



- 1 TARGET, 90° THEODOLITE
T90
- 2 TARGET, 90° MAGNETIC THEODOLITE
T90M
- 3 TARGET, CORNER 90° (LEFT or RIGHT HAND)
TC/90 LH or RH
- 4 TARGET, CORNER 90° (NEG or POS)
TC/90 NEG or POS
- 5 TARGET, STRAIGHT-ON THEODOLITE
TS0
- 6 TARGET, MAGNETIC THEODOLITE
TM
- 7 TARGET, 45° THEODOLITE
T45
- 8 TARGET, 45° MAGNETIC THEODOLITE
T45M
- 9 TARGET, CORNER 45° (LEFT or RIGHT HAND)
TC45 LH or RH
- 10 TARGET, CORNER 45° (NEG or POS)
TC45 NEG or POS
- 11 TARGET, BUTTON
TB

TARGET BUTTON VARIABLE
TBV
- 12 FLUSH MOUNT THEODOLITE
FM
- 13 DOUBLE VECTOR TARGET THEODOLITE
DVT

TARGET, CORNER THEODOLITE
TC
- 14 45° DOUBLE VECTOR TARGET THEODOLITE
45 DVT
- 15 DOUBLE VECTOR TARGET MAGNETIC
DVTM
- 16 TARGET SKIN GAP
TSG
- 17 THEODOLITE 1.5 SPHERE
T 1.5 S

T90

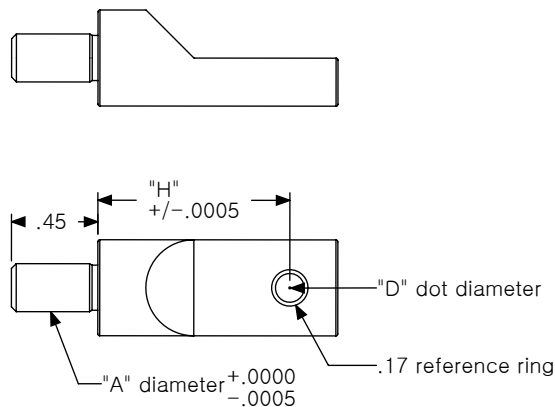
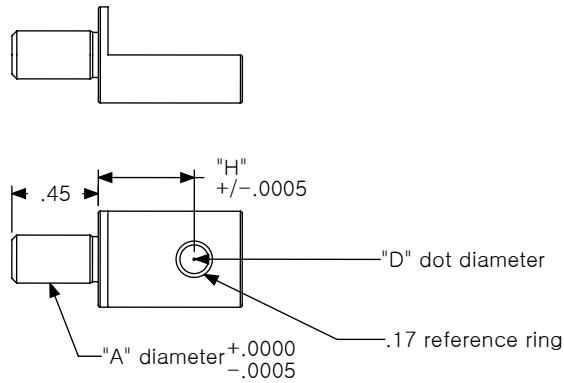
Used with computer-aided Theodolite for targeting holes approximately 90° to line of sight.

T90 ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
T90 STANDARD BUILD	T90	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	T90	■	■	■			
REFERENCE NOTES							

TARGET, 90° THEODOLITE

CAD on file



T90 - .500



T90 - 1.000



T90 FEATURES

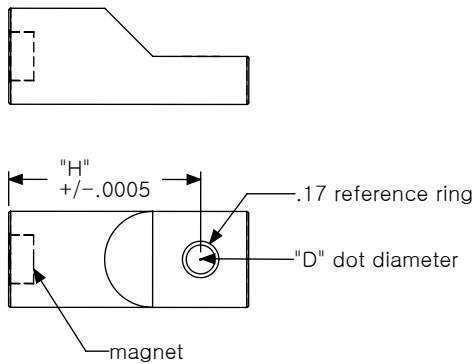
1144 STEEL, BLACK OXIDE FINISH (standard)

T90M
Used to target above
and 90° to steel surfaces.
The side of the body
may be used to target
surfaces, edges, or steps
.2500 away.

T90M ORDERING INFORMATION						
	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL		
T90M STANDARD BUILD	T90M			1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	T90M					
REFERENCE NOTES						

TARGET, 90° MAGNETIC THEODOLITE

CAD on file



T90M FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

T90M ORDERING
Normal offsets for
targets are:

- .3125
- .500
- 1.000
- 12mm
- 24mm

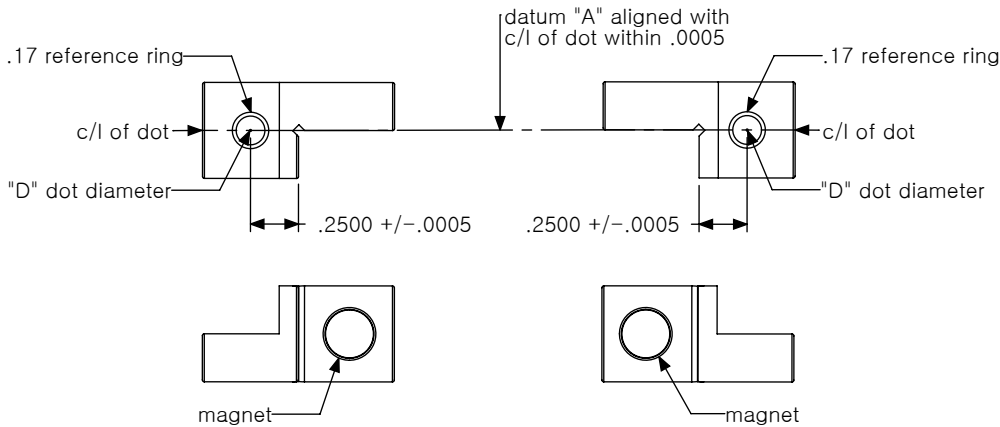
Other special offsets
available, subject to quote.

TC / 90
(LH or RH)
Used with computer-
aided Theodolite for
targeting edges
and/or surfaces.

TC / 90 - LH or RH ORDERING INFORMATION						
	FAMILY	LEFT or RIGHT HAND	"D" DOT DIAMETER	MATERIAL		
TC / 90 -LH or RH STANDARD BUILD	TC / 90	LH or RH		1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TC / 90	■	■			
REFERENCE NOTES						

TARGET CORNER, 90° (LEFT HAND or RIGHT HAND)

CAD on file



TC / 90-LH



TC / 90-RH



TC / 90
LH or RH
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TC / 90
(NEG or POS)
Used with computer-
aided Theodolite for
targeting edges
and/or surfaces.

TC / 90 - NEG or POS ORDERING INFORMATION						
	FAMILY	NEGATIVE or POSITIVE	"D" DOT DIAMETER	MATERIAL		
TC / 90-NEG or POS STANDARD BUILD	TC / 90	NEG or POS		1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TC / 90	■	■			
REFERENCE NOTES						

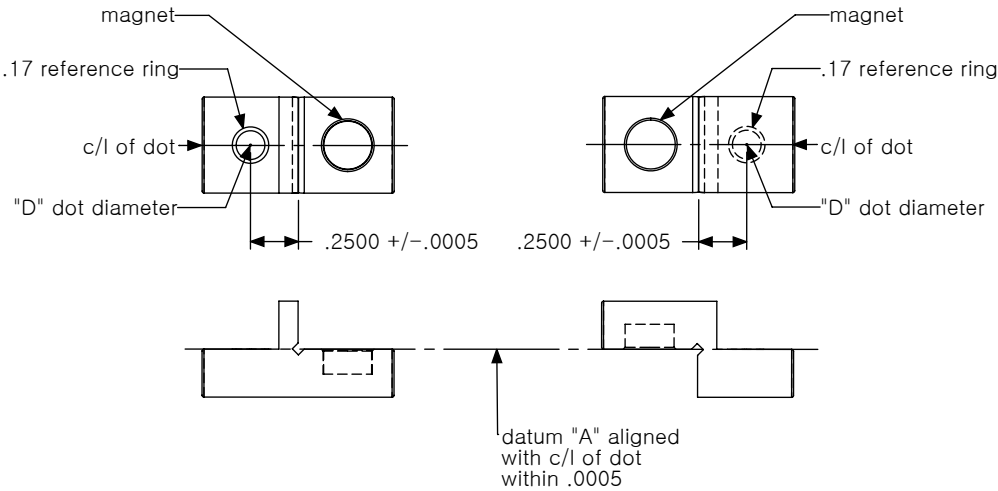
TARGET CORNER, 90° (NEGATIVE or POSITIVE)

CAD on file

NEGATIVE



POSITIVE



TC / 90
NEG or POS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TSO

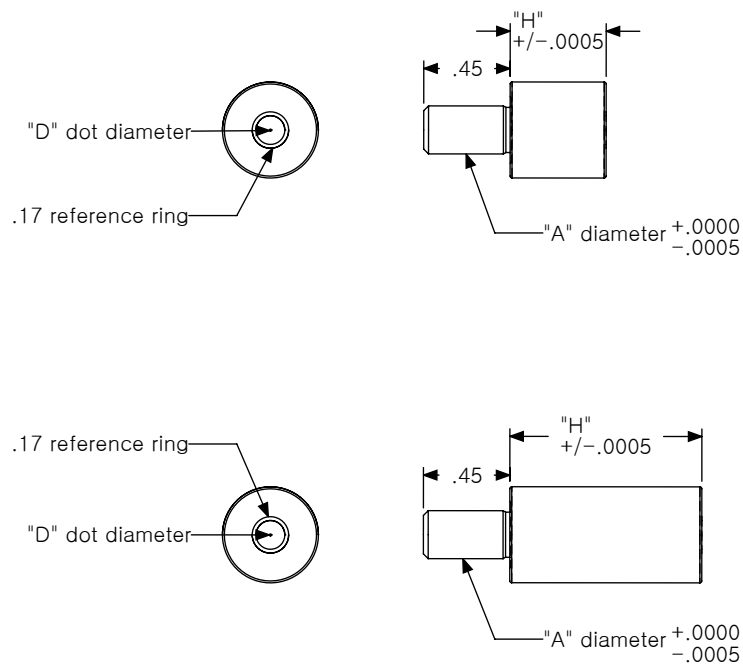
Used with computer-aided Theodolite for targeting holes approximately in line with line of sight.

TSO ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
TSO STANDARD BUILD	TSO	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TSO	■	■	■			
REFERENCE NOTES							

TARGET, STRAIGHT-ON THEODOLITE

CAD on file



TSO FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

TSO ORDERING

Normal offsets for targets are:

.3125
.500
1.000
12mm
24mm

Other special offsets available, subject to quote.

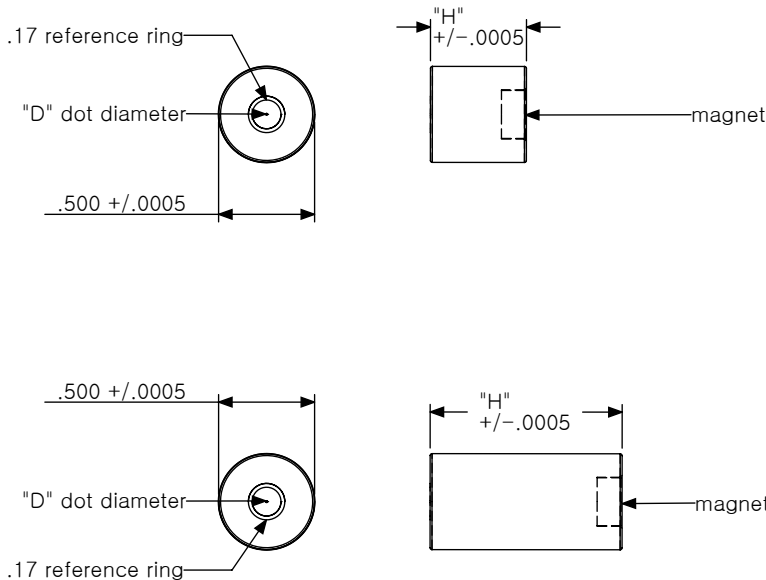
TM
Used to target above
and 90° to steel surfaces.
The side of the body
may be used to target
surfaces, edges, or
steps .2500 away.

TM ORDERING INFORMATION						
	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL		
TM STANDARD BUILD	TM	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TM	■	■			
REFERENCE NOTES						

A
6

TARGET, MAGNETIC THEODOLITE

CAD on file



TM FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TM ORDERING
Normal offsets for
targets are:

.3125
.500
1.000
12mm
24mm

Other special offsets
available, subject to quote.

T45

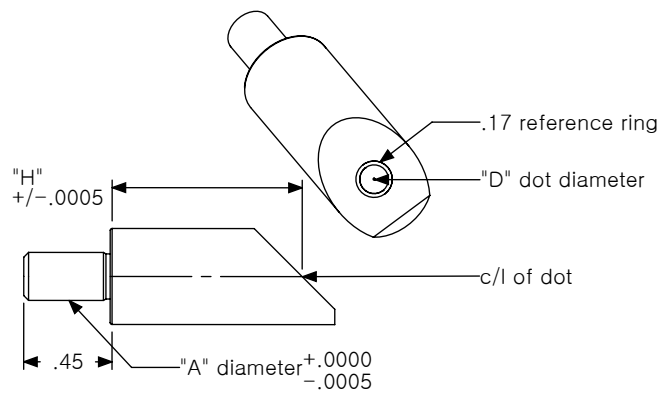
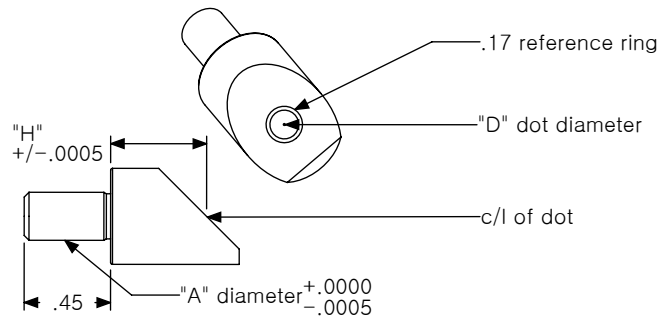
Used with computer-aided Theodolite for targeting holes approximately 45° to the line of sight.

T45 ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
T45 STANDARD BUILD	T45	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	T45	■	■	■			
REFERENCE NOTES							

TARGET, 45° THEODOLITE

CAD on file



T45 FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

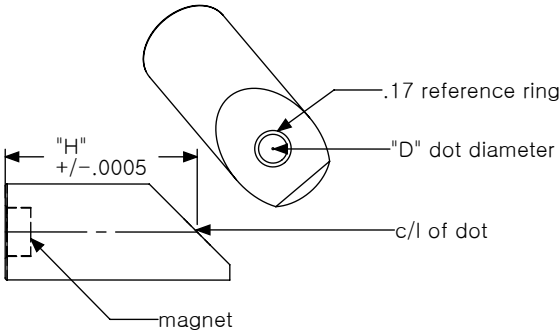
T45M
Used to target above and 90° to steel surfaces when a 45° target face is more applicable. The side of the body may be used to target surfaces, edges, or steps .2500 away.

T45M ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL			
T45M STANDARD BUILD	T45M			1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	T45M						
REFERENCE NOTES							

TARGET, 45° MAGNETIC THEODOLITE

CAD on file



T45M FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

TC / 45 (LH or RH)

Used with computer-aided Theodolite for targeting edges and/or surfaces.

TC / 45 - LH or RH ORDERING INFORMATION

	FAMILY	LEFT or RIGHT HAND	"D" DOT DIAMETER	MATERIAL			
TC / 45 -LH or RH STANDARD BUILD	TC / 45	LH or RH		1144 steel, black oxide finish			

CUSTOMER PROVIDES INFO

TC / 45

REFERENCE NOTES

TARGET CORNER, 45° THEODOLITE (LEFT HAND or RIGHT HAND)

CAD on file

TC / 45-LH

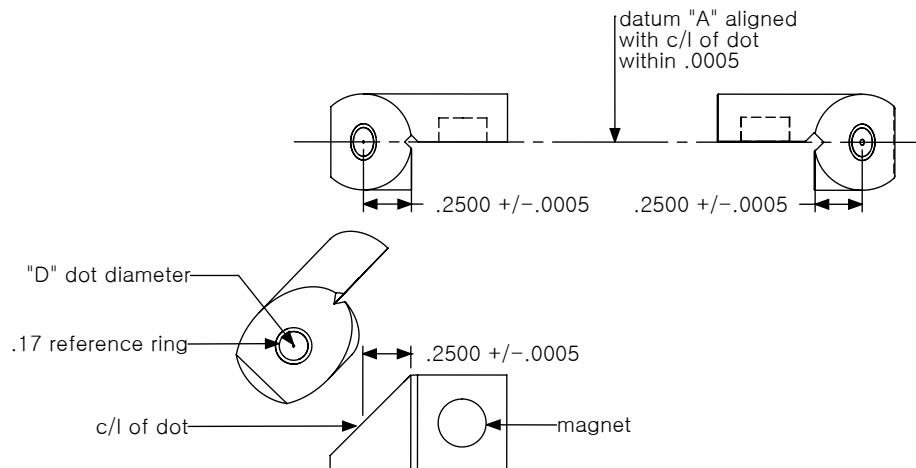


TC / 45-RH



TC / 45 - LH or RH FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

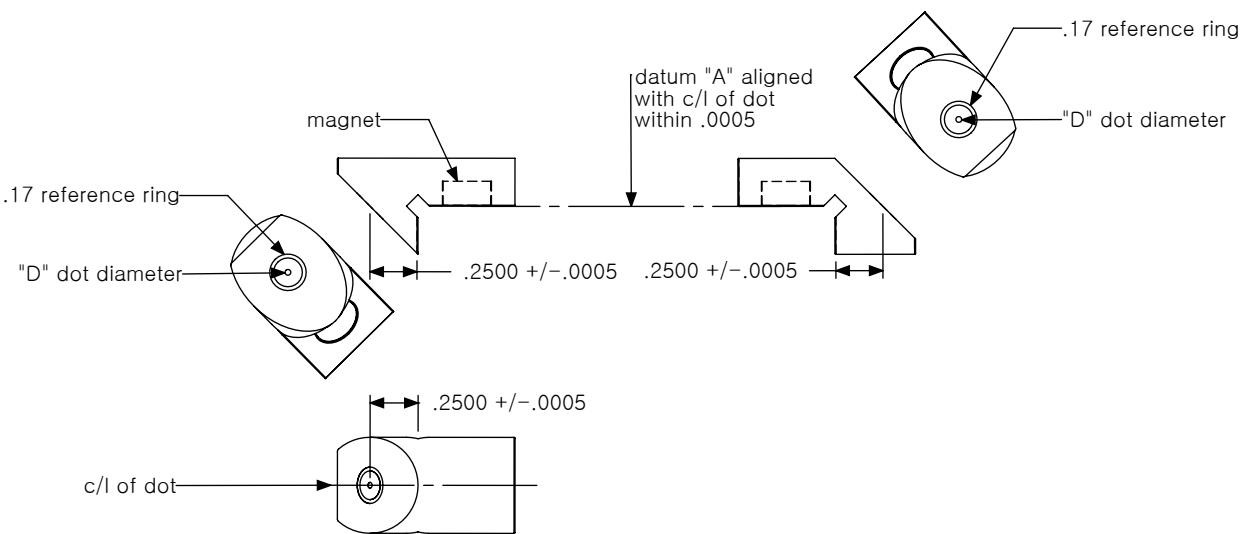


TC / 45
(NEG or POS)
Used with computer-
aided Theodolite for
targeting edges
and/or surfaces.

		TC / 45 - NEG or POS		ORDERING INFORMATION		
		FAMILY	NEGATIVE or POSITIVE	"D" DOT DIAMETER	MATERIAL	
TC / 45-NEG or POS STANDARD BUILD		TC / 45	NEG or POS		1144 steel, black oxide finish	
CUSTOMER PROVIDES INFO		TC / 45	■	■		
REFERENCE NOTES						

TARGET CORNER, 45° THEODOLITE (NEGATIVE or POSITIVE)

CAD on file



TC / 45
NEG or POS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TB and TBV

Used with computer-aided theodolite for targeting .125 diameter tooling holes. For any other requirements, refer to TBV design.

TB ORDERING INFORMATION

	FAMILY	"D" DOT DIAMETER	MATERIAL				
TB STANDARD BUILD	TB		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	TB						

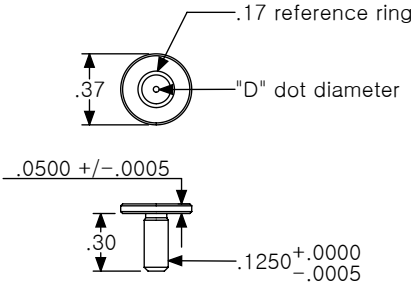
TBV ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"B" SHANK LENGTH	"D" DOT DIAMETER	MATERIAL		
TBV STANDARD BUILD	TBV				1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TBV						

REFERENCE NOTES

TARGET, BUTTON THEODOLITE

CAD on file



TB FEATURES

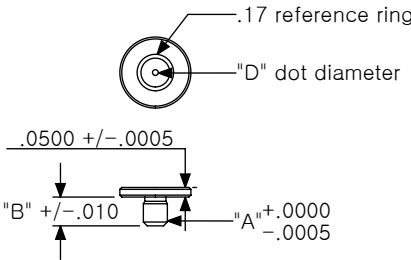
1144 STEEL, BLACK OXIDE FINISH (standard)

TB ORDERING

Can only select dot diameter.

TARGET, BUTTON VARIABLE THEODOLITE

CAD on file



TBV FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

TBV ORDERING

Customer has more call-out options than TB.

FM
Used for targeting holes
when a zero height
value is required. See
FM notes for ordering
specifications on
this product.

FM ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
FM STANDARD BUILD	FM	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	FM	■	■				
REFERENCE NOTES							

A
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FLUSH MOUNT THEODOLITE

CAD on file

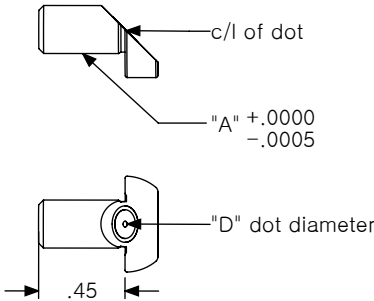


FM FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

FM ORDERING
STANDARD SHANK SIZES:

- .1250
- .1875
- .2500
- .3125
- .3750
- .4375
- .5000
- .6250
- .7500
- 1.000
- 6mm
- 8mm

Other shank sizes
possible, but subject to
call-out quote.



DVT

Used to measure location and angularity of a hole.

DVT ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
DVT STANDARD BUILD	DVT	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	DVT	■	■				

TC

Used with computer-aided Theodolite for targeting straight edges.

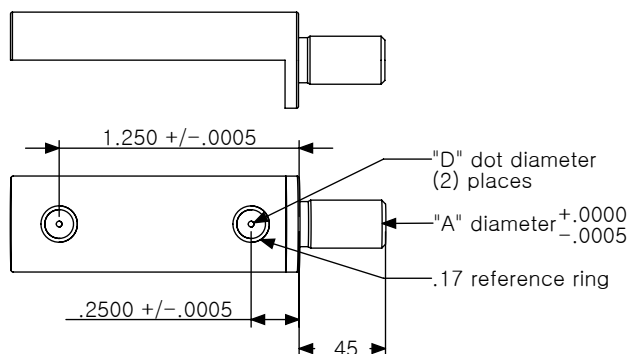
TC ORDERING INFORMATION

	FAMILY	"D" DOT DIAMETER	MATERIAL				
TC STANDARD BUILD	TC	↓	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	TC	■					

REFERENCE NOTES

DOUBLE VECTOR, TARGET THEODOLITE

CAD on file

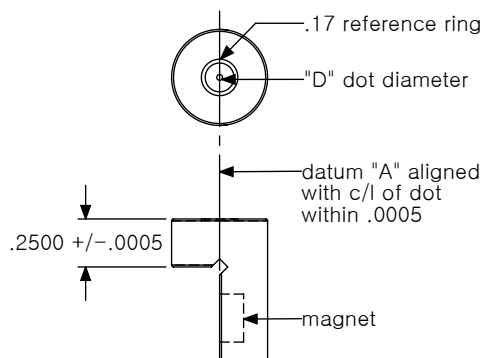


DVT FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

TARGET, CORNER THEODOLITE

CAD on file



TC FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

45 DVT
Used to measure
location and angularity
of a hole.

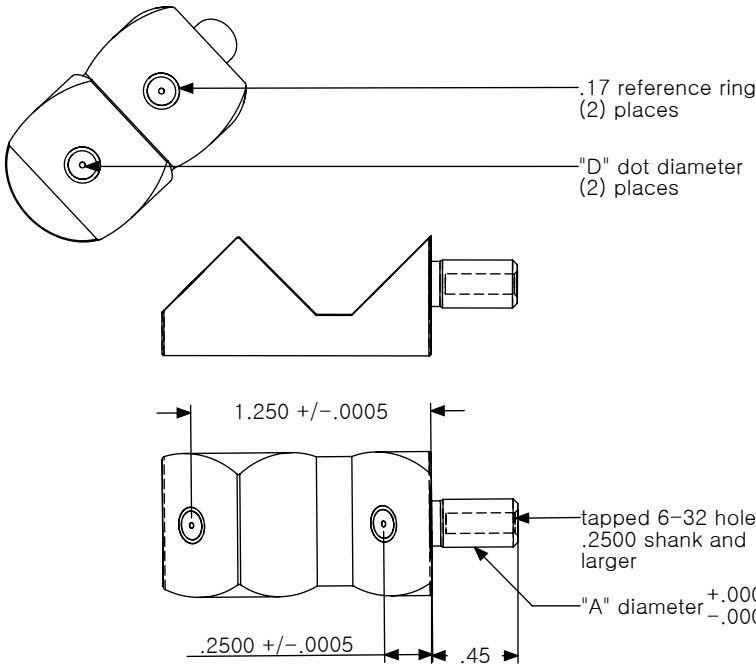
45 DVT ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
45 DVT STANDARD BUILD	45 DVT	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	45 DVT	■	■				
REFERENCE NOTES							

A
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45° DOUBLE VECTOR TARGET THEODOLITE

CAD on file



45 DVT
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

DVTM

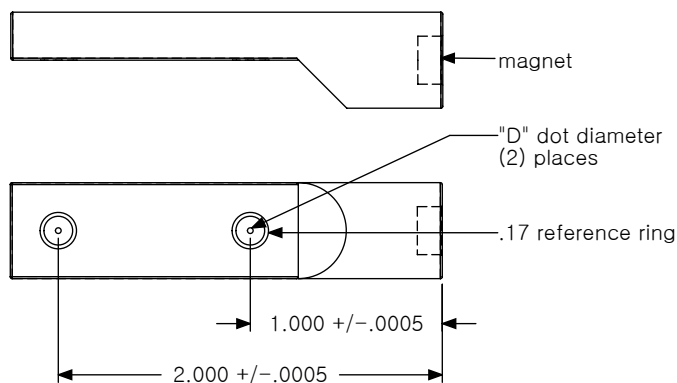
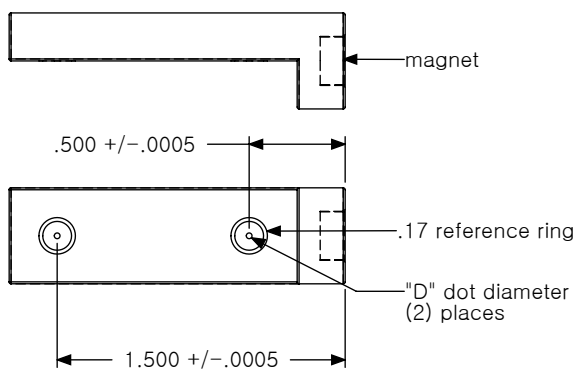
Used to measure location and angularity of a surface.

DVTM ORDERING INFORMATION

	FAMILY	"H" TO FIRST DOT	"D" DOT DIAMETER	MATERIAL			
DVTM STANDARD BUILD	DVTM	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	DVTM	■	■				
REFERENCE NOTES							

DOUBLE VECTOR, TARGET MAGNET

CAD on file



DVTM - .500



DVTM - 1.000



DVTM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

TSG
Used for locating edges
of sheet metal, slots,
or grooves.

TSG ORDERING INFORMATION

	FAMILY	"T" INDEXING TANG LENGTH	"D" DOT DIAMETER	MATERIAL			
TSG STANDARD BUILD	TSG	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	TSG	■	■				
REFERENCE NOTES							

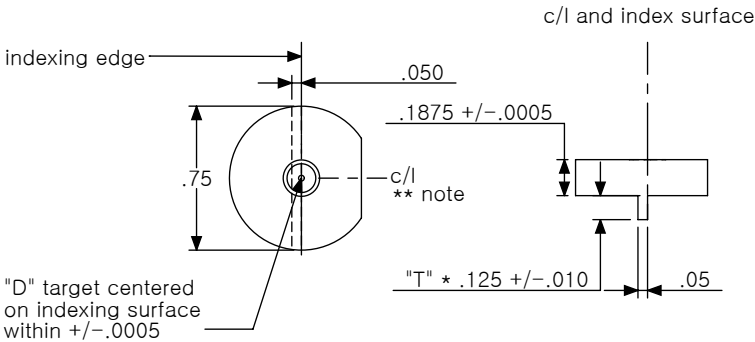
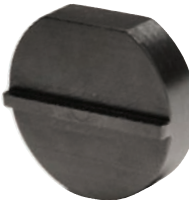
A
16

TARGET, SKIN GAP

CAD on file

NOTE

The side of the target with
the flat represents the side
of the indexing surface.



TSG FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TSG ORDERING
STANDARD INDEXING
TANG LENGTH

.125

Other indexing tang
lengths possible, but
subject to call-out quote.

T1.5S

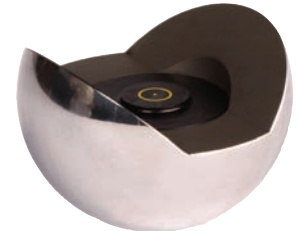
Provides same centerline value as a Spherically Mounted Retro-Reflector. This allows interchangeability from Laser Trackersystems to computer-aided Theodolite systems.

T1.5S ORDERING INFORMATION

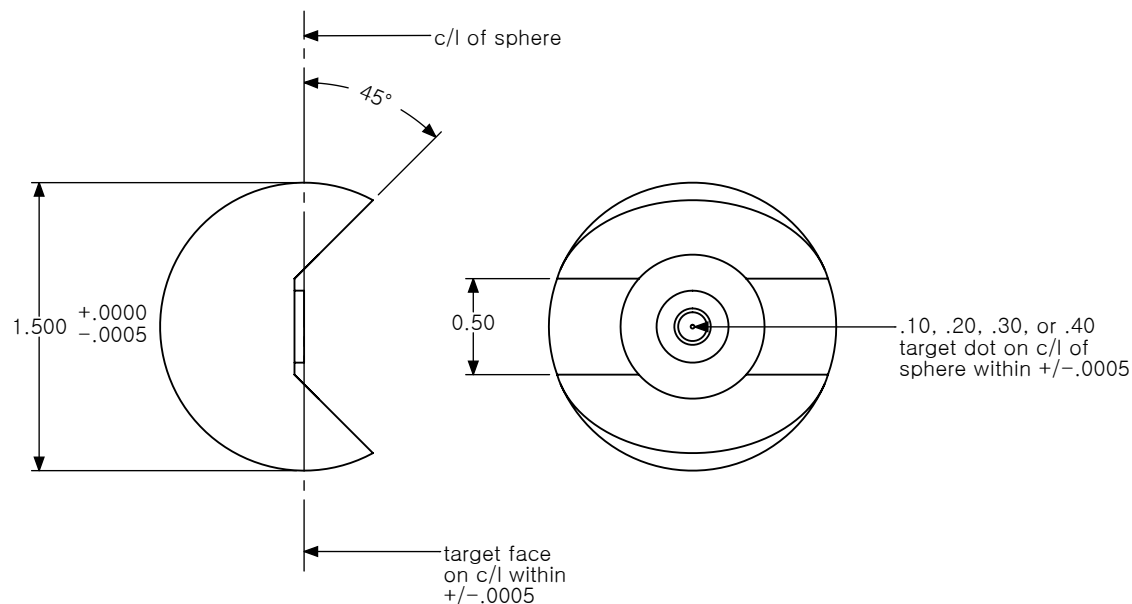
	FAMILY	"D" DOT DIAMETER	MATERIAL				
T1.5S STANDARD BUILD	T1.5S		stainless steel(SS) and 1144 steel				
CUSTOMER PROVIDES INFO	T1.5S	■	■				
REFERENCE NOTES							

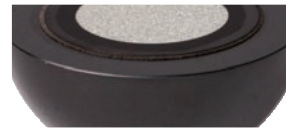
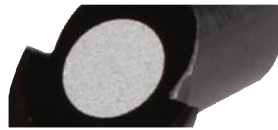
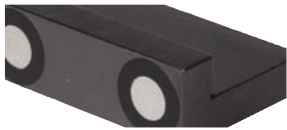
THEODOLITE 1.5 SPHERE

CAD on file



T1.5S FEATURES
HARDENED STAINLESS STEEL SHELL/SPHERE
R/C 53 – 55 with 1144 STEEL, BLACK OXIDE INSERT.





- 1 TARGET, 90° RETRO-REFLECTIVE
T90R
- 2 TARGET, 90° MAGNETIC RETRO-REFLECTIVE
T90MR
- 3 TARGET, STRAIGHT-ON RETRO-REFLECTIVE
TSOR
- 4 TARGET, MAGNETIC RETRO-REFLECTIVE
TMR
- 5 TARGET, 45° RETRO-REFLECTIVE
T45R
- 6 TARGET, 45° MAGNETIC RETRO-REFLECTIVE
T45MR
- 7 TARGET, CORNER 45° RETRO-REFLECTIVE
(LEFT or RIGHT HAND) TCR 45 LH or RH
- 8 TARGET, CORNER 45° RETRO-REFLECTIVE
(NEG or POS) TCR 45 NEG or POS
- 9 TARGET, BUTTON, RETRO-REFLECTIVE
TBR

TARGET, BUTTON,
RETRO-REFLECTIVE VARIABLE
TBRV
- 10 FLUSH MOUNT RETRO-REFLECTIVE
FMR
- 11 DOUBLE VECTOR TARGET RETRO-REFLECTIVE
DVTR
- 12 TARGET, CORNER RETRO-REFLECTIVE
TCR
- 13 DOUBLE TARGET EDGE TARGET
DTET

DOUBLE VECTOR TARGET VIDEO
DVTV
- 14 45° DOUBLE VECTOR TARGET RETRO-REFLECTIVE
45 DVTR
- 15 TARGET, CORNER 90° RETRO-REFLECTIVE
(LEFT or RIGHT HAND)
TCR/90 LH or RH
- 16 TARGET, CORNER 90° RETRO-REFLECTIVE
(NEG or POS)
TCR/90 NEG or POS
- 17 SPLIT-BEARING RETRO-REFLECTIVE
SBR

- 18 TARGET SKIN GAP, RETRO-REFLECTIVE
TSGR
- 19 RETRO-REFLECTIVE 1.5 SPHERE
R 1.5 S

T90R

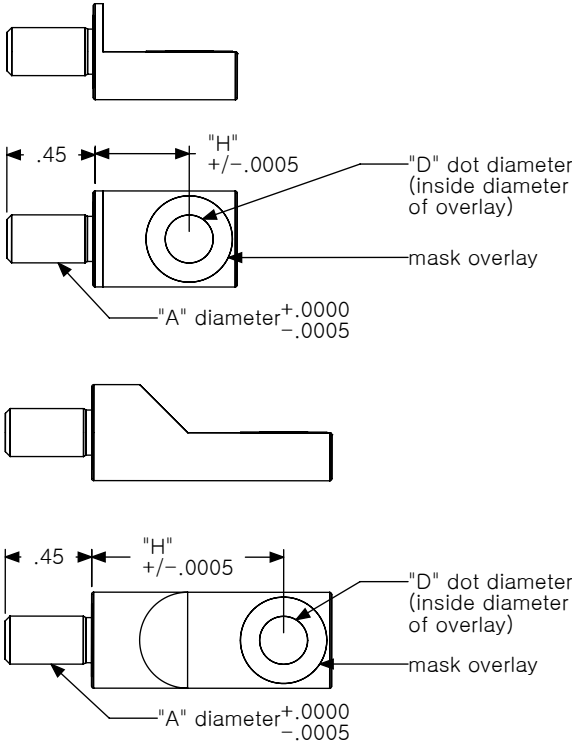
Used with
photogrammetry
for targeting holes
approximately 90° to
line of sight.

T90R (T90 .500 or T90 1.000) ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
T90R STANDARD BUILD	T90R	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	T90R	■	■	■			
REFERENCE NOTES							

TARGET, 90° RETRO - REFLECTIVE (T90 .500 or T90 1.000)

CAD on file



T90R - .500



T90R - 1.000



T90R FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

T90MR

Used to target above and 90° to steel surfaces.
The side of the body may be used to target surfaces, edges, or steps .2500 or .3750 away.

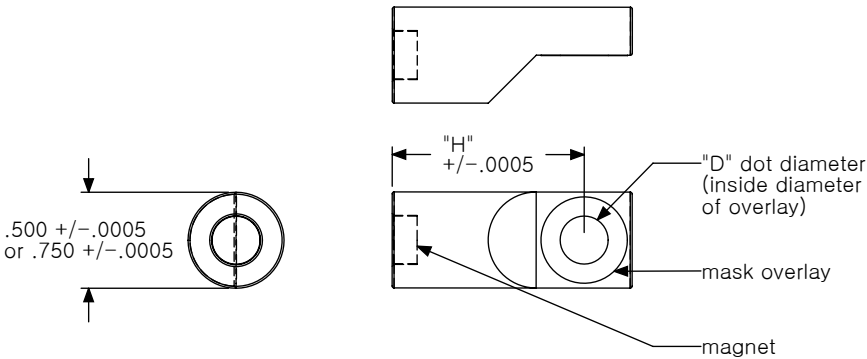
T90MR ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL			
T90MR STANDARD BUILD	T90MR			1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	T90MR						
REFERENCE NOTES							

B
2

TARGET, 90° MAGNETIC RETRO-REFLECTIVE

CAD on file



T90MR FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

T90MR ORDERING
Normal offsets for targets are:

- .3125
- .500
- 1.000
- 12mm
- 24mm

Other special offsets available, subject to quote.

TSOR

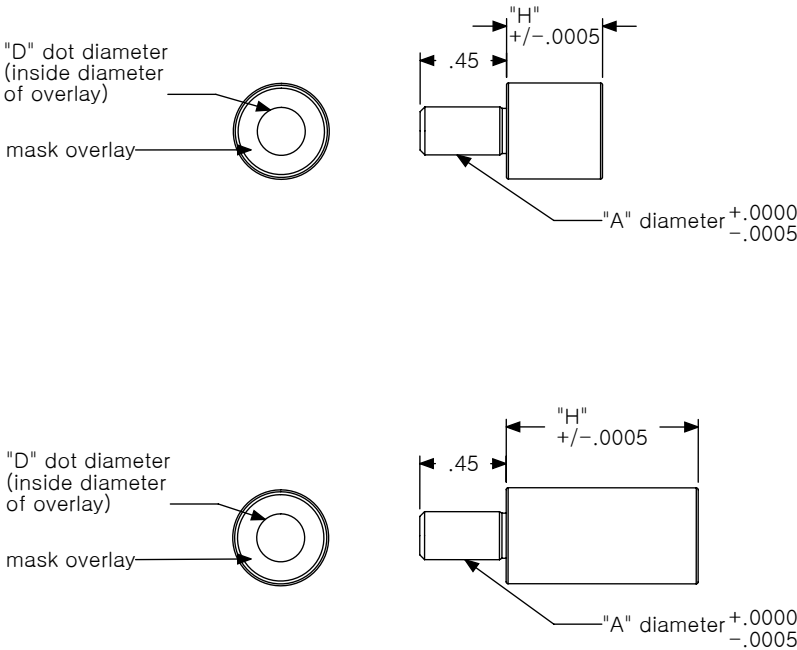
Used with
photogrammetry
for targeting holes
approximately in line
with line of sight.

TSOR ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
TSOR STANDARD BUILD	TSOR	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TSOR	■	■	■			
REFERENCE NOTES							

TARGET, STRAIGHT-ON, RETRO - REFLECTIVE

CAD on file



TSOR - .500



TSOR - 1.000



TSOR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TSOR ORDERING
Normal offsets for
targets are:

- .3125
- .500
- 1.000
- 12mm
- 24mm

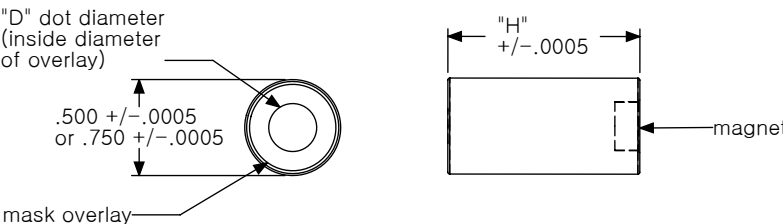
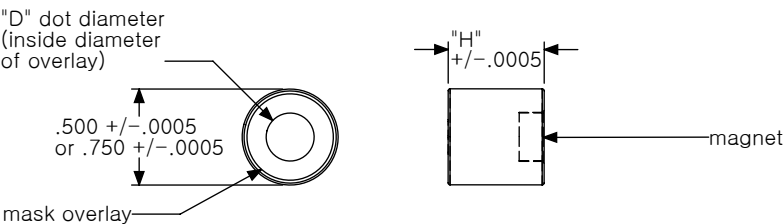
Other special offsets
available, subject to quote.

TMR
Used to target above
and 90° to steel surfaces.
The side of the body
may be used to target
surfaces, edges, or steps
.2500 or .3750 away.

TMR ORDERING INFORMATION						
	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL		
TMR STANDARD BUILD	TMR			1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TMR					
REFERENCE NOTES						

TARGET, MAGNETIC, RETRO - REFLECTIVE

CAD on file



TMR - .500



TMR - 1.000



TMR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TMR ORDERING
Normal offsets for
targets are:

- .3125
- .500
- 1.000
- 12mm
- 24mm

Other special offsets
available, subject to quote.

T45R

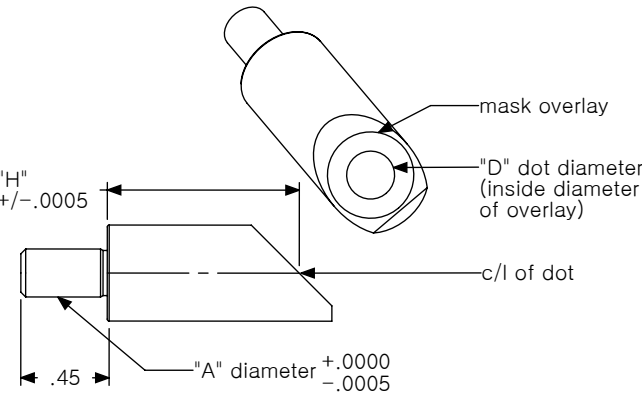
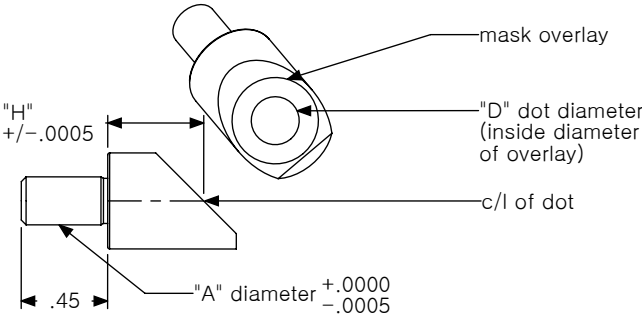
Used with
photogrammetry
for targeting holes
approximately 45° to
the line of sight.

T45R ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL		
T45R STANDARD BUILD	T45R	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	T45R	■	■	■			
REFERENCE NOTES							

TARGET, 45° RETRO - REFLECTIVE

CAD on file



T45R - .500



T45R - 1.000



T45R FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

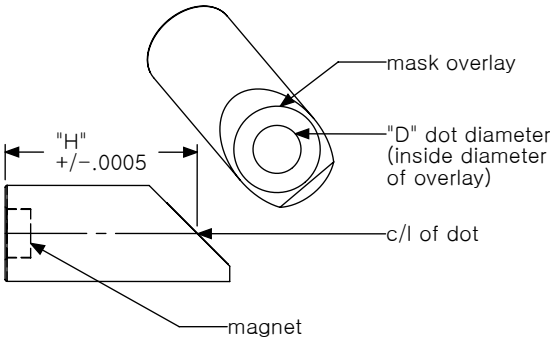
T45MR

Used to target above and 90° to steel surfaces when a 45° target face is more applicable. The side of the body may be used to target surfaces, edges, or steps .2500 or .3750 away.

T45MR ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"D" DOT DIAMETER	MATERIAL			
T45MR STANDARD BUILD	T45MR			1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	T45MR						
REFERENCE NOTES							

TARGET, 45° MAGNETIC, RETRO - REFLECTIVE



T45MR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TCR / 45
(LH or RH)
Used with
photogrammetry
for targeting
edges/surfaces.

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TCR / 45 - LH or RH ORDERING INFORMATION

	FAMILY	LEFT or RIGHT HAND	"D" DOT DIAMETER	MATERIAL			
TCR / 45 -LH or RH STANDARD BUILD	TCR / 45	LH or RH	↓	1144 steel, black oxide finish			

CUSTOMER
PROVIDES INFO

TCR / 45

REFERENCE
NOTES

TARGET CORNER, 45° RETRO - REFLECTIVE (LEFT HAND or RIGHT HAND)

CAD on file

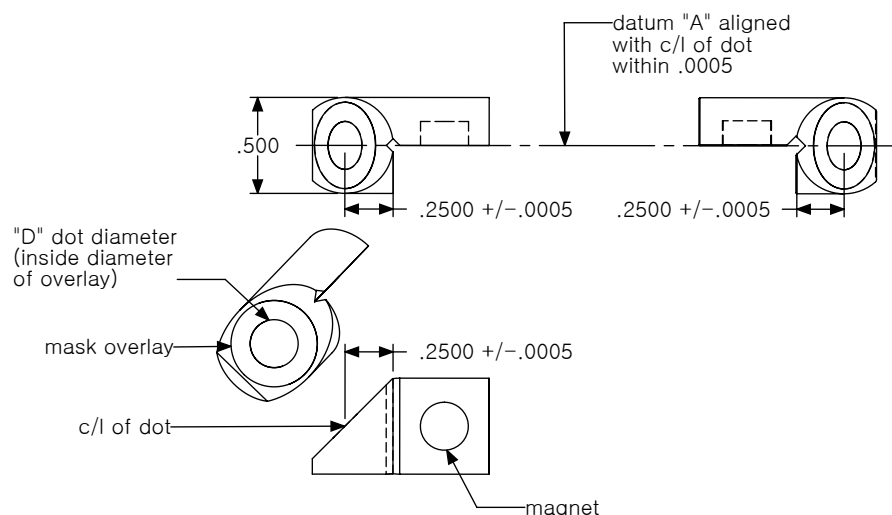
TCR / 45-LH



TCR / 45-RH



TCR / 45 - LH or RH
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



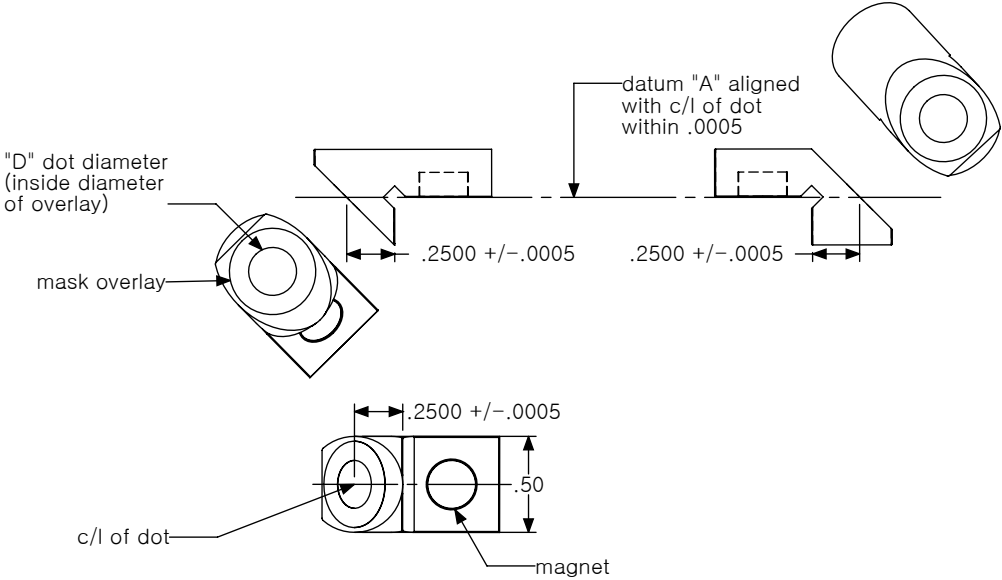
TCR / 45
(NEG or POS)
Used with
photogrammetry
for targeting
edges/surfaces.

TCR / 45 - NEG or POS ORDERING INFORMATION

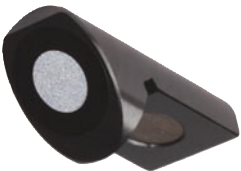
	FAMILY	NEGATIVE or POSITIVE	"D" DOT DIAMETER	MATERIAL			
TCR / 45-NEG or POS STANDARD BUILD	TCR / 45	NEG or POS	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	TCR / 45	■	■				
REFERENCE NOTES							

TARGET CORNER, 45° RETRO - REFLECTIVE (NEGATIVE or POSITIVE)

CAD on file



TCR / 45-NEG



TCR / 45-POS



TCR / 45
NEG or POS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TBR and TBRV

Used with photo-grammetry for targeting .125 diameter tooling holes. For any other requirements, refer to TBRV design.

TBR ORDERING INFORMATION

	FAMILY	"D" DOT DIAMETER	MATERIAL				
TBR STANDARD BUILD	TBR		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	TBR						

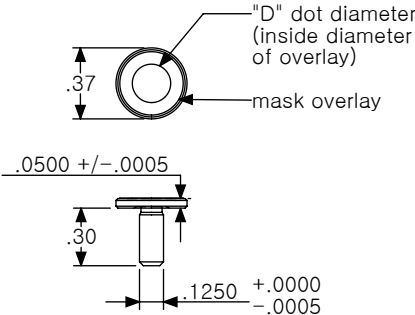
TBRV ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"B" SHANK LENGTH	"D" DOT DIAMETER	MATERIAL		
TBRV STANDARD BUILD	TBRV				1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	TBRV						

REFERENCE NOTES

TARGET, BUTTON RETRO - REFLECTIVE

CAD on file

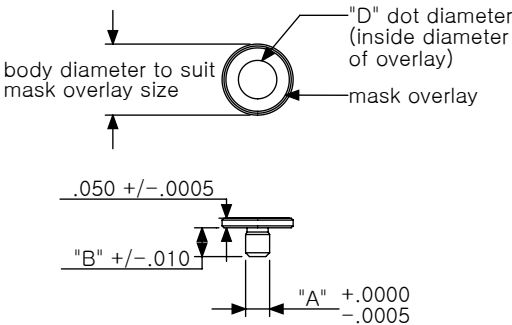


TBR FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

TBR ORDERING
Can only select dot diameter.

TARGET, BUTTON, RETRO - REFLECTIVE VARIABLE

CAD on file



TBRV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

FMR
Used for targeting holes
when a zero height value
is required.

FMR ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
FMR STANDARD BUILD	FMR	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	FMR	■	■				
REFERENCE NOTES							

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FLUSH MOUNT RETRO - REFLECTIVE

CAD on file

NOTE
Some limitations of dot
diameters relative to
shank diameters.

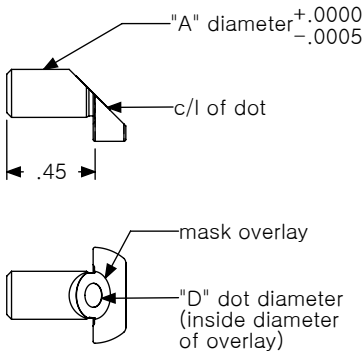


FMR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

FMR ORDERING
STANDARD SHANK SIZES:

- .1250
- .1875
- .2500
- .3125
- .3750
- .4375
- .5000
- .6250
- .7500
- 1.000
- 6mm
- 8mm

Other shank sizes
possible, but subject to
call-out quote.



DVTR

Used to measure
location and angularity
of a hole.

DVTR ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
DVTR STANDARD BUILD	DVTR	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	DVTR	■	■				
REFERENCE NOTES							

DOUBLE VECTOR TARGET RETRO - REFLECTIVE

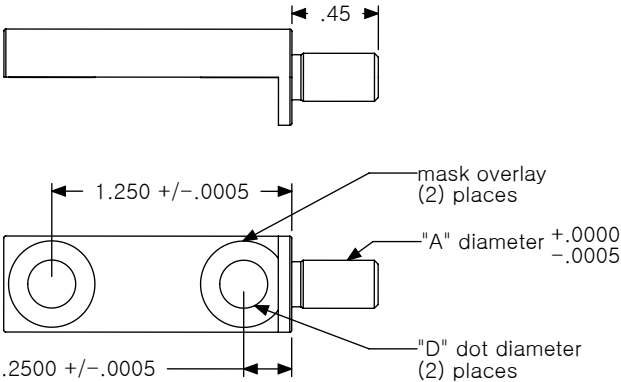
CAD on file

NOTE

.2500 maximum dot
diameter. For larger dot
diameters, use DVTV
on page B13.



DVTR
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



TCR
Used with
photogrammetry
for targeting
edges/surfaces.

TCR ORDERING INFORMATION

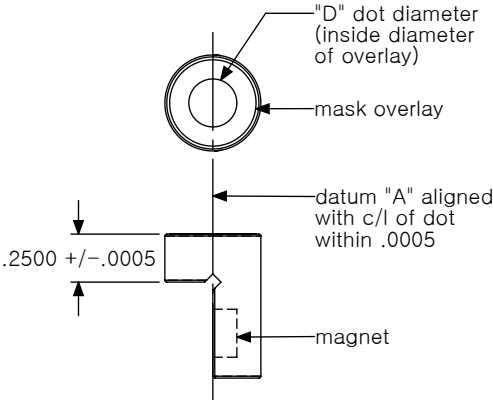
	FAMILY	"D" DOT DIAMETER	MATERIAL				
TCR STANDARD BUILD	TCR	↓	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	TCR	■					
REFERENCE NOTES							

TARGET CORNER, RETRO - REFLECTIVE

CAD on file



TCR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



DTET

Used to target edges/surfaces.

DTET ORDERING INFORMATION

	FAMILY	"D" DOT DIAMETER	MATERIAL				
DTET STANDARD BUILD	DTET	↓	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	DTET	■					

DVTV

Used to measure location and angularity of a hole.

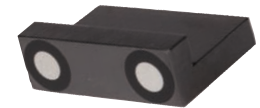
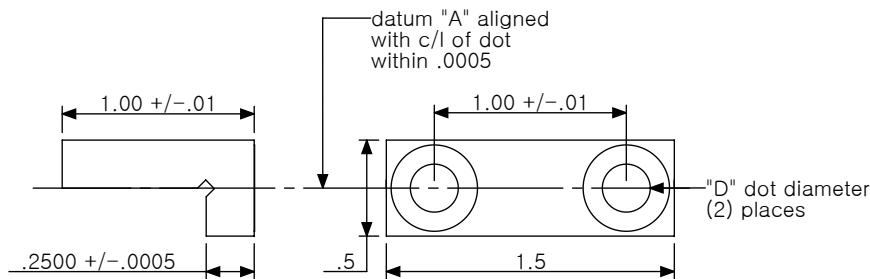
DVTV ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"B" SHANK LENGTH	"D" DOT DIAMETER	MATERIAL		
DVTV STANDARD BUILD	DVTV	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	DVTV	■	■	■			

REFERENCE
NOTES

DOUBLE TARGET EDGE TARGET

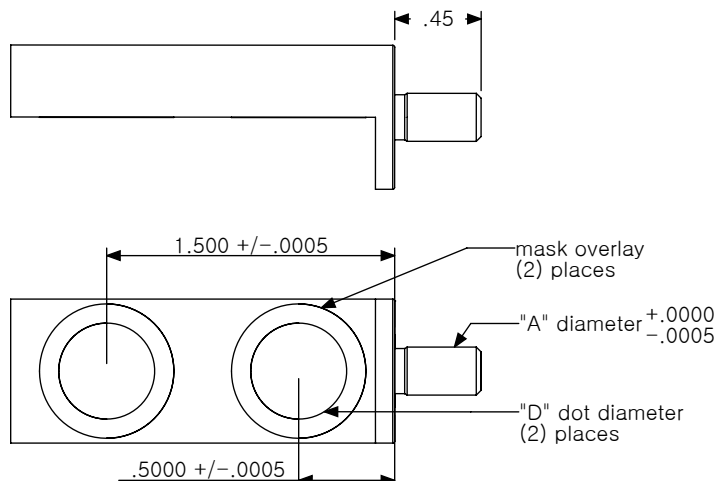
CAD on file



DTET FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

DOUBLE VECTOR TARGET VIDEO

CAD on file



DVTV FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

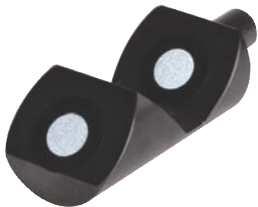
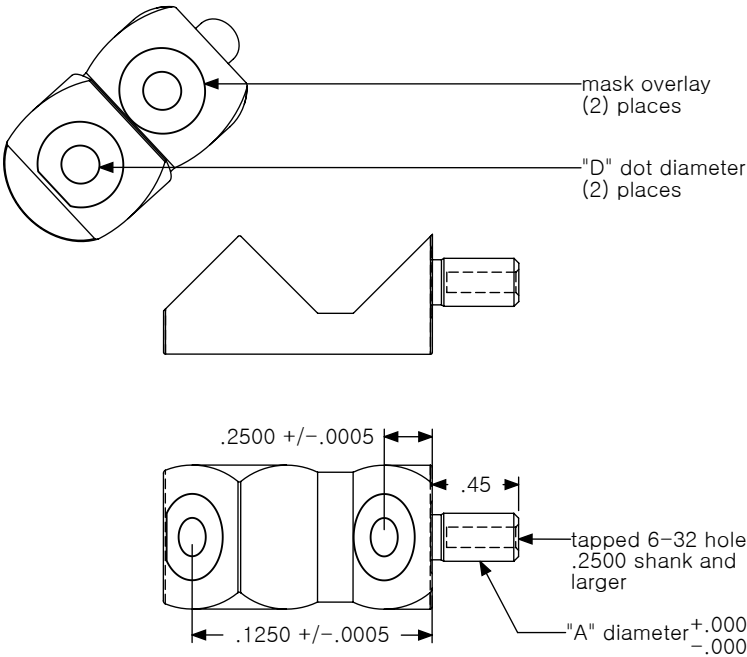
45 DVTR
Used to measure
location and angularity
of a hole.

45 DVTR ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" DOT DIAMETER	MATERIAL			
45 DVTR STANDARD BUILD	45 DVTR	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	45 DVTR	■	■				
REFERENCE NOTES							

45° DOUBLE VECTOR TARGET RETRO - REFLECTIVE

CAD on file



45 DVTR
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TCR / 90
(LH or RH)
Used with
photogrammetry
for targeting
edges/surfaces.

TCR / 90 LH or RH ORDERING INFORMATION

	FAMILY	LEFT or RIGHT HAND	"D" DOT DIAMETER	MATERIAL			
TCR / 90-LH or RH STANDARD BUILD	TCR / 90	LH or RH		1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	TCR / 90	▪	▪				
REFERENCE NOTES							

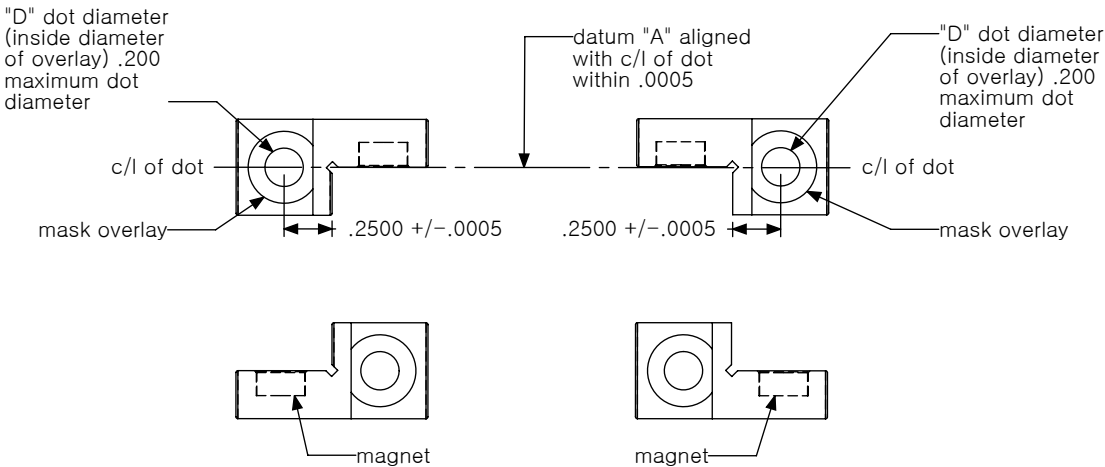
TARGET CORNER, RETRO - REFLECTIVE, 90° (LEFT or RIGHT HAND)

CAD on file

TCR / 90-LH



TCR / 90-RH



TCR / 90
LH or RH
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TCR / 90
(NEG or POS)
Used with
photogrammetry
for targeting
edges/surfaces.

TCR / 90 NEG or POS ORDERING INFORMATION

	FAMILY	LEFT or RIGHT HAND	"D" DOT DIAMETER	MATERIAL			
TCR / 90-NEG or POS STANDARD BUILD	TCR / 90	NEG or POS		1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	TCR / 90	■	■				
REFERENCE NOTES							

TARGET CORNER, RETRO - REFLECTIVE, 90° (NEGATIVE or POSITIVE)

CAD on file

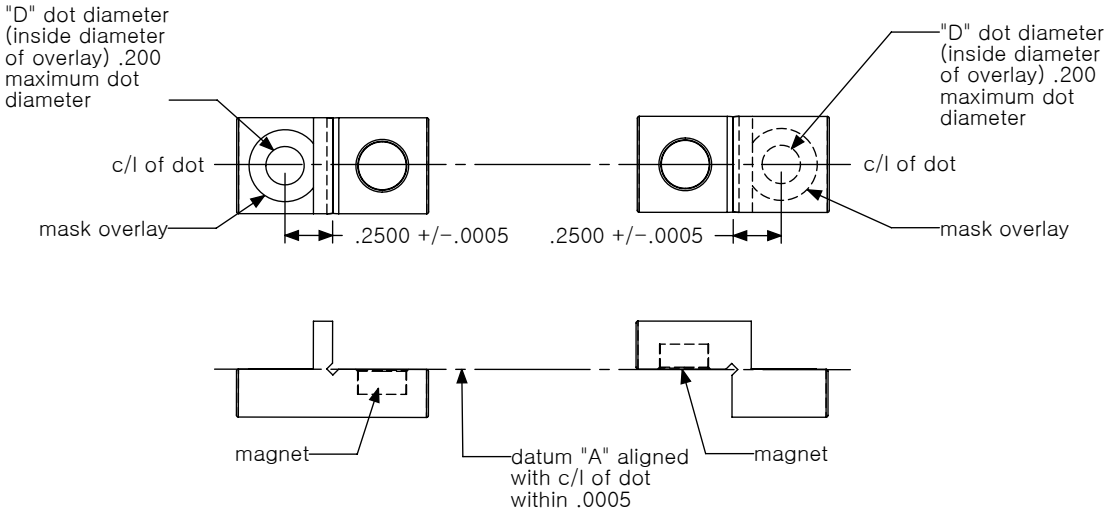
TCR / 90-NEG



TCR / 90-POS



TCR / 90
NEG or POS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



SBR

Designed for use where radial location is desired.

SBR ORDERING INFORMATION

	FAMILY	BALL DIAMETER	"D" DOT DIAMETER	MATERIAL			
SBR STANDARD BUILD	SBR	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	SBR	■	■				
REFERENCE NOTES							

SPLIT BEARING RETRO - REFLECTIVE

CAD on file



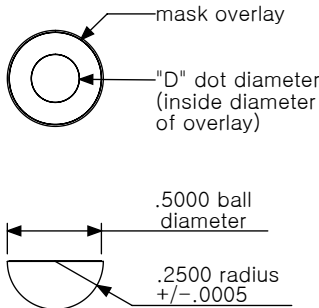
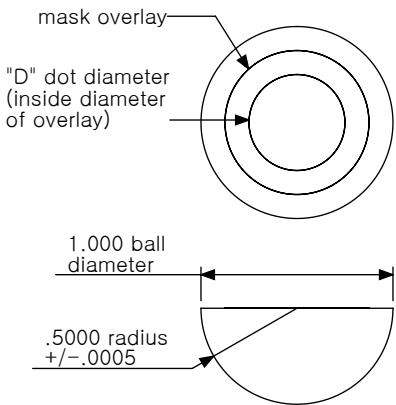
SBR FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

- .5 and 1.5 SBR can be used with standard Laser Tracker Sphere Mounts.

SBR ORDERING
STANDARD BALL DIAMETER SIZES

.500
1.000
1.500

Other ball diameter sizes possible, but subject to call-out quote.



TSGR

Used for locating edges
of sheet metal, slots
or grooves.

TSGR ORDERING INFORMATION

	FAMILY	"T" INDEXING TANG LENGTH	"D" DOT DIAMETER	MATERIAL			
TSGR STANDARD BUILD	TSGR	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	TSGR	■	■				
REFERENCE NOTES							

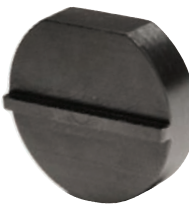
B
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TARGET SKIN GAP, RETRO - REFLECTIVE

CAD on file

NOTE

The side of the target with
the flat represents the side
of the indexing surface.

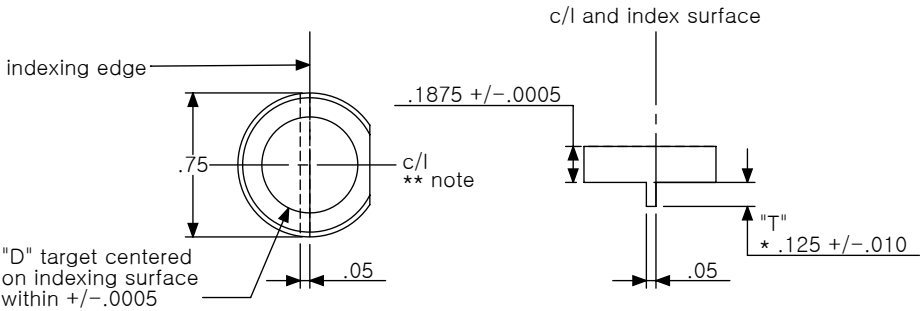


TSGR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

TSGR ORDERING
STANDARD INDEXING
TANG LENGTH

.125

Other indexing tang
lengths possible, but
subject to call-out quote.



R1.5S

Provides same centerline value as a Spherically Mounted Retro-Reflector. This allows interchangeability from Laser Tracker systems to Photogrammetry or Videogrammetry systems.

R1.5S ORDERING INFORMATION

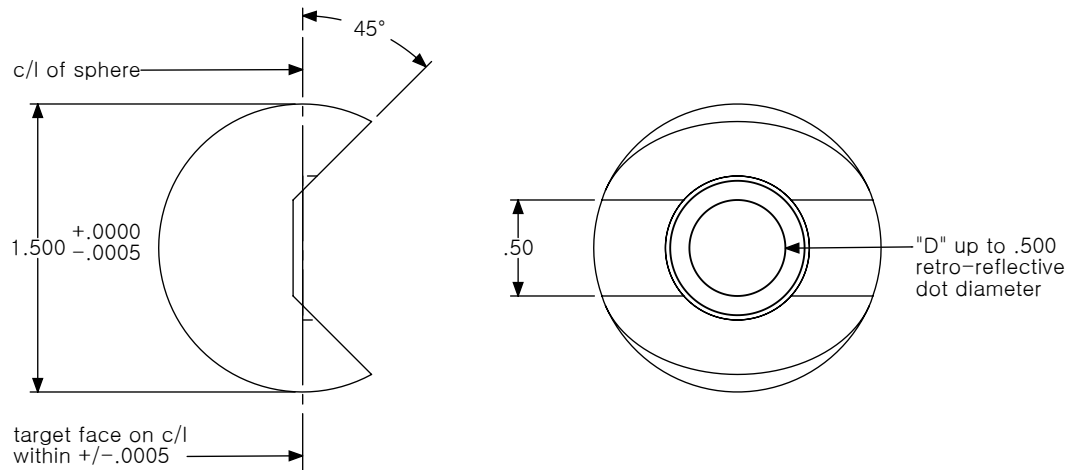
	FAMILY	"D" DOT DIAMETER	MATERIAL				
R1.5S STANDARD BUILD	R1.5S		stainless steel(SS) and 1144 steel				
CUSTOMER PROVIDES INFO	R1.5S	■					
REFERENCE NOTES							

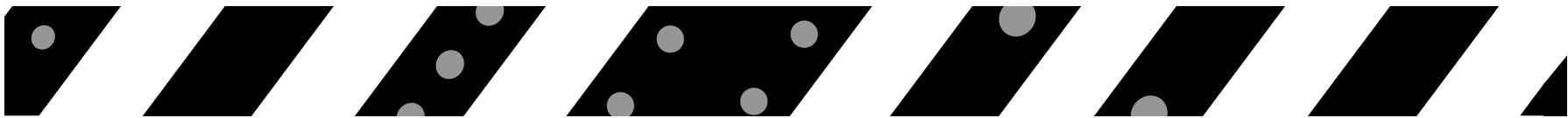
RETRO - REFLECTIVE 1.5 SPHERE

CAD on file



R1.5S FEATURES
HARDENED STAINLESS STEEL SHELL/SPHERE
R/C 53 – 55 with 1144 STEEL, BLACK OXIDE INSERT



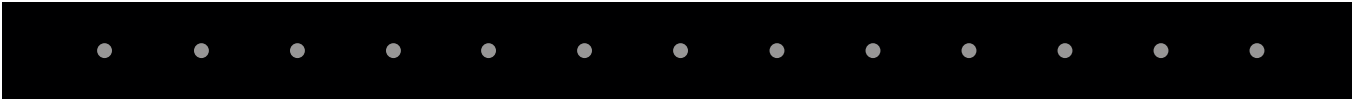


- 1 RETRO-REFLECTIVE TAPE
.06 - .12 DOT DIAMETER
- 2 RETRO-REFLECTIVE TAPE
.12 - .20 DOT DIAMETER
- 3 RETRO-REFLECTIVE TAPE
.25 DOT DIAMETER
- 4 RETRO-REFLECTIVE TAPE
.37 - .39 DOT DIAMETER
- 5 RETRO-REFLECTIVE TAPE
.50 DOT DIAMETER
- 6 RETRO-REFLECTIVE TAPE
.75 - 1.00 DOT DIAMETER

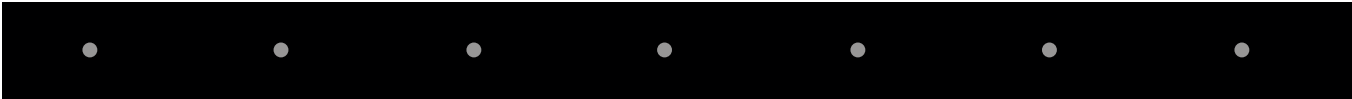


RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

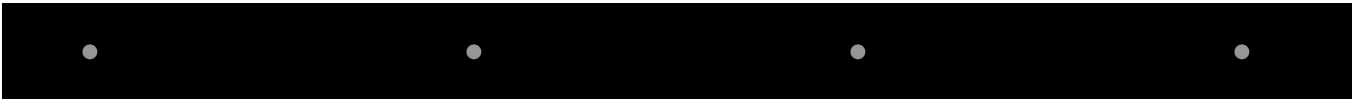
.06 DOT DIAMETER X .500 SPACING



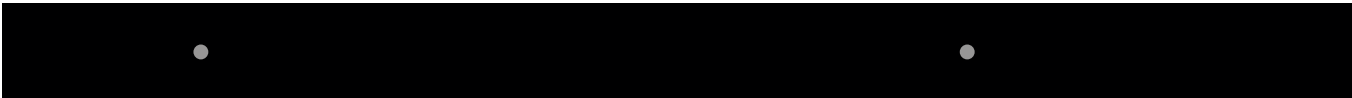
.06 DOT DIAMETER X 1.00 SPACING



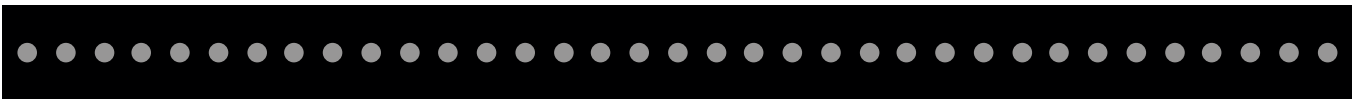
.06 DOT DIAMETER X 2.00 SPACING



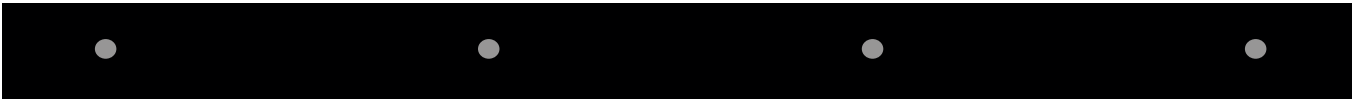
.06 DOT DIAMETER X 4.00 SPACING



.08 DOT DIAMETER X .20 SPACING



.09 DOT DIAMETER X 2.00 SPACING



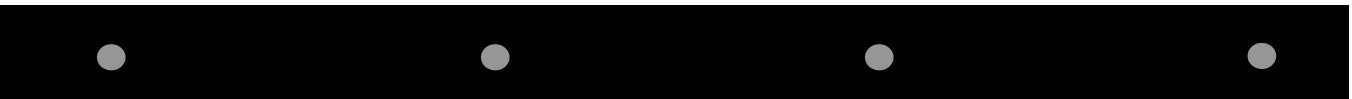
.12 DOT DIAMETER X .40 SPACING



.12 DOT DIAMETER X 1.00 SPACING

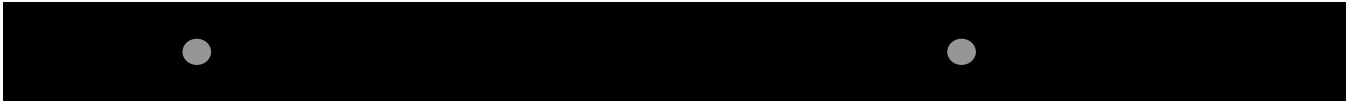


.12 DOT DIAMETER X 2.00 SPACING

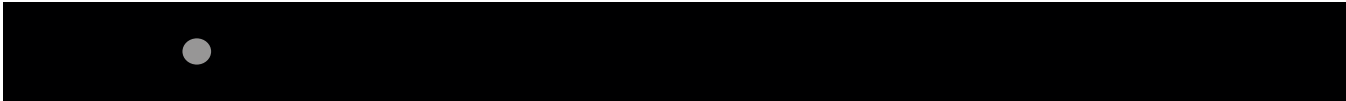


RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

.12 DOT DIAMETER X 4.00 SPACING



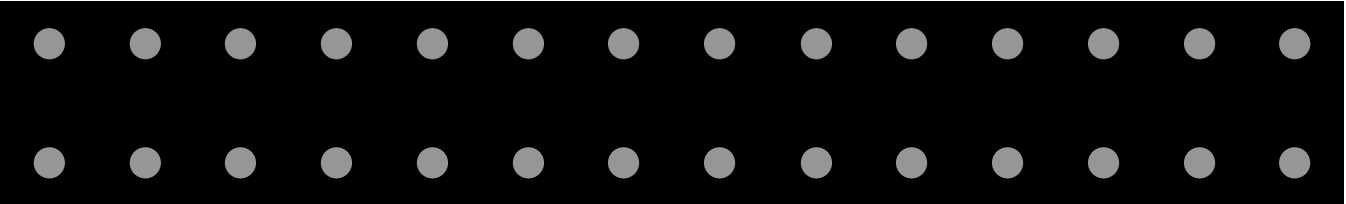
.12 DOT DIAMETER X 9.25 SPACING



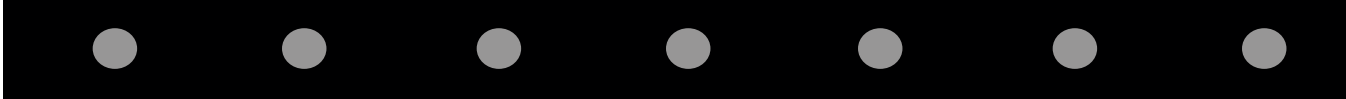
.16 DOT DIAMETER X .40 SPACING



.16 DOT DIAMETER X 4.00 SPACING (SIDE BY SIDE)



.20 DOT DIAMETER X .20 SPACING



.20 DOT DIAMETER X 2.00 SPACING



.20 DOT DIAMETER X .40 SPACING



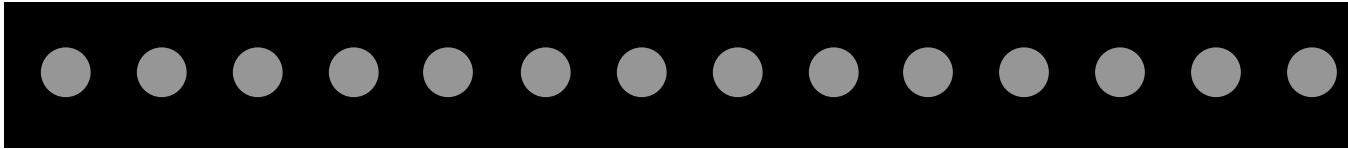
.20 DOT DIAMETER X 2.00 SPACING



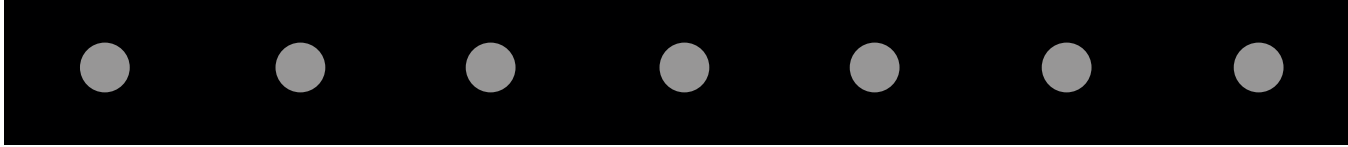
C
2

RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

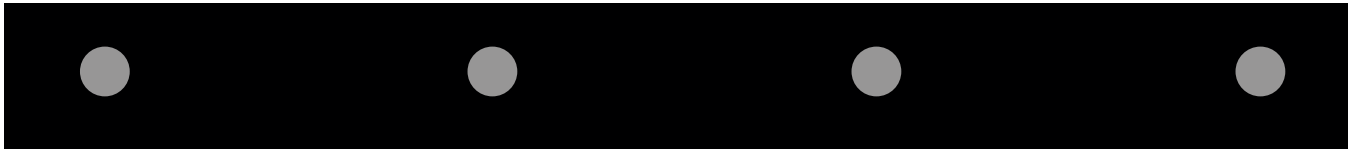
.25 DOT DIAMETER X .50 SPACING



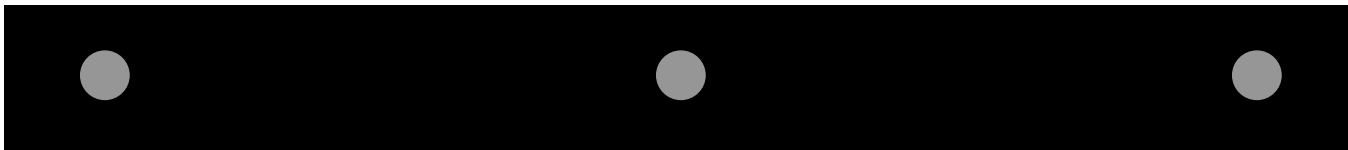
.25 DOT DIAMETER X 1.00 SPACING



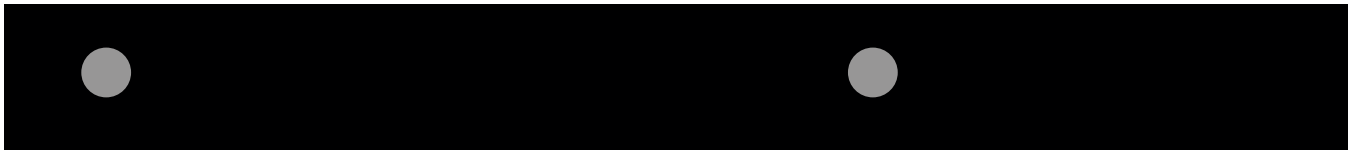
.25 DOT DIAMETER X 2.00 SPACING



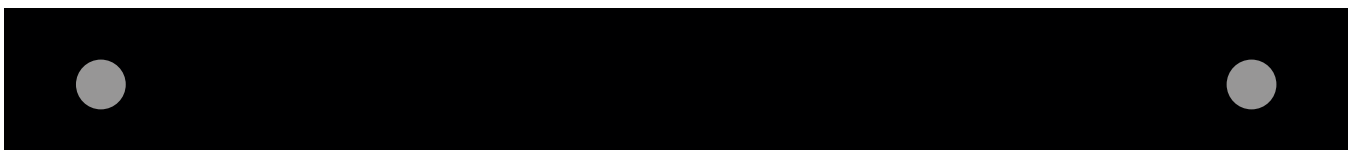
.25 DOT DIAMETER X 3.00 SPACING



.25 DOT DIAMETER X 4.00 SPACING

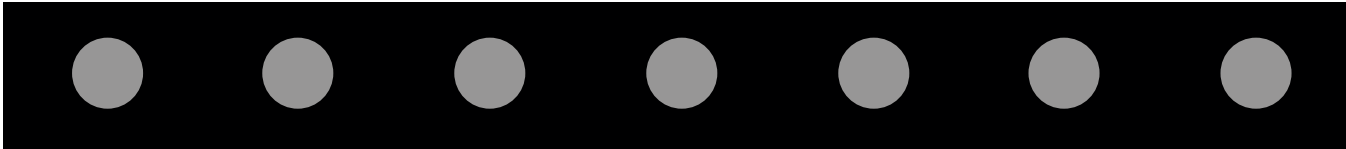


.25 DOT DIAMETER X 6.00 SPACING

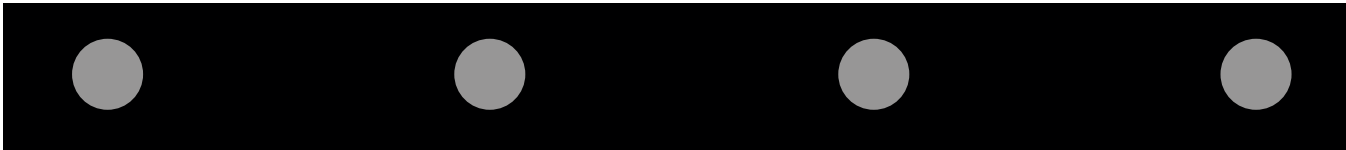


RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

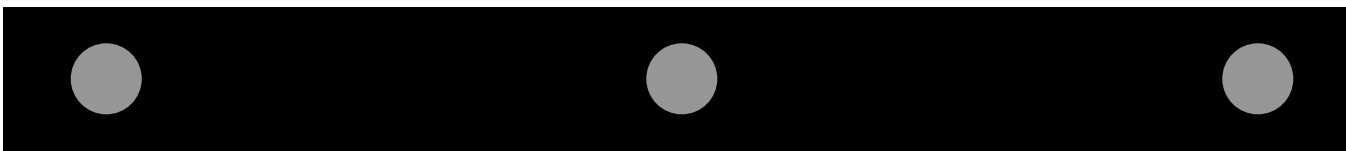
.37 DOT DIAMETER X 1.00 SPACING



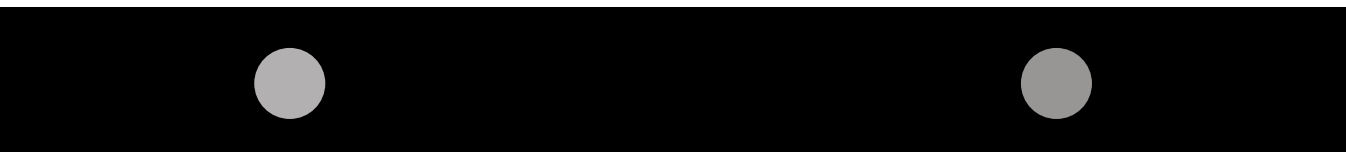
.37 DOT DIAMETER X 2.00 SPACING



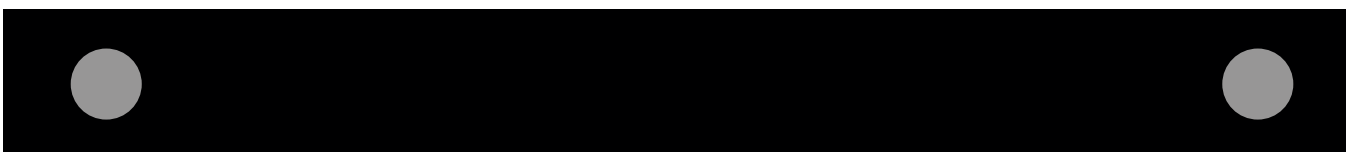
.37 DOT DIAMETER X 3.00 SPACING



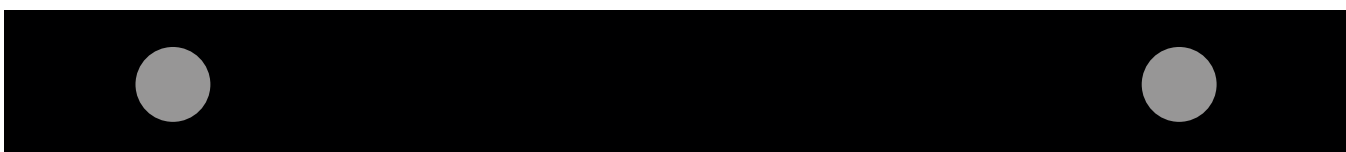
.37 DOT DIAMETER X 4.00 SPACING



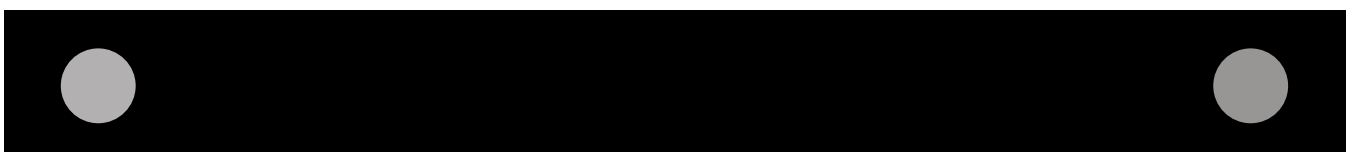
.37 DOT DIAMETER X 6.00 SPACING



.39 DOT DIAMETER X 5.25 SPACING

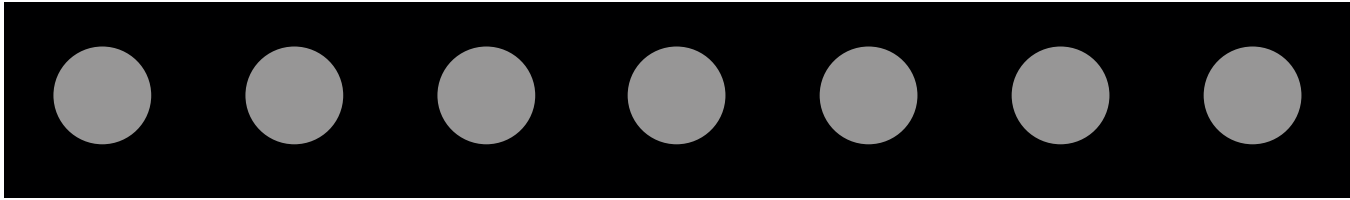


.39 DOT DIAMETER X 6.00 SPACING

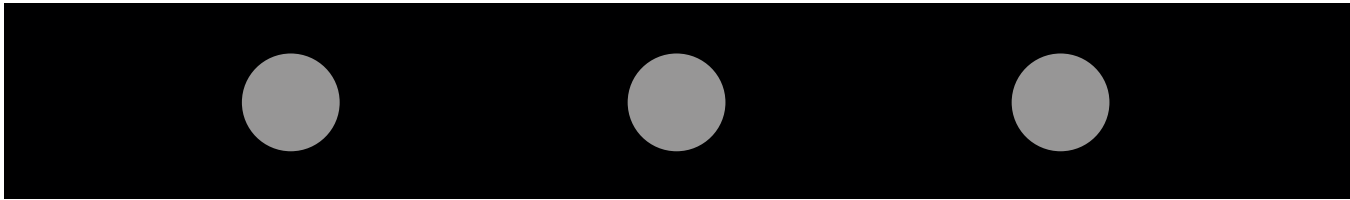


RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

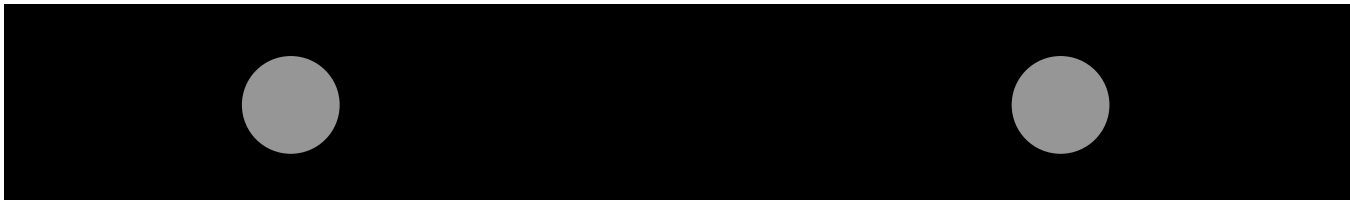
.50 DOT DIAMETER X 1.00 SPACING



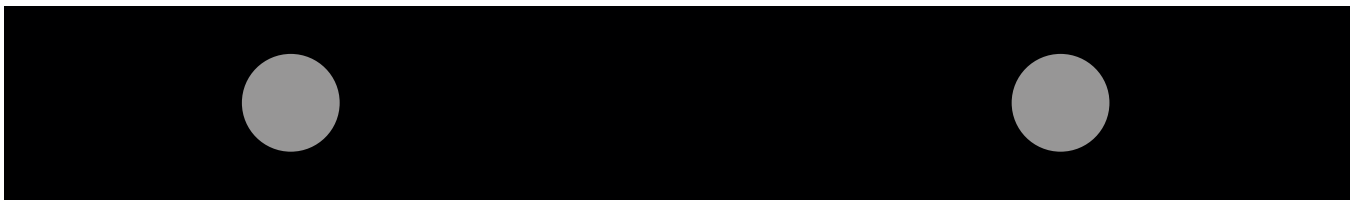
.50 DOT DIAMETER X 2.00 SPACING



.50 DOT DIAMETER X 4.00 SPACING



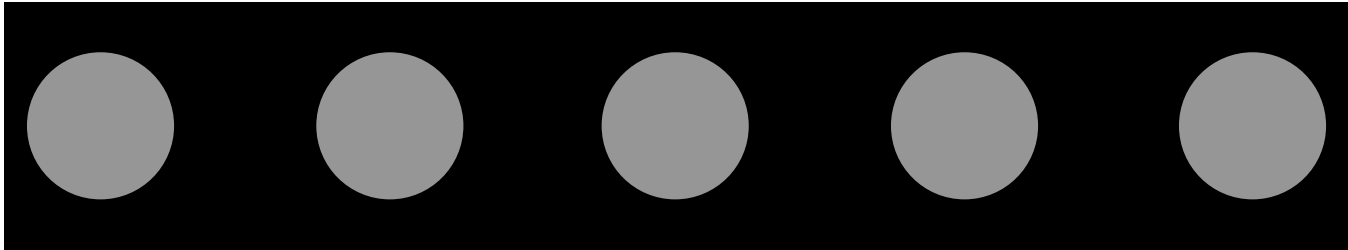
.50 DOT DIAMETER X 12.00 SPACING



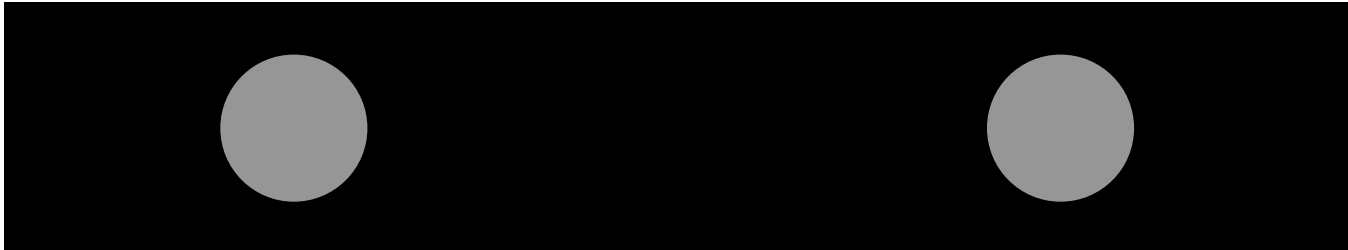
C
5

RETRO - REFLECTIVE TAPE OPTIONS (50 YARDS PER ROLL)

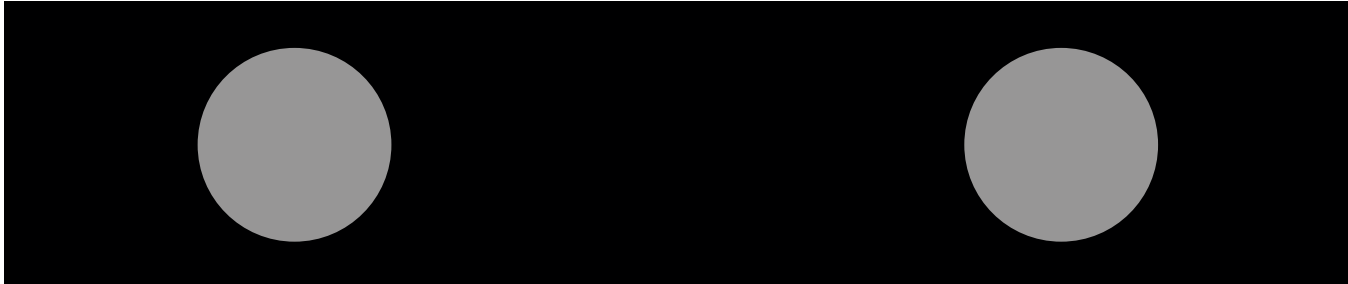
.75 DOT DIAMETER X 1.50 SPACING



.75 DOT DIAMETER X 4.00 SPACING



1.00 DOT DIAMETER X 4.00 SPACING



D
1

LB and LBV

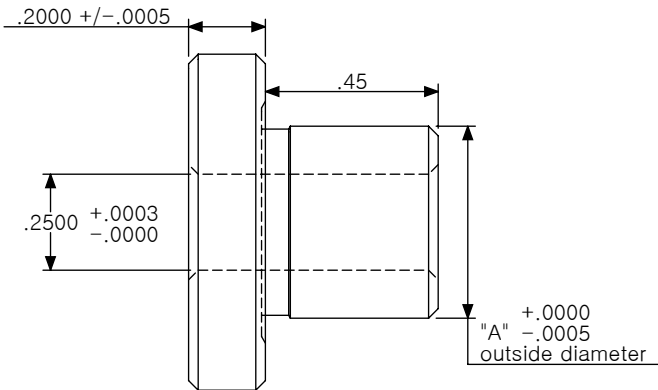
Used for adapting standard .2500 or .1250 shank targets to odd-sized holes. (Allow.2000 for height difference)
Many nominal fractional sizes in stock.

LB ORDERING INFORMATION						
	FAMILY	"A" OUTSIDE DIAMETER	MATERIAL			
LB STANDARD BUILD	LB		1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	LB					

LBV ORDERING INFORMATION						
	FAMILY	"A" OUTSIDE DIAMETER	"B" SHANK LENGTH	"C" SHOULDER WIDTH	"D" SHOULDER DIAMETER	MATERIAL
LBV STANDARD BUILD	LBV					1144 steel, black oxide finish
CUSTOMER PROVIDES INFO	LBV					
REFERENCE NOTES						

LINER BUSHING

CAD on file



NOTE
For head diameter, add .375 to "A" diameter.

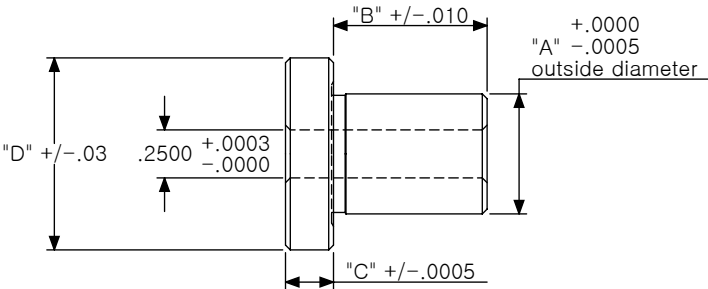


LB FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

LB ORDERING
Can only select outside diameter.

LINER BUSHING VARIABLE

CAD on file



LBV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

TLB

Used for adapting standard .2500 or .1250 shank targets to threaded holes.
(Allow.2000 for height difference)

TLB ORDERING INFORMATION

CUSTOMER PROVIDES INFO	FAMILY	"A" THREAD SIZE	MATERIAL				
TLB STANDARD BUILD	TLB	↓	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	TLB	■					

TLBV

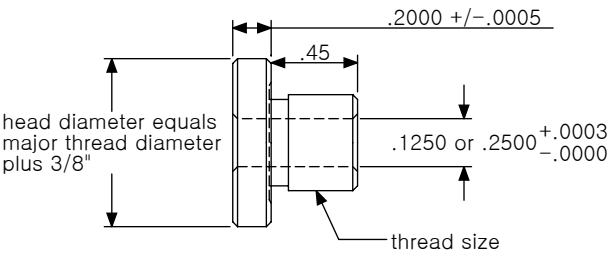
Used for adapting standard .2500 or .1250 shank targets to threaded holes.
(Allow.2000 for height difference)

TLBV ORDERING INFORMATION

CUSTOMER PROVIDES INFO	FAMILY	"A" THREAD SIZE	"B" SHANK LENGTH	"C" HEAD THICKNESS	"D" SHOULDER DIAMETER	MATERIAL	
TLBV STANDARD BUILD	TLBV	↓	↓	↓	↓	1144 steel, black oxide finish	
CUSTOMER PROVIDES INFO	TLBV	■	■	■	■		
REFERENCE NOTES							

THREADED LINER BUSHING

CAD on file



NOTE

For .1250 diameter hole, +.0003/- .0000 for major thread diameter .375 and less.

.2500 diameter hole, +.0003/- .0000 for major thread diameter over .375

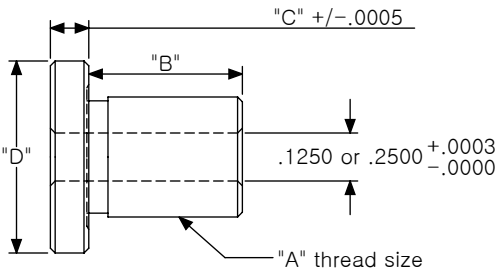


TLB FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

TLB ORDERING
Insert desired thread size as example:
LB - 1/4 - 20

THREADED LINER BUSHING VARIABLE

CAD on file



NOTE

For .1250 diameter hole, +.0003/- .0000 for major thread diameter .375 and less.

.2500 diameter hole, +.0003/- .0000 for major thread diameter over .375



TLBV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

HDLB

Used for adapting standard .2500 or .1250 shank targets to standard type slotted bushings. (Allow .1875 for height difference)

HDLB ORDERING INFORMATION

	FAMILY	"A" DIMENSION "FLATS"	"B" DIMENSION DIAMETER	MATERIAL			
HDLB STANDARD BUILD	HDLB	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	HDLB	■	■				
REFERENCE NOTES							

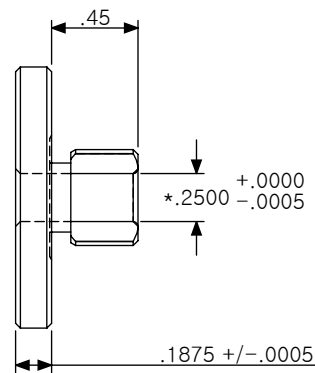
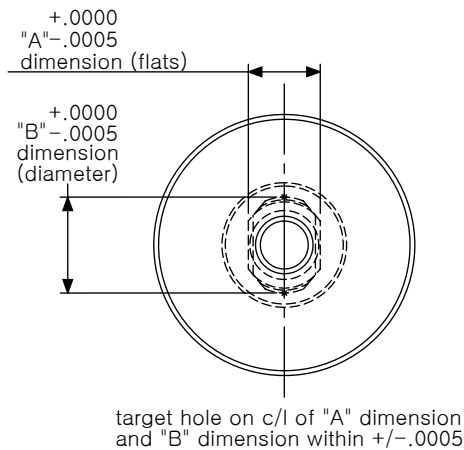
HEADED DIAMOND LINER BUSHING

CAD on file

D
3

NOTE

.1250 hole when "A" dimension (flats) is less than .3120



HDLB FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

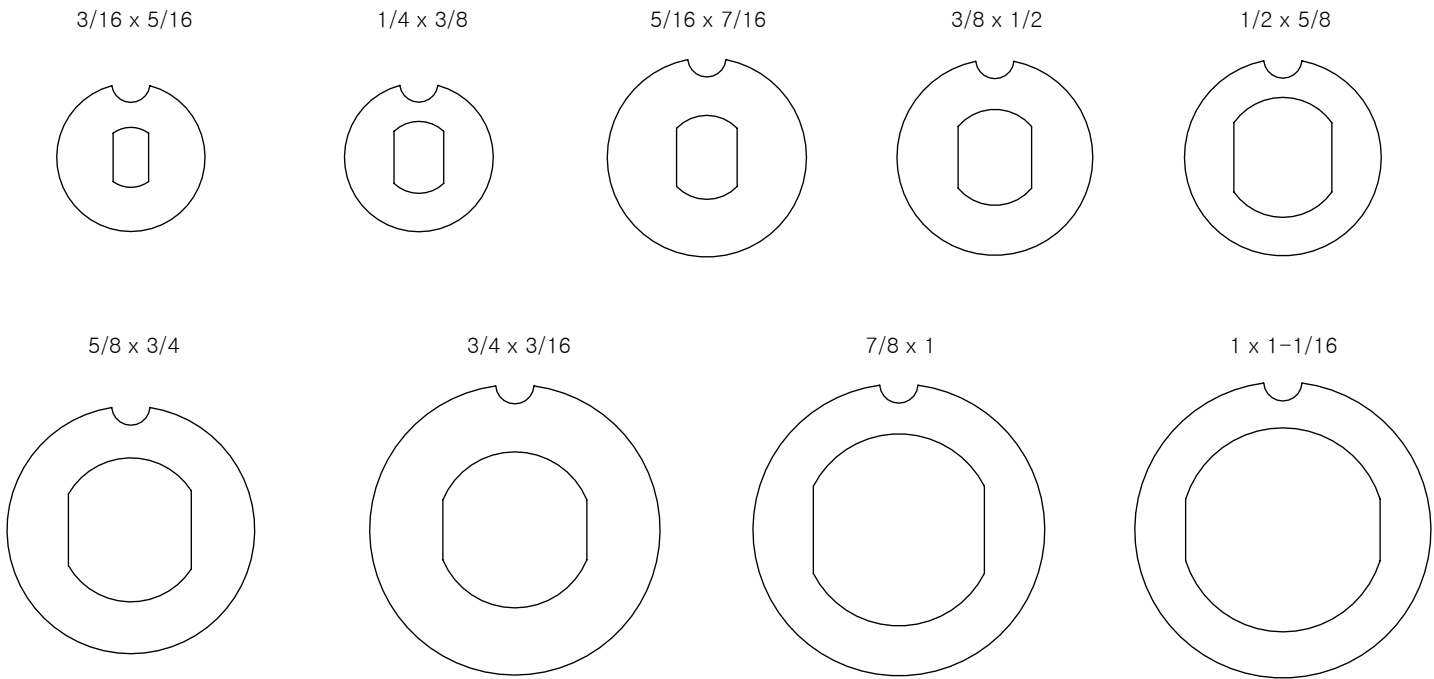
HDLB ORDERING

.1250 hole when "A" dimension (flats) is less than .3120

HEADED DIAMOND LINER BUSHING REFERENCE

NOMINAL SIZES FOR
EXAMPLE ONLY

Actual dimensions will
be .0005 smaller than
the fractional sizes
shown below.



D
4

HEADED DIAMOND LINER BUSHING NOTES

FOR BEST RESULTS
WE RECOMMEND:

- Make sure that the slotted bushing slot and locating surface around slotted bushing is clean.
- Make sure locating surface around slotted bushing and the inside edges of the slotted bushing are free of burrs. Burrs inside the slot may not allow the HDLB to fit freely and may cause damage to the HDLB if not removed.
- Standard HDLB's are .0005 to .0010 of an inch under the nominal length and width sizes for minimal clearance. A light coat of grease around the diamond locating areas will help the HDLB to center themselves within the normal minimal clearance.
- We suggest using a .3125 high targeting in conjunction with the .1875 head thickness of the HDLB to achieve a .500 offset.

HDLBV

Allows the end user to custom design the bushing for a specific need.

HDLBV ORDERING INFORMATION

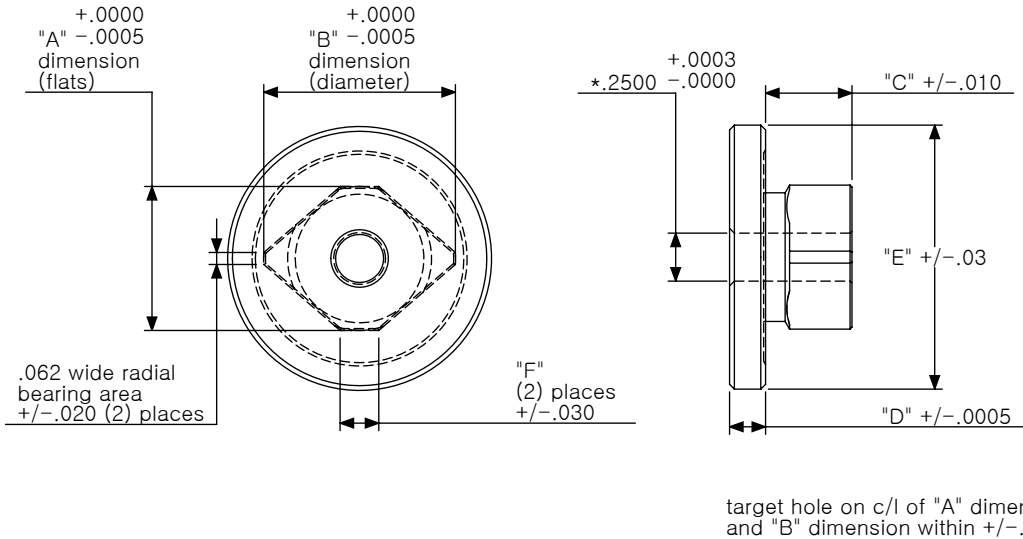
	FAMILY	"A" DIMENSION "FLATS"	"B" DIMENSION DIAMETER	"C" SHANK LENGTH	"D" HEAD THICKNESS	"E" HEAD DIAMETER	"F" FLAT LENGTH
HDLBV STANDARD BUILD	HDLBV	↓	↓	↓	↓	↓	↓
CUSTOMER PROVIDES INFO	HDLBV	▪	▪	▪	▪	▪	▪
REFERENCE NOTES							

HEADED DIAMOND LINER BUSHING VARIABLE

CAD on file

NOTE

.1250 hole when "A" dimension (flats) is less than .3120



HDLBV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

HDLBV ORDERING
.1250 hole when "A" dimension (flats) is less than .3120



1 MAGNETIC CORNER ADAPTOR
MCA

EDGE TARGET ADAPTOR
ETA

2 INVAR TARGET ADAPTOR
ITA

INVAR TARGET ADAPTOR - 2
ITA - 2

3 90° ADAPTOR
90 AD

4 LINE OF SIGHT ADAPTOR
LOSA

5 SPHERE FIT ADAPTOR
SFA

HARD POINT
HP

6 CONSTRUCTION BALL ADAPTOR
CBA

7 BALL POINT
BP

8 INVAR MAGNETIC BASE ADAPTOR
IMBA

9 SURFACE EDGE TARGET ADAPTOR
SETA

MCA

Used to adapt standard
.2500 shank targets to
edges/surfaces
magnetically.

MCA ORDERING INFORMATION

	FAMILY	MATERIAL					
MCA STANDARD BUILD	MCA	1144 steel, black oxide finish					

CUSTOMER
PROVIDES INFO

MCA

ETA

Used to adapt standard
.2500 shank targets to
edges/surfaces
by clamping.

ETA ORDERING INFORMATION

	FAMILY	MATERIAL					
ETA STANDARD BUILD	ETA	1144 steel, black oxide finish					

CUSTOMER
PROVIDES INFO

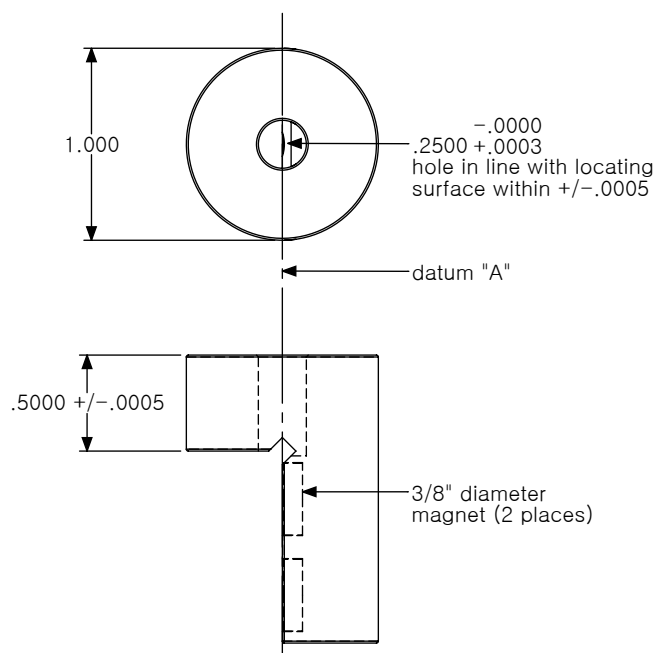
ETA

REFERENCE
NOTES

E
1

MAGNETIC CORNER ADAPTOR

CAD on file

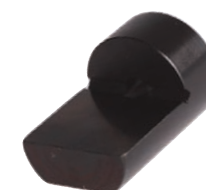
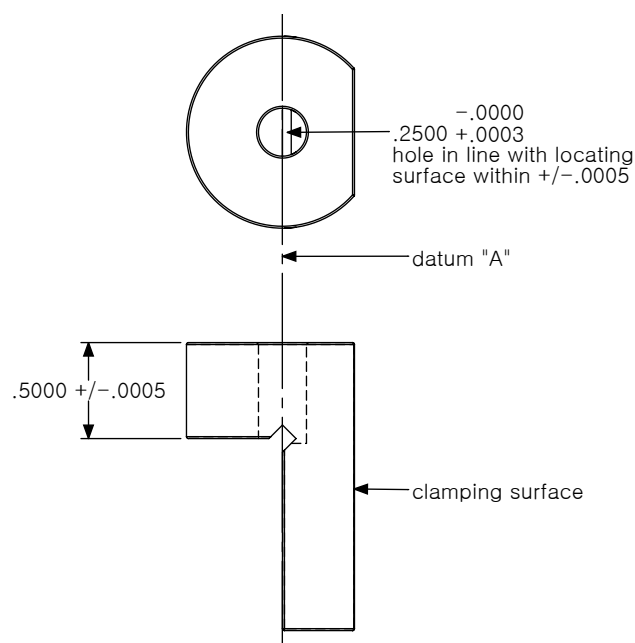


MCA FEATURES

1144 STEEL, BLACK OXIDE
FINISH (standard)

EDGE TARGET ADAPTOR

CAD on file



ETA FEATURES

1144 STEEL, BLACK OXIDE
FINISH (standard)

ITA and ITA - 2

Designed to adapt 90° targets to a Brunson Invar Scale Bar Kit.

ITA ORDERING INFORMATION

	FAMILY	OVERALL LENGTH	MATERIAL				
ITA STANDARD BUILD	ITA	1.00 or 24mm	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	ITA						

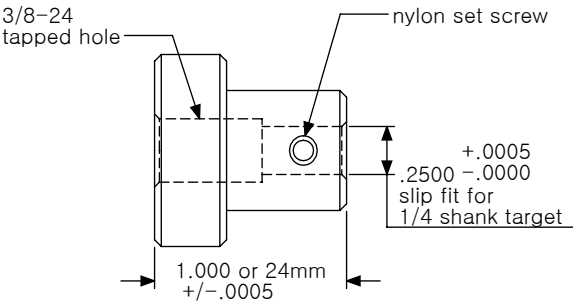
ITA - 2 ORDERING INFORMATION

	FAMILY	OVERALL LENGTH	MATERIAL				
ITA-2 STANDARD BUILD	ITA-2	2.00	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	ITA-2						

REFERENCE NOTES

INVAR TARGET ADAPTOR

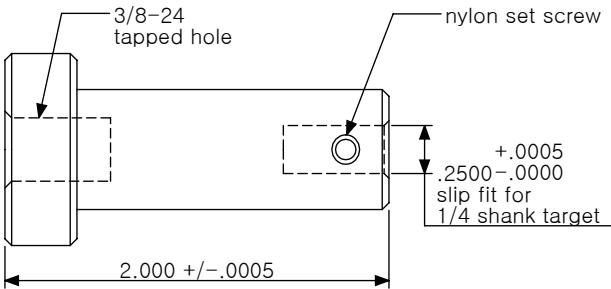
CAD on file



ITA FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

INVAR TARGET ADAPTOR - 2

CAD on file



ITA - 2
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

90 AD

Represents the same centerline and height value as a construction ball. It accepts a Hidden Point Bar (HPB) assembly and is used when it is needed to project 90° to a point that is obstructed from view.

90 AD ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	MATERIAL				
90 AD STANDARD BUILD	90 AD	.3125 or .500	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	90 AD						
REFERENCE NOTES							

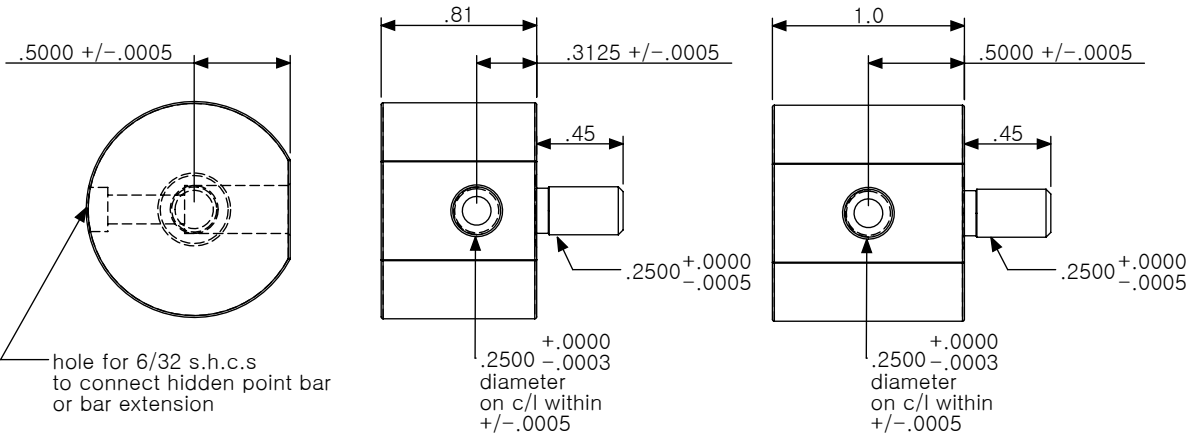
90° ADAPTOR

CAD on file



90 AD FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

90 AD ORDERING
.2500 shank is standard.
Other shank sizes subject to quote.



LOSA

Replaces the standard optics 3 1/2" diameter Line of Sight Spherical Target.

LOSA ORDERING INFORMATION

	FAMILY	OFFSET	MATERIAL				
LOSA STANDARD BUILD	LOSA	.3125 or .500	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	LOSA	■					
REFERENCE NOTES							

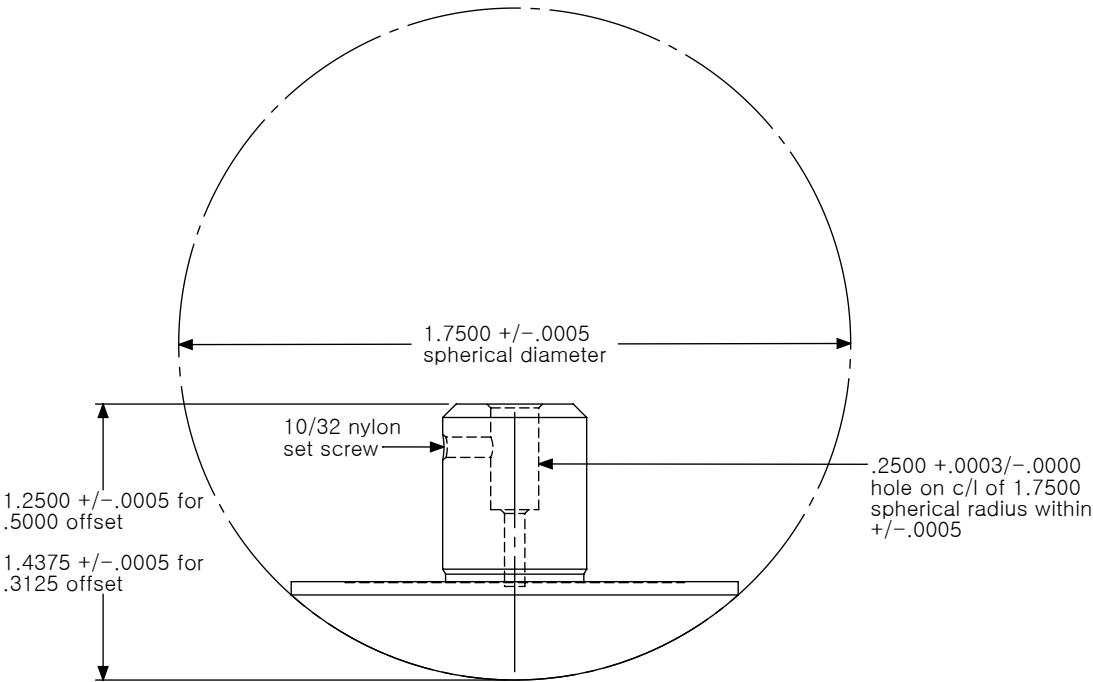
LINE OF SIGHT ADAPTOR

CAD on file



LOSA FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)
Hardened to R/C 53-55

LOSA ORDERING
Specify .3125 or .5000 offset.



SFA

Screws onto the end of a Bar Extension similar to a Hard Point and allows the user to locate the conical nest around a construction ball in order to generate a sphere fit routine.

HP

Used to adapt to a Hidden Point Bar or Bar Extensions to contact surfaces or scribe lines that are hidden from view.

SFA ORDERING INFORMATION

	FAMILY	MATERIAL					
SFA STANDARD BUILD	SFA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	SFA						

HP ORDERING INFORMATION

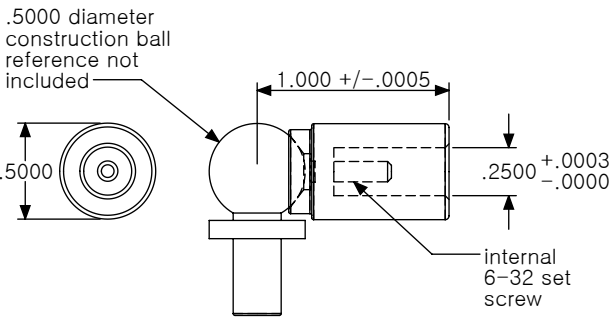
	FAMILY	MATERIAL					
HP STANDARD BUILD	HP	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	HP						

REFERENCE NOTES

E
5

SPHERE FIT ADAPTOR

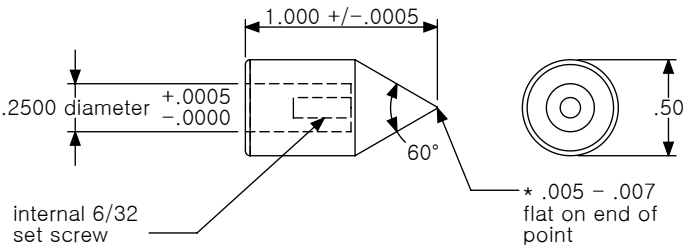
CAD on file



SFA FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

HARD POINT

CAD on file



HP FEATURES
1144 STEEL, BLACK OXIDE
FINISH - Hardened to R/C
53-55 (standard)

CBA

Mounts to a Hidden Point Bar or Bar Extension similar to the Hard Point. Connects to a Construction Ball and allows for 90° rotation.

CBA ORDERING INFORMATION

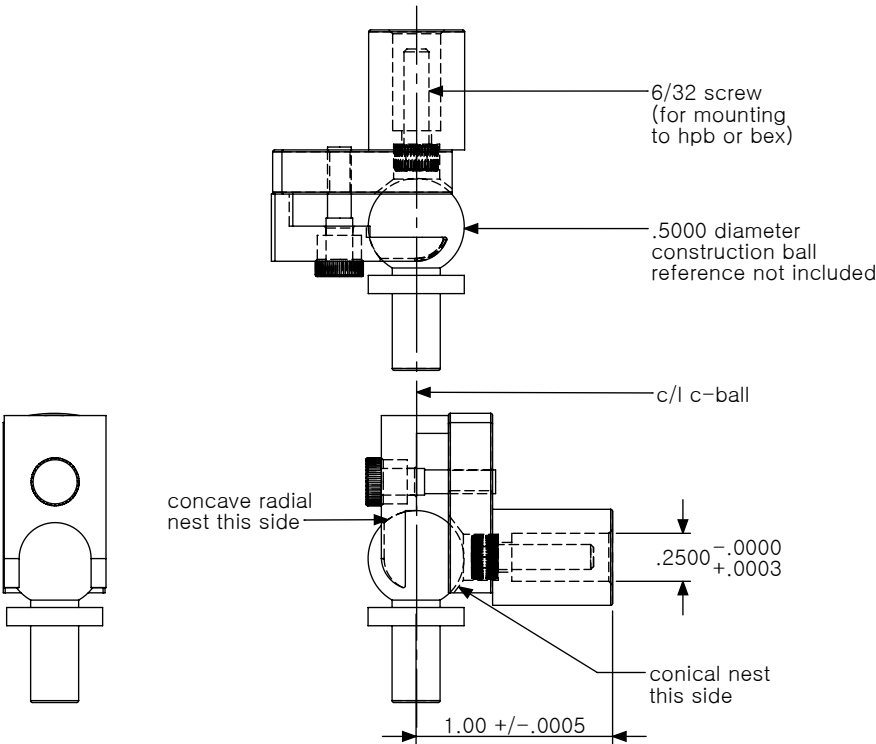
CBA STANDARD BUILD	FAMILY	MATERIAL					
	CBA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	CBA						
REFERENCE NOTES							

CONSTRUCTION BALL ADAPTOR



CBA FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

E
6



BP

Can be screwed onto the shank end of a Bar Extension or Hidden Point Bar similar to the Hard Point.

BP ORDERING INFORMATION

BP STANDARD BUILD	FAMILY	BALL DIAMETER	MATERIAL				
	BP	choose a diameter below	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	BP	■					
REFERENCE NOTES							

BALL POINT

CAD on file

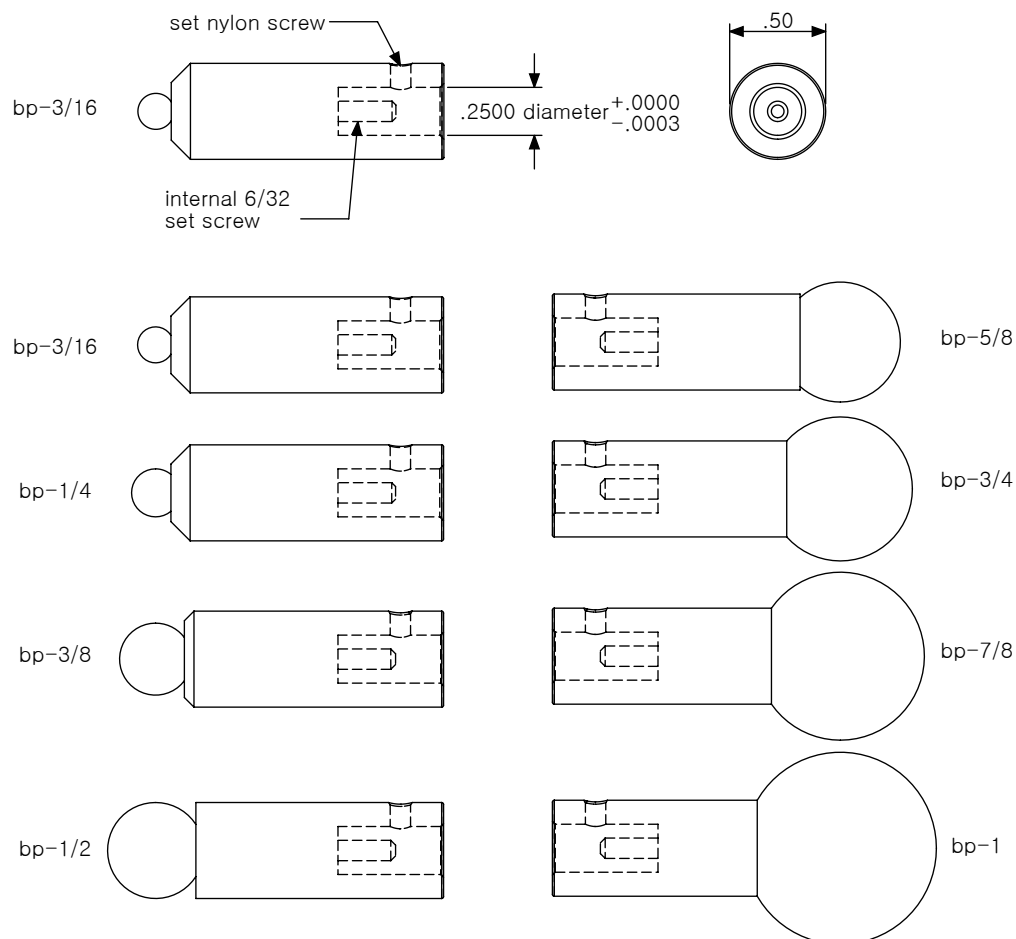
NOTE

BALL IS BONDED TO BASE
HANDLE WITH CARE



BP FEATURES

1144 STEEL, BLACK OXIDE
FINISH (standard)



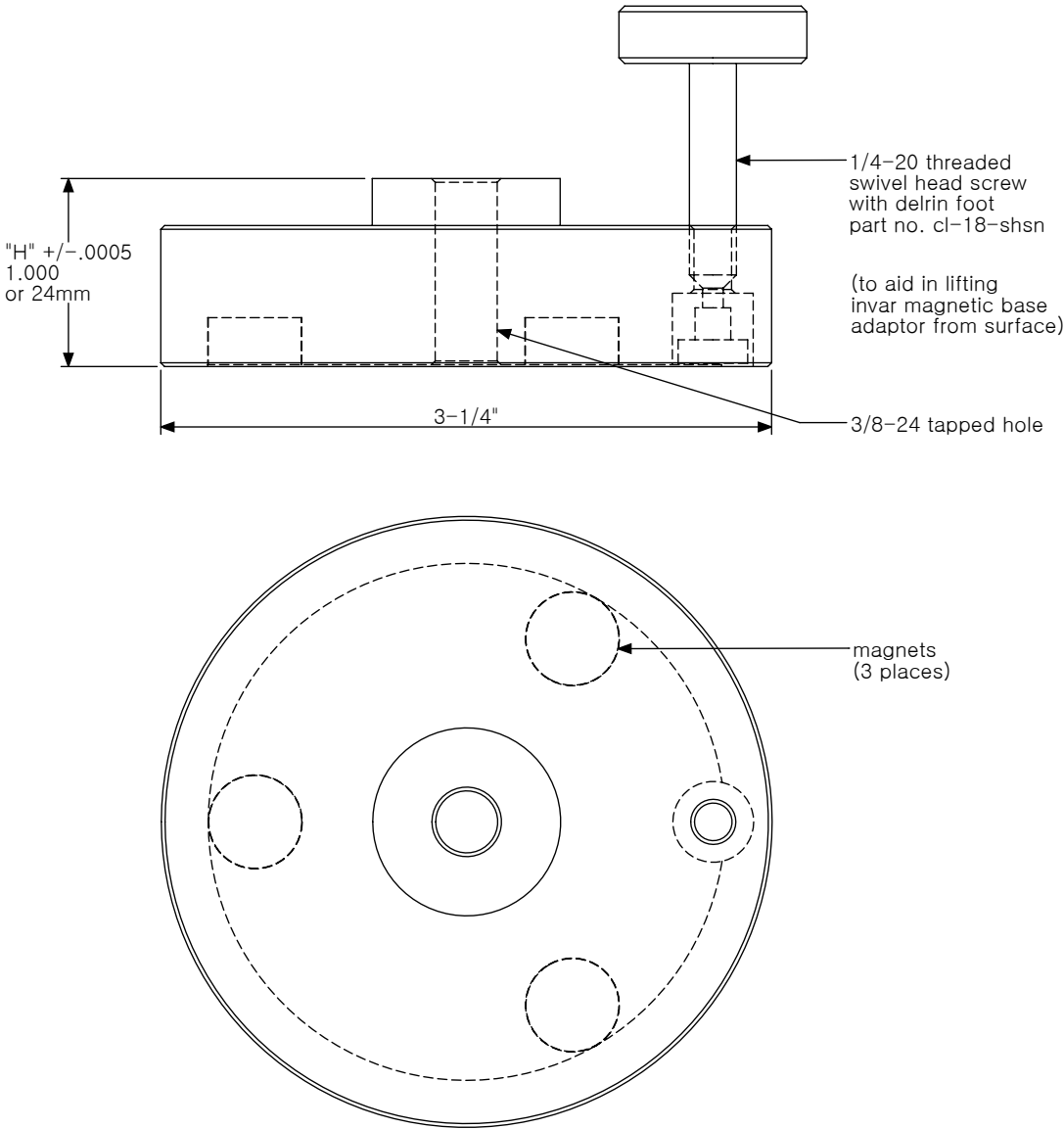
IMBA
Used for adapting Invar
Bar to flat surface.

IMBA ORDERING INFORMATION

	FAMILY	"H" HEIGHT	MATERIAL				
IMBA STANDARD BUILD	IMBA		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	IMBA						
REFERENCE NOTES							

INVAR MAGNETIC BASE ADAPTOR

CAD on file



IMBA FEATURES
1144 STEEL, BLACK OXIDE
FINISH – Hardened to R/C
53-55 (standard)

SETA

Designed to adapt
.2500 shank targets to
the edge/surface of
sheet metal.

SETA ORDERING INFORMATION

SETA STANDARD BUILD	FAMILY	MATERIAL					
	SETA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	SETA						
REFERENCE NOTES							

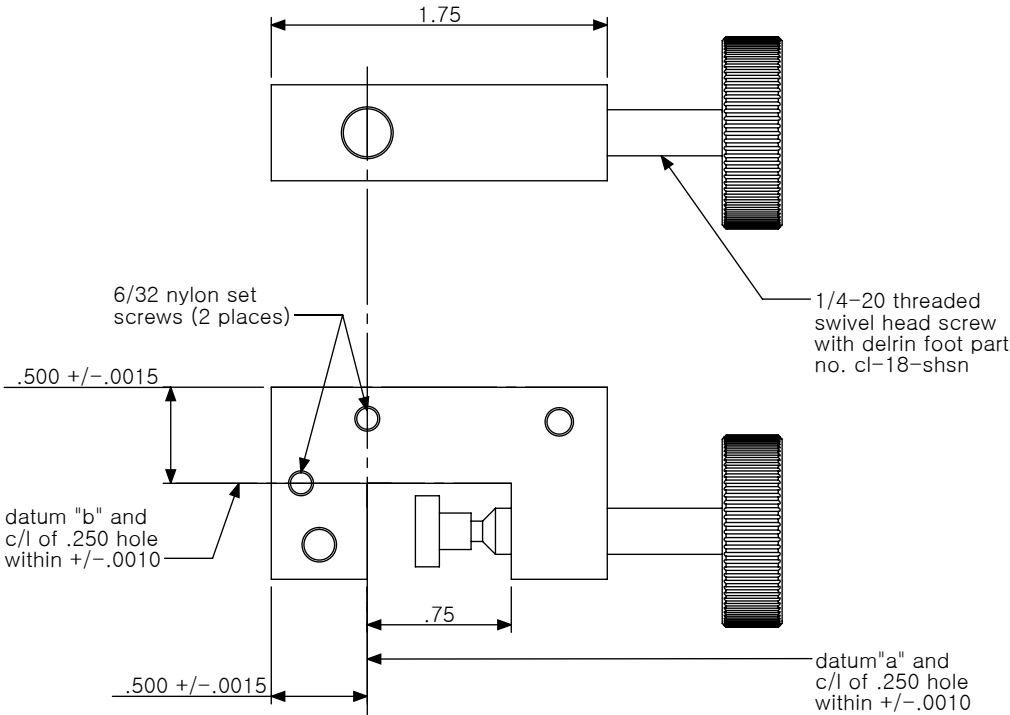
SURFACE EDGE TARGET ADAPTOR

CAD on file



SETA
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

- Screw clamp will open
to excess of 9/16"





- 1** HIDDEN POINT BAR 2.5
HPB 2.5
- 2** HIDDEN POINT BAR 4.0
HPB 4.0
- 3** BAR EXTENSION
BEX
- 4** HIDDEN POINT BAR HOLDER
HPBH
- 5** INSERT OFFSET ROD
IOR
- 6** INSERT SINE BAR
ISB
- 7** INSERT VARIABLE OFFSET ROD
IVOR
- 8** INSERT VARIABLE SINE BAR
IVSB
- 9** REVERSE HIDDEN POINT ADAPTOR
RHPA

HPB - 2.5 and HPBR - 2.5

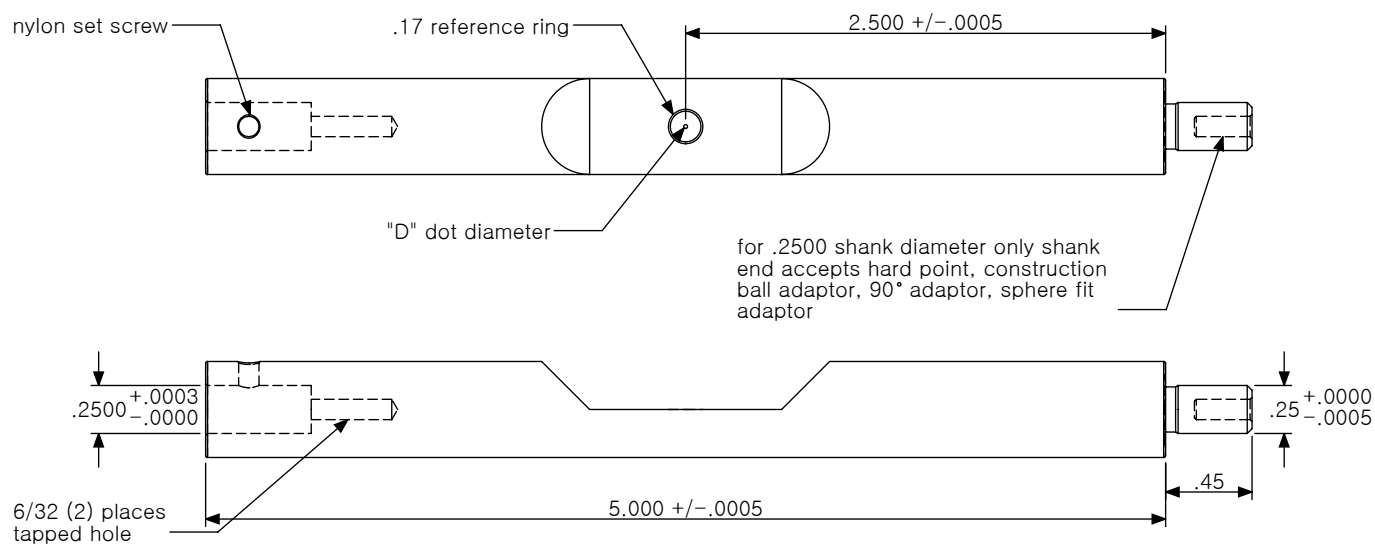
Used for projecting to a hidden hole or surface. The .2500 hole accepts a 90° target or bar extension. A Starrett 657TW fine adjustment flexible arm magnetic base or equivalent may be used with a Hidden Point Bar Holder (HPBH) when necessary.

HPB - 2.5 and HPBR - 2.5 ORDERING INFORMATION

	FAMILY	"D" DOT DIAMETER	MATERIAL				
HPB/HPBR-2.5 STANDARD BUILD	HPB-2.5 or HPBR-2.5		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO							
REFERENCE NOTES							

HIDDEN POINT BAR and HIDDEN POINT BAR RETRO-REFLECTIVE- 2.5

CAD on file



NOTES

FOR .2500 DIAMETER SHANK ONLY

If a shank diameter is needed other than .2500, adapt by using a Bar Extension 1" (BEX-1) with optional shank sizes



● RETRO - REFLECTIVE MODEL AVAILABLE

HPB/HPBR - 2.5 FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

HPB/HPBR - 2.5 ORDERING

- For .2500 shank diameter only
- For Retro-Reflective model, order HPBR - 2.5

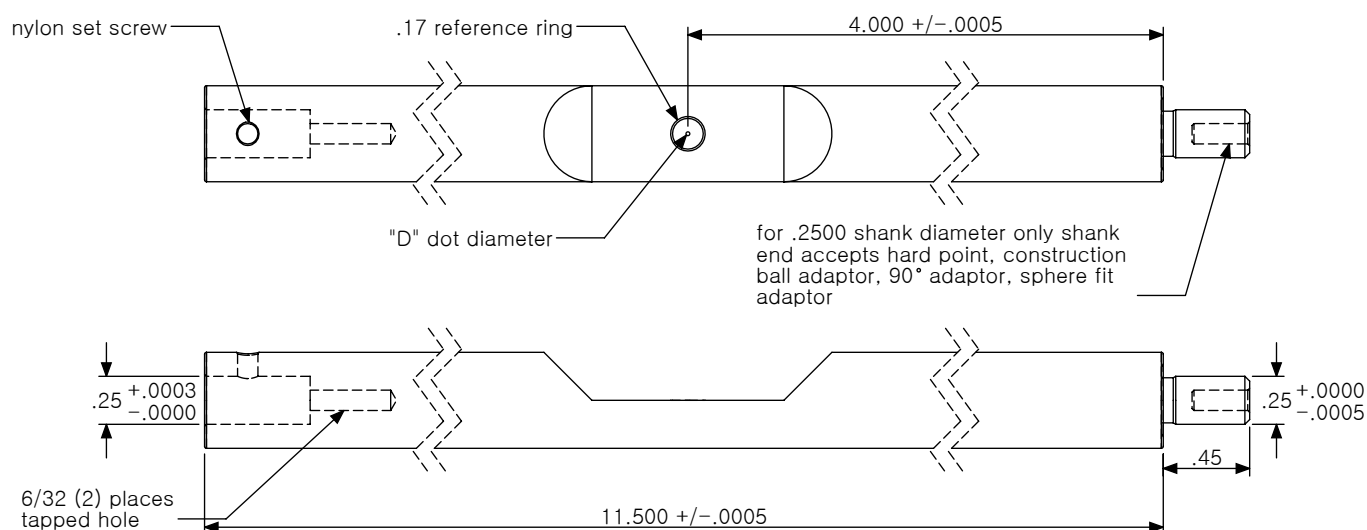
HPB/HPBR - 2.5 APPLICATION

Shank end accepts Hard point, Construction ball Adaptor, 90° Adaptor, and Sphere Fit Adaptor.

Used for projecting to a hidden hole or surface. The .2500 hole accepts a 90° target or extension. A Starrett 57TW fine adjustment flexible arm magnetic base or equivalent may be used with a Hidden Point Bar Holder (HPBH) when necessary.

	FAMILY	"D" DOT DIAMETER	MATERIAL				
HPB/HPBR-4.0 STANDARD BUILD	HPB-4.0 or HPBR-4.0		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO							
REFERENCE NOTES							

CAD on file



If a shank diameter is needed other than .2500, adapt by using a Bar Extension 1" (BEX-1) with optional shank sizes.



HPB/HPBR - 4.0
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

HPB/HPBR - 4.0

ORDERING

- For .2500 shank diameter only
- For Retro-Reflective model, order HPBR - 4.0

HPB/HPBR - 4.0 APPLICATION

Shank end accepts Hard point, Construction ball Adaptor, 90° Adaptor, and Sphere Fit Adaptor.

BEX

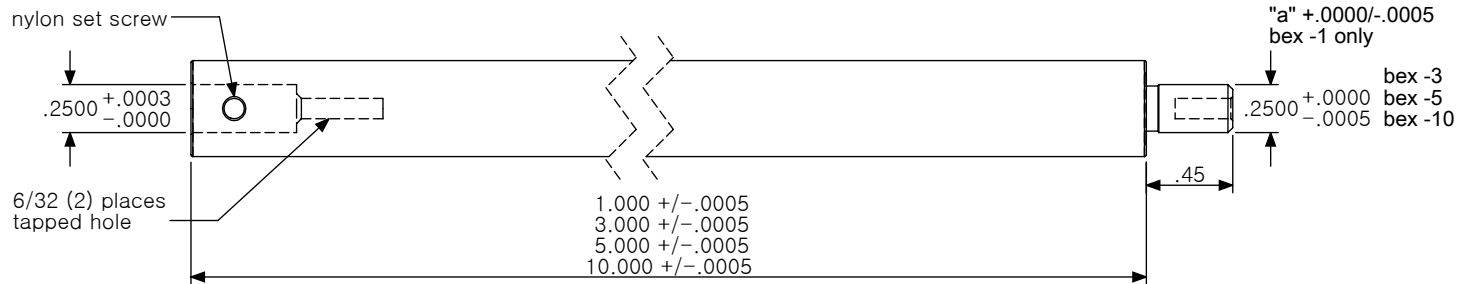
Used with a Hidden Point Bar to extend lengths.

BEX ORDERING INFORMATION

	FAMILY	BAR LENGTH CHOICES	"A" SHANK DIAMETER	MATERIAL			
BEX STANDARD BUILD	BEX	1" or 3" or 5" or 10"	.2500 except for BEX - 1	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	BEX	■	■				
REFERENCE NOTES							

BAR EXTENSION

CAD on file



NOTES

FOR .2500 DIAMETER SHANK ONLY
EXCEPT FOR BEX - 1



BEX FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

BEX ORDERING

"A" diameter callout for BEX - 1 only, all others have .2500 shank diameter.

BEX APPLICATION

Shank end accepts Hard Point, Construction Ball Adaptor, 90° Adaptor, and Sphere Fit Adaptor or screw together with a Hidden Point Bar using 6/32 set screw provided.

HPBH

Used for adapting a Hidden Point Bar or Bar Extension to a magnetic base for support.

HPBH ORDERING INFORMATION

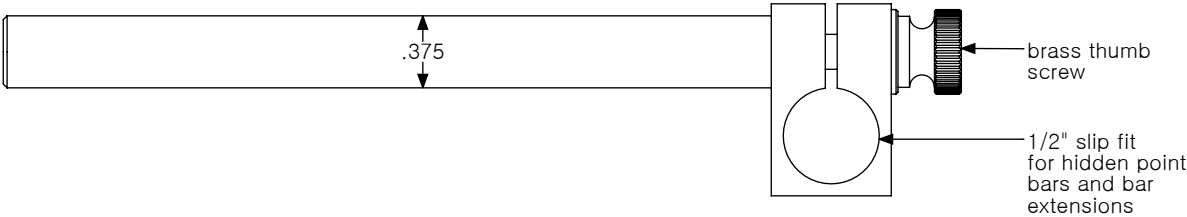
HPBH STANDARD BUILD	FAMILY	MATERIAL					
	HPBH	1144 steel, black oxide, plastic					
CUSTOMER PROVIDES INFO	HPBH						
REFERENCE NOTES							

HIDDEN POINT BAR HOLDER

CAD on file



HPBH FEATURES
.375 shaft material:
1144 STEEL, BLACK OXIDE
FINISH (standard)
Block is plastic.



IOR

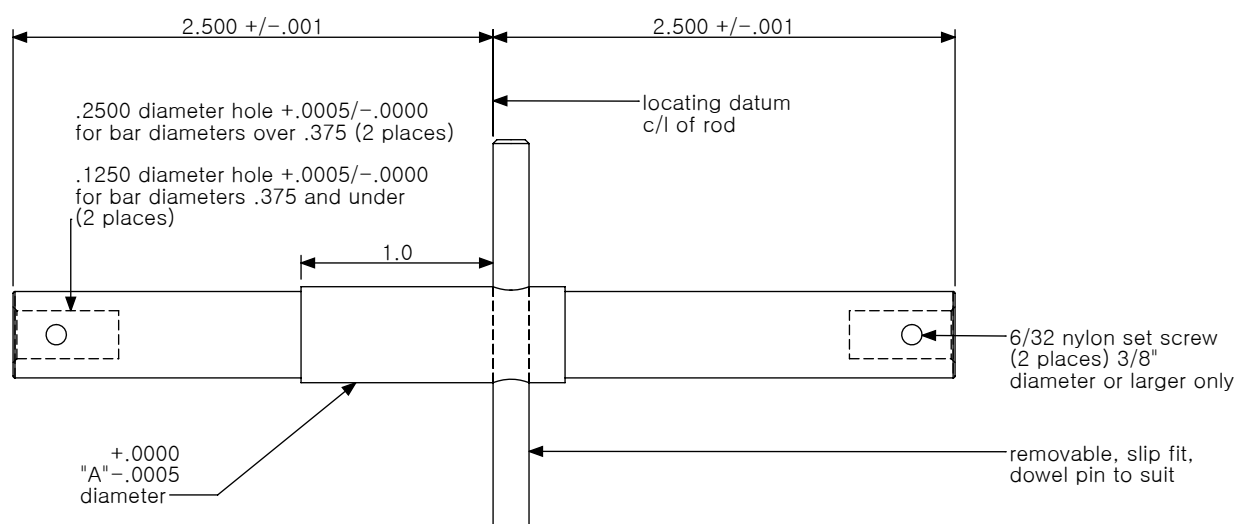
Accepts a 90° target, .500 high, .2500 shank, or .1250 shank in each end to achieve a 3.000 inch offset in each direction. For anything other than a 2.500 length in both directions, please refer to the IVOR product.

IOR ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	MATERIAL				
IOR STANDARD BUILD	IOR		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	IOR	■					
REFERENCE NOTES							

INSERT OFFSET ROD

CAD on file



IOR FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

ISB

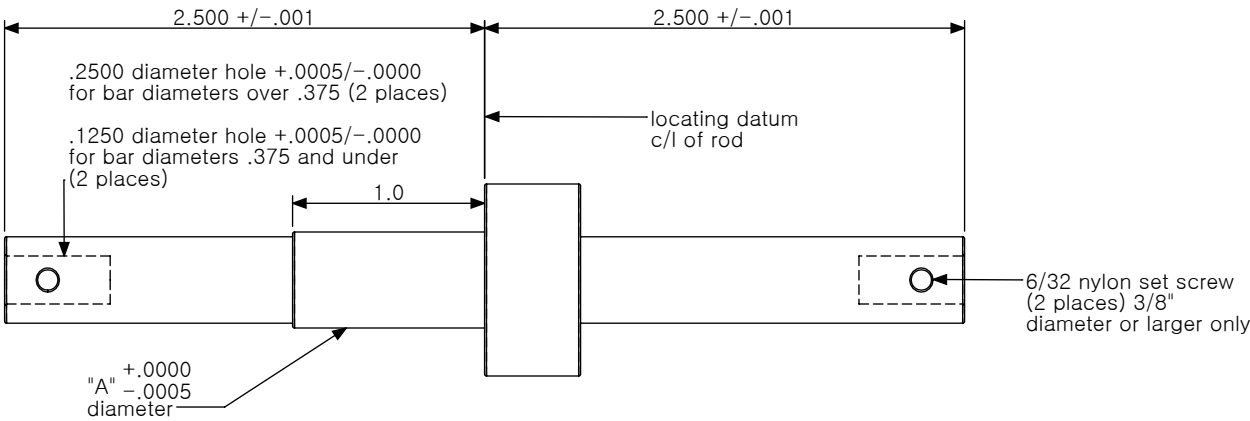
Accepts a 90° target, .500 high, .2500 shank, or .1250 shank in each end to achieve a 3.000 inch offset in each direction. For anything other than a 2.500 length in both directions, please refer to the IVSB product.

ISB ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	MATERIAL				
ISB STANDARD BUILD	ISB		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	ISB	■					
REFERENCE NOTES							

INSERT SINE BAR

CAD on file



ISB FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

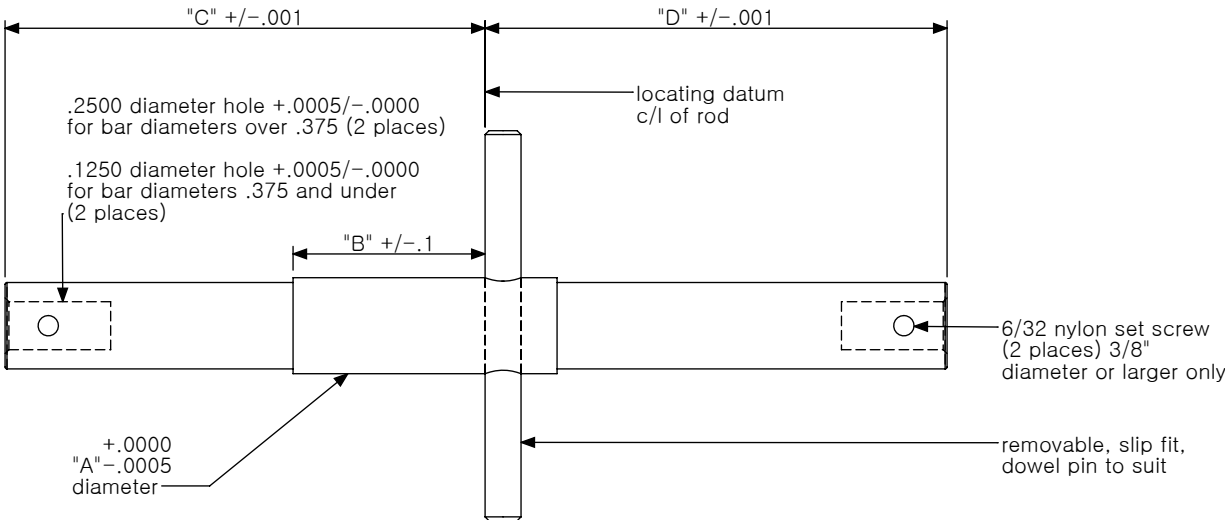
IVOR
Accepts any type of stemmed target or tooling ball in each end to achieve an even inch increment offset in each direction.

IVOR ORDERING INFORMATION

	FAMILY	"A" LOCATING DIAMETER	"B" LENGTH OF DIAMETER	"C" LOCATING LENGTH	"D" LOCATING LENGTH	MATERIAL	
IVOR STANDARD BUILD	IVOR	↓	↓	↓	↓	1144 steel, black oxide finish	
CUSTOMER PROVIDES INFO	IVOR	■	■	■	■		
REFERENCE NOTES							

INSERT VARIABLE OFFSET ROD

CAD on file



IVOR FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

IVOR ORDERING
For custom lengths, please
call for quote.

IVSB

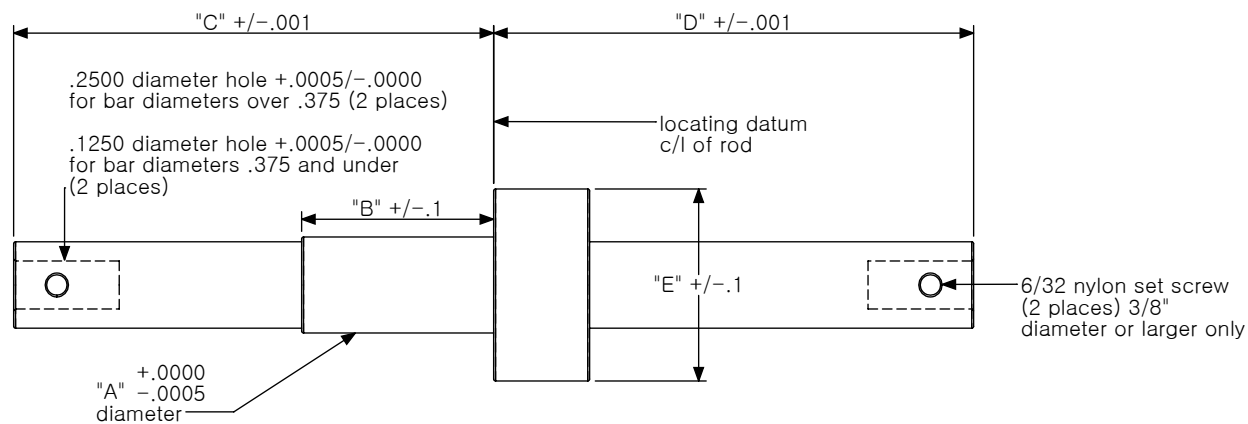
Accepts any type of stemmed target or tooling ball in each end to achieve an even inch increment offset in each direction.

IVSB ORDERING INFORMATION

	FAMILY	"A" LOCATING DIAMETER	"B" LENGTH OF DIAMETER	"C" LOCATING LENGTH	"D" LOCATING LENGTH	"E" SHOULDER DIAMETER	MATERIAL
IVSB STANDARD BUILD	IVSB	↓	↓	↓	↓	↓	1144 steel, black oxide finish
CUSTOMER PROVIDES INFO	IVSB	■	■	■	■	■	
REFERENCE NOTES							

INSERT VARIABLE SINE BAR

CAD on file



IVSB FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

IVSB ORDERING

For custom lengths, please call for quote.

RHPA

Accepts standard .2500 or .1250 shank target to meet customer's needs.

RHPA ORDERING INFORMATION

	FAMILY	"A" DIAMETER	"B" LENGTH	"C" DIAMETER	MATERIAL		
RHPA STANDARD BUILD	RHPA	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	RHPA	■	■	■			
REFERENCE NOTES							

REVERSE HIDDEN POINT ADAPTOR

CAD on file

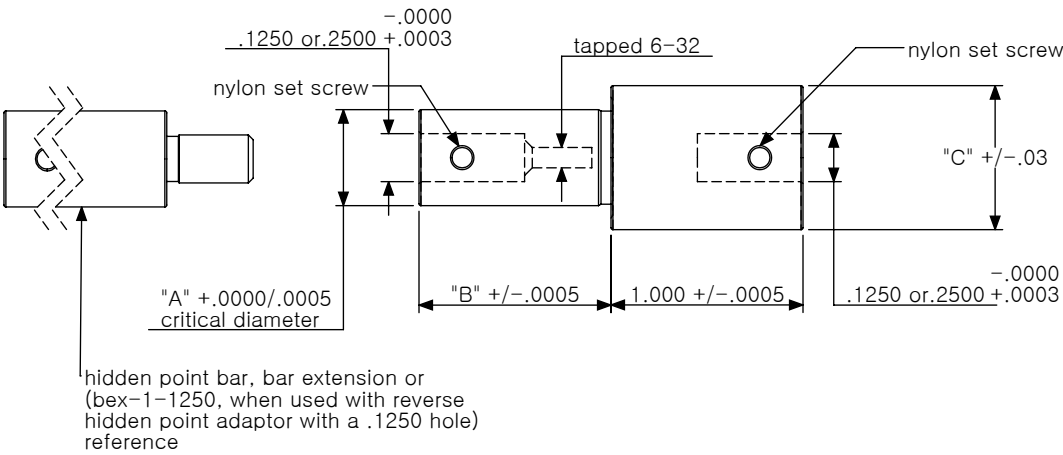
NOTE

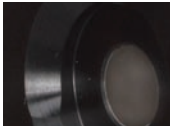
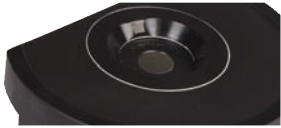
.2500 diameter hole
+.0003/ -.0000, for bar
diameters over .375

.1250 diameter hole
+.0003/ -.0000, for bar
diameters .375 and
under, tapped 6-32
hole omitted



RHPA
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)





- | | | | |
|-----------|--|-----------|--|
| 1 | 1.5 SPHERE MOUNT
1.5 SM | 22 | 1.5 EDGE SPHERE MOUNT - 2 - OUTSIDE CORNER
1.5 ESM - 2 - OC |
| 2 | 1.5 SPHERE MOUNT NEGATIVE
1.5 SMN | 23 | 1.5 EDGE SPHERE MOUNT - 2 - 1/4
1.5 ESM - 2 - 1/4 |
| 3 | 1.5 SPHERE MOUNT NEGATIVE / MAGNETIC BASE
1.5 SMN / MB | 24 | 1.5 INVAR SPHERE MOUNT
1.5 ISM |
| 4 | 1.5 SPHERE MOUNT NEGATIVE - 1.250 BODY - SS
1.5 SMN - 1.250 BODY - SS | 25 | 1.5 TRIPOD SPHERE MOUNT
1.5 TSM |
| 5 | 1.5 SPHERE MOUNT - 1.00 BODY - SS
1.5 SM - 1.00 BODY - SS | 26 | 1.5 LASER TRACKER - REFERENCE SPHERE MOUNT
1.5 LT - RSM |
| 6 | 1.5 SPHERE MOUNT VARIABLE
1.5 SMV | 27 | 1.5 SPHERE MOUNT / DRIFT NEST - 3 POINT ALUMINUM
1.5 SM / DN - 3PA |
| 7 | 1.5 SPHERE MOUNT SPECIAL INDEX
1.5 SMSI | 28 | 1.5 SPHERE MOUNT NEGATIVE / DRIFT NEST
3 POINT ALUMINUM
1.5 SMN / DN - 3PA |
| 8 | 1.5 NON-MAGNETIC SPHERE MOUNT
1.5 NMSM | 29 | 1.5 SPHERE MOUNT / DRIFT NEST - 3 POINT STEEL
1.5 SM / DN - 3PS |
| 9 | 1.5 SPHERE MOUNT / DIAMOND SHANK
1.5 SM / DS | 30 | 1.5 SPHERE MOUNT NEGATIVE / DRIFT NEST
3 POINT STEEL
1.5 SMN / DN - 3PS |
| 10 | 1.5 SPHERE MOUNT / DIAMOND SHANK
REFERENCE and NOTES | 31 | 1.5 SPHERE MOUNT - HARD COAT
1.5 SM - HC |
| 11 | 1.5 SPHERE MOUNT VARIABLE / DIAMOND SHANK
1.5 SMV / DS | 32 | 1.5 SPHERE MOUNT - HARD COAT / MAGNETIC BASE
1.5 SM - HC / MB |
| 12 | 1.5 SPHERE MOUNT THREADED
1.5 SMT | 33 | 1.5 SPHERE MOUNT - HARD COAT / CENTER PUNCH
1.5 SM - HC / CP |
| 13 | 1.5 SHANKLESS SPHERE MOUNT
1.5 SSM | 34 | 1.5 SPHERE MOUNT - TEMPORARY MONUMENT
1.5 SM - HC / TM |
| 14 | 1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE
1.5 SSM / MB | 35 | 1.5 TRACK AND PUNCH SMR NEST
1.5 TPSN |
| 15 | 1.5 SHANKLESS SPHERE MOUNT / M6
1.5 SSM / M6 | 36 | 1.5 CENTER PUNCH SPHERE NEST
1.5 CPSN |
| 16 | 1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE
CENTER PUNCH
1.5 SSM / MB - CP | 37 | 1.5 FOUNDATION SPHERE MOUNT
1.5 FSM |
| 17 | 1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE
CENTER PUNCH LOCATOR
1.5 SSM / MB - CPL | 38 | 1.5 SMR / MAGNETIC CLAMP
1.5 SMR / MC |
| 18 | 1.5 GRID LINE SPHERE MOUNT
1.5 GLSM | 39 | 1.5 SPHERE MOUNT - POLE ADAPTOR
1.5 SM - PA |
| 19 | 1.5 EDGE SPHERE MOUNT
1.5 ESM | 40 | LASER TRACKER LEVELING LUG ADAPTOR
LT - LLA |
| 20 | 1.5 EDGE SPHERE MOUNT - 2
1.5 ESM - 2 | 41 | LEVELING LUG SPHERE TARGET
LLST |
| 21 | 1.5 EDGE SPHERE MOUNT - OUTSIDE CORNER
1.5 ESM - OC | 42 | LASER TRACKER - LINE OF SIGHT ADAPTOR
LT - LOSA |



- 43

1.5 - .5 SMR ADAPTOR

1.5 - .5 SMR AD

1.5 - .875 SMR ADAPTOR

1.5 - .875 SMR AD
- 44

1.5 RETRO-PROBE - RESET SPHERE (BALL)

1.5 RRS (BALL)

1.5 RETRO-PROBE - RESET SPHERE (POINT)

1.5 RRS (POINT)
- 45

1.5 HIDDEN POINT ADAPTOR

1.5 HPA

THEODOLITE 1.5 SPHERE

T1.5S
- 46

RETRO-REFLECTIVE 1.5 SPHERE

R1.5S
- 47

SMR LANYARD SET (FULL)
- 48

SMR LANYARD SET (PARTIAL)
- 49

LEICA LANYARD SET (FULL)
- 50

LEICA LANYARD SET (PARTIAL)

1.5 SM

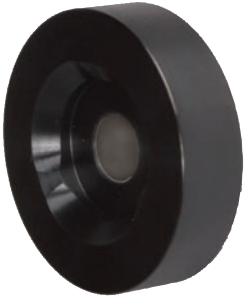
Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole and 1.000 above or 25mm above.

1.5 SM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
1.5 SM STANDARD BUILD	1.5 SM	1.000 or 25mm		1144 steel or (SS)			
CUSTOMER PROVIDES INFO	1.5 SM	■	■	■			
REFERENCE NOTES							

1.5 SPHERE MOUNT

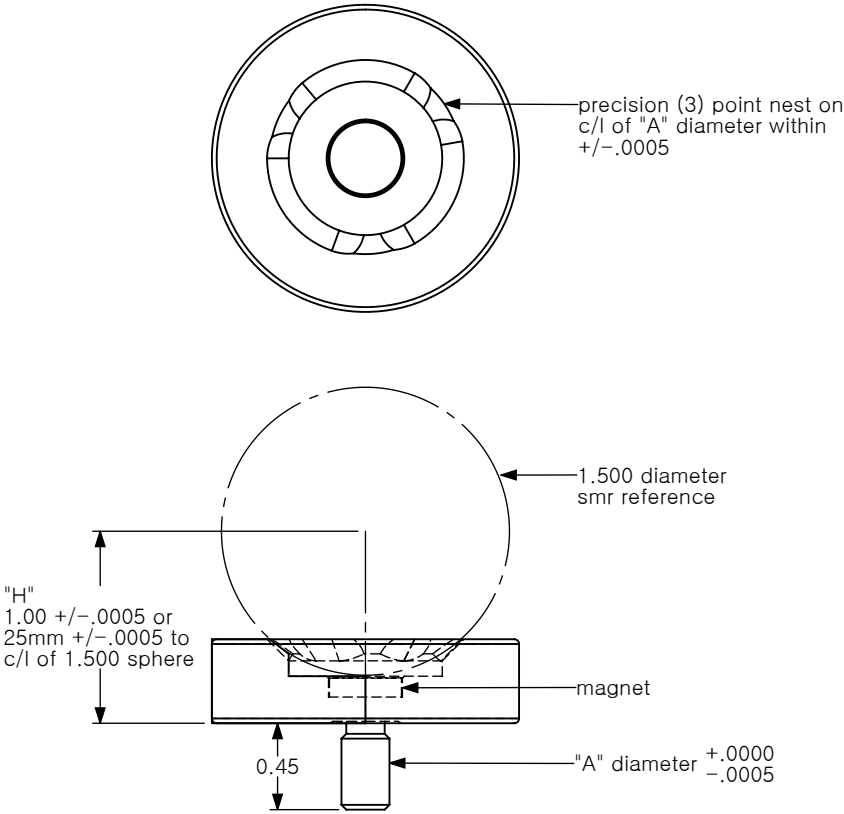
CAD on file



1.5 SM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



1.5 SMN

Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole and 1.000 above and optional 25mm above and allows for the SMR to be rotated below horizontal.

1.5 SMN ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
1.5 SMN STANDARD BUILD	1.5 SMN	1.000 or 25mm		1144 steel or (SS)			
CUSTOMER PROVIDES INFO	1.5 SMN	■	■	■			
REFERENCE NOTES							

1.5 SPHERE MOUNT NEGATIVE

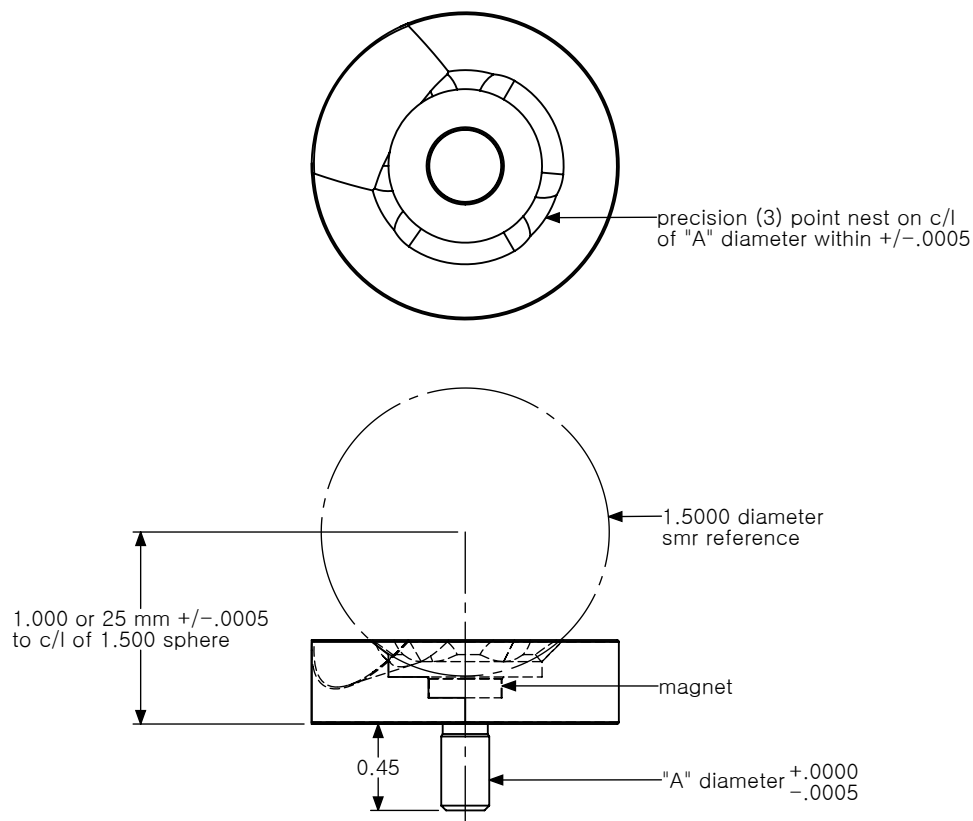
CAD on file



1.5 SMN FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



1.5 SMN/MB

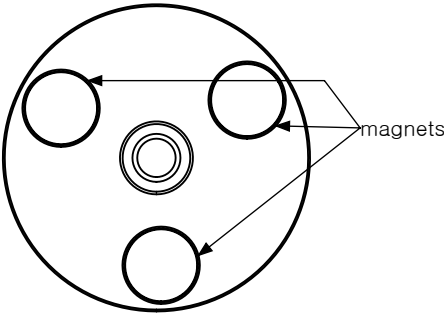
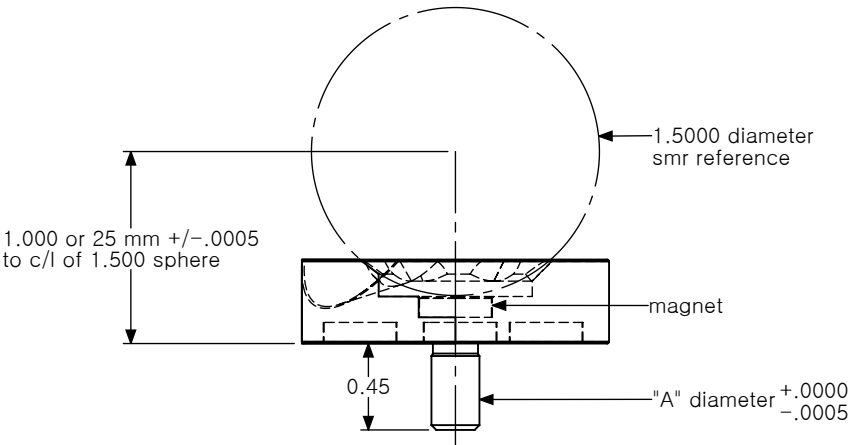
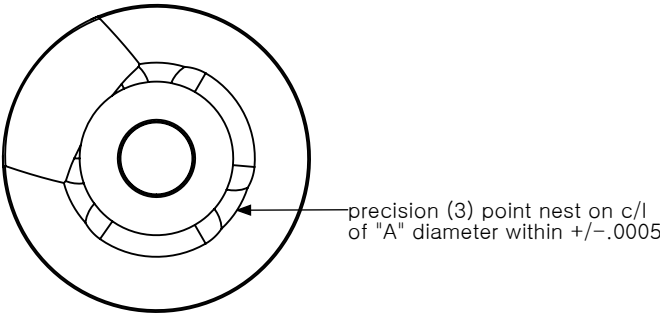
Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole and 1.000 above or 25mm above.

1.5 SMN / MB ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL			
1.5 SM/MB STANDARD BUILD	1.5 SM/MB	1.000 or 25mm		1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	1.5 SM/MB						
REFERENCE NOTES							

1.5 SPHERE MOUNT NEGATIVE / MAGNETIC BASE

CAD on file



1.5 SMN / MB
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

The 1.5 SMN - SS (1.250 BODY)
Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole and 1.000 above or 25mm above.

1.5 SMN - SS (1.250 BODY) ORDERING INFORMATION

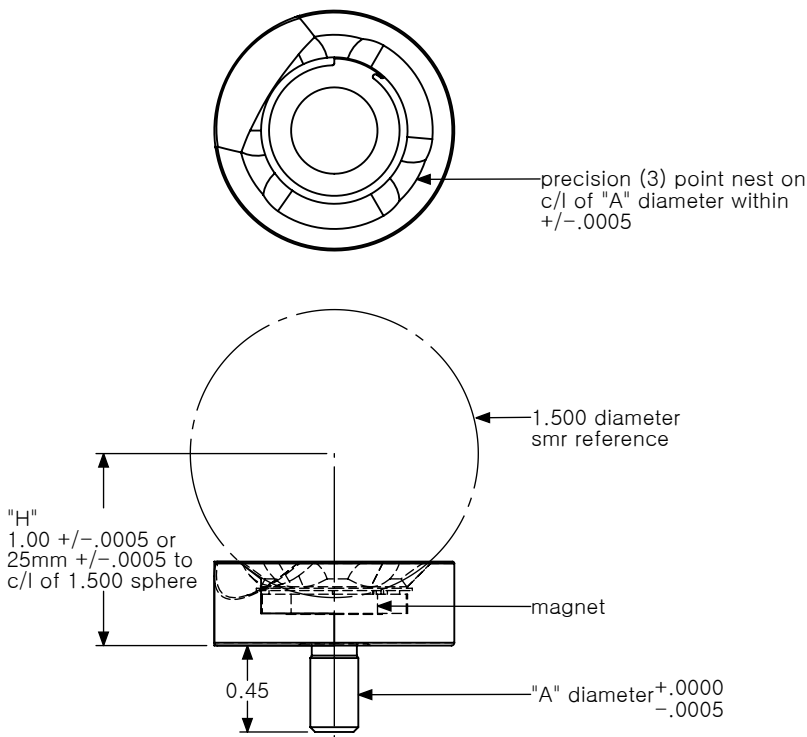
	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL			
1.5 SMN - SS STANDARD BUILD	1.5 SMN - SS	1.000 or 25mm		stainless steel (SS)			
CUSTOMER PROVIDES INFO	1.5 SMN - SS ■						
REFERENCE NOTES							

1.5 SPHERE MOUNT NEGATIVE - SS (1.250 BODY)

CAD on file



1.5 SMN - SS (1.250 BODY)
FEATURES
STAINLESS STEEL (standard)



1.5 SM - SS
(1.000 BODY)

Designed to hold a
Spherically Mounted
Retro-Reflector or
Theodolite Sphere on
centerline of a hole
and 1.000 above
or 25mm above.

1.5 SM - SS (1.000 BODY) ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL			
1.5 SM-SS STANDARD BUILD	1.5 SM-SS	1.000 or 25mm		stainless steel (SS)			

CUSTOMER
PROVIDES INFO

1.5 SM-SS ■

■

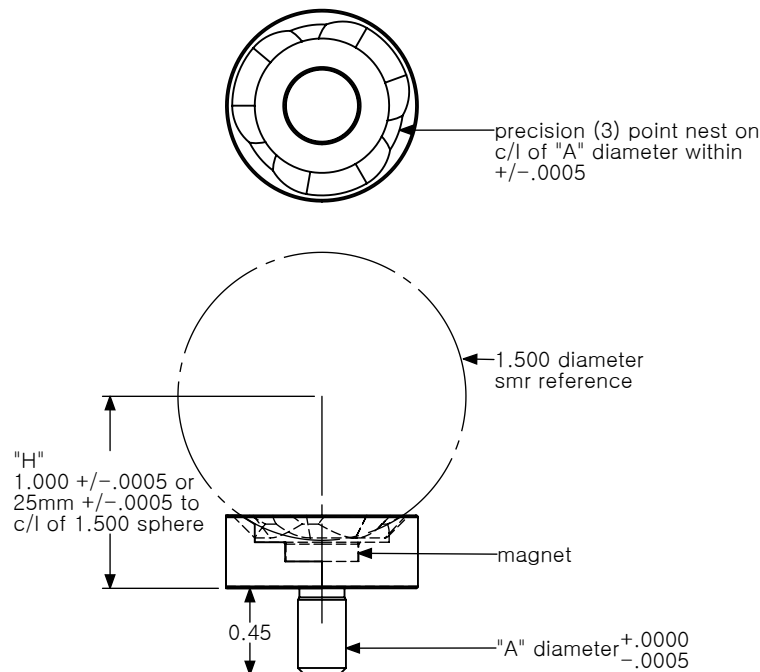
REFERENCE
NOTES

1.5 SPHERE MOUNT - SS (1.000 BODY)

CAD on file



1.5 SM - SS
(1.000 BODY)
FEATURES
STAINLESS STEEL
(standard)



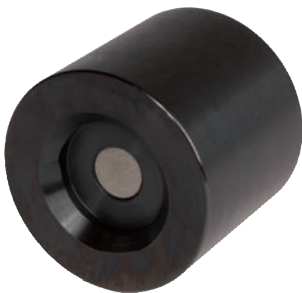
1.5 SMV
Designed to hold a Spherically Mounted Retro-Reflector, a Theodolite Sphere, or 1.5 Sphere on centerline of a hole. Use the variable design to customize the mount for your specific needs.

1.5 SMV ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	"B" SHANK LENGTH	MATERIAL (OPTIONS)		
1.5 SMV STANDARD BUILD	1.5 SMV	↓	↓	↓	1144 steel or (SS)		
CUSTOMER PROVIDES INFO	1.5 SMV	■	■	■	■		
REFERENCE NOTES							

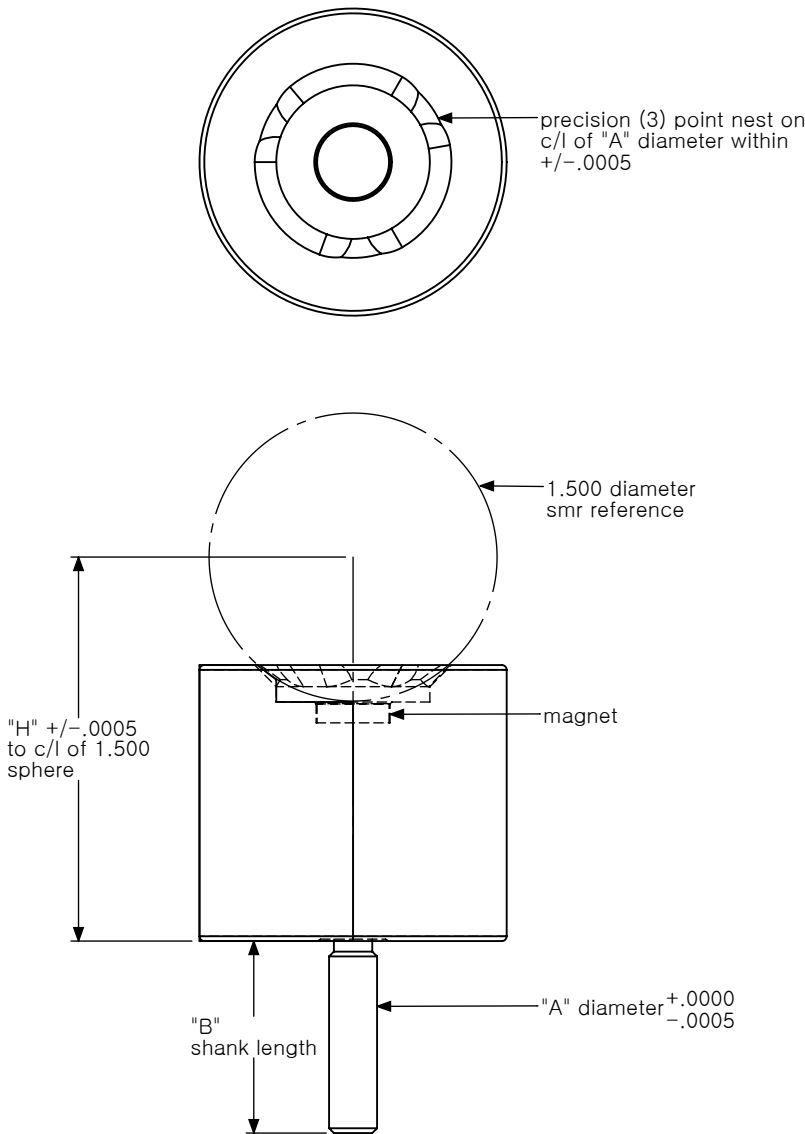
1.5 SPHERE MOUNT VARIABLE

CAD on file



1.5 SMV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



1.5 SMSI

Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole and 1.000 or 25 mm offset above where a smaller shoulder locating area is required.

1.5 SMSI ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
1.5 SMSI STANDARD BUILD	1.5 SMSI	1.000 or 25mm		1144 steel or (SS)			
CUSTOMER PROVIDES INFO	1.5 SMSI	■	■	■			
REFERENCE NOTES							

1.5 SPHERE MOUNT SPECIAL INDEX

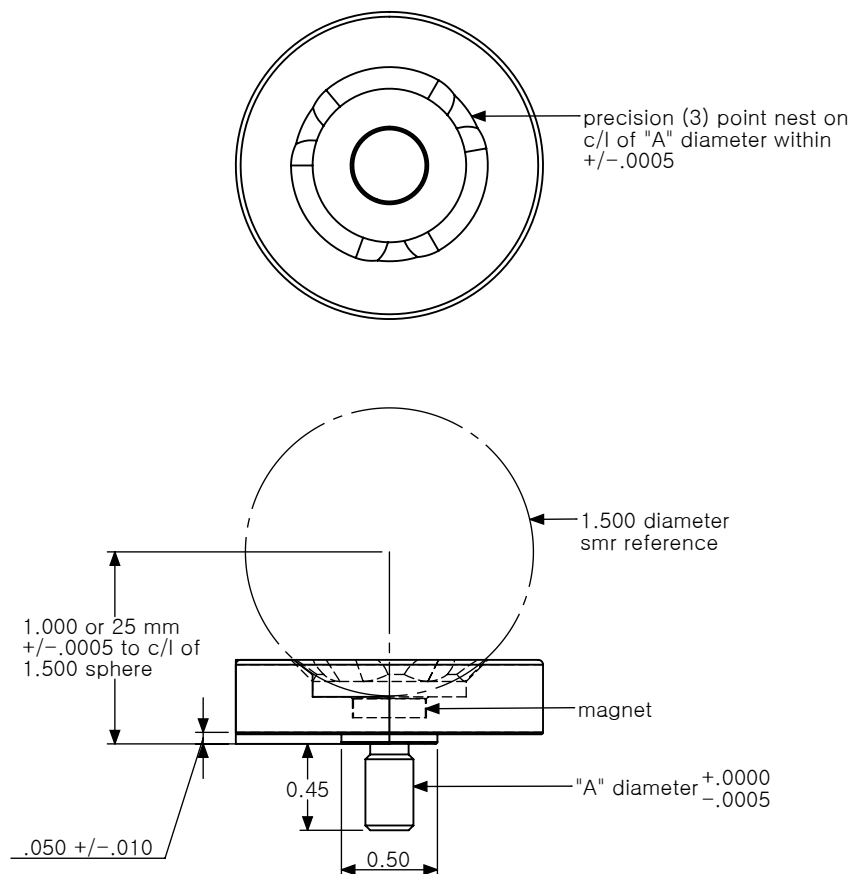
CAD on file



1.5 SMSI FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



1.5 NMSM

Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a hole when a magnet is not required.

1.5 NMSM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
1.5 NMSM STANDARD BUILD	1.5 NMSM	1.000 or 25mm		1144 steel or (SS)			
CUSTOMER PROVIDES INFO	1.5 NMSM	■	■	■			
REFERENCE NOTES							

1.5 NON-MAGNETIC SPHERE MOUNT

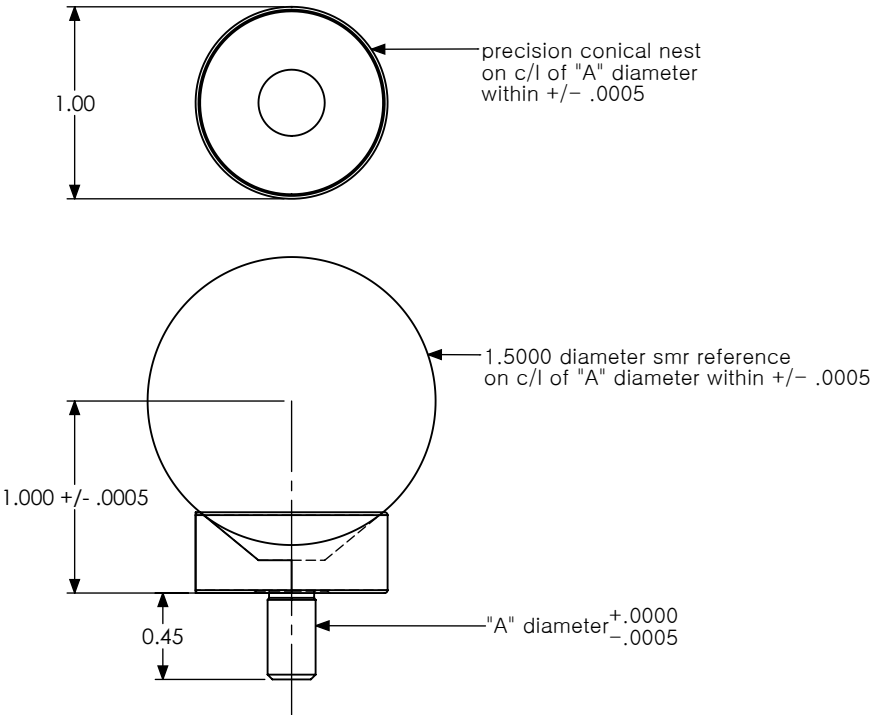
CAD on file



1.5 NMSM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



1.5 SM / DS

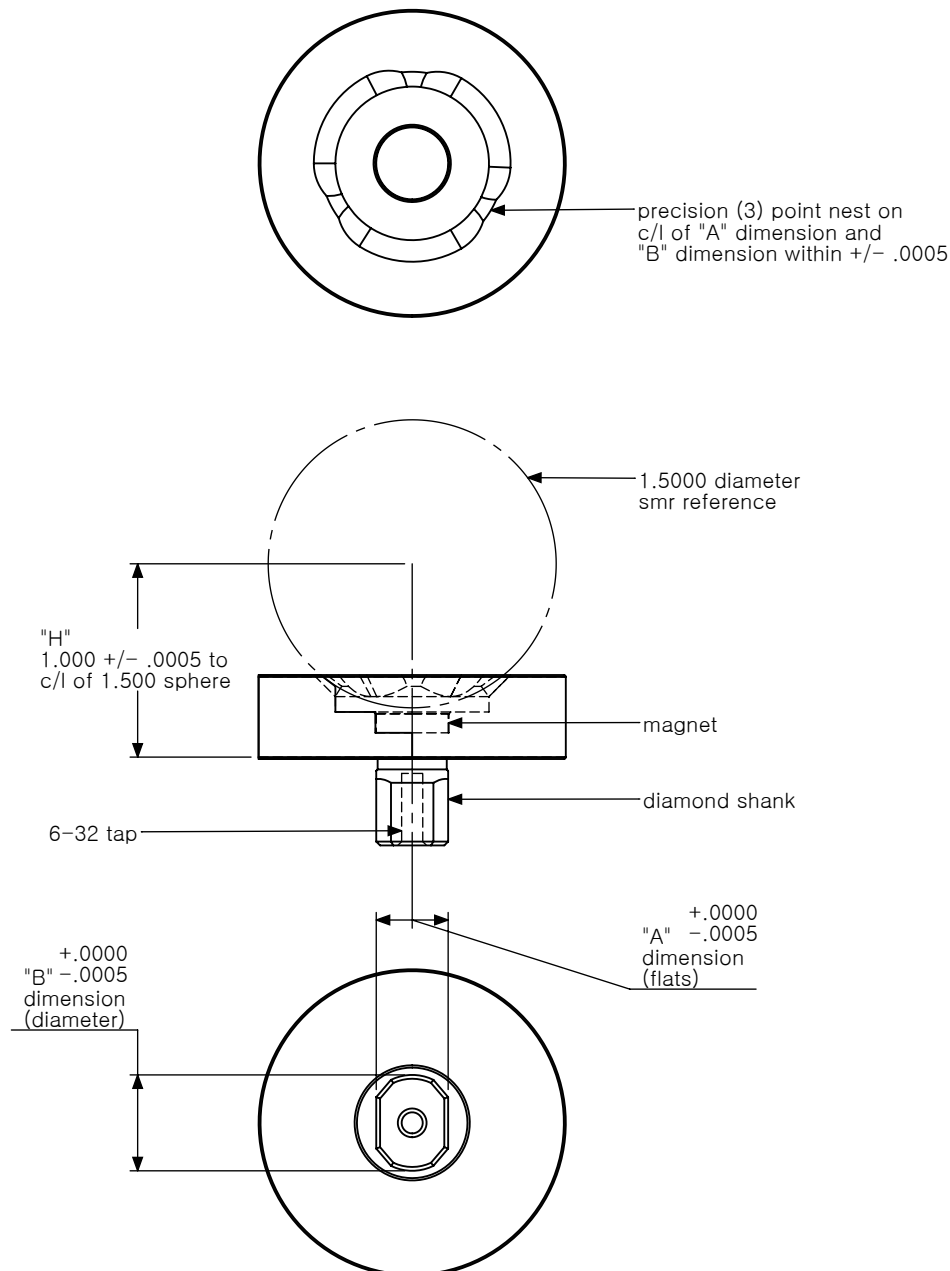
Designed to hold a Spherically Mounted Retro-Reflector Theodolite Sphere or Retro-Reflective 1.5 Sphere on centerline of standard slotted type bushings.

1.5 SM / DS ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	"B" DIMENSION DIAMETER	MATERIAL		
1.5 SM/DS STANDARD BUILD	1.5 SM/DS	1.000	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	1.5 SM/DS		■	■			
REFERENCE NOTES							

1.5 SPHERE MOUNT / DIAMOND SHANK

CAD on file



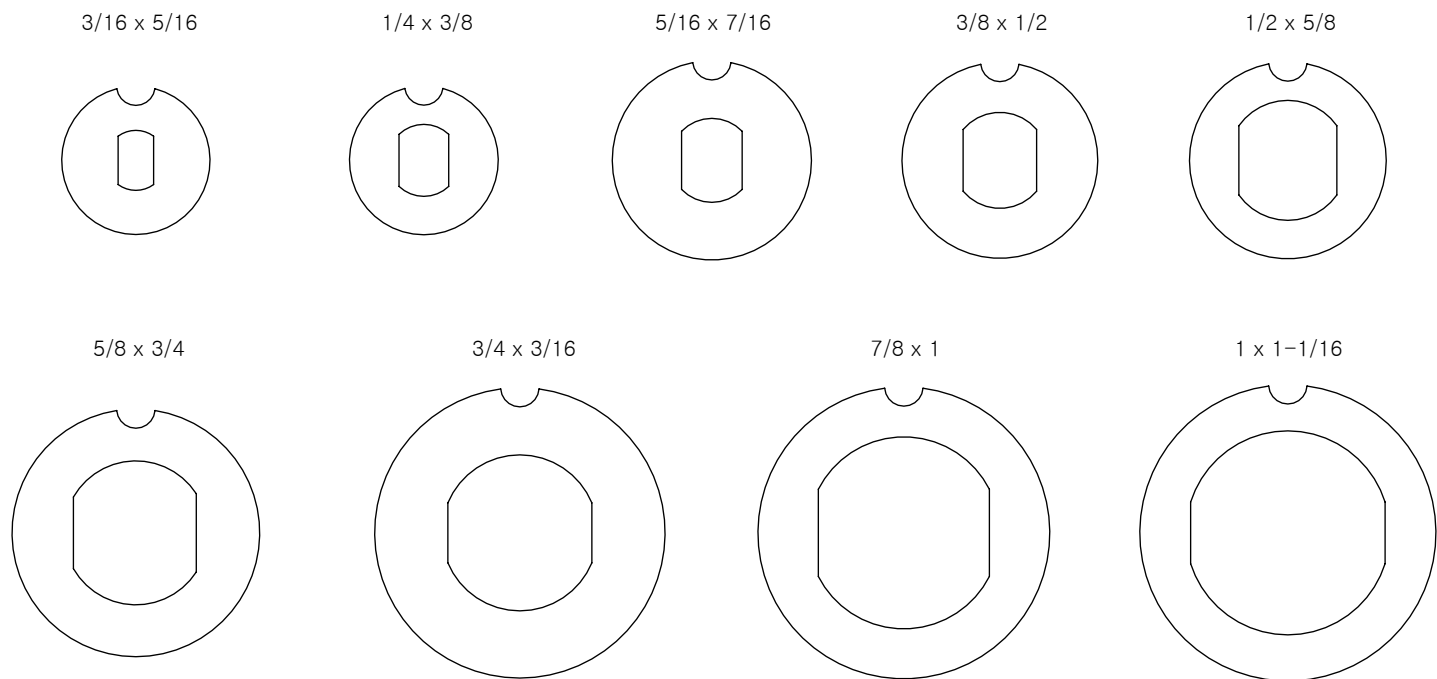
1.5 SM / DS FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

1.5 SPHERE MOUNT / DIAMOND SHANK REFERENCE

NOMINAL SIZES FOR
EXAMPLE ONLY

Actual dimensions will
be .0005 smaller than
the fractional sizes
shown below.



1.5 SPHERE MOUNT / DIAMOND SHANK NOTES

FOR BEST RESULTS
WE RECOMMEND:

- Make sure that the slotted bushing slot and locating surface around slotted bushing is clean.
- Make sure locating surface around slotted bushing and the inside edges of the slotted bushing are free of burrs. Burrs inside the slot may not allow the 1.5SM/DS to fit freely and may cause damage to the 1.5SM/DS if not removed.
- Standard 1.5SM/DS's are .0005 to .0010 of an inch under the nominal length and width sizes for minimal clearance. A light coat of grease around the diamond locating areas will help the 1.5SM/DS to center themselves within the normal minimal clearance.

1.5 SMV / DS

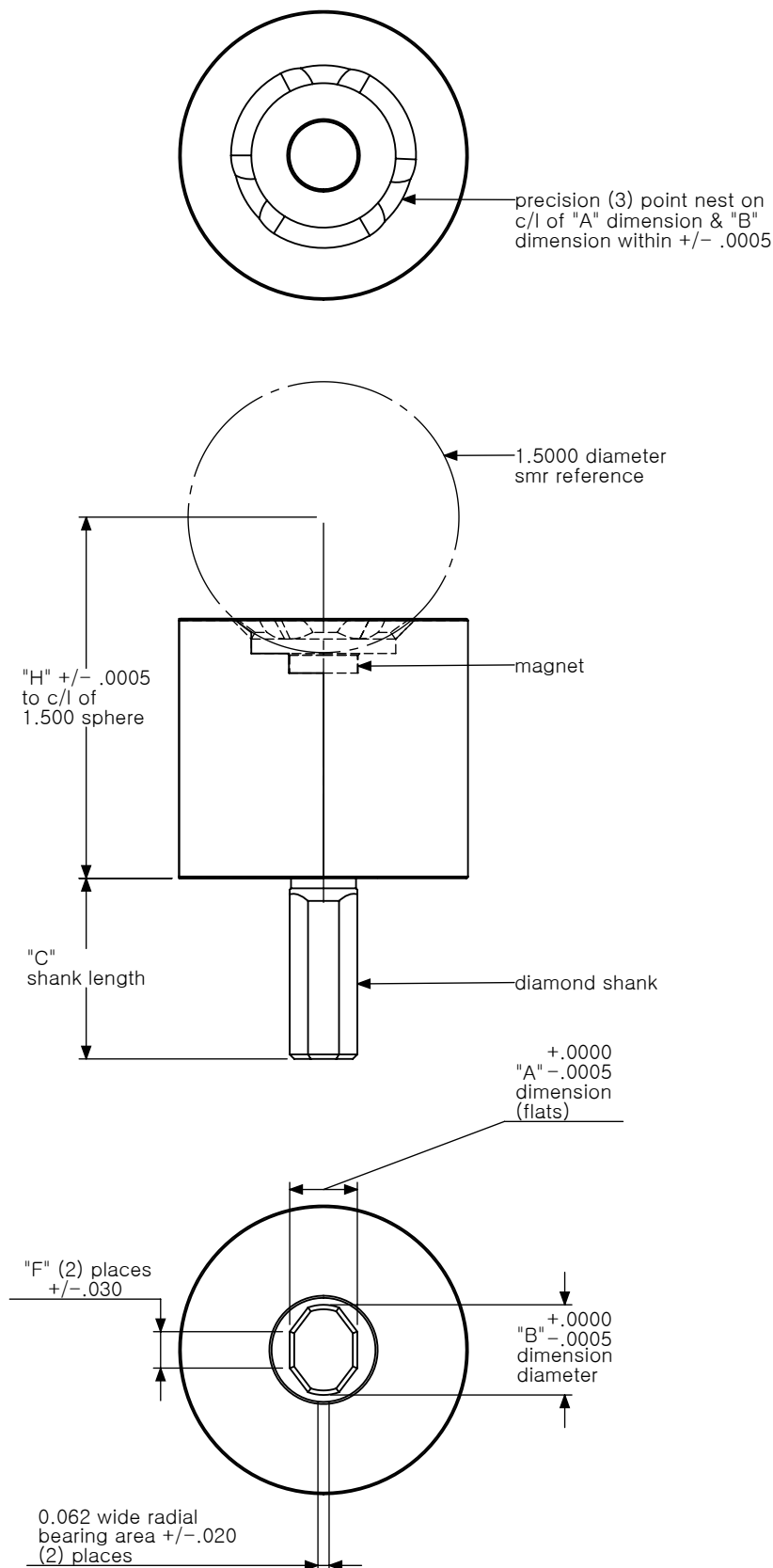
Designed to hold a Spherically Mounted Retro-Reflector Theodolite Sphere or Retro-Reflective 1.5 Sphere on centerline of a slotted bushing. Use the variable design to customize the Sphere Mount for your specific needs.

1.5 SMV / DS ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" DIMENSION (FLATS)	"B" DIMENSION (DIAMETER)	"C" SHANK LENGTH	"D" FLAT LENGTH	MATERIAL
1.5 SMV / DS STANDARD BUILD	1.5 SMV / DS	↓	↓	↓	↓	↓	1144 steel, black oxide finish
CUSTOMER PROVIDES INFO	1.5 SMV / DS ■	■	■	■	■	■	
REFERENCE NOTES							

1.5 SPHERE MOUNT VARIABLE / DIAMOND SHANK

CAD on file



1.5 SMV / DS FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

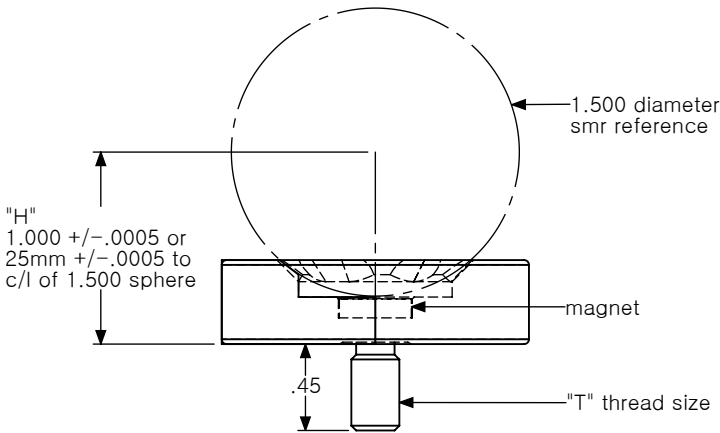
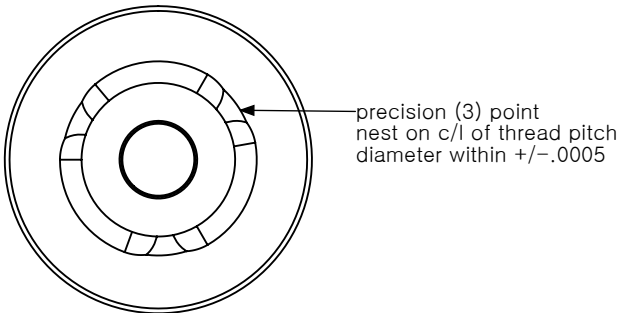
1.5 SMT
Designed to hold a Spherically Mounted Retro-Reflector or Theodolite Sphere on centerline of a threaded hole and 1.000 above or optional 25mm above.

1.5 SMT ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"T" THREAD SIZE	MATERIAL (OPTIONS)			
1.5 SMT STANDARD BUILD	1.5 SMT	1.000 or 25mm		1144 steel or (SS)			
CUSTOMER PROVIDES INFO	1.5 SMT	■	■	■			
REFERENCE NOTES							

1.5 SPHERE MOUNT THREADED

CAD on file



1.5 SMT FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

1.5 SSM

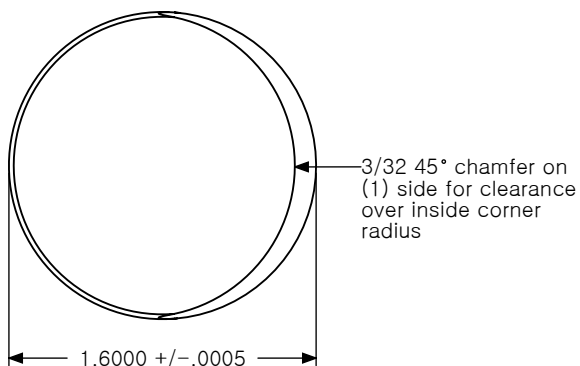
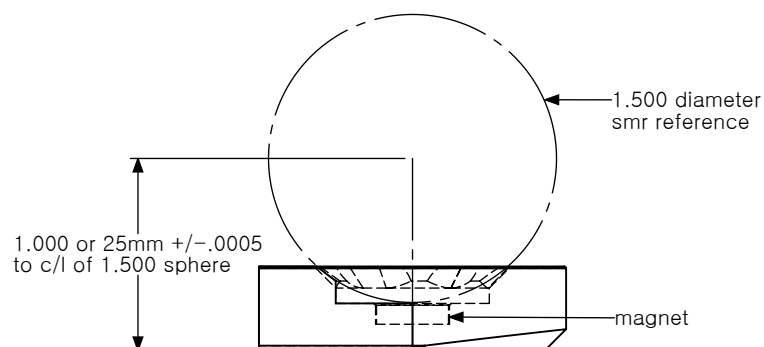
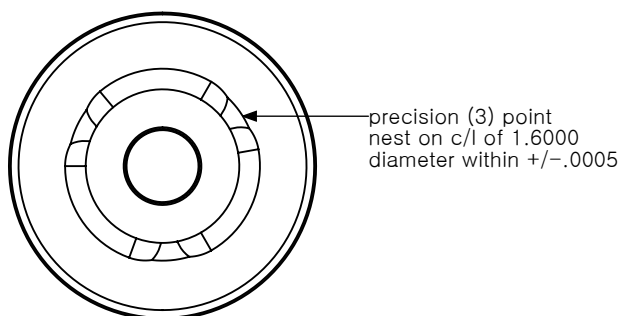
Supports a 1.5 Spherically Mounted Retro-Reflector or Theodolite Sphere for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

1.5 SSM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
1.5 SSM STANDARD BUILD	1.5 SSM	1.000 or 25mm	1144 steel or (SS)				
CUSTOMER PROVIDES INFO	1.5 SSM	■	■				
REFERENCE NOTES							

1.5 SHANKLESS SPHERE MOUNT

CAD on file



1.5 SSM FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

1.5 SSM SUGGESTION

For non-critical applications, we suggest using a 1.5 Sphere Mount Hard Coat (1.5SM-HC) on page G31.

1.5 SSM / MB

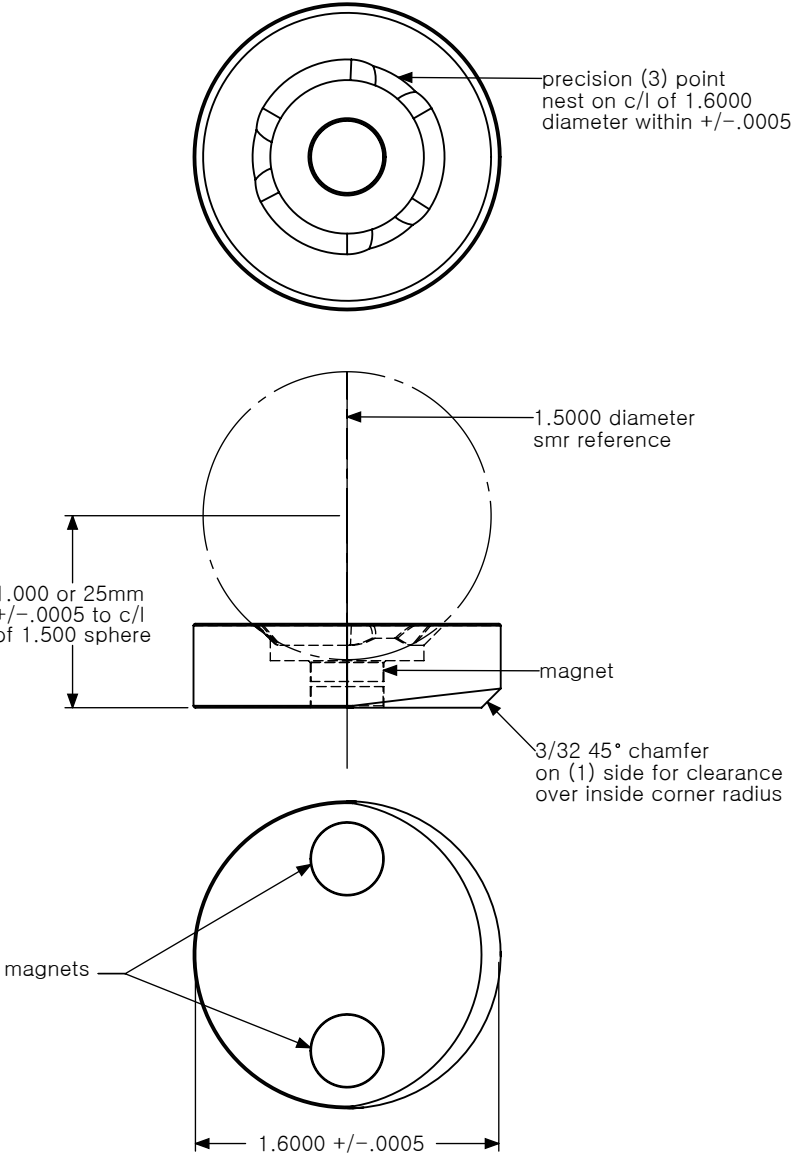
Supports a 1.5 Spherically Mounted Retro-Reflector or Theodolite Sphere for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

1.5 SSM / MB ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
1.5 SSM / MB STANDARD BUILD	1.5 SSM / MB	1.000 or 25mm	1144 steel or (SS)				
CUSTOMER PROVIDES INFO	1.5 SSM / MB ■		■				
REFERENCE NOTES							

1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE

CAD on file



1.5 SSM / MB FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

1.5 SSM / MB SUGGESTION

For non-critical applications, we suggest using a 1.5 Sphere Mount Hard Coat / Magnetic Base (1.5SM-HC/MB) on page G32.

1.5 SSM / M6

Supports a 1.5 Spherically Mounted Retro-Reflector or Theodolite Sphere for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

1.5 SSM / M6 ORDERING INFORMATION

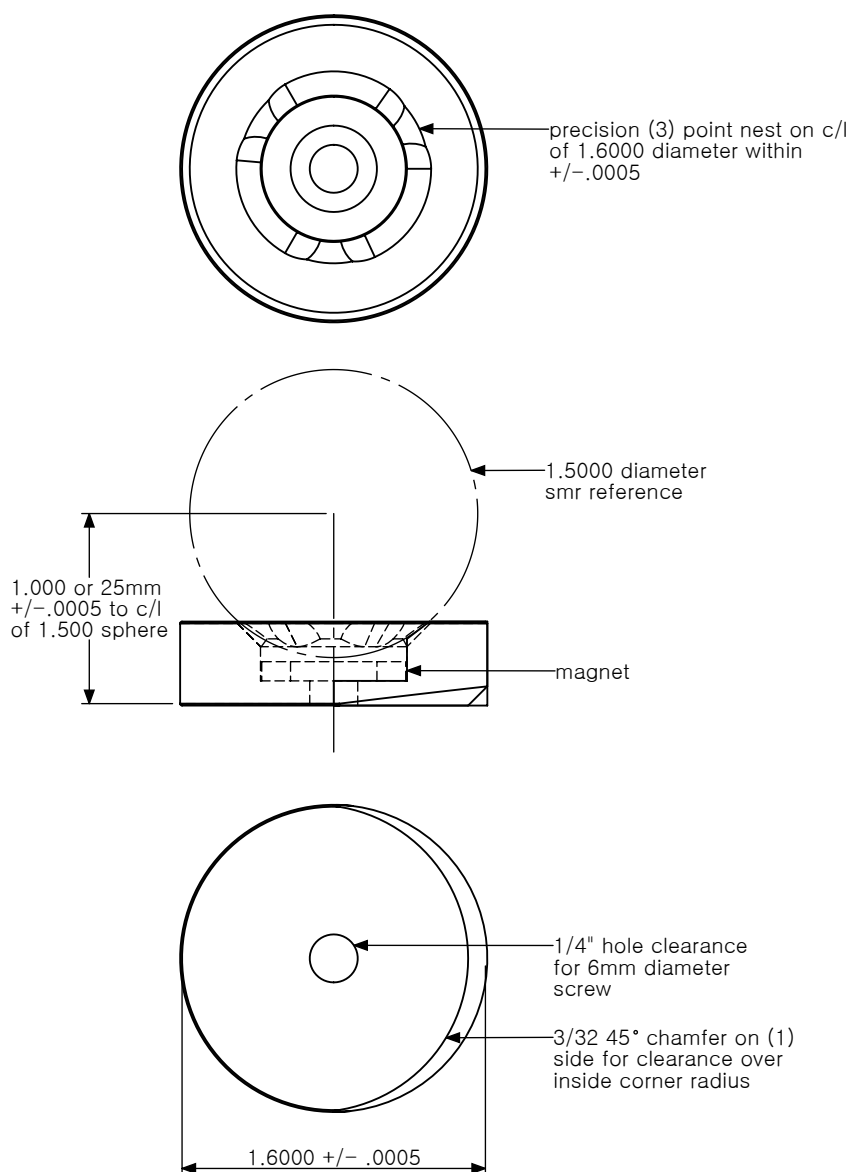
	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 SSM / M6 STANDARD BUILD	1.5 SSM / M6	1.000 or 25mm	1144 steel, black oxide finish				

CUSTOMER PROVIDES INFO 1.5 SSM / M6 ■

REFERENCE NOTES

1.5 SHANKLESS SPHERE MOUNT / M6

CAD on file



1.5 SSM / M6 FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

1.5 SSM / MB - CP

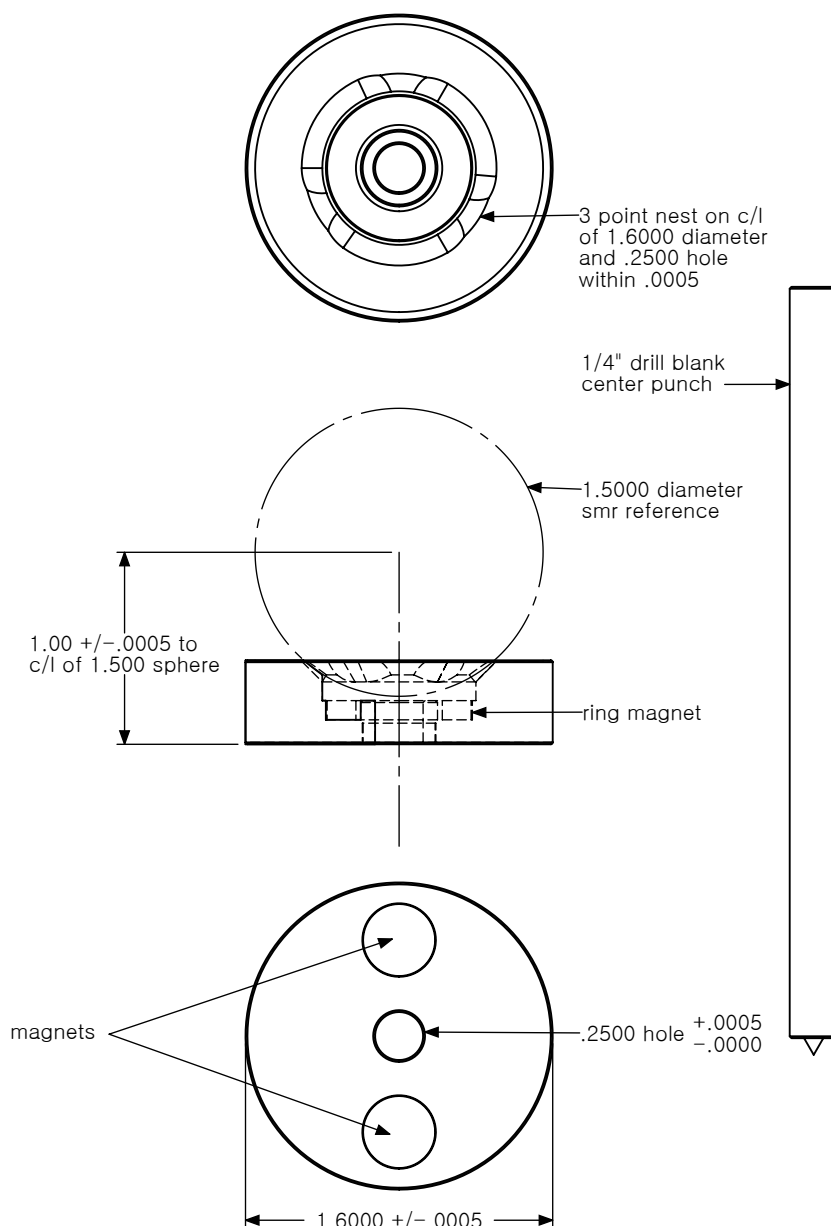
Supports a 1.5 Spherically Mounted Retro-Reflector or Theodolite Sphere for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

1.5 SSM / MB - CP ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 SSM / MB - CP STANDARD BUILD	1.5 SSM/ MB-CP	1.000	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 SSM/ MB-CP						
REFERENCE NOTES							

1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE - CENTER PUNCH

CAD on file



1.5 SSM / MB - CP FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

1.5 SSM / MB - CP APPLICATION

Position Sphere Mount and Target into position – remove target and insert center punch in the center hole to punch an identifying mark or use the center punch to pick up an existing mark.

1.5 SSM / MB - CPL

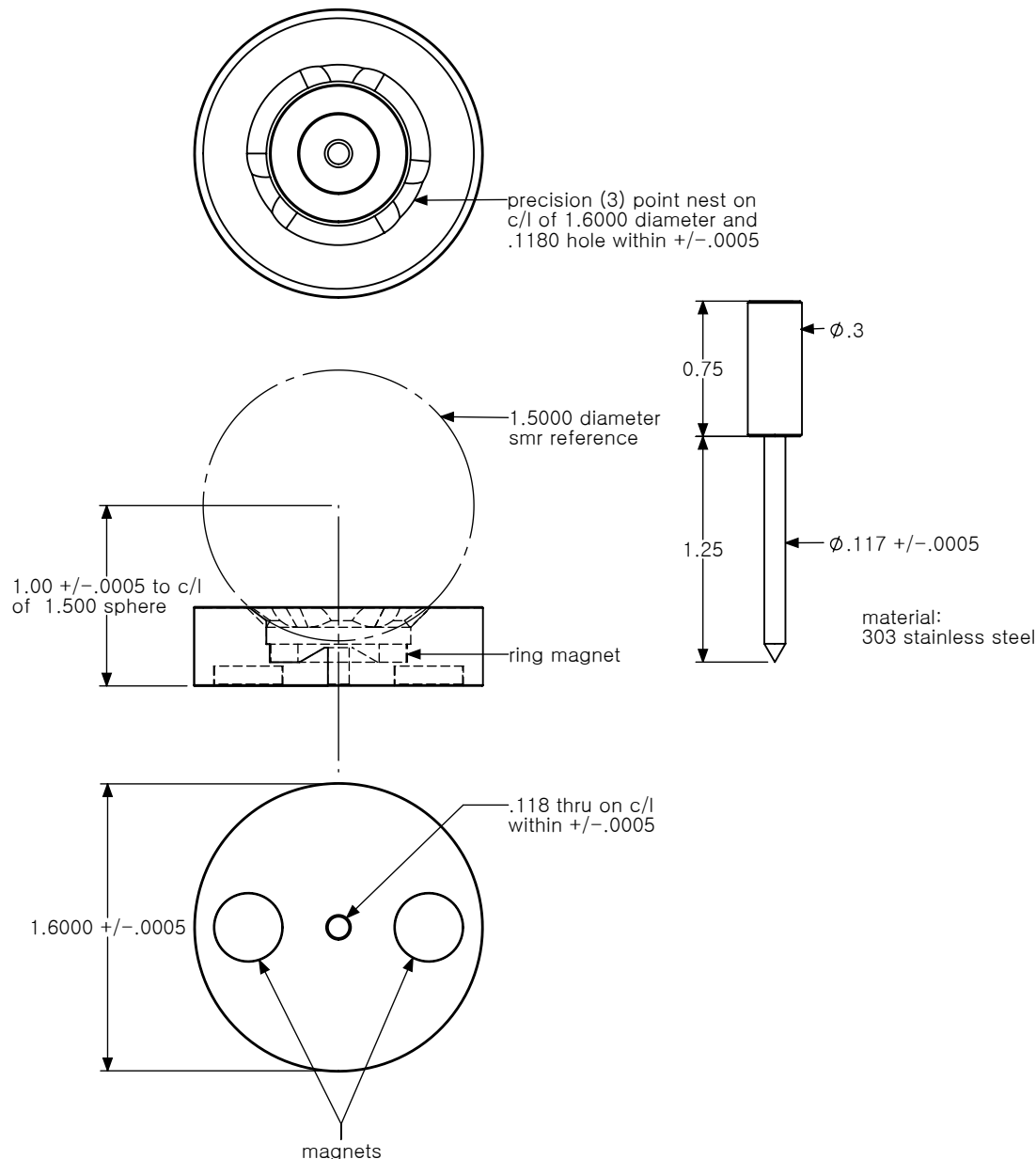
Supports a 1.5 Spherically Mounted Retro-Reflector or Theodolite Sphere for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

1.5 SSM / MB - CPL ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 SSM / M6 STANDARD BUILD	1.5 SSM/ MB-CPL	1.000	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 SSM/ MB-CPL						
REFERENCE NOTES							

1.5 SHANKLESS SPHERE MOUNT / MAGNETIC BASE - CENTER PUNCH LOCATOR

CAD on file



1.5 SSM / MB - CPL FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 38 – 42 (standard)

1.5 GLSM

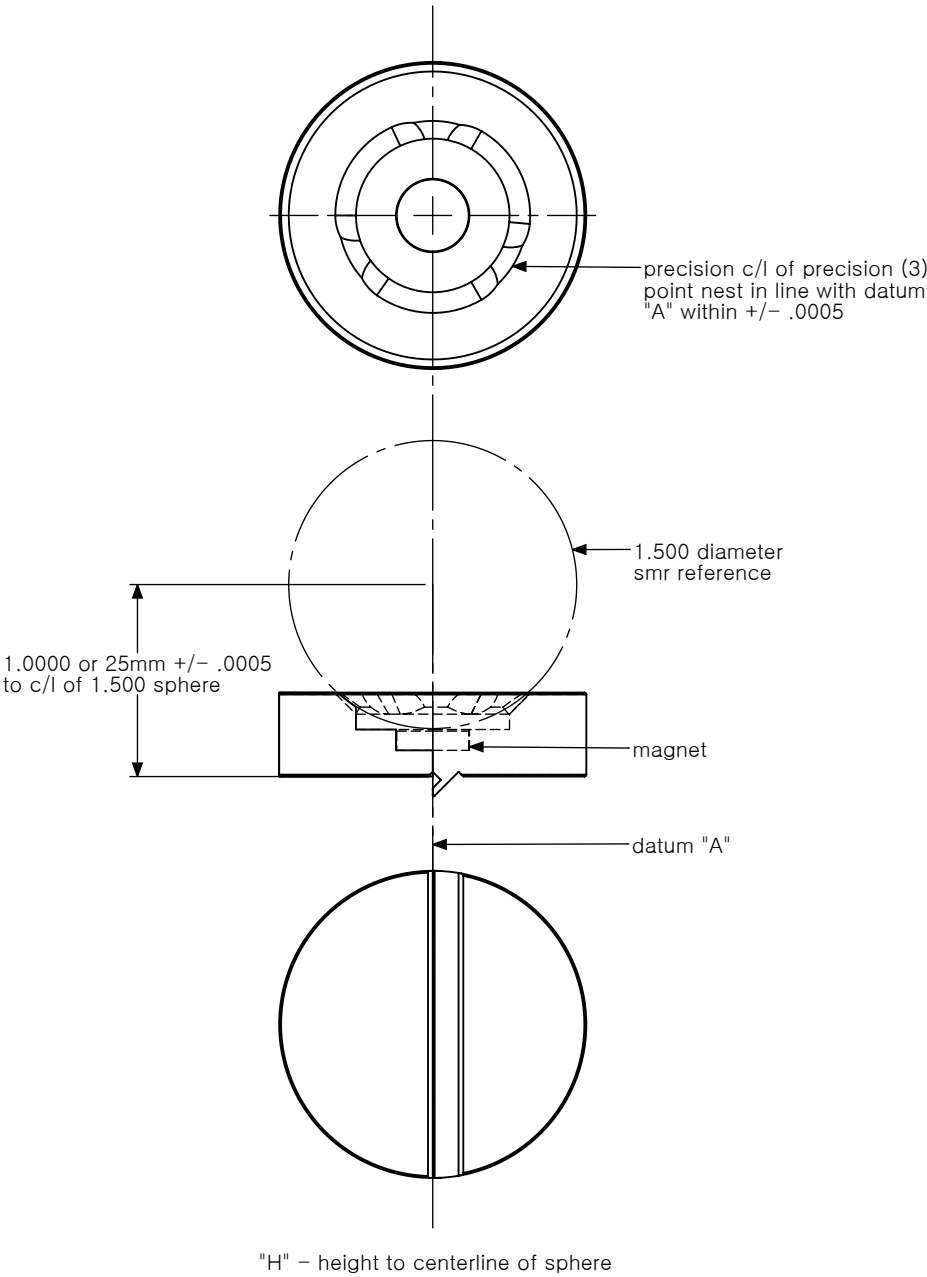
Used to represent the control side of a groove that is in an automotive grid plate at 1.000 or 25mm above and will clear 3mm by 3mm groove or slot.

1.5 GLSM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 GLSM STANDARD BUILD	1.5 GLSM	1.000 or 25mm	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 GLSM						
REFERENCE NOTES							

1.5 GRID LINE SPHERE MOUNT

CAD on file



1.5 GLSM
FEATURES
1144 STEEL, BLACK OXIDE
FINISH - Heat-treated and
hardened to R/C 53 - 55
(standard)

1.5 ESM

Designed to hold a Spherically Mounted Retro-Reflector for the purpose of locating edges/surfaces.

1.5 ESM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 ESM STANDARD BUILD	1.5 ESM	1.000 or 25mm	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 ESM						
REFERENCE NOTES							

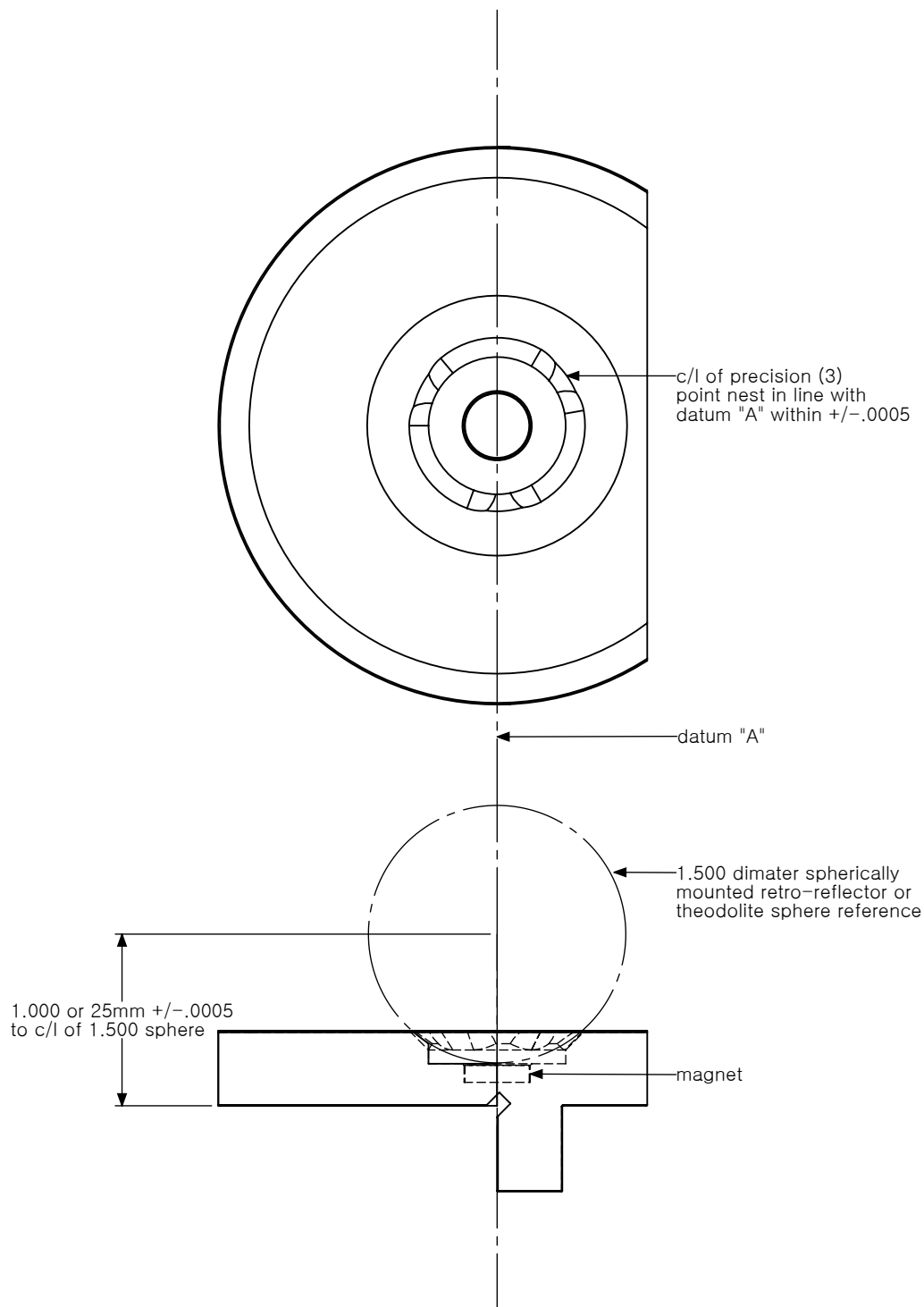
1.5 EDGE SPHERE MOUNT

CAD on file



1.5 ESM FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)



1.5 ESM - 2

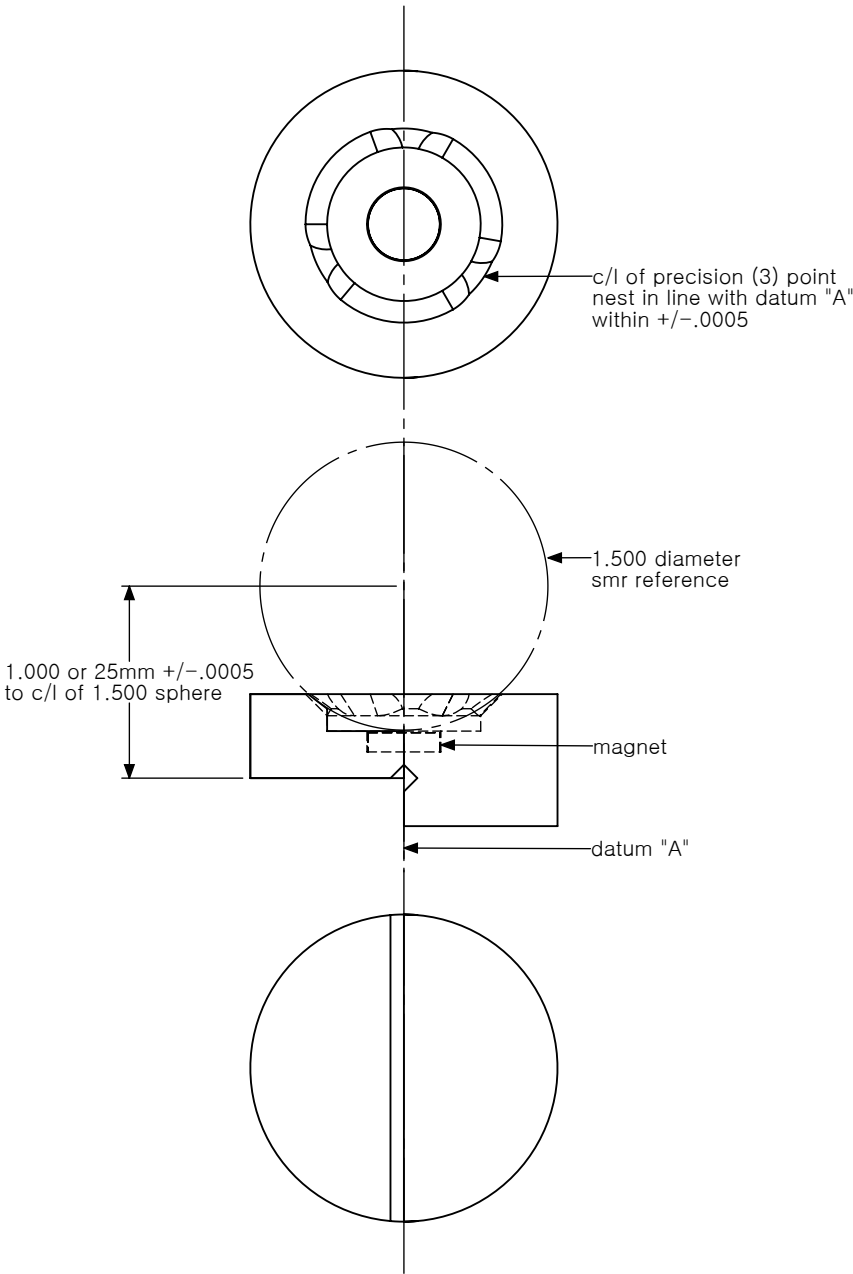
Designed to hold a Spherically Mounted Retro-Reflector for the purpose of locating edges/surfaces.

1.5 ESM - 2 ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
1.5 ESM-2 STANDARD BUILD	1.5 ESM-2	1.000 or 25mm	1144 steel or (SS)				
CUSTOMER PROVIDES INFO	1.5 ESM-2						
REFERENCE NOTES							

1.5 EDGE SPHERE MOUNT - 2

CAD on file



1.5 ESM - 2 FEATURES
1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

1.5 ESM - 2 CAUTION
The 1.5ESM-2 will not balance over an edge by itself. The 1.5ESM-2 must be held in place or it will fall, possibly causing damage to the SMR.

1.5 ESM - OC

Designed to hold a Spherically Mounted Retro-Reflector for the purpose of locating outside corners.

1.5 ESM - OC ORDERING INFORMATION

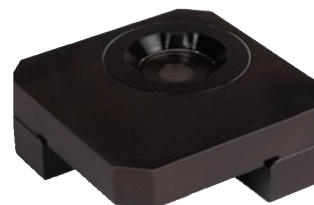
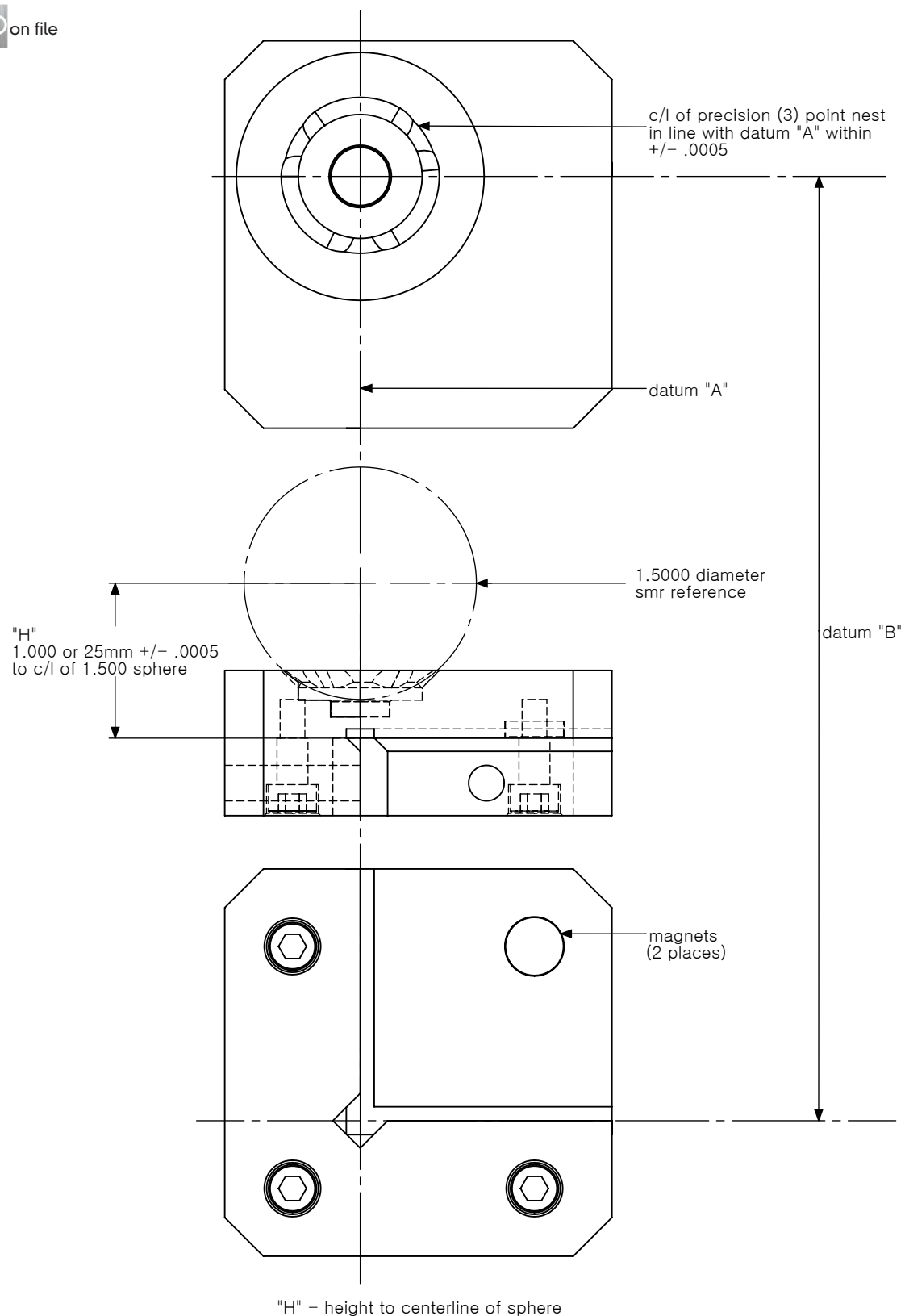
	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 ESM-OC STANDARD BUILD	1.5 ESM-OC	1.000 or 25mm	1144 steel, black oxide finish				

CUSTOMER PROVIDES INFO 1.5 ESM-OC ■

REFERENCE NOTES

1.5 EDGE SPHERE MOUNT - OUTSIDE CORNER

CAD on file



1.5 ESM - OC FEATURES

1144 STEEL, BLACK OXIDE FINISH - Heat-treated and hardened to R/C 53 - 55 (standard)

1.5 ESM - 2 - OC

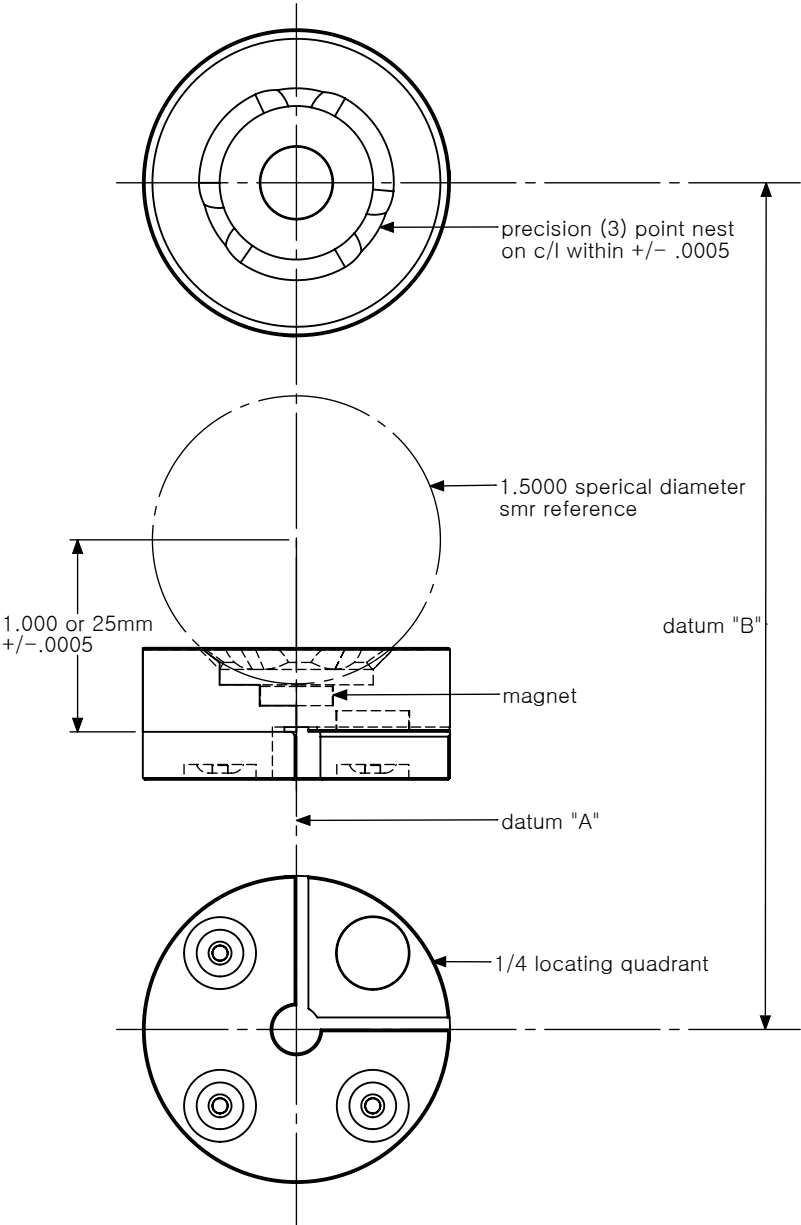
Designed to hold a Spherically Mounted Retro-Reflector for the purpose of locating outside corners.

1.5 ESM - 2 - OC ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 ESM-2-OC STANDARD BUILD	1.5 ESM -2-OC		1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 ESM -2-OC	■					
REFERENCE NOTES							

1.5 EDGE SPHERE MOUNT - 2 - OUTSIDE CORNER

CAD on file



1.5 ESM - 2 - OC
FEATURES
1144 STEEL, BLACK OXIDE
FINISH – Heat-treated and
hardened to R/C 53 – 55
(standard)

1.5 ESM - 2 - OC
CAUTION
The 1.5ESM-2-OC will not
balance over an edge by
itself. The 1.5ESM-2-OC
must be held in place or it
will fall, possibly causing
damage to the SMR.

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1.5 ESM - 2 - 1/4

Designed to hold a Spherically Mounted Retro-Reflector for the purpose of locating outside corners or radius.

1.5 ESM - 2 - 1/4 ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 ESM-2-1/4 STANDARD BUILD	1.5 ESM 2-1/4	1.000 or 25mm	1144 steel, black oxide finish				

CUSTOMER PROVIDES INFO 1.5 ESM 2-1/4 ■

REFERENCE NOTES

NOTE

Intersection of datum "A" and datum "B" is a sharp edge critical locating surface. (HANDLE WITH CARE)



1.5 ESM - 2 - 1/4

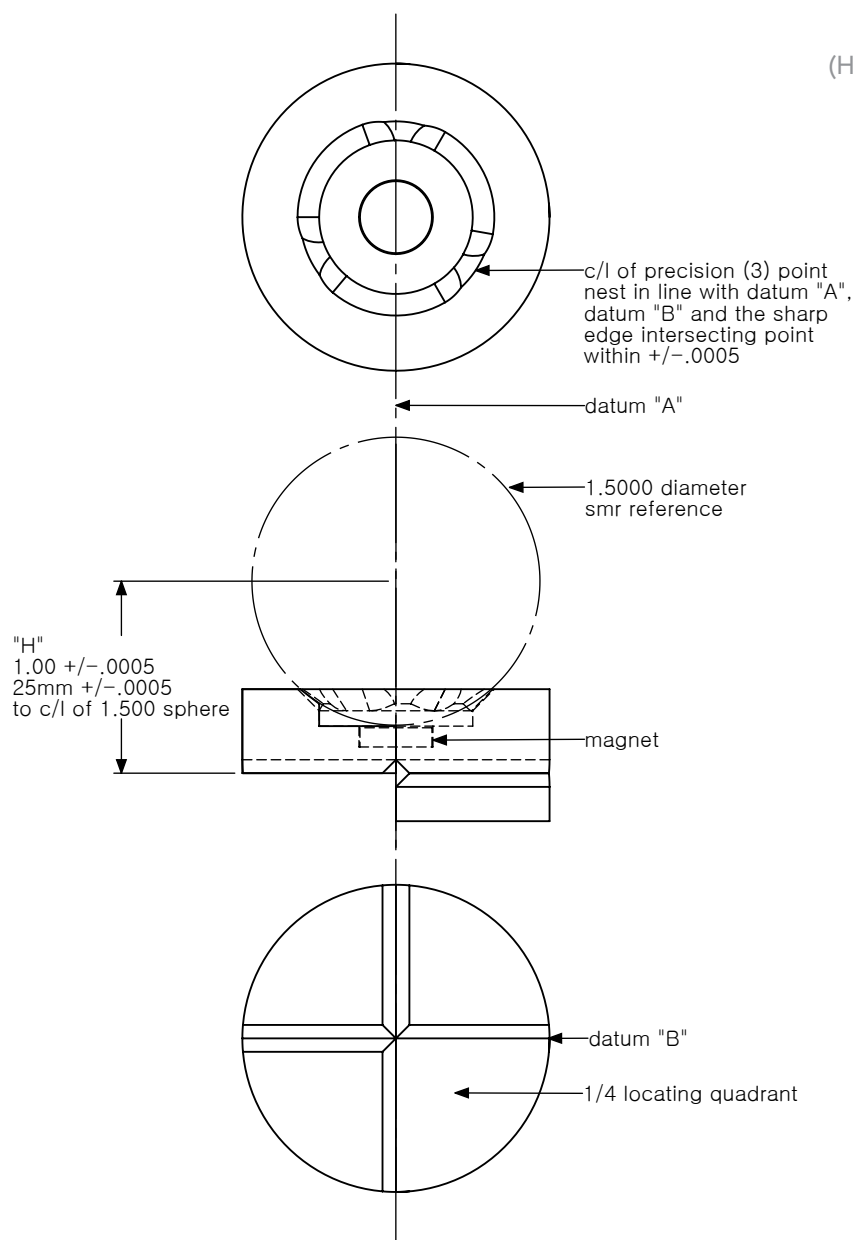
FEATURES

1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

1.5 ESM - 2 - 1/4

CAUTION

The 1.5ESM-2-1/4 will not balance over an edge by itself. The 1.5 ESM-2-1/4 must be held in place or it will fall, possibly causing damage to the SMR.



1.5 ISM
Designed to adapt a 1.5
Spherically Mounted
Retro-Reflector to an
Invar Scale Bar.

1.5 ISM ORDERING INFORMATION

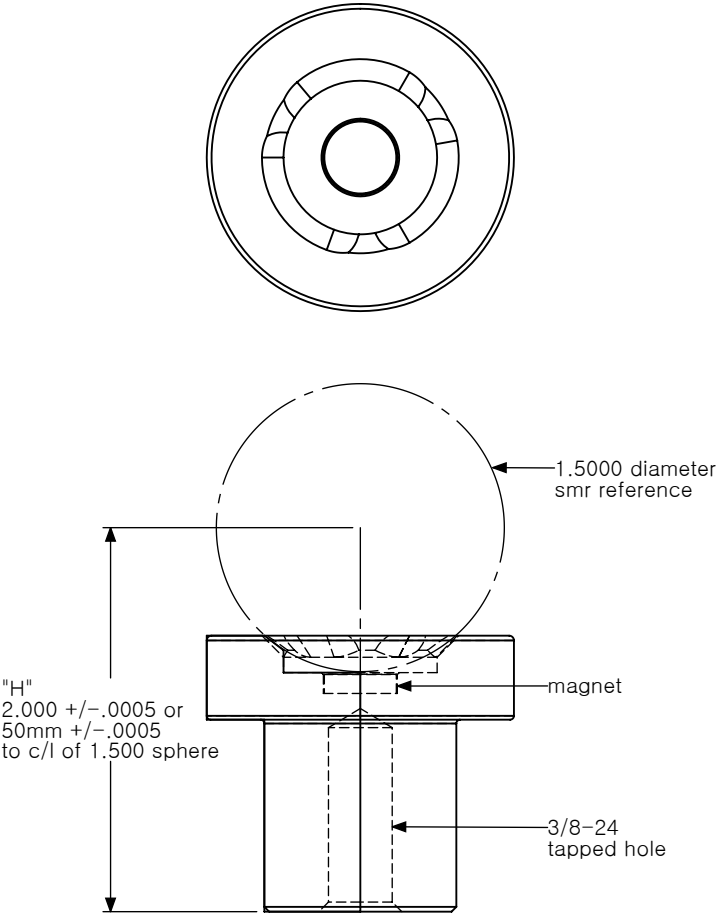
	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
1.5 ISM STANDARD BUILD	1.5 ISM	2.000 or 50mm	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 ISM	■					
REFERENCE NOTES							

1.5 INVAR SPHERE MOUNT

CAD on file



1.5 ISM
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



1.5 TSM

Adapts to a Theodolite
Adaptor to hold a 1.5
Spherically Mounted
Retro-Reflector in
place for a consistant
reference point.

1.5 TSM ORDERING INFORMATION

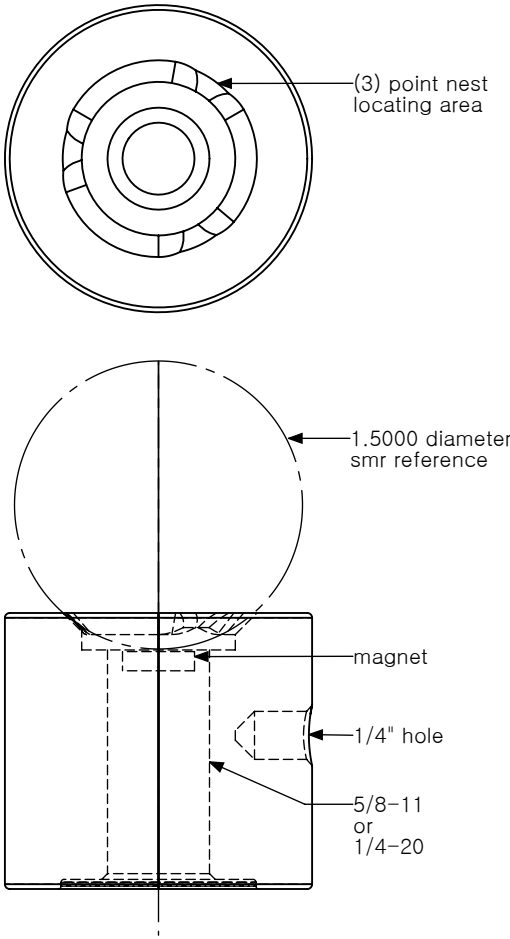
	FAMILY	DIAMETER OF TAPPED HOLE	MATERIAL				
1.5 TSM STANDARD BUILD	1.5 TSM	5/8-11 or 1/4-20	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	1.5 TSM						
REFERENCE NOTES							

1.5 TRIPOD SPHERE MOUNT

CAD on file



1.5 TSM
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



1.5 LT - RSM

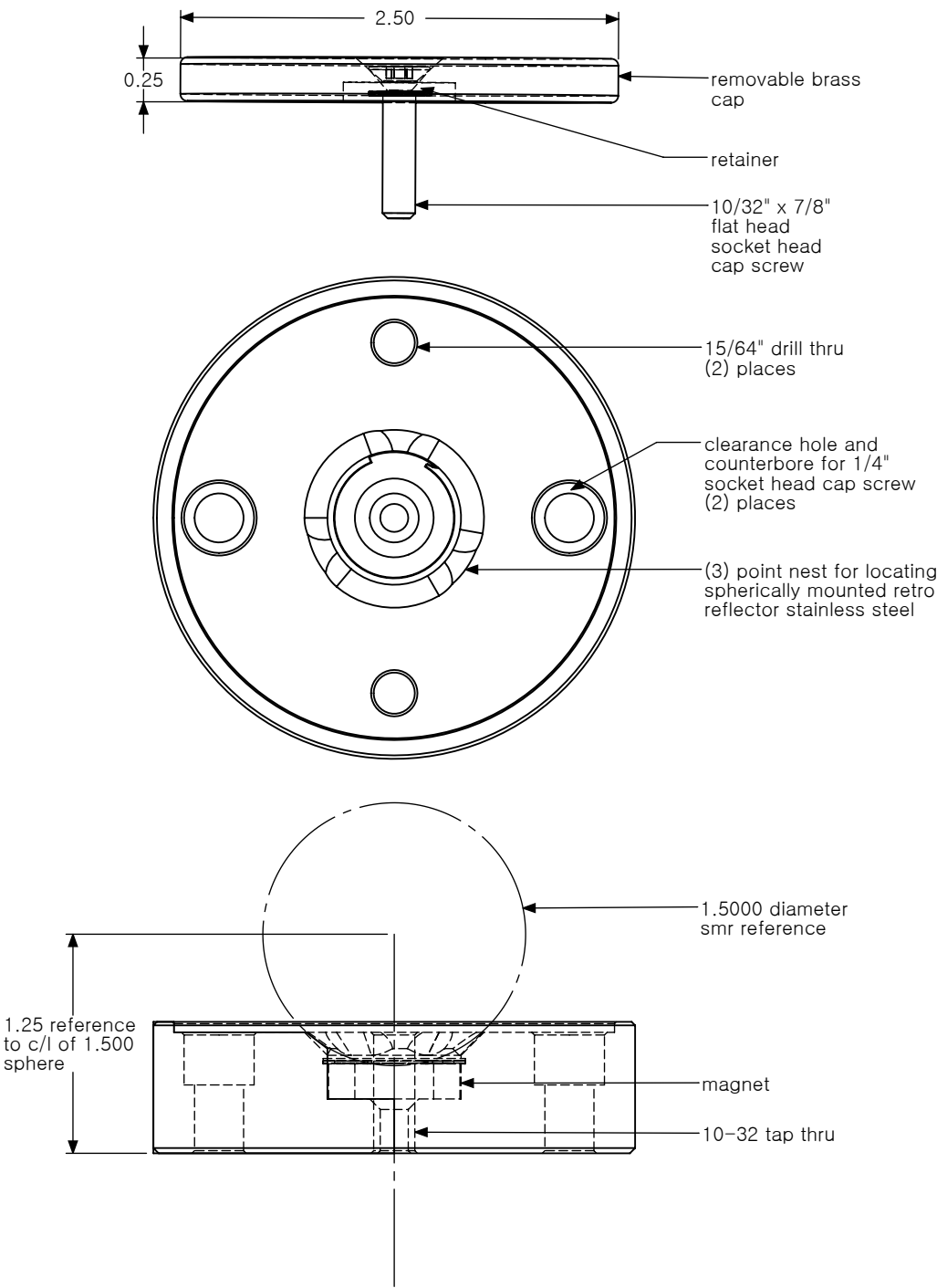
Designed to hold a 1.5 Spherically Mounted Retro-Reflector as a permanent reference point.

1.5 LT - RSM ORDERING INFORMATION

1.5 LT-RSM STANDARD BUILD	FAMILY	MATERIAL					
	1.5 LT-RSM	stainless steel (SS)					
CUSTOMER PROVIDES INFO	1.5 LT-RSM						
REFERENCE NOTES							

1.5 LASER TRACKER - REFERENCE SPHERE MOUNT

CAD on file



1.5 LT - RSM
FEATURES
STAINLESS STEEL
(standard)

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1.5 SM - DN - 3PA

Used for establishing non-critical temporary or permanent monuments using hot-glue or permanent adhesives.

1.5 SM - DN - 3PA ORDERING INFORMATION

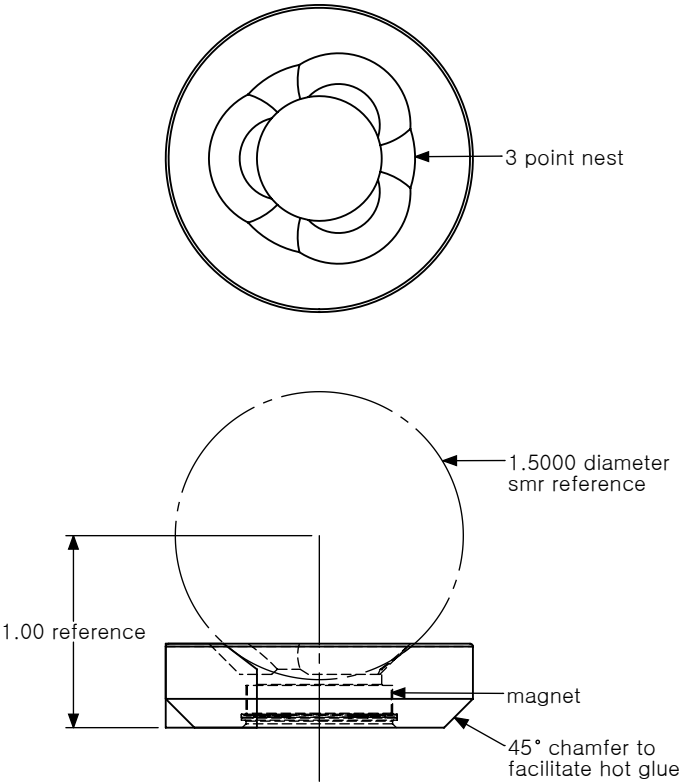
	FAMILY	MATERIAL					
1.5 SM-DN-3PA STANDARD BUILD	1.5 SM-DN-3PA	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-DN-3PA						
REFERENCE NOTES							

1.5 SPHERE MOUNT - DRIFT NEST - THREE POINT ALUMINUM

CAD on file



1.5 SM - DN - 3PA
FEATURES
ALUMINUM BLACK, HARD
ANODIZED COATING



1.5 SMN - DN - 3PA

Used for establishing non-critical temporary or permanent monuments using hot-glue or permanent adhesives.

1.5 SMN - DN - 3PA ORDERING INFORMATION

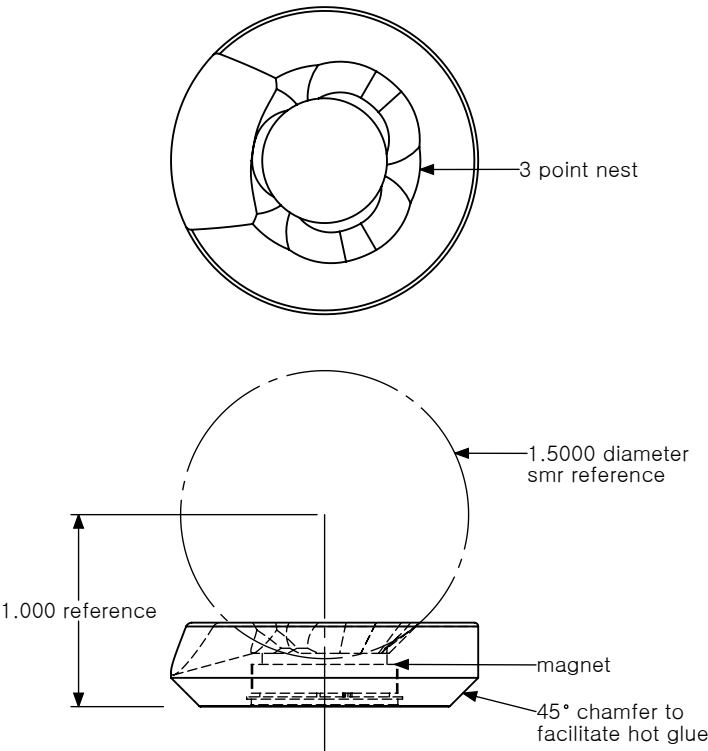
	FAMILY	MATERIAL					
1.5 SMN-DN-3PA STANDARD BUILD	1.5 SMN-DN-3PA	aluminum					
CUSTOMER PROVIDES INFO	1.5 SMN-DN-3PA						
REFERENCE NOTES							

1.5 SPHERE MOUNT NEGATIVE - DRIFT NEST - THREE POINT ALUMINUM

CAD on file



1.5 SMN - DN - 3PA
FEATURES
ALUMINUM BLACK, HARD
ANODIZED COATING



1.5 SM - DN - 3PS

Used for establishing non-critical temporary or permanent monuments using adhesives or by tack welding.

1.5 SM - DN - 3PS ORDERING INFORMATION

1.5SM-DN-3PS STANDARD BUILD	FAMILY	MATERIAL (OPTIONS)					
	1.5SM-DN-3PS	1144 steel or (SS)					
CUSTOMER PROVIDES INFO	1.5SM-DN-3PS						
REFERENCE NOTES							

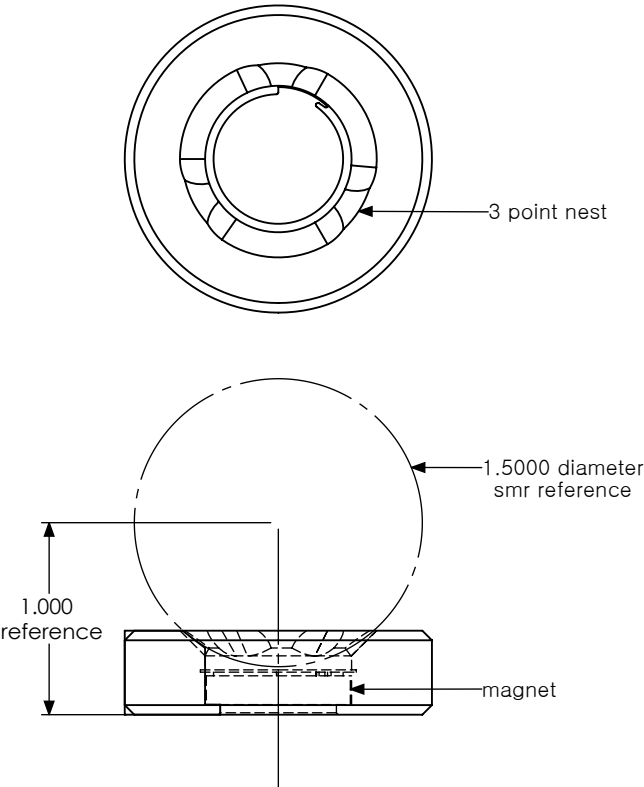
1.5 SPHERE MOUNT - DRIFT NEST - THREE POINT STEEL

CAD on file



1.5 SM - DN - 3PS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive
environments)



1.5 SMN - DN - 3PS

Used for establishing non-critical temporary or permanent monuments using adhesives or by tack welding.

1.5 SMN- DN - 3PS ORDERING INFORMATION

	FAMILY	MATERIAL (OPTIONS)					
1.5 SMN-DN-3PS STANDARD BUILD	1.5 SMN-DN-3PS	1144 steel or (SS)					
CUSTOMER PROVIDES INFO	1.5 SMN-DN-3PS	■					
REFERENCE NOTES							

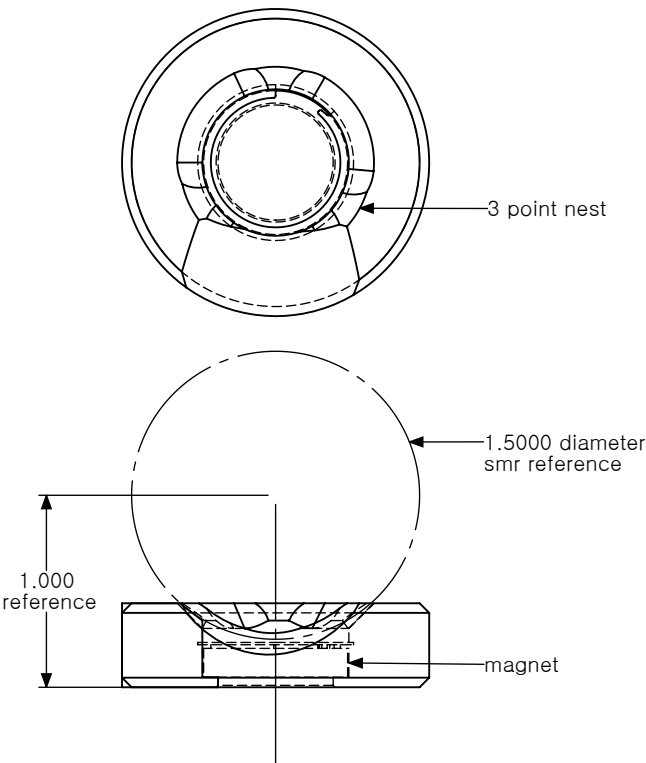
1.5 SPHERE MOUNT NEGATIVE - DRIFT NEST - THREE POINT STEEL

CAD on file



1.5 SMN - DN - 3PS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive
environments)



1.5 SM - HC

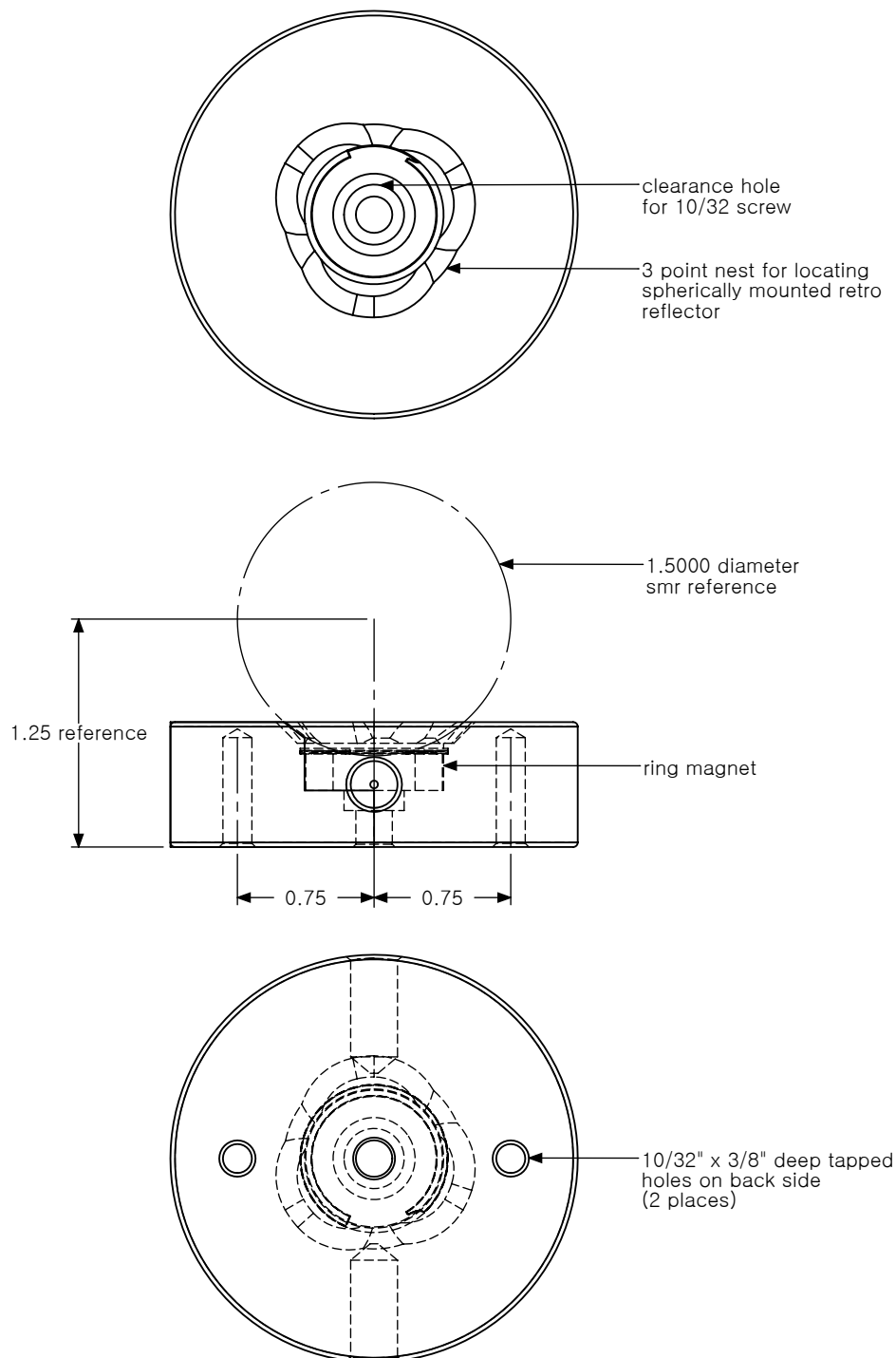
Designed for mounting to a surface to securely hold a 1.500 diameter Spherically Mounted Retro-Reflector or Theodolite Sphere. The 1.5SM-HC is used for temporary or permanent reference only, not intended for critical offsets or concentricities.

1.5 SM - HC ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 SM-HC STANDARD BUILD	1.5 SM-HC	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-HC						
REFERENCE NOTES							

1.5 SPHERE MOUNT - HARD COAT

CAD on file



1.5 SM - HC
FEATURES
 ALUMINUM BLACK, HARD
 ANODIZED COATING

1.5 SM - HC / MB

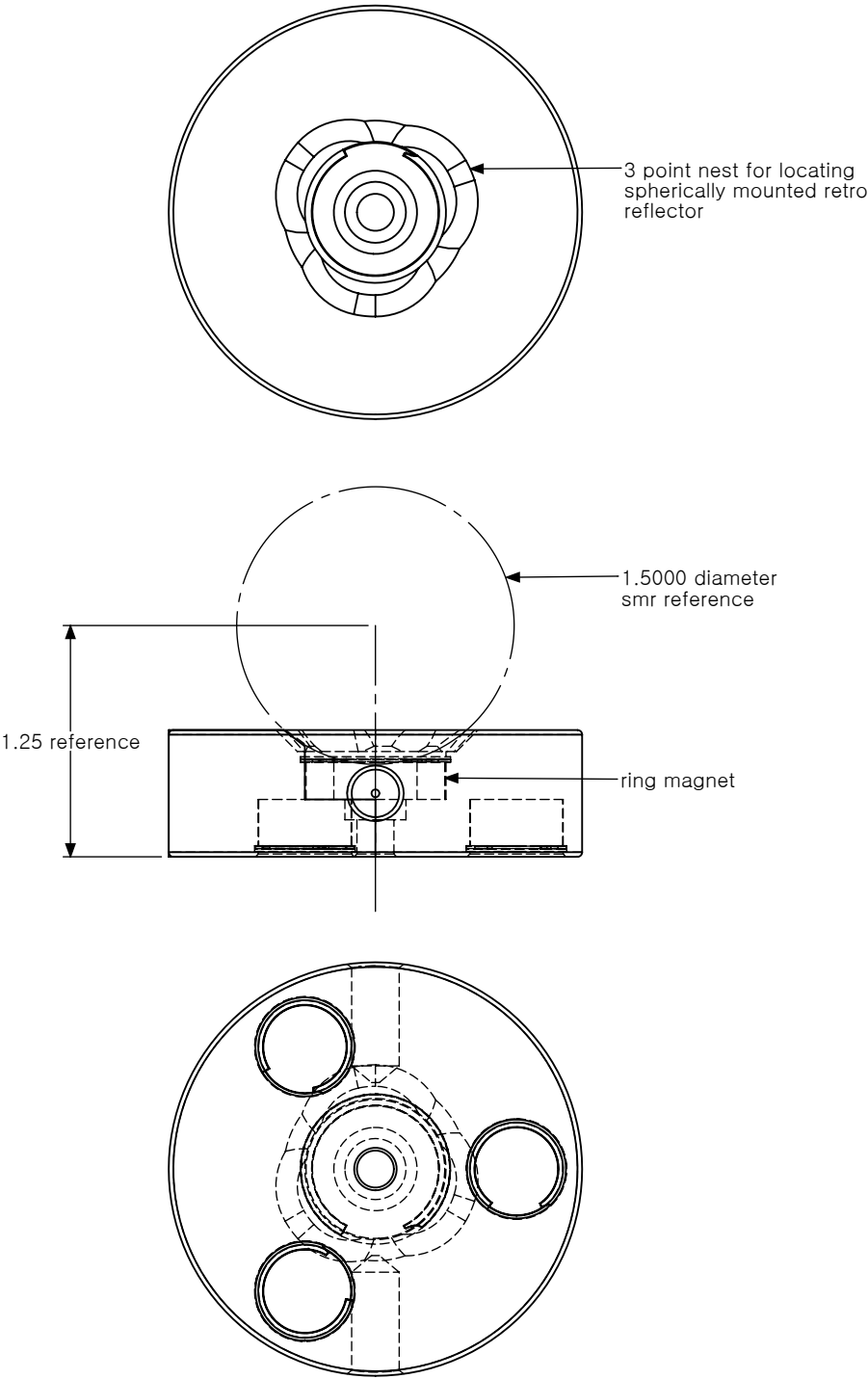
Designed for mounting to a surface to securely hold a 1.500 diameter Spherically Mounted Retro-Reflector or Theodolite Sphere. The 1.5SM-HC/MB is used for temporary or permanent reference only, not intended for critical offsets or concentricities.

1.5 SM - HC / MB ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 SM-HC / MB STANDARD BUILD	1.5 SM-HC / MB	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-HC / MB						
REFERENCE NOTES							

1.5 SPHERE MOUNT - HARD COAT / MAGNETIC BASE

CAD on file



1.5 SM - HC / MB
FEATURES
ALUMINUM BLACK, HARD
ANODIZED COATING

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1.5 SM - HC / CP

Designed for adhering to a steel surface to securely hold a 1.500 diameter Spherically Mounted Retro-Reflector or Theodolite Sphere.

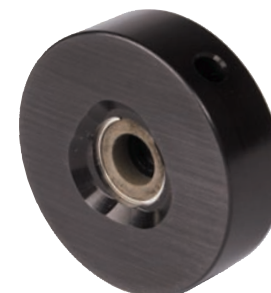
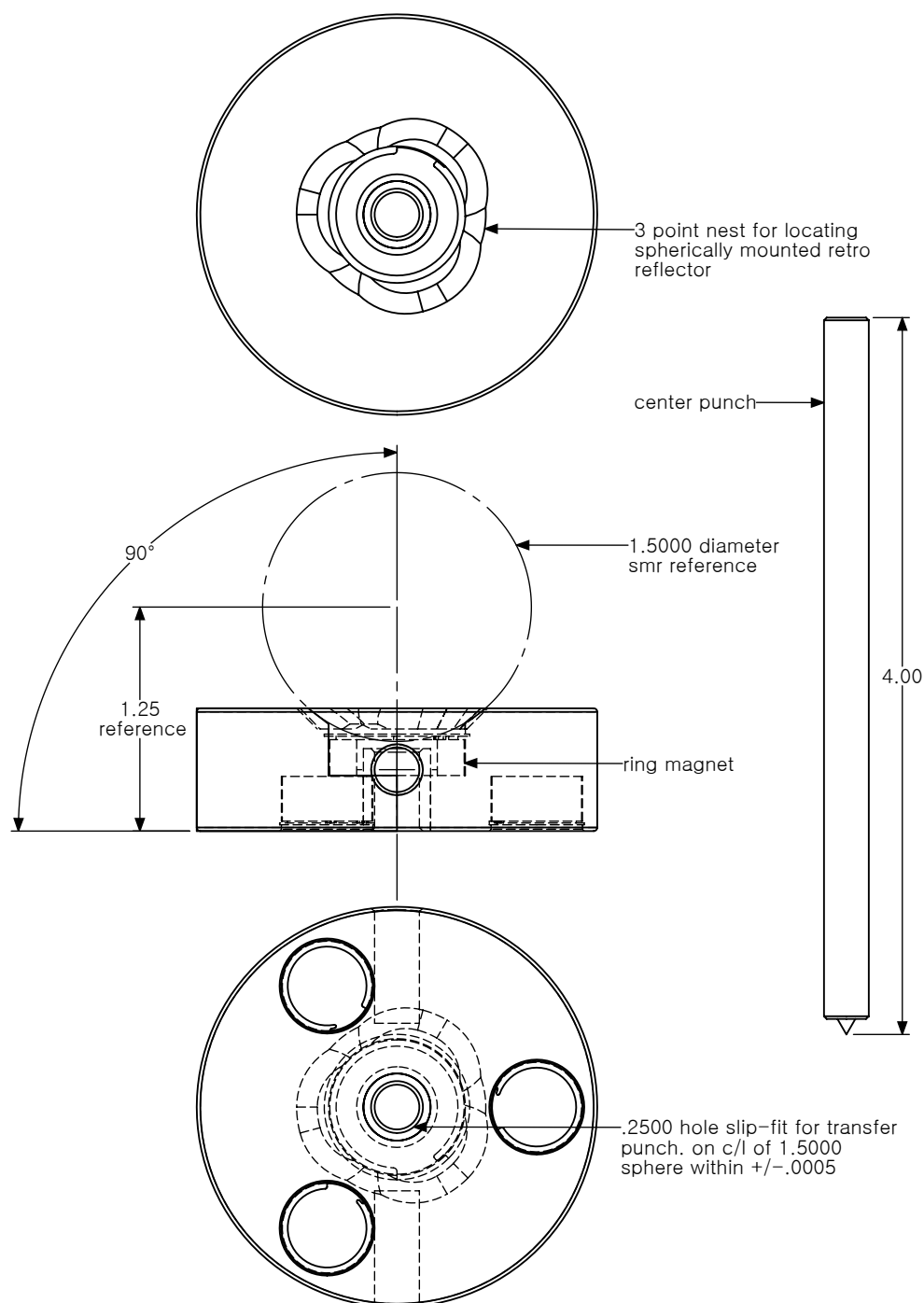
1.5 SM - HC / CP ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 SM-HC / CP STANDARD BUILD	1.5 SM-HC / CP	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-HC / CP						

REFERENCE
NOTES

1.5 SPHERE MOUNT - HARD COAT / CENTER PUNCH

CAD on file



1.5 SM - HC / CP FEATURES

ALUMINUM BLACK, HARD
ANODIZED COATING

1.5 SM - HC / CP APPLICATION

Move the nest into position, remove the Sphere Target and place transfer into center bore. Center punch to leave an identifying mark.

1.5 SM - TM

Sometimes called a "hockey puck," the 1.5 SM-TM provides a temporary magnetic SMR adaptor in almost any location on any surface by using hot glue to attach the adaptor temporarily.

1.5 SM - TM ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 SM-TM STANDARD BUILD	1.5 SM-TM	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-TM						
REFERENCE NOTES							

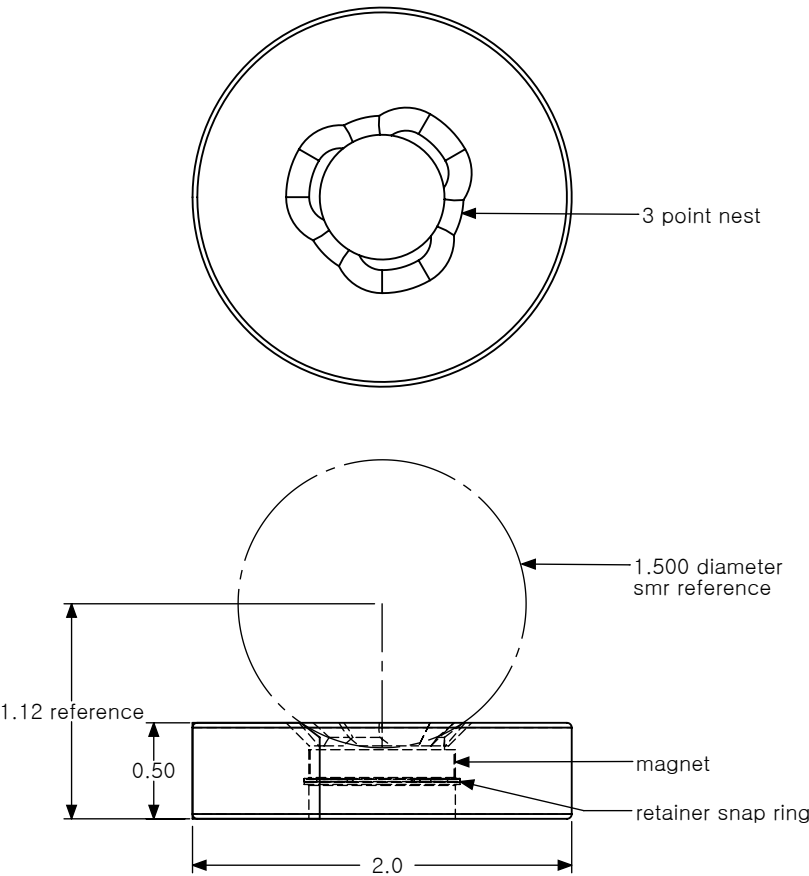
1.5 SPHERE MOUNT - TEMPORARY MONUMENT

CAD on file



1.5 SM - TM
FEATURES
ALUMINUM BLACK, HARD
ANODIZED COATING

- Low cost
- Lightweight
- Removable and replaceable magnet



1.5 TPSN

Allows the SMR to be tracked into a position.

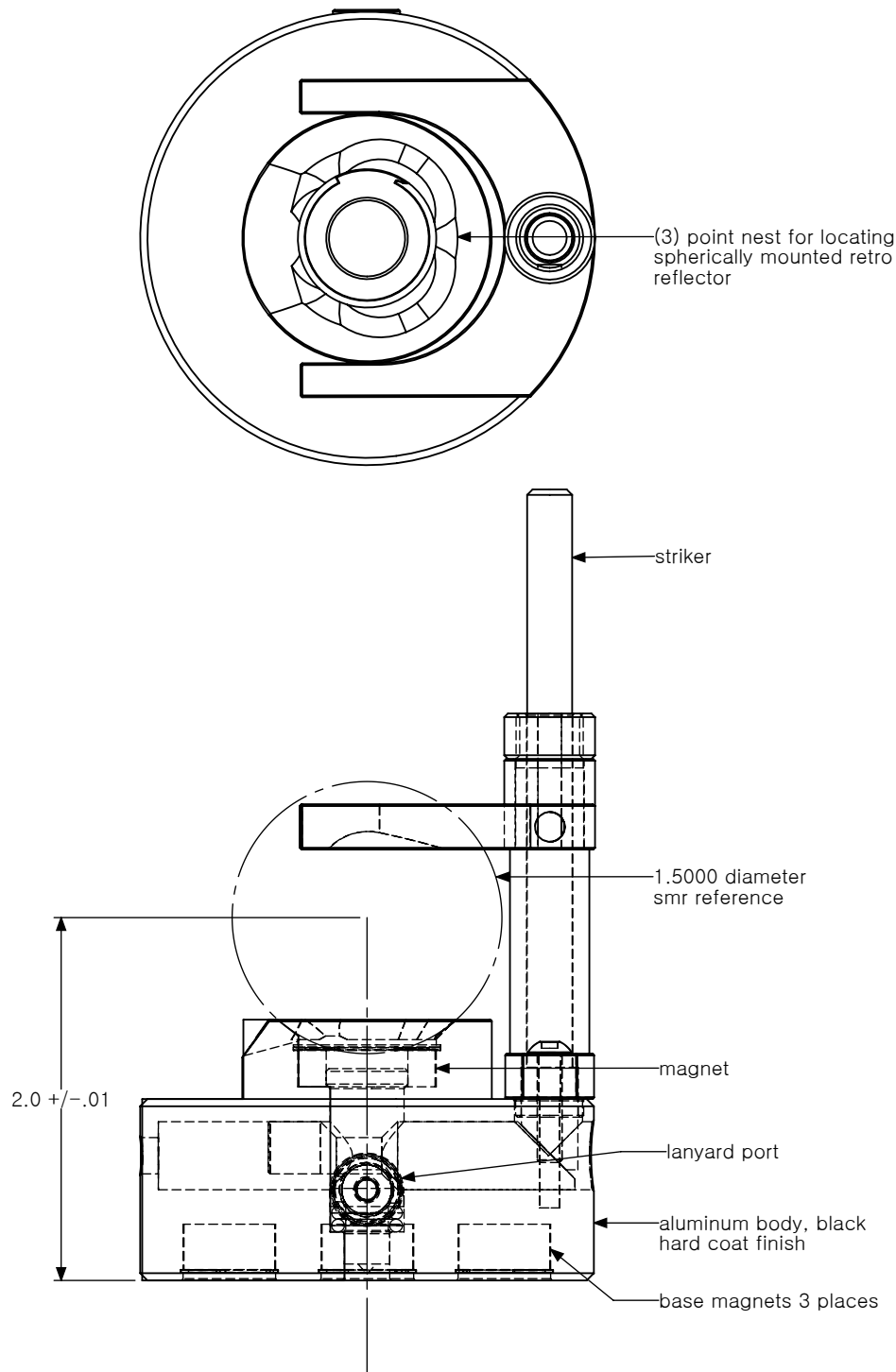
A light tap with a hammer will produce a small accurately located center punch mark under the SMR location without removing the SMR. Item intended for layout work on flat steel surfaces.

1.5 TPSN ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 TPSN STANDARD BUILD	1.5 TPSN	aluminum					
CUSTOMER PROVIDES INFO	1.5 TPSN						
REFERENCE NOTES							

1.5 TRACK AND PUNCH - SMR NEST

CAD on file



1.5 TPSN FEATURES

ALUMINUM BLACK, HARD ANODIZED COATING

- SMR is able to rotate up to 90°
- SMR is held in place by a magnet and retainer if desired.
- Lanyard port is located on side of body

1.5 CPSN

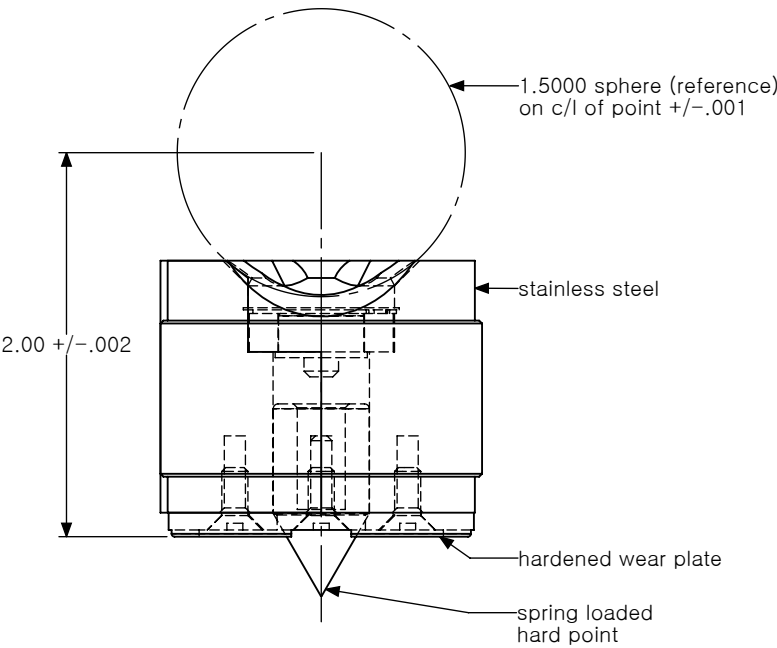
Designed to hold a 1.5 Spherically Mounted Retro-Reflector for the purpose of locating center punch marks without removing SMR.

1.5 CPSN ORDERING INFORMATION

1.5 CPSN STANDARD BUILD	FAMILY	MATERIAL					
	1.5 CPSN	stainless steel (SS)					
CUSTOMER PROVIDES INFO	1.5 CPSN						
REFERENCE NOTES							

1.5 CENTER PUNCH SPHERE NEST

CAD on file



1.5 CPSN
FEATURES
STAINLESS STEEL
(standard)

- Spring-loaded Hard Point (HP) self-centers in any size center punch mark.

1.5 FSM

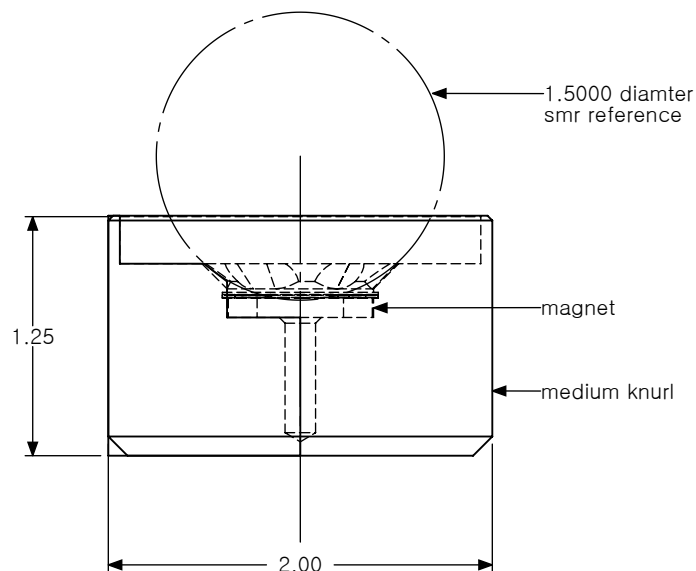
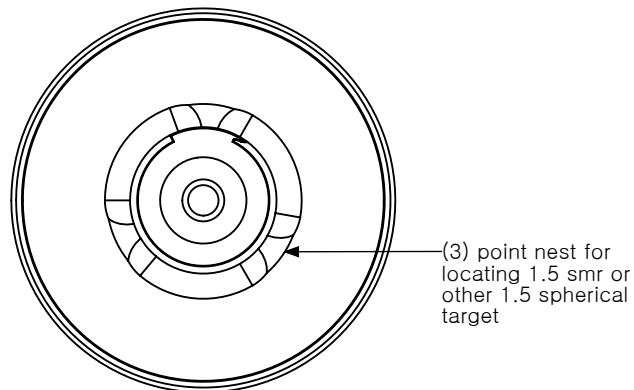
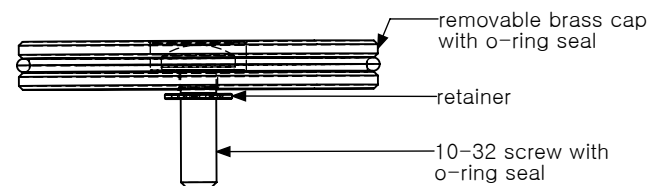
Mounted in concrete flooring/foundations, etc., to allow for a permanent Laser Tracker target reference.

1.5 FSM ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 FSM STANDARD BUILD	1.5 FSM	stainless steel (SS)					
CUSTOMER PROVIDES INFO	1.5 FSM						
REFERENCE NOTES							

1.5 FOUNDATION SPHERE MOUNT

CAD on file



1.5 FSM
FEATURES
STAINLESS STEEL
(standard)

1.5 SMR / MC
Holds a 1.5 inch SMR magnetically to a flat, ferrous surface. It can also hold a Theodolite or Photogrammetry Sphere in some orientations.

1.5 SMR / MC ORDERING INFORMATION

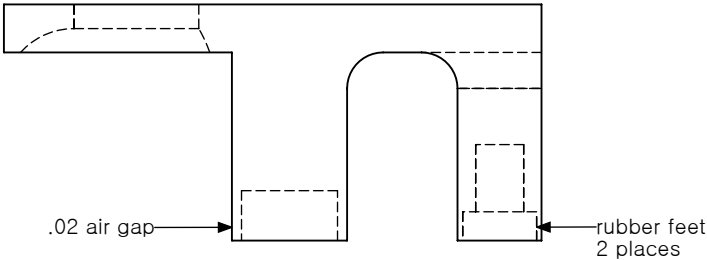
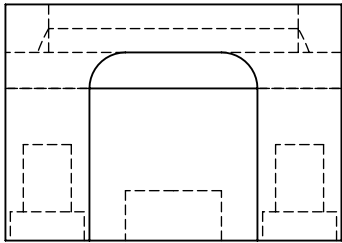
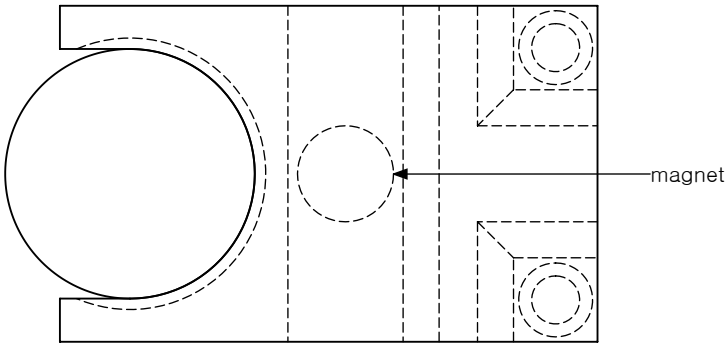
	FAMILY	MATERIAL					
1.5 SMR / MC STANDARD BUILD	1.5 SMR / MC	aluminum					
CUSTOMER PROVIDES INFO	1.5 SMR / MC						
REFERENCE NOTES							

1.5 SMR / MAGNETIC CLAMP

CAD on file



1.5 SMR / MC
FEATURES
ALUMINUM BLACK,
ANODIZED COATING



1.5 SM - PA

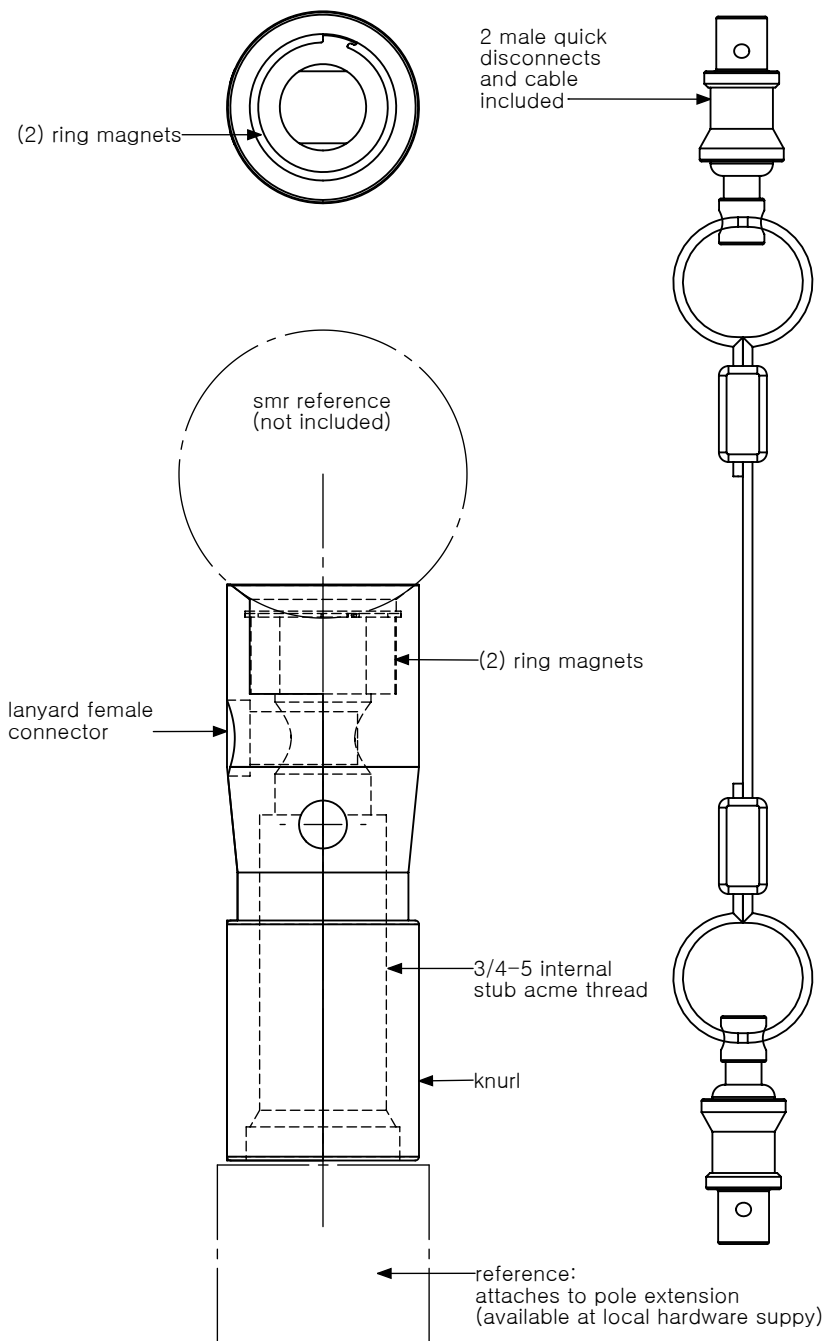
Designed to adapt a 1.5 Spherically Mounted Retro-Reflector to a customer-supplied pole extension (painting pole, broom handle, etc.) for the purpose of reaching inaccessible places with SMR.

1.5 SM - PA ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 SM-PA STANDARD BUILD	1.5 SM-PA	aluminum					
CUSTOMER PROVIDES INFO	1.5 SM-PA						
REFERENCE NOTES							

1.5 SPHERE MOUNT - POLE ADAPTOR

CAD on file



1.5 SM - PA
FEATURES
 ALUMINUM BLACK,
 ANODIZED COATING

LT - LLA
Designed to locate
Leveling Lug.

LT - LLA ORDERING INFORMATION

	FAMILY	MATERIAL					
LT-LLA STANDARD BUILD	LT-LLA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	LT-LLA						
REFERENCE NOTES							

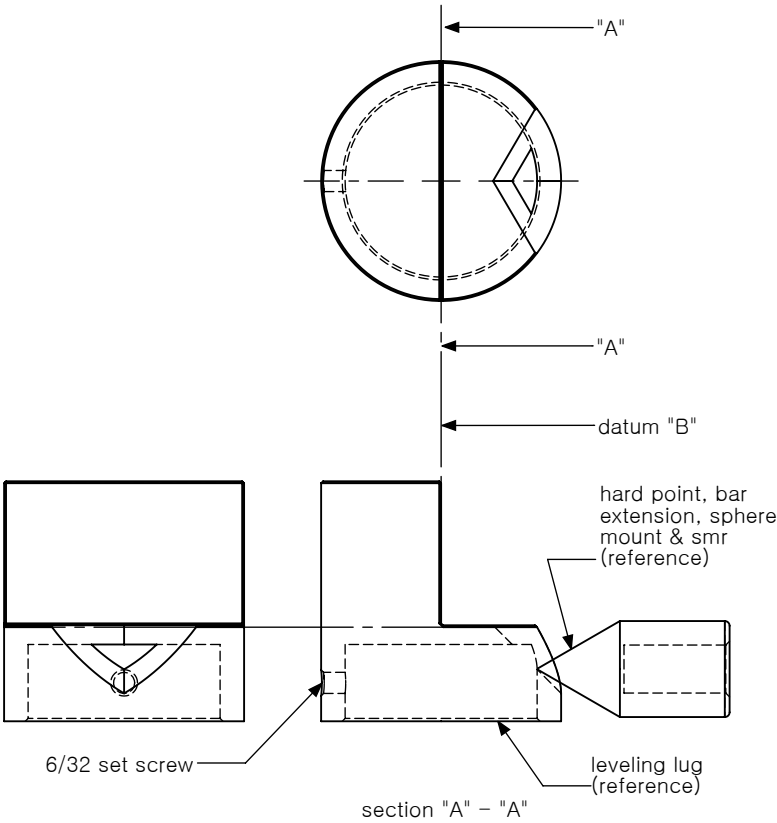
LASER TRACKER LEVELING LUG ADAPTOR

CAD on file



LT - LLA
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

LT - LLA
APPLICATION
Use a bubble level
(combination square
level) to datum "B"
then insert Hard Point Bar,
Bar Extension, Sphere Mount,
and Spherically Mounted
Retro-Reflector (SMR) into
"V" notch and generate
a spherical radius. The
center of the radius will
be the same as the top of
the Leveling Lug.



LLST
Designed to achieve
the centerline of the
Leveling Lug.

LLST ORDERING INFORMATION

	FAMILY	MATERIAL					
LLST STANDARD BUILD	LLST	stainless steel (SS) and 1144 steel					
CUSTOMER PROVIDES INFO	LLST						
REFERENCE NOTES							

LEVELING LUG SPHERE TARGET

CAD on file

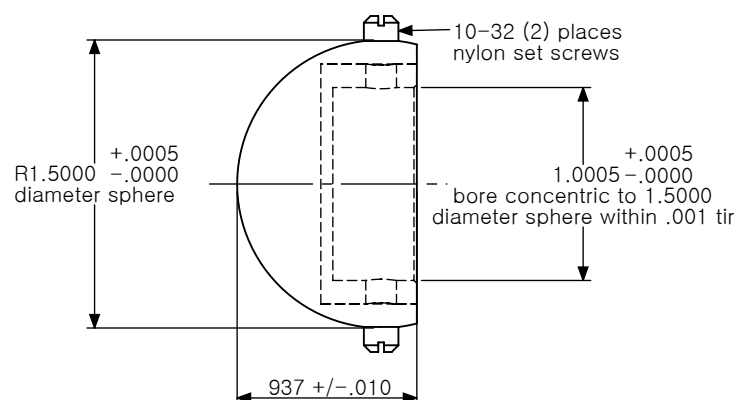


LLST FEATURES

STAINLESS STEEL WITH
1144 STEEL, BLACK OXIDE
INSERT – Heat-treated and
hardened to R/C 53 – 55
(standard)

LLST APPLICATION

Slide LLST over Leveling
Lug and tighten set screws.
Profile a 1.500 spherical
area with SMR to achieve
the centerline of
Leveling Lug.



LT - LOSA

Adapts a 1.5 Spherically Mounted Retro-Reflector to replace the standard optic 3 1/2" diameter line of sight spherical target.

LT - LOSA ORDERING INFORMATION

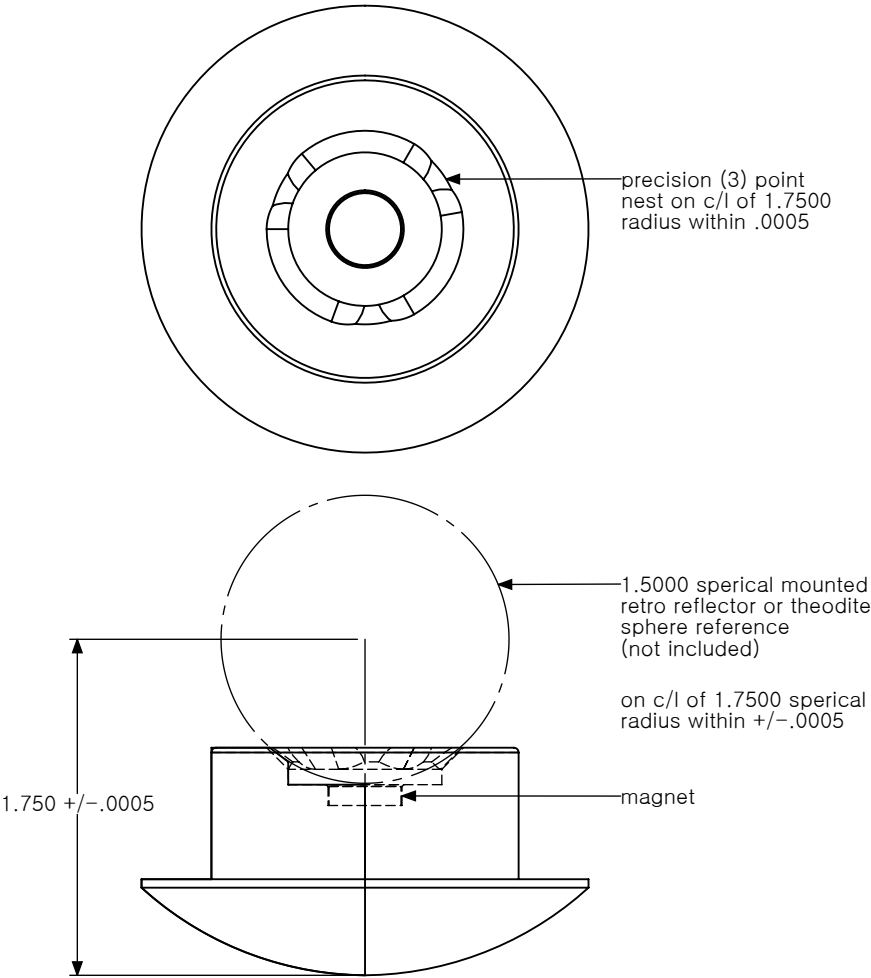
	FAMILY	MATERIAL					
	LT-LOSA STANDARD BUILD	LT-LOSA	1144 steel				
CUSTOMER PROVIDES INFO	LT-LOSA						
REFERENCE NOTES							

LASER TRACKER - LINE OF SIGHT ADAPTOR

CAD on file



LT - LOSA
FEATURES
1144 STEEL, BLACK OXIDE
FINISH – Heat-treated and
hardened to R/C 53 – 55
(standard)



1.5 - .5 SMR AD
Designed to adapt a
1.5 Sphere Mount
Nest to .5000
Spherically Mounted
Retro-Reflector.

1.5 - .875 SMR
AD
Designed to adapt
a 1.5 Sphere Mount
Nest to .8750
Spherically Mounted
Retro-Reflector.

1.5 - .5 SMR AD ORDERING INFORMATION

	FAMILY	MATERIAL				
1.5-.5 SMR AD STANDARD BUILD	1.5-.5 SMR AD	stainless steel (SS)				
CUSTOMER PROVIDES INFO	1.5-.5 SMR AD					

1.5 - .875 SMR AD ORDERING INFORMATION

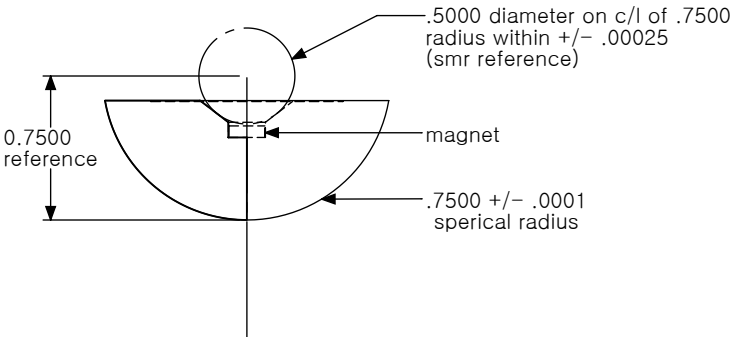
	FAMILY	MATERIAL				
1.5-.875 SMR AD STANDARD BUILD	1.5-.875 SMR AD	stainless steel (SS)				
CUSTOMER PROVIDES INFO	1.5-.875 SMR AD					

REFERENCE

NOTES

1.5 - .5 SMR AD

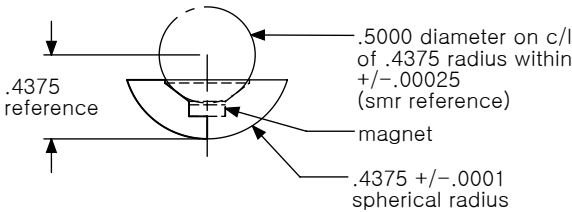
CAD on file



1.5 - .5 SMR AD
FEATURES
STAINLESS STEEL
Heat-treated and
hardened to R/C 53 – 55
(standard)

1.5 - .875 SMR AD

CAD on file



1.5 - .875 SMR AD
FEATURES
STAINLESS STEEL
Heat-treated and
hardened to R/C 53 – 55
(standard)

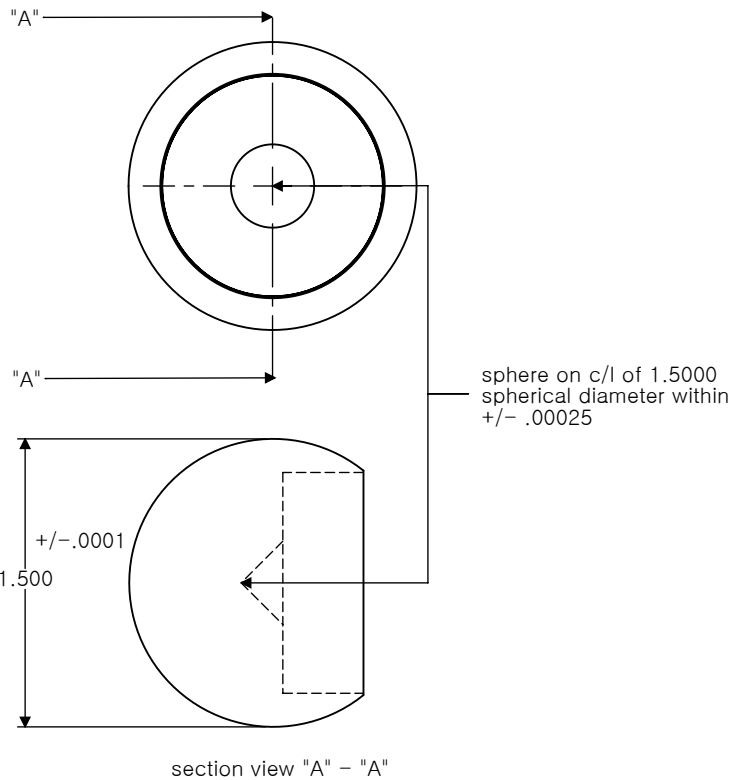
1.5 RRS
Adapts a Retro-Probe
tip to centerline of 1.5000
Sphere to within .00025.

1.5 RRS (BALL) AND (POINT) ORDERING INFORMATION

	FAMILY	MODEL	MATERIAL				
1.5 RRS STANDARD BUILD	1.5 RRS	BALL DIA. or POINT	stainless steel (SS) and 1144 steel				
CUSTOMER PROVIDES INFO	1.5 RRS	■					
REFERENCE NOTES							

1.5 RETRO - PROBE RESET SPHERE (BALL)

CAD on file



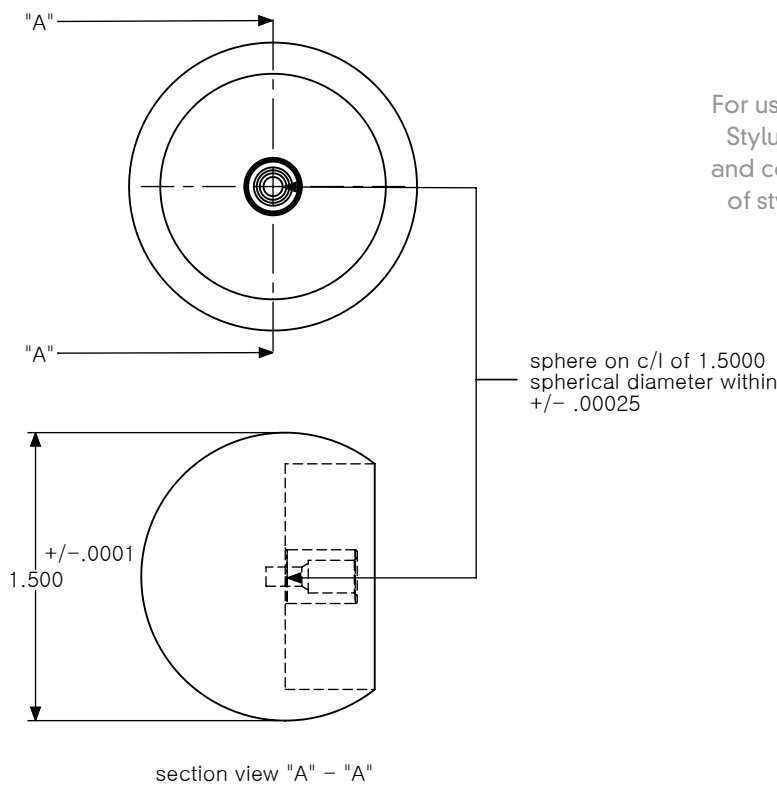
NOTE
Nest for probe tip
diameter from
1mm to .2500



**1.5 RRS (BALL)
FEATURES**
STAINLESS STEEL WITH
1144 STEEL, BLACK OXIDE
INSERT – Heat-treated and
hardened to R/C 53 – 55
(standard)

1.5 RETRO - PROBE RESET SPHERE (POINT)

CAD on file



NOTE
For use on FARO "POINT"
Stylus only. Internal bore
and conical nest put point
of stylus on centerline of
1.5000 diameter
within .00025



**1.5 RRS (POINT)
FEATURES**
STAINLESS STEEL WITH
1144 STEEL, BLACK OXIDE
INSERT – Heat-treated and
hardened to R/C 53 – 55
(standard)

1.5 HPA

Designed to adapt a 1.5 Sphere Mount Nest in an inaccessible location using .2500 shank applicable accessories.

1.5 HPA ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 HPA STANDARD BUILD	1.5 HPA	stainless steel (SS) and 1144 steel					
CUSTOMER PROVIDES INFO	1.5 HPA						

T1.5S

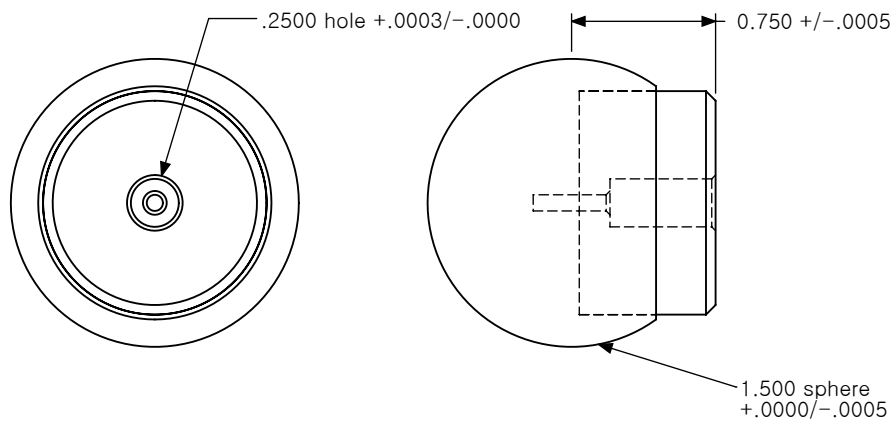
Provides same centerline value as a Spherically Mounted Retro-Reflector. This allows interchangeability from Laser Tracker systems to computer-aided Theodolite systems.

T1.5S ORDERING INFORMATION

	FAMILY	MATERIAL					
T1.5S STANDARD BUILD	T1.5S	stainless steel (SS) and 1144 steel					
CUSTOMER PROVIDES INFO	T1.5S						
REFERENCE NOTES							

1.5 HIDDEN POINT ADAPTOR

CAD on file

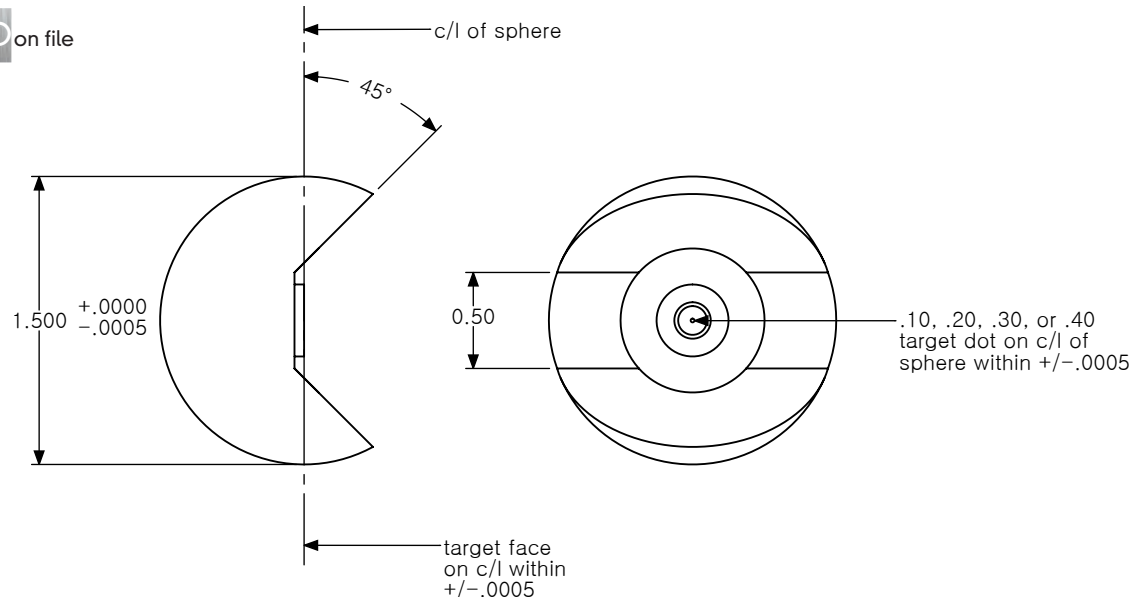


1.5 HPA FEATURES

STAINLESS STEEL WITH 1144 STEEL, BLACK OXIDE INSERT – Heat-treated and hardened to R/C 53 – 55 (standard)

T1.5 SPHERE

CAD on file



T1.5S FEATURES

STAINLESS STEEL WITH 1144 STEEL, BLACK OXIDE INSERT – Heat-treated and hardened to R/C 53 – 55 (standard)

R1.5S

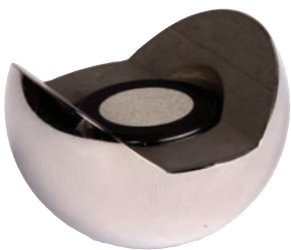
Provides the same centerline value as a Spherically Mounted Retro-Reflector. This allows interchangeability from Laser Tracker systems to photogrammetry or videogrammetry systems.

R1.5S ORDERING INFORMATION

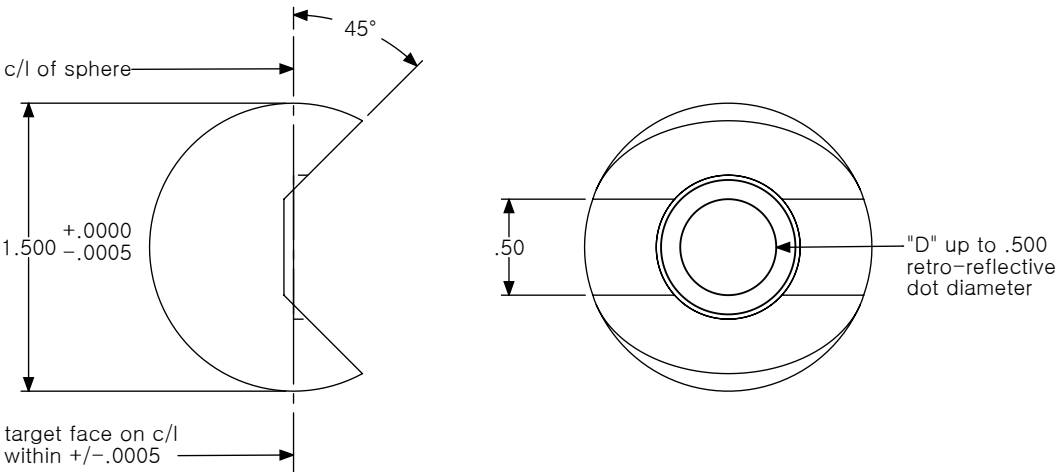
	FAMILY	"D" DOT DIAMETER	MATERIAL				
R1.5S STANDARD BUILD	R1.5S		stainless steel(SS) and 1144 steel				
CUSTOMER PROVIDES INFO	R1.5S						
REFERENCE NOTES							

RETRO - REFLECTIVE 1.5 SPHERE

CAD on file



R1.5S
FEATURES
STAINLESS STEEL WITH 1144 STEEL, BLACK OXIDE INSERT – Heat-treated and hardened to R/C 53 – 55 (standard)



SMR LANYARD SET

Designed to tether a 1.5 Spherically Mounted Retro-Reflector to the user or Sphere Mount, preventing loss or damage.

SMR LANYARD SET ORDERING INFORMATION

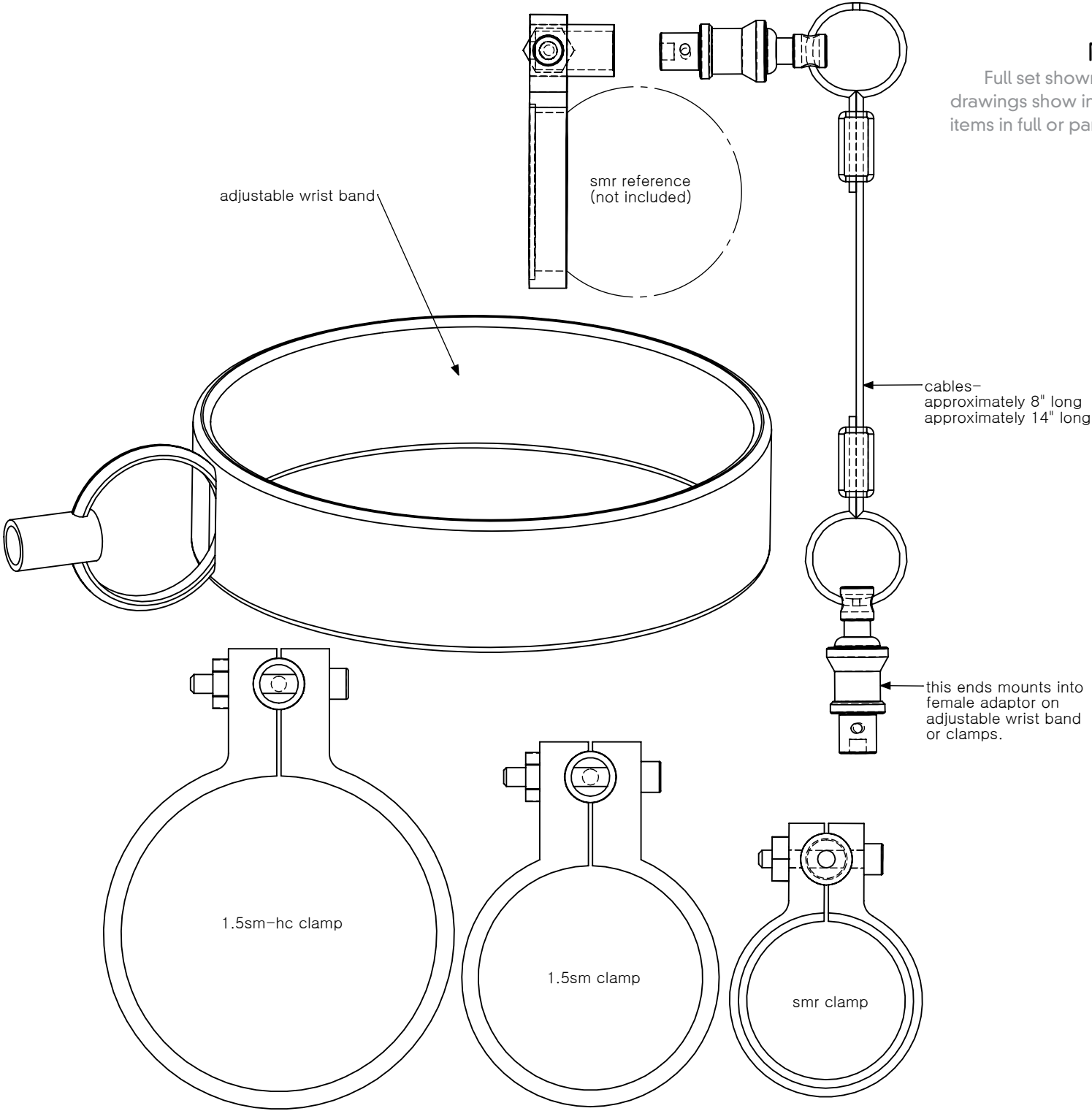
	SMR LANYARD SET	SMR CLAMP	1.5 SM and 1.5 SM-HC CLAMP	8" CABLE	14" CABLE	ADJUSTABLE WRIST BAND	CLAMP MATERIAL (OPTIONS)
SMR LANYARD SET STANDARD BUILD	FULL	1	2	1	1	1	faro SMR or plx SMR
	PARTIAL	1		1		1	faro SMR or plx SMR

CUSTOMER PROVIDES INFO *SPECIFY FULL OR PARTIAL SET AND IF USING FARO OR PLX

REFERENCE NOTES

SMR LANYARD SET (FULL)

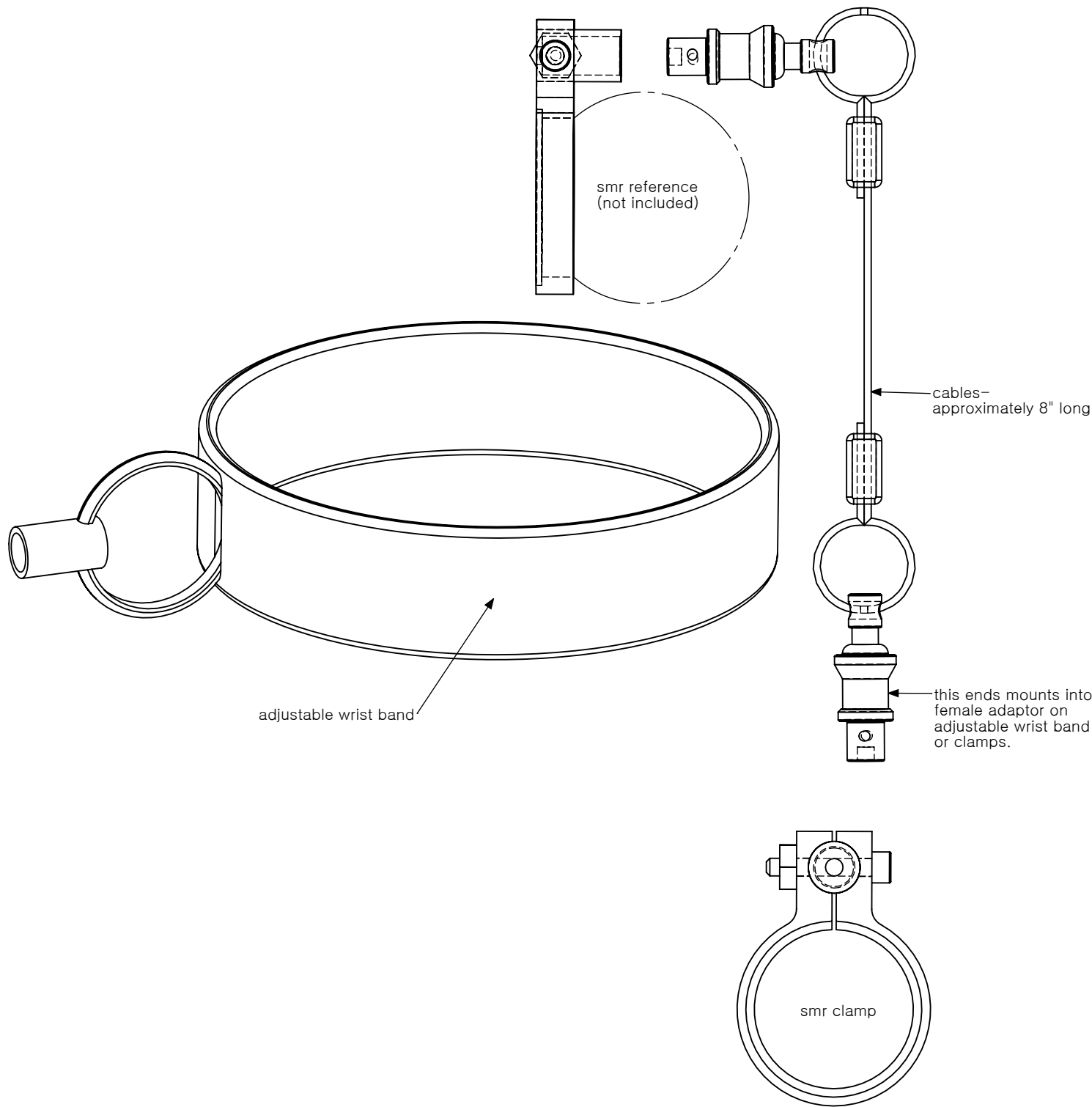
CAD on file



NOTE

Full set shown at left, drawings show included items in full or partial set.

SMR LANYARD SET (PARTIAL)



SMR LANYARD SET
FEATURES

Available in Black Delrin (FARO SMR) or White Delrin (PLX SMR)

SUGGESTED

IF USING LEICA SMR,
Please see Leica Lanyard
Set on G49-G50.

SMR LANYARD SET
ORDERING

*To order, please specify as
FULL SMR LANYARD SET or
PARTIAL SMR LANYARD SET
and if using FARO or PLX.

LEICA LANYARD SET

Designed to tether a 1.5 Spherically Mounted Retro-Reflector to the user or Sphere Mount, preventing loss or damage.

SMR LANYARD SET STANDARD BUILD

SMR LANYARD SET	"C" CLAMP	1.5 SM and 1.5 SM-HC CLAMP	8" CABLE	14" CABLE	ADJUSTABLE WRIST BAND	CLAMP MATERIAL
FULL	1	1	1	1	1	
PARTIAL	1		1		1	

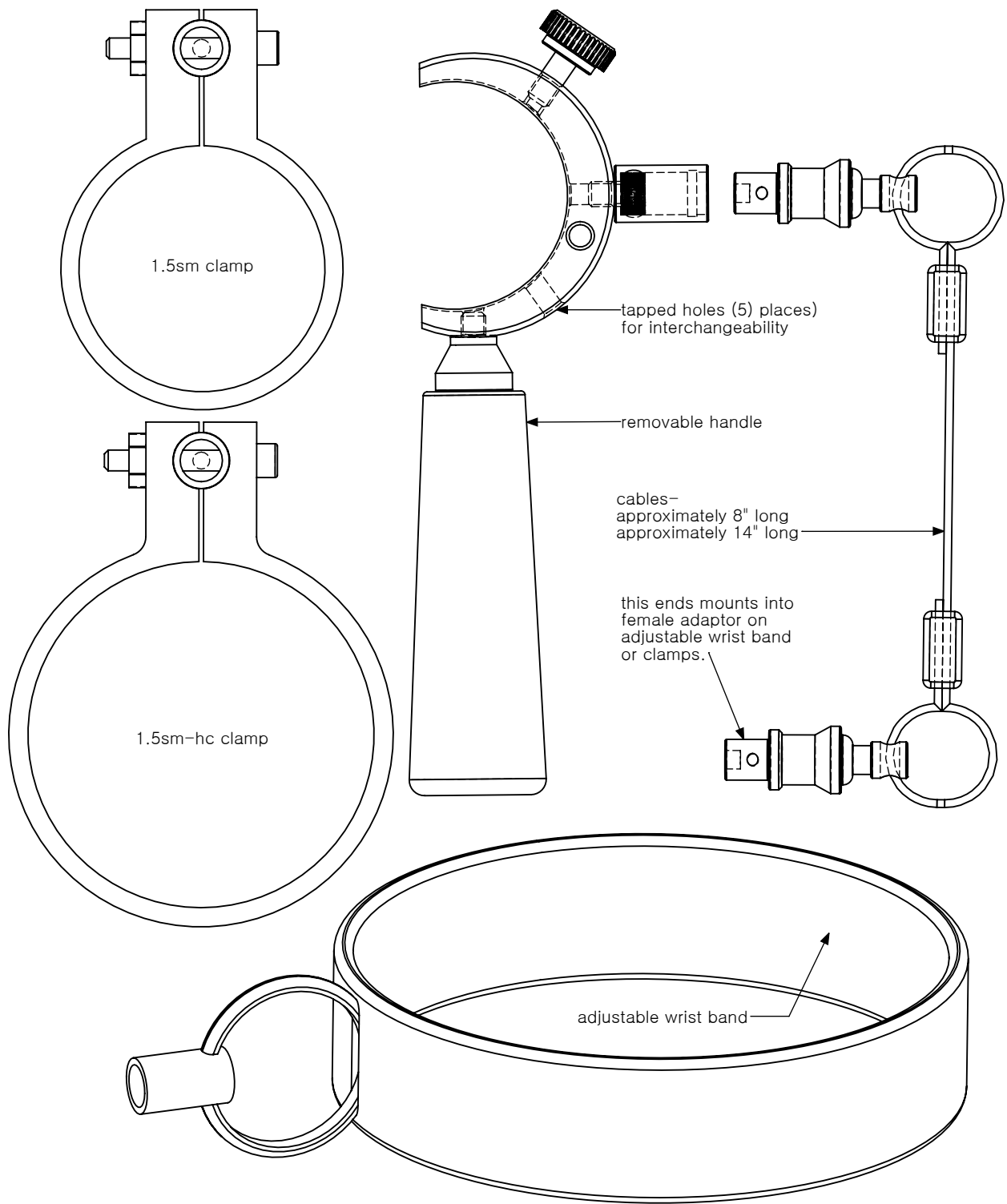
CUSTOMER PROVIDES INFO

*SPECIFY FULL OR PARTIAL SET

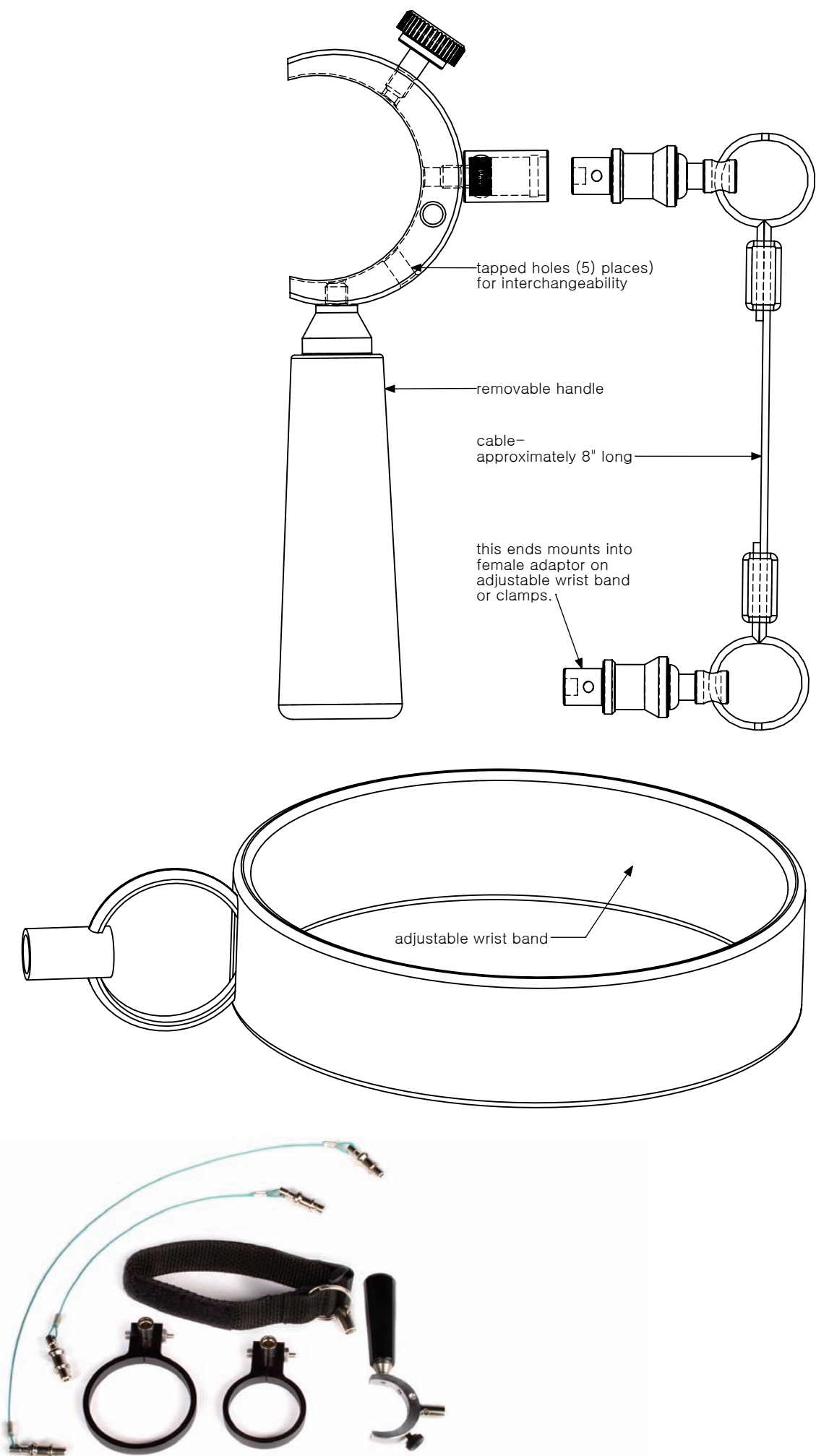
REFERENCE NOTES

LEICA LANYARD SET (FULL)

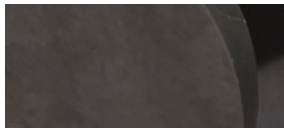
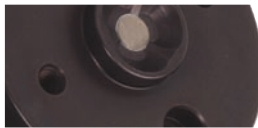
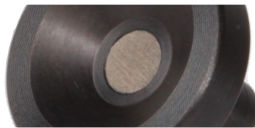
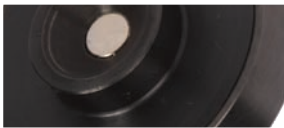
CAD on file



NOTE
Full set shown at left, drawings show included items in full or partial set.



LEICA LANYARD SET
ORDERING
*To order, please specify as
FULL LEICA LANYARD SET or
PARTIAL LEICA LANYARD SET.



- 1

.875 SPHERE MOUNT

.875 SM
- 2

.875 SHANKLESS SPHERE MOUNT

.875 SSM
- 3

.875 SPHERE MOUNT - HARD COAT

.875 SM - HC
- 4

1.5 - .875 SMR ADAPTOR

1.5 - .875 SMR AD

.875 - .5 SMR ADAPTOR

.875 - .5 SMR AD

.875 SM

Designed to hold a .875 Spherically Mounted Retro-Reflector on centerline of a hole and critical offset.

.875 SM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
.875 SM STANDARD BUILD	.875 SM	↓	↓	1144 steel or (SS)			
CUSTOMER PROVIDES INFO	.875 SM	■	■	■			
REFERENCE NOTES							

.875 SPHERE MOUNT

CAD on file

NOTE

The "H" offset must be .500 minimum.

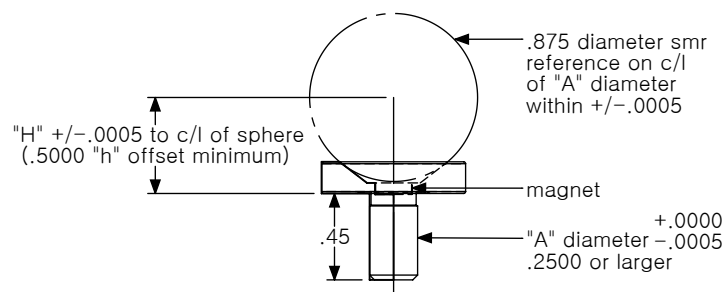
An "A" diameter smaller than a 6mm shank will be non-magnetic.



.875 SM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



.875 SSM

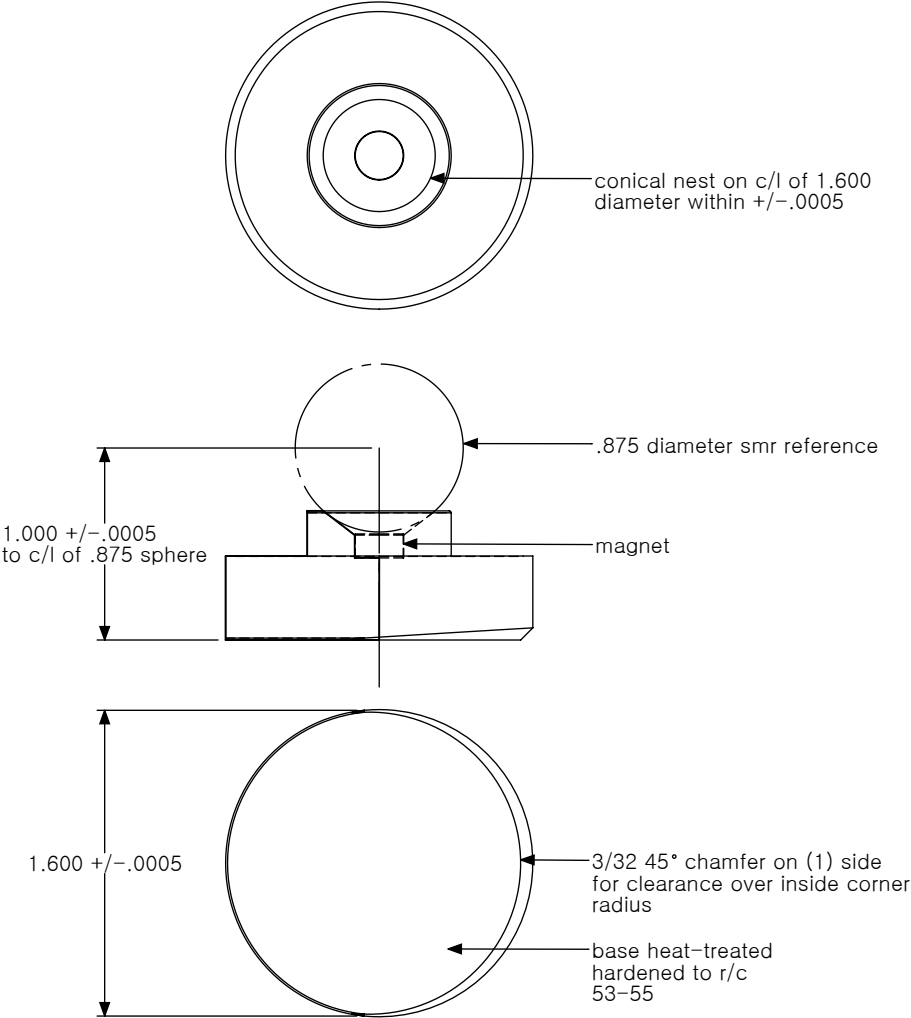
Supports a spherical mounted Retro-Reflector for a critical height and centerline. The edge may be used to contact inside edges to give a value of .800 away.

.875 SSM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
.875 SSM STANDARD BUILD	.875 SSM	1.000	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	.875 SSM						
REFERENCE NOTES							

.875 SHANKLESS SPHERE MOUNT

CAD on file



.875 SSM FEATURES
1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)

.875 SM - HC

Designed for mounting to a surface to securely hold a .8750 diameter, spherically mounted Retro-Reflector. The .875 SM-HC is used for reference only; not intended for critical offsets or concentricities.

.875 SM - HC ORDERING INFORMATION

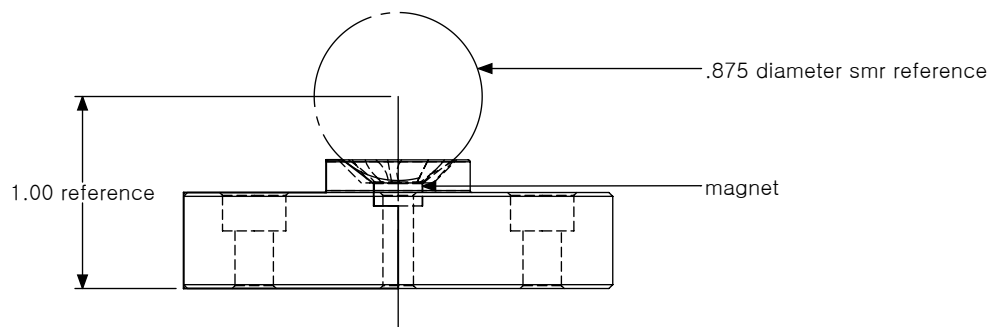
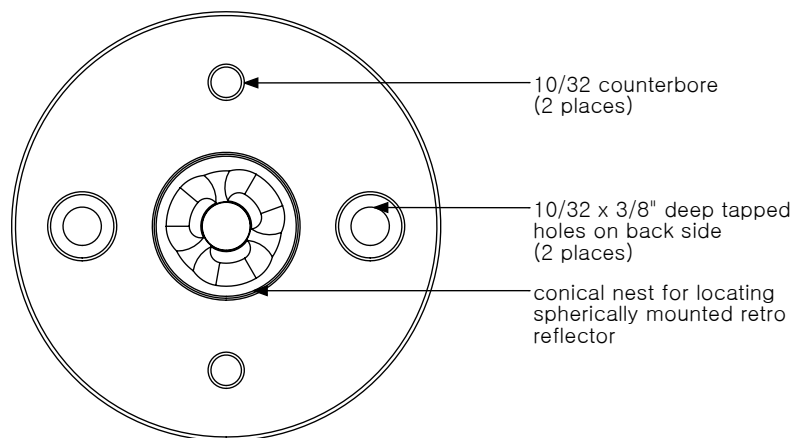
	FAMILY	"H" TO CENTERLINE OF SPHERE	FINISH				
.875 SM-HC STANDARD BUILD	.875 SM-HC	1.000 REFERENCE	aluminum				
CUSTOMER PROVIDES INFO	.875 SM-HC						
REFERENCE NOTES							

.875 SPHERE MOUNT - HARD COAT

CAD on file



.875 SM - HC
FEATURES
ALUMINUM BLACK HARD
ANODIZED COATING



1.5 - .875 SMR AD

Designed to adapt
a 1.5 Sphere Mount
Nest to .8750 Spherically
Mounted Retro-Reflector.

1.5 - .875 SMR AD ORDERING INFORMATION

	FAMILY	MATERIAL					
1.5 - .875 SMR AD STANDARD BUILD	1.5 - .875 SMR AD	stainless steel (SS)					
CUSTOMER PROVIDES INFO	1.5 - .875 SMR AD						

.875 - .5 SMR AD

Designed to adapt
a .8750 Sphere Mount
Nest to .5 Spherically
Mounted Retro-Reflector.

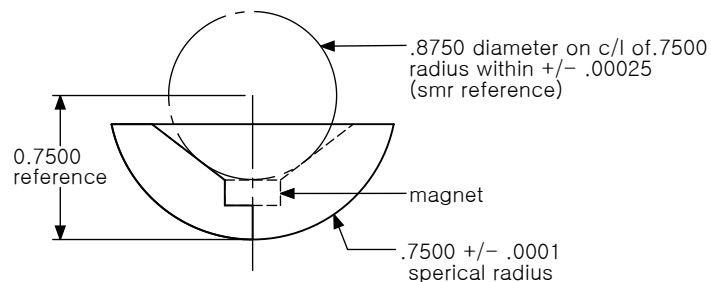
.875 - .5 SMR AD ORDERING INFORMATION

	FAMILY	MATERIAL					
.875 - .5 SMR AD STANDARD BUILD	.875 - .5 SMR AD	stainless steel (SS)					
CUSTOMER PROVIDES INFO	.875 - .5 SMR AD						

REFERENCE
NOTES

1.5 - .875 SMR AD

CAD on file



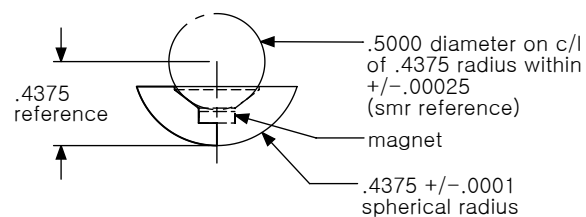
1.5 - .875 SMR AD

FEATURES

STAINLESS STEEL
Heat-treated and
hardened to R/C 53 - 55
(standard)

.875 - .5 SMR AD

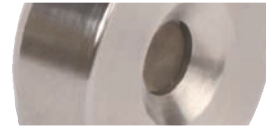
CAD on file



.875 - .5 SMR AD

FEATURES

STAINLESS STEEL
Heat-treated and
hardened to R/C 53 - 55
(standard)



1 .5 SPHERE MOUNT
.5 SM

.5 SPHERE MOUNT NEGATIVE
.5 SMN

2 .5 SPHERE MOUNT VARIABLE
.5 SMV

.5 SPHERE MOUNT VARIABLE NEGATIVE
.5 SMVN

3 .5 SHANKLESS SPHERE MOUNT
.5 SSM

.5 SHANKLESS SPHERE MOUNT NEGATIVE
.5 SSMN

4 .5 SPHERE MOUNT THREADED
.5 SMT

TBR RETAINER "BIRDCAGE"

5 .5 SPHERE MOUNT / LASER RADAR
.5 SM / LR

.5 SPHERE MOUNT / TARGET CORNER
.5 SM / TC

6 .5 EDGE SPHERE MOUNT - OUTSIDE CORNER
.5 ESM - OC

7 DOUBLE VECTOR TARGET / SPHERE MOUNT LASER RADAR
DVT / SMLR

8 .5 SPHERE MOUNT / HIDDEN POINT BAR ADAPTOR
.5 SM / HPBA

9 .5 LASER TRACKER - REFERENCE SPHERE MOUNT
.5 LT - RSM

10 .5 FOUNDATION SPHERE MOUNT
.5 FSM

.5 DRIFT NEST
.5 DN

11 .5 TRIPOD SPHERE MOUNT
.5 TSM

12 .5 FARO TRIPOD SPHERE MOUNT
.5 FARO TSM

13 HEAVY DUTY MAG HOLDER
LIGHT DUTY MAG HOLDER

14 .5 SMR MAGNETIC CLAMP
.5 SMR MC

.5 SMR SUPPORT

15 1.5 - .5 SMR ADAPTOR
1.5 - .5 SMR AD

.875 - .5 SMR ADAPTOR
.875 - .5 SMR AD

.5 SM

Designed to hold a .5000 Spherically Mounted Retro-Reflector on centerline of a hole and critical offset.

.5 SM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
.5 SM STANDARD BUILD	.5 SM			1144 steel or (SS)			
CUSTOMER PROVIDES INFO	.5 SM						

.5 SMN

Allows SMR rotation below horizontal.

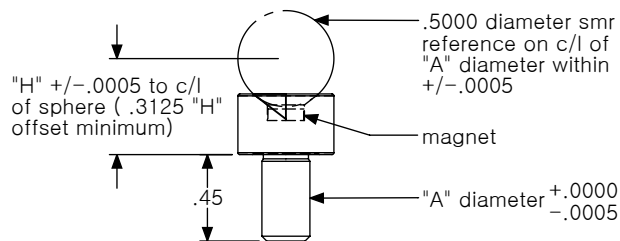
.5 SMN ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL (OPTIONS)			
.5 SMN STANDARD BUILD	.5 SMN			1144 steel or (SS)			
CUSTOMER PROVIDES INFO	.5 SMN						

REFERENCE NOTES

.5 SPHERE MOUNT

CAD on file



NOTE

For a .3125 offset only, the minimum shank possible with a magnetic insert is a .2500 shank. For shank sizes smaller than .2500 with a .3125 offset, use SMLR design or they will be non-magnetic.

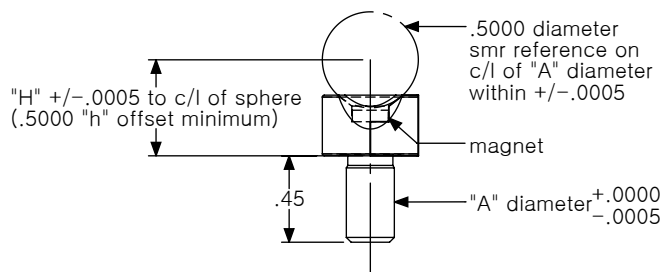


.5 SM FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)

.5 SPHERE MOUNT NEGATIVE

CAD on file



.5 SMN FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)

.5 SMV
Designed to hold a .5000 Spherically Mounted Retro-Reflector on centerline of a hole and critical offset. Variable design for your specific needs.

.5 SMVN
Allows SMR rotation below horizontal. Variable design for your specific needs.

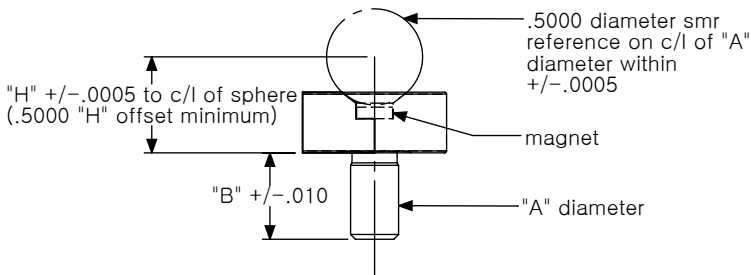
.5 SMV ORDERING INFORMATION						
	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	"B" SHANK LENGTH	MATERIAL (OPTIONS)	
.5 SMV STANDARD BUILD	.5 SMV				1144 steel or (SS)	
CUSTOMER PROVIDES INFO	.5 SMV					

.5 SMVN ORDERING INFORMATION						
	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	"B" SHANK LENGTH	MATERIAL (OPTIONS)	
.5 SMVN STANDARD BUILD	.5 SMVN				1144 steel or (SS)	
CUSTOMER PROVIDES INFO	.5 SMVN					

REFERENCE NOTES

.5 SPHERE MOUNT VARIABLE

CAD on file

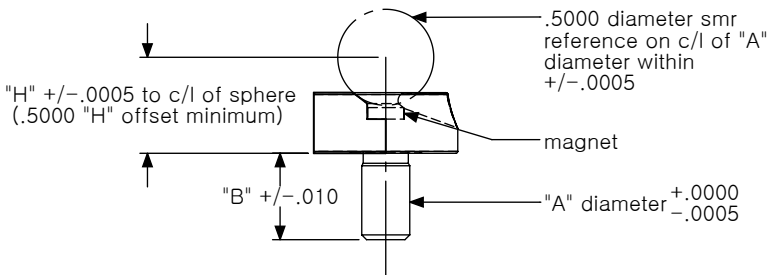


.5 SMV FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

.5 SPHERE MOUNT VARIABLE, NEGATIVE

CAD on file



.5 SMVN FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

.5 SSM

Supports .5000 Spherically Mounted Retro-Reflector for critical offset and centerline. The edge may be used to contact in edges to a value of .250 away.

.5 SSMN

Allows SMR rotation below horizontal.

.5 SSM ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
.5 SSM STANDARD BUILD	.5 SSM		1144 steel or (SS)				
CUSTOMER PROVIDES INFO	.5 SSM	■					

.5 SSMN ORDERING INFORMATION

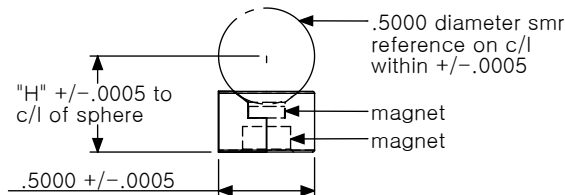
	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
.5 SSMN STANDARD BUILD	.5 SSMN		1144 steel or (SS)				
CUSTOMER PROVIDES INFO	.5 SSMN	■					

REFERENCE NOTES

.5 SHANKLESS SPHERE MOUNT

CAD on file

NOTE
Minimum offset 10mm



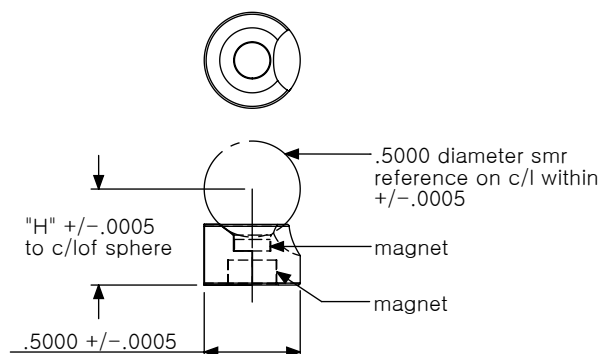
.5 SSM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)

.5 SHANKLESS SPHERE MOUNT NEGATIVE

CAD on file



.5 SSMN FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)

.5 SMT

Designed to hold a .5 Spherically Mounted Retro-Reflector on centerline of a threaded hole and critical offset.

.5 SMT ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"T" THREAD SIZE	MATERIAL (OPTIONS)			
.5 SMT STANDARD BUILD	.5 SMT			1144 steel or (SS)			
CUSTOMER PROVIDES INFO	.5 SMT						

.5 TBR RETAINER "BIRDCAGE"

Snaps on .5 SM for added protection of keeping the sphere from falling out.

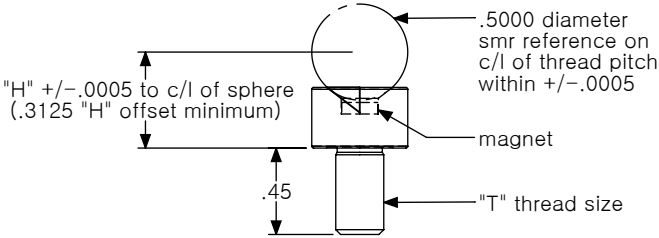
.5 TBR RETAINER "BIRDCAGE" ORDERING INFORMATION

	FAMILY	MODEL	FITS FOLLOWING OFFSETS
.5 TBR STANDARD BUILD	.5 TBR	1	.3125 and 10mm
	.5 TBR	2	12mm / .500 offset and high and 10mm
CUSTOMER PROVIDES INFO	.5 TBR		

REFERENCE NOTES

.5 SPHERE MOUNT THREADED

CAD on file



NOTE

M8 or 5/16 thread are the smallest size with .3125 offset that can be magnetic.



.5 SMT FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)

.5 TBR RETAINER "BIRDCAGE"



.5 TBR RETAINER FEATURES

- Allows free rotation of the TBR from horizontal to vertical.
- Strong, rigid, durable plastic protects the surface of the TBR.
- Assembles and disassembles easily.

.5 SM / LR

Designed to hold a .5000 Spherically Mounted Retro-Reflector on centerline of a hole and critical offset when a non-magnetic mount is preferred.

.5 SM / TC

Designed to hold a .5000 Spherically Mounted Retro-Reflector to target edges/surfaces.

.5 SM / LR ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	"A" SHANK DIAMETER	MATERIAL			
.5 SM / LR STANDARD BUILD	.5 SM / LR			1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	.5 SM / LR						

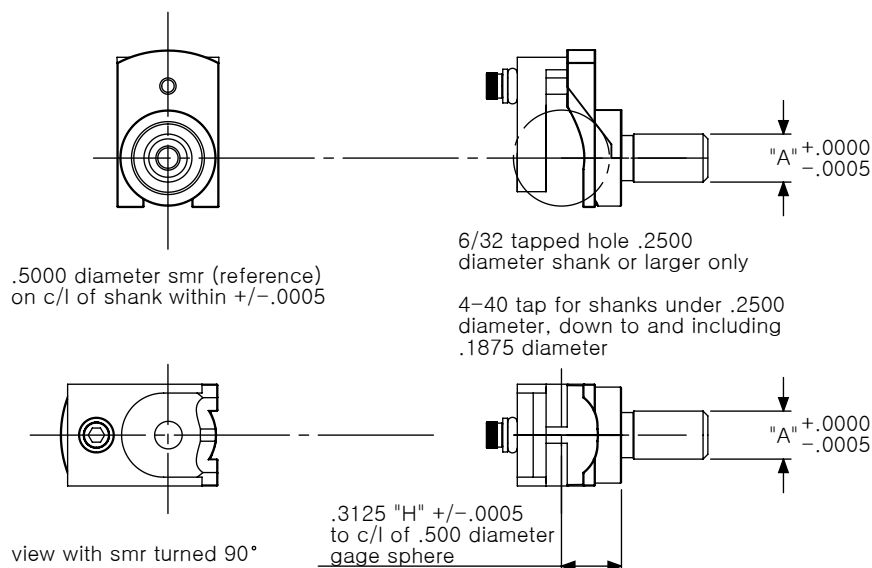
.5 SM / TC ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL (OPTIONS)				
.5 SM / TC STANDARD BUILD	.5 SM / TC	5000	1144 steel or (SS)				
CUSTOMER PROVIDES INFO	.5 SM / TC						

REFERENCE
NOTES

.5 SPHERE MOUNT / LASER RADAR

CAD on file

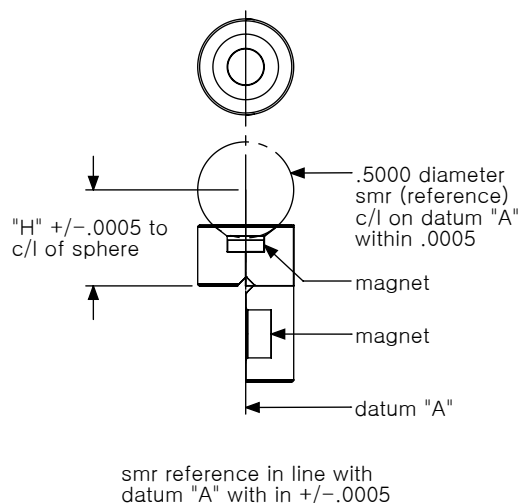


.5 SM / LR FEATURES

1144 STEEL, BLACK OXIDE
FINISH (standard)

.5 SPHERE MOUNT / TARGET CORNER

CAD on file



NOTE

10mm shortest offset
on .5 SM / TC



.5 SM / TC FEATURES

1144 STEEL, BLACK OXIDE
FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive
environments)

DVT / SMLR

Holds (2) Tooling Ball
Retro-Reflectors to
measure location and
angularity of a hole.

DVT / SMLR ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	MATERIAL (OPTIONS)				
DVT / SMLR STANDARD BUILD	DVT / SMLR		1144 steel or (SS)				
CUSTOMER PROVIDES INFO		DVT / SMLR ■ ■					
REFERENCE NOTES							

DOUBLE VECTOR TARGET / SPHERE MOUNT LASER RADAR

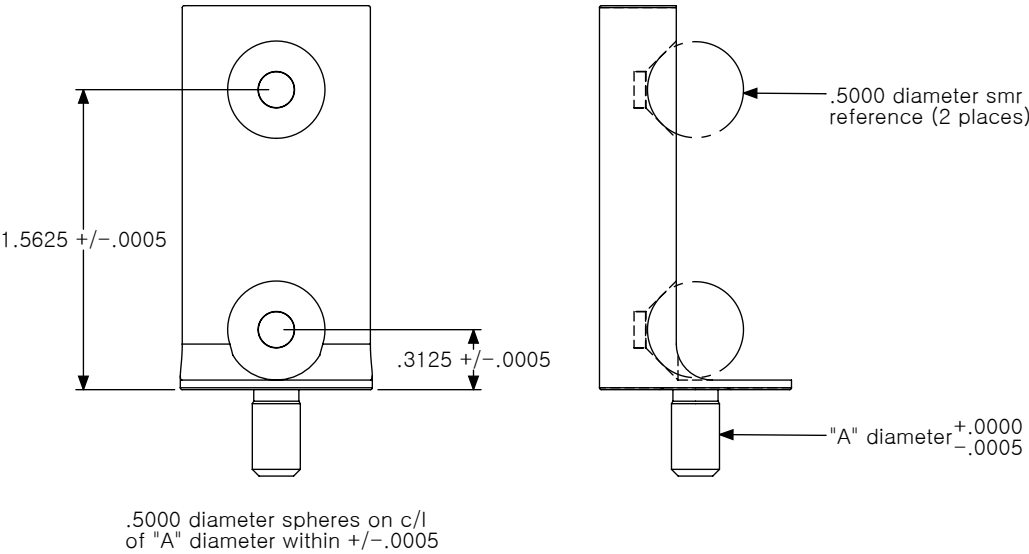
CAD on file



DVT / SMLR FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)



.5 SM / HPBA
Assembles with various
Bar Extension lengths
and holds the .5 SMR on
centerline for Hidden
Point applications.

.5 SM / HPBA ORDERING INFORMATION

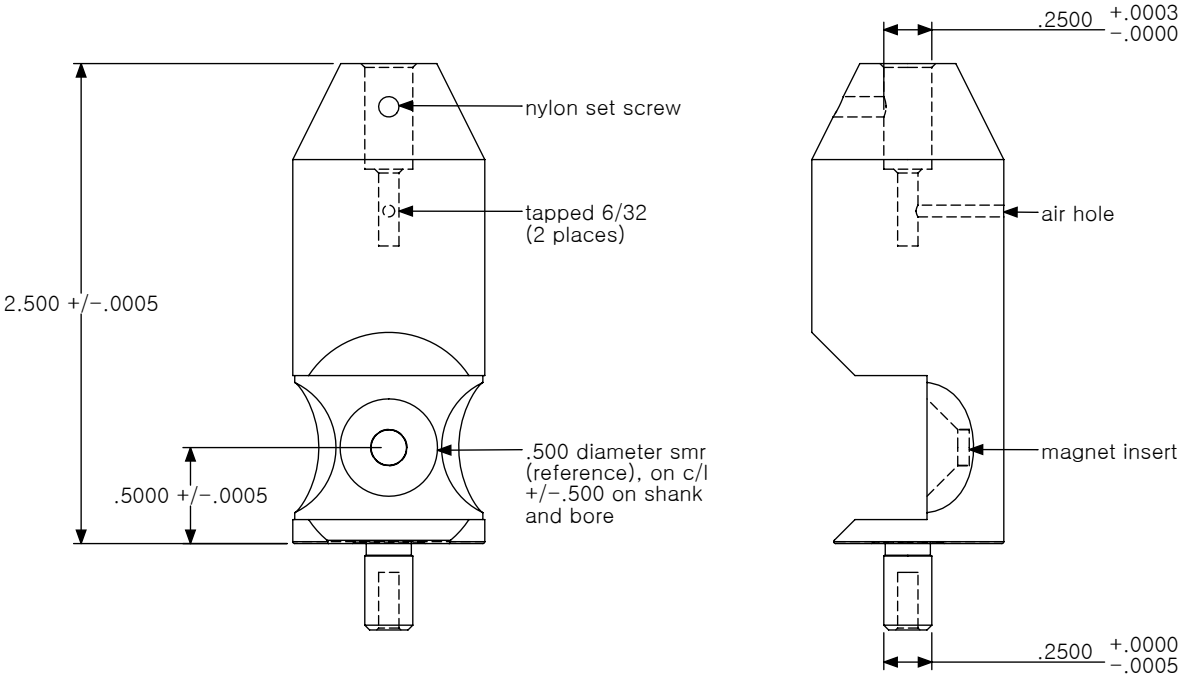
	FAMILY	MATERIAL					
.5 SM / HPBA STANDARD BUILD	.5 SM / HPBA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 SM / HPBA						
REFERENCE NOTES							

.5 SPHERE MOUNT HIDDEN POINT BAR ADAPTOR

CAD on file



**.5 SM / HPBA
FEATURES**
1144 STEEL, BLACK OXIDE
FINISH (standard)



.5 LT - RSM

Designed to hold .5000
Spherically Mounted
Retro-Reflector as
a permanent
reference point.

.5 LT - RSM ORDERING INFORMATION

LT-RSM STANDARD BUILD	FAMILY	"H" TO CENTERLINE OF SPHERE	MATERIAL				
	LT-RSM	16mm	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO		LT-RSM					
REFERENCE NOTES							

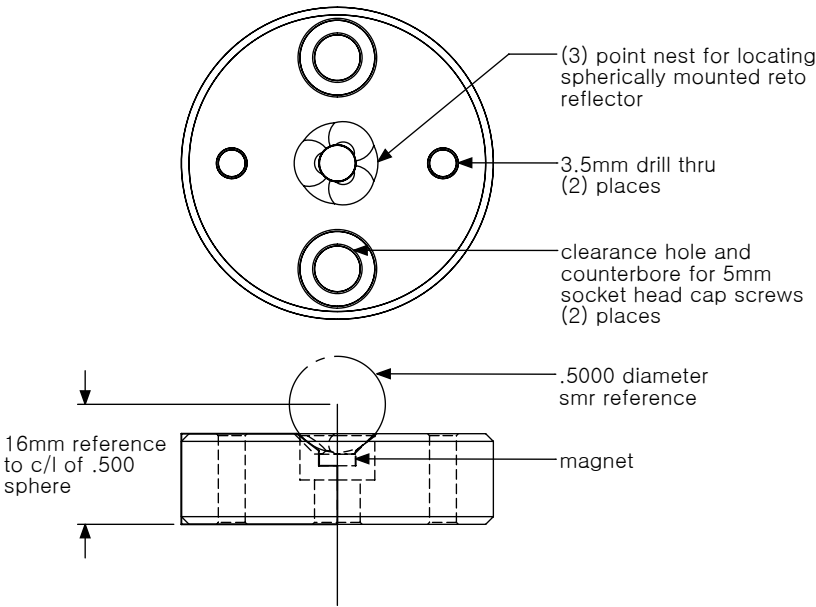
.5 LASER TRACKER - REFERENCE SPHERE MOUNT

CAD on file



.5 LT - RSM
FEATURES

1144 STEEL OXIDE FINISH
(standard)



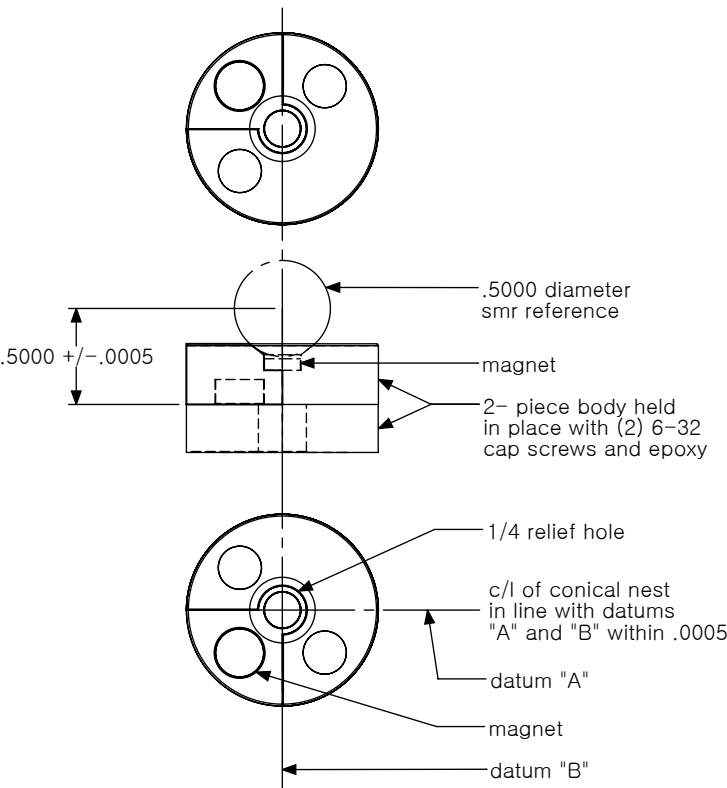
.5 ESM / OC
Designed to hold
Spherically Mounted
Retro-Reflector for the
purpose of locating
outside corners.

.5 ESM / OC ORDERING INFORMATION

	FAMILY	MATERIAL (OPTIONS)					
.5 ESM / OC STANDARD BUILD	.5 ESM / OC	1144 steel or (SS)					
CUSTOMER PROVIDES INFO	.5 ESM / OC						
REFERENCE NOTES							

.5 EDGE SPHERE MOUNT / OUTSIDE CORNER

CAD on file



.5 ESM / OC FEATURES
1144 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION (for more corrosive environments)

.5 FSM
Mounted in concrete
flooring/foundations,etc.
to allow for a permanent
Laser Tracker target
reference.

.5 DN
Designed to hold .5000
Spherically Mounted
Retro-Reflector as
a temporary
reference point.

.5 FSM ORDERING INFORMATION

	FAMILY	MATERIAL					
.5 FSM STANDARD BUILD	.5 FSM	stainless steel (SS)					
CUSTOMER PROVIDES INFO	.5 FSM						

.5 DN ORDERING INFORMATION

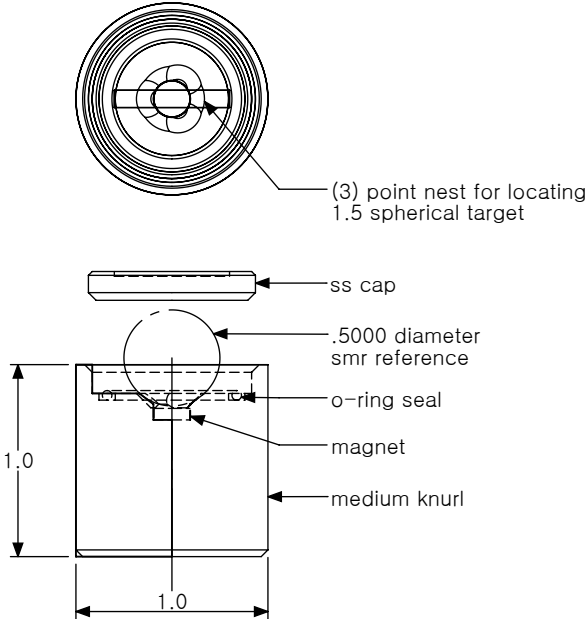
	FAMILY	MATERIAL					
.5 DN STANDARD BUILD	.5 DN	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 DN						

REFERENCE

NOTES

.5 FOUNDATION SPHERE MOUNT

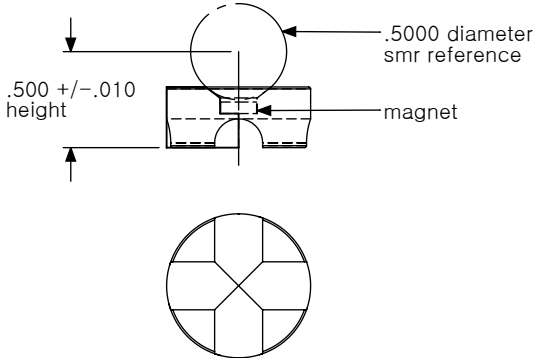
CAD on file



.5 FSM
FEATURES
STAINLESS STEEL
(standard)

.5 DRIFT NEST

CAD on file



NOTE
To Use: Hold .5 Reflector
Holder Drift Nest in place
and inject hot glue into (1)
of the (4) tunnels until hot
glue protrudes out of the
other sides.



.5 DN
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

.5 TSM

Mounted to a
Theodolite adaptor to
hold a .5 Spherically
Mounted Retro-Reflector
in place for a consistant
reference point.

.5 TSM ORDERING INFORMATION

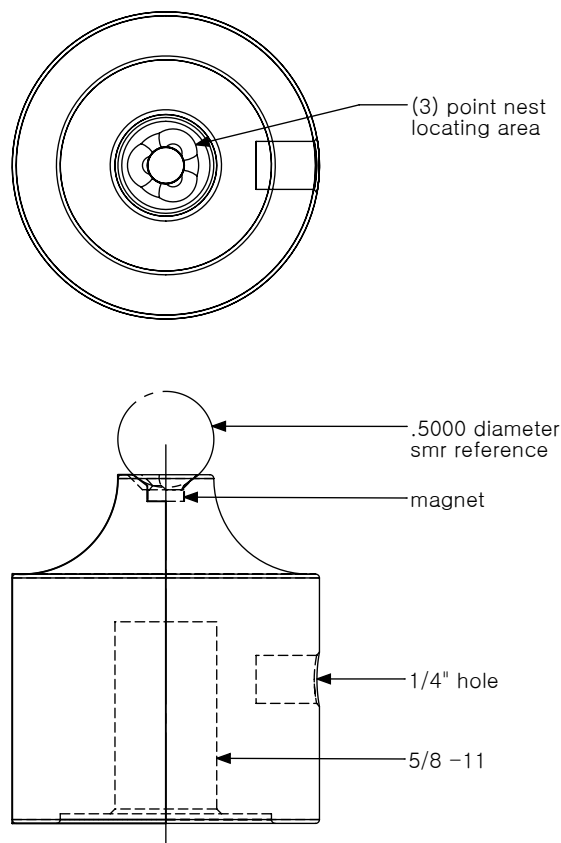
	FAMILY	MATERIAL (OPTIONS)					
.5 TSM STANDARD BUILD	.5 TSM	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 TSM						
REFERENCE NOTES							

.5 TRIPOD SPHERE MOUNT

CAD on file



.5 TSM
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



.5 TSM (FARO)

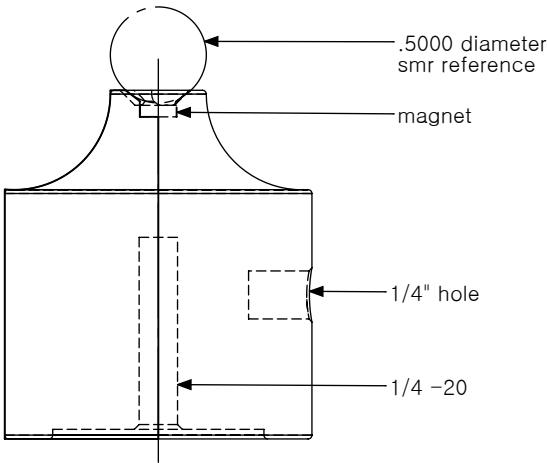
Mounted to a Theodolite adaptor to hold a .5 Spherically Mounted Retro-Reflector in place for a constant reference point.

.5 TSM (FARO) ORDERING INFORMATION

	FAMILY	MATERIAL (OPTIONS)					
.5 TSM (FARO) STANDARD BUILD	.5 TSM (FARO)	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 TSM (FARO)						
REFERENCE NOTES							

.5 TRIPOD SPHERE MOUNT (FARO)

CAD on file



.5 TSM (FARO)
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

MAGNETIC
HOLDER

Designed to hold .5000
Spherically Mounted
Retro-Reflector
during use.

MAGNETIC HOLDER ORDERING INFORMATION

.5 TBR STANDARD BUILD	FAMILY	MODEL	BEST FOR
	MAGNETIC HOLDER	HEAVY DUTY	Holding .5 SMR when profiling surfaces
	MAGNETIC HOLDER	LIGHT DUTY	Placing or removing .5 SMR from nest
CUSTOMER PROVIDES INFO	.5 TBR	■	
REFERENCE NOTES			

HEAVY DUTY MAGNETIC HOLDER FOR TBR



FEATURES

- Allows free rotation of the TBR from horizontal to vertical.
- Assembles and disassembles easily.

LIGHT DUTY MAGNETIC HOLDER FOR TBR



FEATURES

- Allows free rotation of the TBR from horizontal to vertical.
- Assembles and disassembles easily.

**.5 SMR MC and
.5 SMR SUPPORT**
Designed to hold a
sphere directly on
the surface.

.5 SMR MC ORDERING INFORMATION

	FAMILY	MATERIAL					
.5 SMR MC STANDARD BUILD	.5 SMR MC	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 SMR MC						

.5 SMR SUPPORT ORDERING INFORMATION

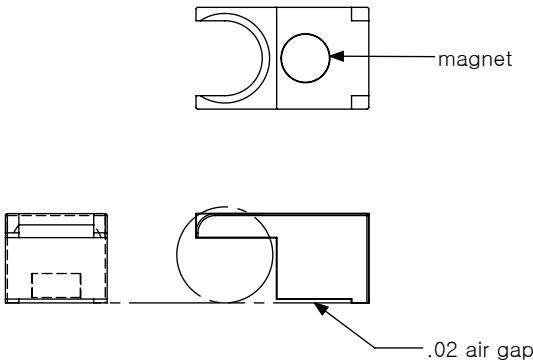
	FAMILY	MATERIAL					
.5 SMR SUPPORT STANDARD BUILD	.5 SMR SUPPORT	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	.5 SMR SUPPORT						

REFERENCE

NOTES

.5 SMR MAGNETIC CLAMP

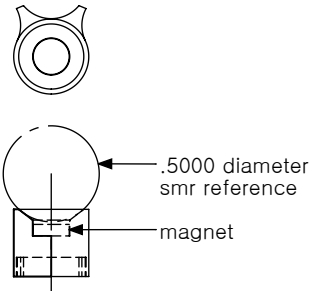
CAD on file



.5 SMR MC
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

.5 SMR SUPPORT

CAD on file



**.5 SMR
SUPPORT**
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

1.5 - .5 SMR AD
Designed to adapt a
1.5 Sphere Mount Nest
to .5000 Spherically
Mounted Retro-Reflector.

.875 - .5 SMR AD
Designed to adapt
a .8750 Sphere Mount
Nest to .5 Spherically
Mounted Retro-Reflector.

1.5 - .5 SMR AD ORDERING INFORMATION

1.5 - .5 SMR AD STANDARD BUILD	FAMILY	MATERIAL					
	1.5 -.5 SMR AD	stainless steel (SS)					
CUSTOMER PROVIDES INFO	1.5 -.5 SMR AD						

.875 - .5 SMR AD ORDERING INFORMATION

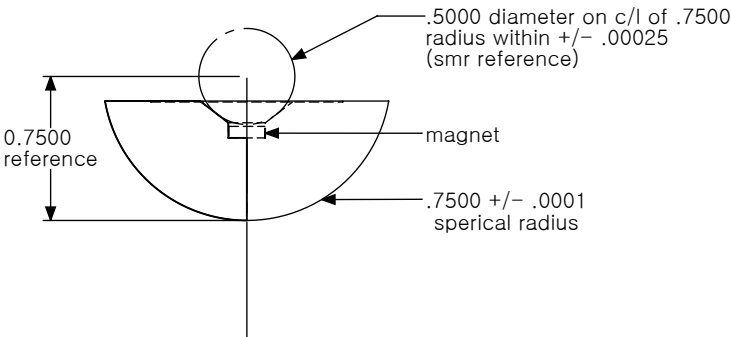
.875 -.5 SMR AD STANDARD BUILD	FAMILY	MATERIAL					
	.875 -.5 SMR AD	stainless steel (SS)					
CUSTOMER PROVIDES INFO	.875 -.5 SMR AD						

REFERENCE

NOTES

1.5 - .5 SMR AD

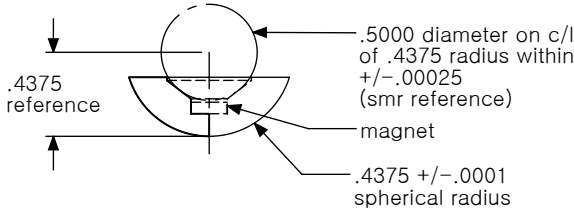
CADon file



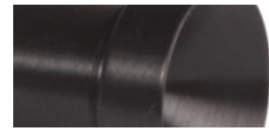
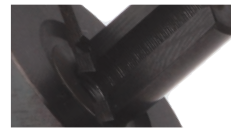
1.5 - .5 SMR AD
FEATURES
STAINLESS STEEL
Heat-treated and
hardened to R/C 53 – 55
(standard)

.875 - .5 SMR AD

CADon file



.875 - .5 SMR AD
FEATURES
STAINLESS STEEL
Heat-treated and
hardened to R/C 53 – 55
(standard)



1 PROBING TARGET / STRAIGHT-ON
PR / TSO

PROBING TARGET / FLUSH MOUNT
PR / FM

2 CMM PROBE TARGET
CPT

CMM PROBE TARGET INSERT
CPT / INS

3 MODIFIED CMM PROBE TARGET
MCPT

4 FLUSH TOOLING BALL
FTB

SCRIBE LINE FLUSH TOOLING BALL
SLFTB

PR / TSO

Designed to hold a Cmm Probe tip on centerline of a hole and critical offset.

PR / TSO ORDERING INFORMATION

	FAMILY	"H" TO CENTERLINE	"A" SHANK DIAMETER	"D" PROBE TIP DIAMETER	MATERIAL		
PR / TSO STANDARD BUILD	PR / TSO	↓	↓	↓	1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	PR / TSO	■	■	■			

PR / FM

Designed to hold a Cmm Probe tip on centerline of a hole and zero offset.

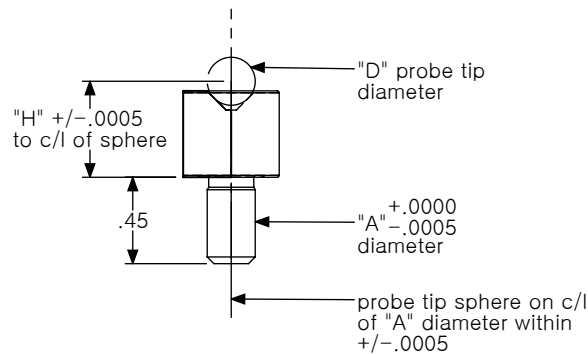
PR / FM ORDERING INFORMATION

	FAMILY	"A" SHANK DIAMETER	"D" PROBE TIP DIAMETER	MATERIAL			
PR / FM STANDARD BUILD	PR / FM	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	PR / FM	■	■				

REFERENCE NOTES

PROBING TARGET / STRAIGHT ON

CAD on file

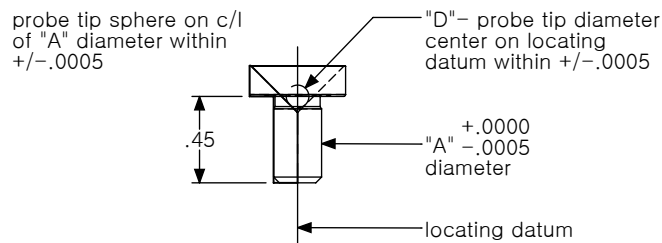


PR / TSO FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

PROBING TARGET / FLUSH MOUNT

CAD on file



NOTE

Some probe tip diameter limitations apply.



PR / FM FEATURES

1144 STEEL, BLACK OXIDE FINISH (standard)

CPT

Designed for use with
Cmm Probe or Laser
Tracker to find centerline
of a hole with zero offset.

CPT / INS

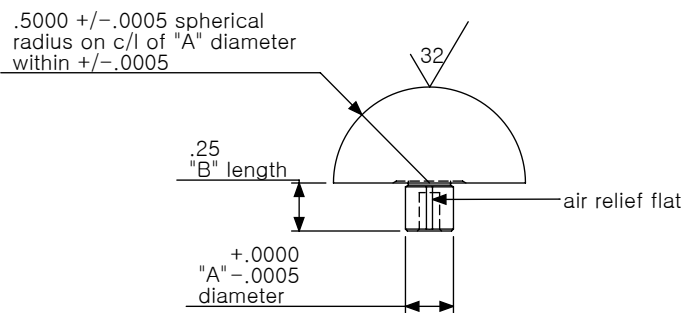
Use along with your
own shop-provided
shank sizes.

CPT ORDERING INFORMATION						
	FAMILY	"A" SHANK DIAMETER	"B" SHANK LENGTH	MATERIAL		
CPT 5000R STANDARD BUILD	CPT 5000R			1144 steel, black oxide finish		
CUSTOMER PROVIDES INFO	CPT 5000R					

CPT / INS ORDERING INFORMATION						
	FAMILY	MATERIAL				
CPT / INS 5000R STANDARD BUILD	CPT / INS 5000R	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	CPT / INS 5000R					
REFERENCE NOTES						

CMM PROBE TARGET

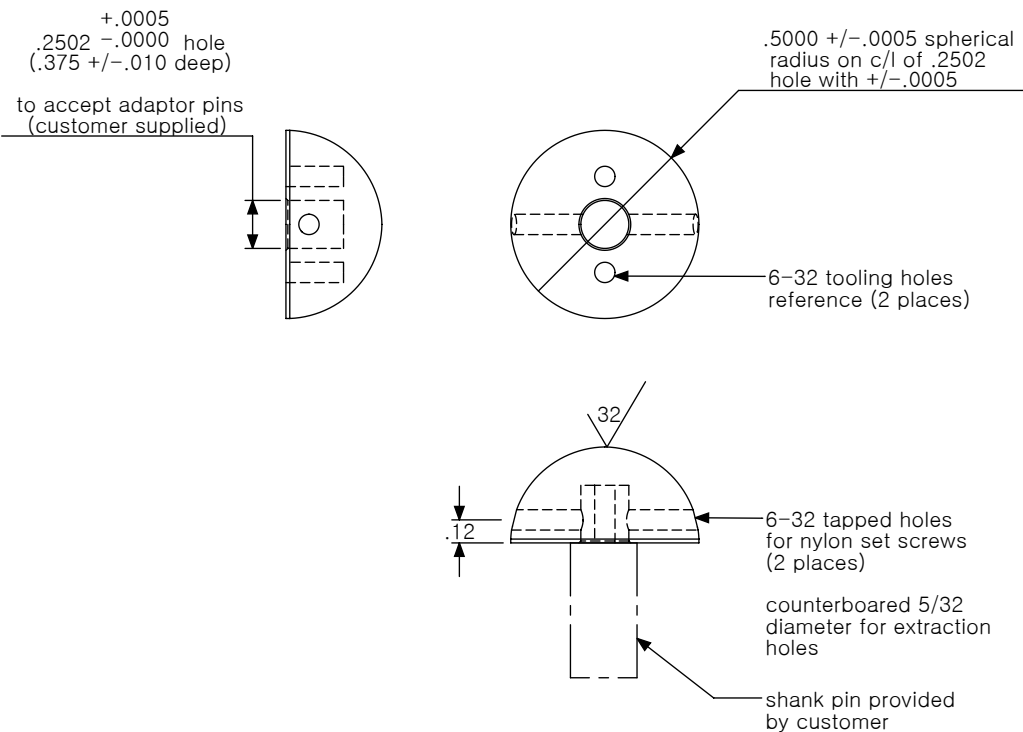
CAD on file



CPT FEATURES
1144 STEEL, BLACK OXIDE
FINISH – Heat-treated and
hardened to R/C 53 – 55
(standard)

CMM PROBE TARGET INSERT

CAD on file



CPT / INS
FEATURES
1144 STEEL, BLACK OXIDE
FINISH – Heat-treated and
hardened to R/C 53 – 55
(standard)

MCPT

Used with Cmm Probe or Laser Tracker to provide X, Y and Z coordinate values for the intersection of a surface and an edge with zero offset.

MCPT ORDERING INFORMATION

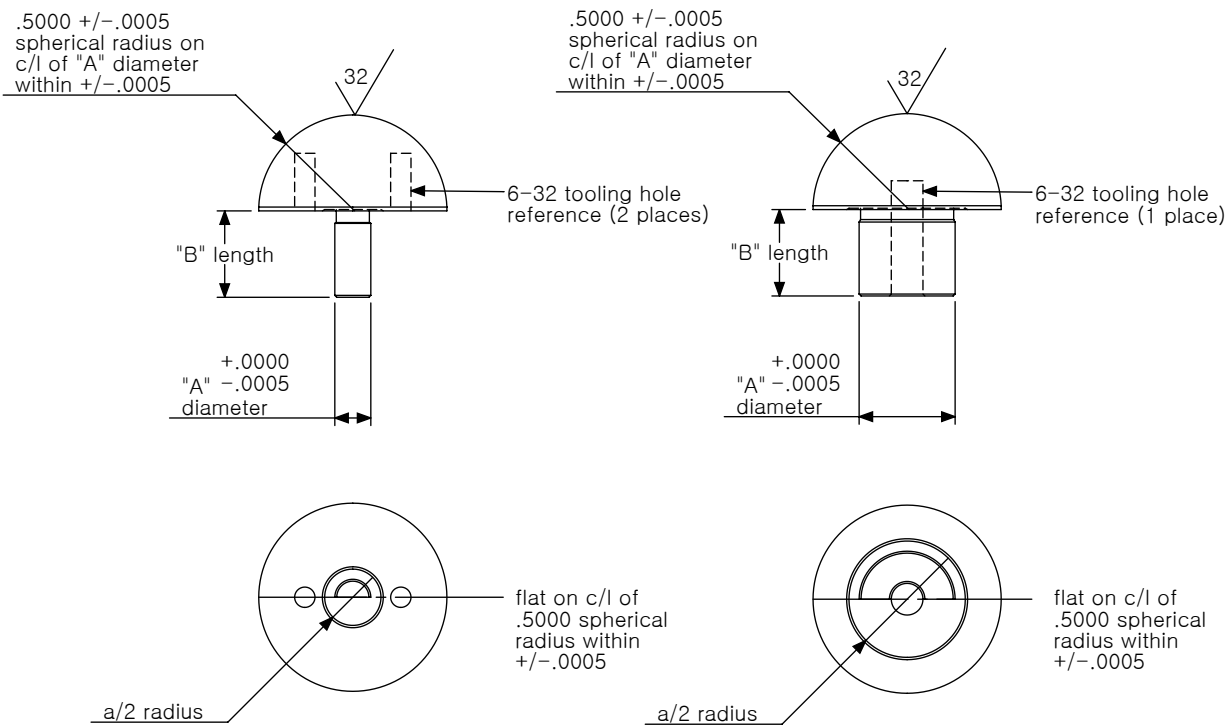
	FAMILY	"A" SHANK DIAMETER	"B" SHANK LENGTH	MATERIAL			
MCPT STANDARD BUILD	MCPT	↓	↓	1144 steel, black oxide finish			
CUSTOMER PROVIDES INFO	MCPT	■	■				
REFERENCE NOTES							

MODIFIED CMM PROBE TARGET

CAD on file



MCPT FEATURES
1144 STEEL, BLACK OXIDE FINISH – Heat-treated and hardened to R/C 53 – 55 (standard)



FTB
Used with the MetricVision measurement systems to represent the centerline of a hole with a zero offset height.

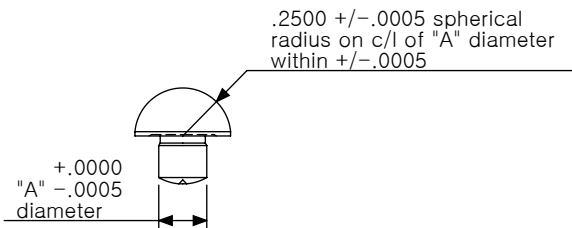
SLFTB
Used with the MetricVision measurement systems to represent the intersection of scribe lines with a zero offset height.

FTB ORDERING INFORMATION							
	FAMILY	"A" SHANK DIAMETER	MATERIAL				
FTB STANDARD BUILD	FTB		stainless steel (SS)				
CUSTOMER PROVIDES INFO	FTB						

SLFTB ORDERING INFORMATION							
	FAMILY	MATERIAL					
SLFTB STANDARD BUILD	SLFTB	stainless steel (SS)					
CUSTOMER PROVIDES INFO	SLFTB						
REFERENCE NOTES							

FLUSH TOOLING BALL

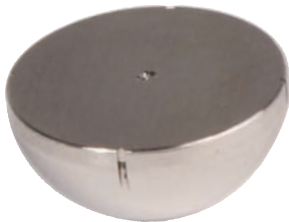
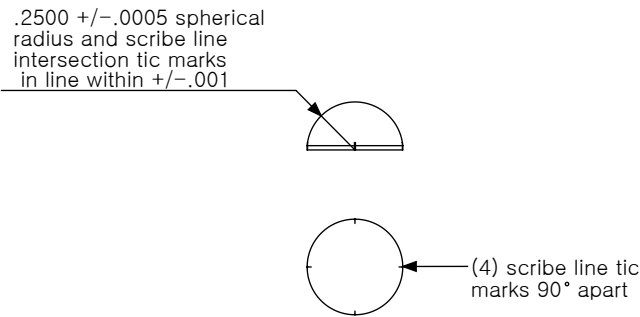
CAD on file



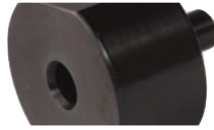
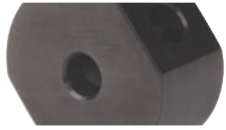
FTB FEATURES
STAINLESS STEEL
(standard)

SCRIBE LINE FLUSH TOOLING BALL

CAD on file



SLFTB FEATURES
STAINLESS STEEL
(standard)



- 1 FOUNDATION TARGET INSERT
FTI
- HARD POINT SPIDER
HPS
- 2 CONSTRUCTION BALL / TARGET PAD
CBTP
- 3 TARGET REFERENCE PAD
TRP
- 4 MAGNETIC BASE TARGET HOLDER ADAPTOR
MBTHA
- CONSTRUCTION BALL
CB
- 5 CUBE ADAPTOR
CA
- 6 BOEING CUBE ADAPTOR (1 and 2)
BCA - 1 / BCA - 2
- BOEING CUBE ADAPTOR PIN
BCA PIN
- 7 BOEING HEADER TARGET
BHT
- 8 BOEING HEADER TARGET - 2
BHT - 2
- 9 LASER TRACKER - BOEING HEADER TARGET
LT - BHT
- 10 DOUBLE VECTOR TARGET PIPE MOUNT
DVT PIPE MOUNT
- 11 ECONOMY RING
E-RING
- 12 LEICA STAND ADAPTOR RINGS
LSAR - SET
- 13 LEICA LASER TRACKER HORIZONTAL MOUNT

FTI

Mounted in concrete flooring/foundations, etc., to allow for a permanent reference.

FTI ORDERING INFORMATION

	FAMILY	MATERIAL					
FTI STANDARD BUILD	FTI	brass					
CUSTOMER PROVIDES INFO	FTI						

HPS

Holds a Hard Point 90° for for locating to identifier rivets, scribe lines, etc.

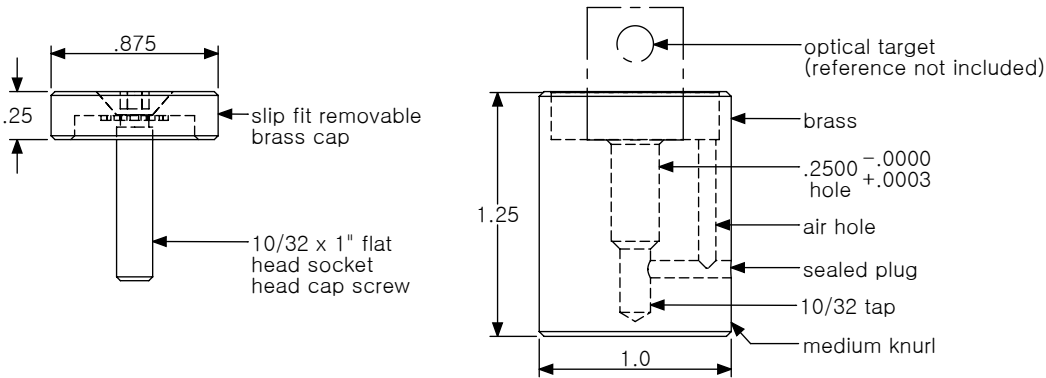
HPS ORDERING INFORMATION

	FAMILY	MATERIAL					
HPS STANDARD BUILD	HPS	aluminum					
CUSTOMER PROVIDES INFO	HPS						

REFERENCE NOTES

FOUNDATION TARGET INSERT

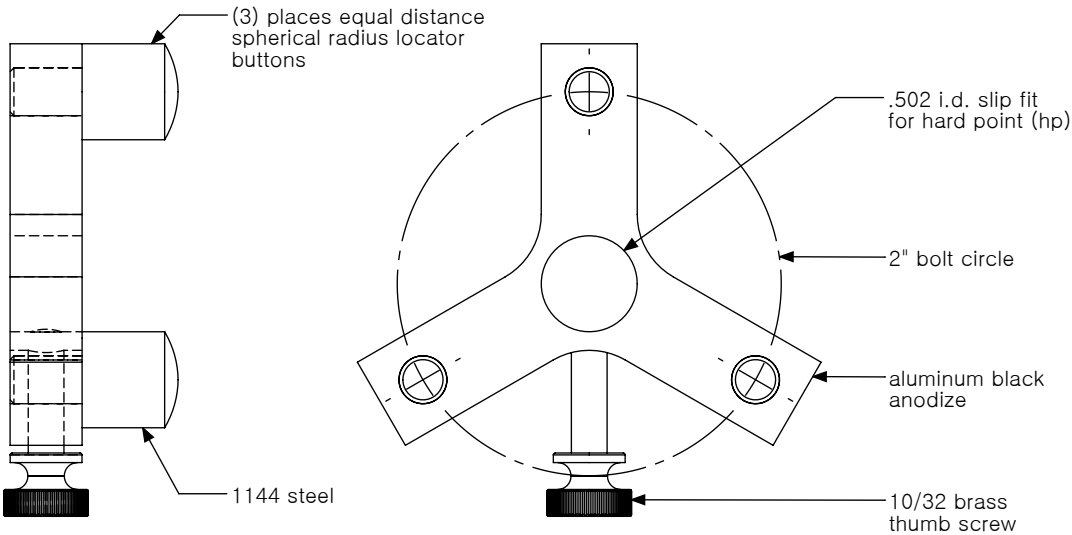
CAD on file



FTI FEATURES
MEDIUM KNURLED BRASS

HARD POINT SPIDER

CAD on file



HPS FEATURES
ALUMINUM BLACK, ANODIZED COATING

CBTP

Uses .2500 + .0003 / .0000 hole that is perpendicular to the top surface which allows interchangeability with standard construction ball, standard optical targeting, or larger diameter items such as Laser Tracker Sphere Mounts.

CBTP ORDERING INFORMATION

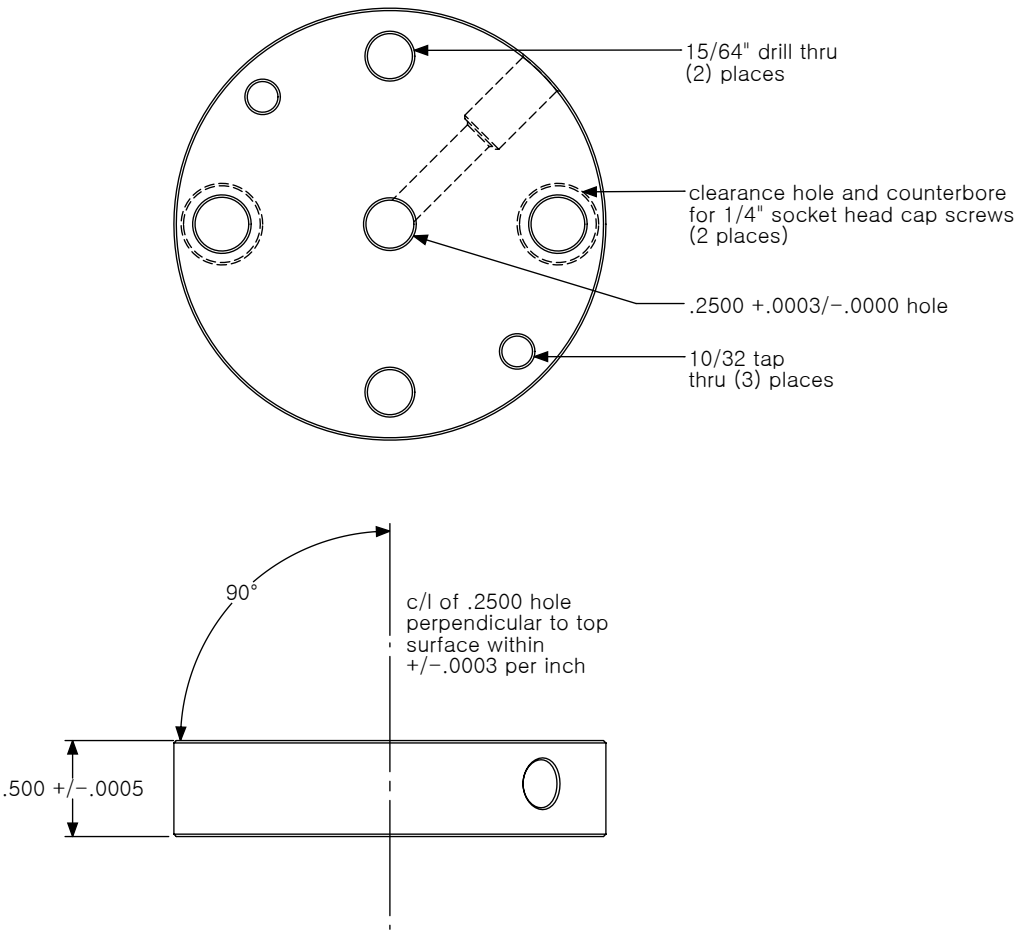
	FAMILY	MATERIAL					
CBTP STANDARD BUILD	CBTP	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	CBTP						
REFERENCE NOTES							

CONSTRUCTION BALL / TARGET PAD

CAD on file



CBTP FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



TRP

Low-cost, efficient way for establishing a permanent, critical .2500 diameter target hole along with a flat and perpendicular reference upper surface. Epoxy, hot glue, or tack weld in place.

TRP ORDERING INFORMATION

	FAMILY	MATERIAL (OPTIONS)					
TRP STANDARD BUILD	TRP	1018 steel or (SS)					
CUSTOMER PROVIDES INFO	TRP	■					
REFERENCE NOTES							

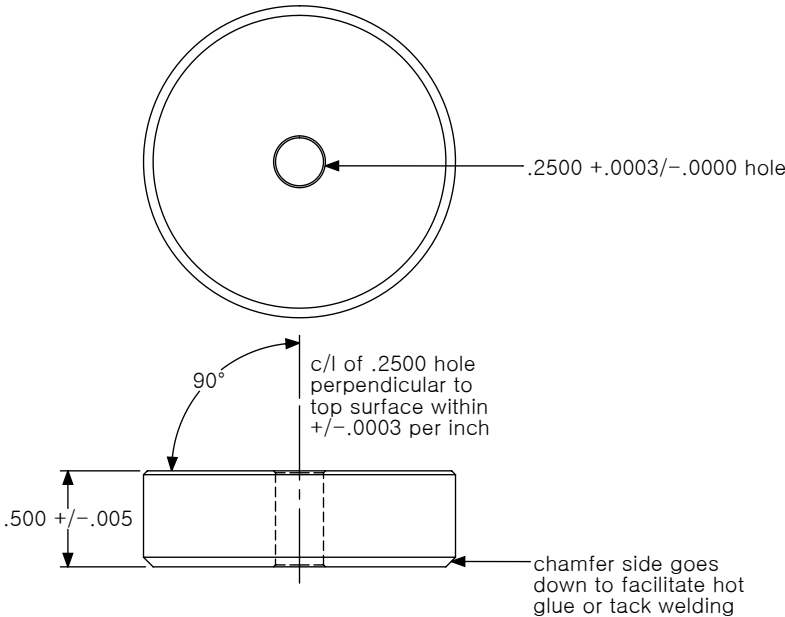
TARGET REFERENCE PAD

CAD on file



TRP FEATURES
1018 STEEL, BLACK OXIDE FINISH (standard)

STAINLESS STEEL OPTION
(for more corrosive environments)



MBTHA

Designed to locate the center of a scribed cross-hair using tick marks.

MBTHA ORDERING INFORMATION

MBTHA STANDARD BUILD	FAMILY	MATERIAL					
	MBTHA	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	MBTHA						

CB

Intended to be used when standard, off the shelf designs, such as .3125 and .5000 offsets with .2500 shanks, cannot be used.

CB ORDERING INFORMATION

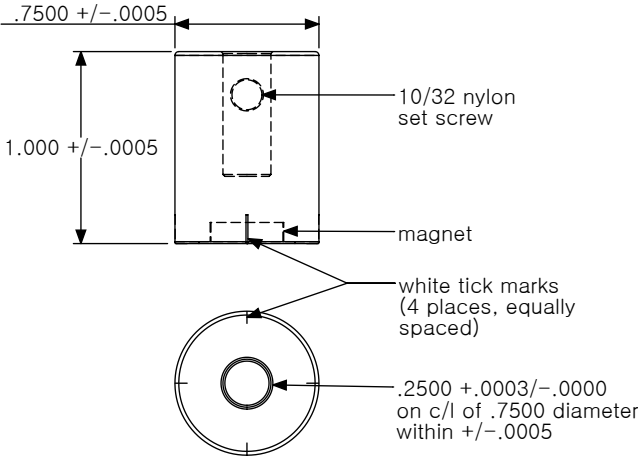
CB STANDARD BUILD	FAMILY	MATERIAL					
	CB	1144 steel and chrome					
CUSTOMER PROVIDES INFO	CB						

REFERENCE

NOTES

MAGNETIC BASE TARGET HOLDER ADAPTOR

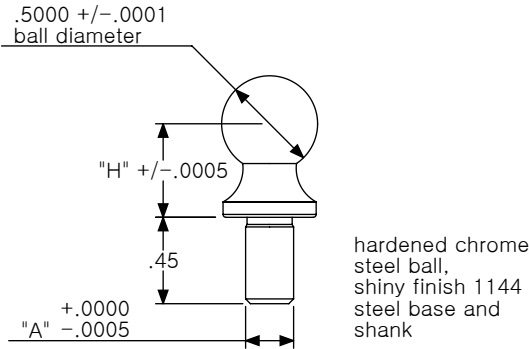
CAD on file



MBTHA FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

CONSTRUCTION BALL

CAD on file



CB FEATURES
1144 STEEL, BLACK OXIDE
FINISH and HARDENED
CHROME STEEL BALL

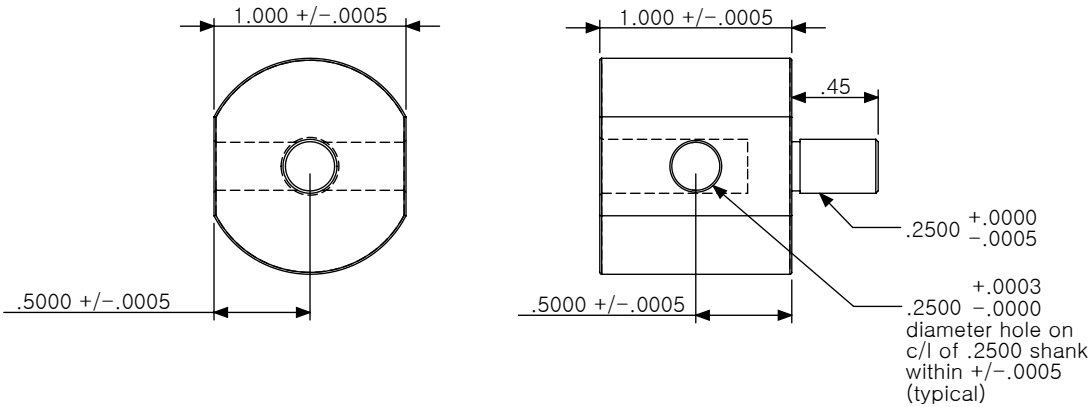
CA

CUBE ADAPTOR ORDERING INFORMATION

	FAMILY	MODEL	MATERIAL				
CA STANDARD BUILD	CA	500 or 3125	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	CA	■					
REFERENCE NOTES							

CUBE ADAPTOR (CA - 500 and CA - 3125)

CAD on file



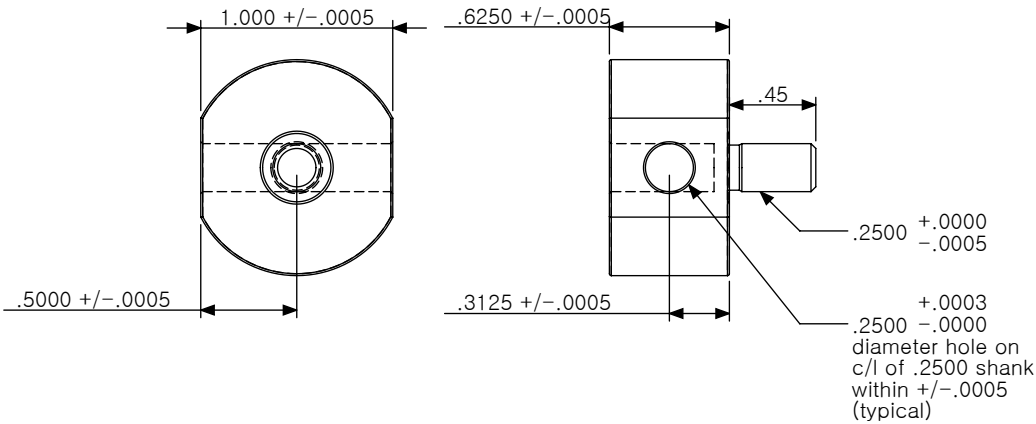
CA - 500



CA - 3125



CA FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)



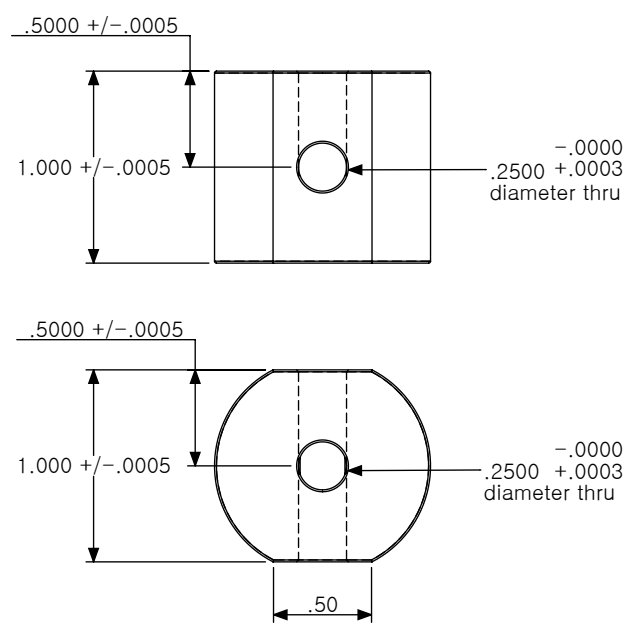
BCA 1 and 2

BCA ORDERING INFORMATION

	FAMILY	MODEL	MATERIAL				
BCA STANDARD BUILD	BCA	1 or 2	1144 steel, black oxide finish				
CUSTOMER PROVIDES INFO	BCA	■					
REFERENCE NOTES							

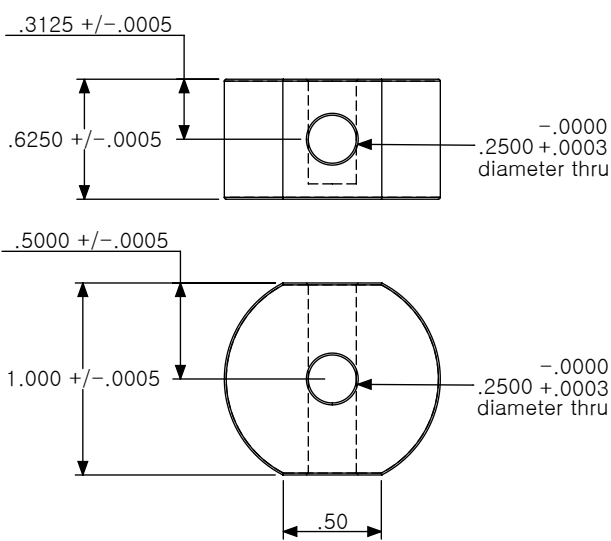
BOEING CUBE ADAPTOR - 1

CAD on file



BOEING CUBE ADAPTOR - 2

CAD on file



BCA 1 and 2
FEATURES
1144 STEEL, BLACK OXIDE
FINISH (standard)

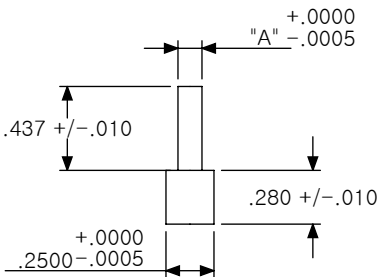
BCA PIN ORDERING INFORMATION

BCA PIN

	FAMILY	MATERIAL	SIZES AVAILABLE (OPTIONS)									
BCA PIN STANDARD BUILD	BCA PIN	drill rod 0-1	.1250 / .1875 / .2500 / .2810 / .3125 / .3750 / .4060 / .4360 / .5000 / .7500 / 1.000									
CUSTOMER PROVIDES INFO	BCA PIN	■										
REFERENCE NOTES												

BOEING CUBE ADAPTOR PIN

CAD on file



BCA PIN
FEATURES
DRILL ROD 0-1, BLACK
OXIDE FINISH

BHT

BHT ORDERING INFORMATION

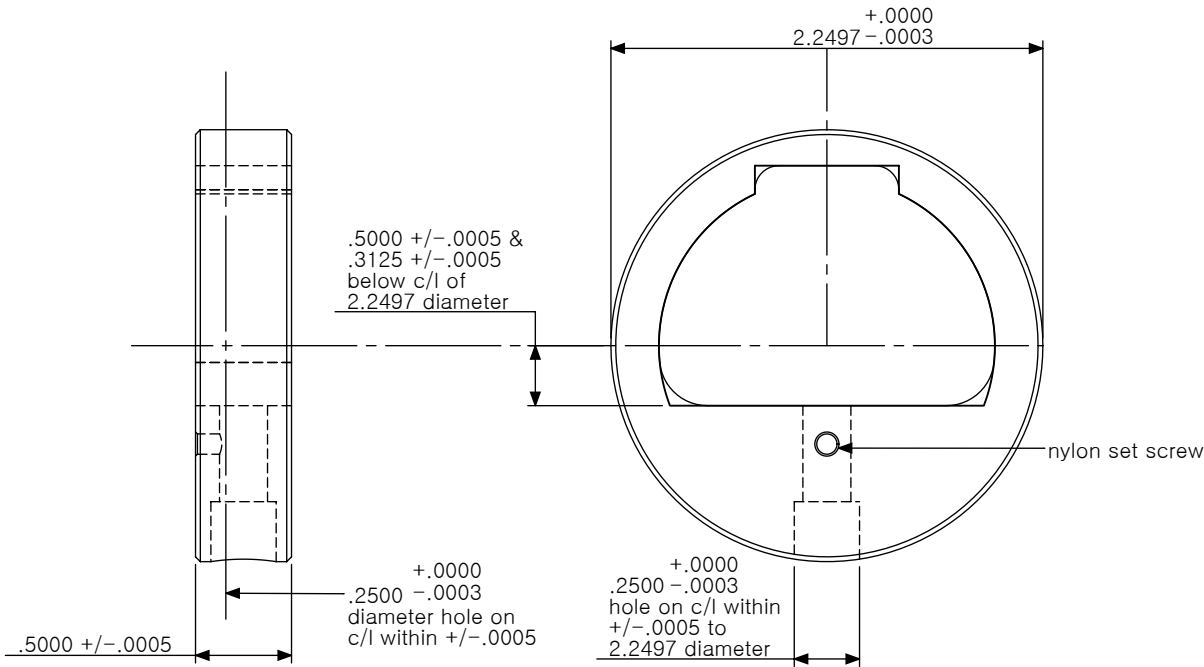
	FAMILY	MATERIAL					
BHT STANDARD BUILD	BHT	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	BHT						
REFERENCE NOTES							

BOEING HEADER TARGET

CAD on file



BHT FEATURES
1144 STEEL BLACK OXIDE
FINISH-heat -treated and
hardened to R/C 38-42



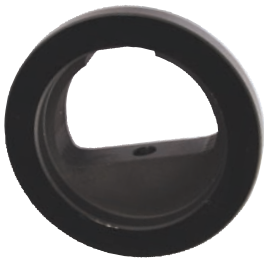
BHT - 2

BHT - 2 ORDERING INFORMATION

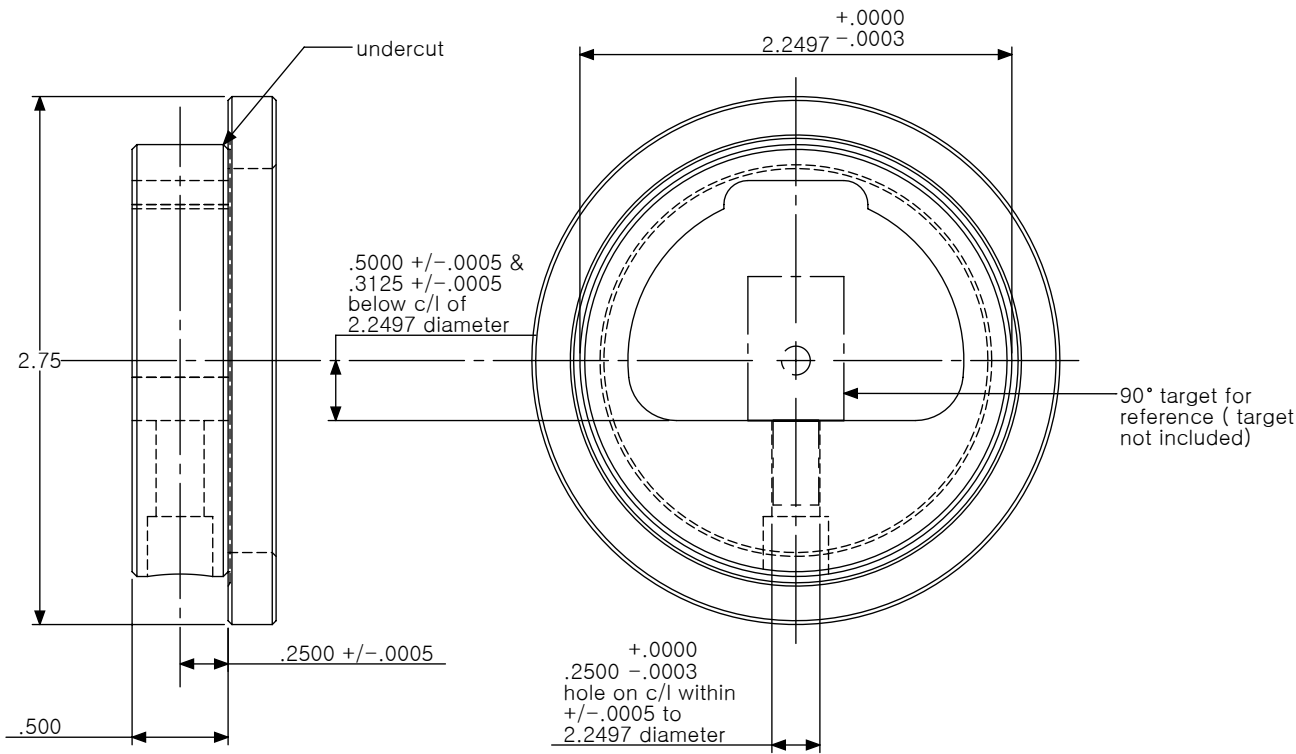
	FAMILY	MATERIAL					
BHT-2 STANDARD BUILD	BHT-2	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	BHT-2						
REFERENCE NOTES							

BOEING HEADER TARGET - 2

CAD on file



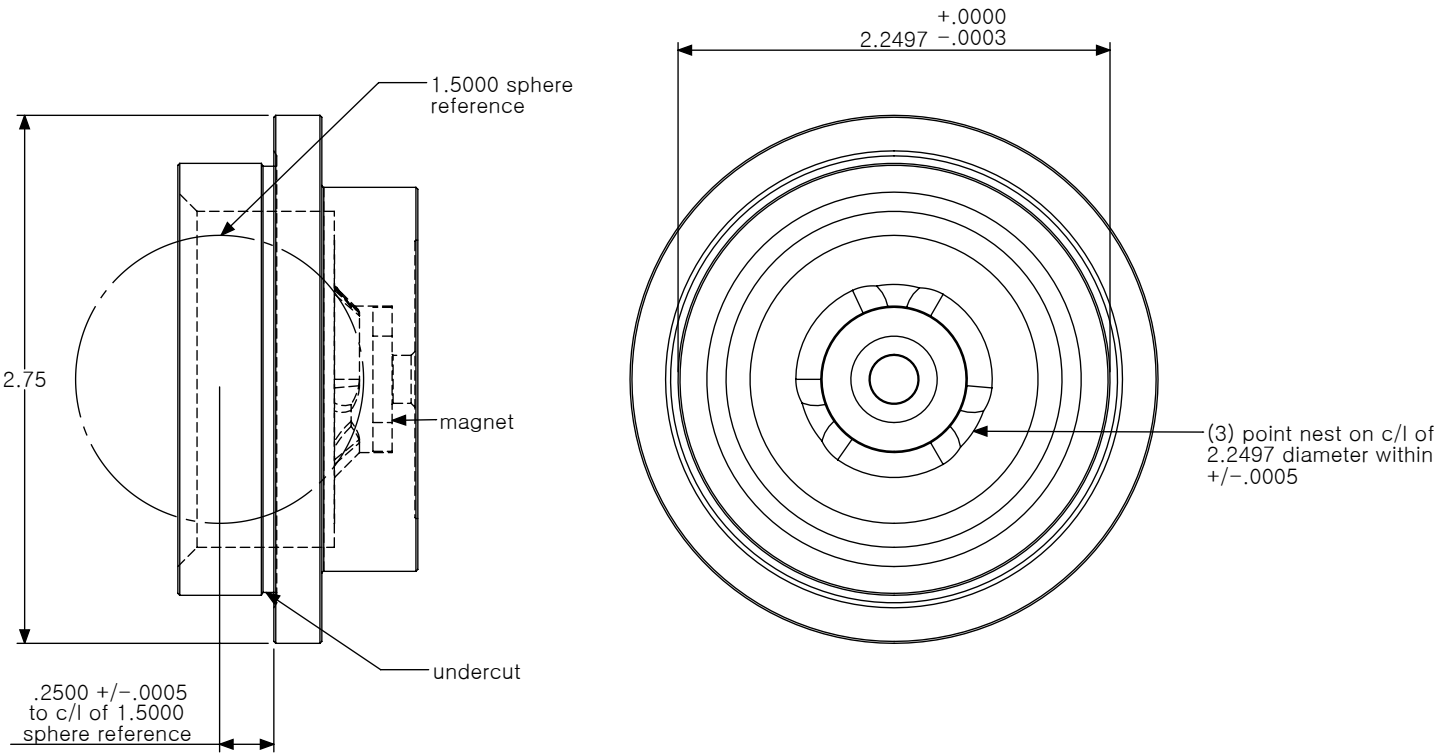
BHT - 2
FEATURES
1144 STEEL BLACK OXIDE
FINISH – Heat -treated and
hardened to R/C 38-42



LT-BHT STANDARD BUILD	FAMILY	MATERIAL					
	LT-BHT	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	LT-BHT						
REFERENCE NOTES							

LASER TRACKER - BOEING HEADER TARGET

CAD on file



LT - BHT
FEATURES
1144 STEEL OXIDE FINISH
(standard)

LT - BHT
ORDERING
For custom lengths, please
call for quote.

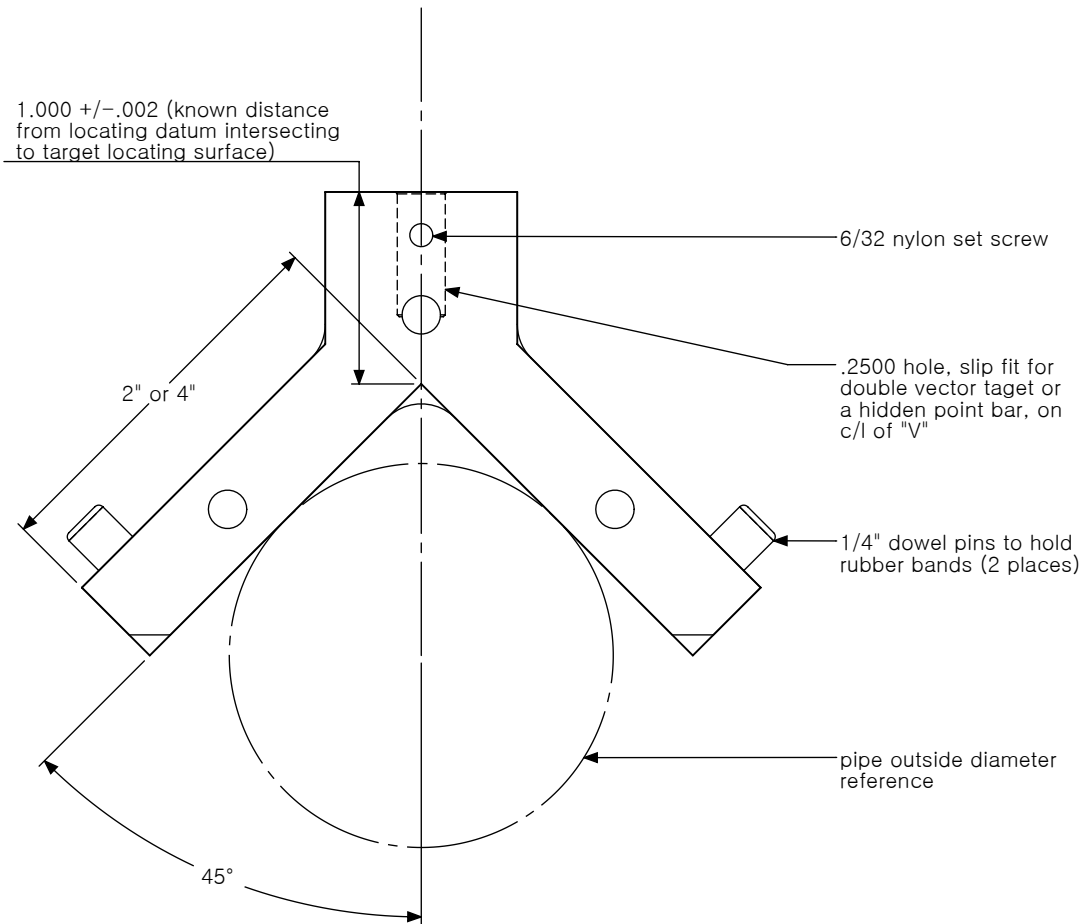
DVTPM
Designed to find
centerline of various
diameters.

DVTPM ORDERING INFORMATION

	FAMILY	LEG LENGTH	MATERIAL				
DVTPM STANDARD BUILD	DVTPM	2 INCH or 4 INCH	aluminum				
CUSTOMER PROVIDES INFO	DVTPM						
REFERENCE NOTES							

DOUBLE VECTOR TARGET PIPE MOUNT

CAD on file



DVTPM - 2



DVTPM - 4



DVTPM
FEATURES
ALUMINUM BLACK,
ANODIZED COATING



E - RING

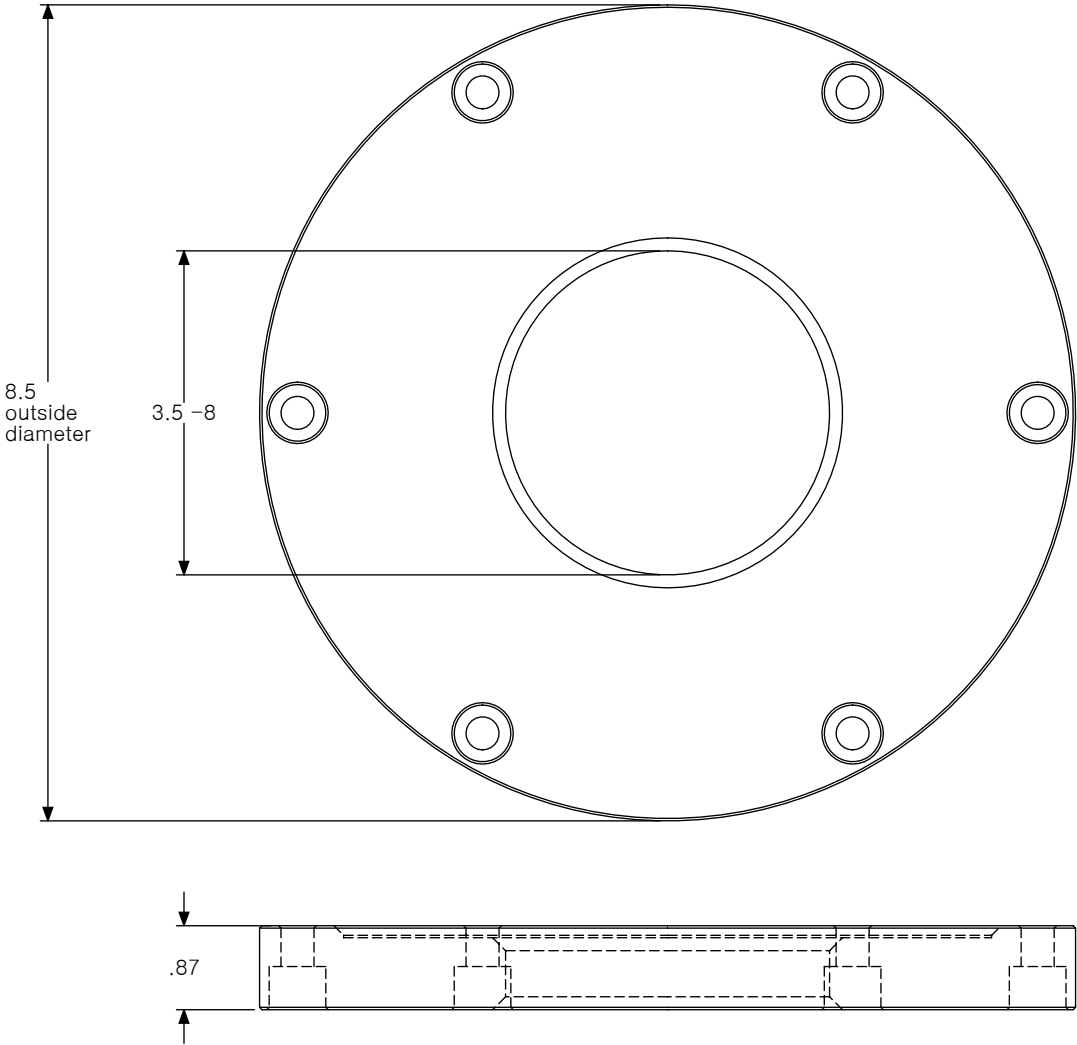
Used to adapt a Leica
Laser Tracker to an
instrument stand.

E - RING ORDERING INFORMATION

	FAMILY	MATERIAL					
E-RING STANDARD BUILD	E-RING	1144 steel, black oxide finish					
CUSTOMER PROVIDES INFO	E-RING						
REFERENCE NOTES							

ECONOMY RING

CAD on file



E - RING
FEATURES
ALUMINUM HARDCOAT
BLACK ANODIZED FINISH

LSAR

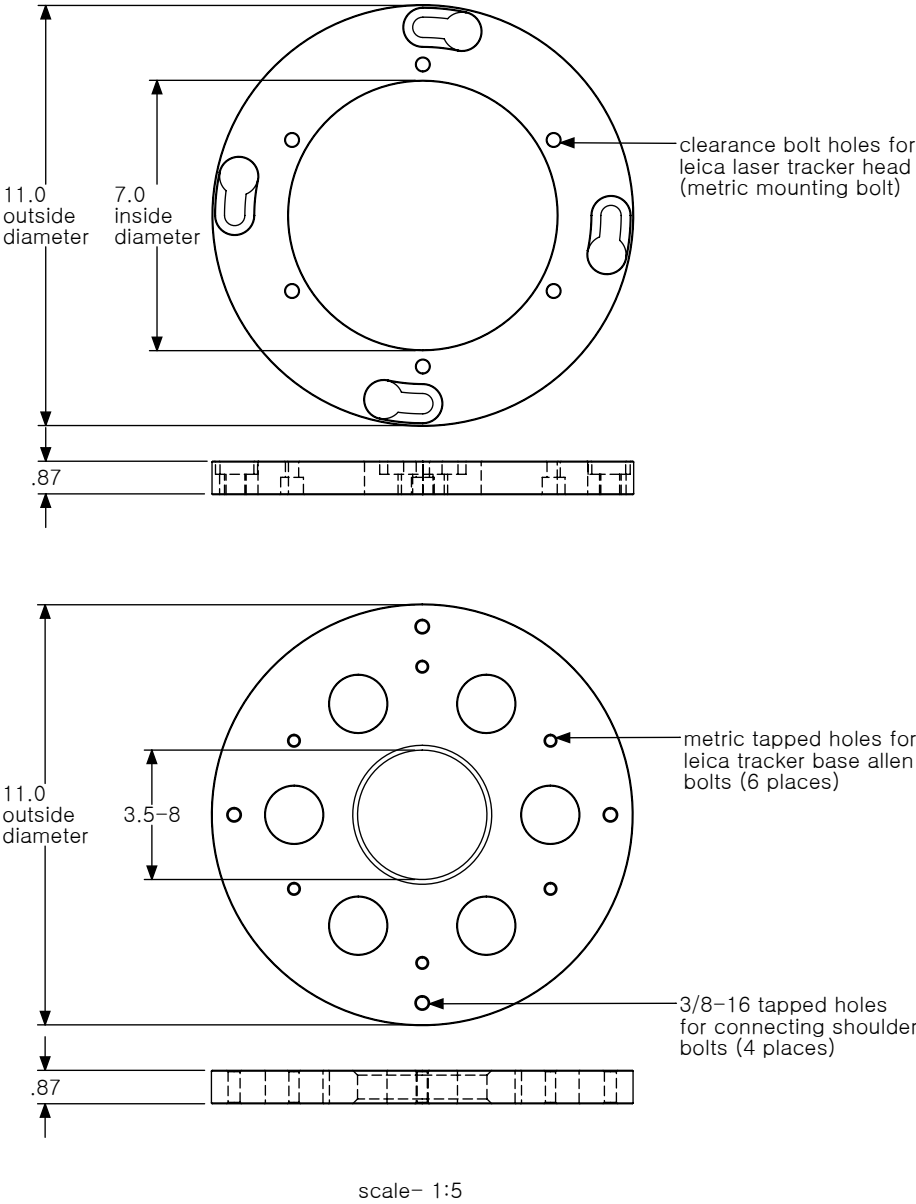
Used to adapt a Leica
Laser Tracker to a Leica
Laser Tracker Base or
Optical Instrument
Stand for quick
mounting or removal.

LSAR ORDERING INFORMATION

LSAR STANDARD BUILD	FAMILY	MATERIAL					
	LSAR	aluminum					
CUSTOMER PROVIDES INFO	LSAR						
REFERENCE NOTES							

LEICA STAND ADAPTOR RINGS

CAD on file



LSAR
FEATURES
6061 ALUMINUM
HARDCOAT BLACK
ANODIZED FINISH

LTHM

Allows the Leica Laser Tracker to lay securely in the horizontal position in a unique "V" nest (with or without adaptor rings).

LEICA TRACKER HORIZONTAL MOUNT ORDERING

	FAMILY	MATERIAL					
LTHM STANDARD BUILD	LTHM	aluminum					
CUSTOMER PROVIDES INFO	LTHM	aluminum					
REFERENCE NOTES							

LEICA TRACKER HORIZONTAL MOUNT



HORIZONTAL MOUNT

FEATURES

6061 ALUMINUM
HARDCOAT BLACK
ANODIZED FINISH

- May also be mounted vertically by using an upper adaptor ring.

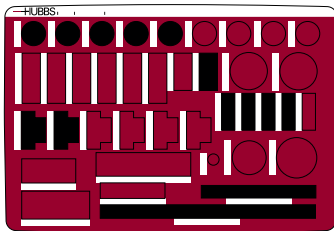
HORIZONTAL MOUNT

APPLICATION

The Leica Tracker Horizontal Mount will mount on the Leica Tracker Base or typical heavy optical instrument stand with a 3 1/2 " - 8 thread. The Leica Tracker Horizontal Mount will attach to stands (with or without adaptor rings).

HUBBS is aware of the nature of your industry. For this reason, we have created the official KIT and CASE that include the most commonly used products. The pelican case enclosing the kit is configured to hold a variety of different arrangements and can evolve into a custom BUILD-A-KIT for those needing a unique configuration.

STARTER HUBBS KIT INCLUDES



- **HARD POINT**
HP
- **CONSTRUCTION BALL**
CB-5000-2500-500
- **SPHERE FIT ADAPTOR**
SFA
- **LINER BUSHING**
LB-3750
- **LINER BUSHING**
LB-5000
- **1.5 SPHERE MOUNT DRIFT NEST - THREE POINT ALUMINUM (QTY. 4)**
1.5 SM-DN-3PA
- **SPHERE MOUNT NEGATIVE**
1.5 SMN-1.000-2500-SS
- **SHANKLESS SPHERE MOUNT**
1.5 SSM-1.000-SS
- **EDGE SPHERE MOUNT**
1.5 ESM-2-1.000-SS
- **BAR EXTENSION - 5"**
BEX-5
- **BAR EXTENSION - 10"**
BEX-10



Case with foam cutout - Length 16" x Width 10 3/4" x Height 3 3/4"
Depth of base - 2 1/2" x Depth of Lid - 1 1/4"

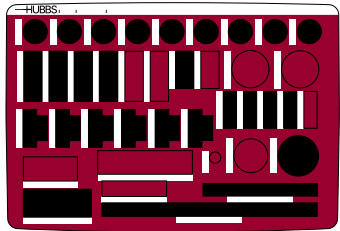
KIT and CASE ORDERING INFORMATION

A complete listing of products are also provided on the order form in the back of the catalog.



Case with foam cutout - Length 16" x Width 10 3/4" x Height 3 3/4"
Depth of base - 2 1/2" x Depth of Lid - 1 1/4"

ADVANCED HUBBS KIT INCLUDES



- **HARD POINT**
HP
- **CONSTRUCTION BALL**
CB-5000-2500-500
- **SPHERE FIT ADAPTOR**
SFA
- **.5 SPHERE MOUNT / TARGET CORNER**
.5 SM / TC-5000
- **.5 SHANKLESS SPHERE MOUNT NEGATIVE**
.5 SSMN-5000
- **.5 DRIFT NEST (QTY. 4)**
.5 DN
- **.5 SPHERE MOUNT NEGATIVE**
.5 SMN-5000-2500-SS
- **LINER BUSHING**
LB-3750
- **LINER BUSHING**
LB-5000
- **1.5 SPHERE MOUNT - HARD COAT (QTY. 4)**
1.5 SM - HC
- **1.5 SPHERE MOUNT NEGATIVE DRIFT NEST - THREE POINT ALUMINUM (QTY. 4)**
1.5 SMN-DN-3PA
- **1.5 SPHERE MOUNT NEGATIVE**
1.5 SMN-1.000-2500-SS w/1.60 body
- **1.5 SPHERE MOUNT NEGATIVE**
1.5 SMN-1.000-2500-SS w/1.60 body
- **1.5 SHANKLESS SPHERE MOUNT**
1.5 SSM-1.000-SS
- **1.5 EDGE SPHERE MOUNT**
1.5 ESM-2-1.000-SS
- **1.5 - .5 SMR ADAPTOR**
1.5 - .5 SMR AD
- **HEAVY DUTY HANDLE FOR TBR**
- **BAR EXTENSION - 5"**
BEX-5
- **BAR EXTENSION - 10"**
BEX-10