

# PISTORIUS

## MACHINE CO., INC.

PHONE: 631-582-6000  
FAX: 631-582-6278  
E-Mail: [info@pistorius.com](mailto:info@pistorius.com)  
Web Site: <http://www.pistorius.com>

1785 EXPRESS DRIVE, HAUPPAUGE, NEW YORK, U.S.A. 11788



### MODEL MN-A HOPPER FED FULLY AUTOMATIC DOUBLE MITER SAW

#### DESCRIPTION

The **Fully Automatic CNC Double Miter Saw** combines a virtually maintenance free mechanical design with automated self feeding for unlimited lengths of wood mouldings, plastic and aluminum extrusions.

**Computer, numerically controlled digital electronics** with precision linear bearing slide and positive material clamps assures repetitively accurate cuts to  $\pm .010$ " with material feed rates up to 48 inches per second.

The user friendly program prompts the operator for required job data entry. Automatically computes for outside "tip-to-tip" or inside "rabbet" sizing. The saw can cut up to six sizes simultaneously for maximum optimization. During operation, the saw continuously monitors the operating functions with automatic diagnostics and problem analysis with solutions.

The machine is designed for totally automatic operation with the operator only required for material loading and initial job data entry. One operator can easily **simultaneously operate five or more machines**.

**Safe and clean to operate**, the machine is equipped with high efficiency sawdust exhaust ducts, low operating noise and when mitering aluminum, is available with the **"PROTEX"** environmentally friendly, pulse type sawblade lubrication system.



*Machine shown with safety guard removed for illustration purposes*

#### FEATURES

- Fully automatic, computer numerically controlled operation.
- Powerful material feed via servo motor and timing belt drive.
- Precision ball bearing material linear slide unit.
- Positive material clamping at all stages of the feeding and cutting cycle, utilizing both vertical and horizontal clamps.
- Virtually maintenance free mechanical components.
- No special operator skills required.
- Simple modular design with easy to change components.
- Cuts from 5" (127mm) to 48" (1219mm) long parts standard (tip to tip). Longer lengths available.
- Large easy to read color touch screen display.
- Automatically counts down and stops at preset quantity.
- High speed material feed rate up to 48" per second.

## PRODUCTION - ECONOMICS

- One operator can feed multiple machines simultaneously.
- The machine produces at a known rate continuously.
- Powered belt type take away conveyor removes finished parts from the machine to further eliminate operator handling (accumulator). Optional accumulators are available.
- Only cuts the number of parts required, no more, no less.
- Can cut up to six different sizes simultaneously for the most efficiency in downstream frame assembly.
- RS232 & ethernet communications interface allows for interfacing and communication with optional optimizing and job entry software. Download cut lists from mainframe or PC.
- Helps to eliminate costly mistakes that cause waste due to incorrectly cut lengths, or too much scrap waste.
- Less downtime due to high quality no maintenance machine components.
- Adjustable sawblade stroke keeps saw cycle to a minimum for increased production.
- Simultaneously cuts a left and a right miter with each cycle of the machine, to produce one finished part per saw cutting cycle.
- Includes air line filter, regulator, and lubricator.
- Available with optical scanning and defecting (optional).

## SAFETY

- Operator is only required for part loading and data entry.
- Fully automatic operation keeps operator away from danger areas.
- High efficiency sawdust exhaust duct system. High efficiency dust collectors also available.
- Scrap is directed to the rear of the machine, away from operator.
- Emergency OFF switch.
- Low operating noise through polyvee flat belt spindle drive.
- Complete sheet metal enclosures around mechanical components.
- Enclosed lockable cabinet houses all electrical and computer equipment.
- Built in pneumatic and electrical lock out devices, prevent operation of machine during routine maintenance. When properly used.
- Automatic operation helps eliminate repetitive motion injuries.
- Available with optional state-of-the-art (environmentally clean) **PROTEX™** sawblade lubrication system for cutting aluminum.

## CONSTRUCTION

- Large diameter, precision made cross roller sawhead pivot bearings allow precise and consistent sawhead movement which provides a smooth, mill like finish to the face of the miters if proper tooling is utilized.
- Precision made, job matched **MITERMASTER®** carbide tipped saw blades produce consistently clean miters with minimal tearout or burrs.
- Computer controlled servo motor provides repetitive length tolerances of  $\pm .010$ ".

## HOPPER FEED

When the machine completes cutting a length of material, it signals the hopper to advance and feed a new length of material and also ejects any remaining scrap from the previous length of material.

The hopper set up can be loaded with approximately 15 lengths of material. For unstable material profiles, custom dogs can be installed on the feed belts. Feed belts can be quickly changed with all dogs in place.

Hopper construction is simple and straightforward, no adjustments are normally required other than changing the feed belts if necessary. The unique horizontal layout allows for a low cost design, easy, non-fatiguing material loading, non marking guides and dogs. The standard hopper will handle lengths up to 10' (3048mm) long, optional supports are available for lengths beyond 10'.

When the machine is started, the work clamps on each side of the sawblades (vertical and horizontal) engage to firmly hold the material back against the fence and down against the table. Once clamping confirmation occurs, the sawblades descend and begin mitering.

When the sawblades leave their home position (up) the material feed station disengages and the feed station retracts the distance programmed for the length of cut desired. When the sawblades return to their home position, the material feed station advances forward and the cycle begins over again. The complete sequence is computer controlled and is based on sequence confirmations.

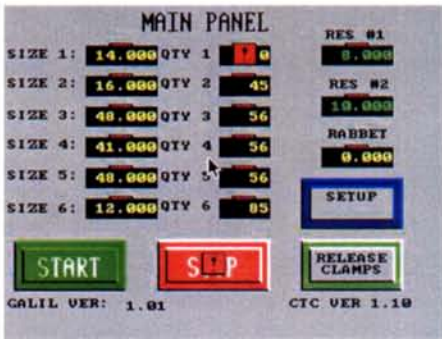
The positioning of the material feed station is numerically controlled via rotary encoder.



## DIAGNOSTICS

- The computer continuously monitors all operating functions and when a failure occurs, it automatically targets the problem.
- When the problem is targeted the computer analyzes and displays possible causes and solutions.
- The RS232 communications interface, allows for software modifications or upgrades.
- Lighted switches and controls allow for easy visual input & output confirmation in the event of a part failure.

## OPERATING PROGRAM



- 1 - Menu driven manual data entry (size and quantity) through graphical color touch screen. Operator enters up to six sizes and quantities. Alternative download of non optimized cut list and quantities via serial or network interface.
- 2 - Two levels of password protection to protect memory stored cut list data and machine set up data.
- 3 - The machine can be paused in the middle of a job or shut down at the end of the day and the software will retain the remaining cut list data.
- 4 - Software allows cutting "tip to tip" or "rabbet" length.

## OPTIMIZATION

The machine is provided with optimization software. The machine automatically detects the actual length of each incoming length of material, then searches the entered cut list and reserve sizes to compute a cutting solution to generate the greatest yield out of each length. This feature is ideal when cutting random lengths of material and will greatly reduce your waste as compared to a non optimized saw.

## OPTIONAL

Optional accumulators and diverters are available to process the completed out feeding material. Further information is available upon evaluation of application.

Optional defect marking and optical scanning of incoming lengths. Operator marks defects with visible chalk or crayon, optical scanner communicates with computer to optimize cut lengths from cut list and reserve list based on the position/s of the marked defects.

Optional parts identification. In some applications it is possible to apply a part number, job number or bar code via an ink jet printer to a finished part for downstream identification or tracking.



## **SPECIFICATIONS**

Sawblade capacity.....	12" (305 mm) (available with 13" (330mm) or 14" (356mm) sawblades).
Arbor diameter .....	5/8" (15.9mm)
Saw motor horsepower (standard).....	2 horsepower (1.5 kw), higher horsepower is available at extra cost.
Saw motor RPM (60 cycle).....	3450
Saw motor RPM (50 cycle).....	2950
Electrics (standard).....	208-230/460 volt, 3phase, 60 cycle.
Electrics (optional).....	575 volt, 3 phase, 60 cycle, 380 volt, 3 phase, 50 cycle.
Amps (2 horsepower motors)	
208 volts, 60 cycle .....	12.8
230 volts, 60 cycle .....	12
460 volts, 60 cycle .....	6
575 volts, 60 cycle .....	4
380 volts, 50 cycle .....	7
Note; For special electrics, amp ratings are listed on motor label.	
Servo feed motor .....	4.4 HP peak, 1.5 HP continuous
Switch .....	Three IEC size A, magnetic starters mounted in a common enclosure with recessed start switch and extended stop switch. Control circuit operates on 24 volts and a pilot light indicates the machine is running.
Air consumption.....	3.2 SCFM
Air pressure .....	80 psi
Saw pivots.....	Sealed high precision, low friction, large diameter cross roller sawhead pivot bearings and sealed high speed spindle bearings.
Height cutting capacity.....	2-5/8" high
(other heights available)	
Width cutting capacity.....	12" - 2 5/8"(67mm) 14" - 3 5/16" (85mm)
Waste.....	Other than the normal waste generated between the sawblades and by the kerf of the sawblades there is unavoidable waste generated at the end of each length that is approximately 3" to 5" long. The actual waste is a factor of the width of the material being cut.
Table height from floor .....	35" (889mm)
Sawdust exhaust .....	Two 4" OD
(Requires approximately 400 CFM per outlet for a total of 800 to 900 CFM)	
Saw drive .....	Non slip polyvee belt with ball bearing tensioner.
Actuation .....	Electric air valve, computer controlled.
Controller/Interface (HMI).....	Graphical color touch screen.
Cycle rate .....	3 1/2 to 4 seconds, actual rate is dependent on material being processed.
Minimum length of cut (standard) .....	5" (127mm) outside tip to tip, shorter cuts may be possible at extra cost.
Maximum length of cut .....	48" (1220mm) outside. Longer is available at extra cost.
Weight	
uncrated .....	1475 lbs. (670 kg.)
crated .....	1675 lbs. (762 kg.)
crated (export) .....	1800 lbs. (818 kg.)
	168" (4267mm) W x 72" (1828mm) D x 58"(1473mm) H

Subject to specification and engineering changes without notice.

### **IMPORTANT WARNING**

It is extremely important that operators be thoroughly instructed in the proper and safe operation of the machine prior to use. Sawblades are extremely sharp and can cause serious injury. Hands and fingers must avoid sawblades at all times and must never be placed under the safety guard while the machine is operating. When the machine is not in use or is undergoing maintenance or adjustments disconnect electrical and air service. Safety guards must never be removed except to change tooling. The machine must not be operated unless in perfect operating condition and all guards are securely in place and in proper adjustment.

### **IMPORTANT NOTICE TO PURCHASER AND USER**

All material contained herein is based on test and information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential arising out of the use or the inability to use the product described herein. Manufacturer offers inspection by buyer and user of product prior to shipment from factory with adequate notice. Before using, user shall solely determine the suitability of the product for his intended use and user assumes all risk and liability whatsoever in connection with strict compliance with all Federal, State and Local health and safety ordinances to its intended use.