



## ALAMO INDUSTRIAL® Specifications Maverick 2 24' Boom

It is the purpose of this specification to describe a 24' mid-mounted, telescoping, hydraulically powered boom mower for cutting grass and brush on roadsides and other areas that are not accessible to conventional mowing equipment. The unit bid shall be the manufacturer's current production model that meets or exceeds the following minimum specifications.

### **FRAME & MOUNTING:**

The unit frame shall be mid-mounted to underside of a suitable size tractor utilizing a modular center weldment with front and rear attaching rails. Frame mount shall provide for unrestricted movement of boom and offer limited obstructions to forward vision.

Frame shall be of modular construction from alloy steel and shall be completely bolted during installation (no welding).

The boom shall utilize a slewing ring bearing for boom function. The ring shall be mated by means of a turret.

4,500 lbs. of counterweight integral with frame shall be required. Wheel weight shall be configured to tractor/boom combination.

### **BOOM FEATURES & CAPABILITIES:**

#### **Boom Features:**

Standard boom structure shall be constructed of a designed, box section geometry, for optimum strength to weight ratio.

The boom shall feature three main components; lift, inner dipper, and outer telescopic sections.

The lift component box section shall be a minimum of 11" tall x 6" wide.

The outer telescopic dipper component section shall be a minimum of 10" tall x 6" wide.

The inner stationary dipper section shall be a minimum of 4.5" tall x 4.5" wide, and shall extend out a minimum of 3'.

The telescopic section shall provide six (6) adjustable slide puck assemblies for slide control and minimal tube deflection. These will have replaceable low-friction, self-lubricating, Nylatron WP PA6 inserts.

Main pivots shall utilize 2" chrome pins with greaseable, hardened steel connex style bushings.

A front axle-mounted stabilizer cylinder shall be featured as standard providing automatic self-adjusting stability of the full package unit when in operation.

#### **Boom Movement:**

Standard boom functions shall feature horizontal swing, vertical lift, dipper reach, telescopic reach, and mower head tilt.

Boom swing angle shall be customized per tractor to accommodate cutting within 12" of front tire.

Boom swing shall be controlled by two standard dual acting cylinders.

Boom swing shall be a minimum of 180°.

The telescopic reach shall be a minimum of 3' fully extended.

#### **Boom Reach (with standard Maverick 60" rotary head):**

The minimum reach up shall meet 21'-10".

The minimum reach out shall meet 24', with telescopic section fully extended.

The minimum reach down shall be 14'-8" below tractor ground level.

Boom mower head shall have the ability to mow horizontally within 6" of the rear tractor tire.

*( Note: All measurements are based on a 96" outside tire spread with 18.4 x 34 tires.)*

### **Boom Cutting Head:**

The boom shall feature four-bar linkage to allow for 205-degree mowing head rotation.

The cutting head shall feature a hydraulic pivot enabling the head to be transported within 108”.

The boom shall feature a 60” heavy-duty rotary cutting head as standard. Detailed specifications attached.

### **Boom Cutting Head (Continued):**

The manufacturer shall offer an array of cutting heads in the sizes and applications meeting or exceeding the following list of optional heads:

50” HD Rotary

48” Flail-Axe Flail

52” Battle Axe HD Flail

60” Heavy Duty Grass Flail

5’ & 7’ Timber Cat Sickle Bar Limb Cutter

48” 2-Blade/ 69” 3-Blade/ 90” 4-Blade Buzzbar Saw Blade Tree Cutter

## **OPERATION & POWER:**

### **Hydraulics:**

The unit shall feature a self-contained hydraulic circuit for both mowing head and boom control circuit.

The mowing head circuit shall feature a closed-loop hydrostatic variable displacement piston pump rated at 101.8 horsepower continuous with 5100 PSI peak pressure.

The hydrostatic pump shall provide a no-flow neutral position while mowing head circuit is “OFF.”

The hydrostatic pump shall feature a charge pump to refresh and cool the cutter circuit.

Boom control circuit shall feature a load-sensing, variable displacement piston pump, rated at 44 horsepower continuous with 4000 PSI peak pressure.

Both pumps shall provide internal relief for component protection.

All high-pressure hydraulic hoses shall be of four-wire braid construction with a minimum rating of SAE100R12.

System hydraulic fluid must be of a superior grade with anti-wear additives that conform to an ISO AW Viscosity Grade 68 and conform to ISO cleanliness standard of 16/14/11.

### **Hydraulic Reservoir:**

The unit shall have a 32 gallon, front mounted, hydraulic reservoir for improved operator visibility, safety, and operator access. (Side mounted tanks will not be accepted.)

The reservoir shall feature visual indication of oil level and temperature to insure proper volume levels are maintained in order to support motor and boom control circuits.

Conveniently accessed points for draining and cleaning of reservoir shall be featured.

Frontal protection for the reservoir shall be provided by a heavy-duty steel bumper plate.

A durable, two-piece sheet metal cover shall be vented and hinged to provide access to components.

### **Cylinder Control Valve:**

The unit shall feature a mono-block, 7-section, electro-hydraulic, multi-directional control valve.

The valve shall be a closed-center load-sensing type featuring section-specific pressure compensation.

The valve shall be equipped with a 3500 PSI main relief.

The main control valve shall be equipped with counterbalance valves for swing, lift, and dipper functions.

The main control valve shall allow for a minimum of four functions to be operated simultaneously.

The swing, lift, dipper, and door sections shall have proportional valve control.

The main control valve shall be protected from falling debris by a vented steel cover.

The main control valve shall feature a manual over-ride for each spool in case of joystick failure .

**Filtration:**

**Hydrostat Charge Pump:**

The unit shall feature a pressure filter providing a minimum of ISO 4406 class 18/13.

The unit shall also feature a Hydrostat charge suction filter providing a minimum of 100 mesh filtration at full flow.

**Tandem (Mower Head & Boom Control) Pumps:**

The unit shall feature a control valve pressure filter rated for a minimum of 4000 PSI

The control valve return filter shall provide a minimum of ISO 4406 class 18/13.

A secondary control pump suction filter shall be featured providing a minimum of 100 mesh filtration at full flow.

**Front Pump Drive System:**

A Neapco style, telescopic driveline with grease-able universal joints shall be featured to accommodate installation and maintenance.

The driveline shall be hard mounted to engine crankshaft and secured to pump shaft with double-bolt style clamping yoke.

Standard tube diameter shall be at maximum 2" round with 14-gauge wall thickness.

Ultimate strength of driveline shall be 33,542 inch pounds of torque.

A cover shall be featured to provide shielding of high speed rotating parts.

**Cooling Fans:**

The hydraulic system shall contain as standard equipment, an oil-to-air cooler with electric fan mounted on top of the hydraulic reservoir and protected by a vented steel cover.

The fan shall be thermostatically controlled and feature a red warning indicator and audible alarm to indicate an over-temp situation. An optional cooling fan reversing circuit shall be available to provide a "self-cleaning" feature.

**Boom Control:**

All valve functions are electronically operated by means of a single joystick.

The Joystick base shall feature indicator lights to verify mower head engagement, fan-on operation, and system over heating warning.

**Tractor Requirements:**

The most suitable tractor shall be a 4WD model weighing a minimum of 10,500 lbs. and have a minimum rating of 86 PTO HP.

The tractor shall feature a minimum 101" wheelbase.

The tractor shall feature a minimum 18" ground clearance.

*(\*\*All tractor and tire combinations must be verified by Alamo Industrial Product Engineering)*

**OPERATOR PROTECTION & SAFETY:**

The mower cutter head shall have a six-second emergency shut down engaged by the operator from inside the tractor cab. The button shall be located within easy reach for complete power shutoff of motor circuit.

The boom controls shall feature a master ON/OFF switch for complete power shutdown.

An "Enable" function shall be incorporated into controls to prevent incidental boom movement.

Polycarbonate (Lexan<sup>®</sup>) window protection shall be offered as standard on CAB tractors as well as on ROPS tractor variations.

## **MISCELLANEOUS:**

### **Boom Rest:**

A boom rest shall be mounted to the rear axle or to the mower frame to cradle the boom when it is in transport position. The rest shall take pressure off the lift, dipper, and swing cylinders when in transport.

### **Optional Equipment:**

The manufacturer can provide optional equipment that includes the following items:

Quick Hitch® Quick Attach System (which is used for changing cutting heads quickly and easily)  
Special Mower Paint  
Additional 12 Month Warranty

### **Weight:**

The unit shall have a shipping weight of approximately 10,450 pounds (excluding tractor weight).

### **Warranty:**

There shall be a minimum one year parts and labor warranty. Non-governmental users are subject to modified policy. Only Alamo Industrial (OEM) parts may be used for warranty replacement.

### **Product Liability Insurance:**

*Choose the term that relates directly to your specific bidding situation. Please note that it is the dealer's responsibility to use the correct verbage for the bid type. **DO NOT USE BOTH.***

#### ***Individual Agency Bids***

Bidders must include a copy of mowing equipment manufacturer's Certificate of Insurance for Product Liability of at least \$5,000,000 for the products subject to its bid. The insurance carrier is to be rated "A, VII" or higher by the A.M Best insurance rating service.

#### ***Multi-Unit DOT Bids***

The successful vendor will provide a copy of mowing equipment manufacturer's Certificate of Insurance of at least \$5,000,000 for Product Liability for the products subject to its bid naming the Agency as an additional insured party. The insurance carrier is to be rated "A, VII" or higher by the A.M. Best insurance rating service.

## **60'' Heavy-Duty Rotary Cutting Head (Standard)**

### **CUTTER HEAD FEATURES & CAPABILITIES:**

The unit shall have a minimum cutting width of 58''.

The cutter head shall cut grass, weeds, and brush up to 5'' in diameter.

The cutting head top deck shall be constructed using a minimum of A606 alloy steel or equivalent.

The side skirts shall be constructed using a minimum of 3/8'' steel.

Top of the deck shall be reinforced with a channel frame and a reinforced spindle mount plate.

The cutting head shall feature full-length, replaceable skid-shoes.

### **Spindle:**

The spindle shall be a minimum of 4-1/2'' x 9'' heat-treated, H-13 modified, alloy tool steel.

The spindle bearing shall be tapered roller bearings, 2-1/2'' ID top and 2-5/8'' ID bottom, in a sealed housing.

### **Blade Carrier and Blades:**

The blade carrier shall be three-leaf, stacked blade-bar type with the bottom leaf being made out of T-1® steel.

The blades shall be 5/8'' x 5'' x 14-5/8'', 360-degree full-swinging, double-edged, and constructed of tempered steel.

### **OPERATION & POWER:**

#### **Motor:**

The motor shall be a cast-iron, piston-type, rated at 205 HP at 4,100 RPM and 6,000 PSI.

The spindle speed shall be a minimum of 1,220 RPM and 4,916 in. lb. of torque.

#### **Motor Drive:**

The motor drive shall be direct drive, splined and totally enclosed. This specifically excludes a chain or dodge coupler.

### **Safety:**

The front shield shall be hydraulically actuated, center feed, metal door operational from the joystick control.

The rear shield shall be constructed of rubber material.

### **MISCELLANEOUS:**

#### **Weight:**

The cutter head shall have a shipping weight of approximately 1,000 lbs.

**Warranty & Product Liability Insurance:** *SEE BOOM MOWER SPECS. SAME DETAILS APPLY.*