SAMURAI 1.8 25’ Model

It is the purpose of this specification to describe a 22’ mid-mounted, 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.

BASIC FEATURES

- 25’ minimum horizontal reach*
- 25’ 7” minimum vertical reach*
- 12’ 1” below grade reach*

*Above measurements are using a boom equipped with a 60” non-swivel rotary head

- Two section articulated boom.

BOOM FEATURES & MOUNTING

- Main Boom: 6” x 6” x ¼” wall structural tubing conforming to ASTM A-500 Gr. B (58,000 psi min tensile).
- Outer Boom: 5” x 5” x ¼” wall structural tubing conforming to ASTM A-500 Gr. B (58,000 psi min tensile).
- The main boom pivot points shall be reinforced with ¾” ASTM A-572 Gr. 50 (65,000 psi min tensile).
- Main pivot pins shall be constructed of 2” ETD 150 alloy steel bar (150,000 psi min tensile/32 Rc min).
- Each pin shall be supported by a pair of 3” hardened steel, greaseable Connex® bushings.

- Standard boom functions shall include horizontal swing, vertical lift, dipper reach, and mower head tilt.
- Boom must swing hydraulically a minimum of 120° utilizing a king post style turning arm.
- The 2 ½” diameter king pin shall be constructed from AISI 1045 chrome steel.
- The king pin shall pivot about a pair of 2 ¾” diameter greaseable Connex® bushings.
- The weight of the boom and turning arm shall be supported by a 5” diameter UHMW polyethylene thrust washer.
- The tilt mechanism shall feature a four-bar linkage to allow for 215° mowing head rotation.

- The tractor mount kit shall feature a subframe spanning from the front bolster to the rear axle.
- Subframe shall consist of 4” x 4” x 5/16” wall tubing with a 6” x 4” x ½” vertical support.
- Torsional loading shall be minimized with a 4” x 2” x ¼” lateral cross-brace spanning the width of the tractor.
- All structural tubing used in the mount kit shall conform to ASTM A-500 Gr. B (58,000 psi min tensile).
- Frame work fastened to the tractor bell housing area will not be accepted.
- The mainframe which supports the king post shall brace over the hood just above the operator’s line of sight.
- The brace shall be a formed 4” x 4” x 5/16” wall tube conforming to ASTM A-500 Gr. B (58,000 psi min tensile).
- Only a one piece, formed structural brace shall be excepted.
- A minimum 1,600 lb. step-style counterweight shall be fastened to the frame opposite the boom.
- A self-adjusting axle stabilizer system shall provide counter-stability for the articulated boom.
- An additional 1,300 lb wheel weight shall be provided as standard equipment.
- A two-piece boom rest structure shall mount to the rear axle to support the weight of the boom in transport.

HYDRAULIC SYSTEM

- Unit shall feature a self-contained hydraulic circuit for both mowing head and boom control.
- Mowing head circuit shall feature a gear-type pump rated at 30 gpm (52 hp) and 3,000 psi @ 2,200 rpm.
- Boom control circuit shall feature a gear-type pump rated at 12 gpm (21 hp) and 3,000 psi @ 2,200 rpm.
- The dual section pump shall be mounted to the front of the tractor and coupled to the engine crankshaft pulley.
- The hydraulic reservoir shall be mounted under the rear fender for improved operator visibility, safety, and operator access.
- The in-tank return filter shall be 10-micron with a 95-GPM full-flow with restriction gauge
- The suction line filter shall be 100-mesh.
- All high-pressure hydraulic hoses shall be of four-wire braid construction with a minimum SAE100R12 rating.

HYDRAULIC SYSTEM (continued)

▪ An optional oil-to-air cooler with integrated electric fan can be located under-hood next to the control valve assembly for Extreme environments.
▪ Reservoir shall feature visual indication of tank level and temperature to insure a minimum 42 gallon working volume.
▪ Convenient access points for draining and cleaning the reservoir shall be provided.
▪ A strategically vented, clam-shell style sheet-metal cover shall provide impact protection for the hydraulic control valve and pumps from falling debris. The cover will include a provision to secure the halves by using a padlock to restrict access and prevent theft.
▪ The cylinder control circuit shall feature a multi-section, electro-hydraulic, directional valve.
▪ The valve shall be open-center and provide section-specific pressure compensation.
▪ Valve shall allow a minimum of four functions to be operated simultaneously by joystick control.
▪ The swing, lift and dipper sections must feature individual work port relief valves for breakaway protection.
▪ The control valve shall be front pedestal mounted.

OPERATOR PROTECTION & SAFETY

▪ The mower cutter head shall have a six-second emergency shut down engaged by the operator inside the cab.
▪ The boom controls shall feature a master ON/OFF switch for complete power shutdown.
▪ An ignition lock-out safety switch shall prevent the tractor from being started with the cutter head valve engaged.
▪ Cab units shall include Shields® Premier 3/8” thick right side replacement polycarbonate windows.
▪ The replacement windows shall feature Supercoat™ anti-abrasion coating with integrated UV protection.

TRACTOR SPECIFICATIONS

▪ Tractor shall weigh a minimum of 7,000 lbs. and have an 85” minimum wheelbase.
▪ The engine shall produce a minimum of 85 net hp.

OPTIONAL EQUIPMENT

▪ Open center valve with lever controls in lieu of joystick.
▪ Rotary head with door, 5” diameter cut capacity.
▪ Heavy duty flail with door, 4” diameter cut capacity.
▪ Saw head with 4” diameter cutting capacity.
▪ Rotary ditcher with hydraulic chute, 20” cutting wheel.
▪ Quick hitch for easy cutting head exchange.

WARRANTY

There shall be a 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.

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