

1

2

3

4

5

A

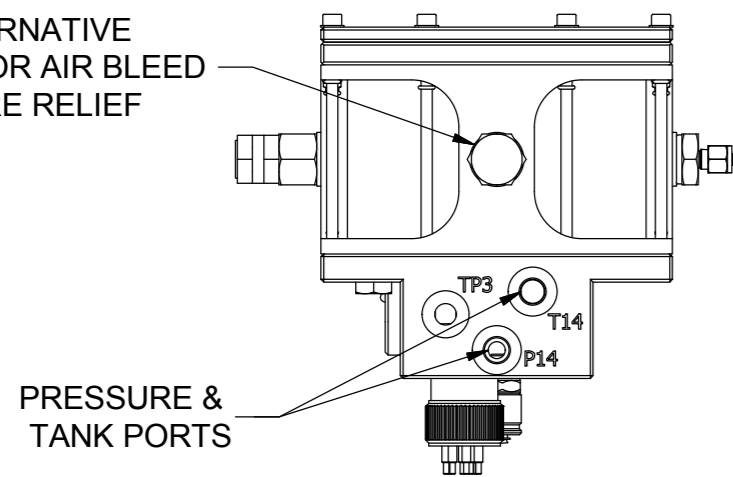
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C

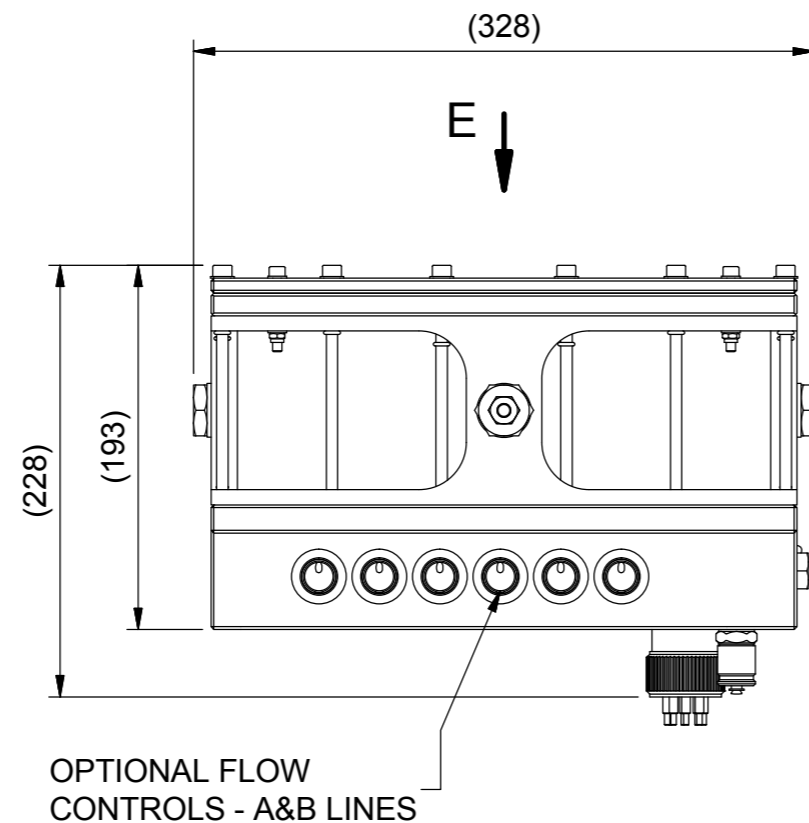
D

E

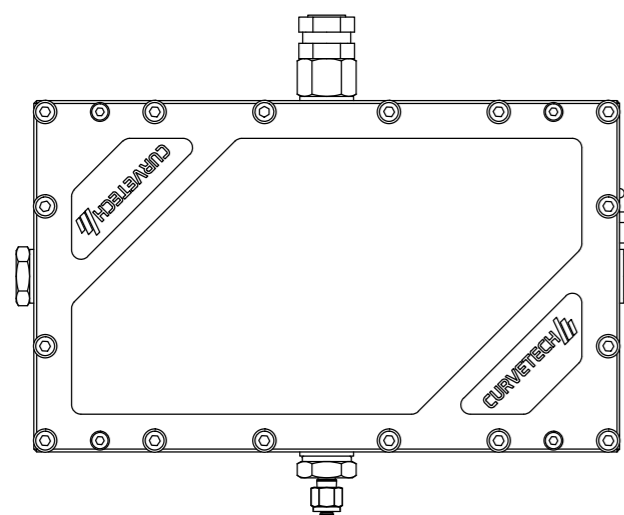
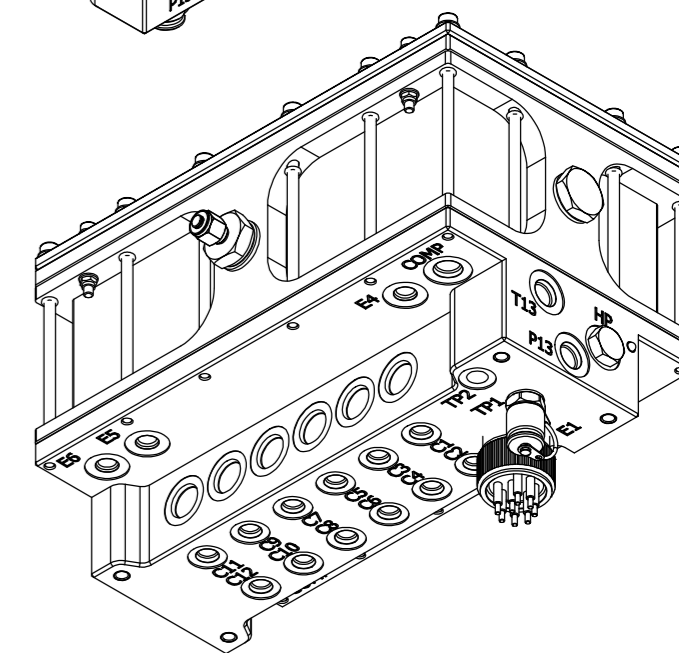
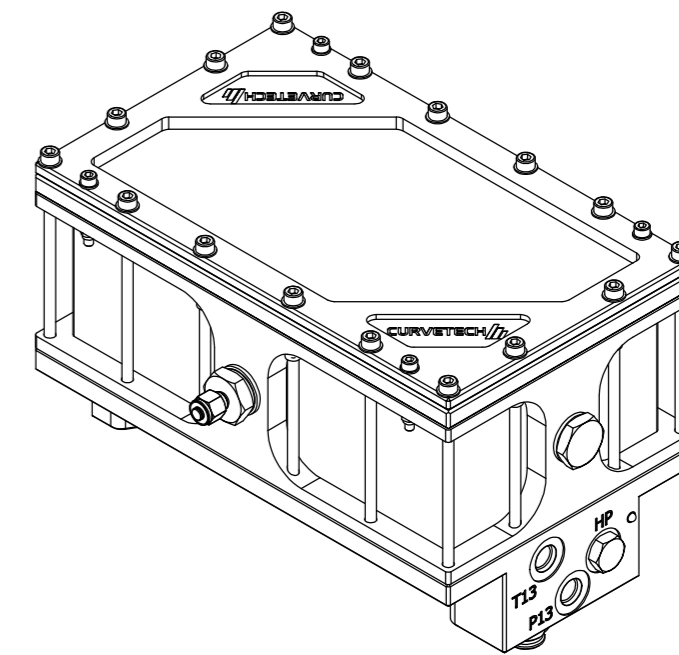
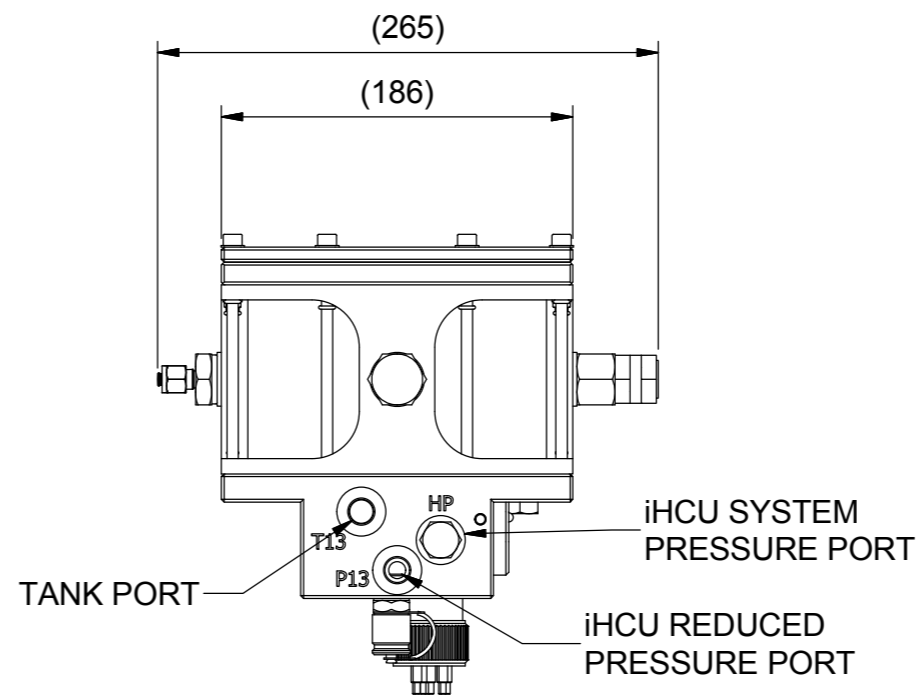
BLANKS. ALTERNATIVE LOCATIONS FOR AIR BLEED AND PRESSURE RELIEF



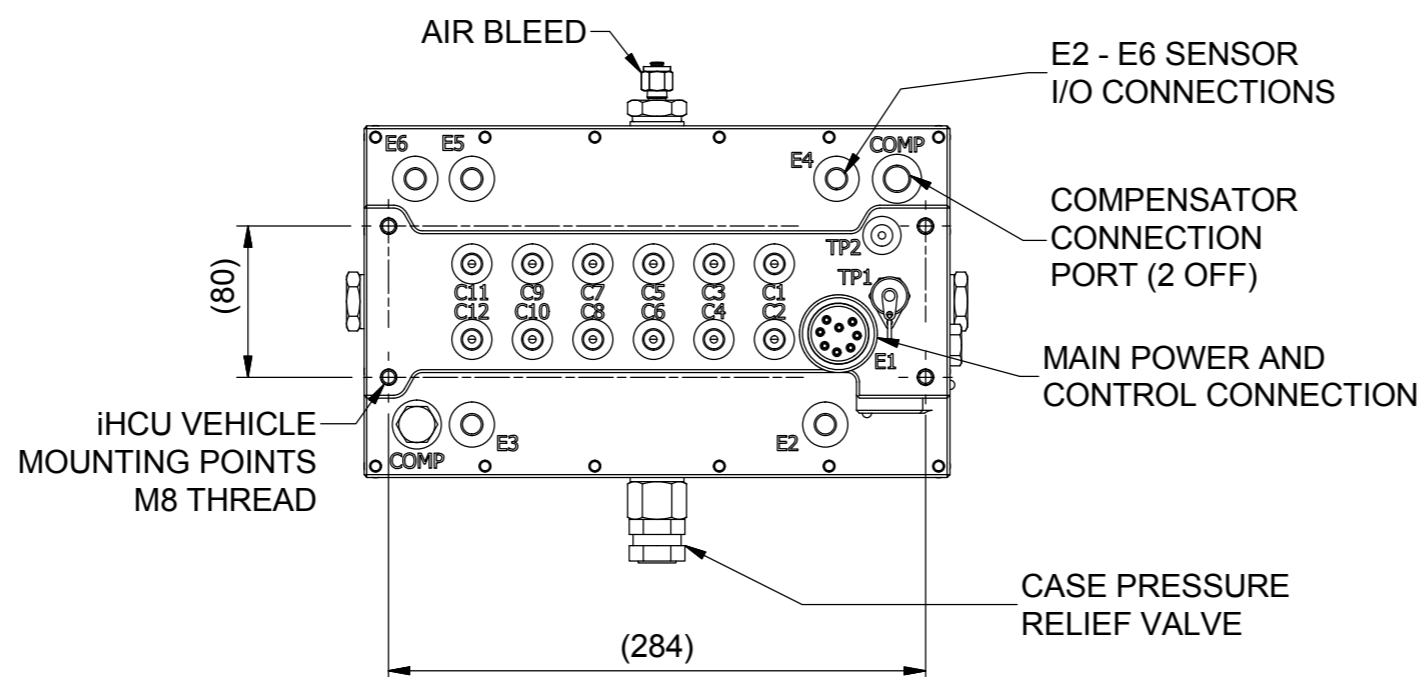
PRESSURE & TANK PORTS



OPTIONAL FLOW CONTROLS - A&B LINES



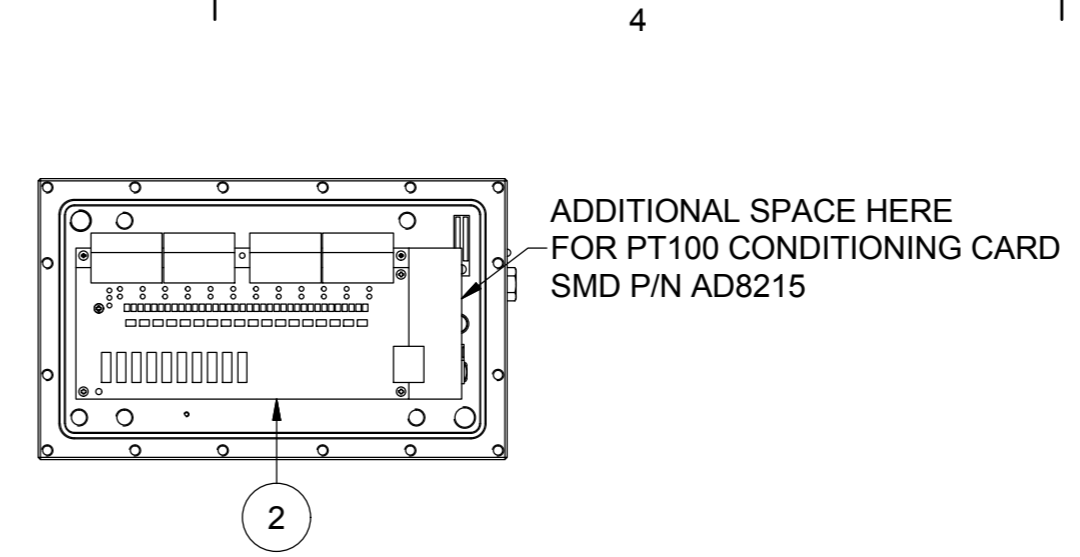
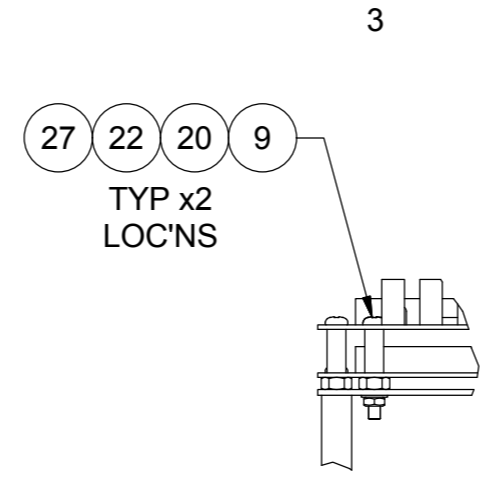
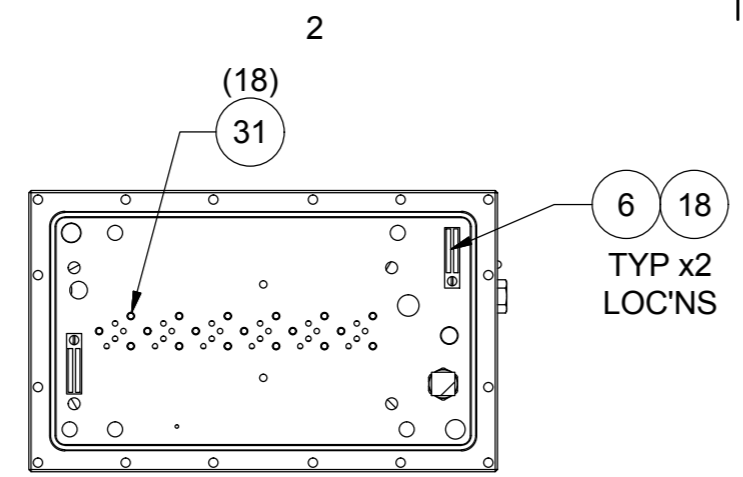
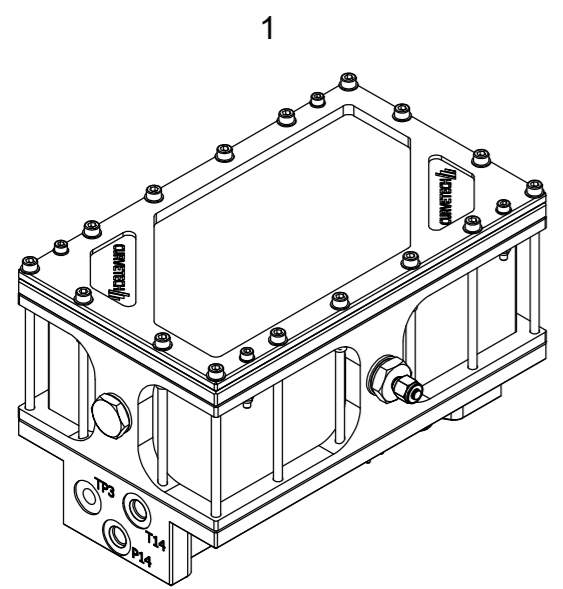
VIEW ON ARROW E



NOTES:
 1. THE CORE VALVE PACK HERE IS UNPOPULATED. SEE DRAWING AK2691 FOR HYDRAULIC SCHEMATIC AND VALVE OPTIONS AVAILABLE.
 2. FOR ASSEMBLY INFORMATION SEE SHEET 2.

GENERAL SPECIFICATION - 6 STATION iHCU	
ITEM	VALUE
LAYOUT	OIL FILLED VALVE TANK. ANODISED ALUMINIUM 6 STATION - NG3 (MINI-3)
DEPTH RATING	3000m - STANDARD 6000m - AT REQUEST
OPERATING TEMPERATURE	-10°C to +50°C AMBIENT
STORAGE TEMPERATURE	-20°C to +50°C AMBIENT
PRESSURE RATING	250bar MAX. WORKING PRESSURE 210bar STANDARD OPERATIONAL
CONNECTION PORT SIZES	SEE DRAWING AK2691
POWER	+24 VDC
COMMUNICATION	RS485
EXTERNAL I/O CONFIGURATION (STANDARD CONFIGURATION)	1 OFF - MAIN SYSTEM CONNECTION 5 OFF - 4-20mA OR 0-10V CONFIGURABLE INPUTS 2 OFF - EXTERNAL PRESSURE INPUTS (TP2; TP3)
INTERNAL I/O CONFIGURATION	1 OFF P-LINE - SYSTEM PRESSURE 2 OFF - CASE WATER INGRESS DETECTION
ADDITIONAL iHCU FEATURES	INLET PRESSURE REDUCING VALVE (OPTION)

REV	DATE	CHANGE COMMENT	ZONE	DRAWN	CHECKED	APPD	DATE	EST. MASS	DIMENSIONS	SCALE	PROJECTION 3RD	TITLE			
							07 MAR 17	10.9 kg	mm	1:5		ASSEMBLY CORE 6-STATION iHCU			
							DESIGNED	DRAWN	TOLERANCES UNLESS OTHERWISE STATED						
							MvZ	LO	DIMENSIONS mm	UP TO 100	100 TO 300	300 TO 1000	OVER 1000	MATERIAL:- N/A	
							CHECKED	APPROVED	FABRICATION	± 1.0	± 1.5	± 2.0	± 3.0	DO NOT SCALE	
							PM	NRC	MACHINED PART	± 0.15	± 0.4	± 0.8	± 1.0	IF IN DOUBT ASK	
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												SHEET 1 OF 2			

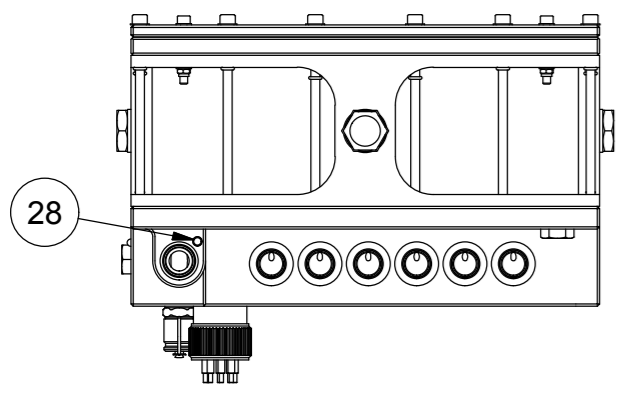


SECTION D - D

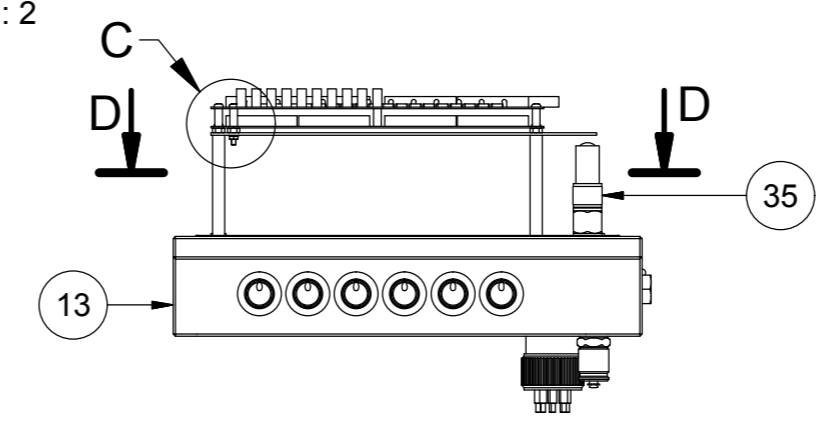
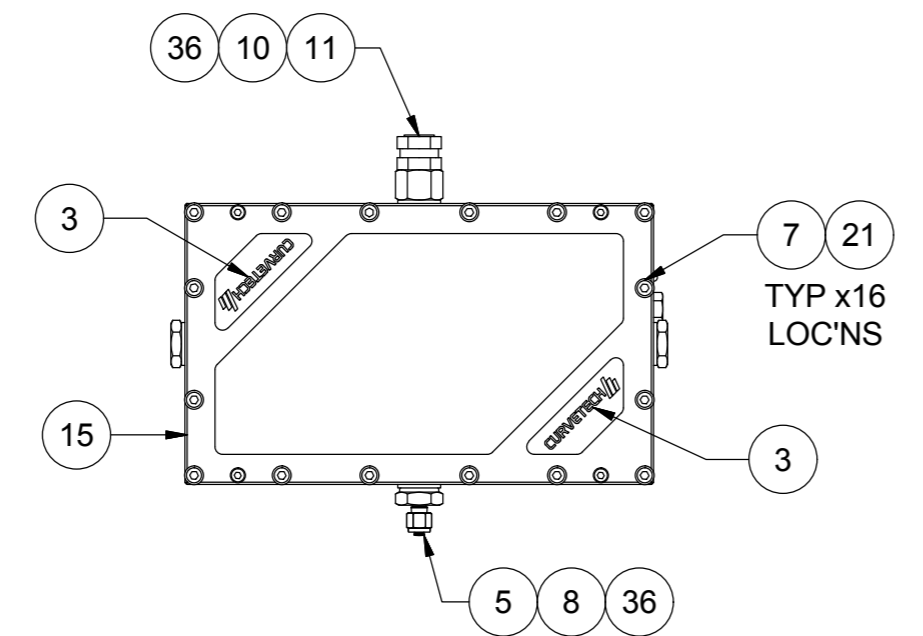
DETAIL C
SCALE 1 : 2

NOTES :-

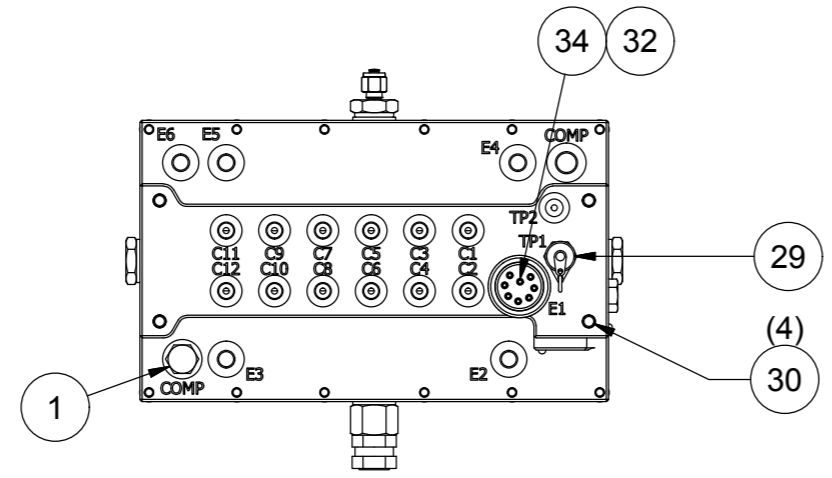
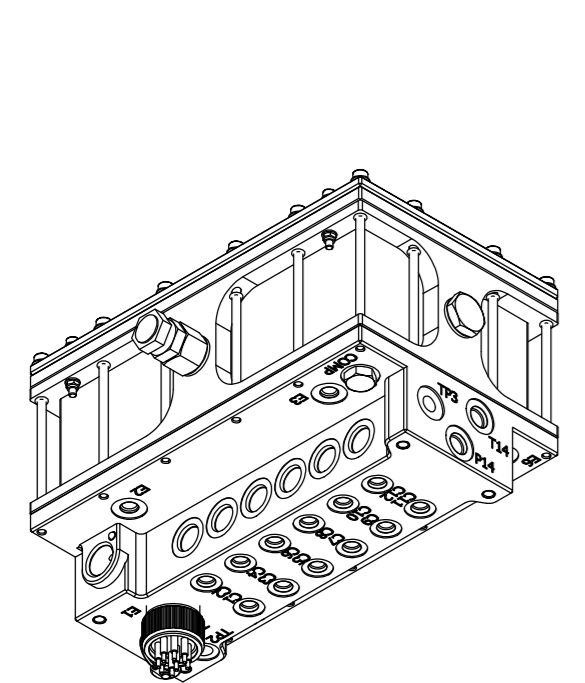
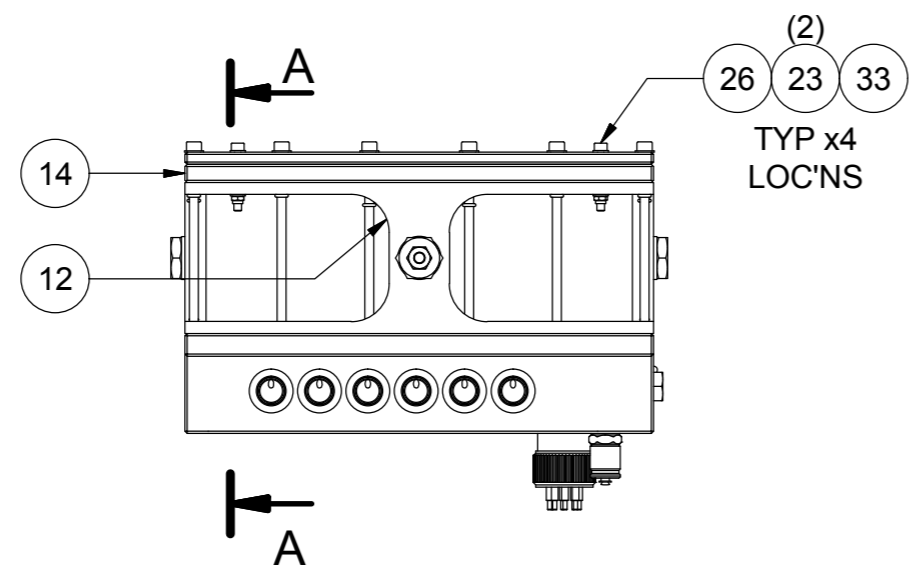
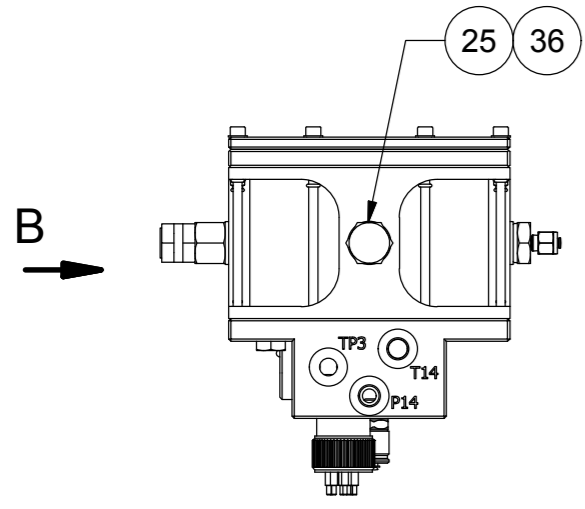
1. ASSEMBLE IN ACCORDANCE WITH SMD SPECIFICATION SMDW100



VIEW ON ARROW B



SECTION A - A



PARTS LIST				
ITEM	PART No	DESCRIPTION	QTY	
1	AA0406	FITTING PLUG 9/16"UNF SS	2	
2	AA0439	PCB MULTIFUNCTION VALVE CONTROLLER	1	
3	AA1643	PLATE CURVETECH LOGO 5mm BLACK	2	
4	AA2575	BOLT M3x10 POZIDRIVE PAN HEAD SS	2	
5	AA3195	FITTING PLUG 1/4" SS A4 - SWAGELOK SS-400-P	1	
6	AA9979	PCB WATER INGRESS SENSOR	2	
7	AB1811	BOLT M6 x 135 SHCS SS A2-70	16	
8	AC0834	CONNECTOR MALE 1/2"BSP M - 1/4" TUBE	1	
9	AC3163	BOLT M3 x 25 PAN HD SS	4	
10	AC6646	ADAPTOR 1/2" BSPP M - 1/2" NPT F	1	
11	AC6652	VALVE RELIEF 15psi (1/2"NPT)	1	
12	AD7009	HCU HOUSING	1	
13	AD7012	MANIFOLD, 6 STATION HCU	1	
14	AD7013	COVER 6-STATION HCU POLYCARBONATE	1	
15	AD7014	CLAMP, 6 STATION HCU	1	
16	AD7983	STAND HCU PCB	4	
17	AE1475	PLATE PCB MOUNT HCU	1	
18	HRS1758065	BOLT M3 x 8 SLTD PAN HD SS A2-70	2	
19	OR_1040	O RING CORD 3mm	2	
20	PA0483	NUT M4 SS	6	
21	PA0546	WASHER M6 FLAT BS4320 FORM B SS A2	16	
22	PA4812	WASHER M3 FLAT BS4320 FORM A SS A2	2	
23	PA4892	WASHER M5 FLAT BS4320 FORM A SS A2	8	
24	PA9812	SEAL O-RING BS009 NBR90 (MINI 4)	16	
25	PB1126	FITTING PLUG 1/2" BSP HEX SS	2	
26	PC1607	BOLT M5 x 40 SHCS SS A2-70	4	
27	PC7718	NUT M3 SS A2-70	2	
28	PD0360	BLANK KOENIG 6mm	2	
29	PD3852	TEST POINT 1/4" BSP SS	1	
30	PD5642	INSERT HELICOIL M8 x 1.5D SS	4	
31	PD5650	INSERT HELICOIL M4 x 2D SS	18	
32	PD6419	CONNECTOR LOCKING SLEEVE DLSB-M	1	
33	PD7552	NUT M5 NYLOC SS A2-70	4	
34	PF2119	IMPULSE CONNECTOR BH8MP	1	
35	PK4444	PRESSURE SENSOR 0-400 bar 4-20mA	1	
36	WA1079	SEAL BONDED 1/2"BSP SS-1.4436 (316S33) SELF CENTERING NBR90	4	

REV	DATE	CHANGE COMMENT	ZONE	DRAWN	CHECKED	APPD	DATE	EST. MASS	DIMENSIONS	SCALE	PROJECTION 3RD	TITLE					
							07 MAR 17	10.9 kg	mm	1:5		ASSEMBLY CORE 6-STATION iHCU					
							DESIGNED	DRAWN	TOLERANCES UNLESS OTHERWISE STATED				MATERIAL:- N/A				
							MvZ	LO	DIMENSIONS mm	UP TO 100	100 TO 300	300 TO 1000	OVER 1000				
							CHECKED	APPROVED	FABRICATION	± 1.0	± 1.5	± 2.0	± 3.0	DO NOT SCALE	DRAWING No	REV No.	SIZE
							PM	NRC	MACHINED PART	± 0.15	± 0.4	± 0.8	± 1.0	IF IN DOUBT ASK	AK2485	0	A2

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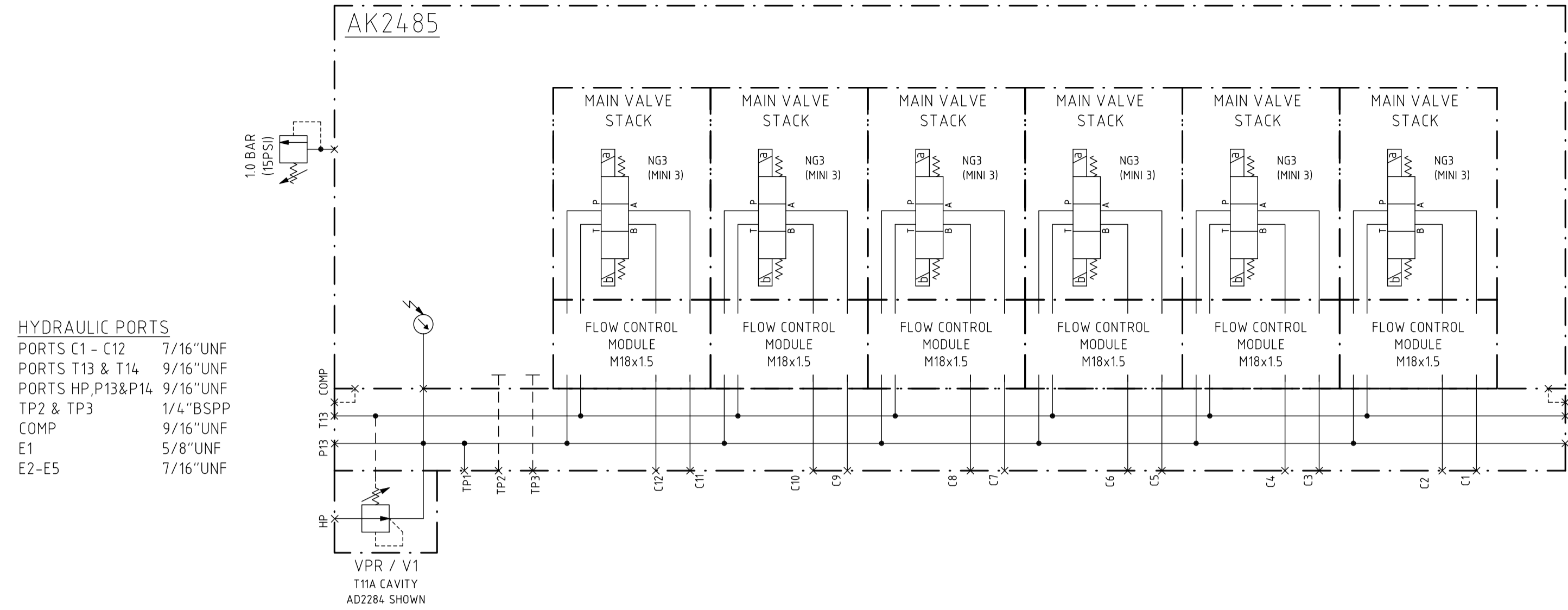
A

B

C

D

E



HYDRAULIC PORTS
 PORTS C1 - C2 7/16"UNF
 PORTS T13 & T14 9/16"UNF
 PORTS HP, P13&P14 9/16"UNF
 TP2 & TP3 1/4"BSPP
 COMP 9/16"UNF
 E1 5/8"UNF
 E2-E5 7/16"UNF

HYDRAULIC OPTIONS		F6	F5	F4	F3	F2	F1
MAIN STACK (SEE DRAWING AK2234 FOR OPTIONS)							
EXTERNAL FLOW CONTROL REQUIRED - YES. (AD3858) NOT REQUIRED - NO. (AD4302)	A	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
	B	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
VPR - VALVE PRESSURE REDUCING (CIRCLE OPTION REQUIRED. SEE NOTE 5)		BLANKED (AD7455) 10-315 BAR (AD2284). SETTING:bar					
TP2 - HYDRAULIC EXTERNAL PRESSURE (CIRCLE OPTION REQUIRED.)		BLANKED (PA9994); 0-16 BAR (AB6633); 0-40 BAR (AB8409);		0-100 BAR (AG1150); 0-400 BAR (PK4444)			
TP3 - HYDRAULIC EXTERNAL PRESSURE (CIRCLE OPTION REQUIRED.)		BLANKED (PA9994); 0-16 BAR (AB6633); 0-40 BAR (AB8409);		0-100 BAR (AG1150); 0-400 BAR (PK4444)			

NOTES

- AK2485 IS AN UNPOPULATED 6 STATION iHCU VALVE-PACK. USE THESE TABLES TO SELECT THE REQUIRED VALVES AND OTHER FEATURES APPROPRIATE TO THE INTENDED APPLICATION.
- ALL VALVE STACKS AND PORTS MUST BE POPULATED OR BLANKED PRIOR TO FIRST USE OF THE VALVE PACK
- THE VALVE PACK SHOULD BE BUILT & TESTED BY QUALIFIED PERSONNEL, TO SMD STANDARDS PRIOR TO FIRST USE ON A VEHICLE.
- SEE DRAWING AK2701 FOR STANDARD WIRING CONFIGURATION
- THE VPR (VALVE PRESSURE REDUCING) ALLOWS A HIGH PRESSURE INPUT FROM THE ROV MAIN CIRCUIT TO BE REDUCED TO A LOWER PRESSURE FOR ALL iHCU STATIONS. FOR EXAMPLE AN ROV WITH 250 BAR MAIN CIRCUIT CAN CONTROL TOOLING WITH 210BAR MAXIMUM WORKING PRESSURE

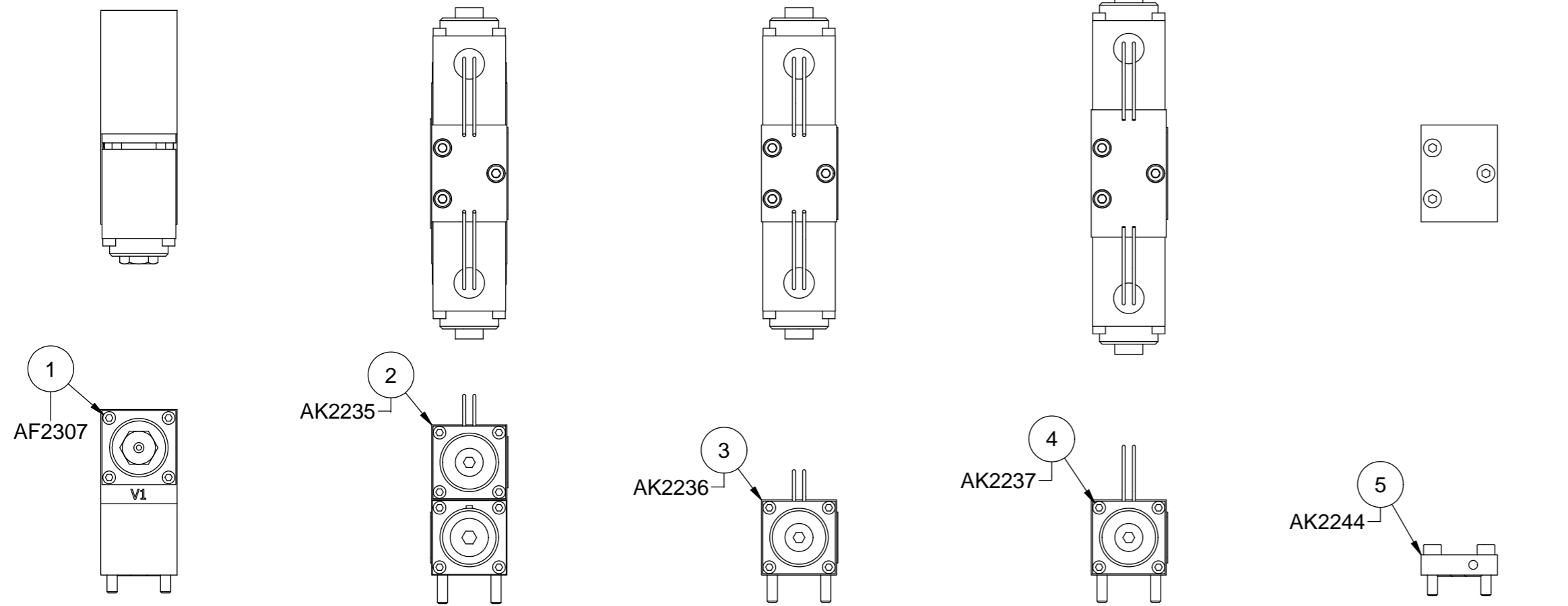
ELECTRICAL CONNECTORS	E6	E5	E4	E3	E2	E1
IMPULSE BH-8-MP SS (PF2119 & PD6419)	N/A	N/A	N/A	N/A	N/A	YES
BLANKED (AA1309)	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	N/A
IMPULSE MCBH-3-FS-SS (PH7867)	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	N/A
IMPULSE MCBH-4-FS-SS (PH4114)	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	N/A

REV No	DATE	CHANGE	ZONE	DRAWN	CHECK	APPD	DATE	EST. MASS	DIMENSIONS	SCALE	PROJECTION 3RD	TITLE
							01/03/2017	N/A	mm	N/A		DRAWING 6ST iHCU - SALES TABLE AND HYDRAULIC SCHEMATIC
DESIGNED	MvZ	DRAWN	MvZ	TOLERANCES UNLESS OTHERWISE STATED								MATERIAL- N/A
CHECKED	PM	APPROVED	NRC	FABRICATION	± 1.0	± 1.5	± 2.0	± 3.0	UP TO 100	100 TO 300	300 TO 1000	OVER 1000
				MACHINED PART	± 0.15	± 0.4	± 0.8	± 1.0				DO NOT SCALE IF IN DOUBT ASK
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<p>SMD Soil Machine Dynamics Ltd</p>												
<p>DRAWING NO. AK2691 REV NO. 0 SIZE A1</p>												
<p>SHEET 1 OF 1</p>												

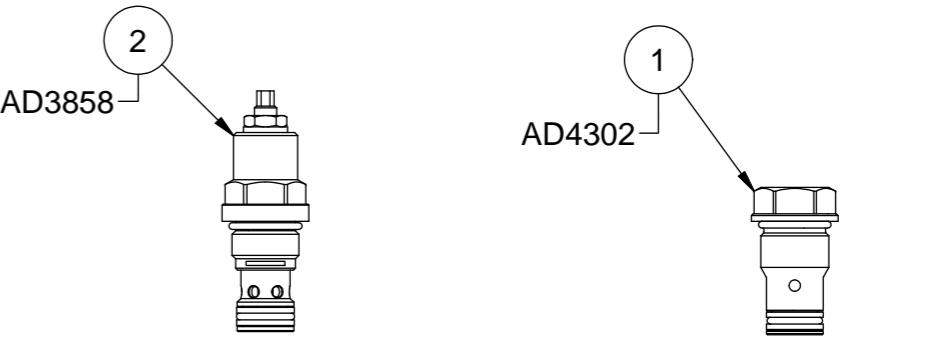
MAIN VALVE STACKS NG3 / MINI-3

PARTS LIST				
ITEM	QTY	PART No	DESCRIPTION	
1	1	AF2307	ASSEMBLY PROP PRESSURE RELIEF VALVE	
2	1	AK2235	ASSEMBLY MINI 3 DIR+PO / DO	
3	1	AK2236	ASSEMBLY MINI 3 DIR / D	
4	1	AK2237	ASSEMBLY MINI 3 PROP / P	
5	1	AK2244	ASSEMBLY BLANKING PLATE NG3 (CETOP MINI-3)	

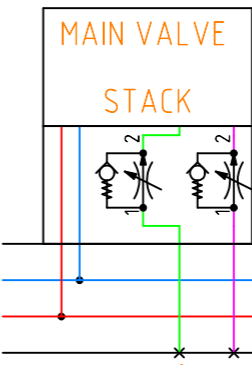
PARTS LIST				
ITEM	QTY	PART No	DESCRIPTION	
1	1	AD4302	VALVE CAVITY PLUG DNSPM18 SS	
2	1	AD3858	VALVE THROTTLE DRSPM18-25-K9-Z251	



FLOW CONTROLS

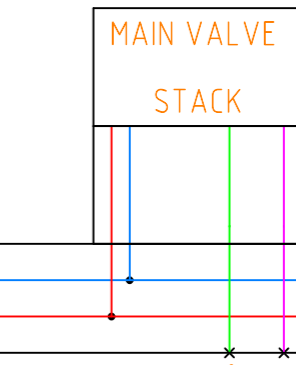


MAIN VALVE
STACK

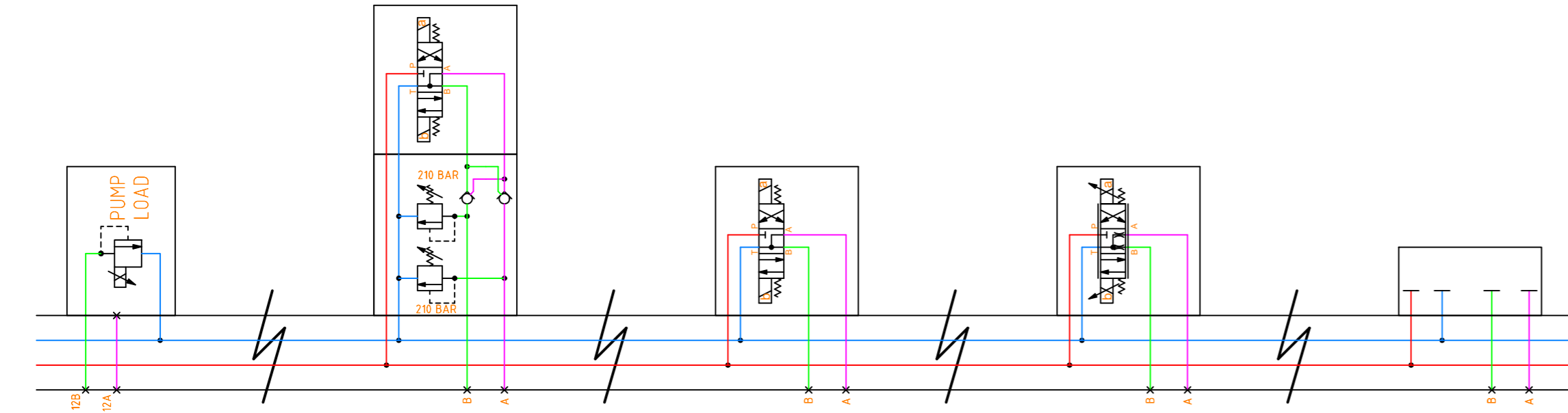


MAX. PRESSURE: 350bar
MAX FLOW: 25 lpm
VARIABLE METER-IN
FLOW CONTROL TO
CONTROL ACTUATOR
MAX. SPEEDS

MAIN VALVE
STACK



MAX. PRESSURE: 350bar
MAX FLOW: 25 lpm
CAVITY PLUG
NO RESTRICTIONS



<p>MAX. PRESSURE: 210bar MAX FLOW: 8 lpm</p> <p>RELIEF VALVE. USED FOR SYSTEM PUMP SWASH CONTROL</p>	<p>MAX. PRESSURE: 315bar MAX FLOW: 8 lpm</p> <p>TYPICALLY USED FOR CONTROL OF CYLINDERS, GRABBERS AND SIMILAR. WILL LOAD HOLD & INCLUDES RELIEF CAPABILITY TO ABSORB SMALL IMPACTS</p>	<p>MAX. PRESSURE: 350bar MAX FLOW: 15 lpm</p> <p>USED FOR CONTROL OF CYLINDERS, SMALL TOOLS & SIMILAR. WHEN DE-ENERGISED CYLINDERS CAN FLOAT</p>	<p>MAX. PRESSURE: 315bar MAX FLOW: 8 lpm</p> <p>PROPORTIONAL VALVE FOR FINE CONTROL OF ACTUATORS. TYPICALLY USED FOR P&T's, MANIPULATORS, ETC.</p>	<p>BLANKING PLATE</p>
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REV	DATE	CHANGE COMMENT	ZONE	DRAWN	CHECKED	APPD	DATE	EST. MASS	DIMENSIONS	SCALE	PROJECTION 3RD	TITLE		
							23/02/17	N/A	mm	1:2		ASSEMBLY NG3 VALVE STACKS - SALES DRAWING		
							DESIGNED	DRAWN	TOLERANCES UNLESS OTHERWISE STATED					
							MvZ	MvZ	DIMENSIONS mm	UP TO 100	100 TO 300	300 TO 1000	OVER 1000	MATERIAL:-
							CHECKED	APPROVED	FABRICATION	± 1.0	± 1.5	± 2.0	± 3.0	DO NOT SCALE
							NRC	NRC	MACHINED PART	± 0.15	± 0.4	± 0.8	± 1.0	IF IN DOUBT ASK
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										DRAWING No	REV No.	SIZE		
										AK2234	0	A2		
SHEET 1 OF 1														