

A UNIQUE LOOK

UNIQUE MACHINE & TOOL CO.

400 Series Shape & Sand Machines

Rev. E



'93 Model 330 pictured

1993

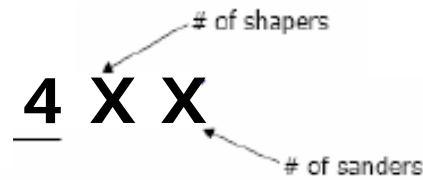


2012



2017

400 Series Shape & Sand Machines - Basics



BASE MODELS

410

411

412

422

In 2012 Unique introduced the 400 Series Shape and Sand. This series took our many years of experience in building shape sands and developed a cost effective solution for small shops.

The modular frames can be built with anywhere from one to three stations.

The smaller machine has a smart yet simple conveyor design providing years of productive output with minimal routine maintenance.

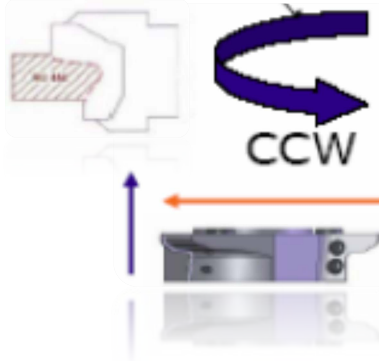
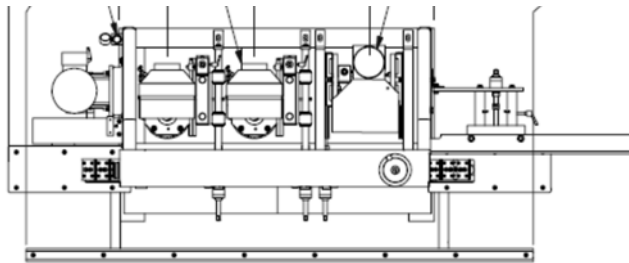
The flexibility and budget conscious line of machines saves resources while accomplishing important tasks. These savings allow focus to be placed in other areas, improving efficiencies in a shop and overall Quality!

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400 Series Shape & Sand Machines - Basics

 ***Feed Rate 0-40 Ft/min***



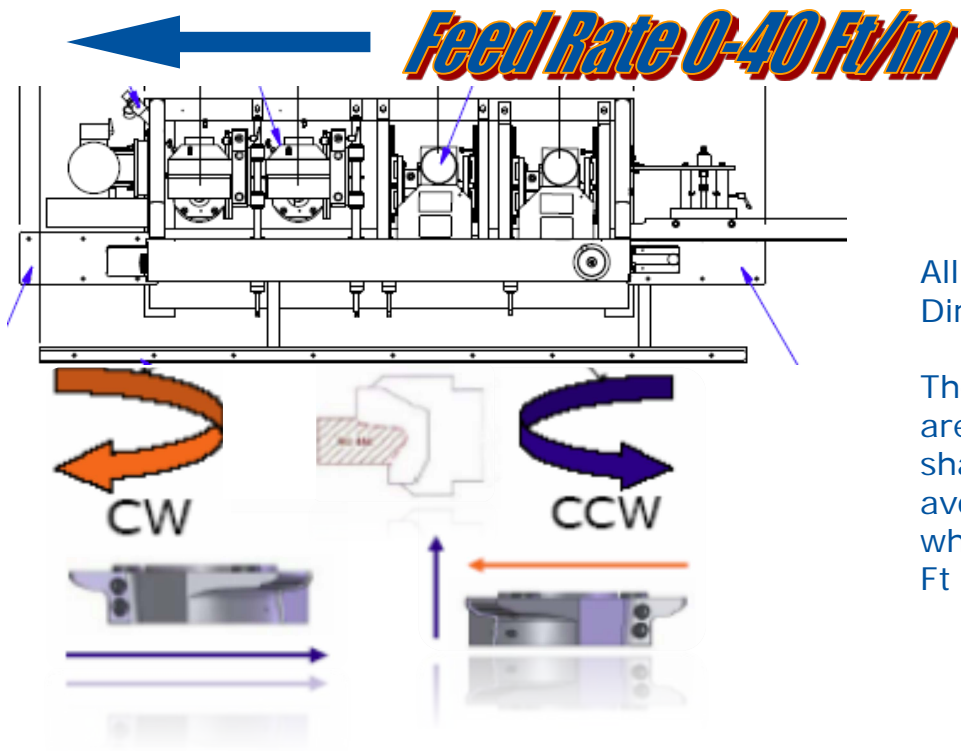
All Unique 400 Series machines have a single 10Hp Direct Drive shaper spindle motor.

The motor can be set to run either direction, however most applications require the shaper head to run CCW while the conveyor feeds right to left at up to 40 Ft / min.

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400 Series Shape & Sand Machines - Basics



All Unique 420 Series machines have two 10Hp Direct Drive shaper spindle motors.

The motor can be set to run either direction, and are variable speed. The machines with two shapers 420 and 422 can have one Head JUMP to avoid blowout and optionally both heads JUMP while the conveyor feeds right to left at up to 40 Ft / min.

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400 Series Shape & Sand Machines - Basics



- ✓ 5" of stack height is standard
- ✓ All stations are reversible rotation
- ✓ All have variable speed rotation

Shaper Stations

10 HP Direct Drive Shapers - STD
6000-9000 variable speed RPM

8 to 18 HP HSK-63F Quick-Change Available
6000-18,000 variable speed RPM

Sander Stations

2 HP Direct Drive Sanders - STD
0-2500 variable speed RPM

8 to 18 HP HSK-63F Quick-Change Available
0-18,000 variable speed RPM

** Guarding & Dust Hoods only removed for better component viewing in a "locked out" state*

400 Series Shape & Sand Machines - Basics

- The 10HP Direct Drive Perske Shaper motor (2) 2HP Baldor Sander and the 2 HP Baldor Conveyor motor are all individually controlled by Mitsubishi Electric VFDs

VFD Controls allow for:

- Preset minimum and maximum RPMs
- Soft start-up reducing peak AMP Draw
- Dynamic Breaking for controlled stops

- 400 Option HSK Feature uses 10HP – 18 HP HSK- 63F quick change electro-spindle motors

varies based on specs of motor used

Common use: (Very fast and accurate setups) For shops who use many profiles and use all of those profiles frequently and constantly changing between those profiles and can realize the value of the added expense..



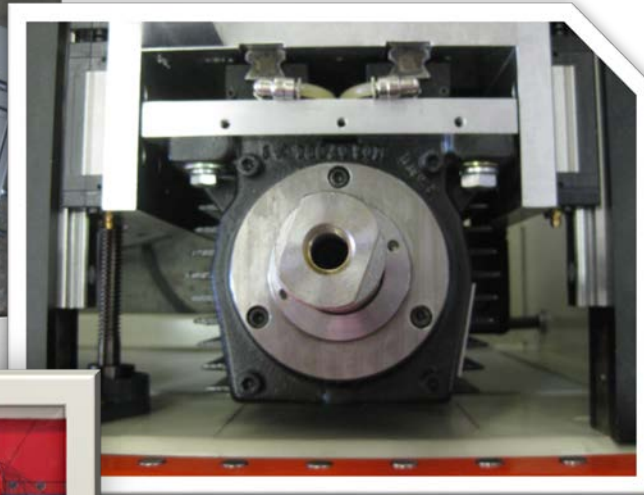
- Simple key switch activated tool release.

For DD HSK-63F option only.

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400 Series Shape & Sand Machines - Basics



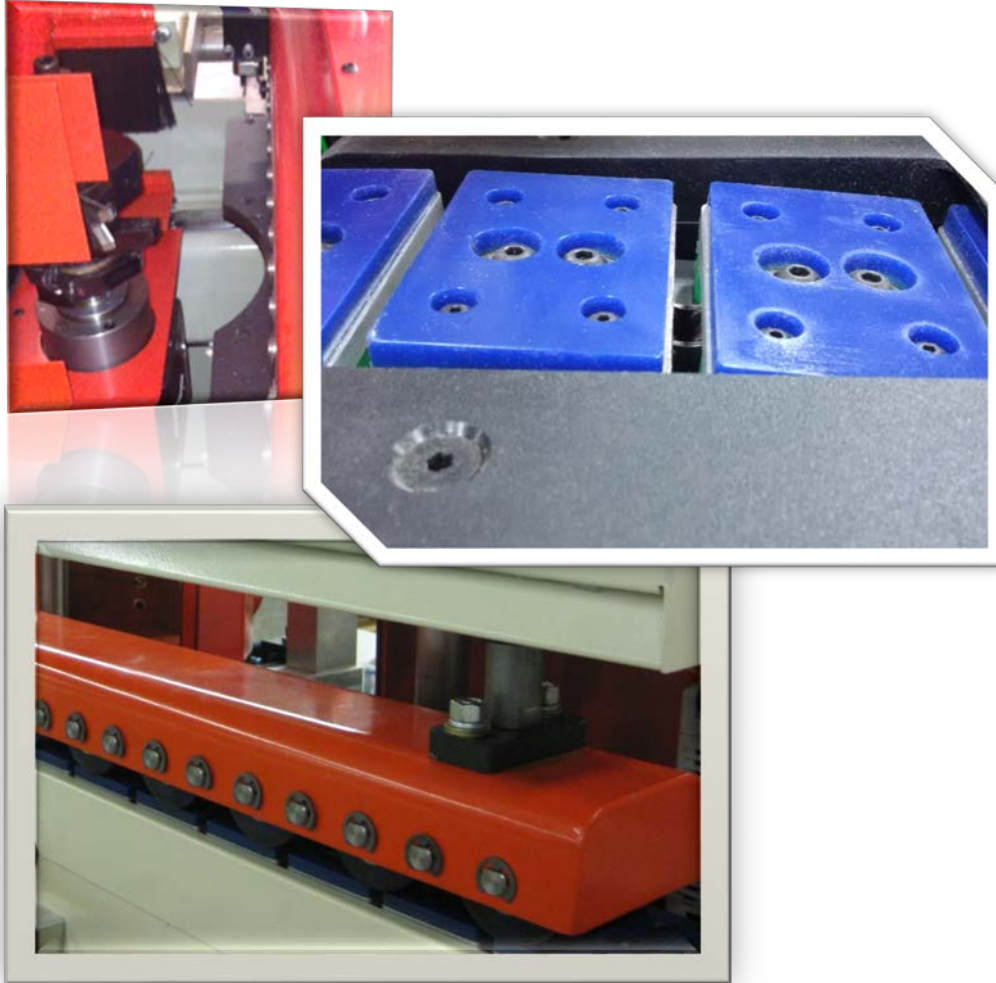
- All adjustment are made from the front of the machine allowing for faster and more user-friendly changeover.
- Shaper stations are guided on THK square rails mounted to the precisely machined steel cross members.
- Centralized grease ports make access to bearings quick and easy which helps promote thorough maintenance habits.
- Sander stations are guided on round linear rails and bearings for smooth accurate and repeatable positioning.
- Sanding Stations Tilt

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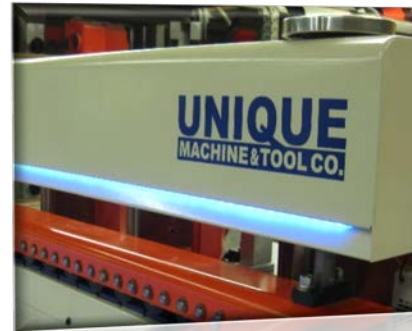
- 3" Wide Durable Conveyor Pad - STD
- Each replaceable pad is a 1/4" thick vulcanized urethane bonded on 1/8" steel plates.
- Each Aluminum Flight is mounted to a #60 High-Quality Roller Chain
- Nyloil Guides ride on two precision ground and nickel plated bars creating a "virtual table" for parts to be machined on.
- 2HP variable speed conveyor runs from Zero – 40 Ft/Min.
- 3 staggered rows of hold down rollers for increased grip on both small and large components.

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400 Series Shape & Sand Machines – Controls



- All 400 Series Machines come equipped with our Unique simple and basic control package.
- Provides the operator fine-tune control

1. Cut/Sand Direction
2. RPM for each spindle
3. Feed rate of the conveyor

Unique's Control Standard Features

- BASIC – “No Computer”
- Bright LED indication push-buttons
- Industrial switches and control potentiometers
- Control Power LED strip to notify operators the machine is under power and operational



(BASIC “No Computer” Controls pictured above)

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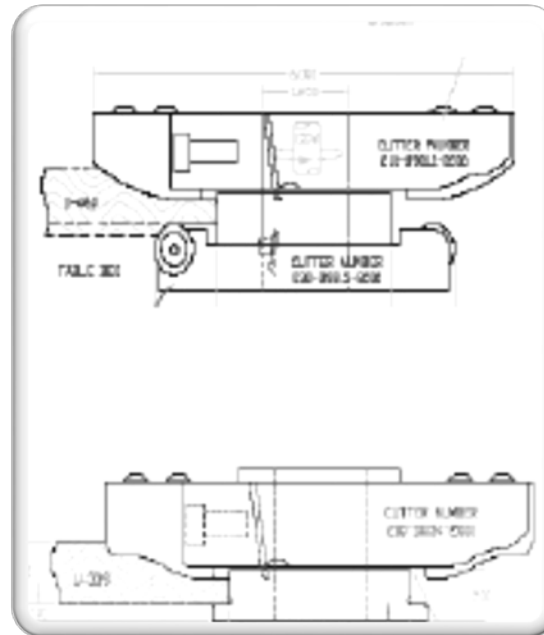
400 Series Shape & Sand Machines – “Arch Following Option”



400 Series Machine can be equipped with optional floating heads for arch following.

In order to follow a arch effectively tooling is a key. To the right are a few common examples.

See Unique Tooling or your regional manager for more information.



Profile Head with back cutter and rub bearing for 3/4" Panels

Profile Head with support bearing for 5/8" Panels

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400 Series Shape & Sand Machines – “Arch Following”



Step 1:

Before going to the 400 “**Pre-hog**” arch pattern from square panels.

A Unique 250 is pictured (*left*) with a straight knife hogging cutter to achieve a smooth cut.



Step 2:

Adjust fence back to the desired finish arch-height.

This allows the arch to hang over the conveyor farther and be cut completely

NOTE: slow down Arch-Feed rate to approximately 20 FPM.



400 Series Shape & Sand Machines – Q&A

• **What does it do?** The 400 series machine is design to shape and sand raised panels and edge details for furniture components, doors and drawers.

• **What kind of finish can be achieved?** This is a difficult question that needs to be discussed in detail when choosing what machine to quote. All customers have different quality levels, as a general rule we use the following based off feed rates of 25-35 feet per minute when compared to finish quality that is produced on a shaper.

- A two sanding machine will eliminate 70-80% of all hand sanding.

In most instances the use of a random orbital should be eliminated and a cross grain should only have to be wiped with a sanding block / Sponge to blend remaining cross-Grain Scratch & achieve a finish quality.

Please note that these statements are based on consulting with both the preferred tooling and sanding manufacturers when ordering tooling as a single "package". Final sanding results vary based on customer preference.

Often Species such as maple and Cherry are at the lower end of the percentile and can even dip lower as they are typically more difficult to machine and sand.

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400 Series Shape & Sand Machines – Q&A

- **How many parts can it do?** The standard machine can run up to 40 feet per minute (when producing stiles). The amount of parts that it can produce is based off average part size and the operators' ability to get parts to the machine.
- **Can it square parts?** This machine can accept parts that are already square and put a profile onto them while maintaining the square. However, in order to size and square parts that are not already squared is to move up to the next level of machinery Unique offers in the 4500 series and choose the Size & Squaring option.
- **Where can I see the machine?** Unique has distribution covering the entire USA with dealers world-wide as well, you may contact us and we will put you in touch with a person who can help setup an appointment to see the machinery in operation at a facility near you or you are also welcome to Visit the factory in Phoenix, Arizona *(located right next to Sky Harbor Intl Airport)*

Video Link: <http://uniquemachine.com/412.html>

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