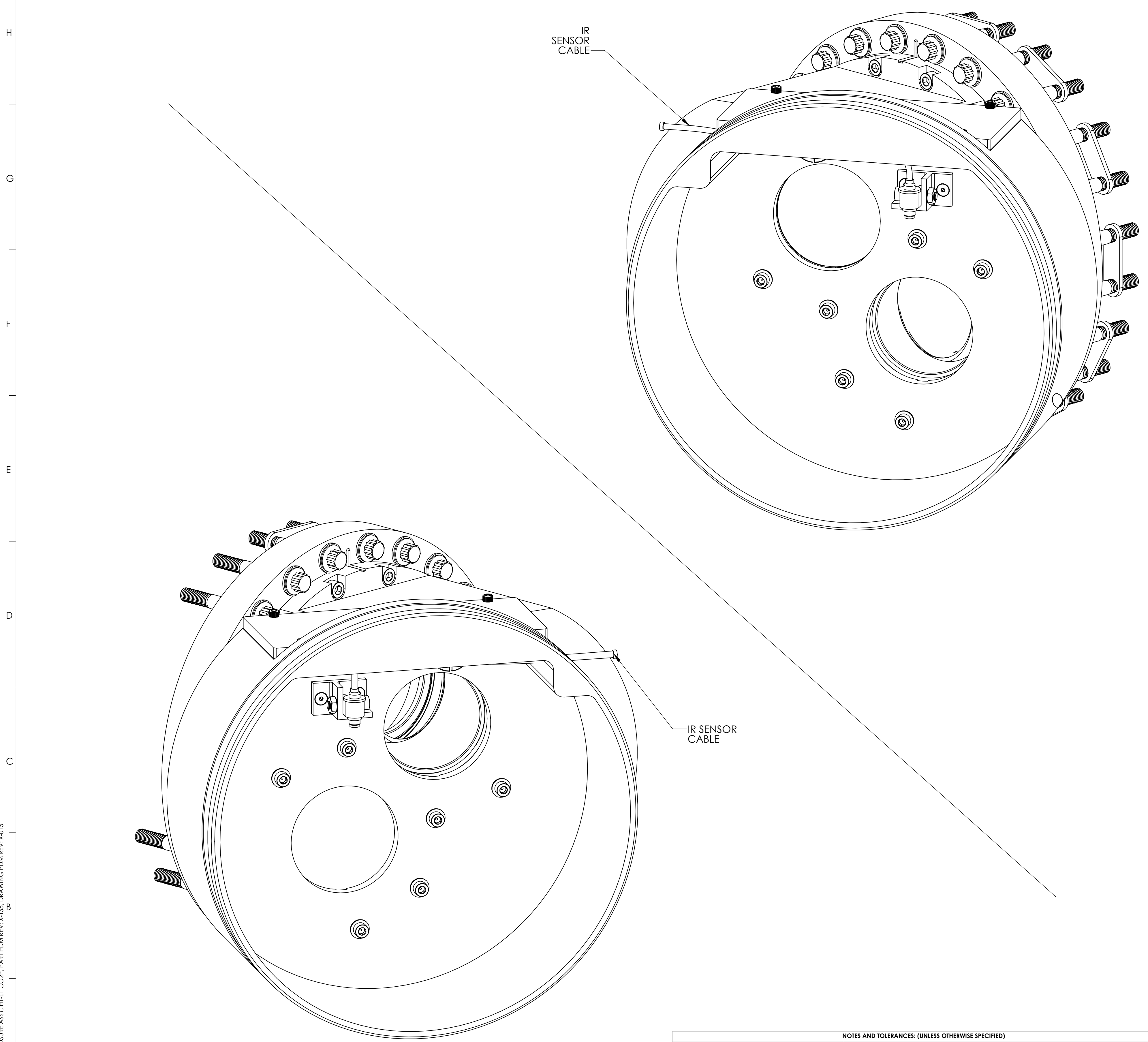


REV.	DATE	DCN #	DRAWING TREE #
v2	06 DEC 2012	E1200247-x0	E1200248-v1
v3	31 OCT 2013	E1300826-v1	E1200248-v2
v4	22 MAR 2016	E1600078-x0	-

TYPE	DESCRIPTION
-01	X-ARM CONFIG. (SHEET 2)
-02	Y-ARM CONFIG. (SHEET 3)

**-01 DETAIL**  
(SEE SHEET 2 FOR EXPLODED VIEW)

34	D1600108-02	Aligo, TCS CO2P VP ENCLOSURE, ACCESS PANEL (LH)	6061 Alloy	-	1
33	D1600108-01	Aligo, TCS CO2P VP ENCLOSURE, ACCESS PANEL	6061 Alloy	1	-
32	D1600107-02	Aligo, TCS CO2P VP ENCLOSURE, BELLOW ADAPTER (LH)	6061 Alloy	-	1
31	D1600107-01	Aligo, TCS CO2P VP ENCLOSURE, BELLOW ADAPTER	6061 Alloy	1	-
30	D1100495	WASHER, CLAMP RING	PEEK	2	2
29	D1300973	KAPTON WASHER-STYLE SHIM	KAPTON	2	4
28	D1300970	WEDGED WASHER-STYLE SHIM	PEEK	2	2
27		EBARA, NUT PLATE 5/16-24	18-8 SSSL	12	12
26	KNP-800-12 NORCAL OR EQ.	WASHER, FLAT, 5/16	300 SSSL	24	24
25		BOLT, 12-POINT FLANGE-HEAD, 5/16-24 UNC-2A X 2.5 LG.	18-8 SSSL	24	24
24	FA-606 UC COMPONENTS OR EQ.	SCREW, FHSC, 6-32 X .375 LG.	18-8 SSSL	2	2
23	MS35489-40 OR EQ.	GROMMET, .63 DIA. HOLE X .13 PANEL	FLUOROELASTOMER	1	1
22	WF-08 UC COMPONENTS OR EQ.	WASHER, FLAT, NO. 8	18-8 SSSL	2	2
21	C-1012 UC COMPONENTS OR EQ.	SCREW, SHC, 10-32 X .75 LG.	18-8 SSSL	8	8
20	WF-10 UC COMPONENTS OR EQ.	WASHER, FLAT, #10	300 SSSL	8	8
19	C-806-N UC COMPONENTS OR EQ.	SCREW, SHCS, 8-32 X .25 LG.	300 SSSL	2	2
18	95966A211 McMASTER-CARR OR EQ.	SCREW, SHC, 6-32 X .38 LG.	18-8 SSSL	4	4
17	8981T61	SSSL 304 CABLE CLAMP, DAMPED, FOR .25 IN OD	AISI 304	1	1
16	C-2016-N UC COMPONENTS OR EQ.	SHSC 1/4-20 UNC-3A X 1.0 LG.	18-8 SSSL	4	4
15	C-2018-N UC COMPONENTS OR EQ.	SHSC 1/4-20 UNC-3A X 1-1/8 LG.	18-8 SSSL	6	6
14	#191019 MDC OR EQ.	COPPER GASKET, 10" FLANGE	Copper	1	1
13	D1201528-02	IR SENSOR SUB-ASSY, (Yarm)	N/A	-	1
12	D1201528-01	IR SENSOR SUB-ASSY, (Xarm)	N/A	1	-
11	D1201304-02	SECONDARY VIEWPORT CLAMP	6061 Alloy	-	1
10	D1201304-01	SECONDARY VIEWPORT CLAMP (Xarm)	6061 Alloy	1	-
9	D1201303-02	PRIMARY VIEWPORT CLAMP, H1-L1 BSC 1 (Yarm)	6061 Alloy	-	1
8	D1201303-01	PRIMARY VIEWPORT CLAMP, H1-L1 BSC 3 (Xarm)	6061 Alloy	1	-
7	D1100540	ALIGO TCS .50" THICK OPTICAL WINDOW	S-Glass Fiber	1	1
6	D1100539	ALIGO TCS .25 IN THICK OPTICAL WINDOW	S-Glass Fiber	1	-
5	D1100485	.25 THICK, 60 MIN WEDGE, ZnSe WINDOW	Glass	1	1
4	D1100439	.5 THICK, 60 MIN WEDGE, ZnSe WINDOW	Glass	1	1
3	D1003196-02	CUSTOM 10-IN VP FLANGE, ALIGO TCS H1-L1	316 SSSL	-	1
2	D1003196-01	TCS 10-IN CUSTOM VP FLANGE (Xarm)	316 SSSL	1	-
1	OVI1B-146-BV UC COMPONENTS OR EQ.	O-RING, 3 IN VIEWPORTS	VITON	6	6



**-02 DETAIL**  
(SEE SHEET 3 FOR EXPLODED VIEW)

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

MATERIAL	N/A	FINISH	N/A μinch
----------	-----	--------	-----------

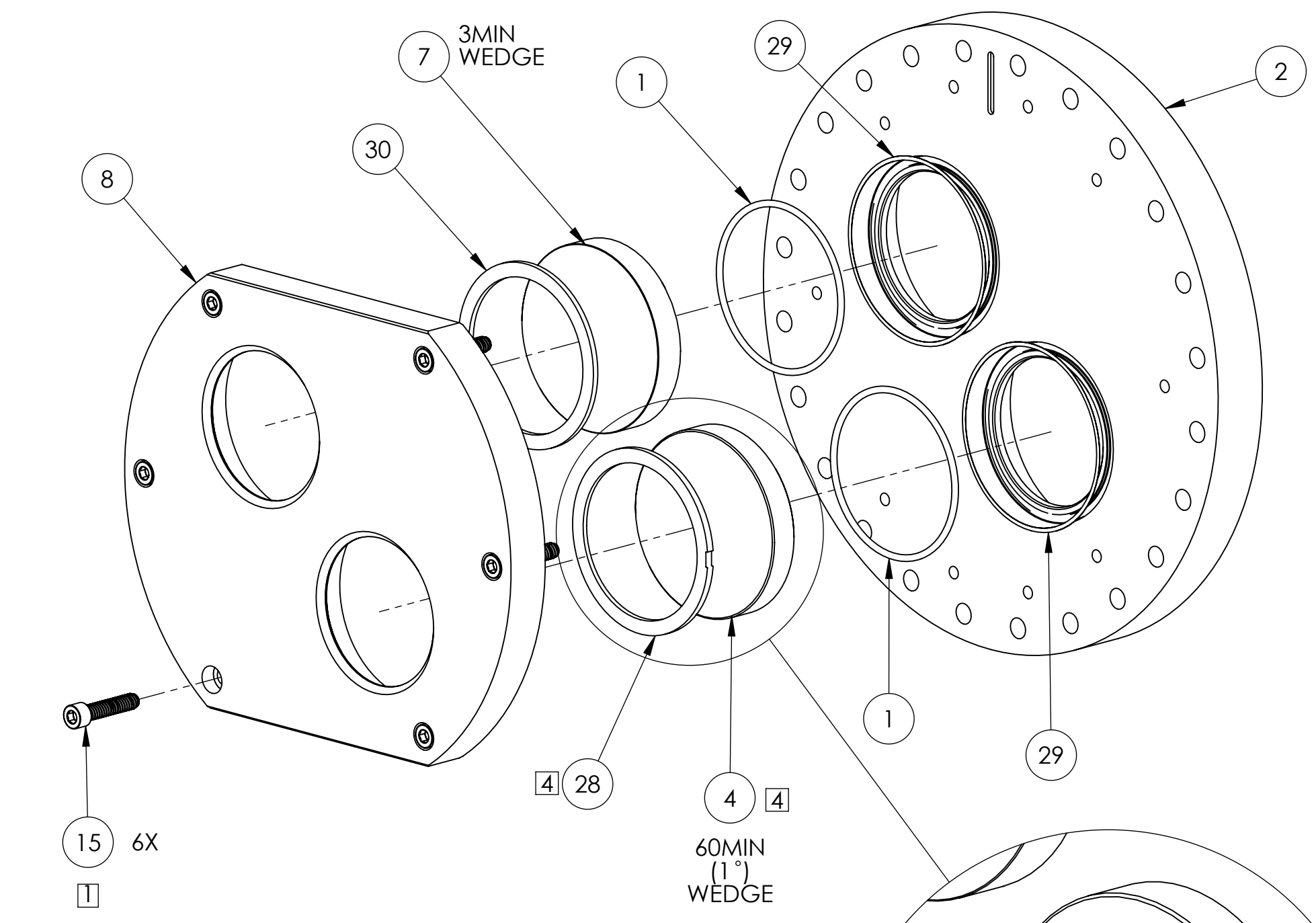
CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
SYSTEM ADVANCED LIGO		SUB-SYSTEM AOS	
DESIGNER	M. JACOBSON	18 SEPT 2012	SIZE DWG. NO.
DRAFTER	M. JACOBSON	01 NOV 2013	D
CHECKER	D. COYNE	01 NOV 2013	
APPROVAL	J. WORDEN	01 NOV 2013	SCALE: 1:1
NEXT ASSY D1000634		PROJECTION:	
		SHEET 1 OF 3	

**D1101627**  
VIEWPORT ENCLOSURE ASSY., H1-L1 CO2P

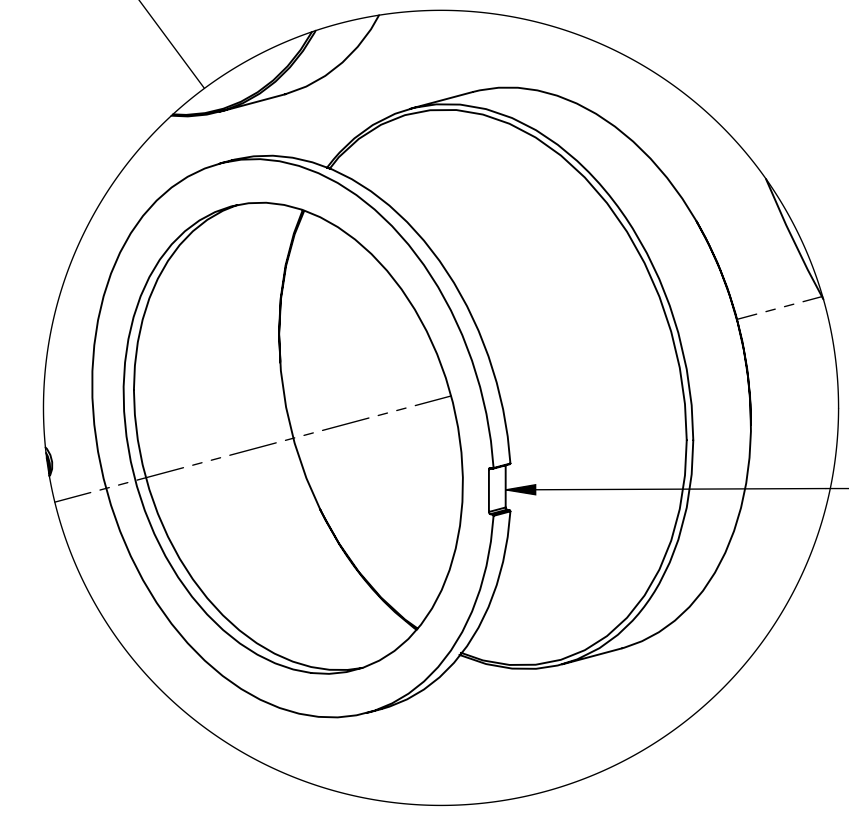
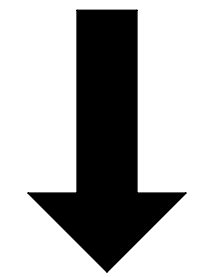
REV. v4

D1101627\_VIEWPORT ENCLOSURE ASSY., H1-L1 CO2P, PART PDM REV. X-135, DRAWING PDM REV. X-015

# -01 (Xarm)

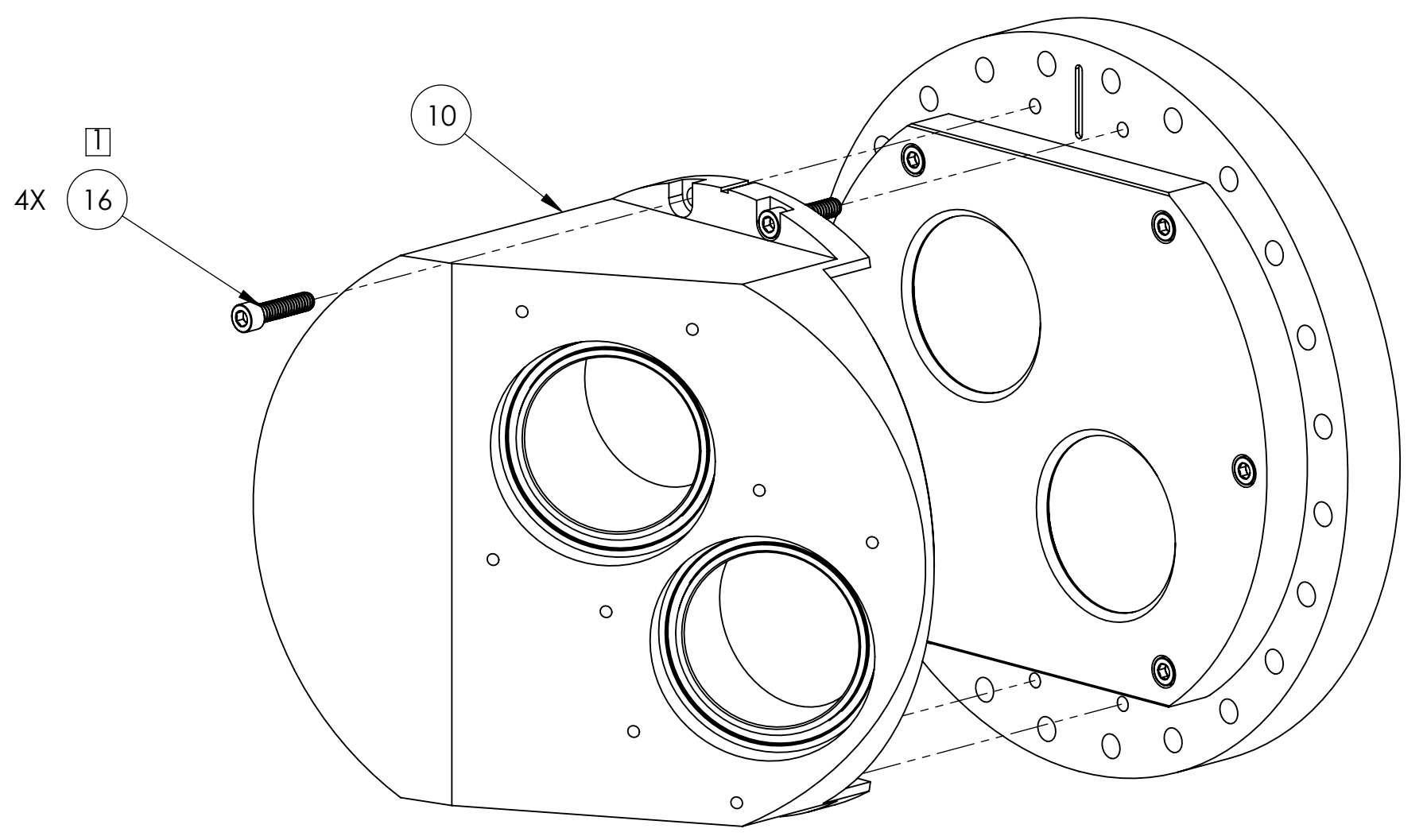


**STEP 1**

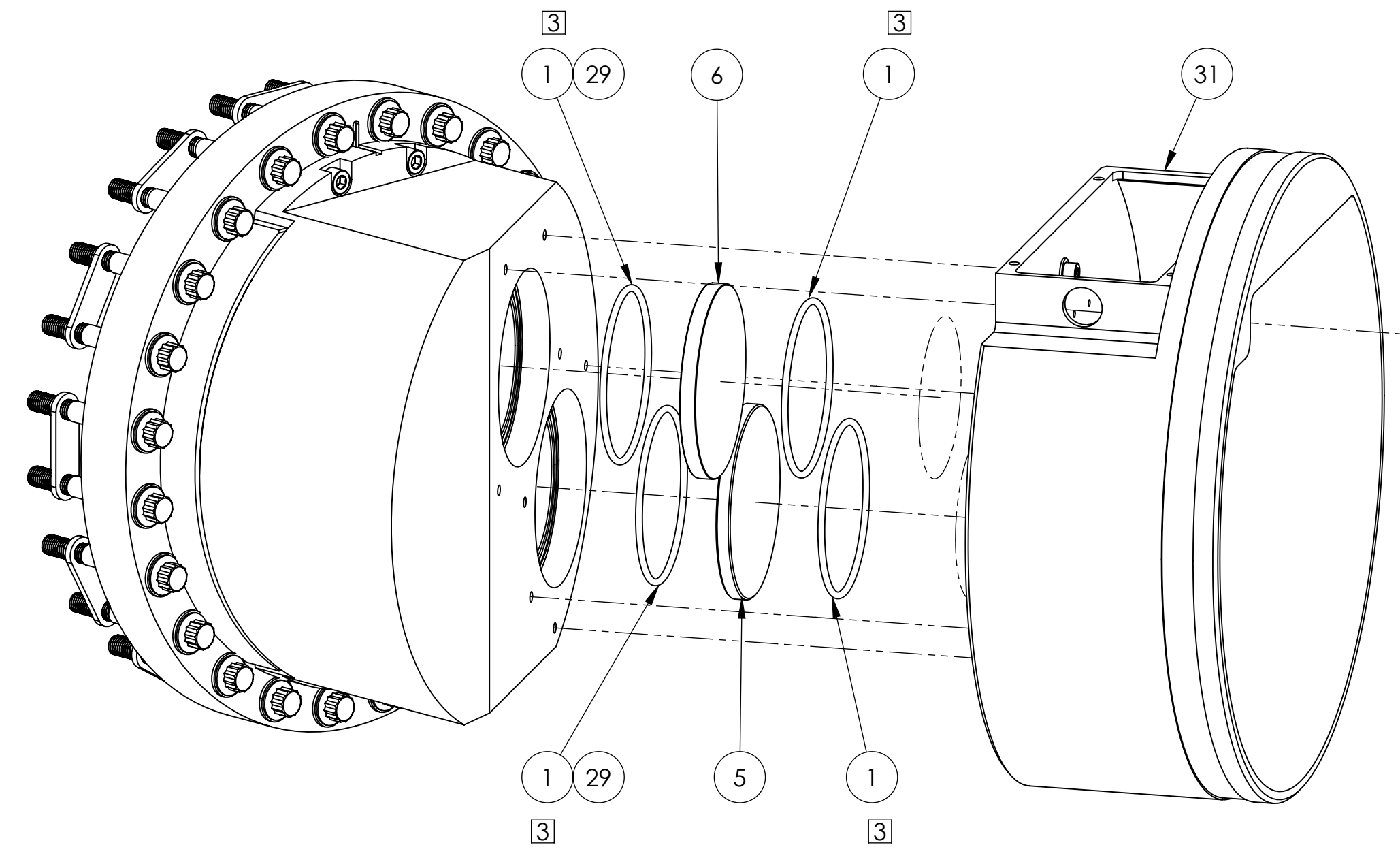
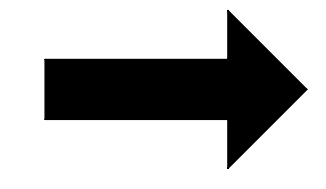


**DETAIL C**  
SCALE 1 : 1

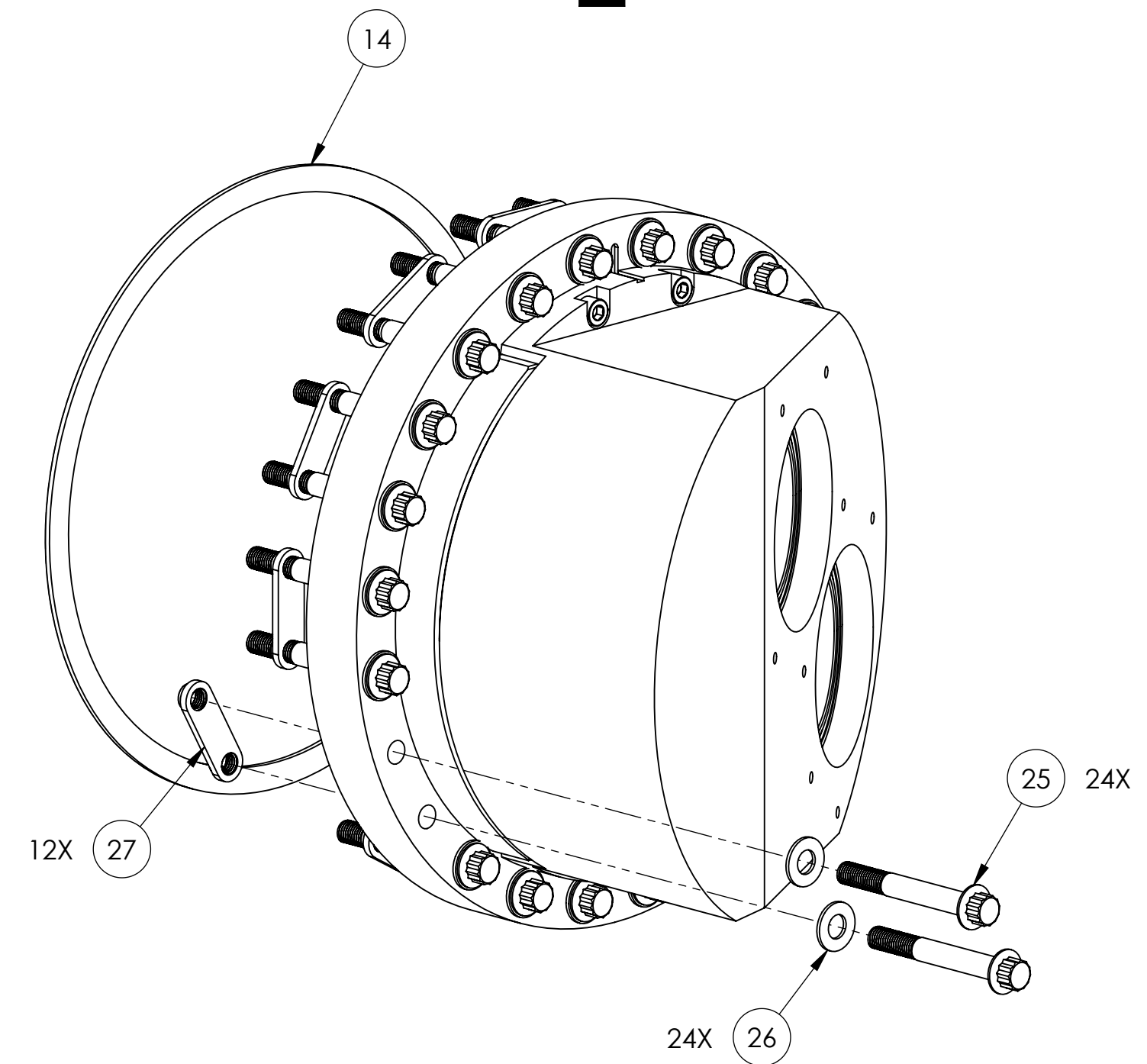
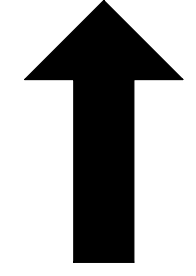
NOTCH MUST BE STACKED AGAINST NARROW WIDTH OF OPTIC ITEM 4



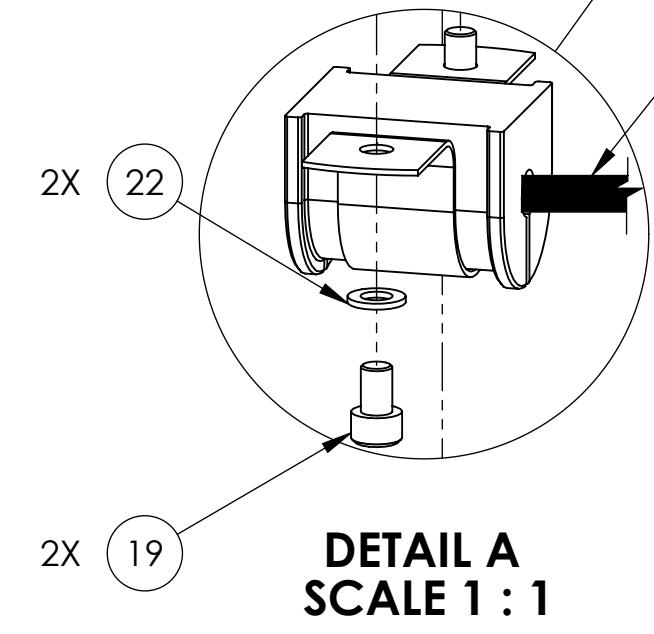
**STEP 2**



**STEP 4**



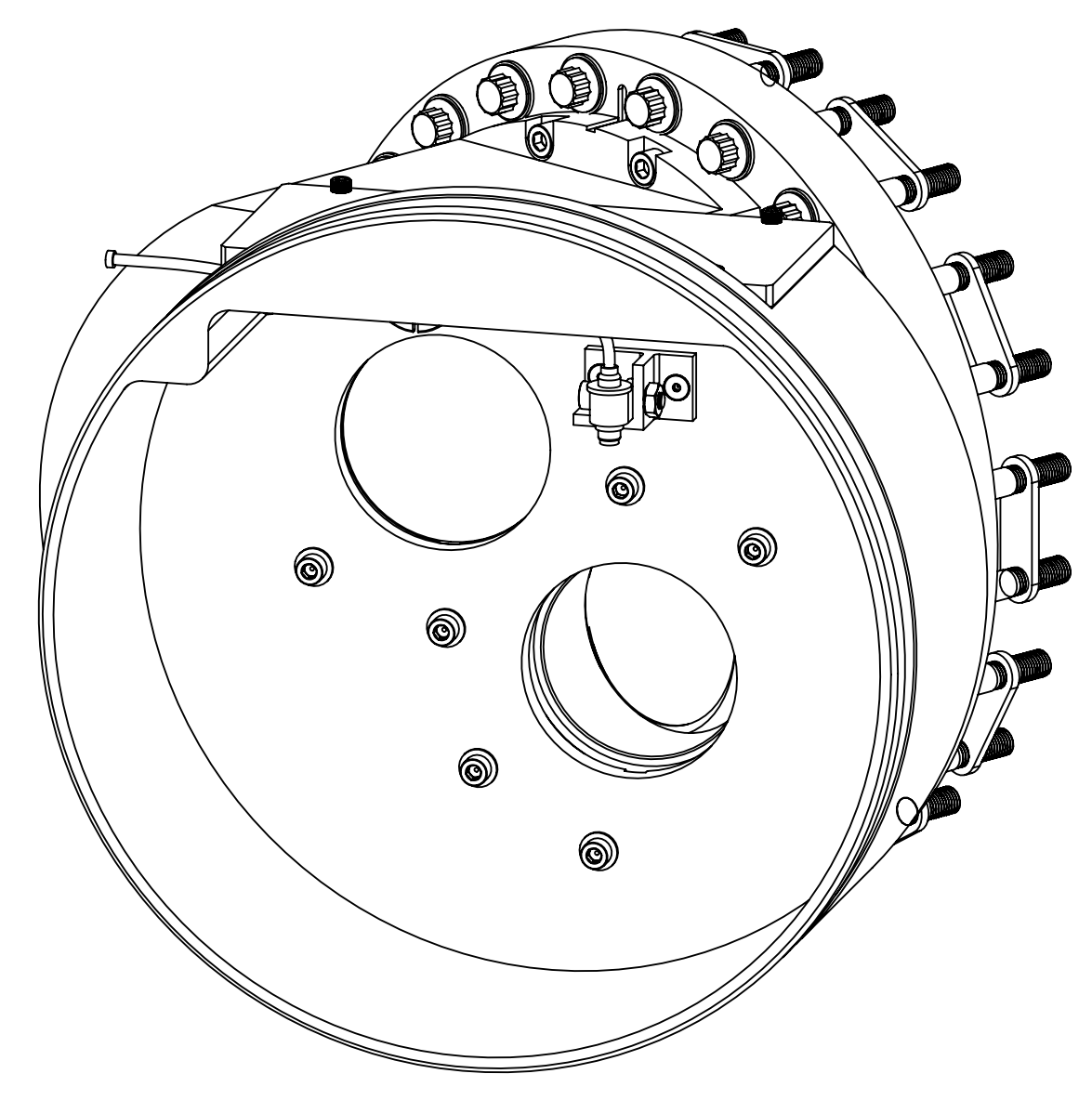
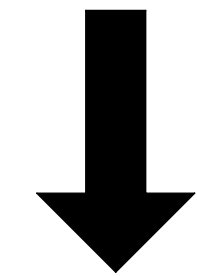
**STEP 3**



**DETAIL A**  
SCALE 1 : 1

ROUTE IR SENSOR CABLE THROUGH ITEM 22 (PART OF ITEM 29)

**STEP 5**  
(IR SENSOR CABLE, NOT SHOWN)



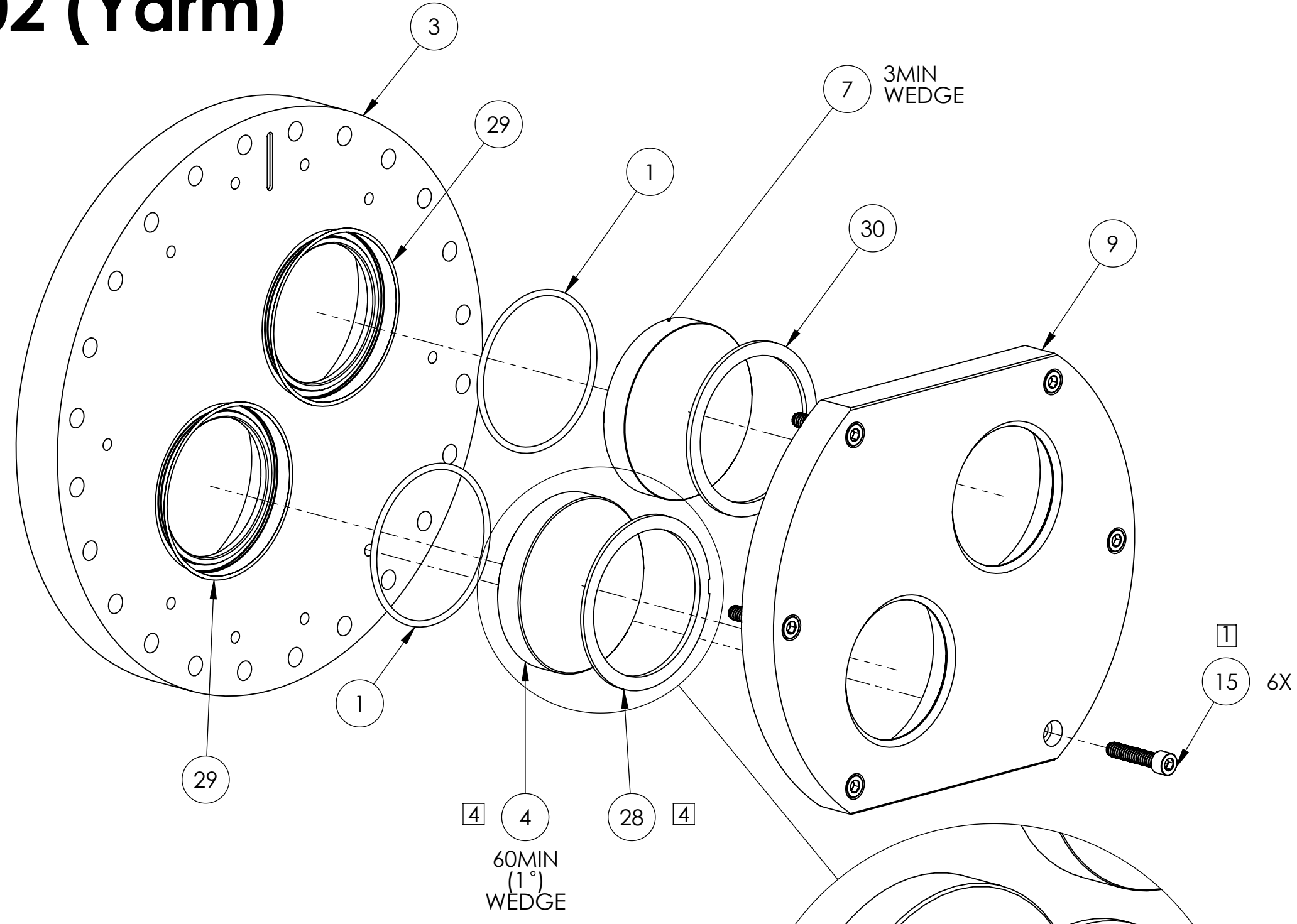
**ISO VIEW**  
**(ASSEMBLED)**

- 1 TORQUE TO 65 IN-LB MAX.
- 2 TORQUE TO 20 IN-LB MAX.
- 3 USING A CLEAN BLADE, MAKE SLITS IN O-RINGS, ALLOWING CAVITY TO VENT
- 4 WEDGED ITEMS MUST BE ORIENTED AS INDICATED

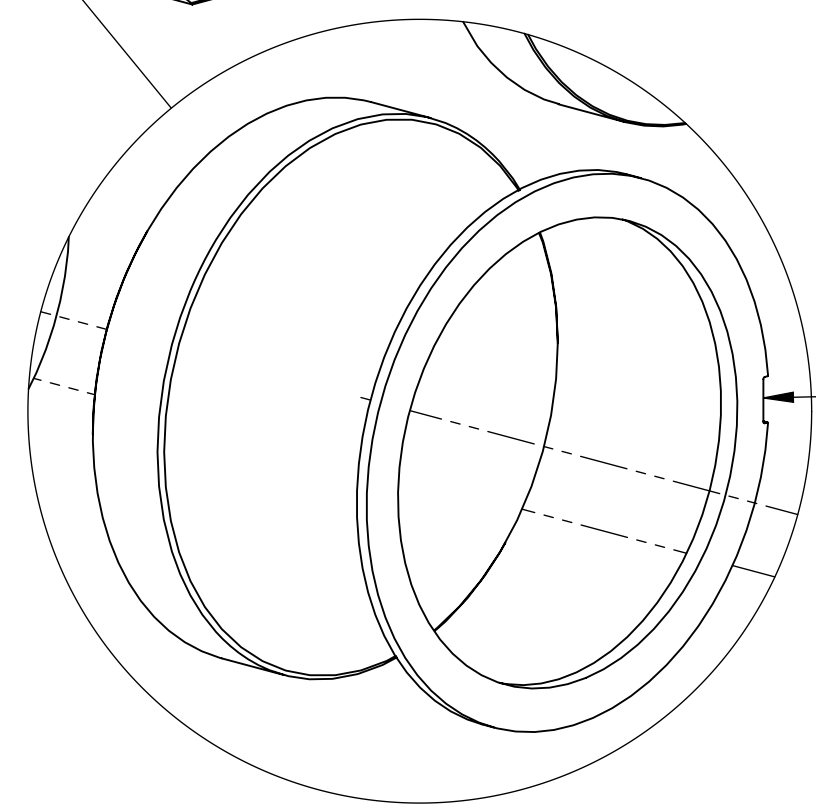
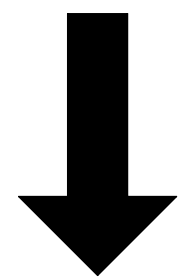
<b>LIGO</b> CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
SIZE DWG. NO.	REV.
D D1101627	v4
SCALE: 1:2	PROJECTION:
SHEET 2 OF 3	

D1101627\_VIEWPORT ENCLOSURE ASSY\_H-I-LI\_COOPR\_PART PDM REV.X-135\_DRAWING PDM REV.X-015

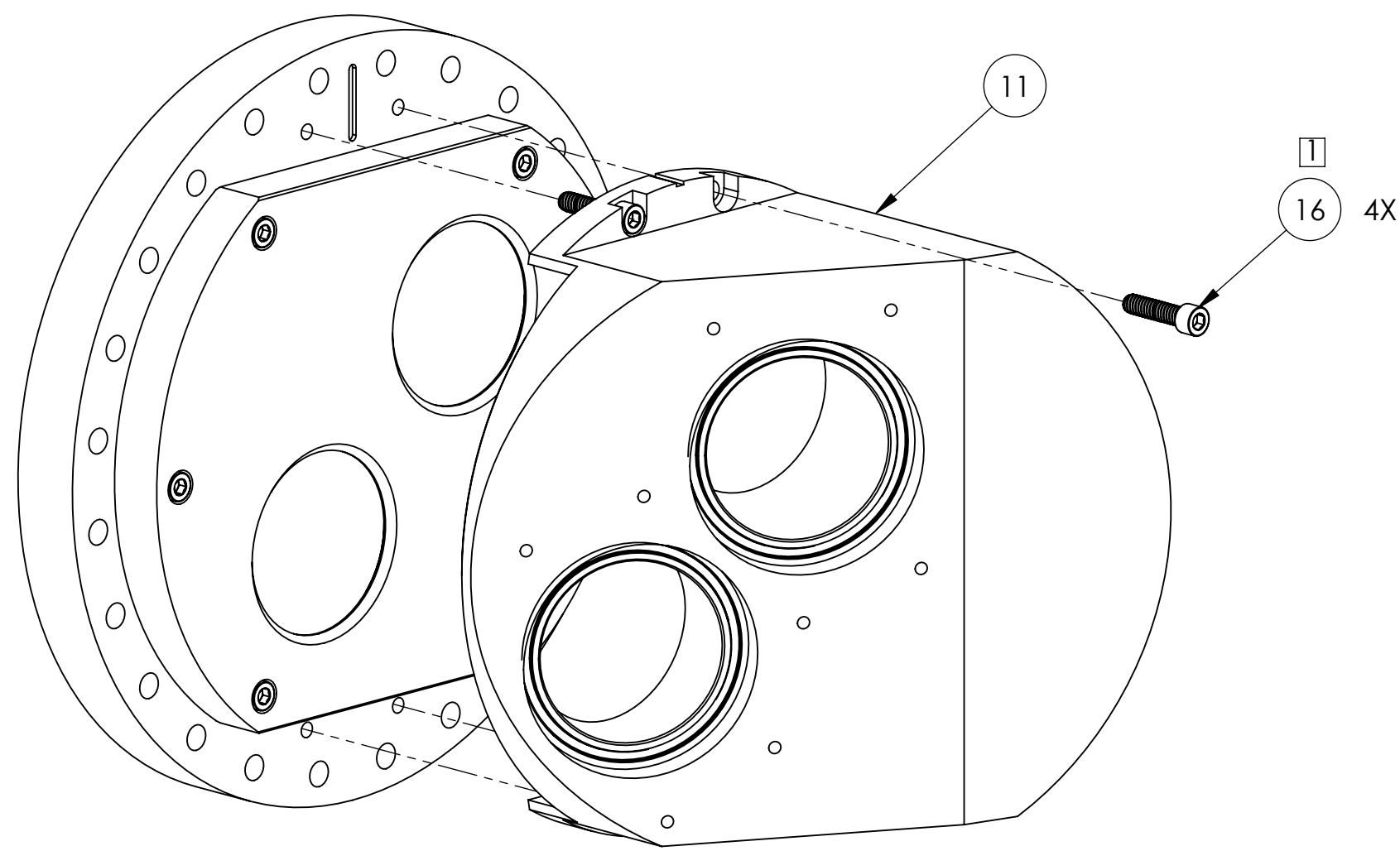
# -02 (Yarm)



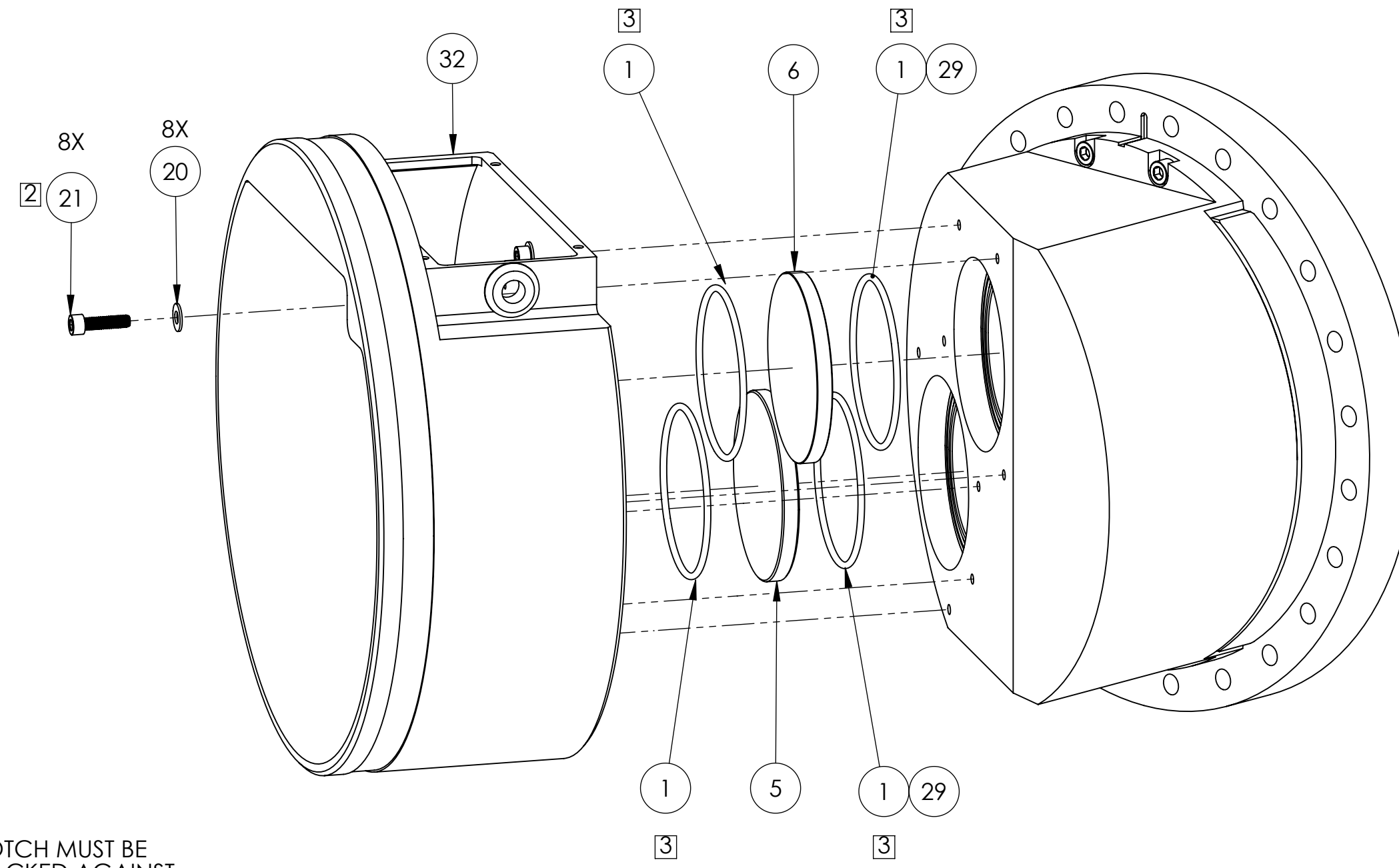
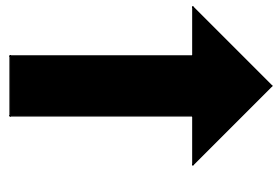
**STEP 1**



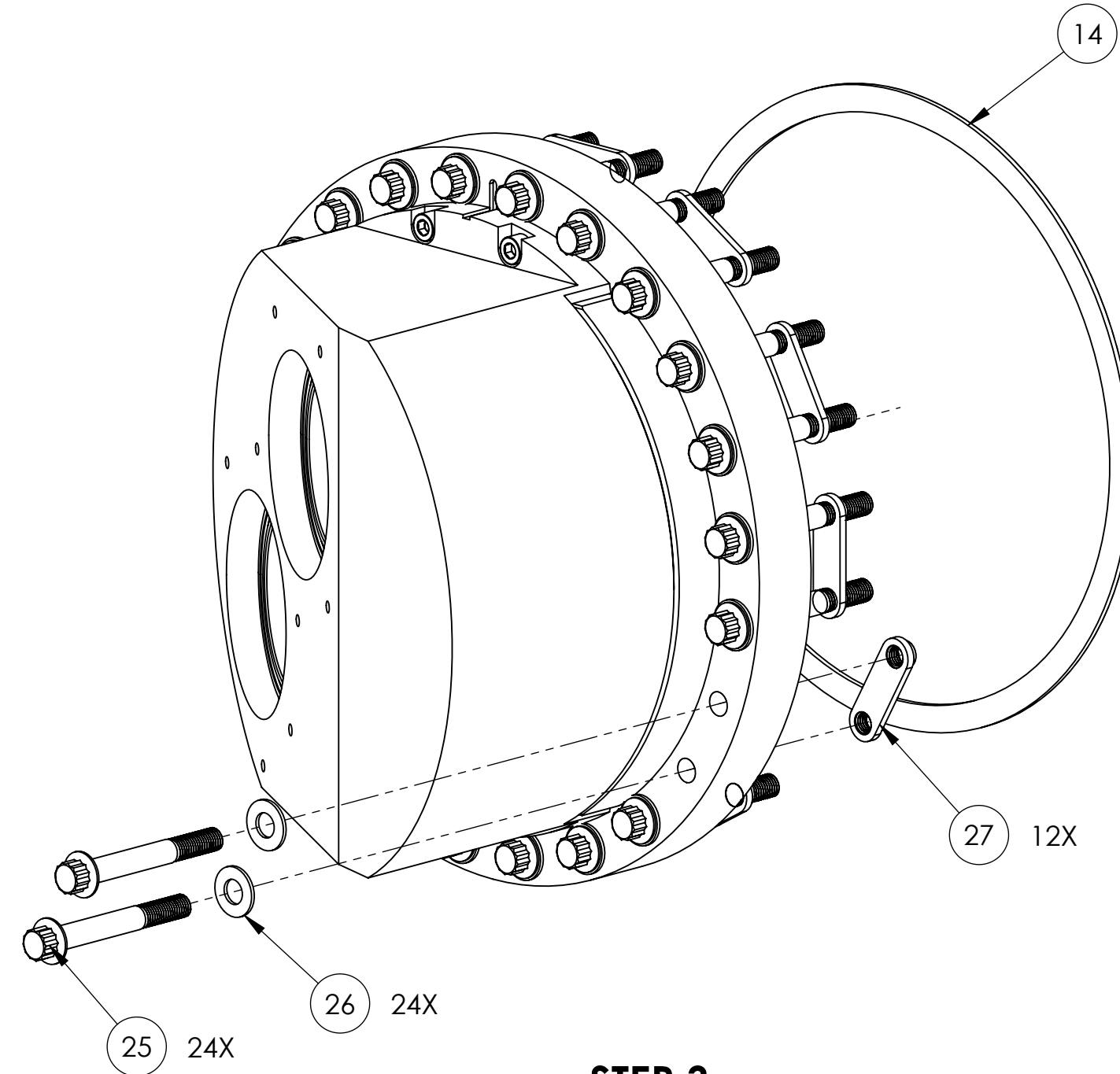
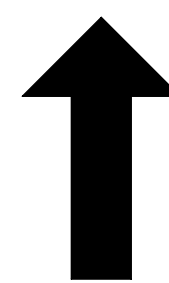
**DETAIL D  
SCALE 1 : 1**



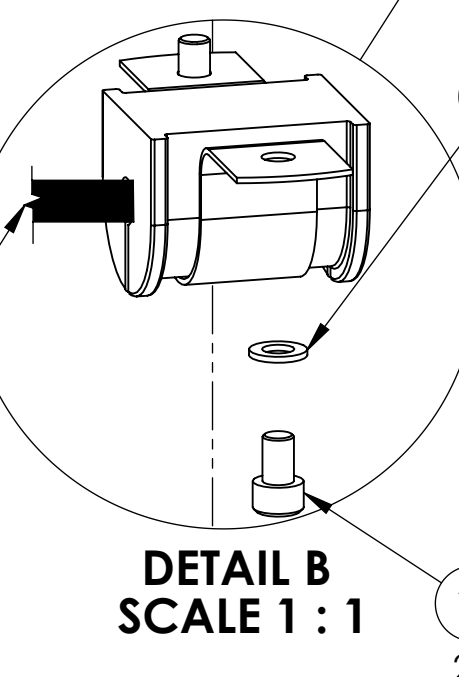
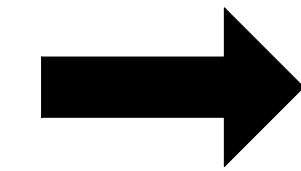
**STEP 2**



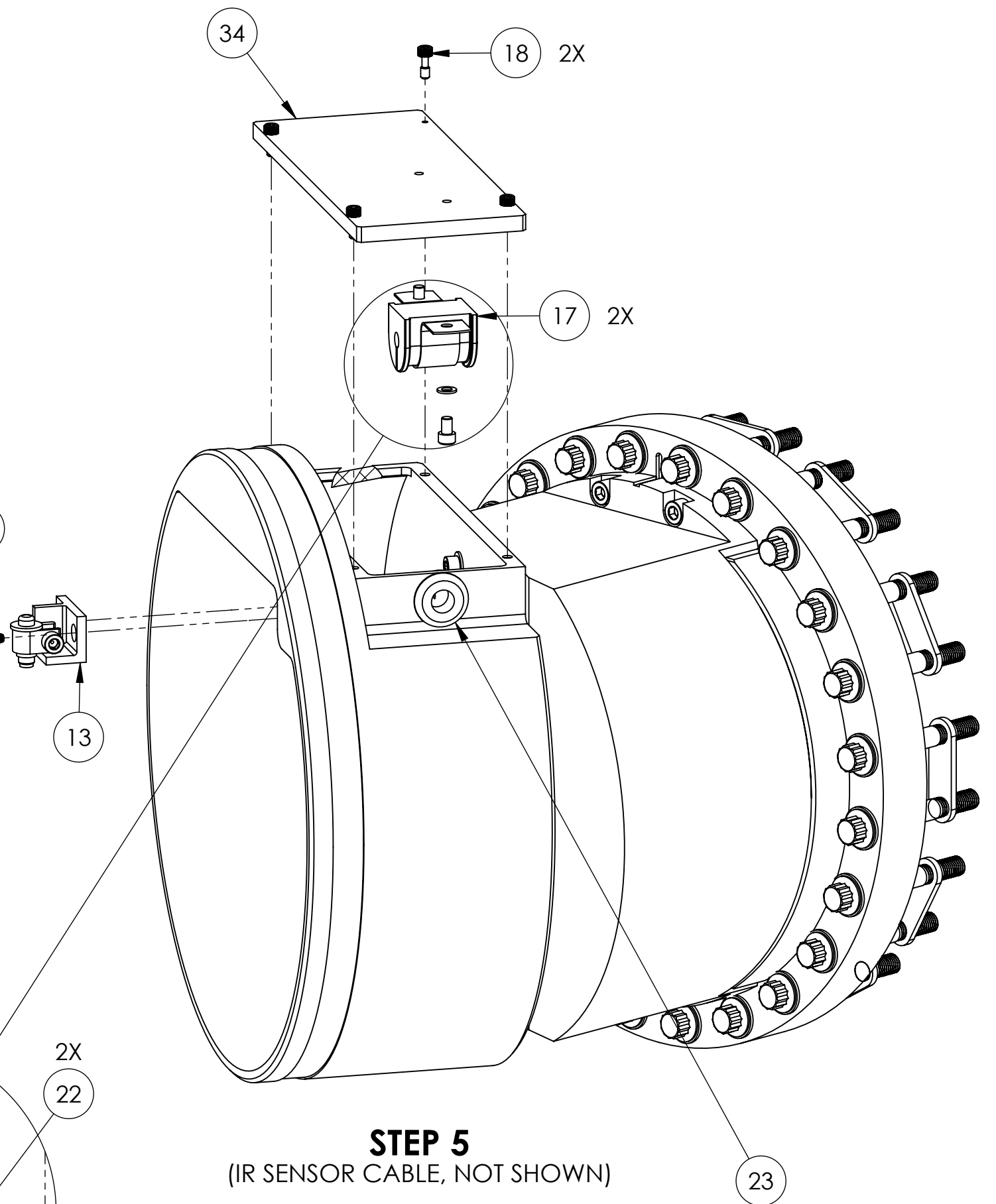
**STEP 4**



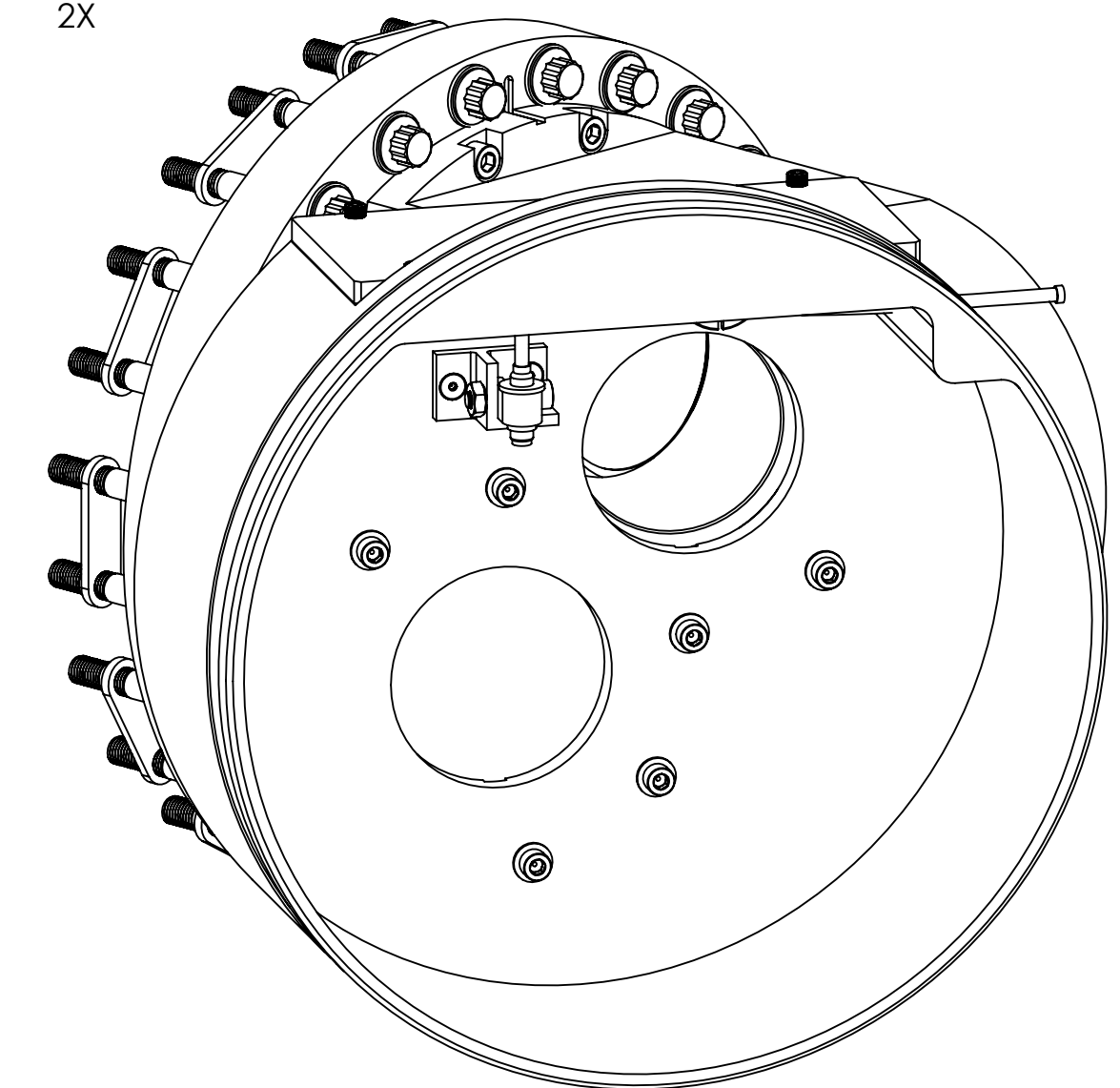
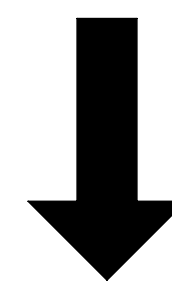
**STEP 5**



**DETAIL B  
SCALE 1 : 1**



**STEP 5  
(IR SENSOR CABLE, NOT SHOWN)**



**ISO VIEW  
(ASSEMBLED)**

- 1 TORQUE TO 65 IN-LB MAX.
- 2 TORQUE TO 20 IN-LB MAX.
- 3 USING A CLEAN BLADE, MAKE SLITS IN O-RINGS, ALLOWING CAVITY TO VENT
- 4 WEDGED ITEMS MUST BE ORIENTED AS INDICATED

<b>LIGO</b> CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
SIZE DWG. NO.	REV.
<b>D</b> D1101627	v4
SCALE: 1:2	PROJECTION:
SHEET 3 OF 3	

D1101627\_VIEWPORT ENCLOSURE ASSY\_H-I-LI\_COOP\_PART PDM REV X-135\_DRAWING PDM REV X-015