

## Optimizing tube-to-tube sheet welding for heat exchangers

### **450 & 550**

Manufacturers in the power generation, HVAC, petrochemical and food and beverage industries need both quality and ease-of-use in a tube-to-tube sheet welding gun. Our 450 and 550 welding guns were designed to exceed expectations on both counts.

The rugged design is critical in the high-volume task of sealing welding tubes-to-tube sheets in heat exchanger applications.

Experience in the field shows these guns provide consistently high weld quality, thanks to a straightforward design that makes on-the-job maintenance a practical possibility.

Our 450 is designed for outside diameters of 5/8" to 1 1/2". And the 550 extends the range to ODs as large as 3 1/2". Both models extend the benefits of portable, practical, quality welding to heat exchanger manufacturing.



**Weld Quality Starts in the Arc**

USA | tel: 1-704-230-2510 | [dimmktg@dimetrics.com](mailto:dimmktg@dimetrics.com)  
INTERNATIONAL | tel: 1-905-689-0734 | [liburdi@liburdi.com](mailto:liburdi@liburdi.com)  
EUROPE | tel: +31-6-2036-1018 | [liburdieurope@liburdi.com](mailto:liburdieurope@liburdi.com)  
[www.liburdi.com](http://www.liburdi.com)

## CAPABILITIES

The 450 and 550 tube-to-tube sheet welding guns are specifically designed for seal welding of flush, recessed and slightly extended (up to 1/8") tube-to-tube sheets. Portability and ease of use, these models are typically hand-held but can also be used with a spring-loaded balancer.

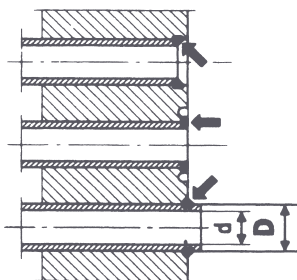
The standard configuration includes a tachometer feedback motor and a position counter for position-based programming (15 degree increments). The shroud is water-cooled but provides openings for visibility of the arc. An optional closed shroud is available when welding materials that are highly reactive to the atmosphere, such as Titanium.

A conventional GTAW torch is used for durability with limited special parts. The torch can be adjusted in or out for diameter adjustment and can be angled up to 10 degrees. The 550 can be equipped with an X-Y Cross Slide which permits adjustment of the torch by lockable knobs.

The 550 has a standard wire feeder and the 450 optional. The wire feeder mounts directly to the rear of the gun and rotates with the torch. Distance from the standard 2-pound wire spool to the wire guide is kept at a minimum length to prevent feeding problems.

We offer a complete line of mandrels and centering cartridges for positioning the tungsten relative to the weld joint. The 550 can be equipped with a mechanical locking mandrel, which is attached through the center of the gun in place of the standard mandrel. However, this mandrel is limited to larger diameter tubes over 1.5 inches.

Our welding guns can be combined with our PTW160™ or P300™ Programmable Power Sources. The PTW160™ provides greater process control with less amperage. And our P300™ provides higher amperage output with microprocessor programming capability.



## ORDERING INFORMATION

### Description

#### Model 450 Tube-To-Tube Sheet Tachometer Feedback

Welding gun (no wire feeder)  
 Welding diameter: 5/8" - 1-1/2" (16mm - 38 mm)  
 Works well with PTW160™ or P300™ Programmable Power Sources

#### Model 550 Tube-To-Tube Sheet Tachometer Feedback

Welding gun with wire feeder  
 Welding diameter: 5/8" - 3-1/2" (16mm - 87 mm)  
 Works well with PTW160™ or P300™ Programmable Power Sources

#### Accessories for Model 450 Welding Gun

Titanium gas shroud for Model 450  
 Wire feed unit with spool adapter and wire guide  
 Protective Case

#### Accessories for Model 550 Welding Gun

Titanium gas shroud for Model 550  
 Mechanical expanding mandrel (1.500 - 2.850) for Model 550  
 X-Y cross slide for Model 550 only  
 Protective Case

#### Mandrels for Model 450 & 550 Tube-To-Tube Sheet Welding Gun

Mandrel "A" for Cartridge "A"  
 Mandrel "B" for Cartridge "B"  
 Mandrel "C" for Cartridge "C"

## BENEFITS

Lightweight for greater portability, easier use.  
 High productivity and weld visibility from water-cooled gas shroud.  
 Simpler mechanism and fewer moving parts for added reliability.  
 Easy maintenance.

## SYSTEM COMPONENTS

- Model 450 or 550 Tube-To-Tube Sheet welding gun
- 25-foot cable assembly
- Designed for use with PTW160™ or P300™ programmable controllers (not included)
- Complete range of mandrels and centering cartridges
- Optional accessories include:
  - Titanium gas shrouds
  - Mechanical expanding mandrel (on Model 550 only)
  - X-Y Cross Slide (on Model 550 only)
  - 25-foot extension cables

## SPECIFICATIONS

|                     | 450                               | 550                               |
|---------------------|-----------------------------------|-----------------------------------|
| D                   | 5/8" - 1-1/2"                     | 5/8" - 3-1/2"                     |
| d                   | 3/8" - 1-1/2"                     | 3/8" - 3"                         |
| Max. extended joint | 1/16"                             | 1/8"                              |
| Weight              | 5- 1/2 lbs.                       | 9 - 3/4 lbs.                      |
| Travel speed        | 0.5 - 4.6 RPM                     | 0.5 - 3.0 RPM                     |
| Wire feed speed     | max 35 IPM                        | max 35 IPM                        |
| Position feed back  | 24-position, 15-degree increments | 24-position, 15-degree increments |
| Current rating      | 200 amp @ 100% duty cycle         | 200 amp @ 100% duty cycle         |