



An electrician at the Morsø factory in Denmark installs the electrical components in a Morsø EH

# The trouble with Morsø is ...

... their machines are just too well made, according to freelance Morsø engineer **Mike Bond GCF**, who has re-written and edited the Morsø instruction manual for manufacturer Dan-List

**T**he Morsø mitre guillotine is a gem. An icon of the picture framing business. There can be no doubt that these wonderful machines are well made; they are built to last like no other picture framing tool. They last for years and years, as a visit to the Dan-List factory in Denmark will prove.

As you pass through the front door of the factory you will see one of the first Morsø machines ever built, in 1911. It is in perfect working order and is much the same as the machines used by today's picture framers, save the absence of the familiar green pressed metal body that surrounds the moving parts. Also, at

the time it was manufactured, safety was not a priority, so there are no guards like the Perspex blade and finger guards which framers have (or should have) on their machines today. The old Morsø may look a little like an old treadle Singer sewing machine, but in fact, not much has changed over the years.

Unlike most of the tools we use for picture framing, which, with respect, always seem to be being improved or refined, this little beauty was designed perfectly at more or less the first attempt, so that 100 years later the principal design remains the same. No one has come up with a better, easier or more cost-effective way of mitring

mouldings. So, unless you wish to move up to faster production, or your knees are knackered, and you wish to invest in an excellent hydraulic Morsø, then your 'F' model is like your best friend and will stand by you throughout your working career.

I was forced to change my trusty old friend for a new one last year, not because there was anything wrong with it, far from it, but the model I operated was no good for teaching new framers, because the measurement scale was imperial and it included the old 45 degree lined scale measuring facility, whereas the newer vernier scale system allows for inside or outside measurements. My old machine was 65 years old and I sold it for £500, probably about three or four times what it cost (actually, I didn't really sell it; a customer was begging me to take money for it).

One instinctively knows when something is well made, but in this case the best barometer of success is that other people manufacture mitre guillotines using the same principles and techniques. An accolade indeed, to have your design copied by factories in the Far East. But, as some readers may have discovered to their cost, quality counts, and quality is of primary importance at the Dan-List factory. It is thanks to their commitment to quality that they feel able to offer a five year warranty on all parts (except blades, of course). This warranty is a little known fact and it astounds me that any company in the modern world can offer that kind of guarantee without the customer having to prove that the machine has been regularly serviced. But Dan-List's confidence in their machines is absolute.

The trouble with Morsø is that their machines are just too reliable. They go on and on, seemingly without the need for lubrication or servicing. Because they don't actually stop working, many of us don't take the time to check that our Morsøs are 'happy' and not in need of maintenance or routine servicing.

When our angles are not quite perfect, we immediately suspect the blades. Everyone who calls me for assistance rambles on about what this blade set did, or that blade set does. I usually put the phone on speaker mode, put the kettle on, make a cup of tea and by the time they have got 'blade syndrome' out of their system I am half way down the cup. I then move to my



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armchair and settle down for the 'adjusting the fences' talk, where the caller tells me that they have done what XYZ Framing does, or what Bloggs GCF told them to do ten years ago. I am dying to say, 'Shut up and listen!' but, as you know, the customer is always right and people like to get things off their chest, so I have become a good listener.

The truth of the matter is that, yes, a certain set of blades may give better angles than another set, but that is not the end of the story. It's not even the beginning. The beginning goes way back to when you bought the machine and, for whatever reason, failed to lubricate the moving parts.

The most important moving parts are the long guides and the short guides, both made of cast iron, both rubbing up and down and backwards and forwards



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against each other. Over the years, play develops between them and the blade carrier and, dear reader, your troubles have begun. 'But,' I hear you repeat, 'This set of blades doesn't do this or that!' In that case, let's get a few things straight about blades:

1. Blades have to be razor sharp
2. Blades have to be ground as a pair
3. Blades have to be hollow ground
4. Blades have to be set up correctly
5. Bottom blades also need changing occasionally ('Bottom blades?' I hear you say).

Now that we have got a few principles straight, I can refer back to the wear and tear I discussed earlier. If there is play in the long guides, and one blade is blunter than its partner, then the blunter blade will cause the blade carrier to tilt slightly as it begins to cut the moulding. This of course means that you won't achieve an accurate cut. Moreover, if there is play in the short guides, this could cause the blade carrier to move slightly left or right during the cut, which will of course alter the angles. Remember, we are talking minimal movement here, but when multiplied by all four corners, it could add up to one or two degrees. Whether you like it or not, a rectangle or square is made up of 360 degrees, no more, no less.

If the blades are not ground as a pair, then one blade could be longer than the other, causing one of them to touch the moulding before its partner, which will result in the problems I have outlined above.

If the blades are not hollow ground, then they are not as the manufacturer intended them to be. The Morsø is designed to use hollow ground blades and nothing else. Dan-List are quite specific about the circumference of the arc of the hollow grinding stone, as is specified in their instruction manual. The final grind is 28 degrees using the Morsø 101 grindstone, and the blade should then be honed by hand to exactly 29 degrees using a Morsø number 102 silicon carbide kerosene impregnated oil stone. The final finish is achieved with a water wetted flat slate stone, according to the Morsø Knife Grinder Instruction Manual. By all means have your blades flat ground, but don't expect them to work as well as hollow ground blades that have been sharpened on a Morsø grinding machine.

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There is a lot of talk about ‘hills’ on blades, which refers to a slight buckling in the blade. This problem can be caused by wood resin on the blade, which requires WD40 and Mr Sheen



The first Morsø factory on the island of Mors, top, and the company's present HQ

blades, which refers to a slight buckling in the blade. I have heard people advise that if the blades on the upstroke will not return, then blade hills could be the problem and you should have these removed. However, this problem could equally be caused by wood resin on the blade, something which can be resolved by cleaning the blade with a ball of cloth with WD40 on it, followed by a quick spray of Mr Sheen. I clean my blades with Mr Sheen after roughly every 50 cuts.

If you suspect that there might be hills on your blades, I suggest that you remove them, place them flat side up and, with the finest of oil stones and keeping the stone exactly flat to the flat side of the blade, and using plenty of lubricant, move the stone in one inch circles across the flat. Do this for a minute, then wipe the blade clean. If there is a hill, then there will be a slightly different ‘arc’ colouring around the shape of the hill. If you do have a hill, you will weaken the blade by trying to remove it by grinding (because the blade is now thinner). So, whether or not to have hills removed is a matter of personal choice.

Blades have to be set up absolutely

correctly. It can take up to 20 minutes to do it properly, but do it properly you must. Picture framers with no engineering experience valiantly tackle this task, with varying degrees of success. But you must take your time, follow the instruction manual and do it right.

Bottom blades (‘What bottom blades?’) have to be set up perfectly. And if you are muttering ‘What bottom blades?’ then perhaps you should consider calling out a qualified engineer to service your machine. Guess what damaged bottom blades will do? They will damage the top blades. So get them checked right away. My final test after a service, or a blade change, is to take the paper back off one of my stickers and let the Morsø cut a mitre in it without me holding it.

Another cause of ‘open at the top, closed at the bottom’ joins is the handle that moves left and right, and subsequently moves the blades forwards and backwards. Well, it is not exactly the handle, it’s the teeth and ratchet on the handle, which in time wear out and cause play on the ‘final cut’ detent. As you push the handle to the right to execute the final cut, the metal handle shaft is moved until it hits the stop. It

may not, however, have settled into its detent, so as you press the foot pedal down and the blades bite, the handle moves back slightly into its detent. The remedy for this problem is threefold:

1. Change the handle or ratchet or both
2. Hold the handle forward with some force during the cut
3. Having pushed the handle forward for the final cut, release the downward pressure and pull the handle back into its detent.

This can also explain why you get ragged edges on the outside back edges of mouldings. There are other reasons for this problem, but this is one of them.

This reliable little mitring workhorse needs TLC like everything else in life, but lubrication and servicing are paramount. Every moving part of your Morsø needs oiling once a week and your machine should be serviced annually, if you want it to remain in tip-top condition. It usually takes me about three hours to service a Morsø F, including taking up all the play and setting up the machine properly.

Another trouble with Morsøs is that they are just too cheap. By that I mean too inexpensive. You really do get a lot for your money relative to other picture





Left: Morsø machines being assembled in the Danish factory  
Below: the first Morsø mitring machine, left, and the fully automated Morsø EHXL production machine (below right)



framing tools. A Morsø is cheaper than a vertical board and glass cutter (a product, incidentally, that I would recommend all framers to invest in), it's cheaper than an oval/circle mountboard cutter and cheaper than the cheapest air operated underpinner. It's not much dearer than a top quality mountcutter, and it's ten times cheaper than a computerised mountcutter.

If we were currently all cutting our mitres with hand-held mitre saws, and tomorrow morning Dan-List proudly presented a Morsø guillotine that would cut perfect mitres in a fraction of the time taken by a saw, without dust or noise, how much could they charge for this wondrous invention? People would certainly pay double or treble what they are paying for a Morsø today.

The reason for its low cost is simply that Dan-List is a lovely family-run company who have always kept their prices low. When a cost rise is announced, I receive an apologetic letter justifying a miserable two per cent rise.

The product is so reasonably priced I am amazed that anyone could justify buying the shoddy imitation made in the Far East that appeared at Spring Fair International a few years ago. There's an expression, 'Buy cheap, buy twice'; the alternative to the Far Eastern copy is to buy a Morsø and buy once, because a Morsø will last a lifetime. Don't just take my word for it, ask any of the legends of picture framing and hear their comments on this wonderfully well made piece of equipment.

Lastly, I would like to provide two extremely handy tips for working with your Morsø:

1. The measuring arm, which is about 2.5m long, tends to hang down about 5mm, as it is light in weight. Therefore, when you put a moulding in position requiring a medium to long length, it can pass over the measuring stop. So I place a piece of wood under the arm at the point furthest from the blades, to hold it up by about 5mm, ensuring that the arm no longer droops.

2. When I am alone in the workshop and cutting a long piece of moulding, I hold the moulding in position with Andywrap®, which prevents it moving at the top end (rather than the cutting end). If the moulding is warped (it only needs to be 3mm out to cause problems over a 1500 length), it wants to lift out of the measuring stop, which is frustrating. You can press on the cutting end and the other will remain firmly in place. Clamps can damage the finish on mouldings, whereas binding the moulding to the measuring arm with Andywrap® won't cause the slightest damage.

Happy mitring. ●

*Mike Bond GCF owns Manchester Picture & Sports Framing in Oldham, Manchester, which specialises in framing pictures and sports memorabilia and excels in medal and war medal framing, [www.manchesterpictureandsportsframing.co.uk](http://www.manchesterpictureandsportsframing.co.uk) Please contact him at [sportsframing@tiscali.co.uk](mailto:sportsframing@tiscali.co.uk)*