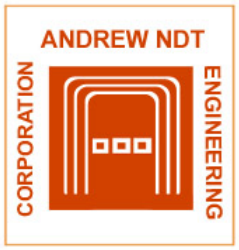

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EDDY CURRENT SECTION

ORDERING INFORMATION:

cuongle@andrewndt.com

408-710-0342

UNIVERSAL ROTOR PROBE



DIMENSION: 2” WORKING LENGTH , Stainless steel insert housing, Overall length 3.5”, 4 PIN Male Fischer, Reflectance mode. Frequency 0.2-2 MHZ, different frequency, metric size can be ordered

Delrin Black body, constant spread against the wall . Option : Spread with adjustable screw

STAINLESS STEEL WHOLE HOUSING IS AVAILABLE.

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UBHU-1	SBHU-1
0.156	5/32	UBHU-2	SBHU-2
0.187	3/16	UBHU-3	SBHU-3
0.25	1/4	UBHU-4	SBHU-4
0.312	5/16	UBHU-5	SBHU-5
0.375	3/8	UBHU-6	SBHU-6
0.437	7/16	UBHU-7	SBHU-7
0.5	1/2	UBHU-8	SBHU-8
0.562	9/16	UBHU-9	SBHU-9
0.625	5/8	UBHU-10	SBHU-10
0.687	11/16	UBHU-11	SBHU-11
0.75	3/4	UBHU-12	SBHU-12

- EDDY CURRENT PROBES FOR AEROSPACE
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- CABLES AND ADAPTERS
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- REPAIR SERVICES
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ROTOR PROBES FOR SPITFIRE, MINIMITE (4 PIN FISCHER), Hocking & ROHMANN

DIMENSION: 2" WORKING LENGTH , Stainless steel insert housing, Overall length 3.5", 4 PIN Male Fischer, Reflectance or differential bridge mode. Frequency 0.2-2 MHZ, different frequency, Metric size can be ordered

Delrin Black body, constant spread against the wall . Option : Spread with adjustable screw

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UBHI-1	SBHI-1
0.156	5/32	UBHI-2	SBHI-2
0.187	3/16	UBHI-3	SBHI-3
0.25	1/4	UBHI-4	SBHI-4
0.312	5/16	UBHi-5	SBHI-5
0.375	3/8	UBHI-6	SBHI-6
0.437	7/16	UBHI-7	SBHI-7
0.5	1/2	UBHI-8	SBHI-8
0.562	9/16	UBHI-9	SBHI-9
0.625	5/8	UBHI-10	SBHI-10
0.687	11/16	UBHI-11	SBHI-11
0.75	3/4	UBHI-12	SBHI-12

RA19, 2000 & MiniMite 4 pin Lemo Rotor

DIMENSION: 2” WORKING LENGTH , Stainless steel insert housing, Overall length 3.5”, 4 PIN Lemo , Differential reflectance mode. Frequency 500 KHZ-3 MHZ, different frequency, Metric size can be ordered

Delrin Black body, constant spread against the wall . Option : Spread with adjustable screw

Decimal	Fraction	unshielded	shielded
0.125	1/8	UBHLM-1	SBHLM-1
0.156	5/32	UBHLM-2	SBHLM-2
0.187	3/16	UBHLM-3	SBHLM-3
0.25	1/4	UBHLM-4	SBHLM-4
0.312	5/16	UBHLM-5	SBHLM-5
0.375	3/8	UBHLM-6	SBHLM-6
0.437	7/16	UBHLM-7	SBHLM-7
0.5	1/2	UBHLM-8	SBHLM-8
0.562	9/16	UBHLM-9	SBHLM9
0.625	5/8	UBHLM-10	SBHLM-10
0.687	11/16	UBHLM-11	SBHLM-11
0.75	3/4	UBHLM-12	SBHLM-12

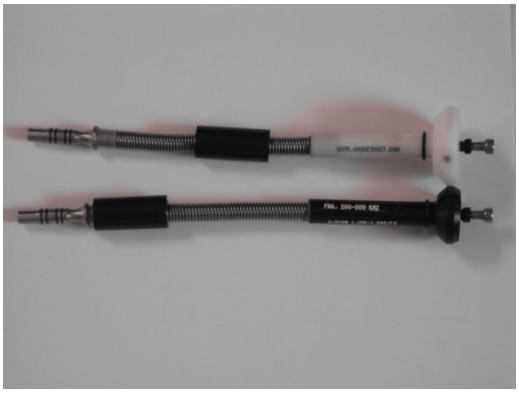
GE ROTOR PROBES AND ELOTEST, ROHMAN GmbH PROBES for MINI ROTOR

DIMENSION: 2" WORKING LENGTH , Stainless steel insert housing, Overall length 3.5", 4 PIN Male Fischer, Reflectance or differential bridge mode. Frequency 0.2-2 MHZ, different frequency, Metric size can be ordered

Delrin Black body, constant spread against the wall . Option : Spread with adjustable screw

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UBHGE-1	SBHGE-1
0.156	5/32	UBHGE-2	SBHGE-2
0.187	3/16	UBHGE-3	SBHGE-3
0.25	1/4	UBHGE-4	SBHGE-4
0.312	5/16	UBHGE-5	SBHGE-5
0.375	3/8	UBHGE-6	SBHGE-6
0.437	7/16	UBHGE-7	SBHGE-7
0.5	1/2	UBHGE-8	SBHGE-8
0.562	9/16	UBHGE-9	SBHGE-9
0.625	5/8	UBHGE-10	SBHGE-10
0.687	11/16	UBHGE-11	SBHGE-11
0.75	3/4	UBHGE-12	SBHGE-12

ROTARY FLEX SHAFT PROBE



WORKING LENGTH IS 6 INCHES OR LONGER CAN BE REQUESTED.

PROBE DIAMETER CAN MADE FROM 1/8 TO ANY SIZE. PROBE CONNECTOR WILL FIT TO YOUR ROTARY SCANNER. PROBE IS DIFFERENTIAL BRIDGE OR REFLECTANCE MODE.

FREQUENCY IS 100 KHZ- 1 MHZ. DIFFERENT FREQUENCY CAN BE MADE TO YOUR REQUEST

PN # : FOR EXAMPLE .

ABHFLU-1/4-10WK8 : THIS 0.250” DIAMETER WITH 8 INCH WORKING LENGTH FOR UNIVERSAL SCANNER .

ROTARY COUNTERSKINK FOR RA19, 2000 & MINIMITE PROBE, 100 degree

DIMENSION: Stainless steel insert housing, Overall length 3.5”, 4 Pin Lemo , Reflectance mode. Frequency 0.2-2 MHZ, different frequency, Metric size can be ordered

Delrin Black body.

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UCSBHLM-1	SCSBHLM-1
0.156	5/32	UCSBHLM-2	SCSBHLM-2
0.187	3/16	UCSBHLM-3	SCSBHLM-3
0.25	1/4	UCSBHLM-4	SCSBHLM-4
0.312	5/16	UCSBHLM-5	SCSBHLM-5
0.375	3/8	UCSBHLM-6	SCSBHLM-6
0.437	7/16	UCSBHLM-7	SCSBHLM-7
0.5	1/2	UCSBHLM-8	SCSBHLM-8
0.562	9/16	UCSBHLM-9	SCSBHULM9
0.625	5/8	UCSBHLM-10	SCSBHLM-10
0.687	11/16	UCSBHLM-11	SCSBHLM-11
0.75	3/4	UCSBHLM-12	SCSBHLM-12

ROTARY COUNTERSKINK FOR MINIMITE SCANNER 4 PIN FISCHER AND UNIVERSAL PROBES (SCANNER) 100 degree

DIMENSION: Stainless steel insert housing, Overall length 3.5”, 4 Pin Male Fischer, Reflectance mode. Frequency 0.2-2 MHZ, different frequency, Metric size can be ordered

Delrin Black body. Option full stainless steel housing

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UCSBHU-1	SCSBHU-1
0.156	5/32	UCSBHU-2	SCSBHU-2
0.187	3/16	UCSBHU-3	SCSBHU-3
0.25	1/4	UCSBHU-4	SCSBHU-4
0.312	5/16	UCSBHU-5	SCSBHU-5
0.375	3/8	UCSBHU-6	SCSBHU-6
0.437	7/16	UCSBHU-7	SCSBHU-7
0.5	1/2	UCSBHU-8	SCSBHU-8
0.562	9/16	UCSBHU-9	SCSBHU-9
0.625	5/8	UCSBHU-10	SCSBHU-10
0.687	11/16	UCSBHU-11	SCSBHU-11
0.75	3/4	UCSBHU-12	SCSBHU-12

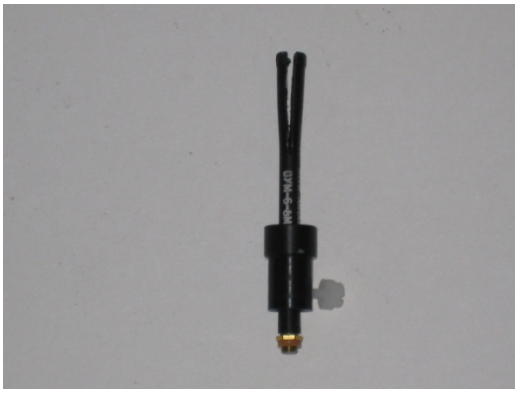
ROTARY COUNTERSKINK FOR GE SCANNER PROBE, 100 degree

DIMENSION: Stainless steel insert housing, Overall length 3.5”, 4 Pin Male Fischer, differential bridge mode. Frequency 0.2-2 MHZ, different frequency, Metric size can be ordered

Delrin Black body. Option: full stainless steel housing

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UCSBHGE-1	SCSBHGE-1
0.156	5/32	UCSBHGE-2	SCSBHGE-2
0.187	3/16	UCSBHGE-3	SCSBHGE-3
0.25	1/4	UCSBHGE-4	SCSBHGE-4
0.312	5/16	UCSBHGE-5	SCSBHGE-5
0.375	3/8	UCSBHGE-6	SCSBHGE-6
0.437	7/16	UCSBHGE-7	SCSBHGE-7
0.5	1/2	UCSBHGE-8	SCSBHGE-8
0.562	9/16	UCSBHGE-9	SCSBHGE-9
0.625	5/8	UCSBHGE-10	SCSBHGE-10
0.687	11/16	UCSBHGE-11	SCSBHGE-11
0.75	3/4	UCSBHGE-	SCSBHGE-12

STANDARD MANUAL BOLT HOLE PROBE



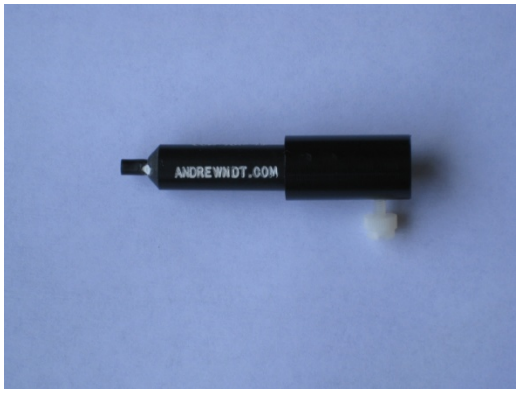
DIMENSION: 2” WORKING LENGTH , Overall length 3.5”, Microdot connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency, Metric size can be ordered

Delrin Black body, constant spread against the wall . Option : Spread with adjustable screw

Option for Lemo 00 Coaxial connector is available to order

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	BPU-1	BPS-1
0.156	5/32	BPU-2	BPS-2
0.187	3/16	BPU-3	BPS-3
0.25	1/4	BPU-4	BPS-4
0.312	5/16	BPU-5	BPS-5
0.375	3/8	BPU-6	BPS-6
0.437	7/16	BPU-7	BPS-7
0.5	1/2	BPU-8	BPS-8
0.562	9/16	BPU-9	BPS-9
0.625	5/8	BPU-10	BPS-10
0.687	11/16	BPU-11	BPS-11
0.75	3/4	BPU-12	BPS-12

STANDARD MANUAL COUNTERSKINK BOLT HOLE PROBE



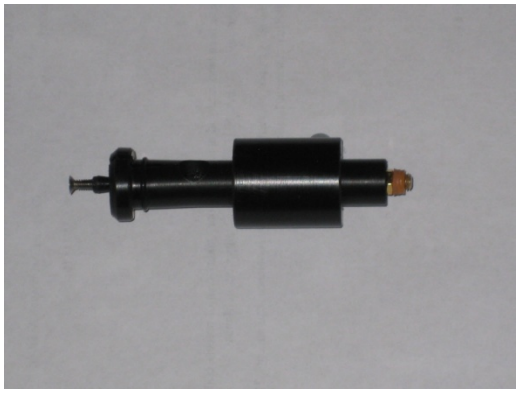
DIMENSION: Overall length 2”, Microdot connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency, Metric size can be ordered

Delrin Black body.

Option for Lemo 00 Coaxial connector is available to order

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	UCSBP-1	SCSBP-1
0.156	5/32	UCSBP-2	SCSBP -2
0.187	3/16	UCSBP-3	SCSBP-3
0.25	1/4	UCSBP-4	SCSBP-4
0.312	5/16	UCSBP-5	SCSBP-5
0.375	3/8	UCSBP-6	SCSBP-6
0.437	7/16	UCSBP-7	SCSBP-7
0.5	1/2	UCSBP-8	SCSBP-8
0.562	9/16	UCSBP-9	SCSBP-9
0.625	5/8	UCSBP-10	SCSBP-10
0.687	11/16	UCSBP-11	SCSB-11
0.75	3/4	UCSBP-12	SCSBP-12

AJUSTABLE STANDARD MANUAL BOLT HOLE PROBE



DIMENSION: 2” WORKING LENGTH , Overall length 3.5”, Microdot connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency, Metric size can be ordered

Delrin Black body, Spread with adjustable screw

Option for Lemo 00 Coaxial connector is available to order

Decimal	Fraction	Unshielded	Shielded
0.125	1/8	ABPU-1	ABPS-1
0.156	5/32	ABPU-2	ABPS-2
0.187	3/16	ABPU-3	ABPS-3
0.25	1/4	ABPU-4	ABPS-4
0.312	5/16	ABPU-5	ABPS-5
0.375	3/8	ABPU-6	ABPS-6
0.437	7/16	ABPU-7	ABPS-7
0.5	1/2	ABPU-8	ABPS-8
0.562	9/16	ABPU-9	ABPS-9
0.625	5/8	ABPU-10	ABPS-10
0.687	11/16	ABPU-11	ABPS-11
0.75	3/4	ABPU-12	ABPS-12

STRAIGHT PENCIL PROBE

Microdot connector

Triax or Lemo 00 connector

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered

Delrin Black body handle , Brass shaft or copper shaft (flexible shaft)

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter : SBSLM-1

NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : SBSTR-1

Probe Length	Shielded 1/8 Brass	Unshielded 1/8 Brass	Shielded 1/8 copper shaft (flexible shaft)	Unshielded 1/8 copper
1”	SBS-1	SBU-1	CSBS-1	CSBU-1
2”	SBS-2	SBU-2	CSBS-2	CSBU-2
3”	SBS-3	SBU-3	CSBS-3	CSBU-3
4”	SBS-4	SBU-4	CSBS-4	CSBU-4
5”	SBS-5	SBU-5	CSBS-5	CSBU-5
6”	SBS-6	SBU-6	CSBS-6	CSBU-6
7”	SBS-7	SBU-7	CSBS-7	CSBU-7
8”	SBS-8	SBU-8	CSBS-8	CSBU-8
9”	SBS-9	SBU-9	CSBS-9	CSBU-9
10”	SBS-10	SBU-10	CSBS-10	CSBU-10
11”	SBS-11	SBU-11	CSBS-11	CSBU-11
12”	SBS-12	SBU-12	CSBS-12	CSBU-12

STRAIGHT PENCIL –SMALL TIP PROBE 1/16

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered

Delrin Black body handle , Brass shaft or copper shaft (flexible shaft). Change letter B (brass) for C (copper)

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

For Example : MTSBSLM-3

NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example:

MTSBSTR-1

Probe length	**Shielded**	**Unshielded**
	1/16 Brass	1/16 Brass
1”	MTSBS-1	MTSBU-1
2”	MTSBS-2	MTSBU-2
3”	MTSBS-3	MTSBU-3
4”	MTSBS-4	MTSBU-4
5”	MTSBS-5	MTSBU-5
6”	MTSBS-6	MTSBU-6
7”	MTSBS-7	MTSBU-7
8”	MTSBS-8	MTSBU-8
9”	MTSBS-9	MTSBU-9
10”	MTSBS-10	MTSBU-10
11”	MTSBS-11	MTSBU-11
12”	MTSBS-12	MTSBU-12

RIGHT ANGLE TIP DROP 0.2”

Microdot connector

Triax connector

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered

Delrin Black body handle , Brass shaft or copper shaft (flexible shaft)

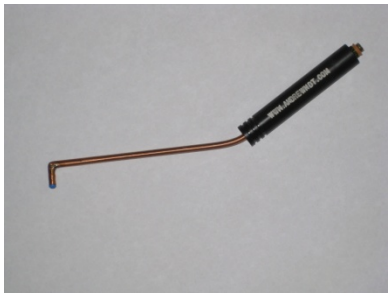
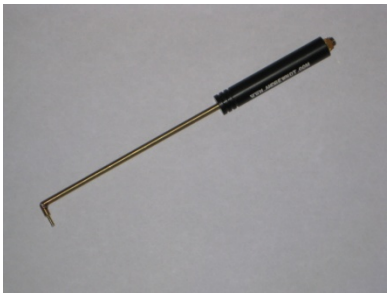
Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

Add Leter M after leter B or C for 1/16 tip

For Example : 90SBLM02-4. NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example: 90SBTR02-7

Probe Length inches	Shielded 1/8 Brass	Unshielded 1/8 Brass	Shielded 1/8 copper	Unshielded 1/8 copper
1”	90SB02-1	90UB02-1	90SC02-1	90UC02-1
2”	90SB02-2	90UB02-2	90SC02-2	90SC02-2
3”	90SB02-3	90UB02-3	90SC02-3	90SC02-3
4”	90SB02-4	90UB02-4	90SC02-4	90SC02-4
5”	90SB02-5	90UB02-5	90SC02-5	90SC02-5
6”	90SB02-6	90UB02-6	90SC02-6	90SC02-6
7”	90SB02-7	90UB02-7	90SC02-7	90SC02-7
8”	90SB02-8	90UB02-8	90SC02-8	90SC02-8
9”	90SB02-9	90UB02-9	90SC02-9	90SC02-9
10”	90SB02-10	90UB02-10	90SC02-10	90SC02-10
11”	90SB02-11	90UB02-11	90SC02-11	90SC02-11
12”	90SB02-12	90UB02-12	90SC02-12	90SC02-12

RIGHT ANGLE TIP DROP 0.5”

Lemo-00 connector Bend 30 degree shaft 1/6 Tip

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered .

Delrin Black body handle , Brass shaft or copper shaft (flexible shaft).

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

For Example : 90SBLM05-3

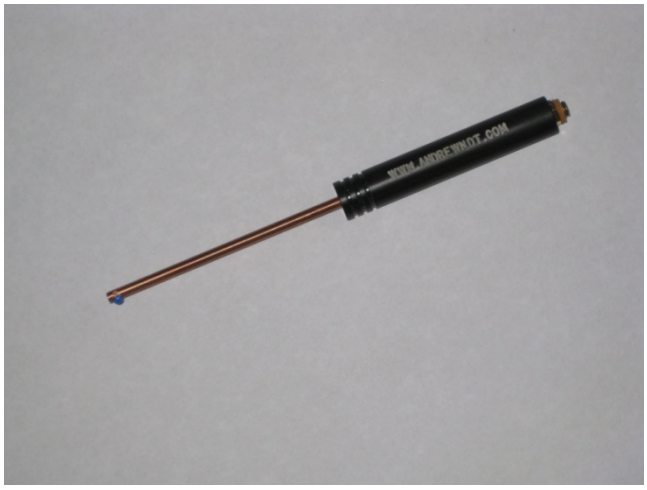
NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example:

90SBTR05-5. ADD LETTER B FOR BEND SHAFT AFTER DROP LENGTH : 90SCO5B-6

For Micro Tip 1/16. Add MT after 90 : For example : 90MTSBC05-6

Probe Length inches	**Shielded 1/8 Brass**	**Unshielded 1/8 Brass**	**Shielded 1/8 copper**	**Unshielded 1/8 copper**
1"	90SB05-1	90UB05-1	90SC05-1	90UC05-1
2"	90SB05-2	90UB05-2	90SC05-2	90UC05-1
3"	90SB05-3	90UB05-3	90SC05-3	90UC05-1
4"	90SB05-4	90UB05-4	90SC05-4	90SC05-4
5"	90SB05-5	90UB05-5	90SC05-5	90SC05-5
6"	90SB05-6	90UB05-6	90SC05-6	90SC05-6
7"	90SB05-7	90UB05-7	90SC05-7	90SC05-7
8"	90SB05-8	90UB05-8	90SC05-8	90SC05-8
9"	90SB05-9	90UB05-9	90SC05-9	90SC05-9
10"	90SB05-10	90UB05-10	90SC05-10	90SC05-10
11"	90SB05-11	90UB05-11	90SC05-11	90SC05-11
12"	90SB05-12	90UB05-12	90SC05-12	90SC05-12

RIGHT ANGLE TIP DROP 0.03”



Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered

Delrin Black body handle , Brass shaft or copper shaft (flexible shaft)

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

For Example : 90SBLM003-3

NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example:

90UCTR003-1

Probe Length inches	Shielded 1/8 Brass	Unshielded 1/8 Brass	Shielded 1/8 copper	Unshielded 1/8 copper
1"	90SB003-1	90UB003-1	90SC003-1	90UC003-1
2"	90SB003-2	90SB003-2	90SC003-2	90UC003-2
3"	90SB003-3	90SB003-3	90SC003-3	90UC003-3
4"	90SB003-4	90SB003-4	90SC003-4	90UC003-4
5"	90SB003-5	90SB003-5	90SC003-5	90UC003-5
6"	90SB003-6	90SB003-6	90SC003-6	90UC003-6
7"	90SB003-7	90SB003-7	90SC003-7	90UC003-7
8"	90SB003-8	90SB003-8	90SC003-8	90UC003-8
9"	90SB003-9	90SB003-9	90SC003-9	90UC003-9
10"	90SB003-10	90SB003-10	90SC003-10	90UC003-10
11"	90SB003-11	90SB003-11	90SC003-11	90UC003-11
12"	90SB003-12	90SB003-12	90SC003-12	90UC003-12

45 DEGREE CURVED TIP 0.5 & 0.3 DROP

1/16 Tip

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered . Delrin Black body handle , Brass shaft or copper shaft (flexible shaft)

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

For Example : 45SCCLM05-2

NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example:

45UCCTR05-1 . TO TIP DROP 0.3" : PN IS 45SBC03-2

For Micro Tip 1/16. Add MT after 45 : For example : 45MTSBC05-6

Probe Length inches	Shielded 1/8 Brass	Unshieled 1/8 Brass	Shielded 1/8 copper	Unshielded 1/8 copper
1"	45SBC05-1	45UBC05-1	45SCC05-1	45UCC05-1
2"	45SBC05-2	45SBC05-2	45SCC05-2	45UCC05-2
3"	45SBC05-3	45SBC05-3	45SCC05-3	45UCC05-3
4"	45SBC05-4	45SBC05-4	45SCC05-4	45UCC05-4
5"	45SBC05-5	45SBC05-5	45SCC05-5	45UCC05-5
6"	45SBC05-6	45SBC05-6	45SCC05-6	45UCC05-6
7"	45SBC05-7	45SBC05-7	45SCC05-7	45UCC05-7
8"	45SBC05-8	45SBC05-8	45SCC05-8	45UCC05-8
9"	45SBC05-9	45SBC05-9	45SCC05-9	45UCC05-9
10"	45SBC05-10	45SBC05-10	45SCC05-10	45UCC05-10
11"	45SBC05-11	45SBC05-11	45SCC05-11	45UCC05-11
12"	45SBC05-12	45SBC05-12	45SCC05-12	45UCC05-12

30 DEGREE CURVED TIP 0.5 DROP

Microdot or Triax connector, Absolute bridge mode. Frequency 50-500 KHZ, different frequency can be ordered . For flexible shaft (copper shaft change letter B (brass)for C (copper)

Delrin Black body handle , Brass shaft 1/8 OR 1/16 TIP

Option for Lemo 00 Coaxial connector is available to order. Insert LM after the end of letter .

For Example : 30SBCLM05-2

NOTE: For Triax connector with Balance coil : Insert: TR after the end of letter : For example:

30UBCTR05-1

Probe Length inches	**Shielded 1/8 Brass**	**Unshieled 1/8 Brass**	**Shielded 1/16 Brass**	**Unshielded 1/16 Brass**
1"	30SBC05-1	30UBC05-1	30MSBC05-1	30MUBC05-1
2"	30SBC05-2	30SBC05-2	30MSBC05-2	30MUBC05-2
3"	30SBC05-3	30SBC05-3	30MSBC05-3	30MUBC05-3
4"	30SBC05-4	30SBC05-4	30MSBC05-4	30MUBC05-4
5"	30SBC05-5	30SBC05-5	30MSBC05-5	30MUBC05-5
6"	30SBC05-6	30SBC05-6	30MSBC05-6	30MUBC05-6
7"	30SBC05-7	30SBC05-7	30MSBC05-7	30MUBC05-7
8"	30SBC05-8	30SBC05-8	30MSBC05-8	30MUBC05-8
9"	30SBC05-9	30SBC05-9	30MSBC05-9	30MUBC05-9

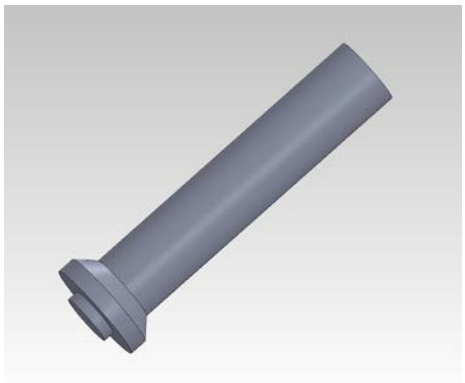
BLADE PROBES

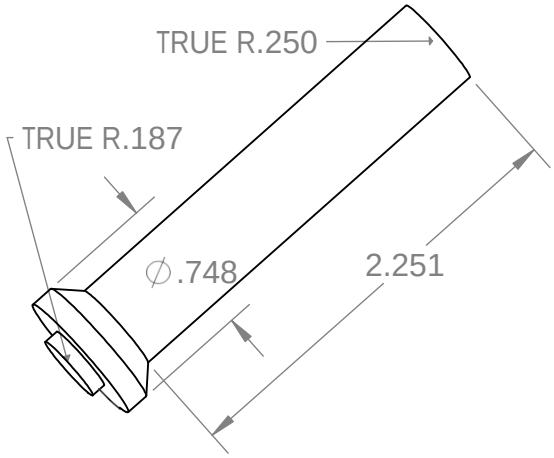
STANDARD BLADE PROBE IS MICRODOT CONNECTOR AND TRIAX WITH BALANCE COIL. FREQUENCY IS 50-500 KHZ. DIFFERENT FREQUENCY CAN BE REQUESTED FOR QUOTATION. MINIMUM THICKNESS FOR THE BLADE PROBE IS 0.045".

PN # FOR TRIAX CONNECTOR : INSERT TR AFTER THE LEETER FOR EXAMPLE : SBLTR-045-3

PN #	ANGLE	THICKNESS	LENGTH
SBL-045-1	STRAIGHT	0.045"	3"
SBL-045-2	STRAIGHT	0.045"	4"
SBL-045-3	STRAIGHT	0.045"	5"
SBL-060-1	STRAIGHT	0.060"	3"
SBL-060-2	STRAIGHT	0.060"	4"
SBL-060-3	STRAIGHT	0.060"	5"
45SBL-045-1	45 DEGREE	0.045"	3"
45SBL-045-1	45 DEGREE	0.045"	4"
45SBL-045-1	45 DEGREE	0.045"	5"
45SBL-060-1	45 DEGREE	0.060"	3"
45SBL-060-1	45 DEGREE	0.060"	4"
45SBL-060-1	45 DEGREE	0.060"	5"
90SBL-045-1	90 DEGREE	0.045"	3"
90SBL-045-2	90 DEGREE	0.045"	4"
90SBL-045-3	90 DEGREE	0.045"	5"
90SBL-060-1	90 DEGREE	0.060"	3"
90SBL-060-2	90 DEGREE	0.060"	4"
90SBL-060-3	90 DEGREE	0.060"	5"

SPRING LOAD PROBE





CONNECTOR IS TRIAX. Total length is 2.5 inches. Probe tip diameter is 0.375” O.D.

ABSOLUTE BRIDGE MODE

PN #	FREQUENCY
SPRL-1	0.1-2 KHZ
SPRL-2	1-5 KHZ
SPRL-3	1-10 KHZ
SPRL-4	5-30 KHZ
SPRL-5	10-50 KHZ
SPRL-6	30-100 KHZ
SPRL-7	50-250 KHZ
SPRL-8	100-500KHZ
SPRL-9	0.25- 1 MHZ

PENCIL PROBE FOR DEFECTORMETER

90 DEGREE , 25 DEGREE BEND, 0.5” DROP

90 DEGREE , 0.5” DROP

UNSHIELDED STRAIGHT

MICRO TIP 2.5mm DIAMETER SHIEDLED STRAIT

TIP 1/8” DIAMETER SHIEDLED STRAIT

PENCIL PROBE 90 DEGREE WITH 0.5” DROP AND 25 DEGREE BEND UPWARD

Probe Length Inches, 0.5” Drop	Shielded 1/8 Brass	Unshieled 1/8 Brass	Shielded 1/8 copper	Unshielded 1/8 copper
1"	90B25-SB05-1	90B25-UB05-1	90B25-SC05-1	90B25-UC05-1
2"	90B25-SB05-2	90B25-UB05-2	90B25-SC05-2	90B25-UC05-1
3"	90B25-SB05-3	90B25-UB05-3	90B25-SC05-3	90B25-UC05-1
4"	90B25-SB05-4	90B25-UB05-4	90B25-SC05-4	90B25-SC05-4
5"	90B25-SB05-5	90B25-UB05-5	90B25-SC05-5	90B25-SC05-5
6"	90B25-SB05-6	90B25-UB05-6	90B25-SC05-6	90B25-SC05-6
7"	90B25-SB05-7	90B25-UB05-7	90B25-SC05-7	90B25-SC05-7
8"	90B25-SB05-8	90B25-UB05-8	90B25-SC05-8	90B25-SC05-8
9"	90B25-SB05-9	90B25-UB05-9	90B25-SC05-9	90B25-SC05-9
10"	90B25-SB05-10	90B25-UB05-10	90B25-SC05-10	90B25-SC05-10
11"	90B25-SB05-11	90B25-UB05-11	90B25-SC05-11	90B25-SC05-11
12"	90B25-SB05-12	90B25-UB05-12	90B25-SC05-12	90B25-SC05-12

PENCIL PROBE 90 DEGREE WITH 0.5” DROP

Probe Length inches, 0.5" Drop	Shielded 1/8 Brass	Unshieled 1/8 Brass	Shielded 1/8 copper	Unshielded 1/8 copper
1"	90SBLM05-1	90UBLM05-1	90SCLM05-1	90UCLM05-1
2"	90SBLM05-2	90UBLM05-2	90SCLM05-2	90UCLM05-1
3"	90SBLM05-3	90UBLM05-3	90SCLM05-3	90UCLM05-1
4"	90SBLM05-4	90UBLM05-4	90SCLM05-4	90SCLM05-4
5"	90SBLM05-5	90UBLM05-5	90SCLM05-5	90SCLM05-5
6"	90SBLM05-6	90UBLM05-6	90SCLM05-6	90SCLM05-6
7"	90SBLM05-7	90UBLM05-7	90SLMC05-7	90SCLM05-7
8"	90SBLM05-8	90UBLM05-8	90SCLM05-8	90SCLM05-8
9"	90SBLM05-9	90UBLM05-9	90SCLM05-9	90SCLM05-9
10"	90SBLM05-10	90UBLM05-10	90SCLM05-10	90SCLM05-10
11"	90SBLM05-11	90UBLM05-11	90SCLM05-11	90SCLM05-11
12"	90SBLM05-12	90UBLM05-12	90SCLM05-12	90SCLM05-12

PENCIL PROBE STRAIT

Probe Length inches	Shielded 1/8 Brass	UnShielded 1/8 Brass	Shielded 1/8 copper shaft (flexible shaft)	UnShielded COPPER SHAFT
1"	SBS-LM1	SBU-LM1	CSBS-LM1	CSBU-LM1

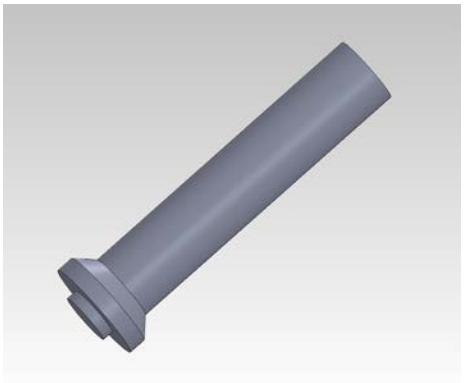
2"	SBS-LM2	SBU-LM2	CSBS-LM2	CSBU-LM2
3"	SBS-LM3	SBU-LM3	CSBS-LM3	CSBU-LM3
4"	SBS-LM4	SBU-LM4	CSBS-LM4	CSBU-LM4
5"	SBS-LM5	SBU-LM5	CSBS-LM5	CSBU-LM5
6"	SBS-LM6	SBU-LM6	CSBS-LM6	CSBU-LM6
7"	SBS-LM7	SBU-LM7	CSBS-LM7	CSBU-LM7
8"	SBS-LM8	SBU-LM8	CSBS-LM8	CSBU-LM8
9"	SBS-LM9	SBU-LM9	CSBS-LM9	CSBU-LM9
10"	SBS-LM10	SBU-LM10	CSBS-LM10	CSBU-LM10
11"	SBS-LM11	SBU-LM11	CSBS-LM11	CSBU-LM11
12"	SBS-LM12	SBU-LM12	CSBS-LM12	CSBU-LM12

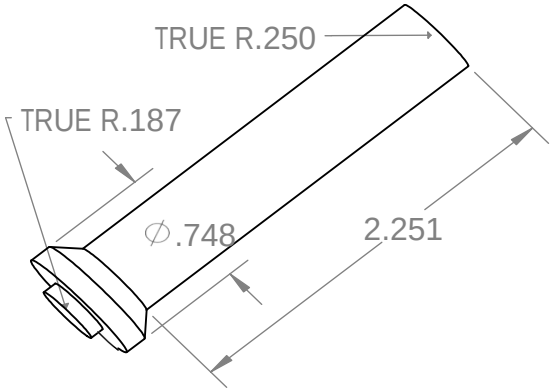
PENCIL PROBE STRAIT MICRO TIP 2.5 mm

Probe length	Shielded 2.5 mm Brass	Unshielded 2.5 mm Brass
1”	MTSBS-LM1	MTSBU-LM1
2”	MTSBS-LM2	MTSBU-LM2
3”	MTSBS-LM3	MTSBU-LM3
4”	MTSBS-LM4	MTSBU-LM4
5”	MTSBS-LM5	MTSBU-LM5
6”	MTSBS-LM6	MTSBU-LM6
7”	MTSBS-LM7	MTSBU-LM7
8”	MTSBS-LM8	MTSBU-LM8
9”	MTSBS-LM9	MTSBU-LM9
10”	MTSBS-LM10	MTSBU-LM10
11”	MTSBS-LM11	MTSBU-LM11
12”	MTSBS-LM12	MTSBU-LM12

CABLE FOR DEFECTORMETER PN : CDF-LM00

PENCIL SPRING LOADED PROBE FOR DEFECTORMETER

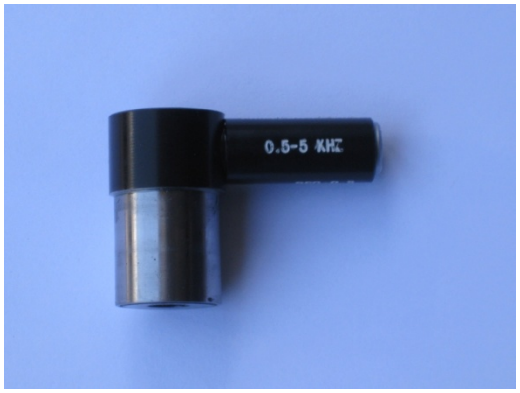




SPRING LOADED PENCIL PROBE: PROBE TIP IS 1/8 INCH X 3” LENGTH, CONNECTOR IS LEMO 00

DESCRIPTION	**PN #**
UNSHIELDED, NFE	USPR-NFE
UNSHIELDED, FE	USPR-FE
UNSHIELDED, AUST & TI	USPT-AU-TI
SHIELDED, NFE	SPR-NFE
SHIELDED, FE	SPR-FE
SHIELDED, AUST & TI	SPT-AU-TI

SPOT PROBE BRIDGE



CONNECTOR IS TRIAX

BLAK DELRIN BODY AND SOFTSTEEL POLISH SHIELDED

Frequency	O.D.	CASE		Frequency	O.D.	CASE	
50-500 HZ	0.280"	0.375"	BSPO-1	0.5-5 KHZ	0.400"	0.480"	BSPOM-1
50-500 HZ	0.450"	0.580"	BSPO-2	0.5-5 KHZ	0.500"	0.580"	BSPOM-2
50-500 HZ	0.800"	0.900"	BSPO-3	1-10 KHZ	0.280"	0.375"	BSPOM-3
50-500 HZ	0.900"	1.00"	BSPO-4	1-10 KHZ	0.400"	0.480"	BSPOM-4
50-500 HZ	1.00"	1.100"	BSPO-5	1-10 KHZ	0.500"	0.580"	BSPOM-5
0.1-2 KHZ	0.370"	0.400"	BSPO-6	3-30 KHZ	0.375"	0.440"	BSPOM-6
0.1-2 KHZ	0.650"	0.740"	BSPO-7	3-30 KHZ	0.425"	0.500"	BSPOM-7
0.1-2 KHZ	1.00"	1.10"	BSPO-8	3-30 KHZ	0.500"	0.560"	BSPOM-8
0.2-4 KHZ	0.250"	0.312"	BSPO-9	5-35 KHZ	0.300"	0.350"	BSPOM-9
0.2-4 KHZ	0.312"	0.375"	BSPO-10	5-35 KHZ	0.490"	0.560"	BSPOM-10
0.2-4 KHZ	0.480"	0.550"	BSPO-11	5-35 KHZ	0.900"	0.960"	BSPOM-11
0.3-5 KHZ	0.600"	0.680"	BSPO-12	10-50 KHZ	0.490"	0.550"	BSPOM-12
0.5-5 KHZ	0.280"	0.360"	BSPO-13	10-50 KHZ	0.500"	0.560"	BSPOM-13

RING PROBE BRIDGE

CONNECTOR IS TRIAX

BLACK DELRIN BODY AND SOFTSTEEL POLISH SHIELDED

Frequency	I.D.	O.D.	PN	Frequency	I.D.	O.D.	PN
50-500 HZ	0.350"	0.750"	RSPO-1	0.3-5 KHZ	0.300"	0.780"	RSPOM-1
50-500 HZ	0.400"	0.900"	RSPO-2	0.3-5 KHZ	0.325"	0.680"	RSPOM-2
50-500 HZ	0.425"	0.900"	RSPO-3	0.3-5 KHZ	0.400"	0.750"	RSPOM-3
50-500 HZ	0.500"	0.980"	RSPO-4	0.3-5 KHZ	0.500"	1.00"	RSPOM-4
50-500 HZ	0.625"	0.990"	RSPO-5	0.5-10 KHZ	0.255"	0.650"	RSPOM-5
50-500 HZ	0.650"	1.065"	RSPO-6	0.5-10 KHZ	0.300"	0.750"	RSPOM-6
50-500 HZ	0.700"	1.300"	RSPO-7	0.5-10 KHZ	0.312"	0.680"	RSPOM-7
50-500 HZ	0.50"	1.280"	RSPO-8	1-15 KHZ	0.160"	0.375"	RSPOM-8
50-500 HZ	0.800"	1.250"	RSPO-9	1-15 KHZ	0.300"	0.750"	RSPOM-9
50-500 HZ	1.00"	1.400"	RSPO-10	1-15 KHZ	0.350"	0.700"	RSPOM-10
0.2-4 KHZ	0.400"	0.880"	RSPO-11	1-15 KHZ	0.400"	0.850"	RSPOM-11
0.3-5 KHZ	0.500"	1.05"	RSPO-12	3-25 KHZ	0.255"	0.650"	RSPOM-12
0.5-5 KHZ	0.200"	0.600"	RSPO-13	3-25 KHZ	0.315"	0.680"	RSPOM-13
				3-25 KHZ	0.325"	0.600"	RSPOM-14

SPOT PROBE REFLECTANCE

CONNECTOR IS TRIAX

BLACK DELRIN BODY AND SOFTSTEEL POLISH SHIELDED

Frequency	O.D	CASE	PN	Frequency	O.D.	CASE	PN
0.05-3 KHZ	0.312"	0.375"	RFSPO-1	0.2-10 KHZ	0.500"	0.575"	RFSPOM-1
0.05-3 KHZ	0.600"	0.670"	RFSPO-2	0.2-10 KHZ	0.610"	0.700"	RFSPOM-2
0.05-3 KHZ	0.700"	0.780"	RFSPO-3	0.5-15 KHZ	0.500"	0.560"	RFSPOM-3
0.05-3 KHZ	0.800"	0.880"	RFSPO-4	0.5-15 KHZ	0.312"	0.375"	RFSPOM-4
0.05-3 KHZ	0.925"	1.00"	RFSPO-5	0.5-15 KHZ	0.425"	0.495"	RFSPOM-5
0.05-3 KHZ	1.00"	1.08"	RFSPO-6	0.5-15 KHZ	0.460"	0.500"	RFSPOM-6
0.05-3 KHZ	1.06"	1.12"	RFSPO-7	1-20 KHZ	0.300"	0.360"	RFSPOM-7
0.05-3 KHZ	1.75"	1.85"	RFSPO-8	1-20 KHZ	0.350"	0.420"	RFSPOM-8
0.1-5 KHZ	.440"	0.520"	RFSPO-9	2-50 KHZ	0.300"	0.380"	RFSPOM-9
0.1-5 KHZ	0.800"	0.880"	RFSPO-10	2-50 KHZ	0.800"	0.865"	RFSPOM-10
0.1-5 KHZ	0.310"	0.360"	RFSPO-11	4-80 KHZ	0.300"	0.380"	RFSPOM-11
0.2-10 KHZ	0.312"	0.375"	RFSPO-12	5-100 KHZ	0.575"	0.660"	RFSPOM-12
0.2-10 KHZ	0.390"	0.450"	RFSPO-13	5-100 KHZ	1.05"	1.13"	RFSPOM-13

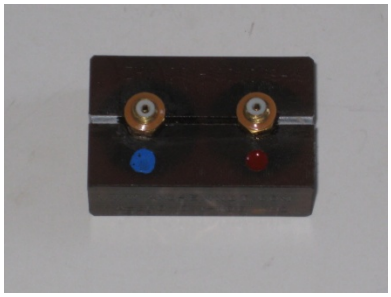
RING PROBE REFLECTANCE

CONNECTOR IS TRIAX

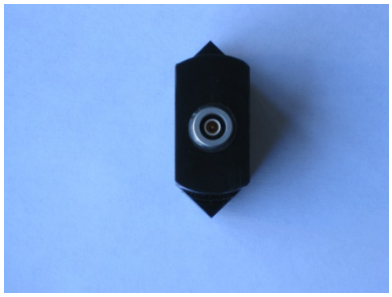
BLACK DELRIN BODY AND SOFTSTEEL POLISH SHIELDED

Frequency	I.D.	O.D.	PN	Frequency	I.D.	O.D.	PN
0.05-3 KHZ	0.400"	0.800"	RFRPO-1	0.1-5 KHZ	0.250"	0.600"	RFRPOM-1
0.05-3 KHZ	0.500"	1.00"	RFRPO-2	0.1-5 KHZ	0.312"	0.790"	RFRPOM-2
0.05-3 KHZ	0.600"	1.16"	RFRPO-3	0.1-5 KHZ	0.430"	0.750"	RFRPOM-3
0.05-3 KHZ	0.700"	1.30"	RFRPO-4	0.1-5 KHZ	0.550"	1.05"	RFRPOM-4
0.05-3 KHZ	0.800"	1.40"	RFRPO-5	0.1-5 KHZ	0.560"	1.09"	RFRPOM-5
0.05-3 KHZ	0.900"	1.50"	RFRPO-6	0.2-10 KHZ	0.200"	0.605"	RFRPOM-6
0.05-3 KHZ	1.00"	1.60"	RFRPO-7	0.2-10 KHZ	0.300"	0.815"	RFRPOM-7
0.08-4 KHZ	0.350"	0.750"	RFRPO-8	0.3-10 KHZ	0.425"	0.750"	RFRPOM-8
0.08-4 KHZ	0.500"	1.00"	RFRPO-9	0.5-20 KHZ	0.250"	0.650"	RFRPOM-9
0.08-4 KHZ	0.680"	1.00"	RFRPO-10	0.5-20 KHZ	0.350"	0.700"	RFRPOM-10
0.08-4 KHZ	0.800"	1.50"	RFRPO-11	0.5-20 KHZ	0.335"	0.600"	RFRPOM-11
0.08-4 KHZ	0.860"	1.25"	RFRPO-12	5-80 KHZ	0.300"	0.600"	RFRPOM-12
0.08-4 KHZ	1.10"	1.74"	RFRPO-13	5-80 KHZ	0.450"	0.900"	RFRPOM-13
0.08-4 KHZ	1.33"	1.87"	RFRPO-14	10-100 KHZ	0.345"	0.550"	RFRPOM-14

SLIDING PROBES

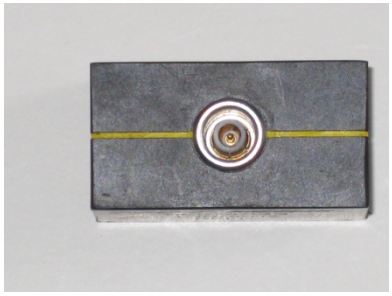


Dual Microdot connector : Type A



Triax connector : Type B

Triax connector : Type C

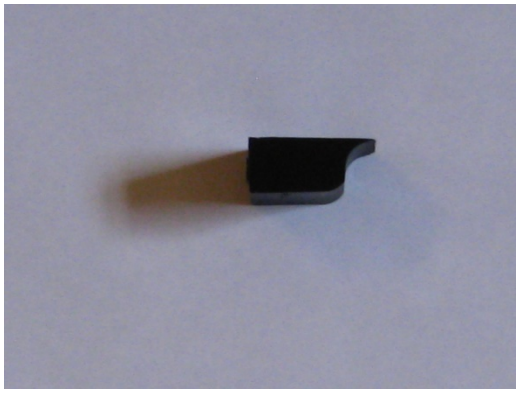


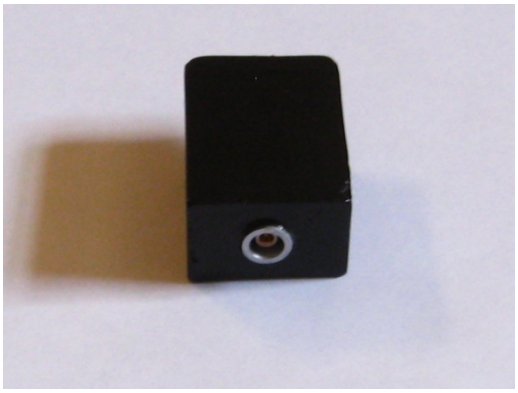
Triax connector : Type D

CONNECTOR IS DUAL MICRODOT OR TRIAX. DIFFERENT FREQUENCY , SPACING BETWEEN PICK UP AND DRIVER COIL CAN BE MADE TO YOUR REQUEST. ADD TYPE AFTER LETTER C

Frequency	**Dimension**			**Connector**	**PART #**
	Height	Width	Length		
	0.600"	1.00"	1.600"	Dual Microdot	Type A
	1.00"	0.800"	1.500"	Triax connector	Type B,C and D
0.1-4 KHZ				Dual Microdot	SLPMC-01
1-15 KHZ				Dual Microdot	SLPMC-02
2-20 KHZ				Dual Microdot	SLPMC-03
5-30 KHZ				Dual Microdot	SLPMC-04
1-100 KHZ				Dual Microdot	SLPMC-05
5-100 KHZ				Triax connector	SLPTR-05
0.1-5 KHZ				Triax connector	SLPTR-01
0.5-10 KHZ				Triax connector	SLPTR-02
1-20 KHZ				Triax connector	SLPTR-03
3-50 KHZ				Triax connector	SLPTR-04

WHEEL PROBE





ANDREW NDT ENGINEERING CORPORATION CAN SUPPLY WHEEL PROBES AND WHEEL STANDARDS FOR ALL AIRCRAFT WITH APPROPRIATE DRAWING. IF YOU DO NOT HAVE A DRAWING, WE NEED A PORTION OF THE WHEEL FOR MANUFACTURER OF WHEEL PROBE AND /OR REFERENCE STANDARD

CABLES AND ADAPTERS

PHASEC-2OR 3- DUAL MICRODOT

PHASEC-2OR 3- TRIAX

PHASEC LOCATOR 2

PHASEC 1.1, AV-10- TRIAX

NORTEC-500/600- DUAL MICRODOT

NORTEC-500/600 – TRIAX

MIZ-21 SERIES- TRIAX

LEMO-1S-LEMO-00

DEFECTOSCOPE- TRIAX

LEMO-00-MICRODOT

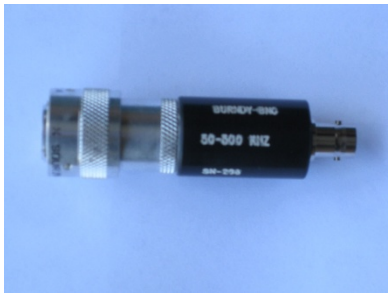
LEMO-00 – BNC

LEMO-00-LEMO-00

BNC-MICRODOT

LEMO-1S-MICRODOT

PHASEC-2OR 3 - LEMO-1B-4



NDT 19 SERIES – BNC ADAPTER

NORTEC 500/600 SERIES- BNC

MIZ 27- 4 PIN FEMALE AMPHANOL

MIZ-21 SERIES – BNC

PHASEC 2 OR 3 - BNC

NORTEC 500 OR 600 – 4 PIN FEMALE AMPHANOL CONNECTOR

DEFECTORMETER CABLE

NORETEC 500 OR 600 – 4 PIN FEMALE AMPHANOL CONNECTOR

PHASEC 2 AND 3- 4 PIN AMPHANOL CONNECTOR

IF YOU DO NOT SEE WHAT YOU NEED, YOU MAY CONTACT US AT 408-710-0342 OR SEND EMAIL TO

CUONGLE@ANDREWNDT.COM

	PN #		
Phasec 2 or 3 dual Microdot	LM-16-Dual-Mic		REFLECTANCE
Phasec 2 or 3 to Triax	LM-12-Triax	BRIDGE	OR REFLECTANCE
Lemo-1 B- Microdot	LM-1B-Mic	BRIDGE	
Phasec 1.1, AV-10, AV100	JG-5-Triax	BRIDGE	OR REFLECTANCE
Nortec 500 or 600 Dual Microdot	LM-16-Dual- Mic		REFLECTANCE
Nortec 500 or 600 - Triax	LM-16 - Triax	BRIDGE	OR REFLECTANCE
Miz 21 seriec to Triax	Fischer - 4- Triax	BRIDGE	
Lemo-1S- Lemo 00	LM-1S-LM 00		
Defectesope-Triax	Amp-15-Triax	BRIDGE/	REFLECTANCE
Lemo 00 - Microdot	LM 00-Mic		
Lemo 00 - BNC	LM 00-BNC		
Lemo 00- Lemo 00	LM 00-LM-00		
BNC- Microdot	BNC-Mic		
Lemo 1S- Microdot	LM 1S-Mic		
Phasec 2 or 3 - Lemo- 1B-4	LM 12-LM 1B-4	BRIDGE	OR REFLECTANCE
NDT 19, 24 series-BNC 50-500 KHZ	BURNDY-5-BNC	BRIDGE	
Phasec 2 or 3 -BNC , 50-500 KHZ	LM 12-BNC	BRIDGE	
Nortec 500 or 600 -4 PIN AMPHANOL	LM 16-AMPH-4	BRIDGE	CABLE
Defectormeter cable	CDF-LM00		
Nortec 500 or 600 -4 PIN AMPHANOL	LM 16-AMP-4	ADAPTER	

PROBE KIT

MANUAL BOLT HOLE KIT

PENCIL PROBE KIT

UNIVERSAL ROTARY BOLT HOLE KIT

WITH STANDARD

MANUAL BOLT HOLE KIT

PN #	CONTENT		PN #	CONTENT
KTBPS-1	29 MANUAL BOLT HOLE PROBES SIZE 1/8 -1.0", 1/32 INCREMENT	Shielded probe Microdot connector	KTRBHP-1	29 SBHU OR UBHU PROBES SIZE 1/8 -1.0", 1/32 INCREMENT
KTBPU-1	29 MANUAL BOLT HOLE PROBES SIZE 1/8 -1.0", 1/32 INCREMENT	Ushielded probe Microdot connector		
KTBPS-2	21 MANUAL BOLT HOLE PROBES SIZE 1/8 - 3/4 INCREMENT	Shielded probe Microdot connector	KTRBHP-2	21 SBHU OR UBHU PROBES SIZE 1/8 -3/4", 1/32 INCREMENT
KTBPU-2	21 MANUAL BOLT HOLE PROBES SIZE 1/8 - 3/4 INCREMENT	Unshielded probe Microdot connector	KTLFP-1	BSPO-1, BSPO-6, BSMO-8, RSPOM-1 RSPO-3, RSPO-12
KTPENP-1	12 PENCIL PROBES DIFFERENT TYPE AND I ADAPTER ADAPTER TO FIT YOUR INSTRUMENT	Shielded probe Microdot connector		

EDDY CURRENT DETACHABLE PROBES BOBBIN

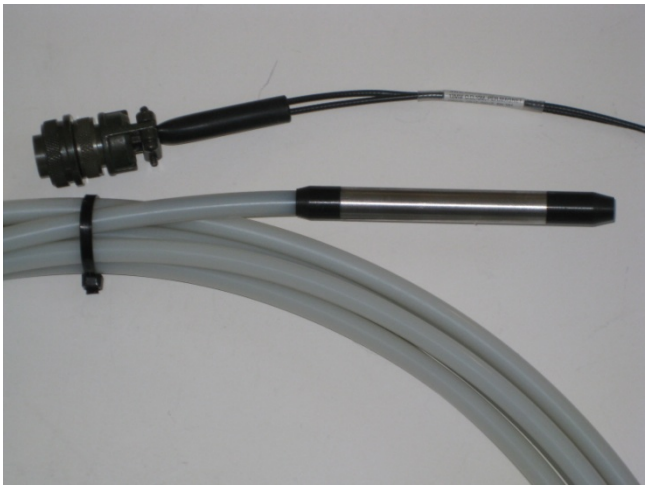
Insert # for Probe length and frequency For Example : DTSBB-0.460-50-100KHZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 10-100 KHZ

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL, 4 PIN FISCHER FOR MIZ 21 SERIES

NOTE: STAINLESS STEEL HOUSING IS ALSO AVAILABLE TO ORDER. ADD LETTER SS AFTER PN: FOR EXAMPLE : DTSBB-0.460-50-100KHZ-SS

BOBBIN STRAIGHT PROBE PN # DETACHABLE PROBE	PROBE O.D.	PROBE SHAFT
DTSBB-0.390	0.390"	3/8 POLY
DTSBB-0.410	0.410"	3/8 POLY
DTSBB-0.460	0.460"	3/8 POLY
DTSBB-0.470	0.470"	3/8 POLY
DTSBB-0.480	0.480"	3/8 POLY
DTSBB-0.490	0.490"	3/8 POLY
DTSBB-0.500	0.500"	3/8 POLY
DTSBB-0.510	0.510"	3/8 POLY
DTSBB-0.560	0.560"	3/8 POLY
DTSBB-0.590	0.590"	3/8 POLY
DTSBB-0.620	0.620"	3/8 POLY
DTSBB-0750	0.750"	3/8 POLY

EDDY CURRENT PROBES FOR TUBES BOBBIN STRAIGHT STAINLESS STEEL HOUSING

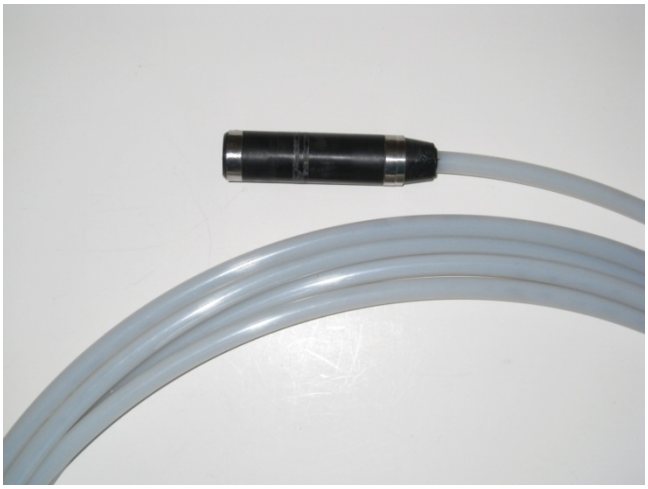


Insert # for Probe length and frequency For Example : SBBP-0.460-50-100KHZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 10-100 KHZ

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL, 4 PIN FISCHER FOR MIZ 21 SERIES.

BOBBIN STRAIGHT PROBE PN # STAINLESS STEEL HOUSING	**PROBE O.D.**	**PROBE SHAFT**
SBBP-0.390	0.390"	3/8 POLY
SBBP-0.410	0.410"	3/8 POLY
SBBP-0.460	0.460"	3/8 POLY
SBBP-0.470	0.470"	3/8 POLY
SBBP-0.480	0.480"	3/8 POLY
SBBP-0.490	0.490"	3/8 POLY
SBBP-0.500	0.500"	3/8 POLY
SBBP-0.510	0.510"	3/8 POLY
SBBP-0.560	0.560"	3/8 POLY
SBBP-0.590	0.590"	3/8 POLY
SBBP-0.620	0.620"	3/8 POLY
SBBP-0.630	0.630"	3/8 POLY

EDDY CURRENT PROBES FOR TUBES BOBBIN STRAIGHT DELRIN HOUSING



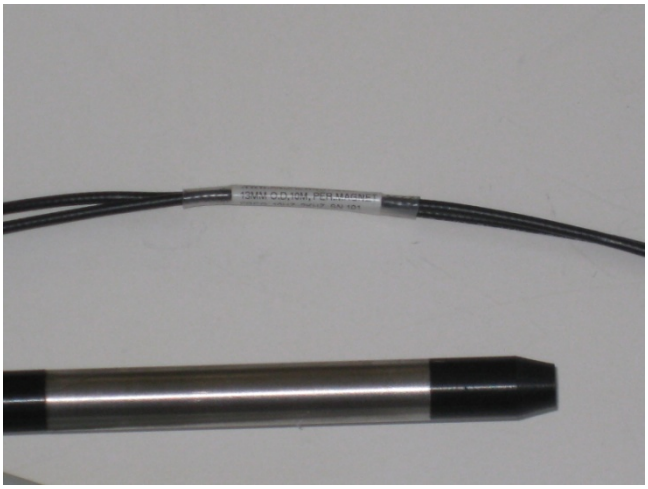
FLAT HEAD BLCK DELRIN HOUSING

Insert # for Probe length and frequency For Example : FDBBP-0.410-50-100KHZ. This is a 0.410" O.D. , 50 feet in length and operating frequency from 10-100 KHZ

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL, 4 PIN FISCHER FOR MIZ 21 SERIES.

BOBBIN STRAIGHT PROBE PN # FLAT HEAD DELRIN HOUSING	**PROBE O.D.**	**PROBE SHAFT**
FDBBP-0.390	0.390"	3/8 POLY
FDBBP-0.410	0.410"	3/8 POLY
FDBBP-0.460	0.460"	3/8 POLY
FDBBP-0.470	0.470"	3/8 POLY
FDBBP-0.480	0.480"	3/8 POLY
FDBBP-0.490	0.490"	3/8 POLY
FDBBP-0.500	0.500"	3/8 POLY
FDBBP-0.510	0.510"	3/8 POLY
FDBBP-0.560	0.560"	3/8 POLY
FDBBP-0.590	0.590"	3/8 POLY
FDBBP-0.620	0.620"	3/8 POLY
FDBBP-0.630	0.630"	3/8 POLY

EDDY CURRENT PROBES FOR TUBES BOBBIN STRAIGHT WITH MAGNETIC SATURATION



Insert # for Probe length and frequency For Example : PMSBB-0.460-50-100KHZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 10-100 KHZ

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL, 4 PIN FISCHER FOR MIZ 21 SERIES.

BOBBIN STRAIGHT PROBE PN # MAGNETIC SATURATION	**PROBE O.D.**	**PROBE SHAFT**
PMSBB-0.390	0.390"	3/8 POLY
PMSBB-0.410	0.410"	3/8 POLY
PMSBB-0.460	0.460"	3/8 POLY
PMSBB-0.470	0.470"	3/8 POLY
PMSBB-0.480	0.480"	3/8 POLY
PMSBB-0.490	0.490"	3/8 POLY
PMSBB-0.500	0.500"	3/8 POLY
PMSBB-0.510	0.510"	3/8 POLY
PMSBB-0.560	0.560"	3/8 POLY
PMSBB-0.590	0.590"	3/8 POLY
PMSBB-0.620	0.620"	3/8 POLY
PMSBB-0.630	0.630"	3/8 POLY

EDDY CURRENT PROBES BOBBIN STRAIGHT FOR AIR CONDITIONING

Insert # for Probe length and frequency For Example : ACSBB-0.460-50-100KHZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 10-100 KHZ

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL

BOBBIN STRAIGHT PROBE PN # FOR AIR CONDITIONING	**PROBE O.D.**	**PROBE SHAFT**
ACSBB-0.390	0.390"	3/8 POLY
ACSBB-0.410	0.410"	3/8 POLY
ACSBB-0.460	0.460"	3/8 POLY
ACSBB-0.470	0.470"	3/8 POLY
ACSBB-0.480	0.480"	3/8 POLY
ACSBB-0.490	0.490"	3/8 POLY
ACSBB-0.500	0.500"	3/8 POLY
ACSBB-0.510	0.510"	3/8 POLY
ACSBB-0.560	0.560"	3/8 POLY
ACSBB-0.590	0.590"	3/8 POLY
ACSBB-0.620	0.620"	3/8 POLY
ACSBB-0.630	0.630"	3/8 POLY

EDDY CURRENT PROBES FLEXIBLE BOBBIN

TYPE A

TYPE B

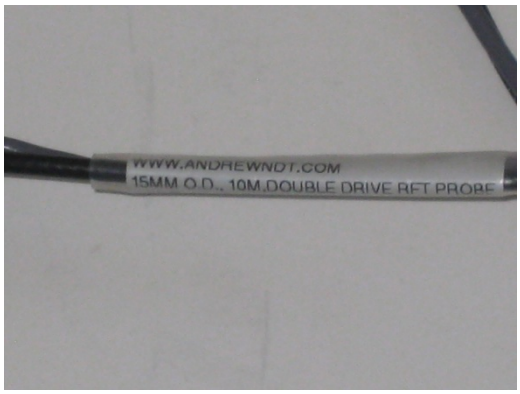
Insert # for Probe length and frequency For Example : AFXSBB-0.460-50-100KHZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 10-100 KHZ. CHANGE LETTER A TO LETTER B TO ORDER TYPE B PROBE

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 4 AND 36 PIN MALE AMPHANOL . DIFFERENT CONNECTOR CAN BE REQUESTED SUCH AS : LEMO-2B 12 PIN MALE, LEMO-2B-16 PIN, 12 PIN MALE AMPHANOL, 18 PIN MALE AMPHANOL, 19 PIN MALE AMPHANOL, 4 PIN FISCHER FOR MIZ 21 SERIES.

BOBBIN PROBE PN # FLEXIBLE PROBE	**PROBE O.D.**	**PROBE SHAFT**
AFXSBB-0.390	0.390"	3/8 POLY
AFXSBB-0.410	0.410"	3/8 POLY
AFXSBB-0.460	0.460"	3/8 POLY
AFXSBB-0.470	0.470"	3/8 POLY
AFXSBB-0.480	0.480"	3/8 POLY
AFXSBB-0.490	0.490"	3/8 POLY
AFXSBB-0.500	0.500"	3/8 POLY
AFXSBB-0.510	0.510"	3/8 POLY
AFXSBB-0.560	0.560"	3/8 POLY
AFXSBB-0.590	0.590"	3/8 POLY
AFXSBB-0.620	0.620"	3/8 POLY
AFXSBB-0.630	0.630"	3/8 POLY

EDDY CURRENT PROBES

RFT

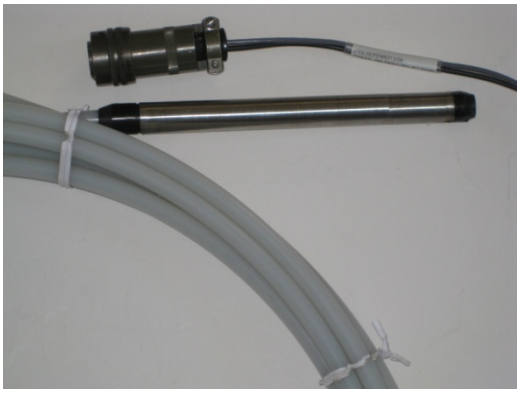


Insert # for Probe length and frequency For Example : DRFT-0.460-50-100-500 HZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 100-500 HZ, WITH DUAL DRIVER. STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 6 AND 3 PIN MALE AMPHANOL, OR CONNECTOR TO FIT TO YOUR EDDY CURRENT EQUIPMENT WHICH SUPPORTS RFT MODE.

PROBE PN # RFT PROBE FOR DUAL DRIVER	**PROBE O.D.**	**PROBE SHAFT**	**PN # FOR SINGLE DRIVER**		
DRFT-0.390	0.390"	3/8 POLY	ARFT-0.390	0.390"	3/8 POLY
DRFT-0.410	0.410"	3/8 POLY	ARFT-0.410	0.410"	3/8 POLY
DRFT-0.460	0.460"	3/8 POLY	ARFT-0.460	0.460"	3/8 POLY
DRFT-0.470	0.470"	3/8 POLY	ARFT-0.470	0.470"	3/8 POLY
DRFT-0.480	0.480"	3/8 POLY	ARFT-0.480	0.480"	3/8 POLY
DRFT-0.490	0.490"	3/8 POLY	ARFT-0.490	0.490"	3/8 POLY
DRFT-0.500	0.500"	3/8 POLY	ARFT-0.500	0.500"	3/8 POLY
DRFT-0.510	0.510"	3/8 POLY	ARFT-0.510	0.510"	3/8 POLY
DRFT-0.560	0.560"	3/8 POLY	ARFT-0.560	0.560"	3/8 POLY
DRFT-0.590	0.590"	3/8 POLY	ARFT-0.590	0.590"	3/8 POLY
DRFT-0.620	0.620"	3/8 POLY	DRFT-0.620	0.620"	3/8 POLY
DRFT-0750	0.750"	3/8 POLY	DRFT-0750	0.750"	3/8 POLY

EDDY CURRENT PROBES

NFT

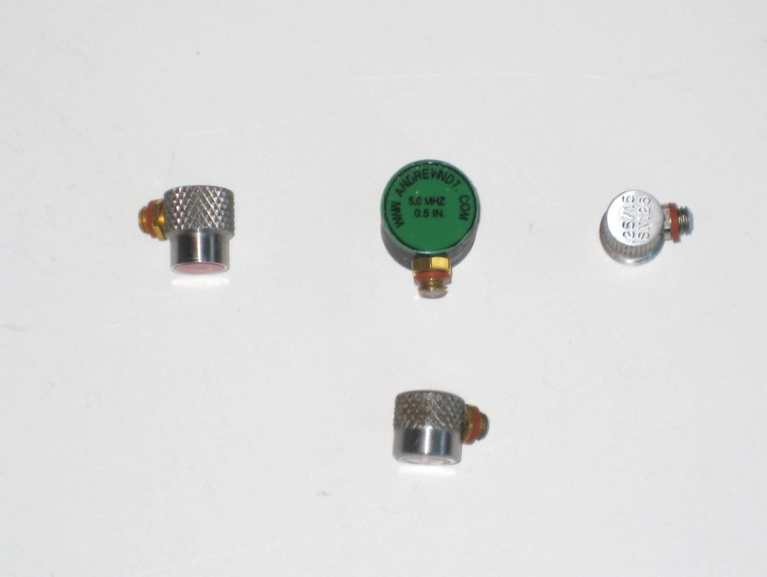


Insert # for Probe length and frequency For Example : DNFT-0.460-50-100-500 HZ. This is a 0.460" O.D. , 50 feet in length and operating frequency from 100-500 HZ, WITH DUAL DRIVER.

STANDARD PROBE SHAFT IS 3/8" POLY, 5/16" AND ½". STANDARD CONNECTOR IS 6 AND 3 PIN MALE AMPHANOL, OR CONNECTOR TO FIT TO YOUR EDDY CURRENT EQUIPMENT WHICH SUPPORTS RFT MODE.

PROBE PN # NFT PROBE FOR DUAL DRIVER	**PROBE O.D.**	**PROBE SHAFT**	**PN # FOR SINGLE DRIVER**		
DNFT-0.390	0.390"	3/8 POLY	ANFT-0.390	0.390"	3/8 POLY
DNFT-0.410	0.410"	3/8 POLY	ANFT-0.410	0.410"	3/8 POLY
DNFT-0.460	0.460"	3/8 POLY	ANFT-0.460	0.460"	3/8 POLY
DNFT-0.470	0.470"	3/8 POLY	ANFT-0.470	0.470"	3/8 POLY
DNFT-0.480	0.480"	3/8 POLY	ANFT-0.480	0.480"	3/8 POLY
DNFT-0.490	0.490"	3/8 POLY	ANFT-0.490	0.490"	3/8 POLY
DNFT-0.500	0.500"	3/8 POLY	ANFT-0.500	0.500"	3/8 POLY
DNFT-0.510	0.510"	3/8 POLY	ANFT-0.510	0.510"	3/8 POLY
DNFT-0.560	0.560"	3/8 POLY	ANFT-0.560	0.560"	3/8 POLY
DNFT-0.590	0.590"	3/8 POLY	ANFT-0.590	0.590"	3/8 POLY
DNFT-0.620	0.620"	3/8 POLY	DNFT-0.620	0.620"	3/8 POLY
DNFT-0750	0.750"	3/8 POLY	DNFT-0750	0.750"	3/8 POLY

STRAIGHT BEAM



FREQUENCY	ELEMENT SIZE	DIMENSION DIAMETER	HEIGHT	PN # SIDE MOUNT	PN # TOP MOUNT
1 MHZ	0.250"	0.375"	0.500"	SBD-1-1	SBT-1-1
1 MHZ	0.370"	0.500"	0.500"	SBD-1-2	SBT-1-2
1 MHZ	0.500"	0.625"	0.650"	SBD-1-3	SBT-1-3
1 MHZ	0.750"	0.875"	1.00"	SBD-1-3	SBT-1-3
1 MHZ	1.000"	1.15"	1.25"	SBD-1-4	SBT-1-4
2.25 MHZ	0.250"	0.375"	0.500"	SBD-2.25-1	SBT-2.25-1
2.25 MHZ	0.310"	0.450"	0.500"	SBD-2.25-2	SBT-2.25-2
2.25 MHZ	0.370"	0.500"	0.500"	SBD-2.25-3	SBT-2.25-3
2.25 MHZ	0.500"	0.625"	0.650"	SBD-2.25-4	SBT-2.25-4
2.25 MHZ	0.750"	0.875"	1.00"	SBD-2.25-5	SBT-2.25-5
2.25 MHZ	1.00"	1.125"	1.25"	SBD-2.25-6	SBT-2.25-6
2.25 MHZ	1.125"	1.25"	1.375"	SBD-2.25-7	SBT-2.25-7
5 MHZ	0.187"	0.250"	0.300"	SBD-5-1	SBT-5-1
5 MHZ	0.187"	0.250"	0.500"	SBD-5-2	SBT-5-2
5 MHZ	0.250"	0.312"	0.500"	SBD-5-3	SBT-5-3
5 MHZ	0.250"	0.375"	0.400"	SBD-5-4	SBT-5-4
5 MHZ	0.250"	0.375"	0.500"	SBD-5-5	SBT-5-5
5 MHZ	0.250"	0.375"	0.600"	SBD-5-6	SBT-5-6
5 MHZ	0.250"	0.375"	0.700"	SBD-5-7	SBT-5-7

	ELEMENT SIZE	DIMENTION DIAMETER	HEIGHT	TOP MOUNT	SIDE MOUNT
5 MHZ	0.250"	0.375"	0.400"	SBD-5-8	SBT-5-8
5 MHZ	0.312"	0.375"	0.500"	SBD-5-9	SBT-5-9
5 MHZ	0.312"	0.375"	0.600"	SBD-5-11	SBT-5-11
5 MHZ	0.375"	0.500"	0.625"	SBD-5-12	SBT-5-12
5 MHZ	0.500"	0.625"	0.650"	SBD-5-13	SBT-5-13
5 MHZ	0.750"	0.875"	1.00"	SBD-5-14	SBT-5-14
5 MHZ	1.00"	1.125"	1.25"	SBD-5-15	SBT-5-15
10 MHZ	0.125"	0.156"	0.750"	SBD-10-1	SBT-10-1
10 MHZ	0.125"	0.187"	0.750"	SBD-10-2	SBT-10-2
10 MHZ	0.187"	0.250"	0.400"	SBD-10-3	SBT-10-3
10 MHZ	0.187"	0.250"	0.500"	SBD-10-4	SBT-10-4
10 MHZ	0.250"	0.312"	0.400"	SBD-10-5	SBT-10-5
10 MHZ	0.250"	0.350"	0.400"	SBD-10-6	SBT-10-6
10 MHZ	0.250"	0.375"	0.500"	SBD-10-7	SBT-10-7
10 MHZ	0.250"	0.375"	0.750"	SBD-10-8	SBT-10-8
10 MHZ	0.312"	0.375"	0.500"	SBD-10-9	SBT-10-9
10 MHZ	0.375"	0.500"	0.500"	SBD-10-11	SBT-10-11
10 MHZ	0.500"	0.625:	0.750"	SBD-10-12	SBT-10-12
15MHZ	0.125"	0.250"	0.500"	SBD-15-1	SBT-15-1

DELAY LINE

FREQUENCY	ELEMENT SIZE	DIMENSION DIAMETER	FIX DELAY HEIGHT	PN # SIDE MOUNT	PN # TOP MOUNT
1 MHZ	0.5OO"	0.620"	0.650"	SBDFS-1-1	SBFST-1-1
2.25 MHZ	0.250"	0.375"	0.600"	SBDFS-2.25-2	SBFST-2.25-2
2.25 MHZ	0.375"	0.500"	0.625"	SBDFS-2.25-3	SBFST-2.25-3
2.25 MHZ	0.500"	0.625"	0.650"	SBDFS-2.25-3	SBFST-2.25-3
5 MHZ	0.250"	0.375"	0.600"	SBDFS-5-4	SBFST-5-4
5 MHZ	0.375"	0.500"	0.625"	SBDFS-5-1	SBFST-5-1
5 MHZ	0.500"	0.625"	0.650"	SBDFS-5-2	SBFST-5-2
5 MHZ	0.750"	0.875"	0.900"	SBDFS-5-3	SBFST-5-3
5 MHZ	1.00"	1.062"	1.00"	SBDFS-5-4	SBFST-5-4
10 MHZ	0.125"	0.300"	0.600"	SBDFS-10-5	SBFST-10-5
10 MHZ	0.250"	0.375"	0.600"	SBDFS-10-6	SBFST-10-6
10 MHZ	0.312"	0.375"	0.600"	SBDFS-10-7	SBFST-10-7
10 MHZ	0.375"	0.500"	0.700"	SBDFS-10-1	SBFST-10-1
10MHZ	0.500"	0.625"	0.650"	SBDFS-10-2	SBFST-10-2
15 MHZ	0.125"	0.300"	0.600"	SBDFS-15-3	SBFST-15-3
15 MHZ	0.250"	0.375"	0.600"	SBDFS-15-4	SBFST-15-4
15 MHZ	0.375"	0.500"	0.600"	SBDFS-15-5	SBFST-15-5

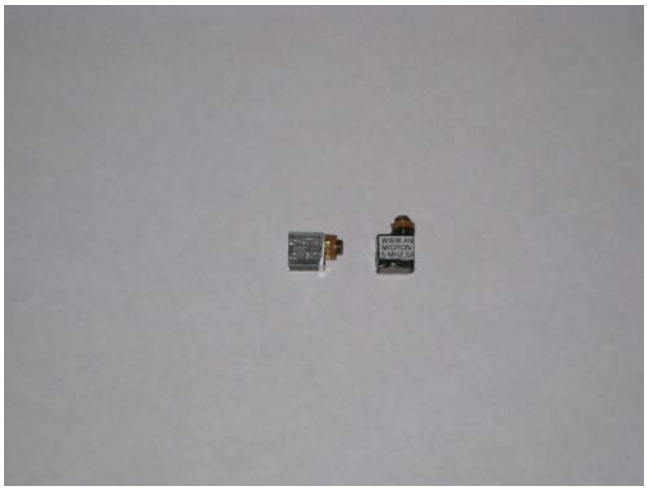
REPLACEABLE SHOE DELAY LINE

FREQUENCY	ELEMENT SIZE	DIMENSION DIAMETER	REPLACEABLE SHOE HEIGHT	PN # SIDE MOUNT	PN # TOP MOUNT
1 MHZ	0.5OO"	0.750"	0.900"	SBDRS-1-1	SBDRT-1-1
2.25 MHZ	0.250"	0.500"	0.650"	SBDRS-2.25-2	SBDRT-2.25-2
2.25 MHZ	0.375"	0.625"	0.750"	SBDRS-2.25-3	SBDRT-2.25-3
2.25 MHZ	0.500"	0.750"	0.900"	SBDRS-2.25-3	SBDRT-2.25-3
5 MHZ	0.250"	0.500"	0.650"	SBDRS-5-4	SBDRT-5-4
5 MHZ	0.375"	0.625"	0.750"	SBDRS-5-1	SBDRT-5-1
5 MHZ	0.500"	0.750"	0.850"	SBDRS-5-2	SBDRT-5-2
5 MHZ	0.750"	1.25"	0.950"	SBDRS-5-3	SBDRT-5-3
5 MHZ	1.00"	1.375"	0.950"	SBDRS-5-4	SBDRT-5-4
10 MHZ	0.125"	0.375"	0.600"	SBDRS-10-5	SBDRT-10-5
10 MHZ	0.250"	0.500"	0.650"	SBDRS-10-6	SBDRT-10-6
10 MHZ	0.312"	0.625"	0.750"	SBDRS-10-7	SBDRT-10-7
10 MHZ	0.375"	0.625"	0.750"	SBDRS-10-1	SBDRT-10-1
10MHZ	0.500"	0.750"	0.750"	SBDRS-10-2	SBDRT-10-2
15 MHZ	0.125"	0.300"	0.650"	SBDRS-15-3	SBDRT-15-3
15 MHZ	0.250"	0.500"	0.650"	SBDRS-15-4	SBDRT-15-4
15 MHZ	0.375"	0.625"	0.650"	SBDRS-15-5	SBDRT-15-5
15 MHZ	0.500"	0.750"	0.750"	SBDRS-15-6	SBDRT-15-6

SMALL ANGLE BEAM

FOR ALUMINUM

Dimension : L X W X H 0.375” X 0.250” X 0.375”

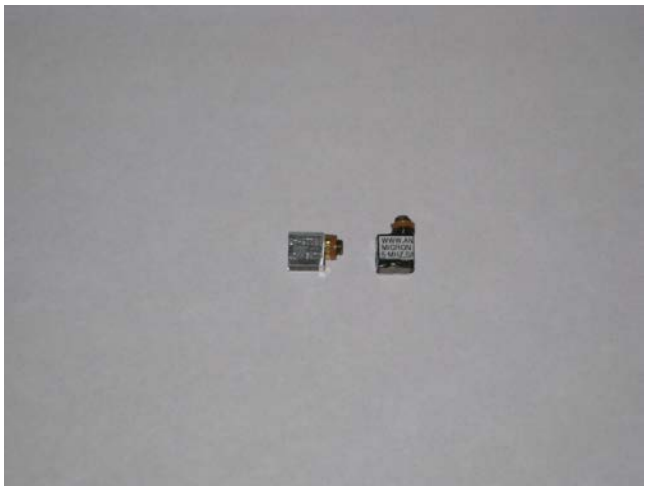


SMALL TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT ALUMINUM	PN # TOP MOUNT ALUMINUM
2.25 MHZ	35	AB2.25-35AS	AB2.25-35AT
2.25 MHZ	45	AB2.25-45AS	AB2.25-45AT
2.25 MHZ	60	AB2.25-60AS	AB2.25-60AT
2.25 MHZ	70	AB2.25-70AS	AB2.25-70AT
2.25 MHZ	90	AB2.25-90AS	AB2.25-90AT
5 MHZ	35	AB5-35AS	AB5-35AT
5 MHZ	45	AB5-45AS	AB5-45AT
5 MHZ	60	AB5-60AS	AB5-60AT
5 MHZ	70	AB5-70AS	AB5-70AT
5 MHZ	90	AB5-90AS	AB5-90AT
10 MHZ	35	AB10-35AS	AB10-35AT
10 MHZ	45	AB10-45AS	AB10-45AT
10 MHZ	60	AB10-60AS	AB10-60AT
10 MHZ	70	AB10-70AS	AB10-70AT
10 MHZ	90	AB10-90AS	AB10-90AT

SMALL ANGLE BEAM

FOR STEEL

Dimension : L X W X H 0.375” X 0.250” X 0.375”

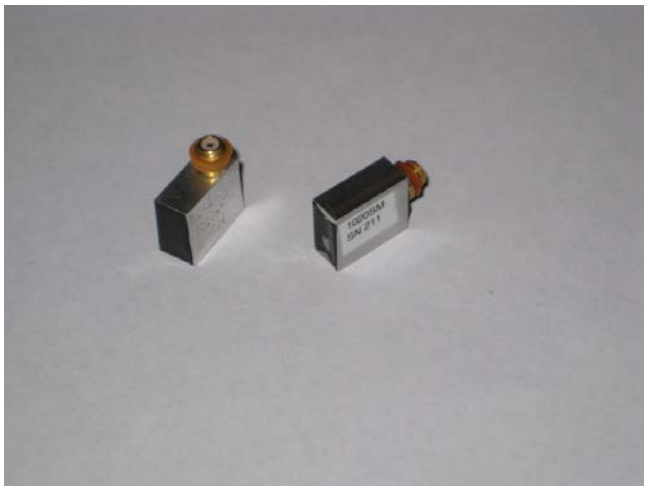


SMALL TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT STEEL	PN # TOP MOUNT STEEL
2.25 MHZ	35	AB2.25-35SS	AB2.25-35ST
2.25 MHZ	45	AB2.25-45SS	AB2.25-45ST
2.25 MHZ	60	AB2.25-60SS	AB2.25-60ST
2.25 MHZ	70	AB2.25-70SS	AB2.25-70ST
2.25 MHZ	90	AB2.25-90SS	AB2.25-90ST
5 MHZ	35	AB5-35SS	AB5-35ST
5 MHZ	45	AB5-45SS	AB5-45ST
5 MHZ	60	AB5-60SS	AB5-60ST
5 MHZ	70	AB5-70SS	AB5-70ST
5 MHZ	90	AB5-90SS	AB5-90ST
10 MHZ	35	AB10-35SS	AB10-35ST
10 MHZ	45	AB10-45SS	AB10-45ST
10 MHZ	60	AB10-60SS	AB10-60ST
10 MHZ	70	AB10-70SS	AB10-70ST
10 MHZ	90	AB10-90SS	AB10-90ST

MEDIUM ANGLE BEAM TRANSDUCER

FOR ALUMINUM

Dimension : L X W X H 0.550” X 0.250” X 0.450”

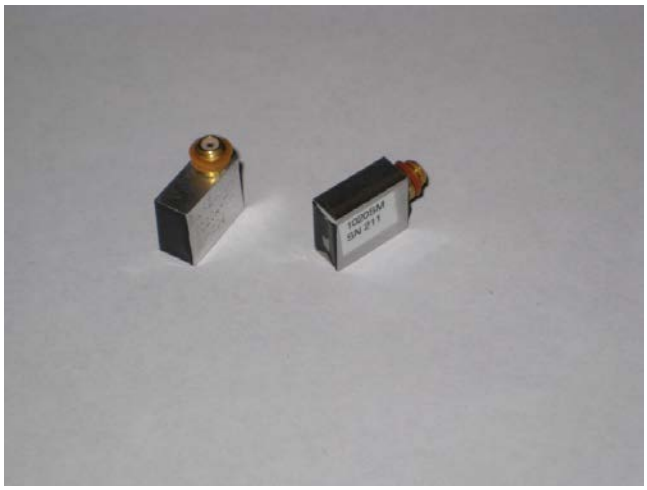


MEDIUM TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT ALUMINUM	PN # TOP MOUNT ALUMINUM
2.25 MHZ	35	ABM2.25-35AS	ABM2.25-35AT
2.25 MHZ	45	ABM2.25-45AS	ABM2.25-45AT
2.25 MHZ	60	ABM2.25-60AS	ABM2.25-60AT
2.25 MHZ	70	ABM2.25-70AS	ABM2.25-70AT
2.25 MHZ	90	ABM2.25-90AS	ABM2.25-90AT
5 MHZ	35	ABM5-35AS	ABM5-35AT
5 MHZ	45	ABM5-45AS	ABM5-45AT
5 MHZ	60	ABM5-60AS	ABM5-60AT
5 MHZ	70	ABM5-70AS	ABM5-70AT
5 MHZ	90	ABM5-90AS	ABM5-90AT
10 MHZ	35	ABM10-35AS	ABM10-35AT
10 MHZ	45	ABM10-45AS	ABM10-45AT
10 MHZ	60	ABM10-60AS	ABM10-60AT
10 MHZ	70	ABM10-70AS	ABM10-70AT
10 MHZ	90	ABM10-90AS	ABM10-90AT

MEDIUM ANGLE BEAM TRANSDUCER

FOR STEEL

Dimension : L X W X H 0.550” X 0.250” X 0.450”

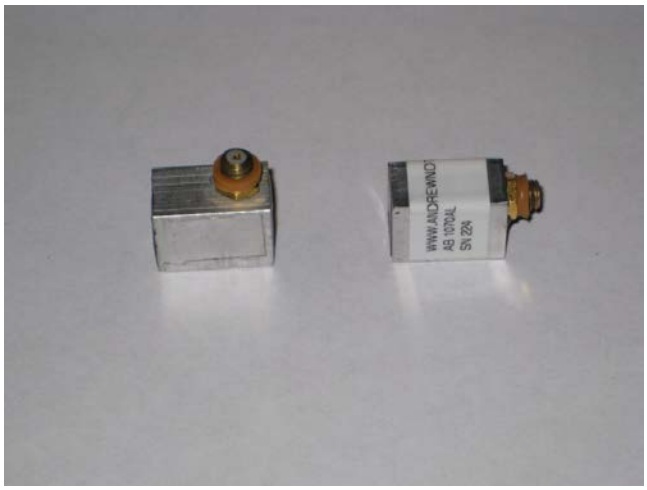


MEDIUM TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT STEEL	PN # TOP MOUNT STEEL
2.25 MHZ	35	ABM2.25-35SS	ABM2.25-35ST
2.25 MHZ	45	ABM2.25-45SS	ABM2.25-45ST
2.25 MHZ	60	ABM2.25-60SS	ABM2.25-60ST
2.25 MHZ	70	ABM2.25-70SS	ABM2.25-70ST
2.25 MHZ	90	ABM2.25-90SS	ABM2.25-90ST
5 MHZ	35	ABM5-35SS	ABM5-35ST
5 MHZ	45	ABM5-45SS	ABM5-45ST
5 MHZ	60	ABM5-60SS	ABM5-60ST
5 MHZ	70	ABM5-70SS	ABM5-70ST
5 MHZ	90	ABM5-90SS	ABM5-90ST
10 MHZ	35	ABM10-35SS	ABM10-35ST
10 MHZ	45	ABM10-45SS	ABM10-45ST
10 MHZ	60	ABM10-60SS	ABM10-60ST
10 MHZ	70	ABM10-70SS	ABM10-70ST
10 MHZ	90	ABM10-90SS	ABM10-90ST

LARGE ANGLE BEAM TRANSDUCER

FOR ALUMINUM

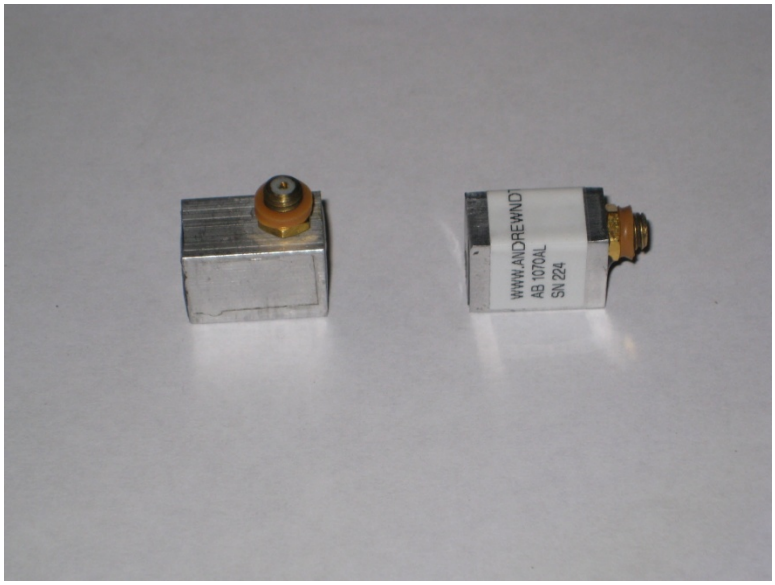
Dimension : L X W X H 0.750” X 0.370” X 0.500”



LARGE TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT ALUMINUM	PN # TOP MOUNT ALUMINUM
2.25 MHZ	35	ABL2.25-35AS	ABL2.25-35AT
2.25 MHZ	45	ABL2.25-45AS	ABL2.25-45AT
2.25 MHZ	60	ABL2.25-60AS	ABL2.25-60AT
2.25 MHZ	70	ABL2.25-70AS	ABL2.25-70AT
2.25 MHZ	90	ABL2.25-90AS	ABL2.25-90AT
5 MHZ	35	ABL5-35AS	ABL5-35AT
5 MHZ	45	ABL5-45AS	ABL5-45AT
5 MHZ	60	ABL5-60AS	ABL5-60AT
5 MHZ	70	ABL5-70AS	ABL5-70AT
5 MHZ	90	ABL5-90AS	ABL5-90AT
10 MHZ	35	ABL10-35AS	ABL10-35AT
10 MHZ	45	ABL10-45AS	ABL10-45AT
10 MHZ	60	ABL10-60AS	ABL10-60AT
10 MHZ	70	ABL10-70AS	ABL10-70AT
10 MHZ	90	ABL10-90AS	ABL10-90AT

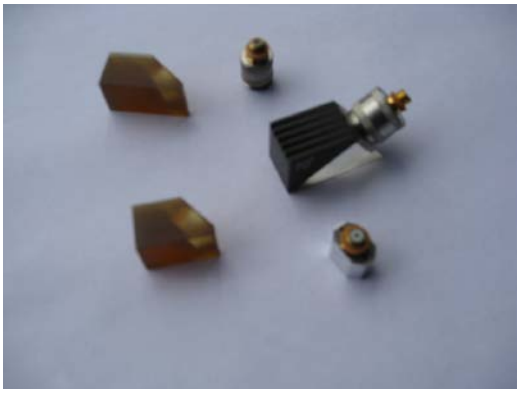
LARGE ANGLE BEAM TRANSDUCER

FOR STEEL



LARGE TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT STEEL	PN # TOP MOUNT STEEL
2.25 MHZ	35	ABL2.25-35SS	ABL2.25-35ST
2.25 MHZ	45	ABL2.25-45SS	ABL2.25-45ST
2.25 MHZ	60	ABL2.25-60SS	ABL2.25-60ST
2.25 MHZ	70	ABL2.25-70SS	ABL2.25-70ST
2.25 MHZ	90	ABL2.25-90SS	ABL2.25-90ST
5 MHZ	35	ABL5-35SS	ABL5-35ST
5 MHZ	45	ABL5-45SS	ABL5-45ST
5 MHZ	60	ABL5-60SS	ABL5-60ST
5 MHZ	70	ABL5-70SS	ABL5-70ST
5 MHZ	90	ABL5-90SS	ABL5-90ST
10 MHZ	35	ABL10-35SS	ABL10-35ST
10 MHZ	45	ABL10-45SS	ABL10-45ST
10 MHZ	60	ABL10-60SS	ABL10-60ST
10 MHZ	70	ABL10-70SS	ABL10-70ST
10 MHZ	90	ABL10-90SS	ABL10-90ST

QUICK CHANGE TRANSDUCERS



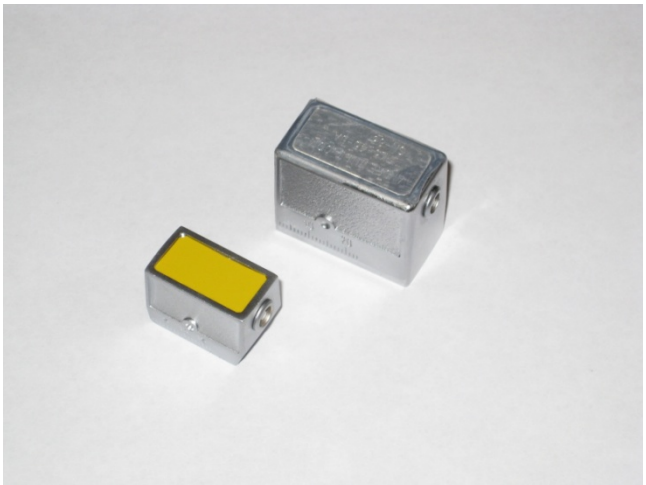
ELEMENT SIZE	**PN #**
0.250"	
1 MHZ	MSQ-1/4-1
2.25 MHZ	MSQ-1/4-2.25
5 MHZ	MSQ-1/4-5
7.5 MHZ	MSQ-1/4-7.5
10 MHZ	MSQ-1/4-10
0.375"	
1 MHZ	MSQ-3/8-1
2.25 MHZ	MSQ-3/8-2.25
5 MHZ	MSQ-3/8-5
7.5 MHZ	MSQ-3/8-7.5
10 MHZ	MSQ-3/8-10
0.500"	
1 MHZ	MSQ-1/2-1
2.25 MHZ	MSQ-1/2-2.25
5 MHZ	MSQ-1/2-5
7.5 MHZ	MSQ-1/2-7.5
10 MHZ	MSQ-1/2-10

QUICK CHANGE TRANSDUCERS AND WEDGES

REPLACEABLE WEDGE

WEDGE ANGLE FOR 0.250"	PN # FOR STEEL	PN # FOR ALUMINUM	THREADS
45	WMSQC-45S-1	WMSQC-45A-1	3/8 -32
60	WMSQC-60S-1	WMSQC-60A-1	3/8 -32
70	WMSQC-70S-1	WMSQC-70A-1	3/8 -32
90	WMSQC-90S-1	WMSQC-90A-1	3/8 -32
WEDGE ANGLE FOR 0.375"			
45	WMSQC-45S-2	WMSQC-45A-2	½-28
60	WMSQC-60S-2	WMSQC-60A-2	½-28
70	WMSQC-70S-2	WMSQC-70A-2	½-28
90	WMSQC-90S-2	WMSQC-90A-2	½-28
WEDGE ANGLE FOR 0.500"			
45	WMSQC-45S-3	WMSQC-45A-3	5/8-24
60	WMSQC-60S-3	WMSQC-60A-3	5/8-24
70	WMSQC-70S-3	WMSQC-70A-3	5/8-24
90	WMSQC-90S-3	WMSQC-90A-3	5/8-24

EUROPEAN ANGLE BEAM TRANSDUCER STANDARDS



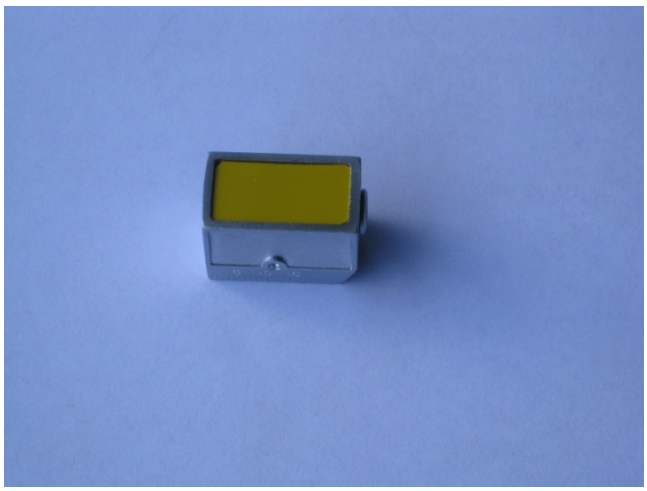
Dimesnion : L x W X H

Large: 1.420" X 0.750" X 1.220". Small : 1.050" X 0.550" x 0.850"

These are equivalent to WB-0, WB, WK AND SWB, SWK. Connector is Lemo 00

LARGE TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT STEEL	PN # TOP MOUNT STEEL
2.25 MHZ	35	EABL2.25-35SS	EABL2.25-35ST
2.25 MHZ	45	EABL2.25-45SS	EABL2.25-45ST
2.25 MHZ	60	EABL2.25-60SS	EABL2.25-60ST
2.25 MHZ	70	EABL2.25-70SS	EABL2.25-70ST
2.25 MHZ	90	EABL2.25-90SS	EABL2.25-90ST
5 MHZ	35	EABL5-35SS	EABL5-35ST
5 MHZ	45	EABL5-45SS	EABL5-45ST
5 MHZ	60	EABL5-60SS	EABL5-60ST
5 MHZ	70	EABL5-70SS	EABL5-70ST
5 MHZ	90	EABL5-90SS	EABL5-90ST
10 MHZ	35	EABL10-35SS	EABL10-35ST
10 MHZ	45	EABL10-45SS	EABL10-45ST
10 MHZ	60	EABL10-60SS	EABL10-60ST
10 MHZ	70	EABL10-70SS	EABL10-70ST
10 MHZ	90	EABL10-90SS	EABL10-90ST

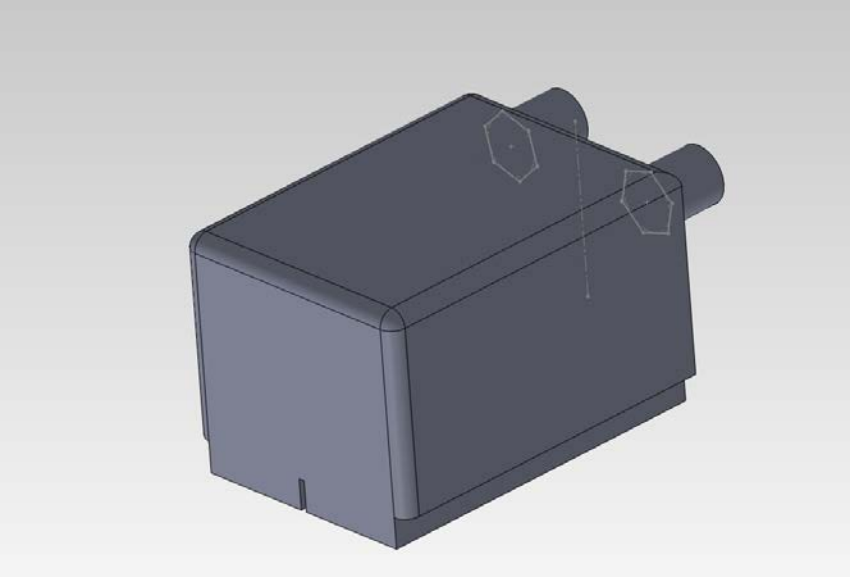
EUROPEAN SMALL ANGLE BEAM TRANSDUCER STANDARDS



Small : 1.050” X 0.550” x 0.850”

SMALL TRANSDUCER FREQUENCY	ANGLE	PN # SIDE MOUNT STEEL	PN # TOP MOUNT STEEL
2.25 MHZ	35	EAB2.25-35SS	EAB2.25-35ST
2.25 MHZ	45	EAB2.25-45SS	EAB2.25-45ST
2.25 MHZ	60	EAB2.25-60SS	EAB2.25-60ST
2.25 MHZ	70	EAB2.25-70SS	EAB2.25-70ST
2.25 MHZ	90	EAB2.25-90SS	EAB2.25-90ST
5 MHZ	35	EAB5-35SS	EAB5-35ST
5 MHZ	45	EAB5-45SS	EAB5-45ST
5 MHZ	60	EAB5-60SS	EAB5-60ST
5 MHZ	70	EAB5-70SS	EAB5-70ST
5 MHZ	90	EAB5-90SS	EAB5-90ST
10 MHZ	35	EAB10-35SS	EAB10-35ST
10 MHZ	45	EAB10-45SS	EAB10-45ST
10 MHZ	60	EAB10-60SS	EAB10-60ST
10 MHZ	70	EAB10-70SS	EAB10-70ST
10 MHZ	90	EAB10-90SS	EAB10-90ST

DUAL ELEMENT RECTANGULAR



Standard is Dual Microdot or dual Lemo 00

FREQUENCY	ELEMENT SIZE	HOUSING DIMENSION H x W x L	PN #
1 MHZ	0.5" x 0.5:	0.650" x 0.850" x 0.800"	DRES-1-1
1 MHZ	0.5" x 1.0"	0.650" x 0.850" x 1.15	DRES-1-2
2.25 MHZ	0.5" x 0.5:	0.650" x 0.850" x 0.800"	DRES-2.25-1
2.25 MHZ	0.5" x 1.0"	0.650" x 0.850" x 1.15	DRES-2.25-2
5 MHZ	0.5" x 0.5:	0.650" x 0.850" x 0.800"	DRES-5-1
5 MHZ	0.5" x 1.0"	0.650" x 0.850" x 1.15	DRES-5-2
10 MHZ	0.5" x 0.5:	0.650" x 0.850" x 0.800"	DRES-10-1
10 MHZ	0.5" x 0.5:	0.650" x 0.850" x 1.15	DRES-10-2
15 MHZ	0.5" x 1.0"	0.650" x 0.850" x 0.800"	DRES-15-1
15 MHZ	0.5" x 0.5:	0.650" x 0.850" x 1.15	DRES-15-2

DUAL ELEMENT

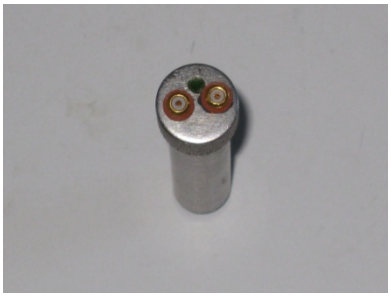
Type A side mount

Type A top mount

Type B Hi Temperature top mount

Type C : Top and Side mount

Type D with support housing



Type B Hi Temperature top mount

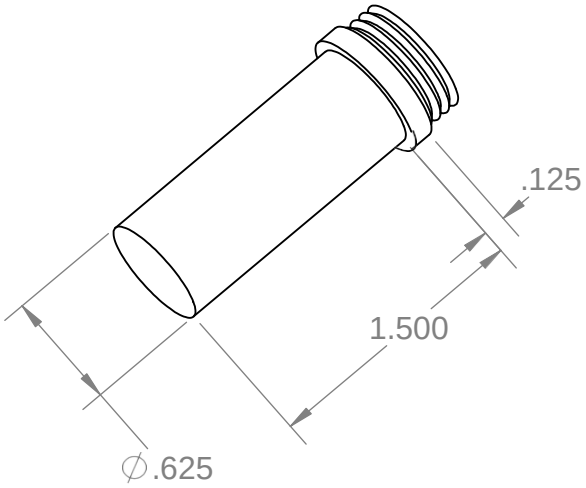
STANDARD CONNECTOR IS MICRODOT AND ATTACHED CABLE WITH DUAL LEMO 00

Type A Dual element Frequency	**ELEMENT SIZE**	**DIMENSION DIAMETER**	**Height**	**PN # SIDE MOUNT**	**PN # TOP MOUNT**
1 MHZ	0.250"	**0.375"**	0.925"	DBS-1-1	DBST-1-1
1 MHZ	0.500"	**0.625"**	1.1.62"	DBS-1-2	DBST-1-2
2.25 MHZ	0.250"	0.375"	0.925"	DBS-2.25-1	DBST-2.25-1
2.25 MHZ	0.500"	0.625"	1.162"	DBS-2.25-2	DBST-2.25-2
5 MHZ	0.250"	0.375"	0.925"	DBS-5-1	DBST-5-1
5 MHZ	0.500"	0.625"	1.162"	DBS-5-2	DBST-5-2
10 MHZ	0.250"	0.375"	0.925"	DBS-10-1	DBST-10-1
10 MHZ	0.500"	0.625"	1.162"	DBS-10-2	DBST-10-2
15 MHZ	0.250"	0.375"	0.925"	DBS-15-1	DBS-15-1
15 MHZ	0.500"	0.625"	1.162"	DBS-15-2	DBS-15-2

Type C Dual element Frequency	ELEMENT SIZE	DIMENSION DIAMETER TIP	Height	PN #
1 MHZ	0.187"	0.218"	0.925"	DCBS-1-0
1 MHZ	0.250"	**0.375"**	0.925"	DCBS-1-1
1 MHZ	0.500"	**0.625"**	1.1.62"	DCBS-1-2
2.25 MHZ	0.187"	0.218"	0.925"	DCBS-2.25-1
2.25 MHZ	0.250"	0.375"	0.925"	DCBS-2.25-1
2.25 MHZ	0.500"	0.625"	1.162"	DCBS-2.25-2
5 MHZ	0.187"	0.218"	0.925"	DCBS-5-1
5 MHZ	0.250"	0.375"	0.925"	DCBS-5-1
5 MHZ	0.500"	0.625"	1.162"	DCBS-5-2
10 MHZ	0.187"	0.375"	0.925"	DCBS-10-1
10 MHZ	0.250"	0.375"	0.925"	DCBS-10-1
10 MHZ	0.500"	0.625"	1.162"	DCBS-10-2
15 MHZ	0.187"	0.218"	0.925"	DCBS-15-1
15 MHZ	0.250"	0.375"	0.925"	DCBS-15-1
15 MHZ	0.500"	0.625"	1.162"	DCBS-15-2

Type D Dual element Frequency	ELEMENT SIZE	DIMENSION DIAMETER TIP	Height	PN #
1 MHZ	0.187"	0.218"	1.567"	DDCBS-1-0
1 MHZ	0.250"	0.375"	1.567"	DDCBS-1-1
1 MHZ	0.500"	0.625"	1.567"	DDCBS-1-2
2.25 MHZ	0.187"	0.218"	1.567"	DDCBS-2.25-1
2.25 MHZ	0.250"	0.375"	1.567"	DDCBS-2.25-1
2.25 MHZ	0.500"	0.625"	1.567"	DDCBS-2.25-2
5 MHZ	0.187"	0.218"	1.567"	DDCBS-5-1
5 MHZ	0.250"	0.375"	1.567"	DDCBS-5-1
5 MHZ	0.500"	0.625"	1.567"	DDCBS-5-2
10 MHZ	0.187"	0.375"	1.567"	DDCBS-10-1
10 MHZ	0.250"	0.375"	1.567"	DDCBS-10-1
10 MHZ	0.500"	0.625"	1.567"	DDCBS-10-2
15 MHZ	0.187"	0.218"	1.567"	DDCBS-15-1
15 MHZ	0.250"	0.375"	1.567"	DDCBS-15-1
15 MHZ	0.500"	0.625"	1.567"	DDCBS-15-2

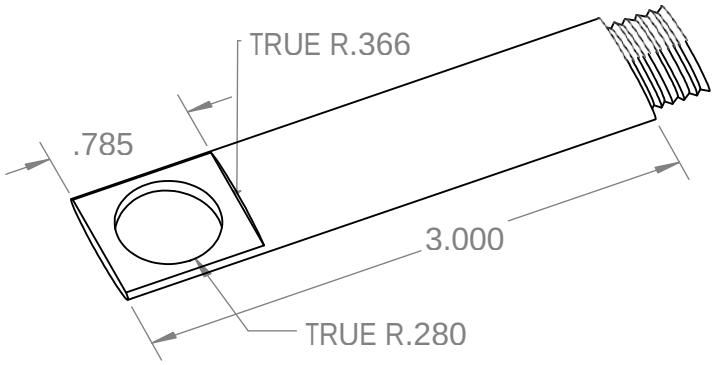
IMMERSION STRAIT TRANSDUCERS



CONNECTOR IS UHF

FREQUENCY	0.187"	0.250"	0.375"	0.500"
1 MHZ	IMS-1-1	IMS-1-2	IMS-1-3	IMS-1-4
2.25 MHZ	IMS-2.25-1	IMS-2.25-2	IMS-2.25-3	IMS-2.25-4
5 MHZ	IMS-5-1	IMS-5-2	IMS-5-3	IMS-5-4
7.5 MHZ	IMS-7.5-1	IMS-7.5-2	IMS-7.5-3	IMS-7.5-4
10 MHZ	IMS-10-1	IMS-10-2	IMS-10-3	IMS-10-4
15 MHZ	IMS-15-1	IMS-15-2	IMS-15-3	IMS-15-4

IMMERSION 90 degree TRANSDUCERS

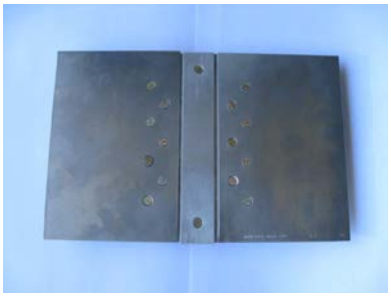
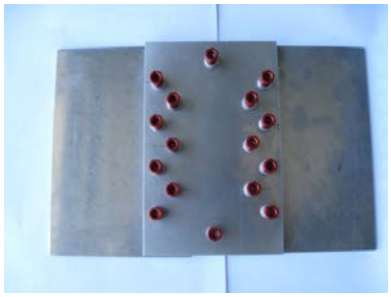
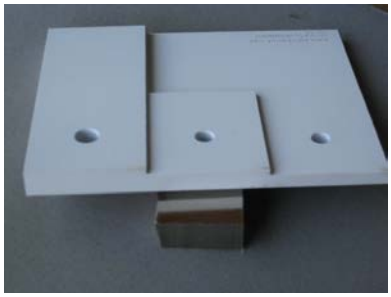


Dimension: L X D 3” X 0.732”

FREQUENCY	0.187"	0.250"	0.375"	0.500"
1 MHZ	IMS-1-1	IMS-1-2	IMS-1-3	IMS-1-4
2.25 MHZ	IM90-2.25-1	IM90-2.25-2	IM90-2.25-3	IM90-2.25-4
5 MHZ	IM90-5-1	IM90-5-2	IM90-5-3	IM90-5-4
7.5 MHZ	IM90-7.5-1	IM90-7.5-2	IM90-7.5-3	IM90-7.5-4
10 MHZ	IM90-10-1	IM90-10-2	IM90-10-3	IM90-10-4
15 MHZ	IM90-15-1	IM90-15-2	IM90-15-3	IM90-15-4

AIRCRAFT STANDARDS




Boeing:

Boeing 707, 727, 737, 767

Airbus

310, 320, 330

Douglas, DC9/MD80

De Havilland Dash 8

BAE Systems Jetstream

Pratt&Whittney Aircraft group

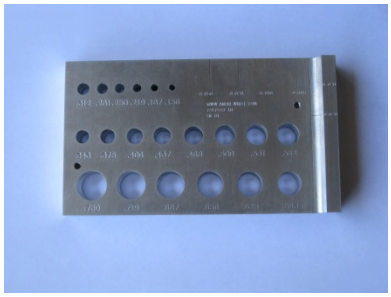
Lockheed Martin

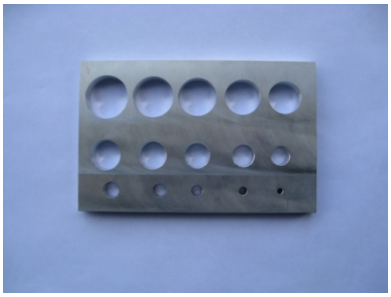
Raytheon Aircraft group.

ATR

LearJet/Bombadier

BOLT HOLE AND SURFACE STANDARDS





PN: USAF 7947479-10 ¼" inner radius 15 holes 13 holes

20 holes with ¼ outer Radius Surface standard

Material Option:

- A: Aluminum 2024-T3 or 7075-T6
- ST: steel 4130 or 4340
- SS: Stainless Steel 303
- TI: Titanium 6AL4V
- I : Inconel 618

NOTCH TYPE:

1 - Corner notch
2- Mid-wall notch
3 – Thru length wall notch
4- 1 and 3
5- 1 and 2

BOLT HOLE STANDARD PN : BHS- 14-A-1 : This is 14 holes, Aluminum and type 1 notch.

5 HOLES = 7/16", ½," 9/16" , ¾ AND 1"

8 HOLES = 3/16 TO 9/16 with 1/16" increment

10 HOLES = 1/8 " to 1/2" with 1/32" increment & 9/16", 5/8" and ¾"

13 HOLES = 1/8"-3/8" with 1/32" increment & 7/16"-5/8 with increment 1/16" and ¾"

15 HOLES= 1/8"- 1.0" with 1/16" increment

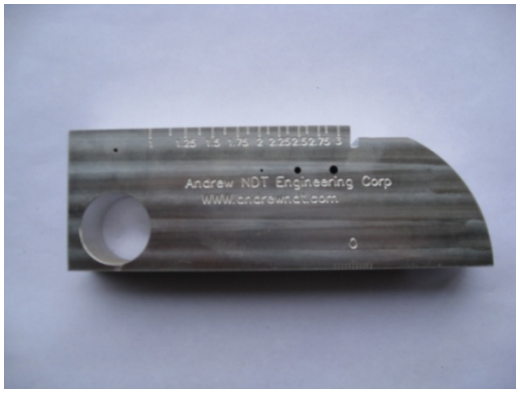
20 HOLES with inner Radius ¼"= 5/32"-3/4" with increment 1/32"

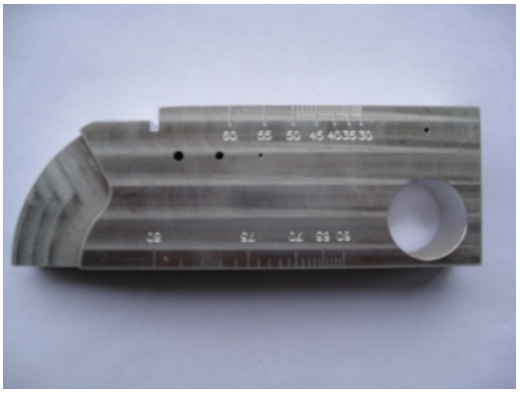
20 HOLES with outer Radius ¼"= 5/32"-3/4" with increment 1/32"

SURFACE STANDARD

SURFACE STANDARD PN : RST-0824-A = Depth of E.D.M. notch 0.008”, 0.20” and 0.040”, Material is Aluminum.

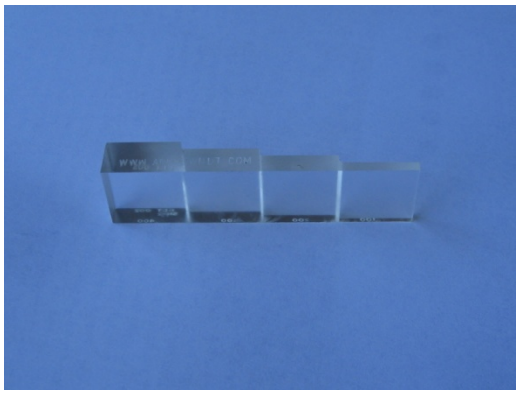
UT CALIBRATION STANDARDS

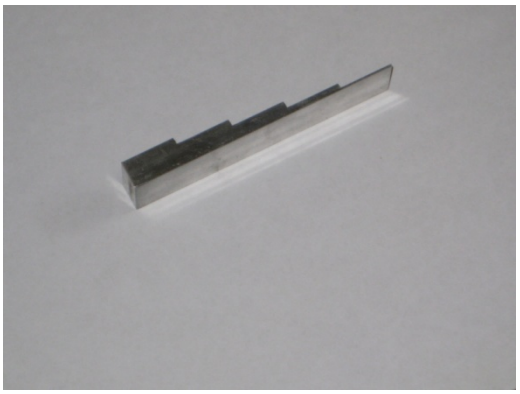




IIW1 block

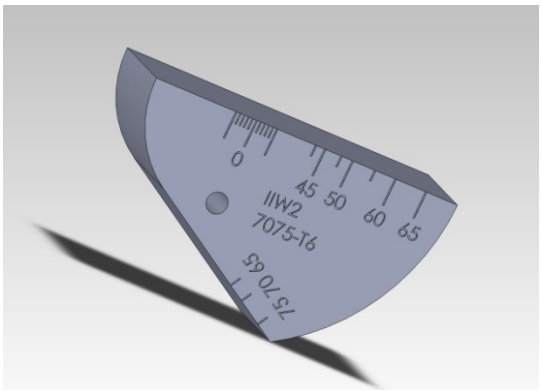
This is a miniature type only ½ regular size. Dimension is L X W X H : 6” X 1” X 2”, 1 “ & 2” diameter





Arcrylic step block

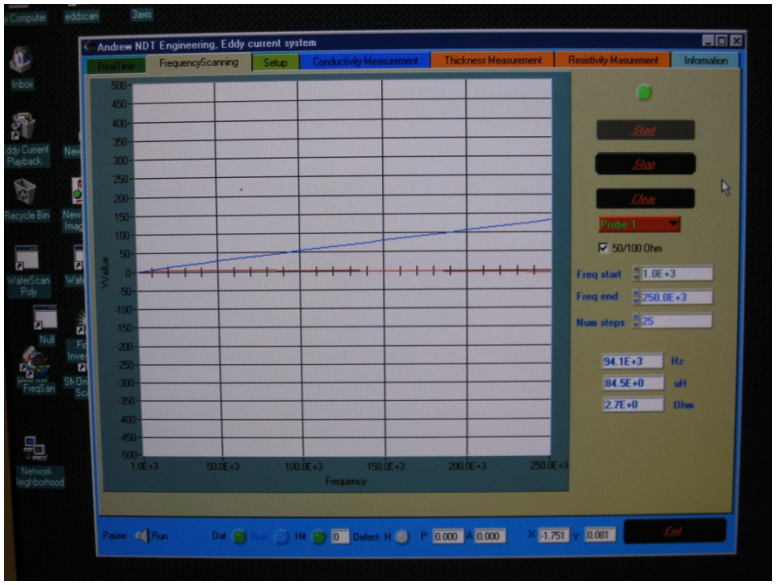
Aluminim step block

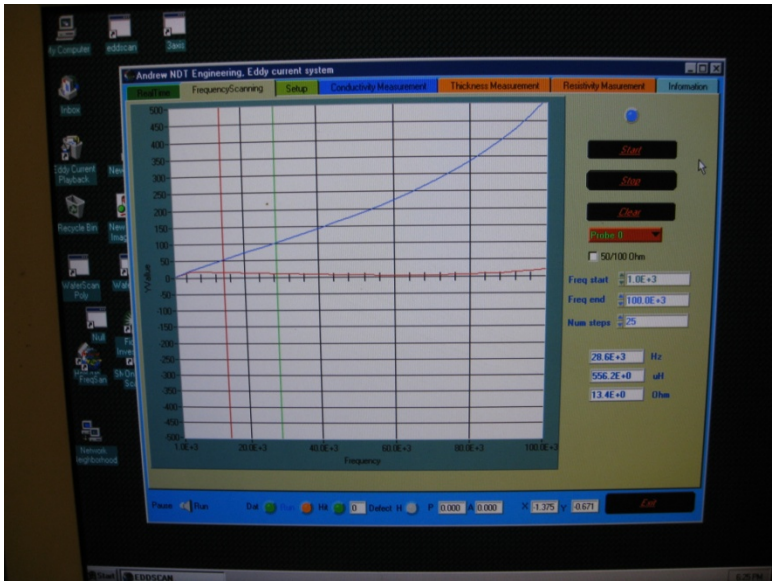


IIW2 block

MATERIAL	PN # FOR IIW1	PN # FOR IIW2	PN # FOR STEP BLOCK
ALUMINUM : 7075-T6	IIW1-AL-7075-T6	IIW2-AL-7075-T6	5STP-AL-7075-T6
ALUMINUM : 2024-T3	IIW1-AL-2024-T6	IIW2-AL-2024-T6	5STP-AL-7075-T6
STEEL-4130	IIW1-S-4130	IIW2-S-4130	5STP-S-4130
STEEL-4340	IIW1-S-4340	IIW2-S-4340	5STP-S-4340
STAINLESS STEEL	IIW1-SS-303	IIW2-SS-303	5STP-SS-303
TITANIUM	IIW1-T-6AL-4V	IIW2-T-6AL-4V	5STP-T-6AL4V
INCONEL	IIW1-I-618	IIW2-I-618	5STP-I-618
ACRYLIC			5STP-ACRYLIC

EDDY CURRENT PROBE CERTIFICATION

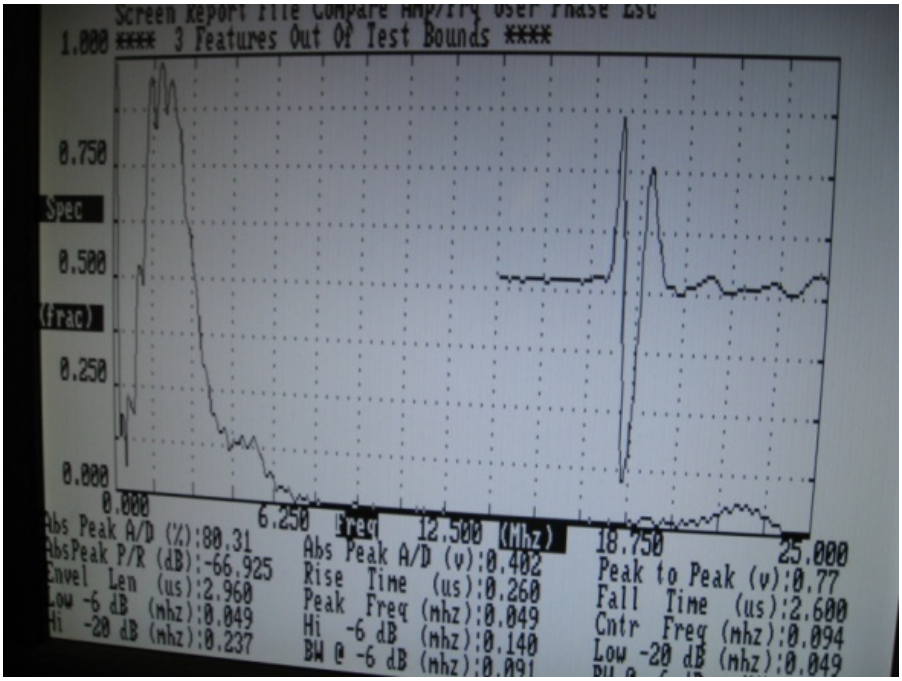


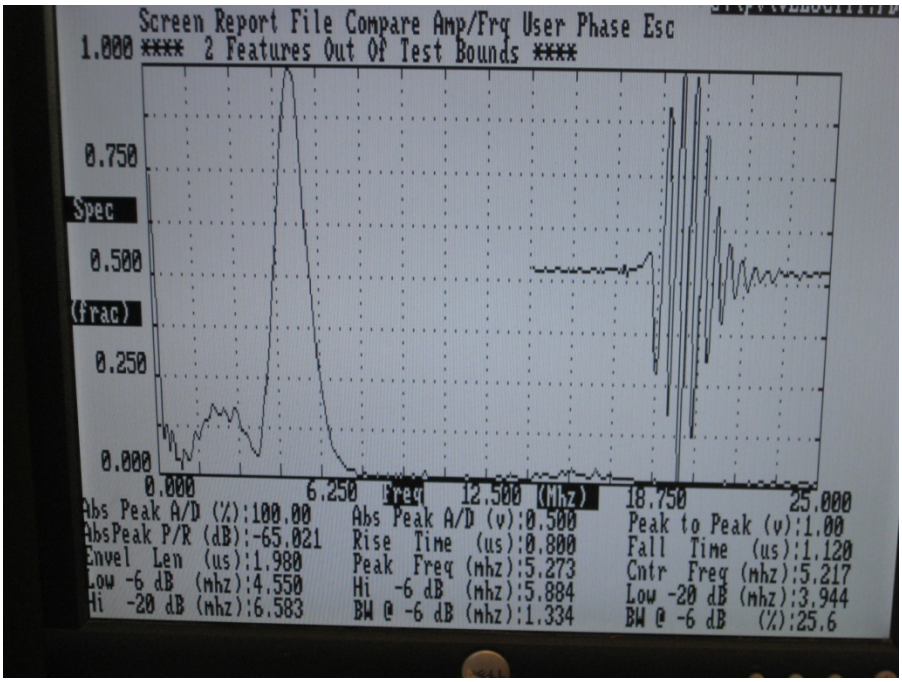


These graphs show the probes spectrum frequency analyses to determine the best frequency working range. No other company can provide the backup data of the probe to certify.

They just show the signal pick up from the E.D.M notch with the frequency was set up for the probe or just give you the probe frequency is Low, Medium and High. Our frequency scanning equipment is traceable to N.I.S.T.

UT TRANSDUSER CERTIFICATION





This is a typical UT transducer certification will be provided. The scanning frequency spectrum equiment is traceable to N.I.S.T.

VALUABLE INFORMATION ABOUT THE EDDY CURRENT PROBE AND ULTRASONIC TRANSDUCER

INDUCTOR VERSUS CAPACITOR

As we know the eddy current probe, (ETP), is an inductor and ultrasonic transducer, (UT), made by the element of Piezo electrical material but it is not known if the UT is actually a capacitor (unique capacitor).

Both ETP and UT use frequency and voltage to excite the inductor and element to make it work. There are many similar characteristics which need to operate the ETP and UT but there are also many different things required to operate between the ETP and UT. By understanding their unique character we actually can choose the best method of inspecting, detecting, and measuring technique for our needs, in terms of saving time, money, and reliability.

Here is a list comparing ETP and UT.

	ETP	UT
Voltage	Low	High (can be up to 1000 V)
Current	High (Mili Amp)	Very low (Micro Amp)
Frequency	Must select to operate	Frequency depends on the element & thickness
Gain	Adjust gain from electronic system	Adjust gain from electronic system
Penetration	Depends on frequency	Depends on frequency

ETP is the best for surface and subsurface (less than 1 inch below surface) material inspection.

UT is the best for surface and subsurface that is 40 inches or more.

ETP depends on the defect's orientation. For the best detection, the path of eddy current must be perpendicular to the longest defect size.

UT depends on the defect's orientation as well. For the best detection, the sound beam must be perpendicular to defects.

ETP is sensitive to electrical conductivity.

UT is sensitive to the material grain size.

ETP cannot focus the eddy current path to a single point.

UT can shape the sound beam to a single point. (Focus transducer)

EPT requires a conducting material.

UT does not require a conducting material.

ETP does not require the couplant to inspect.

UT does require the couplant to transmit sound.

ETP does not require paint to be removed from the surface for inspection.

UT requires paint to be removed from the surface prior inspection.

These are a few things we can list so that you may have some idea of what you need to know about the eddy current probe and the ultrasonic transducer. By knowing these things it will prepare you to better understand and select the best suitable method for your inspection technique.

Before we go into detail of how to choose the suitable eddy current probe or ultrasonic transducer, we need to understand a little bit about the eddy current and ultrasonic operating principal.

Eddy current equipment works on the principal of the Wheatstone bridge to detect the in-balance of the bridge, which measures the voltage different between two legs of the bridge. The measured voltage is the amplitude of your signal. The phase change which produces the shift of the Sine wave form is the angle separation between the lift off signal and the detection signal. We will not try to go deep into the mathematics to explain why, what, and when to have the signal eddy current in the impedance display on your modern eddy current or the needle change in your eddy current analog meter.

There are few arrangements in the electrical design of the input eddy current probe to have different types of display signals of the eddy current detection and the probes type. Either the analog meter or the impedance display of eddy current equipment must be NULL (a balance signal or it could be called zero voltage point). A Null point can be obtained with the inspecting probe in the air or the probe on the good known area without defects.

The absolute mode: Signal eddy current probe displays a single line.

In the absolute mode, there are several types: The absolute bridge, the absolute resonant circuit and the reflection absolute.

For analog meter types such as ED520, ED-500, the probe is balanced by turning the analog knob to match the single coil probe value.

For absolute resonant types such as Foerster Defectormeter the capacitance and the inductance value determine the frequency operation of the probe. The capacitor is built in the probe or the cable connection to the instrument. Without the capacitor, the single coil probe will not work.

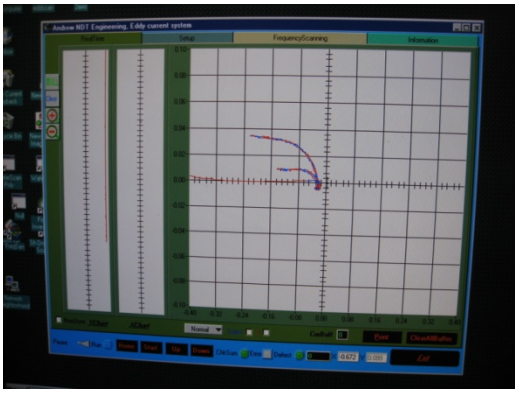
For absolute bridge type, a balance coil needs to have the similar value in Micro Henry with the inspecting probe. Most of modern eddy current equipment such as Nortec, Zetec, Hocking, Foerster, and Andrew NDT Engineering (PC Window base) are operated in Bridge type mode. A balance coil can be arranged as:

- Built in the probe handle.
- Built in the probe connector cable.
- Built in the adapter.

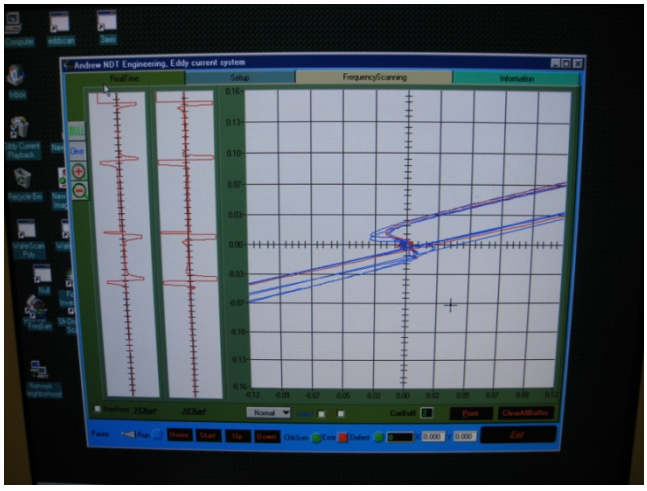
For absolute reflection type, this is a driver and picks up the coil or transmits and receives the coil:

-A single circular probe; the driver coil is outside the circle and the pickup coil is the inner circle

-A sliding probe; the driver coil is adjacent to the pickup coil.



The differential bridge mode: Signal eddy current probe displays a number 8 shape.



On the left is digital Strip chart recorder. The strip charge recorder is represent for X axis and Y axis . They are also known as Chanel 1 or Chanel 2 . It is a Reactant and Resistant of the coil. On the Right is Impedance display .

In differential bridge type, there are two types of arrangements. They are differential bridge and differential reflection type:

For differential bridge mode:

- A circular probe; two similar value coils arranged adjacent in the same plane.
- A bolt hole probe; two similar value coils arranged adjacent in the same circle.
- A bobbin probe; two similar value coils arranged adjacent in the same axial axis.

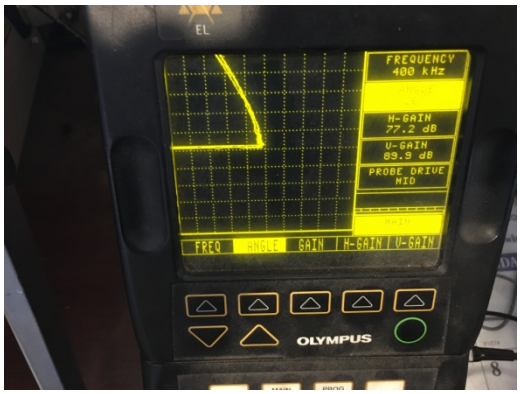
For differential reflection type, this is a driver and pick up coils or transmit and receive coils:

- A circular probe; a driver coil is outside the circle and two pick up coils arranged adjacent the inner circle in the same plane.
- A bolt hole probe; a single driver coil is outside the circle and two pick up coils arranged adjacent in the same circle.
- A bobbin probe; a driver coil or double driver coils is/are adjacent or a distance from the two pick up coils arranged adjacent in the same axial axis.

The bridge or the reflection mode? This is a common question asked by those who are involved in trying to select the best probe for inspection. Here are some helpful explanations.

Gain: A myth is reflection probe will have high gain of about 6 db to a bridge probe when they have the same setting parameters. It's a wrong explanation. We should put into consideration the number of turns of the pickup coils and the driver coil/coils. If the reflection probe has more numbers of turn than the bridge probe, then it has more gain in the same setting but if the number of turns of the pickup coils are the same as the bridge coil there is no higher gain at all and actually the other way around. Even with the higher number of turns of the pickup coil, with modern equipment, gain is available to increase so it's not so important.

This is reflectance absolute probe signal



This is differential absolute probe signal

We made the differential absolute detecting signal coil has the same number of turn of reflectance

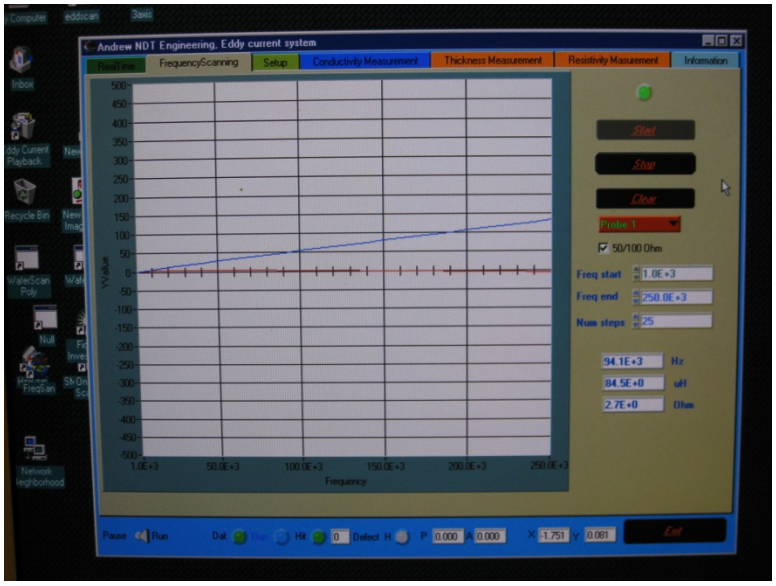
absolute pick up coil.

We should consider the size of the coil when comparing the Bridge and reflection. The bridge probe has a smaller side than the reflection probe when both working in the same frequency range. Remember, the bridge probe has less range operation than the reflection probe (we will clarify this later in the selection of the frequency range). But this is not critical when we select the correct operating range frequency of the probe. Do not try to stress the probe beyond the sensitivity detection.

Frequency range: The wrong explanation is “the reflection probe does not need a balance between the driver coil and the pickup coil”. It’s true that the reflection probe does not need the balance between the driver coil and the pickup coil, as long as the driver produces an eddy current the pickup coil/coils will detect them and some signal will be displayed. But the signal is so poor in quality and noisy that it is worthless to use the signal picked up from the probe. Therefore, the reflectance probe also needs balance between the driver and the pickup coils to have an excellent signal response and low noise, as well as less drift signal.

With modern electronic and software filtration, hardware, fixed or adjustable resistor, and adjustable transformer precision, it has greater ability to balance over a wide range of frequencies for the bridge mode, so it’s less important between the frequency range of the bridge and the reflection probe.

Center Frequency of the probe: There is no center frequency of an eddy current probe compared to the center frequency of an ultrasonic transducer. This is misleading from eddy current manufacturers. An inductor is the key of an eddy current probe. You can put any frequency of sine waves to an inductor and the inductor will produce the magnetic field and eddy current into the conducting material. The only correct term is the useful working range of frequency which the probe will give the best amplitude signal response with lowest noise when it detects the defects. You can view the Frequency spectrum analysis graph of Eddy current probe certification of Andrew NDT Engineering, Corp. below.



It's also the label of probe frequency such as Low, Medium, and High that are vague values for an inspector guessing what frequency should be entered into eddy current equipment because there is no frequency entered as LOW, MED or HI. It should be labeled at the range of working frequency.

Drift: What is the signal drift on your impedance display? The signal drift is the signal balance obtained from the electronic circuit to bring the signal to zero voltage (with all the parameter settings for the probe you are going to use for the calibration or inspection process. It has frequency, gain, filtering, both Hi and Low analog and digital filter, voltage driver, and sampling rate). This is a small dot on your display screen to the center of the impedance plane . It is a NULL point .

An Excellent, good, bad and worse eddy current instrument will have no drift in how many hours it continues operation. That means after so many hours, the small dot from the balance point or Null point will start to move away from the center of the screen. For normal inspection to detect cracks and corrosion, as long as you can see the balance point on the screen, the detection ability is still O.K... But it will be very critical when you try to measure such things as thickness, resistivity or conduction of material.

Signal drift is a combination of vary ambient temperature of the probe, the heat in the electronic circuit equipment. The driver, the gain is set up too high etc….

An excellent balance probe will reduce significance drift signal and has excellent signal/low noise ratio.

Absolute and differential probes: There is an easy way to determine what probe is an absolute or differential probe regardless of the mode or type of Bridge, Reflection, or Resonance. A probe that displays a signal that is a single line or just a needle meter that moves in one direction when it detects the defect, lift off, or close to the edge, is an absolute probe.

A probe that displays a number 8 shape when it detects the defect or rocking the probe back and forth on a conducting material surface, is a differential probe regardless of the mode or type of Bridge, Reflection, or Resonance.

We can specify as follows: Absolute Bridge probe, Absolute Reflection probe, Differential Bridge Probe, Differential Reflection probe.

A RFT (Remote field) probe is actually an absolute or differential reflection probe where the driver/s is/are a minimum of 3x diameters of the probe away from the pickup or receiver coils. The driver coil can be a single driver (single coil) and single receiver for an absolute probe and double receiver (two coils) for differential reflection probes. The double driver is two drivers (coils).

A NFT (Near field probe) probe is actually an absolute or differential reflection probe where the driver/s is adjacent to the pickup or receiver coils. The driver coil can be a single driver (single coil) and single receiver for an absolute reflection probe and double receiver (two coils) for differential reflection probe. The double driver is two drivers (coils).

Shielded and unshielded probes: Shielding restricts the magnetic field close to the size of the shield. Shield material is made of ferrite, soft steel (Mild steel) or Mu-metal. Shielded probes allow probes to inspect close to the edge. Because shielded sleeves cover the cylindrical coil, it suppresses the magnetic field line to a smaller area. It increases the magnetic flux density. It increases the inductance values of the coil without the need of increasing the number of turns of the coil. As a result, the shield helps increase the amplitude signal detection and helps reduce the size of the coil. Ferrite is the best for shielding material.

Unshielded probes allow deeper penetration due to a magnetic field not being suppressed by a shield, but there will be less signal amplitude response due to the magnetic flex density being smaller than the shielded probes. The unshielded probes are recommended to inspect ferrous material.

Ultrasonic transducer operating principal: A short bust of very high Voltage in the range of 400-1000 Volts between the two conducting plates of + and - between a very high resistance material (a unique combination of many different materials called Piezo-electric material), creates a mechanical vibration and transfer of energy in the form of sine wave to the material inspection through the contact between the transducer surface and surface of the material. A sound wave travels from the front surface where it contacts with the transducer surface to the back of the material and bounds back to the front surface of material and transmits back to the element. The element is vibrated and produces a very small electrical signal. This electrical signal is very small but it will be amplified and display on screen to see. This is called the Pulse echo method. You should see the front signal and the back signal. The back signal is smaller than the front signal due to the loss of energy during the travel of the sound beam in the material. A multiple echo can be seen on screen but the amplitude will be reduced at each time until it loses the signal.

To ensure the maximum transfer of energy, a couplant grease is used between the transducer and the material. Depending on the material type and thickness of element made, the frequency of transducer is generated. It can have a narrow bell shape or wider bell shape. Ultrasonic transducer can be made with wide range of frequency operation. The Transducer can be ordered by frequency, size, and mode transmitted sound wave mode into material.

There are a few modes of sound waves transmitting into the material: Straight beam or Compression mode of sound wave, Shear wave, surface waves etc…

Compression waves mode: All transducers generate the sound beam. Depending on the frequency, you may hear it or even feel the vibration from the transducer. If the frequency of the transducer generates in the audio range of human hearing, 400 Hz-20 KHZ, we can hear the sound and feel the vibration. The sonic cleaning tank transducer is an example of transducer working in the range of human hearing and we can feel the vibration generated by the transducer. Frequencies that are below and above the audio of human hearing cannot be heard or vibration felt of the transducer by humans. Elephants and whales generate frequencies below 400 Hz so we cannot hear them communicate to each other sometimes at a distance of 20-30 miles. Our nondestructive testing transducers are in the range of 500 KHz-25 MHZ.

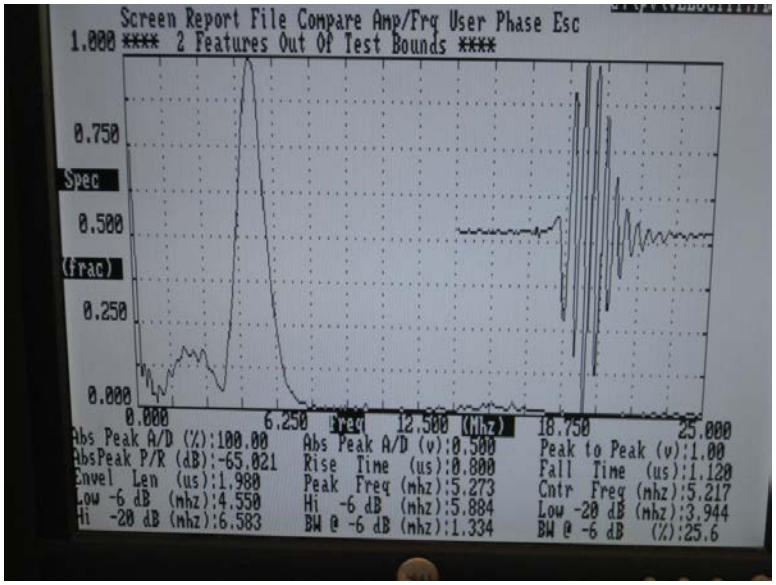
Compression mode is a transmitting energy by pushing the grain of material to move back and forth. Just like you have a series of steel balls hanging with thread the balls align in a straight line. The first ball is held back to a distance and released. The movement of all the balls in sequence is a good explanation and visualization of the compression mode of the sound beam in the material.

Shear waves mode: The energy transmitted by the grain moves up and down which are why the shear waves velocity is about ½ of the compression waves velocity. To create the shear waves a shoe made by Acrylic, Peeks, or some special plastic materials with an angle (the incident angle) to entrant angle, a sound beam angle, to the material such as: 45, 60, 70, and 90 degrees for the Surface Waves mode.

Surface waves mode: This is the sound beam traveling only a few grain lengths below the surface.

NOTE: In order to have sound travel into the material, the material must have grain structure. A single grain structure such as Silicon Ingot or Quart will not transmit sound.

Frequency set up: Most of the ultrasonic instruments have a knob or a key pad to change the set up frequency for 0.5, 2.25, 5, 10, 15 and 20 MHZ. A miss conception is that "the ultrasonic equipment generates a frequency of 5 MHZ to operate the transducer labeled 5 MHZ". Actually the transducer itself will generate the 5 MHZ (bell shape with spectrum frequency, 5 MHZ is the peak and majority of the bell shape) when the element is excited by a bust voltage. When you change the knob or the key pad indicates the Frequency #, the UT equipment just changes the voltage bust to the transducer. Lower Frequency requires higher voltage for excitation.



This is a 5 MHZ transducer

We can see the spectrum frequency analysis for certification of transducer with the bell shape frequency distribution and understand what a bell shape means.

HOW TO CHOOSE ET PROBE OR UT TRANSDUCER FOR YOUR APPLICATIONS

Filter setting : There are three types of filter setting type depend on your eddy current instrument. The Hi pass, low pass and software filter. The filter function is to clean up the noise signal to have a clean signal response from the defects. For high frequency operating 100 KHZ-1 MHZ, usually we leave the Low pass filter at 100-200HZ. The Hi pass filter is set up to 0. For low frequency probe operating, we set up the Hi pass filter around 1-5 HZ. Choose the lowest number of HI pass filter to get the best signal to noise ratio. If your equipment dose have the software filter , the Anti Alias filter is set to 2.5 -4.6 KHZ fro High frequency probe and 1 KHZ for low frequency probe.

Sampling rate : What is the sampling rate ? The sampling rate is the number of sample data points collecting per second. Depend on the rate converting from analog to digital, a sampling rate of portable eddy current equipment about 400-1000 data points per second. This sampling rate is not a very high sampling rate so do not expect to have a high scanning rate (inspection speed). For fast scanning rate such as high speed inspection about 18 feet per second you need a sampling rate about 20 to 80,000 data points per second to detect a defect size of 1/32 drill hole thru the tube coil.

Here is an example of sampling rate data collection. An eddy current equipment has a fix sampling data collection of 400 points per second. There are two pencil probes operating in the sample frequency and setting. One pencil probe has diameter is twice diameter bigger than the other pencil probe. Scanning at the same speed pass cross over the E.D.M. notch , the bigger diameter will produce the bigger signal amplitude than the smaller diameter pencil probe. Because the bigger diameter pencil probe has more time (2 x time travel pass over the width of E.D.M. notch) to collect sampling data double than the smaller probe.

If the scanning speed is 1inch per minute and the width of the E.D.M notch is 0.005”. The smaller pencil probe has 0.125” diameter will take 0.0375 second to pass over the 0.005” width E.D.M.. The bigger pencil probe has 0.250” diameter will take 0.075 Second to pass the 0.005” width E.D.M.

Sampling rate collected by small pencil probe is 0.0375 second X 400/second = 15 data points

Sampling rate collected by small pencil probe is 0.075 second X 400/second = 30 data points

For bolt hole inspection, bigger diameter probe will travel faster than the smaller diameter probe as the as the same rotation speed. But the size of the coils inserted to the bolt hole probe, regardless of the size of the bolt hole probe, is the same. The bigger bolt hole probe will have less sampling data collection than the smaller bolt hole probe, because the smaller bolt hole probe has more time sitting on the defect .

NOTE: To recommend an increase the filter to 100-200 Hz of both HI and Low filters to get the signal because the bigger diameter bolt hole probe is not correct action. The correction is increase either the sampling data collection rate or slow down the rotation of the scanner.

As we already have some information about the similarities and differences in characteristics between ETC and UT, we are ready to explore further the process of selecting the best method of inspection for your applications.

Before we go to select which one is the right technique for your inspection, we need to know how calibration standards are made designed and fabricated. Without calibration reference standards, the Nondestructive testing method cannot be done. A calibration reference standard is a calibration block containing a known defect at a specific location or a general surface defects.

Most inspectors, engineers in the nondestructive testing field, do not have any idea how or where the calibration reference standards are designed, how the dimensions of the E.D.M notch with specific length width and depth are determined, nor why the E.D.M. is located at a specific location in the reference standards.

The length X width X depth of E.D.M. is specified by the result by the calculation of failure and destruction of the testing material. Based on the Fracture Mechanic calculation and testing, Material Engineers are able to provide a critical crack size of specific material under certain conditions of mechanical design, load, stress, corrosion or fatigue circles. The critical crack size has shape, length, width and depth.

Why do we call it is a critical crack size? The answer is, at a constant load or stress applied to the part, if the part has a flaw or crack size equal to critical crack/flaw size then the material failed instantly.

We do not want to detect an indication which is close to the critical crack size. We want to detect indication before it reaches the critical flaw /crack size.

When the indication of crack size is approaching the critical crack or flaw size by factor safety of 2 or 3 types, that crack or flaw indication will be rejected. What is the safety factor by 2 or 3? A safety factor by 2 is the indication crack size equals to ½ the size of the critical crack length. Same as the safety factor by 3 is the size of indication crack size equal to 1/3 of the critical crack size.

Now we understand how to select the correct size of indication needed to detect before it equals to critical crack size. We can specify the E.D.M (Electrical discharge machine) notch size. Because the E.D.M is a man made notch, it can be cut to a precise length, width and depth of the notch. This notch is a known crack or flaw size which is used for calibration of ET equipment with the ET probe or UT equipment with the UT transducer.

Most inspectors and engineers in the nondestructive testing just follow the technical release for inspection of regular routine inspection of Aircraft, Aircraft Engine by Maintenance Manual or Service bulletin from manufacturers of Aircraft or Aircraft Engines.

The Maintenance Manual or Service Bulletin provides the inspection procedure and calibration reference standards.

NOTE: The person responsible to develop a testing and inspection procedure normally is a NDI Engineer Level III with back ground is Materials Engineer.

Now we know the procedure of how and why the calibration was made. The engineers of Manufacturing companies follow exactly what I described above to create a calibration standard. The best calibration standard is the calibration standard made as identical to the Part needed to inspect.

After the calibration standard is made, the Manufacturer will select the method to inspect the Part needed to inspect. It can be either the ET or UT method.

The inspection procedure will provide all requirements of Testing equipment, cables, and ET probes or UT transducers.

They either provide the drawing of a Calibration standard needed to be made or just advise where the calibration can be purchased, but never said you have to buy the calibration from that company.

Similarly with ET probes and UT transducers, Aircraft or Engine Aircraft manufacturers never write the inspection procedure or spell out that we have to buy the ET probes and UT transducers from these listed companies. They are just available for your purchase, but any other company which has not been mentioned on the procedure but can still provide the similar ET probes and UT transducers which work on the same manner will be sufficient enough. It still can perform the inspection.

NOTE: Regardless of the Inspection procedure from Big manufacturers, the procedure and calibration standards sometime have flaws too. The engineers from these big companies are not perfect. They may make mistakes too, so be aware that the procedure and the calibration can have flaws too.

For surface crack inspection, a pencil probe, ET probe, or UT surface wave transducer can be used.

For sub surface crack or corrosion with a single layer or multiple layers less than 0.500” of nonferrous material, Low frequency ET probes can be used.

For sub surface crack or corrosion with a single layer, a UT transducer can be used.

For thickness measurement, the minimum thickness for a UT transducer is 0.010”

For thickness thinner than 0.010”, an ET probe can be used.

For measuring the resistivity or conductivity, an ET probe should be used.

These are a few suggestions to select the right technique.

EDDY CURRENT PROBES AND ULTRASONIC TRANSDUCERS FOR DIFFERENT INDUSTRIES OPINIONS

The myth about differences of ET probes and UT transducers whose, use these probe and transducers, are in different industries such as one is in Aerospace the other in heat exchanger or tube inspection industries. There are some people are nagging that there are two different animal in the same field. Some people who works in heat exchanger and tubes claims that the eddy current probe and the ultrasonic transducers are made different with the eddy current probes and transducers in Aerospace.

The truth answer is : eddy current probe is eddy current probe and ultrasonic transducer is ultrasonic transducer. There are no different in principal of fabrication of the ETC and UT. The only different is different in design of the ET probe and UT transducer configuration to fit the applications.

SPECIAL PROBES AND TRANSDUCERS: There are many probes and transducers types for specific application, please send us a drawing or sketch of your requirements and we will happy to discuss with you and give a quote for special custom made to fit your application.

TROUBLESHOOTING

There are many possible factors will contribute to difficult operating a probe. Following these test to make a correction problems.

- Check the probe type Bridge or reflectance ET probe
- Check cable type bridge cable or reflectance cable
- Check frequency setting is it in the probe range ?
- If the probe is no balance properly, possible cause: balance coil is no math, gain too high, driver voltage too high. Coil is damage. Try to match the coil value, reduce gain and driver voltage level
- If the probe can balance but there no phase change only amplitude change: Possible cause is Sine wave is saturation and become the rectangular waves. Reduce the diver voltage , gain and change Frequency up or down.
- Check cable for continuity

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