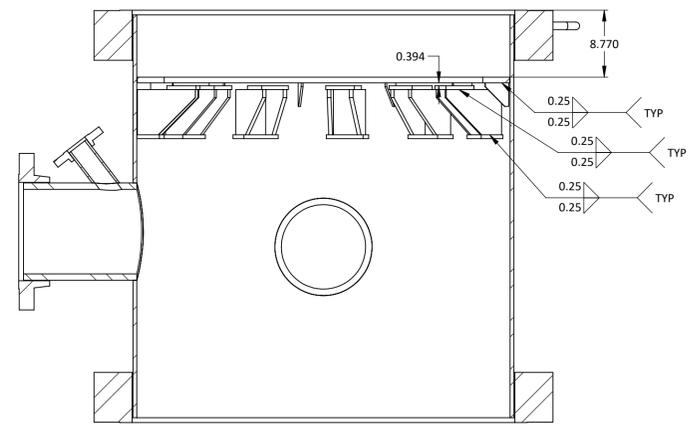
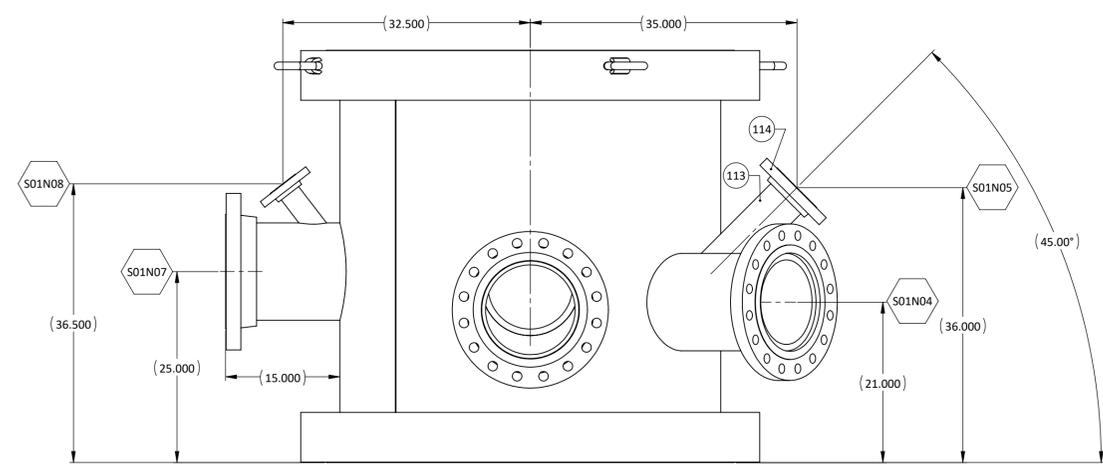
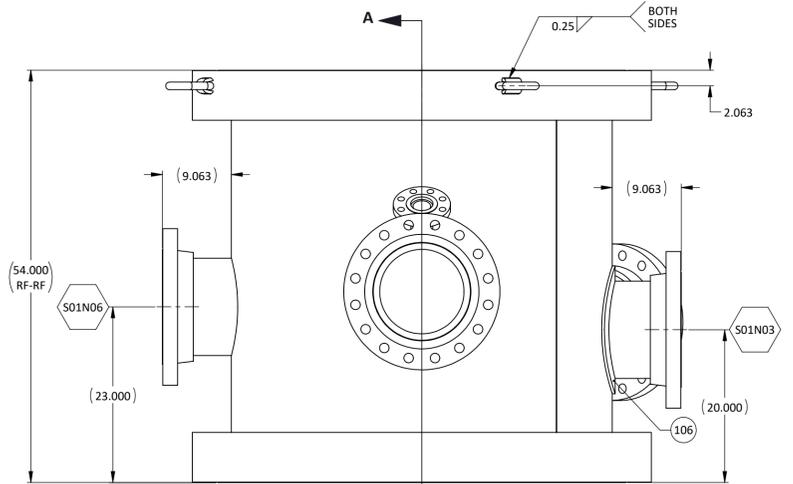


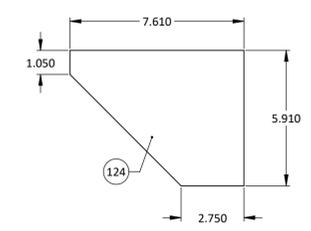
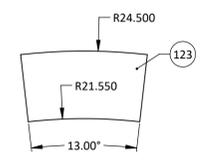
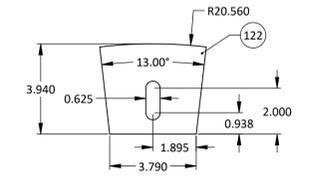
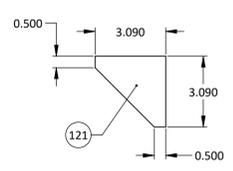
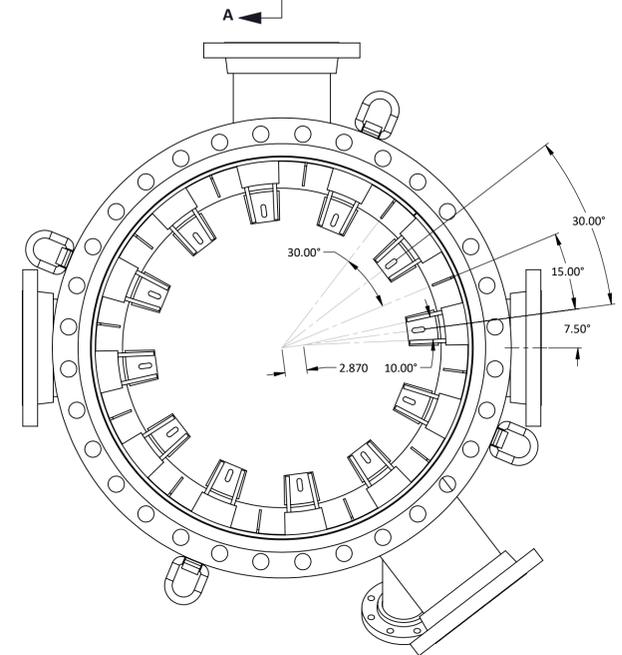
BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
101	1	SHELL, SPOOL 1	SA-516 70
102	1	PIPE - SCH. 100, 12.00 NPS	SA-106 B
103	1	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
104	1	PIPE - SCH. XS, 12.00 NPS	SA-106 B
105	1	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
106	1	REPAD, 16.75" OD, 3/8" THK	SA-516 70
107	1	PIPE - SCH. 100, 12.00 NPS	SA-106 B
108	1	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
109	1	PIPE - SCH. 100, 12.00 NPS	SA-106 B
110	1	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
111	1	PIPE - SCH. XS, 2.50 NPS	SA-106 B
112	1	FLANGE, B16.5 RFSO - 300#, 2.50 NPS	SA-105
113	1	PIPE - SCH. STD., 5.00 NPS	SA-106 B
114	1	FLANGE, B16.5 RFSO - 300#, 5.00 NPS	SA-105
120	1	SHELF RING, 48.88" OD, 41.83" ID, 3/4" THK	SA-516 70
121	12	SHELF STIFFENER, 1/4" THK	SA-516 70
122	12	SUPPORT TOP PLATE, 1/2" THK	SA-240 316
123	12	SUPPORT BOTTOM PLATE, 1/2" THK	SA-240 316
124	24	SUPPORT GUSSET, 1/2" THK	SA-240 316
601	2	FLANGE, SPOOL BODY	SA-105N, FINE GRAIN
704	4	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL

- NOTES**
- ALL DIMENSIONS IN INCHES.
 - ALL WELDS SHALL BE NEAT IN APPEARANCE, FREE FROM SLAG AND OTHER DEFECTS.
 - REMOVE ALL SHARP EDGES ON NOZZLES (1/8" MINIMUM RADIUS)
 - ALL NOZZLES TO SUPPORT NOMINAL LOADS ONLY.
 - GRIND WELDS FLUSH UNDER REPADS.
 - MAXIMUM MISALIGNMENT OF BUTT JOINTS IS LIMITED TO .25T (CATEGORY A, B, C, D UP TO 1/2" THICK)
 - ALL FITTINGS CONFORM TO B16.9 STANDARDS.
 - ALL COUPLINGS TO CONFORM TO B16.11 STANDARDS.
 - ALL FLANGES TO CONFORM TO B16.5 / B16.47 STANDARDS.
 - FLANGE BOLT HOLES TO STRADDLE NATURAL CENTRE LINES.
 - TELLTALE HOLE 1/4" NPT REQUIRED IN ALL REPADS AND SADDLE WEAR PLATES.
 - * NEW ITEM

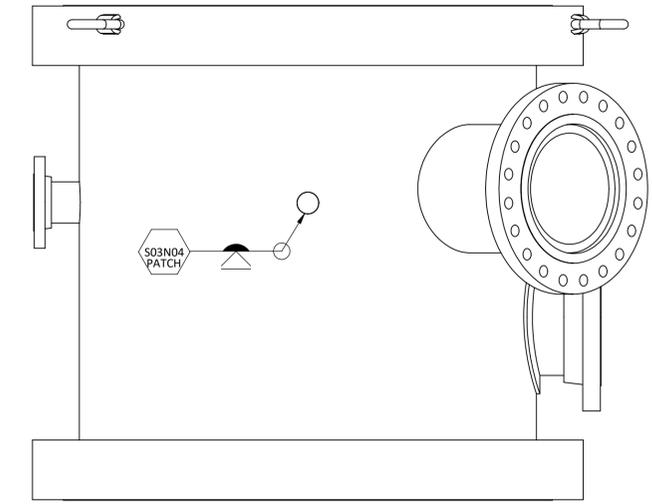
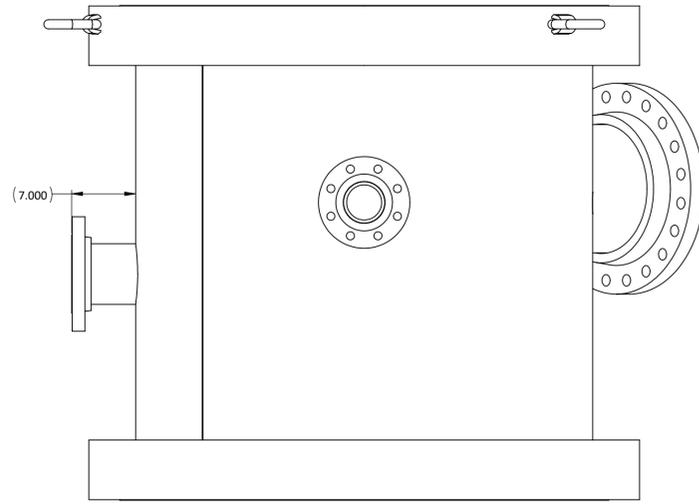
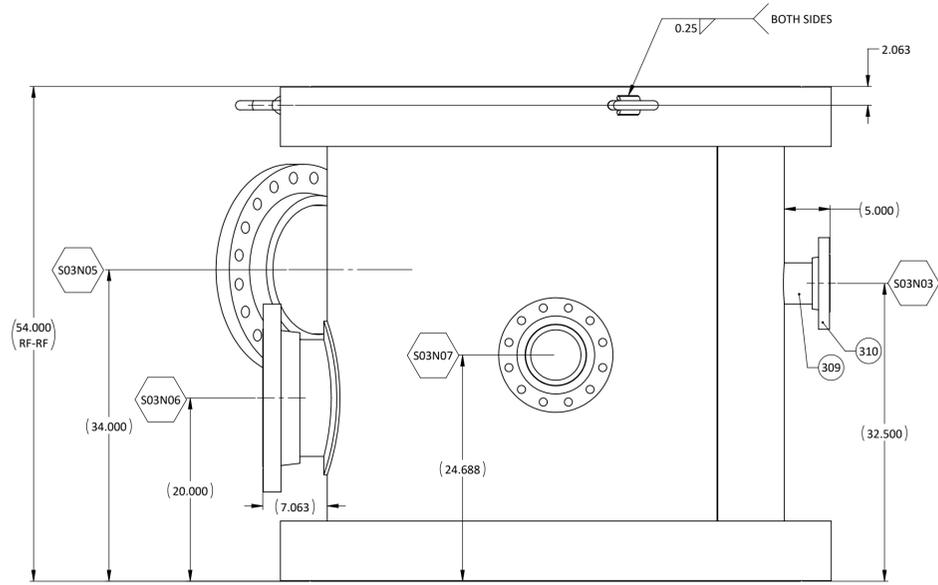
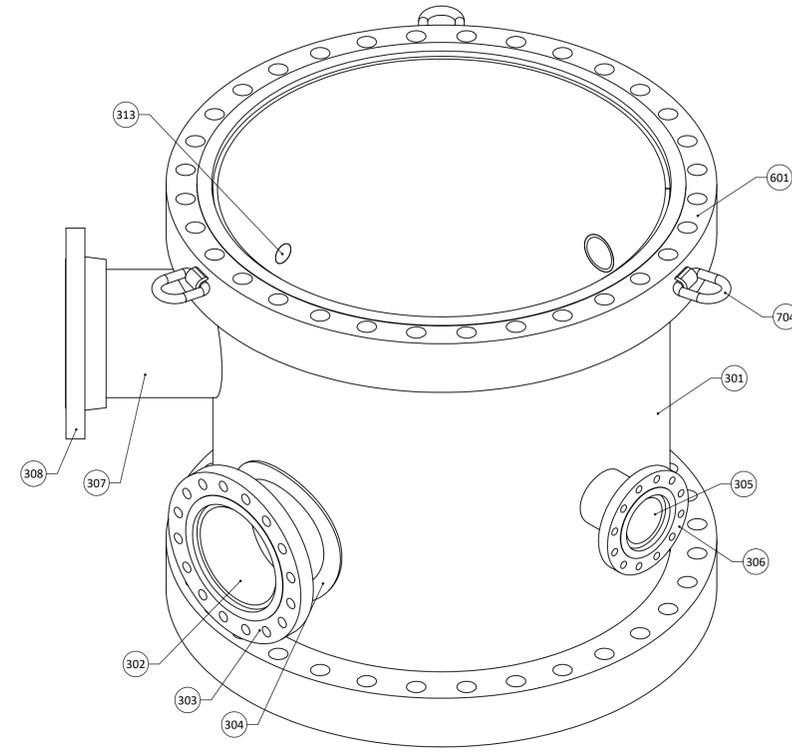
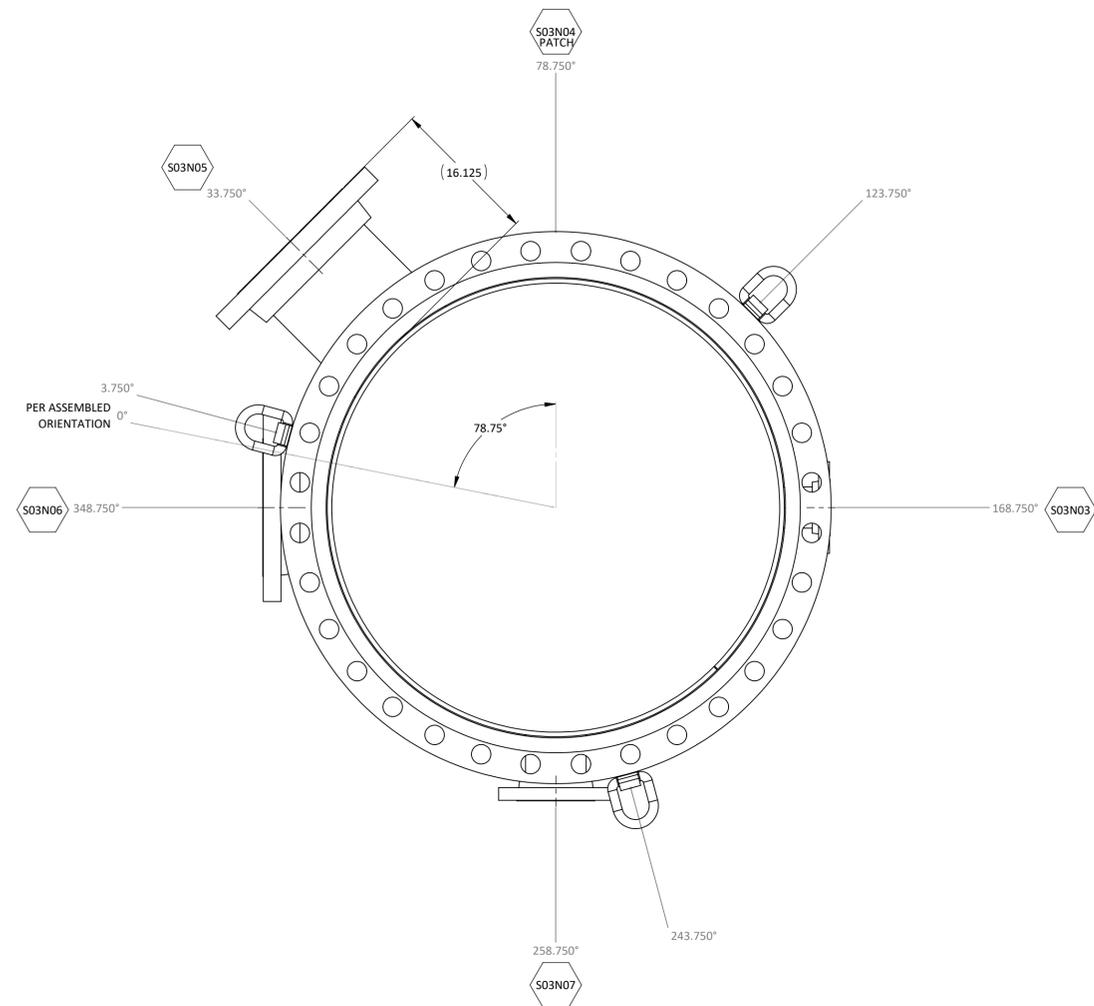
- ALTERATION ACTIONS**
- REMOVE EXISTING LUGS FROM ITEM 601
 - GRIND LOCATIONS FLUSH
 - MT OR PT INSPECT LOCATIONS
 - WELD NEW ITEM 704 AS SHOWN
 - MT OR PT INSPECT WELDS
 - WELD NEW ITEMS 120 THRU 124 AS SHOWN



SECTION A-A



TOLERANCES		TITLE	
ANGLES: ±0.5		SPOOL 1 ASSEMBLY	
X: ±0.02		SIZE	REVISION
.XX: ±0.01		C	2
.XXX: ±0.005		JOB ID	DATE
		PVENG# 19133	19133-000
		SCALE	SHEET
		1:12	2 OF 7
THIRD ANGLE PROJECTION		THIS DRAWING AND THE INFORMATION HEREIN IS CONFIDENTIAL, AND MUST NOT BE REPRODUCED OR USED IN ANY WAY WITHOUT THE WRITTEN PERMISSION OF PRESSURE VESSEL ENGINEERING LTD.	



BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
301	1	SHELL, SPOOL 3	SA-516 70
302	1	PIPE - SCH. XS, 12.00 NPS	SA-106 B
303	1	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
304	1	REPAD, 16.75" OD, 3/8" THK	SA-516 70
305	1	PIPE - SCH. 120, 6.00 NPS	SA-106 B
306	1	FLANGE, B16.5 RFSO - 300#, 6.00 NPS	SA-105
307	1	PIPE - SCH. 100, 14.00 NPS	SA-106 B
308	1	FLANGE, B16.5 RFSO - 300#, 14.00 NPS	SA-105
309	1	PIPE - SCH. XS, 4.00 NPS	SA-106 B
310	1	FLANGE, B16.5 RFSO - 300#, 4.00 NPS	SA-105
313	1	PATCH PLATE, 3" OD, 1/2" THK, ROLL TO 24.5" INSIDE RADIUS	SA-516 70
601	2	FLANGE, SPOOL BODY	SA-105N, FINE GRAIN
704	3	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL

- NOTES**
1. ALL DIMENSIONS IN INCHES.
 2. ALL WELDS SHALL BE NEAT IN APPEARANCE, FREE FROM SLAG AND OTHER DEFECTS.
 3. REMOVE ALL SHARP EDGES ON NOZZLES (1/8" MINIMUM RADIUS)
 4. ALL NOZZLES TO SUPPORT NOMINAL LOADS ONLY.
 5. GRIND WELDS FLUSH UNDER REPADS.
 6. MAXIMUM MISALIGNMENT OF BUTT JOINTS IS LIMITED TO .25T (CATEGORY A, B, C, D UP TO 1/2" THICK)
 7. ALL FITTINGS CONFORM TO B16.9 STANDARDS.
 8. ALL COUPLINGS TO CONFORM TO B16.11 STANDARDS.
 9. ALL FLANGES TO CONFORM TO B16.5 / B16.47 STANDARDS.
 10. FLANGE BOLT HOLES TO STRADDLE NATURAL CENTRE LINES.
 11. TELLTALE HOLE 1/4 NPT REQUIRED IN ALL REPADS AND SADDLE WEAR PLATES.
 12. * NEW ITEM

- ALTERATION ACTIONS**
1. REMOVE EXISTING LUGS FROM ITEM 601
 2. REMOVE EXISTING SUPPORT LEGS FROM ITEM 301
 3. REMOVE EXISTING S03N04
 4. GRIND LOCATIONS FLUSH/SMOOTH, BEVEL AS REQUIRED
 5. MT OR PT INSPECT ALL GRIND LOCATIONS
 6. WELD NEW ITEM 704 AS SHOWN
 7. WELD NEW ITEM 313 AS SHOWN
 8. MT OR PT INSPECT WELDS

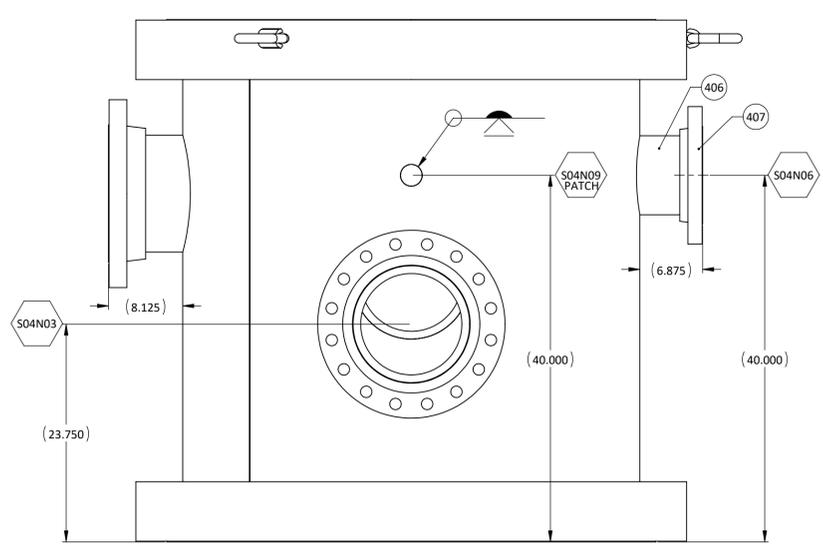
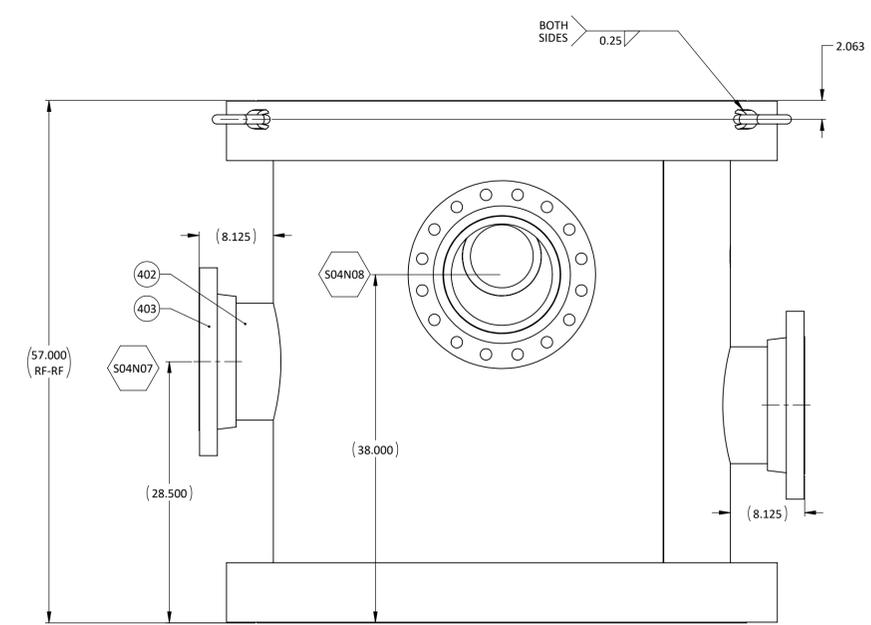
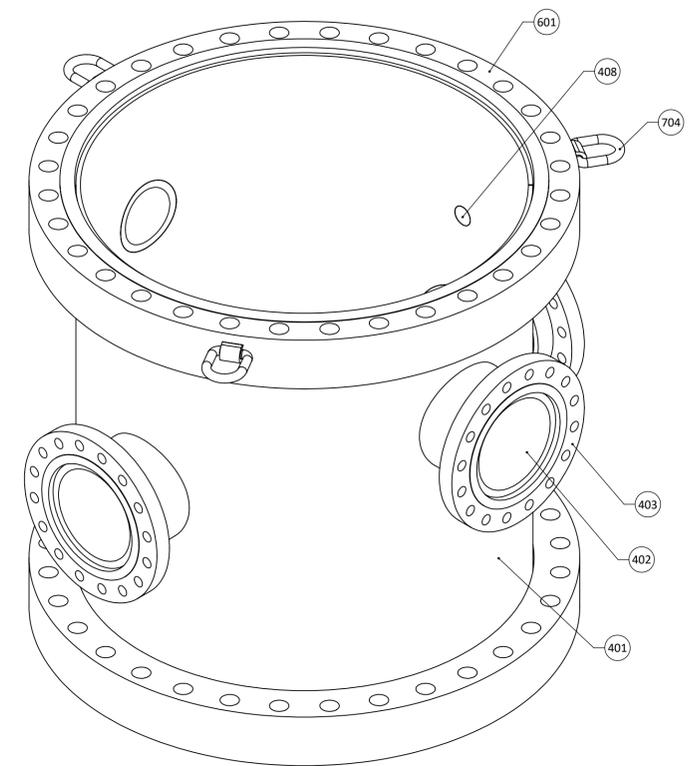
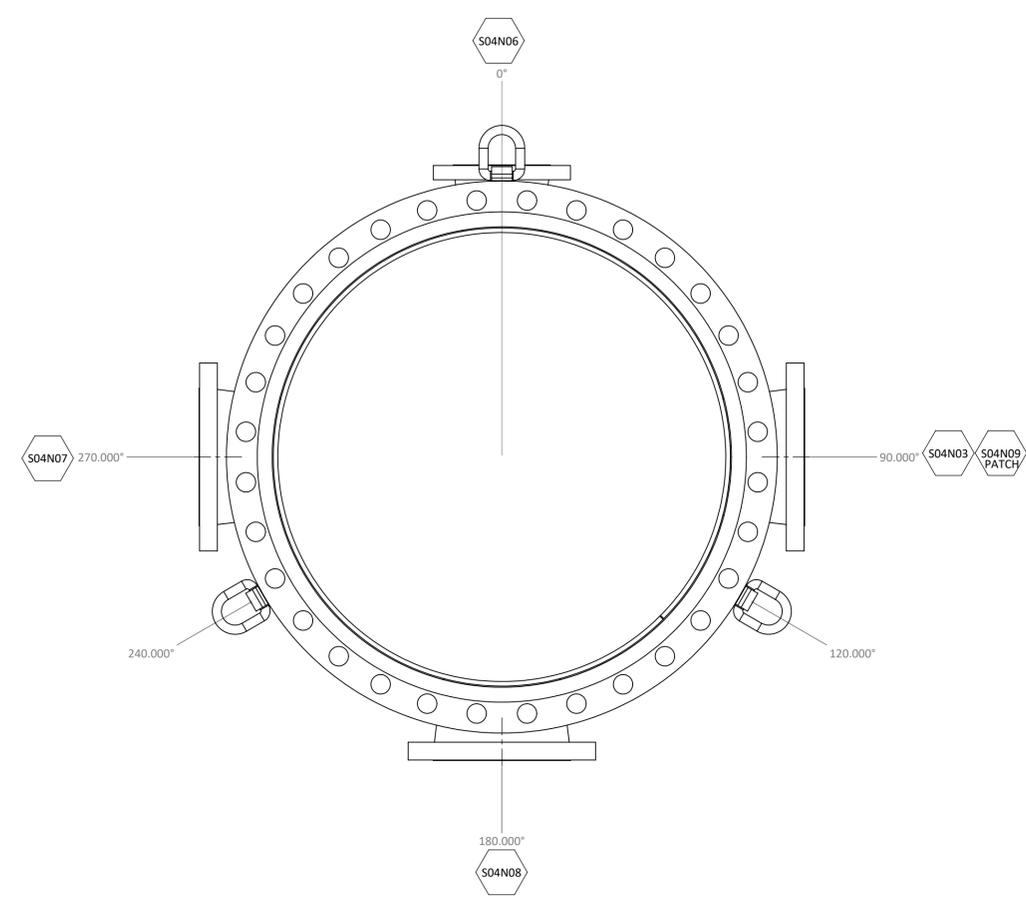
PVENG Pressure Vessel Engineering
 1-1440 KING ST. N. PO BOX 112
 ST. JACOBS, ON, CANADA, N0B 2N0

TOLERANCES		TITLE	
ANGLES: ±0.5		SPOOL 3 ASSEMBLY	
.X: ±0.02		SIZE	REVISION
.XX: ±0.01		C	2
.XXX: ±0.005		JOB ID	DATE
		PVENG# 19133	19133-000
THIRD ANGLE PROJECTION		MATERIAL	SHEET
		1:10	4 OF 7
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BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
401	1	SHELL, SPOOL 4	SA-516 70
402	3	PIPE - SCH. 100, 12.00 NPS	SA-106 B
403	3	FLANGE, B16.5 RFSO - 300#, 12.00 NPS	SA-105
406	1	PIPE - SCH. XXS, 8.00 NPS	SA-106 B
407	1	FLANGE, B16.5 RFSO - 300#, 8.00 NPS	SA-105
408	1	PATCH PLATE, 3" OD, 1/2" THK, ROLL TO 24.5" INSIDE RADIUS	SA-516 70
601	2	FLANGE, SPOOL BODY	SA-105N, FINE GRAIN
704	3	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL

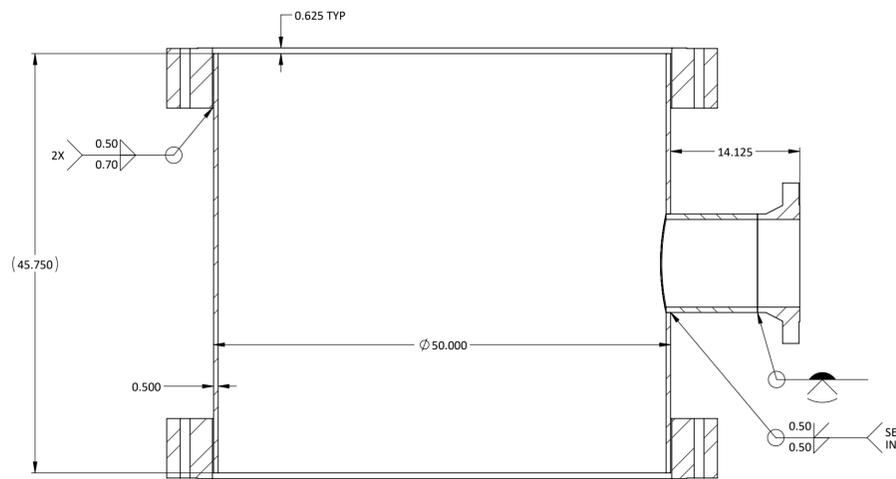
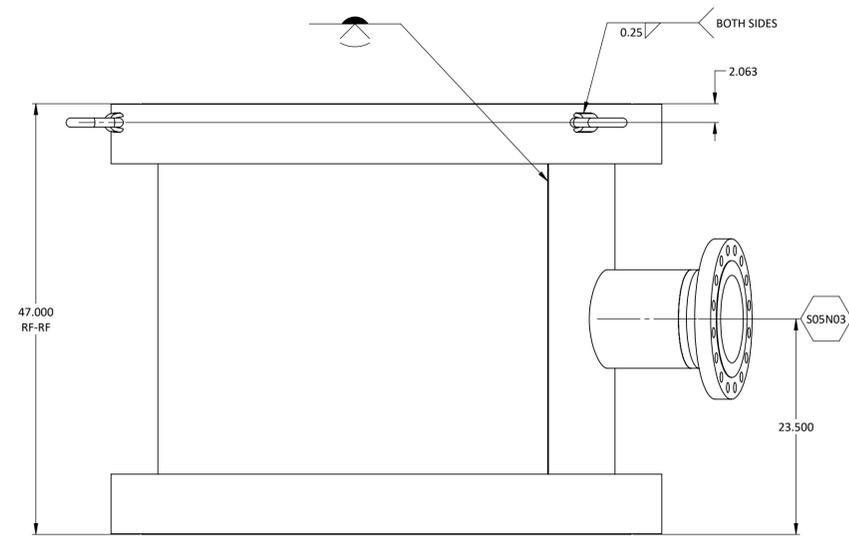
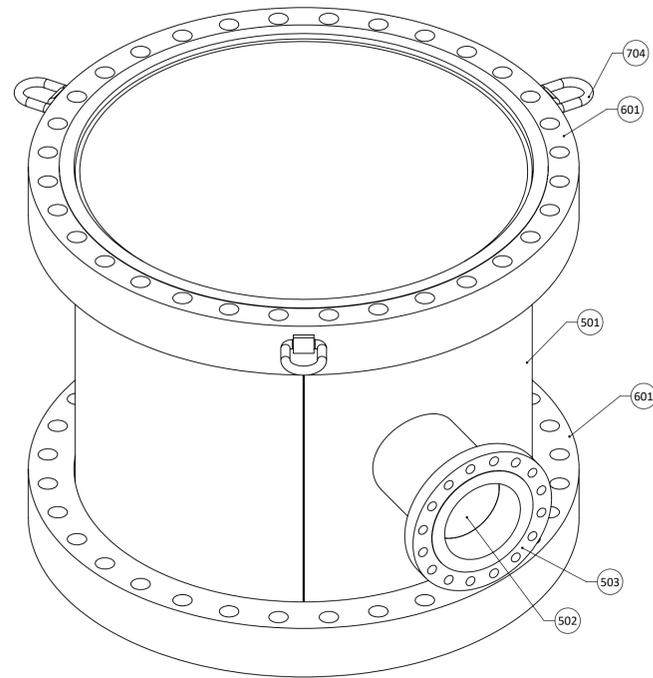
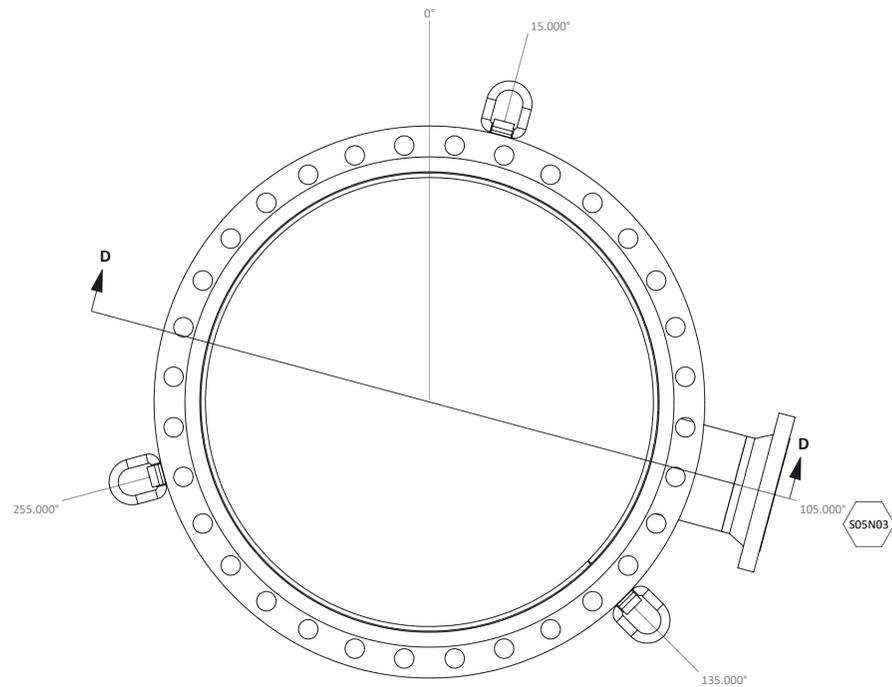
- NOTES**
- ALL DIMENSIONS IN INCHES.
 - ALL WELDS SHALL BE NEAT IN APPEARANCE, FREE FROM SLAG AND OTHER DEFECTS.
 - REMOVE ALL SHARP EDGES ON NOZZLES (1/8" MINIMUM RADIUS)
 - ALL NOZZLES TO SUPPORT NOMINAL LOADS ONLY.
 - GRIND WELDS FLUSH UNDER REPADS.
 - MAXIMUM MISALIGNMENT OF BUTT JOINTS IS LIMITED TO .25T (CATEGORY A, B, C, D UP TO 1/2" THICK)
 - ALL FITTINGS CONFORM TO B16.9 STANDARDS.
 - ALL COUPLINGS TO CONFORM TO B16.11 STANDARDS.
 - ALL FLANGES TO CONFORM TO B16.5 / B16.47 STANDARDS.
 - FLANGE BOLT HOLES TO STRADDLE NATURAL CENTRE LINES.
 - TELLTALE HOLE 1/4 NPT REQUIRED IN ALL REPADS AND SADDLE WEAR PLATES.
 - * NEW ITEM

- ALTERATION ACTIONS**
- REMOVE EXISTING LUGS FROM ITEM 601
 - REMOVE EXISTING S04N09
 - GRIND LOCATIONS FLUSH/SMOOTH, BEVEL AS REQUIRED
 - MT OR PT INSPECT LOCATIONS
 - WELD NEW ITEM 704 AS SHOWN
 - WELD NEW ITEM 408 AS SHOWN
 - MT OR PT INSPECT WELDS

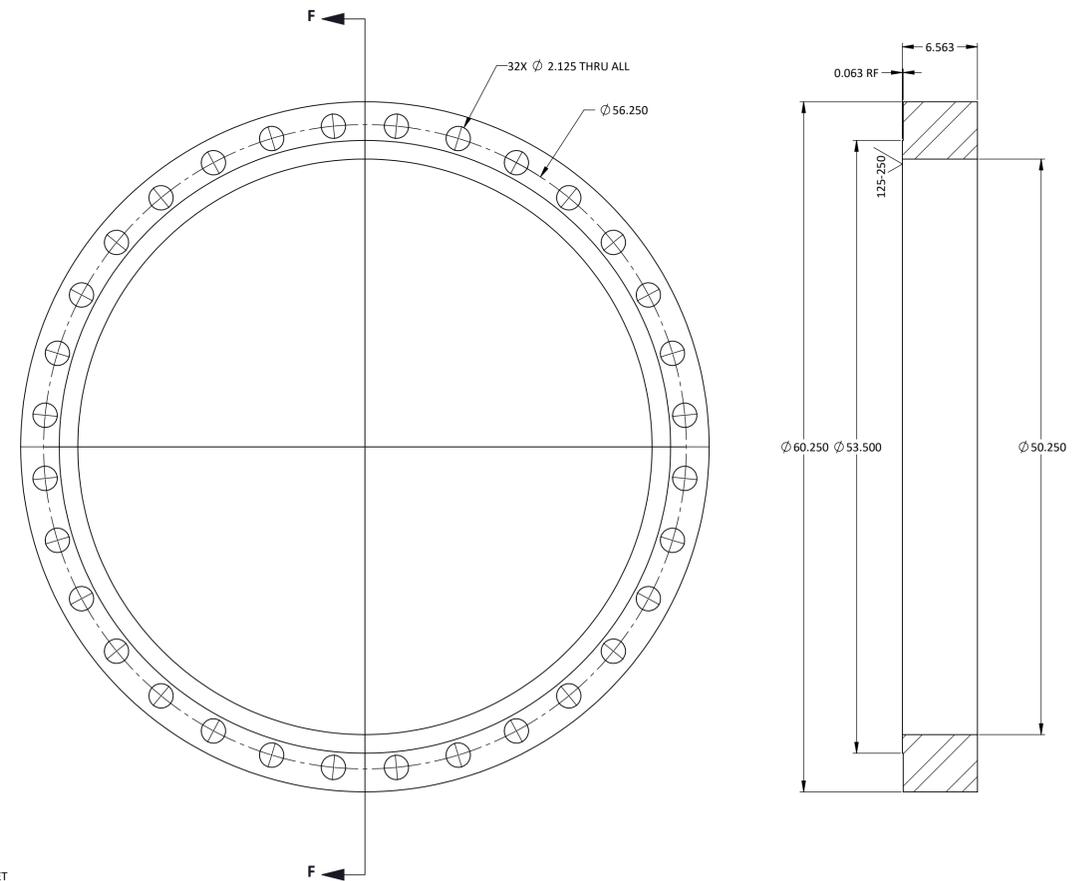


TOLERANCES		TITLE	
ANGLES: ±0.5		SPOOL 4 ASSEMBLY	
X: ±0.02		SIZE	REVISION
.XX: ±0.01		C	2
.XXX: ±0.005		JOB ID	DATE
THIRD ANGLE PROJECTION		PVENG# 19133	19133-000
SCALE	MATERIAL	SHEET	
1:10		5 OF 7	

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SECTION D-D



SECTION F-F
SCALE 1 : 8

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
* 501	1	SHELL, SPOOL 5	SA-516 70
* 502	1	PIPE - SCH. 80, 10.00 NPS	SA-106 B
* 503	1	FLANGE, B16.5 RFWN - 300#, 10.00 NPS, 9.56" BORE	SA-105
* 601	2	FLANGE, SPOOL BODY	SA-105N, FINE GRAIN
* 704	3	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL

- NOTES**
1. ALL DIMENSIONS IN INCHES.
 2. ALL WELDS SHALL BE NEAT IN APPEARANCE, FREE FROM SLAG AND OTHER DEFECTS.
 3. REMOVE ALL SHARP EDGES ON NOZZLES (1/8" MINIMUM RADIUS)
 4. ALL NOZZLES TO SUPPORT NOMINAL LOADS ONLY.
 5. GRIND WELDS FLUSH UNDER REPADS.
 6. MAXIMUM MISALIGNMENT OF BUTT JOINTS IS LIMITED TO .25T (CATEGORY A, B, C, D UP TO 1/2" THICK)
 7. ALL FITTINGS CONFORM TO B16.9 STANDARDS.
 8. ALL COUPLINGS TO CONFORM TO B16.11 STANDARDS.
 9. ALL FLANGES TO CONFORM TO B16.5 / B16.47 STANDARDS.
 10. FLANGE BOLT HOLES TO STRADDLE NATURAL CENTRE LINES.
 11. TELLTALE HOLE 1/4 NPT REQUIRED IN ALL REPADS AND SADDLE WEAR PLATES.
 12. * NEW ITEM

- ALTERATION ACTIONS**
1. WELD NEW SPOOL AS SHOWN
 2. 100% RT REQUIRED ON SPOOL SHELL LONG SEAM & 505N03 FLANGE CRIC
 3. MT OR PT INSPECT LIFT DEVICE WELDS

PV ENG Pressure Vessel Engineering
 1-1440 KING ST. N. PO BOX 112
 ST. JACOBS, ON, CANADA, N0B 2N0

TOLERANCES			
ANGLES:	±0.5		
X:	±0.02		
.XX:	±0.01		
.XXX:	±0.005		

TITLE			
SPOOL 5 ASSEMBLY			
SIZE	C	JOB ID	PVENG# 19133
SCALE	1:10	DRAWING NO.	19133-000
MATERIAL		REVISION	2
THIRD ANGLE PROJECTION		SHEET	6 OF 7

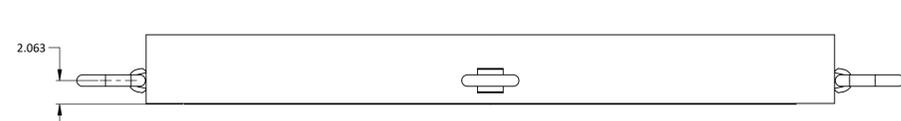
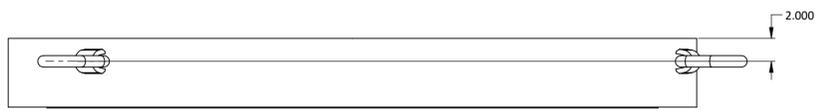
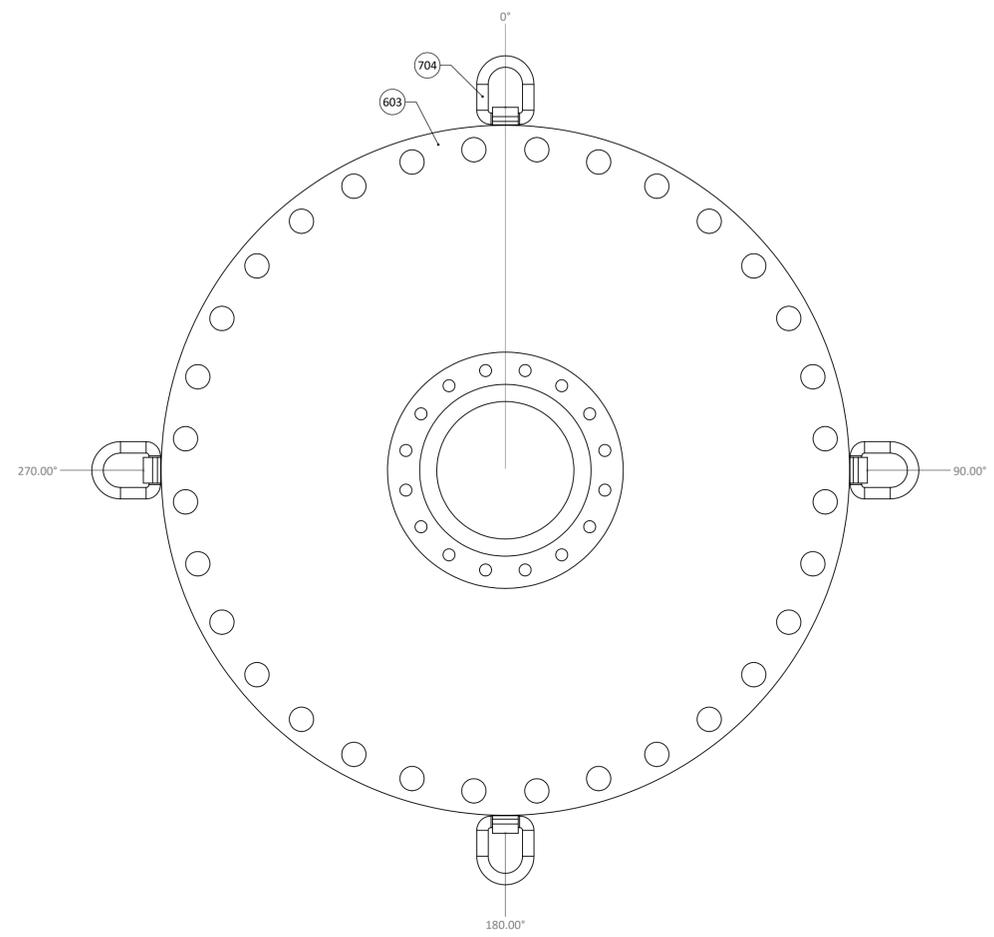
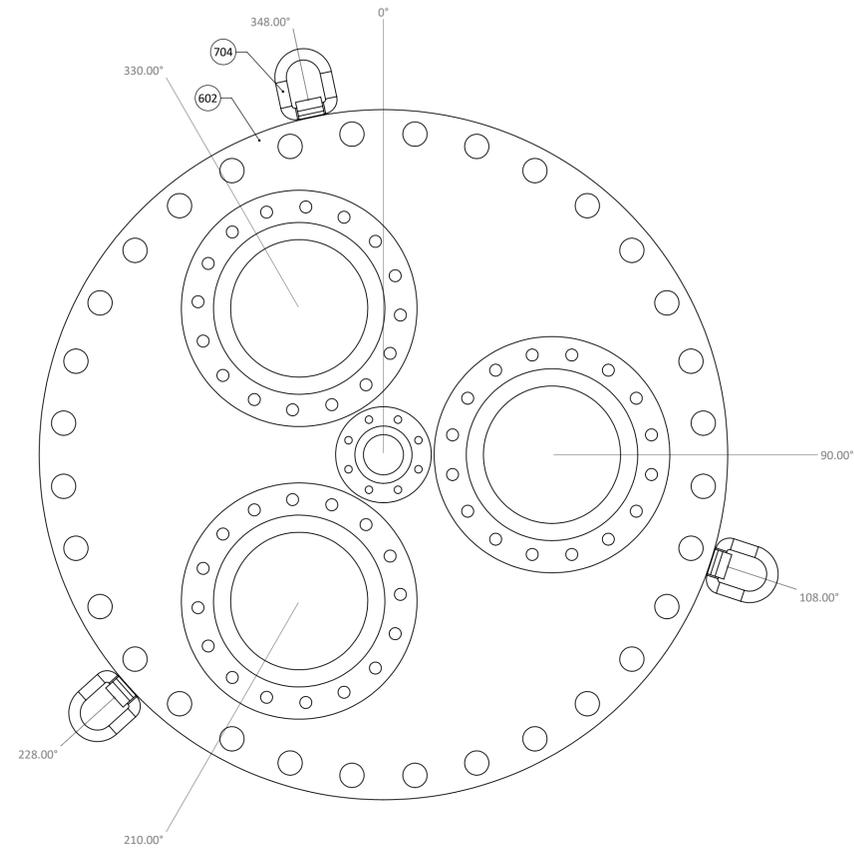
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- NOTES**
1. ALL DIMENSIONS IN INCHES.
 2. ALL WELDS SHALL BE NEAT IN APPEARANCE, FREE FROM SLAG AND OTHER DEFECTS.
 3. FLANGE BOLT HOLES TO STRADDLE NATURAL CENTRE LINES.
 4. * NEW ITEM

- ALTERATION ACTIONS**
1. REMOVE EXISTING LUGS FROM ITEM 602 & 603
 2. GRIND LOCATIONS FLUSH
 3. MT OR PT INSPECT LOCATIONS
 4. WELD NEW ITEM 704 AS SHOWN
 5. MT OR PT INSPECT WELDS

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
602	1	EXISTING TOP FLANGE	SA-105
* 704	3	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
603	1	EXISTING BOTTOM FLANGE	SA-105
* 704	4	LIFT POINT RIGGING CANADA PART ID 28-057-8T, 8 TON	ALLOY STEEL



		Pressure Vessel Engineering 1-1440 KING ST. N. PO BOX 112 ST. JACOBS, ON, CANADA, N0B 2N0	
BLIND FLANGE ASSEMBLY			
TOLERANCES: ANGLES: ±0.5 X: ±0.02 XX: ±0.01 .XXX: ±0.005	SIZE: C JOB ID: PVENG# 19133 DRAWING NO: 19133-000 SCALE: 1:8 MATERIAL: - SHEET: 7 OF 7	REVISION: 2	TITLE:
THIRD ANGLE PROJECTION			
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