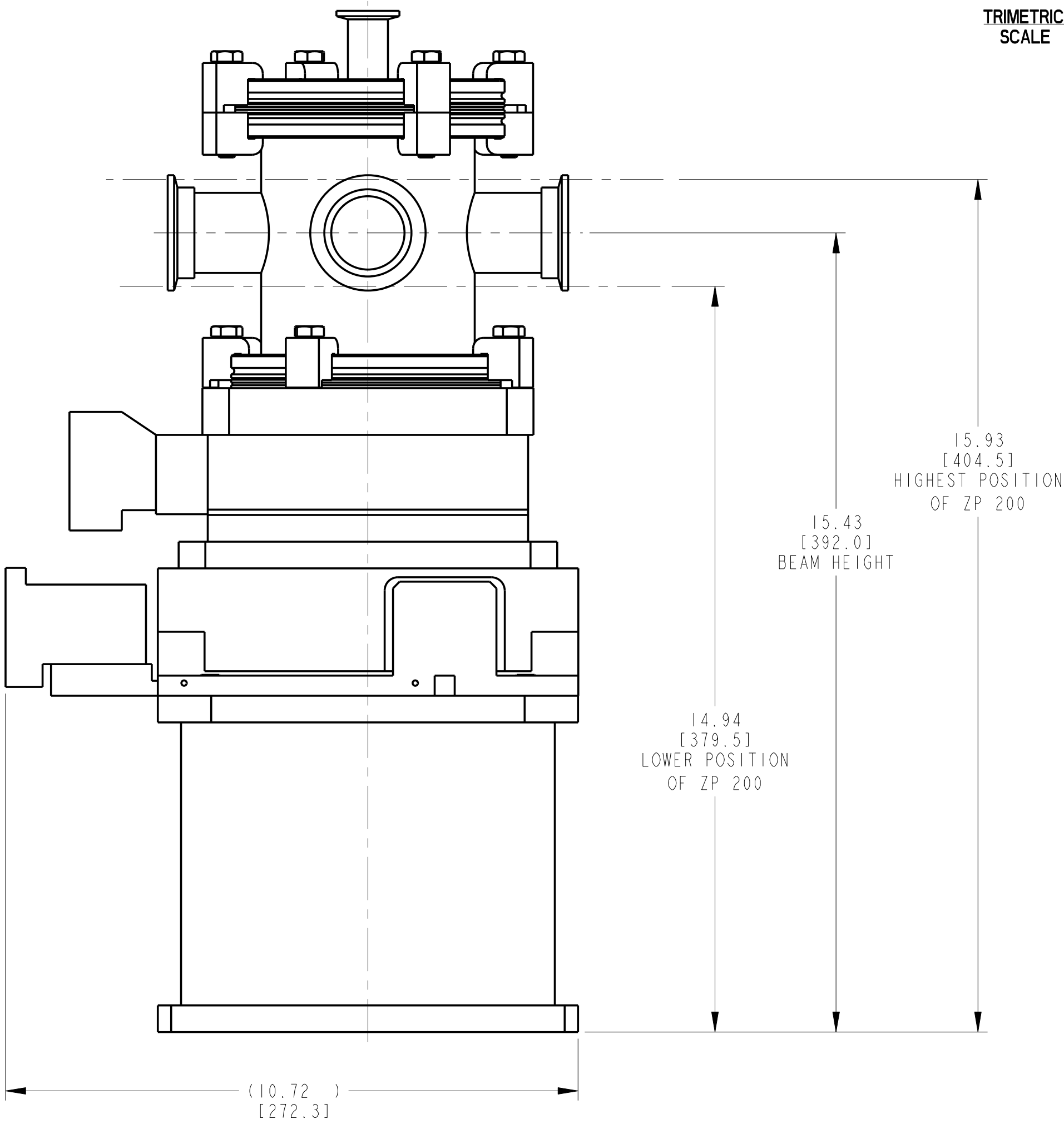
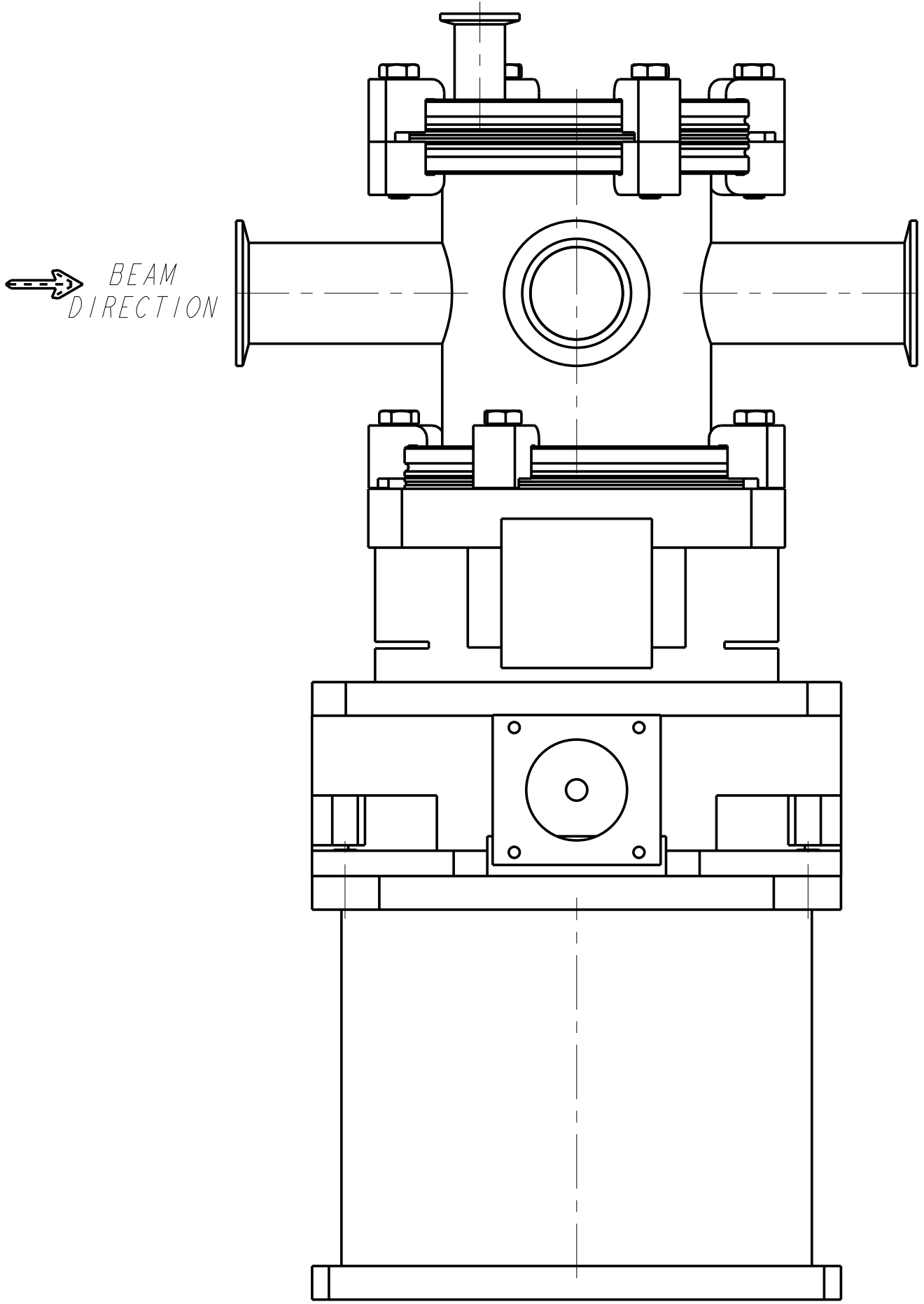
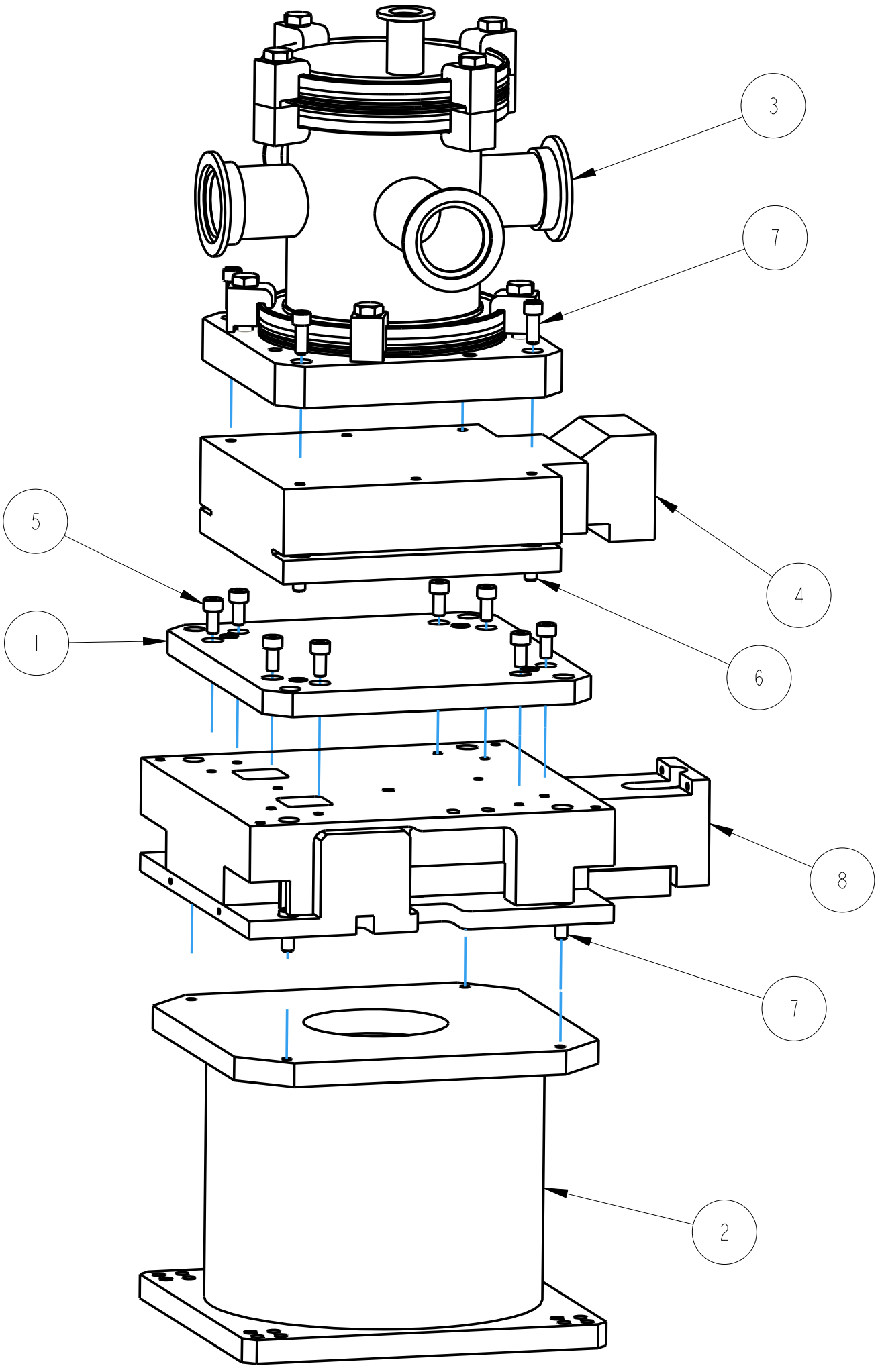
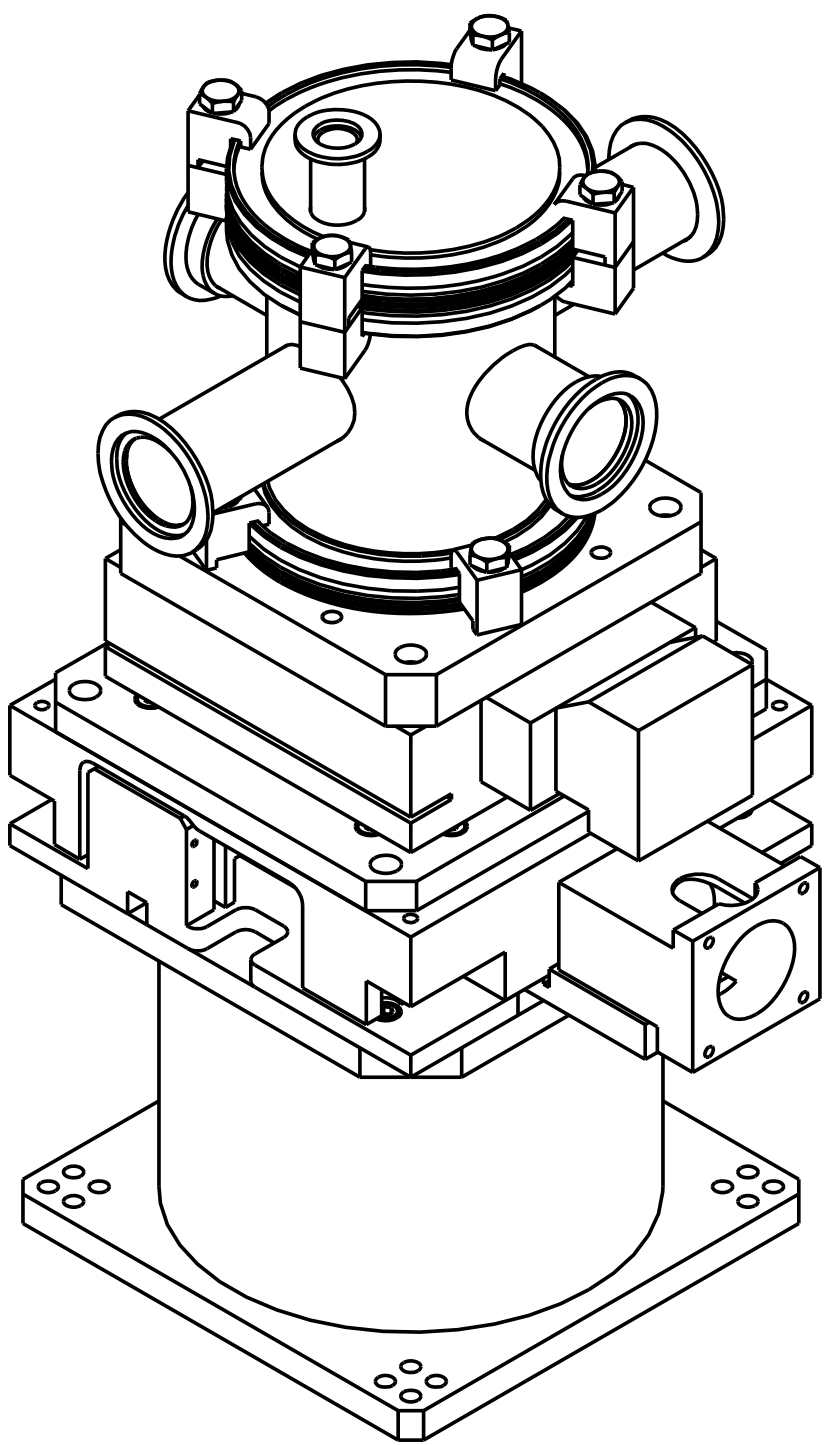
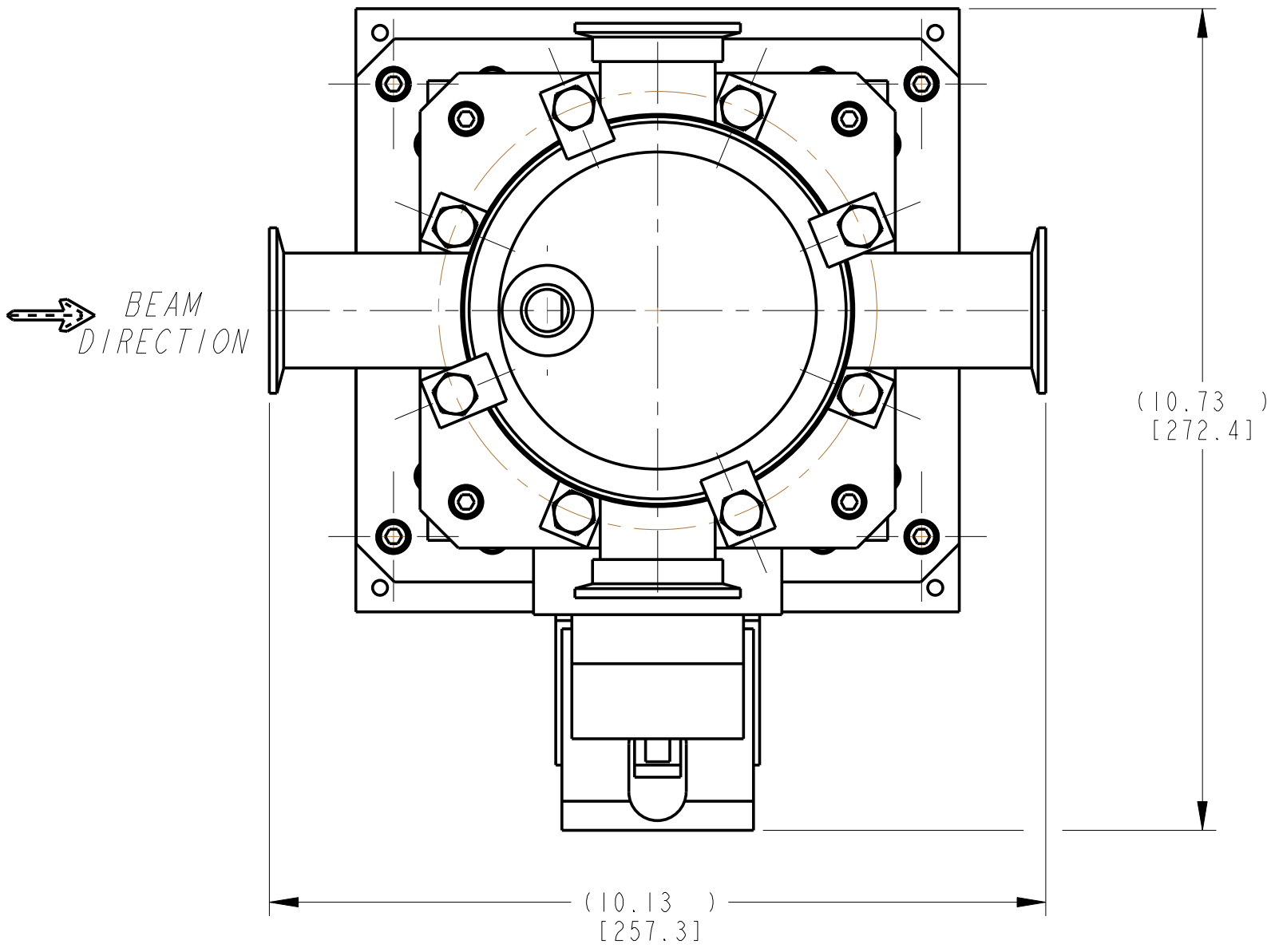


REVISIONS					
ZONE	REV	DESCRIPTION		BY	APPROVED DATE



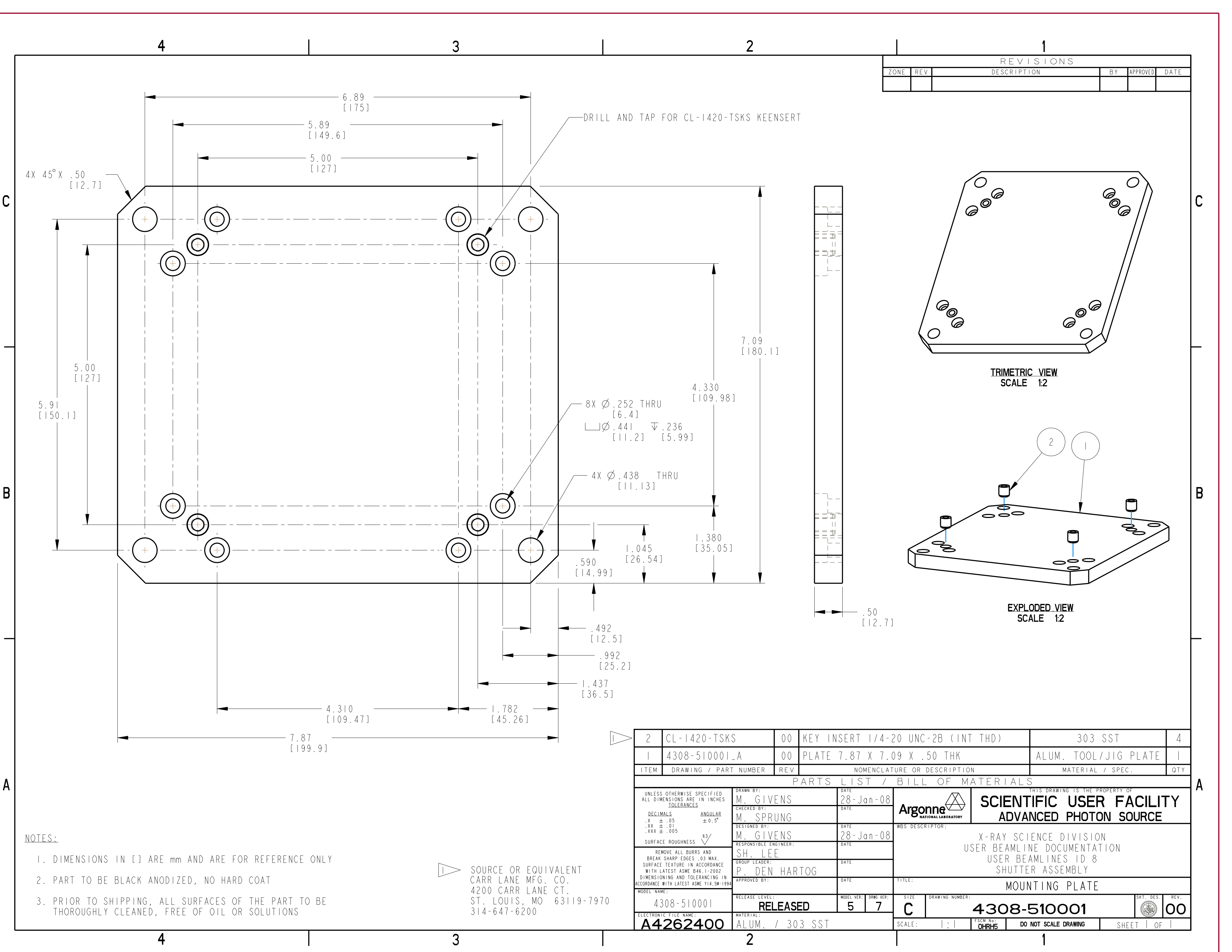
8	ZP200	00	VERTICAL LIFT	PURCHASE	1
7	92196A539	00	SHCS 1/4-20 UNC-2A X .63 LG	18-8 SST	8
6	92196A537	00	SHCS 1/4-20 UNC-2A X .50 LG	18-8 SST	4
5	91292A134	00	SHCS M6 X 1.0 X 12mm LG	18-8 SST	8
4	106004	00	STAGE BALL BEARING SERIES 100-BT	PURCHASE	1
3	4308-512000	00	VACUUM CHAMBER ASSEMBLY		1
2	4308-511000	00	SHUTTER SUPPORT WELDMENT		1
1	4308-510001	00	MOUNTING PLATE	ALUM. / 303 SST	1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY

PARTS LIST / BILL OF MATERIALS

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES: DECIMALS .1 ± .1 XX ± .03 .XXX ± .010 SURFACE ROUGHNESS 125/✓		DRAWN BY: M. GIVENS CHECKED BY: M. SPRUNG DESIGNED BY: M. GIVENS RESPONSIBLE ENGINEER: SH. LEE GROUP LEADER: P. DEN HARTOG APPROVED BY: [Signature]	DATE: 28-Jan-08 DATE: 28-Jan-08 DATE: 28-Jan-08 DATE: 28-Jan-08 DATE: 28-Jan-08 DATE: 28-Jan-08	THIS DRAWING IS THE PROPERTY OF Argonne NATIONAL LABORATORY SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994.			WBS DESCRIPTION: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 V9 VACUUM CHAMBER		
MODEL NAME: 4308-510000		RELEASE LEVEL: RELEASED		TITLE: SHUTTER ASSEMBLY	
ELECTRONIC FILE NAME: A4262300		MATERIAL: SEE PARTS LIST		SIZE: D DRAWING NUMBER: 4308-510000	
OHRHS		DO NOT SCALE DRAWING		SHEET 1 OF 1	

- NOTES:
- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
 - FILL BASE WITH SILICA SAND (McMASTER CARR #3164K11 OR EQUIVALENT) IF NECESSARY

- 1 SOURCE OR EQUIVALENT
PARKER HANNIFIN
1140 SANDY HILL ROAD
IRWIN, PA 15642
800-245-6903
- 2 SOURCE OR EQUIVALENT
McMASTER-CARR
P.O. BOX 4355
CHICAGO, IL 60680-4355
630-883-0300



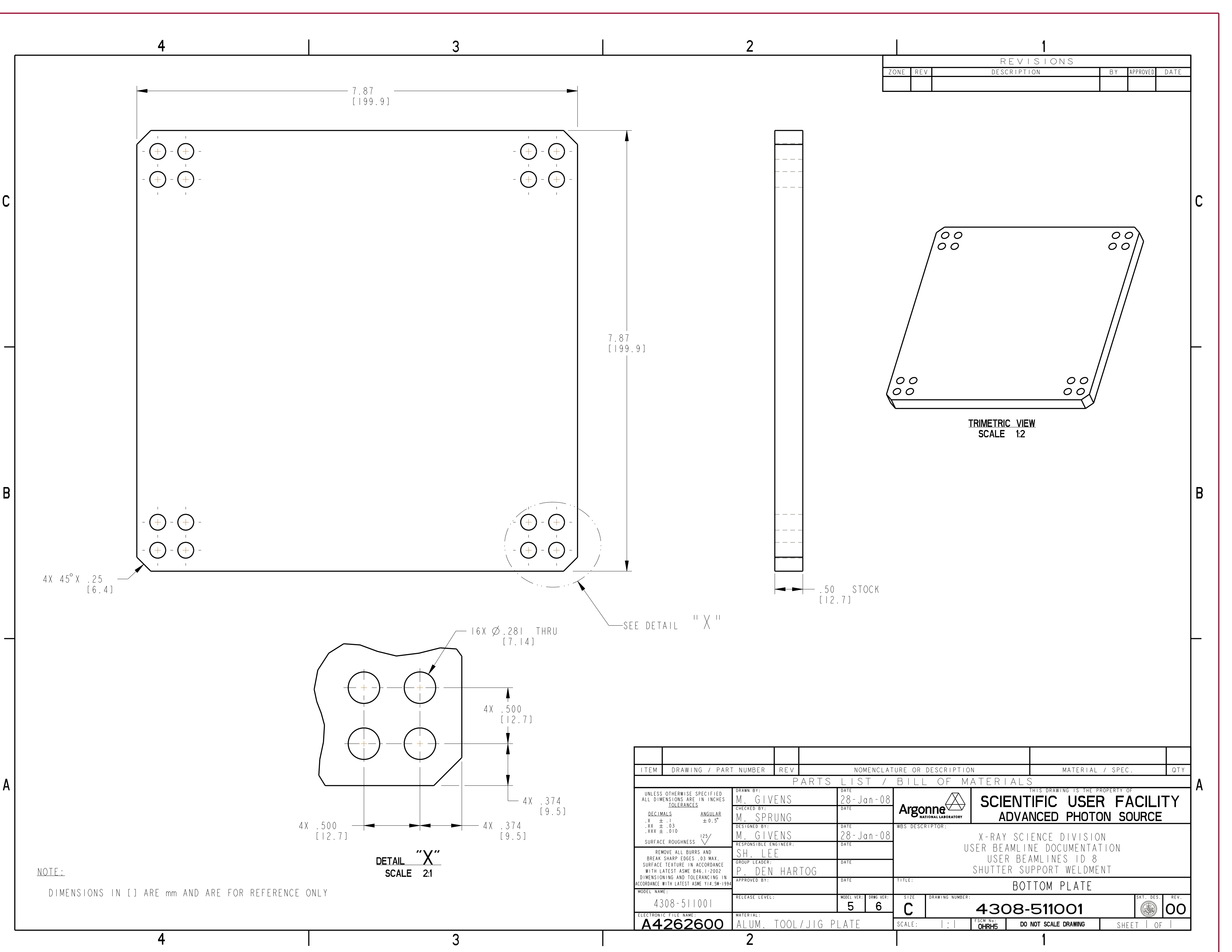
REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE

NOTES:

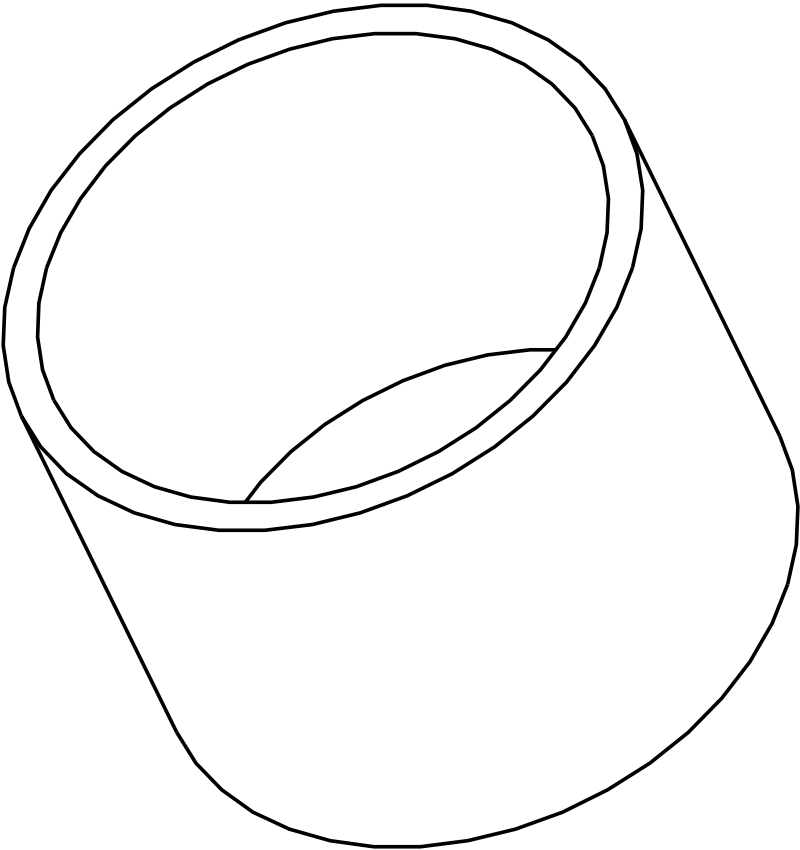
- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- PART TO BE BLACK ANODIZED, NO HARD COAT
- PRIOR TO SHIPPING, ALL SURFACES OF THE PART TO BE THOROUGHLY CLEANED, FREE OF OIL OR SOLUTIONS

SOURCE OR EQUIVALENT
CARR LANE MFG. CO.
4200 CARR LANE CT.
ST. LOUIS, MO 63119-7970
314-647-6200

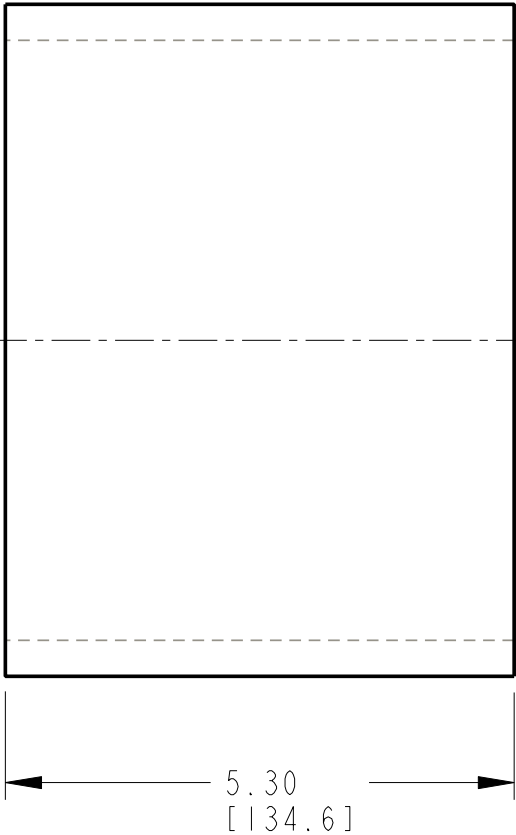
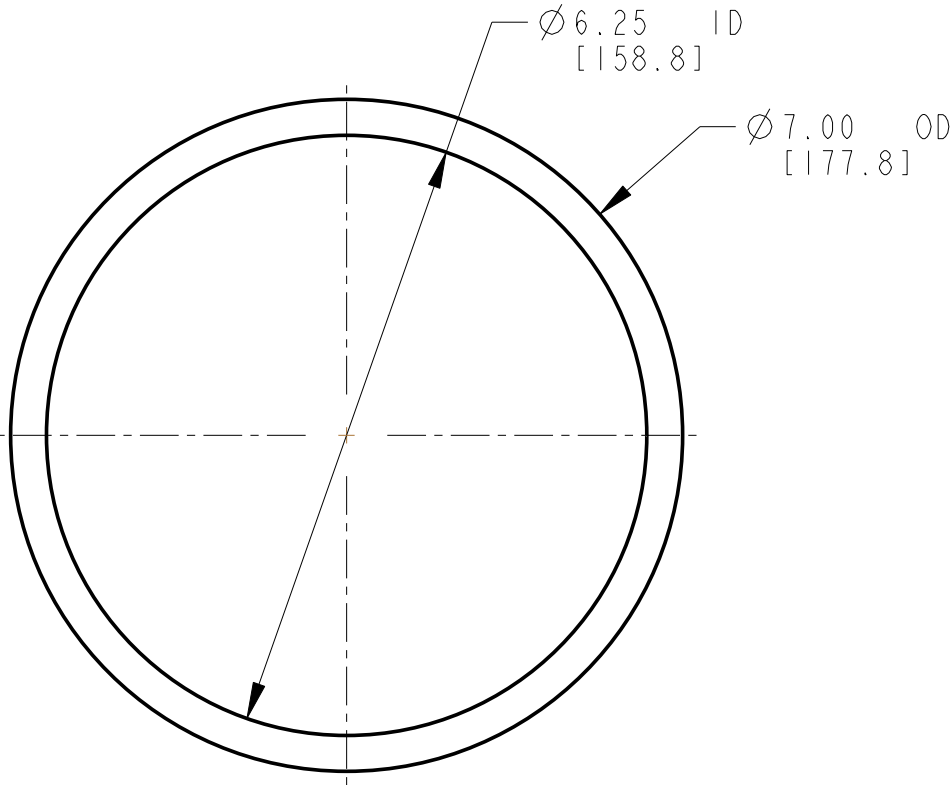
2	CL-1420-TSKS	00	KEY INSERT 1/4-20 UNC-2B (INT THD)	303 SST	4
1	4308-510001-A	00	PLATE 7.87 X 7.09 X .50 THK	ALUM. TOOL/JIG PLATE	1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES			THIS DRAWING IS THE PROPERTY OF		
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005			Argonne NATIONAL LABORATORY		
ANGULAR ± 0.5°			SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE		
SURFACE ROUGHNESS √63			WBS DESCRIPTOR:		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994			X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 SHUTTER ASSEMBLY		
MODEL NAME:			TITLE:		
4308-510001			MOUNTING PLATE		
ELECTRONIC FILE NAME:			SIZE		
A4262400			C		
MATERIAL:			DRAWING NUMBER:		
ALUM. / 303 SST			4308-510001		
RELEASE LEVEL:			SCALE:		
RELEASED			1:1		
MODEL VER:			FSCM No:		
5			OHRHS		
DRWG VER:			DO NOT SCALE DRAWING		
7			SHEET 1 OF 1		
SKT. DES.			REV.		
00			00		



REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE



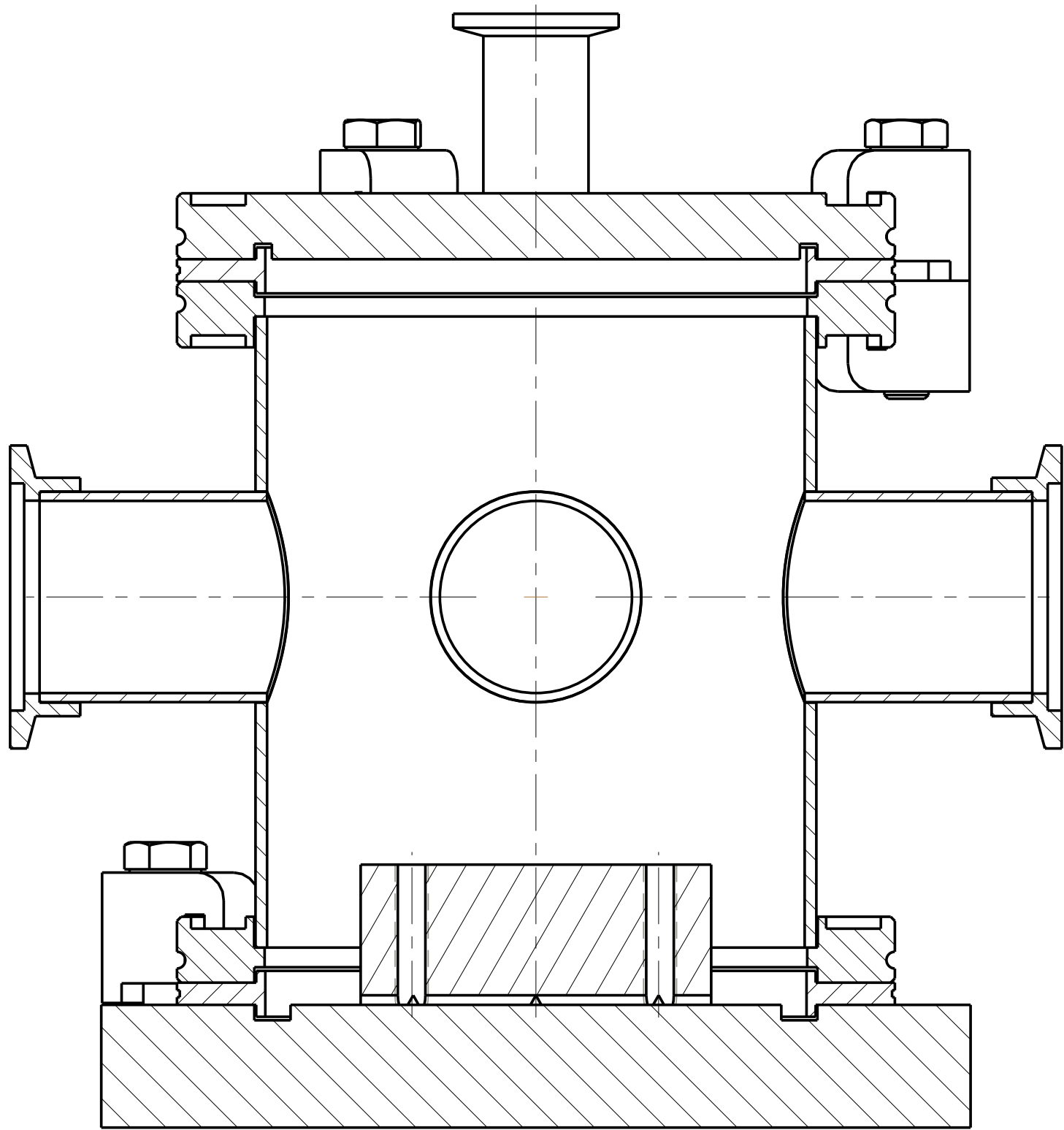
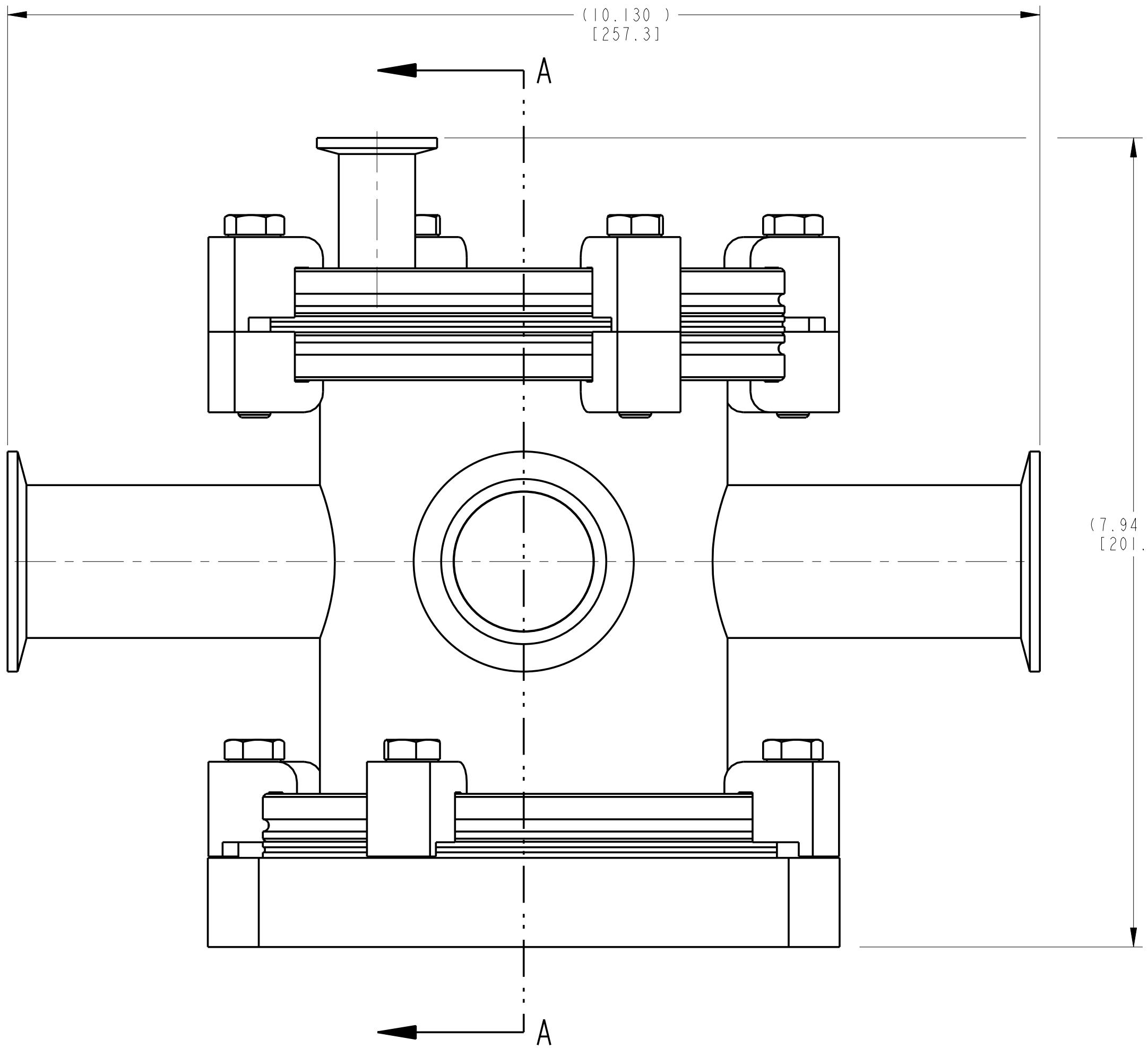
TRIMETRIC VIEW
SCALE 1:2



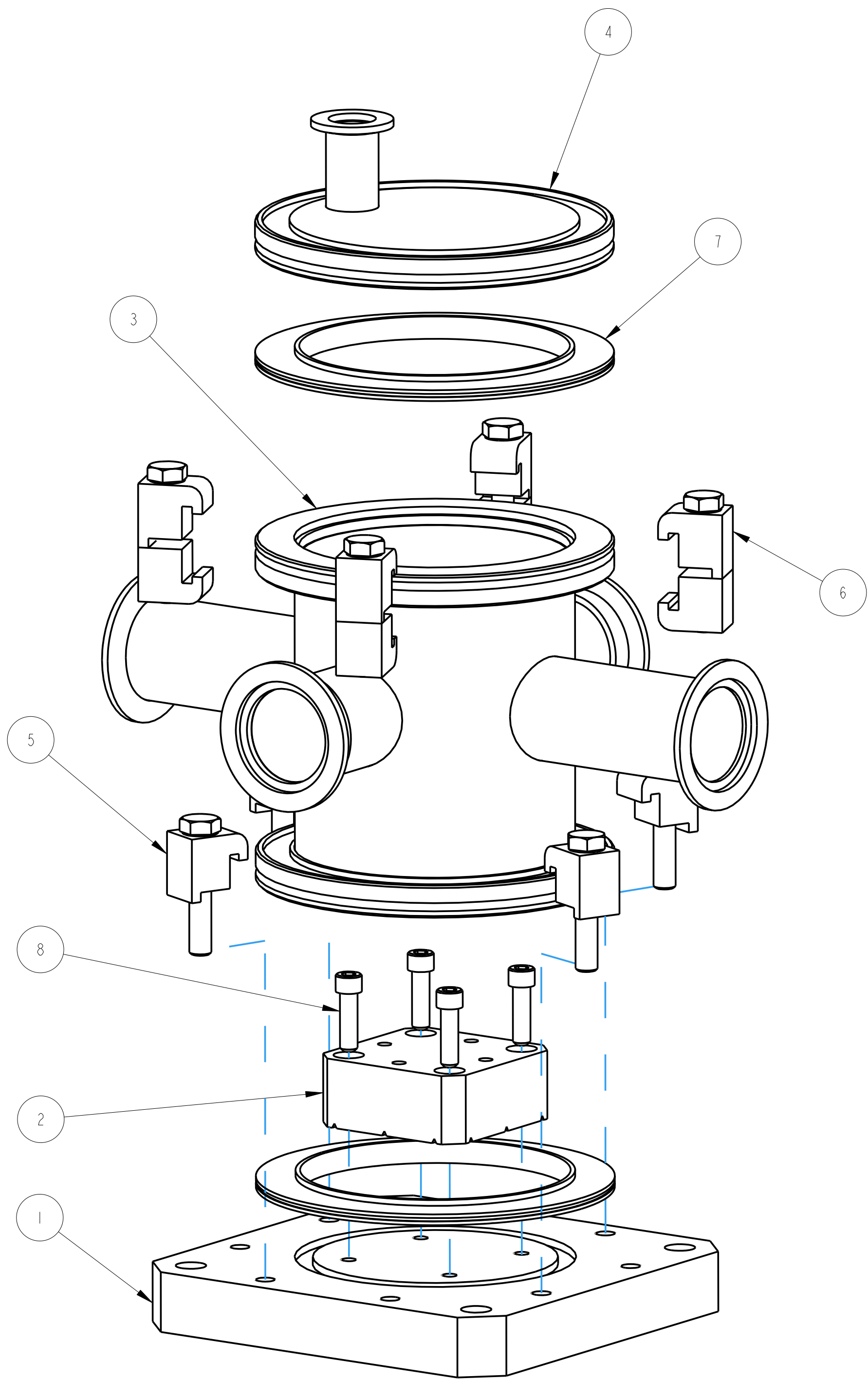
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS					
<div>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES</div> <div>DECIMALS ANGULAR .X ± .1 ± 0.5° .XX ± .03 .XXX ± .010</div> <div>SURFACE ROUGHNESS </div> <div>REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994</div>		DRAWN BY: M. GIVENS	DATE 25-Jan-08	<div> Argonne NATIONAL LABORATORY</div> <div>THIS DRAWING IS THE PROPERTY OF SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE</div>	
		CHECKED BY: M. SPRUNG	DATE		
		DESIGNED BY: M. GIVENS	DATE 25-Jan-08	WBS DESCRIPTOR: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 SHUTTER SUPPORT WELDMENT	
		RESPONSIBLE ENGINEER: SH. LEE	DATE		
		GROUP LEADER: P. DEN HARTOG	DATE		
MODEL NAME: 4308-511003		APPROVED BY:	DATE	TITLE: TUBE	
ELECTRONIC FILE NAME: A4262800		RELEASE LEVEL: WIP	MODEL VER: 6	DRWG VER: 8	SIZE B
MATERIAL: ALUM. 6061-T6		DRAWING NUMBER: 4308-511003		SKT. DES. 	REV. 00
SCALE: 1:2		FSCM No: OHRH5	DO NOT SCALE DRAWING		SHEET 1 OF 1

NOTE:
DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY

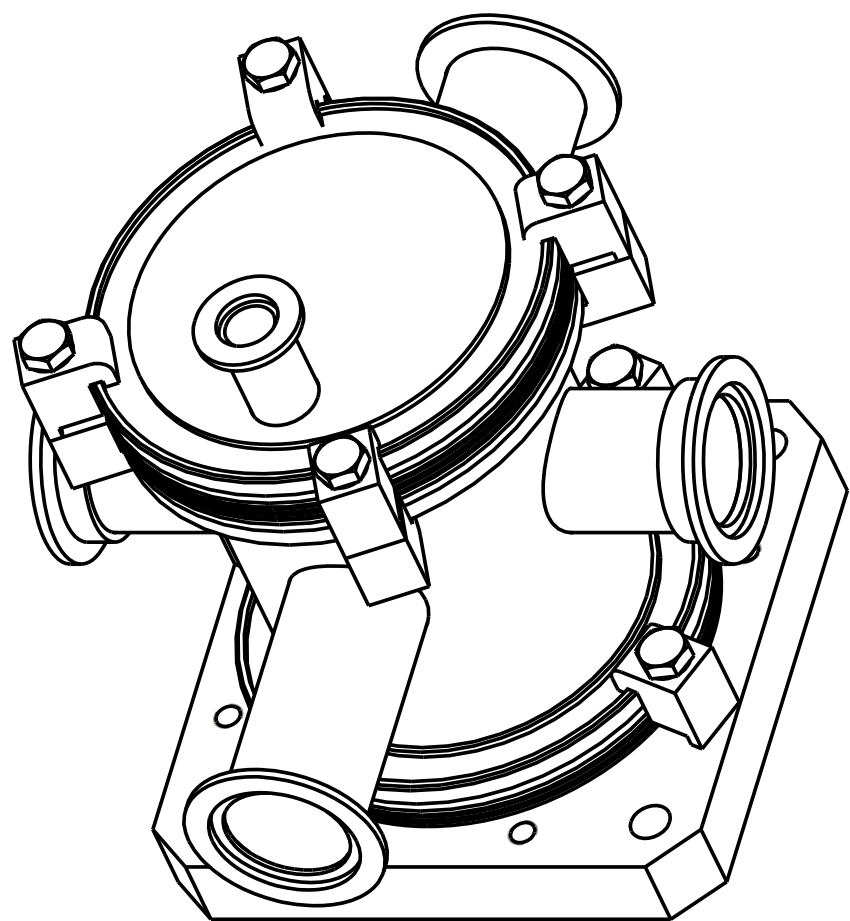
REVISIONS					
ZONE	REV	DESCRIPTION		BY	APPROVED DATE



SECTION A-A



EXPLODED VIEW
SCALE 3/4



TRIMETRIC VIEW
SCALE 1/2

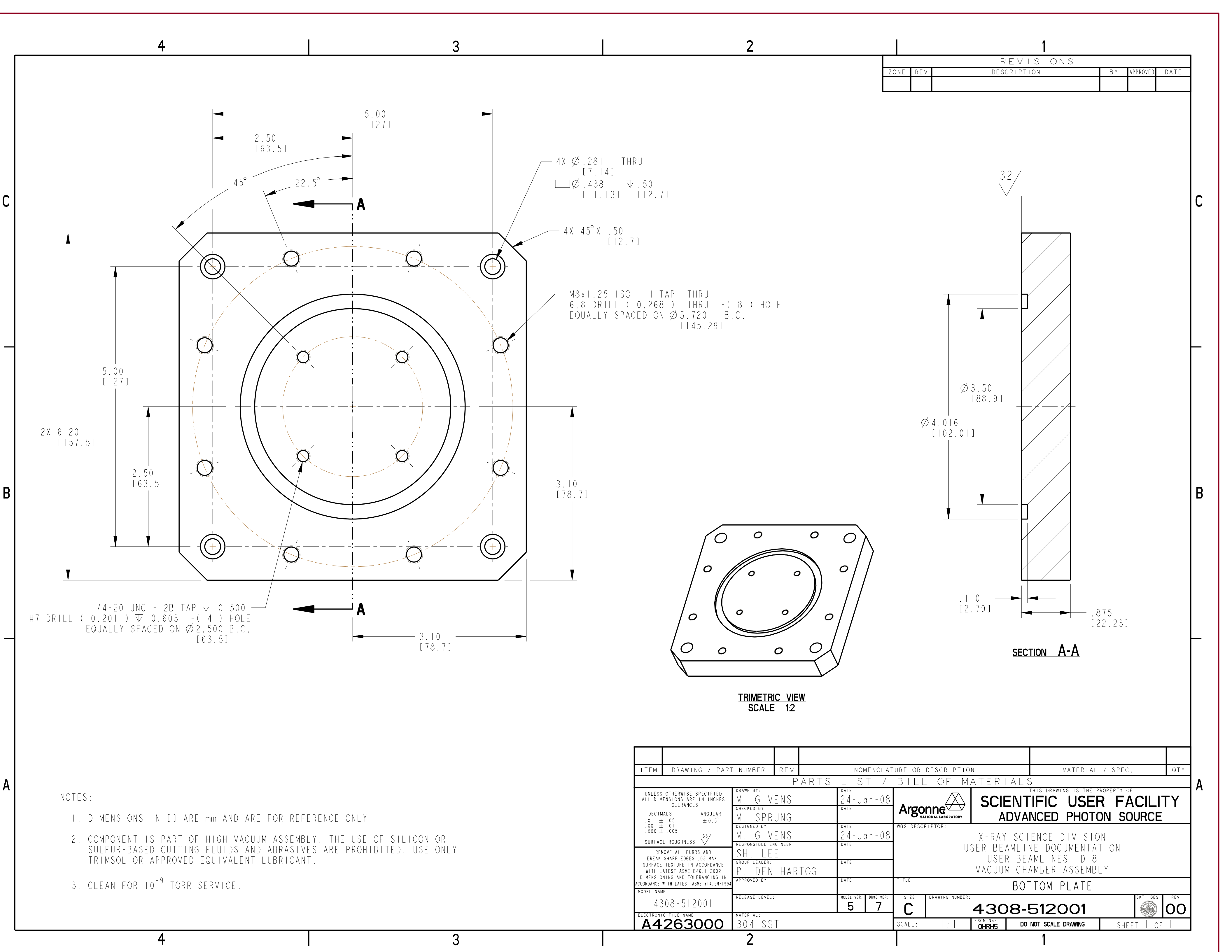
NOTES:

1. DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
2. PROTECT FLANGES WITH FOIL AND PLASTIC CAPS

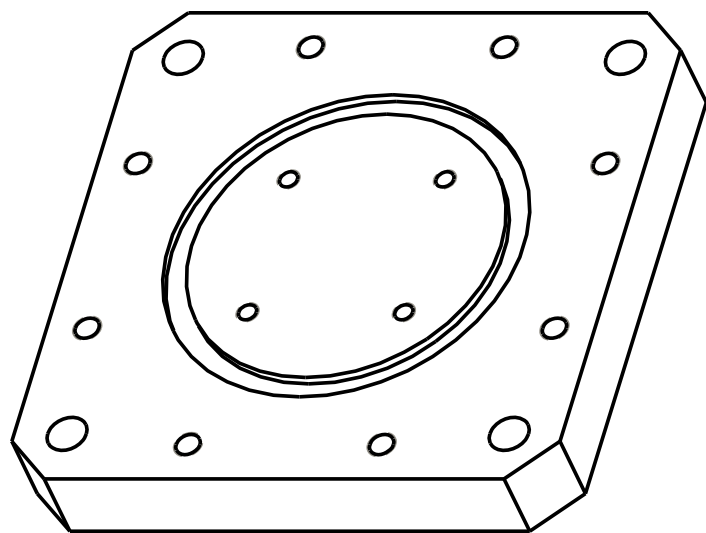
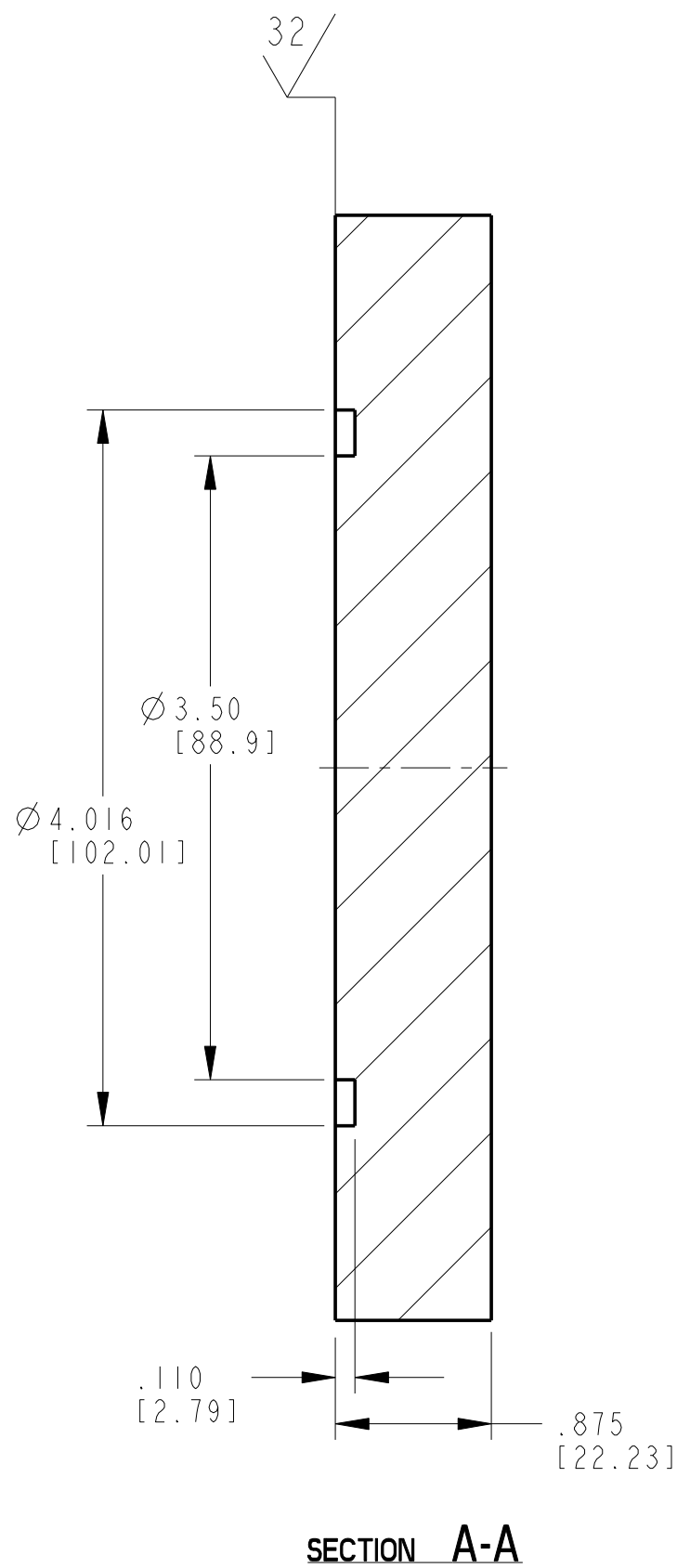
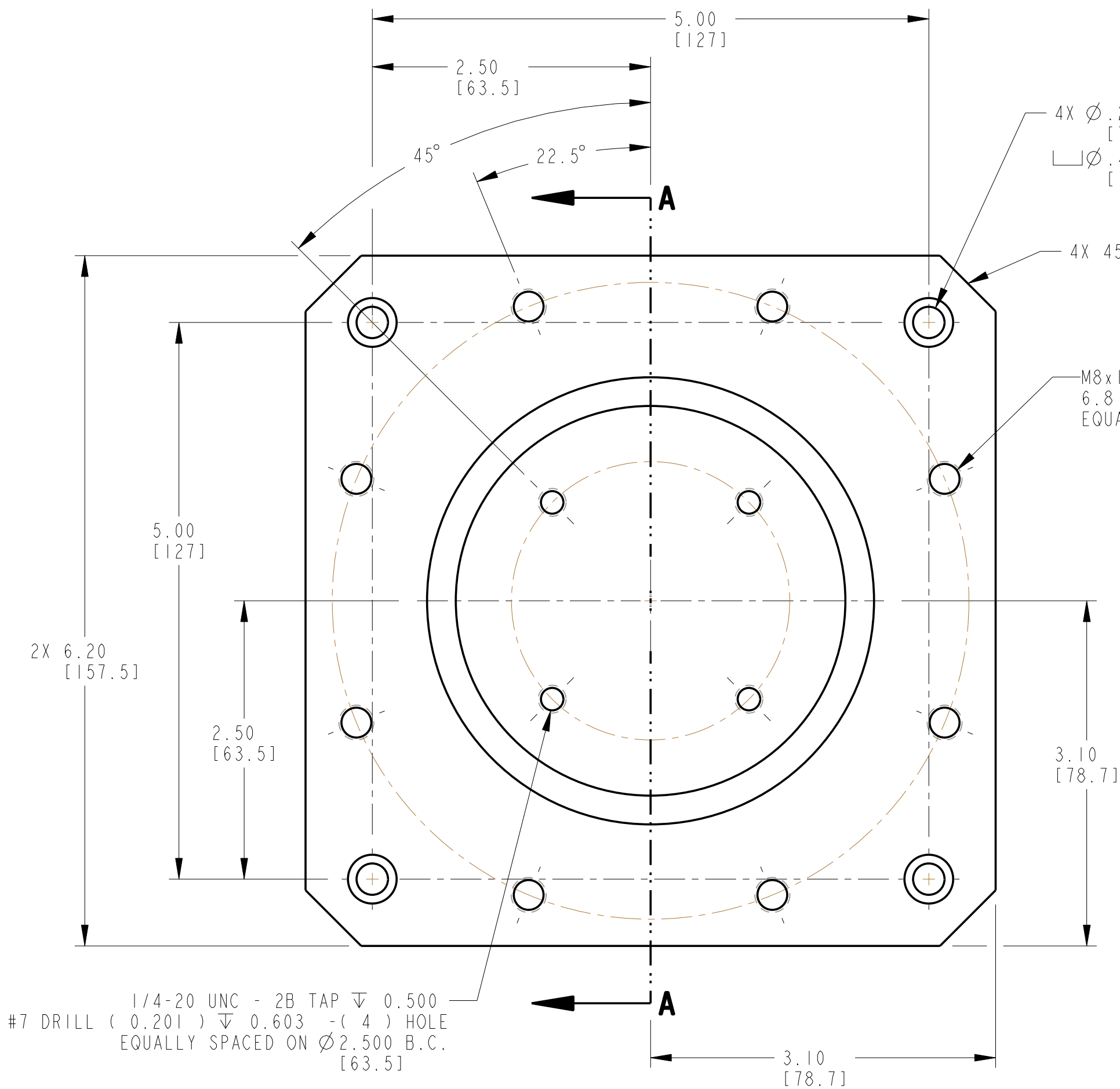
1 SOURCE OR EQUIVALENT
VACUUM ONE (MDC/ISI)
2502 NORTH CLARK STREET
CHICAGO, IL 60614
773-244-3102

2 SOURCE OR EQUIVALENT
McMASTER-CARR
P.O. BOX 4355
CHICAGO, IL 60680-4355
630-883-0300

ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
8	93235A541	00	SHCS 1/4-20 UNC-3A X .875 LG (VENTED)	18-8 SST	4
7	810001	00	CENTERING RING ASSEMBLY	PURCHASE	2
6	802000	00	CLAMP DOUBLE CLAW	PURCHASE	4
5	801000	00	CLAMP SINGLE CLAW	PURCHASE	4
4	4308-512200	00	TOP FLANGE WELDMENT	304 SST	1
3	4308-512100	00	CHAMBER WELDMENT	304 SST	1
2	4308-512002	00	SAMPLE MOUNTING PLATE	304 SST	1
1	4308-512001	00	BOTTOM PLATE	304 SST	1
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS .1 ± .1 .1XX ± .03 .1XXX ± .010 SURFACE ROUGHNESS 63/			THIS DRAWING IS THE PROPERTY OF Argonne NATIONAL LABORATORY SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 SHUTTER ASSEMBLY VACUUM CHAMBER ASSEMBLY		
DRAWN BY: M. GIVENS CHECKED BY: M. SPRUNG DESIGNED BY: M. GIVENS RESPONSIBLE ENGINEER: SH. LEE GROUP LEADER: D. DEN HARTOG APPROVED BY: [Signature]			DATE: 25-Jan-08 DATE: 25-Jan-08 DATE: 25-Jan-08 DATE: 25-Jan-08 DATE: 25-Jan-08 DATE: 25-Jan-08		
MODEL NAME: 4308-512000 ELECTRONIC FILE NAME: A4262900			RELEASE LEVEL: RELEASED MATERIAL: SEE PARTS LIST MODEL VER: 6 DWG VER: 6		
SIZE: D DRAWING NUMBER: 4308-512000 SCALE: 1:1			SAT. DES. REV. 00 SHEET 1 OF 1		



REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE

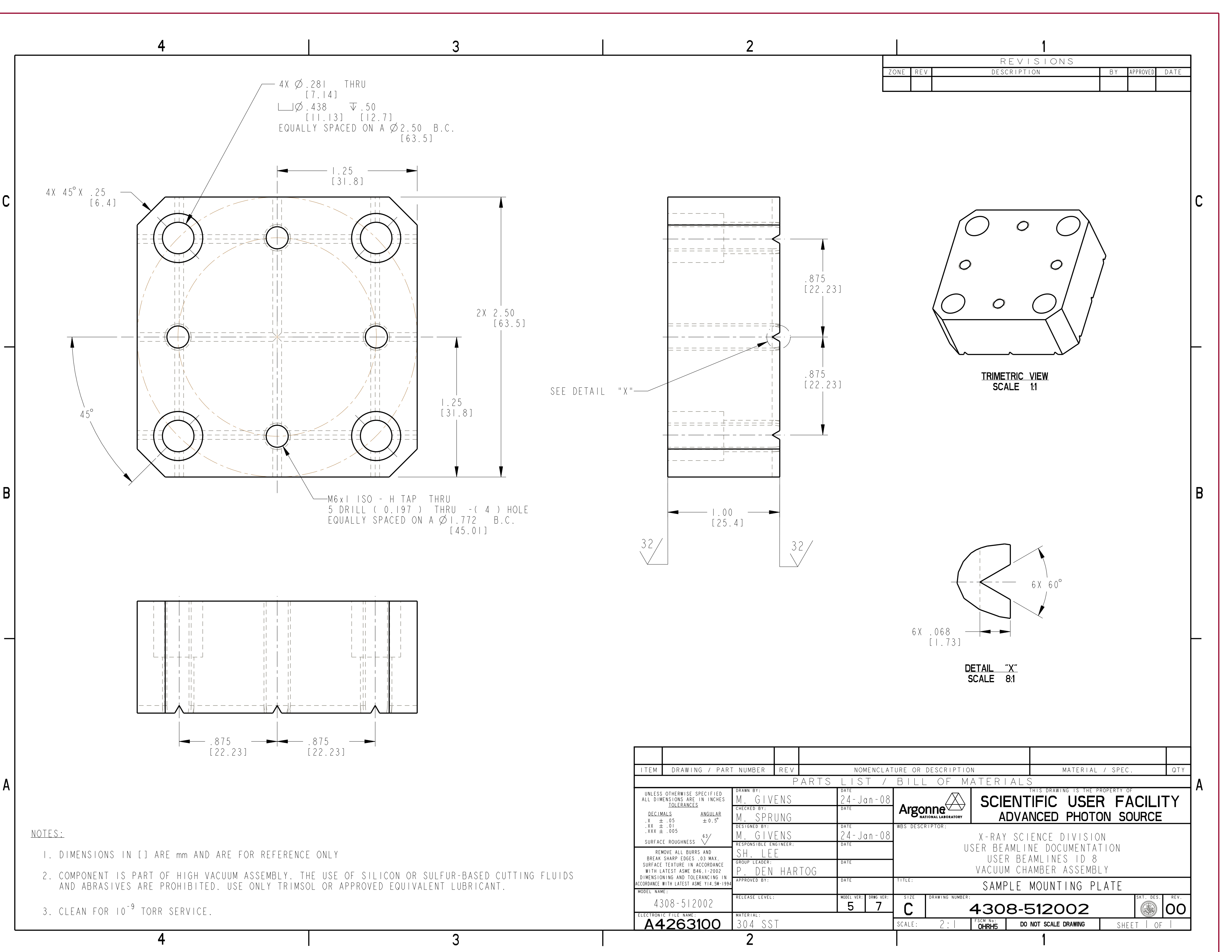


TRIMETRIC VIEW
SCALE 1:2

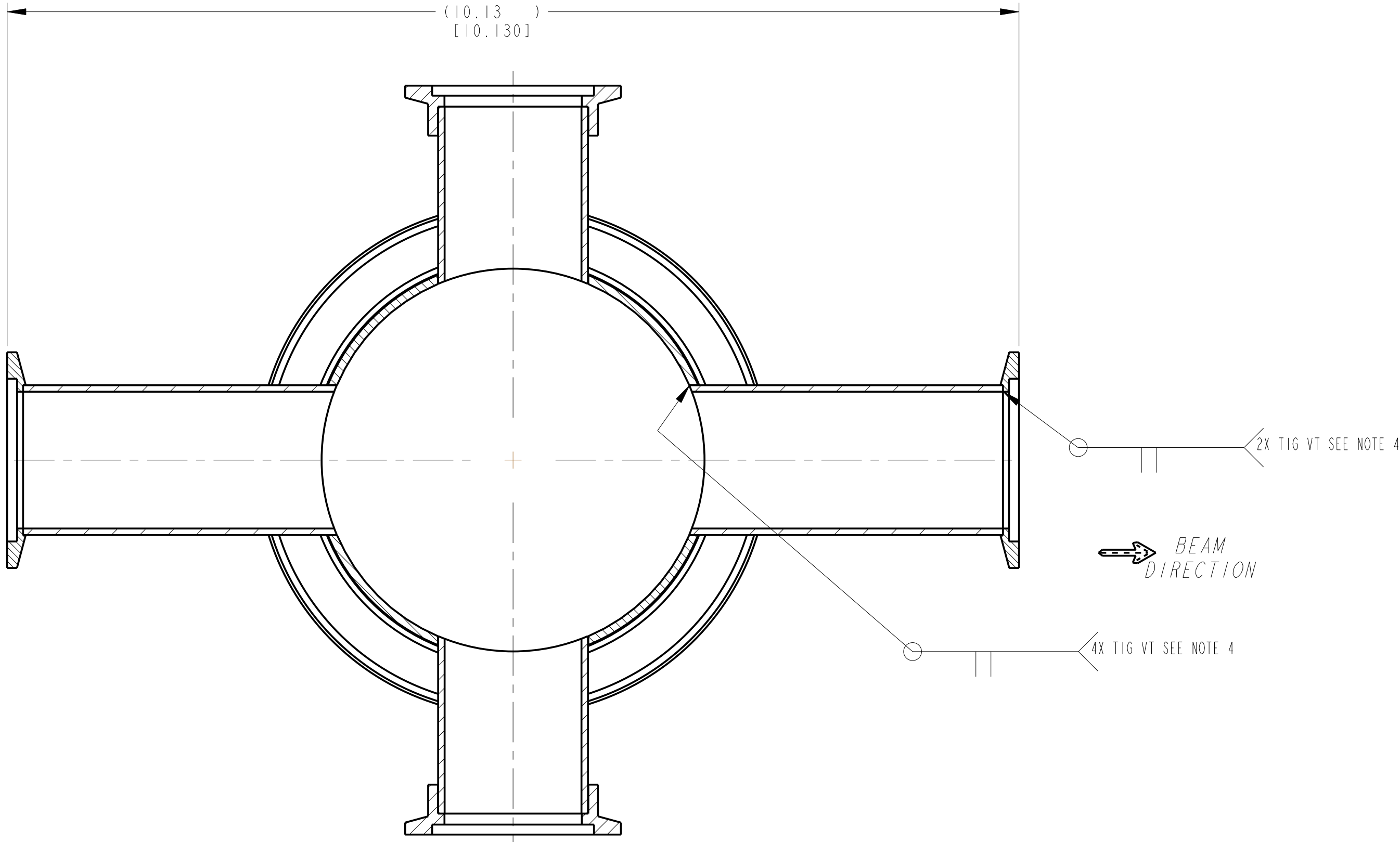
NOTES:

- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- COMPONENT IS PART OF HIGH VACUUM ASSEMBLY. THE USE OF SILICON OR SULFUR-BASED CUTTING FLUIDS AND ABRASIVES ARE PROHIBITED. USE ONLY TRIMSOL OR APPROVED EQUIVALENT LUBRICANT.
- CLEAN FOR 10⁻⁹ TORR SERVICE.

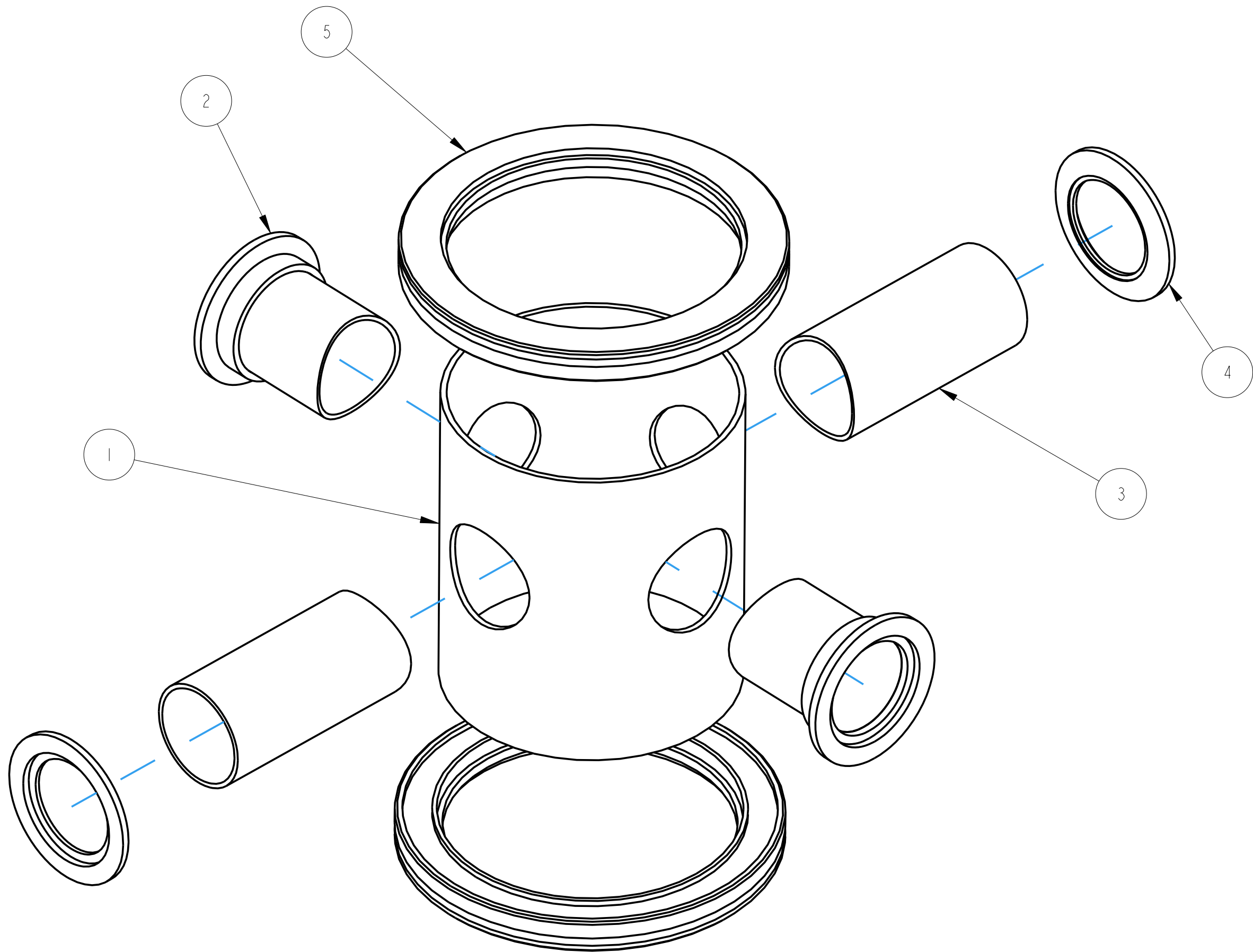
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION		MATERIAL / SPEC. QTY
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES		DRAWN BY: M. GIVENS	DATE 24-Jan-08	<div>THIS DRAWING IS THE PROPERTY OF SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE</div> <div>WBS DESCRIPTOR: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 VACUUM CHAMBER ASSEMBLY</div> <div>TITLE: BOTTOM PLATE</div>	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	ANGULAR ± 0.5° 63/	CHECKED BY: M. SPRUNG	DATE		
SURFACE ROUGHNESS		DESIGNED BY: M. GIVENS	DATE 24-Jan-08		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994		RESPONSIBLE ENGINEER: SH. LEE	DATE		
MODEL NAME: 4308-512001		GROUP LEADER: P. DEN HARTOG	DATE		
ELECTRONIC FILE NAME: A4263000		APPROVED BY:	DATE	SIZE C	
MATERIAL: 304 SST		RELEASE LEVEL:	MODEL VER: 5	DWG VER: 7	DRAWING NUMBER: 4308-512001
		SCALE: 1:1		FSCM No: OHRHS	DO NOT SCALE DRAWING
				SKT. DES. 00	REV. 00
				SHEET 1 OF 1	



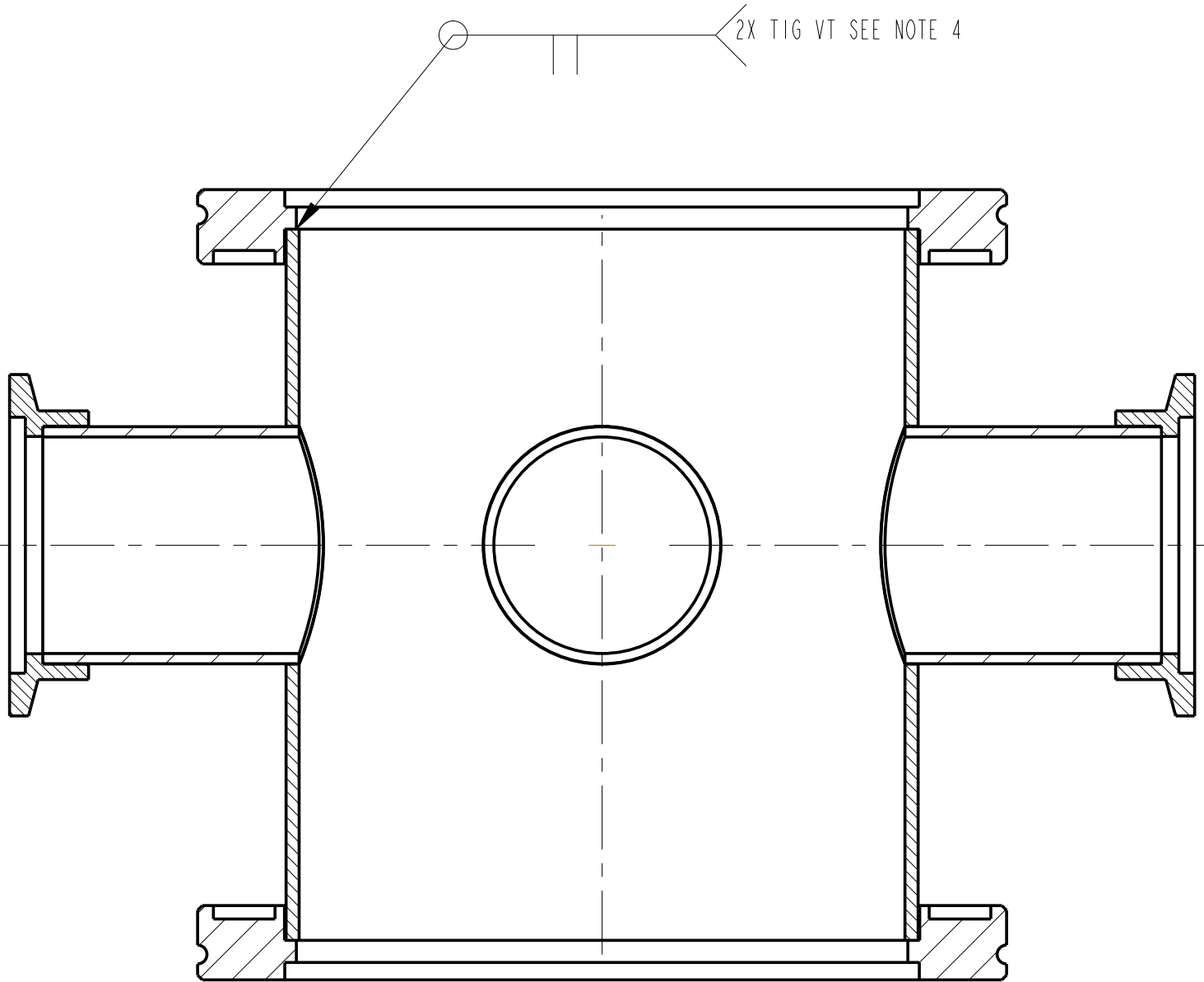
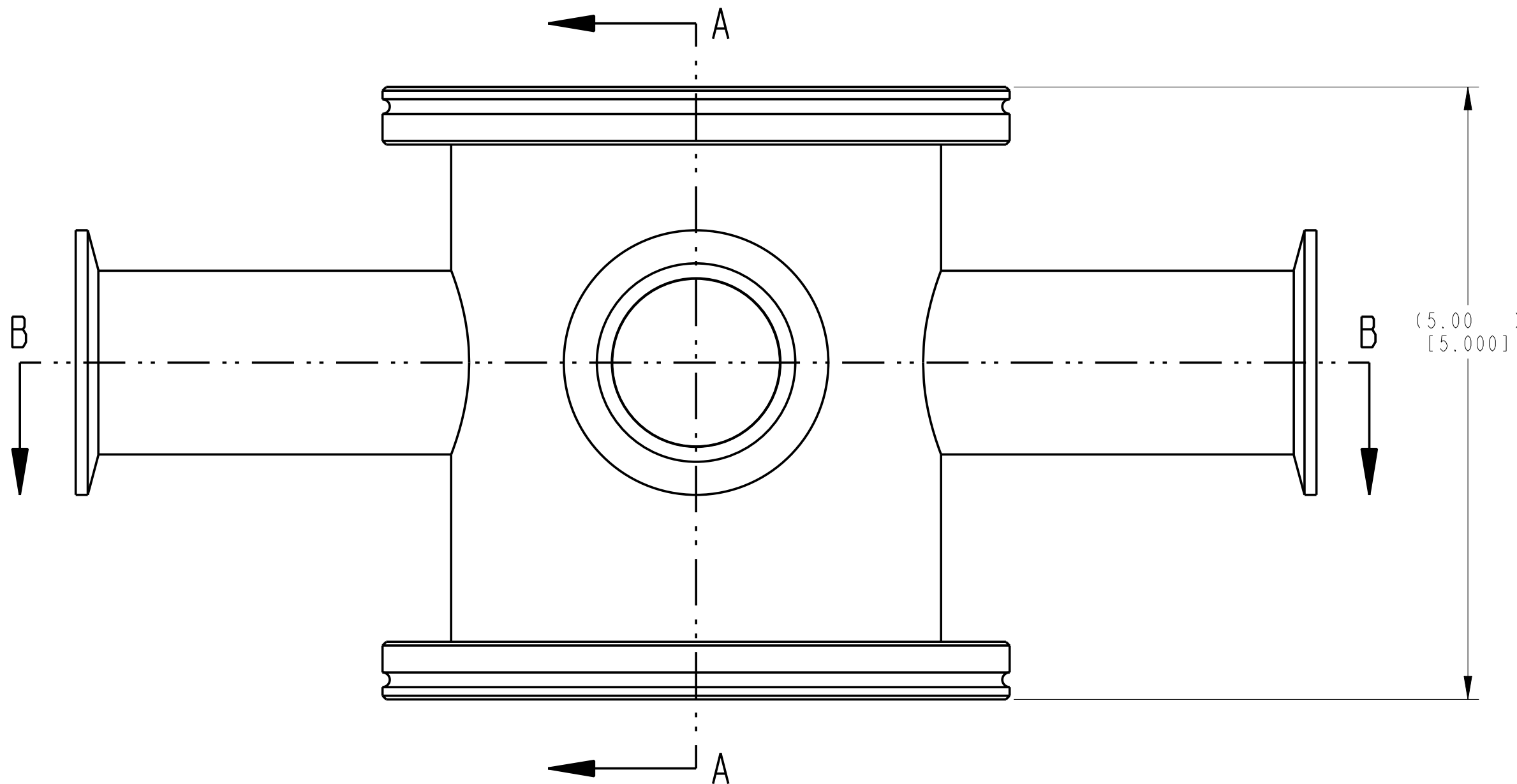
REVISIONS					
ZONE	REV	DESCRIPTION		BY	DATE



SECTION B-B



EXPLODED VIEW
SCALE 3/4



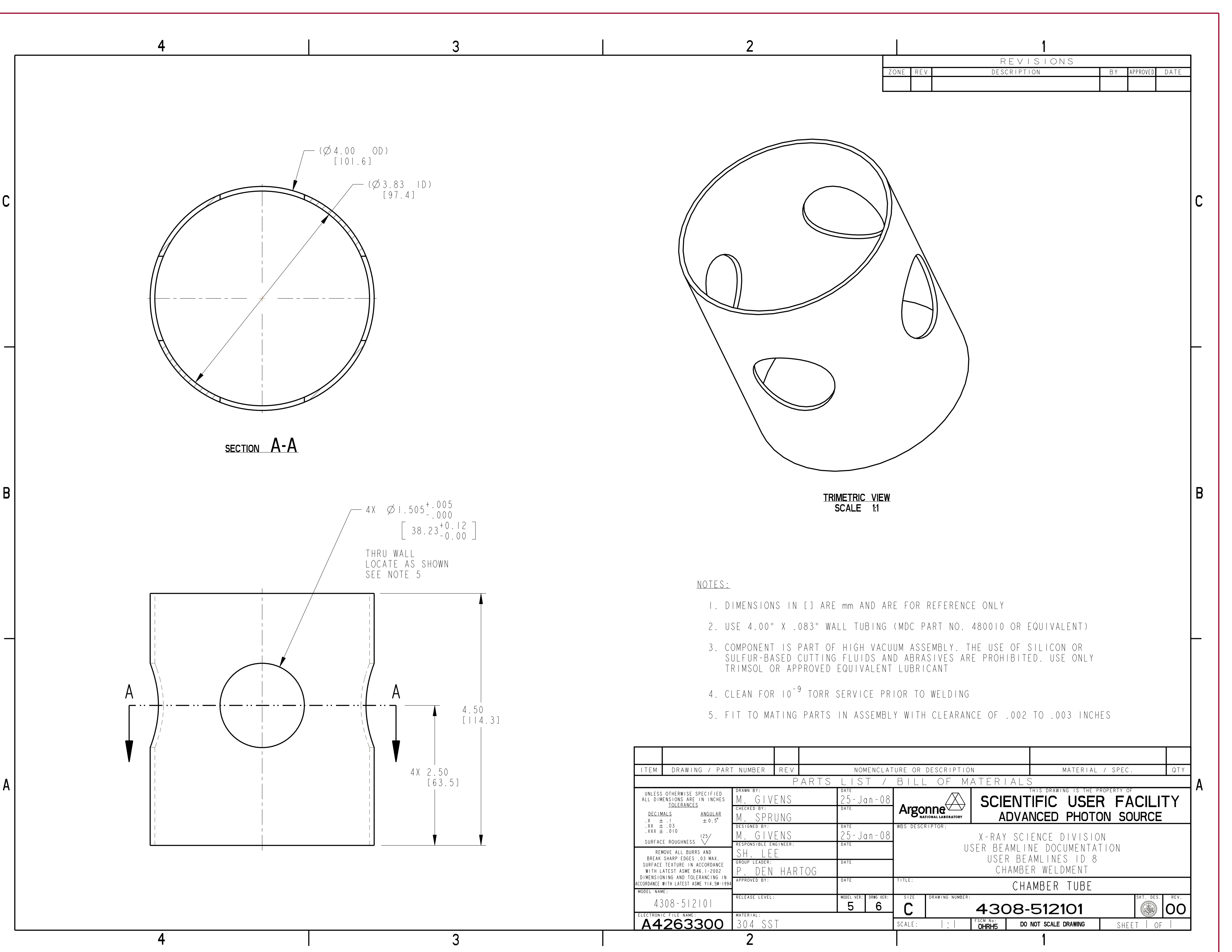
SECTION A-A

NOTES:



- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- COMPONENT IS PART OF HIGH VACUUM ASSEMBLY. THE USE OF SILICON OR SULFUR-BASED CUTTING FLUIDS AND ABRASIVES ARE PROHIBITED. USE ONLY TRIMSOL OR APPROVED EQUIVALENT LUBRICANT
- PRIOR TO WELDING, ALL PARTS MUST BE CLEANED FOR 10^{-9} TORR SERVICE.
- VT IS VACUUM-TIGHT, LEAK CHECK: NO DETECTABLE LEAKS WHEN TESTING AT 2×10^{-9} STD CC/SEC OF HELIUM LEVEL
- BAKE AT 150°C BEFORE INSTALLATION
- PROTECT FLANGES WITH FOIL AND PLASTIC CAPS

5	813001	00	FLANGE ISO NW100 WELD	304 SST	2
4	713016	00	NW 40 ISO FLANGE- 1.5" TUBE OD	304 SST	2
3	4308-512103	00	TUBE MACHINING	304 SST	2
2	4308-512102	00	HALF NIPPLE MACHINING	304 SST	2
1	4308-512101	00	CHAMBER TUBE	304 SST	1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES			THIS DRAWING IS THE PROPERTY OF		
DECIMALS ± .01 ANGULAR ± 0.5° .XX ± .03 .XXX ± .010		DRAWN BY: M. GIVENS CHECKED BY: M. SPRUNG DESIGNED BY: M. GIVENS RESPONSIBLE ENGINEER: SH. LEE GROUP LEADER: P. DEN HARTOG APPROVED BY:		DATE: 25-Jan-08 DATE: 25-Jan-08 DATE: DATE: DATE:	
SURFACE ROUGHNESS 63/ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994		Argonne NATIONAL LABORATORY		SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE	
		WBS DESCRIPTION:		X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 SHUTTER ASSEMBLY	
MODEL NAME: 4308-512100		RELEASE LEVEL: RELEASED		MODEL VER: 5 DWG VER: 6	
ELECTRONIC FILE NAME: A4263200		MATERIAL: 304 SST		SIZE: D DRAWING NUMBER: 4308-512100	
		SCALE: 1:1		DO NOT SCALE DRAWING	
		FSCM NO. OHRHS		SHEET 1 OF 1	
				REV: 00	

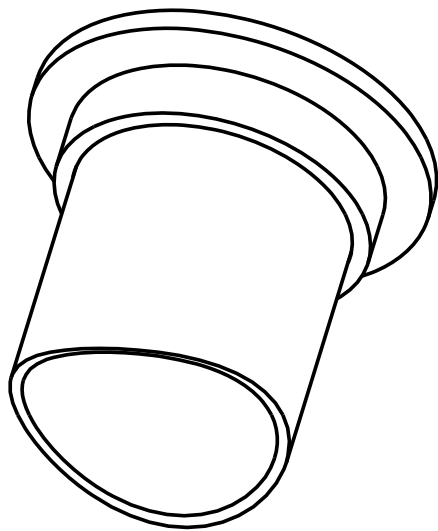
SOURCE OR EQUIVALENT
VACUUM ONE (MDC/ISI)
2502 NORTH CLARK STREET
CHICAGO, IL 60614
773-244-3102



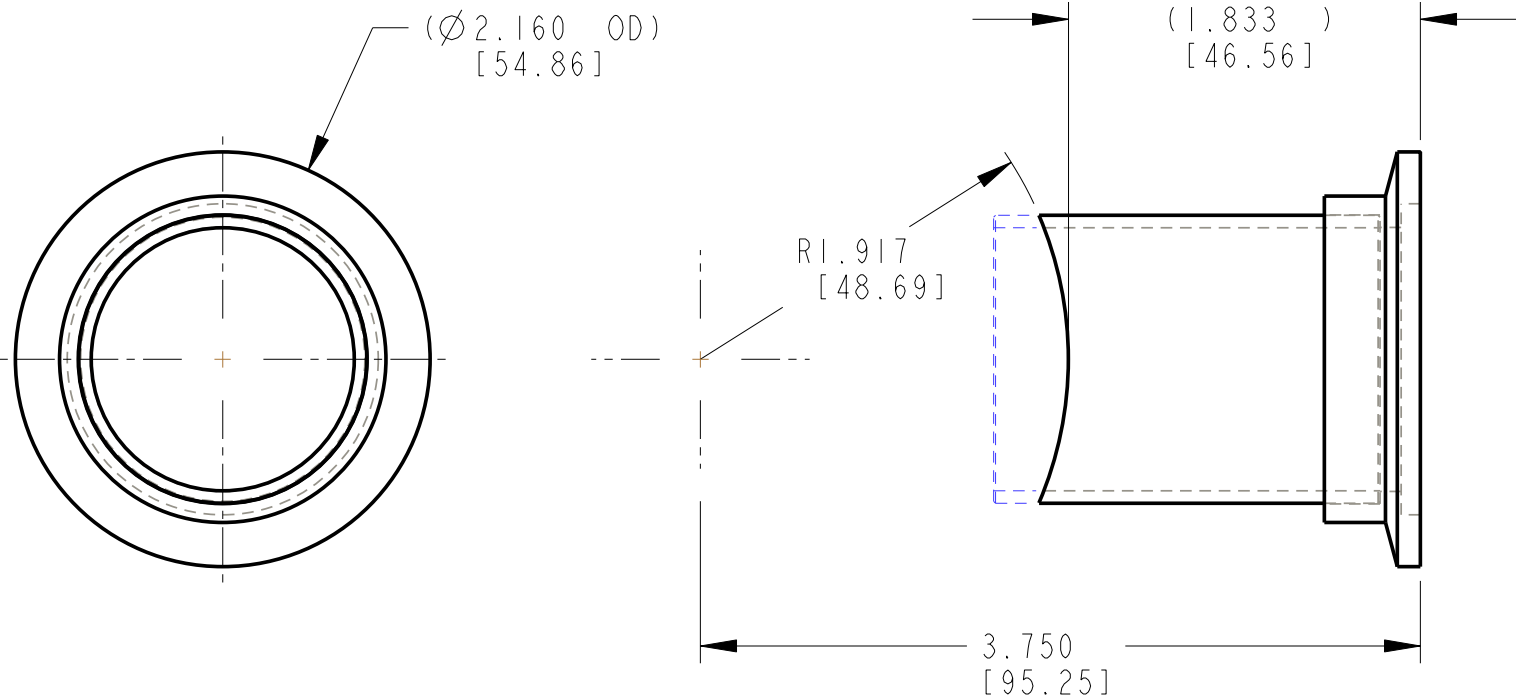
REVISIONS					
ZONE	REV	DESCRIPTION		BY	APPROVED DATE

ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION			MATERIAL / SPEC.	QTY			
PARTS LIST / BILL OF MATERIALS										
<div>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES</div> <div>DECIMALS ANGULAR</div> <div>.X ± .1 ± 0.5°</div> <div>.XX ± .03</div> <div>.XXX ± .010</div> <div>SURFACE ROUGHNESS 125/</div> <div>REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994</div> <div>MODEL NAME:</div> <div>4308-512101</div> <div>ELECTRONIC FILE NAME:</div> <div>A4263300</div>		DRAWN BY: M. GIVENS		DATE 25-Jan-08		<div>THIS DRAWING IS THE PROPERTY OF</div> <div>Argonne  NATIONAL LABORATORY</div> <div>SCIENTIFIC USER FACILITY</div> <div>ADVANCED PHOTON SOURCE</div>				
		CHECKED BY: M. SPRUNG		DATE						
		DESIGNED BY: M. GIVENS		DATE 25-Jan-08		WBS DESCRIPTOR: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 CHAMBER WELDMENT				
		RESPONSIBLE ENGINEER: SH. LEE		DATE						
		GROUP LEADER: P. DEN HARTOG		DATE						
APPROVED BY:		DATE		TITLE: CHAMBER TUBE						
RELEASE LEVEL:		MODEL VER: DWG VER:		SIZE	DRAWING NUMBER:		SKT. DES.	REV.		
		5 6		C	4308-512101			00		
MATERIAL: 304 SST				SCALE: 1:1		FSCM No.: OHRHS	DO NOT SCALE DRAWING		SHEET 1 OF 1	

REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE



TRIMETRIC VIEW
SCALE 1:1



SOURCE OR EQUIVALENT
VACUUM ONE (MDC/ISI)
2502 NORTH CLARK STREET
CHICAGO, IL 60614
773-244-3102

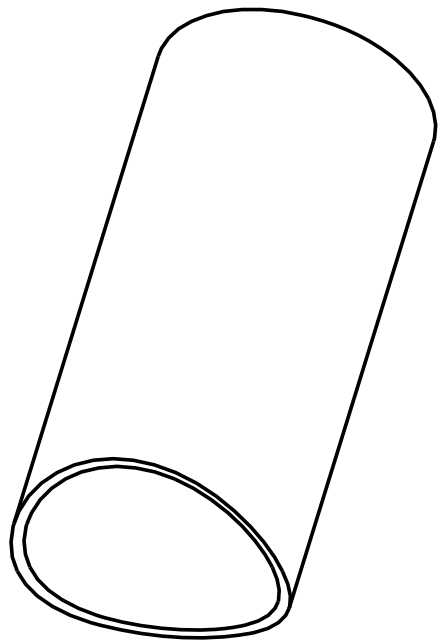
NOTES:

- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- COMPONENT IS PART OF A HIGH VACUUM ASSEMBLY
THE USE OF SILICON OR SULFUR-BASED CUTTING
FLUIDS AND ABRASIVES ARE PROHIBITED, USE ONLY
TRIMSOL OR APPROVED EQUIVALENT LUBRICANT

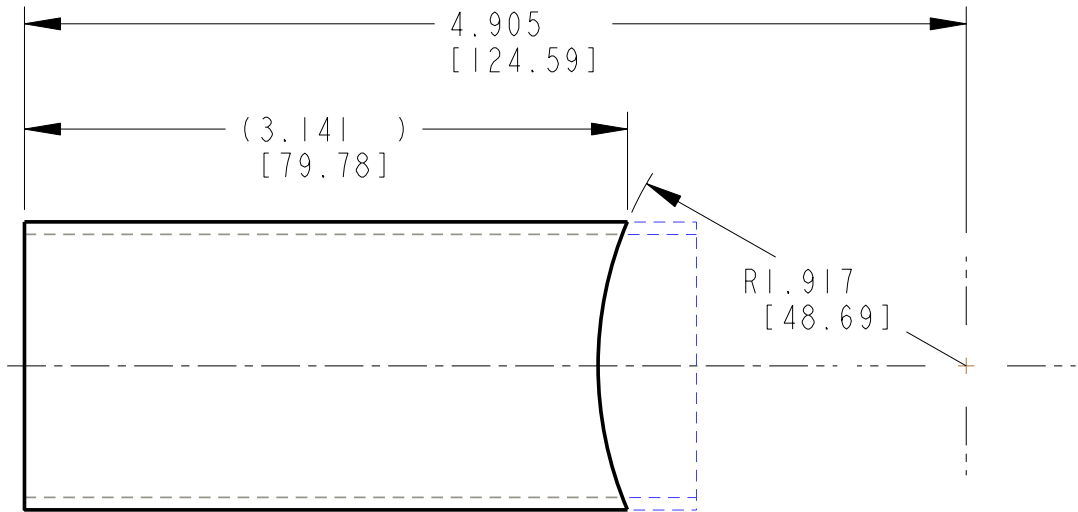
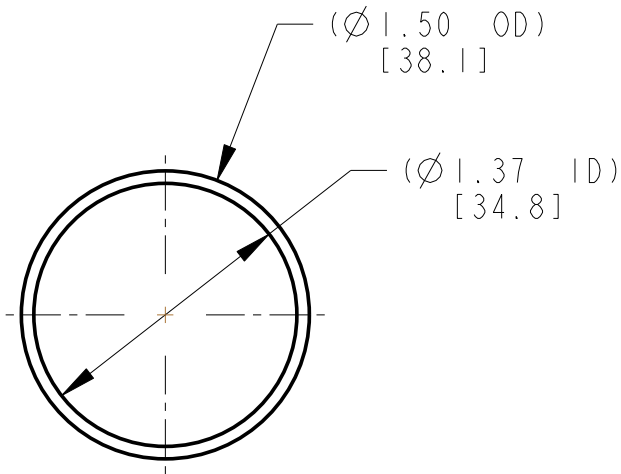


1	720003	00	HALF NIPPLE, NW40, 1.5" O.D. TUBE			1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION		MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS						
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS .X ± .1 .XX ± .03 .XXX ± .010 ANGULAR ± 0.5° SURFACE ROUGHNESS 125/		DRAWN BY: M. GIVENS CHECKED BY: M. SPRUNG DESIGNED BY: M. GIVENS RESPONSIBLE ENGINEER: SH. LEE GROUP LEADER: P. DEN HARTOG APPROVED BY:		DATE 25-Jan-08 DATE DATE 25-Jan-08 DATE DATE DATE	THIS DRAWING IS THE PROPERTY OF Argonne NATIONAL LABORATORY SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE WBS DESCRIPTOR: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 CHAMBER WELDMENT	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994		MODEL NAME: 4308-512102		RELEASE LEVEL: RELEASED	MODEL VER: 5	DRWG VER: 5
ELECTRONIC FILE NAME: A4263400		MATERIAL: 304 SST		SIZE: B	DRAWING NUMBER: 4308-512102	
				SCALE: 1:1	FSCM No: OHRH5	DO NOT SCALE DRAWING
				SHEET 1 OF 1		

REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE




TRIMETRIC VIEW
SCALE 1:1

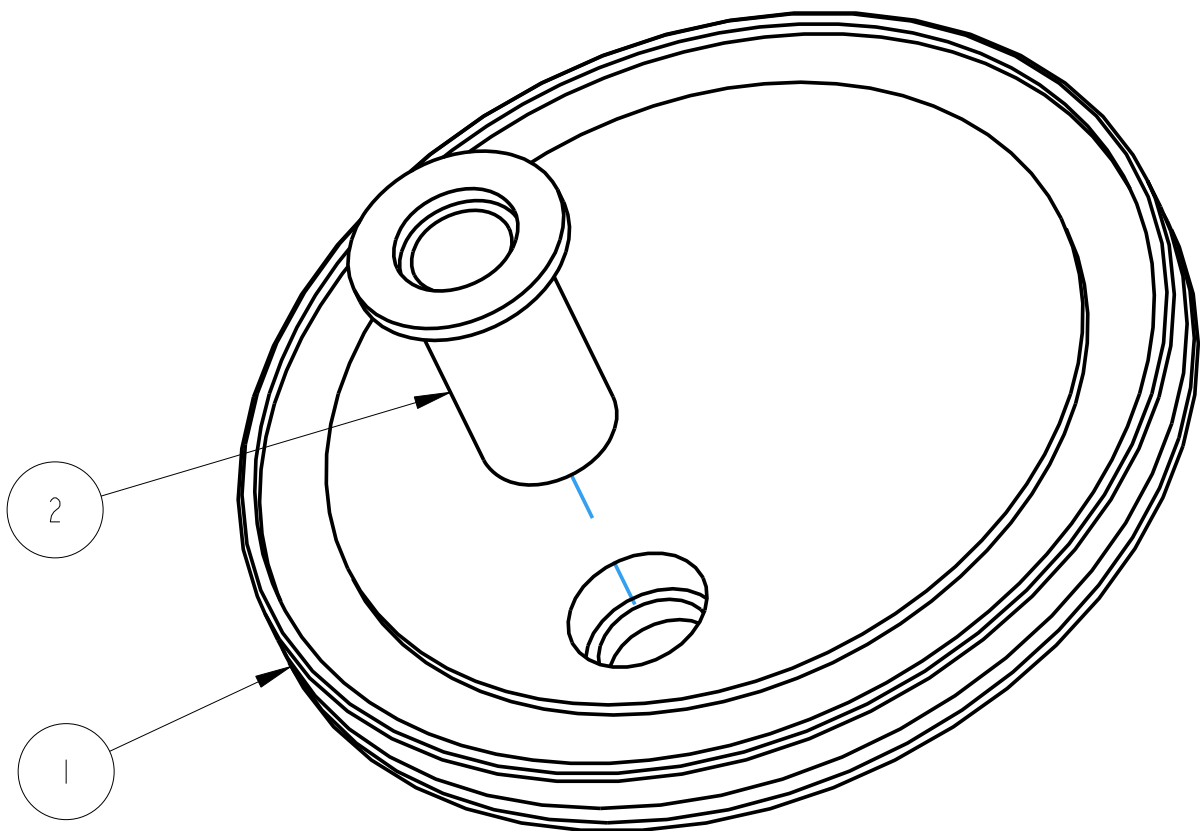


NOTES:

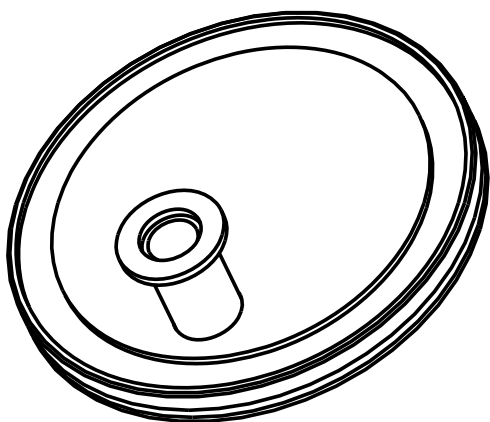
- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- USE 1.50" OD X .065" WALL TUBING (MDC PART NO. 480006 OR EQUIVALENT)
- COMPONENT IS PART OF HIGH VACUUM ASSEMBLY. THE USE OF SILICON OR SULFUR-BASED CUTTING FLUIDS AND ABRASIVES ARE PROHIBITED, USE ONLY TRIMSOL OR APPROVED EQUIVALENT LUBRICANT
- CLEAN FOR 10⁻⁹ TORR SERVICE PRIOR TO WELDING

ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION		MATERIAL / SPEC.	QTY	
PARTS LIST / BILL OF MATERIALS							
<div>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES</div> <div>DECIMALS ANGULAR .X ± .1 ± 0.5° .XX ± .03 .XXX ± .010</div> <div>SURFACE ROUGHNESS 125/✓</div> <div>REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994</div> <div>MODEL NAME: 4308-512103</div> <div>ELECTRONIC FILE NAME: A4263500</div>		DRAWN BY: M. GIVENS	DATE 25-Jan-08	<div>Argonne NATIONAL LABORATORY</div> <div>THIS DRAWING IS THE PROPERTY OF SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE</div> <div>WBS DESCRIPTOR: X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 CHAMBER WELDMENT</div> <div>TITLE: TUBE MACHINING</div>			
		CHECKED BY: M. SPRUNG	DATE				
		DESIGNED BY: M. GIVENS	DATE 25-Jan-08				
		RESPONSIBLE ENGINEER: SH. LEE	DATE				
		GROUP LEADER: P. DEN HARTOG	DATE				
APPROVED BY:	DATE						
RELEASE LEVEL:		MODEL VER: 5	DRWG VER: 6	SIZE B	DRAWING NUMBER: 4308-512103	SKT. DES. 	REV. 00
MATERIAL: 304 SST				SCALE: :	FSCM No: OHRH5	DO NOT SCALE DRAWING	SHEET OF

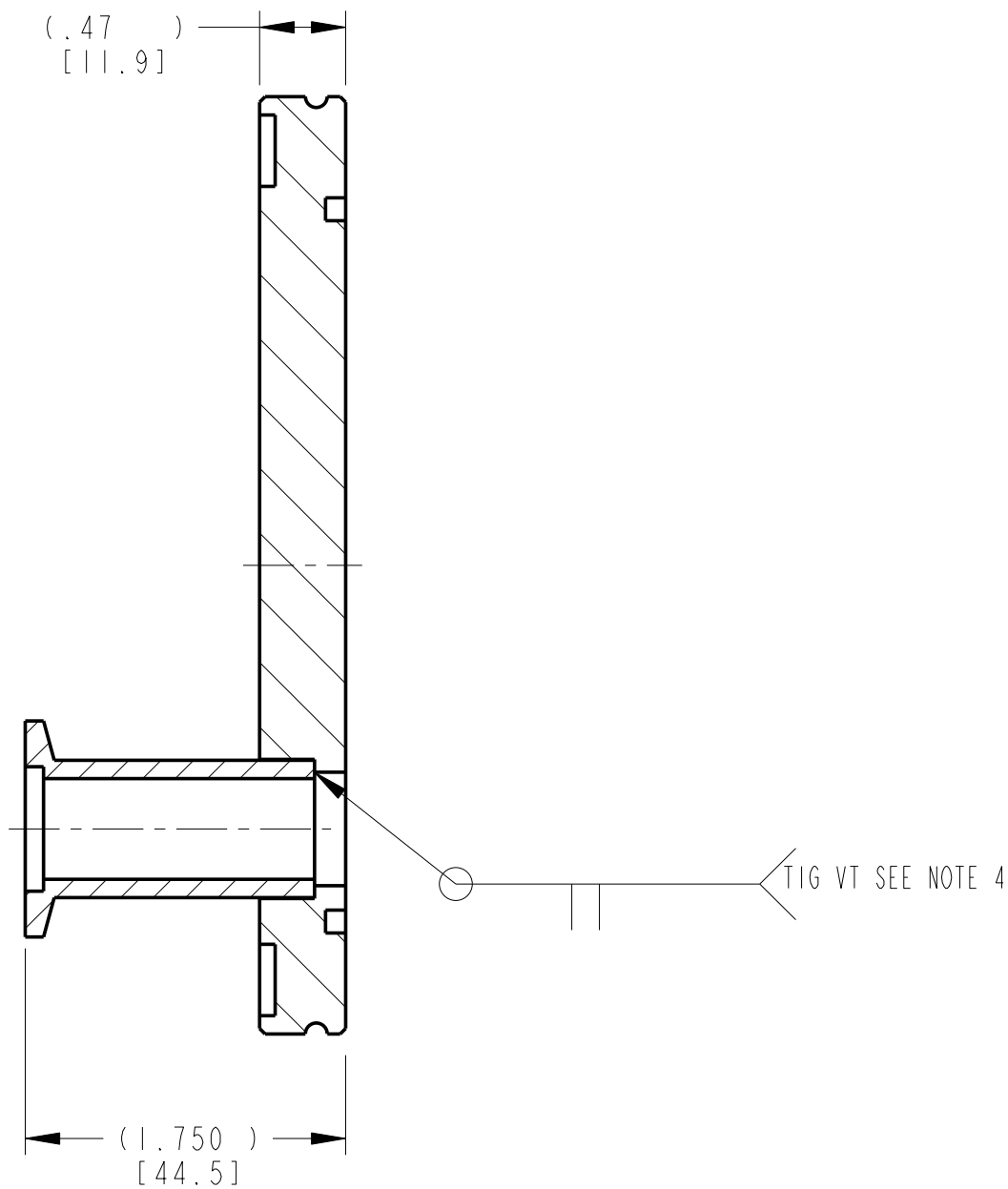
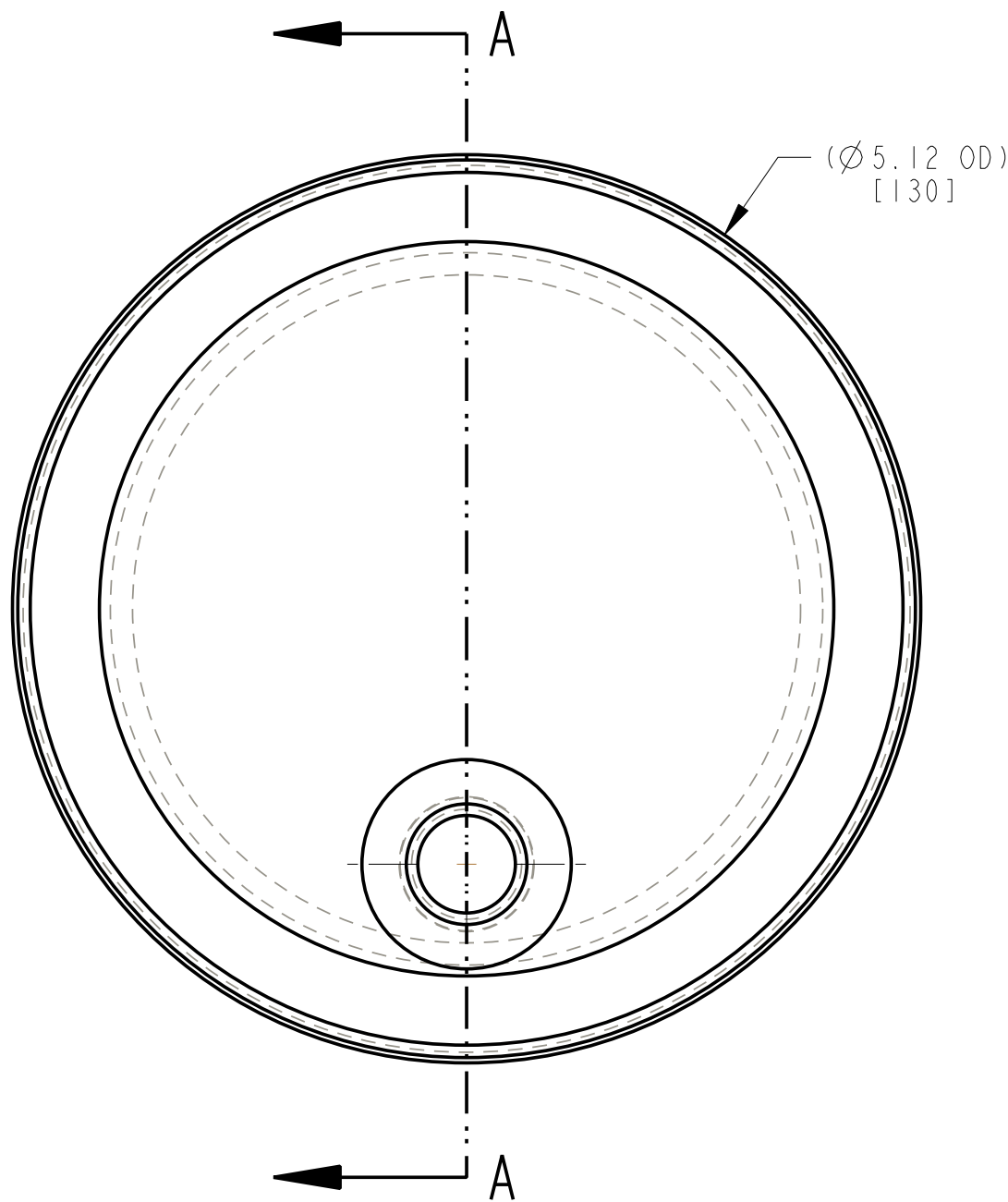
REVISIONS					
ZONE	REV	DESCRIPTION		BY	APPROVED DATE



EXPLODED VIEW
SCALE 1:1



TRIMETRIC VIEW
SCALE 1:2



SECTION A-A

NOTES:

- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- THIS WELDMENT IS PART OF HIGH VACUUM ASSEMBLY. THE USE OF SILICON OR SULFUR-BASED CUTTING FLUIDS AND ABRASIVES ARE PROHIBITED, USE ONLY TRIMSOL OR APPROVED EQUIVALENT LUBRICANT
- PRIOR TO WELDING, ALL COMPONENTS ARE TO BE CLEANED FOR 10^{-9} TORR SERVICE
- VT IS VACUUM-TIGHT, LEAK CHECK: NO DETECTABLE LEAKS WHEN TESTING AT 2×10^{-9} STD CC/SEC OF HELIUM LEVEL
- BAKE AT 150°C BEFORE INSTALLATION
- PROTECT FLANGES WITH FOIL AND PLASTIC CAPS

SOURCE OR EQUIVALENT
VACUUM ONE (MDC/ISI)
2502 NORTH CLARK STREET
CHICAGO, IL 60614
773-244-3102

2	715106	00	HALF NIPPLE 1.18 OD FLANGE X 1.58 LG	304 SST	1
1	4308-512201	00	TOP FLANGE MACHINING	304 SST	1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES			DRAWN BY: M. GIVENS	DATE 25-Jan-08	<div>THIS DRAWING IS THE PROPERTY OF Argonne NATIONAL LABORATORY SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 SHUTTER ASSEMBLY TITLE: TOP FLANGE WELDMENT</div>
DECIMALS .X ± .1 .XX ± .03 .XXX ± .010			CHECKED BY: M. SPRUNG	DATE	
ANGULAR ± 0.5°			DESIGNED BY: M. GIVENS	DATE 25-Jan-08	
SURFACE ROUGHNESS 125/			RESPONSIBLE ENGINEER: SH. LEE	DATE	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994			GROUP LEADER: P. DEN HARTOG	DATE	
MODEL NAME: 4308-512200			APPROVED BY:	DATE	
ELECTRONIC FILE NAME: A4263600			RELEASE LEVEL: RELEASED	MODEL VER: 6	DWG VER: 7
MATERIAL: 304 SST			SIZE C	DRAWING NUMBER: 4308-512200	SKT. DES. REV. 00
SCALE: 1:1			FSCM No: OHRHS	DO NOT SCALE DRAWING	SHEET 1 OF 1

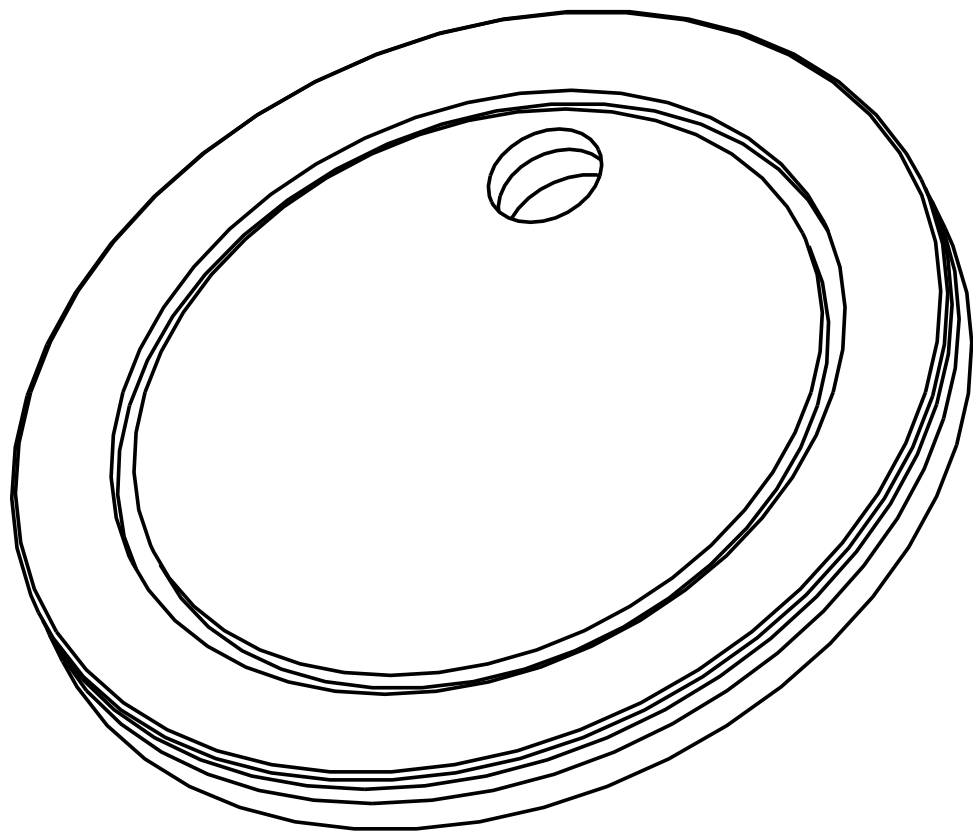
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3

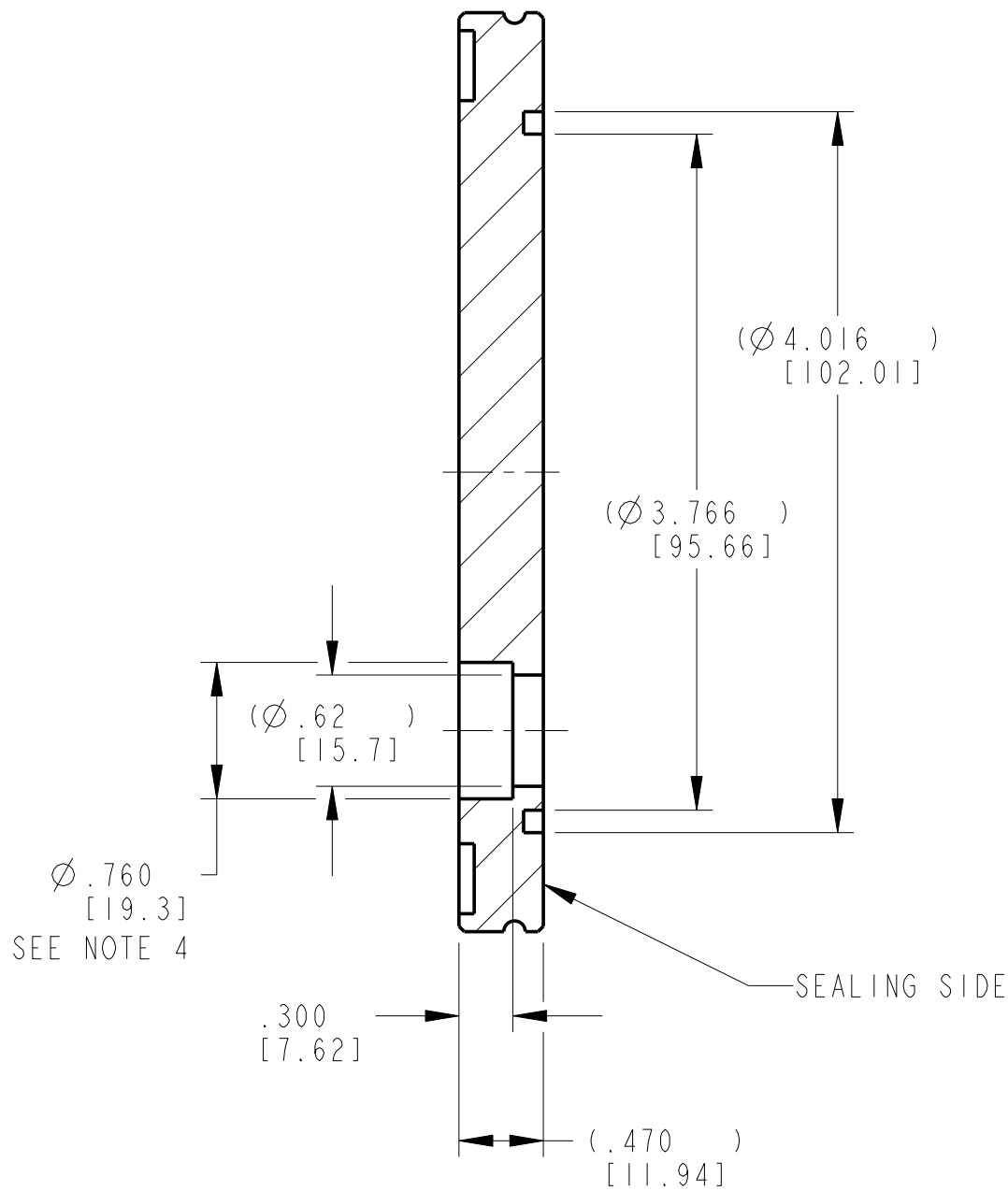
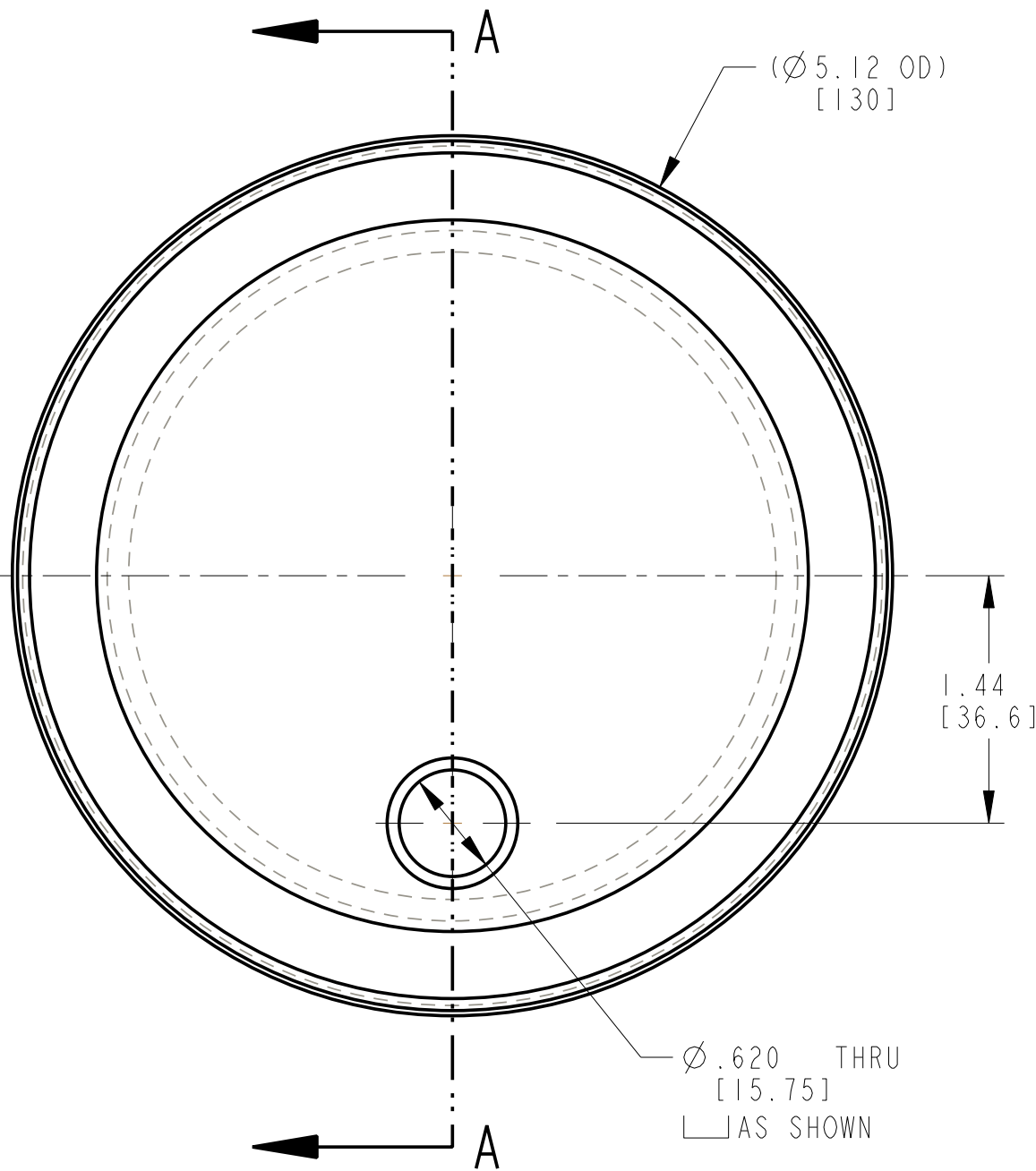
2

1

REVISIONS					
ZONE	REV	DESCRIPTION		BY	APPROVED DATE



SEALING-SIDE VIEW
SCALE 1:1



SECTION A-A

NOTES:

- DIMENSIONS IN [] ARE mm AND ARE FOR REFERENCE ONLY
- COMPONENT IS PART OF HIGH VACUUM ASSEMBLY. THE USE OF SILICON OR SULFUR-BASED CUTTING FLUIDS AND ABRASIVES ARE PROHIBITED USES ONLY TRIMSOL OR APPROVED EQUIVALENT LUBRICANT
- CLEAN FOR 10⁻⁹ TORR SERVICE PRIOR TO WELDING
- FIT TO MATING PART (MDC PART NO. 715106 OR EQUIVALENT)

SOURCE OR EQUIVALENT
VACUUM ONE (MDC/ISI)
2502 NORTH CLARK STREET
CHICAGO, IL 60614
773-244-3102

1	812001	00	FLANGE ISO NW100 BLANK	304 SST	1
ITEM	DRAWING / PART NUMBER	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC.	QTY
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES			THIS DRAWING IS THE PROPERTY OF		
DECIMALS .X ± .1 .XX ± .03 .XXX ± .010			Argonne NATIONAL LABORATORY		
ANGULAR ± 0.5°			SCIENTIFIC USER FACILITY ADVANCED PHOTON SOURCE		
SURFACE ROUGHNESS 125/			WBS DESCRIPTOR:		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE IN ACCORDANCE WITH LATEST ASME B46.1-2002 DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5M-1994			X-RAY SCIENCE DIVISION USER BEAMLINE DOCUMENTATION USER BEAMLINES ID 8 TOP FLANGE WELDMENT		
MODEL NAME:			TITLE:		
4308-512201			TOP FLANGE MACHINING		
ELECTRONIC FILE NAME:			SIZE		
A4263700			C		
MATERIAL:			DRAWING NUMBER:		
304 SST			4308-512201		
RELEASE LEVEL:			SCALE:		
RELEASED			1:1		
MODEL VER:			FSCM No:		
6			OHRHS		
DRWG VER:			DO NOT SCALE DRAWING		
7			SHEET 1 OF 1		
			SKT. DES. REV.		
			00		