

ROOF TILE MAKER

MACHINE ADJUSTMENTS AND SETTINGS

1 Adjusting the GUIDE BARS. The first adjustment is the height of the long, round chromed shafts running along each side of the Roof Tile Maker. These shafts are called Guide Bars. These guide the handle as it slides back and forth while shaping the tile. The grooves in the handle can get worn causing the hand to be lower and lower until it hits the mould frame at which time they need to be adjusted.

The mould frame is the rectangular space into which the mould is placed. It has two straight sides of different heights and two end pieces that have a 'wave' and two Vee-notches.

The Guide Shafts are held in position by a supporting screw underneath and a locking screw on top. These might be bolts with a hex head or grub screws turned with an Allen Key. The height at both ends should be checked to see they are adjusted correctly. If you have to replace them, they have standard M6 threads.

When the handle is placed on the bars, the half-rounds at each end should sit on the Guide Shafts and the handle should not slide along touching any part of the mould frame. The handle should always slide on the Guide Shafts.

When the handle is passing over the ends of the mould frame, it needs to be scraped clean so that the sand-cement mix remains on the tile. The clearance between the underside of the handle and the end plates should be less than half a millimetre. Touching the end plate a very small amount is not a problem so it should pass over as close to it as is practical.

Adjusting the Guide Shaft Height

Loosen the locking screw on top. The adjusting bolts under the guide shafts should be screwed up or down until the handle passes over the end plate and almost touches it. A little light will shine through between them but a paper clip wire will not fit in the gap.

Repeat the adjustment for the other end - four bolts in all. Lock the shafts into position with the four locking screws on top.

2 Adjusting the MOULD REST BOLTS. The mould sits on the ends of four threaded shafts. These support the mould while you are making the tile. These four bolts should not be adjusted unless you have first checked that the Guide Shaft height is set correctly. Guide shafts only rarely require adjustment so it is likely to be OK, but check first (See section 1).

Turn the hand tool on its side, or on its back and place it on the guide shafts so that the round handles hang over each side without touching the guide shafts. One of the flat sides of the hand tool will then be resting on both guide shafts and this provides an edge from which to measure down to the top of the bolts. See photo.

Place the edge of the hand tool directly over one of the 4 Mould Rest Bolts. Using a clearly marked and accurate ruler such as a 150mm steel rule or something similar, measure the distance from the top of the Mould Rests up to the underside of the hand tool. Get your eye down level with the top of the machine so you can see very clearly. The gap between them should be exactly 26mm. If it is not, you can loosen the locknut holding the threaded bar (the nut will be either 18 or 19mm) and rotate the threaded shaft up or down as necessary. When tightening the lock nut, hold the threaded shaft firmly so that it does not rotate as the locknut is tightened. Check again that it is 26mm between the top of the threaded shaft and the underside of the hand tool. Using a metal or wooden spacer with a thickness of 26mm is very helpful in maintaining accuracy.

Repeat this check with the other three Mould Rest bolts. Their top faces should all be 26mm below the edge of the hand tool.

3 Adjustment of the EJECTOR PLATE BOLTS. The ejector plate is the square steel plate that moves up and down when you lift the ejector handle. The ejector plate has 4 bolts protruding upwards from the corners. Each bolt has a lock nut under it. The spanner size for them is either 18 or 19mm.

Stand at the front of the machine so that the red ejector handle is directly in front of you. Slide the overturned Hand tool along the Guide Bars until it is directly over one of the two bolts on the **RIGHT HAND SIDE** of the ejector plate. The Right Hand Side bolts are the ones near the higher of the two sides of the mould frame. Remember that in order to make this measurement, the handtool must be on its side or upside down with a flat surface (not the round handles) resting on the two guide bars. If you have not checked that the guide bars are in their correct position, go to Section 1 and check them for height.

The distance between the top of the two Right Hand bolts and the underside of the handtool should be 28mm. This distance only applies to the two bolts on the Right Hand Side. Adjust the bolts as necessary and tighten the lock nuts. Always check the height again after the lock nuts have been tightened. Using a metal or wooden spacer with a thickness of 28mm is very helpful in maintaining accuracy.

Slide the handtool until it is directly over one of the two bolts on the **LEFT HAND SIDE** of the ejector plate. The Left Hand Side bolts are the ones near the lower of the two sides of the mould frame. In order to make this measurement, the handtool must be on its side or upside down with a flat surface (not the round handles) resting on the two guide bars. If you have not checked that the guide bars are in their correct position, go to Section 1 and check them for height.

The distance between the top of the two **LEFT** bolts and the underside of the handtool should be 30mm. This distance only applies to the bolts on the Left Hand Side. Adjust the bolts as necessary and tighten the lock nuts. Always check the height again after the lock nuts have been tightened. Using a metal or wooden spacer with a thickness of 30mm is very helpful in maintaining accuracy.

4 Checking the operation of the Mould Rests. Place a mould into the machine, left side down first and then drop in the right hand side. If the mould is flat (not warped) it should lie flat on the 4 mould rests. Try rocking the mould back and forth to see if it wobbles. It should wobble less than 1mm. If it wobbles more than that, then either the mould rests are not set evenly in height, or the mould has become warped. It is possible to straighten a mould by having two people giving it a good hard twist in the appropriate direction. They are quite stiff but they can be straightened a little.

When the mould is resting evenly on all the mould rests, put the handle in the normal position (profile under) over the mould. Measure the distance between the straight part of the handle and the top of the two waves on the right side of the mould. This should be 9 to 9.5mm, not less (this is the thinnest part of the roof tile). If you find it is less, for instance 7 mm, the Mould Rests are 2mm too high. Adjust the dimensions given in section 2 and 3 above by the amount that it is out, in this case 2mm too high. Thus the 26mm becomes 28, 28mm becomes 30 and so on.

If you measure more than 9 mm for instance 12 mm . Then the Mould Rests are too low. Set the Mould Rests to $26-3=23$ mm, the right side of the ejector plate to 25 mm and the left side to 27 mm.

5Checking the operation of the Ejector Plate. Place a mould into the machine, left side down first and then drop in the right hand side. Try rocking the mould back and forth to see if it wobbles. It should wobble less than 1mm. If it wobbles more than that, see Section 4.

Place your left hand on the centre of the mould and press gently downwards. With your right hand lift up on the red ejector handle. After a brief movement up, the ejector plate bolts on the Right Hand Side will come into contact with the underside of the mould, but only on the right hand side. Continue lifting the red ejector handle. The right side of the mould will lift up about 2mm and the left side will remain where was, sitting on the mould rests. Both of the ejector plate bolts on the right side should hit the underside of the mould at the same time. If they do not, then either the mould rests or the ejector plate bolts are not correctly set, or the mould is warped.

Continue lifting the red ejector handle. The two ejector plate bolts on the Left Side should come into contact with the underside of the mould at the same time. This is 2mm of handle travel LATER than the two bolts on the right side.

Take your left hand off the top of the mould and let the red ejector handle drop back down to the bottom. The mould should drop back into position, sitting on the four mould rests. The mould should not touch any of the four ejector plate bolts when it is sitting on the mould rests.

Again, slowly raise the red ejector handle and watch closely to see that the right hand side of the mould is lifted slightly before the left hand side. This motion eases the finished Roof Tile up out of the mould frame without damaging it.

6If the Hand tool just skims over the end plates of the Mould Frame, and if the mould lies flat on the mould rests, and it ejects upwards on the right slightly before the left, then your Roof Tile Maker is properly adjusted and ready for use.

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