



Woodworking machinery at its best!

FLOORSTANDING LATHE OPERATORS MANUAL

MODEL: W813



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GENERAL SAFETY RULES



WARNING: Do not attempt to operate the machine until you have read thoroughly and understood completely all instructions, rules, etc. contained in this manual. Failure to comply may result in accidents involving fire, electric shock, or serious personal injury. Keep this owner's manual and review frequently for continuous safe operation.

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.
2. Make sure all tools are properly earthed.
3. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.
4. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before switched it on.
5. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.
6. Do not use in dangerous environments. Do not use power tools in damp or wet locations, or expose them to rain. Keep work areas well illuminated.
7. Keep children away. All visitors should be kept a safe distance from the work area.
8. Make workshop childproof. Use padlocks, master switches and remove starter keys.
9. Do not force the machine. It will do the job better and be safer at the rate for which it is designed.
10. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed. Contact the manufacturer or distributor if there is any question about the machine's suitability for a particular job.
11. Wear proper apparel. Avoid loose clothing, gloves, ties, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
12. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.
13. Do not over-reach. Keep proper footing and balance at all times.
14. Maintain machine in good condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and changing accessories.

15. Disconnect the machine from power source before servicing and when changing the drive belt.
16. To avoid accidental starting, make sure the switch is in the OFF position before plugging in the mains cable.
17. Never leave the machine running unattended. Turn the power off. Do not leave the machine until it comes to a complete stop.
18. Do not use any power tools while under the effects of drugs, alcohol or medication.
19. Always wear a face or dust mask if operation creates a lot of dust and/or chips. Always operate the tool in a well ventilated area and provide for proper dust removal. Use a suitable dust extractor.

ADDITIONAL RULES FOR LATHES

Never attempt to adjust any part of the workpiece whilst the lathe is still in motion. Wait until the workpiece has come to a complete stop.

1. Ensure that chuck keys, tommy bars and similar items are removed before the lathe is started.
2. Always stand to one side when you start the lathe so that if anything does fly off e.g. a loose piece of bark, you will be out of the line-of-fire.
3. When mounting a new piece of timber, rotate the wood through 360° by hand to ensure that it will not hit the tool rest or the bed of the lathe and then start the lathe at its slowest speed. When you are certain that that the work is secure and not too out of balance set the lathe to the normal turning speed.
4. Always check the rotation speed before switching the lathe on to avoid the risk of starting it whilst it is set to run at too high a speed.
5. The speed of the lathe must be adjusted to suit the size, balance, length and condition of the timber being turned. The greater the diameter of the work, the slower the rotation speed needs to be. If the piece you are turning is out of balance, then you must start turning at a low speed, until it is balanced.
6. The tool must rest firmly on the tool rest before it is brought into contact with the rotating wood and must never be lifted off the tool rest as long as it is in contact with the timber.
7. Before sanding, polishing or doing anything else that brings your fingers close to the work, remove the tool rest. Getting your fingers trapped between the tool rest and the work will at least be very painful and may cause serious injury.
8. Never wrap the sandpaper or polishing cloth round the work. If it tightens up it will pull your fingers into contact with the timber and may lead to serious injury.

Important:



Risk of Injury!
Never reach into
Moving parts



Wear Eye
Protection



Wear Ear
Protection

Specification

Distance between centres	900mm (36")
Maximum diameter over bed	310mm (12")
Maximum diameter (with head rotated)	375mm (15")
Motor (induction)	550W (3/4hp), 240v
Speeds	(10) 500 to 2,000 RPM
Spindle thread	M33 x 3.5mm
Head and tailstock tapers	2MT
Hollow Centres	10mm diameter
Dimensions (WxDxH)	1700 x 450 x 1120mm
Weight	82kg
Rating	Hobby

Rating Description

Hobby: Suitable for Weekend DIY'ers and woodworking enthusiasts. Generally lighter weight machines with lower power ratings and smaller tooling capacities. Typically only ever used by one person for short periods of time or longer periods of time infrequently. Machinery should be well maintained in a clean, dry environment such as a home workshop, garage or timber shed. **Expected maximum use of 100 hours annually.**

Please Note: Using a product in excess of its rating will void the manufacturer's free warranty.

Unpacking the Lathe

All the parts are in one carton. As the lathe is heavy, it should be lifted out of the carton by two people.



Assembling the Floor Stand

Important: All nuts and bolts should only be fastened finger tight until assembly is complete.

Using the coach bolts, nuts and plain washers, fix the four legs to the tray, noting that the legs are left and right handed. Bolt on the top plates, which fit inside the legs. Square up the assembly and tighten all the nuts and bolts.



Fitting the Lathe to the Stand



Lift (two people are required for this stage) the lathe bed, complete with headstock, tailstock and tool rest on to the stand (Fig. 2)

Line up the fixing holes in the bed with those in the stand and join the two with the 8 long cap head bolts, spring washers and nuts. Once all 8 are in place, tighten them firmly.



Fit the yellow lever onto the headstock locking shaft. Secure it in place with the spring and fixing screw. Tighten the fixing screw firmly.

When engaged, this lever will unlock the headstock. Pull the lever away from the headstock to rotate it without engaging the shaft. In this way the handle can always be placed in a convenient position.

Insert the drive centre into the headstock spindle and the tail centre into the tailstock spindle. These may be removed by inserting the knock out bar into the other end of the spindle and tapping the centre out. It is advisable to put a hand under the centre when knocking it out, to prevent the centre from falling to the floor and being damaged.



Bolt the left hand extension bed to the headstock end of the main bed using 2 fixing screws.

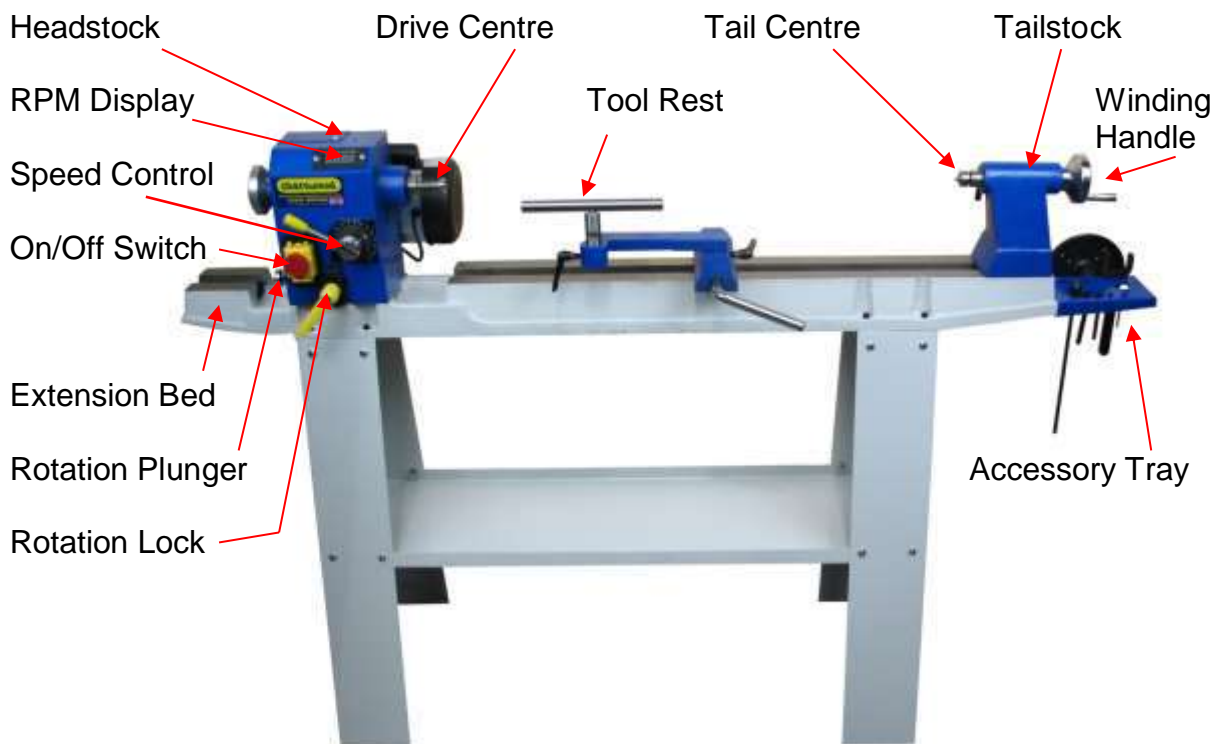
The headstock on this model rotates so that large diameter bowls can be turned.

The tool rest can be fixed to the extension bed when using the headstock rotated to the front, as shown.



Bolt on the accessory storage tray using the 2 fixing bolts.

Operation



Starting and Stopping

Slide up the red switch cover and lift the cover. Press the green 'on' button to start the lathe. Press the red 'off' button to stop the lathe. When the switch cover is down, pressing the cover activates the stop button.

The lathe must be running before you use the speed control. To change the speed pull the end of the lever towards you, then slowly rotate it to the desired speed. The revolutions per minute will be indicated on the digital readout.

It is recommended that the lathe is always retuned to the slowest speed before stopping the lathe. Leaving the lathe at a higher speed when starting, puts more strain on the motor and may shorten the life span of the motor.



Speed Control
Lever

On/Off Switch

Rotating the Headstock

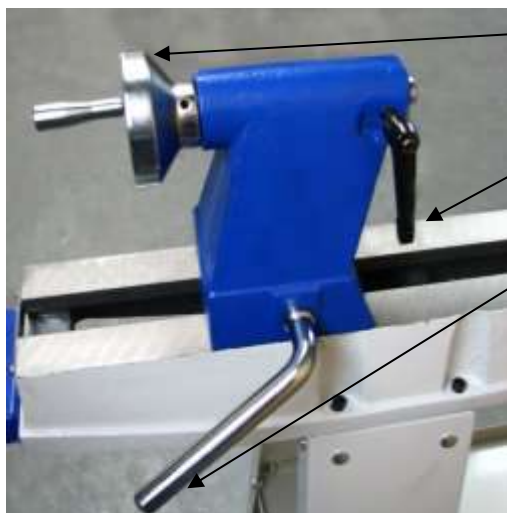
For safe shipping the headstock is rotated to the front of the machine. To return it to the normal spindle turning position, undo the yellow rotation lock lever, pull out the silver rotation plunger and turn the complete headstock anticlockwise through 90 degrees. The plunger will engage again in this position, lock it tight with the yellow lever.

For certain projects, such as large bowl turning, it may be necessary or more comfortable to rotate the headstock round to the front, 90 degrees clockwise from the spindle turning position. The headstock can be locked in any position at 45 degree intervals.

Adjusting the Tailstock

The tailstock can be moved along the bed of the lathe. To release the tailstock pull up the silver tailstock locking lever. The tailstock can now freely slide along the bed, when it is positioned where required, clamp it firmly in place by pressing the lever firmly down.

Fine adjustment is then made to the tail centre position. Unlock the winding handle locking lever by half a turn only. Turn the winding handle to enable the tail centre to be advanced or retracted. It has a travel of 57mm (2½”).



Winding Handle

Winding Handle Locking Lever

Tailstock Locking Lever

Both the headstock and tailstock spindles are hollow and drive centres or other tools may be removed by tapping them out with the knockout bar supplied.

Align the Centres



It is now necessary to check the alignment of the tailstock to the headstock. Fit both centres and slide the tailstock down towards the headstock until both centres touch and lock the tail centre in place. If the 2 centres do not meet correctly, undo the yellow headstock rotation locking lever and move the headstock slightly until the centres are aligned. Now lock the headstock.

It will be necessary to repeat this procedure whenever the headstock has

been moved away from the spindle turning position.

Adjusting the Toolrest

The toolrest can be moved along the bed of the lathe. To release the toolrest pull up the silver toolrest locking lever. The toolrest can now freely slide along the bed, when it is positioned where required, clamp it firmly in place by pressing the lever firmly down.



Toolrest

Toolrest Height Adjustment Lever

Toolrest Locking Lever

The height of the toolrest can also be adjusted, using the black lever. This type of lever can be rotated to a more convenient position, without moving the thread, by pulling the lever away from the thread to disengage the ratchet teeth and then rotating it.

Recommended Turning Speeds

Diameter (mm)	Roughing RPM	General Cutting RPM	Finishing RPM
Under 50	1500	3200	3200
50 – 100	750	1600	2500
100 – 150	500	1000	1700
150 – 200	500	800	1250
200 -250	500	650	1000
250 – 300	500	530	850
300 - 350	500	500	700
350 - 400	500	500	600

Maintenance

Changing the Drive Belt



Over time the drive belt will become worn and will need replacing.

Stop the lathe in the fastest speed and unplug it from the electric supply. Use a hex key to undo the grub screw which holds the silver rotating hand wheel onto the spindle. Unscrew the rotating hand wheel from the spindle. Locate the 4 retaining screws and remove the belt cover. Remove the drive belt from the motor pulleys first.

Install the new belt and then follow these instructions in reverse.

You can find a video guide in the technical help section of our website or on you tube.

Optional Accessories

There are a wide range of optional accessories available for lathes.



Viper 3 Geared Scroll Chuck

A chuck is used for bowl turning projects, when the work piece is held from one end only.

The Viper 3 sized chuck is a perfect match for the size and power of this lathe.



DC16MT2

A Drill Chuck with 16mm Capacity, and an MT2 fitting. Used for boring holes from the tailstock end.



W834

6 Piece High Speed Steel Chisel Set. Includes the 6 most commonly used woodturning chisels, everything you need for spindle turning.

ML28 LED Work Lamp

If you need better lighting in your workshop this LED light has a magnetic base which can be attached to the headstock or the bed of the lathe. A Flexible shaft allows it to be positioned as required.

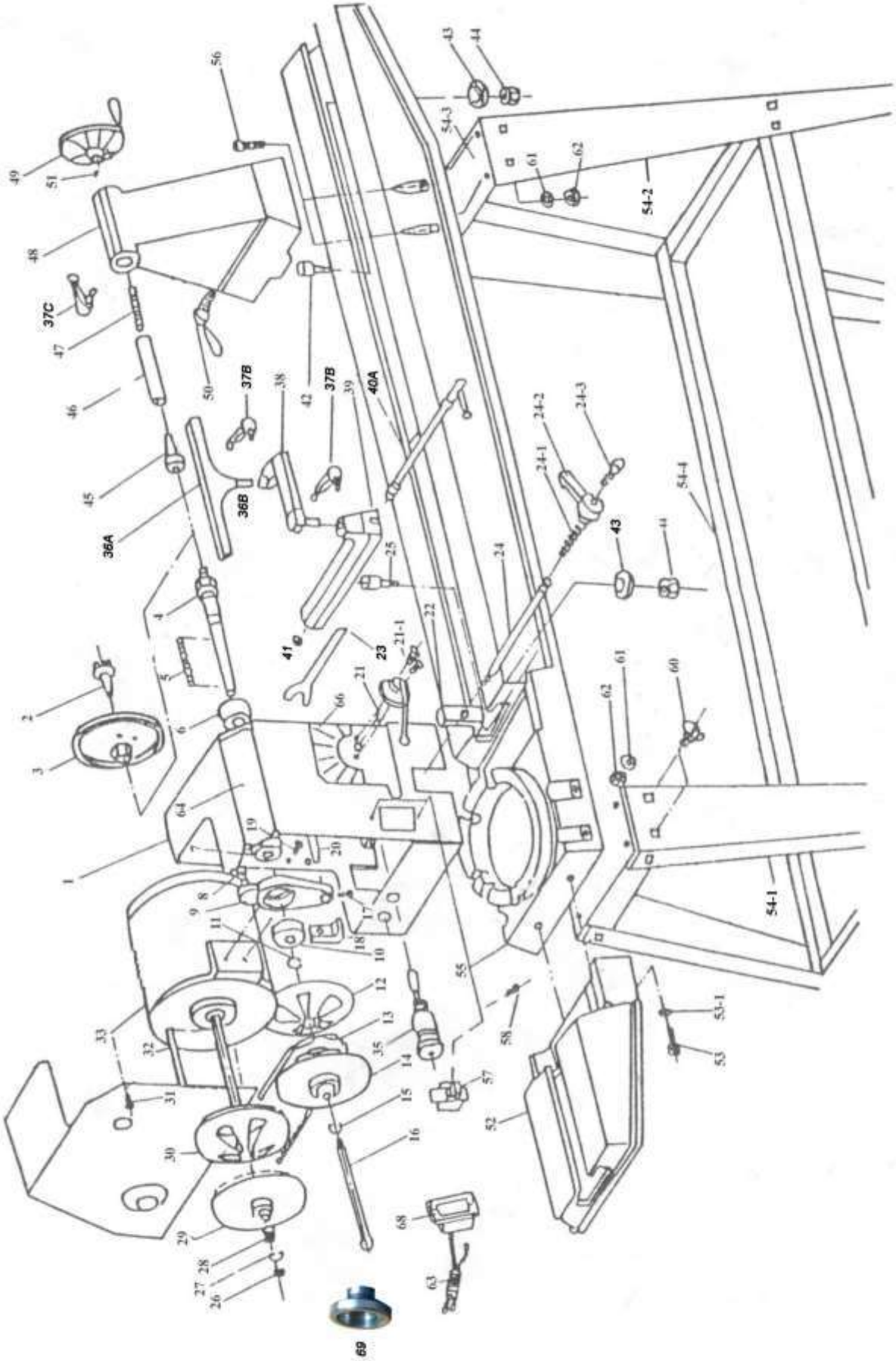


CHARNWOOD W813 LATHE TROUBLESHOOTING GUIDE

Fault	Possible Cause	Remedy
Machine will not start	Power supply not connected	Check plug socket is switched on
	Fuse in plug has blown	Replace fuse
	Break in power supply cable	Visually check cable, replace in necessary
	Loose terminal on switch	Remove switch and check connections
	Switch failed	Replace switch
Machine will not start, a buzzing sound is heard	Start capacitor failed	Replace capacitor
Machine starts to turn but slow speed only and stalls easily	Failed motor	Replace motor
Spindle stalls but motor still running	Loose drive belt	Replace drive belt
Motor is running but spindle not turning	Broken drive belt	Replace drive belt
Motor is overheating	Too much load on motor	Reduce load on motor, make shallower cuts
	Airflow to cooling fan is blocked	Remove fan cover and clean grill
Spindle rotation slows during cut	Excessive depth of cut	Make shallower cuts
	Chisels are dull	Sharpen chisels
	Drive Belt Slipping: Check the belt is not frayed	Replace drive belt
	Drive Belt Slipping: Check the spring loaded pulley moves freely along the shaft	Clean the shaft and use a lubricating sparay
	Signs of wear or damage to pulleys	Replace motor drive pulleys

You can find more information as well as video guides in the technical help section of our website and on youtube.

Charnwood W813 Parts Diagram



Charnwood W813 Parts List

No.	Description
01	Headstock Casting
02	Drive Centre 2MT
03	Faceplate M33 x 3.5mm
04	Headstock Spindle M33 x 3.5 / 2MT
05	Key
06	Bearing 6205Z
07	Bearing 6205Z
08	Spring
09	Pulley Shift Bracket A
10	Bearing 6007Z
11	C Ring Circlip
12	Pulley Spindle - Right
13	Drive Belt
14	Pulley Spindle – Left
15	C Ring Circlip
16	Knock Out Bar
17	Screw
18	Rear Headstock Clamp
19	Screw
20	Rack Shaft
21	Speed Change Shaft Assembly
21-1	Screw
22	Front Headstock Clamp
23	Headstock Spanner 32mm
24	Locking Shaft
24-1	Spring
24-2	Rotation Lock Handle
24-3	Handle Fixing Screw
25	Tool Rest Cam Hanger
26	C Ring/Circlip
27	Sleeve
28	Spring
29	Motor Pulley - Left
30	Motor Pulley - Right
31	Screw M5 x 10mm
32	Key 4 x 4 x 85mm
33	Motor 550W, 240V
34	Cover, Drive Belt
35	Plunge Lock
36A	Tool Rest Crossbar 225mm Width

No.	Description
36B	Tool Rest Post 25mm Diameter
37B	Ratchet Handle – Tool Rest
37C	Ratchet Handle - Tailstock
38	Tool Rest Extension
39	Tool Rest Body (Banjo)
40A	Tool Rest Locking Handle
41	C Ring/ Circlip
42	Tailstock Cam Hanger
43	Clamp Plate
44	M18 Nyloc Hex Nut
45	Tail Centre 2MT
46	Tailstock Spindle 2MT
47	Tailstock Screw
48	Tailstock Casting
49	Tailstock Hand Wheel
50	Tailstock Locking Handle
51	Grub Screw
52	Extension Bed
53	Hex Socket Screw
53-1	Washer
54-1	Floorstand Leg (front left / rear right)
54-2	Floorstand Leg (front right / rear left)
54-3	Floorstand Top Plate
54-4	Floorstand Shelf
55	Cast Iron Bed
56	Hex Socket Screw
57	On/Off Switch KJD12
58	Screw
60	Coach Head Bolt
61	Washer
62	Nut
63	Power Cable
64	Speed Display (New – Inset)
65	Speed Sensor
66	Speed Label
68	Switch Housing
69	Hand Wheel
70	Tool Tray



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