INSTALLATION, OPERATION, MAINTENANCE AND OVERHAUL INSTRUCTIONS

FOR LOW PRESSURE XW SERIES PUMPS AND MOTOR PUMP UNITS

Doc No.	Rev.	Description	Author	Approved
OM-03-00002-00	1	XW Low Pressure	D. Phillips	A. Middleton
OM-03-00002-00	2	General Update	D. Phillips	A. Cossins
OM-03-00002-00	3	Bleed notes added	D. Phillips	A. Cossins
OM-03-00002-00	4	Coupling fit notes	D. Phillips	A.D.Cossins
OM-03-00002-00	5	Updated storage	A.Adams	A.D.Cossins

Manufacturer of high pressure, stainless steel fluid power equipment for the International offshore oil & gas industry

Mounting Details

XW motor-pump units may be installed in either the horizontal or vertical plane. Units that are horizontally mounted are secured using the motor mounting feet. The recommended method of mounting vertical units is through a mounting slot cut into a support plate or platform. This allows the unit to be removed with minimum clearance required overhead. Marshalsea bellhousings carry an additional 4 tapped holes on the same PCD as the motor fixing bolts to allow the complete motor-pump unit assembly to be secured to a suitable mounting platform. Refer to the motor-pump unit drawing for mounting dimensions specific to your motor-pump configuration.

Health and Safety

All work should be carried out by suitably qualified personnel. Eye protection and PPE equipment must be worn. Use lifting equipment for items that weigh over 20Kg.

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Installation

1. Refer to the relevant pump data sheet for details of the pump connections.

2. Fluid is left in the pump after factory testing to assist with start-up and priming. The pump should not be rotated until the suction line pipework is connected and flooded.

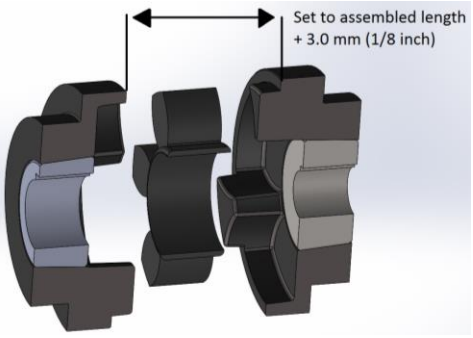
3. Connect the suction line to the pump. Please note that it is the end users responsibility to ensure that the free flow of fluid from the tank, via the suction line is greater than the maximum flow rate of the pump (checked after the filter). The filter fitted to the suction line should be 125 microns or better.

4. Open the valve on the suction line pipework, such that the pump fills with fluid. Unscrew the air bleed screws shown on the pump data sheet (if applicable) until fluid is observed. Once fluid is observed re-tighten the screw.

5. Connect the motor to the power supply. The pumps are bi-directional and can run either clockwise or anti-clockwise. The electrical connection should be made by suitably qualified personnel.

6. Fill the pump case with Castrol Alphasyn PG150. Other good quality mineral oils with a viscosity between 100 and 150cst may be used. Oil volumes are provided on the pump data sheets.

Information for Setting Coupling



Position coupling halves and element together and measure the distance between the coupling faces. Position each coupling half on the motor and pump shafts such that when assembled the coupling faces will be positioned at the measured dimension plus 3.0mm (1/8 inch). This ensures that axial forces from the pump are not transmitted to the motor bearings.

Tighten coupling locking screws (refer to leaflet supplied with couplings for specific torque figures). Note that the position of the bushes may move as the screws are tightened. Re-check assembly dimensions.

Fit element to one coupling half and assemble the two units together. The pump should be positioned with the inlet port uppermost.

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Operation

1. If possible the pump should be started without the delivery pipe work connected. This will enable the pumps to prime easily. Once the pump is delivering a constant flow, the pump may be stopped.

2. When started the pump should self prime and deliver fluid. It may take several minutes for the air in the system to be expelled from the pump and during this time the output flow will be erratic.

3. After several minutes, continued loss of flow and/or vibration indicates air remains trapped in the cylinder block, in this case it may be necessary to open the bleed screws a number of times. See ‘Air Bleeding Procedures’ for detailed instructions.

4. If opening the bleed screws fails to remove all the trapped air it will be necessary to purge the pump by pressurising the inlet and forcing fluid through the piston chambers. See ‘Air Bleeding Procedures’ for detailed instructions.

5. Connect the delivery pipe work, ensuring that a relief valve is fitted to the system to protect the pump from being over-pressurised.

6. Start the motor and apply load pressure to the pump and ensure that the pump operates correctly. The flow rate from the pump will decrease with increasing load pressure.

Air Bleeding Procedures

Air Bleed Screws

The positioning of the bleed screws varies between different versions of the XW pump. For the location of the appropriate bleed screws refer to the relevant pump technical data sheet. Figure A shows typical bleed screw positions.

Unscrew the appropriate air bleed screw(s), once fluid is seen refit the screw (torque to 6-9 Nm). It may be necessary to open the bleed screws a number of times to remove all trapped air.

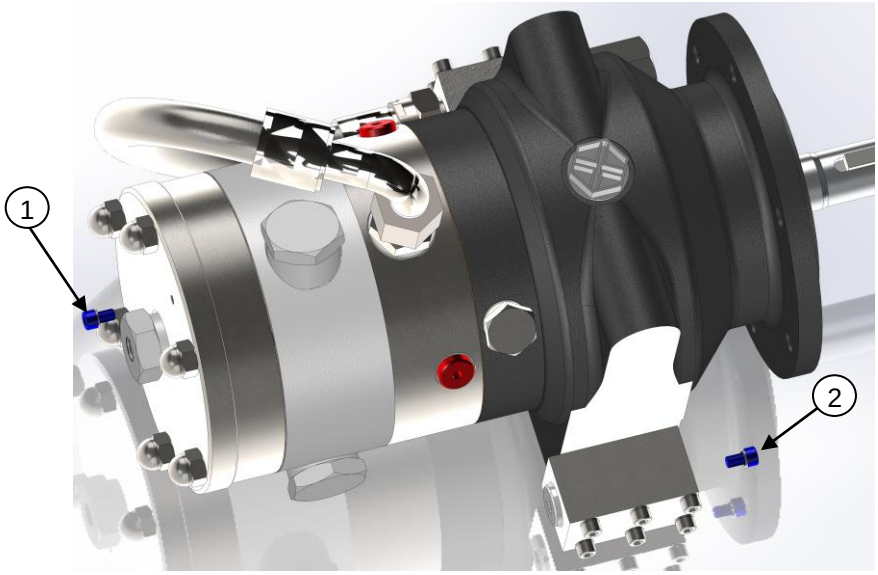

Figure A – Removing air bleed screws

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Pressurising the Pump Inlet

- Shut off the supply of fluid to the pump inlet by closing off the ball valve in the suction side pipework. Remove one of the two 1/4” BSP plugs in the bulkhead (highlighted red Figure B.1).

- Connect a flushing/charging/hand pump to the open 1/4” BSP port and gradually increase the pressure. The maximum pressure applied must not exceed 100 PSI (7.0 bar).

- In practice this pressure should not be reached since both the suction and delivery valves will open allowing air to be pushed through the pump and the chambers to be fully flooded with fluid.

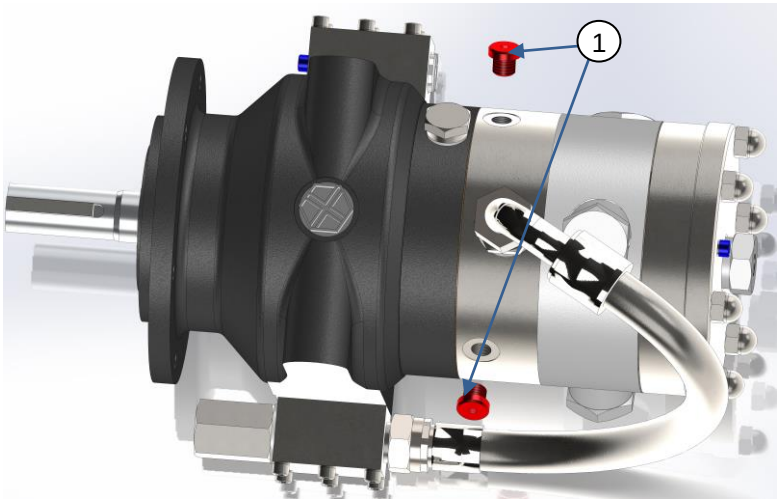

Figure B – Removal of 1/4” BSP plug

- Run the flushing/charging/hand pump until the discharge from the pump becomes steady (i.e. all air has been removed).

- With the flushing/charging/hand pump still connected open the suction side ball valve and run the pump. If output flow remains erratic stop the pump, shut off the suction side ball valve and repeat the previous step.

- Once output flow is steady and no trapped air remains; shut off the suction side ball valve. Remove the flushing pump and refit the 1/4” BSP plug (torque to 15-20 Nm) and open the suction side ball valve.

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Maintenance and Storage

Maintenance of the lubricating oil level and condition is the major element of routine servicing. The oil fill, level and drain plugs are shown on the pump data sheet. The maintenance schedule for the pump is as follows:

1. Change the case lubricating oil at 150 operating hour intervals

2. Regularly clean or replace the inlet filter

3. Periodically check tightness of fasteners and hydraulic connections

During running a small amount of lubricating oil is consumed (typically 1 – 2cc/hour) and a degree of cross contamination between the oil and process fluid takes place. Due to this small oil consumption the oil level should be routinely monitored. If operational circumstances do not permit the oil level to be routinely checked, consideration should be given to increasing the oil volume by way of an auxiliary reservoir.

Case Oil Levels

Horizontally mounted motor-pump units include a fill/breather assembly which prevents pressure build up in the case with increasing temperature. This assembly also gives an indication of the oil level when the pump is running. If the pump is overfilled, oil will be thrown out through the breather. If the oil level is correct, a small amount of oil will be seen entering the breather. If the oil level is too low, no oil will be seen in the breather.

The vertical oil level indicator included with each vertically mounted motor-pump unit gives a clear reading of the volume of oil within the pump. The indicator also provides an external circulation path which allows the natural pumping action of the rotating swashplate to circulate oil from the case to the fill point on the bellhousing. This provides a degree of protection to the upper bearings should the oil level fall.

Storage

Storage up to 6 months:

When the pump is delivered from Bifold Marshalsea the pump will be supplied primed with water glycol and the case drained of lubricating oil. For storage the air must be displaced from the case by filling the case with a good quality mineral oil to prevent internal corrosion to the bearings and shaft assembly. For pumps that were purchased as vertical units, a seal housing assembly will need to be purchased from Bifold Marshalsea for storage purposes only (seal housing assembly part number RKSA-03-00006-00)

Before commissioning after storage the oil in the case must be drained and replaced with new oil to the correct specification and operational level before the pump is started. It is recommended that the pump is run to waste for a short period to prevent the water glycol present in the pump during storage entering the system.

Storage 6 months and above:

When the pump is delivered from Bifold Marshalsea the pump will be supplied primed with water glycol (oil on request) and the case drained of lubricating oil. For storage the air must be displaced from the case by filling the case with a good quality mineral oil to prevent internal corrosion to the bearings and shaft assembly. For storage greater than 6 months the pump chambers should also be drained of water glycol and filled with a mineral oil. This can be achieved by connecting the pump inlet to an oil supply. If an oil supply is not available, the pump inlet (bulkhead) can be filled manually with oil (the oil level will need to be maintained manually during the flushing procedure). To flush, the pump shaft should be turned (direction not important but one direction should be maintained once started) by hand until non contaminated oil is discharged from the outlet.

Before commissioning after storage the oil in the case must be drained and replaced with new oil to the correct specification and operational level before the pump is started. It is recommended that the pump be run to waste for a short period to prevent the oil present in the pump during storage entering the system.

Note: *The pump can be supplied primed with oil from the factory if specified on the purchase order.*

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Instructions Relating to the ATEX Directive

This product is certified by BifoldMarshalsea to be ATEX compliant. The following actions/tasks result from risk analysis carried out to comply with the directive.

1. The maintenance schedule forms a protective scheme to prevent premature failure and subsequent temperature rise, this must be complied with. If the maintenance regime cannot be guaranteed, additional protective measures must be taken i.e. temperature monitoring of the product and/or the provision of additional lubricating oil.

2. Minimum size motors should be used to drive this product to prevent over driving of damaged parts resulting from a failure. If the motors are not supplied by BifoldMarshalsea, our technical department should be consulted for the correct motor size.

3. Before this product is put out into service, all parts of this document must be read and complied with.

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Pump Overhaul Instructions

These instructions provide an overview of the overhaul procedure of high pressure XW pumps using a pump-specific repair kit. For part numbers of components and their positions once installed refer to the pump general assembly. All installed seals should be removed and discarded during disassembly, and then replaced with new components contained in the seal or repair kit.

Pumps must not be dismantled while vertical for reasons of safety, also there is a danger of bearing parts being lost.

1. Drain oil from pump case, check for contamination. Maintain the pump in the horizontal plane.

2. Remove delivery connection (figure 1.1) and hexagon nuts (figure 1.2). Beware of piston spring load separating pump cylinder block from case.

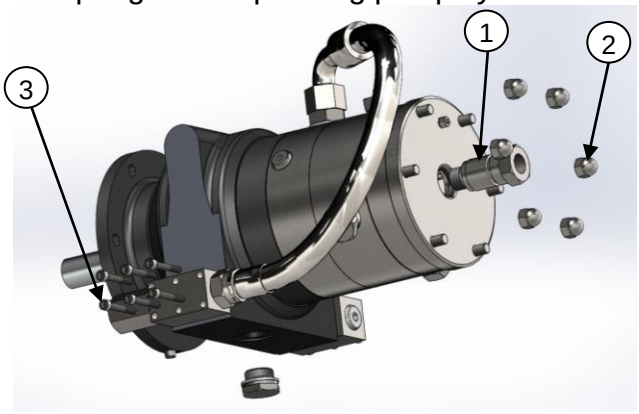

Figure 1

3. (Cool case pumps only) Remove M6 bolts (figure 1.3) attaching cooling blocks to the case. Remove cooling blocks (figure 2.2) from case and unscrew inlet hose (figure 2.3). Slide cooling tubes out from case.

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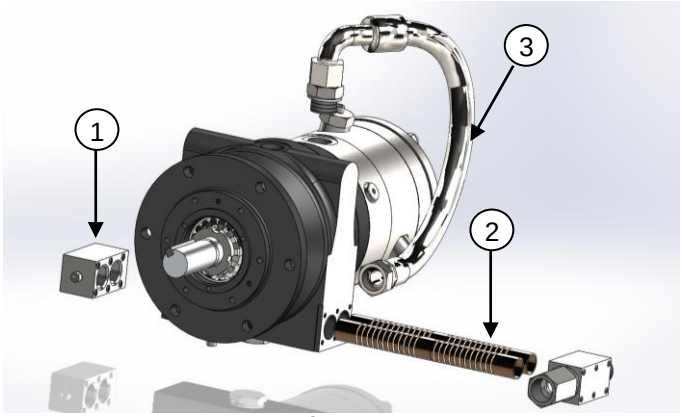

Figure 2

4. Withdraw the end cover. Withdraw the cylinder block assembly from the case taking care to retain the pistons in their respective cylinders.

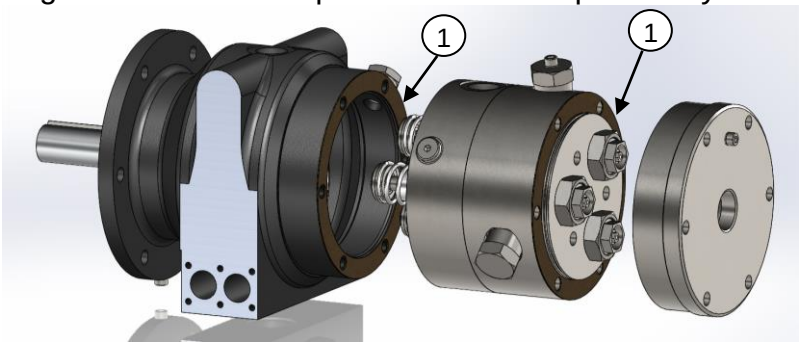

Figure 3

5. Remove gaskets (brown – figure 3.1) from case and cylinder block. Remove bulkhead. Note bulkhead must be replaced in the same position.

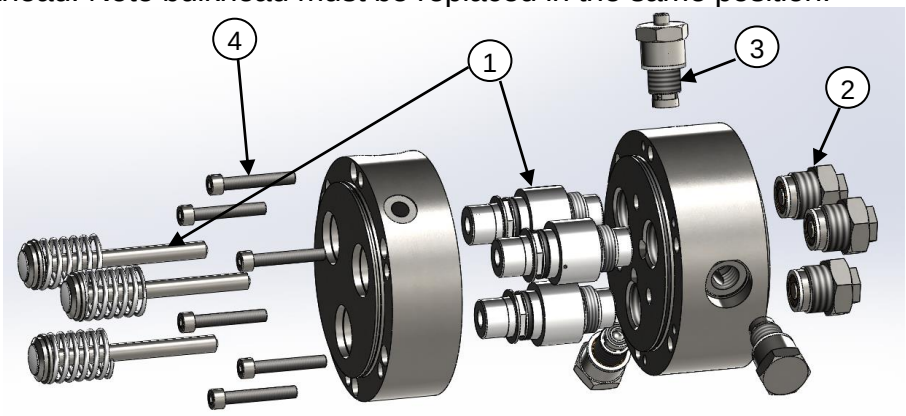

Figure 4

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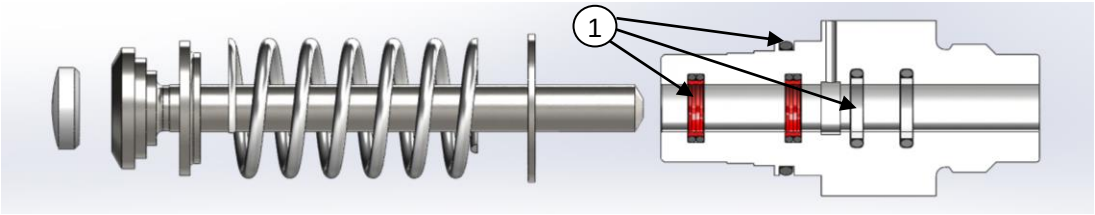

Figure 5 – Piston/Cylinder Assemblies

6. Remove piston/cylinder assemblies (figure 4.1). If only seals are to be replaced then care should be taken to keep the matching pistons and cylinders together, they are matched sets and should not be interchanged. If replacing only seals; remove old ones (figure 5.1), care must be taken not to damage cylinder bores.

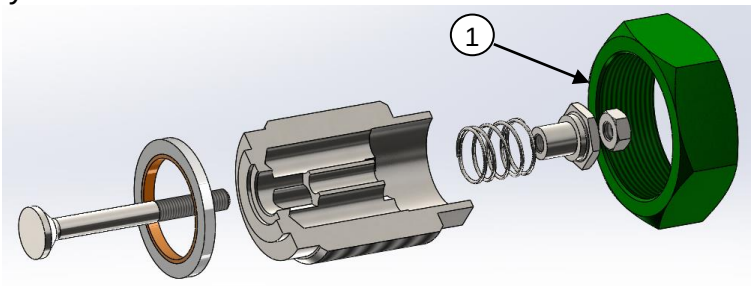

Figure 6 – Suction Valve Assemblies

7. Remove suction valve sub-assemblies (figure 4.2). Examine and test for leakage, re-lap seat or renew.

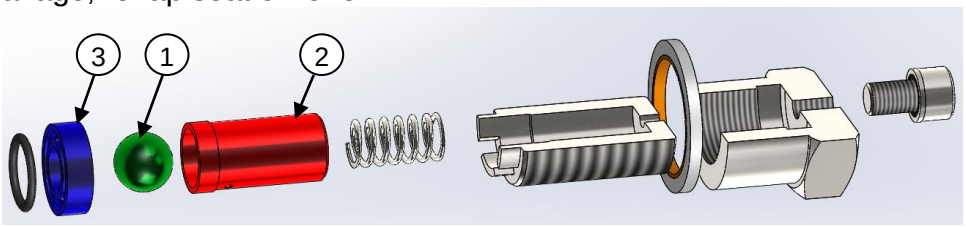

Figure 7 – Delivery Valve Assemblies

8. Remove delivery valve assemblies (figure 4.3) and disassemble. Examine ball (green – figure 7.1), guide (red – figure 7.2) and seat (blue – figure 7.3) for damage or wear, renew if necessary.

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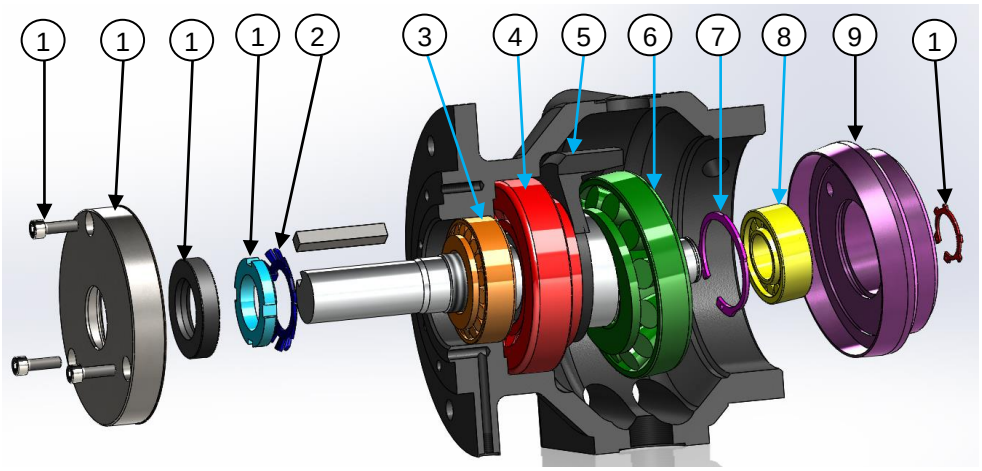

Figure 8

9. For horizontally mounted pumps remove the bolts (figure 8.11) attaching the seal housing to the case, remove the seal housing (figure 8.12) and shaft seal (figure 8.13). Remove gasket from seal housing/case.

10. Disengage the tab washer (light blue – figure 8.1) and remove with lockwasher (dark blue – figure 8.2)

11. Support shaft assembly inside case and drive complete assembly from case with soft mallet. Drive the two bearings (red - figure 8.4 and orange – figure 8.3) from case through access holes.

12. Securely restrain shaft assembly for bearing removal (clamp in machine vice across parallel faces of balance weight).

13. Remove circlip (red – figure 8.10) from shaft

14. Using leg type bearing puller pull complete swashplate (pink – figure 8.9) assembly from shaft (pull on rear of bearing (yellow – figure 8.8).

15. Using bearing puller pull bearing (green – figure 8.6) from shaft through access slots in balance weight (black – figure 8.5)

16. Remove circlip (pink – figure 8.7) from swashplate.

17. Drive bearing (yellow – figure 8.8) from swashplate. Note the thrust ring need only be replaced if it is damaged or scored, minor scuffing is acceptable.

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ASSEMBLY

1. The piston/cylinder assemblies are matched and care should be taken not to mix them up. The fit between the piston and cylinder is carefully controlled in manufacture; it is advisable therefore to get the "feel" of the piston fit in the cylinder before fitting into cylinder block. If only seals are to be replaced it is advisable to fit them before the cylinders are fitted into the cylinder block. Seal rings are folded into a heart shape, positioned in the cylinder groove and reformed using non-metallic taper tools and finally the piston.

2. Ensure that the all ports and mating faces in the cylinder block are perfectly clean and free from marks which may impair the sealing ability of the seals.

3. Fit composite seals into cylinder block noting orientation of corner back up ring (false coloured green) as in figure 9 below.

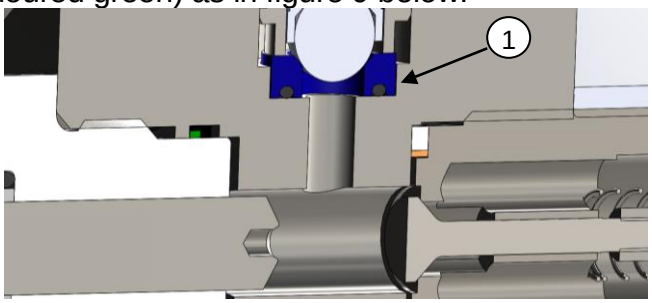

Figure 9

4. Screw cylinders, with matched piston in place, into cylinder block and tighten cylinders to 60-65Nm.

5. With new seals fitted replace bulkhead. Note bulkhead must be fitted in its original position. Torque bolts (figure 4.5) to 15-20Nm.

6. Assemble suction valve sub-assemblies as per figure 6; the M4 nut should be flush with the end of the valve stem. Torque nut to 2-3Nm, apply loctite 225, 1-2 drops. Screw into cylinder block, apply a small amount of Loctite 225 to the last few threads and tighten to 60-65Nm. Fit lock nuts (green – figure 6.1) and torque to 30-35Nm, note lock nuts are not fitted to 6 piston XW pump variants.

7. Position the delivery valve seats (blue – figure 9.1) with o-rings installed into the cylinder block, assemble the remaining delivery valve sub-assembly components as in figure 7 and screw them into the cylinder block. Torque to 65-70Nm.

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8. Remove each piston in turn and fit thrust washers & springs (as per figure 5).

9. Shaft Assembly – 1/3 and 2/3 stroke shafts only

9.1. Fit new bearing tracks (green - figure 8.6 and yellow - figure 8.8) to the swashplate (pink - figure 8.9) by heating (preferred) or by pressing with fitting sleeves if a heat source is not available. Note- bearing (yellow - figure 8.8) MUST be fitted with the roller retaining circlip facing the thrust ring i.e. outwards. Fit circlip (pink – figure 8.7)

9.2. Fit bearing halves (green - figure 8.6 and red - figure 8.4) to shaft by heating (preferred) or pressing.

9.3. Press complete swashplate assembly on to shaft (push on inner track of bearing (yellow – figure 8.8)). Position swashplate assembly on shaft such that when bearing (green – figure 8.6) makes contact the rollers of bearing (yellow – figure 8.8) have free longitudinal movement and are clear of the circlip and guide faces. As the main thrust bearing (green – figure 8.6) wears the swashplate will move back and consequently there must be clearance on the ends of the rollers. Fit circlip (red – figure 8.10)

9.4. Lightly lubricate bearings and position shaft assembly into case

9.5. Fit bearing (orange – figure 8.3), tab washer and locknut (light blue – figure 8.1 and dark blue figure 8.2). Tighten locknut fully and tap shaft end with a soft mallet to set the bearing. Slacken locknut and re-tighten to remove free play from shaft assembly. Engage tab washer.

10. Shaft Assembly – full stroke shafts only

10.1. Remove roller retaining circlip in bearing (yellow – figure 8.8) and separate bearing halves and rollers.

10.2. Fit outer track of bearing (green – figure 8.6) and bearing track (yellow – figure 8.8) to swashplate (pink – figure 8.9) by heating (preferred) or by pressing with fitting sleeves. The outer track of bearing (yellow – figure 8.8) MUST be fitted with the circlip groove inwards allowing assembly over the rollers when fitting inside the case.

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10.3. Fit bearing halves (green – figure 8.6 and red – figure 8.4) to shaft by heating (preferred) or pressing.

10.4. Fit inner track of bearing (yellow – figure 8.8) to shaft and fit circlip (red – figure 8.10)

10.5. Trial assemble swashplate assembly to shaft and ensure the rollers of bearing (yellow – figure 8.8) have free end movement as 9.3.

10.6. Fit shaft assembly to case as 9.4. and 9.5.

10.7. Position rollers of bearing (yellow – figure 8.8) to bearing inner track with grease. Fit swashplate assembly over rollers.

11. For horizontally mounted pumps re-fit seal housing assembly. Torque bolts to 9-12Nm.

12. Fit new gasket (brown – figure 3.1) over case studs, and slide cylinder block assembly over studs.

13. Fit new gasket (brown – figure 3.1) over studs against cylinder block and slide end cover over studs. Push end cover until hexagon nuts can be screwed on to studs. Before nuts are fully tightened; fit delivery connection with new seals, noting orientation of corner back up ring.

14. (Cool case pumps only) Slide cooling tubes into block and fit the four o-rings over the ends of the tubes. Position cooling blocks over the cooling tubes with new seals in place and torque the 12 bolts to 6-9Nm. Fit hose and adaptors.

Preparation for Running Pump after Overhaul

1. Run pump off-load and ensure that no abnormal noises are evident.

2. After an initial running in period of two hours, gradually increase pressure in steps of 500 psi every 15-20 minutes until full working pressure is reached. The pump case temperature must not exceed 85°C during the testing. For non-cooled case pumps, it may not be possible to run the pump for 15 minutes at each pressure setting. The pump is now ready for normal service.

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OM-03-00002-00	3	Bleed notes added	D. Phillips	A. Cossins
OM-03-00002-00	4	Coupling fit notes	D. Phillips	A.D.Cossins
OM-03-00002-00	5	Updated storage	A.Adams	A.D.Cossins

DO NOT SCALE

THIRD ANGLE PROJECTION

DIMENSIONS IN MILLIMETRES

FP10P - S1 - 04 - 32 - NU - V - 77A9 - 24D - ML - 57 - K85

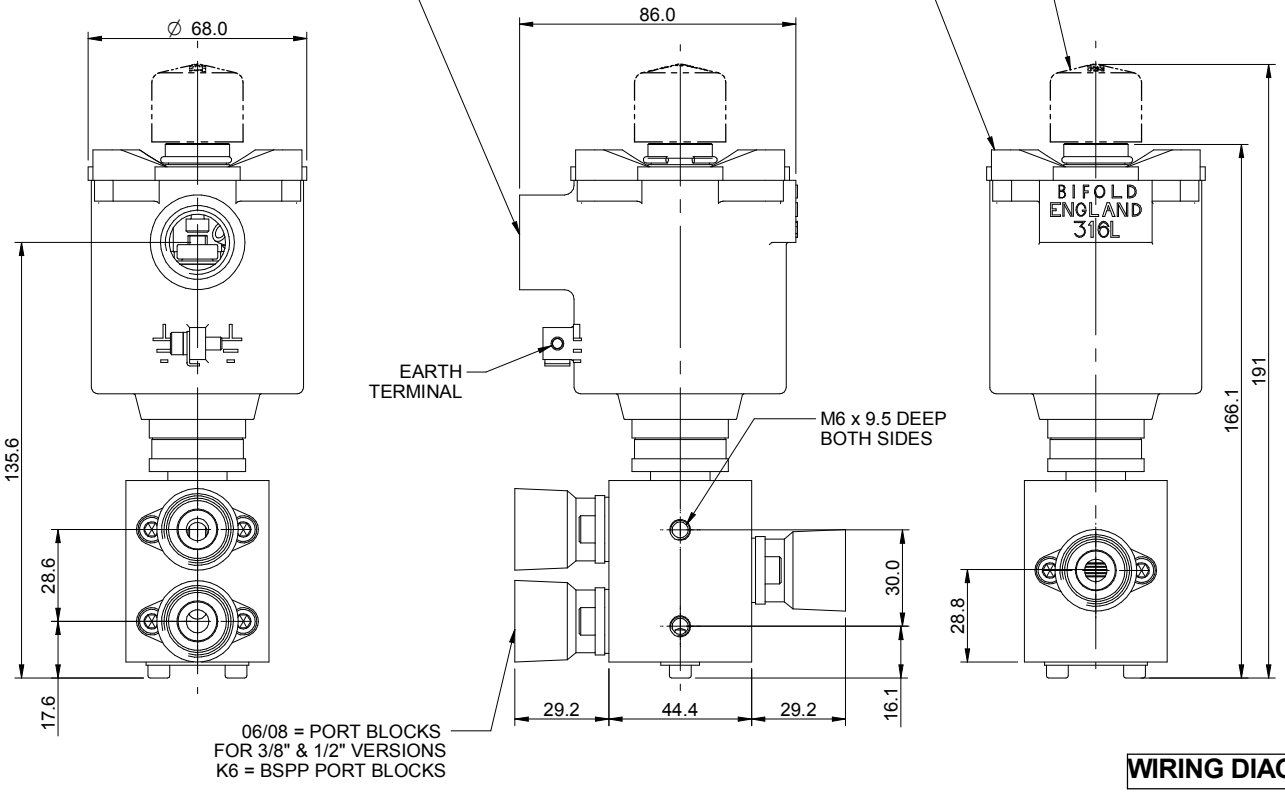
- K6 = BSPP PORTS
- K85 = 1/2" NPT CONDUIT ENTRY
- 30 = 3.0W (ML Only)
- 35 = 3.5W
- 57 = 5.7W
- 65 = 6.5W
- M = ELEC TO SWITCH
- ML = ELEC/MANUAL LATCH
- MLT = ELEC/MANUAL TAMPERPROOF
- 3 = T4 IIC
- 6 = T5 IIC
- 9 = T6 IIC
- A = ATEX Ex II 2GD
- G = GOST 1 Exd IIC T6 (T5,T4)
- 74 = EExemb
- 77 = EExd
- NU = NORMALLY UNIVERSAL
- 32 = 3 WAY 2 POSITION
- 04 = 1/4" PORTS (USE PORTED BODY)
- 06 = 3/8" PORTS
- 08 = 1/2" PORTS
- S1 = WP 10BAR MAX

VALVE SUITABLE FOR UNIVERSAL OPERATION 2/2 & 3/2
NORMALLY OPEN AND NORMALLY CLOSED.
PLUG PORT 3 FOR 2/2 NORMALLY CLOSED FUNCTION. (PLUGS AVAILABLE AS A LINE ITEM)
PLUG PORT 1 FOR 2/2 NORMALLY OPEN FUNCTION. (PLUGS AVAILABLE AS A LINE ITEM)

M = ELECTRICAL TO SWITCH OR TEMP MANUAL OVERRIDE
ML = ELEC & MANUAL LATCH OR TEMP MANUAL OVERRIDE
MLT = ELEC & MANUAL LATCH (TAMPERPROOF)

M20 CONDUIT ENTRY AS STANDARD
(K85 = 1/2" NPT ENTRY)

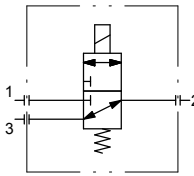
70 SERIES = FULLY ROTATIONAL
SOLENOID HOUSING



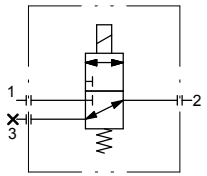
WEIGHT

2.6 kg APPROX
2.8 kg WITH PORTS

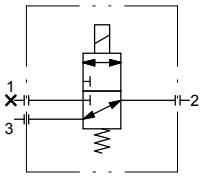
SCHEMATIC 3/2 N.U



SCHEMATIC 2/2 N.C

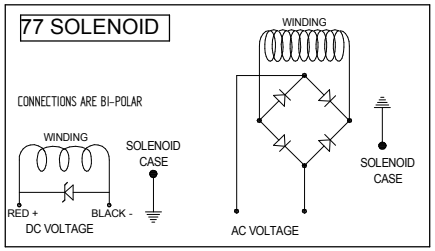


SCHEMATIC 2/2 N.O

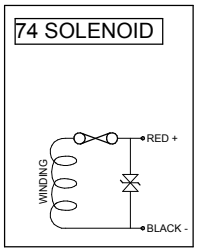


WIRING DIAGRAMS

77 SOLENOID



74 SOLENOID



REV	DATE	DRAWN	CHKD	REVISION
1	19.04.10	P.J.H.		PRODUCTION ISSUE M6 MOUNTING HOLES WERE M5
0	05.04.10	P.J.H.		PRODUCTION STANDARD

NOTES :

1) O-RING MATERIAL CODE 'X' V = VITON

2) ALL DIMENSIONS NOMINAL UNLESS OTHERWISE STATED.

VALVE TYPES/USED ON

FluidPower
Bifold Fluidpower Limited
Greenside way,Middleton, Manchester, M24 1SW
Telephone (44) 0161 345 4777 Fax (44) 0161 345 4780

PROJECT TITLE: DIRECT ACTING SOLENOID VALVE

PROJECT No.:

DRAWING TITLE: FP10P-S1-0X-X2-NU-X-7XXX-24D-02

DRAWING No.: 0-IN0108

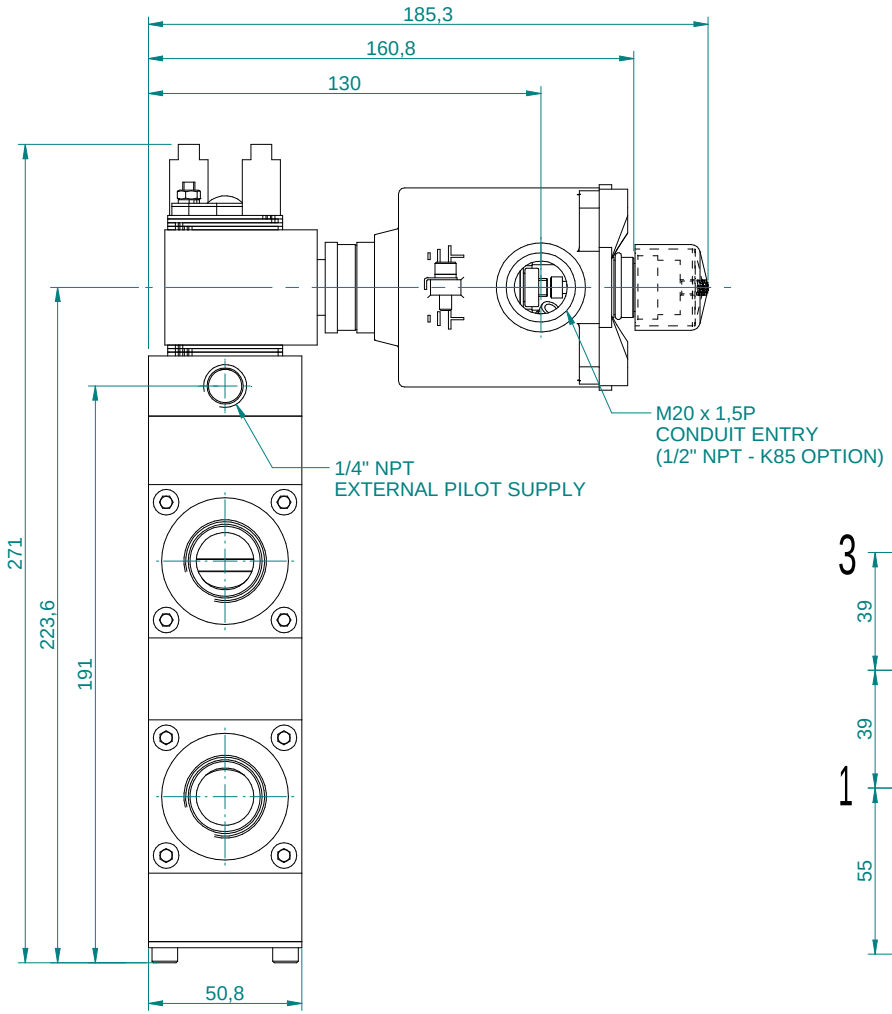
REV.: 1

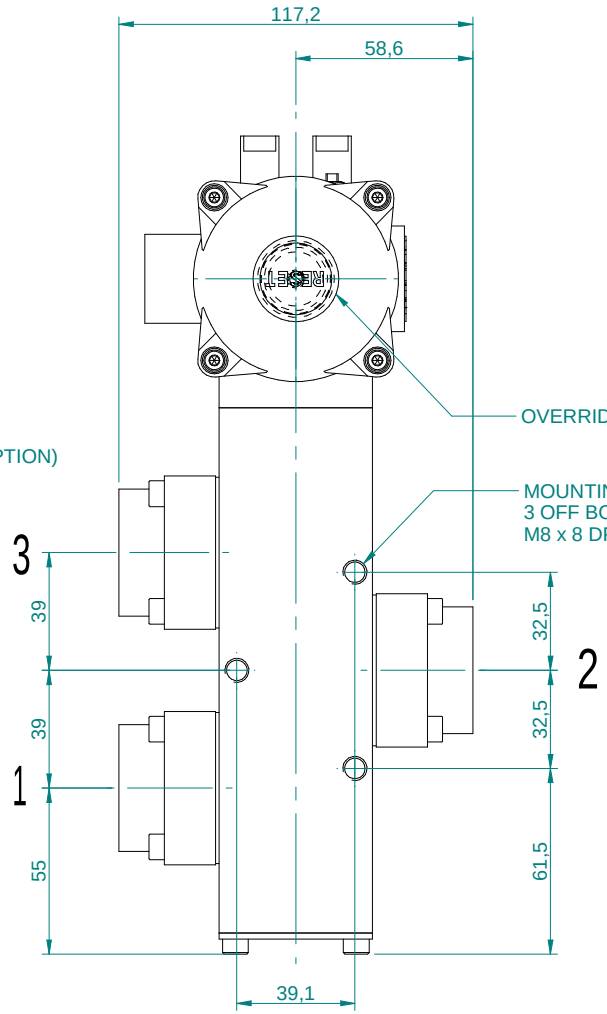
DRAWN: P.HAMER DATE: 05.04.10 CHECKED: DATE: APPROVED: DATE:

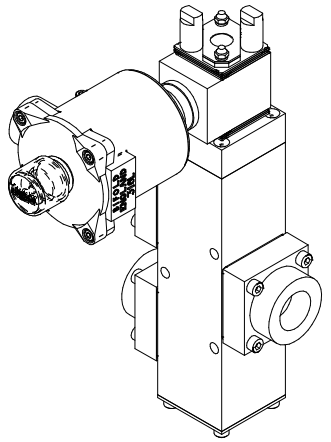
DO NOT SCALE

THIRD ANGLE PROJECTION

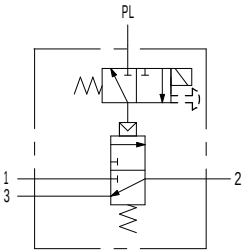
DIMENSIONS IN MILLIMETRES







MAX WORKING PRESSURE: 10 BAR
MINIMUM PILOT PRESSURE NC: 3 BAR
MINIMUM PILOT PRESSURE NO: 5 BAR



FIXING SCREW TORQUE SETTINGS	
M4	2.2 Nm
M6	7.3 Nm
M8	17.7 Nm
M10	35.5 Nm

APPROX WEIGHT
6.5 kg +/- 0.5 kg

REV	DATE	DRAWN	CHKD	REVISION
0	09.05.12	RA		PRODUCTION ISSUE

NOTES :

1) O-RING MATERIAL CODE 'X' S = NITRILE
V = VITON
SA = LOW TEMP. NITRILE

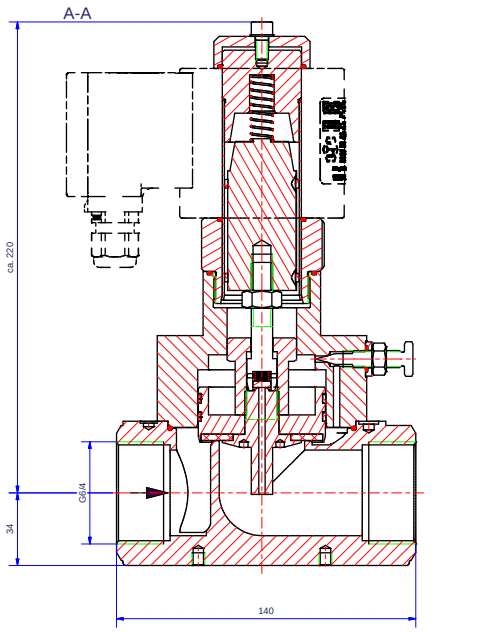
2) ALL DIMENSIONS NOMINAL UNLESS OTHERWISE STATED.

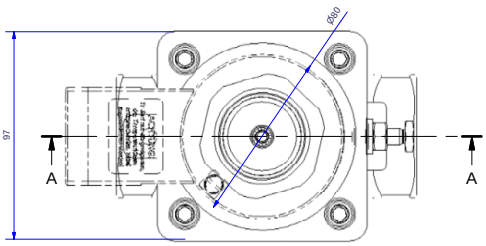
VALVE TYPES/USED ON
SPR19-E2-32-NU-00-7XX-02
SPR25-E2-32-NU-00-7XX-02
SPR19-E4-32-NU-00-7XX-02
SPR25-E4-32-NU-00-7XX-02
SPR19-E6-32-NU-00-7XX-02
SPR25-E6-32-NU-00-7XX-02

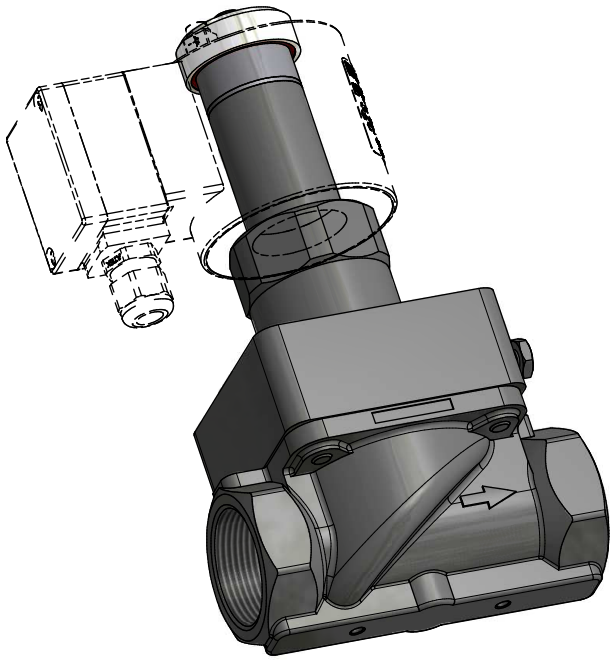
Bifold Fluidpower Limited
Greenside way,Middleton, Manchester, M24 1SW
Telephone (44) 0161 345 4777 Fax (44) 0161 345 4780

PROJECT TITLE: SPR19-E2-32-NU-00-7XX-02
PROJECT No.:
DRAWING TITLE: GENERAL ARRANGEMENT
DRAWING No.: 0-IN0133
REV.: 0

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
RA	09.05.12				







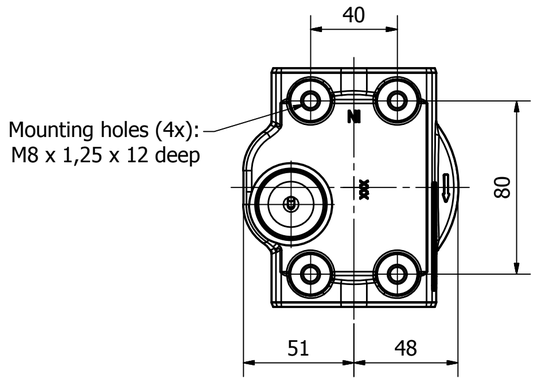
Im Meisenfeld 1
D 32602 Vlotho
Tel.: 05228/779-0

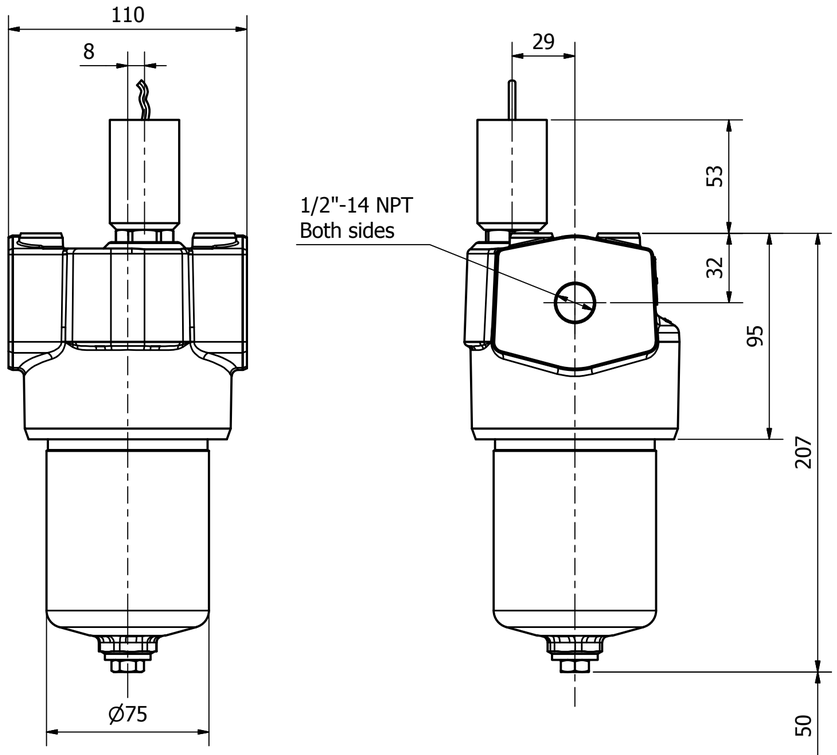
GSR Ventiltechnik

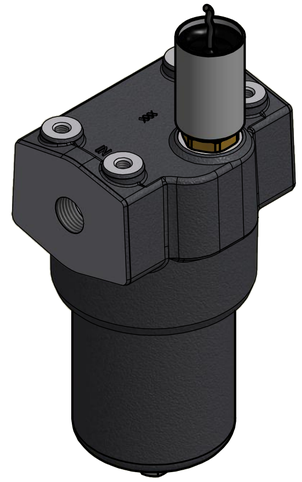
2/2 Wege
Kolben-Magnetventil
item-no. 049.001775
drawing-no.: 88-002695
unit-no.: 87-016834

	Datum	Name
Angel.	06.10.2014	DKlinksiek
Bearb.	06.10.2014	DKlinksiek
Gepr.		
Rev.Gepr.		

Blatt 1
A2







INDICATOR DETAILS:

Electrical connection: Voltage 10 - 36 V DC
Current 300 mA (max)
Cable: Halogen free HABIA N2419 I14 4x0,3mm
- Red = input voltage
- Blue = GND
- White = pre-indication
- Black = indication
- Switch type = N.O. PNP
- Cable length = 10m.

The apparatus shall be supplied and protected so that a current of 1 A is not exceeded.

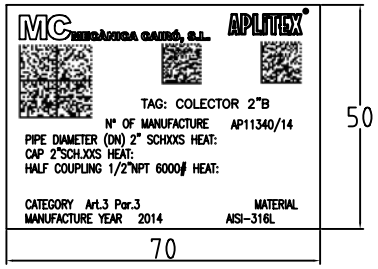
PROD	NOTE: This document contains proprietary information and is submitted in confidence and subject to return upon request and upon the condition that the information contained herein will not be used in any way detrimental to the interest of Parker Filtration BV	Installation dimensions EPF2105QIBX1MN081S45	Drawn: RA	Date: 20-10-2014	
CZ			Appr: AL	Date: 20-10-2014	
QA			Scale: 1:2	Sheet: 1 of 1	
MAT		Parts only: For not indicated tolerances see QAD-W-ENGE08	Drawing no. A-2959-V001		Rev. A
SE X	Parker	PARKER FILTRATION BV Filter Division Europe Arnhem - Holland Tel. +31(0)26 - 376 03 76	A2		

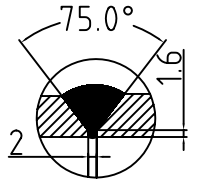
A-2959-V001.idw

DIRECTIVE APPLICATION	97/23/CE
DESING AND USE CONDITIONS	
Volume	0,644 liters
SERVICE CONDITIONS	P = bar g ; T = ºC
DESING CONDITIONS	PS = 260 bar g ; TS = -10ºC / +150ºC
HYDROSTATIC TEST (PT)	PT = 390 bar g ; Room Temperature ; 15min
FLUID	GAS, GROUP 2 acc/RD 2216/85
CLASS ACCORDING TO DIRECTIVE	Article 3 Paragraph 3
DESING & FABRICATION CODE	ASME VIII Div1 - 2011

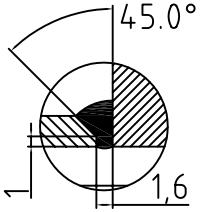
Num.	Nota de Rev. / Note of Rev.	Fecha/Date	RESP.	VºBº
A	Approval drawing	10/04/2014	RLH	
1	Schedule, PS, V & fluid limit revised	05/05/2014	RLH	

DETAIL IDENTIFICATION PLATE

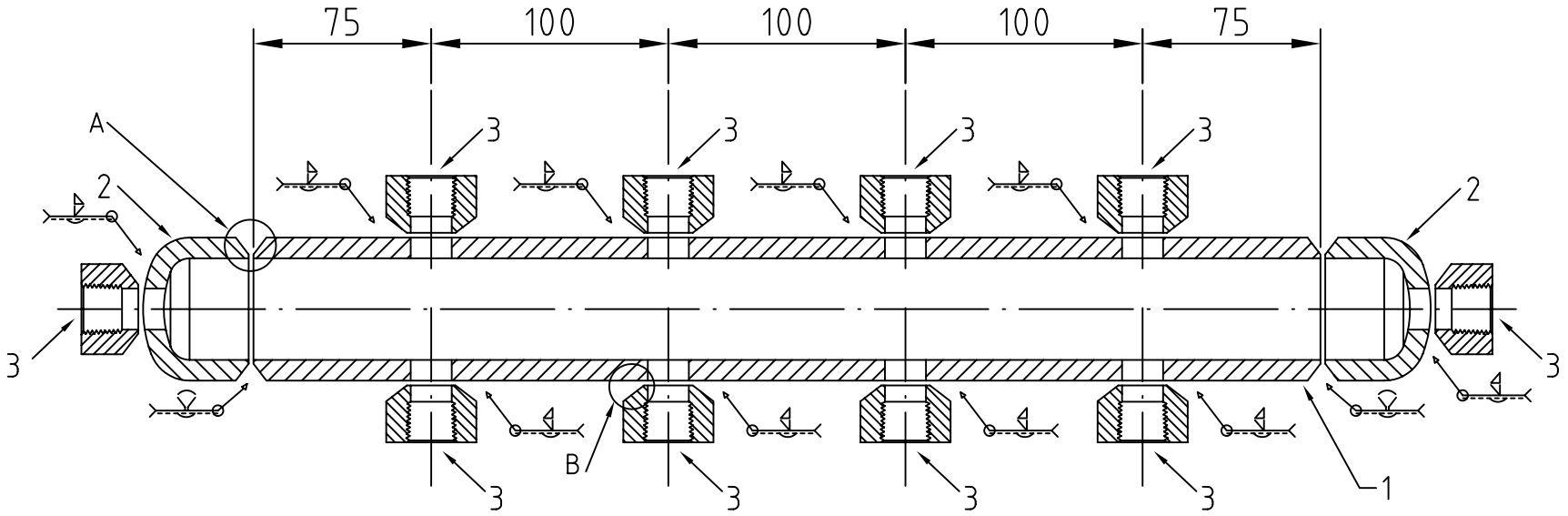




DETAIL "A"



DETAIL "B"



POS	DESCRIPCION/DESCRIPTION	CALID/QLTY	TAM/SIZE	CANT/QTY
3	ANSI B16.10 HALF COUPLING 6000# ASTM	A-182 F316L	1/2"NPT-H	10
2	ANSI B16.9 CAP ASTM	A-182 F316L	2" SCH-XXS	2
1	ANSI B16.10 PIPE ASTM	A-312 Tp.316L	2" SCH-XXS	1

TOLERANCIAS GENERALES: Aguj. H11 | Ejes. h11 | Long. J13 | Ang. ±30' | Cant. R0.5 | N8 (M)

PROYECTO/PROJECT | CLIENTE/CUSTOMER: Arcamo Controls | PEDIDO/ORDER: PC14-360

Num.	Nota Requerimiento./ Requirement Note

MECÀNICA CAIRÓ S.L.
Ramon Martí Alsina, 20 - 08911 - BADALONA (Barcelona)
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e-mail: mecanicacairo@mecanicacairo.com
http: //www.mecanicacairo.com
http: //www.aplitex.com
APLiTEX® APLICACIONES TÉCNICAS DEL INOXIDABLE

EDICION: 11340/14	Firma / Sign.	Dibujado por - fecha / Drawing by - date: R.Lucena 10/04/2014
CAD: AP11340_14 ARCAMO	Firma / Sign.	Conprobado por - fecha / Check by - date: F.Cairó 10/04/2014
CNC:	Firma / Sign.	Aprobado por - fecha/ Approved by - date: F.C.Ricart 10/04/2014

Nombre / Name: INSTRUMENTS COLECTOR

Escala: --

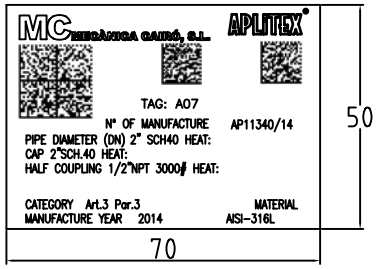
Núm. dibujo / Drawing num.: AP11340-14

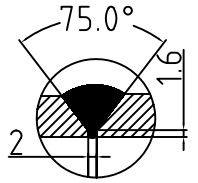
Sheet 1 Next sh 4

DIRECTIVE APPLICATION	97/23/CE
DESING AND USE CONDITIONS	
Volume	1,398 liters
SERVICE CONDITIONS	P = bar g ; T = ºC
DESING CONDITIONS	PS = 17,8 bar g ; TS = -10ºC / +150ºC
HYDROSTATIC TEST (PT)	PT = 27 bar g ; Room Temperature ; 15min
CLASS ACCORDING TO DIRECTIVE	Article 3 Paragraph 3
DESING & FABRICATION CODE	ASME VIII Div1 - 2011

Num.	Nota de Rev. / Note of Rev.	Fecha/Date	RESP.	VºBº
A	Approval drawing	10/04/2014	RLH	
1	--	05/05/2014	RLH	

DETAIL IDENTIFICATION PLATE





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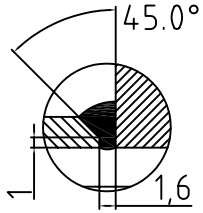

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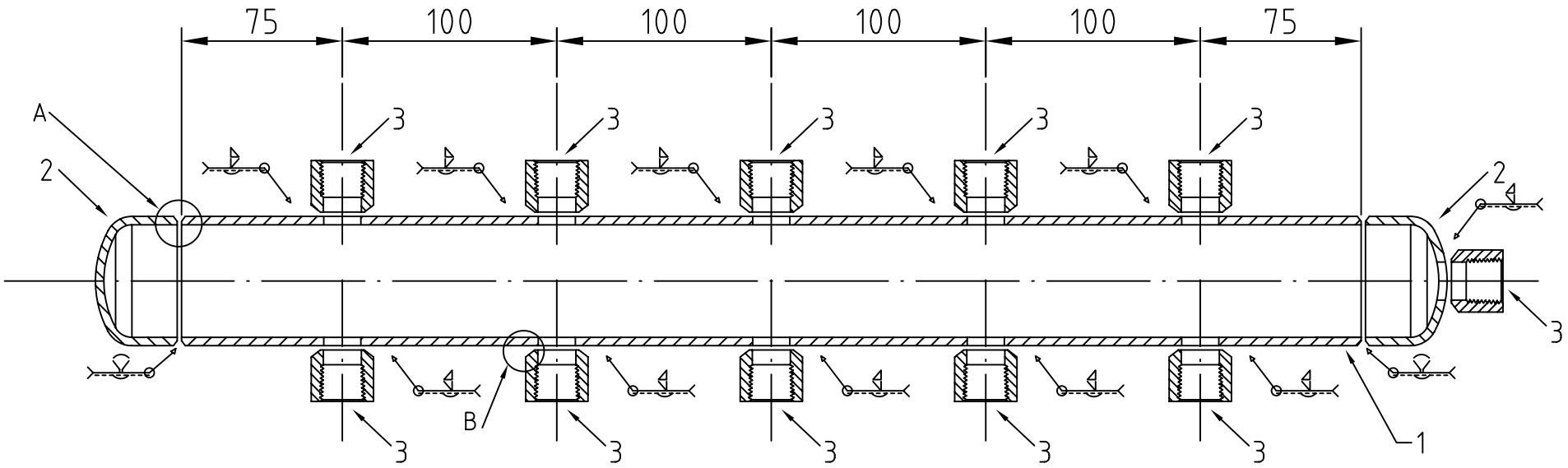

POS	DESCRIPCION/DESCRIPTION	CALID/QLTY	TAM/SIZE	CANT/QTY
3	ANSI B16.11 HALF COUPLING 3000# ASTM	A-182 F316L	1/2"NPT-H	11
2	ANSI B16.9 CAP ASTM	A-403 WP316L	2" SCH-40	2
1	ANSI B16.10 PIPE ASTM	A-312 Tp.316L	2" SCH-40	1

TOLERANCIAS GENERALES

Aguj. H11	Ejes. h11	Long. J13
Ang. ±30'	Cant. R0.5	N8 (√)

PROYECTO/PROJECT	
CLIENTE/CUSTOMER	Arcamo Controls
PEDIDO/ORDER	PC14-360

Num.	Nota Requerimiento./ Requirement Note

MECÀNICA CAIRÓ S.L.
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http: //www.mecanicacairo.com
http: //www.aplitex.com
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APLICACIONES TÉCNICAS DEL INOXIDABLE

EDICION:	Firma / Sign.	Dibujado por - fecha / Drawing by - date
11340/14		R.Lucena 10/04/2014
CAD: AP11340_14 ARCAMO	Firma / Sign.	Conprobado por - fecha / Check by - date F.Cairó 10/04/2014
CNC:	Firma / Sign.	Aprobado por - fecha/ Approved by - date F.C.Ricart 10/04/2014

Nombre / Name: INSTRUMENTS COLECTOR

Escala: --

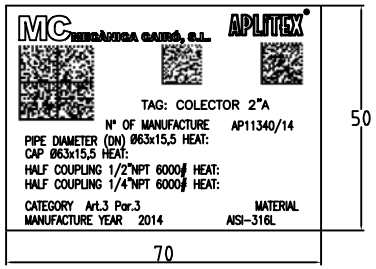
Núm. dibujo / Drawing num.: AP11340-14

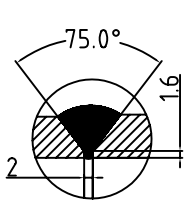
Sheet 2 Next sh 4

DIRECTIVE APPLICATION	97/23/CE
DESING AND USE CONDITIONS	
Volume	0,773 liters
SERVICE CONDITIONS	P = bar g ; T = ºC
DESING CONDITIONS	PS = 260 bar g ; TS = -10ºC / +150ºC
HYDROSTATIC TEST (PT)	PT = 390 bar g ; Room Temperature ; 15min
FLUID	GAS, GROUP 2 acc/RD 2216/85
CLASS ACCORDING TO DIRECTIVE	Article 3 Paragraph 3
DESING & FABRICATION CODE	ASME VIII Div1 - 2011

Num.	Nota de Rev. / Note of Rev.	Fecha/Date	RESP.	VºBº
A	*Approval drawing*	*10/04/2014*	*RLH*	
1	*Schedule, PS, V & fluid limit revised*	*05/05/2014*	*RLH*	

DETAIL IDENTIFICATION PLATE





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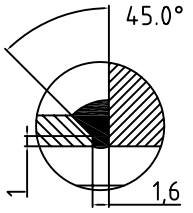

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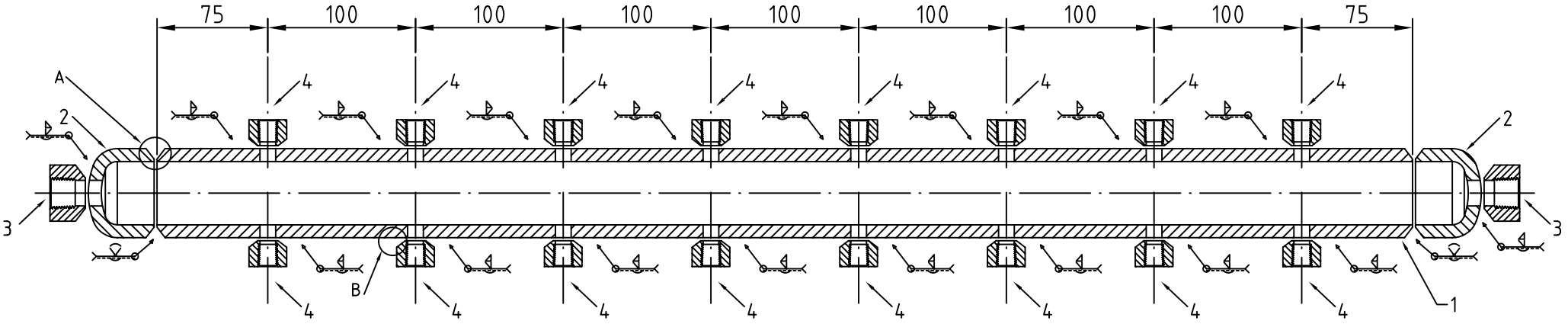

POS	DESCRIPCION/DESCRIPTION	CALID/QLTY	TAM/SIZE	CANT/QTY
4	*ANSI B16.11 HALF COUPLING 6000# ASTM*	*A-182 F316L*	*1/4"NPT-H*	*16*
3	*ANSI B16.11 HALF COUPLING 6000# ASTM*	*A-182 F316L*	*1/2"NPT-H*	*2*
2	*CAP*	*A-182 F316L*	*Ø63x15,5*	*2*
1	*PIPE*	*A-312 Tp.316L*	*Ø63x15,5*	*1*

TOLERANCIAS GENERALES			PROYECTO/PROJECT	
Aguj. H11	Ejes. h11	Long. J13	CLIENTE/CUSTOMER	*Arcamo Controls*
Ang. ±30'	Cant. R0.5	NB (√)	PEDIDO/ORDER	*PC14-360*

Num.	Nota Requerimiento./ Requirement Note

MECÀNICA CAIRÓ S.L.
Ramon Martí Alsina, 20 - 08911 - BADALONA (Barcelona)
Teléf. (+34) 93 384 24 00 - Fax. (+34) 93 389 07 95
e-mail: mecanicacairo@mecanicacairo.com
http://www.mecanicacairo.com
http://www.aplitex.com
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APLICACIONES TÉCNICAS DEL INOXIDABLE

EDICION:	Firma / Sign.	Dibujado por - fecha / Drawing by - date
11340/14		*R.Lucena* *10/04/2014*
CAD: *AP11340_14 ARCAMO*	Firma / Sign.	Conprobado por - fecha / Check by - date *F.Cairó* *10/04/2014*
CNC:	Firma / Sign.	Aprobado por - fecha/ Approved by - date *F.C.Ricart* *10/04/2014*

Nombre / Name: *INSTRUMENTS COLECTOR*

Escala: --

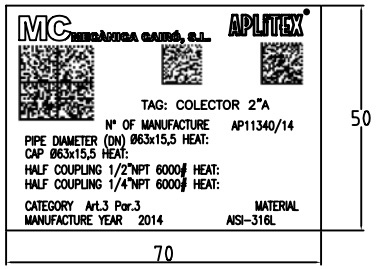
Núm. dibujo / Drawing num.: *AP11340-14*

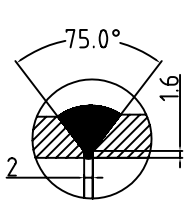
Sheet: *3* Next sh: *4*

DIRECTIVE APPLICATION	97/23/CE
DESING AND USE CONDITIONS	
Volume	0,773 liters
SERVICE CONDITIONS	P = bar g ; T = ºC
DESING CONDITIONS	PS = 260 bar g ; TS = -10ºC / +150ºC
HYDROSTATIC TEST (PT)	PT = 390 bar g ; Room Temperature ; 15min
FLUID	GAS, GROUP 2 acc/RD 2216/85
CLASS ACCORDING TO DIRECTIVE	Article 3 Paragraph 3
DESING & FABRICATION CODE	ASME VIII Div1 - 2011

Num.	Nota de Rev. / Note of Rev.	Fecha/Date	RESP.	VºBº
A	*Approval drawing*	*10/04/2014*	*RLH*	
1	*Schedule, PS, V & fluid limit revised*	*05/05/2014*	*RLH*	

DETAIL IDENTIFICATION PLATE





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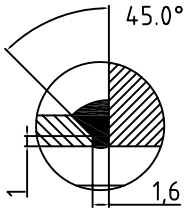

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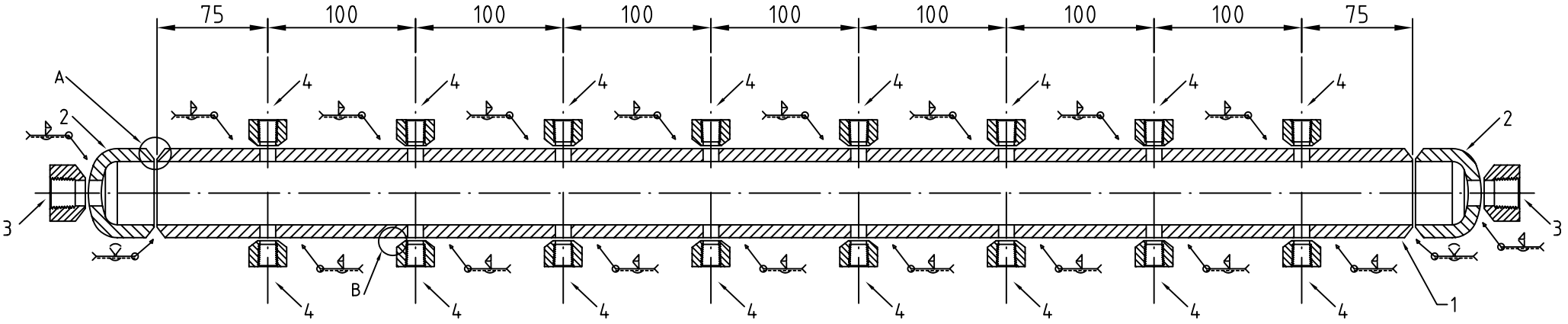


POS	DESCRIPCION/DESCRIPTION	CALID/QLTY	TAM/SIZE	CANT/QTY
4	*ANSI B16.11 HALF COUPLING 6000# ASTM*	*A-182 F316L*	*1/4"NPT-H*	*16*
3	*ANSI B16.11 HALF COUPLING 6000# ASTM*	*A-182 F316L*	*1/2"NPT-H*	*2*
2	*CAP*	*A-182 F316L*	*Ø63x15,5*	*2*
1	*PIPE*	*A-312 Tp.316L*	*Ø63x15,5*	*1*

TOLERANCIAS GENERALES			PROYECTO/PROJECT	
Aguj. H11	Ejes. h11	Long. J13	CLIENTE/CUSTOMER	*Arcamo Controls*
Ang. ±30'	Cant. R0.5	NB (√)	PEDIDO/ORDER	*PC14-360*

Num.	Nota Requerimiento./ Requirement Note

MECÀNICA CAIRÓ S.L.
Ramon Martí Alsina, 20 - 08911 - BADALONA (Barcelona)
Teléf. (+34) 93 384 24 00 - Fax. (+34) 93 389 07 95
e-mail: mecanicacairo@mecanicacairo.com
http://www.mecanicacairo.com
http://www.aplitex.com
APLiTEX®
APLICACIONES TÉCNICAS DEL INOXIDABLE

EDICION:	Firma / Sign.	Dibujado por - fecha / Drawing by - date
11340/14		*R.Lucena* *10/04/2014*
CAD: *AP11340_14 ARCAMO*	Firma / Sign.	Conprobado por - fecha / Check by - date *F.Cairó* *10/04/2014*
CNC:	Firma / Sign.	Aprobado por - fecha/ Approved by - date *F.C.Ricart* *10/04/2014*

Nombre / Name: *INSTRUMENTS COLECTOR*

Escala: --

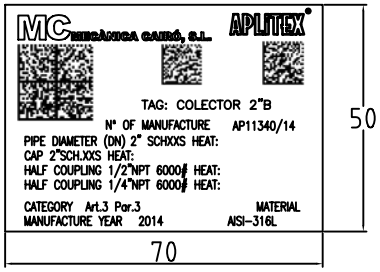
Núm. dibujo / Drawing num.: *AP11340-14*

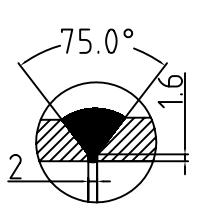
Sheet: *3* Next sh: *4*

DIRECTIVE APPLICATION	97/23/CE
DESING AND USE CONDITIONS	
Volume	0,728 liters
SERVICE CONDITIONS	P = bar g ; T = ºC
DESING CONDITIONS	PS = 260 bar g ; TS = -10ºC / +150ºC
HYDROSTATIC TEST (PT)	PT = 390 bar g ; Room Temperature ; 15min
FLUID	GAS, GROUP 2 acc/RD 2216/85
CLASS ACCORDING TO DIRECTIVE	Article 3 Paragraph 3
DESING & FABRICATION CODE	ASME VIII Div1 - 2011

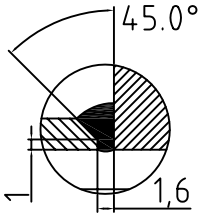
Num.	Nota de Rev. / Note of Rev.	Fecha/Date	RESP.	VºBº
A	Approval drawing	10/04/2014	RLH	
1	Schedule, PS, V & fluid limit revised	05/05/2014	RLH	

DETAIL IDENTIFICATION PLATE

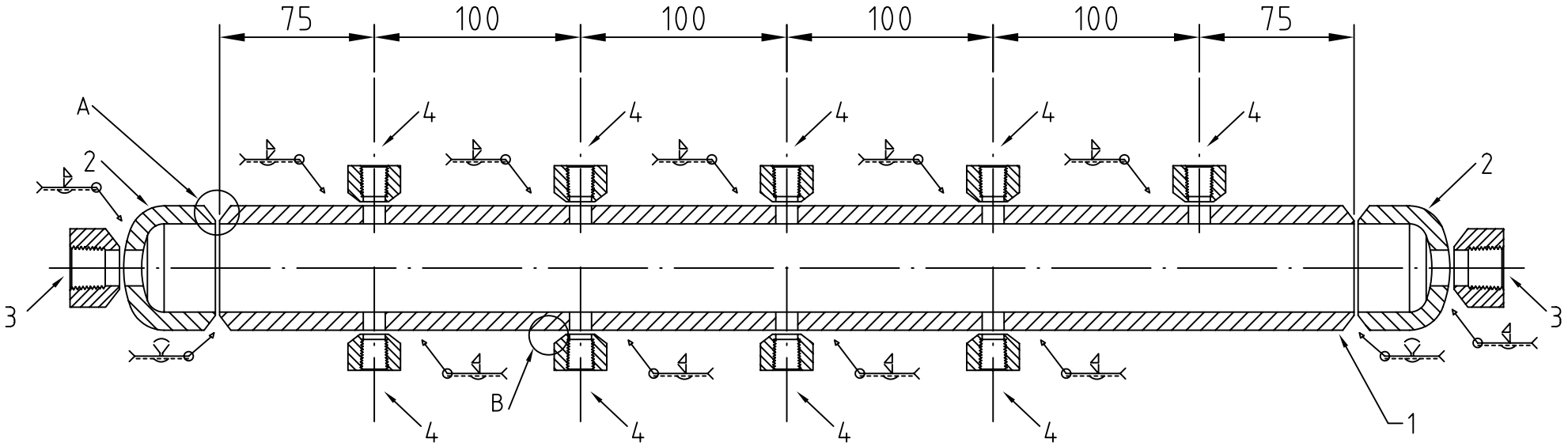




DETAIL "A"



DETAIL "B"



POS	DESCRIPCION/DESCRIPTION	CALID/QLTY	TAM/SIZE	CANT/QTY
4	ANSI B16.11 HALF COUPLING 6000# ASTM	A-182 F316L	1/4"NPT-H	9
3	ANSI B16.11 HALF COUPLING 6000# ASTM	A-182 F316L	1/2"NPT-H	2
2	ANSI B16.9 CAP ASTM	A-182 F316L	2" SCH-XXS	2
1	ANSI B16.10 PIPE ASTM	A-312 Tp.316L	2" SCH-XXS	1

TOLERANCIAS GENERALES

Aguj. H11	Ejes. h11	Long. J13
Ang. ±30'	Cant. R0.5	$\sqrt{}^{N8}$ (M)

PROYECTO/PROJECT			
CLIENTE/CUSTOMER	Arcamo Controls		
PEDIDO/ORDER	PC14-360	Num.	Nota Requerimiento./ Requirement Note

MECÀNICA CAIRÓ S.L.
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e-mail: mecanicacairo@mecanicacairo.com
http: //www.mecanicacairo.com
http: //www.aplitex.com
APLiTEX®
APLICACIONES TÉCNICAS DEL INOXIDABLE

EDICION: 11340/14	Firma / Sign.	Dibujado por - fecha / Drawing by - date: R.Lucena 10/04/2014
CAD: AP11340_14 ARCAMO	Firma / Sign.	Conprobado por - fecha / Check by - date: F.Cairó 10/04/2014
CNC:	Firma / Sign.	Aprobado por - fecha/ Approved by - date: F.C.Ricart 10/04/2014

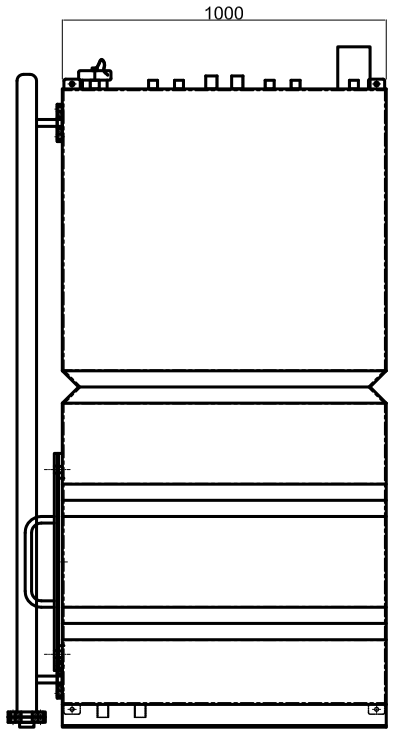
Nombre / Name: INSTRUMENTS COLECTOR

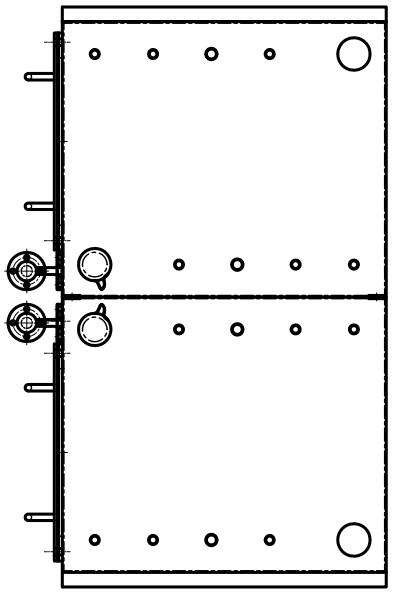
Escala: --

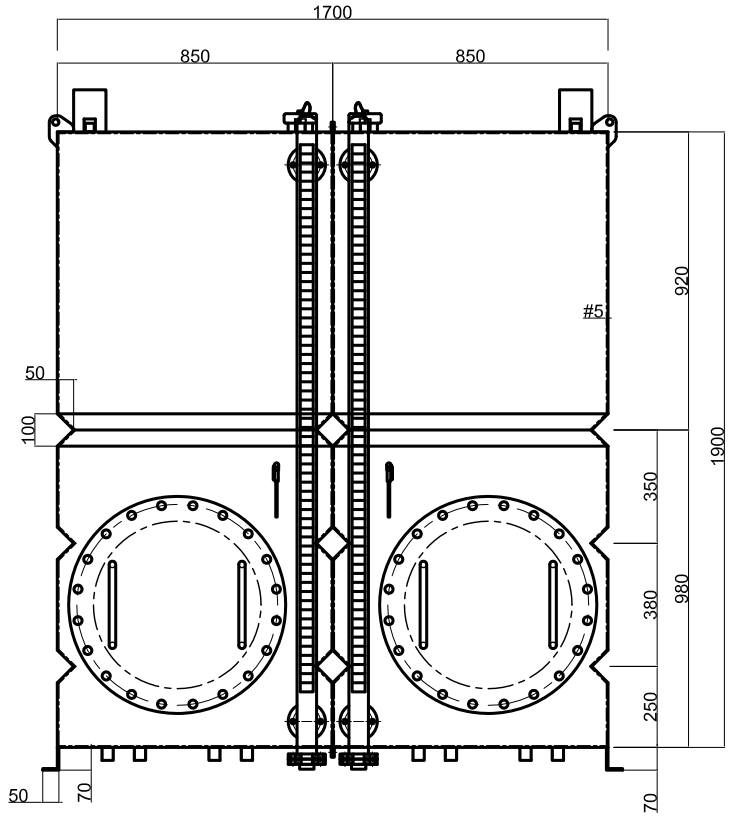
Núm. dibujo / Drawing num.: AP11340-14

Sheet: 4 Next sh: 4

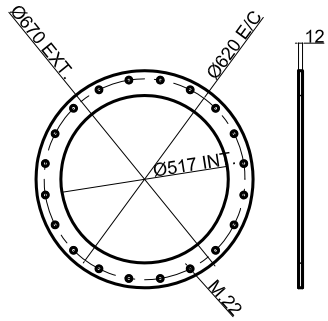
2 DEPOSITOS PARA PRODUCTO HIDRAULICO
CAPACIDAD DE 1600 L. CADA UNO



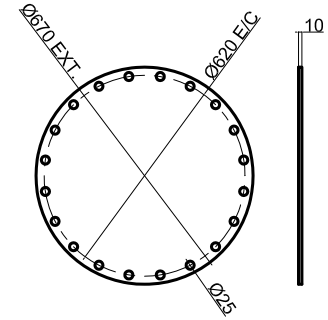




BRIDA INOX 316 L.
2 UNIDADES

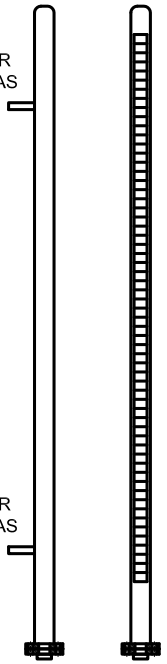


BRIDA CIEGA INOX 316 L.
2 UNIDADES



INDICADOR DE NIVEL
TIPO BYPASS
MODELO KBK-01
2 UNIDADES

SITUAR
3 PIEZAS



SITUAR
3 PIEZAS

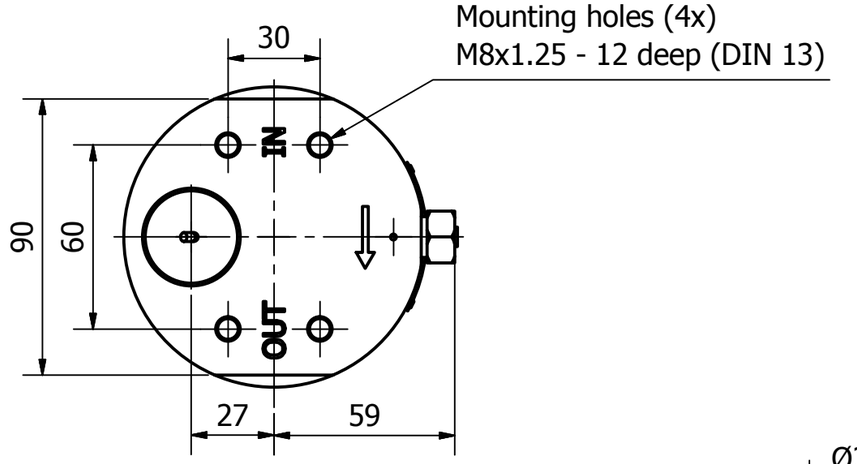
	DEPOSITOS	2	INOX 316 L.	Ver plano
POS.	DENOMINACION	CANT.	MATERIAL	DIMENSIONES

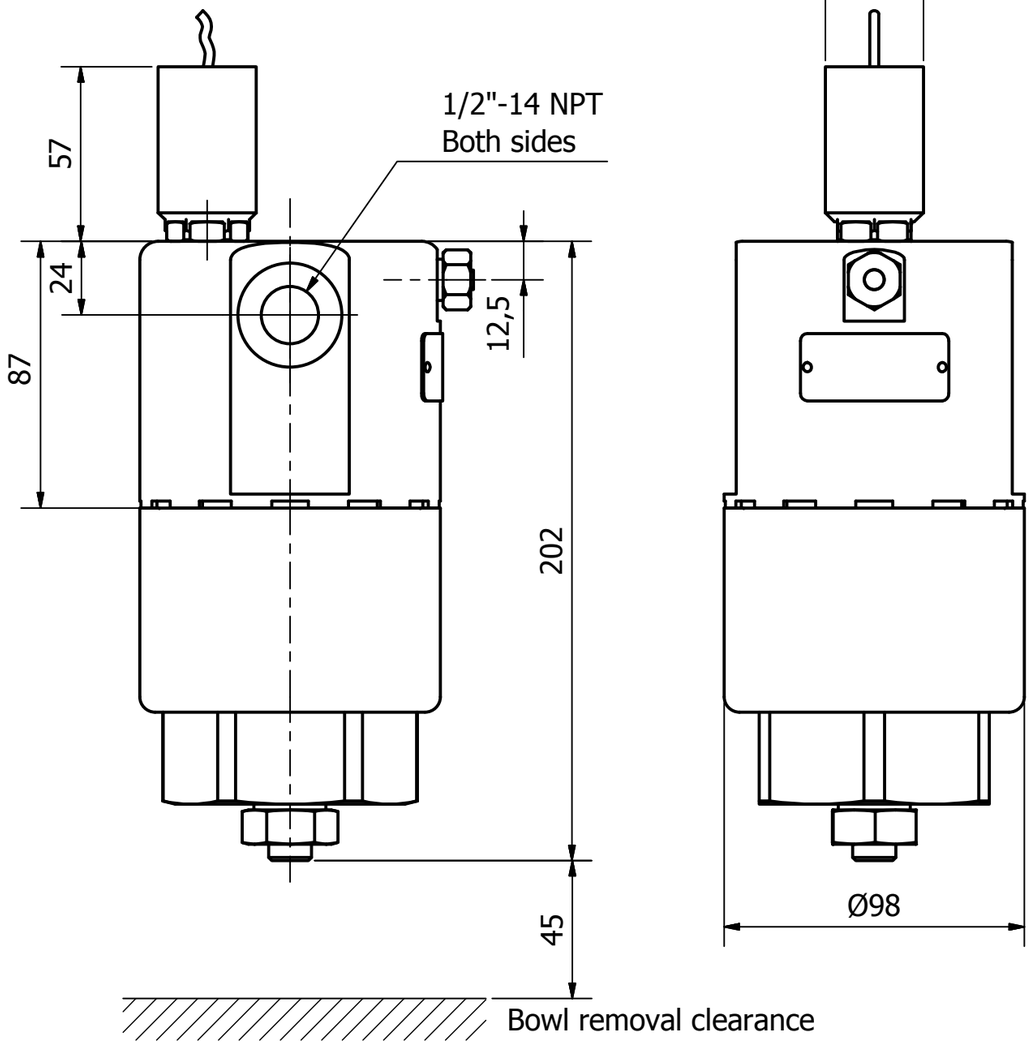
ESCALA	MODIFICACION	ZONAS SIN INDICACION	TRATAMIENTO	EURO PROJ.
1:5	00	h11 / h11 / H11		
OT 000	PLANO DE:			

	FECHA	NOMBRE	PROYECTO
Dibujado	02/07/13	Sergio	GES.
Comprobado	02/07/13	Jesús	

TALLERES AZUARA, SL

DENOMINACION: DEPOSITOS HIDRAULICOS
FORMATO: DIN-A2
Nº DE PLANO: 2013/000/01
Sustituye a:
Sustituido por:





INDICATOR DETAILS:
Electrical connection: Voltage 10 - 36 V DC
Current 300 mA (max)
Cable: Halogen free HABIA N2419 I14 4x0,3mm
- Red = input voltage
- Blue = GND
- White = pre-indication
- Black = indication
- Switch type = N.O. PNP
- Cable length = 10m.

The apparatus shall be supplied and protected so that a current of 1 A is not exceeded.

PROD | CZ | QA | MAT | SE | X

Installation dimensions
EAPF1105QIBX1MN081S46

Drawn: RA | Date: 22-10-2014
Appr: PW | Date: 23-10-2014
Scale: 1:2 | Sheet: 1 of 1

Parts only: For not indicated tolerances see QAD-W-ENGE08

PARKER FILTRATION BV
Filter Division Europe
Arnhem - Holland
Tel. +31(0)26 - 376 03 76

A3

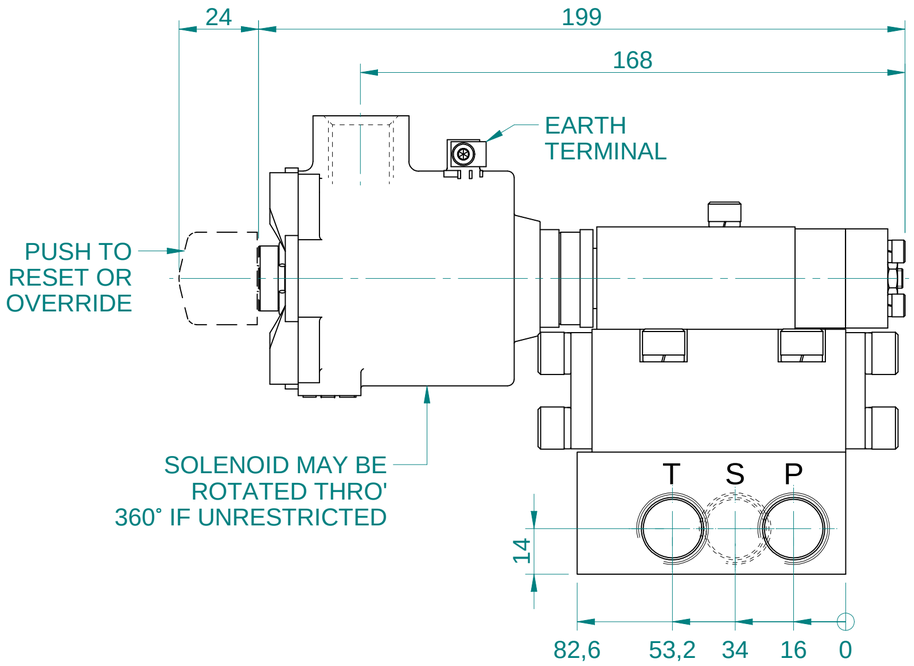
Drawing no. A-2962-V001 | Rev. A

A-2962-V001.idw

DO NOT SCALE

THIRD ANGLE PROJECTION

DIMENSIONS IN MILLIMETRES



CONNECTIONS

P = PRESSURE PORT - 1/2 NPT
S = SERVICE PORT - 1/2 NPT
T = TANK PORT - 1/2 NPT

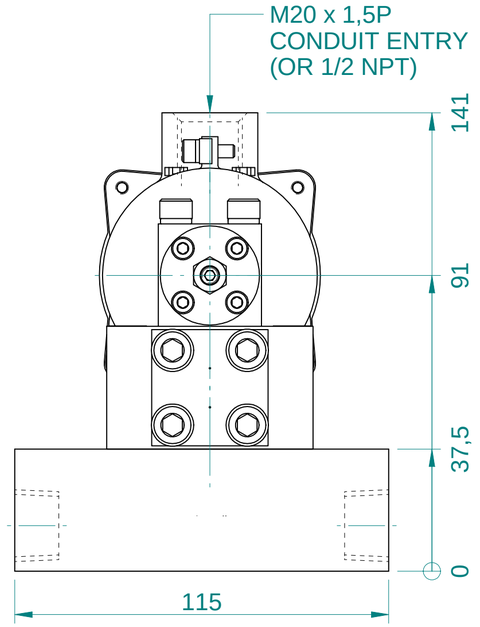
WORKING PRESSURES

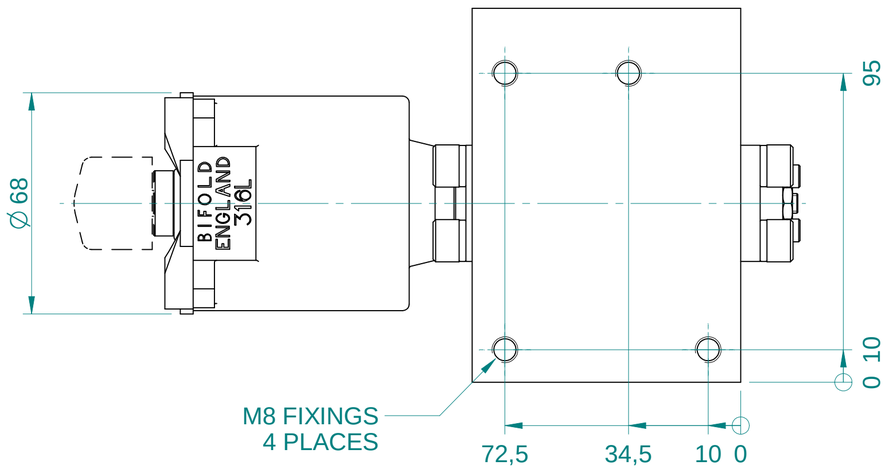
MAXIMUM WP TYPE S1 - 345 BAR (5,000 PSI)
MAXIMUM WP TYPE S2 - 517 BAR (7,500 PSI)
MAXIMUM WP TYPE S3 - 690 BAR (10,000 PSI)

MINIMUM OPERATING PRESSURE 50 BAR (725 PSI)

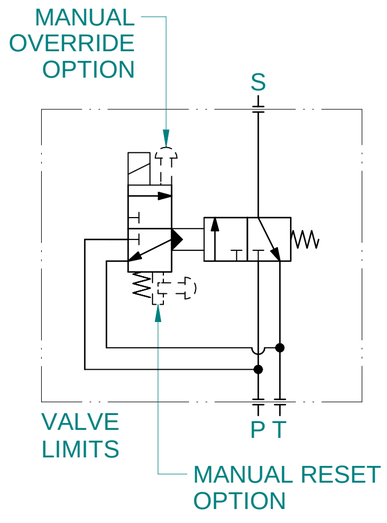
WEIGHT

6.7 Kg APPROX

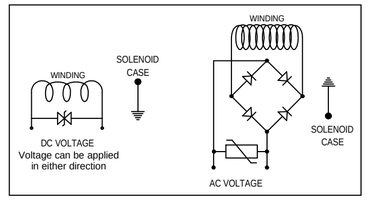




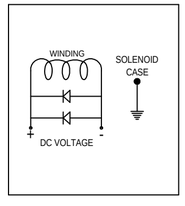
SCHEMATIC



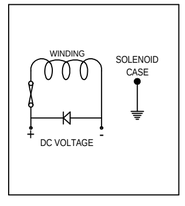
WIRING DIAGRAMS - TYPE 77X



WIRING DIAGRAM - TYPE 78X



WIRING DIAGRAM - TYPE 74X



REV	DATE	DRAWN	CHKD	REVISION
0	14.08.14	MM	PK	PRODUCTION STANDRAD

NOTES :

1.) O-RING MATERIAL CODE 'X' S = NITRILE
V = VITON
SA = LOW TEMP NITRILE

2.) ALL DIMENSIONS NOMINAL UNLESS OTHERWISE STATED.

VALVE TYPES/USED ON
FP15/SX/M/32/S-7X-[M229]
FP15/SX/M/32/V-7X-[M229]
FP15/SX/M/32/SA-7X-[M229]
K85 OPTION
'M' AND 'ML' OPTIONS

PROJECT TITLE

GENERAL INSTALLATION

PROJECT No.

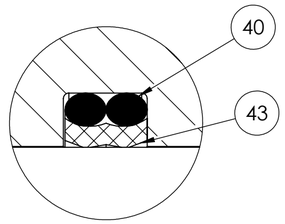
DRAWING No. 10854

REV. 0

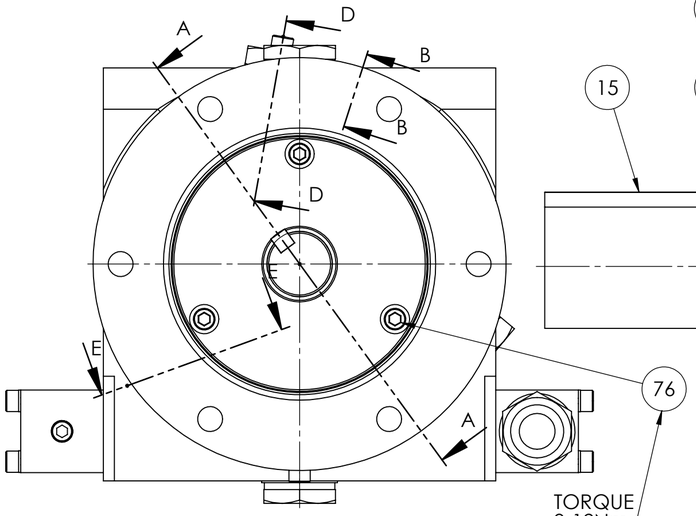
DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
M MELLOR	14.08.14				

DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

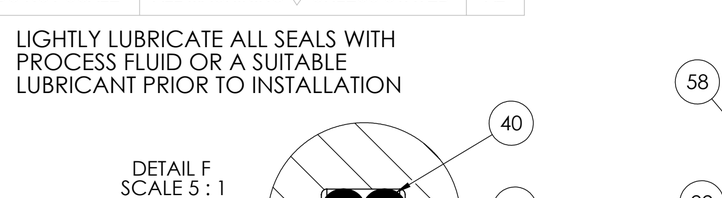
LIGHTLY LUBRICATE ALL SEALS WITH PROCESS FLUID OR A SUITABLE LUBRICANT PRIOR TO INSTALLATION



DETAIL F
SCALE 5 : 1
OIL WIPER SEALS

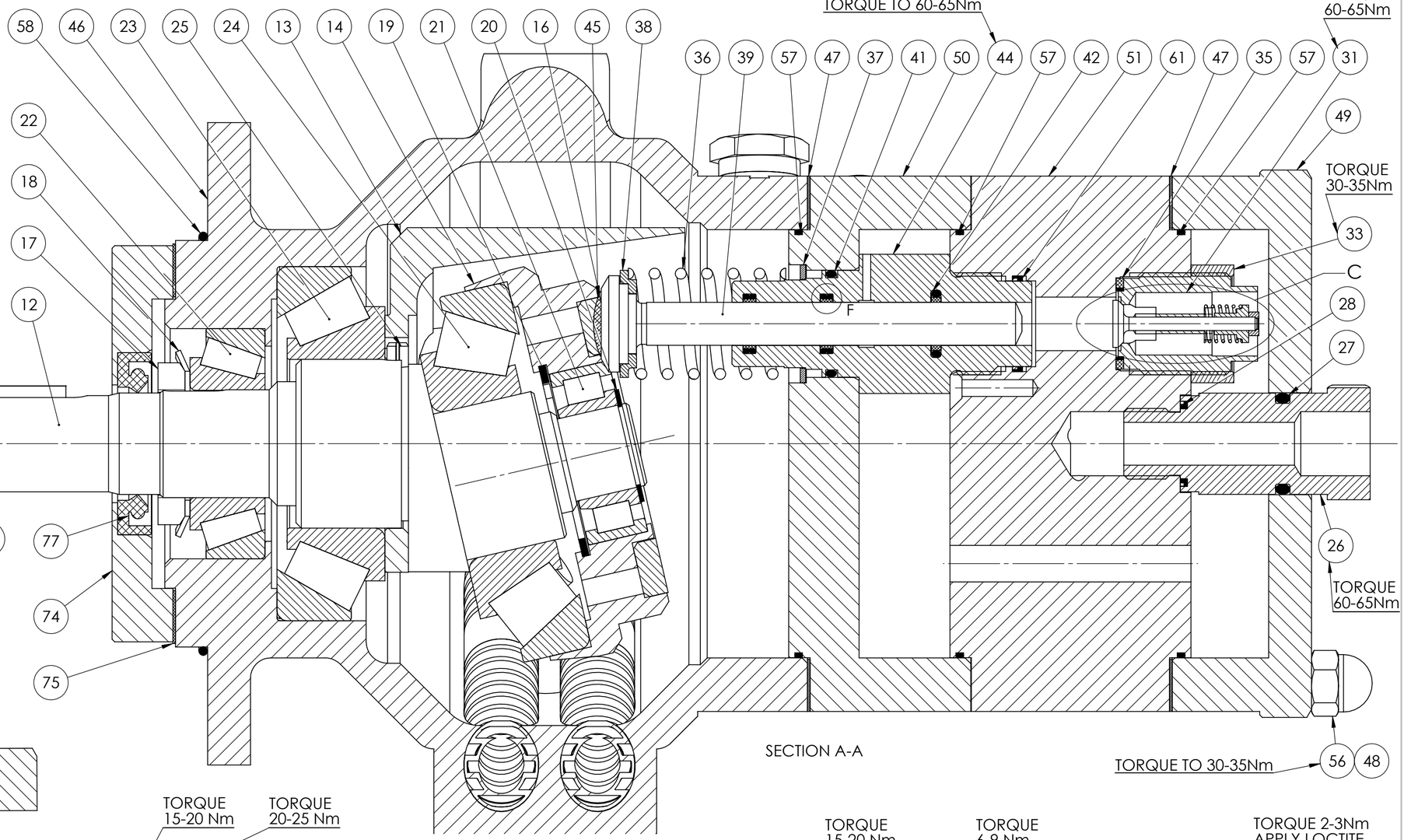


TORQUE 9-12Nm

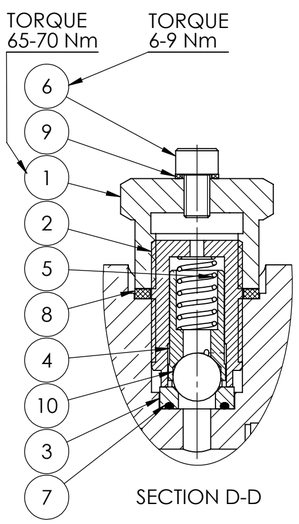


TORQUE 15-20Nm

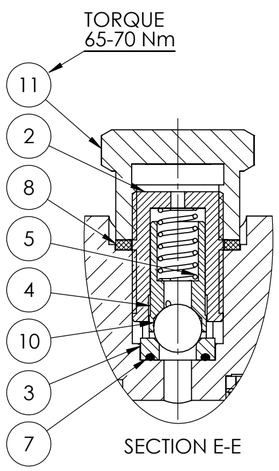
SECTION B-B



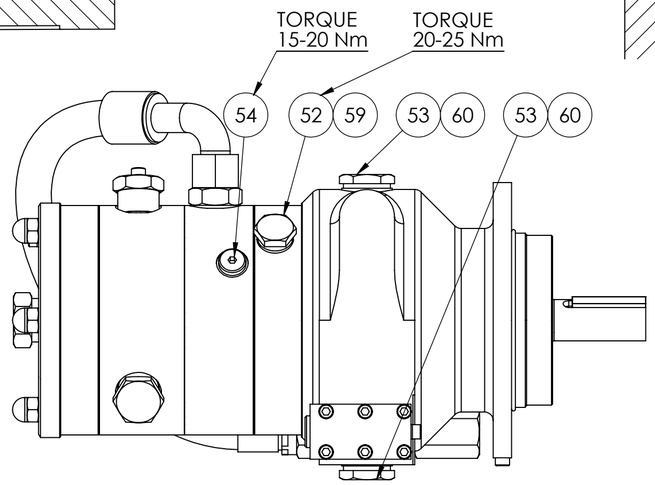
SECTION A-A

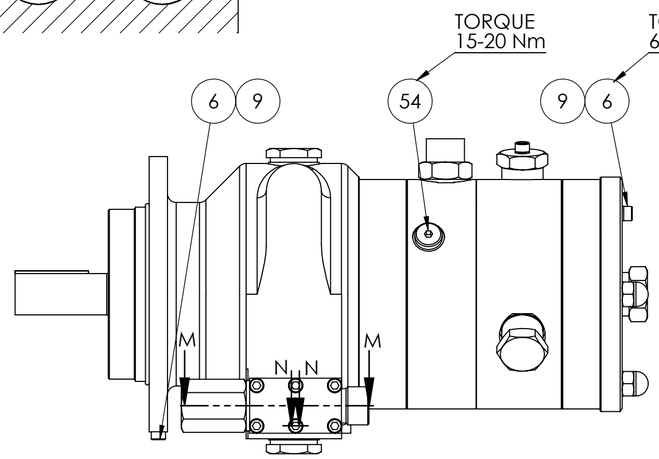


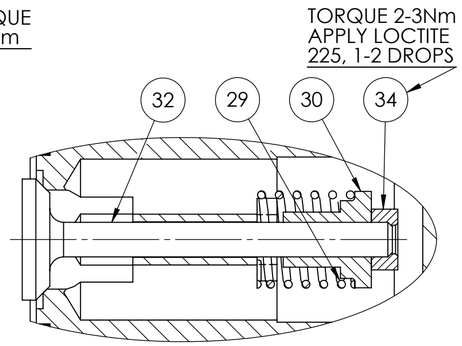
SECTION D-D



SECTION E-E







DETAIL C
SCALE 2 : 1

SUCTION VALVE ASSEMBLY

DATE	No.	REVISIONS
06/06/14	3	CYLINDER MATERIAL UPDATED, ONE PRESSURE SEAL GROOVE REMOVED
16/07/13	2	WIPER SEAL O-RING CHANGED TO 70 SHORE
07/06/13	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.30
0.00 = ± 0.15

CHECKED BY G. OWEN

DRAWN BY D. PHILLIPS

PART No. XW-00-00790-0520-3-4-CC-H-04-XX

KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

SCALE 1:1

ISSUE No 3

TITLE GENERAL ASSEMBLY

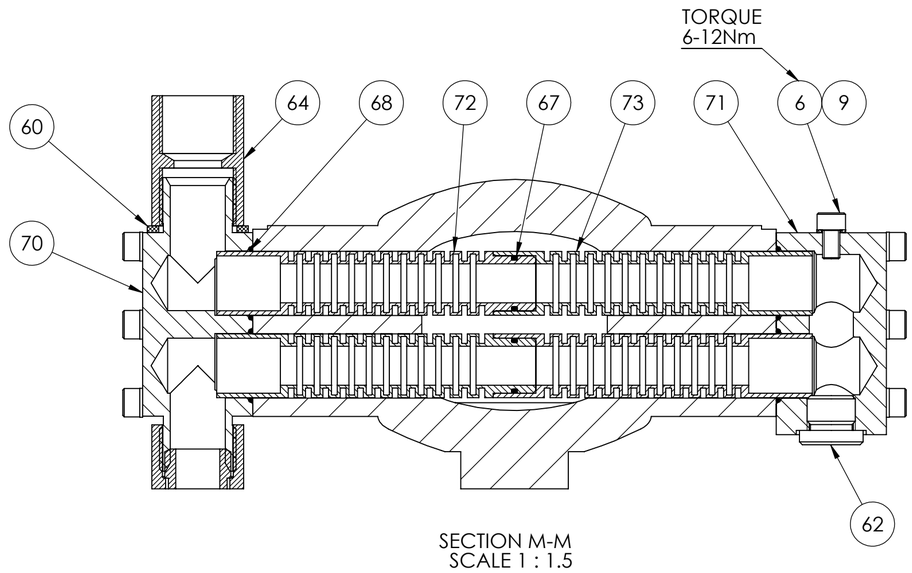
DRAWING No GA-03-00052-00

SHEET 1 OF 2

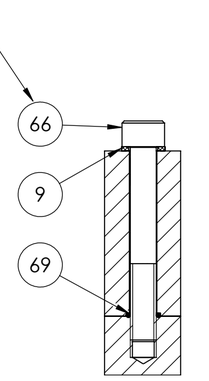
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

ITEM NO.	PART NUMBER	DESCRIPTION	Material	QTY.	REPAIR KIT ITEM	SEAL KIT ITEM
1	07431-05_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
2	11081-01_07	VALVE BODY	431S29 Stainless Steel TO BS970 Pt 3	3	*	
3	11083-01_06	DELIVERY VALVE SEAT	431S29 Stainless Steel TO BS970 Pt 3	3	*	
4	11084-01_03	VALVE GUIDE	M340 stainless Steel	3	*	
5	11093-01_01	SPRING	302S26 Stainless Steel	3	*	
6	180348	M6x10 CAP HEAD SCREW	A4-70 Stainless Steel	4		
7	240117	O-RING BS013	Nitrile 90 Shore	3	*	*
8	250105	BONDED WASHER	Stainless Steel / Nitrile	3	*	*
9	250135	BONDED WASHER NIT PP206 (M6)	Stainless Steel / Nitrile	16	*	*
10	280839	7/16 BALL	Stainless Steel to AISI 440C	3	*	
11	07431-01_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	2		
12	07424-01_05	SHAFT	USA SPEED 55	1		
13	07425-04	BALANCE WEIGHT	Cast Iron	1		
14	07434-04_02	SWASHPLATE (HEAVY DUTY BRGS)	EN1A MILD STEEL	1		
15	11135-01_01	KEY	TOOL STEEL	1	*	
16	11254-01_02	THRUST RING	M42	1		
17	210801	M32x1.5 LOCKNUT	Stainless Steel	1		
18	210802	M32 LOCKWASHER	Stainless Steel	1		
19	260143	INTERNAL CIRCLIP ND3008-055P	EN1A MILD STEEL	1	*	
20	260223	EXTERNAL CIRCLIP AKM0250	Cast Carbon Steel	1	*	
21	280111	CYLINDRICAL ROLLER BRG SL182205A		1	*	
22	280410	TAPER ROLLER BRG M88046/M88010		1	*	
23	280412	TAPER ROLLER BEARING JW5049/JW5010		1	*	
24	280413	TAPER ROLLER BRG 55175C/55437		1	*	
25	290120	SELOCK PIN	Plain Carbon Steel	1		
26	SEE TABLE 1	DELIVERY CONNECTION	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
27	240305	O-RING BS213	Nitrile 90 Shore	1	*	*
28	250476	CORNER SEAL	Nitrile/UH	1	*	*
29	11094-01_03	SPRING	EN58A Stainless Steel	3	*	
30	11237-01_01	SUCTION VALVE COLLAR	303 Stainless Steel	3	*	
31	DP-03-00043-100	SUCTION VALVE BODY 9/16, 5/8 & 11/16 PISTONS	17/4 pH H1150 + 1150	3	*	
32	11239-02_03	SUCTION VALVE	M340 stainless Steel	3	*	
33	11315-01_1	SUCTION VALVE LOCKNUT	303 Stainless Steel	3		
34	210401	M4 HEX NUT	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	3	*	
35	250104	BOND SEAL NIT PP45-CC	Stainless Steel / Nitrile	3	*	*
36	11134-20_08	PISTON SPRING	Silicon Chrome BS2083	3	*	
37	11236-01_03	SPRING SEAT	EN1A MILD STEEL	3	*	
38	11242-01_02	THRUST WASHER	EN351	3	*	
39	11244-01_04	1/2" PISTON	A286 Stainless Steel	3	*	
40	2401202	O RING BS015	Nitrile 70 Shore	12	*	*
41	240429	O-RING 27MM x 33MM x 3MM	Nitrile 70 Shore	3	*	*
42	250405	COMPOSITE SEAL	NITRILE/UH	3	*	*
43	BO-03-00006-90	WIPER SEAL 1/2 RED PU	Red PU 95A	6	*	*
44	DP-03-00025-111	CYLINDER - 1/2" - 3 PISTON	HIDURON 130	3	*	
45	11243-02	PISTON PAD	M42	3	*	
46	07423-07	CASE (WITH INTEGRAL COOLER)	Cast Iron	1		
47	07426-01_07	GASKET	SENTINEL	2	*	*
48	07439-01_04	M10 STUD	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
49	07546-02_04	END COVER	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
50	11245-01_10	BULKHEAD (3 PISTON)	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
51	11246-05_7	3 PISTON CYLINDER BLOCK 9/16	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
52	11249-01_02	3/8" BSP PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
53	14329-01_06	3/4 BSP BLANKING PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	2		
54	120321	1/4" BSP SCHWER PLUG & VITON SEAL	316 Stainless Steel / Nitrile	2	*	
55	180422	M8x50 CAP HEAD SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
56	210418	M10 DOME NUT	A4-70 Stainless Steel	6		
57	240177	O-RING BS048	Nitrile 70 Shore	3	*	*
58	240239	O-RING BS158	Nitrile 70 Shore	1	*	*
59	250103	BONDED WASHER	Stainless Steel / Nitrile	1	*	*
60	250107	BONDED WASHER PP45-F	Stainless Steel / Nitrile	4	*	*
61	250437	CORNER SEAL	Nitrile / PEEK	3	*	*
62	120327	BLANKING PLUG 3/8 BSP	Stainless Steel / Nitrile	1		
63	120408	3/4BSP MALE X 3/4BSP MALE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
64	120433	ADAPTOR 3/4 BSPFM x 3/4 BSPFM	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
65	121010	INLET HOSE	Stainless Steel	1		
66	180323	M6x45 CAP HEAD SCREW	A470 Stainless Steel	12		
67	240122	O RING BS016	Nitrile 90 Shore	2	*	*
68	240129	O RING BS020	Nitrile 90 Shore	4	*	*
69	240433	O RING 6x8x1	Buna Nitrile (Med) 80 Shore	12	*	*
70	DP-03-00002-02_2	CASE ADAPTOR (3/4 BSP CONNECTIONS)	316S11 Stainless Steel BSEN10088-3 1995 1.4404 TO NACE MR-01-75	1		
71	DP-03-00018-02	CASE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
72	DP-03-00029-11	FINNED COOLING TUBE HALF A	Aluminium Bronze to BS2874: CA104	2		
73	DP-03-00030-11_1	FINNED COOLING TUBE HALF B	Aluminium Bronze to BS2874: CA104	2		
74	07428-01_02	SEAL HOUSING	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
75	07435-01	GASKET - SEAL HOUSING	SENTINEL	1	*	*
76	180310	M6X20 HEX HEAD SCREW	A4-70 Stainless Steel	3		
77	250313	SHAFT SEAL	Viton	1	*	*
-	11866-01_05	LABEL	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
-	09.000.19.5025	No.0 x 3/16 HAMMER DRIVE SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		



SECTION M-M
SCALE 1 : 1.5



SECTION N-N

TABLE 1

OUTLET CODE	KIT NO.	PART NUMBER	DESCRIPTION
-03	XW-00052-03	07433-07	DELIVERY CONNECTION 1/2" BSP FEMALE
-08	XW-00052-08	07433-08	DELIVERY CONNECTION 1/2" NPT FEMALE
-12	XW-00052-12	07433-02	DELIVERY CONNECTION 3/8" MP FEMALE
-13	XW-00052-13	07433-04	DELIVERY CONNECTION 9/16" MP FEMALE

DATE	No.	REVISIONS
06/06/14	3	CYLINDER MATERIAL UPDATED, ONE PRESSURE SEAL GROOVE REMOVED
16/07/13	2	WIPER SEAL O-RING CHANGED TO 70 SHORE
07/06/13	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.30
0.00 = ± 0.15

CHECKED BY G. OWEN
DRAWN BY D. PHILLIPS

PART No. XW-00-00790-0520-3-4-CC-H-04-XX

KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

SCALE 1:1 | ISSUE No 3

TITLE: GENERAL ASSEMBLY

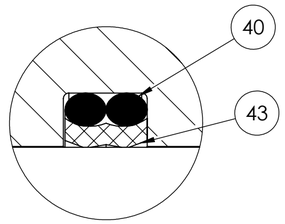
DRAWING No: GA-03-00052-00

SHEET 2 OF 2

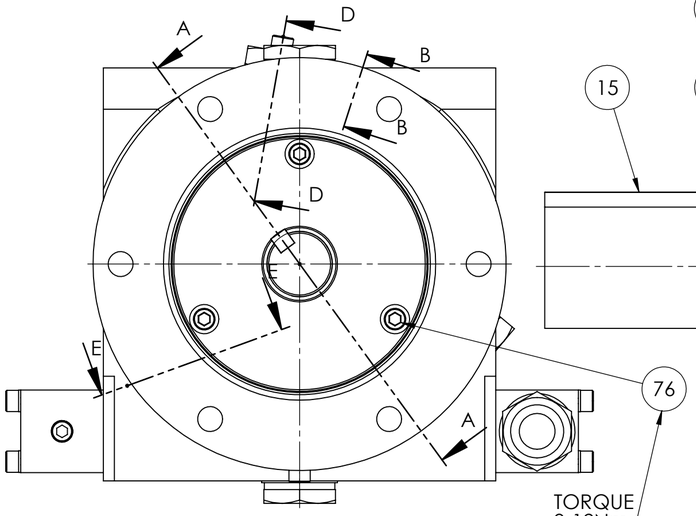
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

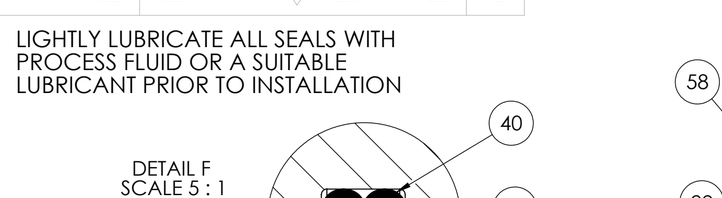
LIGHTLY LUBRICATE ALL SEALS WITH PROCESS FLUID OR A SUITABLE LUBRICANT PRIOR TO INSTALLATION



DETAIL F
SCALE 5 : 1
OIL WIPER SEALS

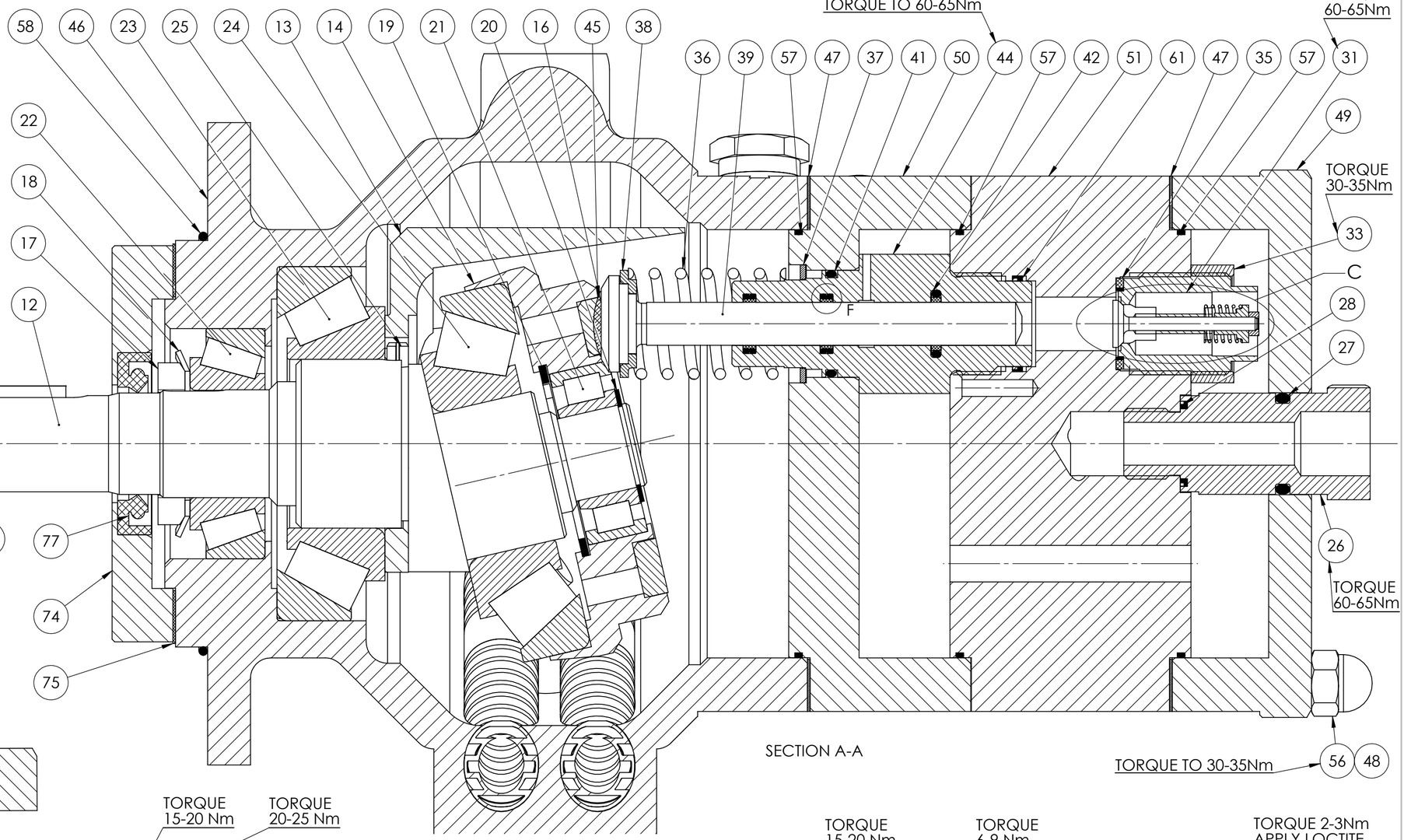


TORQUE 9-12Nm

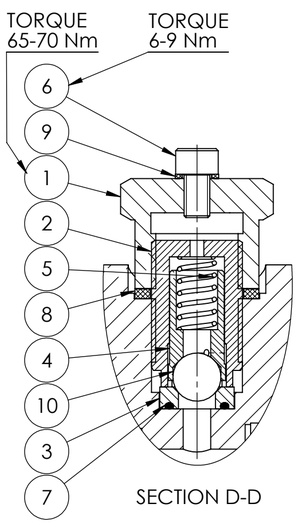


TORQUE 15-20Nm

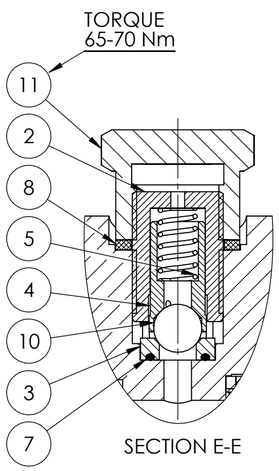
SECTION B-B



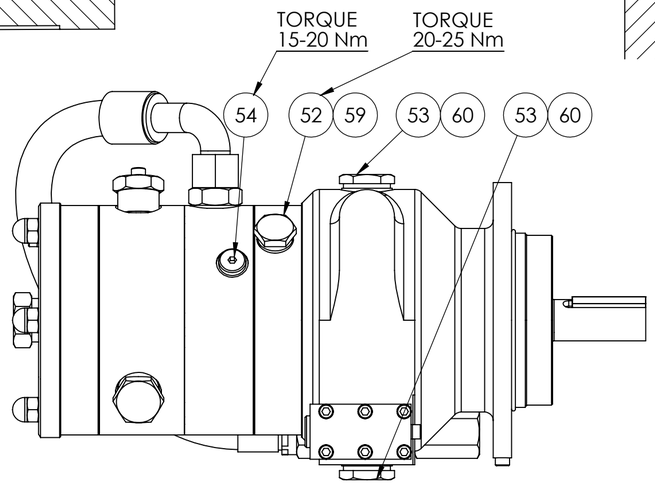
SECTION A-A

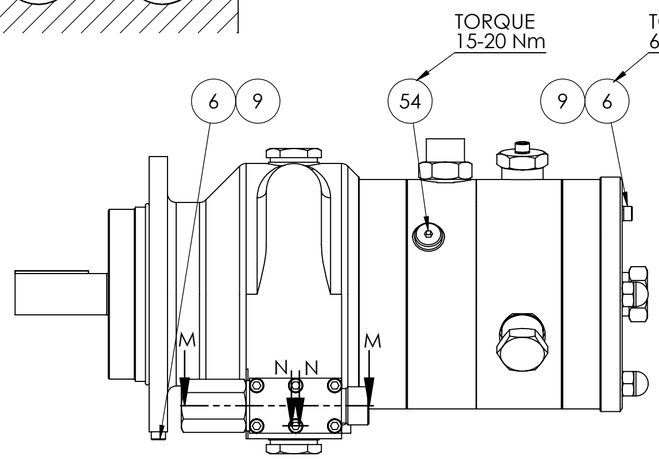


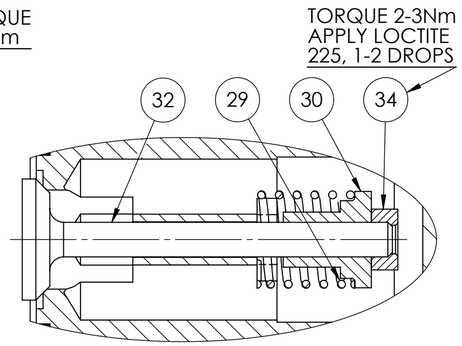
SECTION D-D



SECTION E-E







DETAIL C
SCALE 2 : 1

SUCTION VALVE ASSEMBLY

DATE	No.	REVISIONS
06/06/14	3	CYLINDER MATERIAL UPDATED, ONE PRESSURE SEAL GROOVE REMOVED
16/07/13	2	WIPER SEAL O-RING CHANGED TO 70 SHORE
07/06/13	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.30
0.00 = ± 0.15

CHECKED BY G. OWEN

DRAWN BY D. PHILLIPS

PART No. XW-00-00790-0520-3-4-CC-H-04-XX

KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

SCALE 1:1

ISSUE No 3

TITLE GENERAL ASSEMBLY

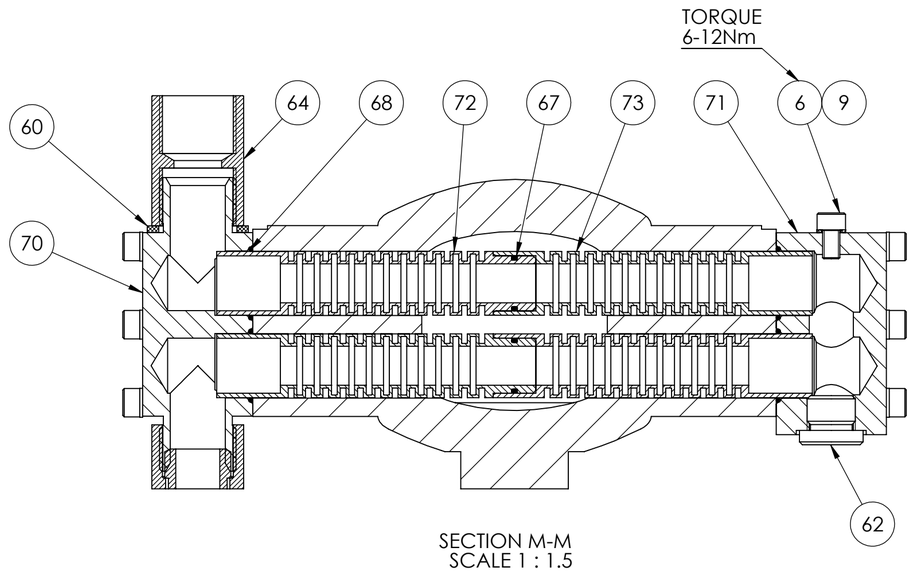
DRAWING No GA-03-00052-00

SHEET 1 OF 2

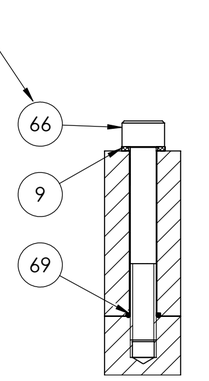
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

ITEM NO.	PART NUMBER	DESCRIPTION	Material	QTY.	REPAIR KIT ITEM	SEAL KIT ITEM
1	07431-05_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
2	11081-01_07	VALVE BODY	431S29 Stainless Steel TO BS970 Pt 3	3	*	
3	11083-01_06	DELIVERY VALVE SEAT	431S29 Stainless Steel TO BS970 Pt 3	3	*	
4	11084-01_03	VALVE GUIDE	M340 stainless Steel	3	*	
5	11093-01_01	SPRING	302S26 Stainless Steel	3	*	
6	180348	M6x10 CAP HEAD SCREW	A4-70 Stainless Steel	4		
7	240117	O-RING BS013	Nitrile 90 Shore	3	*	*
8	250105	BONDED WASHER	Stainless Steel / Nitrile	3	*	*
9	250135	BONDED WASHER NIT PP206 (M6)	Stainless Steel / Nitrile	16	*	*
10	280839	7/16 BALL	Stainless Steel to AISI 440C	3	*	
11	07431-01_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	2		
12	07424-01_05	SHAFT	USA SPEED 55	1		
13	07425-04	BALANCE WEIGHT	Cast Iron	1		
14	07434-04_02	SWASHPLATE (HEAVY DUTY BRGS)	EN1A MILD STEEL	1		
15	11135-01_01	KEY	TOOL STEEL	1	*	
16	11254-01_02	THRUST RING	M42	1		
17	210801	M32x1.5 LOCKNUT	Stainless Steel	1		
18	210802	M32 LOCKWASHER	Stainless Steel	1		
19	260143	INTERNAL CIRCLIP ND3008-055P	EN1A MILD STEEL	1	*	
20	260223	EXTERNAL CIRCLIP AKM0250	Cast Carbon Steel	1	*	
21	280111	CYLINDRICAL ROLLER BRG SL182205A		1	*	
22	280410	TAPER ROLLER BRG M88046/M88010		1	*	
23	280412	TAPER ROLLER BEARING JW5049/JW5010		1	*	
24	280413	TAPER ROLLER BRG 55175C/55437		1	*	
25	290120	SELOCK PIN	Plain Carbon Steel	1		
26	SEE TABLE 1	DELIVERY CONNECTION	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
27	240305	O-RING BS213	Nitrile 90 Shore	1	*	*
28	250476	CORNER SEAL	Nitrile/UH	1	*	*
29	11094-01_03	SPRING	EN58A Stainless Steel	3	*	
30	11237-01_01	SUCTION VALVE COLLAR	303 Stainless Steel	3	*	
31	DP-03-00043-100	SUCTION VALVE BODY 9/16, 5/8 & 11/16 PISTONS	17/4 pH H1150 + 1150	3	*	
32	11239-02_03	SUCTION VALVE	M340 stainless Steel	3	*	
33	11315-01_1	SUCTION VALVE LOCKNUT	303 Stainless Steel	3		
34	210401	M4 HEX NUT	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	3	*	
35	250104	BOND SEAL NIT PP45-CC	Stainless Steel / Nitrile	3	*	*
36	11134-20_08	PISTON SPRING	Silicon Chrome BS2083	3	*	
37	11236-01_03	SPRING SEAT	EN1A MILD STEEL	3	*	
38	11242-01_02	THRUST WASHER	EN351	3	*	
39	11244-01_04	1/2" PISTON	A286 Stainless Steel	3	*	
40	2401202	O RING BS015	Nitrile 70 Shore	12	*	*
41	240429	O-RING 27MM x 33MM x 3MM	Nitrile 70 Shore	3	*	*
42	250405	COMPOSITE SEAL	NITRILE/UH	3	*	*
43	BO-03-00006-90	WIPER SEAL 1/2 RED PU	Red PU 95A	6	*	*
44	DP-03-00025-111	CYLINDER - 1/2" - 3 PISTON	HIDURON 130	3	*	
45	11243-02	PISTON PAD	M42	3	*	
46	07423-07	CASE (WITH INTEGRAL COOLER)	Cast Iron	1		
47	07426-01_07	GASKET	SENTINEL	2	*	*
48	07439-01_04	M10 STUD	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
49	07546-02_04	END COVER	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
50	11245-01_10	BULKHEAD (3 PISTON)	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
51	11246-05_7	3 PISTON CYLINDER BLOCK 9/16	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
52	11249-01_02	3/8" BSP PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
53	14329-01_06	3/4 BSP BLANKING PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	2		
54	120321	1/4" BSP SCHWER PLUG & VITON SEAL	316 Stainless Steel / Nitrile	2	*	
55	180422	M8x50 CAP HEAD SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
56	210418	M10 DOME NUT	A4-70 Stainless Steel	6		
57	240177	O-RING BS048	Nitrile 70 Shore	3	*	*
58	240239	O-RING BS158	Nitrile 70 Shore	1	*	*
59	250103	BONDED WASHER	Stainless Steel / Nitrile	1	*	*
60	250107	BONDED WASHER PP45-F	Stainless Steel / Nitrile	4	*	*
61	250437	CORNER SEAL	Nitrile / PEEK	3	*	*
62	120327	BLANKING PLUG 3/8 BSP	Stainless Steel / Nitrile	1		
63	120408	3/4BSP MALE X 3/4BSP MALE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
64	120433	ADAPTOR 3/4 BSPFM x 3/4 BSPFM	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
65	121010	INLET HOSE	Stainless Steel	1		
66	180323	M6x45 CAP HEAD SCREW	A470 Stainless Steel	12		
67	240122	O RING BS016	Nitrile 90 Shore	2	*	*
68	240129	O RING BS020	Nitrile 90 Shore	4	*	*
69	240433	O RING 6x8x1	Buna Nitrile (Med) 80 Shore	12	*	*
70	DP-03-00002-02_2	CASE ADAPTOR (3/4 BSP CONNECTIONS)	316S11 Stainless Steel BSEN10088-3 1995 1.4404 TO NACE MR-01-75	1		
71	DP-03-00018-02	CASE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
72	DP-03-00029-11	FINNED COOLING TUBE HALF A	Aluminium Bronze to BS2874: CA104	2		
73	DP-03-00030-11_1	FINNED COOLING TUBE HALF B	Aluminium Bronze to BS2874: CA104	2		
74	07428-01_02	SEAL HOUSING	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
75	07435-01	GASKET - SEAL HOUSING	SENTINEL	1	*	*
76	180310	M6X20 HEX HEAD SCREW	A4-70 Stainless Steel	3		
77	250313	SHAFT SEAL	Viton	1	*	*
-	11866-01_05	LABEL	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
-	09.000.19.5025	No.0 x 3/16 HAMMER DRIVE SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		



SECTION M-M
SCALE 1 : 1.5



SECTION N-N

TABLE 1

OUTLET CODE	KIT NO.	PART NUMBER	DESCRIPTION
-03	XW-00052-03	07433-07	DELIVERY CONNECTION 1/2" BSP FEMALE
-08	XW-00052-08	07433-08	DELIVERY CONNECTION 1/2" NPT FEMALE
-12	XW-00052-12	07433-02	DELIVERY CONNECTION 3/8" MP FEMALE
-13	XW-00052-13	07433-04	DELIVERY CONNECTION 9/16" MP FEMALE

DATE	No.	REVISIONS
06/06/14	3	CYLINDER MATERIAL UPDATED, ONE PRESSURE SEAL GROOVE REMOVED
16/07/13	2	WIPER SEAL O-RING CHANGED TO 70 SHORE
07/06/13	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.30
0.00 = ± 0.15

CHECKED BY G. OWEN
DRAWN BY D. PHILLIPS

PART No. XW-00-00790-0520-3-4-CC-H-04-XX

KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

SCALE 1:1 | ISSUE No 3

TITLE: GENERAL ASSEMBLY

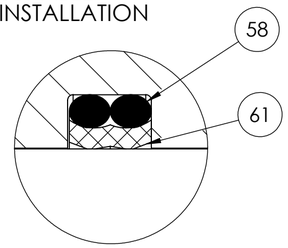
DRAWING No: GA-03-00052-00

SHEET 2 OF 2

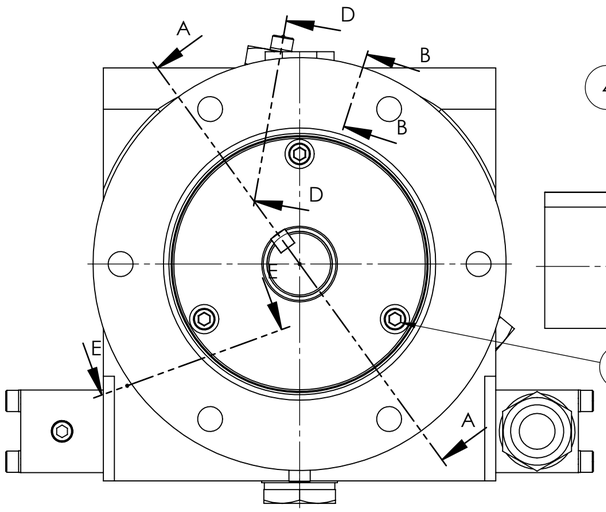
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

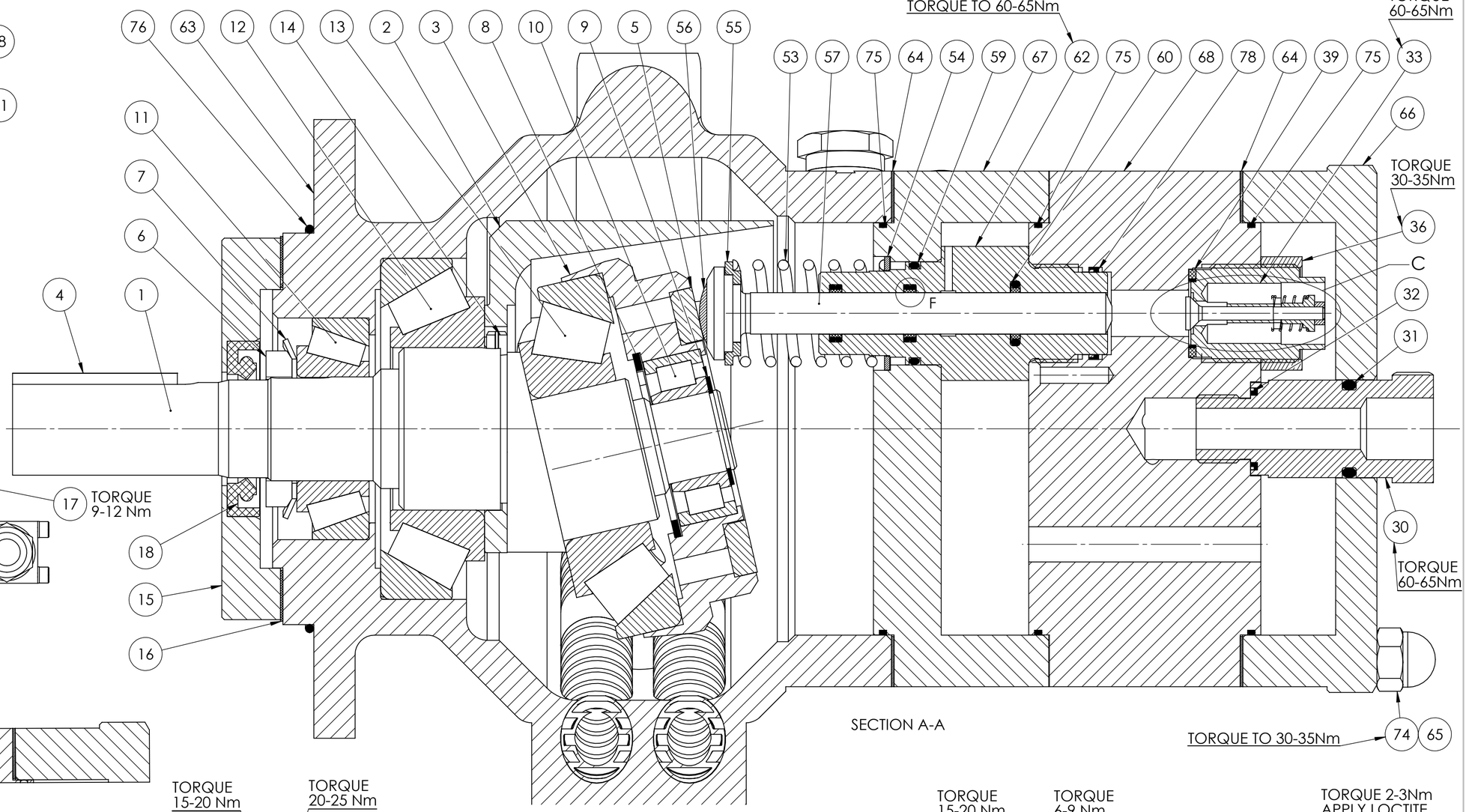
DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

LIGHTLY LUBRICATE ALL SEALS WITH PROCESS FLUID OR A SUITABLE LUBRICANT PRIOR TO INSTALLATION

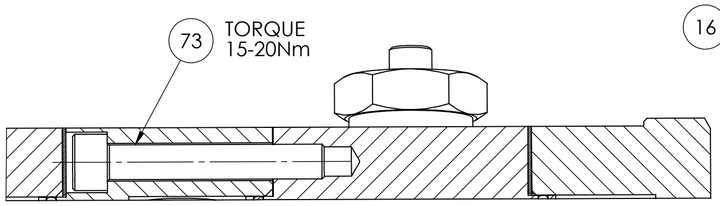


DETAIL F
SCALE 5 : 1
OIL WIPER SEALS

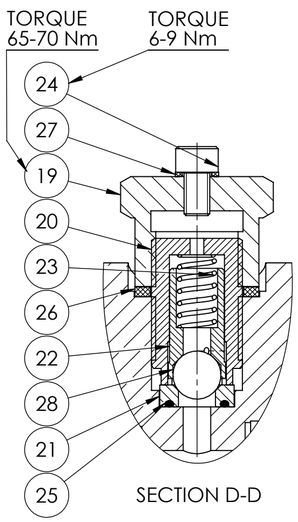




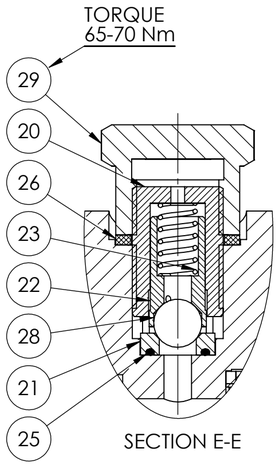
SECTION A-A



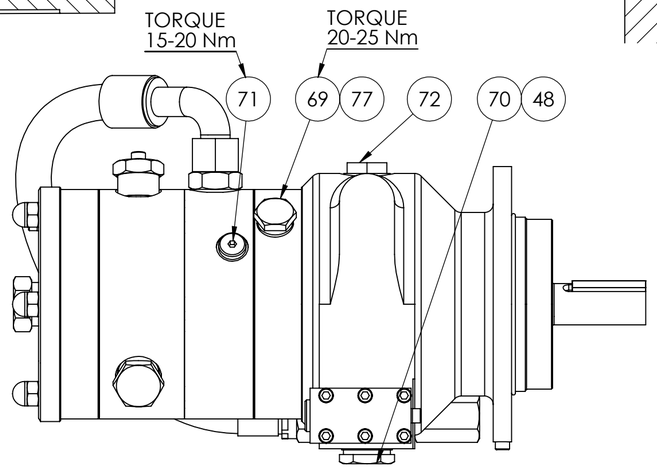
SECTION B-B

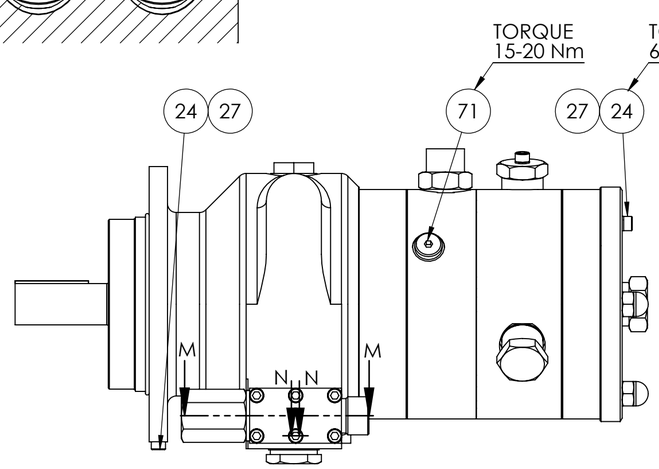


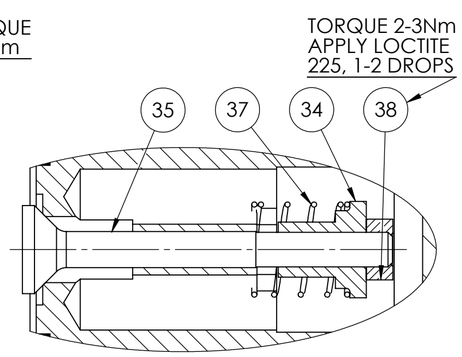
SECTION D-D



SECTION E-E







DETAIL C
SCALE 2 : 1

SUCTION VALVE ASSEMBLY

DATE	No.	REVISIONS
15/08/14	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.30
0.00 = ± 0.15

CHECKED BY G. OWEN

DRAWN BY D. PHILLIPS

PART No. XW-00-00625-0520-3-4-CC-H-04-XX

KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

TITLE: GENERAL ASSEMBLY

SCALE 1:1 | ISSUE No 1

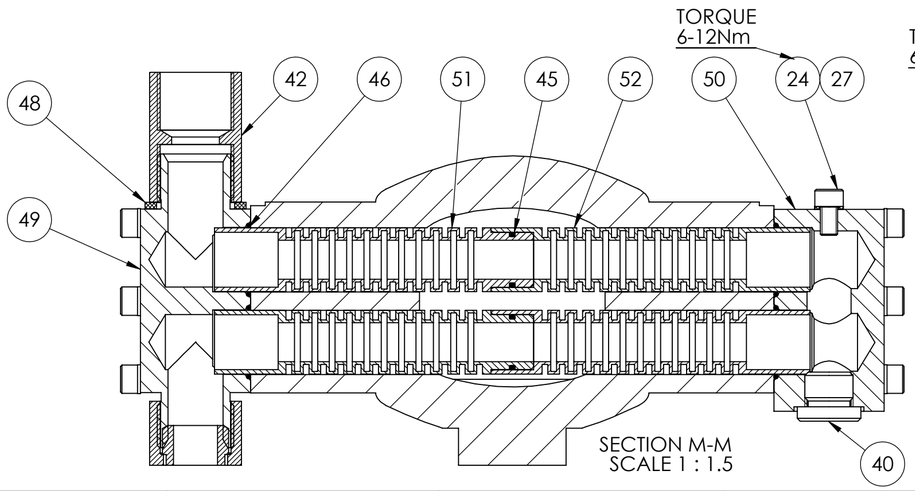
DRAWING No GA-03-00094-00

SHEET 1 OF 2

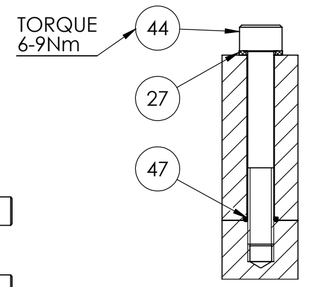
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE | ALL MACHINING 1.6 UNLESS STATED | A2 | REMOVE BURRS AND ALL SHARP EDGES R0.2 OR CHAMFER MAX | IF IN DOUBT ASK

ITEM NO.	PART NUMBER	DESCRIPTION	Material	QTY.	REPAIR KIT ITEM	SEAL KIT ITEM
1	07424-01_05	SHAFT	USA SPEED 55	1		
2	07425-04	BALANCE WEIGHT	Cast Iron	1		
3	07434-04_02	SWASHPLATE (HEAVY DUTY BRGS)	EN1A MILD STEEL	1		
4	11135-01_01	KEY	TOOL STEEL	1	*	
5	11254-01_02	THRUST RING	M42	1		
6	210801	M32x1.5 LOCKNUT	Stainless Steel	1		
7	210802	M32 LOCKWASHER	Stainless Steel	1		
8	260143	INTERNAL CIRCLIP ND3008-055P	EN1A MILD STEEL	1	*	
9	260223	EXTERNAL CIRCLIP AKM0250	Cast Carbon Steel	1	*	
10	280111	CYLINDRICAL ROLLER BRG SL182205A		1	*	
11	280410	TAPER ROLLER BRG M88046/M88010		1	*	
12	280412	TAPER ROLLER BEARING JW5049/JW5010		1	*	
13	280413	TAPER ROLLER BRG 55175C/55437		1	*	
14	290120	SELOCK PIN	Plain Carbon Steel	1		
15	07428-01_02	SEAL HOUSING	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
16	07435-01	GASKET - SEAL HOUSING	SENTINEL	1	*	*
17	180310	M6X20 HEX HEAD SCREW	A4-70 Stainless Steel	3		
18	250313	SHAFT SEAL	Viton	1	*	*
19	07431-05_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
20	11081-01_07	VALVE BODY	431S29 Stainless Steel TO BS970 Pt 3	3	*	
21	11083-01_06	DELIVERY VALVE SEAT	431S29 Stainless Steel TO BS970 Pt 3	3	*	
22	11084-01_03	VALVE GUIDE	M340 stainless Steel	3	*	
23	11093-01_01	SPRING	302S26 Stainless Steel	3	*	
24	180348	M6x10 CAP HEAD SCREW	A4-70 Stainless Steel	4		
25	240117	O-RING BS013	Nitrile 90 Shore	3	*	*
26	250105	BONDED WASHER	Stainless Steel / Nitrile	3	*	*
27	250135	BONDED WASHER NIT PP206 (M6)	Stainless Steel / Nitrile	16	*	*
28	280839	7/16 BALL	Stainless Steel to AISI 440C	3	*	
29	07431-01_01	DELIVERY VALVE CAP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	2		
30	SEE TABLE 1	DELIVERY CONNECTION 1/2" BSP	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
31	240305	O-RING BS213	Nitrile 90 Shore	1	*	*
32	250476	CORNER SEAL	Nitrile/UH	1	*	*
33	DP-03-00041-100	SUCTION VALVE BODY 7/16 AND 1/2 PISTONS	17/4 pH H1150 + 1150	3	*	
34	11237-01_01	SUCTION VALVE COLLAR	303 Stainless Steel	3	*	
35	11239-01_03	SUCTION VALVE	M340 stainless Steel	3	*	
36	11315-01_1	SUCTION VALVE LOCKNUT	303 Stainless Steel	3		
37	11094-02	SUCTION VALVE SPRING	302S26 Stainless Steel	3	*	
38	210401	M4 HEX NUT	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	3	*	
39	250104	BOND SEAL NIT PP45-CC	Stainless Steel / Nitrile	3	*	*
40	120327	BLANKING PLUG 3/8 BSP	Stainless Steel / Nitrile	1		
41	120408	3/4BSP MALE X 3/4BSP MALE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
42	120433	ADAPTOR 3/4 BSPFM x 3/4 BSPFM	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
43	121010	INLET HOSE	Stainless Steel	1		
44	180323	M6x45 CAP HEAD SCREW	A470 Stainless Steel	12		
45	240122	O RING BS016	Nitrile 90 Shore	2	*	*
46	240129	O RING BS020	Nitrile 90 Shore	4	*	*
47	240433	O RING 6x8x1	Buna Nitrile (Med) 80 Shore	12	*	*
48	250107	BONDED WASHER PP45-F	Stainless Steel / Nitrile	3	*	*
49	DP-03-00002-02_2	CASE ADAPTOR (3/4 BSP CONNECTIONS)	316S11 Stainless Steel BSEN10088-3 1995 1.4404 TO NACE MR-01-75	1		
50	DP-03-00018-02	CASE ADAPTOR	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
51	DP-03-00029-11	FINNED COOLING TUBE HALF A	Aluminium Bronze to BS2874: CA104	2		
52	DP-03-00030-11_1	FINNED COOLING TUBE HALF B	Aluminium Bronze to BS2874: CA104	2		
53	11134-20_08	PISTON SPRING	Silicon Chrome BS2083	3	*	
54	11236-01_03	SPRING SEAT	EN1A MILD STEEL	3	*	
55	11242-01_02	THRUST WASHER	EN351	3	*	
56	11243-01	PISTON PAD	M42	3	*	
57	11244-01_04	1/2" PISTON	A286 Stainless Steel	3	*	
58	2401202	O RING BS015	Nitrile 70 Shore	12	*	*
59	240429	O-RING 27MM x 33MM x 3MM	Nitrile 70 Shore	3	*	*
60	250405	COMPOSITE SEAL	NITRILE/UH	3	*	*
61	BO-03-00006-90	WIPER SEAL 1/2 RED PU	Red PU 95A	6	*	*
62	DP-03-00025-111	CYLINDER - 1/2" - 3 PISTON	HIDURON 130	3	*	
63	07423-07	CASE (WITH INTEGRAL COOLER)	Cast Iron	1		
64	07426-01_07	GASKET	SENTINEL	2	*	*
65	07439-01_04	M10 STUD	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
66	07546-02_04	END COVER	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
67	11245-01_10	BULKHEAD (3 PISTON)	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
68	11246-04_7	3 PISTON CYLINDER BLOCK 1/2	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
69	11249-01_02	3/8" BSP PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
70	14329-01_06	3/4 BSP BLANKING PLUG	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
71	120321	1/4" BSP SCHWER PLUG & VITON SEAL	316 Stainless Steel / Nitrile	2	*	
72	121105	PLASTIC PLUG THREADED 3/4" BSP	PE High Density	1		
73	180422	M8x50 CAP HEAD SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		
74	210418	M10 DOME NUT	A4-70 Stainless Steel	6		
75	240177	O-RING BS048	Nitrile 70 Shore	3	*	*
76	240239	O-RING BS158	Nitrile 70 Shore	1	*	*
77	250103	BONDED WASHER	Stainless Steel / Nitrile	1	*	*
78	250437	CORNER SEAL	Nitrile / PEEK	3	*	*
-	11866-01_05	LABEL	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	1		
-	09.000.19.5025	No.0 x 3/16 HAMMER DRIVE SCREW	316S11 Stainless Steel BSEN10088-3 1.4404 TO NACE MR-01-75	6		



SECTION M-M
SCALE 1 : 1.5



SECTION N-N

TABLE 1

OUTLET CODE	KIT NO.	PART NUMBER	DESCRIPTION
-03	XW-00093-04	07433-07	DELIVERY CONNECTION 1/2 BSP FEMALE
-08	XW-00094-08	07433-08	DELIVERY CONNECTION 1/2 NPT FEMALE
-12	XW-00094-12	07433-02	DELIVERY CONNECTION 3/8 MP TUBE FEMALE
-13	XW-00094-13	07433-04	DELIVERY CONNECTION 9/16 MP TUBE FEMALE

DATE	No.	REVISIONS
15/08/14	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS

TOLERANCES
DECIMALS
0.0 = ± 0.30
0.00 = ± 0.15
ANGLES ± 0° 30'

CHECKED BY G. OWEN
DRAWN BY D. PHILLIPS

PART No. XW-00-00625-0520-3-4-CC-H-04-XX
KIT No. SEE TABLE 1

THIRD ANGLE PROJECTION

SCALE 1:1
ISSUE No 1

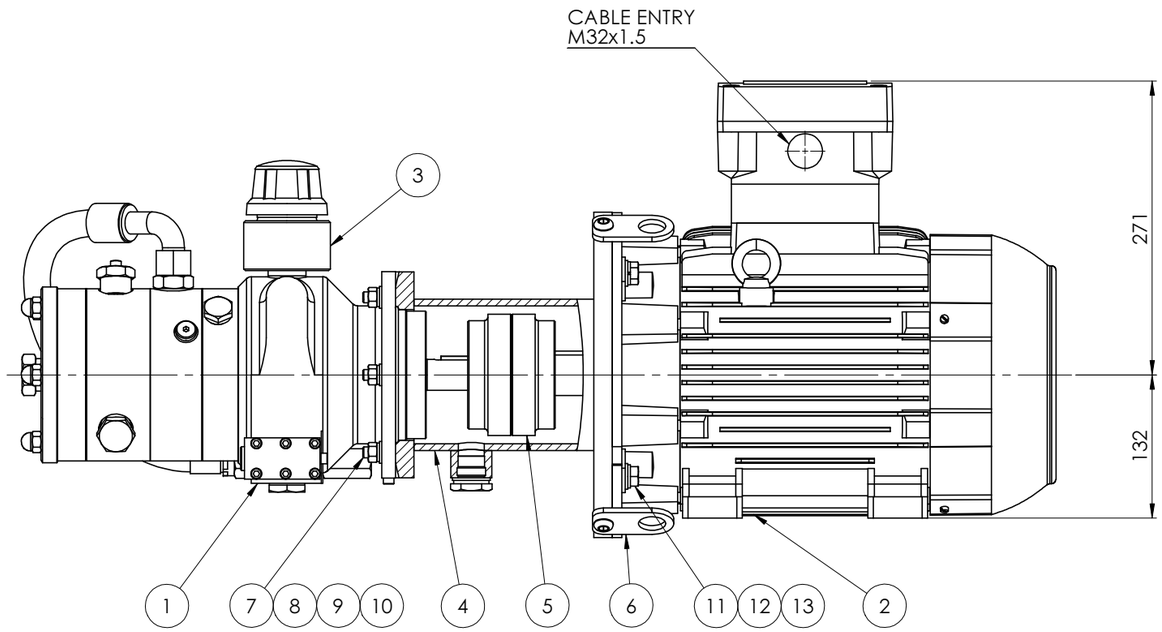
TITLE GENERAL ASSEMBLY

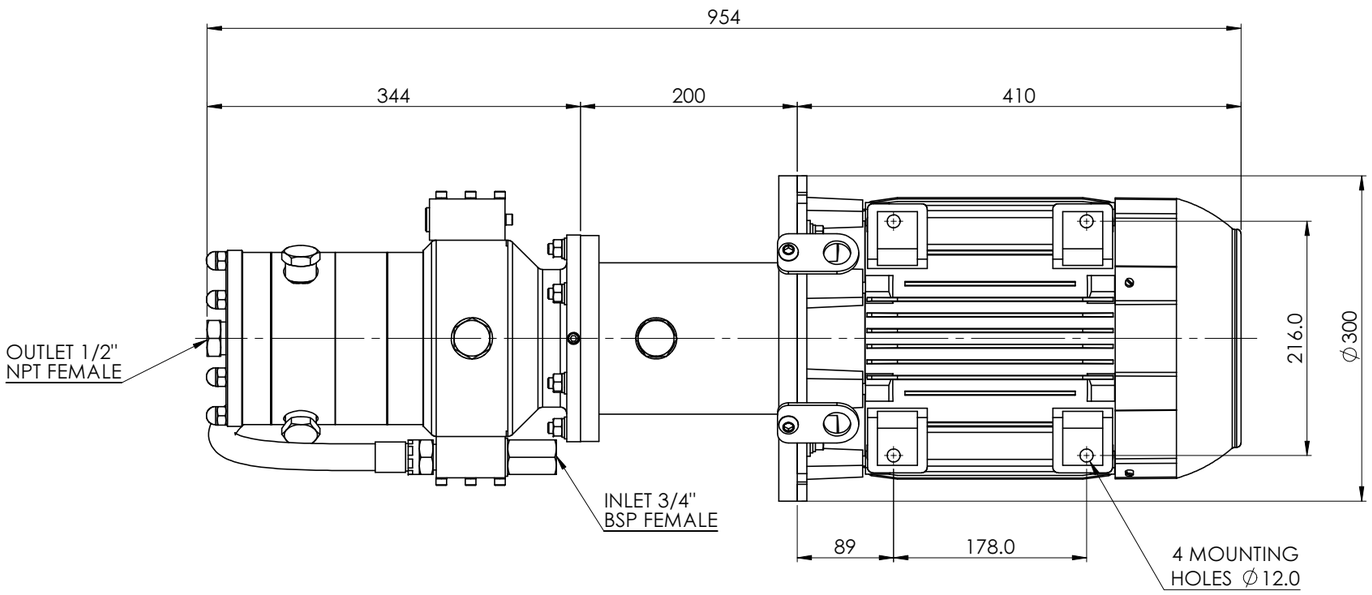
DRAWING No GA-03-00094-00

SHEET 2 OF 2

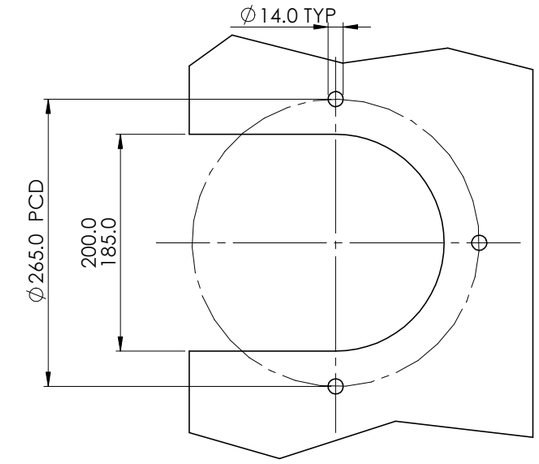
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE	ALL MACHINING 1.6 UNLESS STATED	A2





Pump Part No.	XW-00-00625-0520-3-4-CC-H-04-08		
Coupling	11779-04		
Bell Housing	11774-02		
Motor Details			
Manufacturer: WEG		Class: Exd	Frame: 132M
Output: 7.5 kW		Voltage: 400V	Phase: 3
Poles: 4	Hz: 50	Speed: 1450 RPM	IP: 56
Thermistors: YES		Mount: B35 FOOT & FLANGE	
Heaters: -		Vibration: -	
Temp. Rise Class: B		Ambient Temp. : -20 TO +40 DEG C	
Marshalsea Ref No: M453541309C533FTN01W			
Total Assembly Weight Approx (kg): 158 KG			
MPU Max Working Pressure: 350 BAR			
MPU Max Flow Rate : (Approx)	8 L/MIN AT 1450 RPM AT 350 BAR		
Finish - Painted : GP 1-2 BLUE RAL 5015			
Full MPU Number :	XW-00-00625-0520-3-4-CC-H-04-08-21-3-10-M453541309C533FTN01W		



RECOMMENDED MOUNTING PLATE
DIMENSIONS FOR VERTICAL INSTALLATIONS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XW-00-00625-0520-3-4-CC-H-04-08	XW PUMP	1
2	M453541309C533FTN01W	WEG Exd 132M FRAME B35 MOUNT MOTOR	1
3	11330-01	OIL LEVEL INDICATOR (HORIZONTAL MOUNTING)	1
4	11774-02	BELLHOUSING 132 FRAME	1
5	11779-04	DRIVE COUPLING X PUMP- 132 MOTOR	1
6	11870-01	BELLHOUSING LIFTING POINT ASSEMBLY	4
7	11734-01	STUD (M10 x 45MM)	6
8	210412	M10 NUT	6
9	220123	M10 PLAIN WASHER	6
10	220227	M10 SPRING WASHER	6
11	180621	M12 X 30 HEX HEAD SCREW	4
12	220124	M12 PLAIN WASHER	4
13	220228	M12 SPRING WASHER	4

DATE	No.	REVISIONS
09/04/14	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS
DRAWING IN ACCORDANCE WITH BS 8888
TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.13
0.00 = ± 0.15

CHECKED BY: -
DRAWN BY: D. PHILLIPS

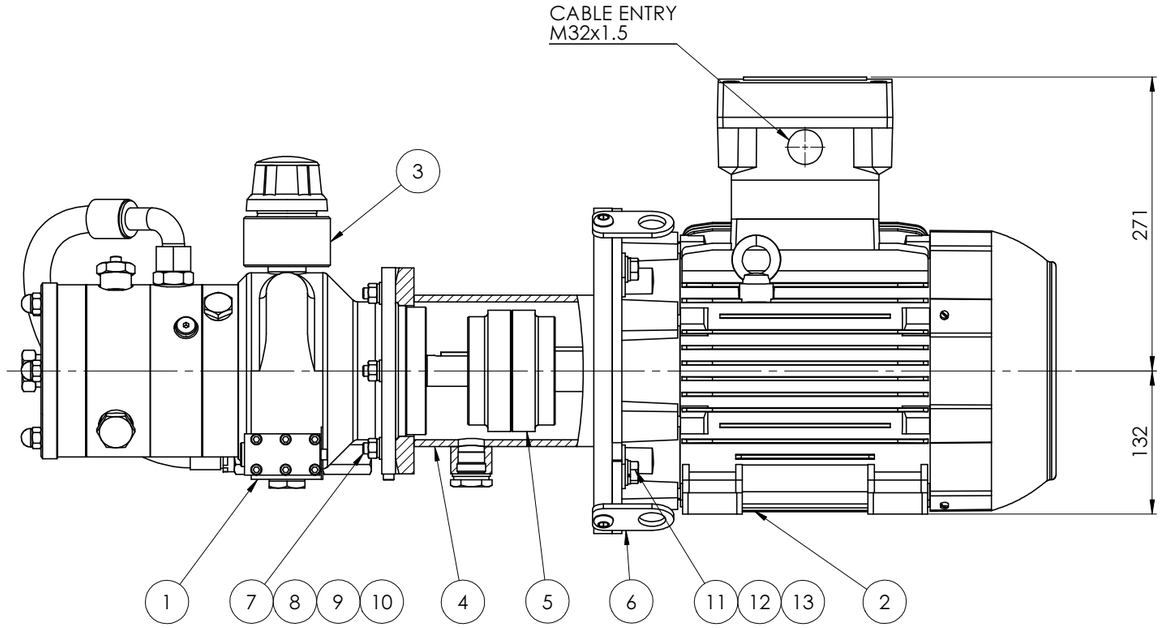
THIRD ANGLE PROJECTION

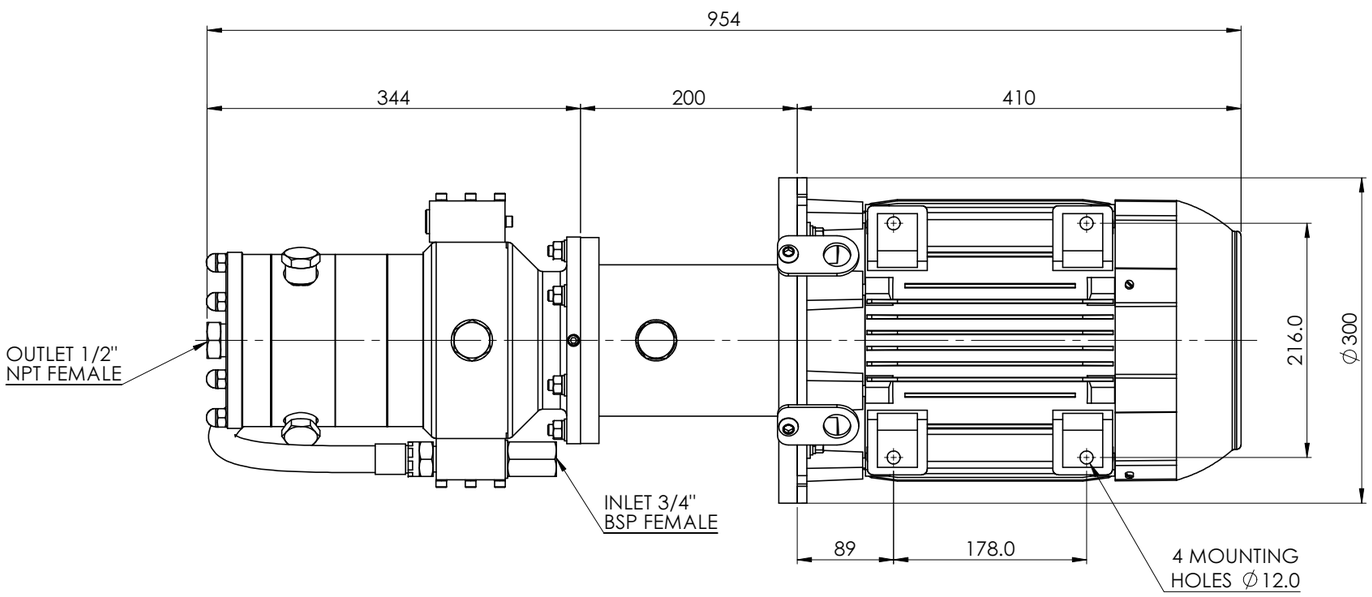
ASSEMBLY No.: XW-00207-21310

SCALE: 1:4
ISSUE No: 1
DRAWING No: GA-03-00207-00
SHEET 1 OF 1

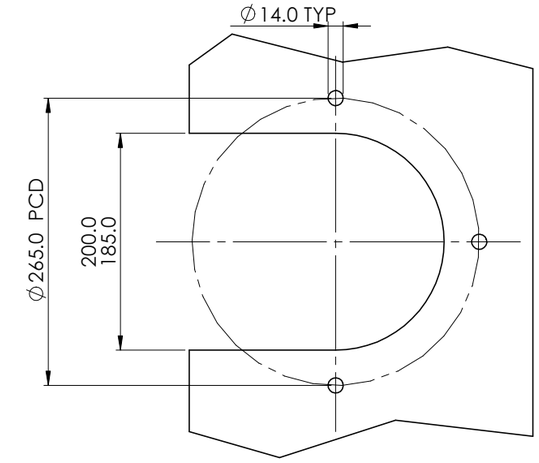
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE	ALL MACHINING 1.6 UNLESS STATED	A2





Pump Part No.	XW-00-00790-0520-3-4-CC-H-04-08		
Coupling	11779-04		
Bell Housing	11774-02		
Motor Details			
Manufacturer: WEG		Class: Exd	Frame: 132M
Output: 7.5 kW		Voltage: 400V	Phase: 3
Poles: 4	Hz: 50	Speed: 1450 RPM	IP: 56
Thermistors: YES		Mount: B35 FOOT & FLANGE	
Heaters: -		Vibration: -	
Temp. Rise Class: B		Ambient Temp. : -20 TO +40 DEG C	
Marshalsea Ref No: M453541309C533FTN01W			
Total Assembly Weight Approx (kg): 158 KG			
MPU Max Working Pressure: 250 BAR			
MPU Max Flow Rate : (Approx)	10 L/MIN AT 1450 RPM AT 250 BAR		
Finish - Painted : GP 1-2 BLUE RAL 5015			
Full MPU Number :	XW-00-00790-0520-3-4-CC-H-04-08-21-3-10-M453541309C533FTN01W		



RECOMMENDED MOUNTING PLATE
DIMENSIONS FOR VERTICAL INSTALLATIONS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XW-00-00790-0520-3-4-CC-H-04-08	XW PUMP	1
2	M453541309C533FTN01W	WEG Exd 132M FRAME B35 MOUNT MOTOR	1
3	11330-01	OIL LEVEL INDICATOR (HORIZONTAL MOUNTING)	1
4	11774-02	BELLHOUSING 132 FRAME	1
5	11779-04	DRIVE COUPLING X PUMP- 132 MOTOR	1
6	11870-01	BELLHOUSING LIFTING POINT ASSEMBLY	4
7	11734-01	STUD (M10 x 45MM)	6
8	210412	M10 NUT	6
9	220123	M10 PLAIN WASHER	6
10	220227	M10 SPRING WASHER	6
11	180621	M12 X 30 HEX HEAD SCREW	4
12	220124	M12 PLAIN WASHER	4
13	220228	M12 SPRING WASHER	4

DATE	No.	REVISIONS
09/04/14	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS
DRAWING IN ACCORDANCE WITH BS 8888
TOLERANCES
DECIMALS 0.0 = ± 0.13, 0.00 = ± 0.15
ANGLES ± 0° 30'

CHECKED BY: -
DRAWN BY: D. PHILLIPS

THIRD ANGLE PROJECTION

ASSEMBLY No.: XW-00208-21310

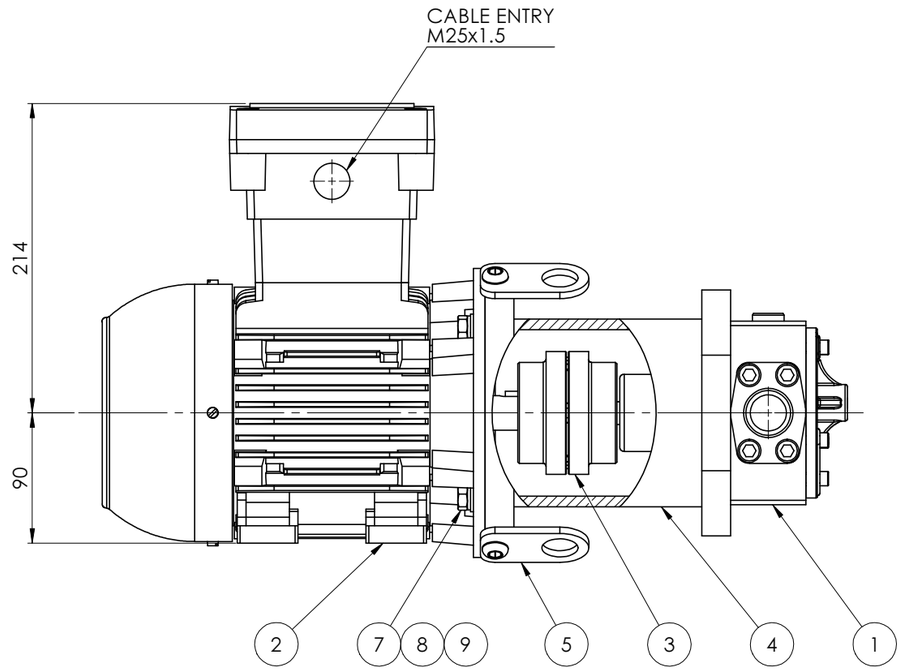
SCALE: 1:4
ISSUE No: 1

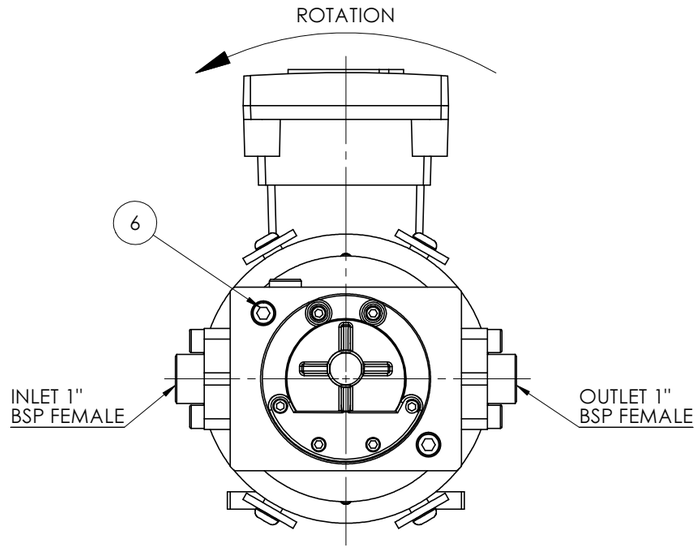
DRAWING No: GA-03-00208-00

SHEET 1 OF 1

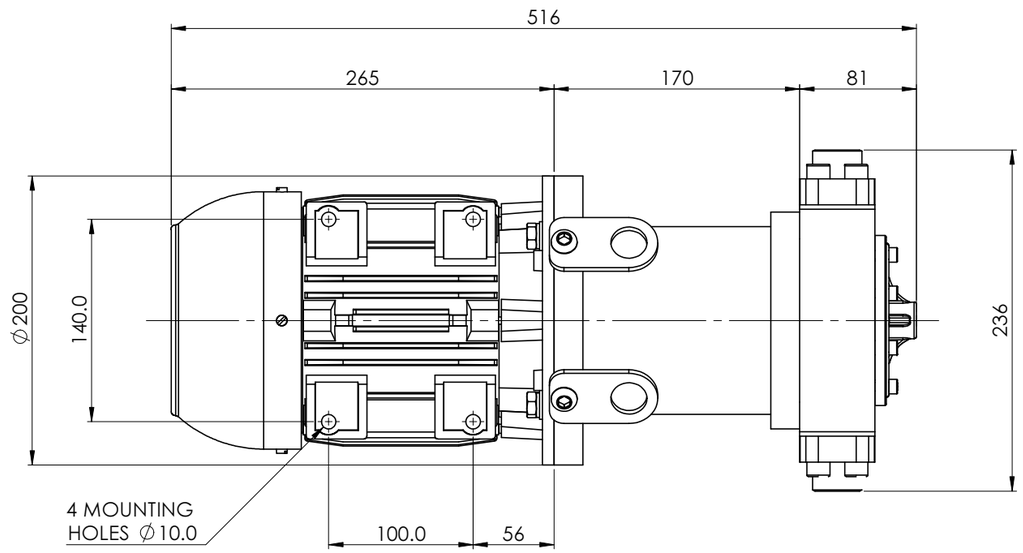
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE	ALL MACHINING 1.6 UNLESS STATED	A2





Pump Part No.	TUTHILL 1014		
Coupling	11784-60		
Bell Housing	11862-03		
Motor Details			
Manufacturer: WEG		Class: Exd	Frame: 90S
Output: 0.75kW		Voltage: 400V	Phase: 3
Poles: 4	Hz: 50	Speed: 1450 RPM	IP: 56
Thermistors: YES		Mount: B35 FOOT & FLANGE	
Heaters: -		Vibration: -	
Temp. Rise Class: B		Ambient Temp. : -20 TO +40 DEG C	
Marshalsea Ref No: M453540604C533FTN01W			
Total Assembly Weight Approx (kg): 58 KG			
MPU Max Working Pressure: 3.5 BAR			
MPU Max Flow Rate : (Approx) 30 L/MIN AT 1450 RPM AT 3.5 BAR			
Finish - Painted : GP 1-2 BLUE RAL 5015			
Full MPU Number : TUTHILL1014-21-1-05-M453540604C533FTN01W			



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TUTHILL 1014	TUTHILL 1014 PUMP	1
2	M453540604C533FTN01W	WEG Exd 90 FRAME B35 MOUNT MOTOR	1
3	11784-60	COUPLING (TUTHILL 1012/1014 TO 90 MOTOR)	1
4	11862-03	BELLHOUSING - TUTHILL 1014 TO 80/90 MOTOR	1
5	11870-01	BELLHOUSING LIFTING POINT ASSEMBLY	4
6	180552	M10 X 55 SKT HD CAP SCREW	2
7	180509	M10 X 30 HEX HEAD SCREW	4
8	220123	M10 PLAIN WASHER	4
9	220227	M10 SPRING WASHER	4

DATE	No.	REVISIONS
09/04/14	1	NEW DRAWING

ALL DIMENSIONS ARE IN MILLIMETERS
DRAWING IN ACCORDANCE WITH BS 8888
TOLERANCES
DECIMALS ANGLES ± 0° 30'
0.0 = ± 0.13
0.00 = ± 0.15

CHECKED BY: -
DRAWN BY: D. PHILLIPS

THIRD ANGLE PROJECTION

ASSEMBLY No.: NM-00033-21104

DRAWING No: GA-16-00033-00

SCALE: 1:3

ISSUE No: 1

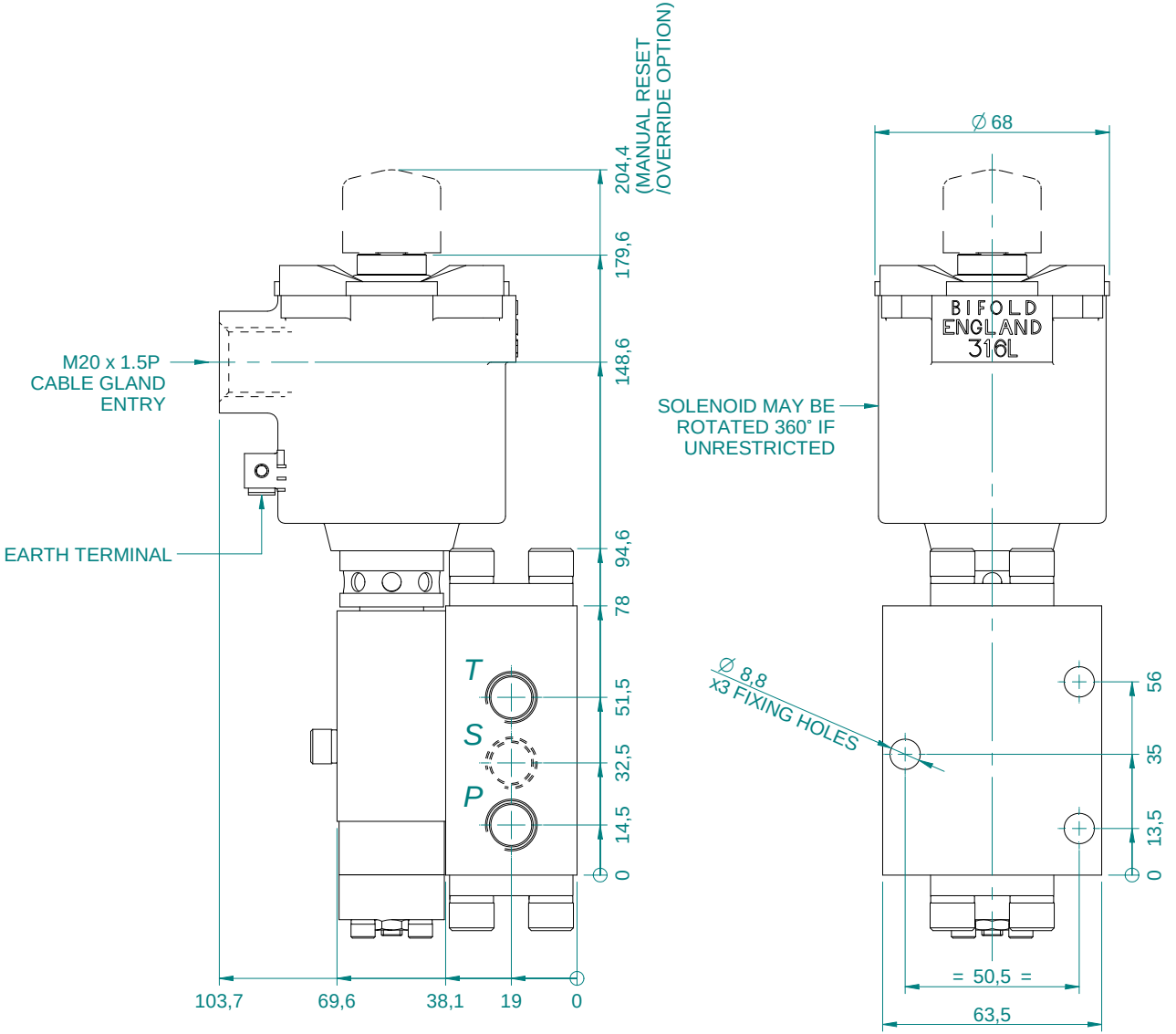
SHEET 1 OF 1

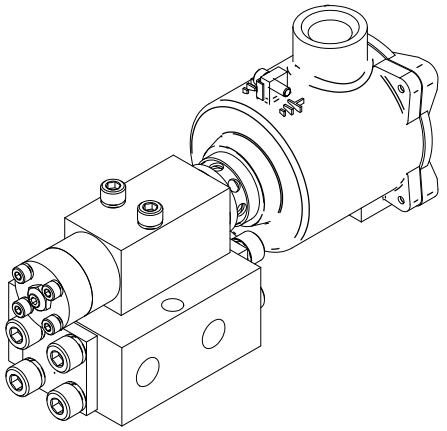
Bifold Marshalsea
TAUNTON SOMERSET ENGLAND
TEL 01823 331081 FAX 01823 323382

DO NOT SCALE

THIRD ANGLE PROJECTION

DIMENSIONS IN MILLIMETRES





CONNECTIONS

P = PRESSURE PORT - (04) 1/4 NPT, (06) 3/8 NPT, (38MP) 3/8" MEDIUM PRESSURE
S = SERVICE PORT - (04) 1/4 NPT, (06) 3/8 NPT, (38MP) 3/8" MEDIUM PRESSURE
T = TANK PORT - (04) 1/4 NPT, (06) 3/8 NPT, (38MP) 3/8" MEDIUM PRESSURE

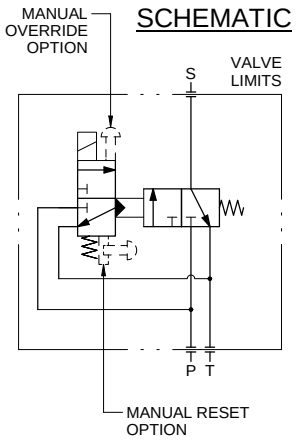
WORKING PRESSURES

S1 - 345 BAR (5,000 PSI)
S2 - 517 BAR (7,500 PSI)
S3 - 690 BAR (10,000 PSI)

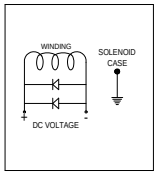
WEIGHT

4 Kg APPROX

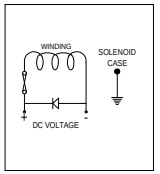
SCHEMATIC



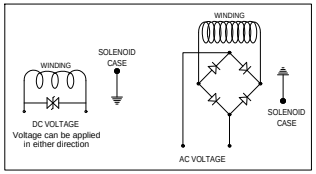
WIRING DIAGRAM - TYPE 78X



WIRING DIAGRAM - TYPE 74X



WIRING DIAGRAMS - TYPE 77X



REV	DATE	DRAWN	CHKD	REVISION
0	22.04.14	JM	PK	PRODUCTION ISSUE

NOTES :

1.) O-RING MATERIAL CODE 'X' S = NITRILE
V = VITON
SA = LOW TEMP. NITRILE

2.) ALL DIMENSIONS NOMINAL UNLESS OTHERWISE STATED.

VALVE TYPES/USED ON

Bifold FluidPower Limited

Bifold Fluidpower Limited
Greenside way,Middleton, Manchester, M24 ISW
Telephone (44) 0161 345 4777 Fax (44) 0161 345 4780

PROJECT TITLE: FP15/SX/XX/32/X/7X
PROJECT No.:
DRAWING TITLE: GENERAL INSTALLATION
DRAWING No.: 10786
REV.: 0

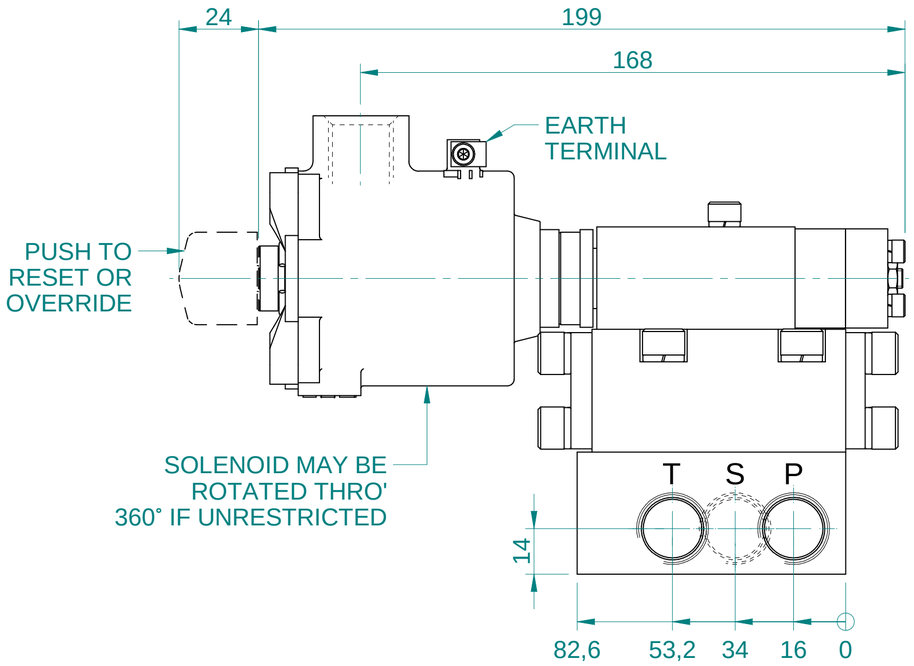
DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
josh.morgan	22.04.14	PETER KYRYCZ	22.04.14		

C.A.D. Produced Drawing DO NOT Change By Hand

DO NOT SCALE

THIRD ANGLE PROJECTION

DIMENSIONS IN MILLIMETRES



CONNECTIONS

P = PRESSURE PORT - 1/2 NPT
S = SERVICE PORT - 1/2 NPT
T = TANK PORT - 1/2 NPT

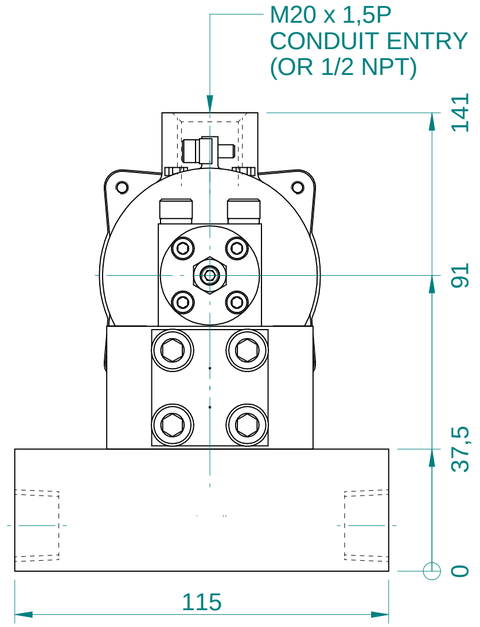
WORKING PRESSURES

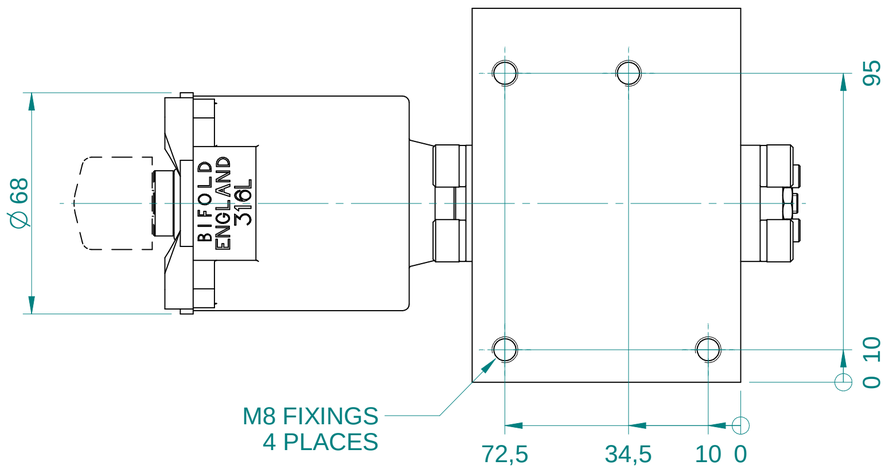
MAXIMUM WP TYPE S1 - 345 BAR (5,000 PSI)
MAXIMUM WP TYPE S2 - 517 BAR (7,500 PSI)
MAXIMUM WP TYPE S3 - 690 BAR (10,000 PSI)

MINIMUM OPERATING PRESSURE 50 BAR (725 PSI)

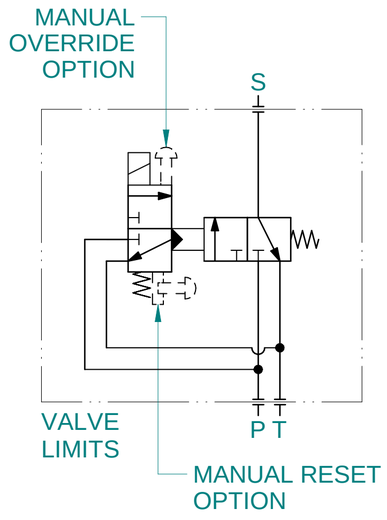
WEIGHT

6.7 Kg APPROX

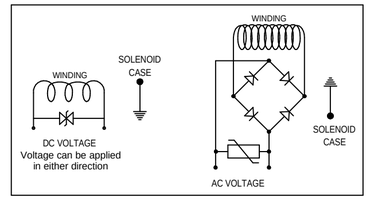




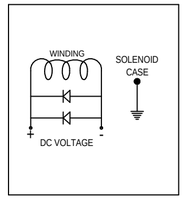
SCHEMATIC



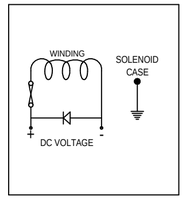
WIRING DIAGRAMS - TYPE 77X



WIRING DIAGRAM - TYPE 78X



WIRING DIAGRAM - TYPE 74X



REV	DATE	DRAWN	CHKD	REVISION
0	14.08.14	MM	PK	PRODUCTION STANDRAD

NOTES :

1.) O-RING MATERIAL CODE 'X' S = NITRILE
V = VITON
SA = LOW TEMP NITRILE

2.) ALL DIMENSIONS NOMINAL UNLESS OTHERWISE STATED.

VALVE TYPES/USED ON
FP15/SX/M/32/S-7X-[M229]
FP15/SX/M/32/V-7X-[M229]
FP15/SX/M/32/SA-7X-[M229]
K85 OPTION
'M' AND 'ML' OPTIONS

Bifold FluidPower Limited

Bifold Fluidpower Limited
Greenside way,Middleton, Manchester, M24 1SW
Telephone (44) 0161 345 4777 Fax (44) 0161 345 4780

PROJECT TITLE: FP15/SX/M/32/X-7X-[M229]

PROJECT No.:

DRAWING TITLE: GENERAL INSTALLATION

DRAWING No.: 10854

REV.: 0

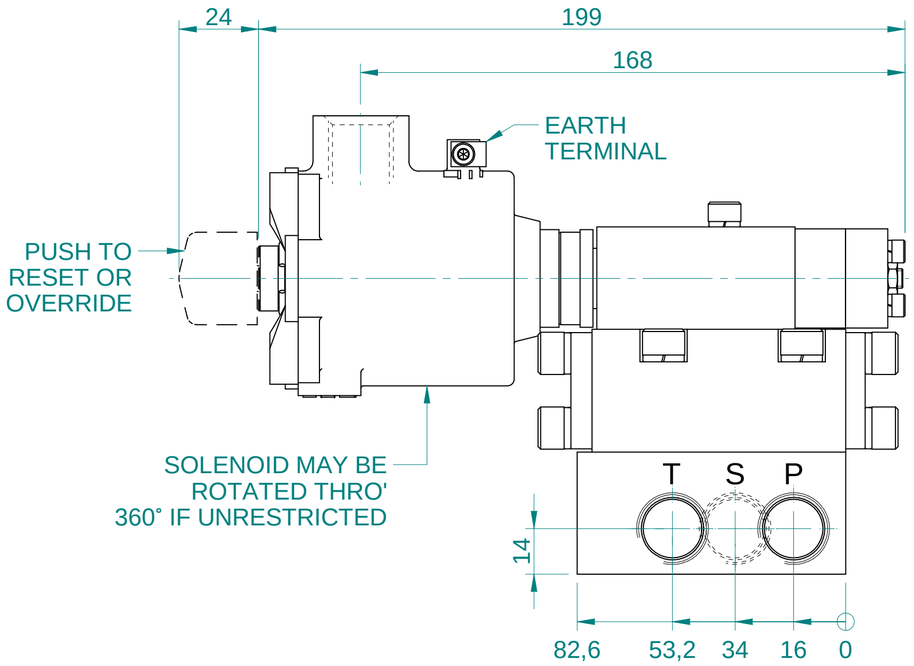
DRAWN: M MELLOR | DATE: 14.08.14 | CHECKED: | DATE: | APPROVED: | DATE:

C.A.D. Produced Drawing DO NOT Change By Hand

DO NOT SCALE

THIRD ANGLE PROJECTION

DIMENSIONS IN MILLIMETRES



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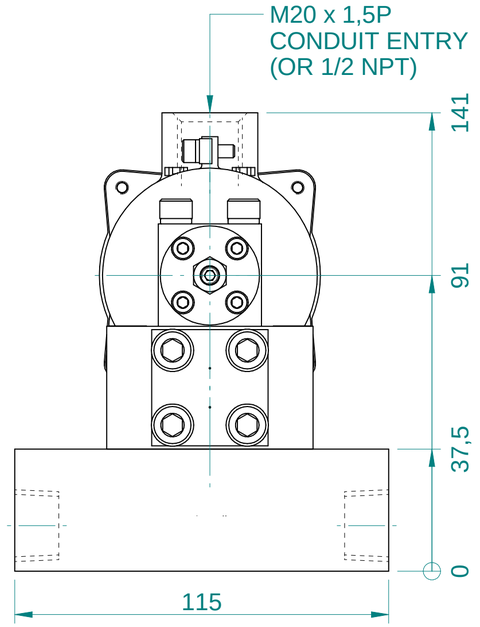
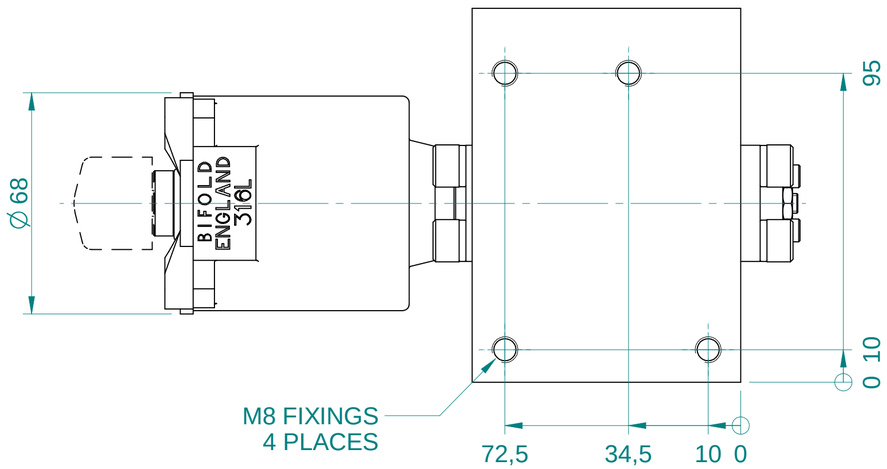
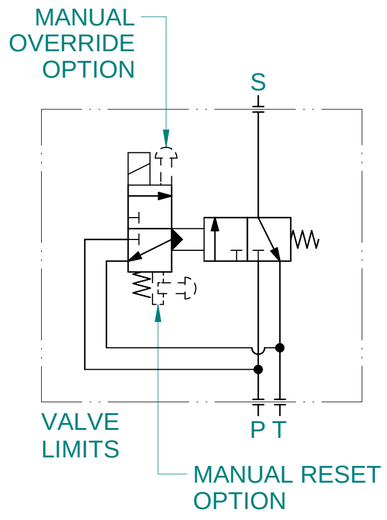
WEIGHT

6.7 Kg APPROX

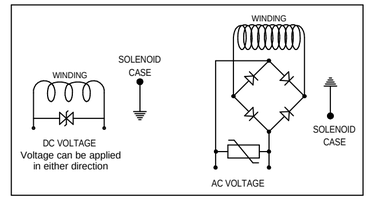




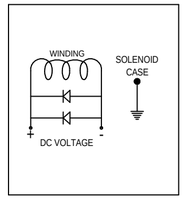
SCHEMATIC



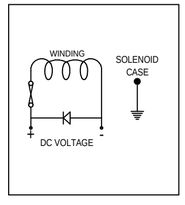
WIRING DIAGRAMS - TYPE 77X



WIRING DIAGRAM - TYPE 78X



WIRING DIAGRAM - TYPE 74X



REV	DATE	DRAWN	CHKD	REVISION
0	14.08.14	MM	PK	PRODUCTION STANDRAD

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FP15/SX/M/32/V-7X-[M229]
FP15/SX/M/32/SA-7X-[M229]
K85 OPTION
'M' AND 'ML' OPTIONS

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PROJECT TITLE: FP15/SX/M/32/X-7X-[M229]

PROJECT No.:

DRAWING TITLE: GENERAL INSTALLATION

DRAWING No.: 10854

REV.: 0

DRAWN: M MELLOR | DATE: 14.08.14 | CHECKED: | DATE: | APPROVED: | DATE:

C.A.D. Produced Drawing DO NOT Change By Hand