

HOMAG Moulder MOULDTEQ M-300



Machine Overview

With the MOULDTEQ M-300, the times of the push buttons are over. The planer combines state-of-the-art technology with solid mechanical engineering. In this way, you get intuitive machine operation and maximum quality in one machine and you will be optimally prepared for the future.

What the M-300 Series Offers

Thanks to variable spindle RPM, you can now match the machine specification to the application more precisely. Frequency drives are standard which provide long lasting spindle braking safety, reliable performance, energy savings benefits, and the ability to electronically vary the spindle RPM's from 4000-8000 RPM.

The main focus point of the MOULDTEQ is the software solutions from HOMAG. The powerTouch control provides access to the innovative ProfileCenter software. With ProfileCenter, you see the profile to be produced before it is produced. You can manage better quality control, lower waste, and make the setups easy and fast with ProfileCenter at your side.

tapio connectivity is included. tapio is the platform on board for connectivity to the outside world. Access to Machine Execution Software (MES), tooling resources, and HOMAG MachineBoard software allows you to enter into Industry 4.0 with intelligent machine solutions.

Technology onboard and external all at your fingertips. Including the new HOMAG moulder apps download on your smart phone for your convenience anywhere, anytime.

See why HOMAG is the leader in technology solutions.

Strength and Stability

The cast iron base provides unmatched durability and absorbs vibrations that would transfer into the wood and affect the cut. The cast iron base extends nearly all the way to the floor for maximum vibration absorption.

Long Lasting Performance

Industrial grade deep chrome tables and fences provide extended wear over any other surface. A need to have for non-wood processing while added value for wood processing.

User-Controlled Feeding

The infeed system features feed beam support at both ends, which is a much more rugged and stable design than a typical single center column support.

This is needed to support the massive feeding system that is with nearly 60% more feed rollers than some competitive models.

The feed system features all cast iron gear boxes to promote more vibration absorption. The cardan drive shaft is powered by a high efficiency, high performance motor. The motor is powered by a frequency drive to all smooth electronic feed speed regulation.

The feed motor features two cooling fans. One is the standard shaft mounted fan. The second is an electronic auxiliary fan. The fan keeps the motor cool even at low RPMs. The cooler the electronics, the better performance and longer lasting they become.

Many Different Technologies – One User Interface

The HOMAG exclusive powerTouch control provides an intuitive and intelligent operating surface. The large 24" display is easy to see and navigate. Most importantly, the professional surface offers multi-touch ability. You can drag and drop tools into locations easy. You can pinch to zoom in/out to see profile drawings more clearly. Along with many more value-added features to bring your production into Industry 4.0 platforms.

tapio Platform for the Wood Industry

tapio is intended to help the wood industry to evolve into the digital future. Through tapio, companies themselves can shape their digital future. With tapio machinery manufacturers, toolmakers, and material producer use the same technology platform. All HOMAG MOULDTEQ solutions are standard with tapio connection. The first interface is the MachineBoard. This provides an easy overview of all machine from everywhere. It is always in real time connectivity with the machine. Providing more flexibility during the daily work schedule saving time and money.

ProfileCenter Equal Intuitive Profiling Setups

The moulder specific software onboard the MOULDTEQ features ProfileCenter. This provides the operator with a visual of the profile before it is produced. As tooling and wood is populated, the operator can see the profile that will be created. Therefore, allowing time to adjust as needed saving time and money in the setup process. Allowing more effectively the chance for the first piece to be the first piece that is correct.

Locked in Securely

Using only an allen wrench, German-engineered ProLock nuts secure the spindles with 2.5 times the clamping force of a conventional and cumbersome spindle wrench. The operator can change tooling in less than one minute.

The spindle design enhances operator safety and eliminates any possible damage by tool installation or tightening.

Precision Performance

Dynamic pad pressure shoes hold workpieces firmly in place during cutting. These shoes move without friction on a rail-and-bearing system, which is more efficient than traditional dovetail designs that often stick, allowing chatter and other end defects.

General

The Operator is responsible that the work pieces/tools are compatible on the machine. Special material/dimensions require specific requirements. The processing of the work piece depends on the following processing parameters: Material quality, wood humidity, hogging cross sections and feed speed.

Depending on the application there might be necessary adaptations of the processing parameters. Required ambient temperature: +5° C to 40° C

For ambient temperature > 35° C or air humidity > 65% a cooling unit for the main electrical cabinet is required (additional price). One set of operation manuals and software text shown in English language.

Energy savings compliant with local electrical regulations (NEC). IE3 is required by law in North America.

Working Capacity	
Min/max working width*	15-250 mm (0.6"-9.8")
Min/max working thickness	10-160 mm (0.4"-6.3")
Min working length, piece by piece	800 mm (32")
Min working length, end to end	300 mm (12")
Feed speed min/max	6-24 M/min (18 – 80 ft/min)
Infeed table length	2 M (6'6")

For tool diameter of 125 mm, for working widths over 230 mm, tool diameter of 125 mm must not be exceeded

Table and Fence

- Frame is of sturdy cast iron construction utilizing multiple box feet for super stability and support. Cast iron body is massive and nearly reaches the floor level.
- Feed table and machine table with industrial hard chrome surface, nominal thickness of 0.3-0.4 mm
- Main fixed fence height of 63 mm. Suitable for taller moulding applications
- Pure pre-planing spindle “without” reference engraving jointing tool
- Table lubrication pump is automatic and managed by powerTouch control based on linear production of product.

Feeding System

Processing feed speed directly impacts processed finish quality of work piece. The machine operator is responsible for managing the feed speed to achieve the desired finish quality. The desired finish quality of the work piece surface is determined by the quantity of knife marks within one given inch of work piece length. The more marks within the measurement, the smoother the finish quality. The less marks, the poorer the quality.

However, the basic rule is to achieve the fastest processing speed with an acceptable finish. Otherwise processing speeds which are too slow can result in over-cutting issues such as poor tool life and crushed wood fibers (resist acceptance of paint/stain).

- All rollers before top spindle are steel surface while all rollers after top spindle/s are rubber surface.
- All upper rollers after the top spindle are upgraded from rubber to two part urethane rollers. The urethane is longer lasting and provides better traction than standard rubber rollers. The two parts are the hub and tire. When worn and in need of replacement, only the tire needs to be replaced, thus reducing operating cost by 70%
- Two upper rollers are provided for best work piece control and safety before the pre-planing first bottom horizontal spindle. These can be raised up by switch for jointing applications.
- Table roller within infeed table is an aggressive serrated design for added traction when processing rough, difficult timbers
- Table roller/s after first bottom are a smooth steel design
- Reduced distance gearbox device (aka short stock feeder) is standard and located directly opposite the fence side spindle.
- Two telescopic shafts allow for fast axial positioning of the feed rollers opposite the near side vertical spindle. Two shafts of different designs are included. The shorter shaft is for narrow work piece processing. The longer shaft is for control of wider work pieces. The longer shaft can extend a roller a maximum of 180 mm towards the near side profiling tool. Telescopic range, min-max: 0-35 mm
- Gearboxes are heavy-duty cast-iron design for vibration absorption qualities and long life. Lubrication is full synthetic with sight window for easy maintenance monitoring.
- Smooth, electronically adjustable feed speed regulation managed by powerTouch control. Speed setting can be saved in corresponds to profile program. Real time processing speed is shown within the powerTouch control.

Feeding System (continued)

- Feeding power is transmitted to heavy duty Cardan drive shaft via belt to prevent transfer of motor vibration to work piece surface quality. Motor is of high-quality energy efficient design for compliancy with local electrical regulations.
- The height of the feed roller above the table level is managed by the powerTouch control. Additional manual adjustment is possible via manual terminal on handheld pendent control by hold to start touch function
- Handheld pendent for the functions of run-in mode, feed start, emergency stop

Technology

Hardware

- Operating panel with 24" FULL-HD multitouch display in widescreen format
- PLC control according to International standard IED 61131
- Control PC with operating system Windows 10, IntelCore I5, USB connection, Digital field bus system, Virus protection software, license period 1 year
- The machine is prepared for connecting to the tapio Cloud

Software

- HOMAG operating surface, powerTouch V2
- Ergonomic touch operation with gestures such as zooming, scrolling, and swiping
- Easy navigation for equal and intuitive operation of the machine
- Intelligent display of readiness of production by light function

HOMAG Solutions

- HOMAG ProfileCenter software
- HOMAG ToolManager
- HOMAG Machine Monitoring and Reporting (MMR)*
- HOMAG tapio, MachineBoard

**MMR Professional is free of charge for first 50 uses, then subscription is required.*

Position	Axial Adj	Radial Adj	Indicator
N.01 Bottom	Manual	Manual	Mech. DRO
N.02 Fence	Manual	Manual	LED
N.03 Near	Manual	Automatic	LED
N.04 Top	Manual	Automatic	LED
N.05 Top	Manual	Automatic	LED
N.06 Bottom	Manual	Manual	LED

Spindles

- Advanced tool clamping system to secure smooth bore tooling. Included on all open-ended spindles. Not possible with spindles with outboard bearing supports.
 - Promote safety as un-securing/securing tool is easily accomplished with a 3 mm TEE handle Allen wrench which anyone can use. No more overtightening or struggling to break loose
 - Fast tool changing provides more production time. Tools can be changed in less than one minute by a novice operator
 - Secure tool clamping as special German design provides 2.5x more clamping strength than traditional spindle wrench devices
 - Reliability is extended as the ProLock system has no external spindle threads to be damaged when loading/unloading tooling.
- Larger spindle diameter best suited for higher for RPM speeds > 6000 RPM.
- Shaft diameter inside spindle housing is an extra-large diameter. Designed to counter-balance the weight and stress of the processing tool. This provides better stability and longer life expectancy.
- Frequency drive devices manage smooth spindle start/stopping. Frequency drive is more tolerant of surging power which has always plagued traditional DC injection, therefore, providing longer lasting value. Frequency drive's spindle stopping is proportional to the load. Thus, unlike traditional DC injection braking systems that are torque and time sensitive. Both of which can introduce stress to motor components resulting in poor life expectancy.

Spindle / Tool Specifications

Tool cutting circle, 1 st bottom	125-160 mm (4.9"-6.2")
Tool cutting circle, vertical spindle	112-200 mm (4.4"-7.8")
Tool cutting circle, horizontal spindle	112-200 mm (4.4"-7.8")
Axial range of vertical spindles	60 mm (2.3") @ 200 mm tool dia 75 mm (2.9") @ 130 mm tool dia
Axial range of horizontal spindles	40 mm (1.5")
Spindle tool clamping	ProLock
Spindle bearing	4pc of ABEC 7 each spindle
Spindle tool diameter	1-13/16" inch
Spindle RPM	Spindle 1: Fixed 6000RPM Spindle 2-6: 4000-8000RPM
Spindle power belt	Flat belt
Maximum tool weight	22 kgs (48 lbs)

**Note: At least 3 mm of the spindle length is to be considered for guiding the tool clamp system.*

Pressure Elements

Lateral pressure elements press work piece to the main fence to promote accuracy and precision. Lateral side pressure roller at infeed table with spring tension. Two lateral side pressure rollers, before and after the fence side vertical spindle are attached and move with the near side profiling assembly. The pressure rollers are with spring tension.

Vertical pressure elements have electronic (LED) display with current and saved position managed by powerTouch control.

- Position height managed by powerTouch profile program and saved with program
- Indication on powerTouch control as to when adjustment is needed
- Promotes fast, easy, and precise setting

Vertical chipbreaker shoe assemble/s hold the work piece to table when it is approaching and while profiling. Pneumatically tensioned cylinders with regulator at machine front allow the operator to easily adjust pressure as needed. The vertical chipbreaker assemblies are standard with two segments working independently for best control with uneven and/or cupped shape work pieces.

Vertical pad pressure shoe/s are adjustable in height to accommodate different tool diameters. The shoe/s holds the work piece down during and as the work piece exits the profiling tool. The regulation of the pneumatic tension is managed from the machine front.

The vertical pressure shoe/s have special rail and bearing movement that is nearly frictionless. Unlike traditional dovetail designs, there is no binding or catching of the shoe due to metal to metal friction. Machine defects such as chatter and end defects are greatly reduced.

- N.04/N.05: Single segment shoe for both top spindles

Spindle – M300/6	Standard
N.01 First bottom horizontal	15HP
N.02 Fence vertical	10HP
N.03 Near vertical	10HP
N.04 First top horizontal	20HP
N.05 Second top horizontal	20HP
N.06 Second bottom horizontal	15HP

UTILITIES

Main voltage	480V, 60hz, 3-phase
<i>Electrical Power Listing for is Reference Only – Full Load Amperage is not Service Size Recommendation. Use local electrical code for sizing requirements.</i>	
Full load amperage (FLA) – M300/6	TBA
Recommended fuse	TBA
Control voltage	24VDC
Compressed air (clean & dry)	6 Bar (90 PSI)
Compressed air consumption	30NL/min
Extraction capacity	8000 m ³ /h
Extraction capacity each spindle	1.330 m ³ /h
Weight, Crated/Uncrated	5,100kgs (11,243lbs)
Dimensions (H x W x L)	2145 x 1912 x 4697 mm

*Voltage range: +/- 5%

**Air speed per spindle, 30 M/sec (5905 ft/min)

Suction volume per spindle, 1300 m³/h (765 CFM)

Port diameter, 125mm (5" inch)

Note: Standard North American systems are of lesser velocity. Typically, 4500 ft/min is normal. Based on 125mm (5") diameter, minimum CFM is 615 CFM per port.

Workforce Development

A well-trained workforce is essential to realizing the full capabilities of HOMAG equipment, safe and efficient machine operation, increased component and tooling life, and reduced maintenance costs. At the time of installation, basic machine programming, operation, and troubleshooting training is administered onsite by a Stiles Field Service Representative (FSR).

Additional training is available through Stiles University, the industry's only nationally accredited training program. With over twenty regularly scheduled courses, Stiles University provides comprehensive, hands-on technical and application training as well as best practices designed to equip manufacturers with the skills and knowledge they need to thrive.

Included with your machine purchase are **two (2)** scholarships for a Stiles University course.

For this model, the following course is recommended: **WOOD220: Moulder Operation**

Designed to meet customer needs, sessions are offered at any of Stiles University's dedicated training centers nationwide, online, or onsite at the customer's facility (if a more specific, customized training is desired).

Explore upcoming course offerings and/or register online at www.stilesuniversity.com or contact classes@stilesmachinery.com for more details.