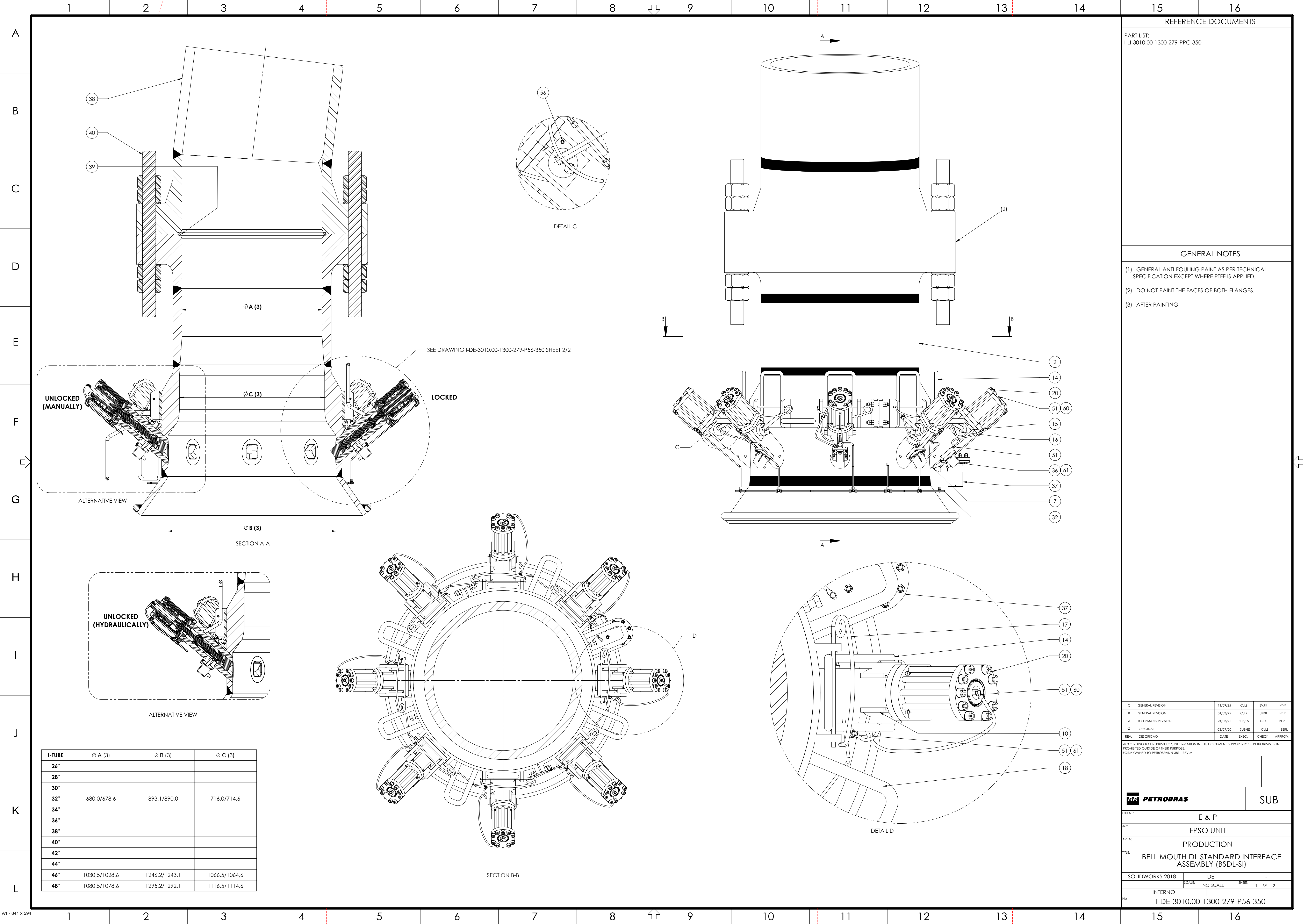




REFERENCE DOCUMENTS

PART LIST:
I-DE-3010.00-1300-279-PPC-350

GENERAL NOTES

- (1) - GENERAL ANTI-FOULING PAINT AS PER TECHNICAL SPECIFICATION EXCEPT WHERE PTFE IS APPLIED.
- (2) - DO NOT PAINT THE FACES OF BOTH FLANGES.
- (3) - AFTER PAINTING

C	GENERAL REVISION	11/09/25	C.J.Z	E.V.N	NTH
B	GENERAL REVISION	31/03/25	C.J.Z	U488	NTH
A	TOLERANCES REVISION	24/03/21	SUB/ES	C.J.X	BRL
Ø	ORIGINAL	03/07/20	SUB/ES	C.J.Z	BRL
REV.	DESCRIÇÃO	DATE	EXEC.	CHECK	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.

FORM OWNED TO PETROBRAS N-381 - REV. A1

PETROBRAS

SUB

CLIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

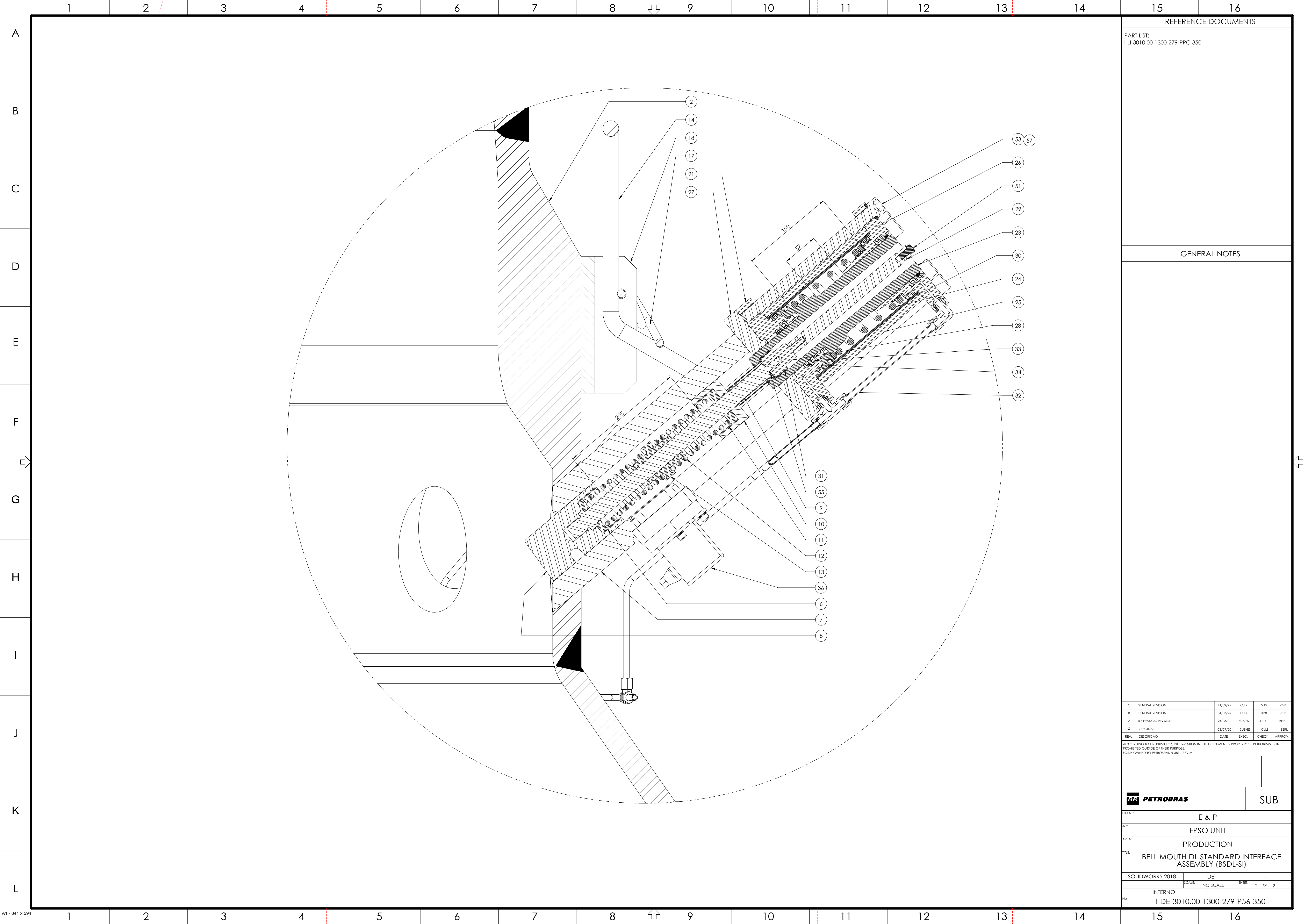
TITLE: BELL MOUTH DL STANDARD INTERFACE ASSEMBLY (BSDI-SI)

SOLIDWORKS 2018 DE -

SCALE: NO SCALE SHEET: 1 OF 2

INTERNO

Nº I-DE-3010.00-1300-279-P56-350



REFERENCE DOCUMENTS	
PART LIST: I-LI-3010.00-1300-279-PPC-350	

GENERAL NOTES

C	GENERAL REVISION	11/09/25	C.J.Z	EV.JN	NTH
B	GENERAL REVISION	31/03/25	C.J.Z	U488	NTH
A	TOLERANCES REVISION	24/03/21	SUB/ES	C.J.X	BER.
Ø	ORIGINAL	03/07/20	SUB/ES	C.J.Z	BER.
REV.	DESCRIÇÃO	DATE	EXEC.	CHECK	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.A1

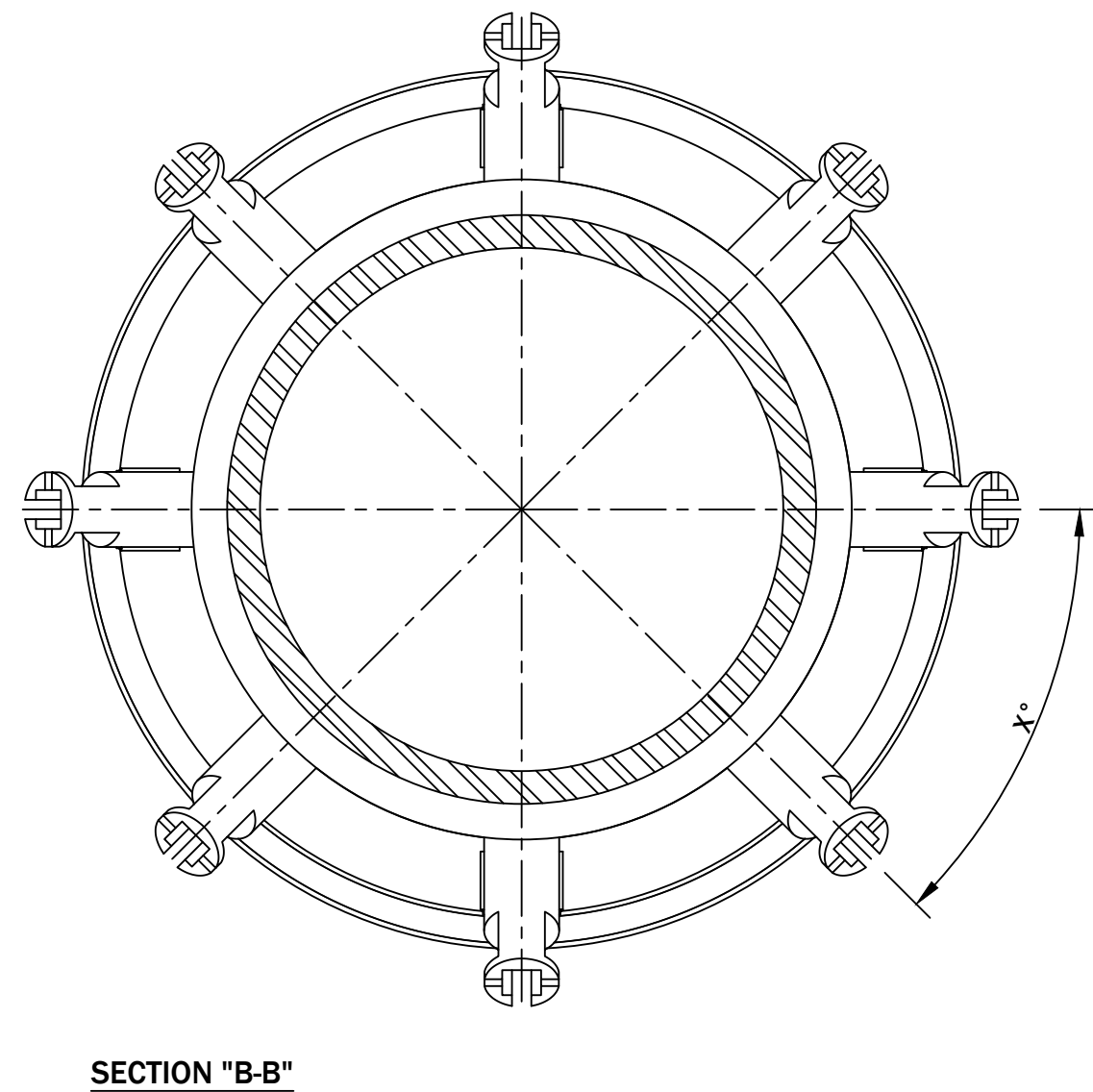
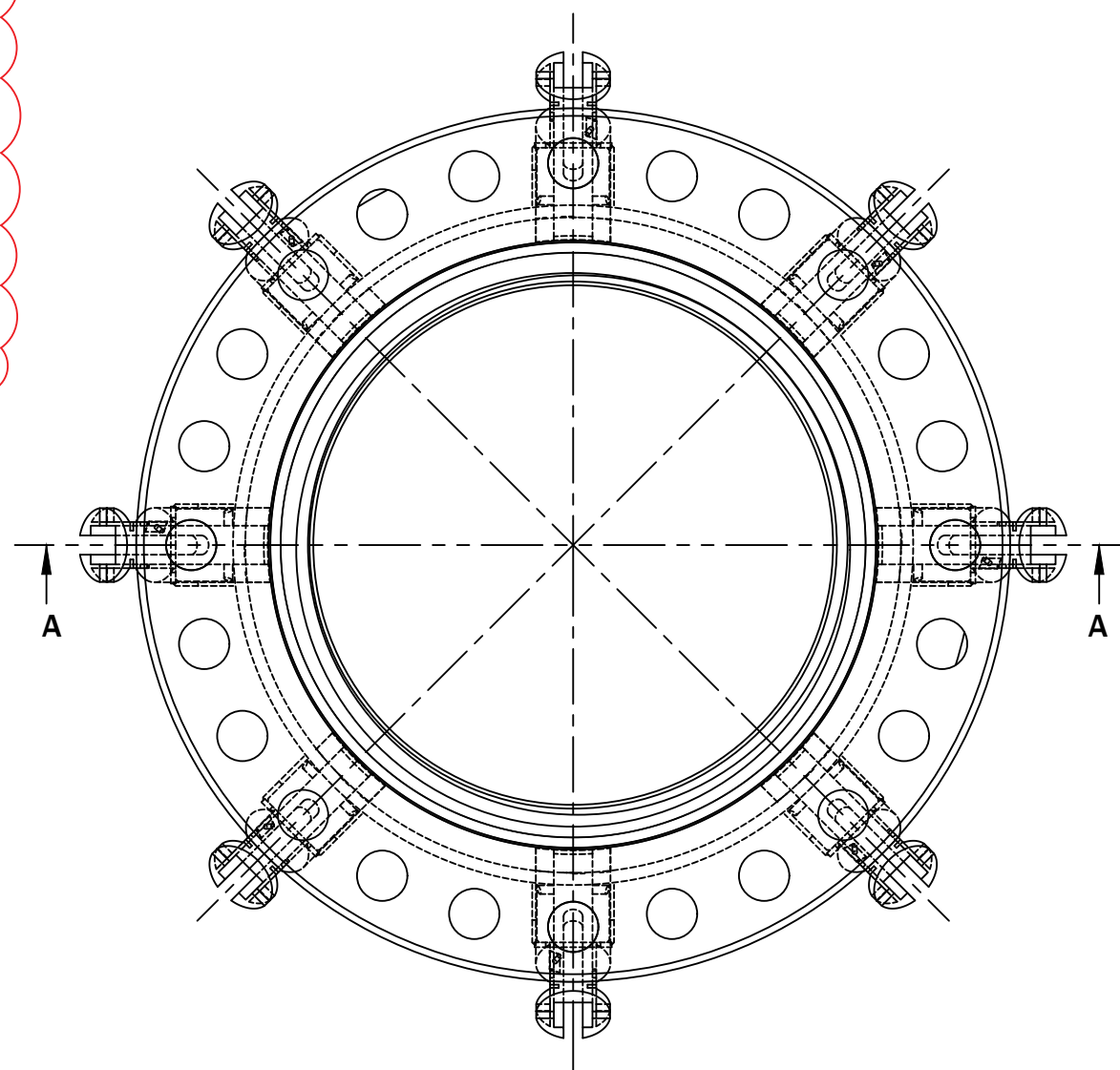
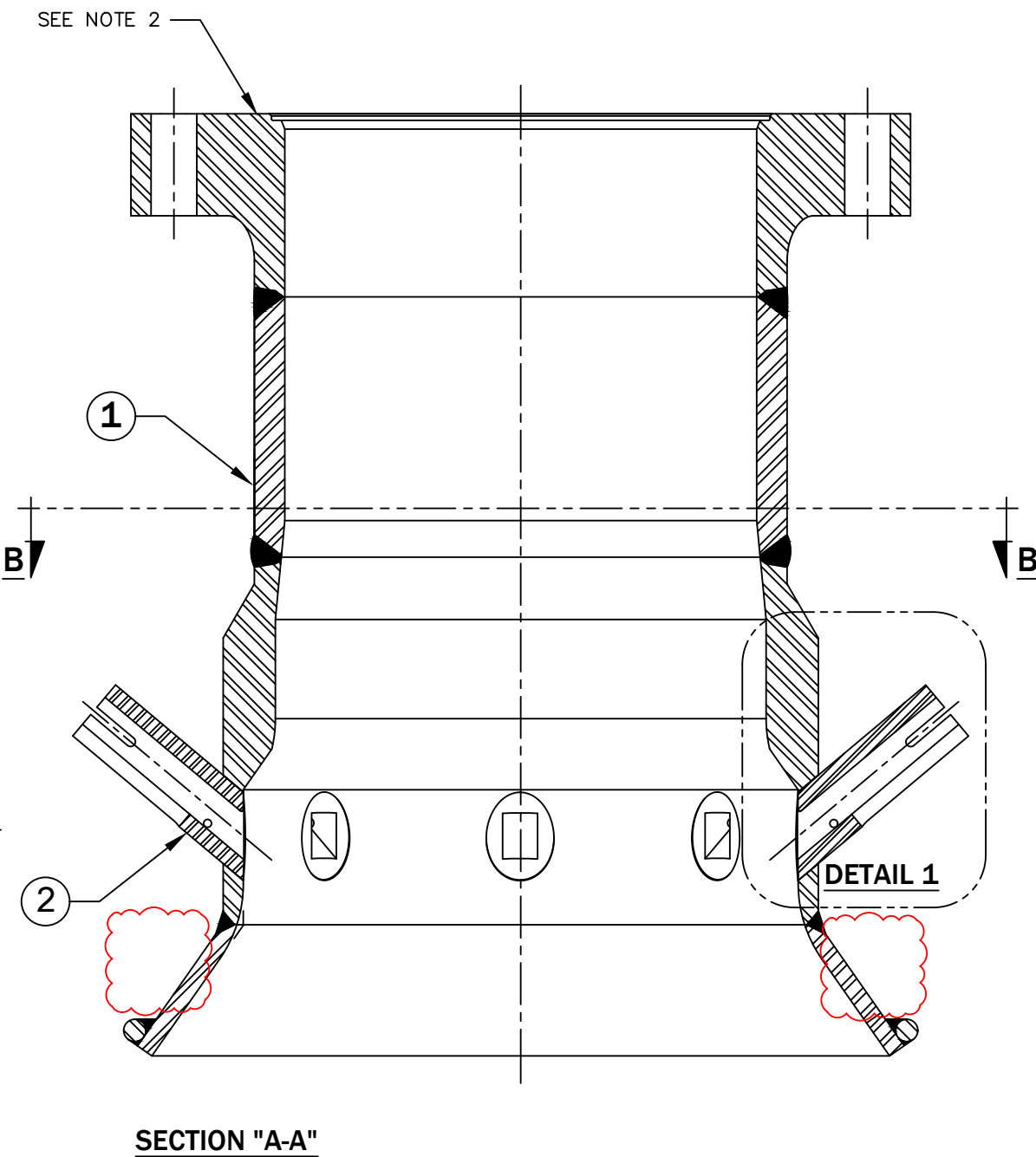
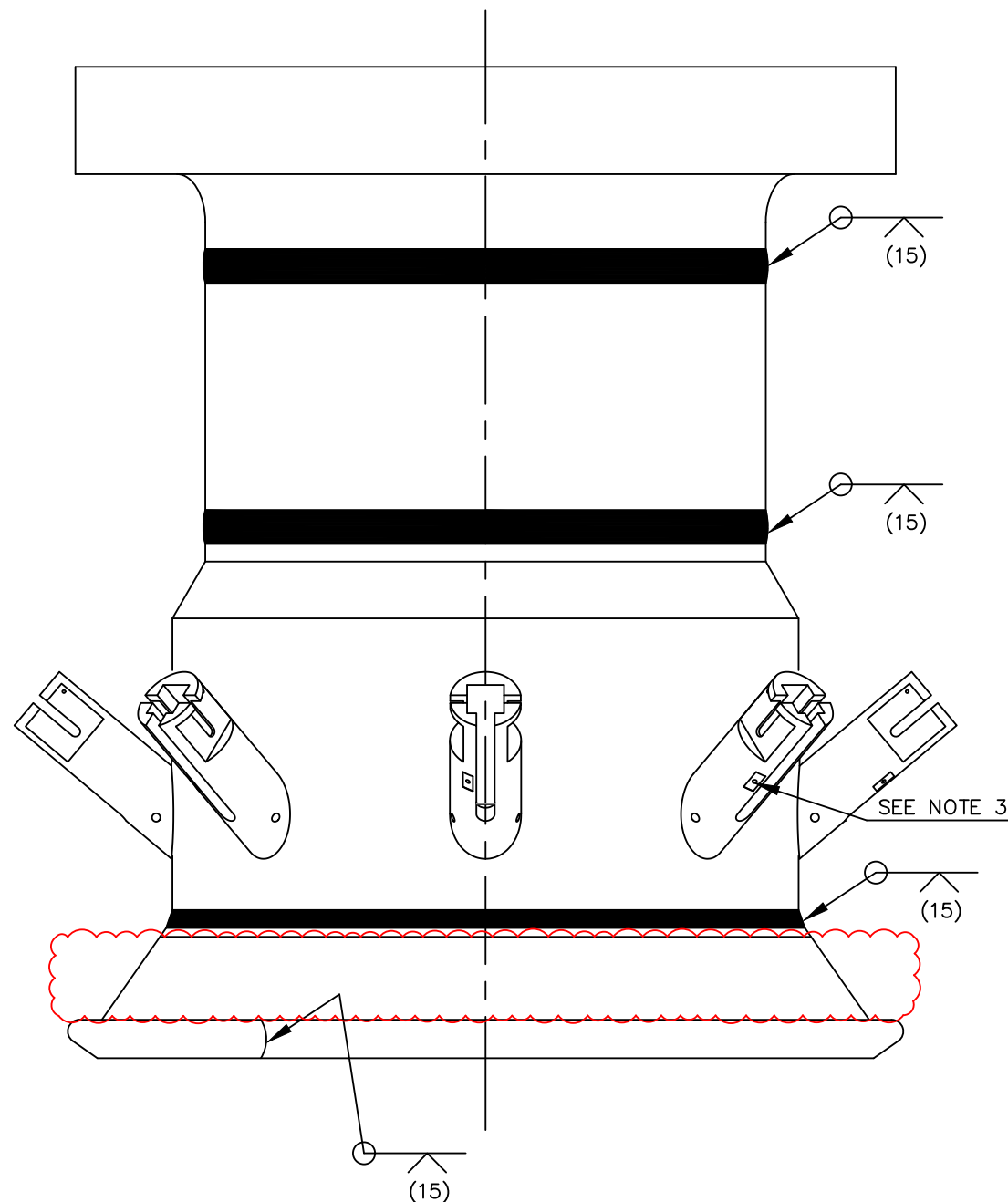
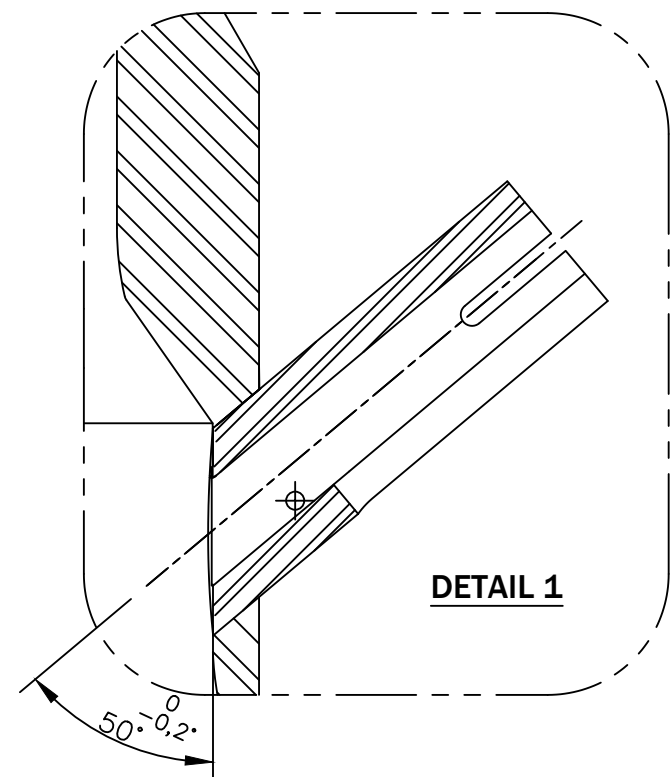
PETROBRAS		SUB
CLIENT: E & P		
JOB: FPSO UNIT		
AREA: PRODUCTION		
TITLE: BELL MOUTH DL STANDARD INTERFACE ASSEMBLY (BSDL-SI)		
SOLIDWORKS 2018	DE	-
SCALE: NO SCALE	SHEET: 2	OF 2
INTERNO		
NO I-DE-3010.00-1300-279-P56-350		

D

C

B

A



BSDL-SI TABLE	
ØI-TUBE	X°
26"	
28"	
30"	
32"	60°
34"	
38"	
40"	
42"	
44"	45°
48"	45°

MATERIAL				WEIGHT		RUGOSITY (C.L.A)		SURFACE COATING TREATMENT																				
LINEAR DIMENSIONS NOT INDICATED — BOILERMAKING								LINEAR DIMENSIONS NOT INDICATED — MACHINING																				
DIMENSIONS (mm)		DE 2 a ≤30	≤120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0,5 a ≤3	0,5 a ≤6	≤30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000											
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGTH		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350

GENERAL NOTES

- 1 - ROUND EXTERNAL FILLET WELDING, (R=3,2um).
- 2 - DO NOT PAINT THIS FACE.
- 3 - DO NOT PAINT FLAT SURFACE ON ROUND BLOCKS (CABLES FOR ELECTRICAL CONTINUITY)
- 4 - ALL WELDS TO BE OF COMPLETE JOINT PENETRATION TYPE (AS PER AWS D1.1 DEFINITION), EXCEPT WHERE INDICATED DIFFERENT

MATERIAL:

① - CENTRAL STRUCTURE = I-DE-3010.00-1300-279-P56-352

② - ROUND BLOCK = I-DE-3010.00-1300-279-P56-355

C	GRAB RING REMOVAL, TABLE, REF.DOC.	MAR 31.2025	CJLZ	U4B8	NTHF
B	WELD DETAIL & GRAB RING DIMENSIONS	MAR 28.2022	SUB/ES	CX4H	BERL
A	ROV DOCKING RING	MAR 12.2021	SUB/ES	CJLZ	BERL
O	ORIGINAL	JUL 03.2020	SUB/ES	CJLZ	BERL
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

THE DATA, OR PART THEREOF ARE PETROBRAS PROPERTY AND THUS MUST NOT BE USED IN ANY WAY WITHOUT PERMISSION

BR PETROBRAS PETRÓLEO BRASILEIRO S.A.		SUB					
CLIENT OR USER		E & P					
JOB OR PROJECT		FPSO UNIT					
AREA OR UNIT		PRODUCTION					
TITLE		WELDING OF THE MAIN STRUCTURE (BSDL-SI)					
DESIGN	SUB/ES	DRAWN	PDDP/TES	CHECK	CJLZ	APPROVAL	BERL
SCALE	1: 15	SIZE	A2	CC		SHEET	1 of 1
DATE	JUL 03.2020	No.	I-DE-3010.00-1300-279-P56-351				

The drawing shows a mechanical part with the following details and section view:

- DETAIL 1**: NTS. Shows a circular cross-section with a 2,0 mm dimension and a 37° angle.
- DETAIL 2**: NTS. Shows a circular cross-section with a 50,8 mm diameter and a 5/15 chamfer.
- DETAIL 3**: NTS. Shows a cross-section with dimensions R=50,0, 60,0, R, 35°, 30° REF, 50°, R=300,0, R=10,0, R=84,0, and Ø P.
- DETAIL 4**: NTS. Shows a circular cross-section with a 40° angle, a 30° angle, a 5,0 mm dimension, and a 3° angle.
- DETAIL 5**: NTS. Shows a cross-section with dimensions Ø S, 5,0 x 45°, and 8,0 x 20,0.
- SECTION "B-B"**: A cross-section of the part showing the internal structure and the location of the holes (X HOLES).

The main drawing includes dimensions: 660,0, 300,0, 299,0, 68,7, 50°, 3,2°, 1,0, 37°, 37°, 2,0, 50,8, 5/15, 40°, 30°, 5,0, 3°, 35°, 30° REF, 50°, R=50,0, 60,0, R, R=300,0, R=10,0, R=84,0, Ø P, and Ø S.

MATERIAL		SEE GENERAL NOTES		RUGOSITY (C.L.A)	
				6,4	
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING					
DIMENSIONS (mm)	DE 2	>30	>120	>400	>1000
	≤30	≤120	≤400	≤1000	≤2000
TOLERANCES	±1	±3	±4	±6	±8

[illegible]

A

B

C

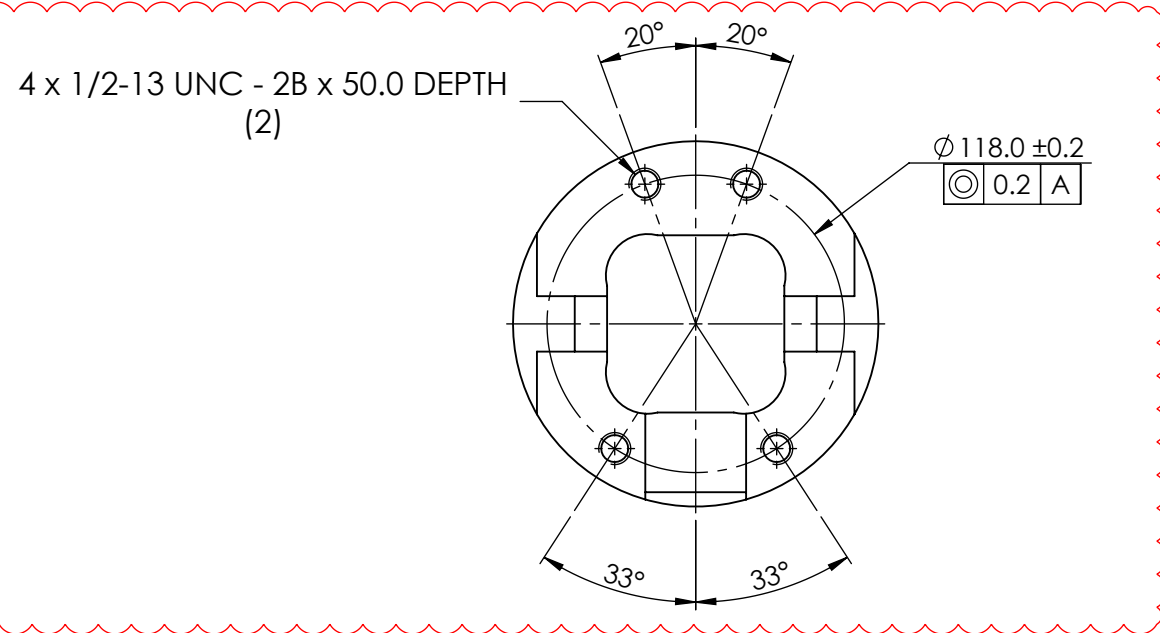
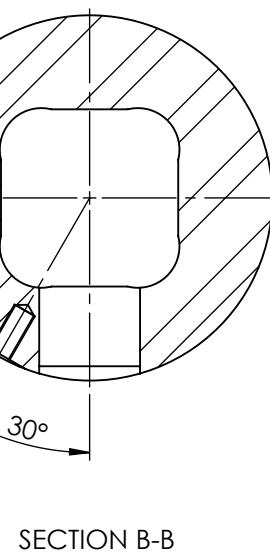
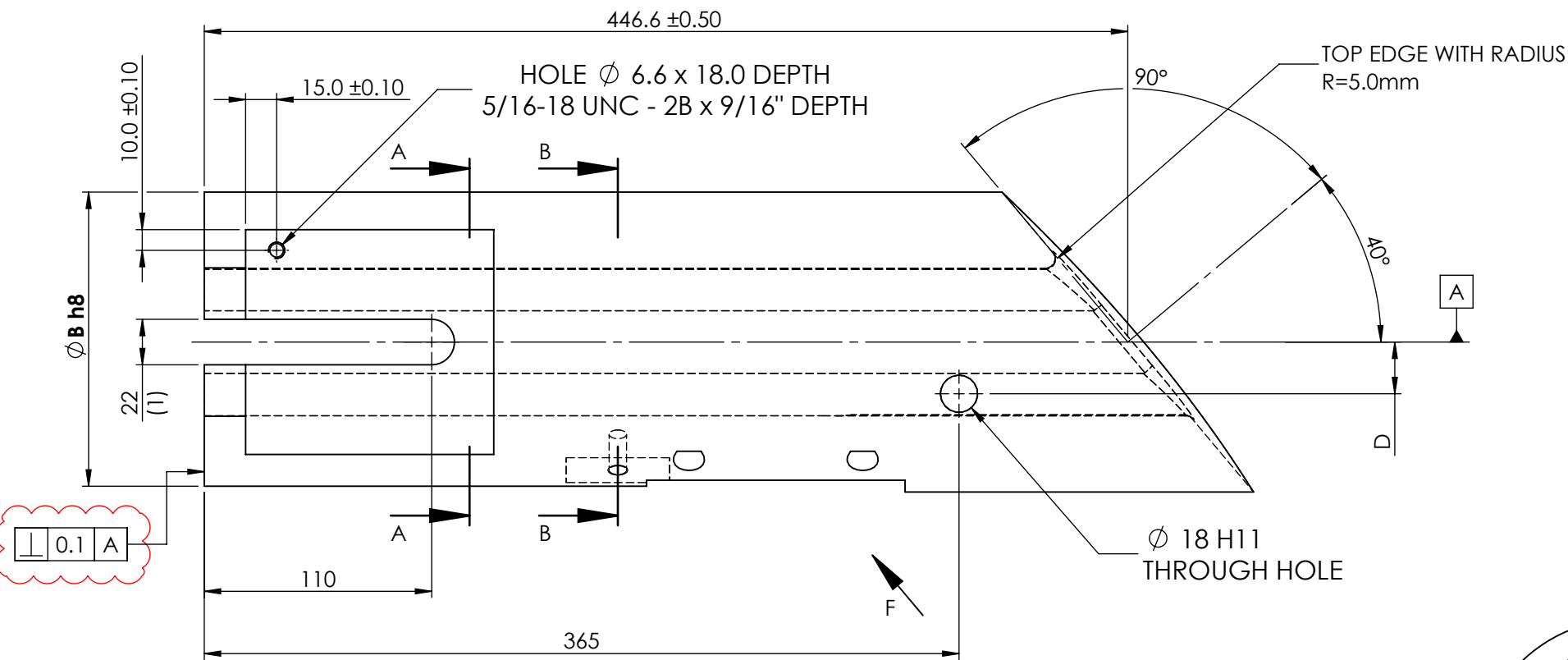
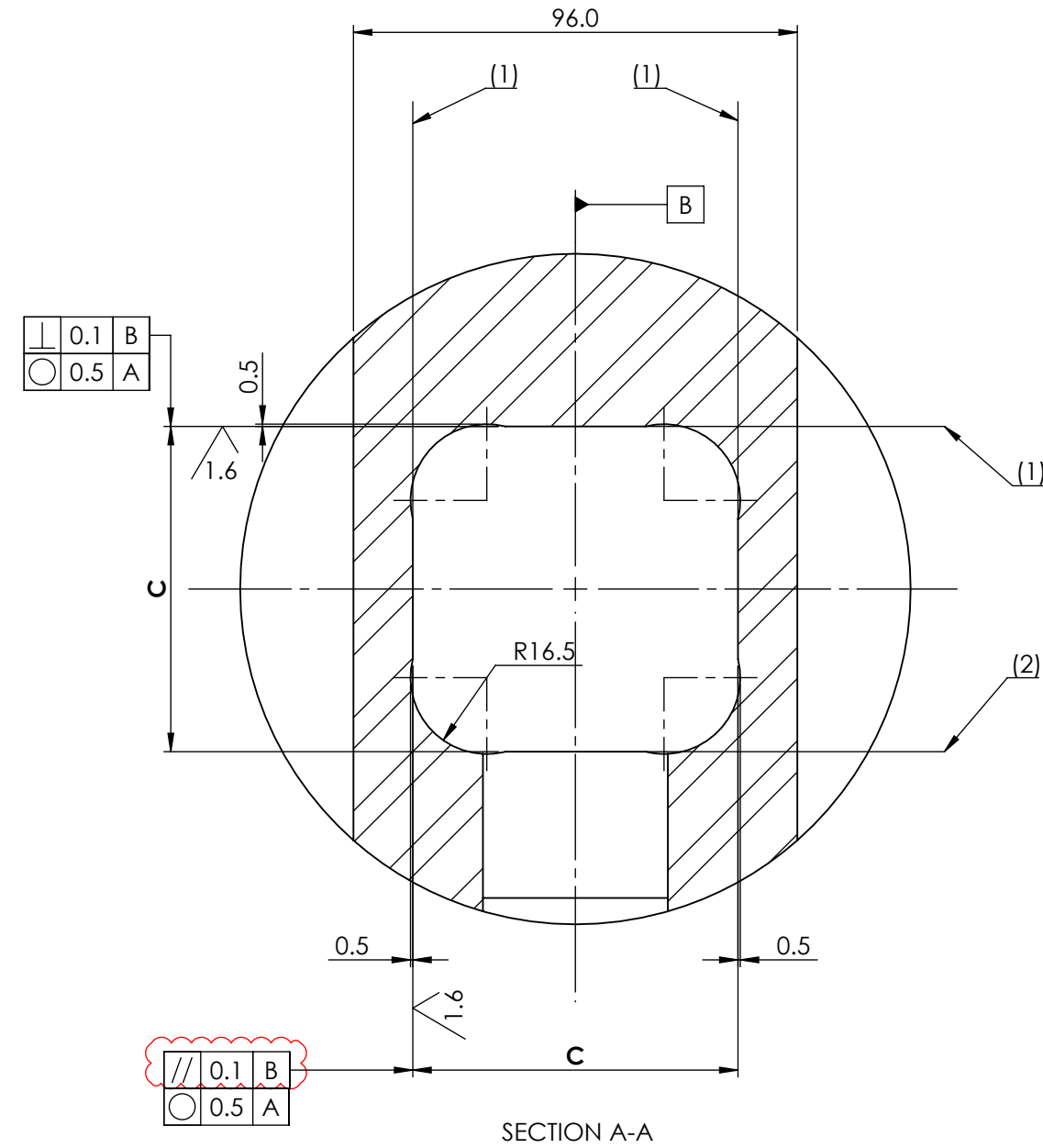
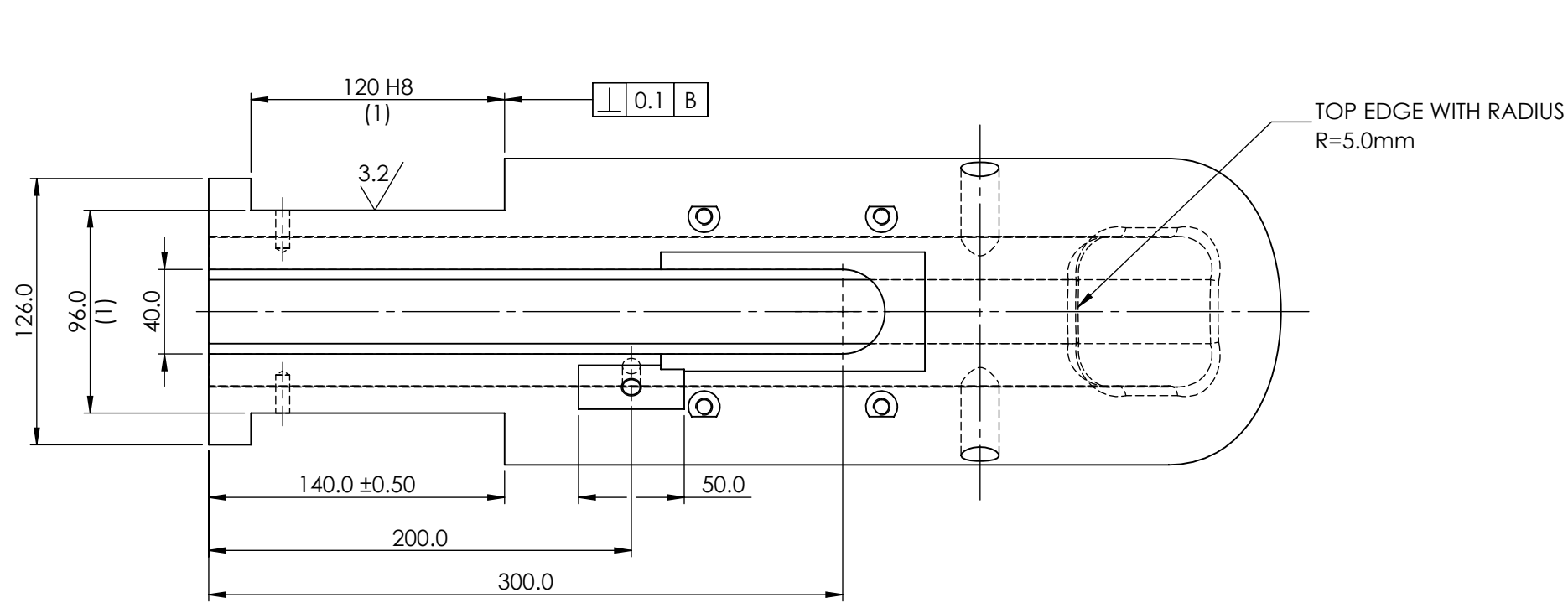
D

E

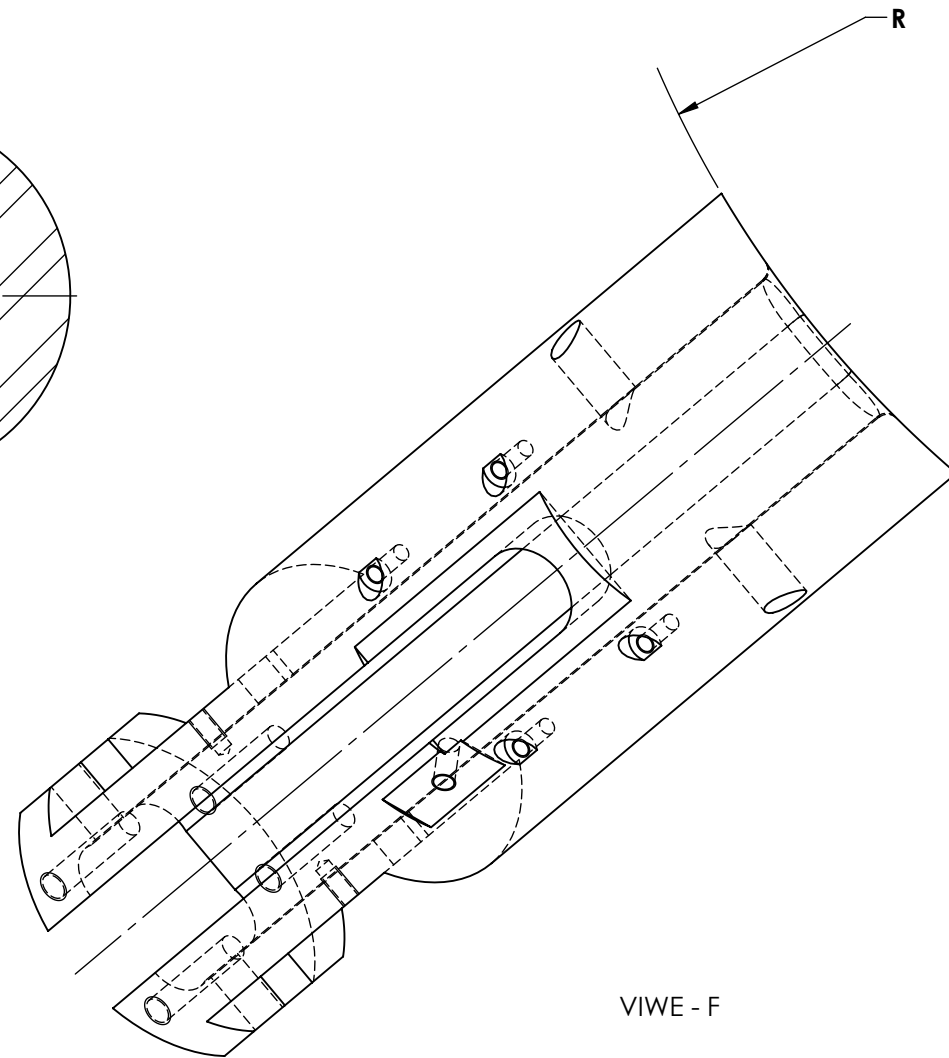
F

G

H



HOLE 5/16" x 20.0 DEPTH
THREAD 3/8"-24UNF-2B x 20.0 DEPTH



I-TUBE	B	C	D	R
26"				
28"				
30"				
32"	145.0	70.35/70.30	25.1/25.0	445.70/447.05
34"				
36"				
38"				
40"				
42"				
44"				
46"	155.0	80.35/80.30	30.1/30.0	622.25/623.60
48"	155.0	80.35/80.30	30.1/30.0	646.75/648.10

MATERIAL				WEIGHT (KG)		RUGOSITY (C.I.A)		SURFACE COATING						(NOTE 1)					
ASTM DH36				33.05		6.3		TREATMENT						-					
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING										LINEAR DIMENSIONS NOT INDICATED - MACHINING									
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±3.0	±4.0
										DIAMETER		±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2.0

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-350

GENERAL NOTES

- COATING:
(1) Zi-Ni + PTFE
(2) Zi-Ni
- MACHINING DIMENSIONS, GD&T STUDY CONSIDERING COATING THICKNESS SHALL BE ASSESSED FOR A SLIDING ASSEMBLY.
- ANGULAR TOLERANCE: ±0° 15'

D	GENERAL REVISION AS INDICATED	14/03/25	C.JLZ	U4B8	NTHF
C	"R" DIMENSIONS & SURFACE COATING	29/03/22	SUB/ES	C.JLZ	BERL
B	HYDRAULIC ACTUATOR REFERENCE	15/03/21	SUB/ES	C.JLZ	BERL
A	"R" TOLERANCE REVISION	28/08/20	SUB/ES	C.JLZ	BERL
Ø	ORIGINAL	03/07/20	SUB/ES	C.JLZ	BERL
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M

PETROBRAS

SUB

CIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: ROUND BLOCK (BSDI-SI)

SOLIDWORKS 2018 DE -

SCALE: NO SCALE SHEET 1 of 1

INTERNO

No I-DE-3010.00-1300-279-P56-355

A

B

C

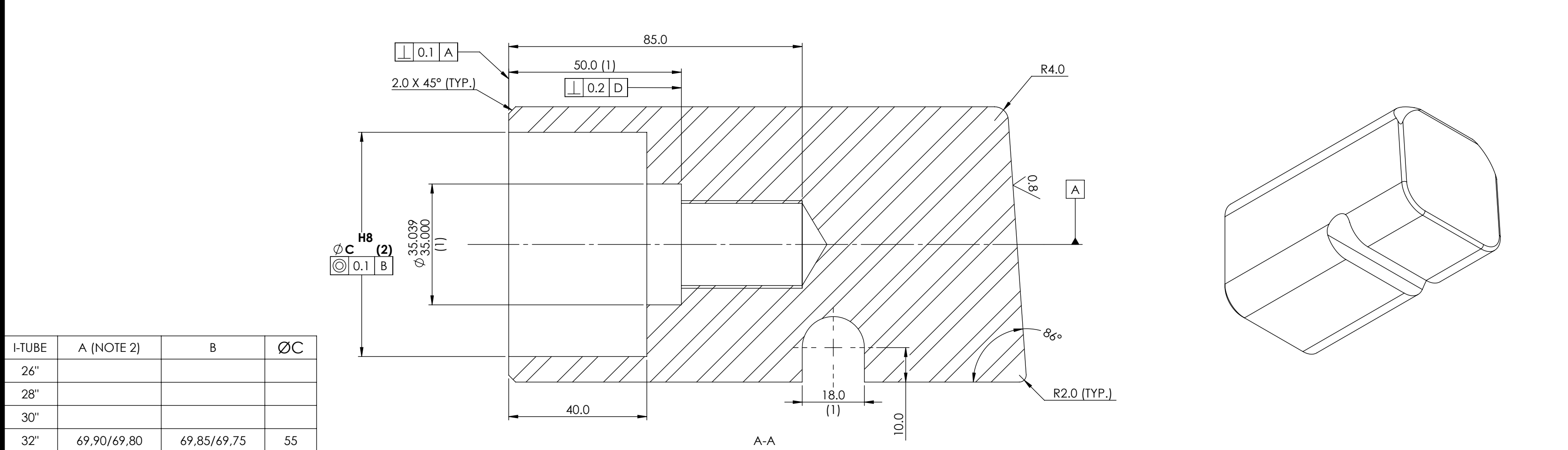
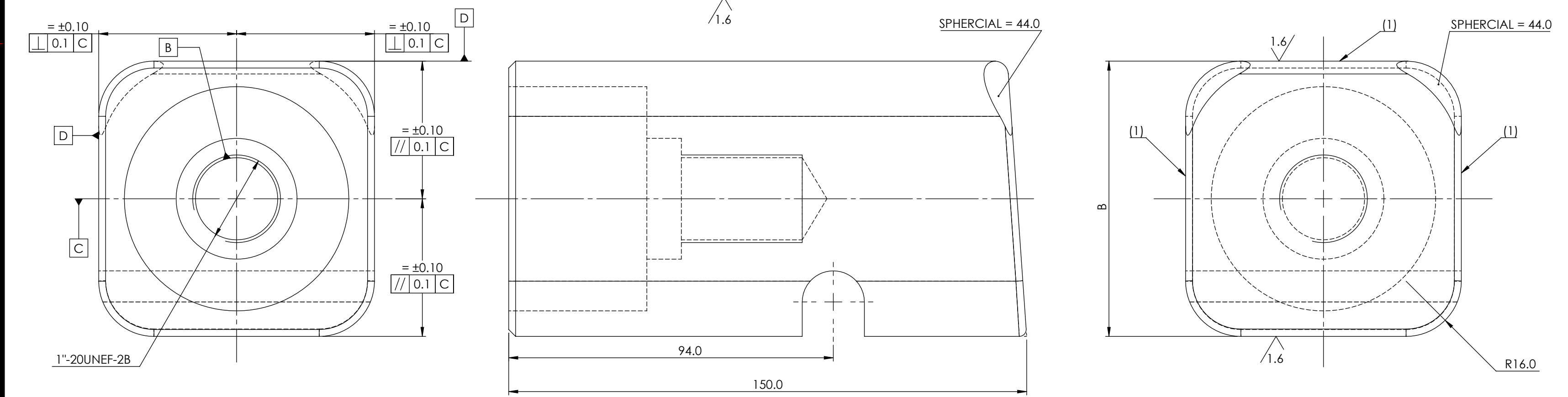
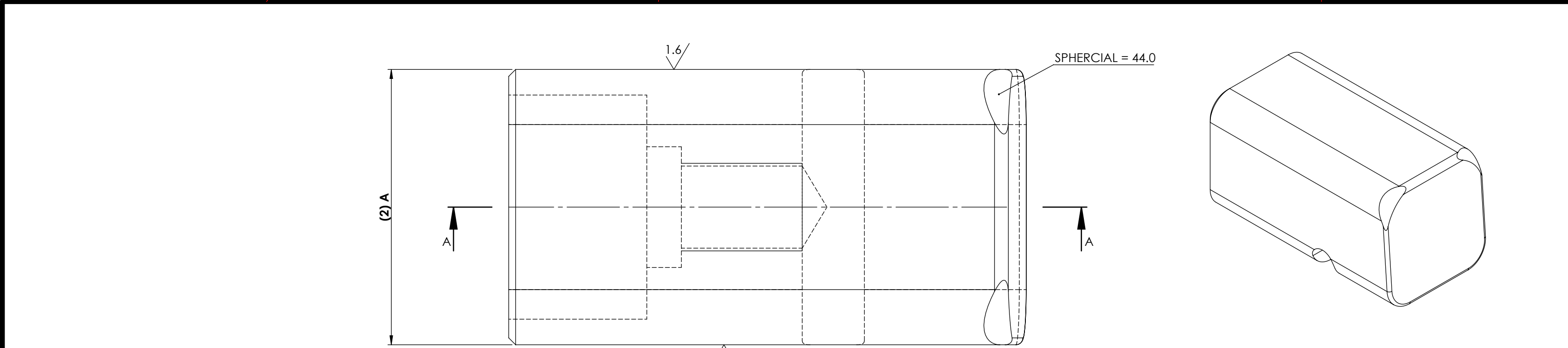
D

E

F

G

H



I-TUBE	A (NOTE 2)	B	ØC
26"			
28"			
30"			
32"	69,90/69,80	69,85/69,75	55
34"			
36"			
38"			
40"			
42"			
44"			
46"	79,90/79,80	79,85/79,75	65
48"	79,90/79,80	79,85/79,75	65

MATERIAL					WEIGHT (KG)		RUGOSITY (C.L.A)		SURFACE COATING		Zi-Ni (+ PTFE WHERE INDICATED)								
SAE 1045					5.67		3.2		TREATMENT		QUENCH AND TEMPERED MINIMUM YIELD STRENGHT 500 MPa								
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING										
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

- Zi-Ni + PTFE
- MACHINING DIMENSIONS. GD&T STUDY CONSIDERING COATING THICKNESS SHALL BE ASSESSED FOR A SLIDING ASSEMBLY.
- REINFORCED LATCH BAR CONFIGURATION, COMPRISING THE FOLLOWING PARTS IN THEIR LATEST REVISIONS:
 - I-DE-3010.00-1300-279-PPC-307
 - I-DE-3010.00-1300-279-PPC-310

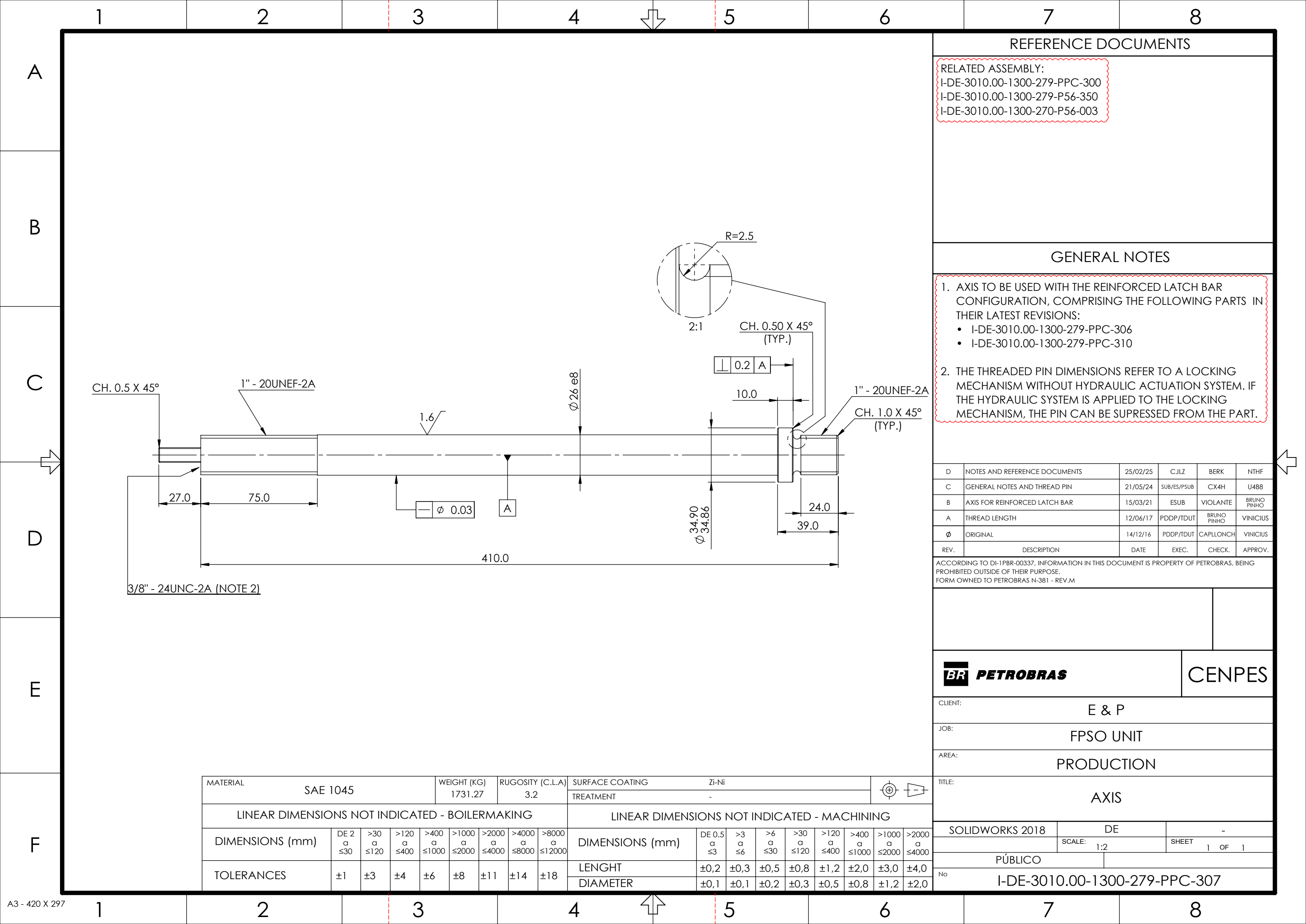
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.
F	NOTES AND REFERENCE DOCUMENTS	25/02/25	C.JLZ	BERK	NTHF
E	REINFORCED LATCH BAR	11/05/2021	ESUB/TDUT	VIOLANTE	BRUNO PINHO
D	GENERAL REVISION	07/07/20	PDDP/TIES	BRUNO PINHO	VINICIUS
C	CORNERS FILLETS	19/06/19	PDDP/TDUT	VIOLANTE	VINICIUS
B	INTERNAL THREAD LENGTH	12/06/17	PDDP/TDUT	BRUNO PINHO	VINICIUS
A	GENERAL REVISION	10/05/17	PDDP/TDUT	FLÁVIO	VINICIUS
Ø	ORIGINAL	22/12/16	PDDP/TDUT	CAPLONCH	VINICIUS

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FORM OWNED TO PETROBRAS N-381 - REV.2M



CENPES

CLIENT:		E & P	
JOB:		FPSO UNIT	
AREA:		PRODUCTION	
TITLE:		LATCH BAR	
SOLIDWORKS 2018		DE	
SCALE: 1 : 1		SHEET 1 of 1	
PÚBLICO			
No		I-DE-3010.00-1300-279-PPC-306	



A

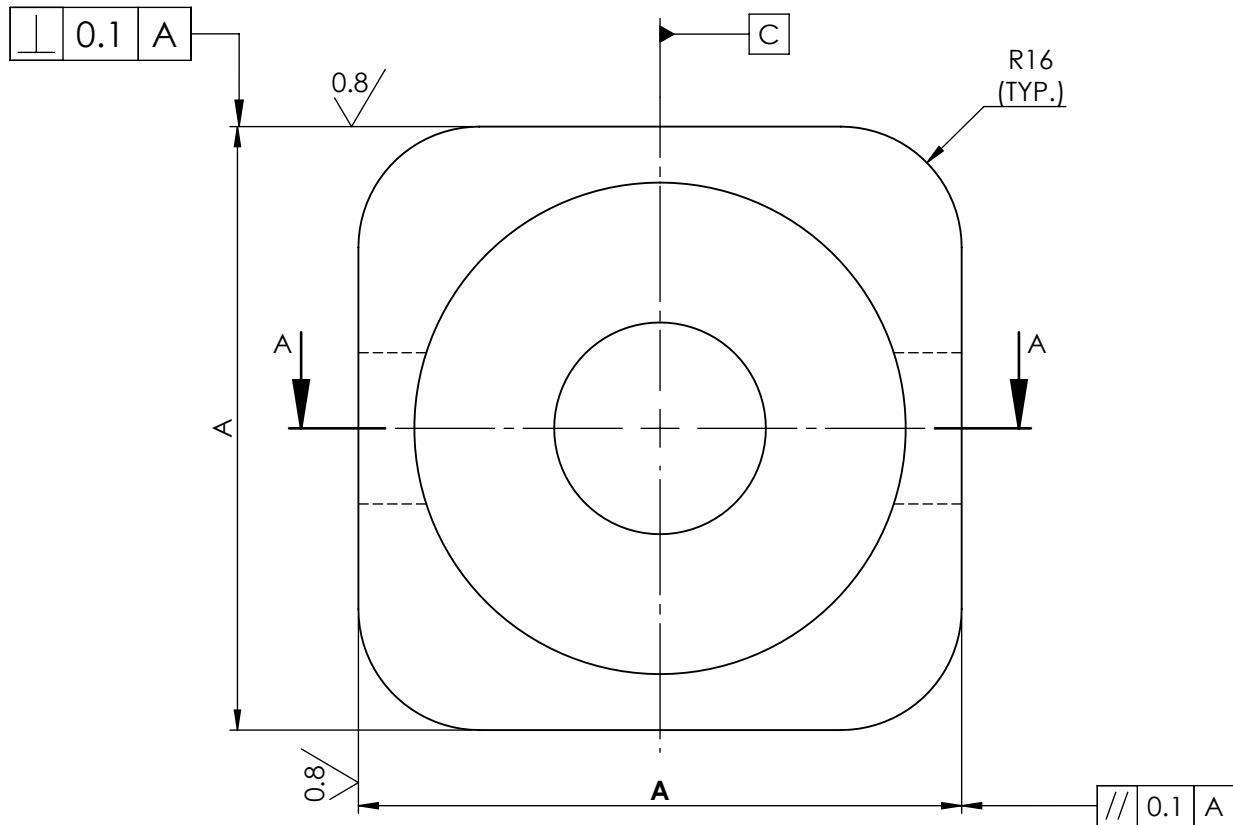
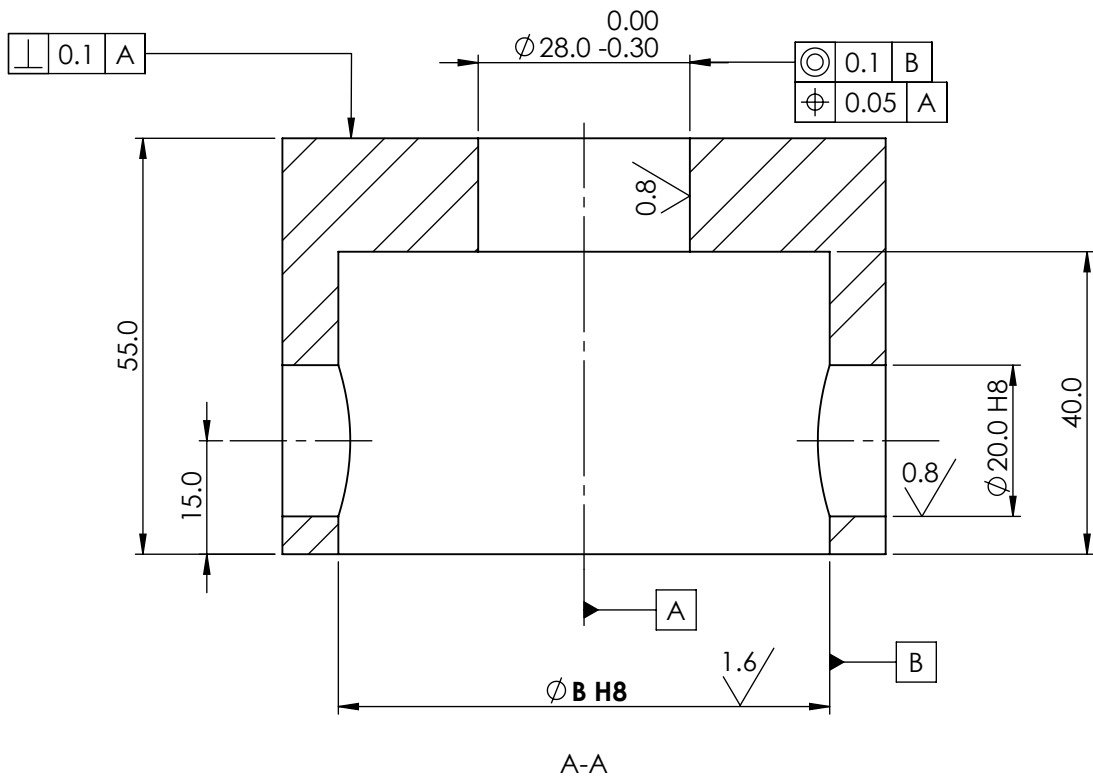
B

C

D

E

F



I-TUBE	A	B
26"		
28"		
30"		
32"	69.85/69.75	55.0
34"		
36"		
38"		
40"		
42"		
44"		
46"	79.85/79.75	65.0
48"	79.85/79.75	65.0

MATERIAL SAE 1045				WEIGHT (KG) 1.50		RUGOSITY (C.L.A) 3.2		SURFACE COATING Zi-Ni															
								TREATMENT -															
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING														
DIMENSIONS (mm)				DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)				DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES				±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0		
												DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0		

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

C	REFERENCE DOCUMENTS	25/02/25	CJLZ	BERK	NTHF
B	CORNERS FILLETS	26/08/19	PDDP/TDUT	VIOLANTE	VINICIUS
A	HOLES REMOVAL	01/06/17	PDDP/TDUT	BRUNO PINHO	VINICIUS
0	ORIGINAL	14/12/16	PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

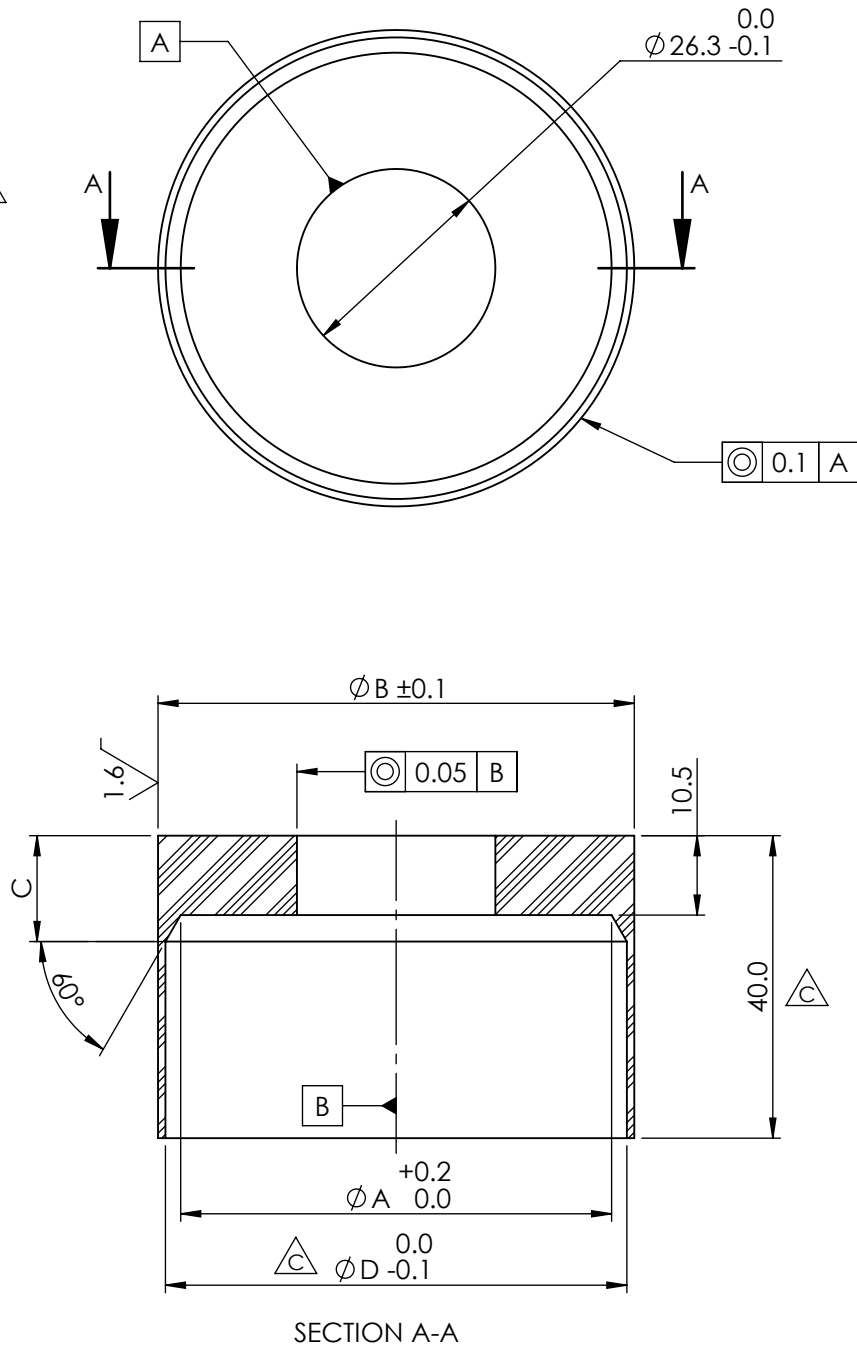


CENPES

CLIENT:	E & P				
JOB:	FPSO UNIT				
AREA:	PRODUCTION				
TITLE:	REACTION BLOCK				

SOLIDWORKS 2018	DE	-
SCALE: 1:1	SHEET 1 OF 1	
PÚBLICO		
No	I-DE-3010.00-1300-279-PPC-308	

I-TUBE	A	B	C	D
26"				
28"				
30"				
32"	52.0	54.0	12.0	53.7
34"				
36"				
38"				
40"				
42"				
44"				
46"	57.0	63.0	14.0	61.0
48"	57.0	63.0	14.0	61.0



REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

C	MATERIAL, SURFACE COATING AND D DIMEN.	10/09/25	CJLZ	EVJN	NTHF
B	MATERIAL, SURFACE COATING AND REF. DOC.	22/05/24	SUB/ES/PSUB	CX4H	U4B8
A	AS INDICATED	08/11/22	TGC6	CX4H	U4B8
ϕ	ORIGINAL	14/12/16	PDDP/IDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M

PETROBRAS

CENPES

CLIENT: E&P

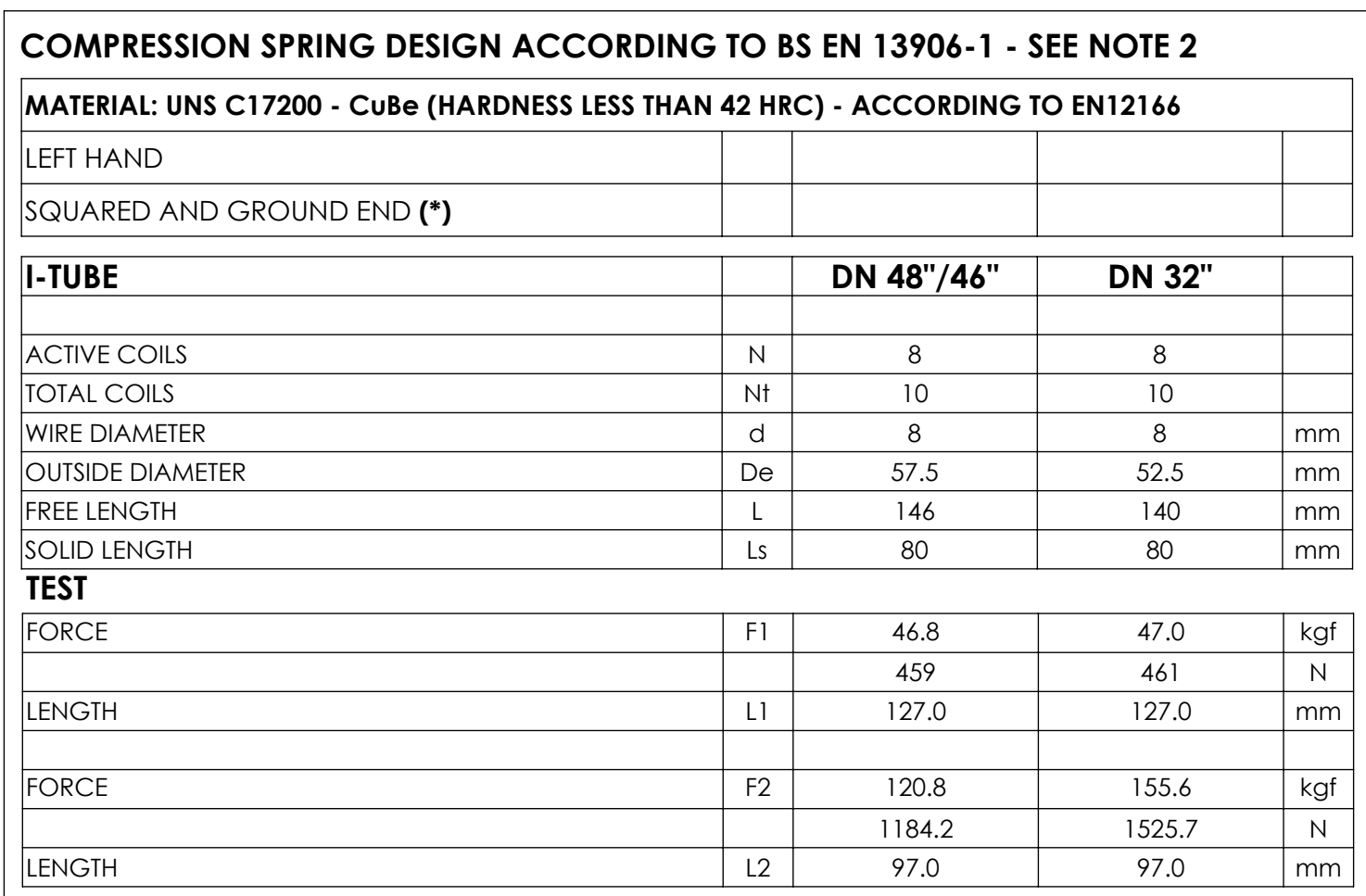
JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: STRUCTURAL WASHER

SOLIDWORKS 2018	DE	-
SCALE: 1:1	SHEET 1 OF 1	
INTERNO		
No	I-DE-3010.00-1300-279-PPC-309	

MATERIAL PEEK 				WEIGHT (KG) 0.04		RUGOSITY (C.L.A) -		SURFACE COATING - 								 	
								TREATMENT -									
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING								
DIMENSIONS (mm)	DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)	DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES	±1	±3	±4	±6	±8	±11	±14	±18	LENGHT	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
									DIAMETER	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0



MATERIAL					UNS C17200					WEIGHT (KG)		RUGOSITY (C.L.A.)		SURFACE COATING									
					0.64									TREATMENT									
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING														LINEAR DIMENSIONS NOT INDICATED - MACHINING									
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000				
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0				
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0				

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

1 - SPRING TO BE USED WITH THE REINFORCED LATCH BAR CONFIGURATION, COMPRISING THE FOLLOWING PARTS IN THEIR LATEST REVISIONS:

- I-DE-3010.00-1300-279-PPC-306
- I-DE-3010.00-1300-279-PPC-307

2 - PLEASE REFER TO CONTRACTUAL TECHNICAL SPECIFICATION FOR FURTHER DETAILS ON SPRING DESIGN AND MANUFACTURING

H	GENERAL REVIEW	11/09/25	CJLZ	EVJN	NTHF
G	NOTES AND REFERENCE DOCUMENTS	24/02/25	CJLZ	BERK	NTHF
F	SPRING PARAMETERS AND MATERIAL	22/05/24	SUB/ES/PSUB	CX4H	U4B8
E	GENERAL REVISION	08/11/22	ESUB	VOLANTE	BRUNO PINHO
D	DESIGN PREMISES	22/07/22	ESUB	VOLANTE	BRUNO PINHO
C	SPRING FOR REINFORCED LATCH BAR	15/03/21	ESUB	VINICIUS	BRUNO PINHO
B	ADDED NOTE	01/06/17	PDDP/TDUT	BRUNO PINHO	VINICIUS
A	SURFACE COATING	10/05/17	PDDP/TDUT	BRUNO PINHO	VINICIUS
Ø	ORIGINAL	14/12/16	pddp/tdut	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

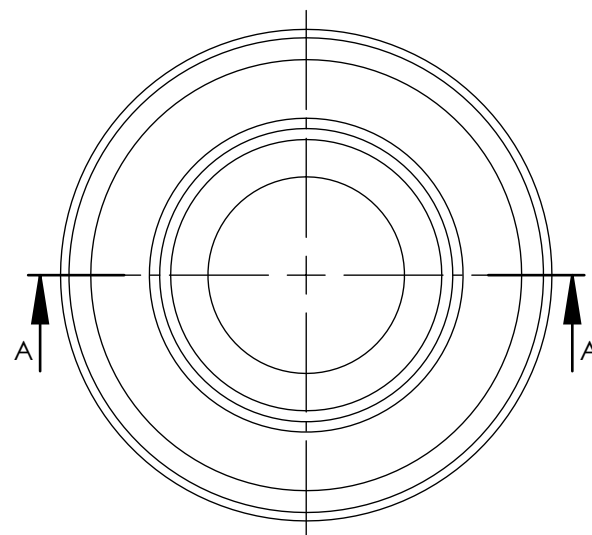
ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M



CENPES

CLIENT:	E & P
JOB:	FPSO UNIT
AREA:	PRODUCTION
TITLE:	SPRING

SOLIDWORKS 2018	DE	-
	SCALE: NO SCALE	SHEET 1 OF 1
PÚBLICO		
No I-DE-3010.00-1300-279-PPC-310		



MATERIAL PEEK 				WEIGHT (KG) 0.11	RUGOSITY (C.L.A) 3.2	SURFACE COATING 										 			
						TREATMENT -													
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING										
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M



CLIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: CENTRALIZERS

SOLIDWORKS 2018	DE	-
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	SCALE: 1:1	SHEET 1 OF 1
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INTERNO	
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No	I-DE-3010.00-1300-315-PPC-311
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A

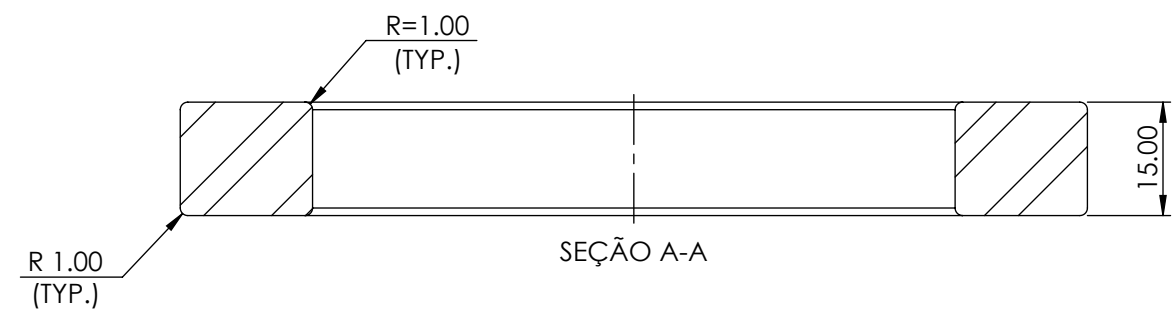
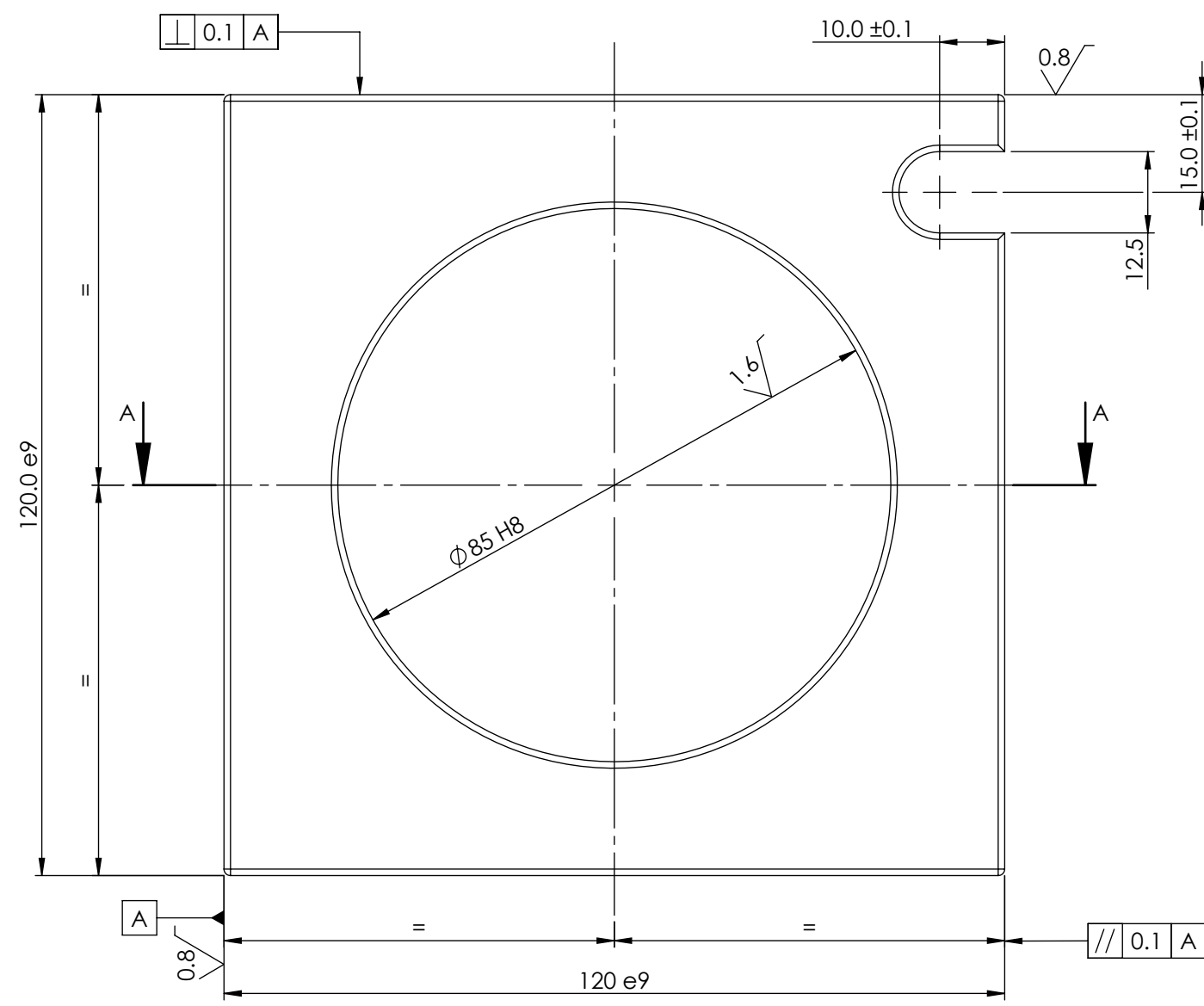
B

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F



MATERIAL				SAE 1045				WEIGHT (KG)		RUGOSITY (C.L.A.)		SURFACE COATING				Zi-Ni + PTFE					
								1.00		-		TREATMENT				-					
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING										LINEAR DIMENSIONS NOT INDICATED - MACHINING											
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000		
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0		
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0		

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

A	REFERENCE DOCUMENTS	25/02/25	CJLZ	BERK	NTHF
Ø	ORIGINAL	14/12/16	PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

PETROBRAS

CENPES

CLIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTIN

TITLE: SLIDING PLATE

SOLIDWORKS 2018

DE

-

SCALE: 1:1

SHEET 1 OF 1

PÚBLICO

No I-DE-3010.00-1300-279-PPC-313

A

B

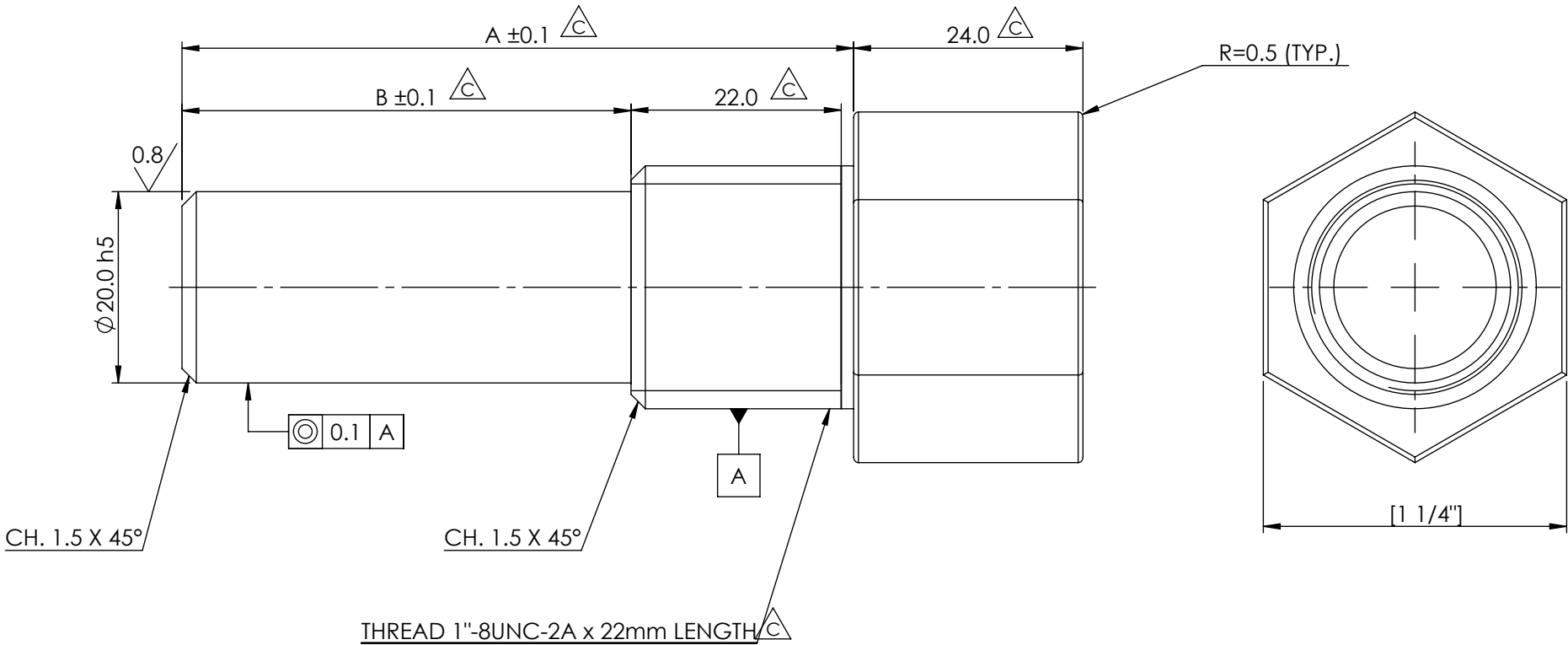
C

D

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F

I-TUBE	A 	B 
26"		
28"		
30"		
32"	70.3	47.0
34"		
36"		
38"		
40"		
42"		
44"		
46"	65.3	42.0
48"	65.3	42.0



MATERIAL SAE 1045				WEIGHT (KG) 0.37		RUGOSITY (C.L.A) -			SURFACE COATING Zi-Ni														
									TREATMENT -														
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING														
DIMENSIONS (mm)				DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)				DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES				±1	±3	±4	±6	±8	±11	±14	±18	LENGHT				±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
												DIAMETER				±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-270-P56-003

GENERAL NOTES

C	AS INDICATED	11/09/25	CJLZ	EVJN	NTHF
B	REFERENCE DOCUMENTS	25/02/25	CJLZ	BERK	NTHF
A	BOLT LENGTH	22/07/22	ESUB	VIOLANTE	BRUNO
Ø	ORIGINAL	24/01/17	PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M



CENPES

CLIENT:	E & P				
JOB:	FPSO UNIT				
AREA:	PRODUCTION				
TITLE:	PIVOT BOLT				

SOLIDWORKS 2018		DE		-	
		SCALE: 1.5 : 1		SHEET 1 OF 1	
INTERNO					
No	I-DE-3010.00-1300-279-PPC-314				

A

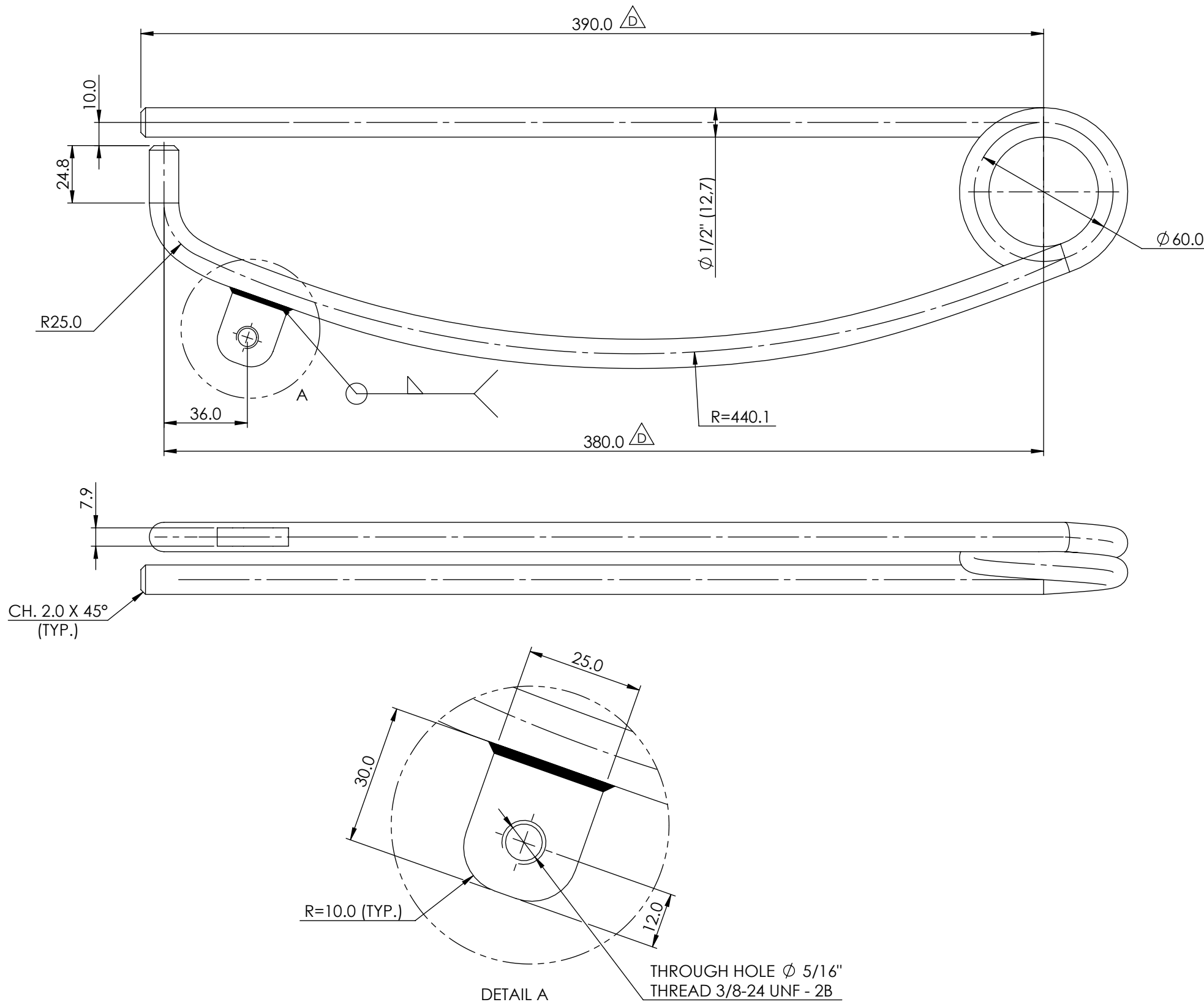
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REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-P56-350

GENERAL NOTES

D	AS INDICATED	10/09/25	CJLZ	EVJN	NTHF
C	DIM. FOR BSDI-SI W/ HYD. ACT. AND REF. DOC.	28/03/25	CJLZ	U4B8	NTHF
B	REFERENCE DOCUMENTS	25/02/25	CJLZ	BERK	NTHF
A	GENERAL REVISION	10/05/17	PDDP/TDUT	VIOLANTE	VINICIUS
ϕ	ORIGINAL	14/12/16	PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M



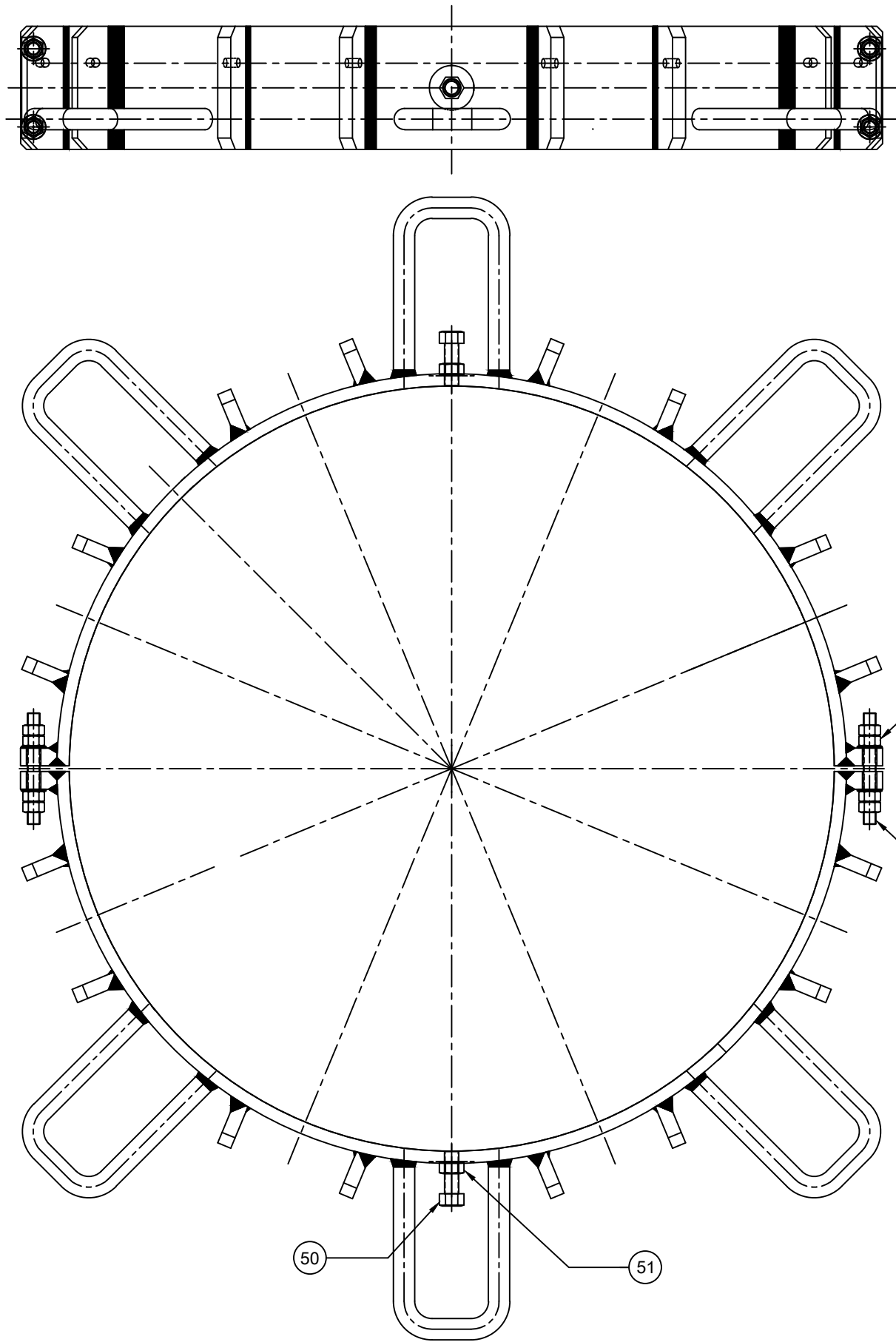
CENPES

CLIENT:	E & P				
JOB:	FPSO UNIT				
AREA:	PRODUCTION				
TITLE:	CLIP				

MATERIAL SAE 1045				WEIGHT (KG) 1.14		RUGOSITY (C.L.A) -		SURFACE COATING Zi-Ni											
								TREATMENT -											
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING										
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0,5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

SOLIDWORKS 2018		DE		-	
		SCALE: 1:2		SHEET 1 OF 1	
INTERNO					
No	I-DE-3010.00-1300-279-PPC-315				

STANDARDIZED FORM BY EP-2B-0001 - FIGURE A22



MATERIAL					WEIGHT		RUGOSITY (Ra)		SURFACE COATING								ZI-Ni			
									TREATMENT											
LINEAR DIMENSIONS NOT INDICATED – BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED – MACHINING											
DIMENSIONS (mm)	DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)	DE 0,5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000			
TOLERANCES	±1	±3	±4	±6	±8	±11	±14	±18	LENGHT	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0			
									DIAMETER	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0			

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350

GENERAL NOTES

B	REFERENCE DOCUMENTS	FEB 25,2025	CJLZ	BERK	NTHF
A	GENERAL REVISION	JUN 01,2017	PDDP/TDUT	BRUNO PINHO	VINICIUS
0	ORIGINAL		PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

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PETROBRAS

CENPES

CLIENT OR USER
E & P

JOB OR PROJECT
FPSO UNIT

AREA OR UNIT
PRODUCTION

TITLE
BSDL
BRACER ASSEMBLY

DESIGN PDDP/TDUT	DRAWN PDDP/TDUT	CHECK CAPLLONCH
APPROVAL VINICIUS	SIZE A3	CC
DATE DEC 14,2016	SCALE s/esc.	SHEET 1 of 1

No. I-DE-3010.00-1300-279-PPC-316

316-BSDL_AXIS_revA.dwg

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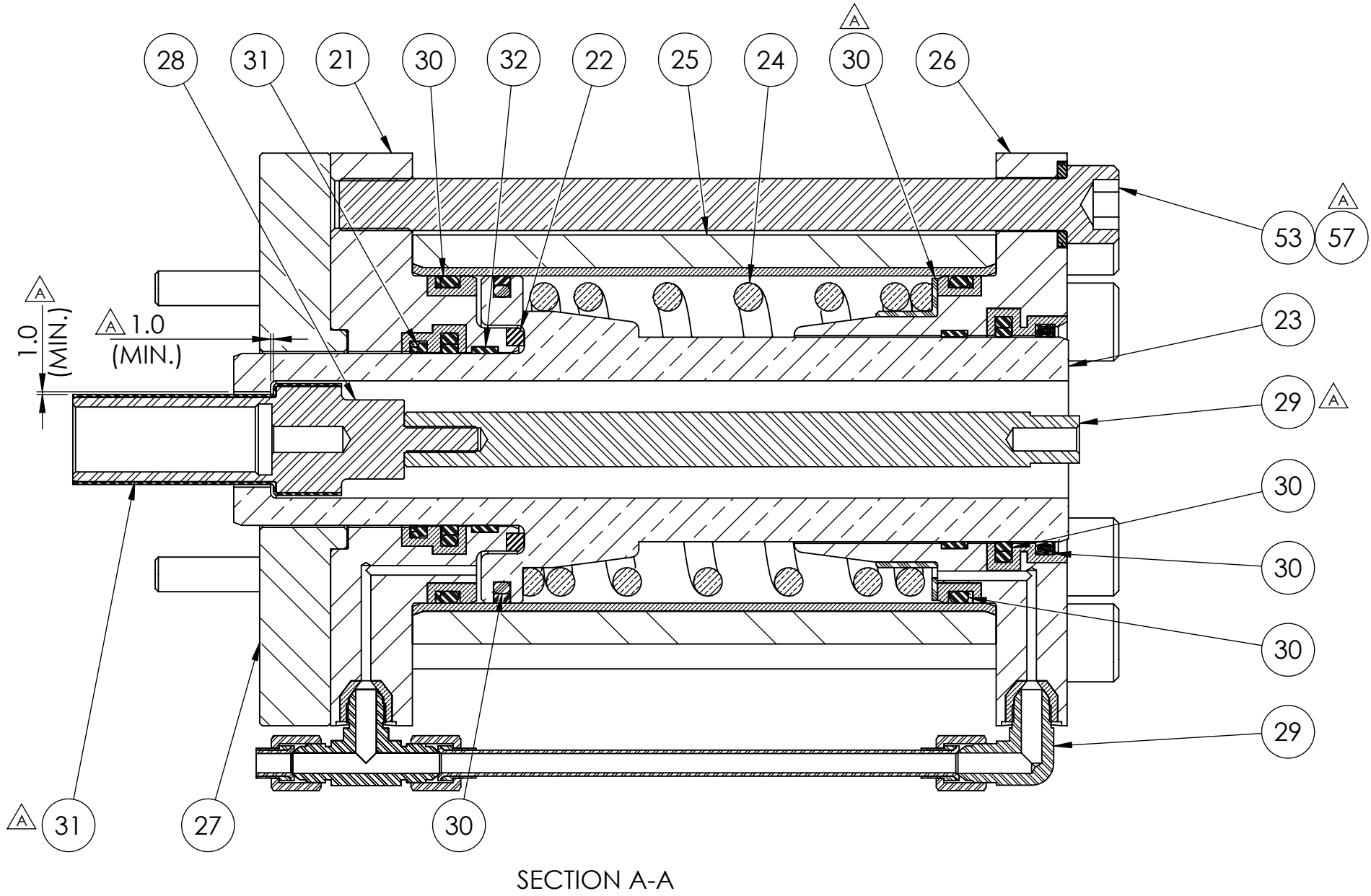
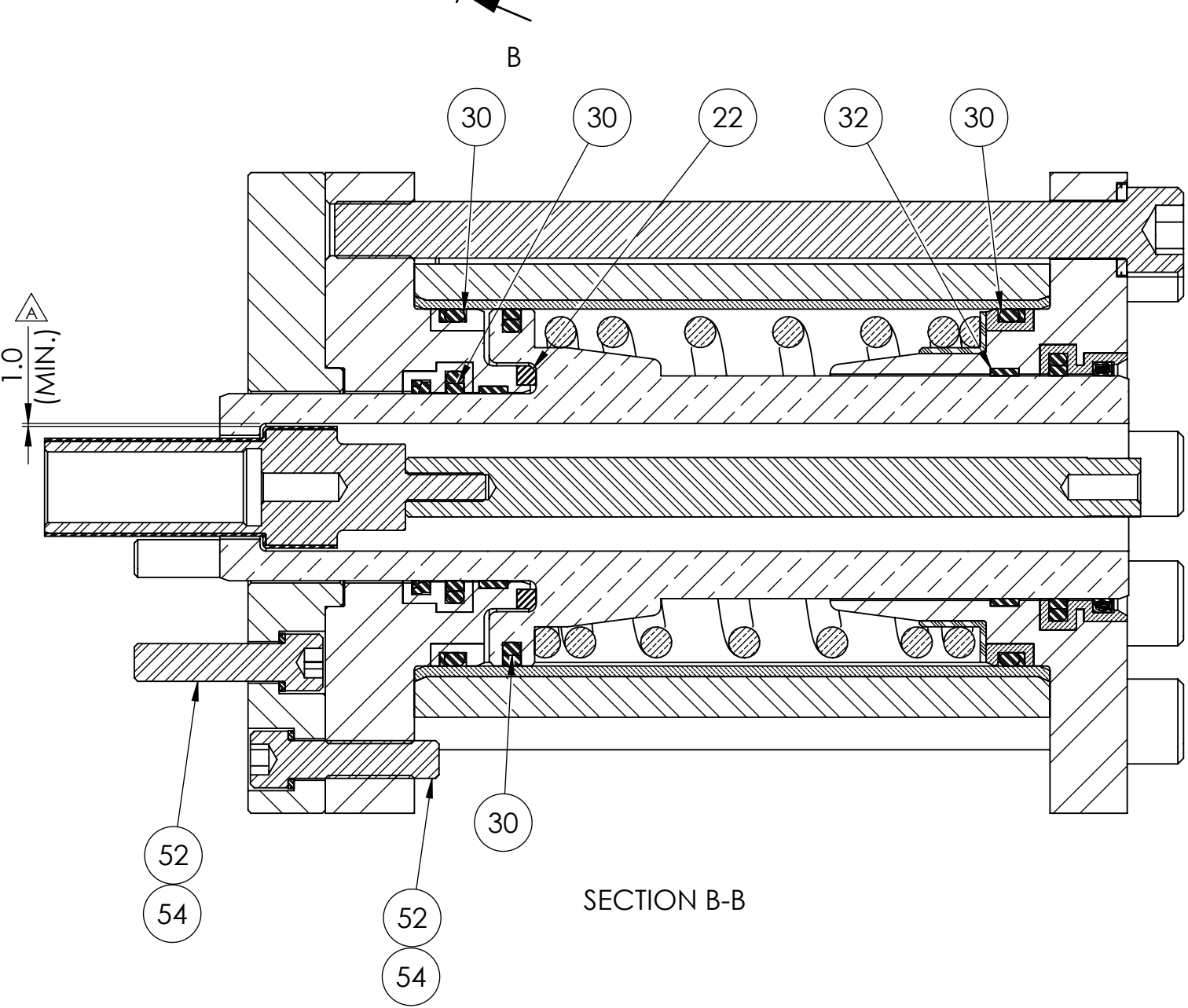
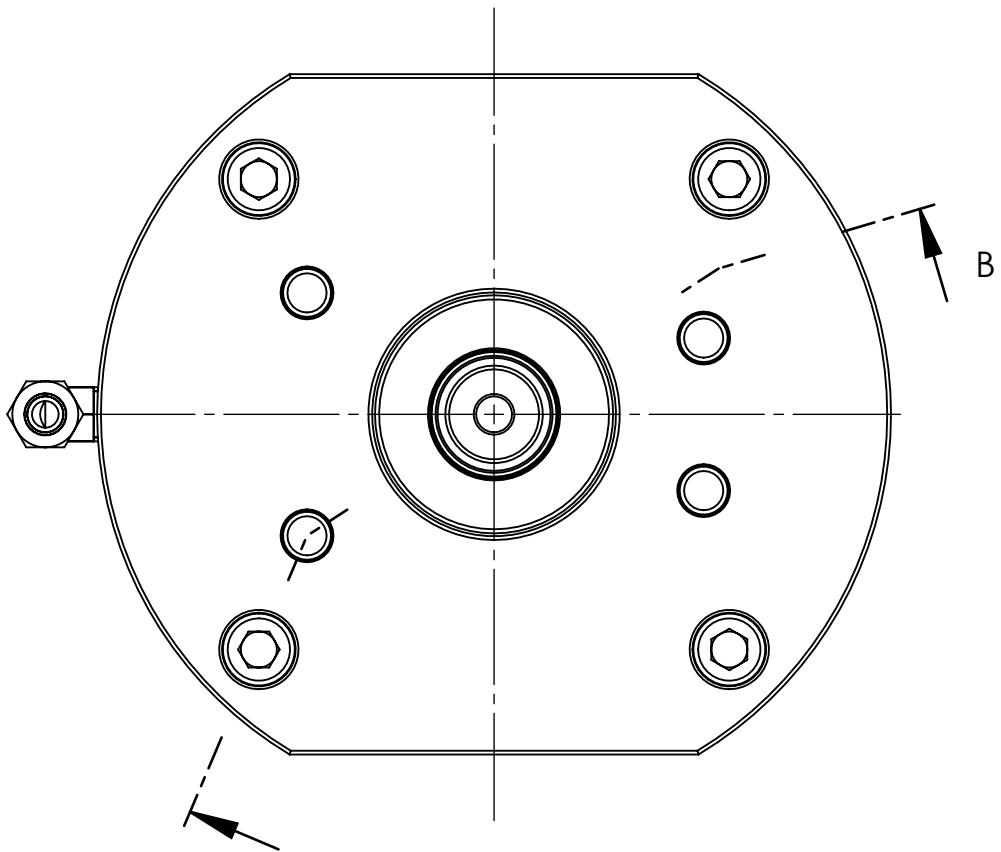
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REFERENCE DOCUMENTS

PART LIST:
I-LI-3010.00-1300-279-P56-350

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350

GENERAL NOTES

A	AS INDICATED	11/09/25	C.JLZ	EVJN	NTHF
Ø	ORIGINAL	26/03/25	C.JLZ	U488	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M



SUB

CIENT: E&P
JOB: FPSO UNIT
AREA: PRODUCTION

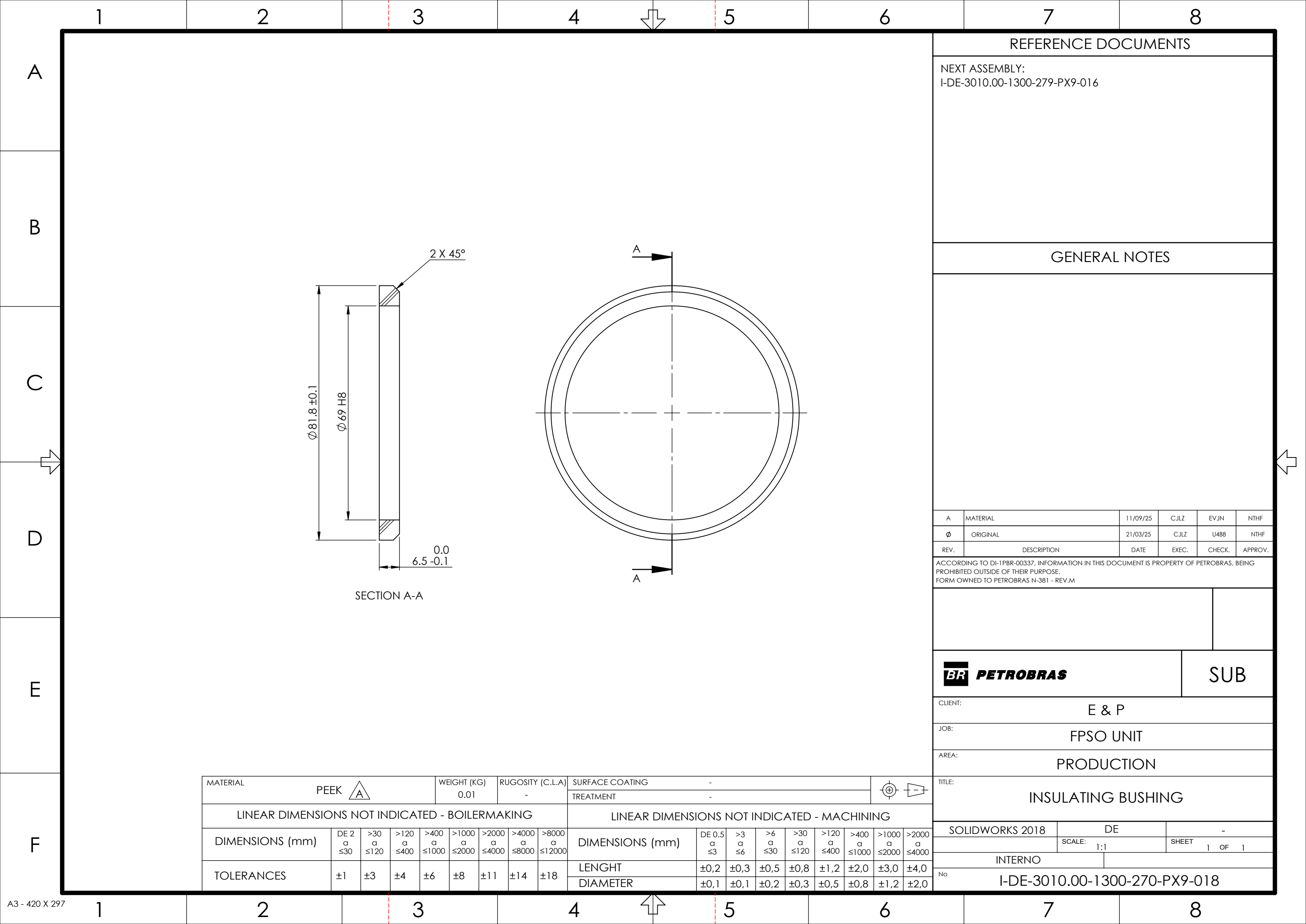
TITLE: HYDRAULIC ACTUATOR ASSEMBLY FOR BSDI

SOLIDWORKS 2018 DE -
SCALE: 1:2 SHEET 1 of 1

INTERNO

No I-DE-3010.00-1300-270-PX9-016

MATERIAL				WEIGHT (KG)		RUGOSITY (C.L.A)		SURFACE COATING																			
Material <não especificado>				48.03		-		-																			
								TREATMENT									-										
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING														LINEAR DIMENSIONS NOT INDICATED - MACHINING													
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000								
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0								
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0								



REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

A	MATERIAL	11/09/25	CJLZ	EVJN	NTHF
Ø	ORIGINAL	21/03/25	CJLZ	U4B8	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M

 **PETROBRAS**

SUB

CLIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: INSULATING BUSHING

SOLIDWORKS 2018	DE	-
	SCALE: 1:1	SHEET 1 OF 1
INTERNO		
No	I-DE-3010.00-1300-270-PX9-018	



COMPRESSION SPRING DESIGN ACCORDING TO BS EN 13906-1				△
MATERIAL: UNS C17200 (HARDNESS LESS THAN 42 HRC) ACCORDING TO EN12166				△
LEFT HAND				
SQUARED AND GROUND END (*)				
ACTIVE COILS	N	5	△	
TOTAL COILS	Nt	7	△	
WIRE DIAMETER	d	10.5	△	mm
OUTSIDE DIAMETER	De	115		mm
FREE LENGTH	L	245		mm
SOLID LENGTH	LS	74	△	mm
TEST				
FORCE	F1	132,7	△	kgf
		1301	△	N
LENGTH	L1	150		mm
FORCE	F2	208.3	△	kgf
		2042.5	△	N
LENGTH	L2	93	△	mm

MATERIAL					UNS C17200					WEIGHT (KG)		RUGOSITY (C.I.A)		SURFACE COATING						
										1.58		-		TREATMENT					-	
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING										LINEAR DIMENSIONS NOT INDICATED - MACHINING										
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±3.0	±4.0	
		DIAMETER		±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±3.0	±4.0							

NEXT ASSEMBLY: I-DE-3010.00-1300-279-PX9-016					
GENERAL NOTES					
1 - PLEASE REFER TO CONTRACTUAL SPECIFICATION FOR FURTHER DETAILS ON SPRING DESIGN AND MANUFACTURING					
A	GENERAL REVIEW AS INDICATED	11/09/25	CJLZ	EVJN	NTHF
Ø	ORIGINAL	21/03/25	CJLZ	U488	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.
ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE. FORM OWNED TO PETROBRAS N-381 - REV.M					
PETROBRAS				SUB	
CLIENT: E & P					
JOB: FPSO UNIT					
AREA: PRODUCTION					
TITLE: ACTUATOR SPRING					
SOLIDWORKS 2018		DE		-	
		SCALE: 1:1		SHEET 1 of 1	
INTERNO					
No I-DE-3010.00-1300-279-PX9-020					



I-DE-5010.00-1500-Z70-I X7-021		
2	11	10

MATERIAL				WEIGHT (KG)		RUGOSITY (C.I.A)		SURFACE COATING											
AISI 4130				10.82		3.2		TREATMENT											
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING								LINEAR DIMENSIONS NOT INDICATED - MACHINING											
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0.2	±0.3	±0.5	±0.8	±1.2	±3.0	±4.0	±6.0
										DIAMETER		±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2.0

A

B

C

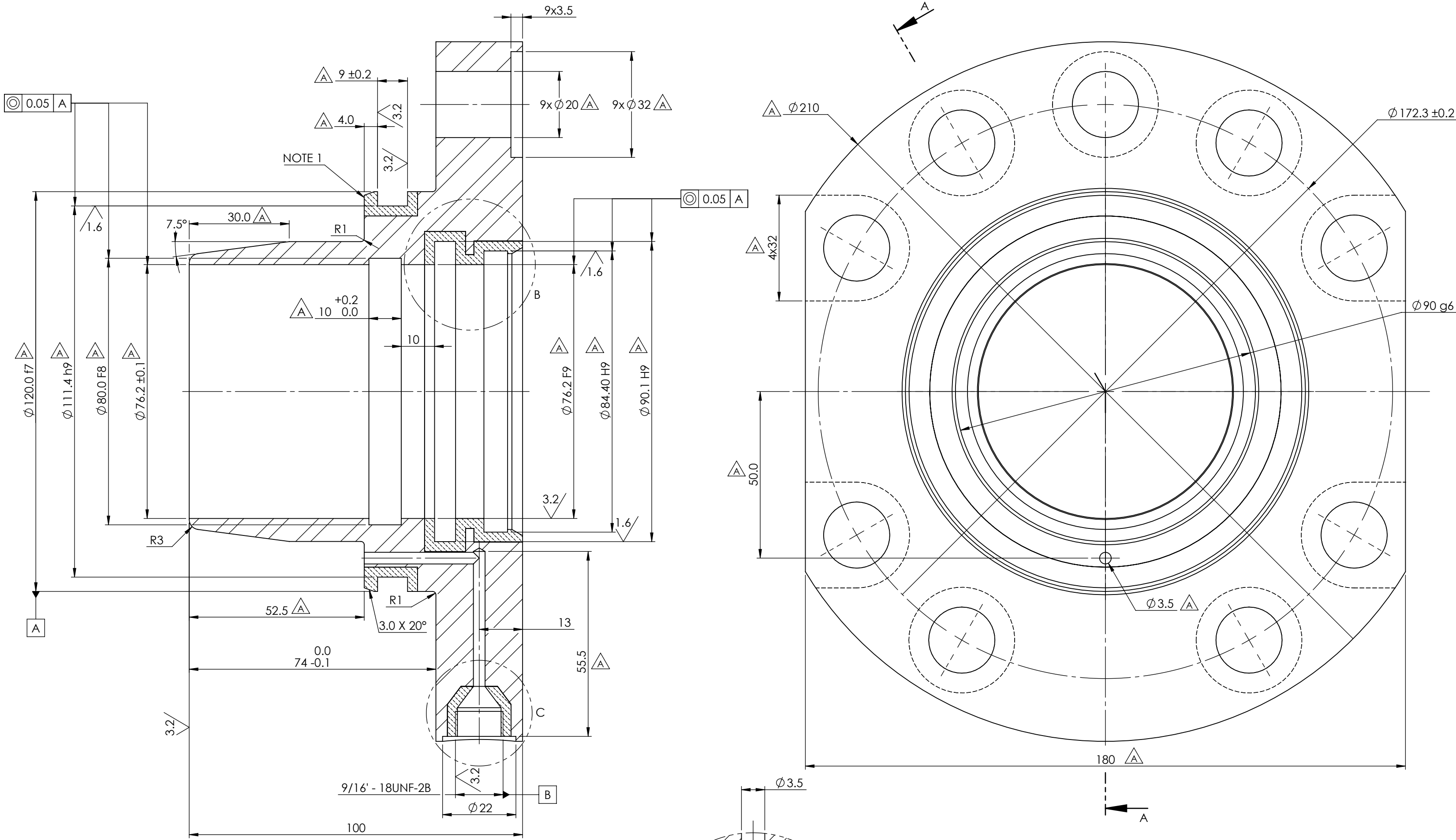
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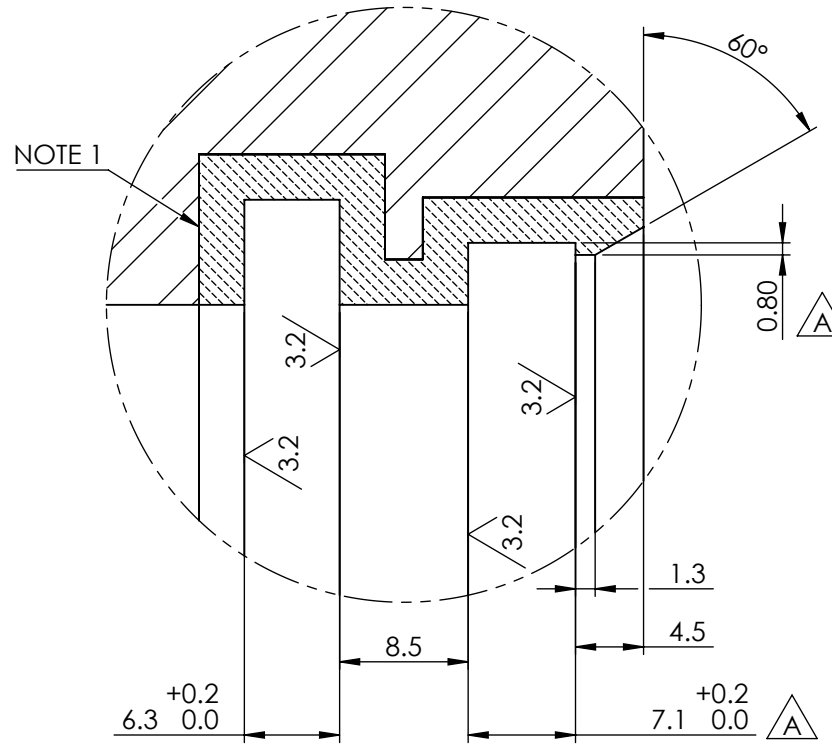
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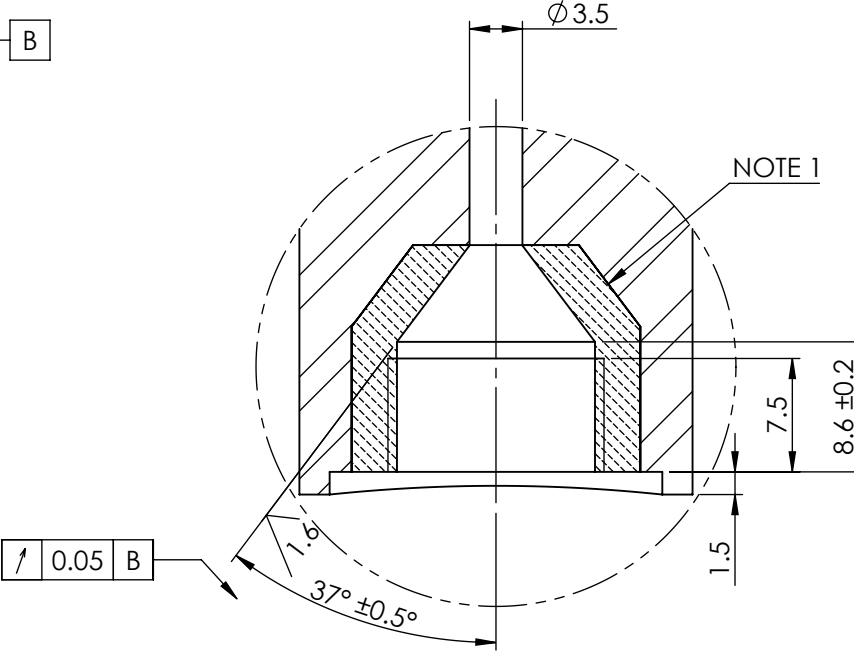
H



SECTION A-A



DETAIL B
SCALE 2 : 1



DETAIL C
SCALE 2 : 1

MATERIAL				WEIGHT (KG)				RUGOSITY (C.I.A)				SURFACE COATING				PTFE							
AISI 4130				6430.60				3.2				TREATMENT				-							
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING												LINEAR DIMENSIONS NOT INDICATED - MACHINING											
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000				
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±1,2	±2,0	±3,0	±4,0					
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0				

REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

1. CLAD 625 API6A 3mm MINIMUM THICKNESS - 220HB MIN.

A	GENERAL REVIEW AS INDICATED	11/09/25	CJLZ	EVJN	NTHF
Ø	ORIGINAL	21/03/25	CJLZ	U488	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

			SUB		
CLIENT: E & P					
JOB: FPSO UNIT					
AREA: PRODUCTION					
TITLE: EXTERNAL CAP					
SOLIDWORKS 2018		DE		-	
SCALE: 1:1		SHEET		1 of 1	
INTERNO					
No I-DE-3010.00-1300-270-PX9-022					

A

B

C

D

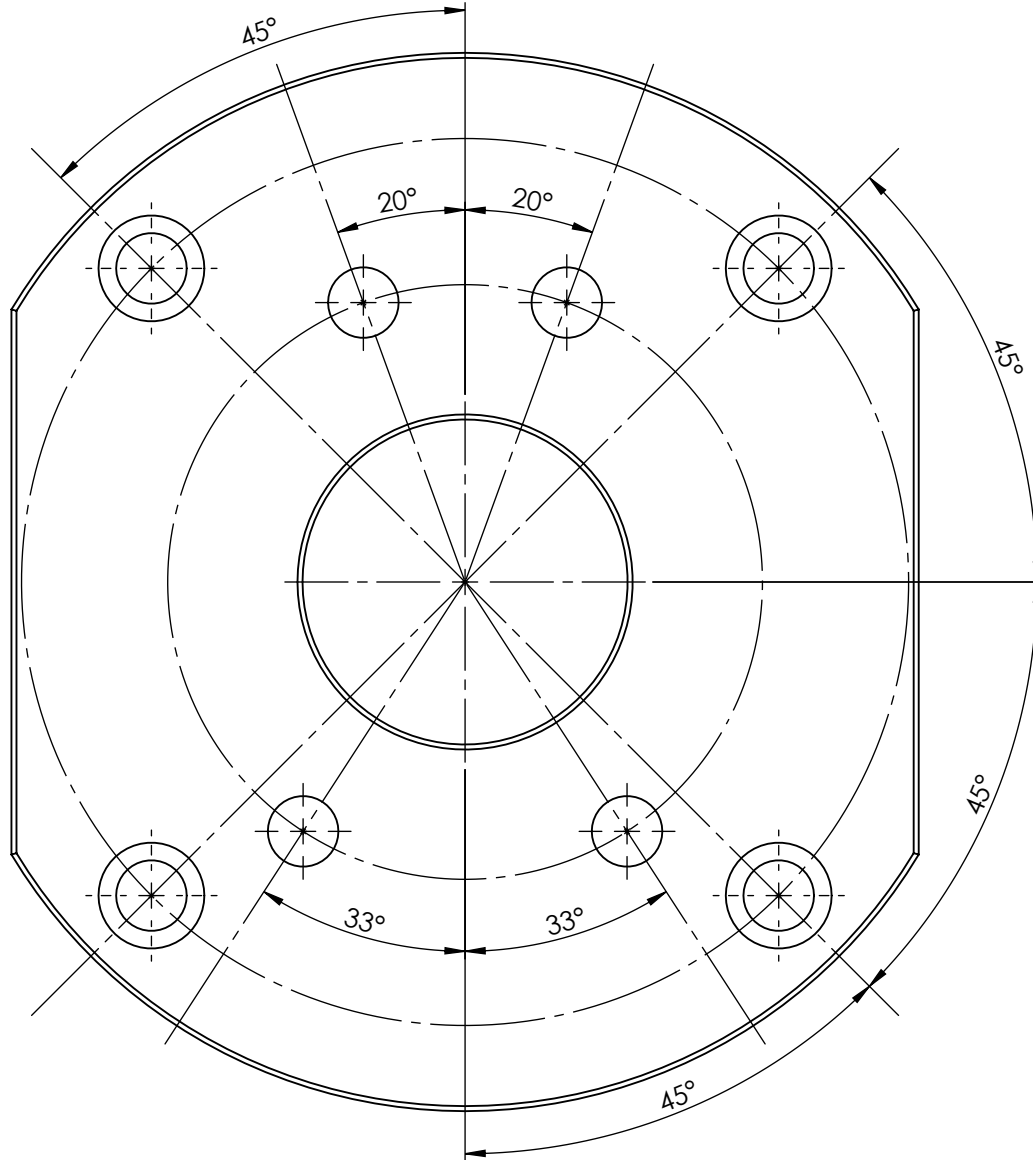
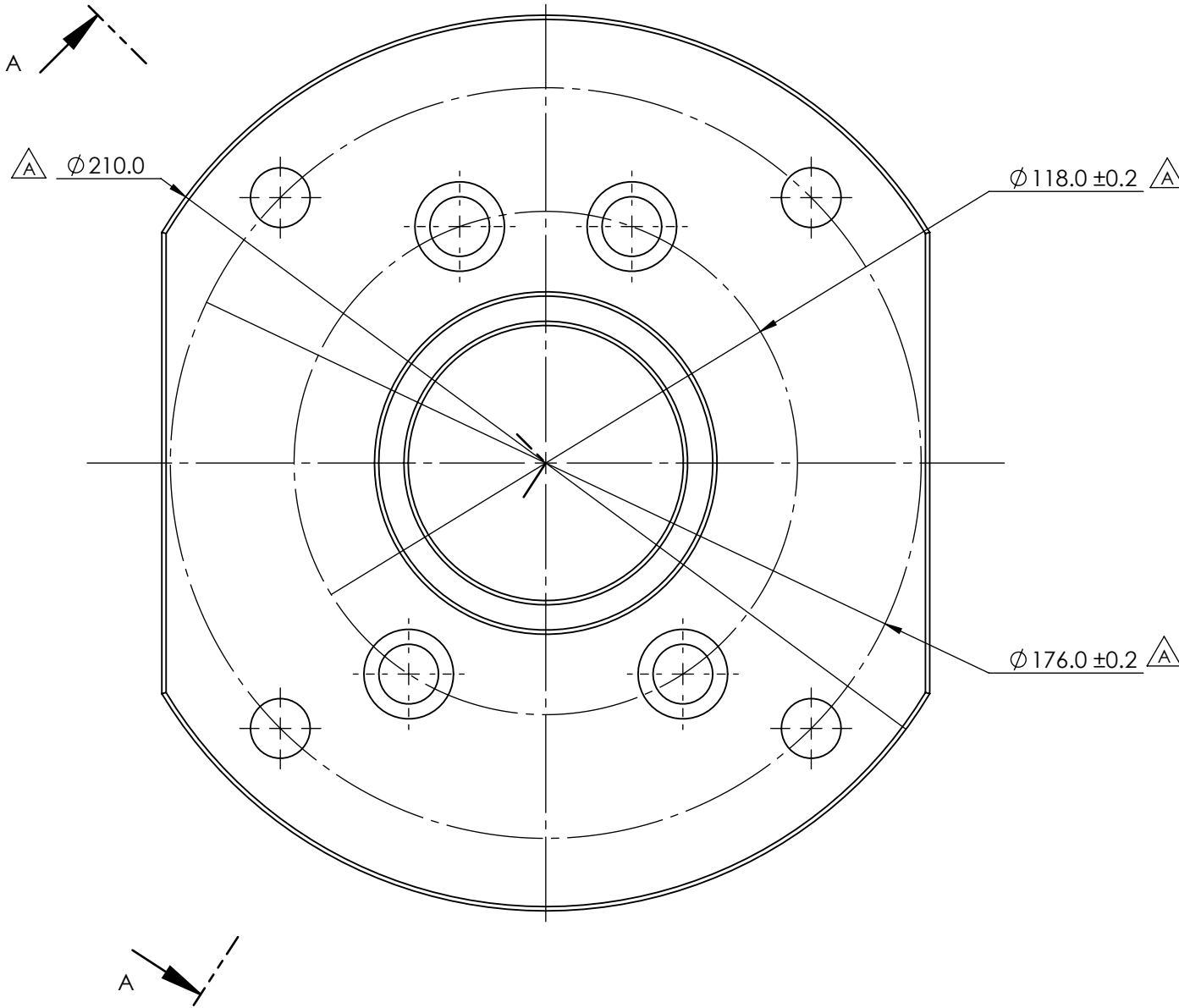
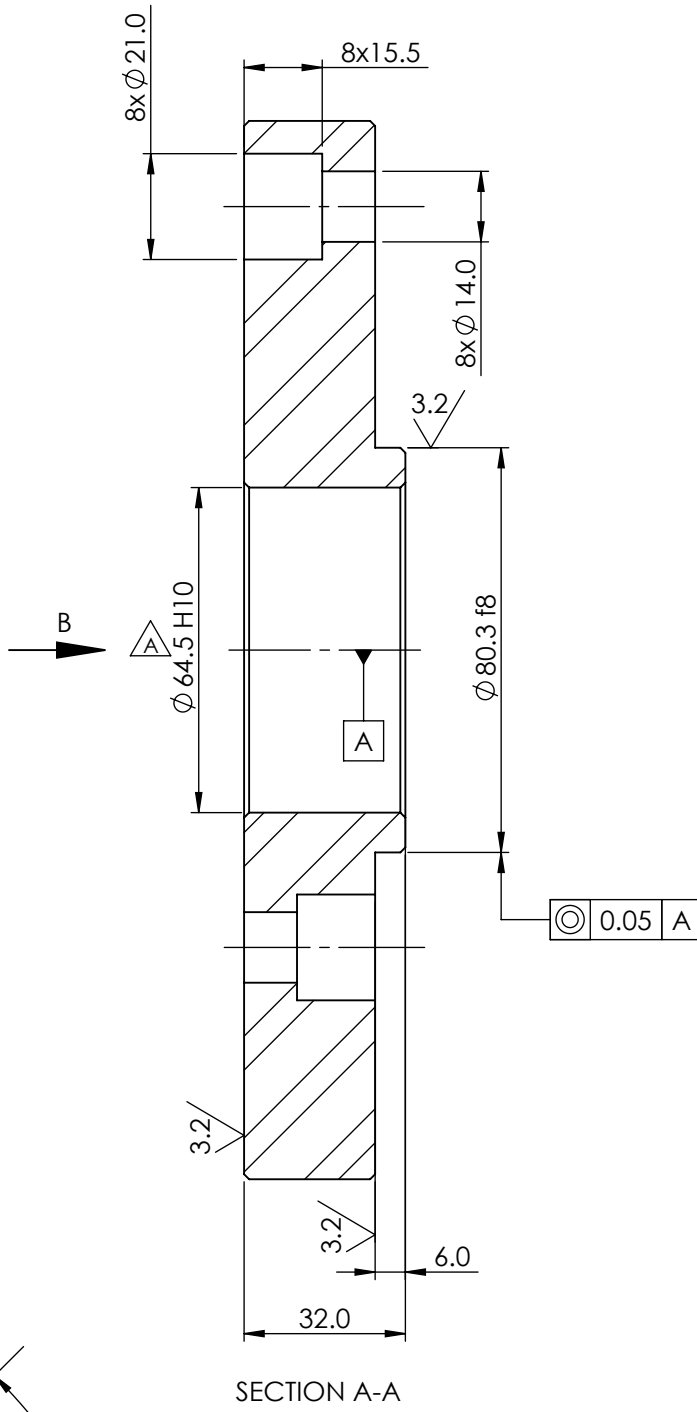
E

F

G

H

A2 - 594 X 420



MATERIAL				WEIGHT (KG)		RUGOSITY (C.I.A)		SURFACE COATING		PTFE									
AISI 4130				5.59		3.2		TREATMENT		-									
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING								LINEAR DIMENSIONS NOT INDICATED - MACHINING											
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

A	AS INDICATED	11/09/25	C.JLZ	EVJN	NTHF
$\varnothing$	ORIGINAL	20/03/25	C.JLZ	U488	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M



SUB

CIENT: E&P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: MOUNTING PLATE

SOLIDWORKS 2018	DE	-
SCALE: 1:1	SHEET	1 of 1

INTERNO

No I-DE-3010.00-1300-270-PX9-023



REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

1. COATING:
(1) Zi-Ni WITHOUT PTFE

A	GENERAL REVIEW AS INDICATED	11/09/25	CJLZ	EVJN	NTHF
Ø	ORIGINAL	20/03/25	CJLZ	U4B8	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M



SUB

CLIENT: E&P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: RETAINING RING

SOLIDWORKS 2018

DE

SCALE: 1:1

	SHEET	1	OF	1
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INTERNO

No	I-DE-3010.00-270-PX9-024
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A

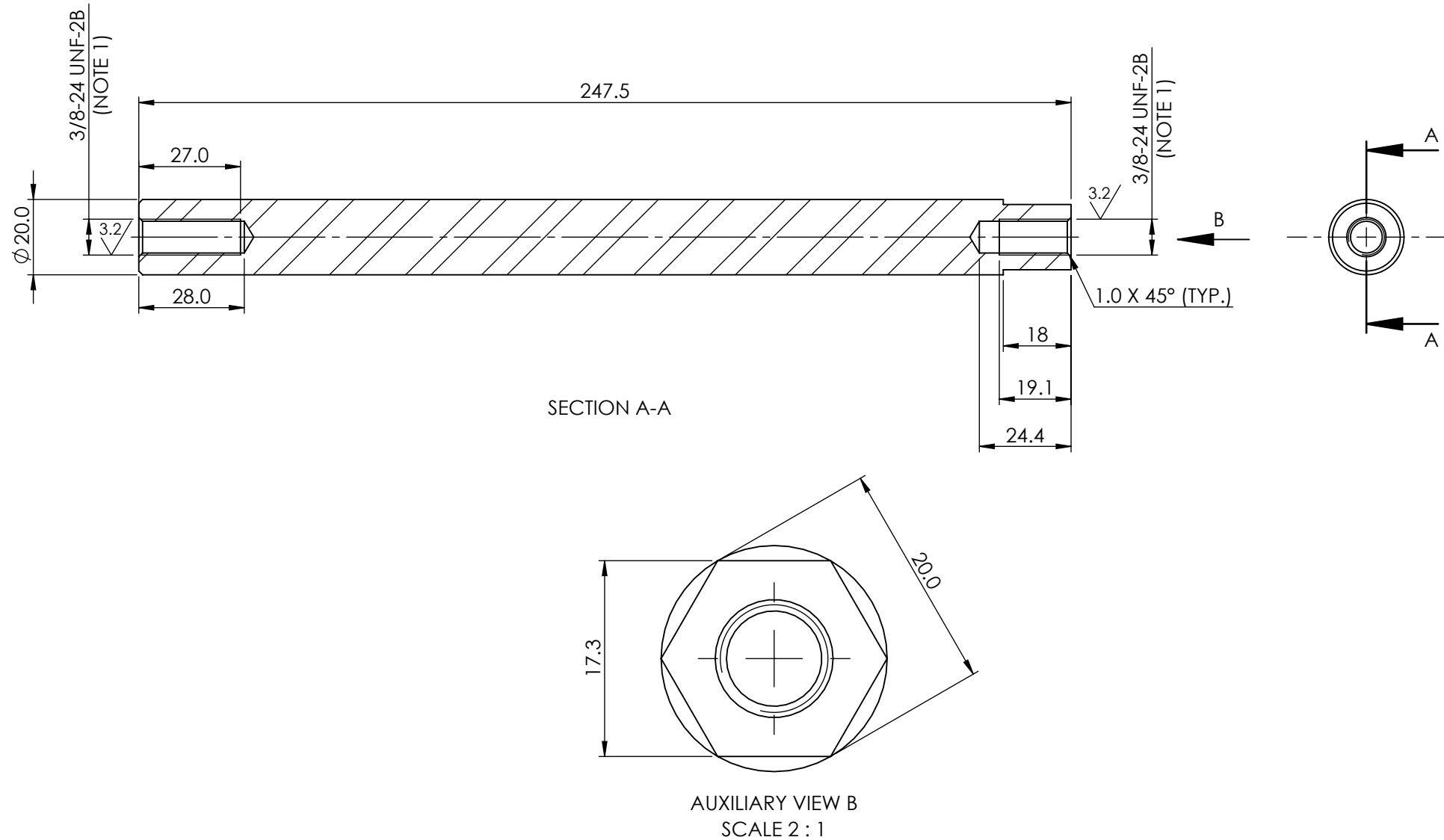
B

C

D

E

F



REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

1. COATING:
(1) Zi-Ni WITHOUT PTFE

Ø	ORIGINAL	11/09/25	CJLZ	EVJN	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M



SUB

CLIENT:	E&P				
JOB:	FPSO UNIT				
AREA:	PRODUCTION				
TITLE:	RETAINING RING				

MATERIAL AISI 4130				WEIGHT (KG) 0.58		RUGOSITY (C.L.A) INDICATED		SURFACE COATING ZiNi + PTFE											
								TREATMENT -											
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING										
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
		TOLERANCES		±1	±3	±4	±6	±8	±11			±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8
		DIAMETER		±0,1		±0,1		±0,2		±0,3		±0,5		±0,8		±1,2		±2,0	

SOLIDWORKS 2018		DE		-	
		SCALE: 1:1		SHEET 1 OF 1	
INTERNO					
No		I-DE-3010.00-270-PX9-025			

A

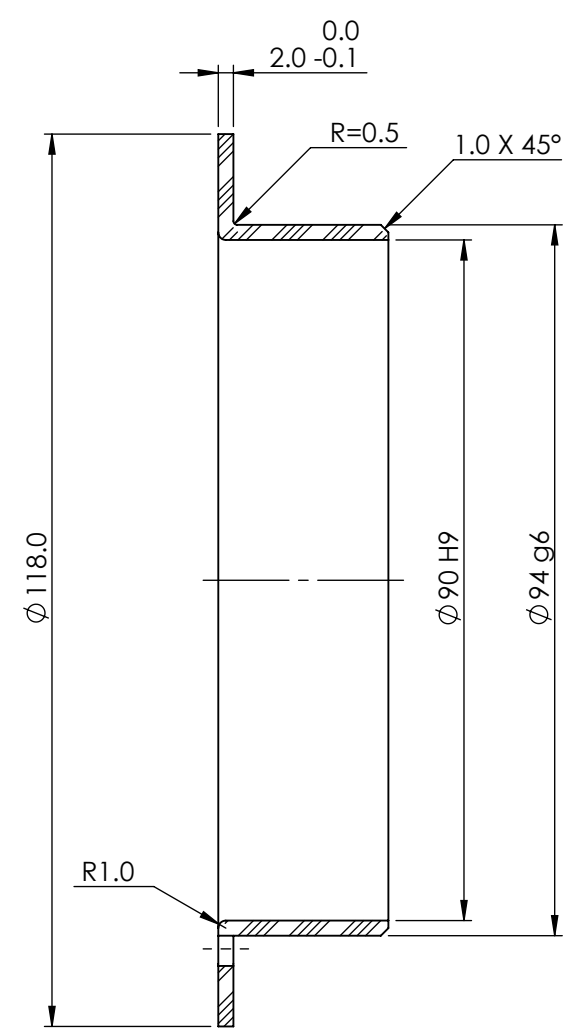
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C

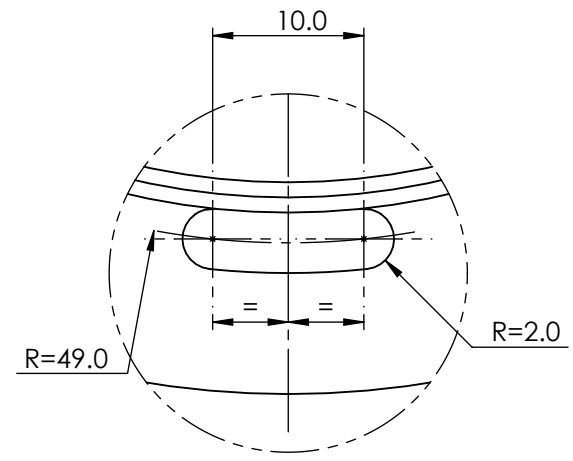
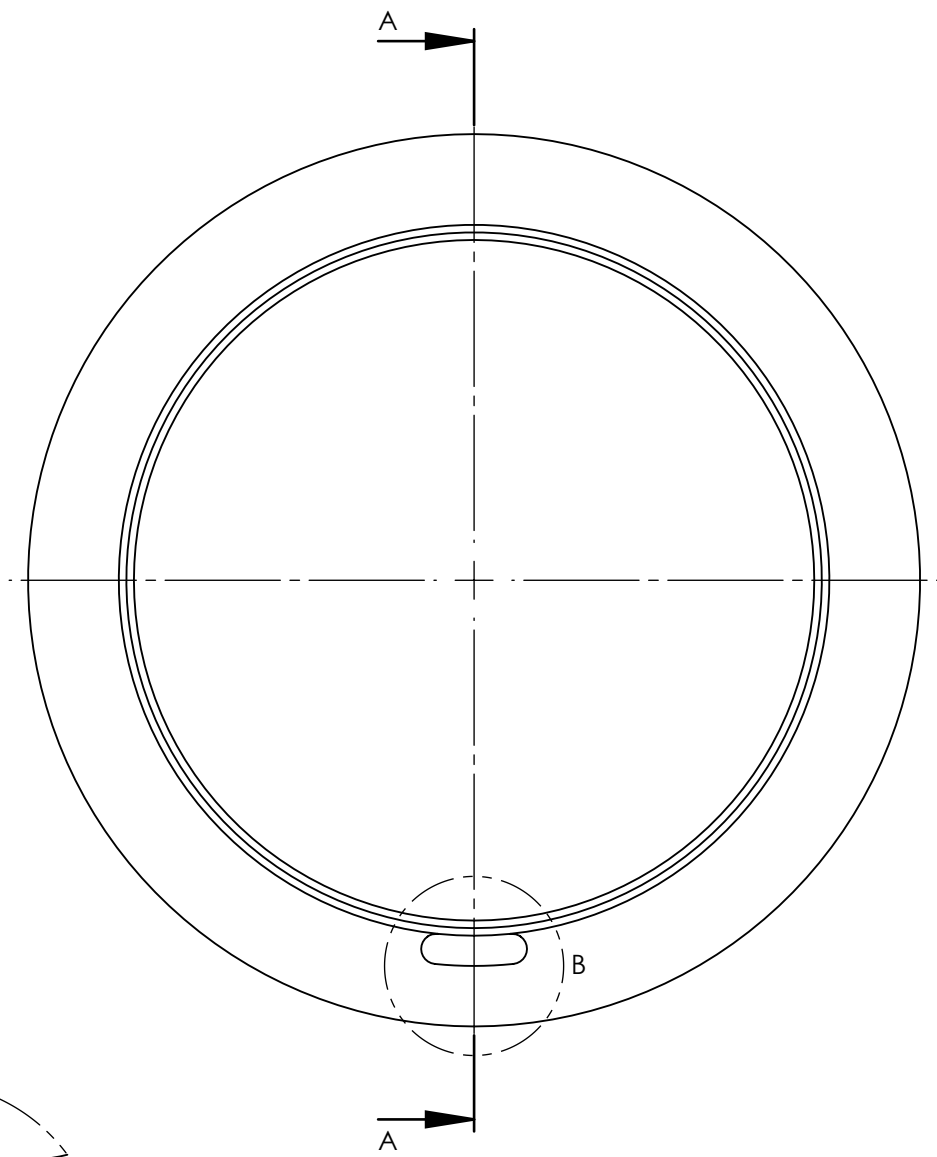
D

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SECTION A-A



DETAIL B
SCALE 2 : 1

MATERIAL				PEEK				WEIGHT (KG)		RUGOSITY (C.L.A.)		SURFACE COATING									
								0.03		-		TREATMENT									
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING										LINEAR DIMENSIONS NOT INDICATED - MACHINING											
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000		
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0		
										DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0		

REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

Ø	ORIGINAL	11/09/25	CJLZ	EVJN	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

SUB

CLIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: SPRING INSULATION BUSHING

SOLIDWORKS 2018	DE	-
SCALE: 1:1	SHEET 1	OF 1

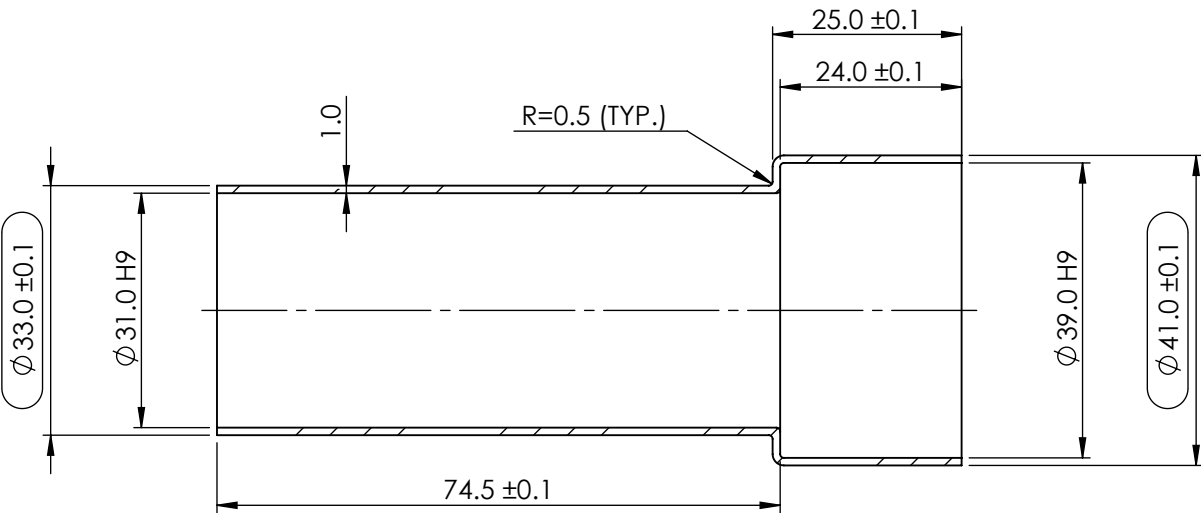
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E

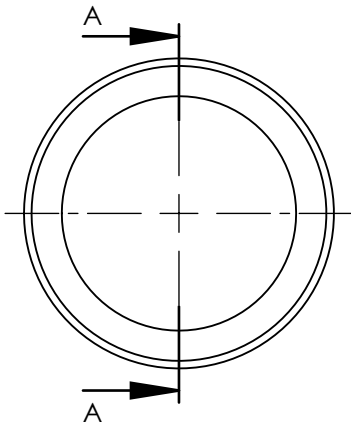
C

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SECTION A-A



REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3010.00-1300-279-P56-350
I-DE-3010.00-1300-279-PX9-016

GENERAL NOTES

Ø	ORIGINAL	05/09/25	CJLZ	EVJN	NTHF
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

ACCORDING TO DI-1PBR-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

			SUB		
CLIENT: E&P					
JOB: FPSO UNIT					
AREA: PRODUCTION					
TITLE: RETAINING RING BUSHING					
SOLIDWORKS 2018		DE		-	
		SCALE: 1:1		SHEET 1 OF 1	
INTERNO					
No		I-DE-3010.00-270-PX9-027			

MATERIAL PEEK				WEIGHT (KG) 0.01		RUGOSITY (C.L.A) -		SURFACE COATING -															
								TREATMENT -															
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING									LINEAR DIMENSIONS NOT INDICATED - MACHINING														
DIMENSIONS (mm)				DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)				DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES				±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0		
												DIAMETER		±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0		

No I-DE-3010.00-270-PX9-027

A

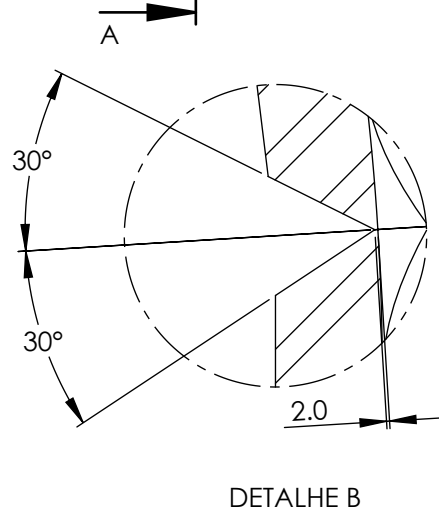
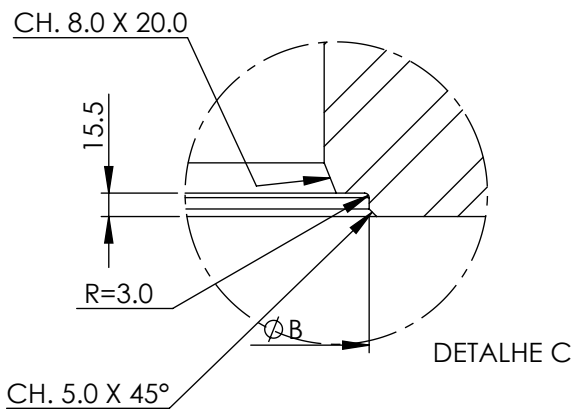
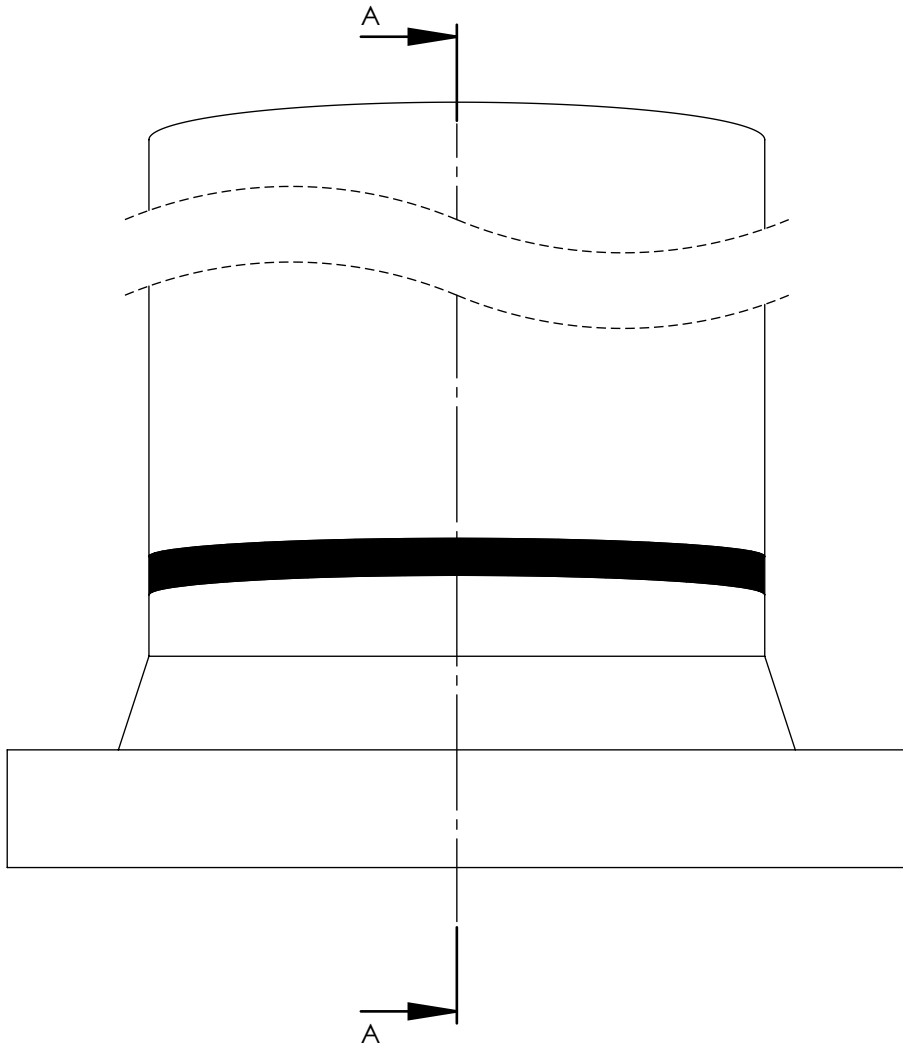
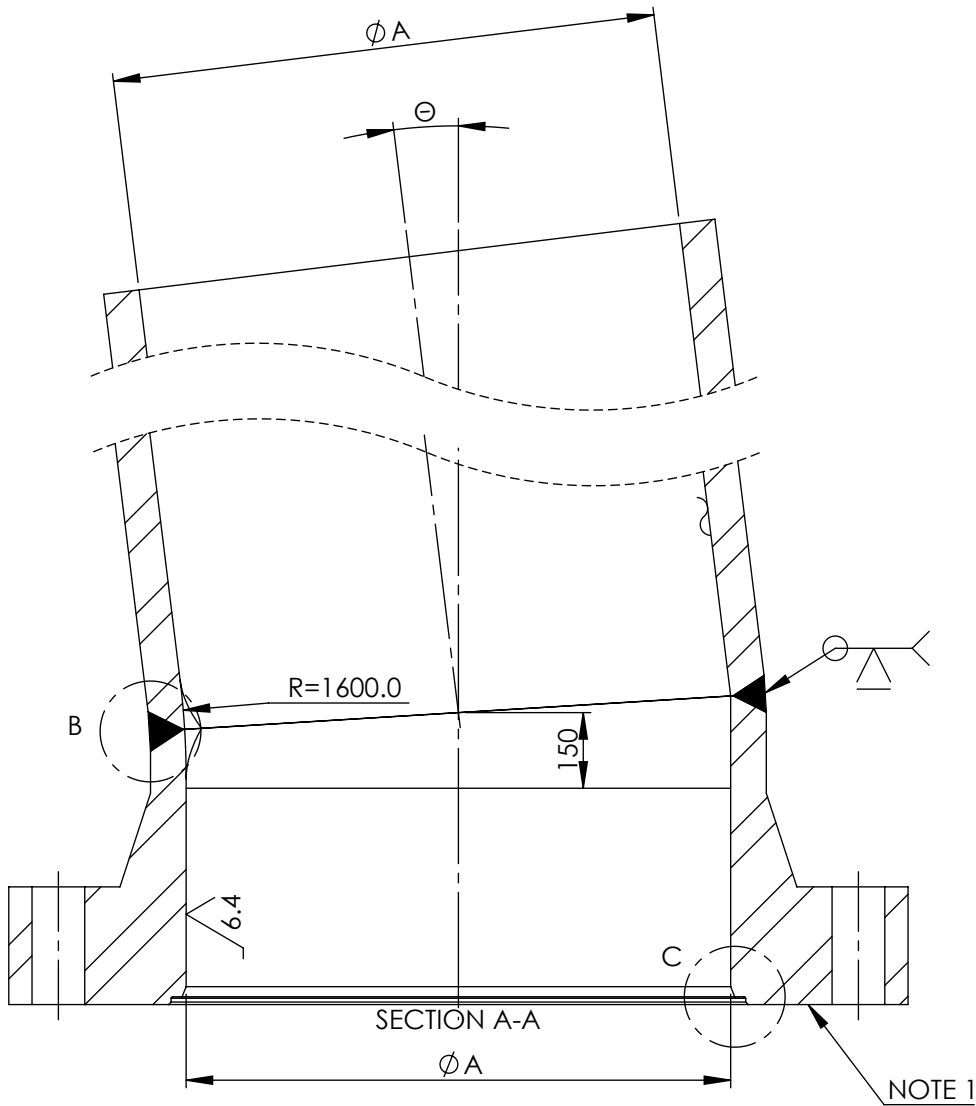
B

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I-Tube	ØA	ØB
26"		
28"		
30"		
32"	680.0/678.6	740.0/740.5
34"		
36"		
38"		
40"		
42"		
44"		
46"	1030.5/1028.6	1090.0/1090.5
48"	1082.5/1080.6	1140.0/1140.5

MATERIAL ASTM A105				WEIGHT (KG) -		RUGOSITY (C.L.A) -		SURFACE COATING ANTIFOULING															
								TREATMENT -															
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING										LINEAR DIMENSIONS NOT INDICATED - MACHINING													
DIMENSIONS (mm)				DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)				DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000
TOLERANCES				±1	±3	±4	±6	±8	±11	±14	±18	LENGHT				±0,2	±0,3	±0,5	±0,8	±1,2	±2,0	±3,0	±4,0
												DIAMETER				±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2,0

REFERENCE DOCUMENTS

RELATED ASSEMBLY:
I-DE-3010.00-1300-279-PPC-300
I-DE-3010.00-1300-279-P56-350

GENERAL NOTES

1. DO NOT PAINT
- Θ - ANGLE TO BE DEFINED BY THE FPSO PROJECT FOR EACH SUPPORT
2. FLANGE SPECIFICATION
- DIMENSIONAL AS PER STANDARD ASME B16,47 CLASS 900 SERIE A (NO RAISED FACE)
 - NOMINAL SIZE: SEE I-TUBE CONFIGURATION
 - MODIFIED EXTENDED NECK (+150mm)

D	48" ØA DIMENSION AND REF. DOC.	24/02/25	CJLZ	BERK	NTHF
C	EXTENDED NECK FLANGE	03/09/21	ESUB/TDUT	VIOLANTE	BRUNO PINHO
B	GENERAL REVISION	26/08/19	PDDP/TDUT	BRUNO PINHO	VINICIUS
A	GENERAL REVISION	10/05/17	PDDP/TDUT	BRUNO PINHO	VINICIUS
Ø	ORIGINAL	16/12/16	PDDP/TDIT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK.	APPROV.

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FORM OWNED TO PETROBRAS N-381 - REV.M



CENPES

CLIENT: E & P

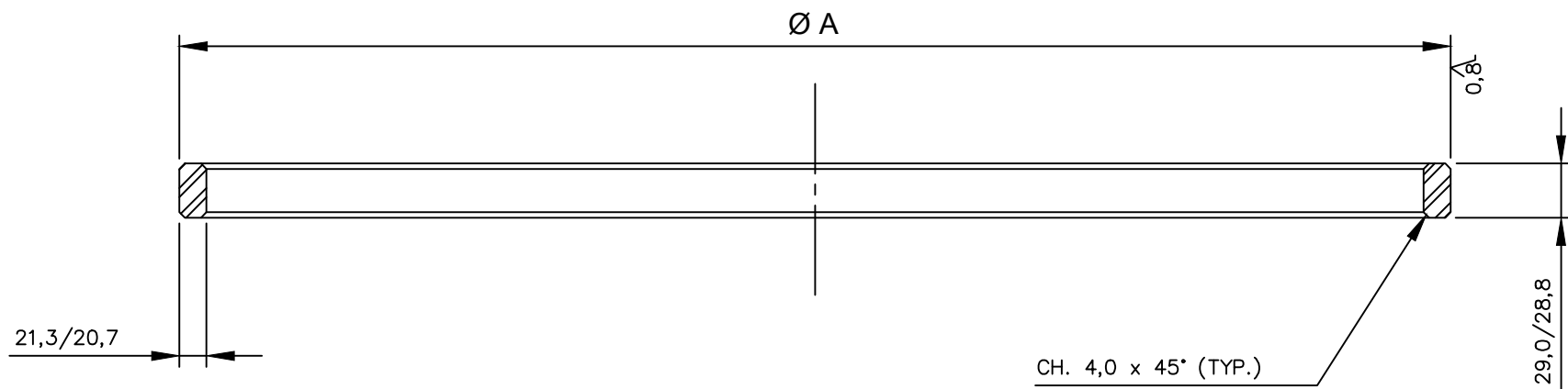
JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: TRANSITION CONNECTION OF I-TUBE ASSEMBLY

SOLIDWORKS 2018		DE		-	
		SCALE: NO SCALE		SHEET 1 OF 1	
INTERNO					
No		I-DE-3010.00-1300-279-PPC-320			

STANDARDIZED FORM BY EP-2B-0001 - FIGURE A22



I-TUBE	Ø A
26"	
28"	
30"	
32"	739,4/739,0
34"	
36"	
38"	
40"	
42"	
44"	
46"	1089,4/1089,0
48"	1139,4/1139,0

REFERENCE DOCUMENTS

NEXT ASSEMBLY:
I-DE-3000.00-1300-279-PPC-300

GENERAL NOTES

MATERIAL PLATE 1" - ASTM DH 36		
TOLERANCE ± 0,4	RUGOSITY (C.L.A) 6,4 µm	WEIGHT(Kg)
SURFACE COATING Zi-Ni		
DIMENSIONS IN MILIMETERS (UNLESS) INDICATED		

0	ORIGINAL		PDDP/TDUT	CAPLLONCH	VINICIUS
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

THE DATA, OR PART THEREOF ARE PETROBRAS PROPERTY AND THUS MUST NOT BE USED IN ANY WAY WITHOUT PERMISSION



CENPES

CLIENT OR USER
E & P

JOB OR PROJECT
FPSO UNIT

AREA OR UNIT
PRODUCTION

TITLE
ALIGNMENT RING

DESIGN	PDDP/TDUT	DRAWN	PDDP/TDUT	CHECK	CAPLLONCH
APPROVAL	VINICIUS	SIZE	A3	CC	
DATE	DEC 15,2016	SCALE	-	SHEET	1 of 1

No. I-DE-3010.00-1300-279-PPC-321

A

B

C

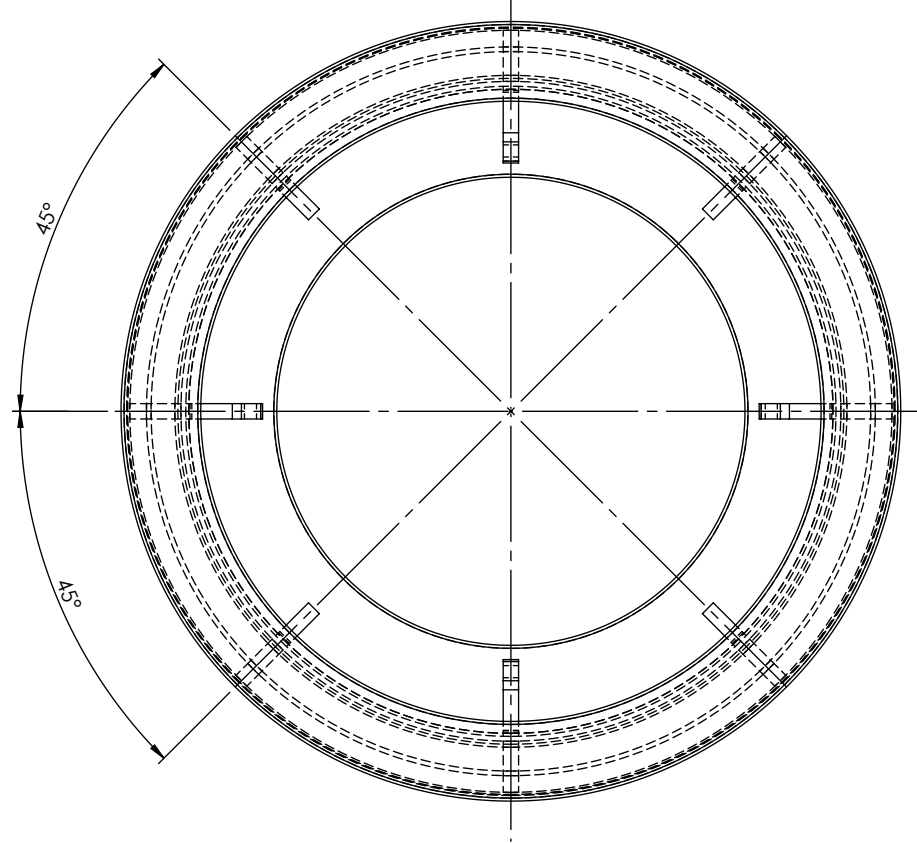
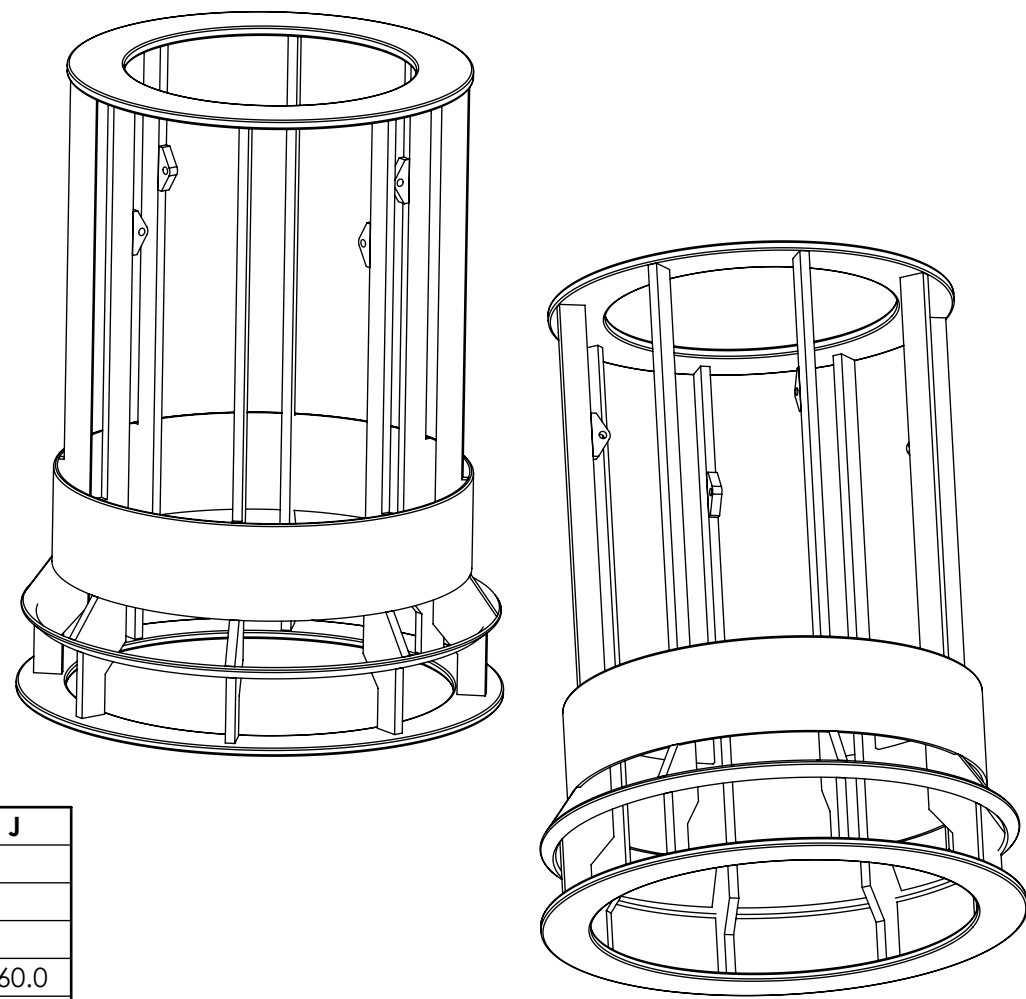
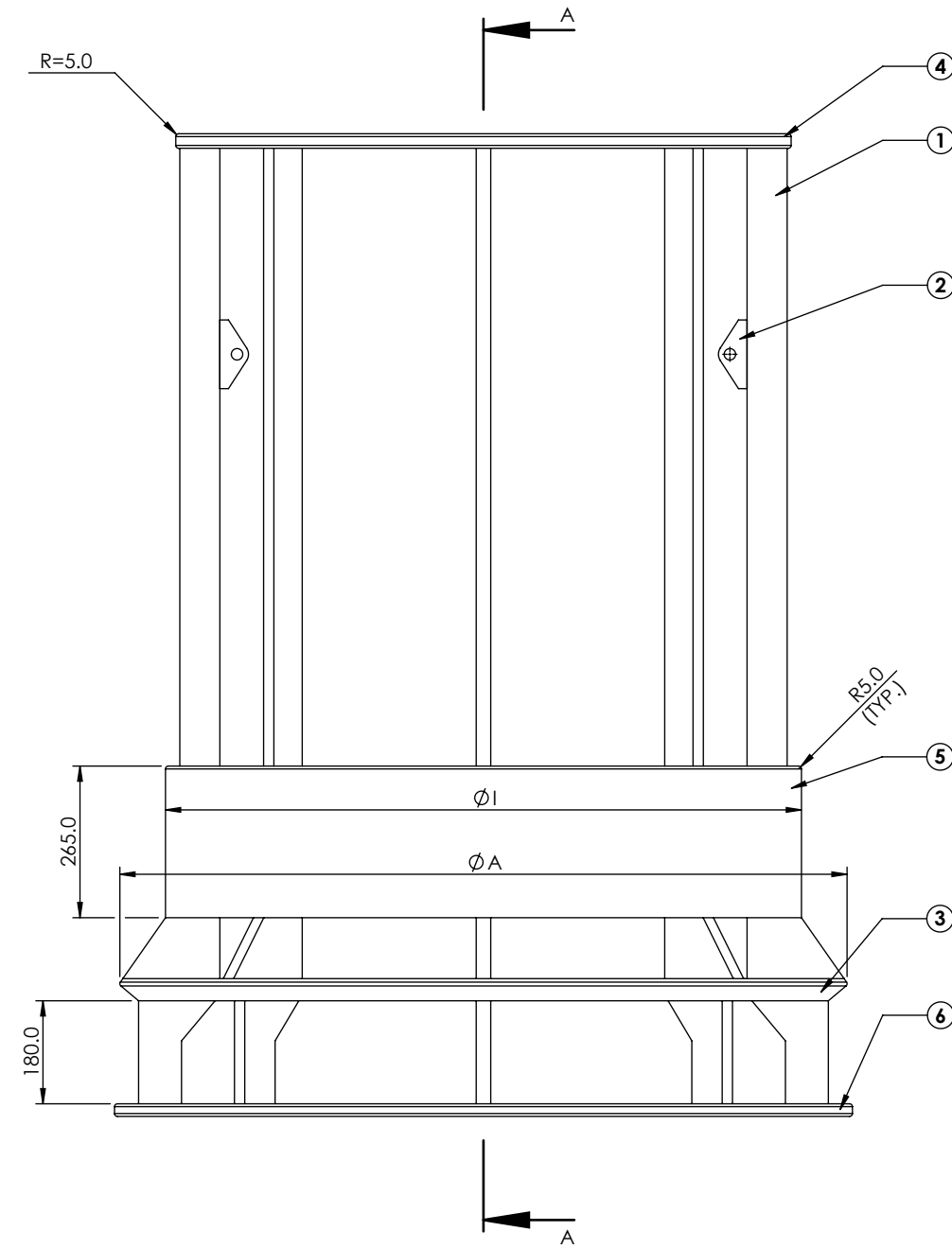
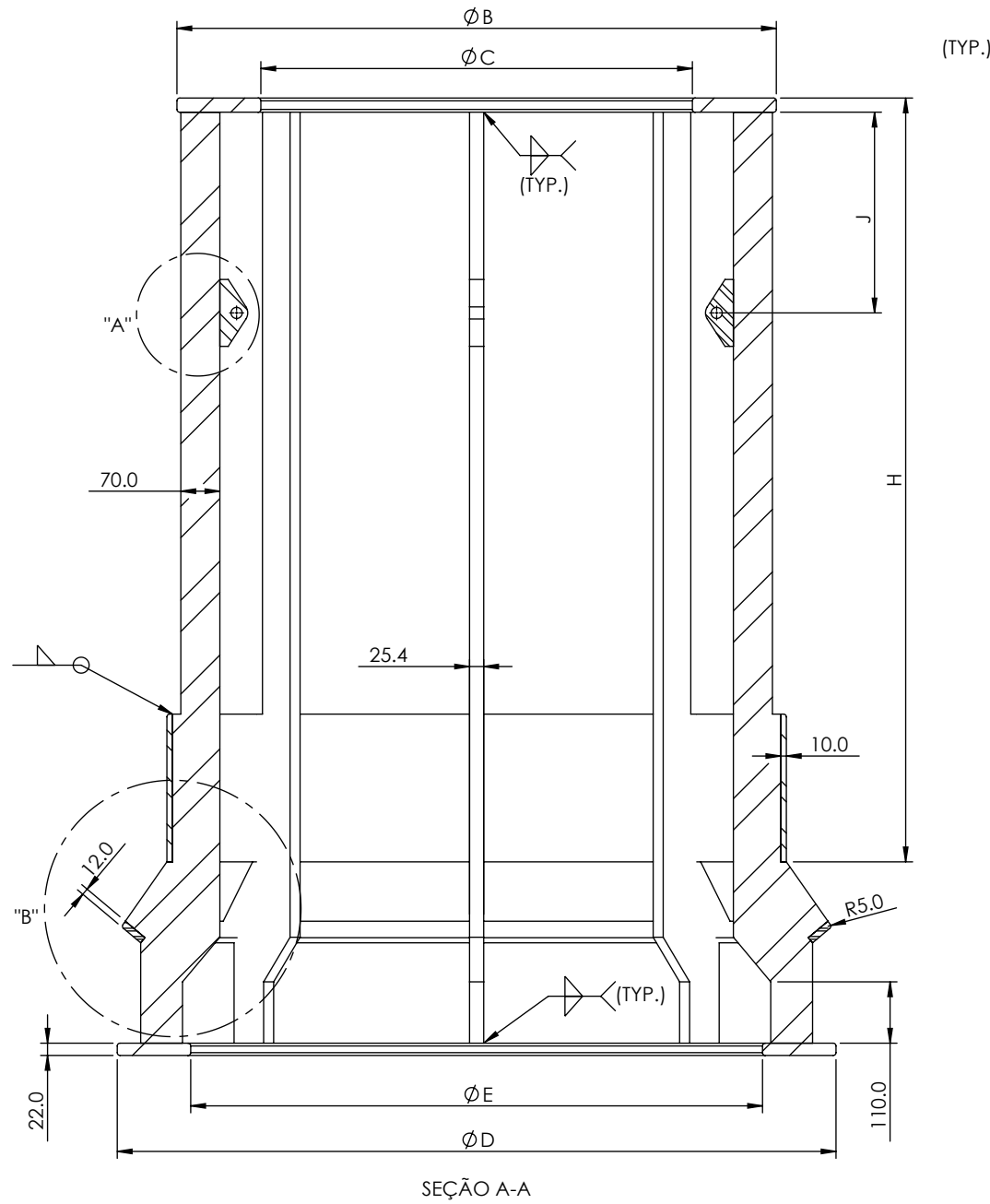
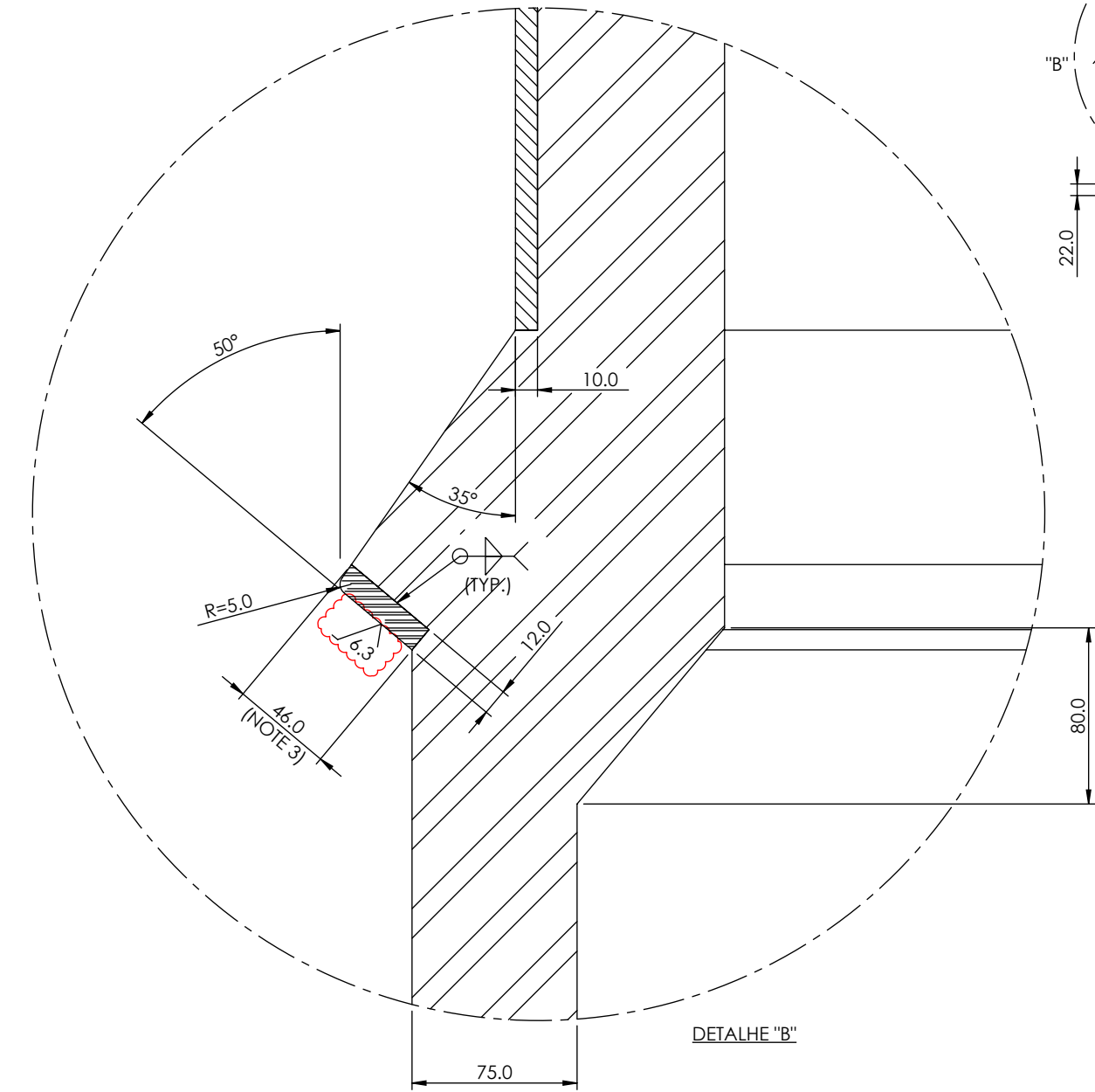
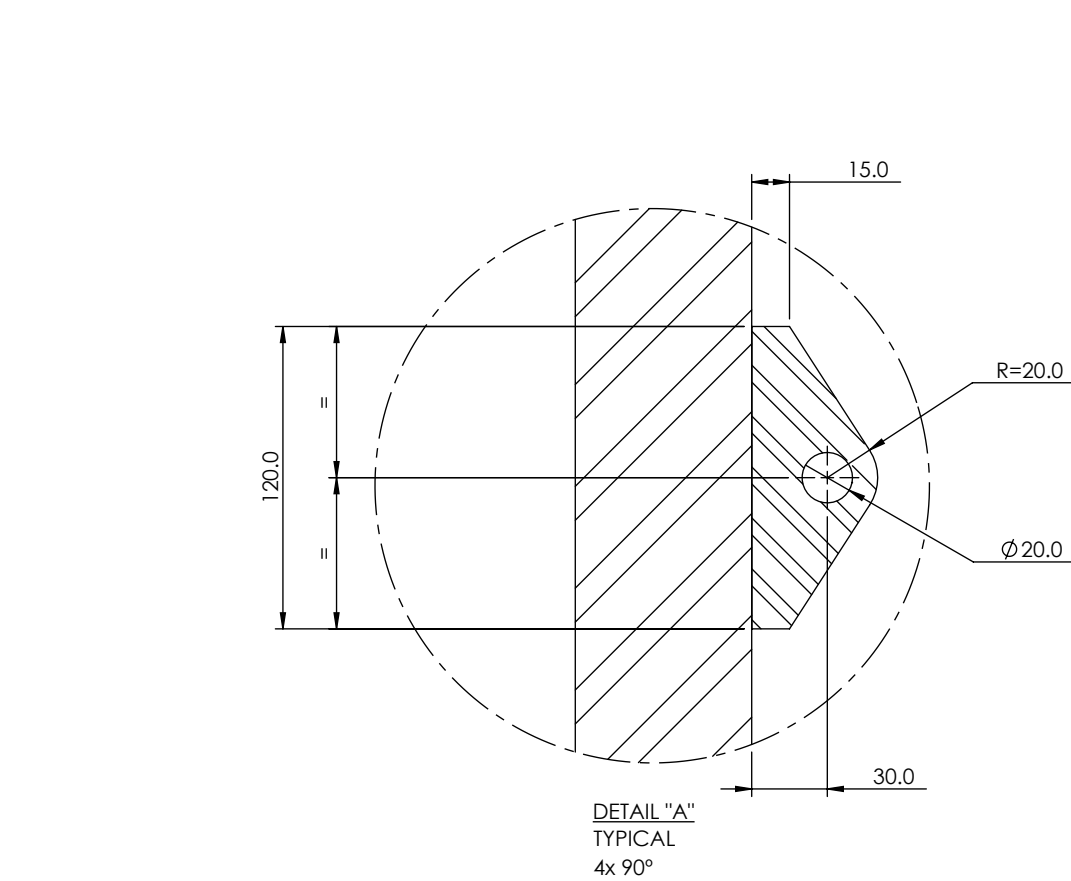
D

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H



I-Tube	ØA	ØB	ØC	ØD	ØE	H	ØI	J
26"								
28"								
30"								
32"	860.0/868.0	676.1/673.5	373.0	887.5/886.6	623.6	950.0	709.5/712.1	260.0
34"								
36"								
38"								
40"								
42"								
44"								
46"	1220.0/1219.0	1026.1/1024.0	724.2	1240.6/1239.7	973.6	1370.0	1060.0/1062.1	360.0
48"	1271.0/1270.0	1076.1/1074.0	774.0	1289.6/1288.7	1025.6	1370.0	1110.0/1112.1	360.0

MATERIAL				WEIGHT (KG)		RUGOSITY (C.L.A.)		SURFACE COATING								Zi-NiZi-Ni							
ASTM A36 Aço				472.96		INDICATED		TREATMENT								-							
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING														LINEAR DIMENSIONS NOT INDICATED - MACHINING									
DIMENSIONS (mm)		DE 2 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000	>4000 a ≤8000	>8000 a ≤12000	DIMENSIONS (mm)		DE 0.5 a ≤3	>3 a ≤6	>6 a ≤30	>30 a ≤120	>120 a ≤400	>400 a ≤1000	>1000 a ≤2000	>2000 a ≤4000				
TOLERANCES		±1	±3	±4	±6	±8	±11	±14	±18	LENGHT		±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±3.0	±4.0				
		DIAMETER		±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0			

REFERENCE DOCUMENTS

GENERAL NOTES

- 1 - DO NOT PAINT
- 2 - ALL DIMENSIONS OF DIAMETER TAKE INTO ACCOUNT THE "CAP" ALREADY COATED.
- 3 - SURFACE MUST BE MACHINED TO ENSURE UNIFORMITY DURING SEATING OF THE DUMMY CAP DURING FAT TESTS.

MATERIAL

- ① - PLATE 1" - ASTM A36
- ② - PLATE 1" - ASTM A36
- ③ - PLATE 1/2" - ASTM A36
- ④ - PLATE 1" - ASTM A36
- ⑤ - PLATE 10mm - ASTM A36
- ⑥ - PLATE 1" - ASTM A36

B	NOTE 3 ADDED AND RUGOSITY	22/05/2024	SUB/ES	CX4H	U4B8
A	TOLERANCES REVISION	24/03/21	SUB/ES	C.JLZ	BERL
Ø	ORIGINAL	07/07/20	SUB/ES	C.JLZ	BERL
REV.	DESCRIPTION	DATE	EXEC.	CHECK	APPROV.

ACCORDING TO DI-1PB8-00337, INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.
FORM OWNED TO PETROBRAS N-381 - REV.M

PETROBRAS

SUB

CIENT: E & P

JOB: FPSO UNIT

AREA: PRODUCTION

TITLE: DUMMY CAP (BSDI-SI)

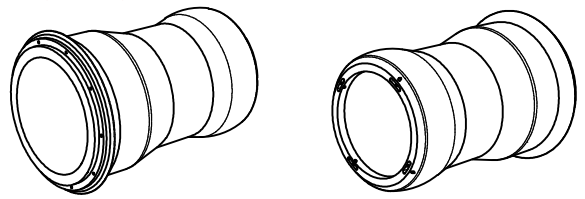
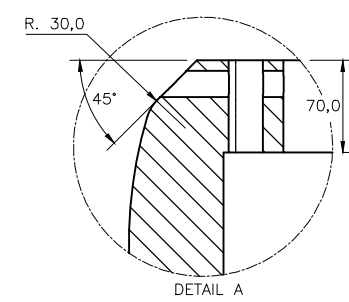
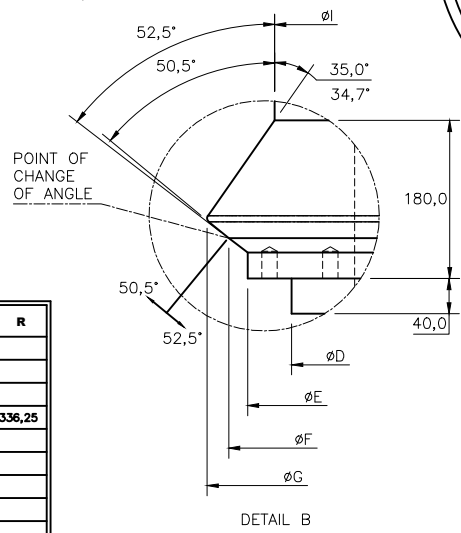
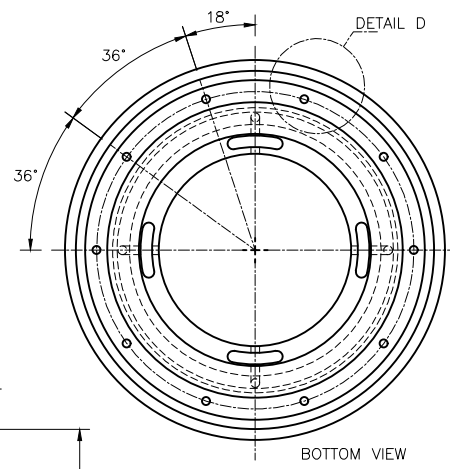
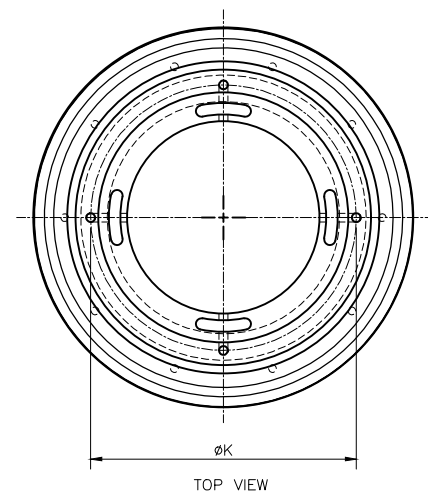
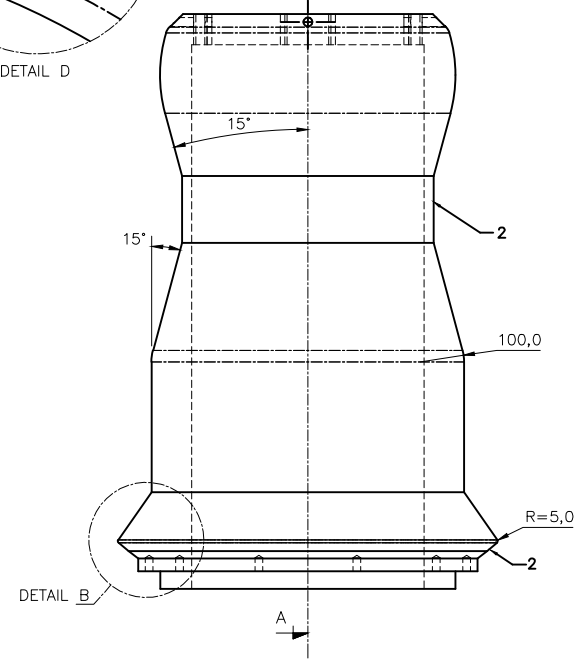
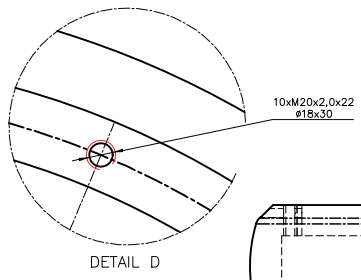
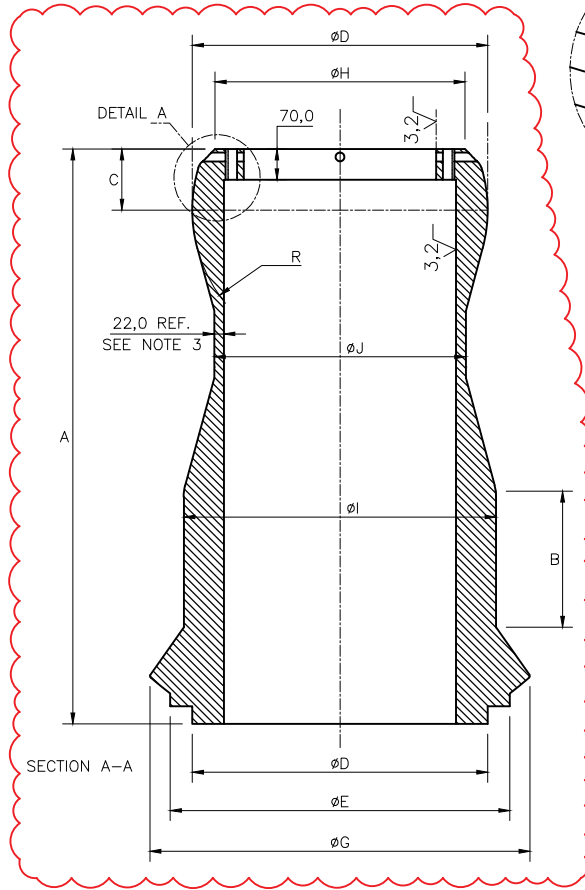
SOLIDWORKS 2018 DE -

SCALE: NO SCALE SHEET 1 of 1

INTERNO

No I-DE-3010.00-1300-279-P56-373

E
D
C
B
A



I-TUBE	A	B	C	ØD	ØE	ØF	ØG	ØH	ØI	ØJ	ØK	R
26"												
28"												
30"												
32"	1310,0/1308,0	310,0	140,0/138,0	674,1/672,4	772,0/775,0	816,0	868,0/869,0	569,0	708,4/710,1	573,0	495,0	336,25
34"												
36"												
38"												
40"												
42"												
44"												
46"	1730,0/1728,0	290,0	200,0/198,0	1024,1/1022,9	1123,0/1125,0	1167,2	1219,0/1220,0	867,2	1058,9/1060,1	899,2	821,2	511,25
48"	1730,0/1728,0	290,0	200,0/198,0	1074,1/1072,9	1174,0/1176,0	1218,0	1270,0/1271,0	936,0	1108,9/1110,1	950,0	872,0	537,25

REFERENCE DOCUMENTS
I-DE-3010.00-1300-279-PPC-330

GENERAL NOTES
1 - DIMENSIONS IN MILLIMETERS (UNLESS) INDICATED.
2 - PTFE WERE INDICATED EXTERNAL SURFACE
3 - FASTENING HOLES ARE AN EXAMPLE OF A SOLUTION FOR A FASTENING SYSTEM. THE FASTENING METHOD MUST BE DEFINED BY RISER SUPPLIER.
4 - THE DIMENSIONS HEREIN SPECIFIED SHOULD BE VERIFIED AFTER FINAL COATING OF THE CAP DL-SI. THE MAXIMUM COATING THICKNESS SHALL NOT EXCEED 0,55MM.

B	GENERAL REVISION	REV. NUMBER	REV. DATE	CHK. NAME	REV. NAME
A	TOLERANCES REVISION	REV. NUMBER	REV. DATE	CHK. NAME	REV. NAME
O	ORIGINAL	REV. NUMBER	REV. DATE	CHK. NAME	REV. NAME
REV.	DESCRIPTION	DATE	DATE	CHECK	APPROV.

THE DATA OR PART THEREOF ARE PETROBRAS PROPERTY AND THEIR MUST NOT BE USED IN ANY WAY WITHOUT PERMISSION

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SUB

CLIENT OR USER
E & P

JOB OR PROJECT
FPSO UNIT

AREA OR UNIT
PRODUCTION

TITLE
CAP DL - SI

EXTERNAL	ASTM A-36	HEAT	HARDENING (CL)	SURFACE FINISH	SPON	REVISION	SUB/ES	DATE	PPDP/YES	CHECK	CAZ	APPROVAL	REVL
LINEAR DIMENSIONS NOT INDICATED - BOILERMAKING													
LINEAR DIMENSIONS NOT INDICATED - MACHINING													
DIMENSIONS (mm)													
TOLERANCES													

SCALE 1:9
DATE JUL 07,2020
1-DE-3010.00-1300-279-P56-375

UNCLASSIFIED DATA BY 00-00-0001 - PENDING AEE