

Manual

Log House Moulder LM410



⚠ Warning: If used incorrectly, the Log House Moulder can cause serious injury.

❗ For your own safety, read this manual before starting to use this equipment.

❗ Inspect your *LM410* immediately on reception. Any transport damage must be notified immediately to the freight company.

PATENTED



 **LOGOSOL**
Swedish wood processing products



Thank you for choosing a machine from LOGOSOL.

You can tell by the name what the log house moulder is intended for, but it is ideal for many other purposes, since it can precision-machine long and heavy workpieces. The LM410 gives you possibilities that you until now could only find in large industrial machines. Take a look through Logosol's Moulding Knives Catalogue, and give free rein to your imagination.

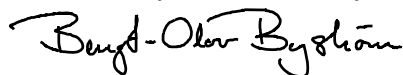
- Building solid wooden houses is in fashion, and building with glulam beams is the latest. Producing your own glulam beams is not hard to do. Afterwards, the LM410 can joint and plane them with high precision. If you want some kind of tongue and groove on the top or the underside of the beam, this is easily produced. Just choose from Logosol's wide range of knives and combine your own profile. If you cannot find anything that suits you, you can quickly and easily order your customized HSS knives.

- For the landscape gardener the moulder opens up entirely new possibilities. Cut an old dry log in two and plane it, and you can make a bench. Make beautiful beams of large dimensions to build portals, terraces or flowerboxes.

- There are many details on a house that you can give a little extra character, such as the ridge, porch posts, doorposts, stairs and furniture. Now, you have the opportunity to make something completely unique that no one has seen before!

In brief, when you can joint and plane 600x600 mm, and in addition mould, entirely new possibilities open up to the creative DIY'er.

We wish you the best with your new machine!



Bengt-Olov Byström

Managing Director



Printed on chlorine-free, recyclable paper, using inks based on vegetable oil.

LOGOSOL is constantly developing its products. For that reason we reserve the right to make changes in the design and construction of our products.

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Knives and Accessories

There is a wide range of accessories for the LM410 such as chip extractors, hoses, wire kit to suspend the electric cable, special log posts for the sawmill, etc. Besides the broad selection of standard knives, Logosol has developed a line of knives that are especially suitable for producing lumber for log houses, e.g knife sets for producing up to 200 mm thick lumber.

Safety Instructions



For your own safety, do not begin working with the machine before having read and understood the entire manual. Do not let anyone who has not read the instructions use the equipment.



Risk of cutting injuries. Use protective gloves when handling the knives. It is especially important that you wear gloves when loosening or tightening the lock screws for the knives and the fences (as there is a risk that you slip with the spanner).



Use approved hearing protectors. Hearing can be impaired after only a short exposure to high-frequency sounds. Use approved eye protectors. Splinters and wood pieces can be hurled out with great force.




Warning! Cutting tools. Never stick hands or tools beneath the table (A12) or in the chip outlet (A17) while the machine is running.




This symbol means "WARNING". Pay extra attention when this symbol appears in the text.



This symbol is followed by an admonition. Pay extra attention when this symbol appears in the text.


 **If used incorrectly, the log house moulder can cause serious injury.** Always be focused and careful when using the machine.

Never stand behind the workpiece when it is being processed in the machine. The workpiece can be hurled out by the cutter if it is not correctly secured. Also knots, splinters or pieces of steel can be hurled out with great force. Always stand at the side of the machine while it is running.

 Always hold the control panel handles firmly using both your hands while the machine is running. Be aware that the machine can come towards you if, for example, the workpiece is poorly secured.

Before starting the machine:

- Make sure that the cutter can rotate freely, and that no tools or loose parts are left inside or on the machine.
- Make sure that all knobs, screws, nuts, log posts, knife gibs, the cutter head, knives, protective covers, etc. are firmly tightened/attached.
- Make sure that no other person besides the operator is within the safety distance, 3 m (10 ft) as a minimum.

 Make sure that the machine runs in the correct direction: Look at the cooling fan at the end of the electric motor. This should rotate in the same direction as the cutter, which must only be used for conventional milling (see fig.). If the machine is running in the wrong direction, change the direction by rotating the white plastic disc in the connection plug with a flat screwdriver.

- Make sure that the cover is properly closed.
- If the chip duct is to be utilized, make sure that the chip hose is correctly mounted and secured with a hose clamp, and that the chip extractor is switched on.
- If you are not going to use the chip duct, the cover (B11) for the chip outlet should be mounted.

In this manual, the phrase "**disconnect the power**" means that you shall turn off the main switch on the control panel and pull out the power cable with the CCE plug, which supplies the machine with electricity, and place it so that no unqualified operator can connect it to the machine. The cable shall also be placed so that you cannot tread or trip on it.

Disconnect the power to the machine and wait for the cutter head to stop before:

- opening the cover to change planing/moulding knives, or to clean or carry out any other operation above or beneath the machine table.
- replacing belts or performing any other servicing or cleaning.
- moving the machine.
- leaving the machine unsupervised.

Risk of fire and dust emission when collecting wood debris. Take necessary measures to prevent fire in the chip collecting equipment.

Do not wear loose-fitting clothing or anything else that can get caught in the moving parts of the machine. If you have long hair you should put it up in a reliable way.

Never use the machine in poor visibility conditions. Always work in good lighting.

Do not use the machine under the influence of alcohol or other drugs.

Keep the work site tidy. Do not leave anything you can trip over lying on the ground.

Never stick your hands or any tools in the chip outlet until you have made sure that the power to the machine is disconnected and the cutter has stopped.

Do not climb onto the machine.

Do not tread on the machine's power cable. The power cable should be suspended by a wire choker rope, ref. no: 6605-000-0300.

Place the machine so that there is free space, at least 1 m (3 ft), along the rails and at the control panel.

For the greatest electrical safety, a **residual circuit breaker** should be fitted.

Make sure the rails are lying flat and horizontally to prevent the machine from accidentally beginning to move due to gravity.




The machine must not be modified or added to. Only use original parts from Logosol. **After servicing, the machine must be restored to its original condition.**

The machine should not be used in temperatures below 0°C (32°F). (In most cases, the machine is not damaged by being used in low temperatures, but pay extra attention to the risks that have to do with icing and frozen wood debris.) Also the electric system can be damaged by condensation, see "Electrical system".

The machine's warning labels are there for everyone's safety. Damaged or illegible labels must be replaced.

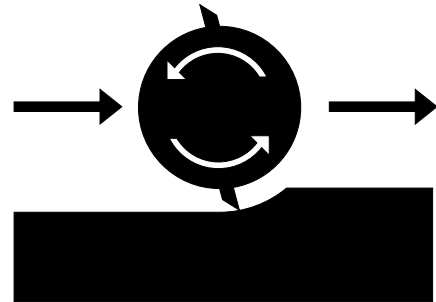
Moving the machine: The machine must not be lifted manually. In the upper edge of the machine chassis there are two holes intended for hoisting rings. The machine can also be lifted with a fork-lift truck or a pallet lift. In this case the machine should stand on and be strapped to a Euro pallet.

Risk of kickbacks.

-  **Never stand behind the work piece when it is being machined.** The workpiece can be hurled out of the machine. Also knots, splinters or pieces of steel can be hurled out with great force. Always stand at the side of the rails.
-  **Minimum dimensions of the workpiece:** Length 1200 mm (47"), width 50 mm (2"), weight at least 20 kg (44 lbs).
Only machine one workpiece at a time. The workpiece must be reliably secured.
-  **Acquaint yourself with all functions and setting possibilities before starting to use the machine.**

Safety distance

The safety distance for persons other than the operator is 3 m (10 ft) from the machine during operation. If the sawmill that the log house moulder is used on has a longer safety distance than 3 m, the longer distance is the one that shall be observed.



RISK OF SERIOUS INJURY.

RISK OF THE MACHINE STARTING TO MOVE RAPIDLY ALONG THE RAILS.



ONLY CONVENTIONAL MILLING.

The cutter must only be used in a way where the machine's direction of motion while processing is the same as the rotation of the cutter on its underside.

Machine description

The LM410 is a log house moulder that is designed to be pushed manually on rails. The wheels, which are guided by two or three sides of the rails, are suspended by separate wheel suspensions which can individually be adjusted sideways.

In its standard design, the Log house moulder fits on rails with widths from 850 to 1050 mm (33 1/2" to 41 7/16").

The workpiece, which should be of large dimensions (see p.5), must be securely fixed between the rails.

The machine is made of a sturdy chassis of 4 mm (3/16") steel sheet with a table of 10 mm (7/16") steel sheet that can be raised or lowered.

On the table a cutter is mounted, which can be adjusted sideways. The cutter head is 410 mm (16 3/16") long and 72 mm (2 7/8") in diameter. For the cutter head, there is a wide range of standard moulding knives.

The electric version of the LM410 is started by a main switch and a dead man's control held by two hands.

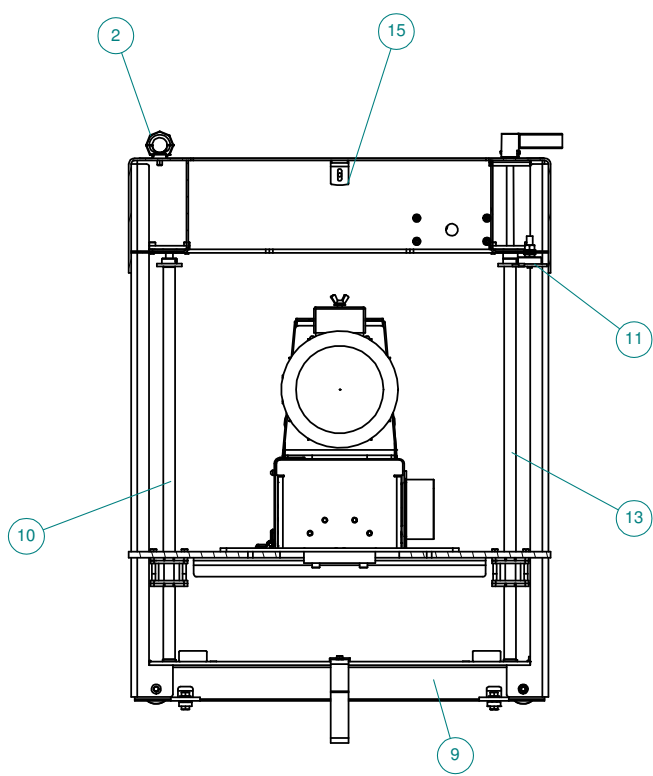
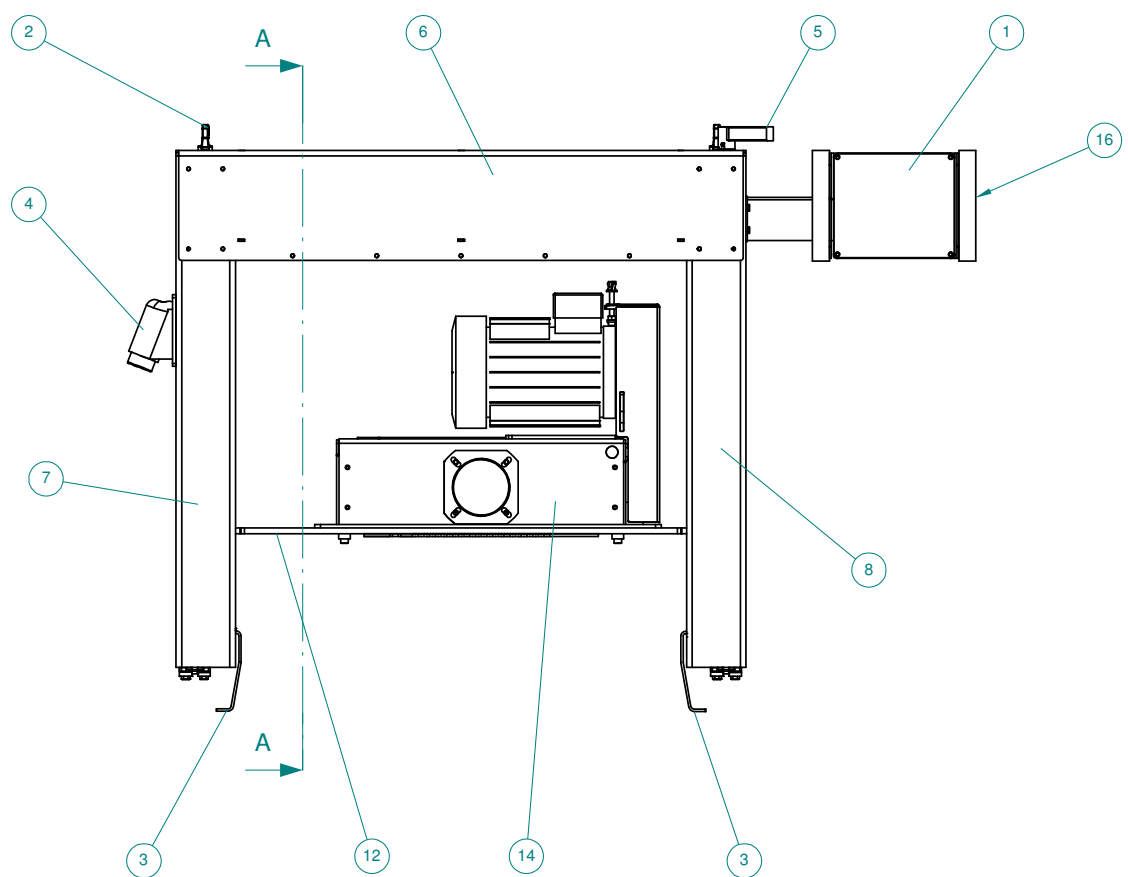
Tools Needed

30 mm spanner
10 mm spanner (supplied)
4 mm Allen key
6 mm Allen key
13 mm ring spanner
10 mm ring spanner
Adjustable spanner
Vernier calliper

List of components A

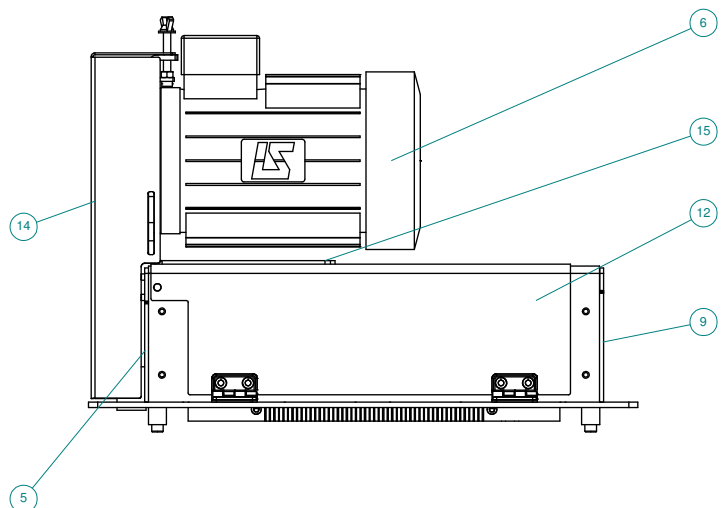
Pos.	Description	Quantity	Ref. no.
1	Electrical box	1	9999-000-9999
2	Hoisting ring	0	9999-000-9999
3	Anti-tilt device LM	2	9999-000-9999
4	Industrial inlet	1	9999-000-9999
5	Crank	1	9999-000-9999
6	Horizontal chassis	1	9999-000-9999
7	Standing chassis L	1	9999-000-9999
8	Standing chassis R	1	9999-000-9999
9	Wheel suspension (E)	2	9999-000-9999
10	Trapezoidal threaded bar	3	9999-000-9999
11	Chain tensioner	2	9999-000-9999
12	Table (C)	1	9999-000-9999
13	Trapezoidal bar, crank	1	9999-000-9999
14	Cutter head (B)	1	9999-000-9999
15	Mounting bracket	2	9999-000-9999
16	Handle	1	9999-000-9999

Overview A



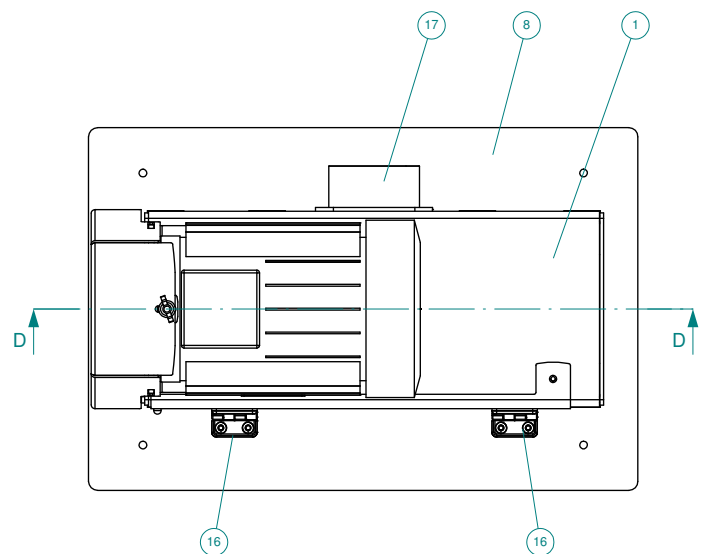
List of components B

Pos.	Description	Quantity	Ref. no.
1	Cutter head chassis	1	9999-000-9999
2	Bearing block	2	9999-000-9999
3	Cutter head	1	9999-000-9999
4	Ball bearing 30x62	2	9999-000-9999
5	Side plate, belt side	1	9999-000-9999
6	Electric motor B14	1	9999-000-9999
7	Chip deflector	1	9999-000-9999
8	Bottom plate, cutterhead	1	9999-000-9999
9	Side plate L	1	9999-000-9999
10	Belt pulley 49 mm	1	9999-000-9999
11	Chip outlet cover	1	9999-000-9999
12	Hatch	1	9999-000-9999
13	Switch	1	9999-000-9999
14	Belt cover	1	9999-000-9999
15	Motor mount	1	9999-000-9999
16	Hinge	2	9999-000-9999
17	Chip duct KS150	Optional	9999-000-9999
18	Belt pulley 118 mm	1	9999-000-9999



List of components C Table

Pos.	Description	Quantity	Ref. no.
1	Adjusting nut KPL (D)	4	9999-000-9999
2	Table	1	9999-000-9999
3	Reinforcement bracket	2	9999-000-9999

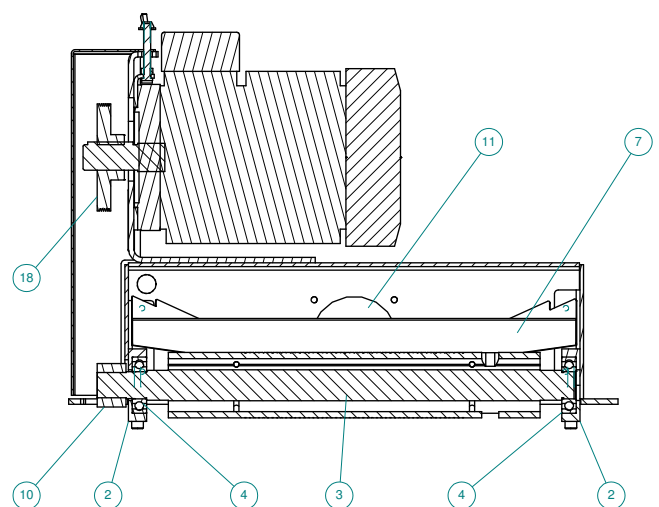


List of components D Adjusting nut

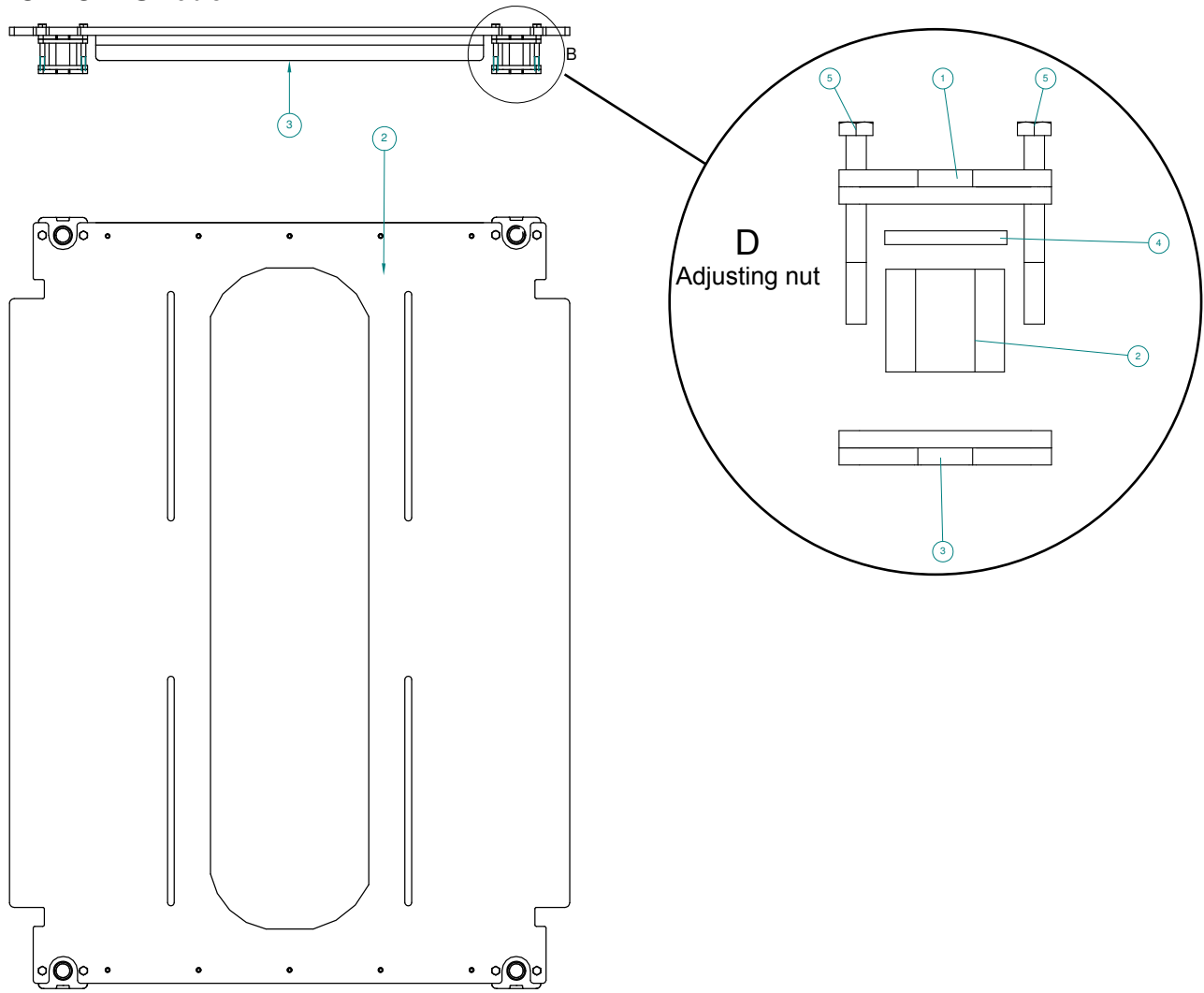
Pos.	Description	Quantity	Ref. no.
1	Nut support	1	9999-000-9999
2	Trapezoidal nut	1	9999-000-9999
3	Nut lock	1	9999-000-9999
4	Rubber washer	1	9999-000-9999
5	Screw M6x55	2	9999-000-9999

List of components E Wheel suspension

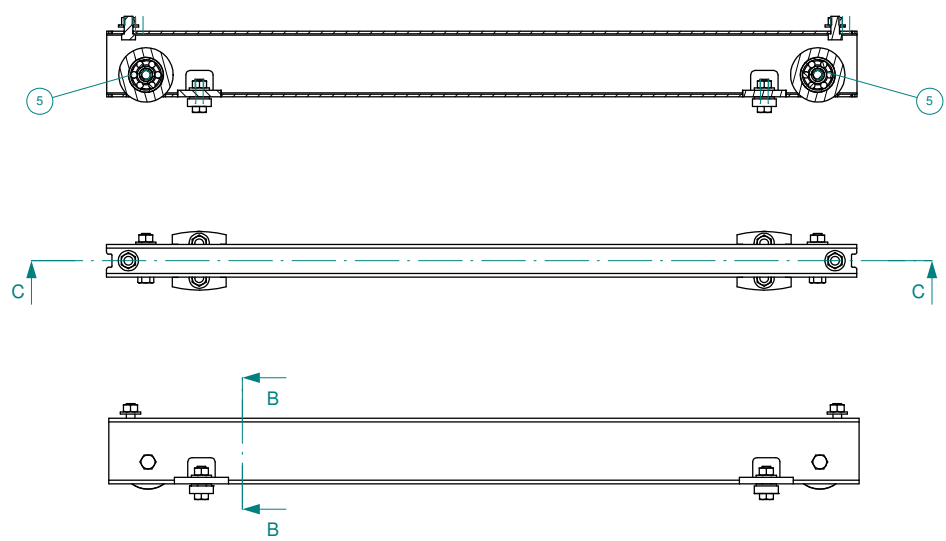
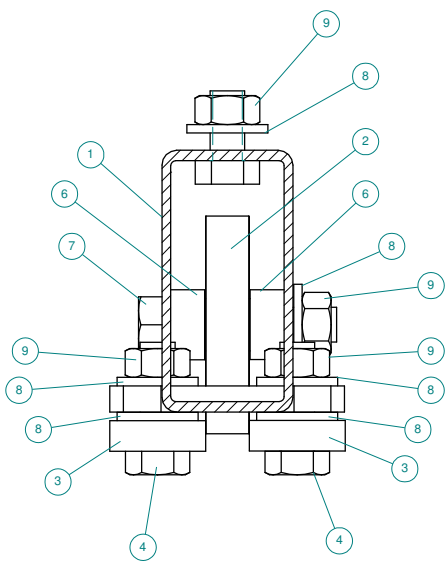
Pos.	Description	Quantity	Ref. no.
1	Bogie	1	9999-000-9999
2	Wheel 10mm	2	9999-000-9999
3	Ball bearing 8x22x7	4	9999-000-9999
4	Screw M8x25	4	9999-000-9999
5	Ball bearing 6201	2	9999-000-9999
6	Spacer	4	9999-000-9999
7	Screw M8x40	2	9999-000-9999
8	Washer M8	12	9999-000-9999
9	Nut M8	8	9999-000-9999



Overview C Table



Overview E
Wheel suspension



Precision log posts

If you want to precision saw or precision mould, which you normally do when moulding knives are mounted in the cutter head, there are special log posts for the bandsaw.

The precision log posts make it possible to secure the log both to the left and to the right of the sawmill, so that the whole width of the cutter head is being used. In the kit three pairs of log posts are included. The three pairs should be placed so far away from each other that you can secure the log in the middle and close to the log ends.

The log posts are especially designed for easy adjustment in angle, height and distance to the rails.

Setting up the LM410

Adjusting the wheel suspension.

The log house moulder must be lifted by a truck, a tractor or the like. Lifting straps can be passed under the horizontal chassis of the machine (A6) but the safest method is to use hoisting rings (A2, not included) that are to be bolted to the

top side of the machine. The machine weighs approx. 200 kg (441 lbs).



Place four wooden blocks (20x20x20 cm) under the machine table (C2). Lift the log house moulder by lowering the table against the blocks. This way you can reach and adjust the wheel

suspension on the under side of the machine. Do not raise the machine in a higher position than necessary, max. 5 cm (2") above the ground.

 **Crushing risk.**


- ❗ Make sure that the machine stands firmly before you start adjusting the wheels. Never place your hands where they can be crushed if the machine falls down.

Measure the distance between the centres of the rails (LM=920 mm, 36 1/4"). Adjust the wheel suspension so that the vertical wheels have this measurement centre to centre.

Measure the distance between the rails' outer edges. Adjust the outer horizontal bearings after this measurement. Adjust the inner ball bearings after the distance between the inner rails minus about 0.5 mm. Measure the distance between the horizontal bearings and make sure that the rails fit between them.

Lifting the log house moulder onto the rails

When the rails are adjusted and the log posts are mounted, the log house moulder can be lifted onto the rails. Fit the anti-tilt devices (A3) so that they go under the upper flange of the perforated beam. The anti-tilt devices should be mounted on the outside or the inside of the rails, depending on the model of your sawmill.

 **Crushing and tilting risk!**

- ❗ Make sure the end stops on the rails are correctly fitted.
- ❗ Ensure that the machine cannot accidentally tilt off the rails. Consult Logosol if the anti-tilt devices do not fit on your sawmill model.
- ❗ Make sure that all wheels and wheelbearings in the wheel suspension are correctly fitted on the rails and that all screws are reliably tightened.
- ❗ A light wind can be enough to move the moulder on the rails. Secure the Log house moulder, e.g. with a strap, when the machine is not being used.
- ❗ Suspend the power cable from the ceiling or protect it in some other way. Never tread on the cable. The machine should be connected via a residual circuit breaker.
- ❗ Ensure the lighting is first-class. You should have good main lighting, and also have a powerful lamp above the machine. Ensure that there is no risk of being dazzled by the light.



Correct installation: The sawmill stands firmly on level ground. The chip hose and the power cable are suspended on rollers on the wire, which is tautened between two posts. The log is in place, ready to be sawn and moulded. Wire kit with rollers, wire posts, chip duct, chip hose, and chip extractor are all accessories that you can order from Logosol.



Sawing...



Moulding...



The result: a 4 metre (13 ft) long straightened and planed beam of 20x50 cm (8"x20"). Impressive! (The maximum dimensions that can be planed or moulded are over 60x60 cm, or 24"x24").

Mounting moulding knives

- ❗ Before opening the hatch (B12) of the log house moulder, ensure that the power is disconnected and that the cutter head is not rotating. Use protective gloves. This is especially important when you are loosening screws that are tightly screwed, or when you are tightening the screws (see *Safety Instructions*). Be careful of the planing knives. You can easily get cut by those, even when touching them lightly.

The moulding knives must always be mounted in pairs and in the same lateral position in the opposite slots of the cutter head. A certain degree of lateral deviation between the moulding knives can, however, be accepted, as long as the cutter head stays balanced.

- ⚠ **Warning! Lack of balance in the cutter head creates vibrations that can damage the machine and cause personal injury.**

- ❗ The moulding knives must always be mounted in pairs so that the cutter head stays balanced. You must always mount two identical knives in the opposite slots of the cutter head.

- ⚠ Risk of serious injury if the knives and knife gibs come loose or break.

- ❗ Knives, knife gibs and cutter head must be perfectly clean before they are mounted. Immediately replace damaged knives and knife gibs.

- Assemble the knife gib (chip breaker) (D) and the moulding knife (E). (See p.13.)
- Insert the gib and the moulding knife in the wide end of the slot in the cutter head.
- Push the knife and the gib along the slot, and then fasten them by turning the screw (F) on the back of the gib anticlockwise so that it presses against the side of the slot.
- ❗ The lock screw (F) of the knife gib (E) must be fixed in the narrow part of the slot. It must not be fixed in the wide end of the slot. Neither may the knife gib protrude outside the cutter head. If a knife gib comes in an incorrect position, move the whole cutter head and restart mounting the knives.

After mounting of moulding knives:

- ❗ Make sure that there are no tools left inside or on the machine, or on the workpiece that is to be machined.
- ❗ Make sure that all screws are reliably tightened.
- ❗ Make sure that the cutter head can rotate freely before closing the hatch.
- ❗ Do you remember the safety instructions on pp.4-5?

Fragile knife profiles

The longer and thinner protrusion of the knife, the more careful you have to be when using it. It is not certain that all knife profiles can stand the same feeding speed. Be extra careful when machining hardwood or wood with a lot of knots. Use common sense, but as a rule of thumb the knife is very fragile if the depth of the cut is twice as much as the width of it (e.g. a 10 mm wide groove that is 20 mm deep). In this case you have to handle the knife with care so that it does not break. A depth of cut that is of the same measurement as the width should be handled with a certain degree of care, and knives with a cutting depth that is less than half of the width it cuts (e.g. a 10 mm wide groove that is 5 mm deep) can stand rather hard treatment.

Grind the knife before it becomes dull

NB: Dull knives increase the risk of them breaking, and consequently also the risk of personal injury!

If you grind the knife before it becomes dull the grinding becomes easier. If you are using a dull knife, the edge can be damaged by, among other things, the heat. If you notice that the knife is dull (one indication is that the quality of the cut degrades) you must stop the work immediately.

Mounting moulding knives

Keep the knives and the cutter head absolutely clean. The slightest presence of wood debris or resin that get into contact with the knife when it is being mounted can cause the knife to break. The surfaces must be completely plane against the knife. If a knife breaks there is a great risk that the cutter head is damaged.

- ❗ The slightest unevenness on the cutter or the surface of the chip breaker means that this component must be replaced.

Pressure marks

Sometimes, light spots can appear on the machined surface. These are pressure marks caused by wood debris around the edge of the knife. The wood debris is then pressed between the machined timber and the back of the edge. In most cases, this is due to the knives beginning to lose their sharpness, but it can also be due to what type of wood you are machining or to the chip extractor having too low capacity.



Mounting planing knives

❗ Before opening the hatch (B12) of the log house moulder, ensure that the power is disconnected and that the cutter head is not rotating. Use protective gloves. This is especially important when you are loosening screws that are tightly screwed, or when you are tightening the screws (see *Safety Instructions*). Be careful of the planing knives. You can easily get cut by those, even when touching them lightly.

Two planing knives can be mounted in two opposite slots in the cutter head (planing knife 410 mm HSS, ref. no. 7000-002-8410). Moulding knives can at the same time be mounted in the two other slots.

⚠ Risk of serious injury if the knives and the knife gibs come loose or break.

❗ Knives, knife gibs and cutter head must be perfectly clean before they are mounted.

Mounting:

Screw down the lock screws (B) of the knife gib (A) so that they reach the bottom. Insert the knife gib in the cutter head. Screw the adjusting screws (C) into the cutter head, and insert the planing knife so that the heads of the adjusting screws come in the indentation on the back of the knife. After this the knife can be raised or lowered with the help of the two recessed adjusting screws (C) next to the cutter head's knife slot. Use a 4 mm Allen key.

To get the planing knives at the correct height the adjusting block (ref. no. 7500-000-1020) should be used. The knives should just touch the block when it is passed over them.

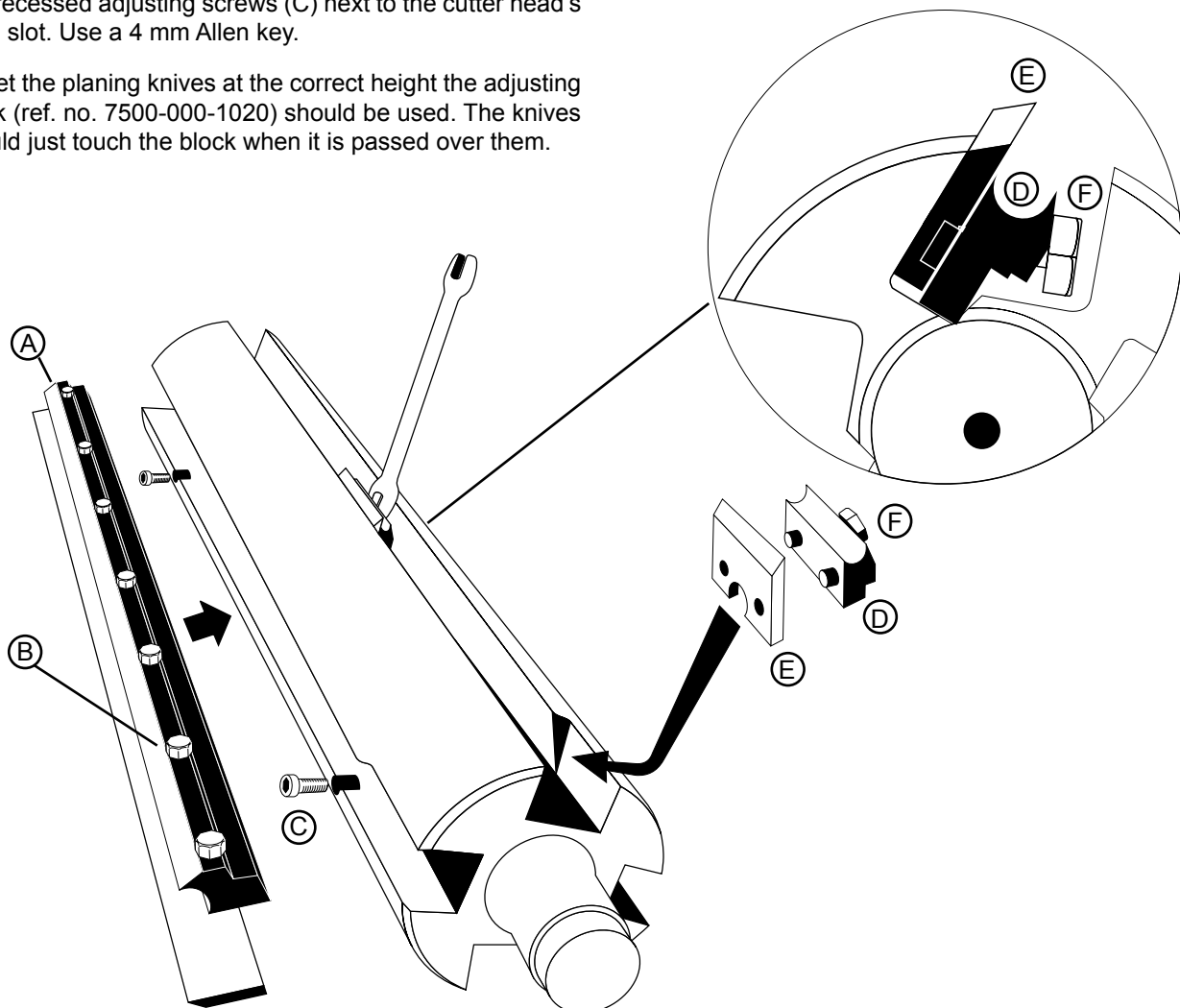
- Tighten the lock screws (which fix the knives) anticlockwise. Tighten carefully at first. Start from the sides, and move to the next until you reach the middle, then retighten all screws the same way.
- Carefully tighten the adjusting screws until they touch the bottom of the indentations of the knives. If these screws are screwed too tight, the knife will crack.

After mounting of planing knives:

- ❗ Make sure that there are no tools left inside or on the machine, or on the workpiece that is to be machined.
- ❗ Make sure that all screws are reliably tightened.
- ❗ Make sure that the cutter head can rotate freely before closing the hatch.
- ❗ Do you remember the safety instructions on pp.4-5?

Removing planing knives

The planing knives are removed by loosening the lock screws (B) of the knife gib (A). Then you raise the knives by loosening the adjusting screws (C) (see above).



The control panel

The control panel is not mounted when you receive the machine, but lies inside the machine on the machine table. The control panel is to be mounted on the short side of the machine. In the parts box, which also lies on the machine table, there are two bolts that should be used for mounting the panel.

A : Dead man's control, start

B: Dead man's control, start

C: Main switch

D: Control lamp for the main switch

E: Control lamp for the cutter motor

Starting the log house moulder:

Make sure that the hatch over the cutter head is completely closed. Perform the safety check under *Before starting the machine*. Set the main switch to "ON". Take hold of the handles on the sides of the control panel, using both your hands, and press the both black buttons (dead man's controls) with your thumbs.

- ❗ When starting the machine, press the start buttons firmly and keep pressing them firmly during operation. Repeated activations or poorly pressed start buttons leads to sparking and wear on both the contactor and the start buttons.

When starting the machine, alternate between pressing the right button first and pressing the left button first. This is to even out the wear, but also to check that both the buttons work as they should.

Emergency stop:

Release the start buttons.


Stopp:


Release the start buttons and set the main switch to "OFF".

- ❗ The cutter head can continue to rotate for up to 10 seconds after the start buttons have been released.



Belt transmission

 **Warning:** If the belt jumps off the pulley or if it breaks, the cutter and the motor can continue to rotate several minutes. It can be difficult to see whether the motor and the belt are rotating.

 Ensure that the power is disconnected before opening any protective covers or carrying out any servicing on the machine.

The cutter head is run by a double-pole, three-phase motor with 2800 rpm. The number of revolutions is geared up by Poly-V belt transmission. The belt has to be tensioned or replaced after some time of use.

When the belt starts to squeak during operation, it should be tensioned and, if necessary, be replaced. If there are visible damages on the inside of the belt, it has to be replaced.

The belt is loosened and tightened as follows:

1. Loosen the the M6 lock nut on the top of the belt cover (B14). Lift up the belt cover.
2. Loosen the four M8 Allan screws behind the belt disc by screwing them one turn. These are the screws that secure the motor.
3. Adjust the belt tension by loosening or tightening the screw that is in the tensioning ring between the motor and the motor mount (the same screw that locks the belt cover).
4. Tighten the screws that hold the motor. Remount the belt cover.

When the belt has the correct tension, it should squeak just as the motor starts, but never while the machine is running.

Maintenance

⚠ Risk of serious injury if maintenance is neglected.

The LM410 is easy to maintain since most of the machine's structure is protected against rust. All cutter bearings and the motor are maintenance free. Necessary maintenance is set out below.

⚠ Ensure that the power is disconnected before opening the hatch for the cutter or removing any protective cover.

Tip: Compressed air can be very useful for blowing the machine clean each time you open the hatch. Use hearing protectors and eye protectors.

When the machine is being used:

- Clean the machine from wood debris. Especially ensure that wood debris has not accumulated on the motor or in the cooling fan of the motor. This can interfere with the cooling of the motor and lead to a motor breakdown or, at worst, fire.

After each working session:

- Clean the machine from loose wood debris with a soft brush or compressed air (in that case use hearing protectors and eye protectors). Also check the chip duct and the chip hose.
- Cleaning and rust protection with Universal Oil 9999-000-5105: Dried sap and resin can be removed with universal oil. Also spray a thin layer on the cutter head, the knives and the ball bearings of the wheel suspension as a rust protective measure. Avoid getting large amounts of oil on the belt transmission. When changing knives or remounting knives, the knife slot in the cutter head, the knife gibs and the knives should be cleaned very thoroughly. The slightest trace of wood debris on the contact surfaces of the knife can lead to total breakdown and risk of personal injury as the knife breaks.
- Lubrication points for Silicone, Ref. no: 9999-000-5110: The power inlet on the machine and the plug on the power cable. Lubricate all plastic parts and cables when cleaning the machine.
- Lubrication points for Super Flo, Ref. no: 9999-000-5115: The transmission chain, the sprockets and the trapezoidal threaded bars. Super Flo is a dry, non-adhesive lubricant. Do not use ordinary oil on the trapezoidal threaded bars, since it makes wood debris stick to them.

Check the safety switch on the hatch:

Disconnect the power and make sure that the safety switch on the cutter-head hatch works. The switch is to be clean and its button easy to move. (It should not be possible to start the machine when the hatch is open.)

If the machine is not being used during a long period of time:

- Disconnect the power.
- Clean the entire machine extra thoroughly, and perform the same maintenance as after each working session. Do not forget the lubrication points.
- Remove knives and chip breakers. Keep these well lubricated and at room temperature.
- Place the machine so that it is not in contact with the ground. Cover the machine with a tarpaulin.
- Before starting the machine after it has not being used for a long period of time: Condensation can accumulate in the motor and in the control panel if the machine has been stored a long period of time in a cold room. The motor has a drain plug on its underside. Open the plug and empty out any water. Open the control panel and dry up accumulated water.



The chain transmission should run smoothly! In the photo you can also see the chain tensioner.

Planer Shavings Collection

Risk of serious injury.

- ❗ Never connect the machine if the chip outlet is open. Either the cover plate (B 11) or the chip duct (B 17) with hose secured with a hose clamp, must be fitted.

The machine can be used without a chip extractor, but this is not recommended.

There will be a lot of shavings. You should use an efficient chip extractor. The chip extractor must have a capacity of at least 500 m³/h, and it has to have higher capacity if you are going to extract the wood debris upwards. Logosol has a couple of suitable alternatives. In most cases, 1.5 kW is sufficient.

Build a chip pocket, or blow the wood debris directly into a trailer or the like. Bear in mind that there has to be an air outlet in your chip container (e.g. a fine-meshed net, or a filter if you collect the wood debris indoors). Poor extraction capacity is often due to a too limited air flow out of the chip container.

If you keep the machine in a heated room, the chip extractor will soon cool the room if you do not direct the air back into the facility.

Dust emission and risk of fire have to be taken into consideration when collecting wood debris.

Risk of fire and dust emission when collecting wood debris.

- ❗ Consult your local authority about the regulations in your district.
- Connect the chip hose, and fasten it with hose clamps both on the planer and the chip extractor. Use the Flexi Hose from Logosol (length: 3 m (10 ft), ref. no. 7000-000-1015) which has a smooth inside improving the flow.
- If you want to convey the wood debris a long way: Place the chip extractor close to the machine, so that you can use as short hose as possible. Then convey the wood debris in a sheet metal pipe, which reduces resistance for the air flow.
- ❗ Place the chip extractor so that its power switch is easily accessible.

Wire Kit

10 metres (33 ft) of wire, rollers and turnbuckles for suspension of the chip hose and the power cable.

Ref. no. 9999P000P9999

Chip duct

Compatible with the LM410. D 100 mm (4").

Ref. no. 9999P000P9999

Chip Hose

The wood debris should be conveyed in sheet metal pipes. It is cheaper and gives less resistance for the air flow and the wood debris. However, closest to the sawmill and the moulder you have to use a flexible chip hose. If you are going to suspend the hose on a wire, the hose should be of the same length as the log house moulder plus 2 m (6 ft).

Ref. no. 9999-000-9999

Chip Extractor

Logosol has a wide range of suitable chip extractors. Consult our customer service to get the right equipment.

Machining log house timber

Below is a description of how to mould 150 mm (approx. 6") wide log house timber on the sawmill LM40. The method is the same for other widths and other profiles, even though the measurements differ. (If the log house moulder is used on sawmills of other brands, Wood-Mizer for instance, you have to consult the manual for that sawmill when it comes to setting the log posts. You can of course always consult Logosol if you are unsure.)

- ❗ The method below can be significantly simplified if you use Logosol's precision log posts (ref. no. 9999-000-9999) instead of the original log posts on the sawmill.

Three log posts are to be used on each side of the log, so that it can be secured and pressed straight in two directions.

Setting the three left log posts

Set the log posts so that they come approx. 2 cm (13/16") inside the welded steel stops on the cross-bunks. Measure against the rails on the left side so that the distance is exactly the same for each log posts.

Sawing a cant

Saw a cant to the width that you will use for the log wall, in this case 150 mm (approx. 6"). The cant can be conical or of uniform thickness. Cut off the bark from the upper and lower side of the first log. This is to make it easier to set the knives. On the following cants it can be good to cut off most of the bark to protect the knives from dirt in the bark.

Planing

If you want to plane the cant on the inner side, this should be done before you mould the upper and lower side of the cant. The planed side is then to be turned so that it faces the log posts. Naturally, you can also plane or mould all sides of the log.

Secure the workpiece on its edge

Place the cant against the log posts and secure it carefully. If you tighten too hard the angle and position of the log posts can be moved, which makes the moulding come in the wrong position on the cant.

Roughly adjust the lateral position of the cutter head so that the cutter head is one or a couple of centimetres outside the edge of the cant.



Mounting (setting the knives)

- ⚠ Risk of serious injury if knives and knife gibs come loose.
- ❗ Read the section *Mounting moulding knives* before you fit the knives in the cutter.
- ⚠ Risk of serious cut injuries.
- ❗ Ensure that the power is disconnected before handling the cutter head and the knives.

The upper side of the cant

In the cutter head, insert the knife set that moulds the lower side of the cant and set them so that the outermost knives come in line with the cutter head end that is closest to the belt pulley. Secure the knives firmly with the knife gibs.

Then insert the knife set that moulds the upper side of the cant. Position the knives in line with the other end of the cutter head. Adjust the cutter head laterally so that the centre of the rounding of the knives comes exactly 3" or 75 mm from the side of the cant that is in contact with the log posts.

NB: Mounting of knives is always to be done from the side of the log post to the centre of the profile. If the measurements deviate on the other side of the cant, this is because the cant has incorrect measurements. This does not matter when you are building the log house, as long as you remember what side of the cant that was lying against the log posts when machining it. The log post side is to be part of the interior wall of the log house.

Push the log house moulder along the cant and check that the knives are following the cant correctly the whole way. If that is not the case, check that:

- the log posts have the same distance to the rails.
- the log posts are right-angled and correctly adjusted laterally.
- the press screws are not too tight.
- the cant is not crooked.

Adjusting the magnetic scale tape

Measure the distance between the log bed and the centre of the rounding knives. Fit the scale to the folded edge of the standing chassis so that the pointer (or the upper edge of the table) comes level with the measured distance.

Test running

Make sure that all knives are securely fastened, and perform the safety check under *Before starting the machine* (see the safety instructions).

Always mould in two steps, and you will get a better result. Lower the moulder so that a good half of the log rounding is milled. (The table should be 5 millimeter or 1/4" above the height of the cant.) Then pull the log house moulder back, and lower the table down to the height of the cant so that the entire rounding is milled.

Now, one side is finished, and it is time to set the knives that will mill the lower side of the cant.

The lower side of the cant

Mount the knives so that the groove that is to be cut will come exactly 75 mm (3") from the opposite log posts (which are to be absolutely in line with each other).

If you do not have Logosol's precision log posts: Measure against the rails on the left side so that the distance is exactly the same for all log posts.

Roll the cant over and secure it against the log posts.

Push the log house moulder so that the cutter head comes straight above the first log post. Rotate the cutter head so that you can see the moulding knives. Thoroughly measure the deviation (the centre of the moulding is to be 75 mm or 3" from the log post). Move the knife set so that it comes in exact position.

Push the log house moulder along the whole cant, and make sure that the knife setting is correct at each log post.

Perform the safety check under *Before starting the machine*, and mould the cant in two steps as before. Note that the scale is set against the rounding of the cant. The groove will make the lower side of the cant a bit flatter. For that reason, the log house moulder can be raised about one additional centimetre (7/16").

Now your first log is ready. The side that was lying against the log posts when the cant was machined, is to be turned inwards when building the log house.

- ❗ Mark the side of the cant that is to be part of the interior wall.



Machining in two steps. Here, a planed and extremely stable bench is produced from a 55 cm (22") thick log.

TROUBLESHOOTING: MECHANICAL OR ELECTRICAL PROBLEMS

Problem	Possible Cause	Remedy
The motor cannot be started.	<ol style="list-style-type: none"> 1. The hatch is not entirely closed. 2. The start buttons (dead man's grip) are not pressed down. 3. No power is supplied to the machine. 4. The motor is overheated. 5. Fault in the electrical system of the machine. 6. Wood debris has accumulated in the safety switch of the cover. 	<ol style="list-style-type: none"> 1. Tighten the locking screw on the hatch. You can hear a soft click when the safety switch is activated. 2. Press both the start buttons at the same time. 3. Check the residual circuit breaker and the fuses in the building. Also check the connecting cable. 4. Wait until the overheating protection of the motor automatically resets (see the point <i>The motor is overheating</i>). 5. The electrical system may only be opened by a qualified electrician: First of all, check the safety hold circuit. This circuit includes, among other things, the start buttons, the safety switch and the overheating protection in the connection block on the motor. 6. The electrical system may only be opened by a qualified electrician: Open and clean the safety switch from wood debris.
The cutter head rotates a long time after the machine has been shut off (it should stop within 10 seconds).	<ol style="list-style-type: none"> 1. The belt is loosely tensioned. 2. The belt is worn out. 	<ol style="list-style-type: none"> 1. Tighten the belt. 2. Replace the belt.
The machine runs for a while but then stops.	<ol style="list-style-type: none"> 1. The motor gets overheated. 	<ol style="list-style-type: none"> 1. See the point <i>The motor gets overheated</i> (see below).
The motor gets overheated.	<ol style="list-style-type: none"> 1. Wood debris has accumulated on the motor and around its cooling fan. 2. Dull knives. 3. Too low voltage in the power supply. 4. Loose or bad connection in the power supply to the machine or in the electrical system of the machine. 5. The cutter removes too much wood. 6. The feeding speed is too high. 	<ol style="list-style-type: none"> 1. Clean. If the motor is kept clean it will be cooled more efficiently. 2. Grind or replace the knives. 3. The electrical system may only be opened by a qualified electrician: Check that you have the correct voltage on all phases and that the power cable is correctly dimensioned. 4. The electrical system may only be opened by a qualified electrician: First of all, check that the power cable has the correct current and voltage during operation. Also check that all wires are correctly connected in the electrical system and in the motor of the machine. 5. If the workpiece is too wide, of a hard sort of wood or of varying oversizes: Machine the log in several steps and just take off a little bit every time. 6. Lower the feeding speed.

Problem	Possible Cause	Remedy
Vibration or rumble in the cutter.	<ol style="list-style-type: none"> 1. The moulding knives are incorrectly mounted. 2. The moulding knives or the planing knives are incorrectly ground. 3. Defect bearing. 4. The belt transmission is defect. 	<ol style="list-style-type: none"> 1. Clean and mount the knives and the knife gibs (chip breakers) correctly. Identical knives should be mounted on opposite sides of the cutter. 2. Grind the knives in pairs so that they are identical on the opposite sides of the cutter. 3. Clean the bearing housing and replace the ball bearing. 4. Clean the belt pulleys and replace the Poly V belt.
It is difficult to adjust the height of the machine table.	<ol style="list-style-type: none"> 1. The trapezoidal threaded bars, on which the table is suspended, are dirty and not lubricated. 2. Faulty chain transmission. 3. The machine has been subject to impact which has spoiled the setting of the table. 	<ol style="list-style-type: none"> 1. Clean and lubricate the trapezoidal threaded bars with Super-flo. 2. Make sure that the chain runs correctly on the sprockets. Clean and lubricate the chain. 3. Adjust the table so that it lies flat on all nuts.

Electrical system:

The LM410 is available in two electric models: 230 V 3-phase 50 Hz and 400 V 3-phase 50 Hz.

The power cable to the log house moulder must be at least 2,5 mm²/wire (1/8") and be max. 25 m (82 ft) long. If you have to use a longer cable, it must be 4 mm²/wire on the length that is more than 25 m.

If the log house moulder is stored in a cold room, fluctuations in temperature will cause condensation to accumulate in closed parts in the machine. Check regularly that there is no water in the junction box behind the control panel or in the enclosure of the three-phase motor. The motor has a drain plug on its underside.

The motor is started by a contactor. The power that runs the electromagnet in the contactor, runs through both the start buttons and the safety switch on the cutter-head hatch. All these three have to work for the motor to start.

Lubricate the industrial power inlet on the LM410 and the plug on the cable with silicone spray.

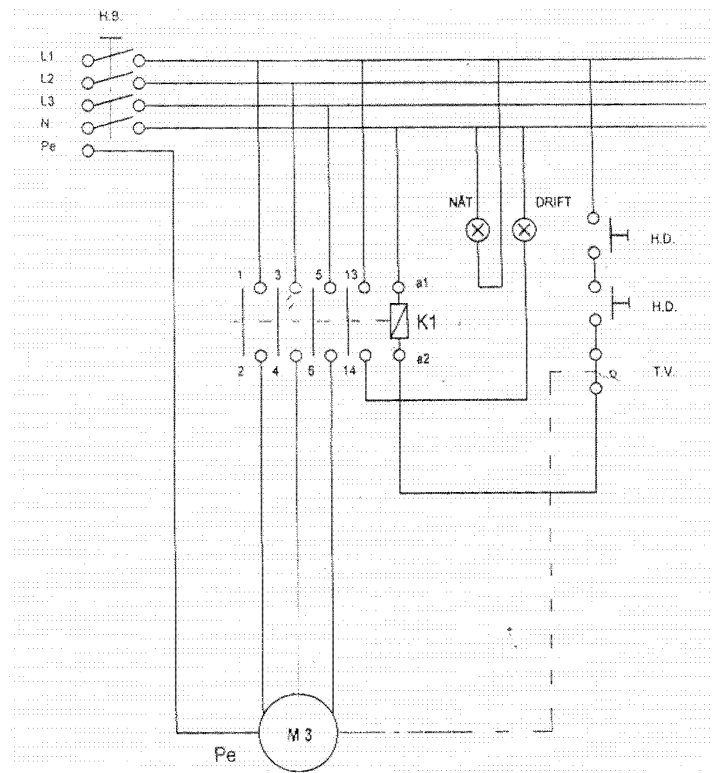
⚠ Lethal voltage. A faulty connection can lead to mortal danger.

❗ Note that only qualified electricians are authorized to open/access the electrical equipment.

❗ Ensure that the power is disconnected before opening the electrical system.

Circuit Diagram 400 V 3-phase

❗ The circuit diagram that is placed inside the junction box of the log house moulder is the one that is relevant.



Circuit Diagram 230 V 3-phase

❗ The circuit diagram that is placed inside the junction box of the log house moulder is the one that is relevant.

Technical data

Dimensions and weight

Length	720 mm (28")
Height	1000 mm (39")
Width	1400 mm (55")
Weight	approx. 200 kg (441 lbs)
Rail width, standard	825-960 mm (33"-38")
Rail width with adaptor plates	custom-made

Timber dimensions

Max. width	600 mm (23 11/16")
Height from rails	600 mm (23 11/16")

Cutter

Diameter	72 mm (3")
Width	410 mm (16")
Continuous output	4 kW
Speed of rotation	6000 rpm
Chip thickness, planing	4 mm (3/16")
Max. knife pattern protrusion	25 mm (1")
Lateral adjustment	200 mm (8")

Electrical system

CCA 16A 400V 50Hz three-phase (alt. 230V 3-phase 25A)
Enclosure protection class: IP54
Thermal cut-out on each motor.
0-tension release.
Protective cover/hatch equipped with safety switch.

Sound levels

Empty machine, 73,2 dB(A), in operation 99,6 dB(A). Addition for measuring accuracy K=4 dB(A). Values measured in workshop environment.



Declaration of conformity Machine Directive 89/392/EEG

Amendment 2, section A

AFS 1994:48, Amendment 2, section A

The manufacturer, Logosol AB, Industrigatan 13, Härnösand, hereby declares that the Log House Moulder Logosol LM410 is manufactured in accordance with AFS 1994:48 Machines and Other Technical Contrivances, or corresponding national directives in other countries within EES that corresponds to the Machinery Directive: (89/392/EEG with the amendments 91/44/EEG, 91/368/EEG och 93/68/EEG).

The manufacturer also declares that Logosol LM410 is manufactured in accordance with (parts of) the following harmonized standards: EN 292-2

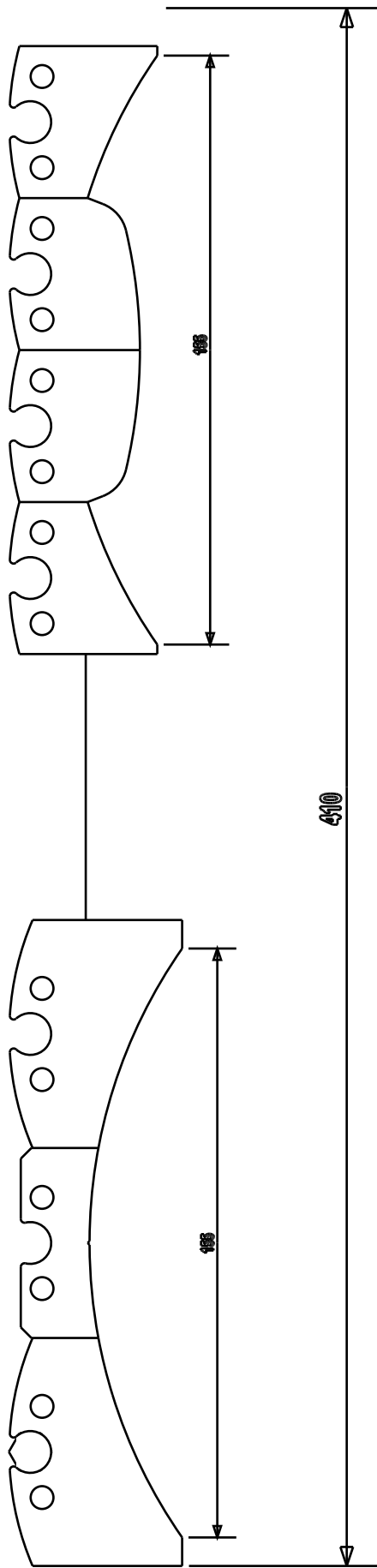
Härnösand

A handwritten signature in black ink, reading 'Bengt-Olov Byström'. The signature is written in a cursive, flowing style.

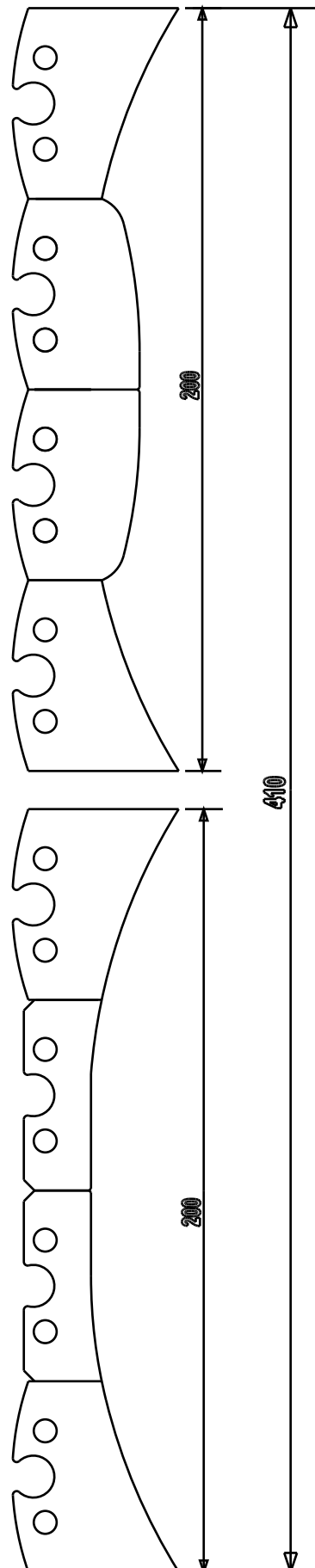
Bengt-Olov Byström

Examples of mouldings

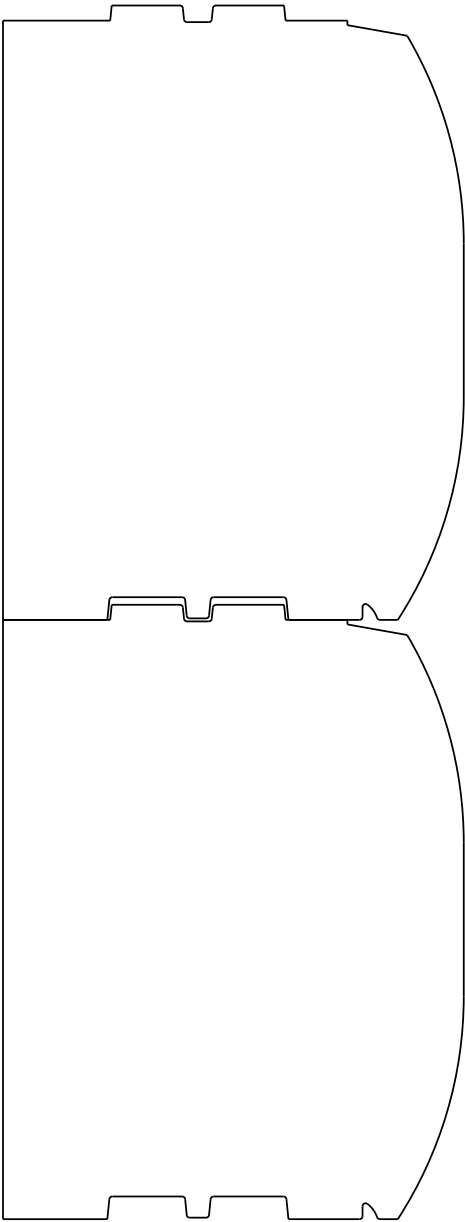
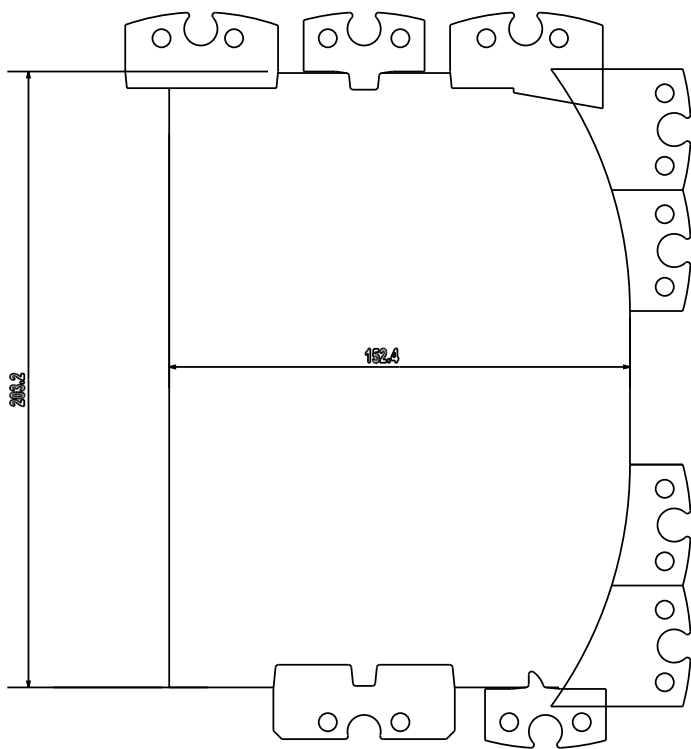
150 mm (6 1/8") Scandinavian traditional log house.



200 mm (7 7/8") Scandinavian traditional log house.



D-log, adjustable in height and width. American and Canadian industrial timber.





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