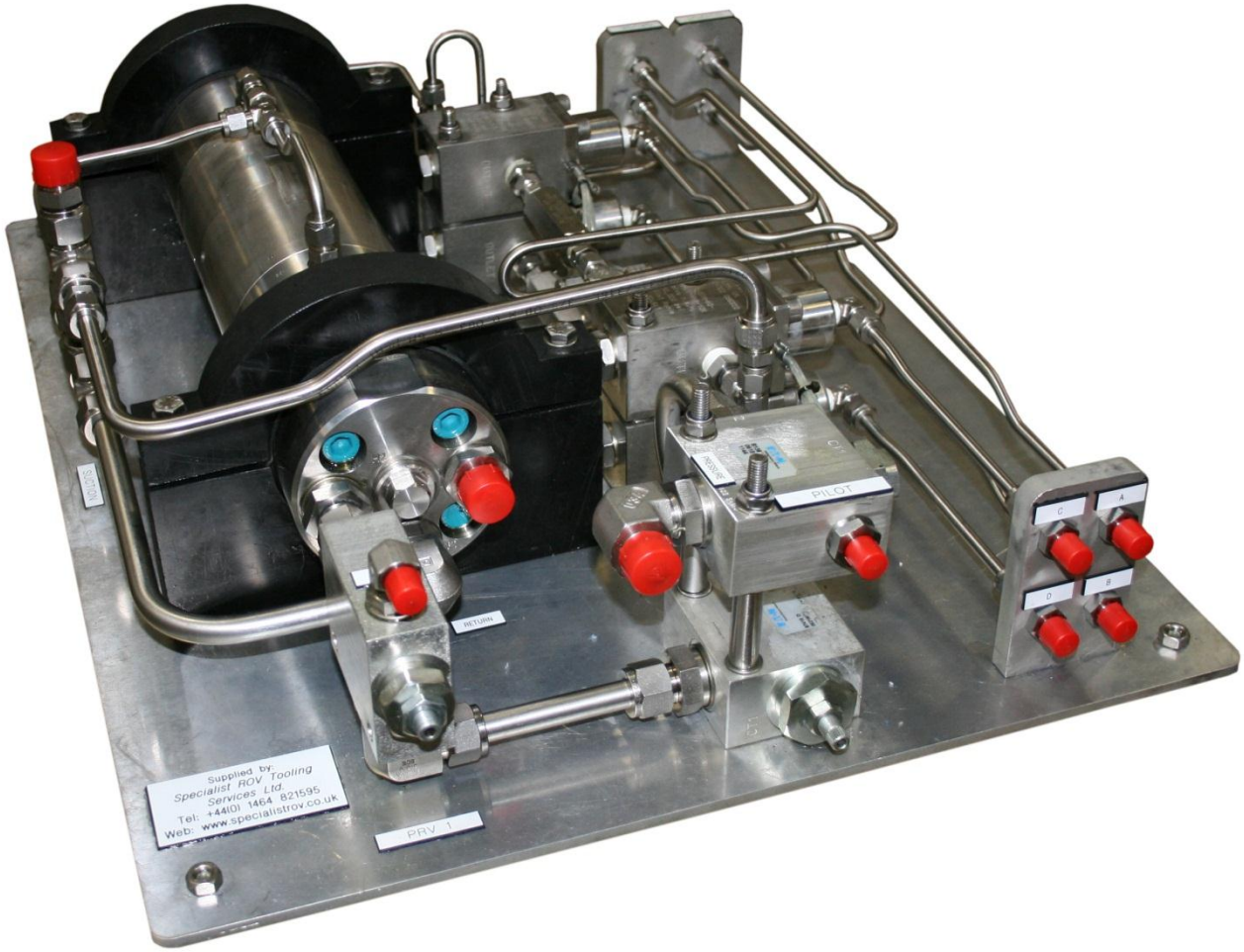


Date	Revision	Description of Revision	Prepared	Checked	Approved
18/07/2012	3	Revised Company formatting	IW	DM	DM
16/09/2011	2	Revised tubing layout	SW	MB	MB
27/03/2011	1	Revised document layout	SW	MB	MB
15/01/2012	0	Issued for use	SW	MB	MB

1 Introduction

1.1 Scope

The scope of this manual is to provide information regarding set up/operating instructions for the 10000psi IHPU.

2 Safety Recommendations

2.1 General – Operations

Only authorised people and qualified personnel should work on the system, and take suitable precautions to prevent injury.

Always adhere to authorised working practices, and use the correct tools for the job. To facilitate this, make sure that these are available before commencing.

Ensure that overalls and other garments are kept clean and free of oil or chemicals. Ensure that any cuts or skin abrasions are protected before handling oil or chemicals to prevent ingress into the body. Protect the hands and arms with a suitable barrier cream and gloves and ensure that all system fluids or chemicals are removed from the skin as soon as possible.

Ensure that the working area is kept clear and uncluttered.

2.2 General – Hydraulic

Do not work on pressurised systems. Hydraulic systems contain a large amount of stored energy when pressurised, therefore the system (including any accumulators) should be de-pressurised, and the power pack switched off, prior to working on the system. Exceptions to this would be system adjustments to components requiring the presence of pressure and/or flow.

Any personnel authorised to work on the system must have a complete understanding of the operation of the hydraulic system, so that they will be aware of any system liable to remain pressurised or hazardous in any other way.

Ensure that all personnel are clear of any mechanical/hydraulic system likely to move if pressure to system actuators is released or applied.

Do not attempt to tighten any leaking fittings whilst under pressure. A rupture could result, leading to injury from flying components and/or oil jets.

Regularly inspect fittings and pipe-work for mechanical damage. If any such damage is found, the item must be repaired or replaced as necessary before pressure is applied to the system. Do not allow damaged fittings to remain in service.

Take care when inspecting, commissioning, repairing or maintaining the system to avoid jets of oil issuing from open orifices; pipe ends etc. if pressure is applied. Particular care should be taken to protect the eyes.

Hydraulic components may be heavy and slippery when covered in oil. Ensure that adequate protective clothing and footwear is used.

Any moving component should be treated with caution when the system is pressurised during operation, and especially during on-deck testing and repair. Keep clear of all moving components, and take all necessary precautions to avoid injury when working on these systems by preventing movement of any components likely to cause injury.

2.3 General – Mechanical

Ensure that all the guards are in place before applying power to the system. The power must be turned off and any potential movement prevented before removal of any guard.

Beware of and keep clear of all moving components. Do not work on the system whilst power is applied, or if there is any potential for components to move.

Ensure that all load bearing components are adequately and regularly inspected. If damage is found the component must be repaired/replaced as necessary. Do not allow damaged components to remain in service.

Some mechanical components/assemblies are heavy and, if covered in oil/water, also slippery. Always ensure that items are correctly and adequately supported before removal, and that authorised lifting equipment and procedures are used.

Note: trying to lift heavy components in an awkward position by hand without the assistance of correct lifting equipment, or lifting any component without adopting the correct stance, can lead to serious injury.

Ensure that when working within or underneath the machine that your presence is known to your supervisor. If working underneath the machine, always ensure that there are no loose or unsupported assemblies, components or tools above.

3 Quality, Health, Safety and Environment (QHSE)

3.1 Quality

It is the prime objective of Forum Subsea to perform all work safely and efficiently in accordance with our Quality Procedure, Legislative and Client specifications and requirements. In performing this work, the quality system of Forum Subsea Tooling shall be adhered to, so as to ensure that Client requirements are met.

THE BRITISH ASSESSMENT BUREAU
ISO9001
UKAS MANAGEMENT SYSTEMS
4307
Certification No. 187786

3.2 Health and Safety

The company considers that prevention of accidents incidents and hazardous occurrences resulting in injury to personnel, damage to equipment and the environment is essential to ensure employees safety. Reducing injuries and ill health, protecting the environment and reducing unnecessary losses and liability contributes to a good safety record which, goes hand in hand with safe operating practices and high quality standards.

The Company is committed to continuous improvement involving the constant development of procedures, approaches to implementation and techniques of risk assessment and control.

To meet these criteria all personnel will be trained to identify, eliminate or control the effects of hazards in their area of work.

It is expected that all employees will exercise a personal responsibility in preventing injury to themselves, their fellow workers, the general public and the environment.

Only through close communication and co-operation by all personnel can safety performance be established and maintained.

It is the duty of all employees to confirm to the Company Safety Policies, codes, plans, procedures and manuals and to accept and undertake their responsibilities.

All employees and those of our sub-contractors have a legal duty to take reasonable care of themselves and any other person who may be affected by their acts and omissions whilst at work and to co-operate with the Company and any persons directly or indirectly involved in the Company's activities.

3.3 Environmental

Forum Subsea Tooling pledges to comply with current environment legislation and best environmental practices, and achieve a balance between economic, social and environmental responsibilities. We are committed to avoiding damage to the environment by any of our actions and operations.

Forum Subsea Tooling is committed to continual improvement, and efficient use of resources, which will be achieved by setting and ensuring successful implementation of environmental objectives.

4 Persons to Contact

All technical enquiries relating to the tooling should be addressed to:

Forum Subsea Tooling
[A division of Forum Energy Technologies (UK) Ltd]
Unit 5 Insch Business Park, Insch, Aberdeenshire AB52 6TA

Telephone: **+44 (0) 1464 821595**
Web: www.f-e-t.com/subseatooling

5 Description

The Forum Subsea Tooling 10000psi IHPU is a unit that can be utilised for many Subsea tasks such as:

- Pressure testing
- Activating Blow Out Preventer
- Fluid Transfer
- Torque Tool Operation

The unit will pump separate media from ROV circuit held in an isolated reservoir and pump through hot stab at pressures up to 10,000 psi.

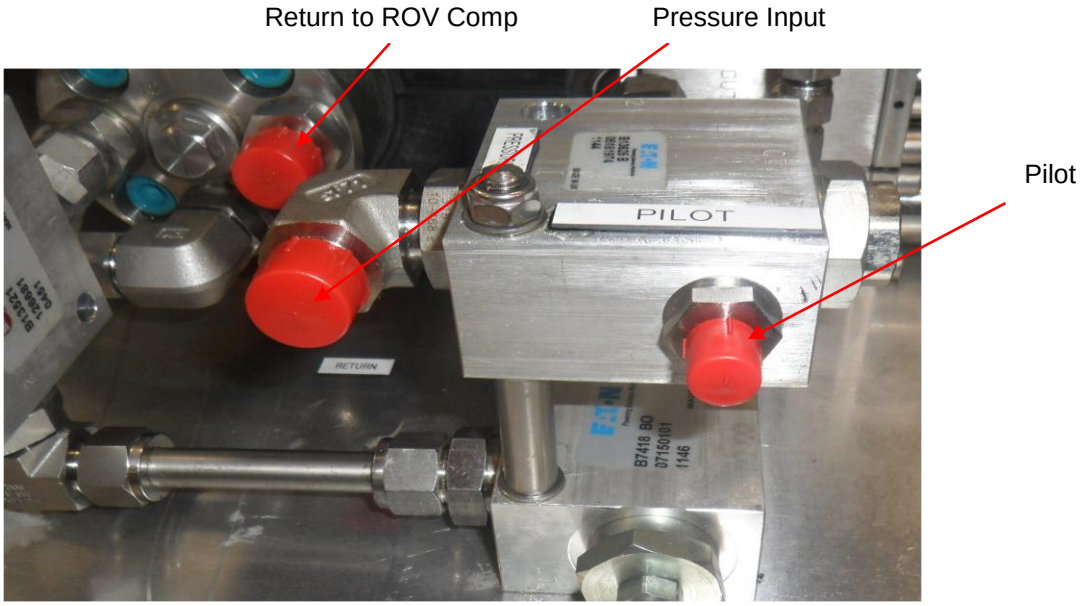
The unit can be easily reconfigured to carry out many different tasks.

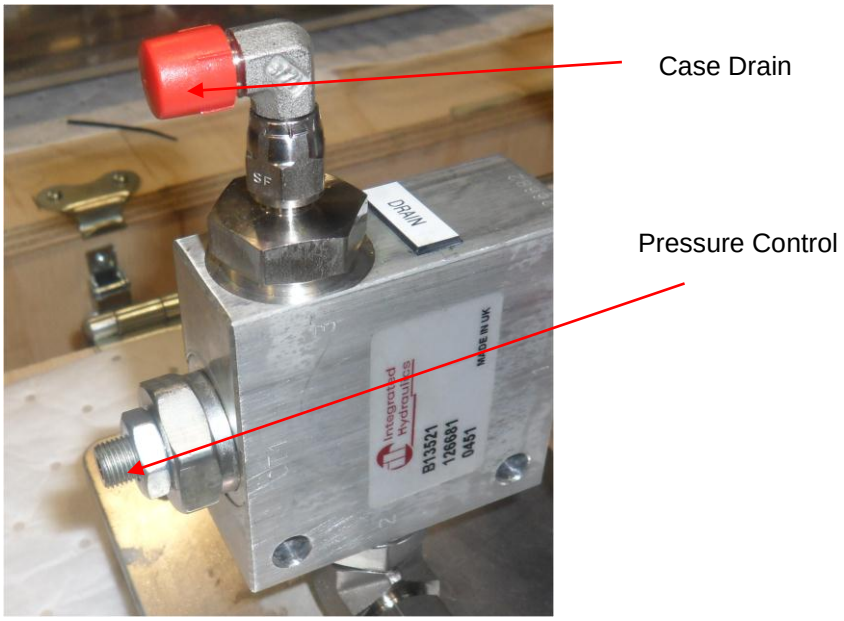
The system consists of a mini-booster pump with two pilot to open check valves. Pressure can be checked on a verification gauge before either pilot line A or B is activated. When correct pressure is achieved it will be held in the line until the dump valve is activated to release pressure safely back in to reservoir.

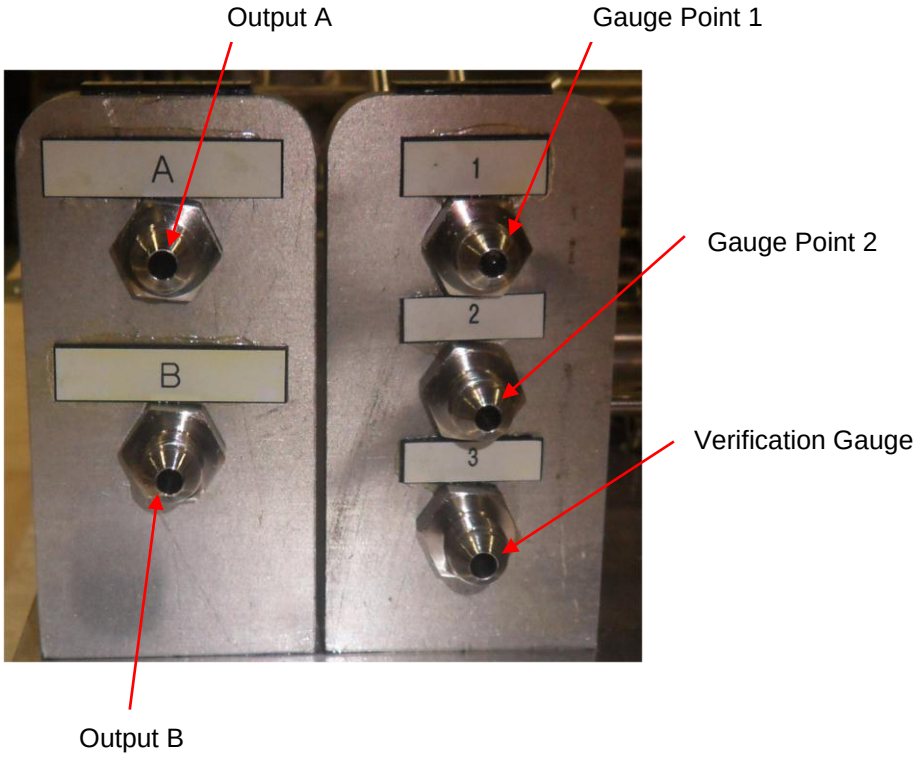
6 Specifications

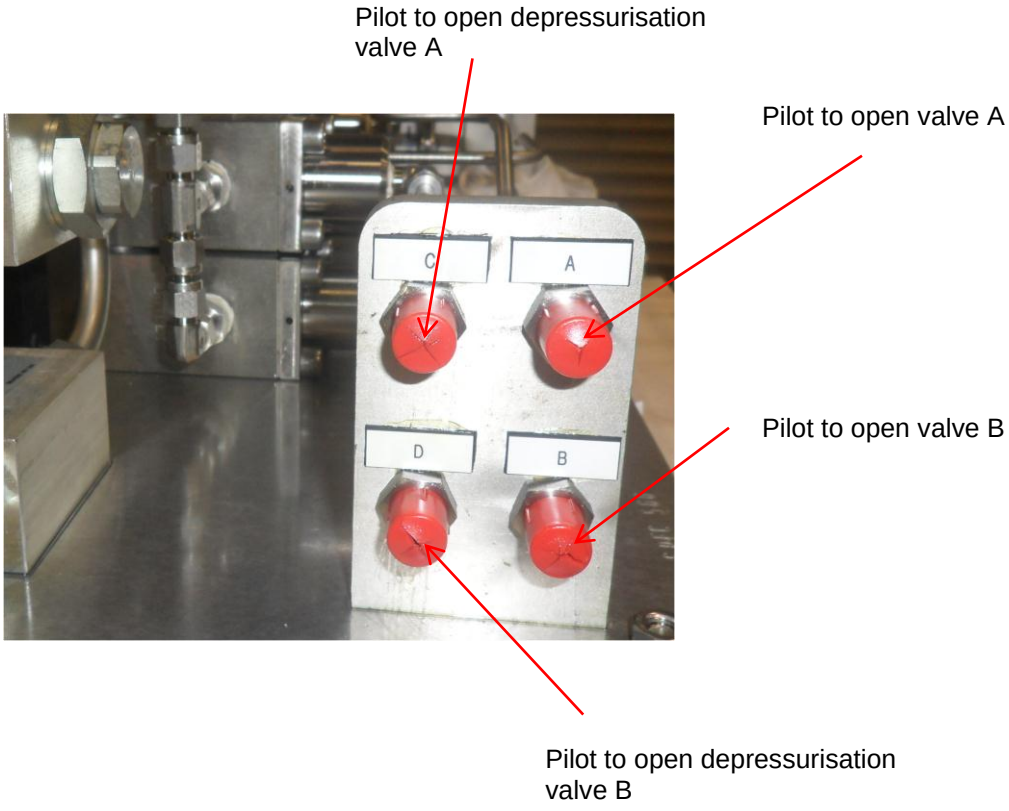
Specification	Measure
Hydraulic Input	
Pressure	210bar (3000psi)
Flow	35-65lpm
Hydraulic Output	
Pressure	690bar (10000psi)
Flow	30lpm
Fluid	Hydraulic Mineral Oil Water/Glycol

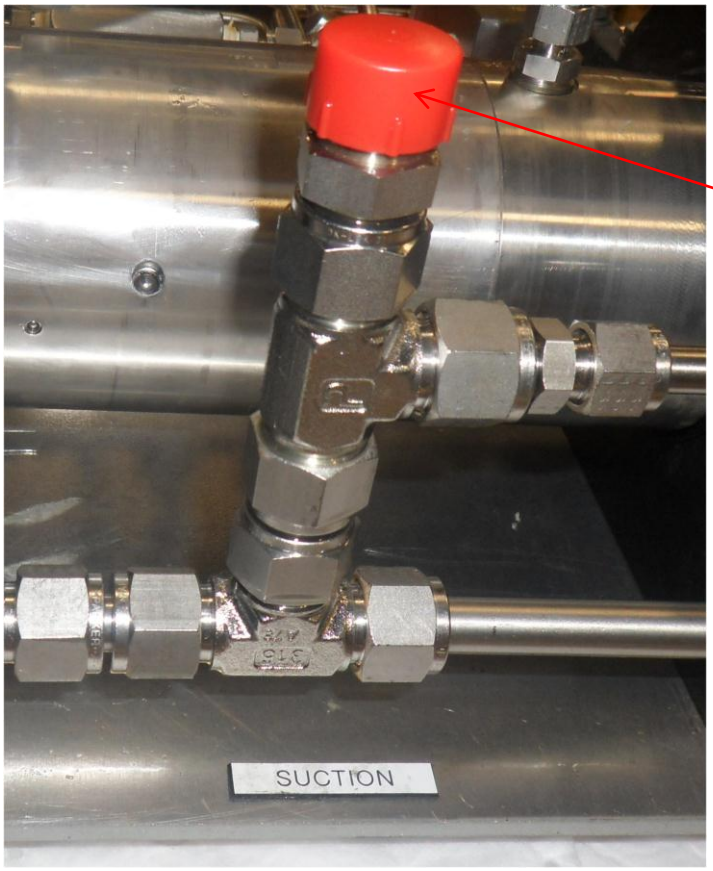
7 Connection to ROV











Suction line to Reservoir

To connect a subsea reservoir to the system simply remove the cap from the suction side of pump unit and connect to reservoir via supplied suction hose.

8 Operation

Ensure system is connected correctly and completely bled of all air.

To start system running operate valve marked pilot, this will open the pilot to open check valve and oil to flow in to the circuit.

When system is running, it will show pressure on the Verification gauge on port 3, this is invaluable when operational as this means you can ensure you have the correct pressure reading on the gauge before you select which direction you are going to open it up to.

When correct pressure is achieved either pilot marked 1 or 2 can be piloted depending on which direction is required and this will allow flow out to either A or B ports.

When correct pressure is achieved the pressure will stay in this line and can be monitored until depressurisation valve marked C or D is activated, then pressure will dissipate back in to reservoir.

8.1 Adjusting Main System Pressure

To adjust main system pressure of the IHPU

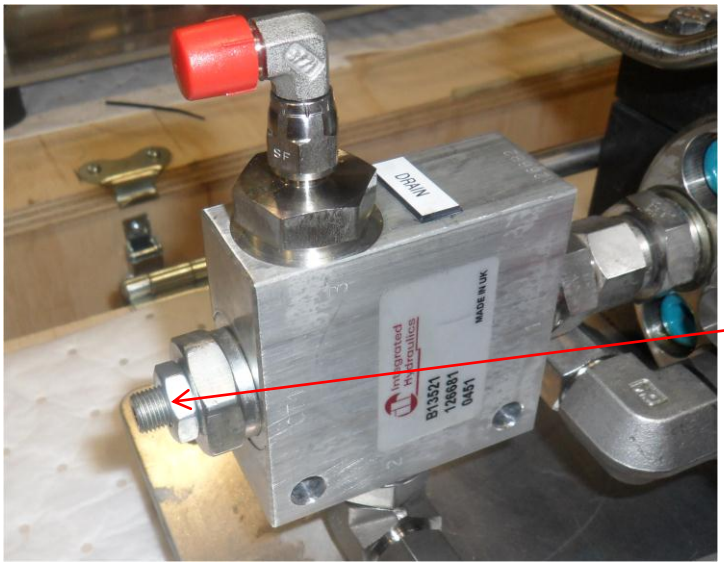
The pump is a MiniBooster HC6d2W and the example intensification ratio is 3.9:1 ,this means that the input pressure is multiplied by 3.9 .

e.g. Input pressure 2500 psi x 3.9 = 9750

If you want a lower output pressure then you need to decrease your input pressure.

There is a pressure reducing valve mounted on the input of the pump, this enables adjustment of the input pressure.

See Below:



Slacken lock nut
Adjust screw c/w for higher pressure and ccw for lower pressure.

9 Maintenance

Task	Frequency
Visually check hoses	Daily
Check connections and pipework are secure	Daily
Check condition of reservoir bag(s)	Daily

To ensure longest life of the pump we recommend flushing the unit after use.

10 Spares

Code	Item
SRTS-036-S	Spares Kit
SRTS-036-H	Hose Kit
SRTS-036-1	Main System Pump
SRTS-036-2	Pilot to Open check Valve
SRTS-036-3	Flow Restrictor Valve
SRTS-036-4	BIS Pilot to Open Check Valve
SRTS-036-5	Pressure Reducing Valve
SRTS-036-6	Seal Kit

www.f-e-t.com/subseatooling

11 Schematic & Drawings

Drawing Ref	Title
SRTS-036-GA	General Arrangement
SRTS-036	10KPSI Injection System Assembly Drawing
SRTS-036-SCH	Schematic

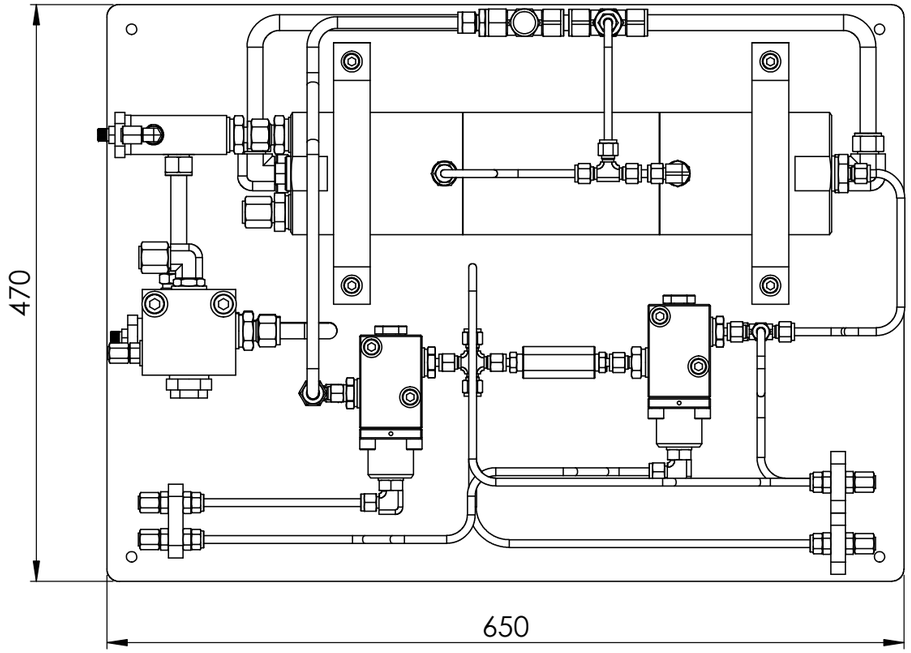
12 Additional Information

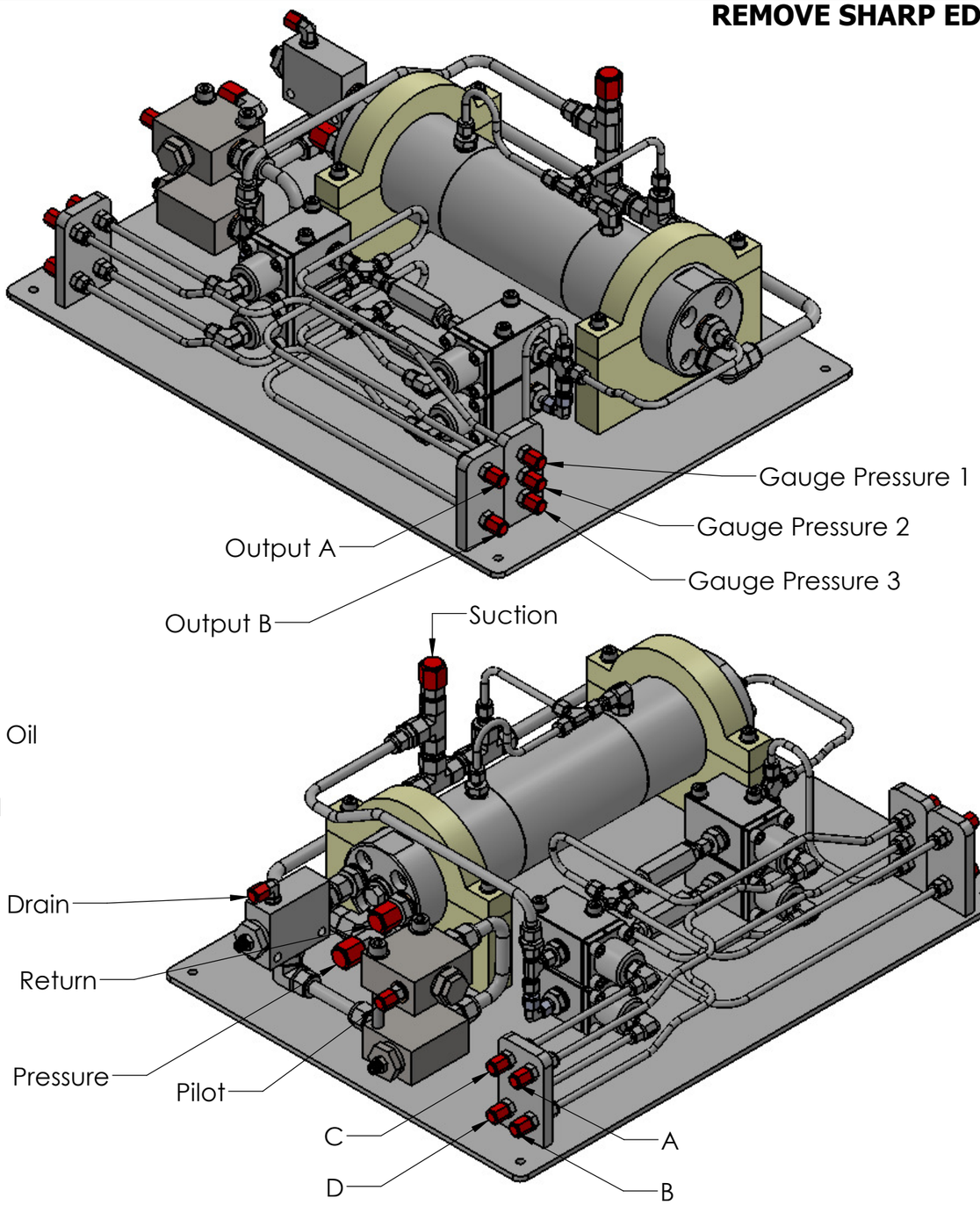
MiniBOOSTER HC6D2W Dual-Media Hydraulic Intensifier

THIRD ANGLE PROJECTION

IF IN DOUBT - ASK!

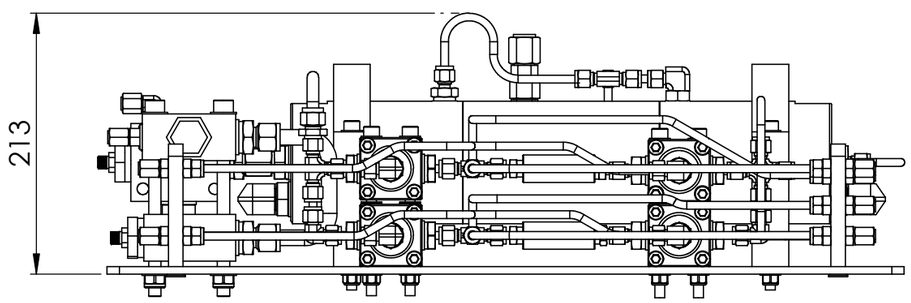
REMOVE SHARP EDGES





NOTES:

1. Pressure Required: 150 - 200 Bar (3000 psi)
2. Flow Required: 20 - 50 lmin
3. Output Pressure: 100 - 800 Bar (11600 psi)
4. Output Flow: 10-25 lmin
5. Operating Depth: 0 - 3000 Msw
6. Suitable For:
   - Hydraulic Oil
   - Glycol
   - Water
   - Methanol



REV	BY	DATE	DESCRIPTION	APP
1	GB	19/04/12	ISSUED FOR INFORMATION	

RECORD OF REVISIONS

MATERIAL: -

FINISH: -

USO, TOLERANCES TO BE: -

WT AIR	WT WATER
62.5 kg (E)	53.3 kg (E)

DRAWN	GB
DATE	19/04/2012
CHECK	DM
APPRV.	DM
ENGR.	GB

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Tel: ++44 (0) 1464 821595

SCALE (UOS): 1:5

ORIG. SIZE: A3

PROJECT: 10KPSI INJECTION SYSTEM

TITLE: 10KPSI INJECTION SYSTEM

GENERAL ARRANGEMENT DRAWING
Sheet 1 of 1

DOC. No. SRTS-036-GA

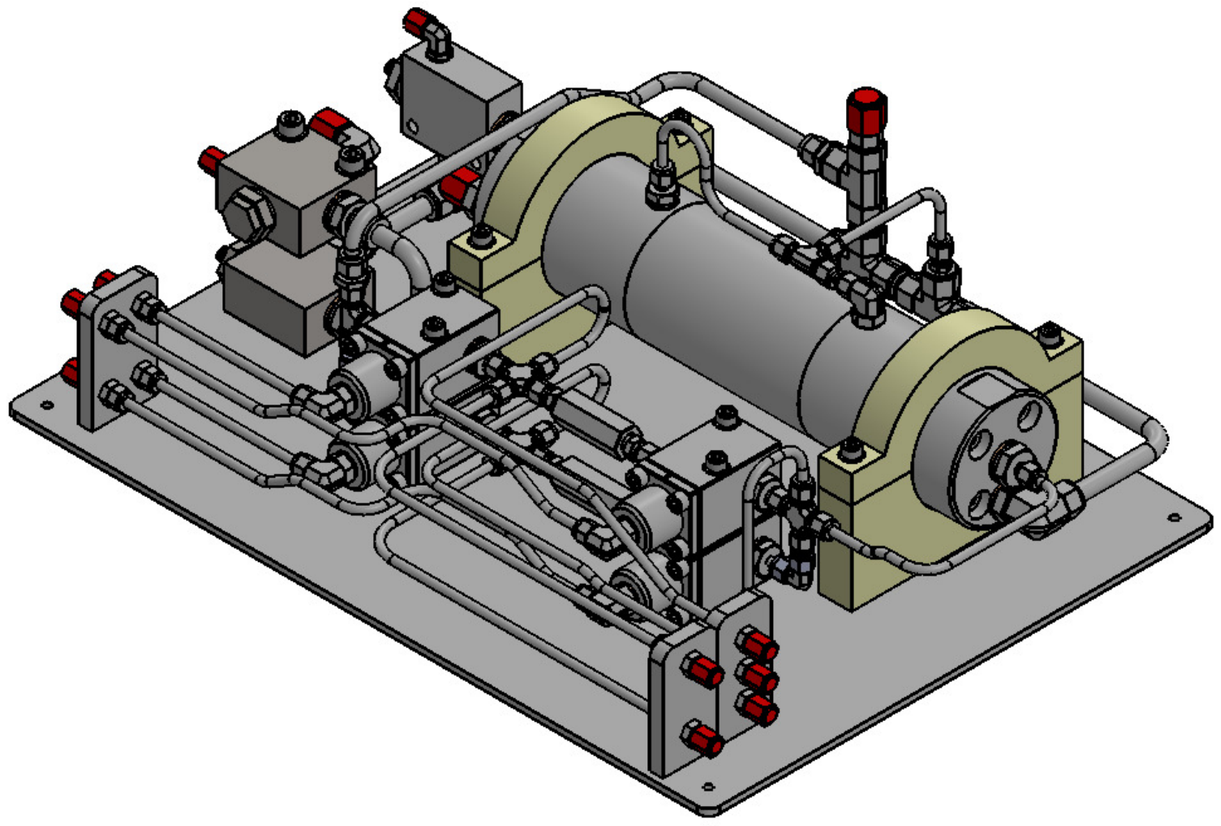
REV 1

THIRD ANGLE PROJECTION

Item No	Qty	Description	SRTS Part Ref.	Material
1	1	SRTS-036-001 (10kpsi Injection System Base Plate)	SRTS-036-001	Stainless Steel 316
2	2	SRTS-036-002 (HC6 Pump Support - Lower)	SRTS-036-002	Polypropylene
3	2	SRTS-036-003 (HC6 Pump Support - Upper)	SRTS-036-003	Polypropylene
4	1	SRTS-036-004 (10kpsi Injection System Tombstone A)	SRTS-036-004	Stainless Steel 316
5	1	SRTS-036-005 (10kpsi Injection System Tombstone B)	SRTS-036-005	Stainless Steel 316
6	1	SRTS-036-006 (10kpsi Injection System Tombstone C)	SRTS-036-006	Stainless Steel 316
7	1	HC6D2W Pump	HC6D2W-3.9-A-1HH	Stainless Steel 316
8	1	Pilot to Open Check - 4CK95	4CK95	Stainless Steel 316
9	1	Flow Restrictor Valve - 2CR85	2CR85	Stainless Steel 316
10	1	Pressure Reducing Valve - 1PA65P35S	1PA65P35S	Stainless Steel 316
11	2	Oliver Valve (In-Line Check Valve 1-4 NPTF 10k)	CV25S/HP/NA	Stainless Steel 316
12	4	V1-37N-HQ-SW-OV-NBR-10K (BIS PO Check Valve 10k)	V1-37N-HQ-SW-OV-NBR-10K	Stainless Steel 316
13	1	4 JIC x 1-4 BSPM	HF-4JIC-14BSPM	Stainless Steel 316
14	1	4 JIC x 1-4 BSPM 90 Elbow Postionable	HF-P90-4JIC-14BSPM	Stainless Steel 316
15	9	4 JIC x 1-4 OD Bulkhead	HF-BH-4JIC-14OD	Stainless Steel 316
16	1	8 JIC x 1-2 BSPM	HF-8JIC-12BSPM	Stainless Steel 316
17	1	8 JIC x 1-2 BSPM 90 Elbow Positionable	HF-P90-8JIC-12BSPM	Stainless Steel 316
18	1	8 JIC x 1-2 OD Standpipe	HF-8JIC-12BSPM	Stainless Steel 316
19	11	4 JIC Cap	HF-CAP-4JIC	Stainless Steel 316
20	3	8 JIC Cap	HF-CAP-8JIC	Stainless Steel 316
21	1	1-4 OD x 1-4 BSPM	HF-14OD-14BSPM	Stainless Steel 316
22	5	1-4 BSPM 90 Elbow Positionable	HF-P90-14OD-14BSPM	Stainless Steel 316
23	6	1-4 OD x 3-8 BSPM Standpipe	HF-SP-14OD-38BSPM	Stainless Steel 316
24	1	1-4 OD x 1-2 BSPM	HF-14OD-12BSPM	Stainless Steel 316
25	3	1-4 OD Port Connector	HF-PC-14OD	Stainless Steel 316
26	2	1-4 OD 90 Elbow	HF-F90-14OD	Stainless Steel 316
27	2	1-4 OD Tee	HF-T-14OD	Stainless Steel 316
28	3	1-4 OD Cross	HF-X-14OD	Stainless Steel 316
29	4	1-4 OD x 1-4 NPTM Standpipe	HF-14OD-14NPTM	Stainless Steel 316
30	2	1-4 OD x 3-8 BSPM	HF-14OD-38BSPM	Stainless Steel 316
31	1	1-4 OD x 1-2 OD Standpipe Reducer	HF-SP-14OD-12OD	Stainless Steel 316
32	1	1-4 OD x 3-8 OD Standpipe Reducer	HF-SP-14OD-38OD	Stainless Steel 316
33	4	1-2 OD x 1-2 BSPM	HF-12OD-12BSPM	Stainless Steel 316
34	2	1-2 OD Port Connector	HF-PC-12OD	Stainless Steel 316
35	1	1-2 OD x 1-2 BSPM Standpipe	HF-SP-12OD-12BSPM	Stainless Steel 316
36	3	1-2 BSPM 90 Elbow Positionable	HF-P90-12OD-12BSPM	Stainless Steel 316
37	3	1-2 OD Tee	HF-T-12OD	Stainless Steel 316
38	1	1-2 OD x 3-8 OD Standpipe Reducer	HF-SP-12OD-38OD	Stainless Steel 316
39	7	1-4 BSPP Dowty Seal	DW-14BSPP	St. Steel/Nitrile
40	8	3-8 BSPP Dowty Seal	DW-38BSPP	St. Steel/Nitrile
41	11	1-2 BSPP Dowty Seal	DW-12BSPP	St. Steel/Nitrile
42	8	Socket Head Cap Screw M8 x 130 long	F-SHCS-M8-130-A470	Stainless Gr A4-70
43	2	Socket Head Cap Screw M10 x 145 long	F-SHCS-M10-150-A470	Stainless Gr A4-70
44	3	C-Sunk Head Socket Screw M8 x 25 long	F-CSHS-M8-25-A470	Stainless Gr A4-70
45	24	Plain Washer M8	F-PW-M8-B-A470	Stainless Gr A4-70
46	4	Plain Washer M10	F-PW-M10-B-A470	Stainless Gr A4-70
47	8	Nylok Hex Nut M8	F-NL-M8-A470	Stainless Gr A4-70
48	2	Nylok Hex Nut M10	F-NL-M10-A470	Stainless Gr A4-70

IF IN DOUBT - ASK!

REMOVE SHARP EDGES



REV	BY	DATE	DESCRIPTION	APP
1	GB	19/04/12	ISSUED FOR CONSTRUCTION	

RECORD OF REVISIONS

MATERIAL: -

FINISH: -

USO, TOLERANCES TO BE: -

WT AIR	WT WATER
62.5 kg (E)	53.3kg (E)

DRAWN	GB
DATE	19/04/2012
CHECK	DM
APPRV.	DM
ENGR.	GB

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SCALE (UOS): 1:4

ORIG. SIZE: A3

PROJECT: 10KPSI INJECTION SYSTEM

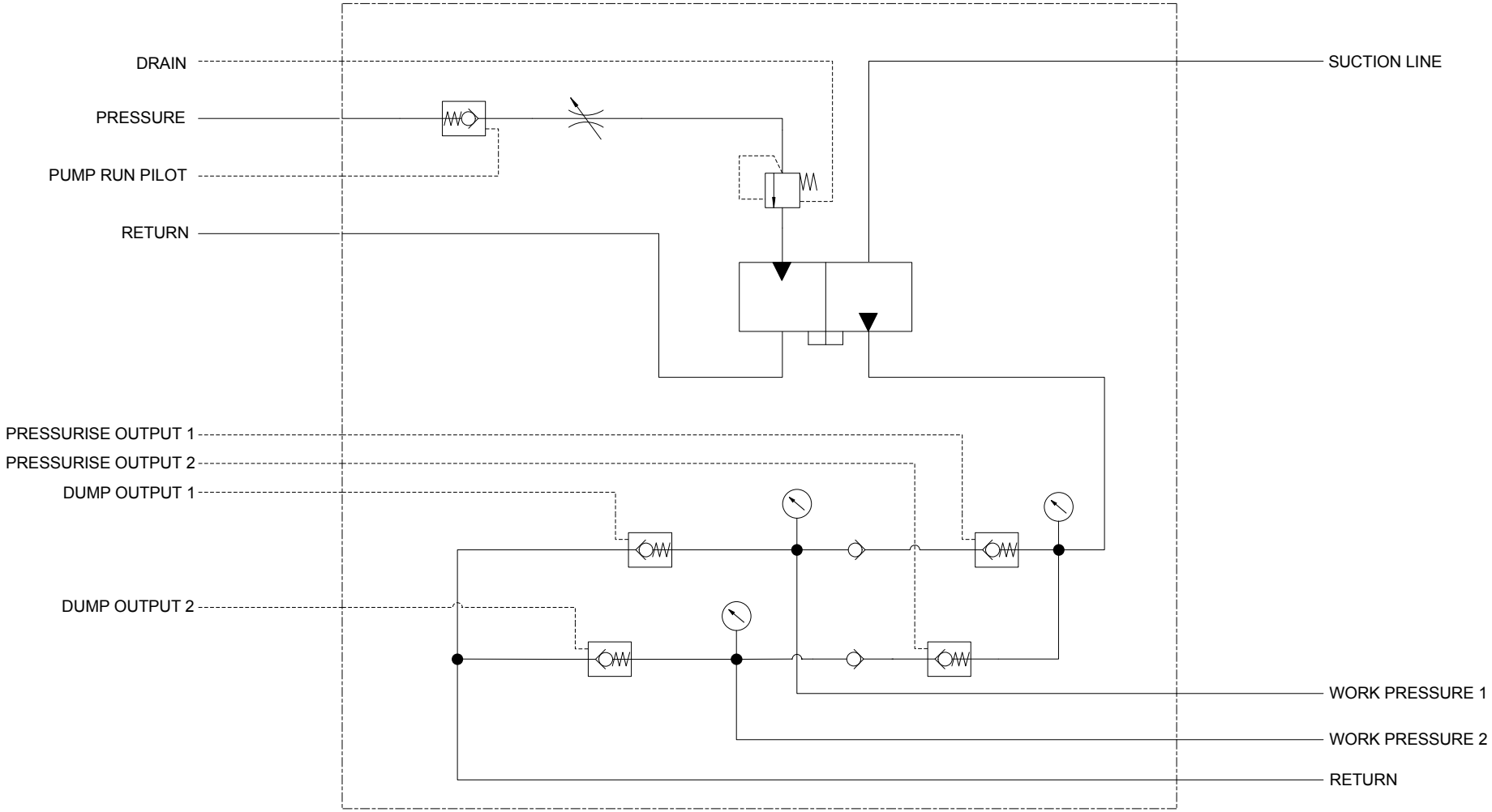
TITLE: 10KPSI INJECTION SYSTEM

ASSEMBLY DRAWING
Sheet 1 of 1

DOC. No. SRTS-036

REV 1

10kpsi INJECTION UNIT SCHEMATIC



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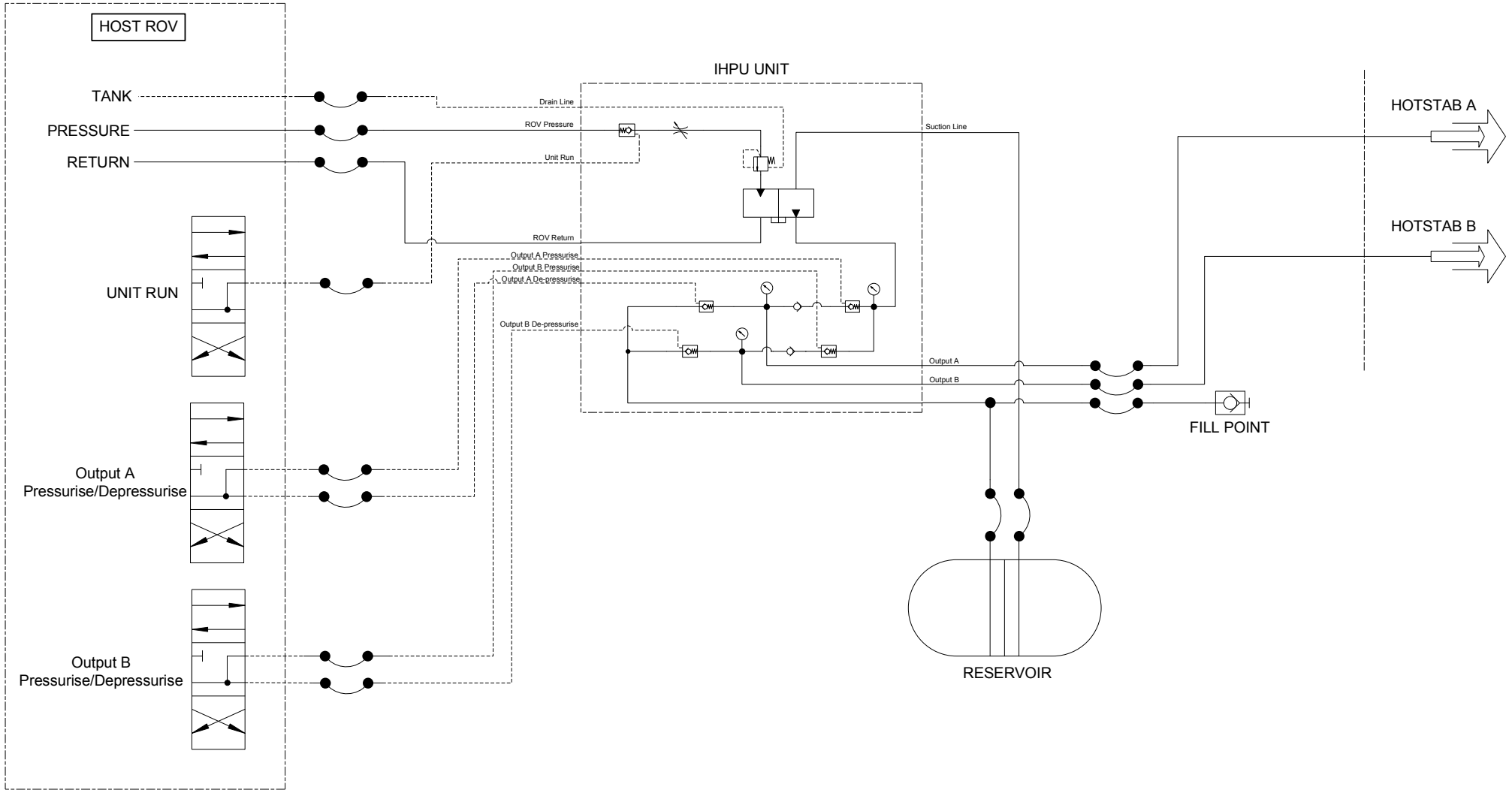
10kpsi INJECTION SYSTEM

SIZE	DATE	DWG NO	REV
A4	17/07/12	SRTS-036-SCH	1

SCALE NTS SHEET 1 OF 2

SUGGESTED IHPU SYSTEM SCHEMATIC



Specialist ROV Tooling Services Ltd
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Tel: +44 (0) 1464 821595

10kpsi INJECTION SYSTEM

SIZE	DATE	DWG NO	REV
A4	13/07/12	SRTS-036-SCH	1
SCALE NTS		SHEET 2 OF 2	

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HYDRAULICS A/S

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OPERATING INSTRUCTIONS

miniBOOSTER HC6D2W Dual-Media Hydraulic Intensifier

Bulletin No. HC6D2W-002
Date: 16/06/09

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Index

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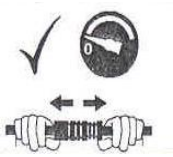
1.0 SAFETY INFORMATION

Although the miniBOOSTER Hydraulic Intensifier has been designed with operator safety in mind, it still requires the operator to be vigilant upon use, therefore ensure that all the following safety instructions have been read and understood! Contact your miniBOOSTER distributor if in doubt.

Read all instruction, warnings, and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. miniBOOSTER cannot be held responsible for damage or injury resulting from unsafe use, lack of maintenance or incorrect product and/or system operation. Contact your miniBOOSTER distributor if in doubt as to the safety precautions and operations. **Failure to comply with the following cautions and warnings could result in equipment damage and personal injury.**

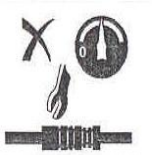
Eye protection must be worn when using this equipment.

Gloves must be worn when using this equipment.



System must be at zero pressure before disconnecting couplings.
Check integrity of connections before applying any hydraulic pressure.

Do not apply hydraulic pressure to non-connected fittings.



Do not unscrew any nipples, couplings or fittings under hydraulic pressure.

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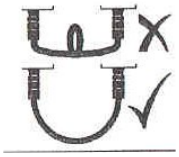
Do not exceed the maximum working pressure of system.



Avoid sharp bends and kinks when routing hydraulic hoses.

Do not exceed the maximum working pressure of system.

When the system is under hydraulic pressure **DO NOT STAND IN LINE** with fittings and connections. This is a danger area.
Keep this area clear of personnel at all times!

Any hoses, couplings, or fittings connected to this system must be clean and free from debris - contamination.

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2.0 DESCRIPTION

The miniBOOSTER HC6D2W is a self-priming, dual media hydraulic intensifier. It is designed to use one media to provide the energy to pressurize a second media. The intensifier is available in several intensification ratios and is capable of operating with several different medias.

Adjusting Media 1 pressure controls Media 2 pressure proportional to the intensification factor.

Like other miniBOOSTER models, the HC6D2W automatically compensates for consumption of Media 2 to maintain the HP set-point.

By design, the HC6D2W provides a continuous flow of high-pressure flow that is controlled internally by a bistable valve assembly.

The HC6D2W is constructed of corrosion resistant stainless steel and is available with different seal systems to permit use with a wide range of media.

3.0 FUNCTION

The basic operation of the HC6D2W intensifier is illustrated in the following function diagram.

Media 1 is fed through IN port flowing freely through the bistable valve (BV1), which in turn drives the LP/HP piston assembly. From both of the suction inlets (S1 & S2), Media 2 is drawn through inlet check valves (KV1) and pumped through high-pressure check valves (KV2) to the high pressure outlets (H).

The intensifier will automatically stall when the end pressure on the high-pressure side (H) is reached.

If there is a pressure drop on the high-pressure side due to consumption or leakage, the LP/HP piston assembly will automatically operate (oscillate) to maintain high pressure.

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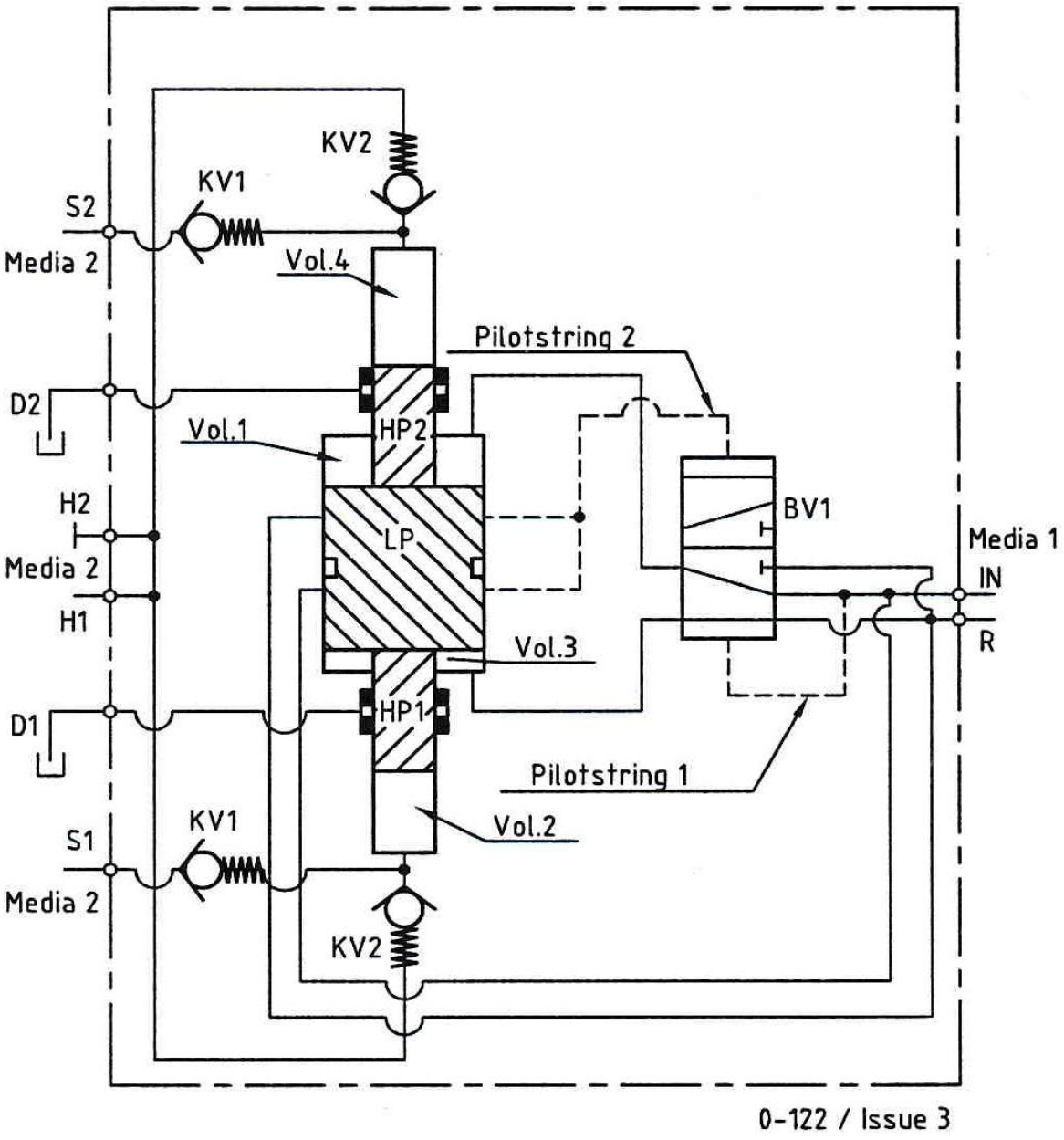
4.0 FUNCTION DIAGRAM



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5.0 TECHNICAL SPECIFICATIONS

Model:

HC6D2W

Pressure Specifications:

P_{IN}	20 - 200 bar	290 – 2,900 PSI
P_H	800 bar (Max)	11,600 PSI
P_R	As low as possible	

Temperature Specifications:

Media Oil:	-20°C / +110°C
Media Water:	+1°C / +110°C

NOTE: DO NOT EXCEED 110 °C

Materials of Construction:

Body:	316L Stainless Steel
Pistons:	Coated Stainless Steel
Checks:	316L Stainless Steel
Static Seals:	H-ECOPUR (Other seal systems available)
LP/HP seals:	H-ECOPUR (Other seal systems available)

Connections:

Inlet (IN)	½" BSPP
Return (R)	½" BSPP
Suction (S1,S2)	½" BSPP
High Pressure (H1,H2)	½" BSPP
Seal Drain (D1,D2)	1/8"BSPP

NOTE: For max. tightening torque, please see separate instructions.

Filtration:

Media 1	10 micron (nominal)
Media 2	40 micron (nominal)

Fluids:

Media 1	Recognized hydraulic fluids, glycol solutions (Min >10%)
Media 2	Hydraulic fluids, glycol, water, seawater

Note: For other media, such as methanol, please contact miniBOOSTER

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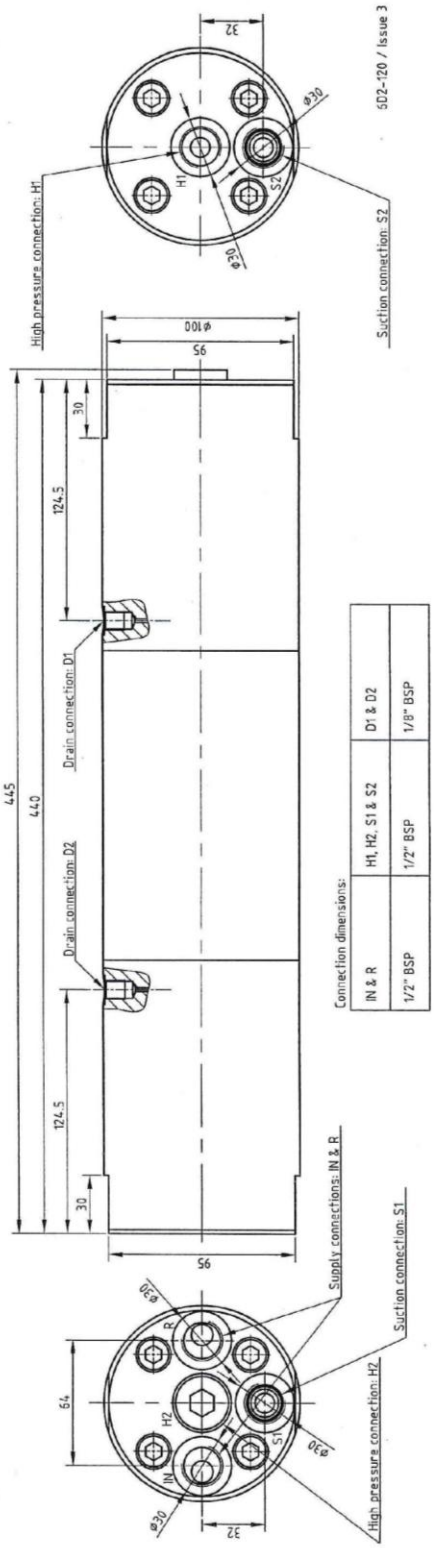
6.0 DIMENSIONAL DRAWING



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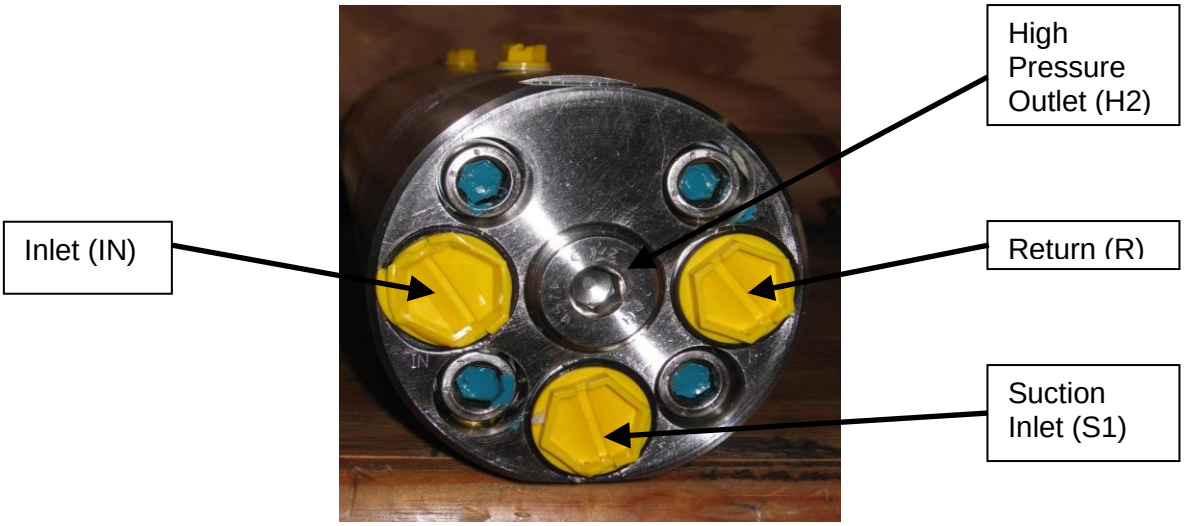
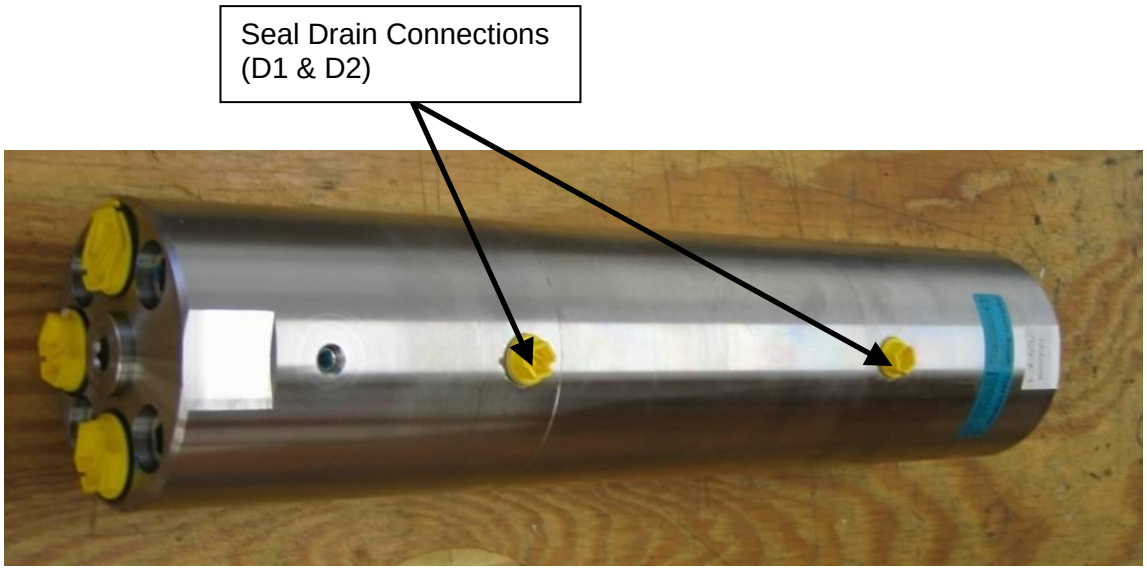
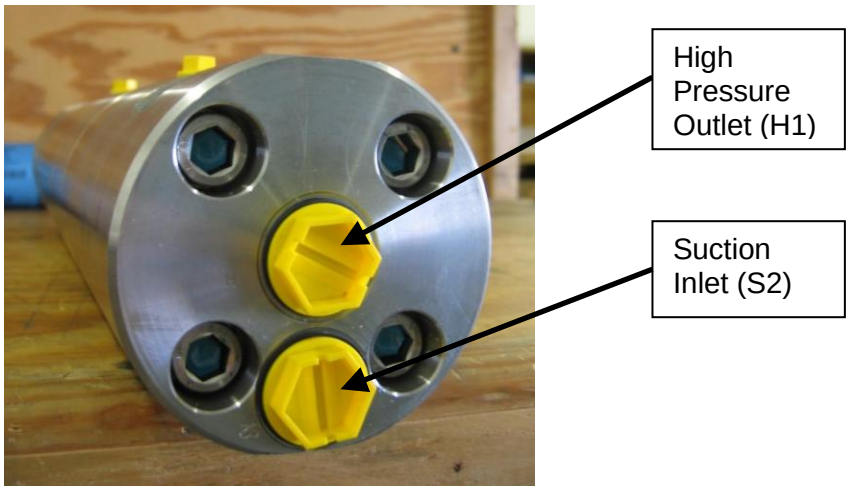
7.0 CONNECTION ILLUSTRATIONS







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8.0 SPECIAL TOOLS

- 4 mm Spanner Wrench for removal of seal retainer
- 10 mm Allen Head Wrench for removal of body bolts

9.0 RECOMMENDED SPARE PARTS

- Seal Kit, part numbers:

Intensification factor	Standard seal kits Media 1: mineral oil, water or seawater Media 2: mineral oil, water or seawater	Special seal kits Media 1: mineral oil, water or seawater Media 2: EPDM/PTBR/PTFE seals
1.0	SEALKIT-1.0HH	SEALKIT-1.0HE
1.2	SEALKIT-1.2HH	SEALKIT-1.2HE
1.5	SEALKIT-1.5HH	SEALKIT-1.5HE
2.0	SEALKIT-2.0HH	SEALKIT-2.0HE
3.0	SEALKIT-3.0HH	SEALKIT-3.0HE
3.9	SEALKIT-3.9HH	SEALKIT-3.9HE
5.2	SEALKIT-5.2HH	SEALKIT-5.2HE
7.1	SEALKIT-7.1HH	SEALKIT-7.1HE
10.1	SEALKIT-10.1HH	SEALKIT-10.1HE

- Body bolts, eight (8) – Part No.: HC6D2W-BOLTKIT

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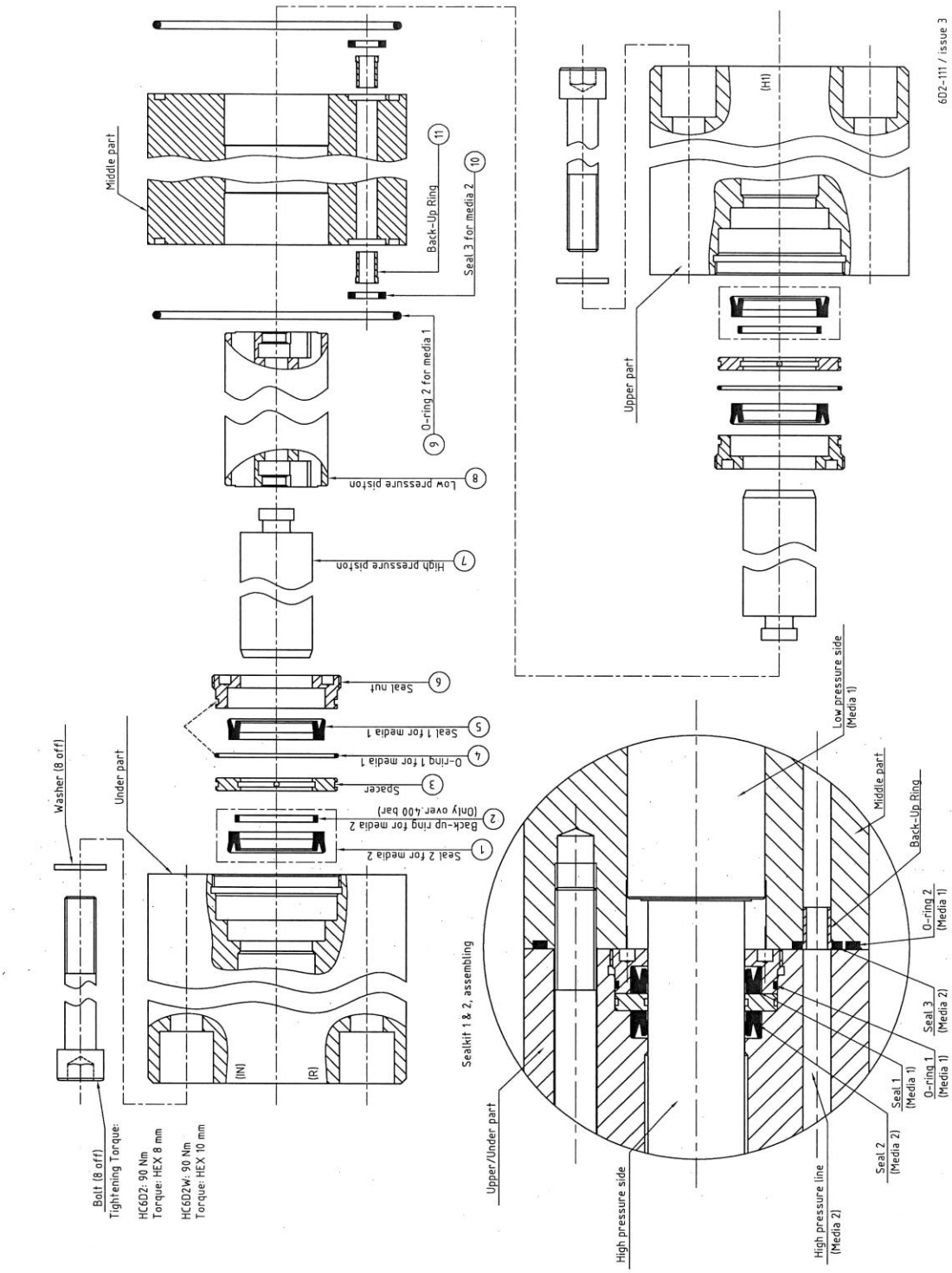
10.0 SEAL REPLACEMENT INSTRUCTIONS



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10.1 Disassembly of Seal Assembly:

Position numbers can be found on the drawing 6D2-111, page 9.

Secure the intensifier in a vice.

Remove the four (4) Allen head bolts w/ washers from the top- or bottom section.

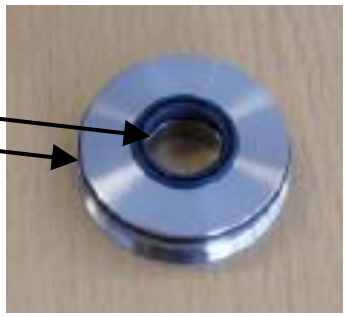
CAUTION: Be sure to hold part securely with two hands. There may be residual oil.

Remove the dismounted part from the booster and place it on a table.

Remove o-ring 2 (pos. 9), seal 3 (pos. 10) and back up ring (pos. 11) from middle section.

Unscrew and remove seal nut (pos. 6) using spanner wrench.

Remove seal 1 (pos. 5) and o-ring 1 (pos. 4)



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Remove spacer (pos. 3)

Remove seal 2 (pos. 1). If over 400 bar, also remove back up ring (pos. 2)

Clean permanent parts: seal nut and spacer and prepare for re-assembly with new seal kit.

10.2 Reassembly of new Seal Assembly:

Position numbers can be found on the drawing 6D2-111, page 9.
Use anti seize grease, such as Rocol Anti Seize (14143), on all parts during reassembly.

Please note:

There are two (2) different sealing rings; red and blue.

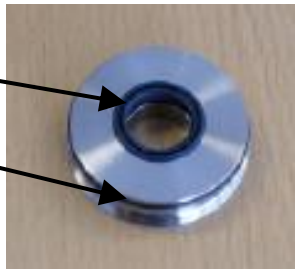
Red seals (pos. 1) are for pressure > 400 bar.
Grey back-up rings (pos. 2) are to be mounted on top when installing red seals.

Blue seals are for pressure < 400 bar. No back-up rings are required.

Install seal 2 (pos. 1). If over 400 bar, also install back up ring (pos. 2)

Install spacer (pos. 3)

Install seal 1 (pos. 5) and o-ring 1 (pos. 4)



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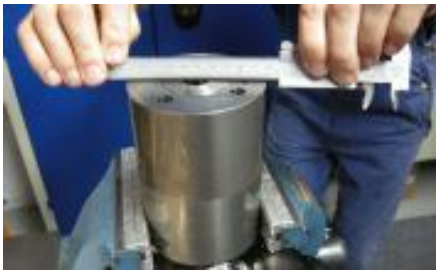
Install sealing nut (pos. 6) using spanner wrench.

Tighten until sealing nut bottoms in hole.

After installing check that sealing nut is below surface of top- or bottom section.



If HP-piston was loosened during disassembly, reinstall carefully. It may be necessary to use a plastic-face hammer.

Install o-ring 2 (pos. 9), seal 3 (pos. 10) and back up ring (pos. 11) in to middle section of intensifier.

Reinstall repaired section on to middle section of intensifier.

Please note!

-the two (2) pistons are to be mounted via T-grooves.
-the two (2) drain holes are at the same side.

Mount the four (4) Allen head bolts w/ washers, torque 90 Nm .

Repeat procedure to replace seals in other end of intensifier.

11.0 CONTACT INFORMATION

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