

Ultrasonic Welding



Acoustic Interface Washers

The operating efficiency of ultrasonic equipment will be greatly affected if the mating interfaces of the converter/ booster/ horn stack are not flat, make poor contact with each other, or become corroded. Branson has found that using acoustic interface washers at the interfaces between the converter and booster, and the booster and horn (instead of silicone grease) will minimize this corrosion. Poor contact can cause these unwanted conditions:

- Higher power draw in air and under load.
- High pitched noise.
- Tuning may be difficult or impossible.
- Weld quality may be affected.
- Converter may be heat damaged.



*Fretting corrosion on horn/
booster interface*

These conditions will be magnified if the equipment is run in continuous operation. Fretting corrosion (which looks like black surface oxidation) is the most common issue affecting frequencies from 15 to 30 kHz. This corrosion is caused by friction being generated at the interfaces between the converter and booster and the booster and horn. Note: Typically, 40 kHz does not generate enough amplitude to create fretting corrosion. For this frequency, the standard Branson silicone grease (Dow Corning #111) should be utilized.

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Before using the washers, follow the steps outlined in Branson TechnoLog TL-3 to recondition the converter/booster/ horn interfaces. Important: Do not use both silicone and an acoustic interface washer. Use only one washer per interface.

It is advisable with new ultrasonic installations to monitor the converter/booster/horn stack to determine when the washer should be replaced. A typical installation will run six to twelve months before requiring a washer change.

The “life expectancy” of an acoustic interface washer will be determined by the following factors:

- Booster ratio: higher amplitude = shorter life.
- Duty cycle: 50% or higher = shorter life.
- Quality of contact surface before washer is used.

ORDERING INFORMATION

	Branson EDP No.
15 kHz: 1/2" I.D. acoustic interface washer kit (10 count)	100-063-652
1/2" I.D. acoustic interface washer kit (150 count)	100-063-713
20 kHz: 3/8" I.D. acoustic interface washer kit (150 count)	100-063-472
1/2" I.D. acoustic interface washer kit (150 count)	100-063-471
20 count kit (10 of 3/8", 10 of 1/2"). This kit is supplied with each welder when shipped.	100-063-357
30 kHz: 3/8" I.D. acoustic interface washer kit (10 count)	100-063-632
3/8" I.D. acoustic interface washer kit (150 count)	100-063-712

BRANSON

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