

2,500 • 3,000 lbs

Yale® motorized hand trucks combine the latest in state-of-the-art technology and ergonomics making Yale the leader for masted walkie applications.

Controls

Travel Direction and Speed are selected by rotating the actuator in the desired direction of travel. The butterfly throttle control provides multiple grip positions minimizing operator fatigue. The stationary portion of the handle minimizes wrist movement and provides a solid grip while maneuvering the truck. This assures additional stability while driving the truck. The bottom-mounted tiller handle optimizes the operating position.

Lift, Lower and Horn push-buttons are conveniently located on the handle. On the MSW025F and MSW030F, the two speed lift/lower is controlled with push-buttons located on the tiller handle. Right hand push-buttons provide full speed lift/lower. Left hand push-buttons provide low speed lift/lower to assist with load placement. Optional variable lift/lower control is also available. With optional proportional hydraulics, the right hand push-buttons provide variable speed lift/lower for accurate load placement. Left hand push-buttons are used to control single speed lift/lower.

The Traction Reversing Switch located on top of the handle simultaneously reverses truck direction and sounds the horn should it come in contact with the operator. The wrap around design provides protection through the full range of handle movement. This switch is reset when the direction control is returned to neutral or the handle is moved to the brake "on" position.

The Creep Speed button is located on the control handle and allows the truck to be operated at speeds of less than 1 mph (1.6 km/h), even with the handle in the vertical position. This allows for precise maneuvering in close locations.

Electrical System

The electrical system utilizes SEM technology with integral hoist control. Separately Excited Motor (SEM) provides the ability to control the traction motor fields and armature independently. This results in enhanced performance and battery efficiency. In combination with the Metal Oxide Semiconductor Field Effect Transistor (MOSFET) motor controller we have reduced wearable components, eliminated forward/reverse contactors and improved performance. The SEM control system provides higher top speeds when loaded and improved acceleration. Variable regenerative braking occurs when the throttle control is reversed. Regenerative braking improves traction motor brush life. The controller has an Auto Deceleration System to decelerate the truck as the butterfly throttle is moved toward the neutral position. The controller senses when the truck is stopped and automatically applies the brake. The Auto Deceleration System reduces the need to manually apply a service brake for slow down. The controller has a programmable setup including parameters for acceleration, auto deceleration and top travel speed. Diagnostic information can be read using a hand-held programmer tool or by looking at the status of the LED indicator mounted on the controller. A solid-state circuit is used to control the pump motor and eliminates the lift contactor.

User Selectable Performance Modes

The operator has a choice of three pre-programmed performance modes that are selectable through the tiller handle. These modes alter the acceleration, deceleration and top speed of the truck.

- Mode 1 – Economy mode (battery saver)
 - Soft acceleration; reduced top travel speed with auto deceleration adjusted to a high level
- Mode 2 – Performance with auto deceleration
 - Medium acceleration; reduced top travel speed with auto deceleration adjusted to a high level
- Mode 3 – Performance with minimum auto deceleration
 - High acceleration; high top travel speed with auto deceleration adjusted to a minimum level

Adjustable performance modes enable the operator to optimize the performance of the truck to the particular work environment or the work cycle. The operator can select the desired mode using the controls on the handle. In addition, an optional "custom performance" mode is available and can be configured by your local Yale Dealer.

Traction System

The traction system consists of the traction motor, gearbox, and brake. The enclosed traction motor is shielded from contamination and UL approved with premium brushes. The traction system has a proven gearbox design with greaseable steer bearings and heat treated gears in an oil bath. The electrically released mechanically applied brake is mounted to the traction motor. The brake is controlled by a solid-state handle position switch which prevents the truck from moving when the tiller handle is fully raised or fully lowered.

Batteries

MSW models come standard set up for either a dealer-installed flooded cell or maintenance-free industrial battery.

MSW025-F Battery Pack and Charger

An optional battery pack, consisting of four 6-volt, deep-cycle flooded cell batteries and a self contained 25 Amp charger with battery cover is available. Batteries are accessed for maintenance through a flip-up cover and removable side panels. The charger operates from a 110 volt outlet and includes a detachable AC power cord with on-board storage compartment. Battery capacity is 158 AH at a 6 hour (185 AH at a 20 hour) rate. To charge the batteries, simply attach the power cord to the charger and plug it into the outlet. The battery connector remains connected to the truck while the batteries are being charged. The charger automatically prevents the truck from being driven. Once the power cord is disconnected from the outlet, the truck is again operational.

MSW025-030F "Pallet Pro" Battery

The MSW025-030F can also be configured to accept an optional 5 - 7 plate 24V maintenance free battery pack with on-board charger. A 9" battery compartment is required.

Hydraulic Components

The high performance hydraulic system is designed for high cycle, multi-shift operations. The hydraulic power pack features a series wound motor and translucent hydraulic tank marked with fill lines. The series wound motor provides high torque, low noise and is easily serviceable. The translucent tank provides quick and easy inspection of hydraulic oil level. Optional fully proportional lift/lower controls provide smooth operation while reducing noise levels.

Mast, Carriage and Forks

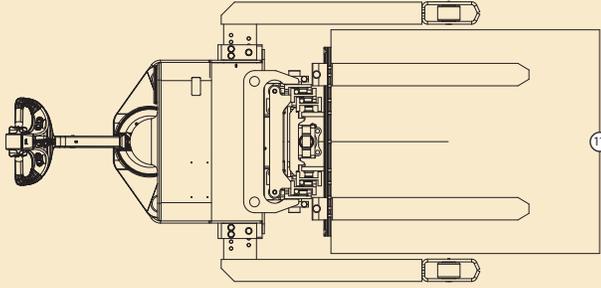
Yale masts provide outstanding visibility and are available simplex and triplex configurations in various heights. The mast is constructed of wide-spread outer channels and nested inner sections.



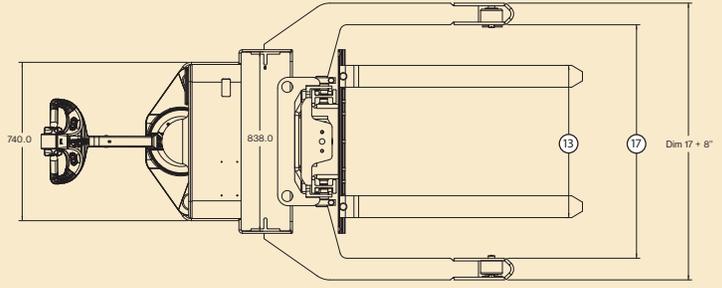
Truck shown with optional equipment

(continued on back)

MSW025F
ADJUSTABLE BASEARMS



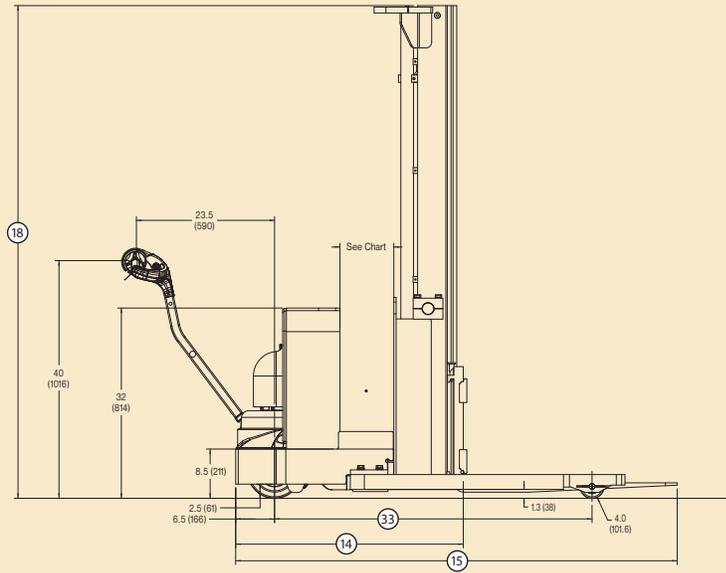
MSW030F
FIXED BASEARMS



| GENERAL | 1 | Manufacturer | | Yale® | | |
|----------------|---------------------------------------|---|---------------------------|--|------------------------------------|---------------------------|
| | 2 | Model Designation | | MSW025-F | MSW030-F | |
| | 3 | Rated Capacity | lb. (kg) | 2500 (1134) | 3000 (1361) | |
| | 4 | Load Center | in. (mm) | 24 (610) | 24 (610) | |
| | 5 | Power | | Battery - 24 Volt | Battery - 24 Volt | |
| | 6 | Operation | | Pedestrian | Pedestrian | |
| | 7 | Tire Type, Cushion, Solid, Pneumatic, etc. | | Cushion | Cushion | |
| | 8 | Wheels, Drive / Load | | 1 / 2 | 1 / 2 | |
| DIMENSIONS | 9 | Standard Mast - Lift Height (TOF) | in. (mm) | 104.0 (2641) | 104.0 (2641) | |
| | 10 | Standard Free Lift (TOF) | in. (mm) | 6.0 (152) | 6.0 (152) | |
| | 11 | Carriage Width - Maximum | in. (mm) | 33.7 (857) | 33.7 (857) | |
| | 12 | Forks, Width / Thickness / Length | in. (mm) | 3.9 / 1.6 / 42.0 (100 / 40 / 1067) | 3.9 / 1.6 / 42.0 (100 / 40 / 1067) | |
| | 13 | Fork Spread (Outside Dimension - Maximum) | in. (mm) | 30.4 (773) | 30.4 (773) | |
| | 14 | Length to Face of Forks | 8.0" Battery Compartment | in. (mm) | 37.3 (947) | N/A |
| | | Length to Face of Forks | 9.0" Battery Compartment | in. (mm) | 38.3 (973) | 38.3 (973) |
| | | Length to Face of Forks | 13.5" Battery Compartment | in. (mm) | N/A | N/A |
| | 15 | Overall Length with 42" Forks | 8.0" Battery Compartment | in. (mm) | 79.3 (2014) | N/A |
| | | Overall Length with 42" Forks | 9.0" Battery Compartment | in. (mm) | 80.3 (2040) | 80.3 (2040) |
| | | Overall Length with 42" Forks | 13.5" Battery Compartment | in. (mm) | N/A | N/A |
| 16 | Outrigger Type, Adjustable / Fixed | | | Adjustable | Fixed | |
| 17 | Outrigger Dimension, Inside Dimension | | in. (mm) | 37.1 / 39.4 / 41.7 / 49.0 (942 / 1002 / 1060 / 1245) | 43.0 (1092) | |
| 18 | Overall Lowered Height (OALH) | | in. (mm) | 72.0 (1829) | 72.0 (1829) | |
| 19 | Maximum Fork Height (MFH) | | in. (mm) | 104.0 (2641) | 104.0 (2641) | |
| 20 | Turning Radius, Minimum Outside | | in. (mm) | 77.0 (1958) | 80.6 (2047) | |
| 21 | Right Angle Stack | | | See Chart | See Chart | |
| 22 | Equal Intersecting Aisle | | | See Chart | See Chart | |
| 23 | Stability (comply with ANSI)* | | | Yes | Yes | |
| PERF. | 24 | Travel Speed - Maximum | No Load / Rated Load | mph (kph) | 3.5 / 3.0 (5.6 / 4.8) | 3.5 / 3.0 (5.6 / 4.8) |
| | 25 | Lifting Speed | No Load / Rated Load | fpm (m/s) | 30.0 / 22.0 (0.15 / 0.11) | 30.0 / 20.0 (0.15 / 0.10) |
| | 26 | Lowering Speed | No Load / Rated Load | fpm (m/s) | 60.0 / 80.0 (0.3 / 0.4) | 60.0 / 80.0 (0.30 / 0.41) |
| WEIGHTS | 27 | Gradeability | | % | 10.0 | 10.0 |
| | 28 | Truck Weight (approximate) Without Battery | No Load | lb. (kg) | 2305 (1046) | 2323 (1054) |
| | 29 | Axle Loading - Drive (Static w/Min. Wt. Battery) | No Load | lb. (kg) | 1523 (691) | 1650 (748) |
| | 30 | Axle Loading - Load Wheel (Static w/Min. Wt. Battery) | No Load | lb. (kg) | 1092 (495) | 1048 (475) |
| WHEELS & TIRES | 31 | Drive Tire | Size / Type | in. | 9.0 x 4.0 Poly | 9.0 x 5.0 Poly |
| | 32 | Load Wheel | Size / Type | in. | 4.0 x 2.8 Poly | 4.0 x 2.8 Poly |
| | 33 | Wheelbase | 8.0" Battery Compartment | in. (mm) | 53.8 (1367) | N/A |
| | | Wheelbase | 9.0" Battery Compartment | in. (mm) | 54.8 (1392) | 57.0 (1448) |
| | | Wheelbase | 13.5" Battery Compartment | in. (mm) | N/A | N/A |
| 34 | Ground Clearance, Lowest Point | No Load | in. (mm) | 1.0 (25) | 1.0 (25) | |
| 35 | Ground Clearance, Center of Wheelbase | No Load | in. (mm) | 1.5 (38) | 2.0 (51) | |
| BATT. | 36 | Type | | | Lead Acid | Lead Acid |
| | 37 | Ampere Hours - Maximum | | | 255 | 255 |
| | 38 | Minimum Weight | | lb. (kg) | 375 (170) | 375 (170) |
| MOTORS | 39 | Traction Motor - 60 Minute Rating | | hp (Kw) | 2.3 (1.7) | 2.3 (1.7) |
| | 40 | Pump Motor - S3 Rating | | hp (Kw) | 4.0 (3.0) | 4.0 (3.0) |
| | 41 | Traction Motor Control Method | | | Transistor | Transistor |
| | 42 | Number of Speeds | | | Infinitely Variable | Infinitely Variable |
| | 43 | Relief Pressure for Attachments | | psi (kPa) | N/A | N/A |
| | 44 | Grade Clearance | 8.0" Battery Compartment | % | 11.0 | N/A |
| | Grade Clearance | 9.0" Battery Compartment | % | 14.0 | 14.0 | |
| | Grade Clearance | 13.5" Battery Compartment | % | N/A | N/A | |

Above specifications, unless otherwise listed, are for a standard truck without optional equipment. Right Angle Stack and Equal Intersecting Aisle are calculated using a 40" wide pallet.

MSW025-030F
SIDE VIEW



RIGHT ANGLE STACK

2500 lb. with 8" BC

| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 82.5 | 82.5 | 82.5 | 36 | 64.4 | 64.4 | 64.4 |
| 40 | 83.3 | 83.3 | 83.3 | 40 | 64.8 | 64.8 | 64.8 |
| 48 | 84.4 | 84.4 | 84.4 | 48 | 69.4 | 69.4 | 69.4 |

2500 lb. with 9" BC

| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 83.5 | 83.5 | 83.5 | 36 | 65.4 | 65.4 | 65.4 |
| 40 | 84.2 | 84.2 | 84.2 | 40 | 66.3 | 66.3 | 66.3 |
| 48 | 85.3 | 85.3 | 85.3 | 48 | 70.0 | 70.0 | 70.0 |

3000 lb. with 9" BC

| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 85.6 | 85.6 | 85.6 | 36 | 67.4 | 67.4 | 67.4 |
| 40 | 86.5 | 86.5 | 86.5 | 40 | 68.5 | 68.5 | 68.5 |
| 48 | 87.4 | 87.4 | 87.4 | 48 | 71.3 | 71.3 | 71.3 |

INTERSECTING AISLE LAYOUT

2500 lb. with 8" BC

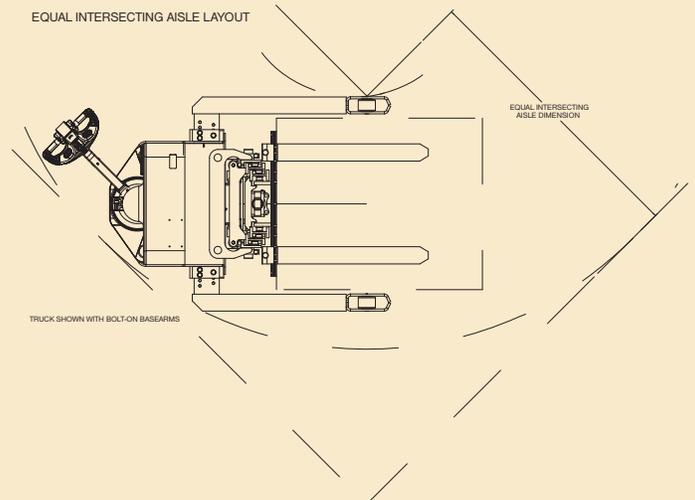
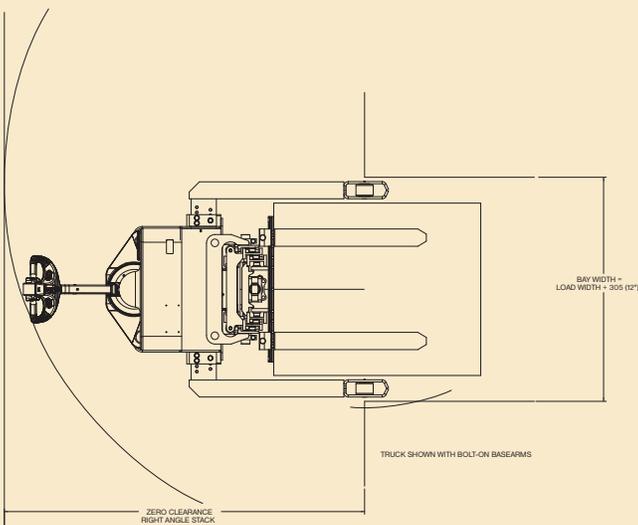
| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 63.1 | 63.1 | 63.1 | 36 | 56.3 | 56.3 | 56.3 |
| 40 | 65.5 | 65.5 | 65.5 | 40 | 58.4 | 58.4 | 58.4 |
| 48 | 68.9 | 68.9 | 68.9 | 48 | 61.6 | 61.6 | 61.6 |

2500 lb. with 9" BC

| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 63.7 | 63.7 | 63.7 | 36 | 56.9 | 56.9 | 56.9 |
| 40 | 66.1 | 66.1 | 66.1 | 40 | 59.5 | 59.5 | 59.5 |
| 48 | 69.5 | 69.5 | 69.5 | 48 | 62.3 | 62.3 | 62.3 |

3000 lb. with 9" BC

| Without Creep Mode Engaged | | | | With Creep Mode Engaged | | | |
|----------------------------|-------------|------|------|-------------------------|-------------|------|------|
| Load Width | Load Length | | | Load Width | Load Length | | |
| | 36 | 40 | 48 | | 36 | 40 | 48 |
| 36 | 65.0 | 65.0 | 65.0 | 36 | 58.5 | 58.5 | 58.5 |
| 40 | 67.9 | 67.9 | 67.9 | 40 | 61.1 | 61.1 | 61.1 |
| 48 | 70.8 | 70.8 | 70.8 | 48 | 63.8 | 63.8 | 63.8 |



Mast channels are specially rolled fine-grain steel. Wrap around cross-members and cross-braces provide added support for mast channels. Roller pressures are minimized through use of widely spaced shimless load rollers. Side-thrust adjustment is accomplished without special tools or mast disassembly. Yale triplex masts incorporate hoist cylinders mounted in-line with the mast channels, improving operator visibility. Hoist cylinder rods are hard-chrome plated for durability. Cylinders are mounted on floating mounts that help prevent cylinder wear. Lowering speeds are controlled by a valve in the manifold block. Controlled descent is assured by flow control valves in lift cylinder bases. Hook-type carriage with class II forks is standard. Forks are heat treated, forged steel with increased thickness in critical heel section.

Outriggers, Wheels and Tires

Outriggers on the MSW025-F are field adjustable to 37", 42" and 49" ID (45", 50" and 57" OD). Standard factory setting is 42" ID. On the MSW030 the outriggers are integral with the chassis. The standard load wheel configuration for all models is a single poly load wheel with two roller bearings. A "knock-out" axle provides for quick

and easy maintenance. The load wheel compound is 92 durometer polyurethane and the wheel measures 4" X 2.8". A 9" X 4" press-on poly drive tire is standard. The drive wheel is secured to the axle with 5 bolts.

Additional Features

- Lubrication - Fill and drain plugs are provided for drive unit
- Battery connector - Standard is red 175 amp connector
- Standard equipment includes key switch and an electronic horn
- 48" Load backrest is standard
- 6" Freelif standard on all SIMPLEX masts
- Multi-function display with BDI, hour meter and fault light

Options

- Cold storage/freezer package to 0°F
- Fixed width outrigger width options (MSW030 only)
- Proportional lift/lower controls
- Sideshifter (2" each side of center)
- Various mast heights
- Lexan mast shield

- Various fork lengths available
- Keyless toggle ignition switch
- Various drive tires available
- Optional batteries
- Optional flooded cell and maintenance-free battery packs with chargers
- Audible alarm options
- Visible alarm options

Truck performance may be affected by the condition of the vehicle, how it is equipped and the application. Consult your Yale Industrial Truck Dealer if any of the information shown is critical to your application. Specifications are subject to change without notice.

This truck meets all design specifications of ANSI B56.1 Safety Standard for Powered Industrial Trucks at the time of manufacture. Classified by Underwriters' Laboratories, Inc. as to fire hazard only.

The Yale products included in this document may be covered by US patent 6,684,148 and other patents pending.

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| BATTERY SPECIFICATIONS | | | | | | | | |
|---|-----------------|-----------|-----------------|---|--|-----------------|-----------------|--------------------|
| Battery Type | Number of Cells | Cell Size | Plates per Cell | Capacity 6 Hour Rate amp hr (kwh) | Battery Dimensions | | | Weight lb. (kg) |
| | | | | | "X" in. (mm) | "Y" in. (mm) | "Z" in. (mm) | |
| 2500 lb Model | | | | | | | | |
| Standard Battery Pack | | | | 158 (4.0) / 185 AH @ 20 hr rate | 28.4 (721) | 7.9 (201) | 23.9 (607) | 310 (141) |
| GNB PalletPro® Battery Pack with 25 Amp Charger | | | | 195 (4.4) | 27.3 (693) | 7.5 (191) | 26.4 (671) | 375 (170) |
| Industrial Battery | 12 | 75 | 5 | 150 (3.5) | 25.3 (643) | 6.4 (163) | 23.3 (592) | 410 (186) |
| | 12 | 85 | 5 | 170 (3.9) | 25.3 (643) | 6.4 (163) | 23.3 (592) | 425 (193) |
| | 12 | 100 | 5 | 200 (4.6) | 25.3 (643) | 6.4 (163) | 26.3 (668) | 470 (213) |
| | 12 | 75 | 7 | 225 (5.2) | 25.7 (653) | 8.8 (224) | 23.3 (592) | 540 (245) |
| 12 | 85 | 7 | 255 (6.0) | 25.7 (653) | 8.8 (224) | 23.3 (592) | 570 (259) | |
| 3000 lb Model | | | | | | | | |
| GNB PalletPro® Battery Pack with 25 Amp Charger | | | | 195 (4.4) | 27.3 (693) | 7.5 (191) | 26.4 (671) | 375 (170) |
| Industrial Battery | 12 | 75 | 5 | 150 (3.5) | 25.3 (643) | 6.4 (163) | 23.3 (592) | 410 (186) |
| | 12 | 85 | 5 | 170 (3.9) | 25.3 (643) | 6.4 (163) | 23.3 (592) | 425 (193) |
| | 12 | 100 | 5 | 200 (4.6) | 25.3 (643) | 6.4 (163) | 26.3 (668) | 470 (213) |
| | 12 | 75 | 7 | 225 (5.2) | 25.7 (653) | 8.8 (224) | 23.3 (592) | 540 (245) |
| 12 | 85 | 7 | 255 (6.0) | 25.7 (653) | 8.8 (224) | 23.3 (592) | 570 (259) | |
| | | | | Battery Connector: 175 Amp, Red | Battery Lead: Length 20" (508 mm), Position "B", 1/0 AWG | | | |

| STANDARD LIFT SPECIFICATIONS | | | | | |
|------------------------------|-----------------------------------|--|----------------------|---------------------------------|-----------------------------------|
| Model MSW025-F | Overall Lowered Ht. in (mm) | Fork Height Top of Forks in (mm) | Free Lift in (mm) | Overall Ht. w/LBR in (mm) | Overall Ht. w/o LBR in (mm) |
| 2 Stage LFL | 72 (1829) | 104 (2641) | 6 (152) | 152 (3861) | 123.5 (3137) |
| | 83 (2109) | 126 (3200) | 6 (152) | 174 (4420) | 145.5 (3936) |
| | 87 (2210) | 130 (3302) | 6 (152) | 178 (4522) | 149.5 (3798) |
| | 92 (2337) | 144 (3657) | 6 (152) | 192 (4877) | 163.5 (4153) |
| | 95 (2413) | 150 (3810) | 6 (152) | 198 (5030) | 169.5 (4306) |

| STANDARD LIFT SPECIFICATIONS | | | | | |
|------------------------------|-----------------------------------|--|----------------------|---------------------------------|-----------------------------------|
| Model MSW030-F | Overall Lowered Ht. in (mm) | Fork Height Top of Forks in (mm) | Free Lift in (mm) | Overall Ht. w/LBR in (mm) | Overall Ht. w/o LBR in (mm) |
| 2 Stage LFL | 72 (1829) | 104 (2641) | 6 (152) | 152 (3861) | 123.5 (3137) |
| | 83 (2109) | 126 (3200) | 6 (152) | 174 (4420) | 145.5 (3936) |
| | 87 (2210) | 130 (3302) | 6 (152) | 178 (4522) | 149.5 (3798) |
| | 92 (2337) | 144 (3657) | 6 (152) | 192 (4877) | 163.5 (4153) |
| | 95 (2413) | 150 (3810) | 6 (152) | 198 (5030) | 169.5 (4306) |
| 3 Stage FFL | 72 (1829) | 157 (3987) | 50 (1270) | 205 (5207) | 176.5 (4484) |



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