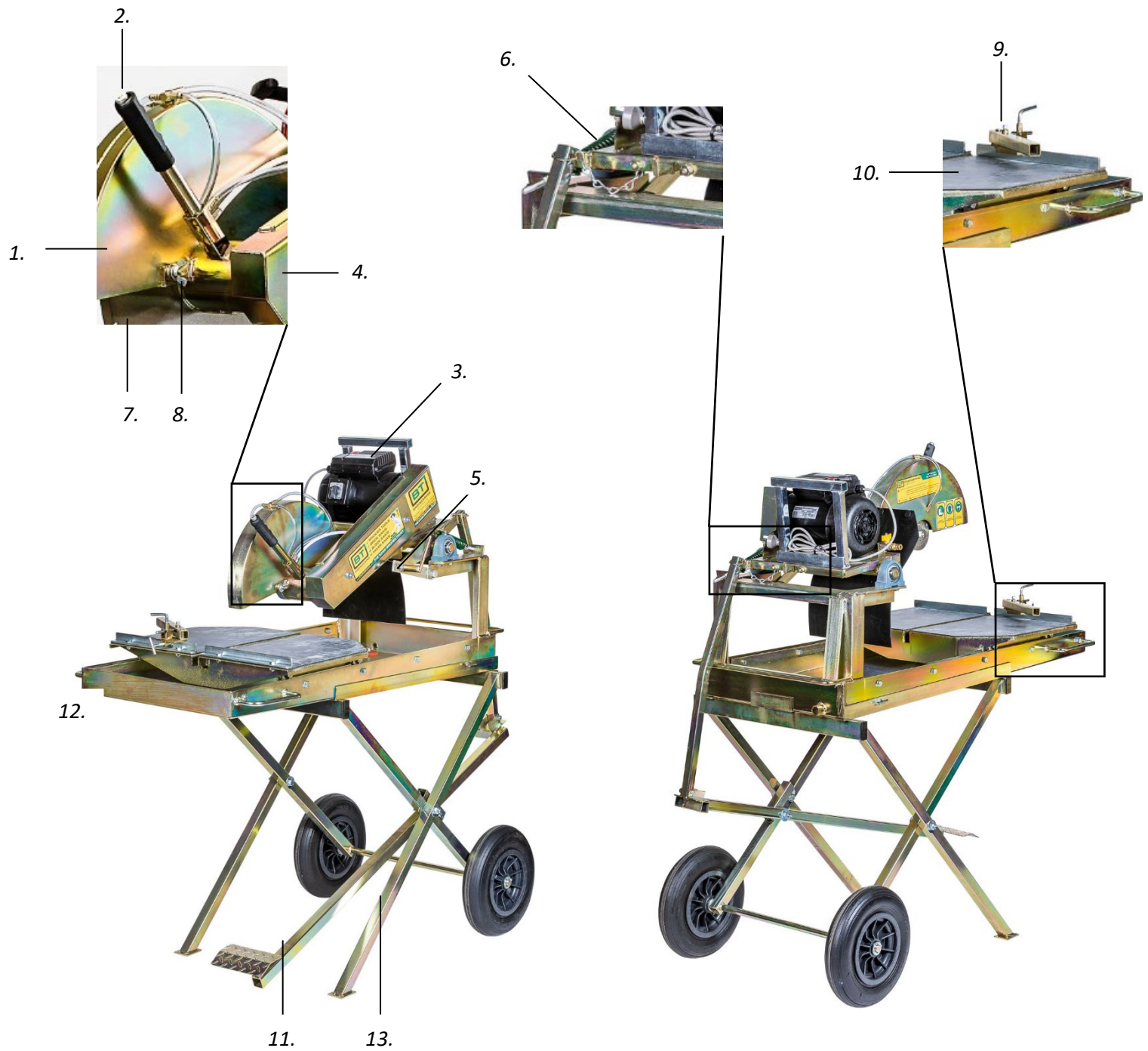
1. The stand is positioned on a flat and even surface.
2. The base is securely fastened to the stand using the locking pin.
3. The work area is well lit and free from trip hazards.
4. The blade and belt guards are in place.
5. The water hose is securely attached and there is adequate water supply.
6. Only 14" diamond impregnated blades are used and inspected for cracks or flaws that may render the blade unsafe.
7. If using an extension cord, ensure that it is no longer than 20 meters and compliant with local and or site-specific requirements.
8. Ensure that a Residual Current Device (R.C.D) is fitted between the motor plug and the power source. Ensure that it complies with local and or site-specific requirements.
9. You are familiar with the operation of the on/off functionality.
10. The saw is never left running unattended.
11. The use of appropriate personal protective equipment (PPE).
12. Compliance with any other local and or site-specific procedures



About the BT Paversaw

The BT Paversaw is the original and only Australian manufactured paver saw on the market. While it is specially designed for cutting large scale pavers that is 600 (24") Square on the diagonal; it is more than capable of cutting any brick, stone, or other masonry material. This heavy-duty saw is built to last, serving those who know what is needed to get the job done right.

Item		Specification
Blade diameter		355mm (14")
Blade bore diameter		25.4mm (1")
Blade bore diameter		25.4mm (1")
Blade cutting depth		125mm (4.9")
Revolutions per Minute (RPM)		2230
Cut Length		600mm (23.6")
Carriage table size		620 x 465mm (24.4 x 18.3")
Motor		Electric
Voltage (v)		240 (50 Hz.)
	No load	Full Load
Current (A) Min / Nom / Max / Start	1.42 / 1.67 / 1.92	7.97 / 8.86 / 9.75 / 55.57
Power Input (w)	293	2124
Assembled dim.		1260 x 700 x 1570 (49.6 x 27.5 x 61.8")
Packed / Transport dim.		1300 x 700 x 890 (51 x 27.5 x 35")
Weight - Dry		95 kgs (209lbs)
Weight - Wet		105 kgs (231lbs)
Warranty – Motor (Honda)		3 years
Warranty – Saw (BT Engineering)		1 Year



1.	Blade Guard
2.	Water button
3.	Motor
4.	Belt Guard
5.	Lockdown nut
6.	Spring – Brick saw
7.	Blade
8.	Blade guard wing nut
9.	Mitre guide
10.	Carriage
11.	Pedal
12.	Base
13.	Stand

Lifting

The BT electric paversaw is a heavy-duty unit weighing 95kgs. Prior to moving the saw either on site or loading or unloading from transport you must check the following:

1. The motor switch is off, and the power cord is unplugged from the power source.
2. The motor is cool.
3. The water supply is off and removed from the water tap connection.
4. The base is clean and dry.
5. The blade is lowered to its minimum height and locked in place using the lock down nut.
6. The pedal push arm is disconnected from the arm and the pedal is raised towards the base.
7. The carriage is removed from base. This can be moved and secured independently of the base and stand.

Lifting - Manual

The paversaw is highly maneuverable whilst on its stand. If you do need to lift the saw it should be moved by a minimum of a two (2) person lift. To make the lift easier the base can be removed from the stand. By removing the two locking plates and screws on each side of the stand and base.



Be sure you plan the lift; that is who is leading, the path to be taken, and each stage of the lift, prior to commencing the lift.

Operation and Control

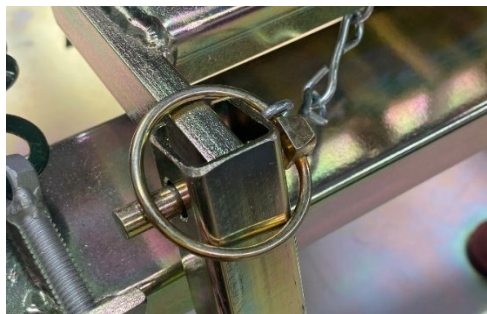
Set up

Making sure the saw is set up correctly is crucial for the operator's safety, those around the saw and the saw itself. The following steps must be taken prior to any prior to cutting.

1. The saw is on a flat and even surface.
2. The area is well ventilated and lit.
3. The base is securely fastened to the stand.
 - I. Fasten locking plate through the stand angle and on to the inside of the base, one of each side.



4. The pivot arm is connected to the motor mount.
 - I. Insert the pedal push arm into the motor mount
 - II. Insert pin through the motor mount



5. Check around the electrical lead to ensure it does not create a trip hazard.
6. Ensure the electrical lead is not in water, or likely to become wet during operation.
7. Check that an R.C.D is in service, and the generator is appropriately sized and positioned.
Note: See the below Generator section.
8. Remove any excessive dirt and debris, from the saw and especially around the motor.
9. Check that the correct blade size and type is installed for that material to be cut.
Note: See the Blade Change steps in the maintenance section of this manual.
10. Check that the correct blade size and type is installed for that material to be cut.

Note: See the Blade Change steps in the maintenance section of this manual.

- I. Maximum blade size is 355mm (14")
 - II. Hard material (Concrete pavers / Terracotta / Granite) - Use a soft matrix blade. The soft blade leaves the diamond chips exposed allowing them to cut through the material.
 - III. Soft material (Cement block / Besa block / Sandstone) – Use a hard blade. The hard blade supports the diamond chips allowing them to cut through the material.
11. Check all guards are fastened securely in place.



12. Always use a BT carriage; check that it is running along the tracks smoothly.
13. A hose is connected to the water tap.

Generators

1. The motor can draw a maximum of 55.57 Amps on start up.
2. Be sure that the generator has been correctly specified for such a current draw. If unsure, please consult your generator supplier or electrician. BT will not recommend nor be responsible for sizing your generator.
3. Do not use an extension lead longer than 20 meters. The generator should be as close as practical to the brick saw as possible.
4. If other power tools are connected to the same generator be aware that this will add extra load to the generator; and the available power for motor startup will be reduced.
5. Incorrect power supply can cause damage to your motor and will not be covered by the warranty.

Start-up sequence

1. Ensure material and carriage is away from the blade.
2. Check motor switch is in the OFF position.
3. Connect all plugs connections are made correctly and ensure R.C.D is used if required.
4. Turn the water source ON.
5. Turn the power source ON.
6. Turn the motor ON.
7. Turn the water ball valve ON.

Overheated Motor

There may be an occasion where the motor will overheat. This is caused by several factors: for example, extended usage, excessive load caused by incorrect blade selection, extreme temperatures due to lack of ventilation or direct sun exposure. The following steps are to be taken if this occurs:

1. Turn off the motor off both at the saw and at the power source.
2. Disconnect motor from power source.
3. Allow motor to cool.
4. Check the length of the extension cord if one is being used. Must be no greater than 20 meters.
5. If a generator is being used check that it meets the minimum rating.
6. Check that the blade rotational direction is correct and suitable for the material being cut.
7. Check to see if the capacitor is not swollen or weeping. This done as describe below:
 - a. Remove the capacitor lid by unscrewing and lifting the lid.



- b. This will show the capacitor (s) some of our older model motors are fitted with a start and run capacitor.



- c. If capacitor is swollen or weeping, then you will need to replace the defective capacitor before returning the saw to service.
 - d. If the capacitor is not swollen or weeping, you can replace the lid.
8. Once the capacitor lid is reinstalled.
- a. Connect the motor to the power supply.
 - b. Press the red reset button on the capacitor box lid, prior to turning the motor back on.

Cutting and Techniques

When cutting Remember to keep hands and fingers at least 50mm (2") away from the blade.

DO NOT:

1. Hold a paver or brick you are cutting with your hand across the front of the blade.
2. Ever put your fingers inside the holes or slots of an extruded brick or block.
3. Ever put your finger in front or behind the blade whilst it is running.
4. Ever cut more than one paver or brick at once.
5. When making deep cuts. Eg. 110mm (4") splits. Always apply downward pressure on the material being cut and do not push cut sections against the blade.
6. Ever force the blade through the material being cut.
7. Attempt to hold or grab a paver or brick if it does jam on a blade.
 - a. Let go immediately.
 - b. Turn off the saw immediately.
8. Cut material with cracks.

There are two cutting methods that are typically used when operating a paver saw. These are the back cut and step cut.

Back cutting

Back cutting is the safest cutting method because the blade is locked into position. Reducing the likelihood of the brick being caught by the blade. Causing the brick to be thrown backwards through the splash guard or being lifted and jammed into the arm and blade cover. The downside to this method is it is a little slower and causes more wear to the blade because more of the blade is exposed to friction for longer.

1. Set the paver in position on the carriage.
2. Ensure the carriage is at the front of the base. *Closest to the operator.*
3. Loosen the lock down nut.
4. Set the blade in the lowered position.
Note: Just lower than the bearing surface of the carriage.
5. Lock the blade in place using the lockdown nut.
6. Turn the water on.
7. Turn the saw on.
8. Press the water button down.
Note: Water will now start to flow.
9. Then slowly and steadily push the paver through the blade.

Step cutting

Usually a quicker method, however there is more inherent risk as both the blade and paver are moving. The operator must ensure the cut being performed on the back surface of the paver to the front, so the likelihood of the brick being caught by the blade is reduced.

1. Set the paver in position on the carriage.
2. Ensure the carriage is at the front of the base. *Closest to the operator.*
3. Turn the water on.
4. Turn the saw on.
5. Loosen the lock down nut.
6. Press the water button down.

Note: Water will now start to flow.

7. Leaving the blade in its raised position, push the paver towards the blade.
8. Once the back 1 inch or so of the brick is under blade; lower the blade to start the cut.
9. As the blade starts to break through the bottom of the paver raise the blade.
10. As the blade is being raised, push the paver further into the blade.
11. Lower the blade to continue the cut.
12. Repeat steps 7 to 9. Stepping through the paver until the cut is complete. It is important to keep even pressure on the blade as both the brick is pushed in, and the blade is lowered.

A video of both methods can be seen at the following link

<https://www.youtube.com/watch?v=LEqd2teat6M>

by scanning the QR code below.



Maintenance

It is critical for the health and safety of the operator and those around them the saw is correctly maintained.

Before conducting any maintenance, make sure the motor is turned off and disconnected from any power source.

It is important that the saw is clean and dry to prevent any injury whilst handling that saw and its components. Below is the recommended minimum maintenance schedule.

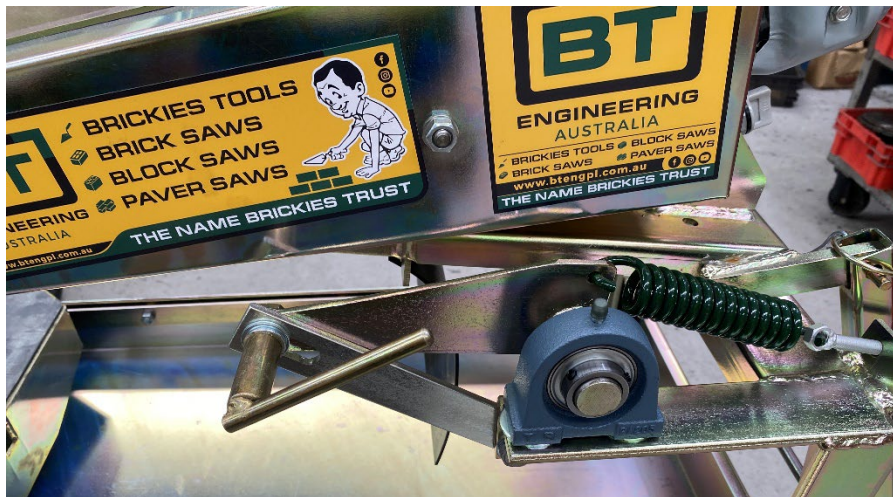
Item	Frequency	Every Use	After First Month OR 20 Hrs	3 Months OR 50 Hrs	6 Months OR 100 Hrs	Year OR 300 Hrs
Carriage wheels	Clean	•				
	Replace					•
Clean Saw		•				
Belts	Check	•	•		•	
	Replace					•
Blade Alignment	Check			•		
Arm Bearings	Check			•		
	Grease					•

Cleaning

1. Brush down the motor with a stiff bristle brush (for example a clean masonry brush) removing any built-up dust and dirt.
Note: Be gentle when brushing over and near the engine switch, oil plug and fuel lever.
2. Make sure the drain hole of plug hole in the back left hand corner of the base is clear, this will allow the water to drain out.
3. Loosen wing nut on the right-hand side of the blade cover.
4. Lift the blade cover to expose the blade.
5. Lift the blade cover exposing the blade and inside of the cover. – *See the blade change instructions.*
6. Flush both the blade and inside of the cover with water (DO NOT use a high-pressure hose), using a stiff bristle brush (for example a clean masonry brush) remove any dirt.
Note: DO NOT spray the motor with the hose as water can get into the air filter and or muffler and cause damage to the engine.
7. Once dry lower and lock the blade cover in place.
8. Wash down your carriage. Be sure to turn it upside down and make sure the wheels are free from any dirt build up.

Blade change

1. Using the lock down nut lock arm in the lifted position.



2. Loosen wing nut on the right-hand side of the blade cover.



3. Lift the blade cover to expose the blade.



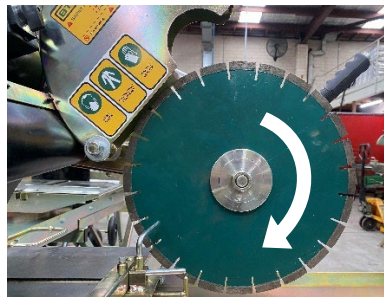
4. Undo and remove the blade nut.

Note: This is a left-hand threaded nut. Turn in a clockwise direction to loosen.

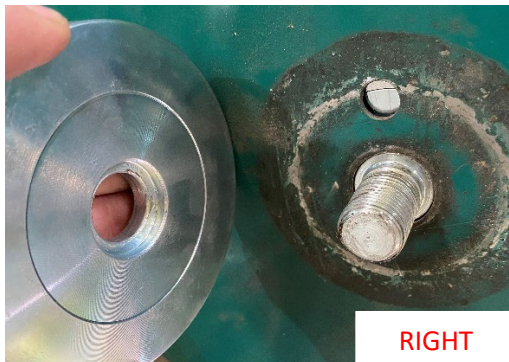
5. Remove the outer blade collar. Do not remove the inner blade collar.



6. Remove the old blade.
7. Install new blade. Checking the direction of rotation of the blade matches the direction rotation of the saw.



8. Slide on outer blade collar checking that the shaft counter bore is closest to the blade.



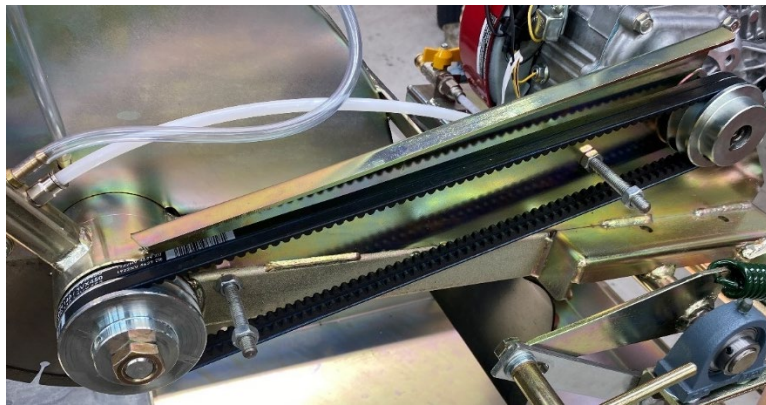
9. Fasten blade nut.
Note this is a left-hand nut. Turn in an anti-clockwise direction
10. Check that the blade is square and center to the carriage.
11. Lower the blade cover.
12. Fix in place by tightening the wing nut on the right-hand side of the blade cover.

Belt Replacement and Tensioning

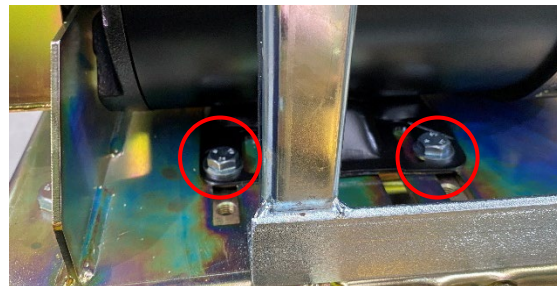
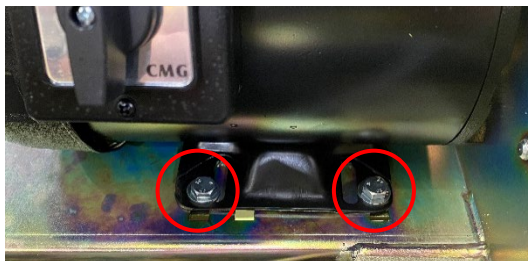
1. Unscrew the nuts on the outside of the belt guard.



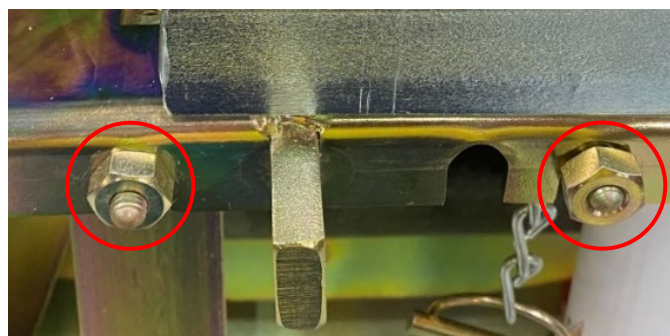
2. Remove the belt guard. This will expose the two V-belts and pulleys.



3. Loosen the four (4) motor mount bolts. Two at the front and two at the back.



4. Loosen the two (2) motor tension nuts. The motor will slide forward reducing the belt tension allowing you to remove the belts.



5. Remove the old belts.
6. Brush off any built up of dirt using a stiff bristle brush (*a clean masonry brush*)
7. Fit new belts – (*Order code: BSAWVB*)
8. Tension belts by doing up the two motor tension nuts.

9. Continue to tighten until you can squeeze the middle of the belts inwards. The deflection should be no greater than 16mm (5/8")



Note: Excessive tension will shorten the life of the belts and pulleys.

10. Once correct tension check belts are parallel.
11. Place a straight edge on the motor pulley and running it towards the blade pulley. You are looking for the pulleys to be parallel.



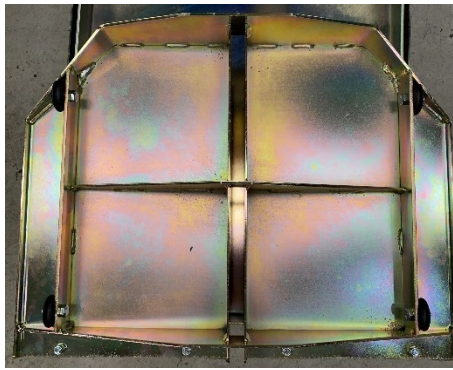
12. Adjust the tension nuts individually to make sure the belts are aligned.

Note: Check belt tension as you work to align the pulleys as you may need to loosen the nuts rather than tighten them.

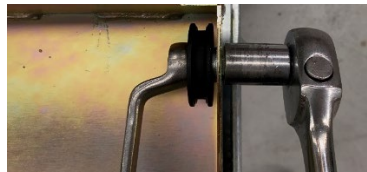
13. Tighten the four motor mount bolts.
14. Fit the belt guards.

Carriage wheel replacement.

1. Turn carriage over to expose the wheels.



2. Using a spanner and socket undo each bolt.



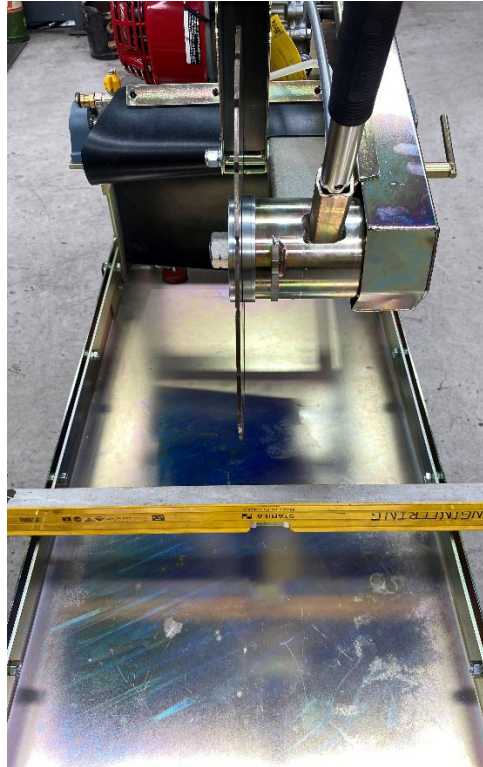
Note: Record the number and position of the packing washers between the carriage body and the wheel.

3. Replace old bolt with new. The head of the bolt is to be on the outside.
4. Replace the old packing washers between the inside face of the carriage and the new wheel.
Note: extra packing washers can be added to improve stability and blade alignment

5. Install the new wheels.
6. Screw on new nut and tighten with a spanner and socket.
7. Test stability and blade alignment. If not correct repeat steps 2-7.
8. Once the carriage is stable and rolling smoothly, the carriage is ok to return to service.

Check vertical blade alignment

1. Remove the carriage from the base.
2. Using the lock down nut lock arm in the raised position.
3. Loosen wing nut on the right-hand side of the blade cover.
4. Lift the blade cover to expose the blade.
5. Place a straight edge across the top edges of the base. *(A spirit level will do)*



6. On the left-hand side of the blade place a one edge of the square on the straight edge and the other edge of the square on the blade.



7. When the blade is vertical there will be no gap between blade and the square.

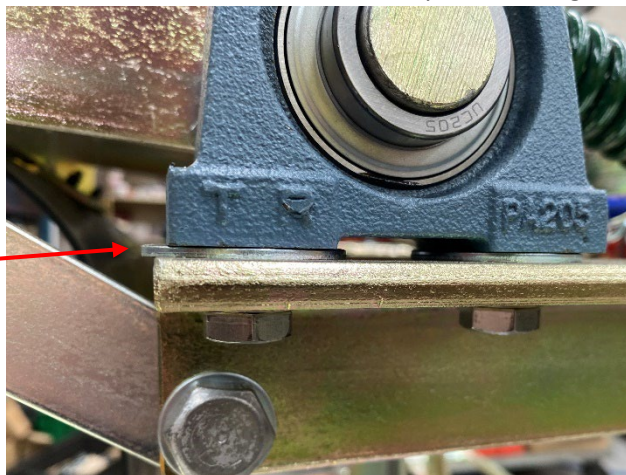
Correcting Vertical Blade Alignment

1. Remove the pivot bearing nuts:
 - I. If the bottom of the blade is proud remove the right-hand side nuts.
 - II. If the top of the blade is proud remove the left-hand side nuts.



2. Place a washer between the motor mount and the pivot bearing.

Washers



3. Tighten pivot bearing nuts.
4. Check vertical alignment.
5. If still out repeat steps 1-4.
6. If corrected check horizontal alignment.

Check horizontal blade alignment

1. Remove the carriage from the base.
2. Using the lock down nut lock arm in the lowered position.
3. Loosen wing nut on the right-hand side of the blade cover.
4. Lift the blade cover to expose the blade.
5. Clamp a straight edge to the right-hand side of the blade. Ensure the straight edge runs the entire length of the base. (*A spirit level will do*)



6. On the right-hand side, measure the distance between the straight edge and the outer edge of the base.
7. The measurement should be the same at the front (closest to the operator) and the back (closest to drain) the measurement should be within $\pm 1.00\text{mm}$ ($1/32''$).



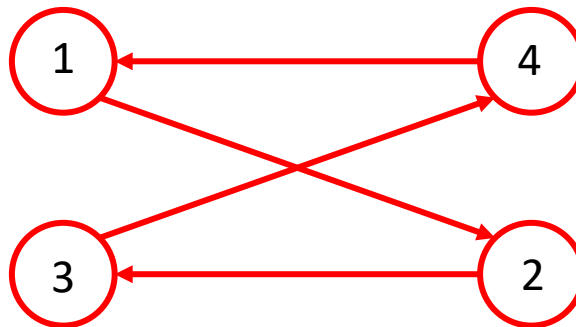
8. The blade is straight when the measurement is within the tolerance.

Correcting Horizontal Blade Alignment

1. Loosen wing nut on the right-hand side of the blade cover.
2. Lift the blade cover to expose the blade.
3. Remove the belt guard.
4. Loosen all pivot bearing bolts.
5. Using soft hammer gently tap the blade shaft until the measurement between the straight edge and the outer edge of the base is the same at the front and the back.



6. Gently tighten pivot bearing nuts in a star pattern to reduce the chance of moving the blade back out of alignment.



7. Check horizontal alignment:
 - I. If blade has moved repeat steps 2-4.
 - II. If blade has remained in place.
8. Replace the belt guard.

Further repair and maintenance videos can be at the following link

<https://www.youtube.com/@btengineeringbrickiestools5797/videos>

or by scanning QR code below.



Spare Parts

The use of genuine BT spares is recommended to ensure the integrity of the parts and the life of the saw.

Part Description	Part number	Standard Qty per saw
Miter Guide	BSAWMI	1
Motor	BSMOTELE	1
Paver saw Carriage – Electric	PSAWC-E	1
Carriage Wheel –Set	SET-BSAWW-PE	1
Blade Shaft Assembly – Brick Saw	BSAWBSK	1
V-Belts	BSAWVB	2
Water Ball valve kit – Brick Saw	BSAWBV	1
Water Tap Assembly and Handle Kit – Brick Saw	BSAWWT	1
Tilt Guide	BSAWAG	0

Troubleshooting Guide

Issue	Cause	Solution
Electrical motor will not start.	<ul style="list-style-type: none"> • Power supply issue. • The plug or lead is damaged. • The capacitor is blown. • The on/off switch is faulty. • The electrical terminals are either corroded or loose. 	<ul style="list-style-type: none"> • Inspect the power supply – for example the circuit or generator is not overloaded. • Have the plug or lead replaced by a qualified person. • Replace the capacitor. • Have the switch replaced by a qualified person. • Clean corrosion off terminals or push leads back on to terminals.
Electrical motor starts but trips thermal overload switch	<ul style="list-style-type: none"> • Power supply issue. • Air does not flow through the motor. • Faulty capacitor. • Mechanical issue. • Faulty thermal overload switch. 	<ul style="list-style-type: none"> • Have a qualified person inspect the power supply. Check the generator has sufficient capacity. • If an extension cord is being used it is no greater than 20m long and is a heavy-duty industrial grade. • Check the fan cowl is clean and air can pass through easily. • Check the fan fins are broken. If so replace fan. • Replace capacitor. • Remove any built up debris. Inspecting the glade guard, Vee-belts, areas around the pulleys, bearings, and collars. • Replace thermal overload switch.
Petrol engine will not start	<ul style="list-style-type: none"> • Flooded engine. • Low fuel or oil. • Spark plug fouled. • Air filter blocked. • Fuel may be contaminated with water or dirt. 	<ul style="list-style-type: none"> • Drain the sediment cup. • Check both fuel and oil levels. • Remove spark plug clean or replace if required. • Inspect choke lever is working correctly – Replace if required. • Remove filter clean or replace if required. • Drain fuel tank and replace fuel with regular unleaded petrol (not E10 or 2 stroke)
Petrol engine starts but does not run smoothly	<ul style="list-style-type: none"> • Choke not closed. • Fuel switch not all the way open. • Old engine oil. • Faulty carburetor. • Mechanical issue. 	<ul style="list-style-type: none"> • Open the choke. • Make sure the fuel switch is push all the way to the open position. • Check fuel lines and drain the sediment cap. • Drain the oil sump and replace with new clean oil. • Drain fuel, remove carburetor inspect and clean. • Remove any built-up debris. Inspecting the glade guard, Vee-belts, areas around the pulleys, bearings, and collars.
Blade is not cutting satisfactorily	<ul style="list-style-type: none"> • Blade maybe blunt. • Blade with incorrect rotational direction. • Blade may not be suitable for the material being cut. • Insufficient water supply 	<ul style="list-style-type: none"> • Inspect the blade for diamonds. • Check rotation of the blade. See blade installation instructions. Pg 13 • Check blade is appropriate for the material being cut. See blade chart from blade manufacturer. • Check water supply and increase flow either direct from the source or at the ball valve.

Issue	Cause	Solution
Blade is wobbling or vibrating	<ul style="list-style-type: none"> Cracked or damaged blade. Blades not compatible with the blade shaft Arbor.(25.4mm [1"]) Blade fitted incorrectly. Worn shaft, shaft bearings or collars 	<ul style="list-style-type: none"> Inspect blade for damage and replace if required. Ensure the blade is suited for a 25.4mm [1"]. If not replace with appropriate blade Refer to blade installation. Inspect and replace worn components.
Not cutting straight	<ul style="list-style-type: none"> Saw carriage wheels worn or damaged. Saw out of alignment. 	<ul style="list-style-type: none"> Inspect carriage wheels and replace them if necessary. Refer to "check horizontal alignment" Page20 of your manual.
Rotational speed of the blade is slow	<ul style="list-style-type: none"> Vee belts slipping. Build up of debris around rotating parts 	<ul style="list-style-type: none"> Refer to "Belt change and tension" Page 15 of your manual. Remove any built-up debris. Inspecting the glade guard, Vee-belts, areas around the pulleys, bearings, and collars.
Excessive noise from the saw	<ul style="list-style-type: none"> Shaft bearings are worn. Motor bearings are worn. 	<ul style="list-style-type: none"> Inspect and replace worn components. Replace motor.

Please note that all trouble should be caused with the motors and engines off and cold.

CONDITIONS OF WARRANTY

This BT Paversaw is warranted free from defective workmanship and or materials for a period of Twelve (12) Months from the date of sale to the original purchaser.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Our Liability hereunder is strictly limited to supplying replacements parts as abovementioned. BT shall not in any event extend to any consequential loss or damage whatsoever, or to any defect due to accident, misuse, or any cause beyond our control.

To make a warranty query or claim, please contact your retailer and provide your serial number and proof of purchase.

The Consumer will pay for freight costs and delivery charges if the BT paver saw needs to be returned to BT Engineering or Retailer for repair or replacement.

Warranty will not be covered in the event of damages or failures by the consumer for incorrect use.

These conditions of warranty exclusively compromise the warranty expressly given by us under the undermentioned BT BRICKSAW

Serial No: _____ Date of Purchase: _____ / _____ / 20____

Purchased from: _____

WARRANTY
HONDA Motor
Powerequipment.honda.com/registration

WARRANTY
BSAW BT BRICKSAW
BT ENGINEERING
+61 2 9521 3041
www.btengpl.com.au
sales@btengpl.com

Please retain this half of the warranty. To be presented when any claim is made under Warranty

Please complete this coupon and return to:

B.T Engineering Group Pty Ltd, 5 Waratah St, Kirrawee NSW AUSTRALIA 2232
or email to sales@btengpl.com

Model : PSAWM	Type: Electric Paver
Serial Number:	Date of Purchase:
Name:	
Address:	
Contact Phone:	Email:
Purchased From:	Ph :