

DOCUMENT TITLE: Operation and Maintenance Manual Ø100 API 17H 3rd edition
Type 4 Hot Stab Program
PROJECT TITLE: 600159 -Ø100 Hot Stab System
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OBJECTIVE

The objective of this document is to present an Operation and Maintenance Manual for the Blue Logic Ø100 Hot Stab Program delivered by Blue Logic. All relevant aspects with regards to safe and correct use, installation, operation, maintenance and storage are covered.

ABSTRACT

The Blue Logic Ø100 Type 4 Hot Stab program is a High Flow Hot Stab system designed according to API 17H Type 4, for operation by use of ROV. The system consists of Male Hot Stabs, Receptacles and related equipment and components.

For full program overview and further technical details, please visit:

<http://e-sea.bluelogic.no/main.aspx>

REVISION CHANGE/RECORD

REV	REASON FOR REVISION/ DESCRIPTION OF CHANGES
01	Issued for Use (Copy from 600141-TD-0003 Ø80 Stab)
02	Update according to API 17H 3rd edition
03	Pressure Stab with bleed-off added
04	Instructions for seal replacement tool added, section 5.2



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1. INTRODUCTION

The Blue Logic Ø100 Hot Stab Program is a very compact and light weight pressure balanced high-flow fluid connector system designed for ROV use where high flow and easy connection is required. The system design is based on API 17H Type 4.

For a complete program overview, please visit: <http://e-sea.bluelogic.no/main.aspx>

1.1. DOCUMENT USE

This document shall be used as a guideline and reference document with regards to installation, operation and storage of the Ø100 Hot Stab System.

1.2. REFERENCES

Latest revision of the below listed drawings:

Dwg. No.	Drawing Title
BA2314	Ø100 SP Stab 10k Interv J-Lock 3" Weco 1502
BA4613	Ø100 SP Press Stab 10K Long-Term wJ-Lock
BA5636	Ø100 SP Press Stab 10K Long-term Dual Entry
BC1048	Ø100 SP Press Stab 10k Long-term wJ-Lock with Bleed Off Function
BA2323	Ø100 SP Prot Stab Vented Long-Term
BB0929	Ø100 SP Rec 10k Long-term 3" FB wJ-Lock 3" WN Sch XXS
BB0824	Ø100 SP Rec 10k Long-term 3" FB wJ-Lock x2 WN 3" Sch 160
BB4099	Ø100 SP Rec 10k Long-term 3" wJ-Lock 3" WN Sch160 1502
BA2321	Ø100 SP Rec 10k Long-term 3" wJ-Lock 3" WN Sch160 MDS D57
BB2490	Ø100 SP Rec 10k Long-term 3" wJ-Lock woFlange WN 3" Sch160
BA2319	Ø100 SP Rec 10k Long-term WN 3" Sch 160 MDS D57
BA5967	Ø100 SP Rec 3.7k Long-term 3" J-Lock ANSI B16.5 Cl.1500
BA8107	Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock 3" WN Sch80
BA8205	Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock WN 3" Sch 80
BA5597	Ø100 SP Park Rec Vented Long-Term
BA5595	Ø100 SP Rec J-Lock Interface
BA9097	Ø100 SP Rec J-Lock Interface Super Duplex

1.3. ABBREVIATIONS

ROV	Remotely Operated Vehicle
HPU	Hydraulic Power Unit
SP	Single Port
REC	Receptacle
CW	Clockwise
CCW	Counterclockwise

2. TECHNICAL DESCRIPTION

This section provides general technical details for all main components within the Ø100 Hot Stab program. For detailed information of specific products reference is made to drawings in APPENDIX 1

2.1. DESIGN AND TEST

The Blue Logic Hot Stab program is calculated, designed, tested and documented in accordance with API 6A (ISO10423) and API 17H with regards to calculations, material usage and pressure test. All Hot Stab equipment is pressure tested to 1.5 x Design Pressure accordingly. Optional gas test upon customer's request.

2.2. TECHNICAL PERFORMANCE

The Blue Logic Ø100 Hot Stabs are Based on API 17H Type 4. They can be delivered in different types and configuration. Hot Stabs for Permanent use, ROV use, and different pressure ratings. What is important to consider when selecting a Hot Stab is the flow capacity. As the flow increase you will experience pressure loss over the connection. This means that you will have less pressure available to do the hydraulic job.

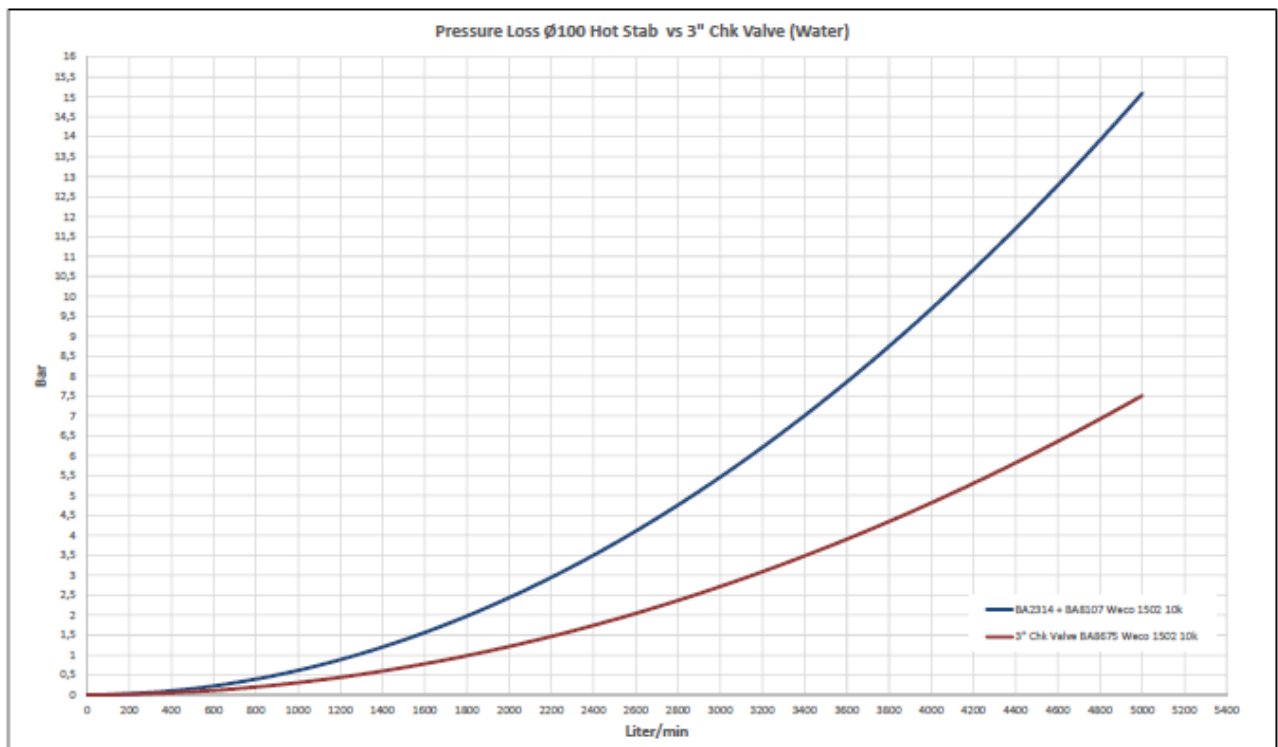


Figure 1 Typical Pressure vs Flow diagram Ø100 Hot Stab

2.3. PROGRAM OVERVIEW

The Ø100 Hot Stab Program can be delivered with alternative ROV Handles, seal materials and hydraulic interfaces. Contact Blue Logic for further information, or visit:

<http://e-sea.bluelogic.no/main.aspx>

2.4. HOT STAB

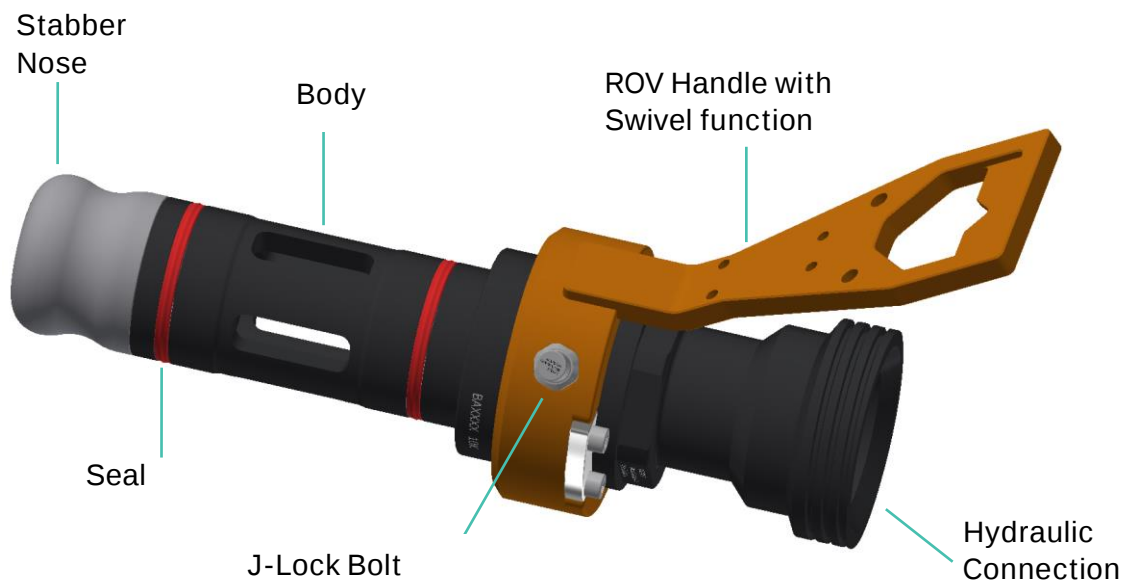


Figure 2 Typical Ø100 Stab with J-Lock Interface and 3" fig. 1502 Weco connection

2.4.1. Hydraulic Ports

The Ø100 Hot Stab is delivered with 3" Fig 1502 as standard but can be delivered with other types of hydraulic connection on request.

Please see product assembly drawing for further detailed information, ref. APPENDIX 1

2.5. PRESSURE STABS

Pressure stabs, i.e. blind stabs acting as pressure barrier, can be delivered both for intervention and permanent installation.

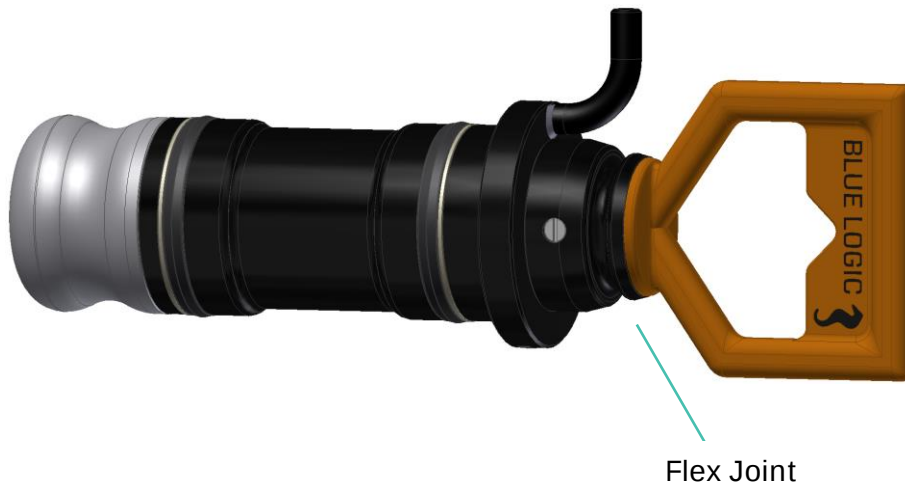


Figure 3 Typical Ø100 Permanent Pressure Stab with J-Lock Interface

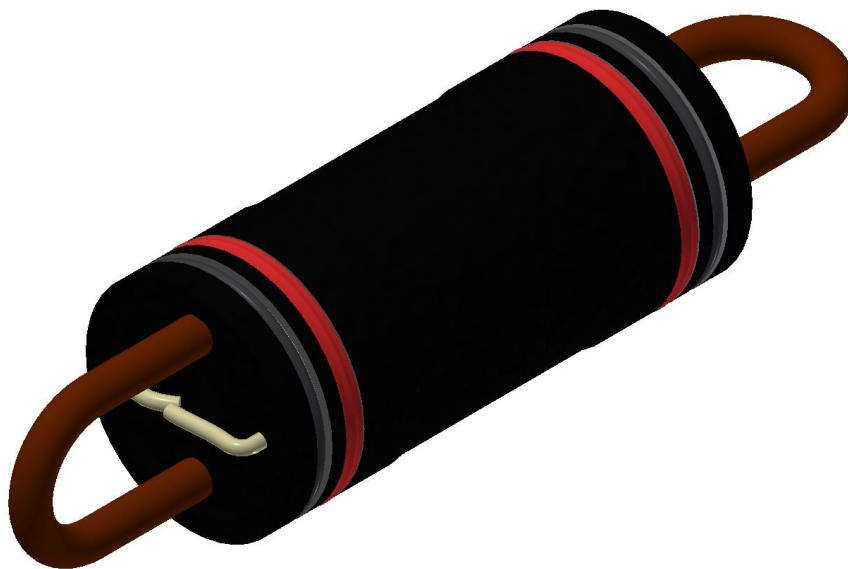


Figure 4 Typical Ø100 Permanent Pressure Stab for dual entry

Dual entry pressure stabs is typically used for pull-in heads and dual entry receptacles. The orange handles are flexible to prevent damage to the seal areas when being stabbed. Because of the flexible handles the stab is not initially made for being inserted into a receptacle by ROV, only pull-out feasible by ROV. It has O-rings outside the red seals to keep it secured to the receptacle before it's intentionally removed.

2.5.1. Pressure Stab with Bleed-Off

The Ø100 Pressure Stab with Bleed-Off is designed for long-term installation in the Ø100 receptacle to act as a pressure barrier.

This pressure stab is identical to the standard pressures stab but has a bleed-off feature to allow bleed-off prior to disconnection.

The bleed-off function is operated by simply pulling the spring-loaded handle by the ROV manipulator. Pressure will be bled off upon activation and the handle is self-retracting.

Pressure bleed-off feasible up to 10 000Psi / 690Bar.

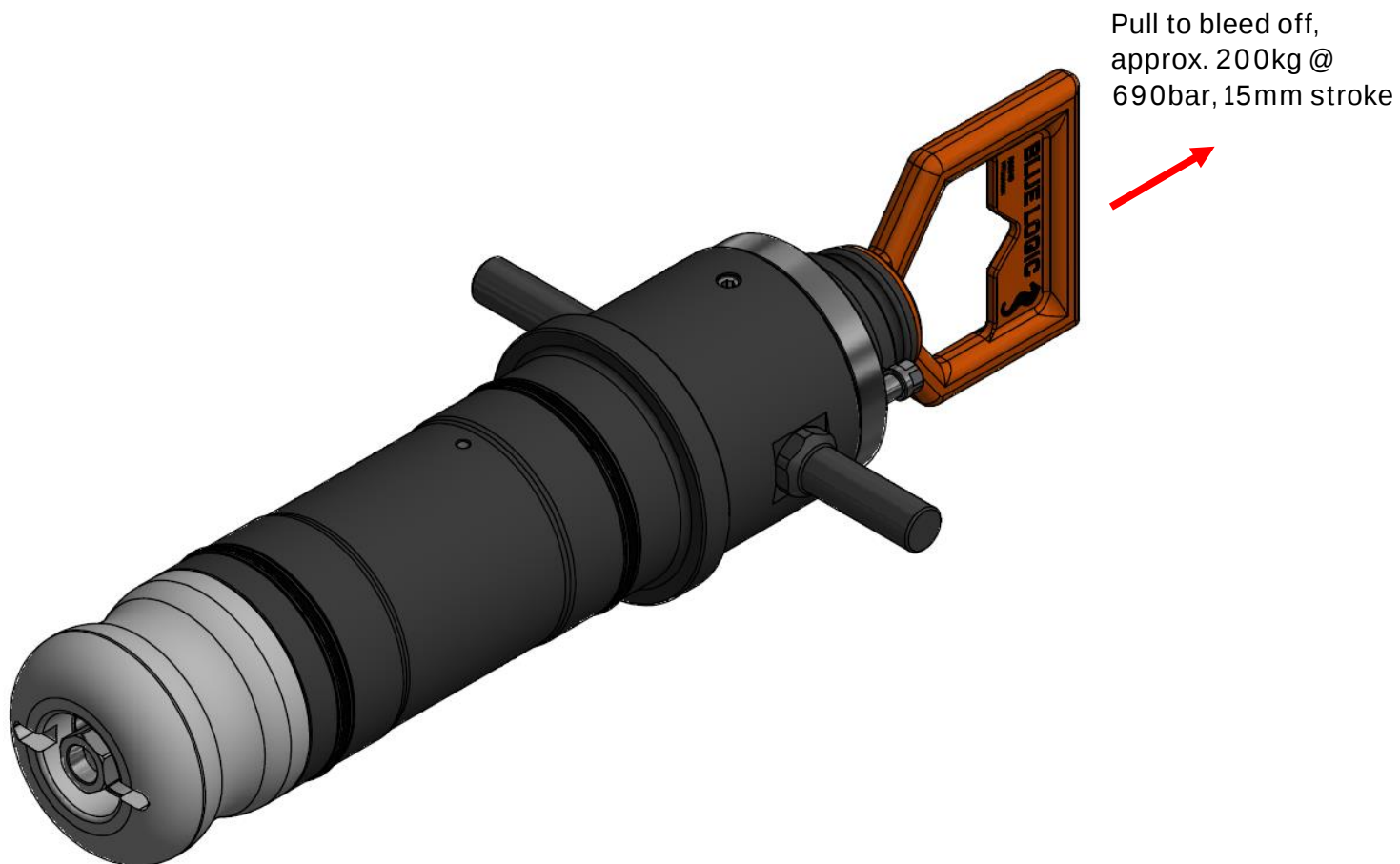


Figure 5, Ø100 Pressure Stab with Bleed-Off

2.6. PROTECTION STAB

Protection stabs are delivered for permanent installation, both vented and non-vented versions.

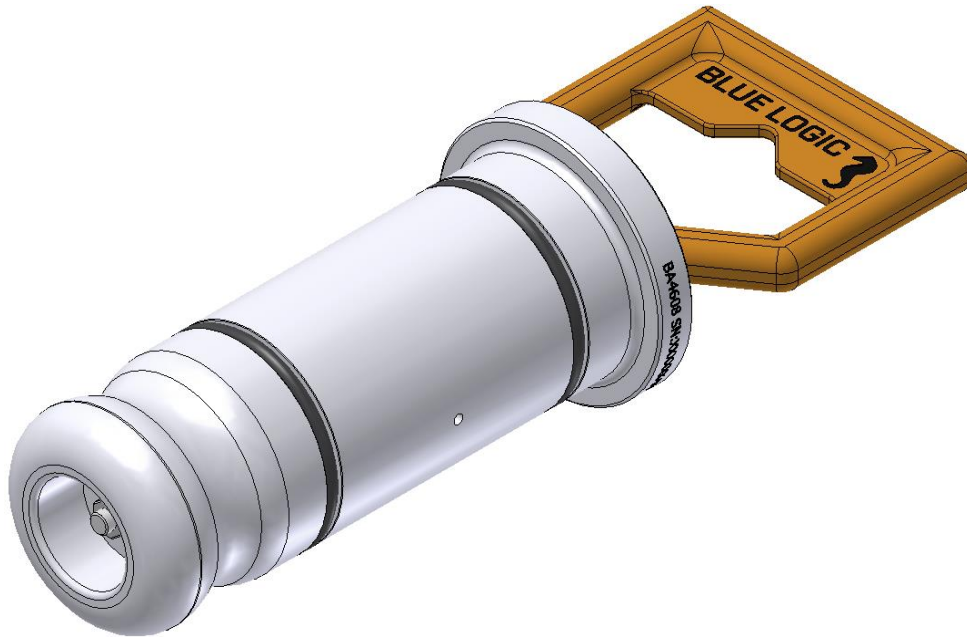


Figure 6 Typical Ø100 Permanent Protection Stab

2.7. ADDITIONAL LOCK

The Ø100 Hot Stab system is locked on place by use of a J-lock function. The stab is inserted into receptacle and then rotated clockwise to lock. This prevents the stab from being pulled from the receptacle. But if the hose with stab is twisted left then the stab might be freed from the J-lock. This is considered unlikely but as an extra safety we can provide a bolt-on spring loaded lock to the Hot Stab. With this ad-on the ROV must pull the spring-loaded lock pin whilst rotating the stab towards left to release the stab from receptacle. There will be fitted a wire-loop, monkey-fist or similar, to the lock pin to make it operable by an ROV.

Anti Rotation Slot

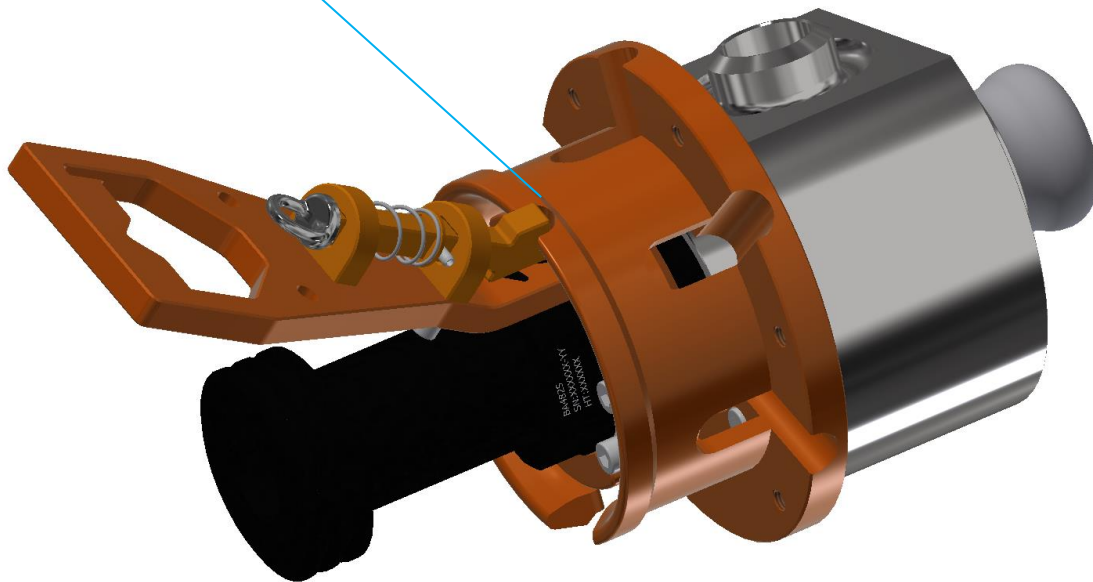


Figure 7 Typical Ø100 Hot Stab w. Additional lock installed and inserted into receptacle

2.8. RECEPTACLE

Receptacles are delivered in alternative materials with different hydraulic ports. See product assembly drawing for detailed information, ref. APPENDIX 1

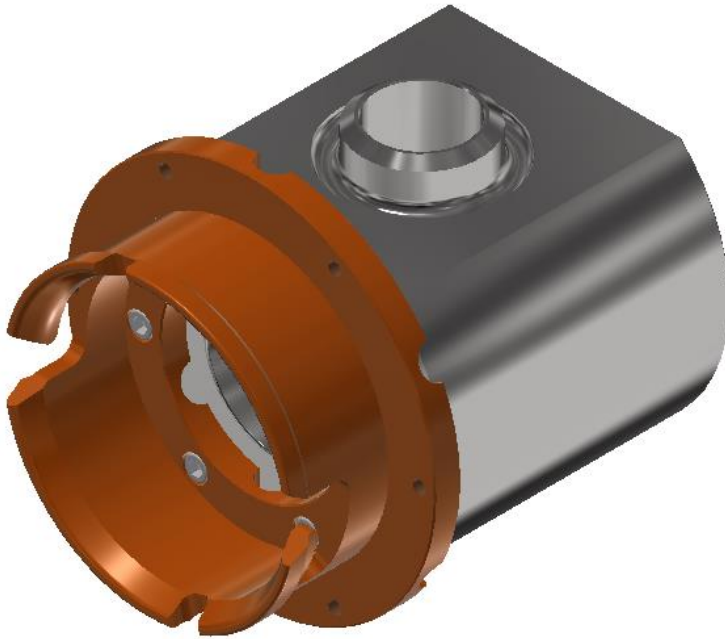


Figure 8 Typical Ø100 Single Port Receptacle with J-Lock Interface and Weld Neck

2.9. PRESSURE GAUGE

The pressure gauge unit is based on a 3" fig. 1502 Hammer Lug coupling. The unit can be mounted to a Blue Logic Ø100 Hot Stab with 3" fig 1502 Hammer Lug as shown below. The pressure gauge is fully pressure balanced, this means the gauge will show how much greater the pressure is relative to ambient. Different scaling and pressure rating on gauge are available upon request.

$$\Delta P = P_1 - P_2$$

Pressure in system=

P_1

Pressure in surrounding environment=

P_2

Pressure shown on gauge=

ΔP



Figure 10 & 11 Pressure Gauge unit with 0-700Bar scale

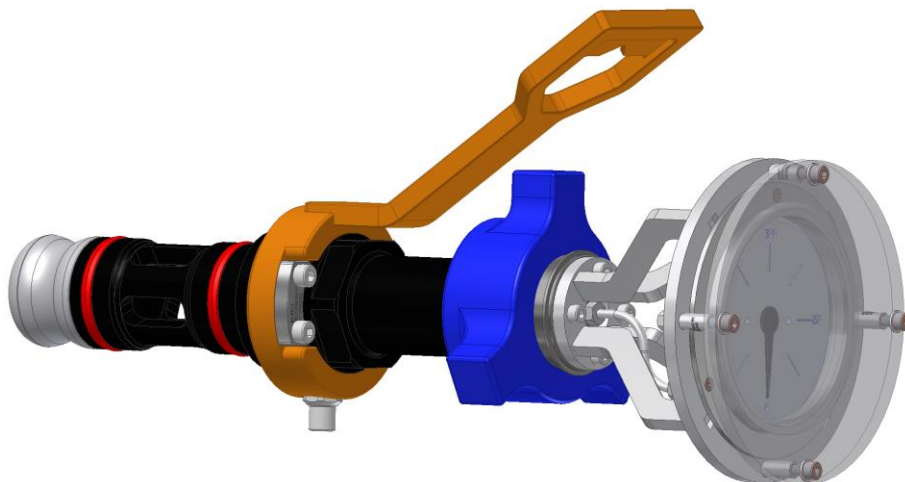


Figure 12 Pressure Gauge fitted on an Ø100 Hot Stab

2.10. CHECK VALVE

One-way check valve for connection to stab or receptacle thru 3" fig. 1502 Weco. The Check Valve will let you extrude the contents without anything returning. Cracking pressure is 2 bar to ambient as standard. Other cracking pressure available on request.

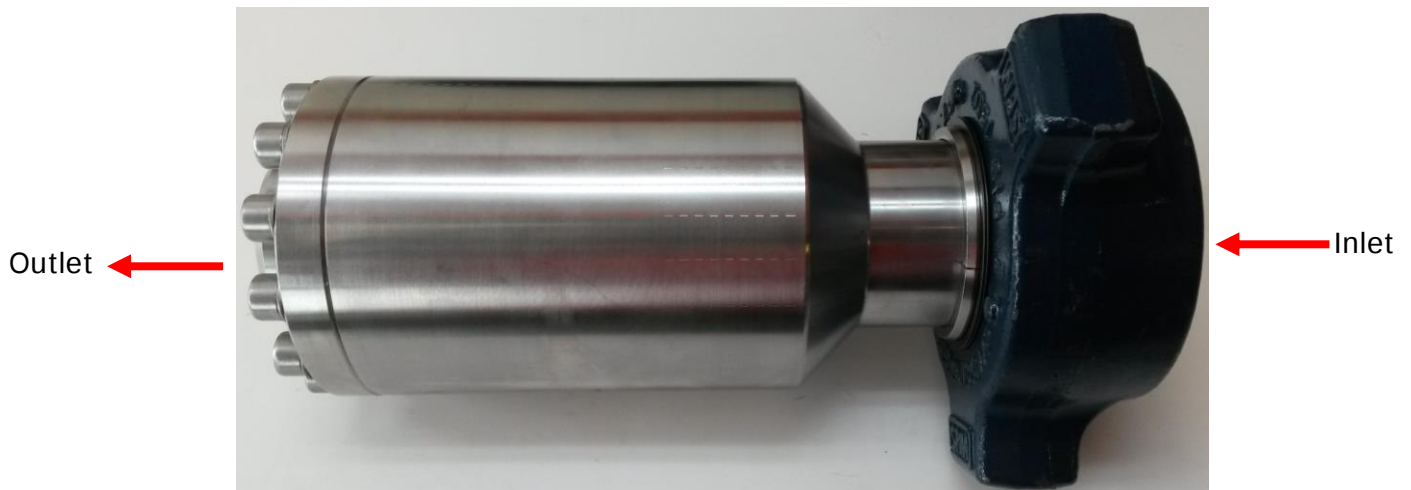


Figure 13 3" One-way check valve w. fig. 1502 hammer lug connection

3. INSTALLATION

3.1. RECEPTACLE

3.1.1. Installation of Receptacle

The Ø100 Receptacle is recommended to be bolted onto the subsea structure by use of the pre-drilled and threaded mechanical interface.

The receptacles may have different interfaces for installing, the interface for each receptacle is available thru the Product drawing for each receptacle.

All Ø100 receptacles are symmetrical and can be mounted and stabbed from both sides.

Depending on material selection; electrical connection between the receptacles and structure should be verified as part of the installation. Serrated washers or dedicated earth cables to be considered.

A variety of hydraulic port interface can be delivered upon customers' request.

Examples shown in below figures.



Figure 14 Ø100 Test Receptacle with 3/8" BSP connection, mainly for On-Deck pressure testing

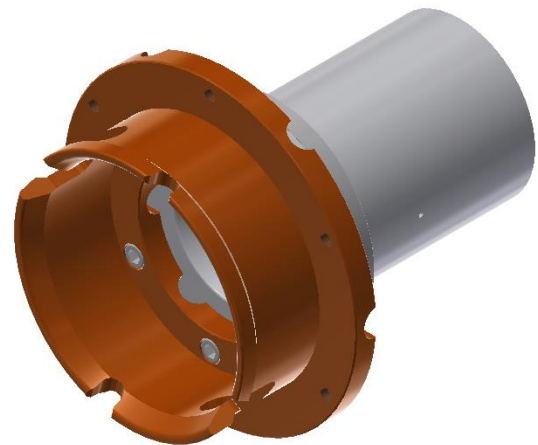


Figure 15 Ø100 Parking Receptacle with J-Lock

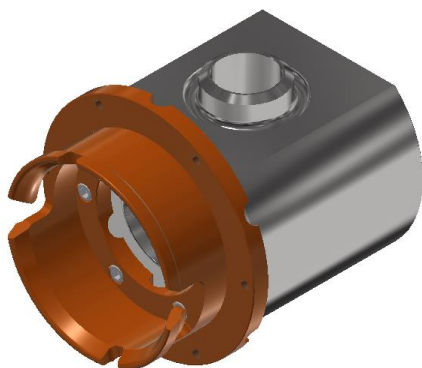


Figure 16 Ø100 Receptacle with 3" WN and J-Lock



Figure 17 Ø100 Receptacle with 2x J-Lock

4. OPERATION

4.1. PRE-DIVE CHECK

4.1.1. Stab

No.	Description	Chk/Verified
01	Verify all fittings and hoses correct installed and secured	
02	Verify no leakages from hoses and connections	
03	Inspect all seals for damage. Replace if required	
04	Inspect Hot stab nose and body for mechanical damages and harmful scratches	
05	Inspect ROV handle for damages	
06	Inspect flex joint properly secured to stab body and ROV handle (if present)	
07	Verify functionality of flex joint. Ensure free to bend in all directions (if present)	
08	Inspect all hydraulic connectors, seals and valves	
09	Inspect all check valves for leakage (if relevant)	
10	Verify functionality of the locking system (Optional equipment)	

4.1.2. Dual Entry Pressure Stab

No.	Description	Chk/Verified
01	Inspect all seals and O-rings for damage. Replace if required	
02	Inspect ROV handles (rope and orange hose) for damages and check all knots.	
03	Inspect all pressure relief ports and fittings (if applicable)	

4.1.3. Receptacle

No.	Description	Chk/Verified
01	Visual inspect receptacle internal surface finish and entrance area if possible.	
02	Ensure correct installation of the receptacle and free distance for hot stab guide nose behind rear receptacle opening	
03	Verify no leakages from hoses, piping and receptacle check valves.	
04	Verify ROV access and free space in front of receptacle and panel.	



4.2. CONNECTION

Stabs without J-lock system can be inserted directly into the receptacle without special preparations independent of axial rotation.

Stabs with J-lock system must be aligned with the corresponding J-lock slot in the receptacle prior to insertion. When fully inserted into the receptacle and J-lock groove, the stab handle should be rotated clockwise 30 degrees (until full stop) to lock the stab into the receptacle.

During insertion of the Hot Stab into the Receptacle there will be friction between Receptacle and stab seal system. Approximate stab force is 200N. This will however vary depending on temperature, lubrication etc.

Dual entry pressure stabs are only made to be extracted by an ROV not inserted/stabbed. This is done by hand on deck before subsea installation. When inserting make sure stab is placed fairly in centre. O-rings shall be fully visible from both sides.

4.3. DISCONNECTION

Note:

Prior to disconnection, hydraulic pressure in the system should be bled off to reduce leakages to the environment. Since the Hot Stab system is a pressure balanced connection system, disconnection can be performed independently of system pressure.

Note:

Stab pull-out force will increase significantly if the system is pressurised, and damage to seals might occur.

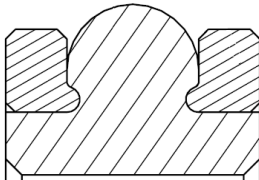
Stab with J-lock to be rotated CCW to end stop to allow pull-out. Stab without J-lock to be pulled out directly.

4.4. POST DIVE CHECK

No.	Description	Chk/Verified
01	Inspect all fittings and hoses for damages and loose connection	
02	Inspect all seals for damage. Replace if required	
03	Inspect Hot stab nose and body for mechanical damages and harmful scratches	
04	Inspect ROV handle for damages	
05	Inspect flex joint (if present), verify functionality	
06	Clean all equipment and flush thoroughly with fresh water	
07	Dry the Hot Stab by use of pressurised air or by use of dry clean rags	
08	Apply preservation oil and secure in storage box.	

**TECHNICAL DOCUMENT****5. MAINTENANCE****5.1. SEAL REPLACEMENT**

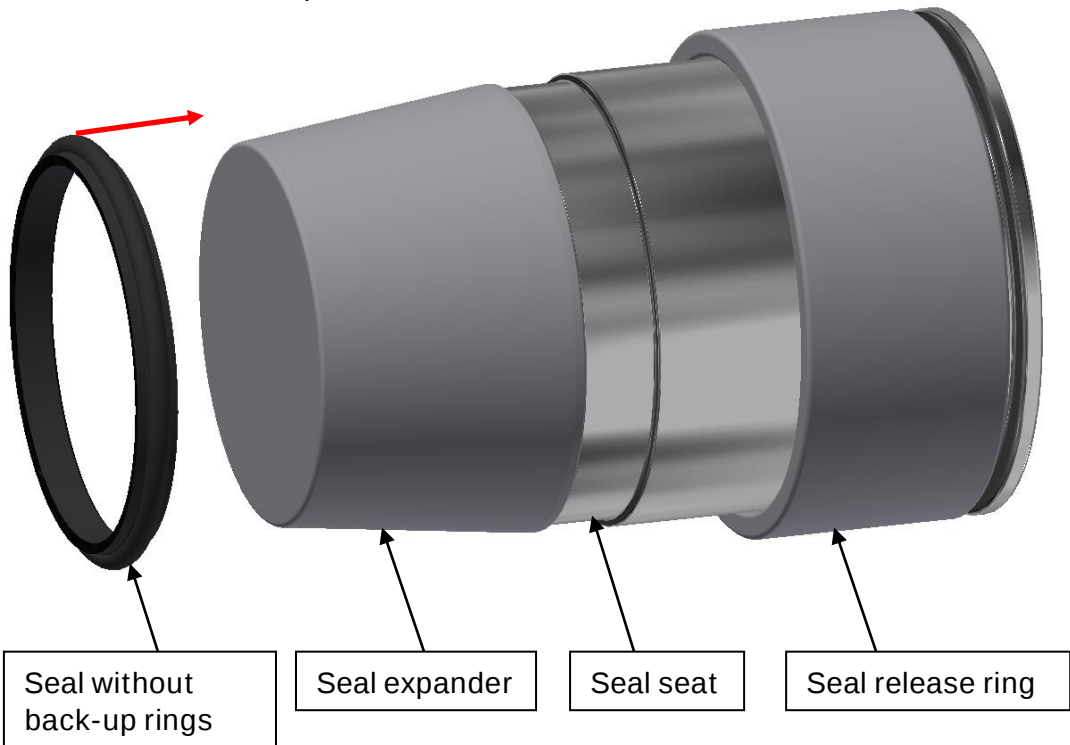
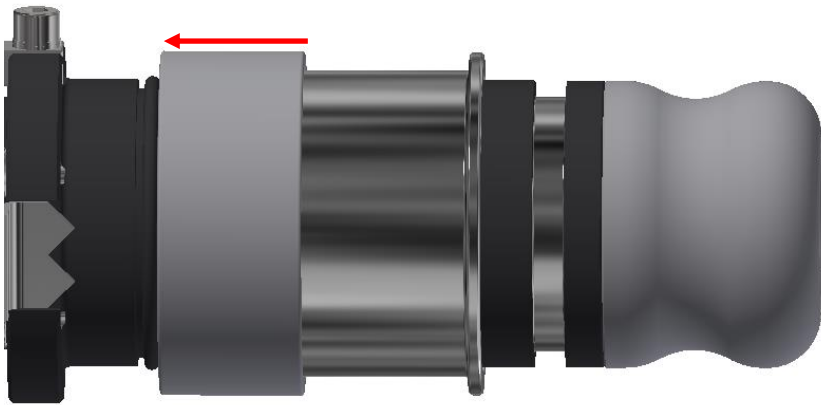
Replacement of the stab seals is feasible to perform in field as described in the below section. The procedure covers both stab and pressure stab as the seals are identical.

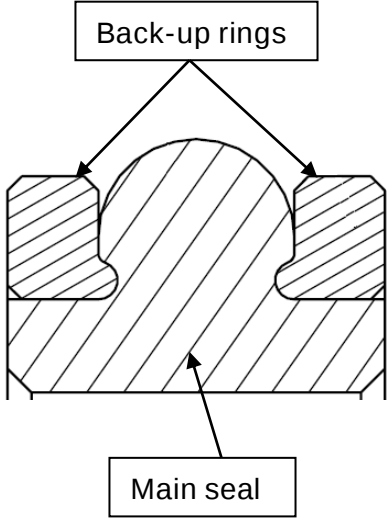
No.	Description
1.	Place the stab upside down in a vice or similar.
2.	Gently remove the back-up rings in PEEK (if present), avoid damage as they will be re-used. Blow the split of the ring with compressed air to ease removal. 
3.	Start with the seal closest to the D-handle. Use a long nose plier to grab the top of the seal and pull out of the seal groove. 
4.	Push the seal along the stab and over the other seals to remove from stab. If re-use not an option; cut the seal for quick removal.
5.	Repeat until all seals have been removed. Clean stab and seal grooves thoroughly to remove all debris and foreign objects. Inspect seal groove surfaces for damage.
6.	Apply a thin layer of Vaseline or similar to seals and stab prior to installing the new seals.
7.	Install the seals starting with the one closest to the stab-nose. The following seals can then be pushed over the first seal. The seals are bi-directional, thus installable both ways. 
8.	Finally install two back-up rings (if present) per seal according to figure. The back-up rings <u>must</u> be installed as shown: 

TECHNICAL DOCUMENT

5.2. SEAL INSTALLATION USING SEAL REPLACEMENT TOOL

The below sequence describes seal replacement if Blue Logic Seal Replacement Tool, SRT, is available. Seal removal to be performed according to instructions in previous section.

No.	Description
1.	Apply a thin layer of Vaseline or similar to seals and stab prior to installing the new seals.
2.	Remove back-up rings from the seal and slide main seal over the seal expander onto seal seat. Seal can be pre-heated in water to 80-100°C to ease installation.  Seal without back-up rings Seal expander Seal seat Seal release ring
3.	Put the SRT over the stab as shown. Start with the innermost seal and push the seal into its groove by the seal release ring. 

No.	Description
4.	Install back-up rings. Verify correct configuration of seal and backup rings. The back-up rings are spitted to ease installation and <u>must</u> be configured as shown:  
5.	Repeat installation for the remaining seals.

5.3. ROV INTERFACE

No special maintenance is required for the ROV handle/ ROV interface. Inspect for damages and replace if required.

5.4. FLEX JOINT

The flex joint can be removed and replaced by the following sequence:

1. Secure the Stab in a vice thus applying axial force between the Stab body and ROV Interface according to figure 20
2. Unscrew the securing pin by use of a standard screwdriver
3. Remove the securing pin
4. Remove the Hot Stab from the vice
5. Remove the Flex element and ROV handle from Hot Stab body
6. Insert the new flex joint
7. Secure the Hot Stab in a vice and apply force between the Hot Stab body and ROV interface until the securing pin can be easily inserted by hand.
8. Apply a thin layer of Loctite 243 on threads and rotate the securing pin by use of a screwdriver and secure by applying approx. 3Nm torque.
9. Remove the Hot Stab from the Vice
10. Inspect Hot Stab and verify functionality of flex joint.

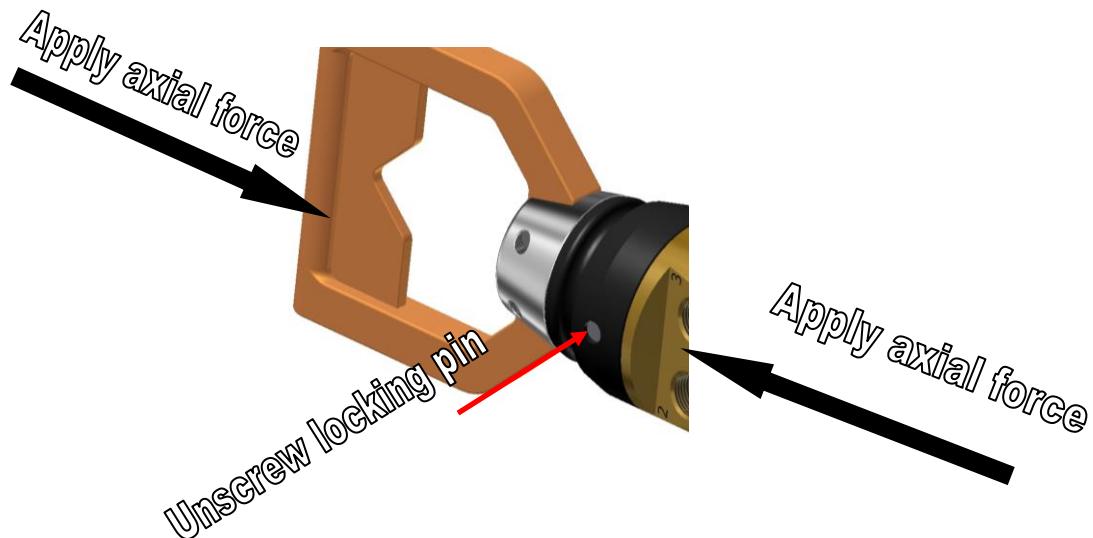


Figure 21 Flex joint installation

5.5. SPARE PARTS

For available spare parts, please visit: <http://e-sea.bluelogic.no/main.aspx>

6. STORAGE AND TRANSPORT

6.1. PRESERVATION FOR STORAGE

No.	Description	Chk/Verified
01	Visual inspect the Hot Stab for damages and wear.	
02	Ensure correct post dive sequence followed (see above sections)	
03	Apply preservation oil and secure in storage box.	

6.2. TRANSPORT

No special precautions are needed for transport. However, the following should be verified:

Correct packing; preferably by use of aluminium transport box

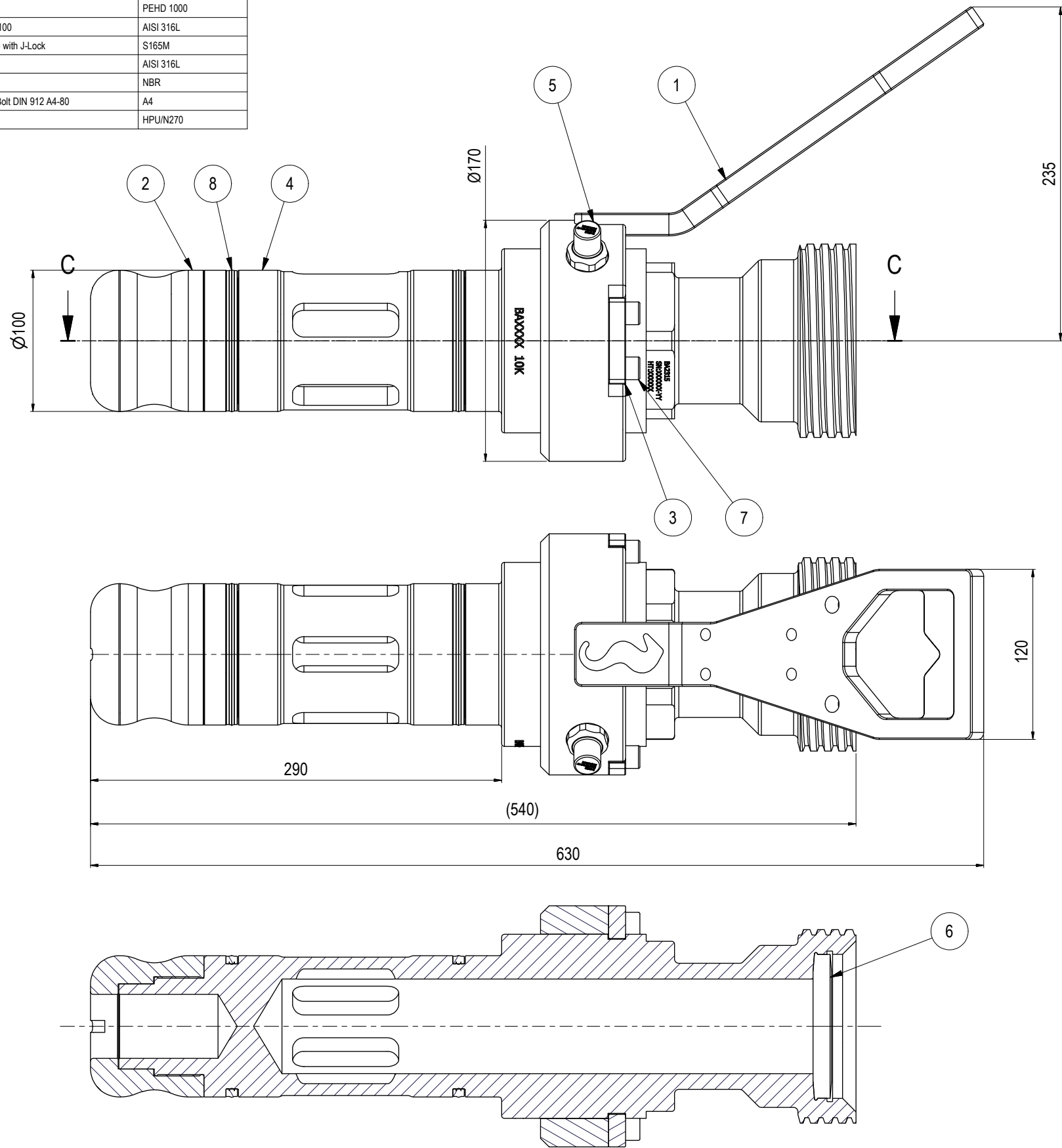
Verify the following

1. Sender Name and Address clearly visible
2. Receiver Name and address clearly visible
3. Inventory list correct filled out

APPENDIX 1 DRAWINGS

Dwg. No.	Drawing Title
BA2314	Ø100 SP Stab 10k Interv J-Lock 3" Weco 1502
BA4613	Ø100 SP Press Stab 10K Long-Term wJ-Lock
BA5636	Ø100 SP Press Stab 10k Long-term Dual Entry
BC1048	Ø100 SP Press Stab 10k Long-term wJ-Lock with Bleed Off Function
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BB2490	Ø100 SP Rec 10k Long-term 3" wJ-Lock woFlange WN 3" Sch160
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BA5967	Ø100 SP Rec 3.7k Long-term 3" J-Lock ANSI B16.5 Cl.1500
BA8107	Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock 3" WN Sch80
BA8205	Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock WN 3" Sch 80
BA5597	Ø100 SP Park Rec Vented Long-Term
BA5595	Ø100 SP Rec J-Lock Interface
BA9097	Ø100 SP Rec J-Lock Interface Super Duplex

Parts List				
ITEM	QTY	PART No.	DESCRIPTION	MATERIAL
1	1	BA5975	Handle for Ø100 Stab	AISI 316L
2	1	BA2318	Guide Nose Ø100	PEHD 1000
3	2	BA2317	ROV Handle Bracket Ø100	AISI 316L
4	1	BA2315	Ø100 SP Stab Full Bore with J-Lock	S165M
5	2	BA1823	J-Lock Bolt	AISI 316L
6	1	101395	Seal ring 3" 1502 weco	NBR
7	4	100594	M10x30 Socked Head Bolt DIN 912 A4-80	A4
8	2	100210	Ø100 Stab Seal	HPU/IN270



NOTE: 1
DESIGN CODE:
Interface: API 17H Type 4
Testing: API 6A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.01. Stab
Sub Group: 1.59.219.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Intervention
Weight: 28,9 kg
Volume: 4,02 dm³
Surface Area: 5620 cm²
Hydraulic: 3" fig. 1502 Female
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1038



07	4.4.2023	9-IFU (Issued for Use)		HNJ	TAN	HNJ
06	2.9.2019	9-IFU (Issued for Use)		WTJ	LGH	WTJ
05	9.11.2017	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
04	7.3.2016	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

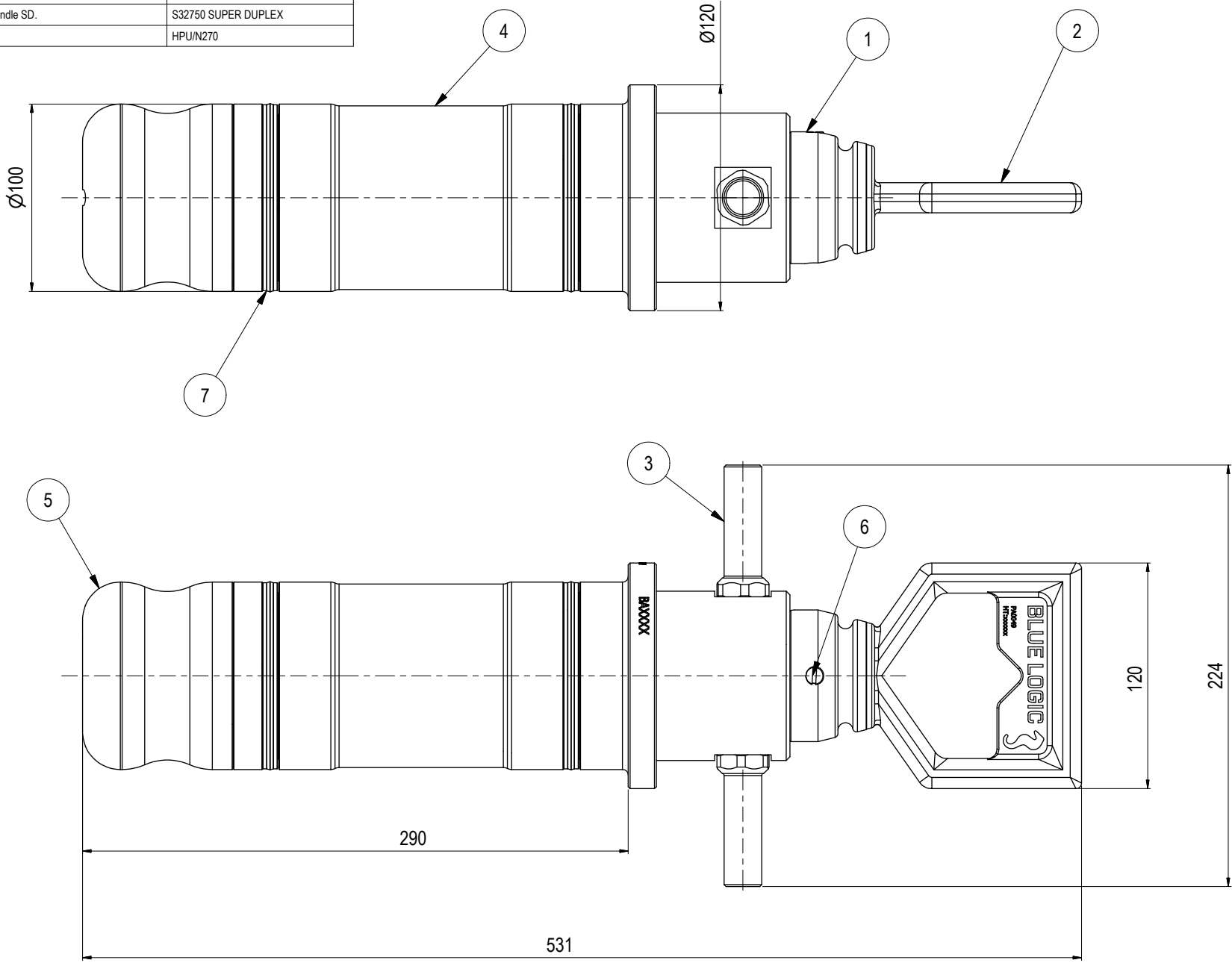
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Dwg Format:
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Drawing title:
Ø100 SP Stab 10k Interv J-Lock 3" Weco 1502

Drawing number:
BA2314

Rev.
07

Parts List				
ITEM	QTY	PART No.	DESCRIPTION	MATERIAL
1	1	PA0050	Flex Element Nitril 85/90 sh	Rubber
2	1	PA0049	D-Handle SD	UNS J93404 Casted Super Duplex
3	2	BA5604	J-Lock Axle Ø20mm	S32760 SUPER DUPLEX
4	1	BA4611	Ø100 SP Press Stab Long-term with J-Lock	S32750 SUPER DUPLEX
5	1	BA2318	Guide Nose Ø100	PEHD 1000
6	1	BA1581	Lock Bolt For Flex Handle SD.	S32750 SUPER DUPLEX
7	2	100210	Ø100 Stab Seal	HPU/IN270



NOTE: 1
DESIGN CODE:
Interface: API 17H
Testing: API 6A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.04. Pressure
Sub Group: 1.59.222.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Design Water Depth: 3000
Material: Long-term
Weight in Air: 15,8 kg
Volume: 2,4 dm³
Submerged Weight: 13,36 kg
Surface Area: 3218 cm²
Hydraulic: N/A
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

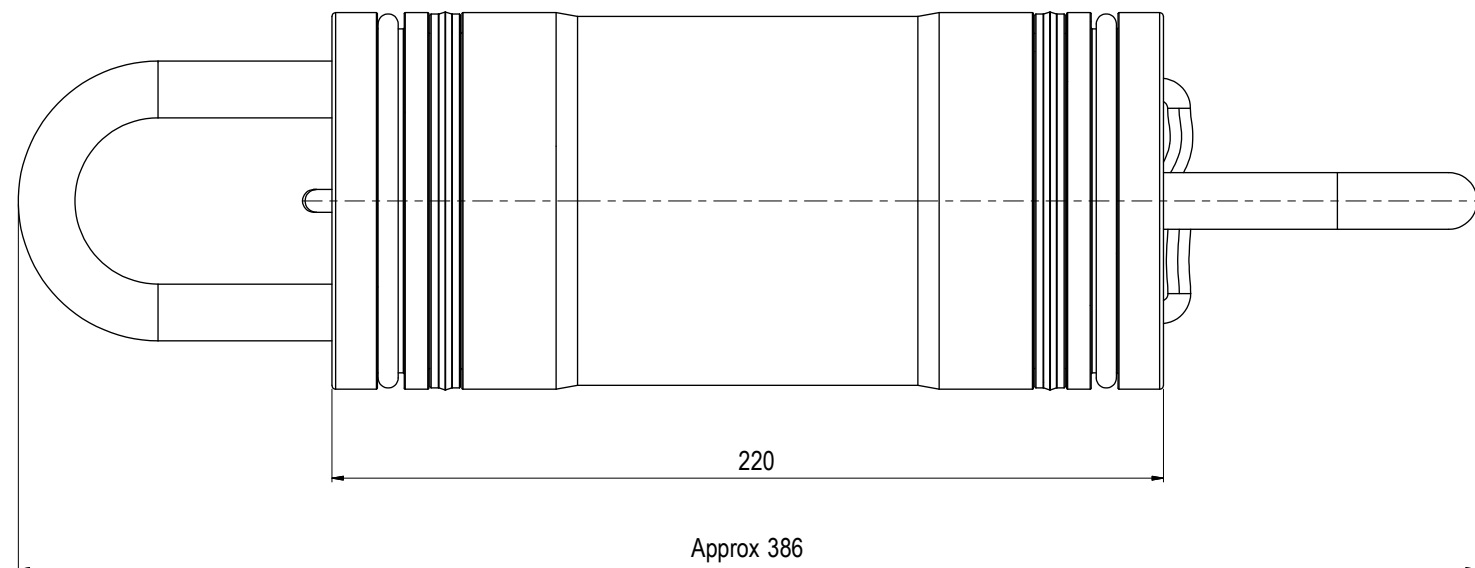
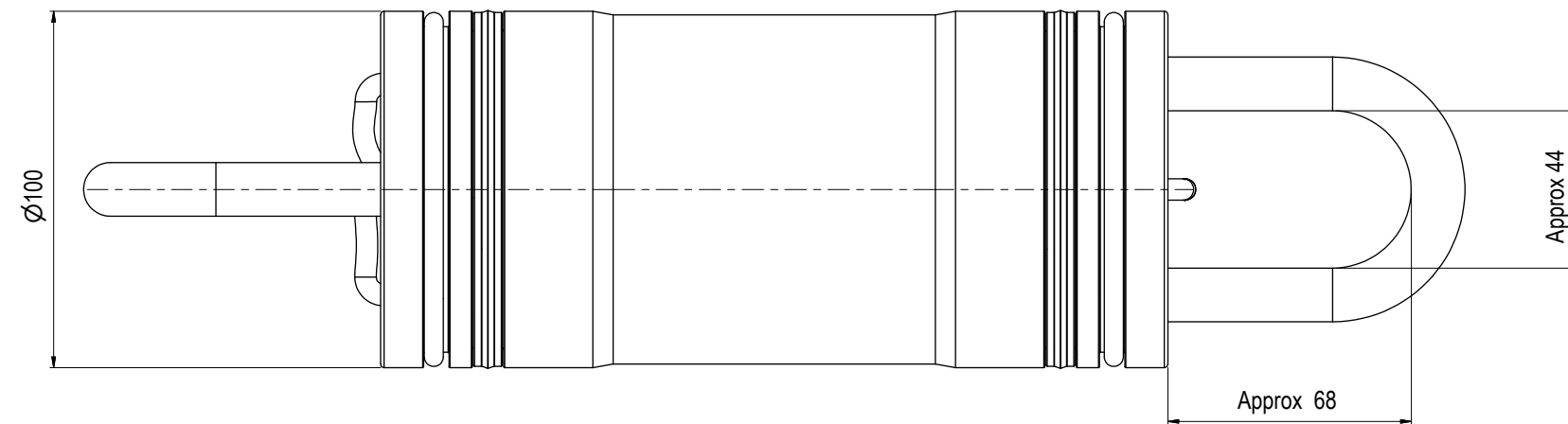
NOTE: 4
SPAREPARTS:
BB1038



03	9.11.2017	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
02	4.7.2014	9-IFU (Issued for Use)		HNJ	LGH	HNJ
01	13.12.2013	2-IFT (Issued for Tender)		HNJ	NA	NA
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.



Dwg Scale: NTS	Drawing title: Ø100 SP Press Stab 10k Long-term wJ-Lock
Dwg Proj: A3	
Dwg Format: A3	
Drawing number: BA4613	Rev. 03



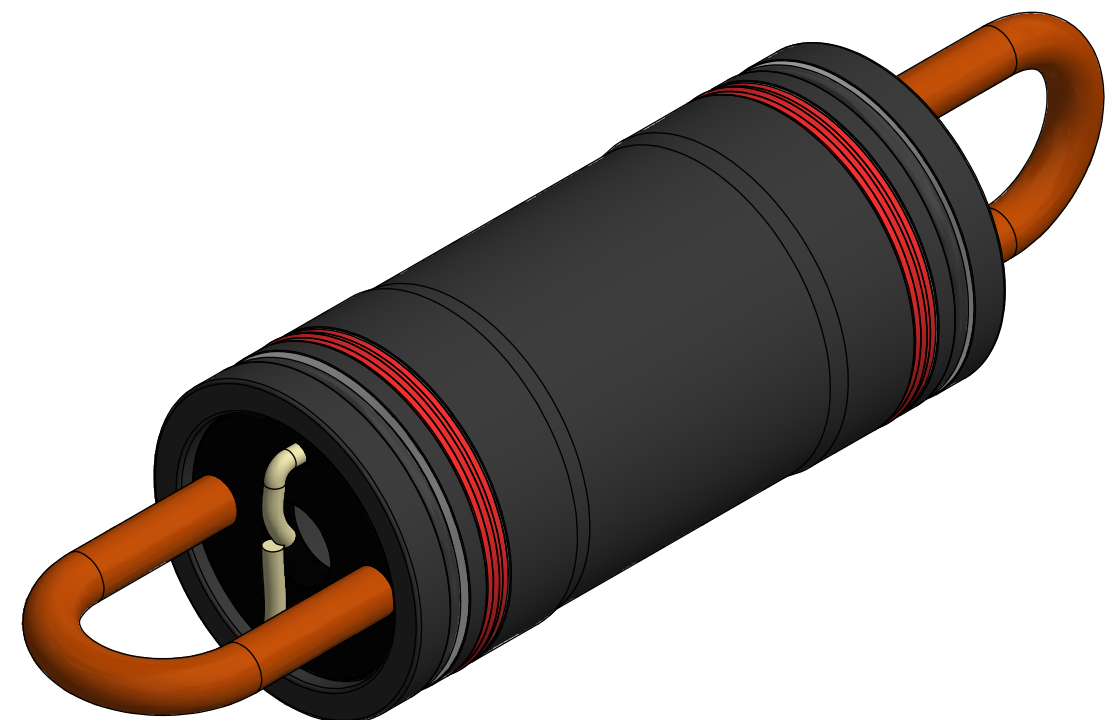
NOTE: 1
DESIGN CODE:
N/A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.04. Pressure
Sub Group: 1.59.222.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 6,7 kg
Volume: 1,04 dm³
Surface Area: 2428 cm²
Hydraulic: N/A
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

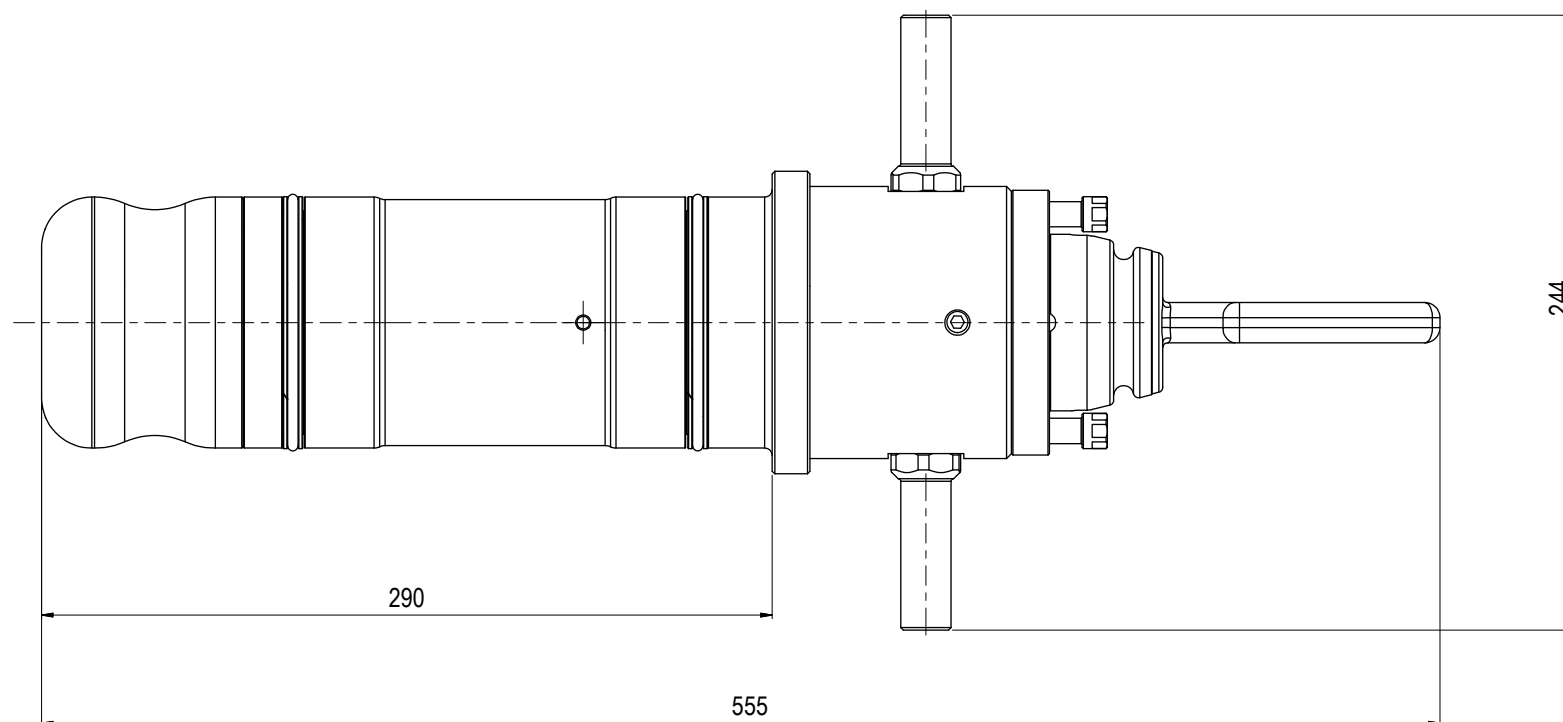
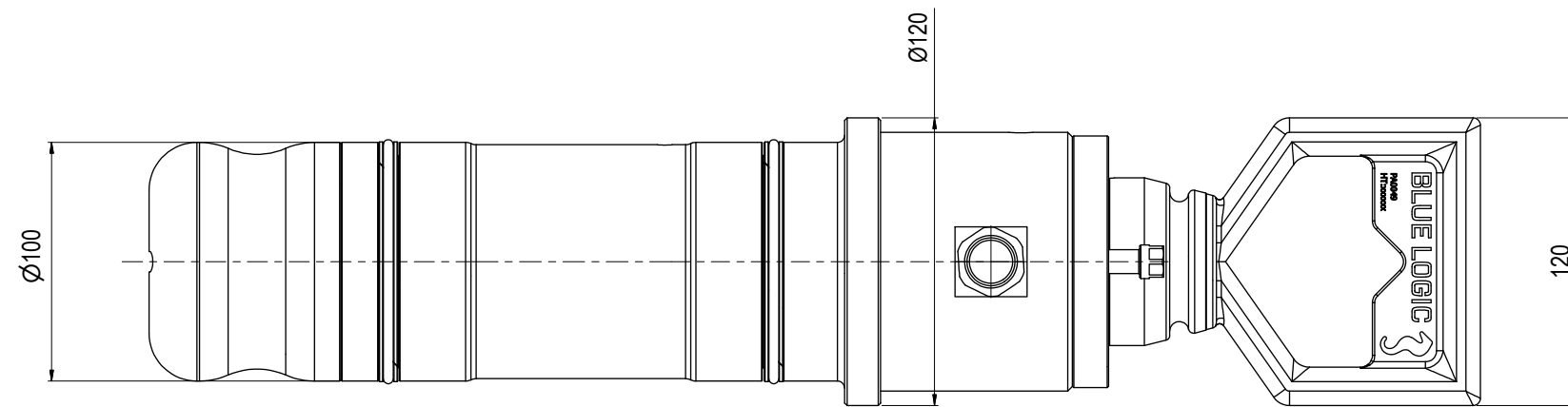
NOTE: 4
SPAREPARTS:
BB1038

NOTE: 5
ADDITIONAL INFORMATION:
Usermanual: N/A



04	7.11.2022	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
03	9.11.2017	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
02	2.12.2014	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
01	19.9.2014	9-IFU (Issued for Use)		WTJ	LGH	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

Dwg Scale: NTS		Drawing title: Ø100 SP Press Stab 10K Long-term Dual Entry	
Dwg Proj:		Drawing number: BA5636	
Dwg Format: A3			Rev. 04



NOTE: 1
DESIGN CODE:
API 17H Type 4
API 6A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.04. Pressure
Sub Group: 1.59.222.01. Single

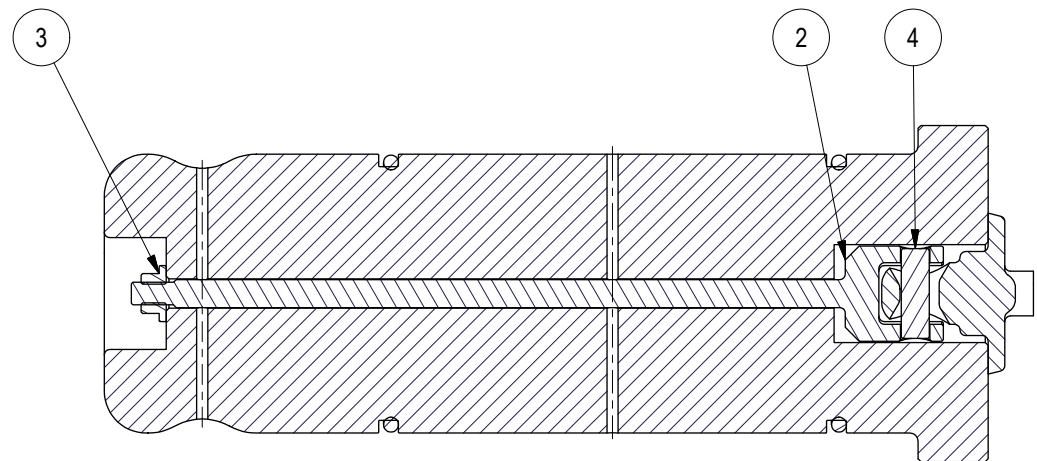
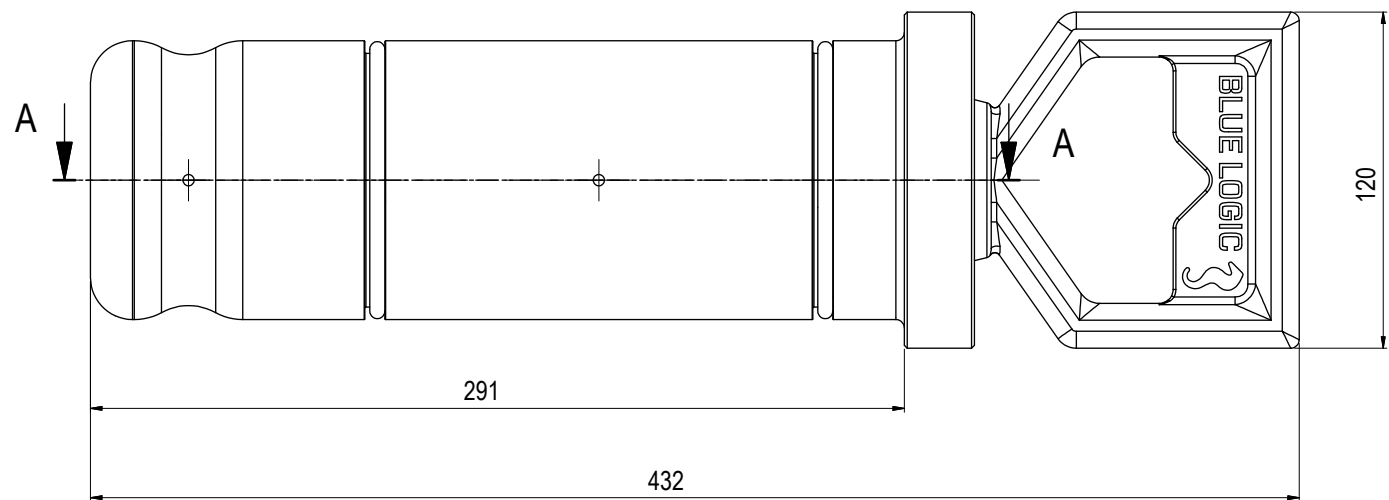
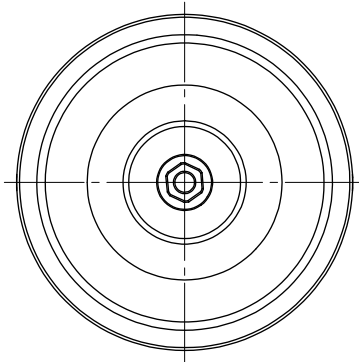
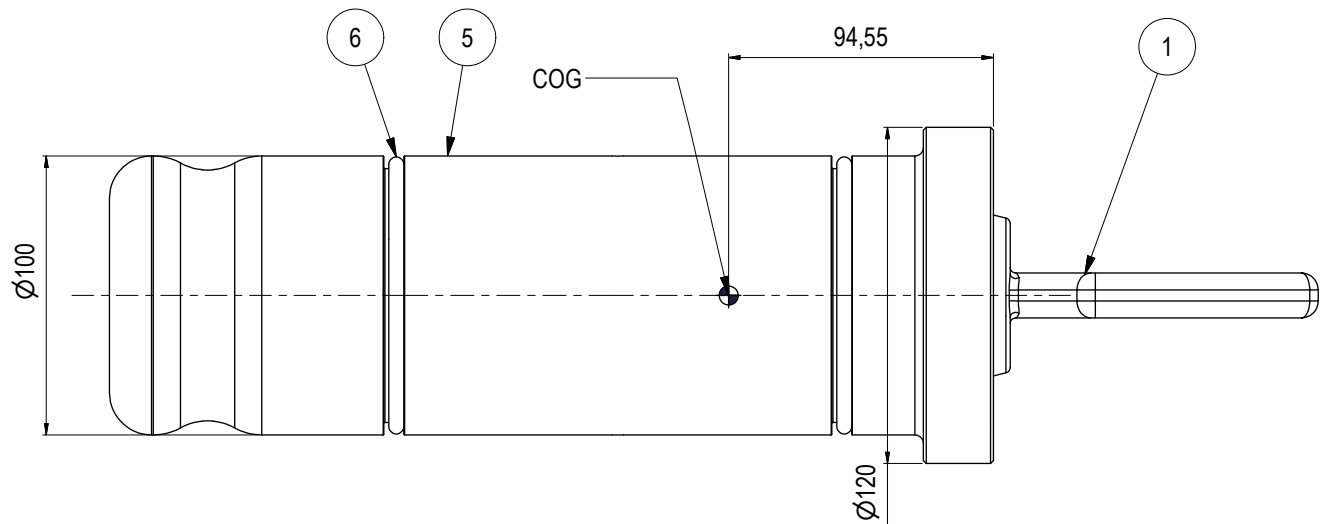
NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 21,8 kg
Volume: 3,16 dm³
Surface Area: 4549 cm²
Hydraulic: N/A
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
ADDITIONAL INFORMATION:
Ø100 Single Port Pressure Stab (blind stab) designed according to API 17H Type 4.
Fabricated in Super Duplex (S32750/S32760) material with Xylan coating and intended for long-term subsea service.
Integrated, manipulator-operated J-lock mechanism to lock the Stab into the Receptacle after connection. The pressure stab is equipped with a ROV operated pressure relief function, to ensure pressure bleed off prior to disconnection of the stab.
Bleed off function is activated by pulling the ROV handle prior to de-activation of the main J-Lock function.
Bleed off pull out force max approx 200kg @ 690bar
Stab nose in PEHD 1000 for gentle guiding of Stab into Receptacle.
Seal material is RU15 (HNBR) with back up rings in PEEK.



03	21.8.2024	9-IFU (Issued for Use)		WTJ	KOS	LGH	BLUE LOGIC This Drawing is the Property of Blue Logic AS © and must Not be Loaned, Reproduced or Transferred to others without written Permission	Dwg Scale: NTS	Drawing title: Ø100 SP Press Stab 10k Long-term wJ-Lock wBleed Off Function	Drawing number: BC1048	Rev. 03
02	28.5.2024	7-IFC (Issued for Construction)		HNJ	TAN	HNJ		Dwg Proj: 			
01	11.4.2024	2-IFT (Issued for Tender)		HNJ	NA	NA		Dwg Format: A3			
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.					

Parts List					
ITEM	QTY	PART No.	DESCRIPTION	MATERIAL	
1	1	PA0049	D-Handle SD	UNS J93404 Casted Super Duplex	
2	1	BA5599	Casted Fastening bracket with Rod for D-handle 255mm	S32750 SUPER DUPLEX	
3	1	BA3032	Lock Nut for Prot Stabs M8	S32750 SUPER DUPLEX	
4	1	BA2958	Lock Bolt for D-Handle	S32760 SUPER DUPLEX	
5	1	BA2324	Ø100 SP Prot Stab Body Vented Long-term	PEHD 1000	
6	2	100291	O-Ring BS341 D1=88,27 D2=5,33 NBR	Rubber Nitril 70	



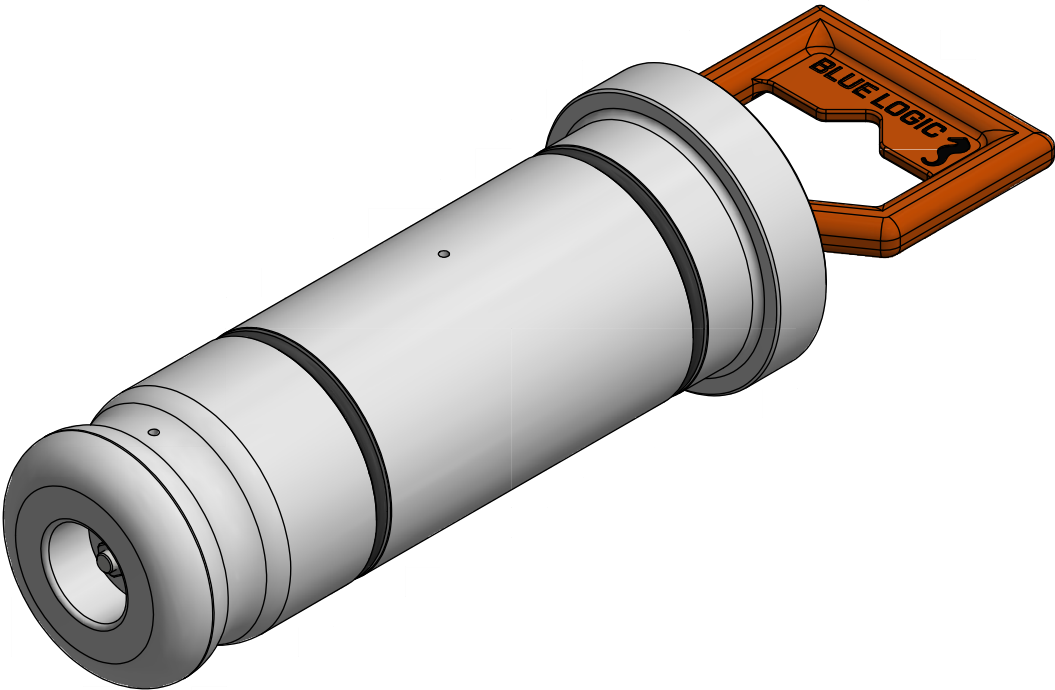
SECTION A-A

NOTE: 1
DESIGN CODE:
API 17H Type 4

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.03. Protection
Sub Group: 1.59.221.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: Vented
Design Water Depth: 3000m
Material: Long-term
Weight in Air: 3,5 kg
Volume: 2,56 dm³
Submerged Weight: 0,9 kg
Surface Area: 1982 cm²
Hydraulic: N/A
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1038 Spare Part Overview

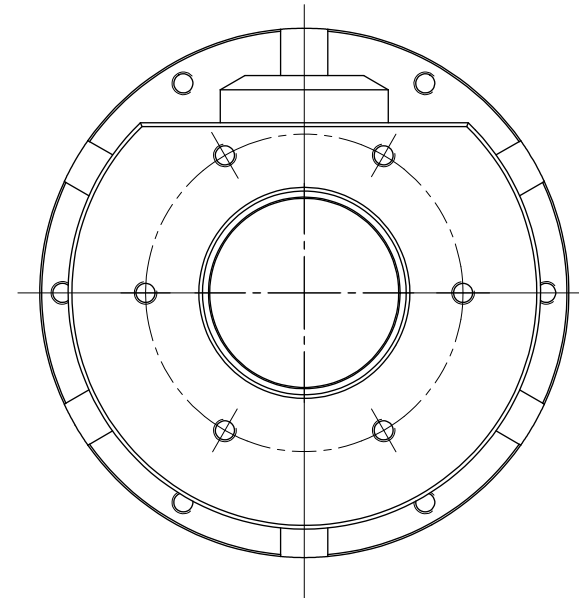
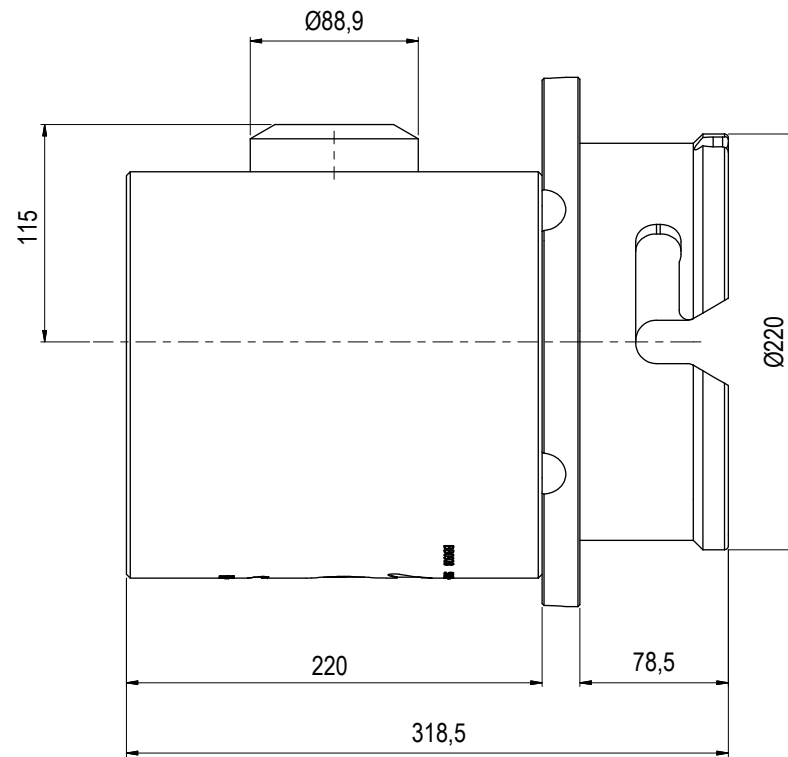
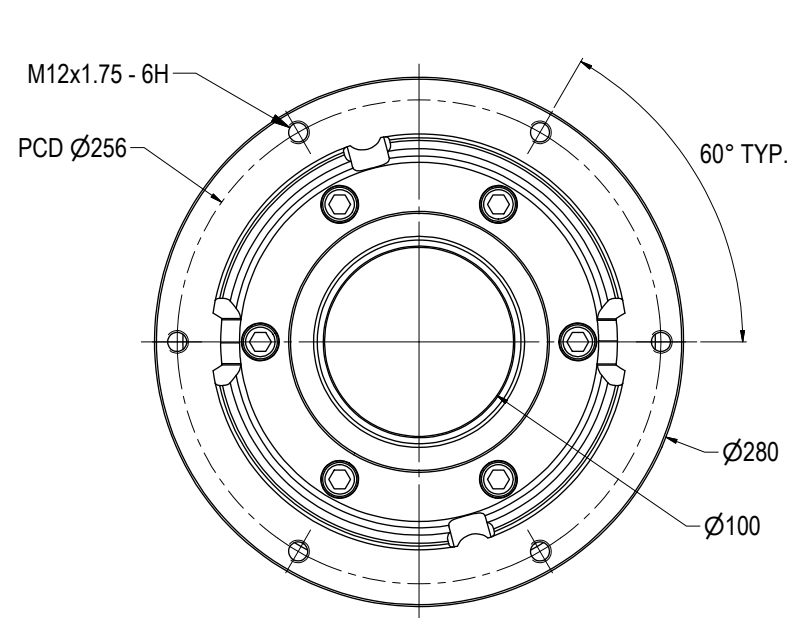


07	3.2.2025	9-IFU (Issued for Use)		HNJ	TAN	HNJ
06	7.9.2021	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
05	21.3.2018	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
04	9.11.2017	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

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Dwg Scale: NTS	Drawing title: Ø100 SP Prot Stab Vented Long-term	
Dwg Proj: A3		
Dwg Format: A3	Drawing number: BA2323	Rev. 07

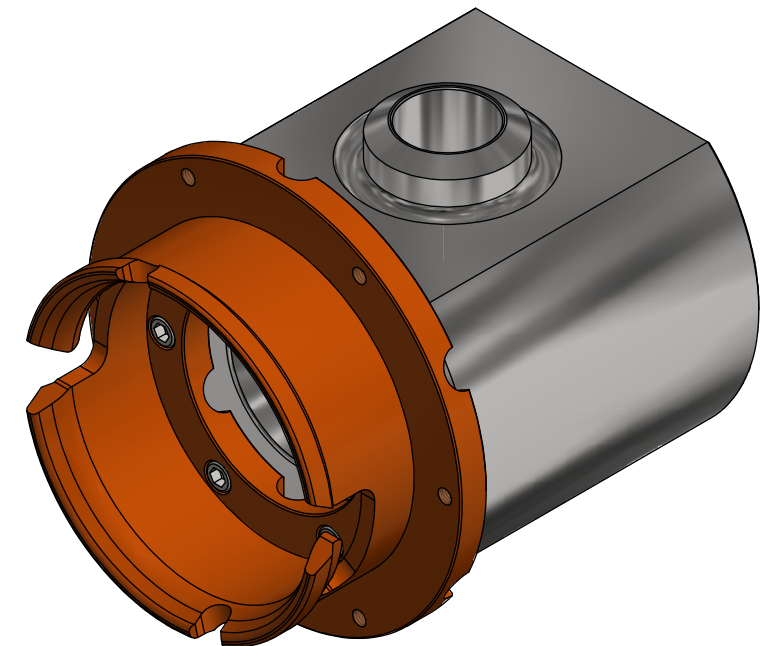


NOTE: 1
DESIGN CODE:
N/A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 71,5 kg
Volume: 9,11 dm³
Surface Area: 5787 cm²
Hydraulic: 3" Full Bore WN SchXXS
Mechanical: 6xM12@PCD 256
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040



Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.
03	31.1.2024	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
02	10.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
01	8.11.2017	9-IFU (Issued for Use)		HNJ	WTJ	HNJ

BLUE LOGIC

Dwg Scale:
NTS
Dwg Proj:
Dwg Format:
A3

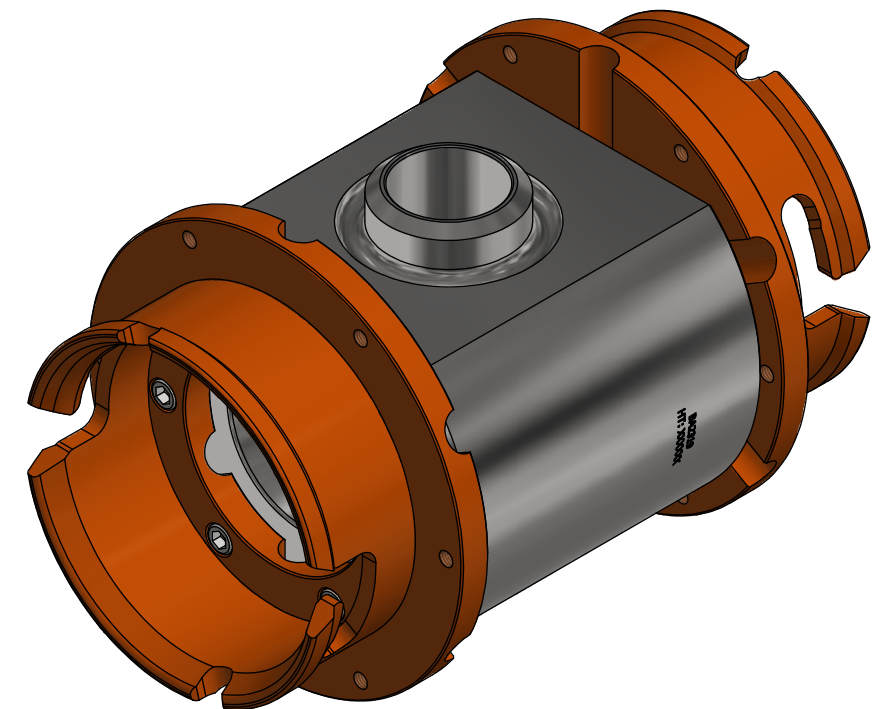
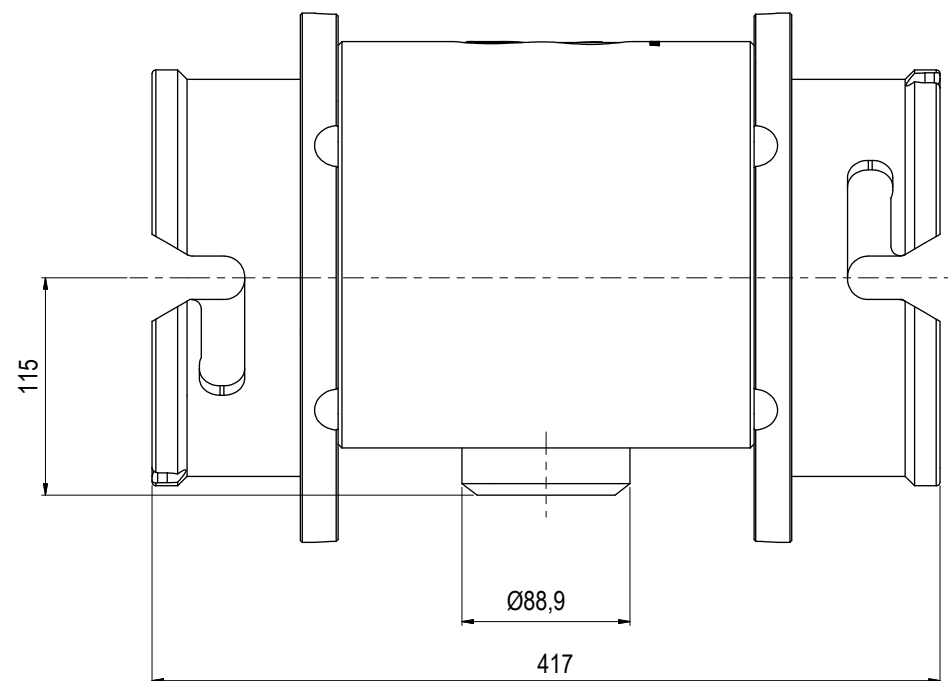
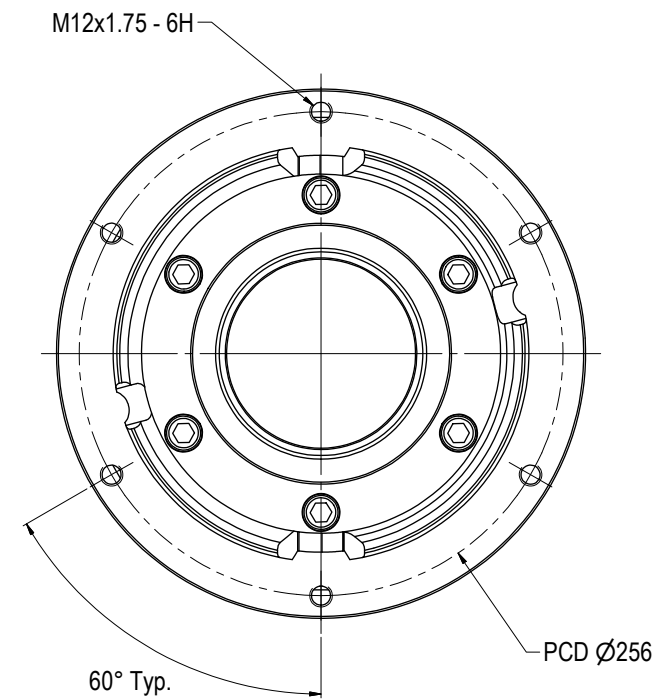
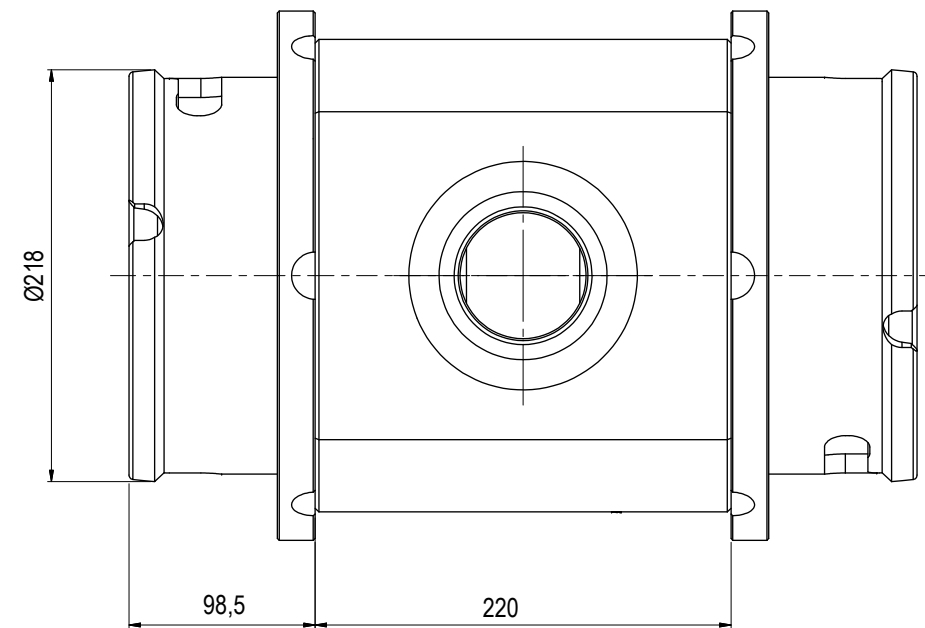
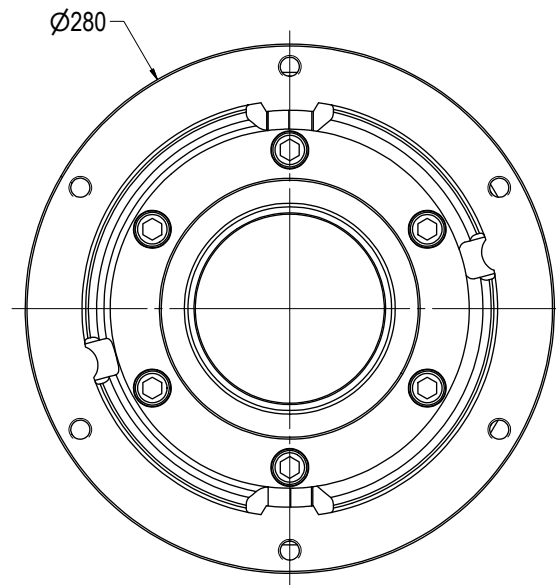
Drawing title:
Ø100 SP Rec 10k Long-term 3" FB wJ-Lock 3" WN Sch XXS
Drawing number:
BB0929
Rev.
03

NOTE: 1
DESIGN CODE:
Interface: API 17H
Material/Testing: API 6A/ISO10423/NORSOK MDS D57

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 81,2 kg
Volume: 10,34 dm³
Surface Area: 8205 cm²
Hydraulic: WN 3" Sch 160
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040



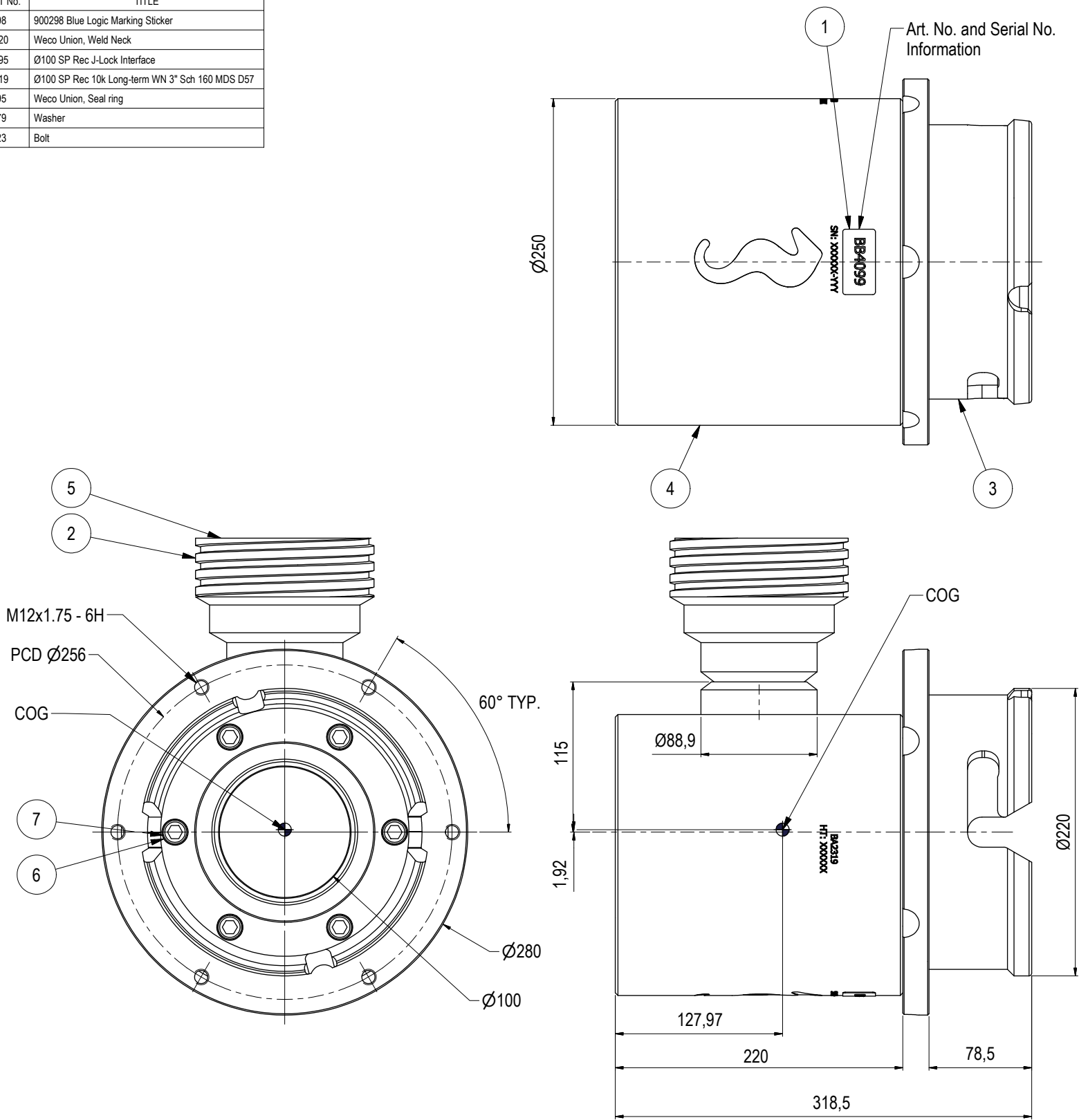
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.
03	26.1.2021	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
02	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
01	19.10.2017	9-IFU (Issued for Use)		HNJ	WTJ	HNJ

BLUE LOGIC

Dwg Scale:
NTS
Dwg Proj:
Dwg Format:
A3

Drawing title:
Ø100 SP Rec 10k Long-term 3" FB wJ-Lock x2 WN 3" Sch 160
Drawing number:
BB0824
Rev:
03

Parts List			
ITEM	QTY	PART No.	TITLE
1	1	900298	900298 Blue Logic Marking Sticker
2	1	BB4220	Weco Union, Weld Neck
3	1	BA5595	Ø100 SP Rec J-Lock Interface
4	1	BA2319	Ø100 SP Rec 10k Long-term WN 3" Sch 160 MDS D57
5	1	101395	Weco Union, Seal ring
6	6	101379	Washer
7	6	100823	Bolt

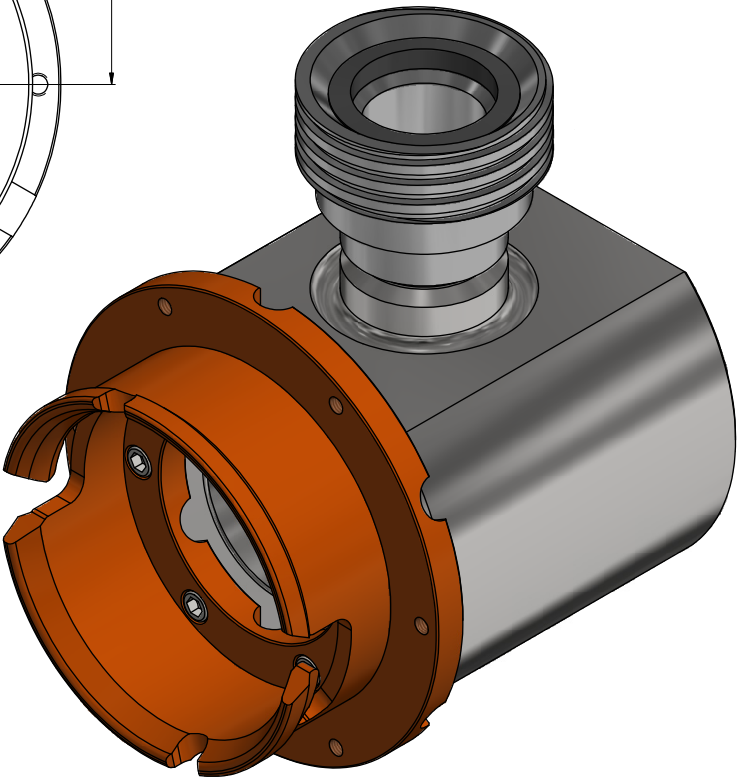


NOTE: 1
DESIGN CODE:
Interface: API 17H Type 4
Material/Testing: API 6A/ISO 10423/ NORSOK MDS D57

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 76,4 kg
Volume: 9,77 dm^3
Surface Area: 6860 cm^2
Hydraulic: 3" Full Bore WN Sch160
Mechanical: 6xM12@PCD 256
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040



02	8.1.2020	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
01	23.12.2019	9-IFU (Issued for Use)		WTJ	SNA	SAA
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

Dwg Scale:
NTS

Dwg Proj:
A3

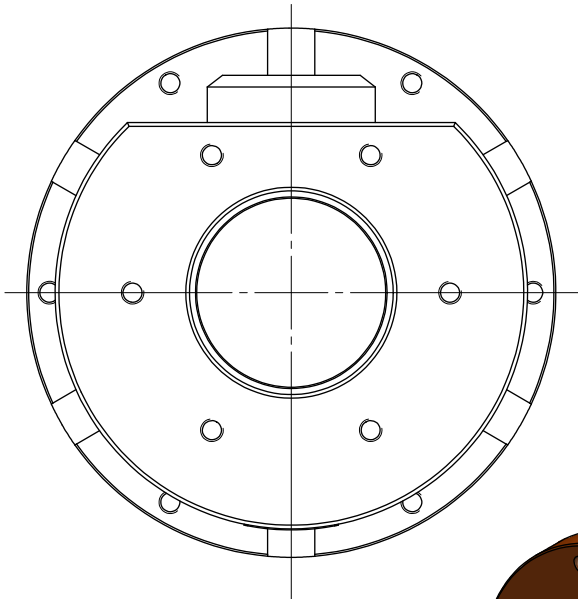
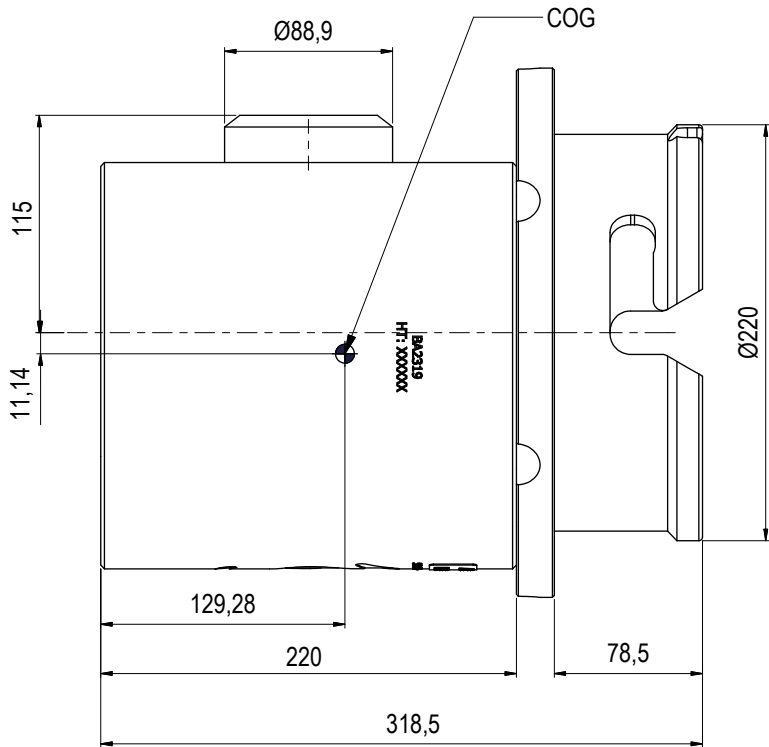
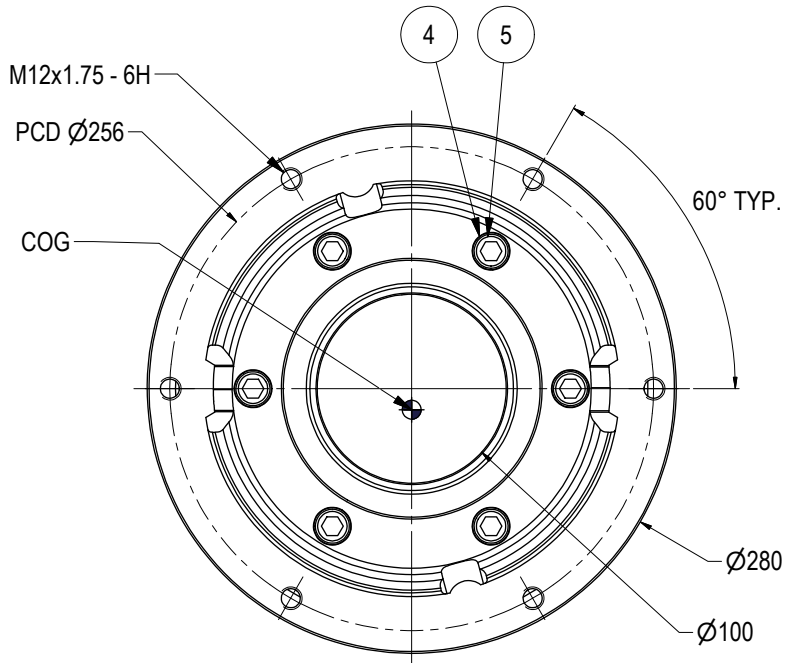
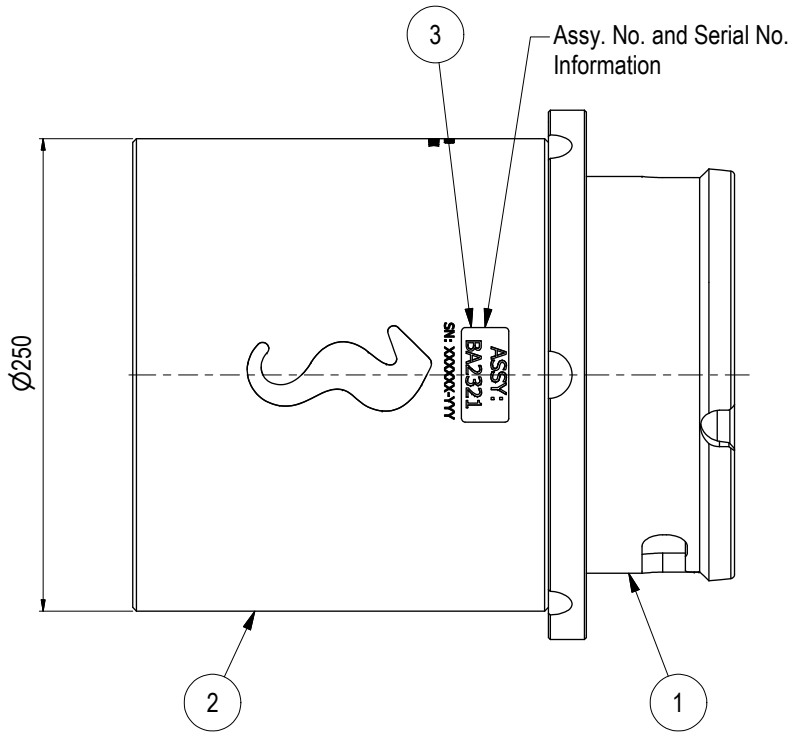
Dwg Format:
A3

Drawing title:
Ø100 SP Rec 10k Long-term 3" wJ-Lock 3" WN Sch160 1502

Drawing number:
BB4099

Rev.
02

Parts List			
ITEM	QTY	PART No.	TITLE
1	1	BA5595	Ø100 SP Rec J-Lock Interface
2	1	BA2319	Ø100 SP Rec 10k Long-term WN 3" Sch 160 MDS D57/D54
3	1	900298	900298 Blue Logic Marking Sticker
4	6	101379	Washer
5	6	100823	Bolt

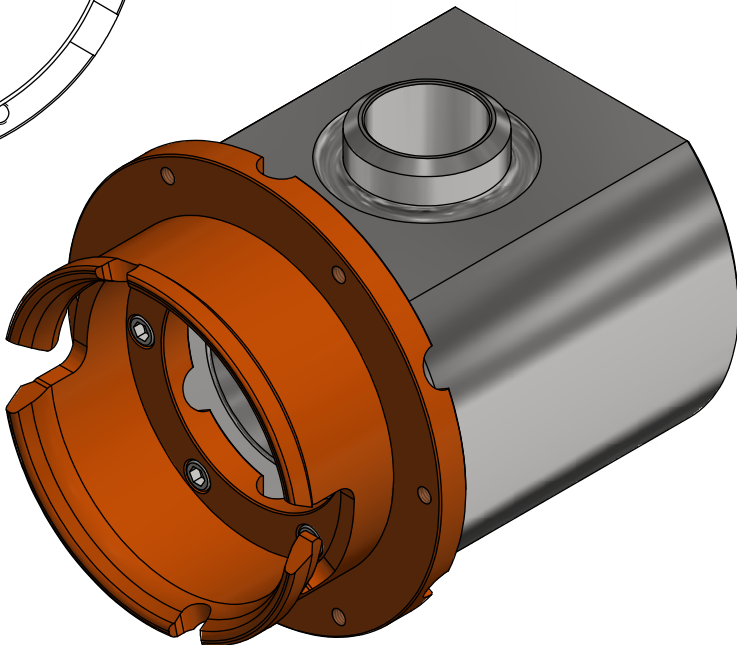


NOTE: 1
DESIGN CODE:
Interface: API 17H Type 4
Material/Testing: API 6A/ISO 10423/ NORSOK MDS D57/D54

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 71,1 kg
Volume: 9,06 dm³
Surface Area: 5817 cm²
Hydraulic: 3" Full Bore WN Sch160
Mechanical: 6xM12@PCD 256
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040



08	11.12.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
07	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
06	14.12.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ
05	10.6.2016	2-IFT (Issued for Tender)		HNJ	LAE	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

Dwg Scale:	NTS
Dwg Proj:	
Dwg Format:	A3

Drawing title:
Ø100 SP Rec 10k Long-term 3" wJ-L 3" WN Sch160 MDS
D57/D54

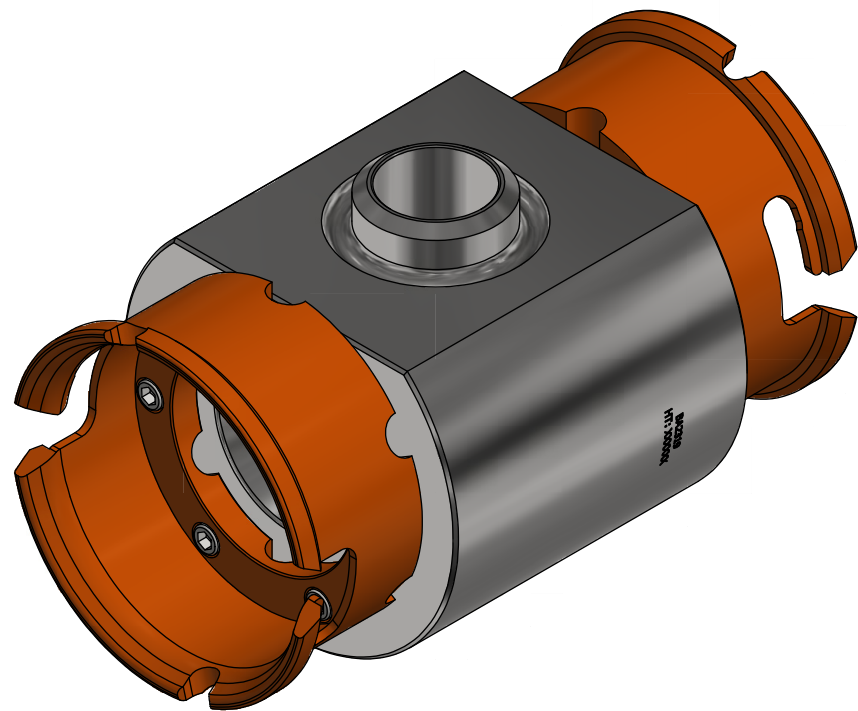
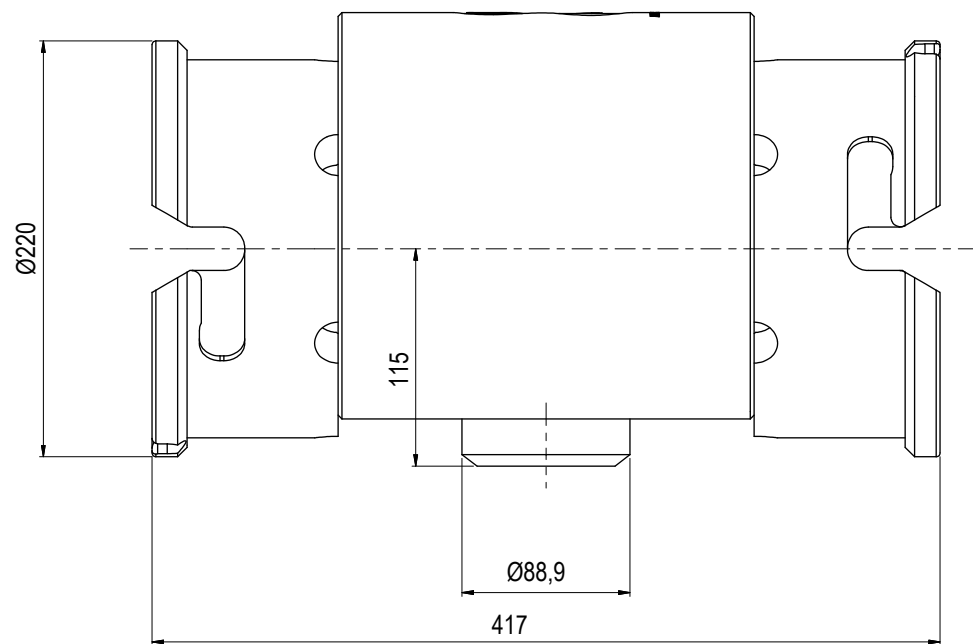
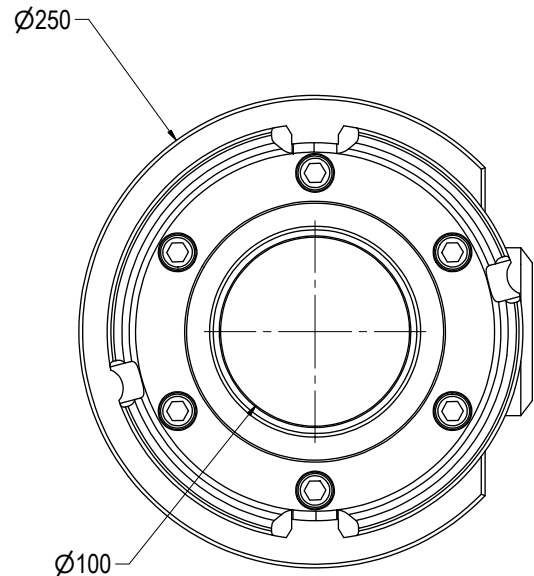
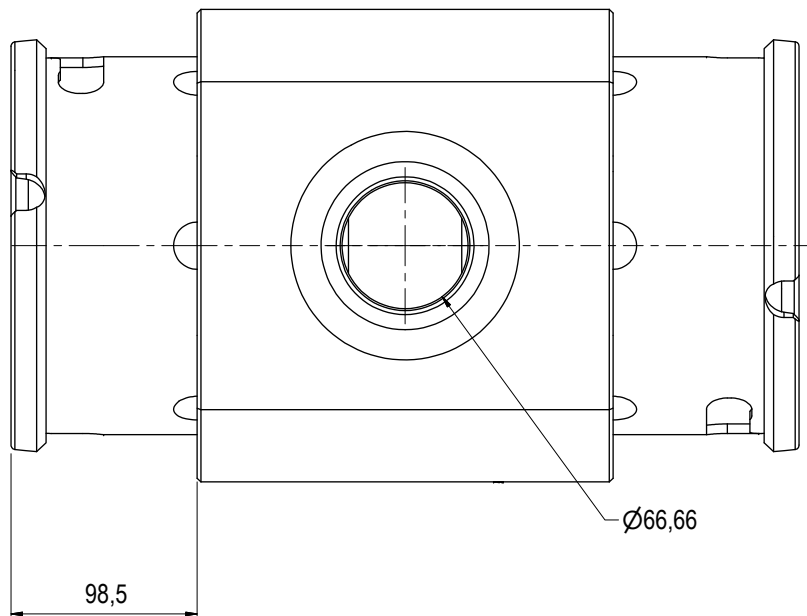
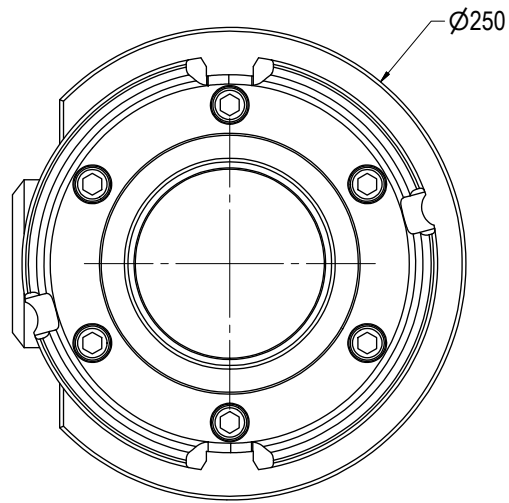
Drawing number: BA2321	Rev. 08
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NOTE: 1
DESIGN CODE:
Interface: API 17H
Material/Testing: API 6A/ISO10423/NORSOK MDS D57

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: Long-term
Weight: 70 kg
Volume: 8,92 dm^3
Surface Area: 6844 cm^2
Hydraulic: WN 3" Sch 160
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

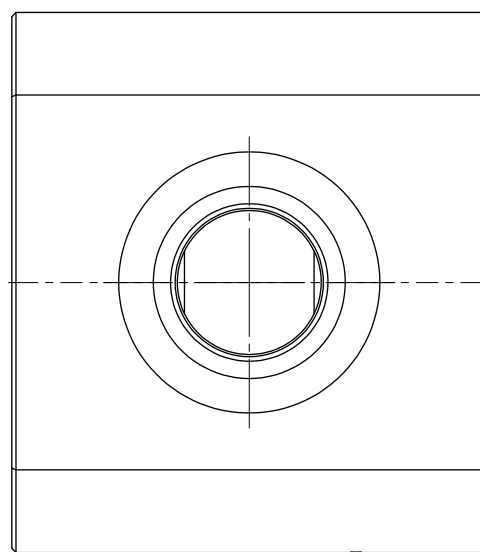
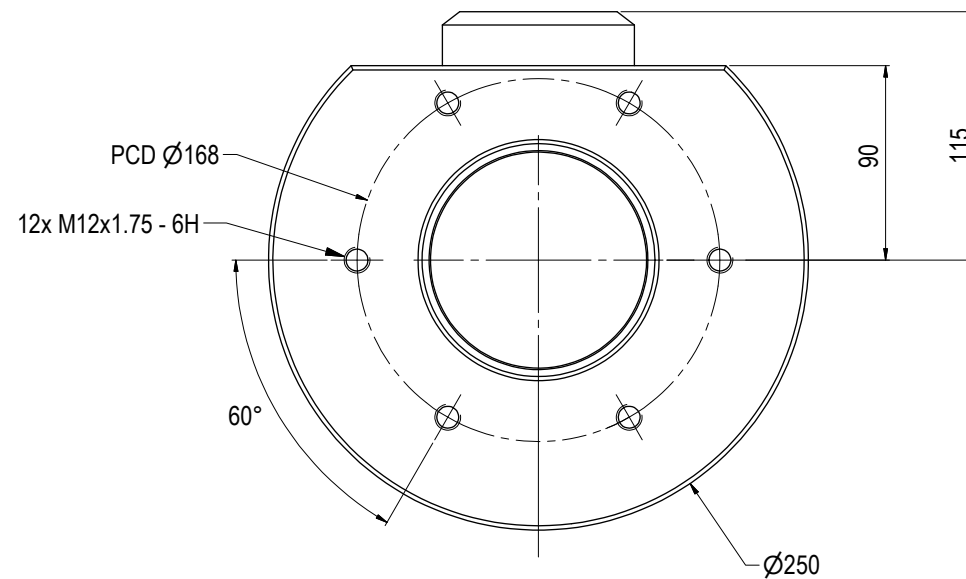
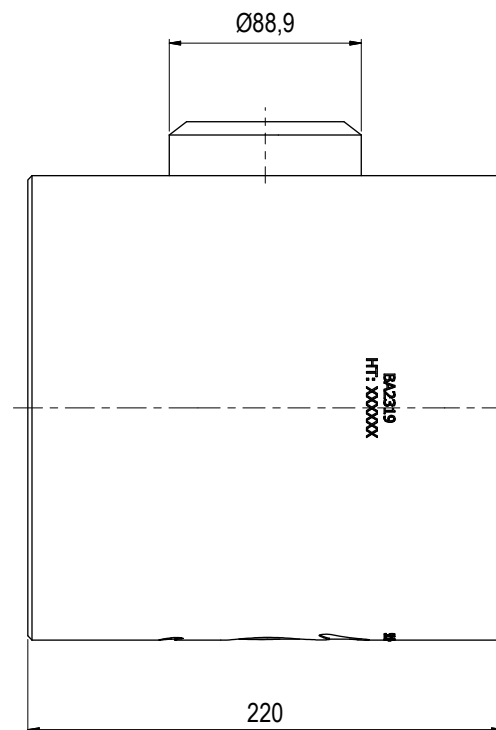
NOTE: 4
SPAREPARTS:
BB1040



04	21.08.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
03	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
02	8.11.2018	9-IFU (Issued for Use)		HNJ	LAE	HNJ
01	24.9.2018	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.



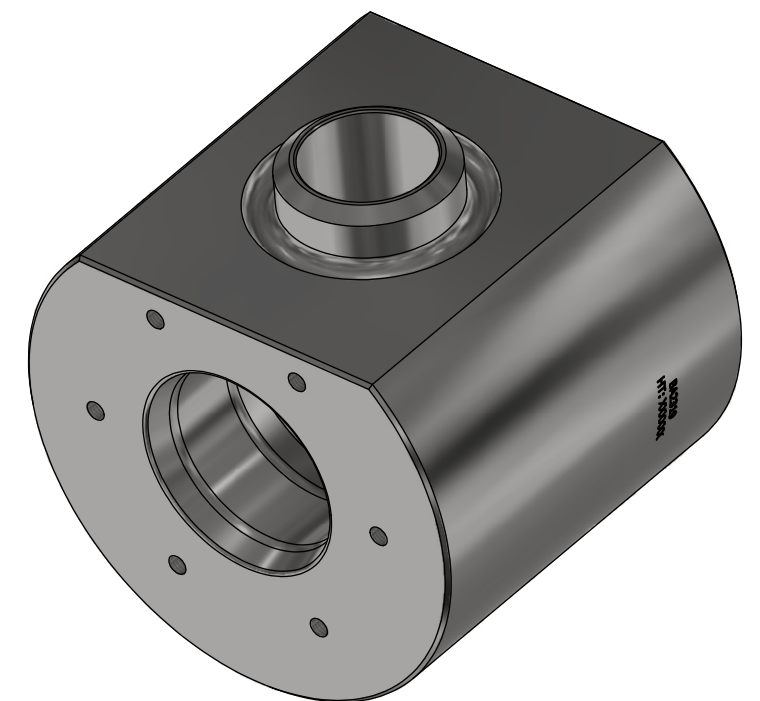
Dwg Scale: NTS	Drawing title: Ø100 SP Rec 10k Long-term 3" wJ-Lock woFlange WN 3" Sch160
Dwg Proj: A3	
Dwg Format: A3	
Drawing number: BB2490	Rev. 04



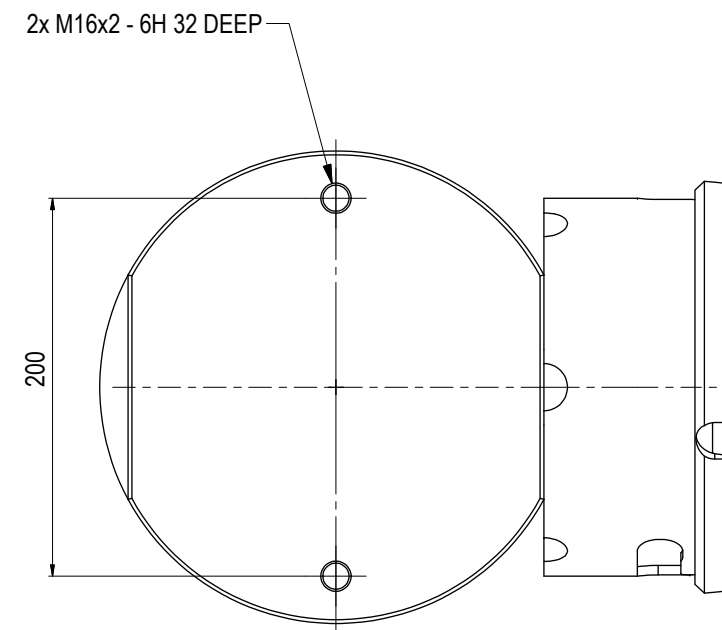
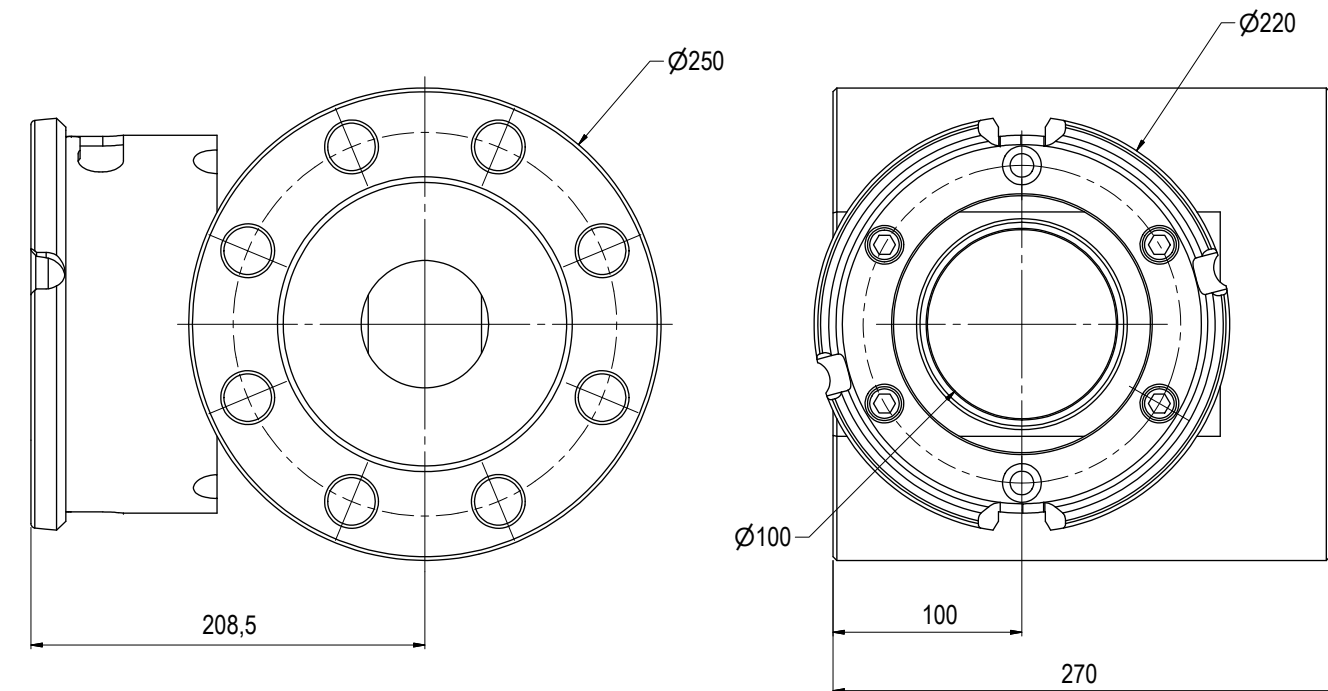
NOTE: 1
DESIGN CODE:
Interface: API 17H Type 4
Material/Testing: API 6A/ISO 10423/ NORSOK MDS D57/D54

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 690
Material: UNS S32750 / S32760
Weight: 61,1 kg
Volume: 7,79 dm^3
Surface Area: 3380 cm^2
Hydraulic: 3" WN Sch160
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A



08	28.11.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ	BLUE LOGIC	Unless Noted Otherwise:	Dwg Scale: NTS	Drawing title: Ø100 SP Rec 10k Long-term WN 3" Sch 160 MDS D57/D54	Drawing number: BA2319	Rev. 08
07	8.1.2019	7-IFC (Issued for Construction)		WTJ	LGH	WTJ		Dim. Tol: NS-ISO 2768-1N/A	Dwg Proj:			
06	8.12.2017	7-IFC (Issued for Construction)		WTJ	LAE	WTJ		Roughness: RaN/A	Dwg Format: A3			
05	7.12.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ		Fillet Rad: Corner Rmax: N/A	Break Edges: (R. Alt. 45°) R= 0,1-0,5			
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.						



NOTE: 1

DESIGN CODE:

N/A

NOTE: 2

TECHNICAL CLASSIFICATION:

Article Type: 001-Hot Stabs

Main Group: 1.06. Ø100 Hot Stab

Intermediate Group: 1.59.02. Receptacle

Sub Group: 1.59.220.01. Single

NOTE: 3

INTERFACE INFORMATION:

Pressure Rating Bar: 255

Material: Long-term

Weight: 82,6 kg

Volume: 10,53 dm³

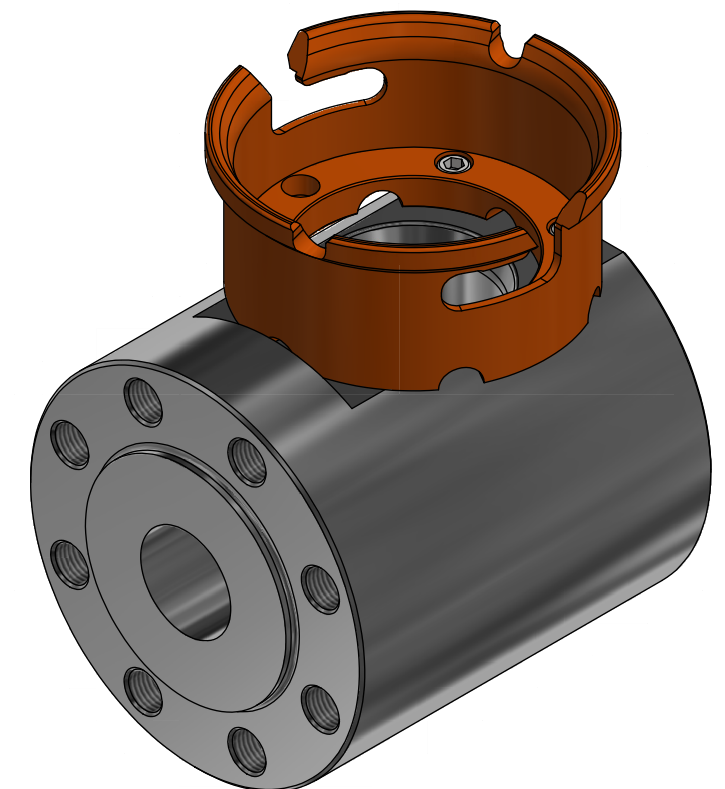
Surface Area: 5787 cm²

Hydraulic: N/A

Mechanical: N/A

Electrical: N/A

Com. & Protocol: N/A



06	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
05	9.11.2018	9-IFU (Issued for Use)		HNJ	LAE	HNJ
04	15.1.2018	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
03	3.1.2018	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

Dwg Scale:
NTS
Dwg Proj:
Dwg Format:
A3

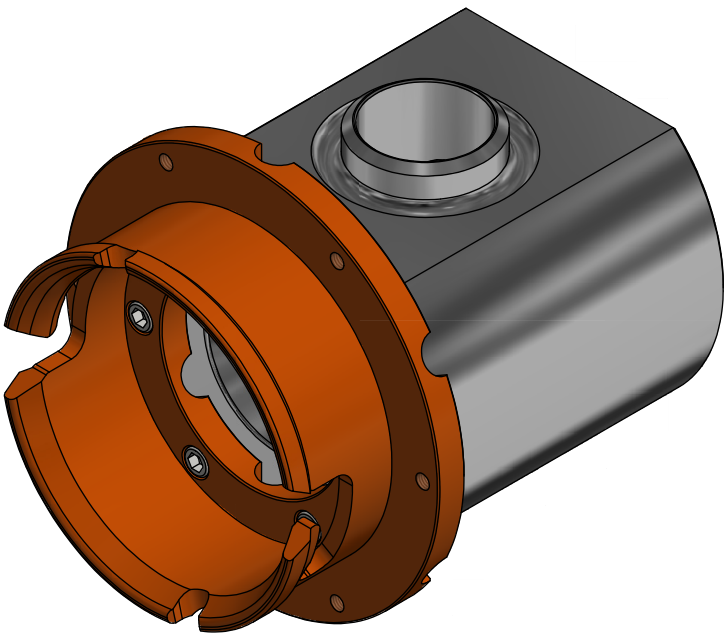
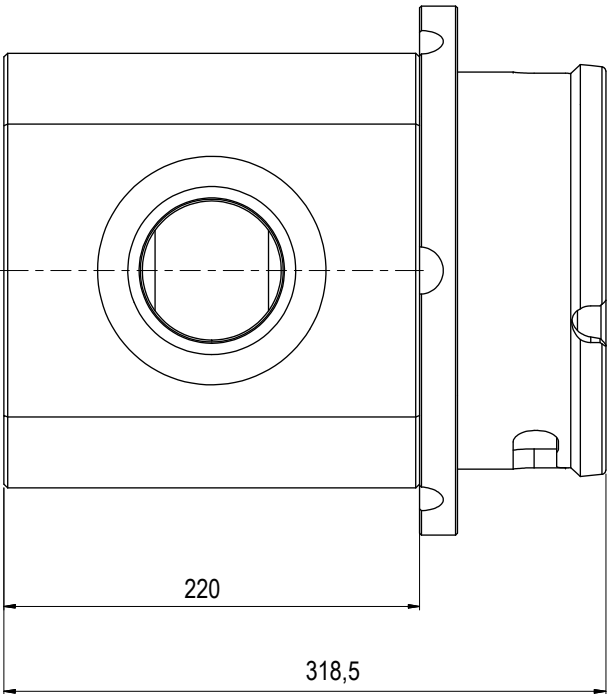
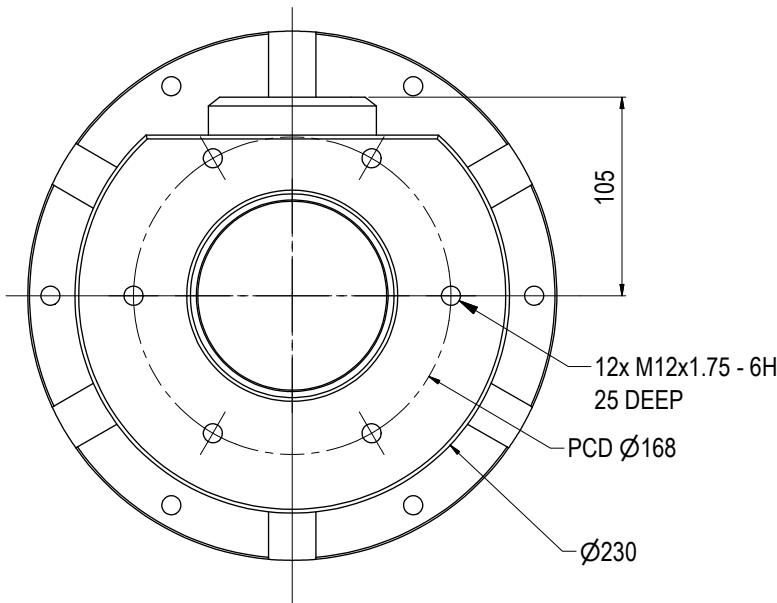
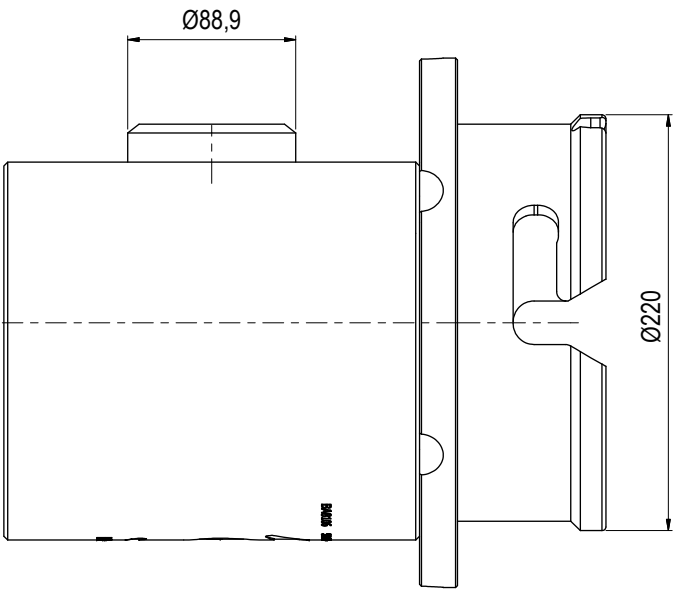
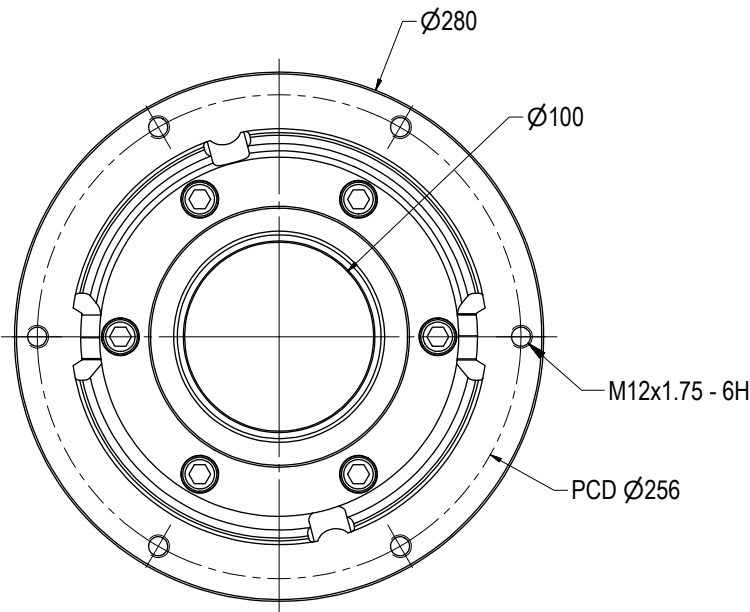
Drawing title:
Ø100 SP Rec 3.7k Long-term 3" J-Lock ANSI B16.5 Cl.1500
Drawing number:
BA5967
Rev.
06

NOTE: 1
DESIGN CODE:
Interface: API 17H
Material/Testing: API 6A/ISO 10423/ NORSOK MDS D57

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 450
Material: Long-term
Weight: 59,6 kg
Volume: 7,59 dm^3
Surface Area: 5496 cm^2
Hydraulic: 3" Full Bore WN Sch80
Mechanical: 6xM12 @PCD 256
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040



07	7.2.2019	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
06	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
05	22.12.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ
04	12.7.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

Dwg Scale:
NTS
Dwg Proj:
Dwg Format:
A3

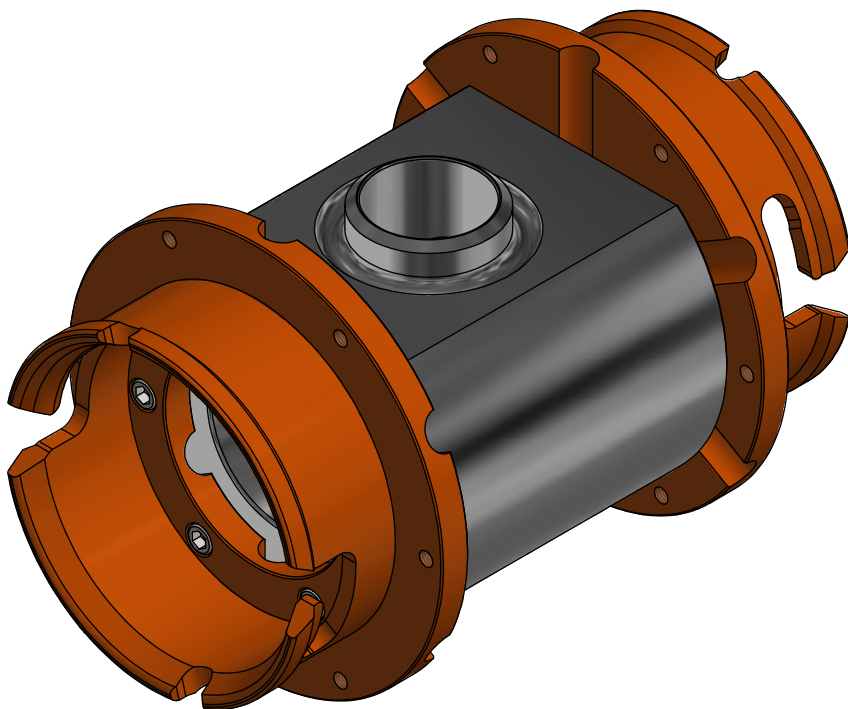
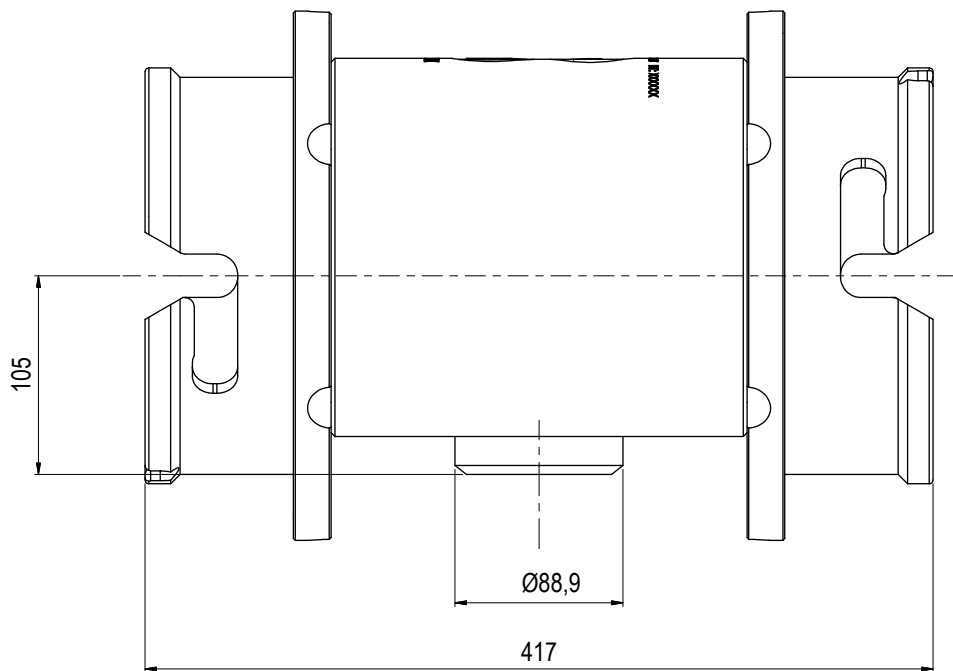
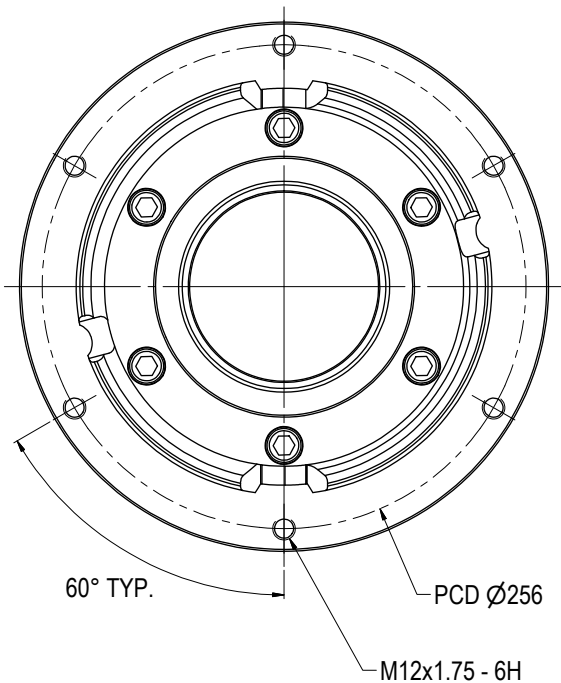
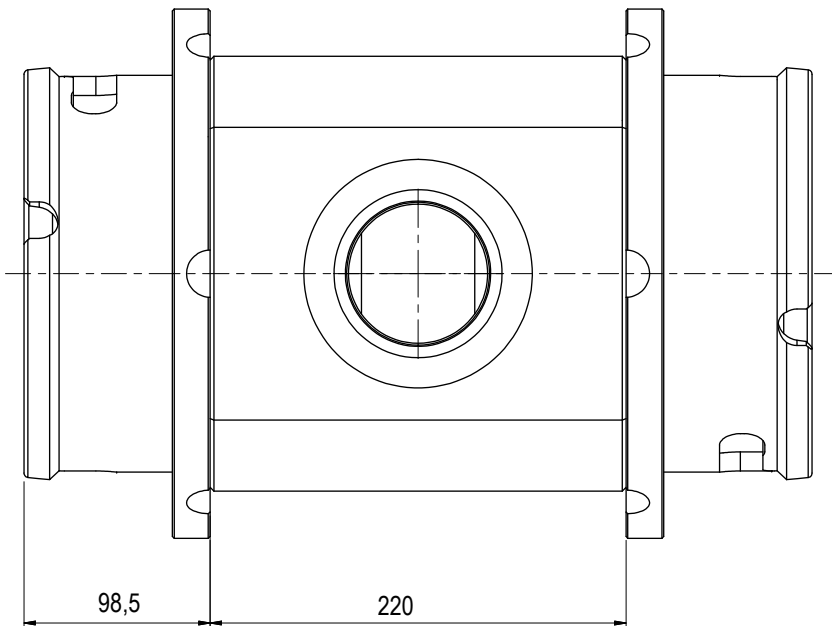
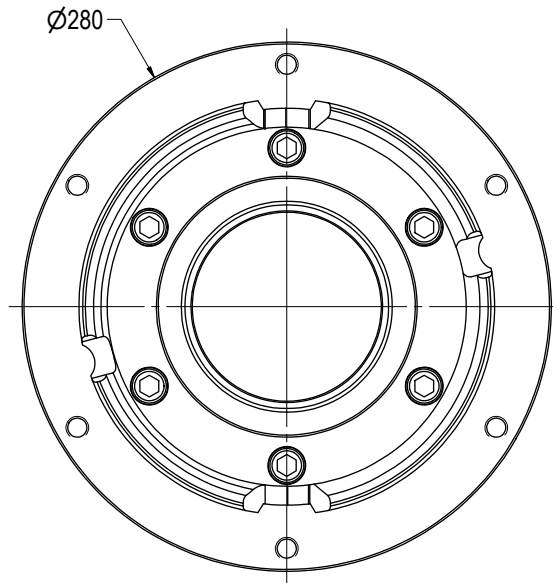
Drawing title:
Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock 3" WN Sch80
Drawing number:
BA8107
Rev.
07

NOTE: 1
DESIGN CODE:
N/A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: 450
Material: Long-term
Weight: 69,6 kg
Volume: 8,87 dm^3
Surface Area: 7909 cm^2
Hydraulic: WN 3" Sch 80
Mechanical: N/A
Electrical: N/A
Com. & Protocol: N/A

NOTE: 4
SPAREPARTS:
BB1040

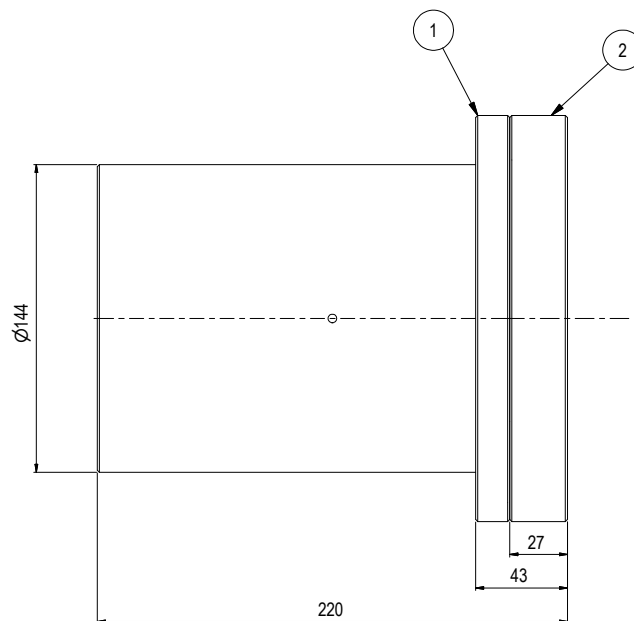
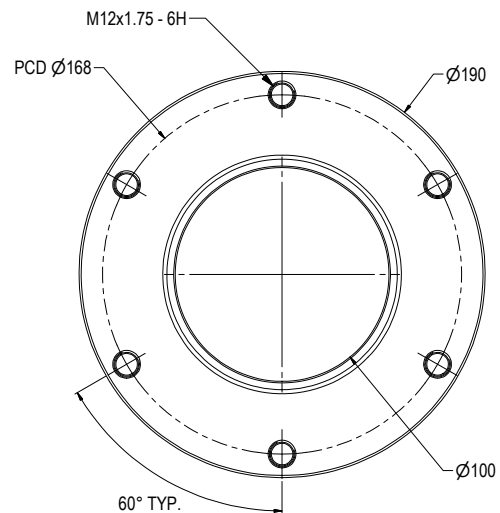


06	12.9.2019	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
05	10.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
04	22.12.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ
03	7.3.2016	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.



Dwg Scale: NTS	Drawing title: Ø100 SP Rec 450Bar Long-term 3" FB wJ-Lock WN 3" Sch 80
Dwg Proj: A3	
Dwg Format: A3	
Drawing number: BA8205	Rev: 06

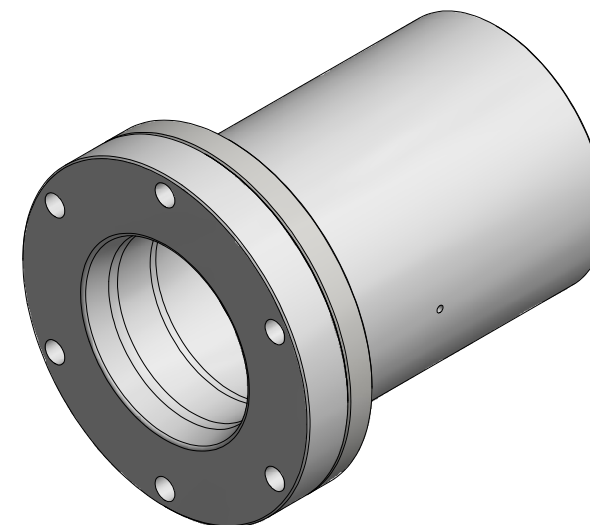
Parts List				
ITEM	QTY	PART No.	DESCRIPTION	MATERIAL
1	1	BA5596	Ring for Ø100 Park Rec	S32750 SUPER DUPLEX
2	1	BA5594	Ø100 SP Park Rec with J-Lock	PEHD 1000



NOTE: 1
DESIGN CODE:
Interface: API 17H

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: Vented
Design Water Depth: 3000
Material: Long-term
Weight in Air: 3.2 kg
Volume: 2,05 dm³
Submerged Weight: 1,11 kg
Surface Area: 2617 cm²
Hydraulic: N/A
Mechanical: 6xM12@PCD 168
Electrical: N/A
Com. & Protocol: N/A



Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.
02	11.4.2016	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
01	12.9.2014	9-IFU (Issued for Use)		WTJ	LGH	WTJ

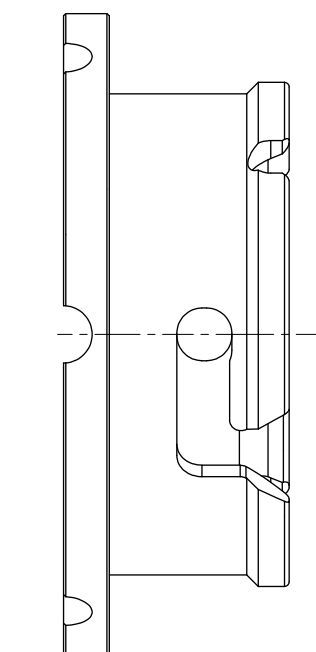
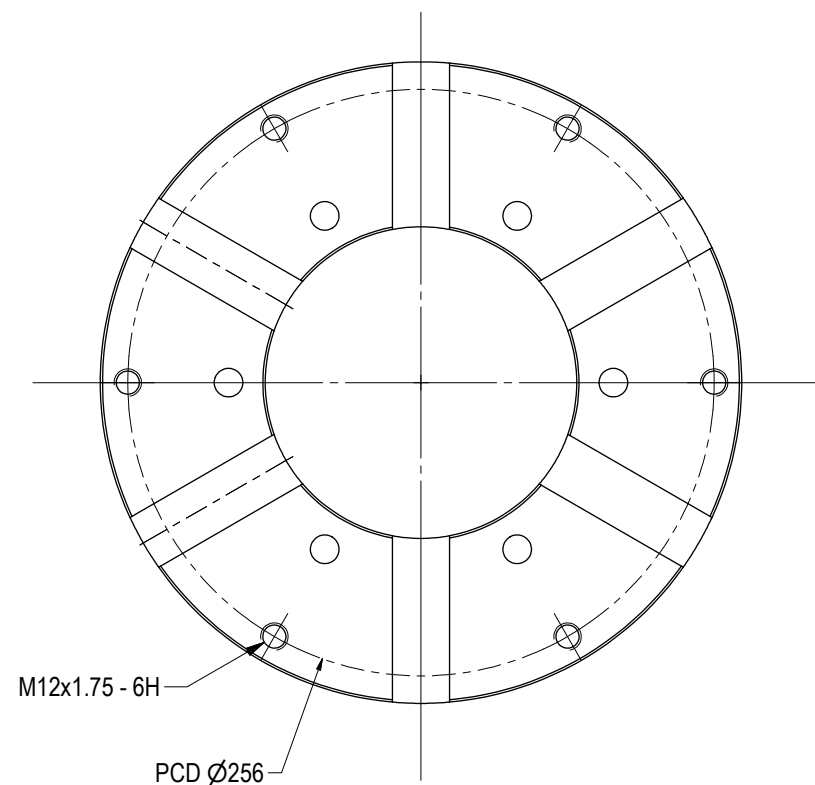
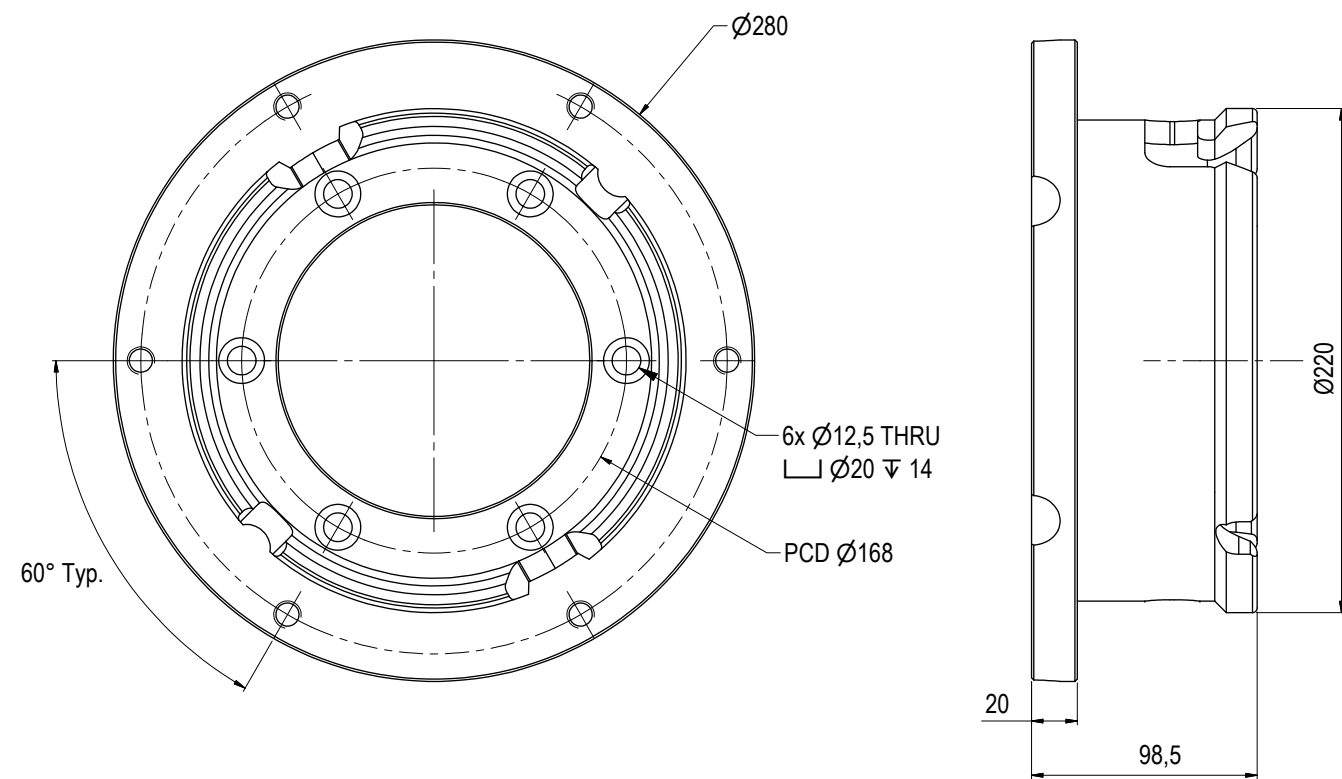
BLUE LOGIC

Dwg Scale:
NTS
Dwg Prop: 
Dwg Format:
A3

Drawing title:
Ø100 SP Park Rec Vented Long-term

Drawing number:
BA5597

Rev.
02



NOTE: 1
DESIGN CODE:
Interface: API 17H
Testing: API 6A

NOTE: 2
TECHNICAL CLASSIFICATION:
Article Type: 001-Hot Stabs
Main Group: 1.06. Ø100 Hot Stab
Intermediate Group: 1.59.02. Receptacle
Sub Group: 1.59.220.01. Single

NOTE: 3
INTERFACE INFORMATION:
Pressure Rating Bar: N/A
Material: AISI 316L
Weight: 9,7 kg
Volume: 1,24 dm³
Surface Area: 2225 cm²
Hydraulic: N/A
Mechanical: 6 X M12 @ PCD 256
Electrical: N/A
Com. & Protocol: N/A



05	8.1.2019	9-IFU (Issued for Use)		WTJ	HNJ	WTJ
04	12.7.2016	9-IFU (Issued for Use)		HNJ	LAE	HNJ
03	7.3.2016	9-IFU (Issued for Use)		HNJ	LGH	HNJ
02	25.2.2016	9-IFU (Issued for Use)		HNJ	WTJ	HNJ
Rev.	Date	Reason for issue	Revision change	Made	Chk'd	Appr.

BLUE LOGIC

Unless Noted Otherwise:	Dwg Scale: NTS
Dim. Tol: NS-ISO 2768-1N/A	Dwg Proj:
Roughness: RaN/A	Dwg Format: A3
Fillet Rad: Corner Rmax: N/A	Break Edges: (R. Alt. 45°) R= 0,1-0,5

Drawing title: Ø100 SP Rec J-Lock Interface	Drawing number: BA5595	Rev: 05
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