

# Precision TIG™ 375



## The Power To Perform!

The Precision TIG™ 375 delivers the Power to Perform — setting a new standard in Square Wave Technology. Combining outstanding value-added features and patented Micro-Start™ Technology, the Precision TIG has the widest range of welding current in its class and features 25 more amps of power at 40% duty cycle and a superior low-end. This machine comes standard with full featured sequencing and pulsing controls and power factor correction. Available in both machine-only models or a convenient Water-Cooled Ready-Pak™ with Cart, the Precision TIG 375 is ready to meet all of your welding needs.

### Processes

Stick TIG

### Advantage Lincoln

#### Outstanding Weld Performance:

- Patented Micro-Start™ technology for premium low amperage starting: 2 amps DC, 5 amps AC.
- Auto-Balance™ mode helps you make great looking aluminum welds.
- FREE! Built-in TIG pulser helps you make great welds.
- Smooth, focused arc for precise TIG and stick welding performance.

#### Simple Controls & Ease of Use:

- Neat/organized cable management with integrated torch holster.
- Water-cooled torch connections with no adapters — side mounted, out of the way, and well-protected.
- Digital meters and simple, well-spaced controls.

#### More Convenience and Value Features:

- Built-in storage compartment with removable tray for torch consumables.
- Ready-Pak™ adds under-cooler cart water cooler, filler metal rack, and storage drawer for helmet, gloves, foot pedal, and work cable and clamp.
- Standard power factor correction capacitors save on electricity cost when welding at higher currents.

#### Superb Quality:

- Fan-As-Needed™ (F.A.N.) prevents thermal cycling.
- CSA C/US certified.
- Three-year warranty on parts and labor.

### Description

Output   Input   

### Recommended General Options

Undercarriage, Work Clamp and Cable Assembly

### Recommended Stick Options

Stick Accessory Kit, Remote Output Control

### Recommended TIG Options

Pro-Torch TIG Torches, Cable Adapters, Under-Cooler Cart Water Cooler, Water Solenoid Kit, Harris® Argon Flowmeter Regulator, Foot Amptrol®, Hand Amptrol, Arc Start Switch, Cut Length Consumables

### Order

K1833-1	Precision TIG™ 375	208/230/460/1/60
K1833-2	Precision TIG™ 375	230/460/575/1/60
K1834-1	Precision TIG™ 375	220-230/380-400/415/1/50/60
K1903-1	Precision TIG™ 375	208/230/460/1/60 (Water-Cooled Ready-Pak™ with Cart Package)

## TECHNICAL SPECIFICATIONS

Product Name	Product Number	Input Power	Rated Output Current/Voltage/Duty Cycle	Input Current @ Rated Output	Output Range	Dimensions H x W x D inches (mm)	Net Weight lbs (kg)
Precision TIG™ 375	K1833-1	208/230/460/1/60	375A/35V/40%	112/102/51A with PFC	DC: 2-420A AC: 5-420A Max. OCV: 80V	31 x 22 x 26 (787 x 559 x 660)	507 (230)
			350A/34V/60%	102/92/46A with PFC			
	K1833-2	230/460/575/1/60	375A/35V/40%	102/51/41A with PFC			
			350A/34V/60%	92/46/37A with PFC			
	K1834-1	220-230/380-400/ 415/1/50/60	375A/35V/40%	119/69/63A with PFC			
			350A/34V/60%	110/64/59A with PFC			

**PERFORMANCE**

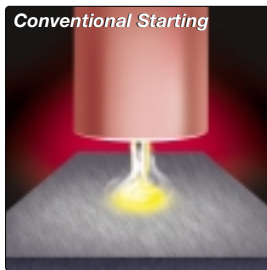
**Micro-Start™ Technology** 

**What Is It?**

Micro-Start™ Technology is a patented circuit that produces an extremely smooth, stable arc at low amperage.



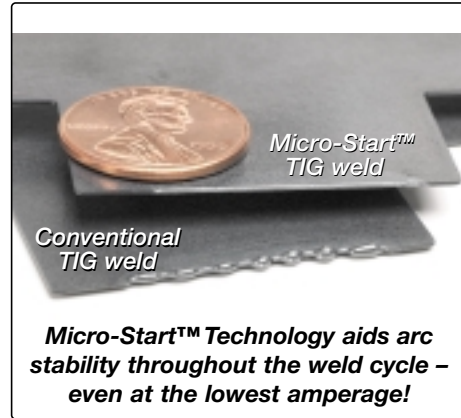
*Micro-Start™ Technology delivers a focused and stable arc at low amperage.*



*Conventional starting relies heavily on intense high frequency and hot starting.*

**Results:**

- Minimizes excessive hot starts normally required to establish the arc.
- Reduces intense high frequency wandering and tungsten frosting during starting.
- Allows you to weld with greater stability at low amperage.



**Micro-Start™ Technology aids arc stability throughout the weld cycle – even at the lowest amperage!**

**Great For:**

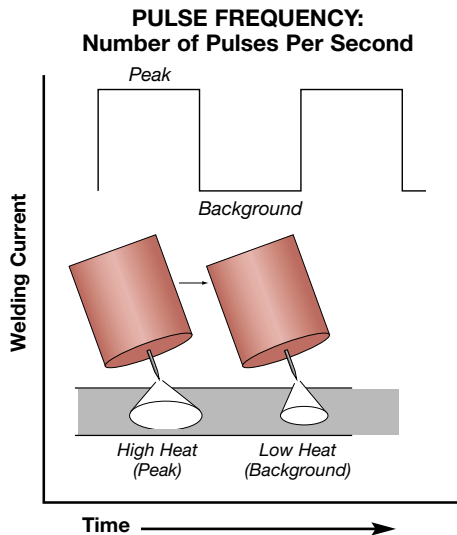
- Welding consistently and smoothly on thin materials, the Precision TIG 375 welds down to 2 amps DC!
- Reducing the risk of melting away material on critical welds.

**More welding control makes welding easier!**

**FREE! Built-In Pulser!**

**What Is It?**

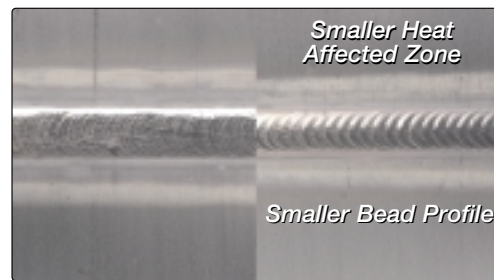
Pulse welding systems vary weld current between peak (high heat) and background current (low heat) levels. Pulse welding reduces the heat input, or total thermal energy, applied to the weld without sacrificing the proper level of penetration. Adjusting the pulse frequency controls the level of heat input applied to the weld relative to the weld travel speed.



**Results**

Better control of heat input in the weld, resulting in:

- Reduced warping and burnthrough on thin materials.
- Smaller heat-affected zone.
- Smaller bead profile without compromising proper penetration.



Standard TIG Weld (at 60 amps)

Pulsed TIG Weld (at 60 amps)

**Great For**

- Thin materials — Faster pulse settings help to narrow the bead profile and minimize the heat-affected zone and resulting warping or burnthrough.
- Consistent appearance — Slower pulse settings aid in timing the application of filler metal to produce the consistent stacked bead appearance associated with high quality TIG welding.
- Helps train novice welders to maintain a steady welding rhythm.

**Make attractive and consistent welds!**

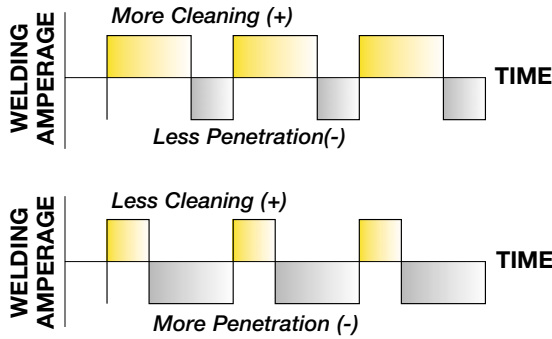
**PERFORMANCE, CON'T.**

**AC Auto-Balance™ Controls**

**What Is It?**

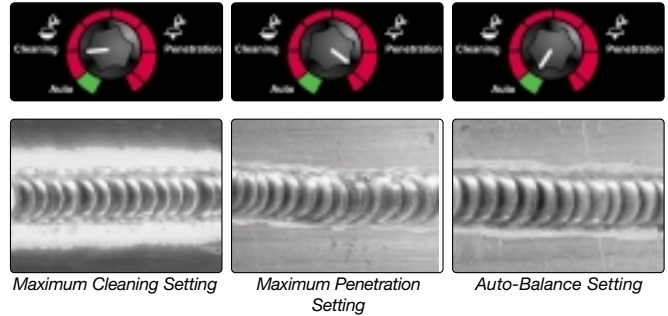
When aluminum welding, the positive (+) portion of the AC welding amperage cleans the oxides from the aluminum surface. The negative (-) portion delivers more heat input, increasing penetration level.

Patented AC Auto-Balance automatically sets the ratio of cleaning action (+) versus penetration (-) based on amperage.



**Results:**

The AC Auto-Balance setting automatically adjusts the optimal ratio of cleaning action (+) versus penetration (-) for most AC welding applications.



**Great For:**

- Novice welders — set it and forget it for most AC welding applications.
- Expert welders — use either the AC Auto-Balance auto setting or manually set the cleaning and penetration levels.

**Achieve great-looking aluminum welds with minimal fuss!**

**PERFORMANCE**

- Excellent stick welding performance.
  - Weld steel, stainless and low alloy metals with ease.
  - Weld sheet metal, pipe and heavy plate.
  - Weld with Lincoln Blue Max Stainless, Excalibur Low Hydrogen and Fleetweld 5P welding electrodes.
- Wider output range — for maximum flexibility:
  - 2-420A DC, 5-420 AC.
- More amperage than nearest competitor at 40% duty cycle — 25 amps more!
- Lower input current draw compared to nearest competitor — up to 10% less current with 40% more duty cycle.



*AC Auto-Balance is especially useful on critical aluminum applications.*

**FEATURES**



*Torch Parts Storage Compartment.*



*FREE! Built-in TIG pulser helps you make great welds.*



*Easily accessible voltage reconnect panel.*



*Water-cooled torch connections with no adapters — side mounted to keep out of the way and protected.*



*Separate output studs for stick and TIG keep both stick electrode holder and TIG torch connected at the same time — eliminates set-up changeover when switching processes.*



*Shown: K1903-1 Water-Cooled Ready-Pak™ With Cart Package*



*Neat/organized cable management with integrated torch holster.*

**Optional Features:**

*(standard with K1903-1 Water-Cooled Ready-Pak™ With Cart Package)*



*Lockable Undercarriage Storage and Water-Cooler Drawers. Reliable Pro-Con pump.*



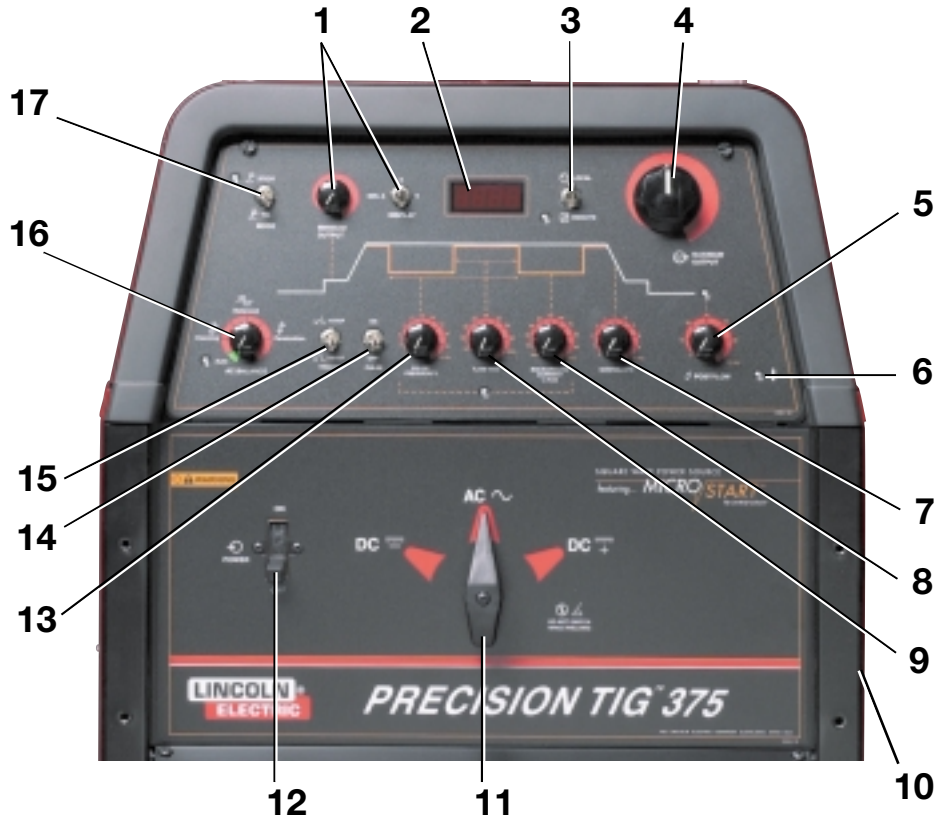
*Low-Lift Shielding Gas Bottle Platform.*

**FEATURES, CON'T.**

- Minimum output control allows user to preset minimum amperage. Aids starting when using large tungstens. Also allows operator to control foot pedal resolution between minimum and maximum amperage.
- Automatically switched auxiliary power receptacle runs water cooler only as needed.
- Adjustable High Frequency Intensity Control right on the machine operating panel.

**Key Controls**

- |   |   |
|---|---|
| 1) Minimum Output Preset Control & Display Switch<br>(Also displays output voltage) | 10) High Frequency Intensity Control (recessed on side panel) |
| 2) Digital Meter  | 11) Polarity Switch   |
| 3) Local/Remote Current Control Switch  | 12) Power Switch  |
| 4) Maximum Output Preset Control  | 13) Pulse Frequency Control                                   |
| 5) Post Flow Time   | 14) Pulse Mode Switch   |
| 6) Thermal Shutdown Light   | 15) Trigger Switch  |
| 7) Downslope Time   | 16) AC Balance Control  |
| 8) Pulse Background Current Control   | 17) Mode Switch   |
| 9) Pulse % On Time Control  | 18) Remote Receptacle (not shown)                             |

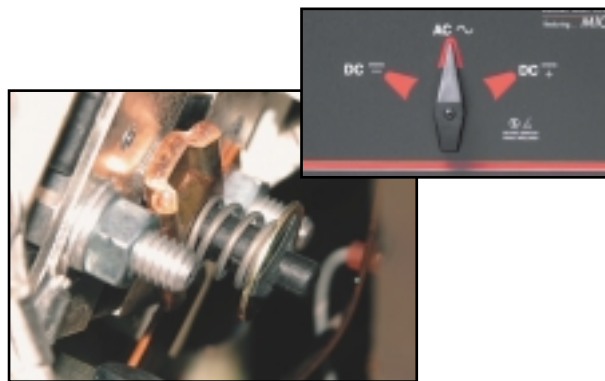


**QUALITY AND RELIABILITY**

- Fan-As-Needed™ (F.A.N.) minimizes repeated heating and cooling of internal components, keeps dust and dirt build-up to a minimum and saves on electricity costs.
- Engineered cooling air routing brings clean air in from the top and exhausts at the bottom to draw and collect less dirt in the machine (see photo at right), unlike competitive systems with a vacuum cleaner-like floor intake.
- Compare these reliability enhancing design features:
  - Crimped and soldered power connections.
  - Electrical coils are wound and varnished without coil spacers to remain secure. Competitive models use wooden coil spacers which can loosen over time.
  - Locking tabs on PC board connectors eliminate loosening that can cause electrical failure.
- Tough testing cycles ensure long service — dropping, jerking, rolling, shipping, vibration, resistance to real world extreme conditions, and extended in-service life testing.
- Line Voltage Compensation holds output setting constant to maintain weld quality even when the input voltage fluctuates  $\pm 10\%$ .
- CSA C/US certified.
- Lincoln three-year warranty on parts and labor.



Clean, cool air route shown.



Snap-action durable switches make positive mechanical contact to reduce chances of intermittent contact failure.

**SYSTEM SELECTION**

**Ready-Pak™ Packages**

Take the hassle out of ordering. Order a Ready-Pak™ pre-assembled welding package.

**Precision TIG 375 Water-Cooled Ready-Pak™ with Cart**

One product number (K1903-1) gets you all this:

- Precision TIG 375 (208/230/460/1/60)
- Under-Cooler Cart Water Cooler
- Foot Amptrol
- Gas Regulator/Flowmeter & Hose Kit
- PTW-20 Pro-Torch™ TIG Torch (250 amp, 25 ft.)
- Zippered Torch Cover
- Parts Kit
- Water Hose (2 included)
- 15 ft., 2/0 Work Cable and Clamp
- Adapter for optional PTA-9 or 17 Torch

Order K1903-1



Shown: K1903-1  
Water-Cooled Ready-Pak™ With Cart Package

**GENERAL OPTIONS**



**Under-Cooler Cart Water Cooler**  
Includes "cooler-in-a-drawer" with hoses and a lockable storage drawer on a dual bottle undercarriage. Two gallon (7.5 ltrs.) capacity.  
**Order K1828-1**



**Undercarriage**  
Includes a dual bottle rack with chain and front casters, rear wheels and a handle.  
**Order K1869-1**



**Harris Argon Flowmeter Regulator**  
Deluxe flowmeter/regulator. Includes 10 ft. (3.0m) hose.  
**Order 3100211**



**Work Clamp & Cable Assembly**  
15 ft. 2/0 cable with 1/2" stud lug and work clamp.  
**Order K2150-1**

**STICK OPTIONS**



**Accessory Kit**  
For stick welding. Includes 35 ft. (10.7m) 2/0 electrode cable with lug, 30 ft. (9.1m) 2/0 work cable with lugs, headshield, filter plate, work clamp and electrode holder. 400 amp capacity.  
**Order K704**



**Accessory Kit**  
For stick welding. Includes 20 ft. (6.1m) #6 electrode cable with lug, 15 ft. (4.6m) #6 work cable with lugs, headshield, filter plate, work clamp, electrode holder and sample pack of mild steel electrode. 200 amp capacity.  
**Order K875**



**Remote Output Control**  
Consists of a control box with choice of two cable lengths. Permits remote adjustment of output. 6 pin connection.  
**Order K857** for 25 ft. (7.6m)  
**Order K857-1** for 100 ft. (30.5m)

**TIG OPTIONS**



**Magnum™ Pro-Torch™ TIG Torches**  
A full line of air-cooled and water-cooled torches available.  
**Request publication E12.150**

**TIG OPTIONS, CONT.**



**PTA-26 One-Cable Adapter**  
Adapts the 7/8" PTA-26 fitting to the 5/8" gas and power connection on machine.  
**Order K2166-1**



**PTA-9, -17 One-Cable Adapter**  
Adapts the 3/8" PTA-9 or -17 fitting to the 5/8" gas and power connection on machine.  
**Order K2166-3**



**PTA-9, PTA-17, PTA-26 Two-Cable Adapter**  
Converts the 7/8" water and power connection on the machine to a 1/2" output stud for use with a two-cable air-cooled TIG torch.  
**Order K2166-2**



**Foot Amptrol™**  
Varies current for making critical TIG welds. Depress pedal to increase current. Depressing pedal fully achieves maximum set current. Fully raising the pedal finishes the weld and starts the afterflow cycle. Includes 25 ft. (7.6m) control cable.  
**Order K870**



**Hand Amptrol**  
May be used in place of the Foot Amptrol. Fastens to the torch for convenient thumb control. Comes with a 25 ft. (7.6m) cable. Fully extend the knob forward to achieve maximum set current. Retract the knob to reduce the current. Returning to the start position finishes the weld and starts the afterflow cycle.  
**Order K963-1** (for smaller handle 9, 17 or 20 series torches)  
**Order K963-2** (for larger handle 26 or 18 series torches)



**Arc Start Switch**  
Needed if an Amptrol is not used when TIG welding. Comes with a 25 ft. (7.6m) cable. Attaches to the TIG torch for convenient finger control.  
**Order K814**



**Water Solenoid Kit**  
Enables use of tap or shop water for an economical water-cooled system. Not recommended for use in conjunction with a water cooler.  
**Order K1830-1**

**PRECISION TIG™ 375 ORDER FORM**

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
<b>PRECISION TIG™ 375 (208/230/460/1/60)</b>	<b>K1833-1</b>		
<b>PRECISION TIG™ 375 (230/460/575/1/60)</b>	<b>K1833-2</b>		
<b>PRECISION TIG™ 375 (220-230/380-400/415/1/50/60)</b>	<b>K1834-1</b>		
<b>READY-PAK™ PACKAGE</b>			
Precision TIG™ 375 (208/230/460/1/60)	K1903-1		
<b>RECOMMENDED GENERAL OPTIONS</b>			
Undercarriage	K1869-1		
Work Clamp and Cable Assembly	K2150-1		
<b>RECOMMENDED STICK OPTIONS</b>			
Stick Accessory Kit, 400 amps	K704		
200 amps	K875		
Remote Output Control, 25 ft. (7.6m)	K857		
100 ft. (30.5m)	K857-1		
<b>RECOMMENDED TIG OPTIONS</b>			
Pro-Torch Water-Cooled TIG Torches (No adapter required.)	See publication E12.150		
Pro-Torch Air-Cooled TIG Torches (Specific adapter required.)	See publication E12.150		
PTA-26 One-Cable Adapter	K2166-1		
PTA-9, -17 One-Cable Adapter (Included with machine.)	K2166-3		
PTA-9, -17, -26 Two-Cable Adapter	K2166-2		
Under-Cooler Cart Water Cooler	K1828-1		
Water Solenoid Kit	K1830-1		
Harris® Argon Flowmeter Regulator	3100211		
Foot Amptrol	K870		
Hand Amptrol, (for -9, -17, -20 series torches)	K963-1		
(for -26, -18, series torches)	K963-2		
Arc Start Switch	K814		
Cut Length Consumables	See publication C9.10		
	<b>TOTAL:</b>		

**CUSTOMER ASSISTANCE POLICY**

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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