# House of Design AUTOMATED ROOF TRUSS SYSTEM SPECIFICATION

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# Automated Roof Truss System

SPECIFICATION SHEET

COLLABORATIVE ROOF TRUSS SYSTEM ~ 2,500+ Bf/Hr with 3 operators\*

The roof truss system is actually two independent systems; allowing different designs to be built simultaneously. Option to run only one automated line when demand is lower, providing for greater flexibility on production scheduling & optimization.



- CUT LABOR NEEDS & COSTS
- LESSEN REQUIRED PHYSICAL DEMAND
- ATTRACT NEW WORKER DEMOGRAPHIC
- REDUCE ERRORS & WASTE

- RAISE PROFITS & BOOST PRODUCTION
- ENHANCE PLANT EFFICIENCY & FLEXIBILITY
- REDUCE RISK OF DOWNTIME LOSSES

\*Many different factors can affect rate including but not limited to operator experience, lumber type and quality, proper system maintenance, complexity of truss design, number of nail plates used, etc.



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## **ROOF TRUSS SYSTEM SPECIFICATION DATA**

#### PRODUCT OVERVIEW

An operator loads multiple truss members on the manual infeed table in the proper sequence. The system then automatically loads each member into the preplate station where nail plates are pressed into the member. The preplated member passes to the assembly robot where it places the member on the table in the correct position and orientation. An operator performs a QC check, securing nail plates as needed. Once all members are in place the system automatically presses the truss and side ejects it to the finish press.

#### **KEY FEATURES**

SYSTEM COMPONENTS: Manual Infeeds, Preplate Stations, Assembly Stations. THE SYSTEM DOES NOT INCLUDE: tables, exit roller(s), finish press. Designed to pick nail plates from most manufacturers. The system builds trusses using standard construction practices and material.

#### LIMITS

Maximum size of a roof truss is 70' long and 13' high. System can accept 2x4, 2x6, 2x8, and 2x10 members.

The length of the 2x10 is limited to 10'.

NOTE: This is a collaborative system - an operator will need to ensure the completed truss meets internal specifications.

## PREPLATE

Places nail plates on both sides of the member depending on assembly sequence.

Uses all common nail plates from most manufacturers. The system allows for nail plates to be manually placed before the member is pressed.

Nail plate magazines - sizes configured per customer's requirements.

Maximum number of nail plate magazines per station is 65. Non-typical nail plate shapes (non-rectangular) require manual installation.

# ASSEMBLY

Processes material ranging from 6" to 20'. Boards outside this range require manual placement.

Handles nail plates up to 10.5" extending off the edge of a member. Any overhang greater will require manual placement.

Includes an end-of-arm tool utilizing vacuum to pick, hold & place boards.

## **SOFTWARE & PROGRAMMING**

Includes software to aid in the sequencing and grouping (batching) of trusses for optimum performance - HoD's TEd software.

Processes customer truss files from a standard TRE and XML file.

Includes a Human Machine Interface (HMI) for entry of part numbers, display of rate, display of system state (errors, alerts, alarms), operation in manual or automatic mode, starting/stopping the system, etc.

Includes programming for automatic operation, producing the components listed in this document.

Detects errors and signals personnel.

System includes a display to direct order and placement of members at the manual infeed.



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#### RATE

System throughput is primarily dependent on the number of nail plates in the truss design. The roof truss system uses 2 infeeds, 2 preplate stations and 2 assembly stations to achieve the quoted rate of up to 2,750 Bf/Hr. See throughput values shown to the right.

#### SAFETY

The system meets all applicable safety requirements. For robotics, meets ANSI Robot Safety Standard, ANSI/RIA R15.06 – 2012. System allows for lock-out/tag-out maintenance access.

#### DIMENSIONS

System footprint: 145' X 65' Based on a 70' table, footprint may expand depending on chosen table length. Maximum truss size is determined by table selection.

ELECTRICAL REQUIREMENTS 480 VAC 3 Phase 50/60Hz UL listed electrical cabinets

AIR REQUIREMENTS 110 PSI - clean and dry air

ENVIRONMENT Indoor operation Relative humidity - at or below 85%. Ambient temperature 32° - 104°F (0° - 40°C).

Bd Ft\Np	Avg. Bd Ft\Hr	Avg. Bd Ft\Hr Total System
1.5	450	900
1.75	450	900
2	450	900
2.25	515	1030
2.5	610	1220
2.75	705	1410
3	800	1600
3.25	895	1790
3.5	990	1980
3.75	1080	2160
4	1175	2350
4.25	1270	2540

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