

# **OPERATIONAL MANUAL**

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MODEL: **SL-1.0** SEAM LOCKER

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**by BLUEROCK® Tools**

## SL-1.0 SEAM LOCKER

### UNPACKING THE ITEM

Caution: This machine is packed together with items that may be sharp, oily and overly heavy objects. Remove the machine from the packaging in a safe manner. Check to ensure all accessories are included with the item while unpacking. If any parts are found to be missing, contact the retailer as soon as possible. Do not throw away the packaging until the item is out of the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Keep all plastic bags away from children due to risk of suffocation.



WEEE - Waste Electrical & Electronic Equipment. Note this machine should be disposed of as electrical & electronic waste.

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## Safety

**DO NOT USE THIS MACHINE UNLESS YOU HAVE READ THE OPERATING INSTRUCTIONS!**



**Safety glasses must be worn at all times in work areas. Use a full face mask whenever possible.**



**Long and loose hair must be contained.**



**Appropriate footwear must be worn.**



**Close fitting/protective clothing must be worn.**



**Safety gloves should be worn at all times and jewelry must not be worn.**



**Hearing protection should be worn when using this machine.**



**Read operational manual prior to use.**

### PRE-OPERATIONAL SAFETY CHECKS

- Examine the power cord and plug for damage.
- Examine the body of the machine and inspect for damage or defects.
- Examine the Driving Wheels and Support Floor to ensure they are operable.
- Make certain the on/off switch is in the off position.

### OPERATIONAL SAFETY CHECKS

- ONLY to be operated by qualified personal who have read instructions.
  - NOTE: Failure to read and follow instructions could result in electrical shock, fire, property damage and/or serious injury!
- DO ensure all non-essential people are clear of the immediate work area.
- DO keep body parts, clothing & power cords clear of turning pieces. Stay alert and use common sense when using this tool.
- DO use both hands when using this machine.
- DO guard against electric shock by preventing body contact with grounded surfaces such as pipes, radiators, ranges, refrigerators, etc.

## SL - 1.0 SEAM LOCKER

➤	DO be mindful that power tools can expose an operator to vibrations transmitted through contact with the machine. Prolonged exposure can lead to medical issues which should be discussed with a medical professional.
➤	DO use a dust extraction system for working materials that create or contain dust. The operator should also wear a protective respiratory device.
➤	DO NOT place your hand/hands into the processing line.
➤	DO NOT make adjustments to machine while the machine is running.
➤	DO NOT use this machine with water or any type of liquids.
➤	DO NOT leave the machine running when not in use.
➤	DO NOT hold the work piece by hand or using body. Always mechanically clamp or secure work piece to create a safe distance between the user and workpiece.
➤	DO NOT allow liquids or dust to enter the machine's ventilation system.
➤	DO NOT operate machine outside of machine specifications.
➤	DO NOT touch moving parts while the machine is running as death or dismemberment could occur.
➤	DO NOT remove machine components while machine is connected to a power source. Only to be removed for service by qualified personal and put back on the machine after service is complete.
➤	DO NOT allow children or untrained personal to operate machine.
➤	DO NOT use this machine in the rain or a wet environment. If using outdoors, make sure the surface is clean and dry.
➤	DO NOT operate in the presence of explosive materials as power tools create sparks which may ignite dust or fumes.
➤	DO NOT use on a work area that may contain a live electrical wire/circuit.
➤	DO NOT use the machine overhead.
➤	DO NOT operate this machine on the same work surface where welding is being performed. This could result in severe damage to the machine or personal injury to the user.
➤	DO NOT operate this machine on a lower voltage as this could limit the motor life and work efficiency.
○	NOTE: Use of long small gauge power extension cords can result in decreased voltage. As local voltages can vary, it may be a good idea to test the voltage at the end of the extension cord to ensure proper voltage requirements are met. You might also consult an electrician to make sure the length of cord matches up with the proper wire gauge for this size motor. Make sure to use outdoor cords when operating outdoors. Use a GFCI circuit if using in wet locations.

## Specifications

<i>ELECTRICAL DATA</i>	
Voltage	120V, 60Hz
Current	11.6 Amps
Motor Size	1400W
Power Connection	US Standard Type Plug
Protective Insulation	Class II

<i>MECHANICAL DATA</i>	
Lock Capacity	0.5mm – 1.0mm
Material Tensile Strength 400N/mm <sup>2</sup>	0.03-0.04inch
Inner Radiuses	Min 5.9"
Outer Radiuses	Min 11.8"
Machine Speed	150 RPM Single Speed Gearbox
Working Speed	13-23 ft/min
Nominal Power Consumption	500W
Noise*	Typically 81dB (A) to 85dB (A)
Vibration*	Typically less than or equal to 2.5 m/s <sup>2</sup>

\* The measured values specified above may be exceeded while working.

<i>SHIPPING DATA</i>	
Machine Weight	11.5lbs
Shipping Weight	19lbs
Shipping Carton	19" x 12" x 9"

## Included Accessories

<i>DESCRIPTION</i>	<i>QTY</i>
Instruction Manual	1
Primary Handle (Lever)	1
Edge Preparation Tool	1
Allen Head Wrench	1

## Additional Available Accessories

Additional accessories for this machine may be found in BLUEROCK® Tools' online shop at [www.bluerocktools.com](http://www.bluerocktools.com) or from your local retailer.

## Operations

### Note

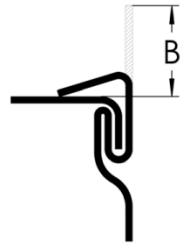
**THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE!**

#### PURPOSE

- The purpose of the SL-1.0 Seam Locker is to close Pittsburgh lock joints on correspondingly pre-machined workpieces, e.g. ventilation ducts, housings, containers, etc.

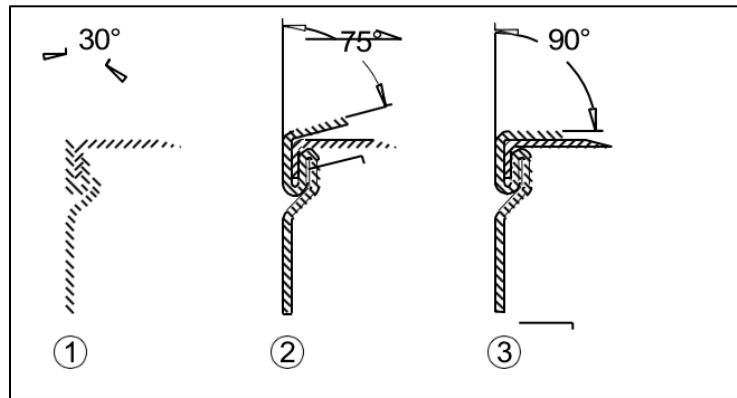
#### OPERATIONAL PRINCIPLES

- The lock seam can be closed on straight or slightly curved contours
- The machine adjusts itself automatically to the sheet thickness to be processed.
- The model SL-1.0 is for locking seams 0.5mm-1.0mm ONLY.

Range of Sheet Thickness SL-1.0		Height of flange (B) [mm]	Picture
[mm]	[Gauge]		
0.5mm-0.75mm	26-22 gauge (Standard Steel) 0.02-0.03 in 28-24 gauge (Galvanized Steel)	6-8mm	 <p>B    Height flange</p>
0.75mm-1mm	22-20 gauge (Standard Steel) 0.03-0.04 in 24-20 gauge (Galvanized Steel)	9-11mm	

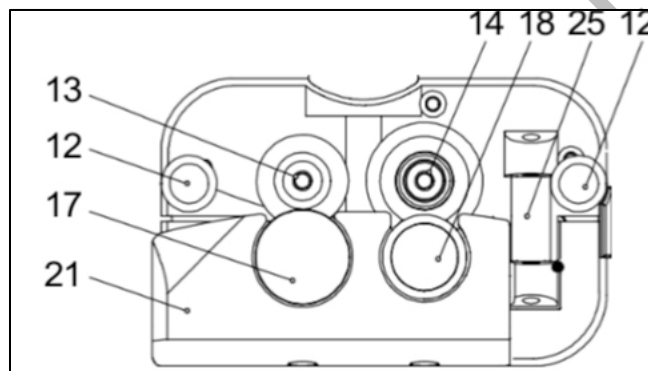
- The quality of the locking seam depends on the height of flange B. If B is too large or too small, the lock seam cannot close properly. Make sure to measure your sheet in mm to make sure the material is within the above chart.
- The seam locker uses 3 stages to lock a seam as it rolls over material. Those stages are outlined below.

## SL-1.0 SEAM LOCKER



1	First Stage
2	Second Stage
3	Third Stage

- The components within the rolling assembly are outlined below with specific attention to the stages shown above.

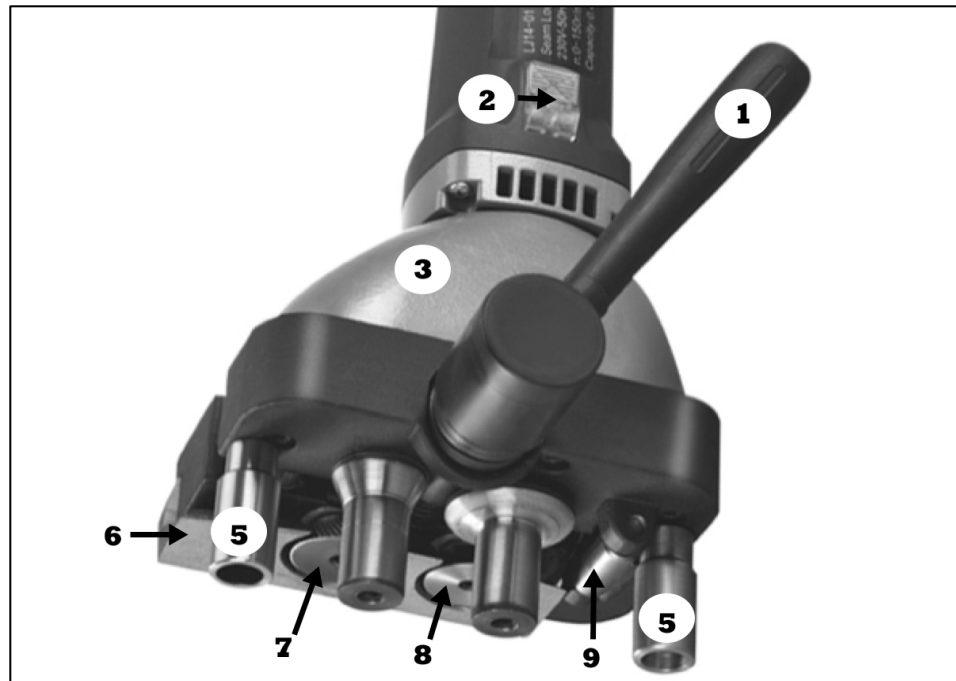


12	Support Roller	21	Guide Rail
13 & 17	1 <sup>st</sup> Stage 30 Deg Rollers	25	3 <sup>rd</sup> Stage Horizontal Roller
14 & 18	2 <sup>nd</sup> Stage 75 Deg Roller		

### MACHINE COMPONENTS

- The main components of the SL-1.0 are the head assembly, gearbox, motor, housing and main handle. The head assembly is driven by the gearbox and the motor.
- These components must not be removed except by a qualified technician. Power must be disconnected prior to any service.
- The machine has a single speed switch located on the main handle (the machine body).



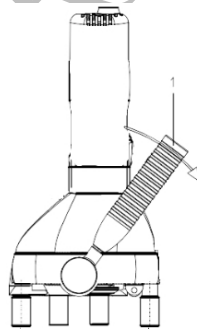


1	Adjustment Lever	6	Guide Rail
2	On/Off Switch	7	30 Deg. Drive Roller
3	Gearbox	8	75 Deg. Drive Roller
5	Support Roller	9	Roller

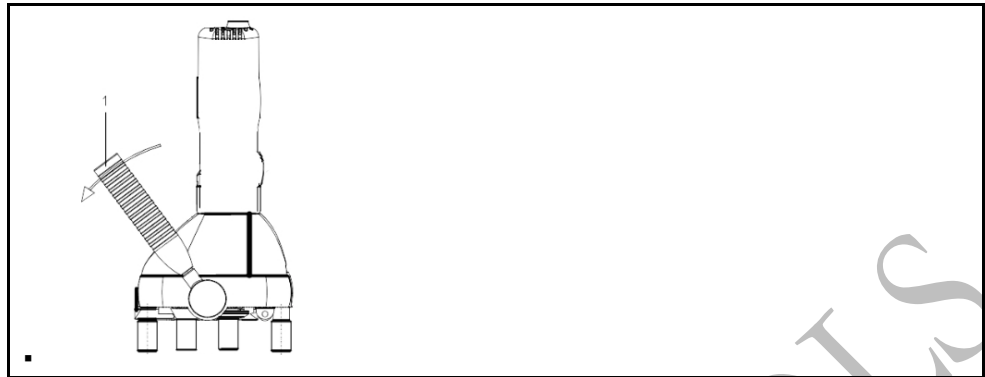
- The clearance between the rollers and the guide rail can be locked into place using the adjustment lever. This is used to place the machine into position prior to use (at the beginning of the channel) and take the machine away from the workpiece after use (at the end of the channel).

- This machine has two positions within the adjustment lever.

- Tool Open: Position 1. This is a disengaged position. This points away from the direction of travel.



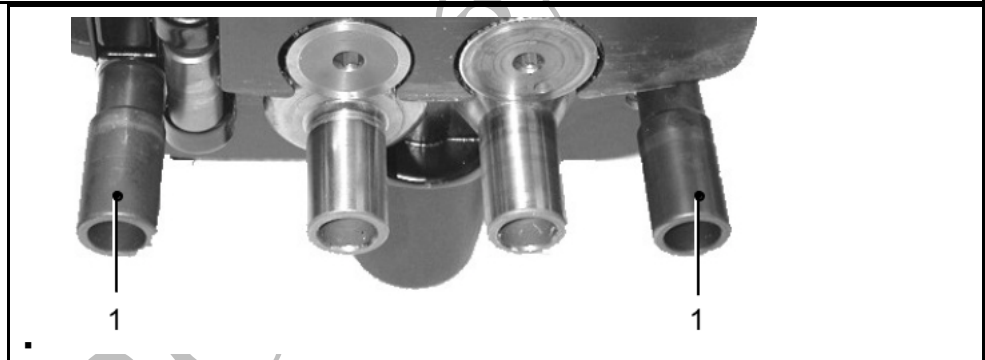
- Tool Working: Position 2. This is the engaged position. This position should point in the direction the machine will be going.



- **NOTE:** No adjustments are used for sheet thickness. The machine will automatically adjust itself depending on the sheet thickness as long as it's within machine's specifications.

➤ **Machining Inner Radiuses:**

- If using the machine to lock seals in an inner radius capacity, the supporting rollers must be removed prior to use. This is part 1 in the figure below. If using it for outer radiuses, the support rollers can stay in place.



**RUNNING THE MACHINE**

- Do all pre-operational and operational safety checks from Chapter 1.
- Consider your security and stability as well as the orientation of the machine in the work area.
  - Consider the work surface material, condition, strength, density and rigidity. These factors directly affect the tools operation and user safety.
  - Ensure the work surface is free of debris, oil, etc.
    - **CAUTION:** Always guide the electric cord away from the back of the machine and ensure it does not pull across sharp surfaces!
  - **NOTE:** For better results, lightly oil the rollers on the machine prior to using.
- Plug the machine into power source.
  - Start the machine by sliding switch 1 in picture below forward. Stop the machine by sliding the switch backwards and release.



○

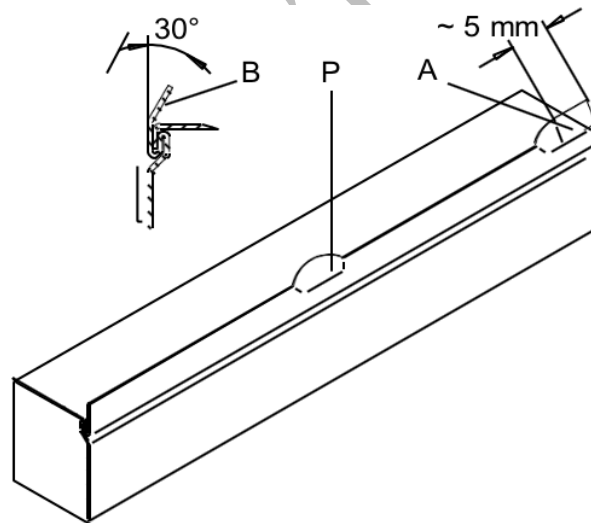
- **CAUTION:** Only lay the machine down on surface once the turning parts have come to a complete stop.

➤ Depending on the construction of the channel to be locked, the seam locker can be used in 2 different ways: "Open Channel" and "Beginning Flange." These 2 methods are outlined below:

○ **Open Channel:**

- In open channel operation you essentially have no constraints at the front and back of the channel

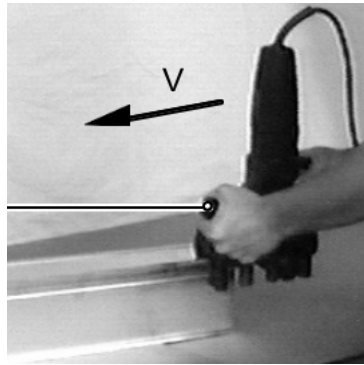
- 1) Bevel the web at the beginning of the channel to approximately 30 degrees with a length of 5mm. See below:



A Beveling for the placement of the machine      P Tacking point

- B Flange

- 2) Move lever in direction of the feed (tool in working position towards the end of the end of the channel).

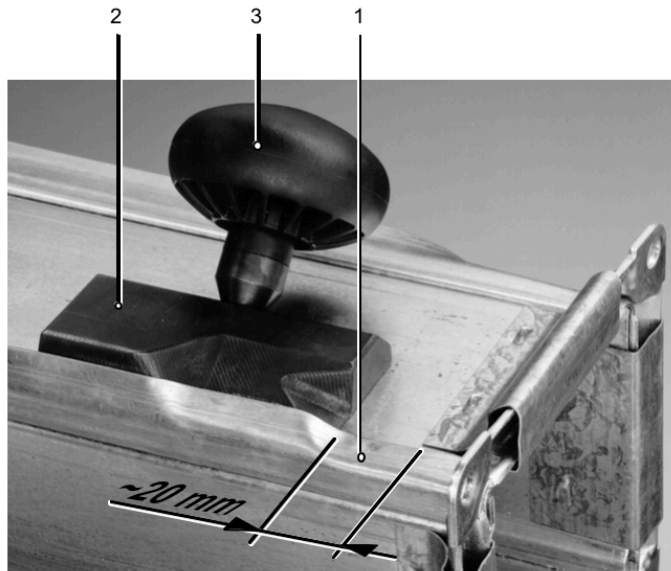


- 3) Switch machine on and place at the beginning of the channel. The curved guide rail on the machine ensures an easy placement of the machine at the beginning of the channel.
- 4) The machine is drawn through the channel as the driving rollers feed the machine over the material while locking the seam.
- 5) Lock seam on channel.
- 6) Move lever into open position.
- 7) Switch machine off and remove from material.

○ Beginning Flange:

- In beginning flange operation you essentially have constraints at some points in the channel.

- 1) Prepare the channel so that the machine can be brought into position. See preparation detail below:



- 1 Pre-formed suspension lug      3 Handle on the moulding
- 2 Moulding for pre-forming the suspension lug

<ul style="list-style-type: none"> <li>• 2) Move lever into position against the channel with the lever in the open position (away from the direction of feed)</li> </ul>
<ul style="list-style-type: none"> <li>• 3) Set the machine up against the prepared material on the channel.</li> </ul>
<ul style="list-style-type: none"> <li>• 4) Move lever in direction of the feed (tool in working position towards the end of the end of the channel).</li> </ul>
<ul style="list-style-type: none"> <li>• 5) Switch machine on.</li> </ul>
<ul style="list-style-type: none"> <li>• 6) The machine is drawn through the channel as the driving rollers feed the machine over the material while locking the seam.</li> </ul>
<ul style="list-style-type: none"> <li>• 7) Lock seam on channel.</li> </ul>
<ul style="list-style-type: none"> <li>• 8) Move lever into open position (away from feed direction)</li> </ul>
<ul style="list-style-type: none"> <li>• 9) Switch machine off and remove from material.</li> </ul>
<ul style="list-style-type: none"> <li>○ NOTE: Some amount of refinishing must be carried out manually at the end of the channel. This is usually 130mm of manual work.</li> </ul>

TRANSPORTING THE MACHINE	
➤	When transporting the machine, always carry by the machine main handle.
➤	If transporting inside a vehicle, it is recommended to transport it on its side so as to avoid the item falling over.
➤	DO NOT carry the machine by the cord.
➤	DO NOT allow the cord or plug to drag along the floor when transporting.

## Troubleshooting

### Note

**SERVICING SHOULD ONLY BE DONE BY A QUALIFIED TECHNICIAN.**

**DON'T FORGET TO UNPLUG POWER TO UNIT PRIOR TO SERVICE!**

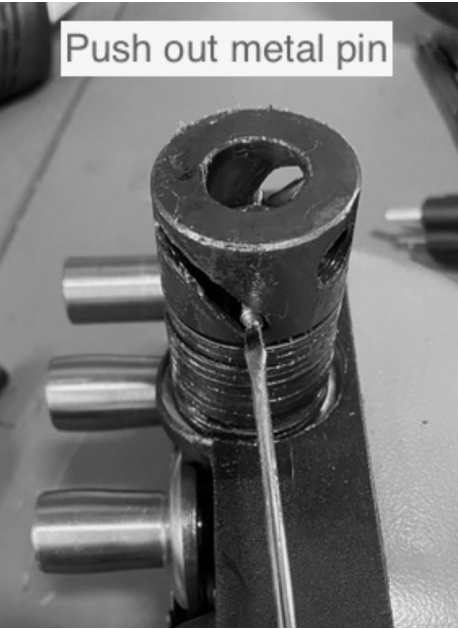

PROBLEM	SOLUTION
Motor does not turn on.	<ol style="list-style-type: none"> <li>1) Check external power source (extension cord, breaker, etc).</li> <li>2) Loose internal wire. Check and secure if necessary.</li> <li>3) Motor brushes defective or worn. Replace if necessary.</li> <li>4) Check to ensure the motor on/off switch is operable. Replace if necessary.</li> </ol>
Excessive sparking when motor is running.	<ol style="list-style-type: none"> <li>1) This may indicate the presence of debris in the motor or worn out carbon brushes. Check the brushes for unusual wear and replace if necessary. Clean out the internal motor armature if necessary.</li> <li>2) Armature has a rough edge. Inspect and replace if necessary.</li> </ol>
Machine is not locking seems fully.	<ol style="list-style-type: none"> <li>1) Wear parts such as Driving Wheels and Pressing Wheels are worn. Replace worn parts.</li> <li>2) Material is not appropriate for this machine. See chapter 3 for sheet type and flange heights.</li> </ol>
Locking handle is too loose/too tight and will not engage properly into a locked position.	<ol style="list-style-type: none"> <li>1) Adjust the handle spacer shims. Handle spacer shims can wear over time. See occasional maintenance section in chapter 5.</li> </ol>

## General Maintenance

➤	Inspect electrical cords and electrical connections.
➤	Keep machine clean and free of debris. Clean motor ventilation slots as necessary.
➤	Check for misalignment, binding and breakage of all moving parts. If damaged, repair tool before use.
➤	Guide Rails of Machine:
○	Clean and oil guide rails on the machine after every 10hrs of use. Cleaning the guide rails can be done with a steel brush. Oil to be used can be Universal Lubricating oil. Check for misalignment, binding and breakage of all moving parts. If damaged, repair tool before use.
➤	Gearbox Service:
○	After 300hrs of use, gearbox grease should be replaced. G1 lubricating grease is recommended.

## Occasional Maintenance

➤	Have the power tool serviced by a qualified service technician using identical replacement parts.
○	Change motor brushes:
➤	Disconnect machine from power.
➤	Take off motor handle housing.
➤	Unscrew left and right side brush holder caps.
➤	Take out old brushes.
➤	Replace with new brushes.
➤	Screw in brush holder caps tightly.
○	Changing out rollers. If any rollers are disassembled, reassemble using 24Nm or torque and use Loctite 262. If the slotted nut is disassembled, reassemble to 16Nm of torque and use Loctite 262.
○	Adjust Handle Spacer Shims if machine handle is too loose or too tight and is not locking into position.
➤	Disconnect machine from power.
➤	Take off motor handle.
➤	Slip off plastic handle cap.
➤	Push metal pin out of threaded handle assembly.

	
<p>➤ Take off threaded handle assembly.</p>	
<p>➤ Take off or add shims. Start at + or – 1 shim depending on the desired result. Add half shims or wavy washers to fine tune.</p>	
	
<p>➤ Reassemble the threaded handle assembly and push pin back in. Connect the handle to test. You may have re-calibrate this a few times adjusting the shim amount until the correct amount of shims are in place. The appropriate shim amount will result in the handle tightly locking into the engaged position without being forced.</p>	



## Parts List

1	Support floor	25	Key	49	Adjusting nut
2	screw	26	Gear	50	screw
3	30°Left Driving wheel	27	Bearing	51	Bearing
4	75°Left Driving wheel	28	Gear	52	Bearing
5	Side wheel	29	Bearing	53	screw
6	screw	30	Gear	54	Gear box cap
7	30°Right Driven wheel	31	Key	55	Bearing
8	75°Right Driven wheel	32	Gear box	56	Clamp
9	Pressing wheel	33	Bearing	57	Wind catcher
10	Pin	34	Gear	58	Motor
11	screw	35	Gear	59	Brush
12	Right machine body	36	Catch spring	60	Brush Holder
13	Pin	37	Gear	61	Field core
14	Left machine body	38	Handlebar (optional)	62	screw
15	screw	39	screw	63	Case
16	Connection block	40	Turning handle	64	Controller (Only on 230V Versions)
17	Bearing	41	Plastic cover	65	Switch push block
18	Pin	42	Pin	66	Switch lever
19	Screw plate	43	Rotor	67	Switch
20	Screw plate	44	Disc spring	68	Cable fixer
21	Gear	45	Disc spring	69	Motor holder cap
22	screw	46	Central shaft	70	Cable protector
23	Gear	47	Pin	71	Flexible cable
24	Gear	48	Spring		

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## Breakdown View

