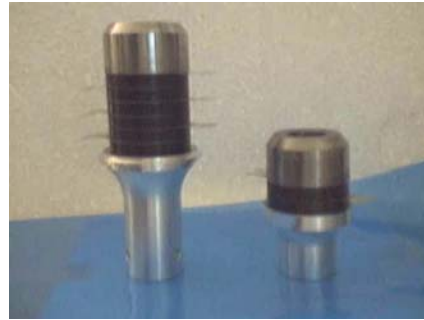


## MPI WELDING CONVERTERS



### 20 & 40 kHz welding Converters (MPI-3520-6PS and MPI-3540-2PS)

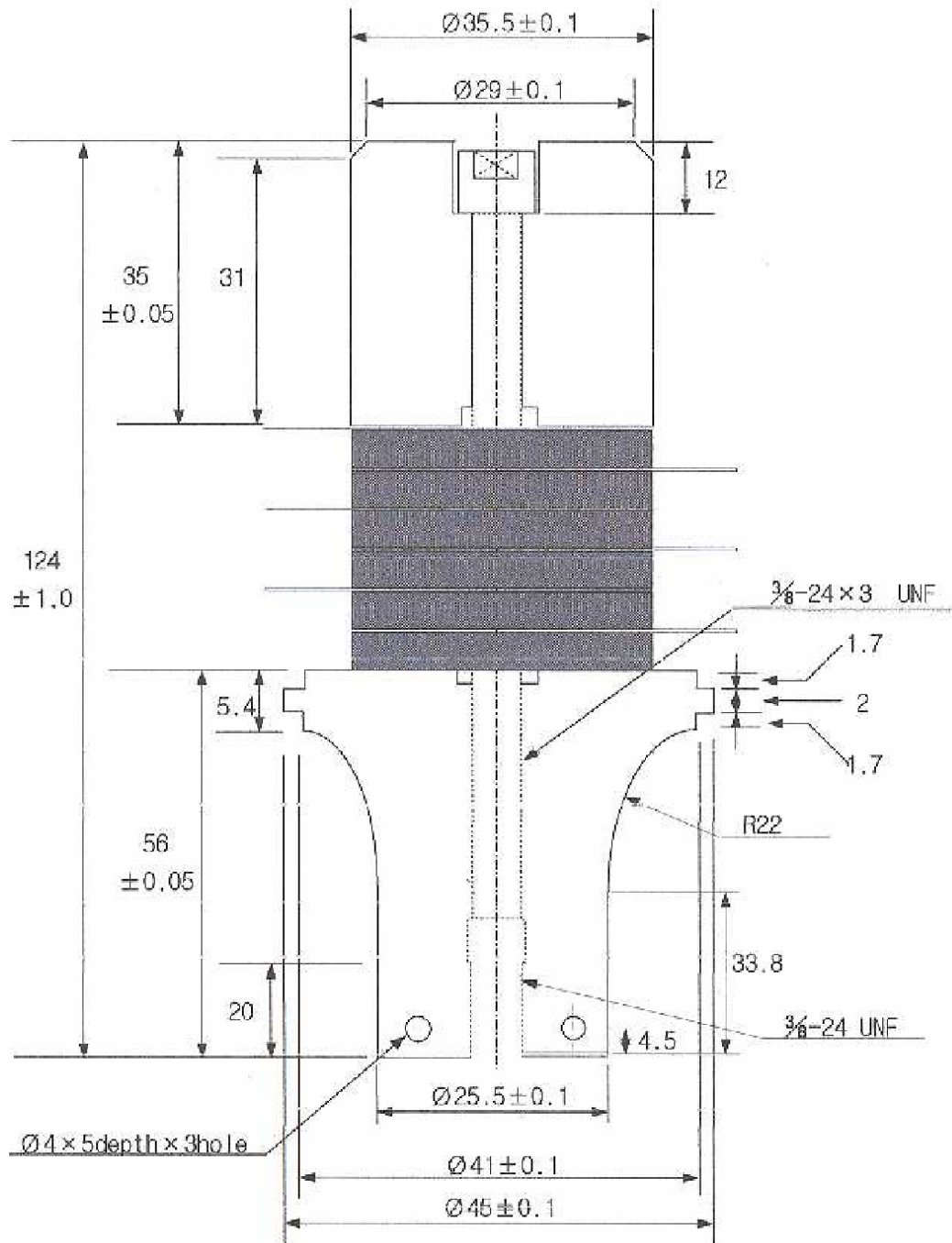


-MPI-3520-6PS, 20 kHz, 1500 W  
 -Total Length = 109 mm,  
 -Piezoceramics OD = 35 mm,  
 -Piezoceramic thickness, t = 5mm  
 -Aluminum-mass output diameter = 25.5 mm  
 -Largest middle diameter = 45 mm  
 -Threaded hole in aluminum mass = 3/8-24 UNF  
 f-r = f-s = 20.7 kHz (3.7 ohm.)  
 f-p = f-a = 23.42 kHz (170 kohm.)



-MPI-3540-2PS, 40 kHz, 500 W  
 -Total Length = 62 mm,  
 -Piezoceramics OD = 35 mm,  
 -Piezoceramic thickness, t = 5mm  
 -Aluminum-mass output diameter = 25.5 mm  
 -Largest middle diameter = 39 mm  
 -Threaded hole in aluminum mass = M8  
 f-r = f-s = 38.05 kHz (6 ohm.)  
 f-p = f-a = 41.27 kHz (290 kohm.)

For larger orders certain non-essential dimensions can be modified  
 All converters are silicone surface-coated  
 Front aluminum mass: AL7075, Ultrasonics Grade  
 Back mass: Stainless Steel 304



**MPI-3520-6PS, 20 kHz, 1500 W**

## MPI-5020-6PS & MPI-5020S-6PS, 20 kHz, 3 kW



**Without Housing: MPI-5020-6PS**



**Protected Flex-Housing: MPI-5020S-6PS**  
(Large mounting area, Watertight, Shock-resistant)

### CHARACTERISTICS:

- MPI-5020-6PS and MPI-5020s-6PS, 20 kHz, 3000 W
- Total Length = 117 mm,
- Piezoceramics OD = 50 mm,
- Piezoceramic thickness, t = 5mm
- Aluminum-mass output diameter = 38 mm
- Largest middle diameter = 69 mm
- Threaded hole in aluminum mass = 1/2", UNF20
- f-r = f-s = 18.76 kHz (2.6 ohm.)
- f-p = f-a = 20.77 kHz (90 kohm.)
- Fully compatible with 502 Branson models, 20 kHz, 3 kW

For larger orders certain non-essential dimensions can be modified  
 All converters are silicone surface-coated  
 Front aluminum mass: AL7075, Ultrasonics Grade  
 Back mass: Stainless Steel 304

## Flex-Housing Converter for MMM Applications: MPI-5020S-6PS & mounting tooling

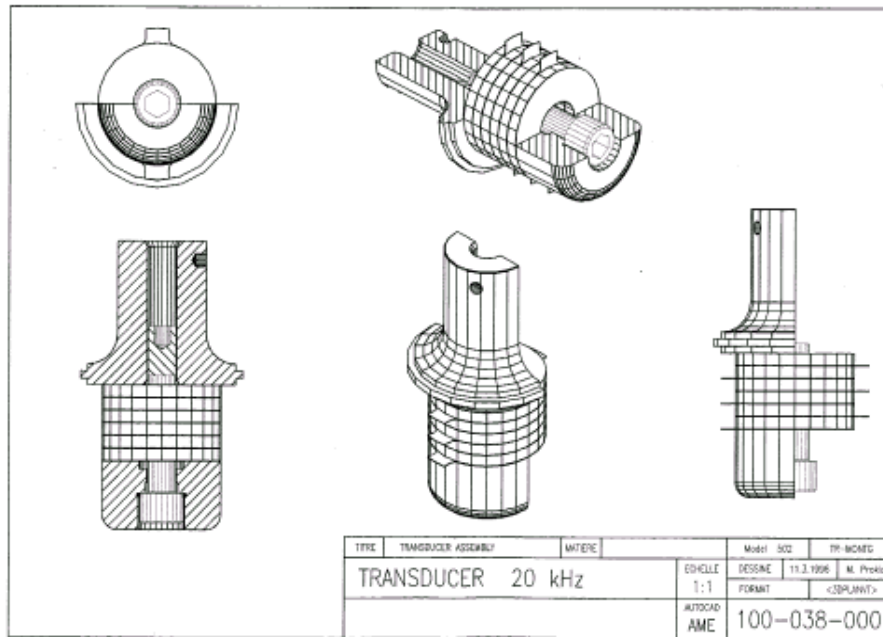


In MMM applications applicable for carrier frequencies from 10 kHz to 30 kHz

Applications: Extruders, Wires & Tubes Drawing, Atomizers, Liquid Alloys Treatment, Defoaming, Mixers, Sonochemical Reactors, Waste Waters Processing, Supercritical, Liquid CO<sub>2</sub> Reactors, Extractions, MMM Cutting, Degassing...

## MPI-5020S-6PS Design

**(Presents an optimized BRANSON 502/932 converter Design)**



### BRANSON converter model 502/932R

- Total axial length of the transducer  $L = 120$  mm
- Largest middle diameter  $D\text{-max.} = 69.5$  mm
- Front emitting surface diameter  $D\text{-min.} = 38$  mm
- Back mass diameter  $D\text{-back} = 51$  mm
- Threaded hole in the front mass UNF 20, 1/2" (free hole length 27mm)

### BRANSON 502/932R, Typical Model Parameters Variations

	In Series Resonance	In Parallel Resonance
<b>Model Parameters for Non-Loaded Converter</b> (Measured on the random, standard-production-quality sample > 100 pcs. of converters, taken after assembling)	$C_{0p} \in [15.3 - 18.1] \text{ nF}, \pm 3\%$ $C_1 \in [3.92 - 4.05] \text{ nF},$ $L_1 \in [17.53 - 18.7] \text{ mH}$ $R_1 \in [1.75 - 4.6] \Omega, \pm 20\%$ $f_1 \in [18435 - 18905] \text{ Hz}, \pm 0.5\%$ $Q_{m01} \in \langle Q_{m01} \rangle \pm 20\%$	$C_{0s} \in [18.7 - 22.05] \text{ nF}, \pm 3\%$ $C_2 \in [79 - 101.53] \text{ nF},$ $L_2 \in [570.50 - 747] \mu\text{H},$ $R_2 \in [94 - 250] \text{ K}\Omega, \pm 20\%$ $f_2 \in [20635 - 20912] \text{ Hz}, \pm 0.5\%$ $Q_{m02} = \langle Q_{m02} \rangle \pm 20\%$