

REFERENCED DRAWING: I-DE-3A36.05-1500-941-P9U -004 Rev G

CBS Nº .: 4600632812

PCS Nº .: 4512019851

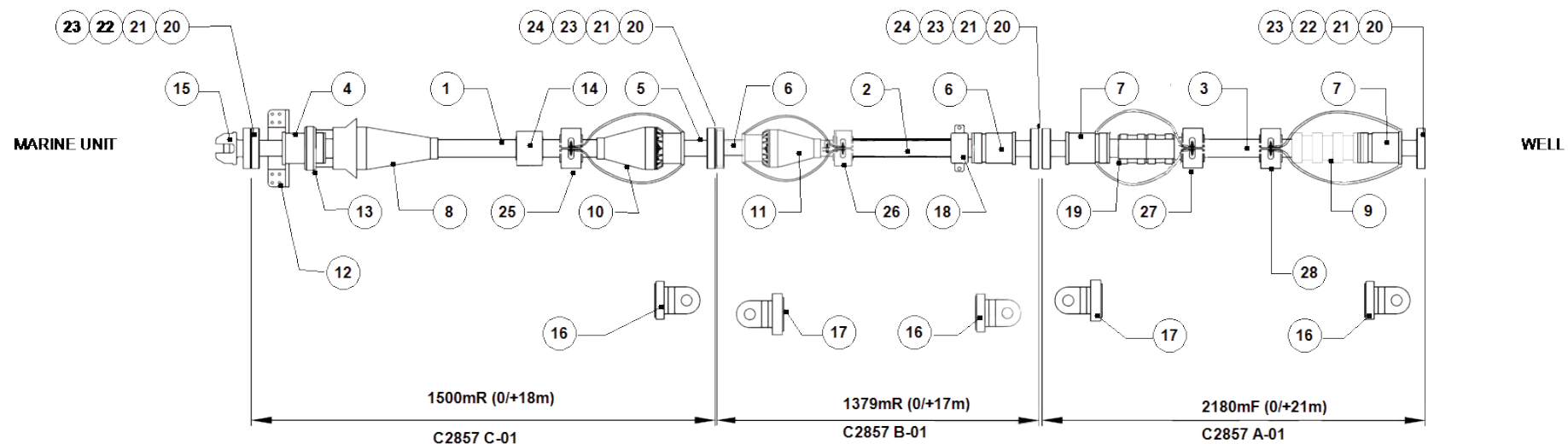
REVISIONS			
REV	DESCRIPTION	APPROVED	DATE
11	According ECR WS00084626. Revisions highlighted in grey.	CNa	2/3/2023
12	Updated according to ECR WS00086990. Template update, anode position, itens 15/16 supplied by client	CNa	5/26/2023

9		30	N/A	N/A	2	-	-	CB-OAXXXXXX-00-88.02	01	Assembly Vacuum Test Adapter (3/8" NPT Male)	(5)	
10		29	110	170	1	-	-	N/A	-	Kit of components for MODA System		
12		28	180	530	175Kg	-	-	CB-TDC2857XX-00-01	02	Anode Collar for Service Life 35 Kg (5 per EndFitting, Drawing Number CB-TDCXXXXXXX-00-01.19B) + Neoprene Blanket		
12		27	190	530	175Kg	-	-	CB-TDC2857XX-00-01	02	Anode Collar for Service Life 35 Kg (5 per EndFitting, Drawing Number CB-TDCXXXXXXX-00-01.19A) + Neoprene Blanket		
12		26	260	530	120Kg	-	-	CB-TDC2857XX-00-01	02	Anode Collar for Service Life 30 Kg (4 per EndFitting, Drawing Number CB-TDCXXXXXXX-00-01.16AH) + Neoprene Blanket		
11		25	270	530	120Kg	-	-	CB-TDC2857XX-00-01	02	Anode Collar for Service Life 30 Kg (4 per EndFitting, Drawing Number CB-TDCXXXXXXX-00-01.16AG) + Neoprene Blanket		
10		24	TBD	640	2	-	-	N/A	-	Set of Studs and Bolts, 7 1/16" API 6BX Flange, 10000 psi, BX 156 , For Tensioner Hydratight HL (For Installation)	(1) (2)	
10		23	240	630	6	-	-	N/A	-	Set of Studs and Bolts, 7 1/16" API 6BX Flange, 10000 psi, BX 156 , For Tensioner Hydratight HL (For transport and tests)	(1) (2)	
10		22	230	620	2	-	-	N/A	-	Set of Studs and Bolts, 7 1/16" API 6BX Rotative Flange, 10000 psi, BX 156 , For Tensioner Hydratight HL (For Installation)	(1) (2)	
10		21	220	580	6	-	-	N/A	-	Seal Ring BX 156 AISI 316L (For transports and tests)		
10		20	TBD	590	4	-	-	N/A	-	Seal Ring BX 156 Inconel 625 (For Installation)		
12		19	160	230	1	-	-	PT-PRT-357021	02	Anchor Collar Protection (3m), 4" ID Gas Service Flowline		
12		18	150	210	1	-	-	CB-AC1012315-00-01	03	Anchor Collar (SWL= 55 tf), 4" ID Gas Service Bottom Riser		
12		17	250	690	2	-	-	CB-TH1522224-00-02	08	Installation/Test Head, 7 1/16" API 6BX Flange, 10000 psi, BX 156 (SWL= 200 tf)		
12		16	N/A	N/A	-	-	3	CB-TH152XXXX-00-01	01	Handling/Test Head, 7 1/16" API 6BX Flange, 10000 psi, BX 156 (SWL= 55 tf)		
12		15	N/A	N/A	-	-	1	CB-PH152XXX-00-02	01	Pulling Head, 7 1/16" API 6BX Flange, 10000 psi, BX 156 (SWL= 400 tf)		
11		14	140	200	1	-	-	CB-SC1012315-00-01	05	Stopper Clamp, 4" ID Gas Service Top Riser		
10		13	130	190	1	-	-	CB-PK1012315-00-01	01	Pull-In Kit 4" ID Gas Service Top Riser		
11		12	120	180	1	-	-	CB-HC1012315-00-01	02	Hang Off Collar, 4" ID, I-Tube 48" Gas Service Top Riser		
12		11	100	160	1	-	-	CB-BS1012315-00-02	02	Intermediate Bend Stiffener, 4" ID Gas Service Bottom Riser		
10		10	90	160	1	-	-	CB-BS1012315-00-02	02	Intermediate Bend Stiffener, 4" ID Gas Service Top Riser		
12		9	170	240	1	-	-	CB-BR1012509-00-01	05	Bend Restrictor, 4" ID Gas Service Flexible Flowline (Splited)		
10		8	80	150	1	-	-	CB-BS1012315-00-01	02	Top Bend Stiffener with Latch Sleeve and Protection, 4" ID, I-Tube 48" Gas Service Top Riser		
12		7	70	130	2	-	-	CB-EF1012511-00-01	05	End Fitting 4" ID Gas Service Flowline 7 1/16" API 6BX Flange, 10000 psi, BX 156 With N2 Seal Port	(3)	
12		6	60	120	2	-	-	CB-EF1012315-00-02	07	End Fitting 4" ID Gas Service Bottom Riser 7 1/16" API 6BX Flange, 10000 psi, BX 156 With N2 Seal Port	(3)	
11		5	50	110	1	-	-	CB-EF1012315-00-02	07	End Fitting 4" ID Gas Service Top Riser 7 1/16" API 6BX Flange, 10000 psi, BX 156 with N2 Seal Port	(3)	
11		4	40	70	1	-	-	CB-EF1012315-00-01	06	End Fitting 4" ID to 6" ID transition bore Gas Service Top Riser 7 1/16" API 6BX Flange, 10000 psi, BX 156 with N2 Seal Port with MODA	(3)	
12		3	30	30	2180 m	-	-	WSI 101.2511-RD-4042-X	01	4" ID Gas Service Flexible Flowline		
12		2	20	20	1379 m	-	-	WSI 101.2316-RD-4042-6	01	4" ID Gas Service Flexible Bottom Riser		
10		1	10	10	1500 m	-	-	WSI 101.2315-RD-4043-6	02	4" ID Gas Service Flexible Top Riser		

ITEM	PCS ITEM	CBS ITEM	NEW QTY.	SPARE QTY.	SUPPLIED BY CLIENT	DOCUMENT Nº	REV Nº	DESCRIPTION	NOTES	CHECK
LEGEND: N/A : MEANS NOT APPLICABLE. TBD: MEANS TO BE DEFINED. ITEMS TO BE ASSEMBLED OFFSHORE. ITEMS TO BE PARTIAL ASSEMBLED OFFSHORE. ITEMS TO BE DELIVERED WITH OFFSHORE ONES.										
NOTES : (1) - 1 1/2"- 8 UN x 15 1/2" BOLTS (12 PER FLANGE), BICHROME OVER CADMIUM. 1 1/2" - 8 UN NUTS (24 PER FLANGE), BICHROME OVER CADMIUM. (3) - EF with Full Protection. (2) - In accordance with MTL-6040. (4) - Pending Analysis for this well. (5) - This item is part of Top Riser End Fitting (not included on PCS).										

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	ENGINEERED BY:	DATE:	REV:	TITLE:				SHEET.:	
	Thaísa Silva	10/02/2021	GFo	Buzios 5 FIELD DEVELOPMENT				1/2	
	CHECKED BY:	DATE:		COMPOSITION DRAWING - Gas Service - FPSO Buzios 5/P-MOD5-04 (RJS-688)					
	Marcio Moraes	10/02/2021	RRo						
	APPROVED BY:	DATE:		CLIENT:		TOP CONFIGURATION:		DRAWING NUMBER:	
	João Lima	12/02/2021	CNa	Petrobras		Hang-Off for I-Tube		C2857 UN-01	
								REV.:	
								12	

← LAUNCHING SEQUENCE



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ENGINEERED BY: Thaísa Silva CHECKED BY: Marcio Moraes APPROVED BY: João Lima	DATE: 10/02/2021	REV: GFO	TITLE: Buzios 5 FIELD DEVELOPMENT			SHEET.: 2/2
	DATE: 10/02/2021	RRo	COMPOSITION DRAWING - Gas Service - FPSO Buzios 5/P-MOD5-04 (RJS-688)			REV.: 12
	DATE: 12/02/2021	CNa	CLIENT: Petrobras	TOP CONFIGURATION: Hang-Off for I-Tube	DRAWING NUMBER: C2857 UN-01	REV.: 12

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REVIEWS

REV	DESCRIPTION	APPROVED	DATE	REV	DESCRIPTION	APPROVED	DATE
5	UPDATED NOTE 2 AND 5 TORQUE VALUE, SEE ECR WS00067400.	TCo	31/03/22	1	ORIGINAL ISSUE	RPo	23/09/21
6	UPDATED NOTES 3, 4, 17 AND 21, ADDED DIMENSION, SEE ECR WS00083432	AFo	04/01/23	2	UPDATED TOLERANCE ABRASION & FLEXSHIELD, SEE ECR WS00060598.	TCo	09/11/21
6	UPDATED NOTES 3, 4, 17 AND 21, ADDED DIMENSION, SEE ECR WS00083432	AFo	04/01/23	3	UPDATED NOTE 4, SEE ECR WS00064923.	TCo	22/02/22
7	ADDED NOTE 22. SEE ECR WS00086301.	RPo	18/03/23	4	INSERTED NOTE 21, SEE ECR WS00066517.	TCo	21/03/22

NOTES:

1. EXTERNAL ENDFITTING MATERIAL: ALLOY STEEL FORGING, MTL-5245. COATED WITH MTL-6017, 600 MICRONS, WHITE COLOR, IN ACCORDANCE TO NORSOK M-501, SYSTEM 7A AS PER QAC-1132.

2. ENDFITTING FASTENER MATERIAL: MTL-6040, ELECTRODEPOSITED CADMIUM WITH CHROMATE (ASSEMBLED WITH LOCTITE 577). TORQUE VALUE:

PLACEMENT	FASTENER	TORQUE VALUE	
		WITH ROCOL (COF 0.09)	WITH EASY RUN (COF 0.08)
BODY TO JACKET	3/4"-16 UNF	231 +5/-0 ft-lbs [313 +7/-0 N.m]	222 +5/-0 ft-lbs [301 +7/-0 N.m]
SPLIT COLLAR TO JACKET	1/2"-20 UNF	67 +5/-0 ft-lbs [91 +7/-0 N.m]	64 +5/-0 ft-lbs [87 +7/-0 N.m]
ADAPTOR TO OUTER COLLAR	3/4"-16 UNF	231 +5/-0 ft-lbs [313 +7/-0 N.m]	222 +5/-0 ft-lbs [301 +7/-0 N.m]
BLIND COVER TO ADAPTOR	1/2"-20 UNF	67 +5/-0 ft-lbs [91 +7/-0 N.m]	64 +5/-0 ft-lbs [87 +7/-0 N.m]
PLUG/OPTICAL CONNECTOR TO JACKET	M5x0.8	2 +1/-0 ft-lbs [2 +1/-0 N.m] (TO BE CONSIDERED DRY)	
LOCKING DEVICE	M10x1.5	10 +1/0 ft-lbs [14 +1/-0 N.m] (TO BE CONSIDERED DRY)	

3. N2 TEST PORT: 3/8"-18NPT MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.

4. VENT PORTS: 1"-12UNF, VENT VALVE MODEL: DUKRON DR-UZC-G6C24IV2. TORQUE WITH TEFGEL (COF 0.1): 44 +2.5/-0 ft-lbs [60 +5/-0 N.m] PLATFORM INTERFACE: 3/8"NPT MALE.

5. FLANGE BOLTS FOR HYDRATIGHT HL TENSIONER:

Ø1 1/2"-8 UN x 15 1/2", STUD BOLTS (MTL-6040), ELECTRODEPOSITED CADMIUM WITH CHROMATE (12 PER FLANGE).

Ø1 1/2"-8 UN, HYDRATIGHT HEX NUTS (MTL-6040), ELECTRODEPOSITED CADMIUM WITH CHROMATE (24 PER FLANGE).

TORQUE (TO BE CONSIDERED DRY): 3038 N.m (2241 ft-lbs); PRELOAD: 467 kN (104951 lbs)

BOLTS NOT SHOWN FOR CLARITY.

6. MASS: 2200 kg (APPROX.).

7. NOMINAL DIMENSIONS GIVEN; DIMENSIONS APPLY PRIOR TO COATING.

8. SEAL AND INTERNAL SURFACES: 625 INCONEL, 3.00 MINIMUM THICKNESS PER MTL-5143.

9. MANUFACTURING ASSY DRW: B-EF1012315-00-01

10. STENCIL WITH RED COLOR AND LOW STRESS STAMP MARKING IDENTIFICATION IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236. ASSEMBLY DRAWING: B-EF1012315-00-01 BODY DRAWING: B-EF1012315-01-01 JACKET DRAWING: B-EF1012315-08-01 OUTER COLLAR DRAWING: B-EF1012315-09-01 INTERMEDIATE OUTER COLLAR DRAWING: B-EF1012315-24-01 ADAPTOR DRAWING: B-EF1012315-26-01 SPLIT COLLAR DRAWING: B-EF1012315-32-01 BLIND COVER DRAWING: B-EFXXXXXX-27-04

11. IDENTIFICATION PLATE DRAWING: B-OAXXXXXXX-00-03

12. OPTICAL CONNECTOR: DRY-MATE SUBMERSIBLE CONNECTOR (STANDARD) TELEDYNE ODI. IF THERE IS NOT OPTICAL CONNECTOR, KEEP THE PLUG OPTICAL CONNECTOR B-OAXXXXXXX-00-61 ASSEMBLED.

13. HARDNESS TESTING PERFORMED ON INCONEL 625 OVERLAY REGION OF FLANGE FACE AT 3 EQUI-DISTANT LOCATIONS WITH IN 6.0mm BANDED REGION OUTSIDE OF BX 156 SEALING REGION. REFER TO DOCUMENTATION INCLUDED IN FLEXIBLE PIPE MANUFACTURING DATA DOSSIER FOR ACTUAL RESULTS WHERE THE HARDNESS SHALL BE WHITIN THE RANGE 220-320 HBN.

14. FOR OPENING AND CLOSING OF BLIND COVERS:

-REPLACE SETSCREW Ø0.375"-16UNC-2A BY EYE BOLT Ø0.375"—16UNC-2A;

-REMOVE CAPSCREWS Ø0.500"-20UNF IN ORDER TO OPEN THE BLIND COVER;

-USE EYE BOLT Ø0.375" - 16UNC - 2A TO HANDLE THE BLIND COVER;

-AFTER INSPECTION, INSTALL THE BLIND COVERS, ASSEMBLY CAPSCREWS Ø0.500"-20UNF WITH LOCTITE 577 AND TORQUE THEM WITH THE VALUE PRESENTED IN NOTE 2;

-REPLACE EYE BOLT Ø0.375"-16UNC-2A BY SETSCREW Ø0.375"-16UNC-2A;

15. PROTECTION AFTER REMOVAL OF THE BLIND COVERS:

-THE O-RINGS AREA SHOULD BE PROTECTED TO PREVENT THE AREAS FROM POTENTIAL DAMAGE;

-THE BLIND COVERS SHOULD BE PACKED WITH A PLASTIC TAPE AND WITH BUBBLE PLASTIC;

-THE REMOVAL OF PROTECTION MUST NOT CAUSE DETRIMENTAL EFFECTS TO THE COMPONENT QUALITY;

-BE CAREFUL WITH THE BLIND COVERS IN ORDER TO AVOID THE LAYER DAMAGE.

16.

QUANTITY	NOMENCLATURE	MAT. SPECIFICATION	COMMENTS
08	O-RING	PARKER V332190B VITON FKM-90 CODE 2.264	1/8", ID 7.5"
16	O-RING BACKUP	PARBAK V332190B VITON FKM-90 CODE 8.264	1/8", ID 7.5"

17. VACUUM TEST PORT: 1"-12UNF TORQUE WITH TEFGEL (COF.:0.1): 85+15/-0 ft-lbs [115+21/-0 N.m]. PLUG TORQUE (TO BE CONSIDERED DRY) (0.375"-18NPT): 40 +5/-0 ft-lbs (54 +7/-0 N.m). PLATFORM INTERFACE: 3/8"NPT MALE.

18. MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 290lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 495mm-515mm.

19. MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 290lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 468mm-470mm.

20. MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 290lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 470-478mm

21. BOLT HOLE FOR ANODE CABLE. SETSCREW M12 MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.

22.

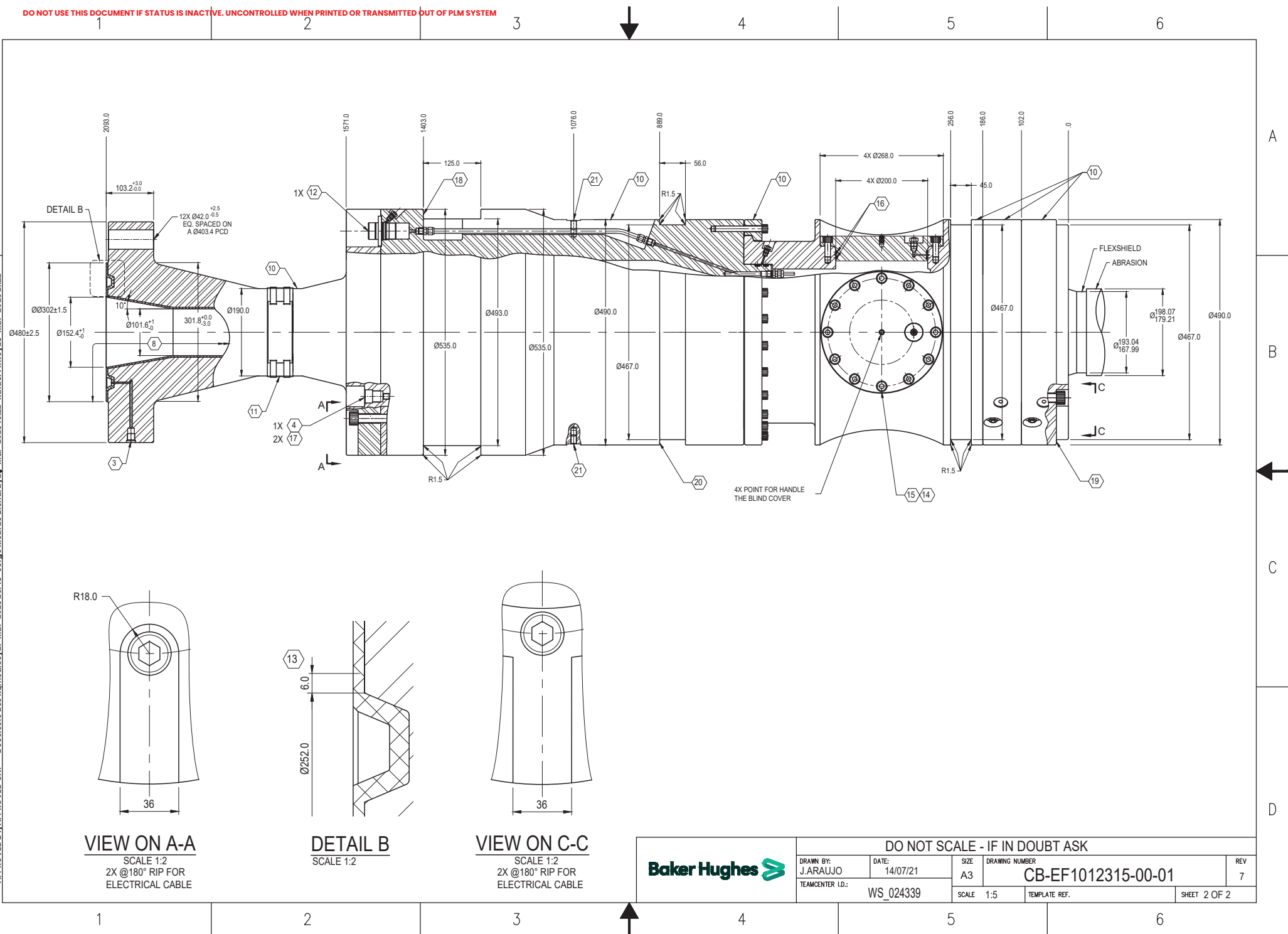
MAXIMUM MODA ENDFITTING ABANDONMENT WATER DEPTH	WITH HYDROSTATIC EQUILIBRIUM	WITHOUT HYDROSTATIC EQUILIBRIUM
	AS PER PIPE DESIGN WATER DEPTH	1727m

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS	APPROVAL INFORMATION		REVISION
	TOLERANCES METRIC (mm)	DRAWN BY: J.ARAUJO	
X. ±1 0.X ±0.3 0.XX ±0.10 ANGULAR ±0° 30' SURFACE ROUGHNESS BREAK SHARP EDGES		CHECKED BY: A.BREVES	DATE: 17/08/21
		ENGINEERED BY: A.FIGUEIREDO	DATE: 01/09/21
		ENGINEERING APPVL: R.PINTO	DATE: 23/09/21
		TEAMCENTER I.D.: WS_024339	

APPLICATION DOCUMENTATION QAC-1209	DO NOT SCALE DRAWING	ENDFITTING CONFIGURATION
- DO NOT SCALE - IF IN DOUBT ASK		4.0" TO 6.0" TRANSITION BORE RISER FLANGE 7 1/16", API 6A TYPE 6BX, 10000 psi FOR RING BX 156

SCALE	DRAWING NUMBER	REV
NONE	CB-EF1012315-00-01	7

SHEET	1 OF 2



NOTES:

1. EXTERNAL ENDFITTING MATERIAL: ALLOY STEEL FORGING OR MTL-5245. COATED WITH MTL-6015, 350 microns, WHITE COLOR, IN ACCORDANCE TO NORSOK M-501, SYSTEM 7B & 7C AS PER QAC-1132.
2. ENDFITTING FASTENER MATERIAL: MTL-6040, ELECTRODEPOSITED CADMIUM WITH CHROMATE (ASSEMBLED WITH LOCTITE 577). TORQUE VALUE:

PLACEMENT	FASTENER	TORQUE VALUE	
		ROCOL (COF: 0.09)	EASY RUN (COF: 0.08)
BODY TO JACKET	3/4"-16 UNF	231 +5/-0 ft-lbs [313 +7/-0 N.m]	222 +5/-0 ft-lbs [301 +7/-0 N.m]
OUTER COLLAR TO JACKET			

3. FLANGE BOLTS FOR HYDRATIGHT HL TENSIONER:

Ø1 1/2"-8 UN x 15 1/2", STUD BOLTS (MTL-6040),
ELECTRODEPOSITED CADMIUM WITH CHROMATE (12 PER FLANGE).
Ø1 1/2"-8 UN, HEX NUTS (MTL-6040),
ELECTRODEPOSITED CADMIUM WITH CHROMATE (24 PER FLANGE).
TORQUE (TO BE CONSIDERED DRY): 3038 N.m (2241 ft/lbs);
PRELOAD: 467 kN (104951 lbs)
BOLTS NOT SHOWN FOR CLARITY.

4. MASS: 1200 Kg (APPROX.).

5. NOMINAL DIMENSIONS GIVEN; DIMENSIONS APPLY PRIOR TO COATING.

6. MANUFACTURING ASSY DRW: B-EF1012315-00-02.

- 7 STENCIL WITH RED COLOR AND LOW STRESS STAMP MARKING IDENTIFICATION IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
ASSEMBLY DRAWING: B-EF1012315-00-02
BODY DRAWING: B-EF1012315-01-02
JACKET DRAWING: B-EF1012315-08-02
OUTER COLLAR DRAWING: B-EF1012315-09-02
INTERMEDIATE OUTER COLLAR DRAWING: B-EF1012315-24-02

- 8 SEAL AND INTERNAL SURFACES: 625 INCONEL, 3.00 MINIMUM THICKNESS PER MTL-5143.

- 9 HARDNESS TESTING PERFORMED ON INCONEL 625 OVERLAY REGION OF FLANGE FACE AT 3 EQUI-DISTANT WITHIN 6.0mm BANDED REGION OUTSIDE OF BX156 SEALING REGION. REFER TO DOCUMENTATION INCLUDED IN FLEXIBLE PIPE MANUFACTURING DATA DOSSIER FOR ACTUAL RESULTS WHERE THE HARDNESS SHALL BE WITHIN THE RANGE 220-320 HBN.

- 10 IDENTIFICATION PLATE DRAWING: B-OAXXXXXX-00-03

- 11 MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 305lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 420mm - 445mm.

REVISIONS

REV	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	TCo	27/08/21
2	UPDATED TOLERANCE ABRASION AND FLEXSHIELD, SEE ECR WS00060598.	TCo	16/11/21
3	UPDATED EXTERNAL DIAMETER FROM 460mm TO 458mm. SEE ECR WSW00061282	TCo	22/11/21
4	UPDATED NOTE 13, SEE ECR WS00064923	TCo	22/02/22
5	INSERTED NOTE 16, SEE ECR WS00066517.	TCo	21/03/22
6	UPDATED NOTE 3 TORQUE VALUE, SEE ECR WS00067400.	TCo	31/03/22
7	UPDATED NOTES 12 AND 16, ADDED DIMENSION, SEE ECR WS00083432	Afo	04/01/23

- 12 N2 TEST PORT: 3/8"-18NPT MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.

- 13 VENT PORTS: 1"-12UNF, VENT VALVE MODEL: DUKRON DR UZC-G604IV2.
TORQUE WITH TEFCEL (COF.0.1): 44 +2.5/-0 ft-lbs [60 +5/-0 N.m]

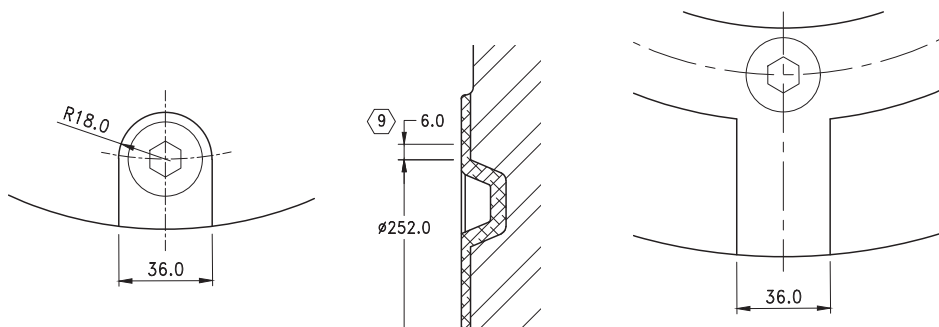
- 14 MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 305 lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 397mm - 415mm.

- 15 MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 305 lf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 205mm - 380mm.

- 16 BOLT HOLE FOR ANODE CABLE. SETSCREWM12 MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.

.02 QUANTITY	.01 ITEM NO.	IDENTIFYING NUMBER	NOMENCLATURE	MATERIAL/MATERIAL SPECIFICATION	COMMENTS	
PARTS LIST						
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		APPROVAL INFORMATION		REV	ENDFITTING CONFIGURATION 4.0" NOMINAL BORE RISER FLANGE 7 1/16", API 6A, TYPE 6BX, 10000 psi FOR RING BX156	
TOLERANCES		DRAWN BY:	DATE:	JCo		
METRIC (mm)		CHECKED BY:	DATE:	ABs		
X, ±1 O.X ±0.3 O.XX ±0.10 ANGULAR ±0° 30' SURFACE ROUGHNESS BREAK SHARP EDGES		ENGINEERED BY:	DATE:	JBa		
		ENGINEERING APPVL:	DATE:	Afo		
DO NOT SCALE DRAWING		TEAMCENTER I.D.: WS_024159		SIZE A3	DRAWING NUMBER CB-EF1012315-00-02	REV 7
				SCALE NONE	TEMPLATE REF:	SHEET 1 OF 2

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WSI 101.2316-RD-4042-6	
WSI 101.2315-RD-4043-6	
NEXT ASSEMBLY	USED ON
APPLICATION	
DOCUMENTATION	
QAC-1209	
- DO NOT SCALE - IF IN DOUBT ASK	



STRUCTURE	FLEXSHIELD		ABRASION	
	MAX	MIN	MAX	MIN
WSI 101.2315-RD-4043-6	193.04	167.99	198.07	179.21
WSI 101.2316-RD-4042-6	182.88	165.46	195.28	176.68

DRAWN BY: J.ARAUJO	DATE: 06/07/21	SIZE A3	DRAWING NUMBER CB-EF1012315-00-02	REV 7
TEAMCENTER I.D.: WS_024159		SCALE 1:5	TEMPLATE REF:	SHEET 2 OF 2



NOTES:

1. EXTERNAL ENDFITTING MATERIAL: ALLOY STEEL FORGING, MTL-5245. COATED WITH MTL-6015, 350 microns, WHITE COLOR, IN ACCORDANCE TO NORSOK M-501, SYSTEM 7B & 7C AS PER QAC-1132.
2. ENDFITTING FASTENER MATERIAL: MTL-6040, ELECTRODEPOSITED CADMIUM WITH CHROMATE (ASSEMBLED WITH LOCTITE 577). TORQUE VALUE:

PLACEMENT	FASTENER	TORQUE VALUE	
		ROCOL (COF 0.09)	EASY RUN (COF 0.08)
BODY TO JACKET	3/4"-16 UNF	231 +5/-0 ft-lbs [313 +7/-0 N.m]	222 +5/-0 ft-lbs [301 +7/-0 N.m]
OUTER COLLAR TO JACKET			

3. FLANGE BOLTS FOR HYDRATIGHT HL TENSIONER:

Ø1 1/2"-8 UN x 15 1/2", STUD BOLTS (MTL-6040),
ELECTRODEPOSITED CADMIUM WITH CHROMATE (12 PER FLANGE).
Ø1 1/2"-8 UN, HEX NUTS (MTL-6040),
ELECTRODEPOSITED CADMIUM WITH CHROMATE (24 PER FLANGE).
TORQUE (TO BE CONSIDERED DRY): 3038 Nm (2241 ft/lbs);
PRELOAD: 467 kN (104951 lbs)
BOLTS NOT SHOWN FOR CLARITY.

4. MASS: 950 Kg (APPROX.).

5. NOMINAL DIMENSIONS GIVEN; DIMENSIONS APPLY PRIOR TO COATING.

6. MANUFACTURING ASSY DRW: B-EF1012511-00-01

- 7 STENCIL WITH RED COLOR AND LOW STRESS STAMP MARKING IDENTIFICATION IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
ASSEMBLY DRAWING: B-EF1012511-00-01
BODY DRAWING: B-EF1012511-01-01
JACKET DRAWING: B-EF1012511-08-01
OUTER COLLAR DRAWING: B-EF1012511-09-01
INTERMEDIATE OUTER COLLAR DRAWING: B-EF1012511-24-01

- 8 SEAL AND INTERNAL SURFACES: 625 INCONEL, 3.00 MINIMUM THICKNESS PER MTL-5143.

- 9 HARDNESS TESTING PERFORMED ON INCONEL 625 OVERLAY REGION OF FLANGE FACE AT 3 EQUI-DISTANT WITHIN 6.0mm BANDED REGION OUTSIDE OF BX156 SEALING REGION. REFER TO DOCUMENTATION INCLUDED IN FLEXIBLE PIPE MANUFACTURING DATA DOSSIER FOR ACTUAL RESULTS WHERE THE MINIMUM HARDNESS SHALL BE 220 HBN.

- 10 IDENTIFICATION PLATE DRAWING: B-OAXXXXXX-00-03

- 11 MAXIMUM ALLOWABLE LOAD TO SUPPORT THE ENDFITTING: 330Hf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF: 397mm - 405mm.


REVISIONS

REV	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	TCo	12/07/21
2	NOTE 14 WAS ADDED, SEE ECR WS00062238.	TCo	16/12/21
3	UPDATED NOTE 13, SEE ECR WS00064923.	TCo	22/02/22
4	INSERTED NOTE 15, SEE ECR WS00066517.	TCo	21/03/22
5	UPDATED NOTES 14 AND 15, ADDED DIMENSION, SEE ECR WS00083432	AFo	04/01/23

- 5 12 N2 TEST PORT 3/8"-18NPT MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.

- 13 VENT PORTS: 1"-12UNF, VENT VALVE MODEL: DUKRON DR UZC-G604IV2. TORQUE WITH TEFGEL (COF.0.1): 44 +2.5/-0 ft-lbs [60 +5/-0 N.m]

- 5 14 BOLT HOLE FOR ANODE CABLE. SETSCREW M12 MUST BE ASSEMBLED IN ORDER TO FACE THE ADJACENT SURFACE OF THE HOLE. NO THREAD OF THE HOLE SHOULD BE EXPOSED. A SPECIFIC TORQUE VALUE IS NOT REQUIRED, ONLY THE APPLICATION OF THE THREAD SEALANT.



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WSI.1012511-RD-4042-X

NEXT ASSEMBLY USED ON

APPLICATION
DOCUMENTATION

QAC-1209

- DO NOT SCALE - IF
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.02 QUANTITY	.01 ITEM NO.	IDENTIFYING NUMBER	NOMENCLATURE	MATERIAL/MATERIAL SPECIFICATION	COMMENTS
PARTS LIST					
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		APPROVAL INFORMATION		REV	ENDFITTING CONFIGURATION 4.0" NOMINAL BORE FLOWLINE FLANGE 7 1/16", API 6A, TYPE 6BX, 10000 psi FOR RING BX156
TOLERANCES		DRAWN BY:	DATE:	JCo	
METRIC (mm)		A.COSTA	31/05/21		
X, ±1 O.X ±0.3 O.XX ±0.10 ANGULAR ±0° 30'		CHECKED BY:	DATE:	ABs	
SURFACE ROUGHNESS BREAK SHARP EDGES		D.REMEDIOS	18/06/21		
		ENGINEERED BY:	DATE:	JBa	
		A.FIGUEIREDO	07/07/21		
		ENGINEERING APPVL:	DATE:	AFo	
		T.CURVO	12/07/21		
DO NOT SCALE DRAWING		TEAMCENTER I.D.:		WS_021769	
		SIZE	DRAWING NUMBER	REV.	
		A3	CB-EF1012511-00-01	5	
		SCALE	TEMPLATE REF:	SHEET 1 OF 2	
		NONE			

SIZE A3	DRAWING NUMBER CB-BS1012315-00-01		REV 2
SCALE NONE	TEMPLATE REF: TEMP_BS_ASSY_01_RE	SHEET 1 OF 2	





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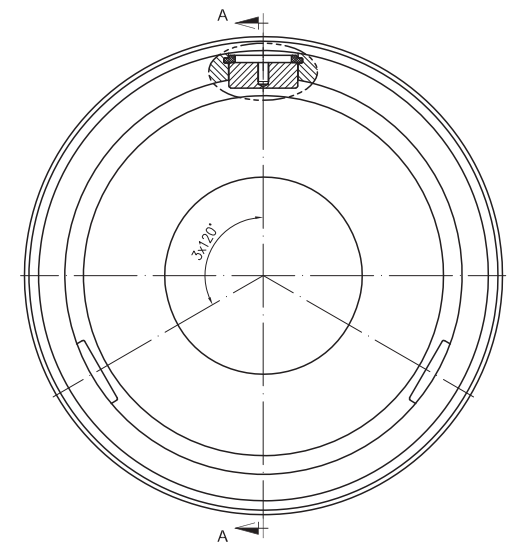
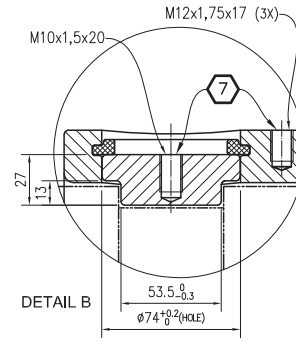
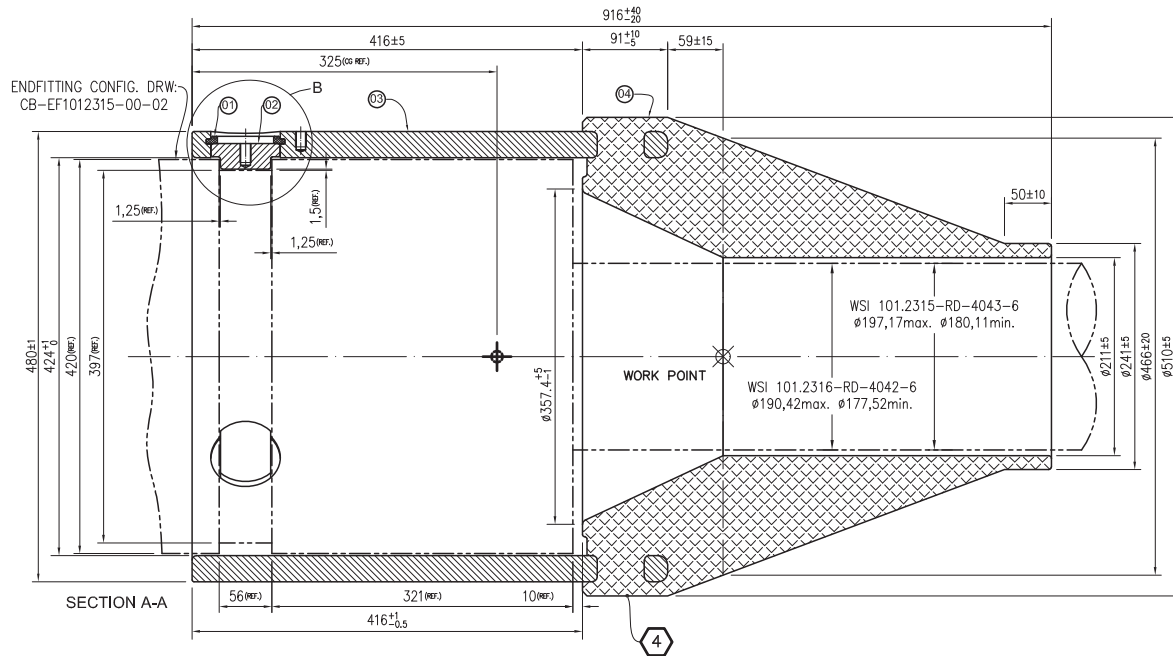
REV.	DESCRIPTION	DATE	CHECKED	APPROVED
01	ORIGINAL ISSUE	03/08/21	C.J.P.	J.G.C.
02	THE DENOMINATION WAS "BEND STIFFENER"	23/08/21	C.J.P.	J.G.C.

NOTAS

- INTERNAL RING E KEY STOCK: REVESTIMENTO DE NÍQUEL QUÍMICO EM TODAS AS SUPERFÍCIES, 75 microns +25/-0 DE ESPESSURA SECA DE ACORDO COM A MTL-5212.
- A FABRICAÇÃO E A INSPEÇÃO DEVEM ESTAR DE ACORDO COM OS DESENHOS DA LISTA DE PEÇAS.
- PESO NO AR : 197 kg (APROX.)
PESO NA AGUA DO MAR: 139 kg (APROX.)
- IDENTIFICAÇÃO DE MARCAÇÃO COM PINTURA NA COR BRANCA SE O POLÍMERO FOR PRETO OU NA COR PRETA SE O POLÍMERO FOR AMARELO APROXIMADAMENTE NA LOCALIZAÇÃO MOSTRADA, DE ACORDO COM A WS-MFG-4236.
- PART NUMBER: WS_P073809.
- RECEBIMENTO E INSPEÇÃO DO BEND STIFFENER INTERMEDIÁRIO DE ACORDO COM A MTL-5193.
- APLICAR SELANTE A BASE DE SILICONE ANTES DA INSTALAÇÃO DO POLYURETHANE LOCK.

NOTES:

- INTERNAL RING AND KEY STOCK: ELECTROLESS NICKEL ALL SURFACES, 75 microns +25/-0 DRY FILM THICKNESS IN ACCORDANCE WITH MTL-5212.
- MANUFACTURING AND INSPECTION SHALL BE ACCORDANCE WITH THE DRAWINGS AT PARTS LIST.
- WEIGHT IN AIR: 197 kg (APPROX.)
WEIGHT IN SEA WATER: 139 kg (APPROX.)
- PAINT PART MARKING IDENTIFICATION IN WHITE COLOR IF POLYMER IS BLACK OR BLACK COLOR IF POLYMER IS YELLOW IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
- PART NUMBER: WS_P073809.
- INTERMEDIATE BEND STIFFENER RECEIVING AND INSPECTION IN ACCORDANCE WITH MTL-5193.
- SEALANT SILICONE BASE REQUIRED PRIOR THE POLYURETHANE LOCK INSTALLATION.



ASSY	ITEM	QUANT.	NOMENCLATURE	DRAWN N°	MATERIAL SPECIFICATION	DIMENSIONS (FINISHED)	WEIGHT IN AIR (Kg.)
	04	01	BEND STIFFENER	RQ73758	POLYURETHANE		
	03	01	INTERNAL RING	FR17401	ASTM A-36		
	02	03	KEY STOCK	FR09301	SAE 1020 / ASTM A-36		
	01	03	POLYURETHANE LOCK	PSI2319	POLYURETHANE		

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	DRAWN BY: D.M.N.	REV.: 02	PLASTIPRENE®
TOLERANCES DECIMAL (mm.)	CHECKED BY: C.J.P.	SCALE: S/E	
X ± 2.0 0.X ± 1.0 0.XX ± 0.5 ANGULAR ± 3°	APPROVED BY: J.G.C.	DATE: 23/08/21	
	SHEET: 1		
CLIENT: Baker Hughes			DENOMINATION: 4" INTERMEDIATE BEND STIFFENER
CLIENT DRAWN N°: CB-BS1012315-00-02			DRAWN N°: RQ73700
C2857			SIZE: A3

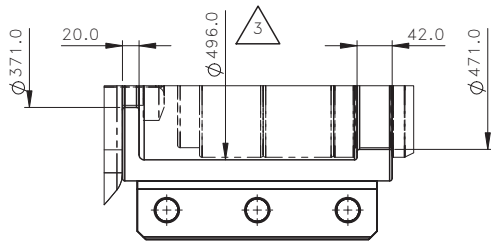
NOTES:

1. LOW STRESS CONTINUOUS AND STENCIL PART MARKING IDENTIFICATION IN ACCORDANCE WITH WS-MFG-4236.
2. COAT HIGH BUILD EPOXY WHITE COLOR ALL SURFACES EXCEPT INTERNAL THREADS UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, FOR OTHERS COUNTRIES.
3. DIMENSIONS APPLY PRIOR TO COATING UNLESS OTHERWISE SPECIFIED.
4. WEIGHT IN AIR 133 kg.
5. TORQUE VALUE (TO BE CONSIDERED DRY):

FASTENER	TORQUE (N.m)
M24	570±5

6. FOR ASSEMBLY DRAWING SEE: B-OA1012315-00-01.
7. ENDFITTING CONFIGURATION DRAWING: CB-EF1012315-00-01.
8. LATCH SLEEVE CONFIGURATION DRAWING: CB-LS1012315-00-01.
9. THE FIXING RING IS FOR TEMPORARY USE AND MUST BE REMOVED PRIOR TO THE PULL-IN OPERATION.
10. BOLTS & NUTS COATING : ELECTRODEPOSITED CADMIUM CLASS 12 MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARTY COLORED CHROMATE TREATMENT (GREEN OLIVE) IN ACCORDANCE WITH MTL-5534.
11. THE FIXING RING WAS DIMENSIONED FOR EACH LOAD CASE SHOWN BELOW:

	PROJECTS		
	C2857	C2865	
LOAD CASE 1 (AXIAL LOAD)	77.05	77.34	kN
LOAD CASE 2 (MOMENT WITH SHEAR LOADS)	68.84	68.79	kN.m
	51.90	51.87	kN
LOAD CASE 3 (PURE MOMENT LOAD)	281.61	281.61	kN.m
LOAD CASE 4 (AXIAL WITH MOMENT WITH SHEAR ACTING TOGETHER LOADS)	68.99	69.13	kN
	59.62	59.58	kN.m
	44.95	44.92	kN

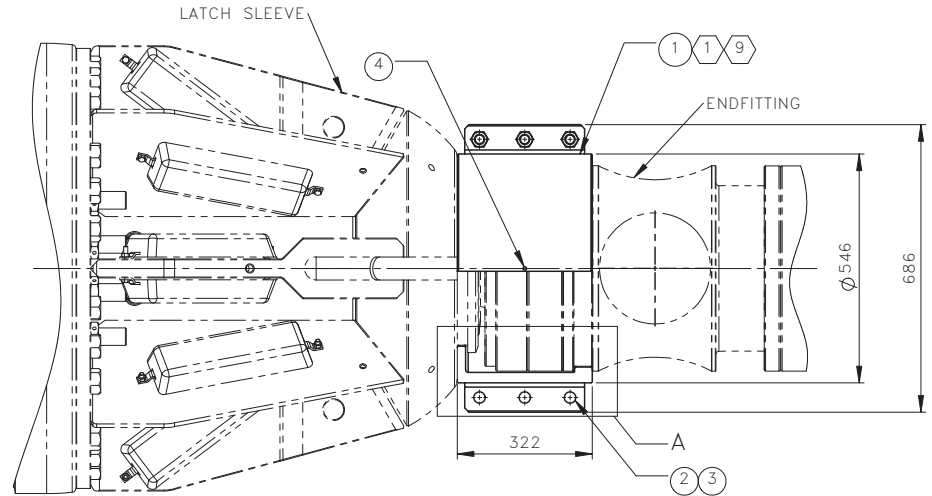


DETAIL A
SCALE 1:6

Baker Hughes

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	2	4		LIFT EYE BOLT SHOULDER TYPE	M10x1.5x17, DIN 580, AISI 1020	ZINC PLATE, YIELD STRENGTH MINIMUM 250 MPa
	6	3		HEX NUT	M24x3.0, DIN 934, MTL-5534	SEE NOTE 10
	6	2		CAPSCREW SOCKET HEAD	M24x3.0x100L, DIN 912, MTL-5534	SEE NOTE 10
	1	1		FIXING RING	ASTM A-36 OR A-106 Gr. B OR ST.52, AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250 MPa
.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF. NUMBER	NOMENCLATURE	MAT. / MAT. SPECIFICATION	COMMENTS

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		APPROVAL INFORMATION		REVISION
TOLERANCES METRIC (mm)		DRAWN BY: A.GASTALDI	DATE: 07/12/21	CSI
X ±1 0.X ±0.3 0.XX ±0.10 ANGULAR ±0° 30'		CHECKED BY: D.REMEDIOS	DATE: 07/12/21	DRs
SURFACE ROUGHNESS BREAK SHARP EDGES		ENGINEERED BY: A.FIGUEIREDO	DATE: 09/12/21	AFo
DO NOT SCALE DRAWING		ENGINEERING APPVL DATE: T.CURVO	DATE: 13/12/21	DHr
FILE I.D.: WS-027084		SIZE: A3		DRAWING NUMBER: CB-OA1012315-00-01
		SCALE: 1:12		TEMPLATE REF:
		SHEET: 1 OF 1		REV: 3

FIXING RING
CONFIGURATION

NOTES:

- BOLTS & NUTS COATING : ELECTRODEPOSITED CADMIUM CLASS 12MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (YELLOW) IN ACCORDANCE WITH MTL-6040.
- COATED WITH CERAMKOTE (WHITE) 300-380 MICRONS DRY FILM THICKNESS AS PER MTL-5250.
- WEIGHT IN AIR: 3100 Kg (APPROX.).
- DIMENSIONS APPLY AFTER COATING.
- TORQUE / TENSION VALUES:

FASTENER	TORQUE VALUE	
	W/LOCTITE 577	W/LOCTITE AND 12
M8	19 N.m	-
M10	38 N.m	-
M36	1913 N.m	1148 N.m

2 6 WORST SHEAR/ MOMENT LOAD:

PROJECT	CASE	SHEAR (kN)	MOMENT (kN.m)
C2857	EXTREME LOAD (GA TO GE)	291.1	229
	ABNORMAL LOAD (GF)	376.8	315


NOTE: CASE GF DISCONSIDERED ON LATCH SLEEVE DESIGN

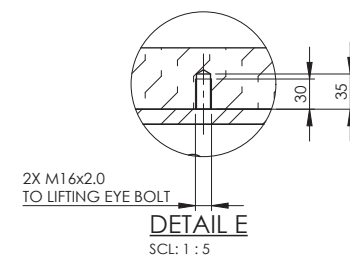
- IN ACCORDANCE WITH I-DE-3010.00-1300-279-PPC-285 Rev. 0.
- BEND STIFFENER IN ACCORDANCE WITH DRW: CB-BS1012315-00-01.
- STENCIL WITH RED COLOR AND LOW STRESS STAMP MARKING IDENTIFICATION AND DRAWING NUMBER LISTED BELOW IN APROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
CONFIGURATION DRAWING: CB-LS1012315-00-01.
ASSEMBLY DRAWING N°.: B-LS1012315-00-01.
CAP DRAWING N°.: B-LS1012315-02-01
TRUMPET DRAWING N°.: B-LS1012315-03-01.
- REMOVE PRIOR PULL-IN OPERATION
- BEFORE FASTENER FIXATION, APPLY SEALANT LOCTITE 577 ON THE UNDERSIDE OF CAPSCREW HEAD.
- CONSIDERING ASSEMBLY WITH GLEITMO 165 OR EQUIVALENT, WITH FRICTION FACTOR 0.09.
- IF GLEITMO 165 OR EQUIVALENT IS APPLIED, FASTENERS SHALL BE INSTALLED IMMEDIATELY AFTER APPLICATION OF A THIN LAYER OF GLEITMO 165 OR EQUIVALENT TO THREADS ONLY AND A THIN LAYER OF LOCTITE 577 TO UNDERSIDE OF FASTENER HEAD.
IMPORTANT, REMOVE ALL GLEITMO 165 FROM COMPONENT FACE BEFORE FITTING FASTENERS.


REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	DHr	21/09/21
2	TABLE WORKS SHEAR/MOMENT LOAD WAS CHANGED, SEE ECR WS00063280.	TCO	18/01/22

	1	10	B-TDXXXXXXX-00-34	LATCH SLEEVE PROTECTION		SEE NOTE 10
	16	9		NUT, HEX	M10x1.5 DIN 934, 316 SST	
	8	8		BOLT, HEX HEAD	M10x1.5x80L DIN 933, 316 SST	
	8	7		BOLT, HEX HEAD	M10x1.5x40L DIN 933, 316 SST	
	16	6		ANODE	ALUMINIUM	
	2	5		CAPCREW, SOCKET HEAD	M8x1.25x16L DIN 912, MTL-6040	SEE NOTE 1 & 11
	24	4		CAPSCREW, HEX, HEAD	M36x4.0x120L DIN 933, MTL-6040	SEE NOTE 1 & 13
	1	3		TRUMPET	ASTM A-36 OR AISI 1020 OR OTHERS STEEL.	YIELD STRENGTH MINIMUM 250MPa
	1	2		CAP	ASTM A-36 OR AISI 1020 OR OTHERS STEEL.	YIELD STRENGTH MINIMUM 250MPa
	1	1		INSERT	MTL-5196	
.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF.NUMBER.	NOMENCLATURE	MAT./ MAT. SPECIFICATION	COMMENTS.

PARTS LIST

Baker Hughes 				TOLERANCES	DRAWN BY:	DATE:		LATCH SLEEVE ADAPTOR 4" I-TUBE 48" CONFIGURATION			
				METRIC (mm)	J.ARAUJO	27/08/21	VLs				
				X. ±1 0.X ±0.3 0.XX ±0.10	A.BREVES	02/09/21	DRs				
		WSI 101.2315-RD-4043-6		ANGULAR ±0° 30'	A.FIGUEIREDO	14/09/21	AFo				
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					D.HAFNER	21/09/21	TCo	SIZE:	DRAWING NUMBER:	REV:	
								A3	CB-LS1012315-00-01	2	
								SCALE:	TEMPLATE REF:	SHEET:	1 OF 2
					TEAMCENTER I.D.:	WS_025019		NONE			



	DRAWN BY: J.ARAUJO	DATE: 27/08/21	SIZE: A3	DRAWING NUMBER: CB-LS1012315-00-01	REV.: 2
	TEAMCENTER I.D.: WS 025019		SCALE: INDICATED	TEMPLATE REF:	SHEET: 2 OF 2

NOTES:

1. COATING: HIGH BUILD EPOXY WHITE COLOR (HALF ADAPTOR AND HALF INNER RING), AND YELLOW COLLOR (HALF OUTER RING) ALL SURFACES UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, CODE E FOR OTHERS COUNTRIES.

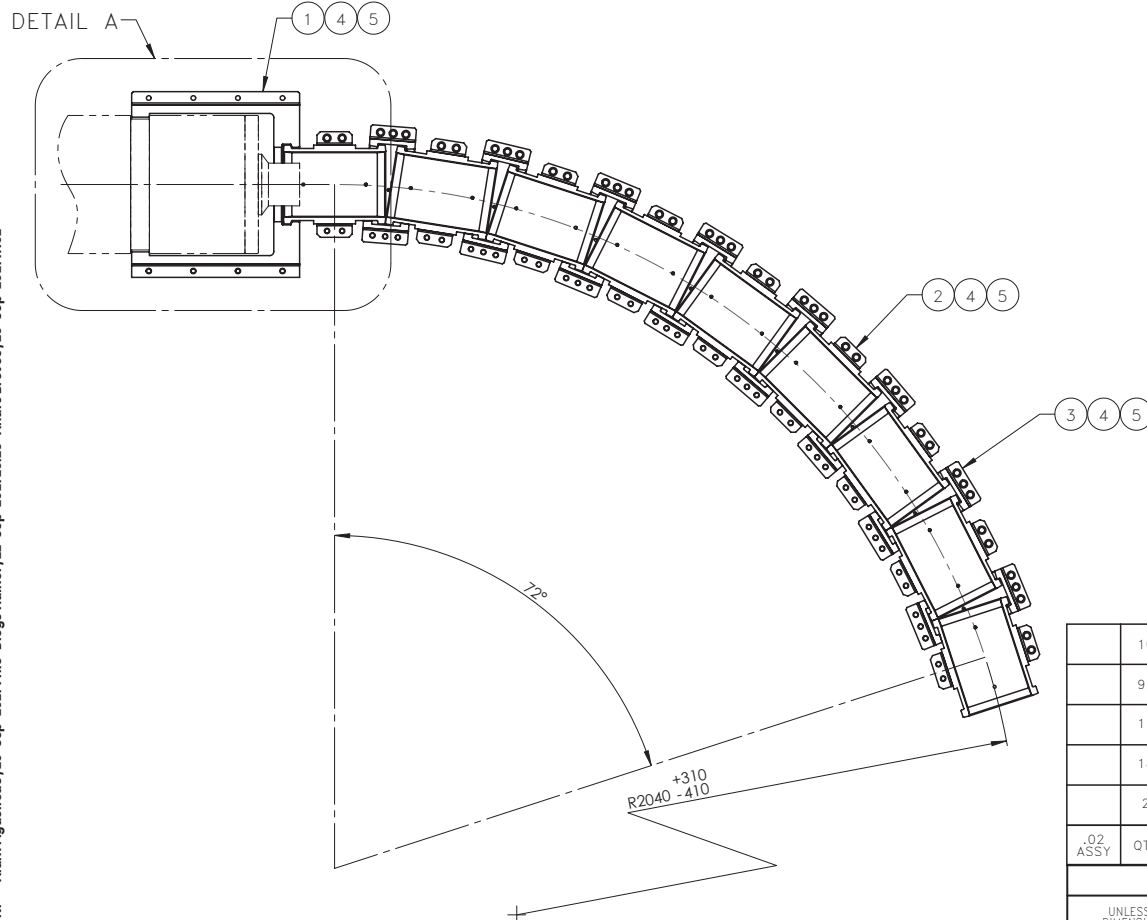
2. BOLTS COATING : ELECTRODEPOSITED CADMIUM CLASS 12 microns (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (GREEN OLIVE) IN ACCORDANCE WITH MTL-5534.

3. WEIGHT IN AIR: 827 kg. (APPROX.)

4. BEND RESTRICTOR SPLITED TOTAL 72°:

COMPRESSED LENGTH= 3198mm.
FREE LENGTH= 3534mm.
NOMINAL LENGTH= 3366mm.

5 DELETE NOTE.



REVISIONS			
REV	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	TCO	02/04/20
2	UPDATED ITEM 04, SEE ECR WS00041436.	TCO	14/05/20
3	UPDATED NOTES 02, 04 AND 09 & DELETED NOTE 5, SEE ECR WS00043292.	DHr	31/07/20
4	UPDATED NOTE 9, SEE ECR WS00047675.	DHr	11/12/20
5	UPDATED NOTE 7 AND USED ON, SEE ECR WS00058062.	TCO	17/09/21

6. TORQUE VALUE:

FASTENER	TORQUE VALUE (TORQUE TO BE CONSIDERED DRY)
M14	105 N.m

7. ENDFITTING CONFIGURATION DRAWING: CB-EF1012509-00-01 AND CB-EF1012511-00-01.

8. MANUFACTURING ASSEMBLY DWG: B-BR1012509-00-01.

9. MAXIMUM ALLOWABLE BENDING MOMENT:

FIELD/FPSO	MAX. BENDING MOMENT (kN.m)	MAX. SHEAR FORCE (kN)
FPS GUANABARA FPSO CARIOCA	27.0	23.8

10. LOW STRESS CONTINUOUS MARK PART NUMBER AND SERVICE ORDER OR BATCH, ON APPROXIMATED LOCATION. INSPECTION AFTER COAT IS NOT REQUIRED. STENCIL PART MARKING IDENTIFICATION IN ACCORDANCE WITH WS-MFG-4236, ON THE APPROXIMATED LOCATION. FOR TRACEABILITY THE FULL INFORMATION WILL BE MARKED ONLY ON HALF ADAPTOR PARTS.

11. BEND RESTRICTOR DESIGNED CONSIDERING FLOODED BORE CONDITION ONLY.
TDP (DRY BORE): 1360mm.
TDP (FLOODED BORE): 1360mm.

12 MAXIMUM ALLOWABLE LOAD TO SUPPORT BEND RESTRICTOR ADAPTOR: 250Hf CONSIDERING THE INTERNAL DIAMETER OF THE PLSV INSERT WITHIN THE RANGE OF 402mm - 530mm.

	10	5		LIFT EYE BOLT SHOULDER TYPE	M10, DIN 580, C15E	ZINC PLATED, YIELD STRENGTH MINIMUM 250 MPa
	92	4		CAPSCREW SOCKET HEAD	M14 x 2.0 x 40, DIN 912, MTL-5534	SEE NOTE 2
	16	3		HALF OUTER RING	ASTM A-36 or A-106 Gr.B or St. 52 or AISI 1020 or equivalent	YIELD STRENGTH MINIMUM 250 MPa
	18	2		HALF INNER RING	ASTM A-36 or A-106 Gr.B or St. 52 or AISI 1020 or equivalent	YIELD STRENGTH MINIMUM 250 MPa
	2	1		HALF ADAPTOR	ASTM A-36 or A-106 Gr.B or St. 52 or AISI 1020 or equivalent	YIELD STRENGTH MINIMUM 250 MPa
.02 ASSY	QTY	ITEM NO.	IDENTIF. NUMBER	NOMENCLATURE	MAT./ MAT. SPECIFICATION CB	COMMENTS

PARTS LIST

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
METRIC (mm)

X. ±1

0.X ±0.3

0.XX ±0.10

ANGULAR ±0° 30'

SURFACE ROUGHNESS

BREAK SHARP EDGES

APPROVAL INFORMATION

DRAWN BY: D.PEREIRA 04/03/20 JAo

CHECKED BY: A.BREVES 16/03/20 ABs

ENGINEERED BY: A.FIGUEIREDO 25/03/20 AFo

ENGINEERING APPL. T.CURVO 02/04/20 TCo

TEAMCENTER I.D.: WS_017288

BEND RESTRICTOR 72°
ID = 190
CONFIGURATION

SIZE: A3	DRAWING NUMBER: CB-BR1012509-00-01	REV: 5
SCALE: NONE	TEMPLATE REF: TEMP CB BR 01 RA	SHEET: 1 OF 2

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QAC - 1209

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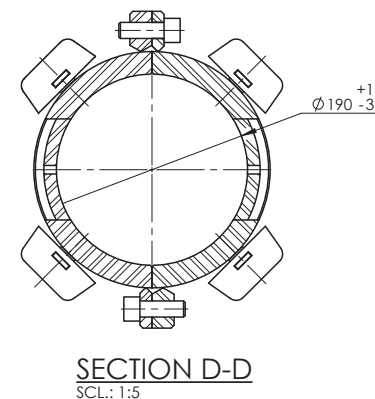
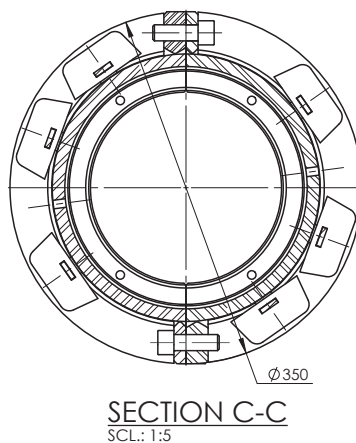
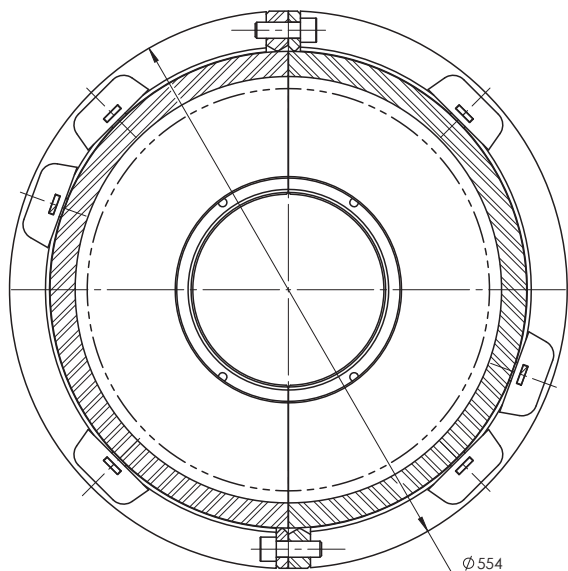
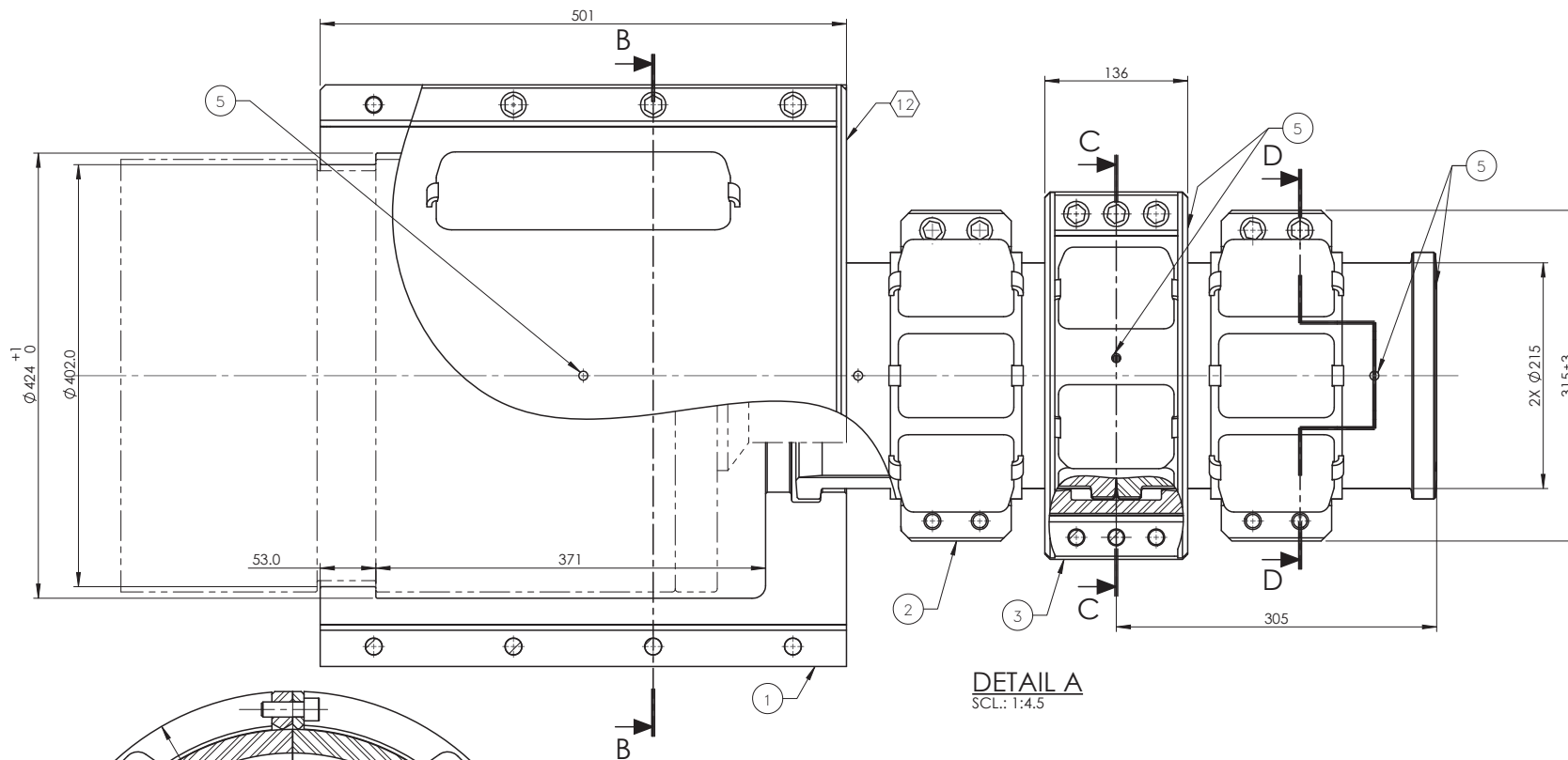
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DO NOT SCALE
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DRAWING



DO NOT SCALE - IF IN DOUBT ASK					
Baker Hughes	DRAWN BY: D.PEREIRA	DATE: 04/03/20	SIZE: A3	DRAWING NUMBER: CB-BR1012509-00-01	REV.: 5
	TEAMCENTER I.D.: WS_017288		SCALE: INDICATED	TEMPLATE REF.: TEMP_CB_BR_01_RA	SHEET: 2 OF 2

DO NOT USE THIS DOCUMENT IF STATUS IS INACTIVE, UNCONTROLLED OR TRANSMITTED OUT-OF-PLM SYSTEM

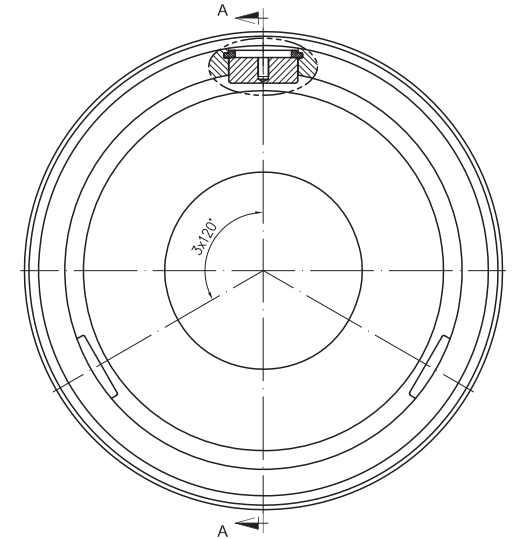
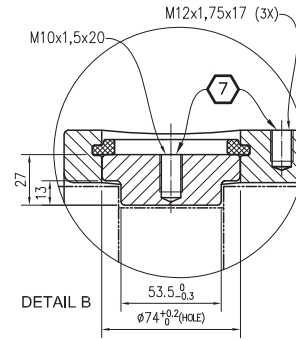
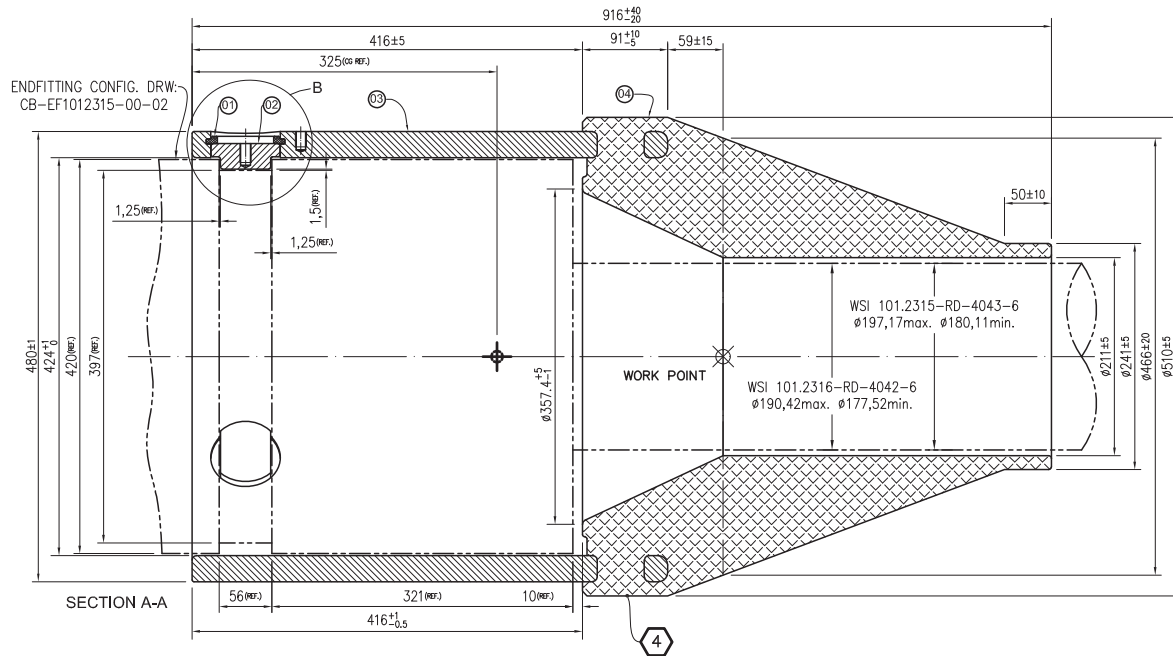
REV.	DESCRIPTION	DATE	CHECKED	APPROVED
01	ORIGINAL ISSUE	03/08/21	C.J.P.	J.G.C.
02	THE DENOMINATION WAS "BEND STIFFENER"	23/08/21	C.J.P.	J.G.C.

NOTAS

- INTERNAL RING E KEY STOCK: REVESTIMENTO DE NÍQUEL QUÍMICO EM TODAS AS SUPERFÍCIES, 75 microns +25/-0 DE ESPESSURA SECA DE ACORDO COM A MTL-5212.
- A FABRICAÇÃO E A INSPEÇÃO DEVEM ESTAR DE ACORDO COM OS DESENHOS DA LISTA DE PEÇAS.
- PESO NO AR : 197 kg (APROX.)
PESO NA AGUA DO MAR: 139 kg (APROX.)
- IDENTIFICAÇÃO DE MARCAÇÃO COM PINTURA NA COR BRANCA SE O POLÍMERO FOR PRETO OU NA COR PRETA SE O POLÍMERO FOR AMARELO APROXIMADAMENTE NA LOCALIZAÇÃO MOSTRADA, DE ACORDO COM A WS-MFG-4236.
- PART NUMBER: WS_P073809.
- RECEBIMENTO E INSPEÇÃO DO BEND STIFFENER INTERMEDIÁRIO DE ACORDO COM A MTL-5193.
- APLICAR SELANTE A BASE DE SILICONE ANTES DA INSTALAÇÃO DO POLYURETHANE LOCK.

NOTES:

- INTERNAL RING AND KEY STOCK: ELECTROLESS NICKEL ALL SURFACES, 75 microns +25/-0 DRY FILM THICKNESS IN ACCORDANCE WITH MTL-5212.
- MANUFACTURING AND INSPECTION SHALL BE ACCORDANCE WITH THE DRAWINGS AT PARTS LIST.
- WEIGHT IN AIR: 197 kg (APPROX.)
WEIGHT IN SEA WATER: 139 kg (APPROX.)
- PAINT PART MARKING IDENTIFICATION IN WHITE COLOR IF POLYMER IS BLACK OR BLACK COLOR IF POLYMER IS YELLOW IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
- PART NUMBER: WS_P073809.
- INTERMEDIATE BEND STIFFENER RECEIVING AND INSPECTION IN ACCORDANCE WITH MTL-5193.
- SEALANT SILICONE BASE REQUIRED PRIOR THE POLYURETHANE LOCK INSTALLATION.



ASSY	ITEM	QUANT.	NOMENCLATURE	DRAWN N°	MATERIAL SPECIFICATION	DIMENSIONS (FINISHED)	WEIGHT IN AIR (Kg.)
	04	01	BEND STIFFENER	RQ73758	POLYURETHANE		
	03	01	INTERNAL RING	FR17401	ASTM A-36		
	02	03	KEY STOCK	FR09301	SAE 1020 / ASTM A-36		
	01	03	POLYURETHANE LOCK	PSI2319	POLYURETHANE		

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	DRAWN BY: D.M.N.	REV.: 02	PLASTIPRENE®	
TOLERANCES DECIMAL (mm.)	CHECKED BY: C.J.P.	SCALE: S/E		
X ± 2,0 0,X ± 1,0 0,XX ± 0,5 ANGULAR ± 3°	APPROVED BY: J.G.C.	DATE: 23/08/21	DENOMINATION: 4" INTERMEDIATE BEND STIFFENER	
			DRAWN N°: RQ73700	C2857
			CLIENT: Baker Hughes	CLIENT DRAWN N°: CB-BS1012315-00-02
				SIZE: A3

1. COAT HIGH BUILD EPOXY YELLOW COLOR ALL SURFACES EXCEPT INTERNAL THREADS UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, CODE E FOR OTHERS COUNTRIES.
2. BOLTS, WASHERS AND NUT COATING: ELECTRODEPOSITED CADMIUM CLASS 12 MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (GREEN OLIVE) IN ACCORDANCE WITH MTL-5534.
3. WEIGTH IN AIR: 1825 kg (APPROX.).
4. TORQUE VALUES TO BE CONSIDERED DRY:

FASTENER	TORQUE VALUE
1 7/8"	5175 N.m
1 3/8"	1943 N.m

5 LOW STRESS CONTINUOUS AND STENCIL PART MARKING IDENTIFICATION IN ACCORDANCE WITH WS-MFG-4236:

B-HC1012315-00-01
CB-HC1012315-00-01

MAX. TT: 250tf

NOTE: INSPECTION OF LOW STRESS MARKING COAT IS NOT REQUIRED.

6 ENDFITTING CONFIGURATION DWG.: CB-EF1012315-00-01.

7. THE ASSEMBLY.01 IS FOR OPERATION AND THE ASSEMBLY.02 IS ONLY FOR INSPECTION AND MAINTENANCE OF THE ENDFITTING MODA SYSTEM. PLEASE ATTENTION TO CHANGE ITEMS 2, 6 AND 7 IN ACCORDANCE WITH THE PART LIST.
8. NDE ULTRASONIC RAW MATERIAL PRIOR TO MACHINED UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH QC-1515 AND QC-1516 FOR FORGINGS AND IN ACCORDANCE WITH QC-1514 FOR LAMINATION SCANS.
9. DESIGN FOR MAX. TOP TENSION: 250 tf
DESIGN FOR BURST REACTION LOAD: 284 tf

REVISIONS

REV.	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	TCo	02/09/21
2	UPDATED THE ENDFITTING REPRESENTATION, UPDATED DRILL QUANTITY IN TOP VIEW IN ASSEMBLY 1, SEE ECR WS00070302	TCo	13/06/22

4	4	11		LIFT EYE BOLT SHOULDER TYPE	M24, DIN 580, C15E	COMMERCIAL
20	20	10		FLAT WASHER	ø1 7/8" AISI B18.22.1 SERIES W TYPE A, STL	SEE NOTE 2
20	20	9		HEAVY HEX NUT	ø1 7/8" - 8 UN-2B, ASME B18.2.2, MTL-5534	SEE NOTE 2
20	20	8		BOLT HEAVY HEX HEAD	ø1 7/8" - 8 UN-2A x 13.75" L, ASME B18.2.1, MTL-5534, FULLY THREADED.	SEE NOTE 2
8	2	7		BOLT HEAVY HEX HEAD	ø1 3/8" - 8 UN-2A x 8.0" L, ASME B18.2.1, MTL-5534, FULLY THREADED	SEE NOTE 2
10	2	6		FLAT WASHER	ø1 3/8" AISI B18.22.1 SERIES W TYPE A, STL	SEE NOTE 2
2	2	5		HEAVY HEX NUT	ø1 3/8" - 8 UN-2B, ASME B18.2.2, MTL-5534	SEE NOTE 2
2	2	4		BOLT HEAVY HEX HEAD	ø1 3/8" - 8 UN-2A x 4.75" L, ASME B18.2.1, MTL-5534, FULLY THREADED	SEE NOTE 2
4	4	3		TIE PLATE	S355J2 OR EQUIVALENT	YIELD STRENGTH MINIMUM 295 MPa
2	-	2		ADAPTOR	S355J2 OR EQUIVALENT	YIELD STRENGTH MINIMUM 295 MPa SEE NOTE 8
2	2	1		HALF PLATE	S355J2 OR EQUIVALENT	YIELD STRENGTH MINIMUM 295 MPa
.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF. NUMBER	NOMENCLATURE	MAT./ MAT. SPECIFICATION B	COMMENTS

PARTS LIST



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CB-EF1012315-00-01

APPLICATION DOCUMENTATION QAC-1209

DO NOT SCALE IF IN DOUBT ASK

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS

TOLERANCES METRIC (mm)

X ±1.3

0.XX ±0.10

ANGULAR ±0° 30'

SURFACE ROUGHNESS 3.2/

BREAK SHARP EDGES

DO NOT SCALE DRAWING



APPROVAL INFORMATION

REVISION

DRAWN BY: D.REMEDIOS

02/09/21

JCo

CHECKED BY: J.SILVA

02/09/21

DRs

ENGINEERED BY: A.FIGUEIREDO

02/09/21

AFo

ENGINEERING APPL: T.CURVO

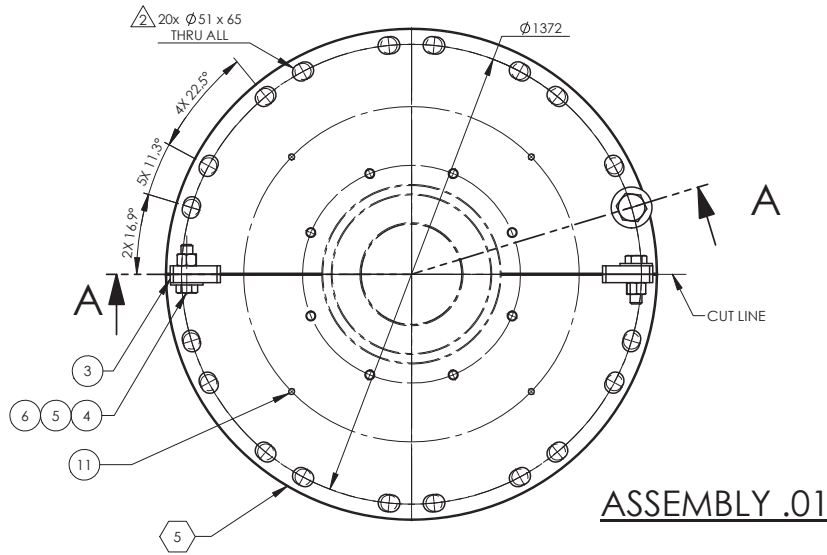
02/09/21

TCo

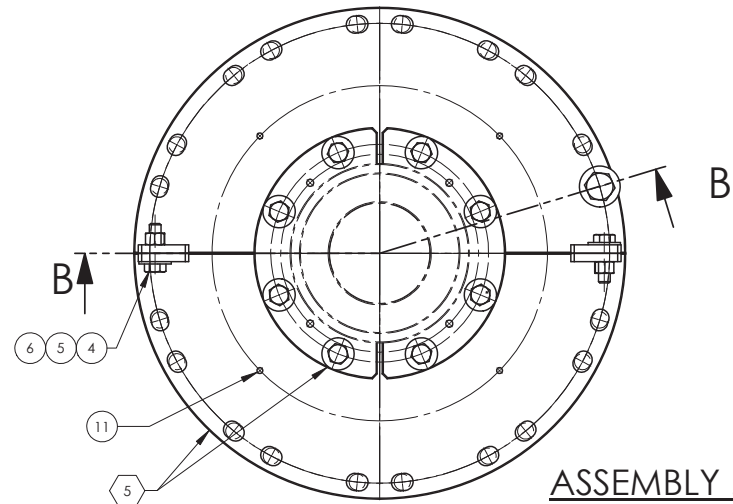
TEAMCENTER I.D.: WS_024660

HANG-OFF COLLAR CONFIGURATION
4" RISER, SWL 250
(I-TUBE 48")

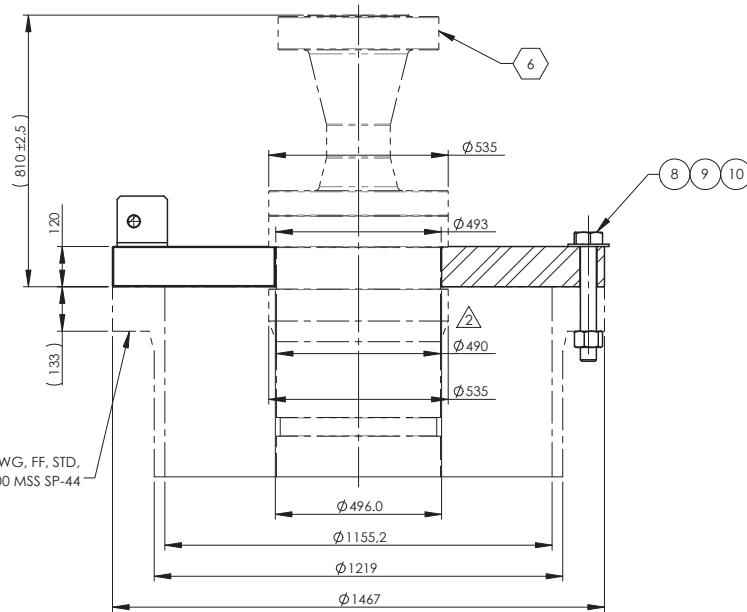
SIZE: A3
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SCALE: NONE
TEMPLATE REF: TEMP_B-HC_04_RA
SHEET: 1 OF 2



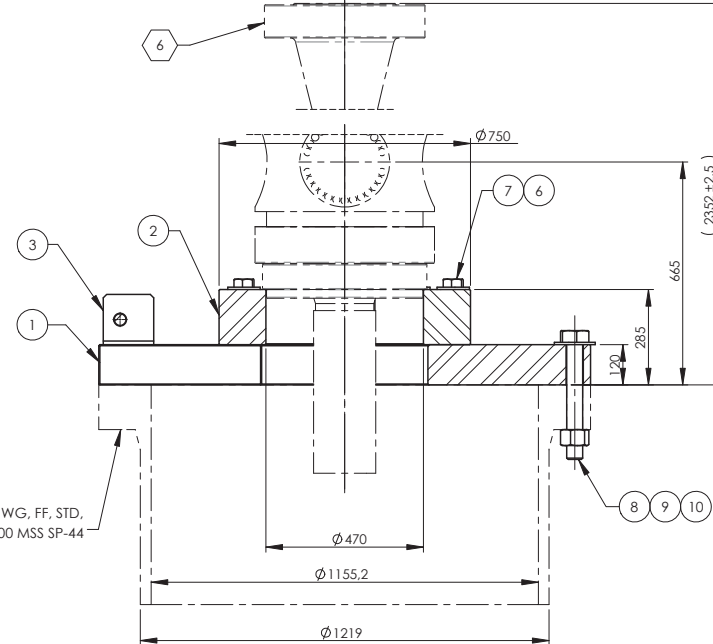
ASSEMBLY .01



ASSEMBLY .02



SECTION A-A
SCALE 1 : 15



SECTION B-B
SCALE 1 : 15

FLG 48" DWR , WG, FF, STD,
FINISH, CL 300 MSS SP-44

FLG 48" DWR , WG, FF, STD,
FINISH, CL 300 MSS SP-44

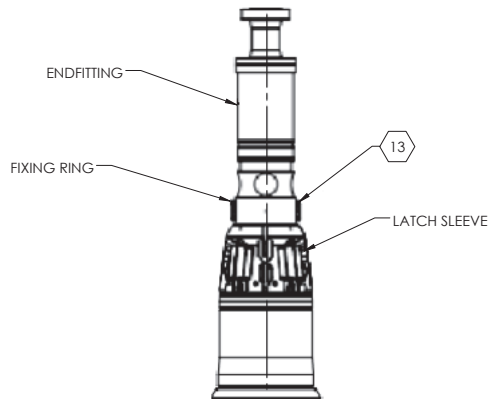
Baker Hughes		DRAWN BY: D.REMEDIOS	DATE: 02/09/21	SIZE: C/A3	DO NOT SCALE - IF IN DOUBT ASK	
TEAMCENTER I.D.:		WS_024660		DRAWING NUMBER: CB-HC1012315-00-01	REV.:	2
				SCALE: INDICATED	TEMPLATE REF: TEMP_B-HC_04_RA	SHEET: 2 OF 2

NOTES:

1. COAT HIGH BUILD EPOXY YELLOW COLOR IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, FOR OTHERS COUNTRIES. DO NOT COAT INTERNAL SURFACES OF BOLT HOLES OR PIN HOLES.
2. BOLTS, PINS AND NUTS, COATING: ELECTRODEPOSITED CADMIUM CLASS 12 MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (GREEN OLIVE) IN ACCORDANCE WITH MTL-5534.
3. WEIGHT IN AIR: 484 Kg. (APPROX.).
4. FOR ASSEMBLY DRAWING SEE: B-PK1012315-00-01.
5. ENDFITTING CONFIGURATION DRAWING: CB-EF1012315-00-01.
6. LATCH SLEEVE CONFIGURATION DRAWING: CB-LS1012315-00-01.
- 7 TORQUE TABLE (TO BE CONSIDERED DRY).

FASTENER	TORQUE (N.m)
0.250"	6 +1 / -0 ft-lbs [9 + 1 / -0 N.m]
1"	508 +5 / -0 ft-lbs [689 + 7 / -0 N.m]

- 8 LOW STRESS STAMP MARKING IDENTIFICATION AND CB-PK1012315-00-01 IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
- 9 EYE BOLT MUST BE REMOVED BEFORE THE PULL-IN OPERATION AND SET SCREW (ITEM 9) MUST BE INSTALLED.
10. IN ACCORDANCE WITH ET-3000.00-1500-941-PMU-003 REV.F.
11. IF NECESSARY THE PULL-IN KIT TO BE MOUNTED BEFORE THE BEND STIFFENER PASS BY THE TOP WHEEL. BAKER HUGHES SUGGESTS THE USE OF POLYESTER ROPE FOR PROTECTION OF THE PULL-IN CABLES. THE PROCEDURE MUST BE EVALUATED BY THE INSTALLATION COMPANY FOR EACH OPERATION.
- 12 BAKER HUGHES RECOMMENDS FOR INSTALLATION COMPANY TO HOLD THE BACKUP CABLES (LONGER LENGTH) TO AVOID INTERFERENCE AND/OR CRUSHING DURING THE PULL-IN OPERATION. AS SUGGESTION, THE INSTALLATION COMPANY SHOULD USE A DUCT TAPE ON THIS PROCESS.
- 13 THE FIXING RING CB-OA1012313-00-01 MUST BE REMOVED PRIOR TO THE PULL IN OPERATION.

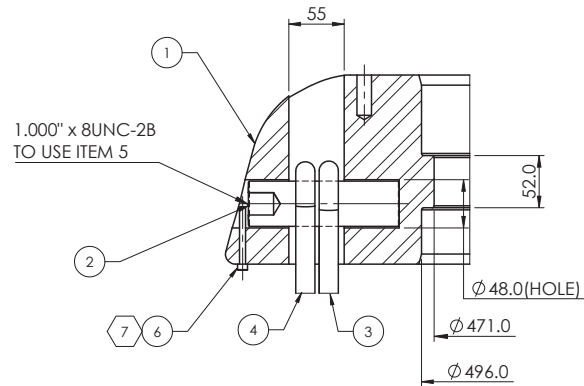
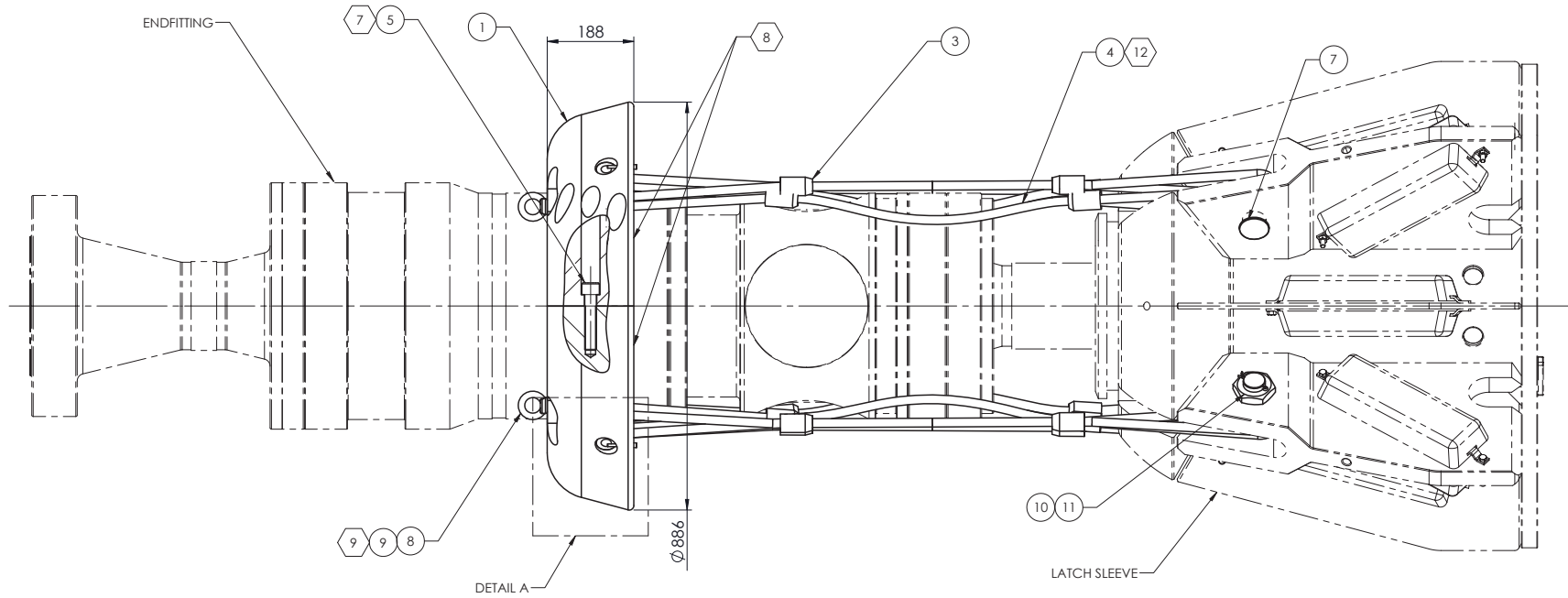


Baker Hughes	
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APPLICATION	DOCUMENTATION
QAC-1209	
- DO NOT SCALE - IF IN DOUBT ASK	

4	11		COTTER PIN	6.3 X 56 DIN 94 STL	ZINC PLATED
4	10		HEX, THIN NUT	M 45 X 4.5 DIN 936, MTL-5534	SEE NOTE 2
4	9		SET SCREW, HEX SOCKET	M16 x 2 x 30 DIN 913 CARBON STEEL	SEE NOTE 2 AND 9
4	8		EYE BOLT	M16 X 2 X 27, DIN 580, AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250 MPa, ZINC PLATED
4	7		LOCK PIN	MTL-5534	SEE NOTE 2
4	6		CAPSCREW, SOCKET HEAD	0.250"x20UNC-2Ax2.25"L, FULLY THREADED, ASME B18.3, MTL-5534	SEE NOTE 2 AND 7
6	5		CAPSCREW, SOCKET HEAD	1.000" - 8UNC-2A x 4.75"L, FULLY THREADED, ASME B18.3, MTL-5534	SEE NOTE 2 AND 7
4	4		WIRE ROPE SINGLE LEG SLING (FLEMISH EYE)	ø3/4" x 1900 AF CLASS 6x36 - EIPS	200/220 Kg/mm2
4	3		WIRE ROPE SINGLE LEG SLING (FLEMISH EYE)	ø3/4" x 1500 AF CLASS 6x36 - EIPS	200/220 Kg/mm2
4	2		SPECIAL PIN	MTL-5534	SEE NOTE 2
2	1		HALF COLLAR	ASTM A-36 OR A-106 Gr. B OR ST.52 OR AISI 1020 OR EQUIVALENT	SEE NOTE 1, YIELD STRENGTH MINIMUM 250MPa
.02 ASSY	.01 ASSY.	ITEM NO.	IDENTIF NUMBER	NOMENCLATURE	MAT/MAT SPECIFICATION
COMMENTS					

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		APPROVAL INFORMATION		REVISION
TOLERANCES		DRAWN BY:	DATE:	
METRIC (mm)		A.GASTALDI	29/09/21	
X. ±1		CHECKED BY:	DATE:	
0.X ±0.3		J.ARAUJO	29/09/21	
0.XX ±0.10		ENGINEERED BY:	DATE:	
ANGULAR ±0° 30'		A.FIGUEIREDO	04/10/21	
SURFACE ROUGHNESS 3.2/		ENGINEERING APPVL:	DATE:	
BREAK SHARP EDGES		T.CURVO	05/10/21	
DO NOT SCALE DRAWING		TEAMCENTER:	WS_025658	
		PULL IN KIT 4.0" CONFIGURATION		
		SIZE: A3		DRAWING NUMBER: CB-PK1012315-00-01
		SCALE: NONE		REV: 1
		TEMPLATE REF: TEMP_CB_PK_01_RA		SHEET: 1 OF 2



DETAIL A ASSEMBLY SPECIAL PIN
SCL.: 1:5


		DO NOT SCALE - IF IN DOUBT ASK	
		DRAWN BY: A.GASTALDI TEAMCENTER: WS_025658	DATE: 29/09/21 SIZE: A3 SCALE: 1:10
		DRAWING NUMBER: CB-PK1012315-00-01 TEMPLATE REF: TEMP_CB_PK_01_RA	REV.: 1 SHEET: 2 OF 2


NOTES:

1. LOW STRESS CONTINUOUS AND STENCIL PART MARKING IDENTIFICATION IN ACCORDANCE WITH WS-MFG-4236, AND THE INFORMATION BELOW:
B-SC1012315-00-01
CB-SC1012315-00-01
- NOTE: INSPECTION OF LOW STRESS AFTER COAT IS NOT REQUIRED
2. COAT HIGH BUILD EPOXY WHITE COLOR ALL SURFACES UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, CODE E, FOR OTHERS COUNTRIES.
3. BOLTS, NUTS AND WASHERS COATING: ELECTRODEPOSITED CADMIUM CLASS 12 MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (GREEN OLIVE) IN ACCORDANCE WITH MTL-5534.
4. TORQUE: 280 (7/-0) N.m (TO BE CONSIDERED DRY)
5. WEIGHT IN AIR: 291 kg (APPROX.).
6. FOR ASSEMBLY DWG SEE: B-SC1012315-00-01.

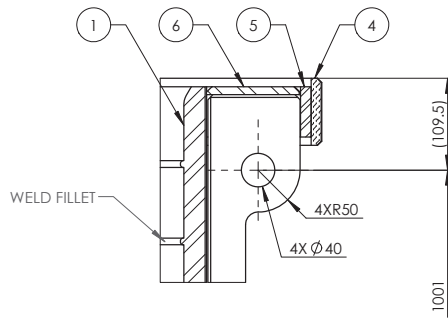
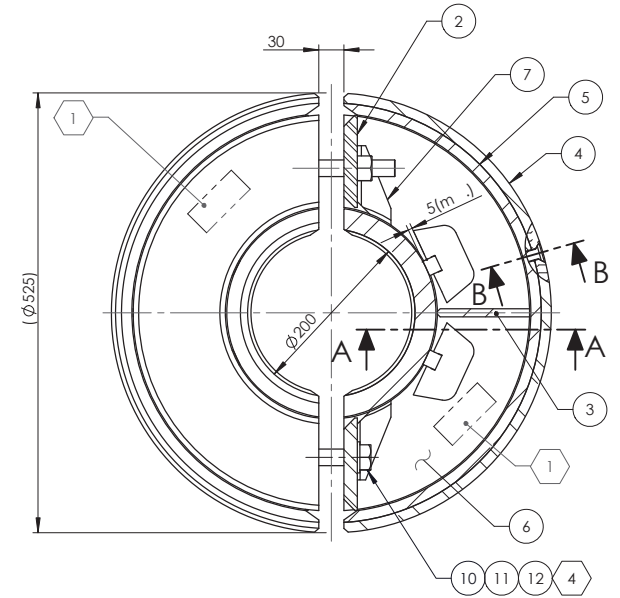
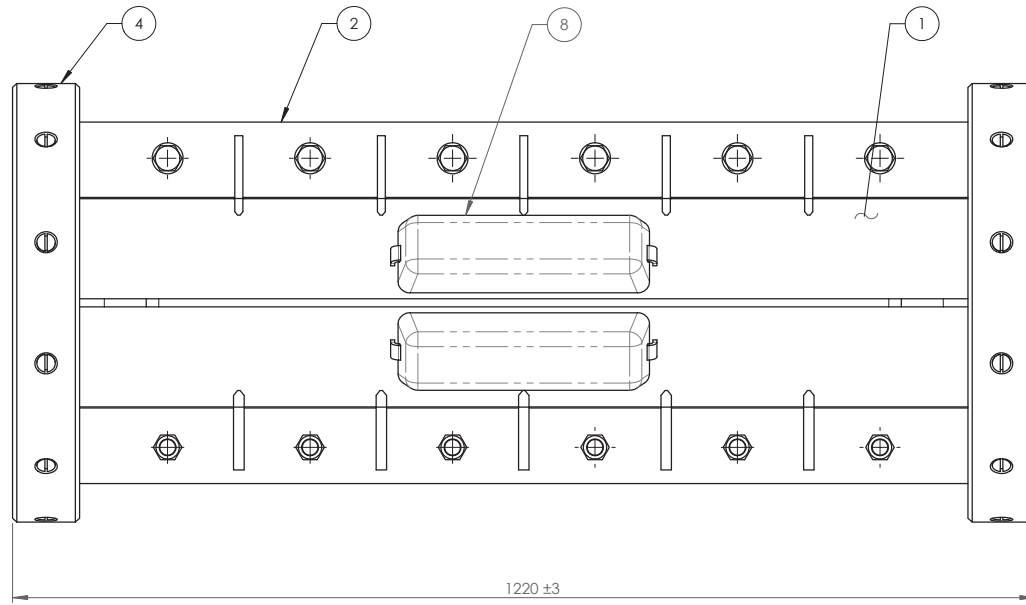
REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE
1	ORIGINAL ISSUE	TCo	23/09/21
2	NOTE 5 AND DIMENSIONS WERE CHANGED, IN PART LIST PN WERE DELETED, SEE ECR WS00059994.	TCo	18/11/21
3	ITEM 9 WAS CHANGED, SEE ECR WS00063236	TCo	11/01/22
4	ITEM 9, 10, 11 AND 12 WAS CHANGED, SEE ECR WS00063539	TCo	24/01/22
5	UPDATED ITEM 9, SEE ECR WS00083432	AFo	04/01/23

	12	12		FLAT WASHER	M20, DIN 125-1A STL	SEE NOTE 3
	12	11		NUT, HEX	M20 x 2.5 DIN 934, MTL-5534	SEE NOTE 3
	12	10		BOLT, HEX HEAD	M20 x 2.5 x 110 L, DIN 933, MTL-5534	SEE NOTE 3
	24	9		BOLT SLOTTED FLAT HEAD	M12 x 1.75 x 20L DIN 963, SAE CLASS 4.8	SEE NOTE 3
	4	8	B-TDXXXXXX-00-13.14	ANODE	ALUMINIUM	
	20	7		GUSSET	ASTM A-36 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
	4	6		FLANGE	ASTM A-36 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
	4	5		BUMPER SUPPORT	ASTM A-36 OR A-106 Gr.B OR ST-52 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
	4	4		BUMPER	POLYURETHANE	58 ± 3 SHORE D - YELLOW COLOR
	2	3		PADEYE	ASTM A-36 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
	4	2		TIE PLATE	ASTM A-36 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
	2	1		PIPE	ASTM A-36 OR A-106 Gr.B OR ST-52 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250MPa
.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF. NUMBER	NOMENCLATURE	MAT./ MAT. SPECIFICATION B	COMMENTS

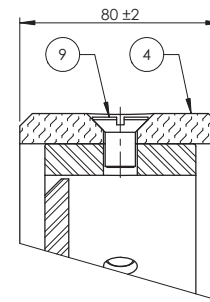
PARTS LIST								
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		APPROVAL INFORMATION		REVISION	STOPPER CLAMP CONFIGURATION 4" RISER			
		DRAWN BY:	23/08/21	JCo				
		G.MENOLI						
		CHECKED BY:	30/08/21	ABs				
		J.ARAUJO						
TOLERANCES	ENGINEERED BY:		10/09/21	JBa				
METRIC (mm)	A.FIGUEIREDO							
X ±1	ENGINEERING APPL:		23/09/21	AFo				
0.X ±0.3	T.CURVO							
0.XX ±0.10	TEAMCENTER I.D.:		WS_025159		SIZE:	DRAWING NUMBER:	REV:	
ANGULAR ±0° 30'	WS_025159				A3	CB-SC1012315-00-01	5	
SURFACE ROUGHNESS 3.2/			SCALE:	NONE	TEMPLATE REF:	TEMP SC_02_RF	SHEET:	1 OF 2
BREAK SHARP EDGES								
DO NOT SCALE DRAWING								

	
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NEXT ASSEMBLY	USED ON
APPLICATION	
DOCUMENTATION	
QAC-1209	
- DO NOT SCALE - IF IN DOUBT ASK	

DESIGN ID: WS_025159/05
RELEASE DATE: 01-Jan-2023 11:21
STATUS: Released
APPROVED BY: APPROVED ON: 00-Jan-2023 11:21
Jorge Ribeiro Ribeiro 00-Jan-2023 11:21
André Siqueira 00-Jan-2023 11:21
Além Figueiredo 01-Jan-2023 11:21



SECTION A-A
SCL.: 1:6



SECTION B-B
SCL.: 1:2

DO NOT SCALE - IF IN DOUBT ASK					
Baker Hughes	DRAWN BY: G.MENOLI	DATE: 23/08/21	SIZE: A3	DRAWING NUMBER: CB-SC1012315-00-01	REV.: 5
	TEAMCENTER I.D.: WS_025159	SCALE: INDICATED	TEMPLATE REF: TEMP_SC_02_RF	SHEET: 2 OF 2	

1

2

3

4

5

6

NOTES:

1

LOW STRESS CONTINUOUS AND STENCIL PART MARKING IDENTIFICATION CB-TH1522224-00-02, SWL= 200tf, TECHNICAL FILE Nº CE-TF-0117 AND CONFORMITY IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.

2

COAT HIGH EPOXY YELLOW COLOR ALL SURFACES UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRASIL MANUFACTURING OR MTL-5138, CODE E FOR OTHER COUNTRIES.

3

FLANGE BOLTS: Ø 1 1/2" - 8 UN x 15 1/2", MTL-5186 STUD BOLTS ELECTRODEPOSITED CADMIUM W/ CHROMATE (12 PER FLANGE).
Ø 1 1/2" - 8 UN, MTL-5186 HYDRATIGHT NUTS, ELECTRODEPOSITED CADMIUM W/ CHROMATE (24 PER FLANGE).
TORQUE: 3059 N.m (2256 ft-lbs); PRELOAD: 466.8 kN (104950 lbs).

4

SIZED FOR 4 3/4" SHACKLE, 200 tons (REF.: CROSBY G-2140, OR EQUIVALENT).

5

WEIGHT IN AIR: 415 kg

6

MANUFACTURING DRW.: B-TH1522224-00-02

7

TAPPED ROLES TO SUIT CROSBY M12 SWIVEL HOIST RING HR-1000M (1068325).
TORQUE SWIVEL HOST RING BOLTS TO 38 Nm, BASED ON THREADS BEING CLEAN, DRY AND FREE OF LUBRIFICATION.

8

SURFACE ÁREA= 1.30m²

9

PLUG: ø1" - 11.5NPT, TORQUE: 1.5 - 2.5 T.F.F.T. (APPLY LOCTITE 577)

10

PLUG: ø1/4" - 18NPT, TORQUE: 1.5 - 3.0 T.F.F.T. (APPLY LOCTITE 577)

11

BOLTS COATING: ELECTRODEPOSITED CADMIUM CLASS 12 MICRONS (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CROMATE TREATMENT (YELLOW) N ACCORDANCE WITH MTL-5186.

12

PULL TEST: (1.5 x SWL)= 300 Te IN ACCORDANCE WITH EU MACHINERY DIRECTIVE 2006 / 42 / EC ANNEX1, SECTION 4.1.2.3.

13

TEAMCENTER PART NUMBER: WS_P052751.

REVISIONS

REV	DESCRIPTION	APPROVED	DATE
07	UPDATED NOTE 12, SEE ECR WS00041920.	JLa	03/06/20
08	UPDATED NOTE 1, SEE ECR WS0004230B.	JLa	16/06/20

01	03		PLUG, HOLLOW HEX 1/4" - 18 NPT	316 SST	
01	02		PLUG, HOLLOW HEX 1" - 11.5 NPT	316 SST	
01	01		TEST HEAD.	LOW ALLOY STEEL / MTL-5120 or 5027 or MTL-5181 or MTL-5245	MTL- YIELD STRENGHT 70 ksi (MIN. / MTL-5120). YIELD STRENGHT 100 ksi (MIN. / MTL-5027 and MTL-5181). YIELD STRENGHT 75 ksi (MIN. / MTL-5245).

.02 ASSY	.01 ASSY	ITEM No.	IDENTIF. NUMBER	NOMENCLATURE	MAT. / MAT. SPECIFICATION	COMMENTS
-------------	-------------	-------------	-----------------	--------------	---------------------------	----------

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
METRIC (mm)
X, ±1
0.X ±0.3
0.XX ±0.10
ANGULAR ±0° 30'
SURFACE ROUGHNESS 3.2/
BREAK SHARP EDGES

APPROVAL INFORMATION

DRAWN BY: M.ALMONACID 29/10/14 DRs
CHECKED BY: A.BREVES 29/10/14 ABs
ENGINEERED BY: M.TEIXEIRA 29/10/14 FAq
ENGINEERING APPVL: M.ARAUJO 29/10/14 JLa
FILE I.D.: WS_CB-TH1522224-00-02
CALCULATION FILE:

REVISION

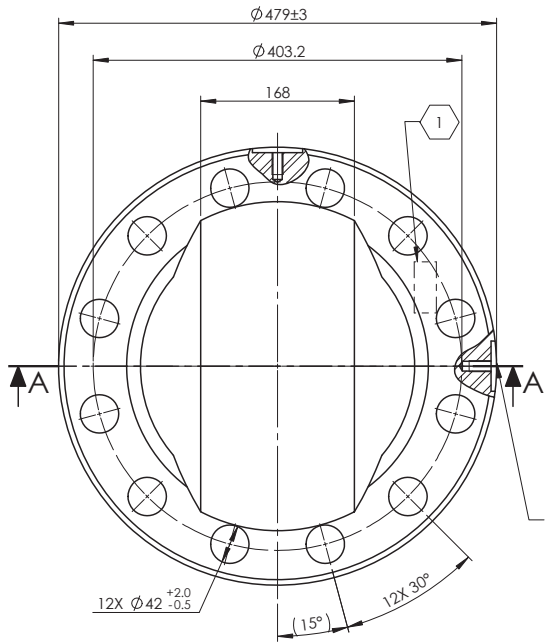
GE Oil & Gas

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APPLICATION DOCUMENTATION	DO NOT SCALE DRAWING
NEXT ASSEMBLY	USED ON
- DO NOT SCALE - IF IN DOUBT ASK	

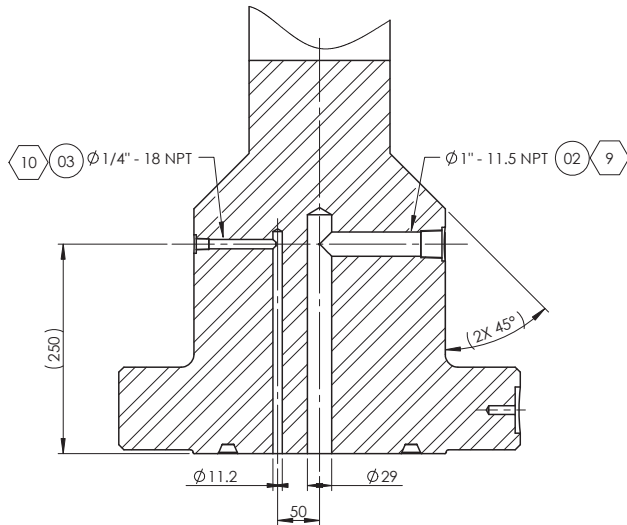
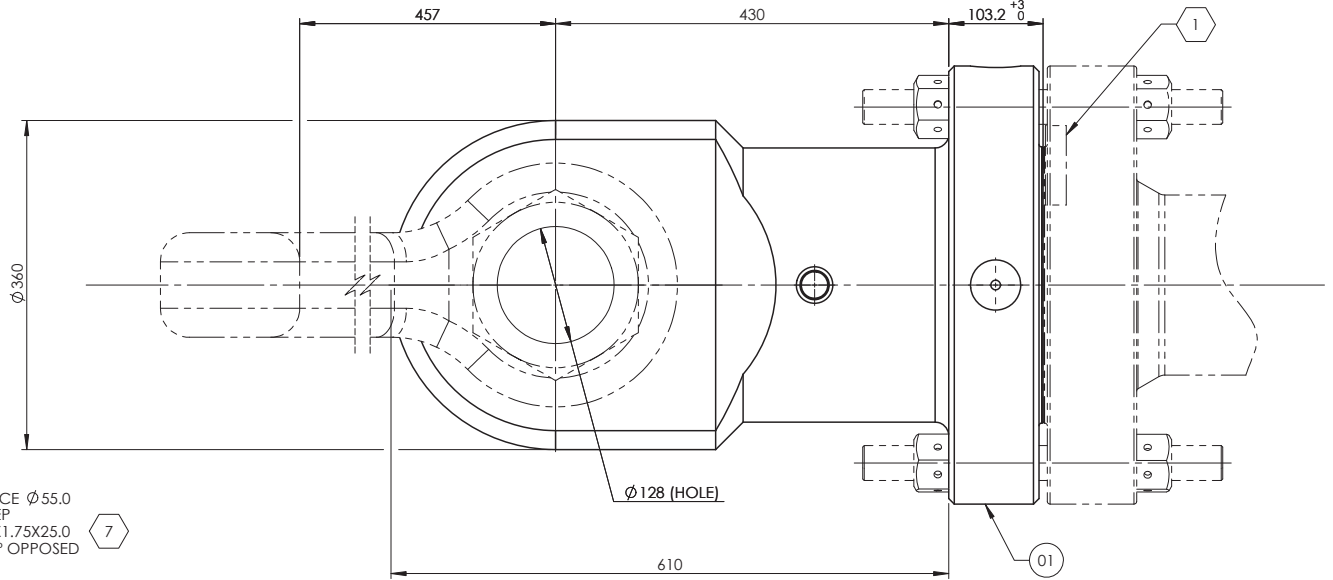
INSTALLATION / TEST HEAD CONFIG.
7 1/16" API 6BX 10000psi
AND BX156 (SWL=200tf)

SIZE: A3	DRAWING NUMBER: CB-TH1522224-00-02	REV: 08
SCALE: NONE	TEMPLATE REF:	SHEET: 1 OF 2



SPOT FACE $\phi 55.0$
X6.0 DEEP
2X M12X1.75X25.0
DEEP 90° OPPOSED

7



SECTION A-A

SCL.: 1:5



GE Oil & Gas

DRAWN BY: M. ALMONACID
DATE: 29/10/14
FILE I.D.: WS_CB-TH1522224-00-02
CALCULATION FILE:

SIZE: A3
SCALE: 1:5

DO NOT SCALE - IF IN DOUBT ASK
DRAWING NUMBER: CB-TH1522224-00-02
REVISION: 08

TEMPLATE REF:

SHEET: 2 OF 2

DESIGN ID: WS-1024320/04
RELEASE DATE: 14-Mar-2023 19:07
STATUS: Released
APPROVED BY/ APPROVED ON: Alun Figueiredo / 13-Mar-2023 19:32 Jorge Ricardo Bichara / 14-Mar-2023 19:07

DO NOT USE THIS DOCUMENT IF STATUS IS INACTIVE. UNCONTROLLED WHEN PRINTED OR TRANSMITTED OUT OF PLM SYSTEM

NOTES:

- 1 LOW STRESS CONTINUOUS AND STENCIL PART MARKING IDENTIFICATION IN ACCORDANCE WITH WS-MFG-4236, AND THE INFORMATION BELOW:

STRAIGHT LINE SWL	55 tf	85 tf
PROJECT	C2857	C2865

B-AC1012315-00-01
CB-AC1012315-00-01

NOTE: INSPECTION OF LOW STRESS AFTER COAT IS NOT REQUIRED.

2. COAT HIGH BUILD EPOXY WHITE COLOR ALL SURFACES UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH MFG-R-4487 FOR BRAZIL MANUFACTURING OR MTL-5138, CODE "E" FOR OTHER COUNTRIES.
3. BOLTS COATING: ELECTRODEPOSITED CADMIUM CLASS 12 microns (MINIMUM THICKNESS) TYPE II WITH SUPPLEMENTARY COLORED CHROMATE TREATMENT (YELLOW) IN ACCORDANCE WITH MTL-6040.
4. WEIGHT IN AIR: 402 kg (APPROX.).
5. NOMINAL DIMENSIONS GIVEN; DIMENSIONS APPLY PRIOR TO COATING.
6. SIZED FOR 55 ton - COLUMBUS 86M858AG OR GUNNEBO G-5263 OR CROSBY G-2140
7. TORQUE VALUE (ASSEMBLED WITH LOCTITE 577):

FASTENER	TORQUE VALUE (DRY)
M24	550Nm

8. MANUFACTURING ASSY DRW: B-AC1012315-00-01.


- 9 BUSHING ASSEMBLY: INTERFERENCE FIT IT CAN BE FITTED WITH A PLATE (WOOD) COVERING THE BUSHING FACE. A HAMMER SHOULD BE USED IN ORDER TO FIT THE BUSHING. OIL AND GREASE CAN BE USED TO FACILITATE THE ASSEMBLY.

- 10 ENDFITTING CONFIGURATION DRW: CB-EF1012315-00-02 .

11. WORST TENSION AT ANCHOR POSITION:

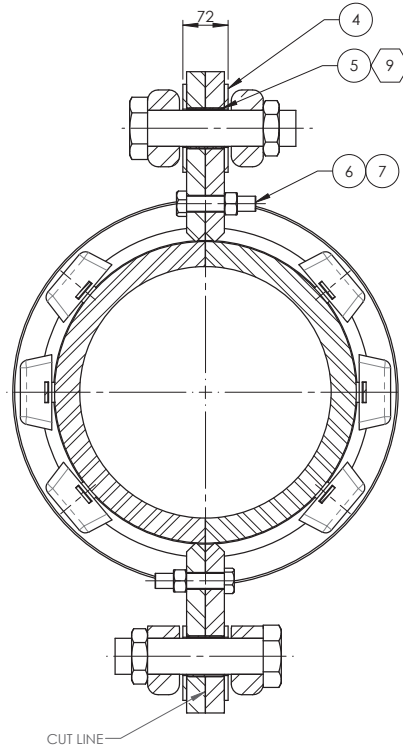
PROJECT	CASE	MAX TENSION (kN)
C2857 - BOZIOS 5	EXTREME LOAD	504.3
	ABNORMAL LOAD	423.4
C2865 - Lula Extremo Sul	EXTREME LOAD	612
	ABNORMAL LOAD	522

NOTE: CASE ABNORMAL LOAD DISCONSIDERED ON ANCHOR COLLAR DESIGN.

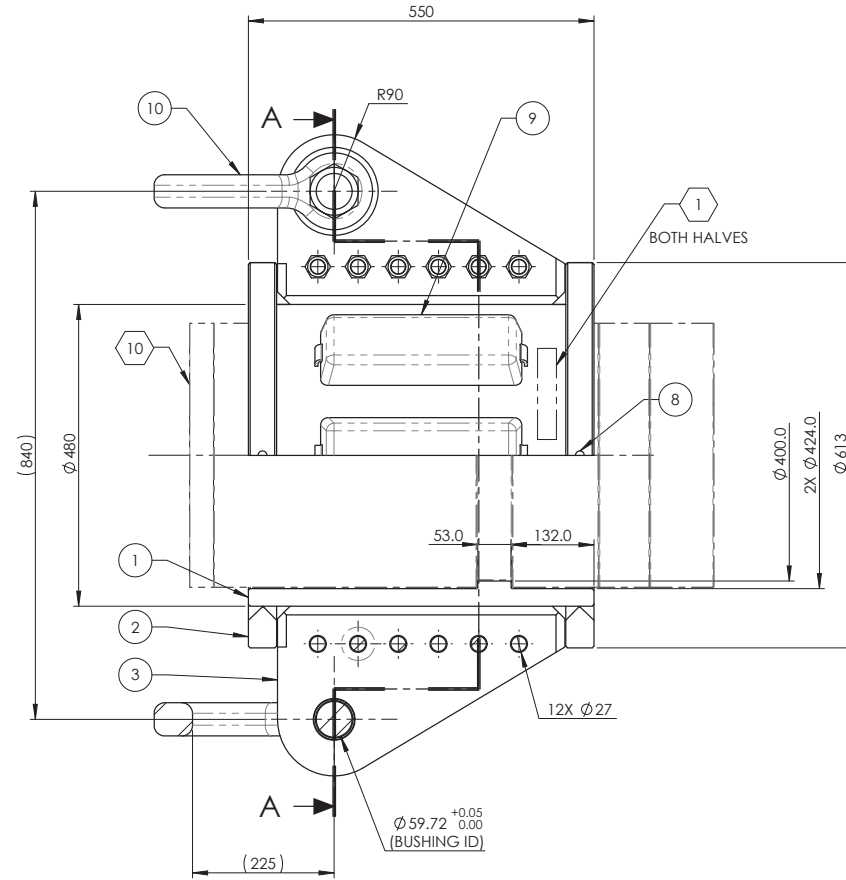
						
		CB-EF1012315-00-02				
	NEXT ASSEMBLY	USED ON				
	APPLICATION DOCUMENTATION					
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- DO NOT SCALE - IF IN DOUBT ASK						

2	10		SHACKLE	55 Tons.COLUMBUS 86M858AG OR GUNNEBO G-5263 OR CROSBY G-2140	ABNT NBR 13545/ CE MARKING	
6	9		ANODE	ALUMINIUM		
4	8		LIFTING EYE BOLT SHOULDER TYPE	M16 x 2.0 x 28 DIN 580, AISI 1020 OR ASTM A-36, OR EQUIVALENT	ZINC PLATED.YIELD STRENGTH MINIMUM 250 MPa	
12	7		NUT, HEX	M24 x 3.0 DIN 934, MTL-6040	UNCOATED	
12	6		BOLT, HEX HEAD	M24 x 3.0 x 110 L, DIN 933, MTL-6040	SEE NOTE 3	
2	5		ELECTRICAL INSULATION BUSHING	ORKOT GRADE C321/ PEEK 450G	TRELLEBORG SEALING SOLUTIONS ROTHERHAM /PETROSEALS	
4	4		ELECTRICAL INSULATION WASHER	ORKOT GRADE C321/ PEEK 450G	TRELLEBORG SEALING SOLUTIONS ROTHERHAM /PETROSEALS	
4	3		PADEYE	ASTM A-36 OR ST-52 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250 MPa	
4	2		SUPPORT	ASTM A-36 OR ST-52 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250 MPa	
2	1		HALF TUBE	ASTM A-36 OR A-106 Gr.B OR ST-52 OR AISI 1020 OR EQUIVALENT	YIELD STRENGTH MINIMUM 250 MPa	
.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF. NUMBER	NOMENCLATURE	MAT./ MAT. SPECIFICATION	
PARTS LIST						
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS			APPROVAL INFORMATION	REVISION	ANCHOR COLLAR FOR ENDFITTING SWL = 1 CONFIGURATION	
TOLERANCES			DRAWN BY: J.ARAUJO	08/07/21		
METRIC (mm)			CHECKED BY: A.BREVES	09/07/21		
X. ±1 0.X ±0.3 0.XX ±0.10 ANGULAR ±0° 30' SURFACE ROUGHNESS BREAK SHARP EDGES			ENGINEERED BY: A.FIGUEIREDO	13/07/21		
			ENGINEERING APPVL: T.CURVO	14/07/21		
			TEAMCENTER I.D.: WS_024320	AFo		
			SIZE: A3 DRAWING NUMBER: CB-AC1012315-00-01			
			SCALE: NONE TEMPLATE REF: TEMP_CB_AC_01_RB			
			REV: 4			
			SHEET: 1 OF 2			





SECTION A-A
SCL:1:8



FRONT VIEW
SCL:1:8

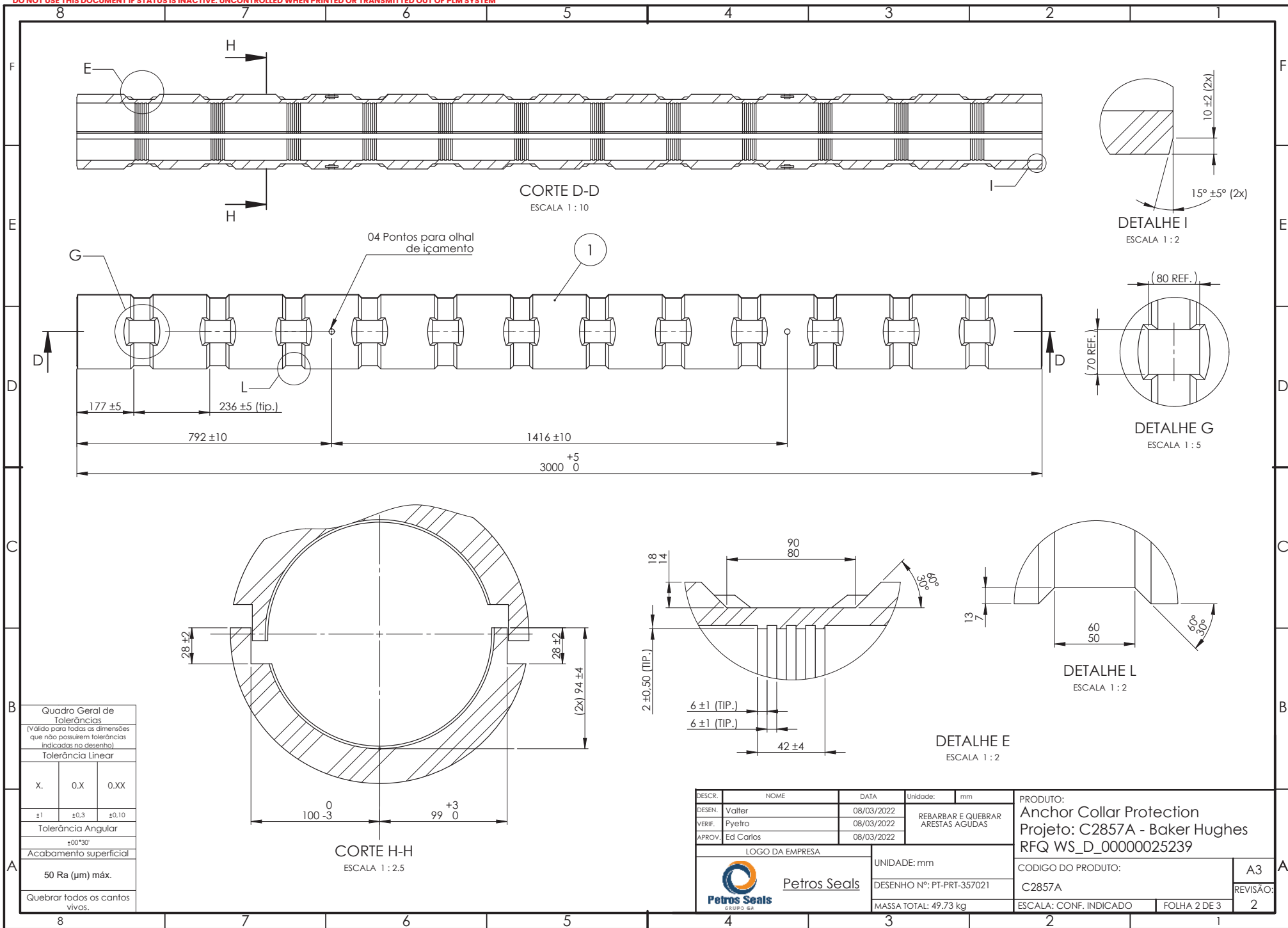
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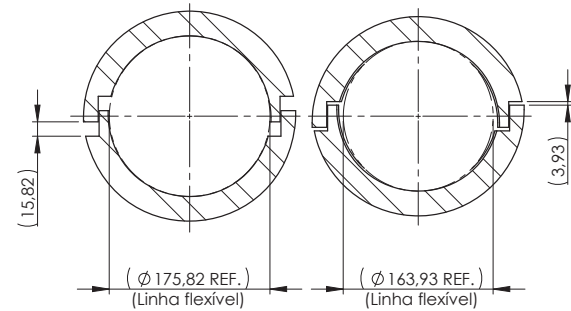
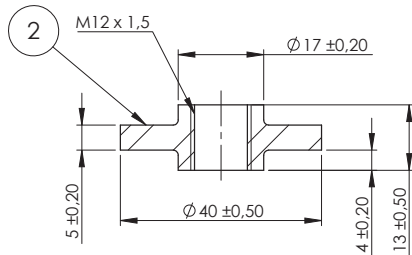
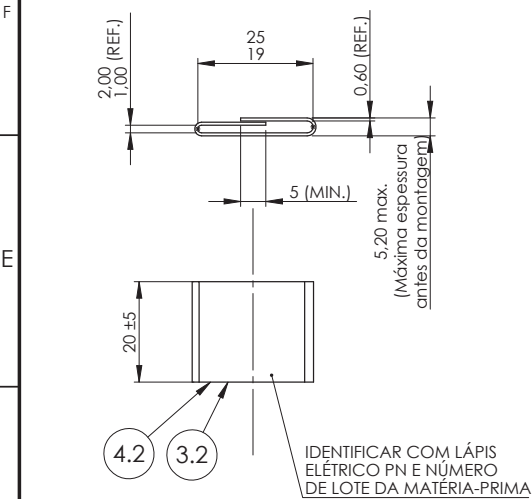
BOLTS TORQUE SEQUENCE

Baker Hughes		DRAWN BY: J.ARAUJO	DATE: 08/07/21	SIZE: A3	DRAWING NUMBER: CB-AC1012315-00-01	REV.: 4
TEAMCENTER I.D.:		WS_024320		SCALE: INDICATED	TEMPLATE REF: TEMP_CB_AC_01_RB	SHEET: 2 OF 2

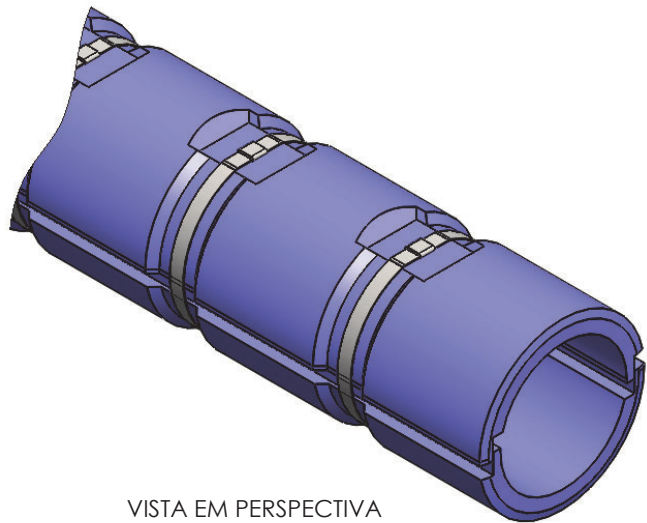




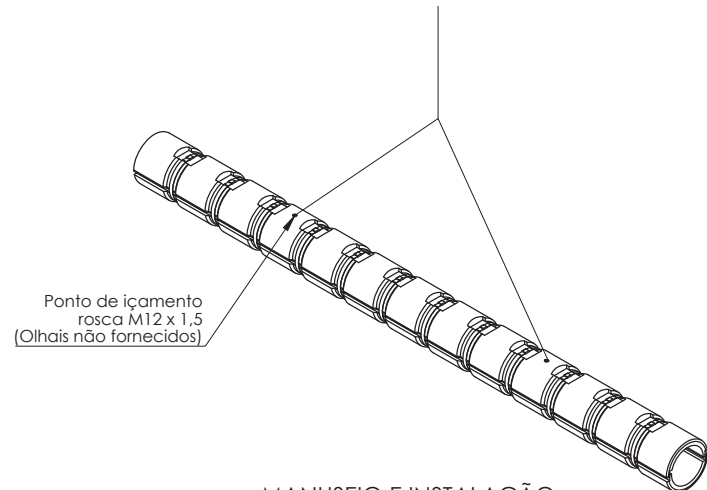
DESCR.	NOME	DATA	Unidade:	mm	PRODUTO:
DESEN.	Valter	08/03/2022	REBARBAR E QUEBRAR ARESTAS AGUDAS		Anchor Collar Protection
VERIF.	Pyetro	08/03/2022			Projeto: C2857A - Baker Hughes
APROV.	Ed Carlos	08/03/2022			RFQ WS_D_00000025239
LOGO DA EMPRESA			UNIDADE: mm		CODIGO DO PRODUTO:
 Petros Seals GRUPO SA			DESENHO Nº: PT-PRT-357021		C2857A
MASSA TOTAL: 49.73 kg			ESCALA: CONF. INDICADO	FOLHA 2 DE 3	REVISÃO:
					2



Estudo de encaixe



VISTA EM PERSPECTIVA



MANUSEIO E INSTALAÇÃO

Quadro Geral de Tolerâncias			
[Válido para todas as dimensões que não possuírem tolerâncias indicadas no desenho]			
Tolerância Linear			
X.	0.X	0.XX	
±1	±0,3	±0,10	
Tolerância Angular			
±00°30'			
Acabamento superficial			
50 Ra (µm) máx.			
Quebrar todos os cantos vivos.			


DESCR.	NOME	DATA	Unidade:	mm	PRODUTO:		
DESEN.	Valter	08/03/2022	REBARBAR E QUEBRAR ARESTAS AGUDAS		Anchor Collar Protection		
VERIF.	Pyetro	08/03/2022			Projeto: C2857A - Baker Hughes		
APROV.	Ed Carlos	08/03/2022			RFQ WS_D_00000025239		
LOGO DA EMPRESA			UNIDADE: mm		CODIGO DO PRODUTO:		A3
 Petros Seals <small>GRUPO SA</small>			DESENHO Nº: PT-PRT-357021		C2857A		REVISÃO:
			MASSA TOTAL: kg		ESCALA: CONF. INDICADO		FOLHA 3 DE 3

DESIGN ID : WS_030206/02
RELEASE DATE 23-May-2022 17:37
APPROVED BY/ APPROVED ON: Victor Souza/23-May-2022 17:37 - Joao Lima/23-May-2022 16:54

PIPE STRUCTURE	ANODE REFERENCE	ANCILLARY ASSEMBLY	ANODE					ANODES QUANTITY (unit)	ELECTRICAL CABLES						CABLE QTY	NEOPRENE BLANKET (mm)			BLANKET QTY	ASSEMBLY ARRANGEMENT	
			ID (mm)	OD (mm)	L (mm)	ANODES NET MASS (kg)	ANODES GROSS MASS (kg)		LENGTH (m)	ANCILLARY END	WS_P066252	WS_P067114	ANODE END	WS_P066252		WS_P067114	LENGTH	WIDTH			THICKNESS
WSI 101.2315-RD-4043.6	B-TDCXXXXXX-00-01.16AG	ENDFITTING (INTER BEND STIFFENER)	207	420	115	30	31.7	1	0.6	14mm (terminal JACKET REF.: N° 95)	2	2	14mm (terminal BEND STIFFENER REF.: N° 95)	2	2	2	2	150	3	4	1
									1.5	14mm (terminal BEND STIFFENER REF.: N° 95)			11mm (terminal ANODE REF.: N° 50)								
								3	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	6					
WSI 101.2316-RD-4042.6	B-TDCXXXXXX-00-01.16AH	ENDFITTING (INTER BEND STIFFENER)	207	420	115	30	31.7	1	0.6	14mm (terminal JACKET REF.: N° 95)	2	2	14mm (terminal BEND STIFFENER REF.: N° 95)	2	2	2	2	150	3	4	1
									1.5	14mm (terminal BEND STIFFENER REF.: N° 95)			11mm (terminal ANODE REF.: N° 50)								
								3	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	6					
WSI 101.2511-RD-4042.X	B-TDCXXXXXX-00-01.19A	ENDFITTING	182	369	180	35	36.7	1	0.3	21mm (terminal OUTER COLLAR REF.: N° 150)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	5	2
								4	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	8					
	B-TDCXXXXXX-00-01.19B	ENDFITTING (BEND RESTRICTOR)	182	369	180	35	36.7	1	5	21mm (terminal BODY REF.: N° 95)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	5	3
								4	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	8					
WSI 101.2511-RD-4042.X	B-TDCXXXXXX-00-01.19C	ENDFITTING	182	369	180	35	36.7	1	0.3	21mm (terminal OUTER COLLAR REF.: N° 150)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	11	2
								10	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	20					
	B-TDCXXXXXX-00-01.19D	ENDFITTING (BEND RESTRICTOR)	182	369	180	35	36.7	1	5	21mm (terminal BODY REF.: N° 95)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	11	3
								10	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	20					
WSI 101.2511-RD-4042.X	B-TDCXXXXXX-00-01.19E	ENDFITTING	182	369	180	35	36.7	1	0.3	21mm (terminal OUTER COLLAR REF.: N° 150)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	7	2
								6	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	12					
	B-TDCXXXXXX-00-01.19F	ENDFITTING (BEND RESTRICTOR)	182	369	180	35	36.7	1	5	21mm (terminal BODY REF.: N° 95)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	7	3
								6	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	12					
WSI 101.2511-RD-4042.X	B-TDCXXXXXX-00-01.19G	ENDFITTING	182	369	180	35	36.7	1	0.3	21mm (terminal OUTER COLLAR REF.: N° 150)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	3	2
								2	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	4					
	B-TDCXXXXXX-00-01.19H	ENDFITTING (BEND RESTRICTOR)	182	369	180	35	36.7	1	5	21mm (terminal BODY REF.: N° 95)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	3	3
								2	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	4					
WSI 101.2511-RD-4042.X	B-TDCXXXXXX-00-01.19I	ENDFITTING	182	369	180	35	36.7	1	0.3	21mm (terminal OUTER COLLAR REF.: N° 150)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	6	2
								5	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	10					
	B-TDCXXXXXX-00-01.19J	ENDFITTING (BEND RESTRICTOR)	182	369	180	35	36.7	1	5	21mm (terminal BODY REF.: N° 95)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	2	1	200	3	6	3
								5	0.3	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	11mm (terminal ANODE REF.: N° 50)	N/A	N/A	10					

Add PDF file on Teamcenter - WS00070038				J.La	23/05/2022	DRAWING BY: C. BORGES	12/05/2022	REV: -	SIZE: A3	DRAWING NUMBER: CB-TDC2857XX-00-01	REV: 2
1	Initial Issue				J.La	12/05/2022	CHECKED BY: V. SOUZA	12/05/2022			
REV	DESCRIPTION				APPROVED	DATE	APPROVED BY: J. LIMA	12/05/2022	SCALE: -	SHEET	1 OF 2

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C2857
ANODE COLLAR TABLE

NAME:	DATE:	REV:	SIZE:	DRAWING NUMBER:	REV:
C. BORGES	12/05/2022	-	A3	CB-TDC2857XX-00-01	2
V. SOUZA	12/05/2022				
J. LIMA	12/05/2022				

NOTES:

1. FOR ANODE DETAILS AND QUANTITY, CABLE LENGTHS AND NEOPRENE DETAILS
FOR EACH STRUCTURE, SEE TABLE AT SHEET 1/2.

2. TORQUE VALUE TO BE CONSIDERED DRY;

PLACEMENT	FASTENER	TORQUE VALUE	QTY PER CONNECTION
END FITTING TO INTERMEDIATE BEND STIFFENER	M12 x 1.75 x 25mm	9 +/- 0 N.m (6 +/- 0 ft-lbs)	2 (BEND STIFFENER)
ANODE COLLAR TO ANODE COLLAR	3/8"	26 +/- 5 N.m (19 +/- 4 ft-lbs)	2

3. NEOPRENE BLANKET TO BE WRAPPED AROUND THE PIPE TO ANODE INSTALLATION

4. THE TECHNICIAN MUST BE SURE THAT THE ANODE FIRM IN PLACE AFTER ANODE INSTALLATION.

5. ANODE MATERIAL SPECIFICATION IN ACCORDANCE WITH DNV-RP-B401, AND MTL-5211.

6. CABLE SPECIFICATION: CROSS SECTIONAL AREA OF #16mm2 WITH PVC INSULATING OUTER SHEATH AND INSULATION CLASS 0.6 / 1kV

7. DUCT TAPE SHALL BE USED TO ENSURE THAT THE ELECTRICAL CABLES ARE FIRMLY AROUND THE ANOCLARIES, SECURING THE CABLES ALONG THE BEND STIFFENER AND BEND RESTRICTOR.

8. ASSEMBLY ARRANGEMENTS BELOW SHOW INSTALLATION LAY-OUT ACCORDING TO ANOCLARY

9. BOLTS, NUTS & WASHERS MATERIAL: SHALL BE AISI 316 STAINLESS STEEL MANUFACTURED IN ACCORDANCE WITH ISO 3506, PART 1 & 2 RESPECTIVELY, GRADE A4, PROPERTY CLASS 70 OR 80, MINIMUM OF 450MPa AND UP TO 500 MPa. WASHERS SHALL BE FROM EQUIVALENT MATERIAL TO NUTS. IMPERIAL DIMENSION IF BRAZIL PROCUREMENT AND METRIC DIMENSION IF UK PROCUREMENT.

10. ALL MATERIAL MUST BE CERTIFIED

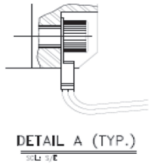
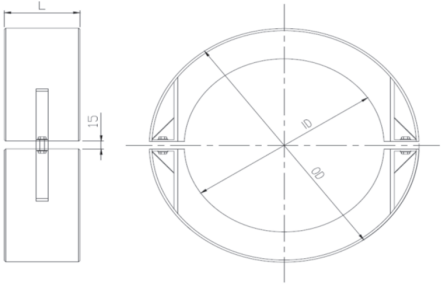
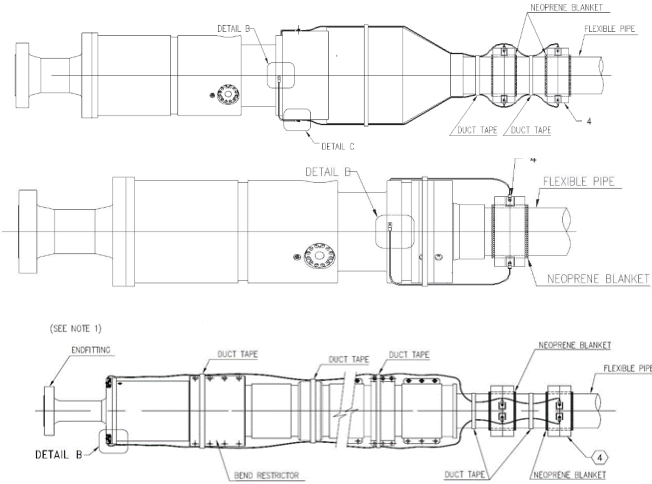
11. LOW STRESS STAMP MARKING IDENTIFICATION ACCORDING WITH MFG-4236.

ASSEMBLY
ARRANGEMENT:

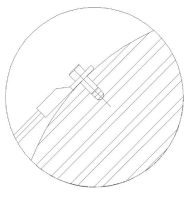
Arrangement #1
Intermediate Bend
Stiffener

Arrangement #2
Endfitting (Front
Asembly)

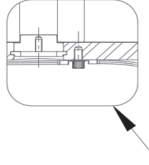
Arrangement #3
Bend Restrictor



DETAIL A: OUTER COLLAR CONNECTION



DETAIL B: JACKET CONNECTION



DETAIL C: INTERMEDIATE BEND STIFFENER CONNECTION

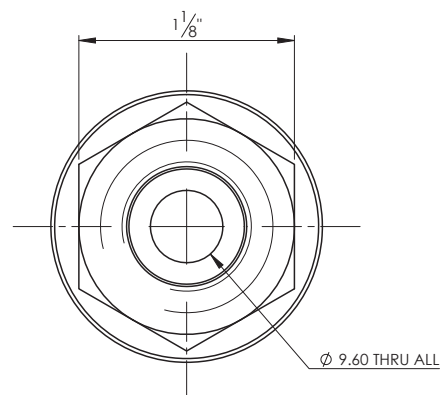
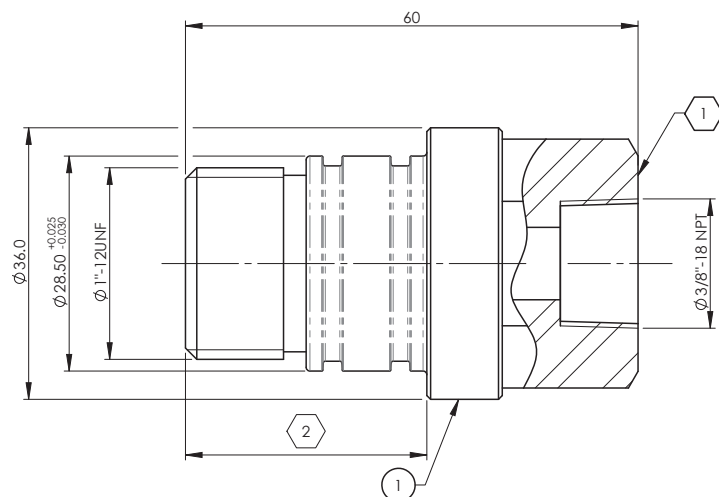
DETAIL C

Baker Hughes

NAME:	DATE:	REV:	SIZE	DRAWING NUMBER	REV
DRAWING BY: C. BORGES	12/05/2022	23/05/2022	A3	CB-TDC2857XX-00-01	2
CHECKED BY: V. SOUZA	12/05/2022	23/05/2022	SCALE	-	SHEET
APPROVED BY: J. LIMA	12/05/2022	23/05/2022			2 OF 2

NOTES:

- 1 LOW STRESS STAMP MARKING IDENTIFICATION IN APPROXIMATE LOCATION SHOWN IN ACCORDANCE WITH WS-MFG-4236.
- 2 HIGHLIGHTED AREA IS A "SEALING SURFACE". AFTER FINAL MACHINING OF "SEALING SURFACES", THE SURFACES ARE TO BE MASKED OFF/ PROTECTED TO PREVENT THE AREAS FROM POTENTIAL DAMAGE. PROTECTION TO BE USED IS AT THE DISCRETION OF THE VENDOR; HOWEVER ITS REMOVAL PRIOR TO FINAL INSPECTION MUST NOT CAUSE DETRIMENTAL EFFECTS TO THE COMPONENT QUALITY.
- 3 ITEMS SHALL BE INSTALLED IMMEDIATELY AFTER APPLICATION (TO THREADS ONLY) OF A THIN LAYER OF THREAD SEALANT LOCTITE #577.



2	2	2	4		O-RING	1/16", ID 1.000" VITON / MTL-5146 / PARKER 2-022, OR EQUIVALENT, WITH ENGINEERING APPROVAL	
1	0	0	3		JIC MALE ADAPTER	316 SS / MALE 3/8"NPT x MALE 3/8" JIC 37° 9/16"-18UNF	
0	1	0	2		NPT MALE ADAPTER	316 SS / MALE 3/8"NPT x MALE 3/8" NPT	
1	1	1	1		PLUG FEMALE	1.000"-12UNF-2A / 316 SS	
.03 ASSY	.02 ASSY	.01 ASSY	ITEM NO.	IDENTIF NUMBER	NOMENCLATURE	MAT./MAT. SPECIFICATION	COMMENTS

PARTS LIST



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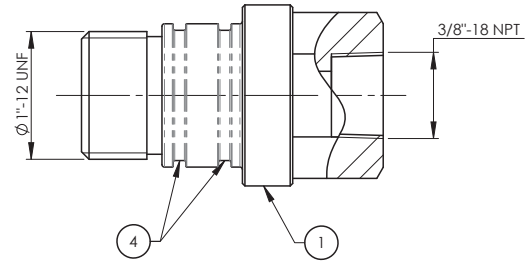
APPLICATION	DOCUMENTATION
QAC-1209	
DO NOT SCALE	IF IN DOUBT ASK

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS	APPROVAL INFORMATION	REVISION
TOLERANCES	DRAWN BY:	
METRIC (mm)	D.PEREIRA	22/05/20
X. ±1	CHECKED BY:	
0.X ±0.3	A.BREVES	25/05/20
0.XX ±0.10	ENGINEERED BY:	
ANGULAR ±0° 30'	L.MORETTO	25/05/20
SURFACE ROUGHNESS	ENGINEERING APPVL	
BREAK SHARP EDGES	R.PINTO	26/05/20
	TEAMCENTER I.D.:	WS_018059

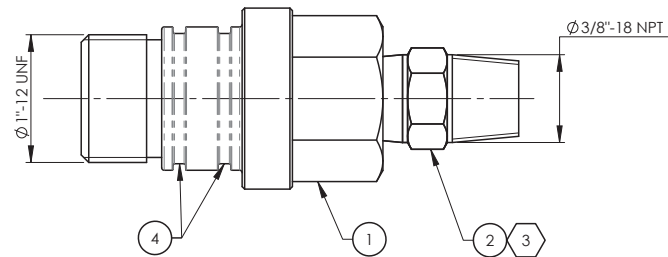
CONFIGURATION VACUUM
TEST ADAPTER

SIZE:	DRAWING NUMBER:	REV:
A3	CB-OAXXXXXXX-00-88.	01
SCALE:	1.5:1	TEMPLATE REF:
		SHEET: 1 OF 2

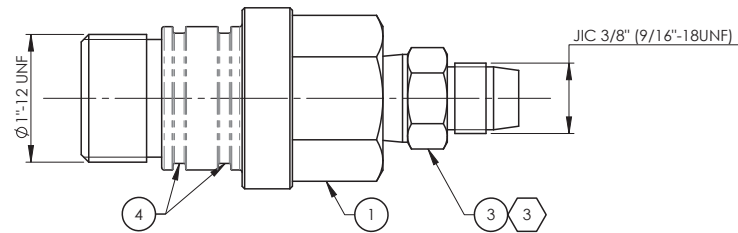
ASSEMBLY .01



ASSEMBLY .02



ASSEMBLY .03



Baker Hughes

DRAWN BY:
D.PEREIRA
TEAMCENTER I.D.:
WS_018059

DATE:
22/05/20

SIZE:
A3

DRAWING NUMBER:
CB-OAXXXXXXX-00-88.#

SCALE:
1:1

TEMPLATE REF:

SHEET: 2 OF 2

DO NOT SCALE - IF IN DOUBT ASK

REV.:
01