



## Torque Wrench Kit

### GENERAL DESCRIPTION

Welding systems function with greatest efficiency when the stack components (converter, booster, and horn) are properly assembled and torqued. The Branson Torque Wrench Kit allows for accurate torquing that is traceable back to NIST standards.

### BENEFITS

- Ensures proper torque and eliminates failures from improper torquing
- Can be calibrated to NIST standards
- Reduces maintenance required because stacks are assembled correctly

### TORQUE GUIDELINES

The chart on the back provides guidelines for applying torque with the kit. Please call us if you have difficulty in applying these parameters to your own equipment.

### Items in the Kit

A. Torque wrench

B. 3/8" square drive adapter

C. Hex bits (to torque studs into booster/horn)

D. Spanner wrench adapter (to torque stack)

### ORDERING INFORMATION

	Branson EDP No.
15, 20, 30 kHz kit	101-063-787
40 kHz kit	101-063-618

### STACK ASSEMBLY GUIDELINES

#### 15, 20, 30 kHz

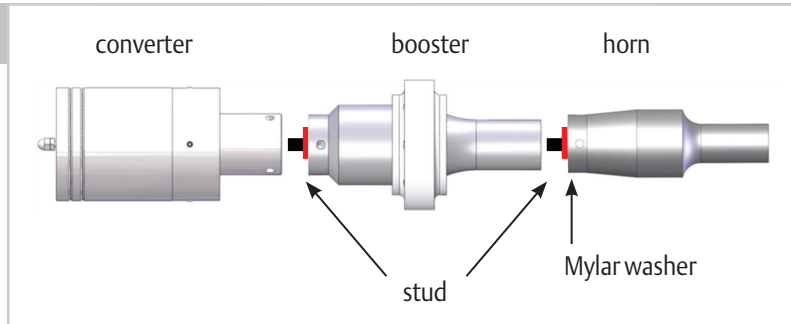
1. Clean the mating surfaces of the converter, booster, and horn, and remove any foreign material from the threaded holes.
2. Install the threaded stud into the top of the booster; torque to specifications. If the stud is dry, apply 1 or 2 drops of a light lubricating oil before installing.
3. Install the threaded stud into the top of the horn; torque to specifications.

# Ultrasonic Welding

4. Install a single acoustic interface washer matching the size of the washer to the stud at each interface.
5. Assemble the converter to the booster and the booster to the horn.
6. Torque to 220 in.-lbs (24.85 Nm) for 15 and 20 kHz stacks.  
Torque to 185 in.-lbs (20.90 Nm) for 30 kHz stacks.

## 40 kHz Installation

1. Clean the mating surfaces of the converter, booster, and horn, and remove any foreign material from the threaded holes.
2. Apply a drop of Loctite® 290 (or equivalent) to the studs on the booster and horn.
3. Install the threaded stud into the top of the booster; torque to specifications. Let cure for 30 minutes.
4. Install the threaded stud into the top of the horn; torque to specifications. Let cure for 30 minutes.
5. Coat each interface surface with a thin film of silicon grease - but do not apply silicon grease to a threaded stud.
6. Assemble the converter to the booster and the booster to the horn.
7. Torque to 95 in.-lbs, 10.73 Nm.



## Studs for horns:

Stud	EDP#	Frequency	Horn Material	Torque
3/8" - 24 x 1"	100-098-120	20 kHz	Ti	290 in.-lbs., 32.76 Nm
3/8" - 24 x 1"	100-298-170	30 kHz	Al, Ti, Steel	290 in.-lbs., 32.76 Nm
3/8" - 24 x 1-1/4"	100-098-121	20 kHz	Al, Steel	290 in.-lbs., 32.76 Nm
1/2" - 20 x 1-1/4"	100-098-370	20 kHz	Ti, Steel	450 in.-lbs., 50.84 Nm
1/2" - 20 x 1-1/2"	100-098-123	20 kHz	Al	450 in.-lbs., 50.84 Nm
1/2" - 20 x 1-1/2"	100-098-123	15 kHz	Al, Ti	450 in.-lbs., 50.84 Nm
M8 - 1.25	100-098-790	40 kHz	Al, Ti, Steel	70 in.-lbs., 7.90 Nm

## Studs for boosters:

Stud	EDP#	Frequency	Torque
1/2" - 20 x 1-1/2"	100-098-123	15 kHz, 20 kHz	450 in.-lbs., 50.84 Nm
3/8" - 24 x 1"	100-298-170	30 kHz	290 in.-lbs., 32.76 Nm
M8 - 1.25**	100-098-790	40 kHz	70 in.-lbs., 7.90 Nm

## Connecting Tip to Horn

1. Clean the mating surfaces of the horn and tip, and remove any foreign matter from the threaded stud and the hole.
2. Hand assemble the tip to the horn. Do not use any silicone grease.
3. Torque tip to specifications:

Tip Thread	Torque
1/4-28	110 in.-lbs., 12.42 Nm
3/8-24	180 in.-lbs., 20.33 Nm

\* For technical and ordering information on acoustic interface washers, please refer to Branson Techno-Log TL-13. \*\* Add a drop of Loctite® 290 to the stud, torque, and let cure 30 minutes before use.

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