House of Design

AUTOMATED ROOF TRUSS SYSTEM SPECIFICATIONS

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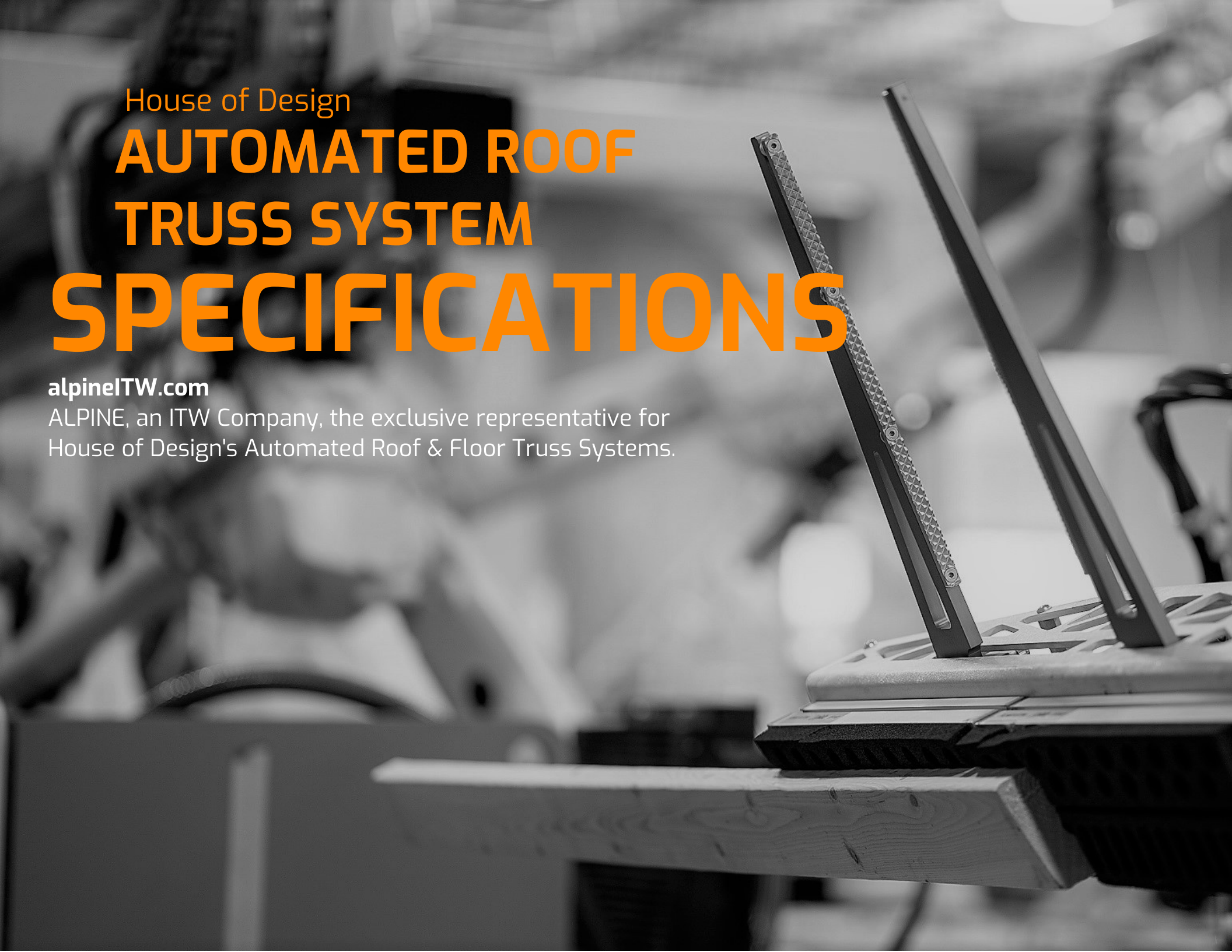
ALPINE, an ITW Company, the exclusive representative for House of Design's Automated Roof & Floor Truss Systems.

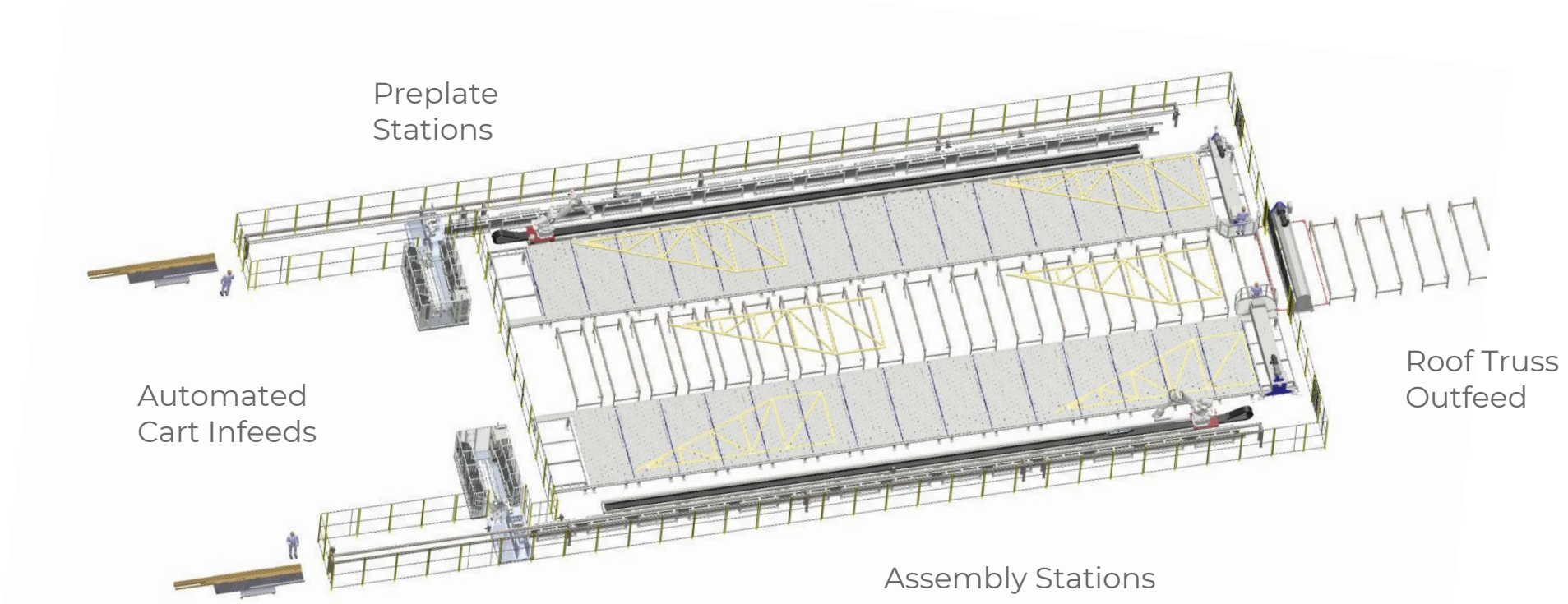


HOUSE of DESIGN
ROBOTIC SOLUTIONS

Automated Roof Truss System

SPECIFICATION SHEET

COLLABORATIVE ROOF TRUSS SYSTEM ~ 800+ Cp/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 connector plates used, etc.

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ROOF TRUSS SYSTEM SPECIFICATION DATA

PRODUCT OVERVIEW

Saw operator loads truss members on the automated carts in the proper sequence. The cart is docked and the system then automatically loads each member into the preplate station where connector 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: Cart Infeeds, Preplate Stations, Assembly Stations.
THE SYSTEM DOES NOT INCLUDE: tables, exit roller(s), finish press.
Designed to pick connector plates from most manufacturers.
The system builds trusses using standard construction practices and material.

LIMITS
Maximum size of a roof truss is 70' long or dependent on table length 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 connector plates on both sides of the member depending on assembly sequence.
Uses all common connector plates from most manufacturers. The system allows for connector plates to be manually placed before the member is pressed.
Connector plate magazines - sizes configured per customer's requirements.
Maximum number of connector plate magazines per station is 65. Non-typical plate shapes (non-rectangular) require manual installation.

ASSEMBLY
Processes material ranging from 6" to 20'. Boards outside this range require manual placement.
Handles connector 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 ASD and TRE file. TEd integrates with most design suite file types.
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 connector 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 800 Cp/Hr.
See throughput values shown to the right.

Cp/Member	Cp/Hr (single)	Cp/Hr (dual)
.50	377	754
1	384	768
1.5	391	781
2	397	794
2.5	404	808
3	410	821
3.5	417	834
4	424	848
4.5	430	861
5	437	874
5.5	444	888

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: 134' X 76'
Based on a 70' table, footprint may expand depending on chosen table length (table +64').
Maximum truss size is determined by table selection.

ELECTRICAL REQUIREMENTS
220A @ 480V 3-phase
UL listed electrical cabinets

AIR REQUIREMENTS
110 PSI - clean and dry air

ENVIRONMENT
Indoor operation, ceiling height equal or greater than 14'
Slab thickness: equal or greater than 6" thick
Relative humidity - at or below 95%.
Ambient temperature 41° - 104°F (5° - 40°C).

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