

5 TOFD TRANSDUCERS & WEDGES



M12 ToFD probes



M20 ToFD probes

5.1 De-mountable TOFD transducers (case height 30mm approx)

Highly damped ceramic faced transducers in a threaded housing for use with WTOF wedges
Probes fitted with 00 Lemo coaxial sockets

Part Number	Frequency MHz	Crystal Diameter	Case Size
DTOF 2/04	2	0.5" (12.5mm)	M20
DTOF 2/06	2	0.75" (20mm)	M30
DTOF 3.5/03	3.5	0.375" (9.5mm)	M20
DTOF 3.5/04	3.5	0.5" (12.5mm)	M20
DTOF 5/01	5	0.125" (3.1mm)	M12
DTOF 5/02	5	0.25" (6.3mm)	M12
DTOF 5/03	5	0.375" (9.5mm)	M20
DTOF 5/04	5	0.5" (12.5mm)	M20
DTOF 7.5/01	7.5	0.125" (3.1mm)	M12
DTOF 7.5/02	7.5	0.25" (6.3mm)	M12
DTOF 10/01	10	0.125" (3.1mm)	M12
DTOF 10/02	10	0.25" (6.3mm)	M12
DTOF 15/01	15	0.125" (3.1mm)	M12
DTOF 15/02	15	0.25" (6.3mm)	M12

5.2 De-mountable Piezocomposite TOFD Transducers (case height 30mm approx)

Highly damped transducers in a threaded housing for use with WTOF wedges. Probes fitted with 00 Lemo coaxial sockets

Part Number	Frequency MHz	Crystal Diameter	Case Size
CDTOF 2/02	2	0.25" (6.3mm)	M12
CDTOF 2/04	2	0.5" (12mm)	M20
CDTOF 3.5/03	3.5	0.375" (9.5mm)	M20
CDTOF 3.5/04	3.5	0.5" (12.5mm)	M20
CDTOF 5/01	5	0.125" (3.1mm)	M12
CDTOF 5/02	5	0.25" (6.3mm)	M12
CDTOF 5/03	5	0.375" (9.5mm)	M20
CDTOF 5/04	5	0.5" (12mm)	M20
CDTOF 7.5/01	7.5	0.125" (3.1mm)	M12
CDTOF 7.5/02	7.5	0.25" (6.3mm)	M12
CDTOF 10/01	10	0.125" (3.1mm)	M12
CDTOF 10/02	10	0.25" (6.3mm)	M12
CDTOF 15/01	15	0.125" (3.1mm)	M12
CDTOF 15/02	15	0.25" (6.3mm)	M12

5.3 Half Height TOFD Transducers (case height 22mm approx)
 Probes fitted with MCX connector only



M12 ToFD probes (Half height)

Part Number	Frequency MHz	Crystal Diameter	Case Size
DTOFM-5/01	5MHz	3mm	M12
DTOFM-10/01	10MHz	3mm	M12
DTOFM-15/01	15MHz	3mm	M12
DTOFM-5/02	5MHz	6mm	M12

5.4 Piezocomposite Half Height TOFD Transducers (case height 22mm approx)
 Probes fitted with MCX connector only

Part Number	Frequency MHz	Crystal Diameter	Case Size
CDTOFM-5/01	5MHz	3mm	M12
CDTOFM-10/01	10MHz	3mm	M12
CDTOFM-15/01	15MHz	3mm	M12
CDTOFM-5/02	5MHz	6mm	M12

5.5 Automated Testing TOFD transducers - PRICE ON REQUEST

Highly damped transducers, angled beam compression type, used as pitch/catch pair, one piece construction.

Composite and non-composite crystal versions available. **Customer to advise.**

Part Number	Frequency MHz	Crystal Diameter	Housing size (mm)
ATOF 2.5/04/*	2.5	0.5" (12.5mm)	30 x 30
ATOF 3.5/03/*	3.5	0.375" (9.5mm)	30 x 30
ATOF 3.5/04/*	3.5	0.5" (12.5mm)	30 x 30
ATOF 5/02/*	5	0.25" (6.3mm)	30 x 30
ATOF 5/03/*	5	0.375" (9.5mm)	30 x 30
ATOF 5/04/*	5	0.5" (12.5mm)	30 x 30
ATOF 10/01/*	10	0.125" (3.1mm)	30 x 30
ATOF 10/02/*	10	0.25" (6.3mm)	30 x 30
ATOF 15/01/*	15	0.125" (3.1mm)	30 x 30
ATOF 15/02/*	15	0.25" (6.3mm)	30 x 30

**please insert angle required - Non standard angles - add £30*

Including couplant irrigation, electrically isolated connector and M4 gimbal mountings
 Probes fitted with top entry 00 Lemo coaxial sockets

5.6 De-mountable Irrigated TOFD Wedges available in Plastic, S/Steel or Brass
- only for use with DTOF & CDTOF Transducers



M12 ToFD wedges (Plastic)



M20 ToFD wedges (S/Steel)



M20 ToFD wedges (Brass)

Part number	Compression Beam Angle	Thread Size
WTOFI 12/45	45°	M12
WTOFI 12/60	60°	M12
WTOFI 12/70	70°	M12
WTOFI 20/45	45°	M20
WTOFI 20/60	60°	M20
WTOFI 20/70	70°	M20
WTOFI 30/45	45°	M30
WTOFI 30/60	60°	M30
WTOFI 30/70	70°	M30
COUPLANT SKIDS - FR	1 set per wedge (1 x front & 1 x rear)	

Non standard wedge angles are available at £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair
Gimbal pin options:- Wren or Standard
NOTE. M30 thread Wedges are 40mm wide, all others 30mm wide

5.7 De-mountable BRASS WREN Irrigated TOFD Wedges
mainly for use with the WREN Scanner and DTOF & CDTOF Transducers with a reduced land enabling wedges to sit closer to the weld cap



WREN ToFD wedges (Brass)



Part number	Compression Beam Angle	Thread Size
WRENI 12/45	45°	M12
WRENI 12/60	60°	M12
WRENI 12/70	70°	M12

Non standard wedge angles are available at £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair
Gimbal pin options:- Wren or Standard

5.8 De-mountable HIGH TEMPERATURE STAINLESS STEEL WREN Irrigated TOFD Wedges - only for use with the WREN Scanner and DTOF Transducers

The material used in this wedge is designed to withstand 200°C, however the temperature limit of the transducer must be considered.

Part number	Compression Beam Angle	Thread Size
WRENI HT 12/45	45°	M12
WRENI HT 12/60	60°	M12
WRENI HT 12/70	70°	M12

Non standard wedge angles are available at £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair

5.9 De-mountable HIGH TEMPERATURE irrigated STAINLESS STEEL TOFD Wedges

- only for use with DTOF Transducers

The material used in this wedge is designed to withstand 200°C, however the temperature limit of the transducer must be considered.



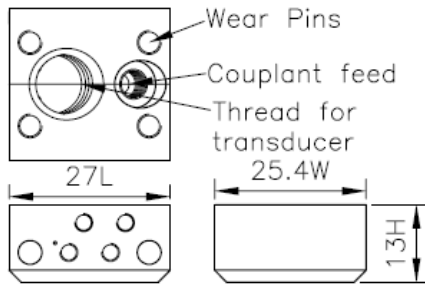
M12 High Temp ToFD wedges (S/Steel)

Part number	Compression Beam Angle	Thread Size
WTOFSSI HT 12/45	45°	M12
WTOFSSI HT 12/60	60°	M12
WTOFSSI HT 12/70	70°	M12
WTOFSSI HT 20/45	45°	M20
WTOFSSI HT 20/60	60°	M20
WTOFSSI HT 20/70	70°	M20

Non standard wedge angles are available at £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair

5.10 Automated HIGH TEMPERATURE TOFD Transducers
Recommended temperature rating - continuously at 180°C

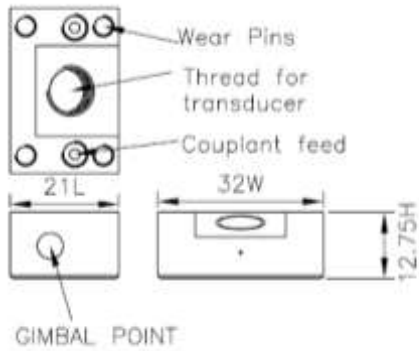
Part Number	Frequency MHz	Crystal Diameter	Housing Size	Angle A°
AHTOF 2.5/04/A	2.5	0.5	30 x 30	45, 60, 70
AHTOF 3.5/03/A	3.5	0.375	30 x 30	45, 60, 70
AHTOF 3.5/04/A	3.5	0.5	30 x 30	45, 60, 70
AHTOF 5/02/A	5	0.25	30 x 30	45, 60, 70
AHTOF 5/03/A	5	0.375	30 x 30	45, 60, 70
AHTOF 5/04/A	5	0.5	30 x 30	45, 60, 70



Part number	Compression Beam Angle	Thread Size
WTOF-PW 3/8-45	45°	3/8"UNEF
WTOF-PW 3/8-60	60°	3/8"UNEF
WTOF-PW 3/8-65	65°	3/8"UNEF
WTOF-PW 3/8-70	70°	3/8"UNEF
WTOF-PW 12/45	45°	M12
WTOF-PW 12/60	60°	M12
WTOF-PW 12/65	65°	M12
WTOF-PW 12/70	70°	M12

Non standard wedge angles are available from £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair

North American Style TOFD Wedges



Part number	Compression Beam Angle	Thread Size
WTOF-NAS 3/8-45	45°	3/8"UNEF
WTOF-NAS 3/8-60	60°	3/8"UNEF
WTOF-NAS 3/8-70	70°	3/8"UNEF

Non standard wedge angles are available from £25.00 extra each
Contoured £30.00 per wedge or £50.00 per pair

Phoenix produces a wide range of Time of Flight Diffraction tools and accessories. This data sheet describes the TOFD wedge range. This range of wedges is manufactured from Plastic, Brass or Stainless Steel (other materials are available). The wedges fit the universal Metric Threaded probes (M12, M20 and M30) and are suitable for use with both composite and standards crystal types.



Technical Specification

Wedge Material: Rexolite. Sound Velocity: 2320m/s. Gimbal centre is 7.00 mm from wedge base. Gimbal is 5 mm Øx3.85 mm long (hex 3mm key). Nozzel fits a 2.5-3 mm tube. All wedges are irrigated as standard and can be coupled with couplant gel or water as required.

Wedge Part No	Probe types	Width x length	Beam Angle	Wedge Delay (mm)	Wedge Delay (µS)	Emmision point (mm from front)
WTOF 12/45	M12 DTOF and CDTOF 3-6 mm Ø	30 x 20 mm	45° L	7.1	3.06	8
WTOF 12/60			60° L	7.1	3.06	8
WTOF 12/70			70° L	7.0	3.01	8
WTOF 20/45	M20 DTOF and CDTOF 9-12 mm dia,	30 x 30 mm	45° L	8.1	3.42	13
WTOF 20/60			60° L	7.5	3.25	13
WTOF 20/70			70° L	7.5	3.25	13
WTOF 30/45	M30 DTOF and CDTOF 20 mm Ø	40 x 45 mm	45° L	7.5	3.25	20
WTOF 30/60			60° L	7.5	3.25	20
WTOF 30/70			70° L	7.5	3.25	20

Accessories-Wear plates or couplant skids.-These must be ordered with the wedge as the wedge require the addition of M3 x 5 deep hole. They are available for the front and rear of the wedge. Side skids are also available but it should be noted that they are incompatible with toolpost applications. The wedges can be contoured to suit any surface profile. Diameter and direction must be stated.

Usage.-Couplant must be applied to the probe face and the wedge shoe during use (this can be pumped or applied manually)

Phoenix ISL assumes no responsibility, explicit or implicit, if these results are found to vary under different test conditions

Phoenix ISL has a policy of continuous development therefore prices stated are subject to change.
Issue Date: Jan 2013 (Issue 1)