Big capabilities in a smaller package.

Developed for harsh environmental conditions and output requirements that range from power-intensive to precise.

An unbeatable combination of durability, output, efficiency and capability—all in a smaller, easier-to-handle package. Inside its tough, corrosion-resistant, all-aluminum case is big power for heavy welding jobs and carbon arc gouging.

In addition to excellent stick and Lift-Arc™ TIG, the Dimension 650 also has excellent short-arc MIG characteristics for precise thin-metal welding performance.
Dimension™ 650 Advantages

Withstands harsh environments

- **All-aluminum construction** helps the machine resist corrosion for long life.
- **Exclusive protection** input inductor protects machine’s performance and reliability from “dirty” input power.
- **Wind Tunnel Technology.™** Internal air flow that protects electrical components and PC boards from dirt, dust, debris... greatly improving reliability
- **Fan-On-Demand™** operates only when needed reducing noise, power consumption, and the amount of airborne contaminants pulled through the machine.

3.25 inches of ground clearance keeps the machine away from water, mud and dirt to protect interior components.

3.25 in.

Smaller and lighter

- **Reduced size and weight** results in an easier-to-handle package that exceeds the welding performance of larger, heavier machines. Weighing in at 158 pounds (71.7 kg), the Dimension 650 is 3.5 times lighter than the Dimension 652, making it easier to move around the shop, jobsite, or shipyard. It also uses 40-percent less floor space.

Power efficient

- **High electrical efficiency and excellent power factor** mean that you can get more welding done using less power. On 460 V, the Dimension 650 draws only 43 amps at rated load and can operate on a 50-amp service. Four machines can work at maximum loads simultaneously on a 200-amp service, drawing less amperage than three previous models.

- **Uses 32% fewer amps than previous model**

- **93% EFFICIENT**

- **3.25 inches of ground clearance** keeps the machine away from water, mud and dirt to protect interior components.

- **40% smaller footprint**

- **Power efficient**

- **93% EFFICIENT**

- **Uses 32% fewer amps than previous model**

- **High electrical efficiency and excellent power factor** mean that you can get more welding done using less power. On 460 V, the Dimension 650 draws only 43 amps at rated load and can operate on a 50-amp service. Four machines can work at maximum loads simultaneously on a 200-amp service, drawing less amperage than three previous models.
**Dimension™ 650 Advantages**

**Improved arc performance**

High-quality performance from power-intensive to precise. Knowing quality welds begin with a quality arc, we’ve significantly improved the performance in all welding processes and made it easy to fine tune the arc to match your personal preferences and welding style.

Gouging mode provides 800 amps of usable power, a full 650 amps of power at 100-percent duty cycle. Perfect for heavy gouging with 3/8-inch carbons.

Three wire modes (GMAW/FCAW/SAW) for simplified setup and optimized arc performance.
- Solid and flux-cored wires with gas offer exceptional short-arc MIG precision to weld thin metals with less risk of distortion or burn-through, and premium flux-cored welding with gas.
- Flux-cored (self-shielded) welding performance is exceptional, especially with wires commonly found in infrastructure construction.
- Sub arc mode provides capability to retrofit into non-digital sub arc applications.

Excellent stick and Lift-Arc™ TIG performance.

Arc control is beneficial when welding with stick and solid wires for easier fine-tuning of tough-to-weld materials and out-of-position applications.

**Dimension™ 650 Recommended Option**

Remote control of the power source without a cord. An ArcReach system allows you to change weld settings from your SuitCase wire feeder or stick/TIG remote, saving a trip to the power supply. ArcReach technology uses the existing weld cable to communicate welding control information between the feeder or remote and the power source. This technology eliminates the need for control cords, and their associated problems and costs.

**ArcReach accessories**

For MIG or flux-cored welding — SuitCase X-TREME 8VS/12VS ArcReach feeders
- Remote voltage control
- Polarity indication
- Auto-Process Select™

For stick or TIG welding — ArcReach stick/TIG remote
- Remote amperage control
- Arc control for stick
- Polarity indication
- Auto-Process Select™
Specifications (Subject to change without notice.)

<table>
<thead>
<tr>
<th>Amperage/Voltage Ranges</th>
<th>Rated Output</th>
<th>Amps Input at Rated Output, 50/60 Hz</th>
<th>Max. Open-Circuit Voltage</th>
<th>Dimensions</th>
<th>Net Weight</th>
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<tr>
<td>15–815 A in CC mode</td>
<td>650 A at 44 VDC, 100% duty cycle</td>
<td>53.2 42.8 34 30.7</td>
<td>87</td>
<td>H: 28.187 in. (716 mm) (including lift eye) W: 16.687 in. (424 mm) D: 31.625 in. (803 mm)</td>
<td>158 lb. (71.7 kg)</td>
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<tr>
<td>10–44 V in CV mode</td>
<td>10–65 V in SAW mode</td>
<td>10–44 V in CV mode</td>
<td>10–65 V in SAW mode</td>
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</table>
Wire Feeder Options

Bench-Style Feeders

20 Series Feeders  See literature M/11.0

22A and 24A — Simple and cost-effective feeders for industrial manufacturing and fabricating.

70 Series Feeders  See literature M/3.0

74S — Standard, simple feeders for most heavy-industrial applications.

74D — Provides increased accuracy and control of the most common weld parameters.

74DX — Provides added features for weld control and programs.

74 MPa Plus — Adds push-pull aluminum capabilities. Optimized for use with XMT® MPa, Invision™ MPa and Dimension 650 power sources.

Boom-Style Feeders

70 Series Swingarc™  See literature M/13.11

Swingarc single and dual boom-mounted wire feeders bring an extra dimension of flexibility and efficiency to weld stations dealing with large weldments, or wherever operator mobility is required.

Portable Suitcase-Style Feeders

SuitCase® X-TREME® 8VS and 12VS  See literature M/6.42

These voltage-sensing feeders are designed to run off of arc voltage from almost any welding power source. The 8VS utilizes an 8-inch spool of wire and fits through a 14-inch manhole/manway, while the 12VS adds the capability to utilize 12-inch spools and is more commonly used in structural steel and fabrication. ArcReach-equipped models provide remote voltage control of the power source without a cord.

SuitCase® 12RC  See literature M/6.45

Standard remote voltage control saves the operator a trip back to the power supply for welding adjustments. For applications where the feeder is within 100 feet of the power source and control cords are acceptable.

Aluminum Push-Pull Feeders and Guns

XR™ Controls  See literature M/1.7

XR-S Control — Cost-effective push-pull feeder for industrial applications.

XR-D Control — Adds capabilities for higher quality welds.

XR-Aluma-Pro™ Gun  See literature M/1.71

Robust professional grade gun has the highest duty-cycle rating in its class.

XR™-Pistol Gun  See literature M/1.73

Reliable cost-effective gun for light to medium industrial applications.

XR™-Pistol Pro Gun  See literature M/1.74

Exceptional aluminum welding results for heavy industrial applications.

Hard Automation

70 Series Remote Configurations  See literature M/3.0

Remote wire feeder control box and wire drive assembly for non-Miller boom applications.

Sub Arc mode provides capability to retrofit into non-digital sub arc applications. See literature no. AY/12.0 for list of compatible accessories. Adapter cord, 115 V for legacy 14-pin accessories is required.
**Genuine Miller® Accessories**

**Dimension™ 650 Racks**
- 907687 2-pack rack
- 907688 4-pack rack (shown above)

**Dimension™ 650 ArcReach™ Racks**
- 907702 2-pack rack
- 907701 4-pack rack

Conveniently houses multiple Dimension 650 power sources for multiple welders. Features include:
- Provision to parallel power sources on common work connections
- Two lifting eyes for transportation
- Rugged skids for dragging or pushing

**Dimension™ 650 Running Gear** 301307
Large rear wheels and front casters provide excellent power source mobility on the shop floor. Easy to install. Handles double as a cable holder. **Note:** Does not accommodate gas cylinders. Use Running Gear Cylinder Rack 300408 when gas cylinders are required.

**Industrial MIG 4/0 Kit** 300390
Includes Miller flowmeter regulator with 10-foot (3 m) gas hose, 10-foot (3 m) 4/0 feeder weld cable with lugs, and 15-foot (4.6 m) work cable with 600-amp C-clamp.

**HF-251D-1 High-Frequency Arc Starter/Stabilizer** 042388
This portable 250-amp, 60-percent duty cycle unit adds high frequency to the welding circuit to help start the arc when using the TIG (GTAW) process. Operates on 115-volt, 50/60/100 Hz. See literature AY/5.1.

**Remote Controls and Switches**
- **ArcReach Stick/TIG Remote** 301325
  When paired with an ArcReach power source, provides remote control of the power source without a cord — saving time and money. See literature AY/14.5.
- **Wireless Remote Foot Control** 300429
  For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 90-foot (27.4 m) operating range.
- **Wireless Remote Hand Control** 300430
  For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 300-foot (91.4 m) operating range.
- **RFCS-14 Foot Control** 043554
  Foot current and contactor control. Includes 20-foot (6 m) cord and 14-pin plug.
- **RHC-14 Hand Control**
  *For additional lengths visit MillerWelds.com/equiptoweld
- **RCC-14 Remote Contactor and Current Control** 151086
  East/west rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Allows complete current and contactor control at operator’s fingertips. Includes 26.5-foot (8 m) cord and 14-pin plug.
- **RCCS-14 Remote Contactor and Current Control** 043688
  North/south rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Great for applications that require a finer amperage control. Includes 26.5-foot (8 m) cord and 14-pin plug.
- **RMLS-14** 129337
  Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and backward for momentary contact. Includes 26.5-foot (8 m) cord and 14-pin plug.
- **Extension Cables for 14-Pin Plugs to 14-Pin Sockets**
  *For additional lengths visit MillerWelds.com/equiptoweld

**RML-251D-1 High-Frequency Arc Starter/Stabilizer**
This portable 250-amp, 60-percent duty cycle unit adds high frequency to the welding circuit to help start the arc when using the TIG (GTAW) process. Operates on 115-volt, 50/60/100 Hz. See literature AY/5.1.

**GFCI Panel Mount Kit** 301179
For applications that require GFCI protection of the 115-volt receptacle.

**Adapter Cord** 301259
115-volt cord for legacy 14-pin accessories. Required to connect to HDC 1500.

**Polarity Control** 042871
This dual-function control is designed for use with dual wire feeders or any application where electrical isolation and/or polarity reversing of weld current is required. Both functions can be used at the same time.

**Process Control Selector** 042872
Allows you to easily change weld processes without changing cables — from TIG to MIG or TIG to stick. Also includes features of polarity control. Can be used with any constant-current, constant-voltage or multiprocess CC/CV welding power source.

**Industrial MIG 4/0 Kit** 300390
Includes Miller flowmeter regulator with 10-foot (3 m) gas hose, 10-foot (3 m) 4/0 feeder weld cable with lugs, and 15-foot (4.6 m) work cable with 600-amp C-clamp.

**Wireless Remote Foot Control** 300429
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 90-foot (27.4 m) operating range.

** Wireless Remote Hand Control** 300430
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 300-foot (91.4 m) operating range.

**RFCS-14 Foot Control** 043554
Foot current and contactor control. Includes 20-foot (6 m) cord and 14-pin plug.

**RHC-14 Hand Control**
*For additional lengths visit MillerWelds.com/equiptoweld

**RCC-14 Remote Contactor and Current Control** 151086
East/west rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Allows complete current and contactor control at operator’s fingertips. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RCCS-14 Remote Contactor and Current Control** 043688
North/south rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Great for applications that require a finer amperage control. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RMLS-14** 129337
Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and backward for momentary contact. Includes 26.5-foot (8 m) cord and 14-pin plug.

**Extension Cables for 14-Pin Plugs to 14-Pin Sockets**
*For additional lengths visit MillerWelds.com/equiptoweld
Wire Feeders

SuitCase® X-TREME™ 8VS  951582
SuitCase® X-TREME™ 12VS  951543
Lightweight, portable wire feeder for a variety of wires up to .062 inch. Holds up to an 8-inch (8VS) or 12-inch (12VS) spool of wire. Operates on open-circuit voltage eliminating the need for a control/power cord. Includes Bernard™ BTB Gun 300 A. See literature M/6.42.

SuitCase® X-TREME™ 8VS ArcReach  951588 With Bernard™ S-Gun™  951584 With Bernard™ BTB Gun 300 A
SuitCase® X-TREME™ 12VS ArcReach  951589 With Bernard™ S-Gun™  951581 With Bernard™ BTB Gun 300 A
Portable feeder designed to run off of arc voltage. When paired with an ArcReach power sources provides remote control of the power source without a cord — saving time and money. See literature M/6.42.

70 Series Wire Feeders
S-74 MPa Plus  951291 single feeder
D-74 MPa Plus  951292 dual feeder
Order XR-Aluma-Pro Plus gun and U-grooved drive rolls separately to match your aluminum needs. Above models are optimized for Dimension 650 and have push-pull capability.
S-74S  951196 single feeder
S-74D  951198 single feeder
S-74DX  951200 single feeder
D-74S  951203 dual feeder
D-74D  951204 dual feeder
D-74DX  951206 dual feeder
70 Series feeders feature Posifeed™ wire drive assembly and handle a variety of wires. Each includes a 15-foot Bernard™ BTB Gun 400 A (two for dual feeders) and .035/.045-inch V-grooved drive rolls. See literature M/3.0.

Welding Intelligence™
Insight Core™ 14-pin Module  301072
Easy-to-install module brings Insight Core capabilities to your existing fleet. This simplified, Internet-based weld data solution collects, transmits and presents actionable information to any Web-connected device. Insight Core can help you increase productivity, improve weld quality and manage costs.

Coolant Systems
For more information, see the Coolmate™ Series literature AY/7.2.

Coolmate™ 3
043007 115 V
043008 230 V
For use with water-cooled torches rated up to 500 amps. Unique paddle-wheel indicator, external filter and easy-fill spout.

Coolmate™ 4
042288 115 V
For use with water-cooled torches rated up to 600 amps. Tough molded polyethylene case with carrying handle.

Coolant  043810
Sold in cases of four one-gallon recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -37 degrees Fahrenheit (-38°C) or boiling to 227 degrees Fahrenheit (108°C). Also contains a compound that resists algae growth.

Mounting Specifications

Bottom View

A. 16.687 in. (424 mm)
B. 14.25 in. (362 mm)
C. 30.25 in. (768 mm)
D. .687 in. (17 mm)
E. 31.625 in. (803 mm)
F. .625 in. (17 mm) dia.

Height: 28.187 in. (716 mm)
Width: 16.687 in. (424 mm)
Depth: 31.625 in. (803 mm)
## Ordering Information

<table>
<thead>
<tr>
<th>Equipment and Options</th>
<th>Stock No.</th>
<th>Description</th>
<th>Qty.</th>
<th>Price</th>
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<td><strong>Dimension™ 650 Stationary Package</strong></td>
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<td>380/460 V, 50/60 Hz. Includes S-74 MPa Plus feeder, Bernard™ BTB Gun 400 A, 0.035/0.045 drive rolls and industrial MIG 4/0 kit</td>
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<td><strong>Dimension™ 650 MIGRunner™ Package</strong></td>
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<td><strong>Dimension 650 Running Gear</strong></td>
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<td><strong>Running Gear Cylinder Rack</strong></td>
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<td><strong>Adapter Cord</strong></td>
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<td><strong>Wire Feeders</strong></td>
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**Date:**

**Total Quoted Price:**