

"Heavy-Builts"

Hasko

Flooring and Woodworking Machinery Since 1930

114 Industrial Park Drive

Soddy Daisy, Tennessee 37379

PH: 423-648-5200 FAX: 423-648-5202

Website: www.haskomachines.com



Both End Matcher Stations
Equipped with Trim Saw,
Top & Bottom Tongue/Bevel/Score
And Vertical Groove/Cope



Page 1 of 4

DESCRIPTION

(Subject to Conditions of Sale)

Hasko PFEM-C HIGH PRODUCTION END MATCHING CENTER

WITH AN INTEGRATED **Hasko Mat-Veyor** CROSSOVER SYSTEM

(Standard Systems With or Without Defecting Stations)

(Optional Configurations Available for Interlocked Flooring)

**For Random Length Pre-Finished or Unfinished Engineered, Laminated, and Solid
Wood Strip and Plank Flooring**

FEATURES:

The **Hasko PFEM-C** End Matching System is designed especially for manufacturers that wish to end match or re-machine pre-finished, unfinished, or pre-sanded engineered or laminated wood strip and plank flooring, 60" or 96" and shorter, *without marking delicate surfaces*. Superior and day-to-day consistent squaring is achieved through extremely rigid 100% steel fabricated frames that are designed for easy access, set-up and maintenance. A large cast iron dovetail hold down slide and Joyce jack provide superior rigidity and precise adjustment of the upper hold-down.

All cutter motors are arranged on large dovetail slides with precise vertical and horizontal adjustment. Both end matching stations are arranged with four Perske high precision, high speed spindle motors - top trim, top and bottom tongue/bevel/score, and a vertical groove/cope unit. The top and bottom tongue/bevel/score motors can be raised or lowered as a unit, or individually, for easy set-up changes.

Electronic inverters are provided for each cutter motor providing overload protection, electronic spindle braking, and spindle speeds to 7000 RPM. A PLC controller coordinates machine functions. An air-cooled NEMA 12 panel at rear of each machine frame is hinged and serves as an access door for groove and top and bottom tongue motors. This panel also houses the Inverter Controllers, PLC, Disconnects and Other Motor and System Controls.

Hasko's key to accurate squaring and trouble free operation is facilitated by dual end matching beds (one for each station) that incorporate our large 6.000" pitch x 5" wide x 2" thick heavy duty end matching chain, the **Hasko** pressure system, and a precisely machined bed system. **Hasko's** dual feed chains are independently square to their respective tongue or groove end matchers. Synchronization is required only for sweep bar alignment.

MACHINE SAFETY, GUARDING, OSHA - Subject to Conditions of Sale

Hasko

PFEM-C End Matchers

Page 2 of 4

With **Hasko's** Cross-Transfer System featuring its exclusive **Mat-Veyor**, the flooring makes a smooth, controlled, and automatic transfer between end matching stations. This system can be offered as open (for defecting at each end matching station) or closed (for no defecting).

1. Equipped with Perske high precision 7000 RPM spindle motors with 40 mm smooth spindles for Hydro-Lok heads.
2. Full vertical and lateral adjustment on all cutting motors.
3. Each motor slide axis has a numerical scale and pointer that promotes fast setups and changes.
4. Heavy steel fabricated end matcher beds are precisely machined to ensure end-matching accuracy. The bed/chain wear surfaces are UHMW lined.
5. Exclusive **SURE-SQUARE™** soft spring loaded rollers ensure positive squaring to lug.
6. Our 6.000" pitch highest grade of cast ductile iron end matching chain with 4.75" between lugs.
7. Exclusive wide 5" chain to end match stock as short as 9-1/2" in length.
8. Large diameter chain drive sprockets provide long life, positive feed, and optimum dampening.
9. Heavy cast iron hold-down assembly incorporates removable, hardened hold-down rails behind v-belts.
10. Excellent dust extraction through improved dust hood design.
11. Lug chain driven by a shaft-mounted gear reduction unit that is driven by a 15-25 H.P. electric motor with standard feed rate range of 100-150 lugs per minute – optionally up to 225 lugs per minute.
12. An electrically interlocked limit bar is incorporated onto each hold-down assembly to protect machines from damage due to mis-loaded or over-thick boards. If the limit bar is activated, the feed system will stop and will not restart until the problem is corrected by the machine operators.
13. Configurations available for engineered wood interlocking "click" or "snap" profiles.

ORIENTATION:

Standard flooring orientation is "face-up". The standard motor configuration will allow Tongue or Groove -left or right at either station.

BOARD REFERENCE:

Standard: Flooring is referenced to the top (face) via spring loaded plungers and ribbons.

Optional: Flooring is referenced to the bottom (back) on hardened, V-grooved replaceable rails.

HEAVY DUTY HOLD-DOWN PLATENS

Upper platens are adjustable with replaceable 1" wide hardened rails mounted to a heavy steel fabricated hold-down beam. Associated with each rail is one non-powered belt and pulley system, so that the hold-down device is non-marking on pre-finished and/or pre-sanded stock.

Hasko CHAIN, BED, and CROSS TRANSFER MATERIAL HANDLING SYSTEM

Both the tongue and groove end matcher stations are integrated with a **Hasko** cross transfer board traversing system that provides automatic positioning (lateral transfer) of random length boards to each of the end matching stations. **Hasko's** key to accurate squaring and trouble free operation is facilitated by dual end matching beds (one for each station) that incorporate our large 6.000" pitch x 5" wide x 2" thick heavy duty end

Hasko

PFEM-C End Matchers

Page 3 of 4

matching chain, the **Hasko** pressure system, and a precisely machined bed system. Traversing bars are attached to end matcher chain lugs and span the distance between the dual chain systems. **Hasko's** exclusive **Mat-Veyor** traverses the boards to the opposite end matching station while they are channeled between the traversing bars. With this set up the flooring makes a smooth and controlled transfer between tongue and groove units. This system can be provided with either the tongue station or the groove station as first machining station as required by your production requirements and material flow.

FEED DRIVE SYSTEM:

PFEM-C End Matching Centers utilize a 15-25 H.P. electric motor feed drive system that drives a large gear reduction unit. Feed rates are variable via electronic inverters with standard feed rate range of 100-150 lugs per minute and optional to 225 lugs per minute. A solenoid controlled pressurized automatic oiling system provides lubrication to chains and beds.

ELECTRICAL:

The tongue and groove units each have a 460 volt/60 cycle/3 phase, NEMA 12, air cooled, control panel with interlocked disconnect, fused 110v control circuitry. Electronic inverters are provided for each cutter motor providing overload protection, electronic spindle braking *as required by OSHA and ANSI standards*, and spindle speeds to 7000 RPM. A PLC controller coordinates machine functions. A hinged NEMA 12 panel at rear of each machine frame serves as an access door for groove motor and the top and bottom tongue motors. This panel also houses the Inverter Controllers, PLC and Disconnects.

A touch screen control panel is mounted on each end matcher for easy access to machine control functions. For safety on in-line systems, both end matcher operators must simultaneously press feed start button to activate feed forward of the feed chain. A control interlocked anti-thickness limit bar promotes safety and prevents machine damage due to over-thick or mis-loaded/lapped boards.

OPTIONAL JUMP SCORE ATTACHMENT IN LIEU OF TOP/BEVEL/SCORE UNIT

The Jump Score Option on the **Hasko PFEM** is PLC controlled and monitored. It verifies its cycle rate over a pre-set quantity of passing chain lugs and corrects the 'Jump' cycle rate if needed. Using a hardened cam, driven by a precision gear head, the attached Servomotor lowers the Jump Score saw *before* the leading edge of a 3" (max) wide board and slowly raises it out of the score cut before the trailing edge--- preventing any blowout on the tongue edge of flooring stock. This allows the climb-cutting top tongue saw to cleanly finish the cut. This is repeated as the next lug passes the blade and so on. An Encoder translates the chain bed drive sprocket rotational speed to an electronic signal, which maintains proper timing for the Servomotor-driven cam. The Jump Score electronics use only electrically isolated photo connectors. These connectors are immune to possible *noise* or voltage spikes that occur in conventional less-expensive, *non-isolated* copper wire conductors.

Hasko

PFEM-C End Matchers

PFEM-C SPECIFICATIONS:

(Drawing # **PFEM-C** 60"W x Open or Closed System)

END MATCHER STATIONS (EACH): MOTOR CONFIGURATIONS

Standard Requirements: 460 volt - 60cycles - 3 phase

- ONE - 5 H.P. Perske 7000 RPM Trim
- ONE - 5 H.P. Perske 7000 RPM Top Tongue or Bevel or Score
- ONE - 5 H.P. Perske 7000 RPM Bottom Tongue or Bevel or Score
- ONE - 5 H.P. Perske 7000 RPM Vertical Groove or Cope

40 MM SMOOTH SPINDLES x 75MM SMOOTH LENGTH ON ALL MOTORS---REQUIRES HYDRO-LOK ADAPTERS

* INVERTER CONTROLS FACILITATE SPINDLE SPEEDS TO 6000 RPM ON THESE MOTORS*

* INVERTER CONTROLS FACILITATE DYNAMIC BRAKING ON THESE MOTORS*

CHAIN BEDS:

25', 31', 34' Systems	15 H.P. Shaft Mounted Gear Reducer
Optional System Lengths	Drives Sized According to Length
Feed Speed - Infinitely Variable	Range of 100-150 Lugs per minute (standard) Up to 225 Lugs per Minute - Optional

TOOLING:

(Tooling is optional --- See tooling diagram)

<u>Trim Saws:</u> 10" - 12" saws Climb Cut	<u>Top Tongue/Bevel/or Score Saws:</u> 10" Saws Climb Cut (Conventional Option)	<u>Bottom Tongue/Bevel/or Score Saws:</u> 10" Saws Climb Cut (Conventional Option)	<u>Vertical Groove/or Cope Saw</u> 8" - 10" Saw Conventional Cut (Climb Option)
--	---	--	---

40 mm smooth spindles---all saw units. Hydro-Lok adapters required.

CAPACITIES:

Longest Material:	60" or 96" Standard (Longer is optionally available)
Shortest Material:	9-1/2"
Thickness:	3/8" - 2"
Widest between lugs:	4.75"
Widest skipping lugs (remove every other chain lug)	10.75"