

M4 Parts Manual

The Drive & Control Company

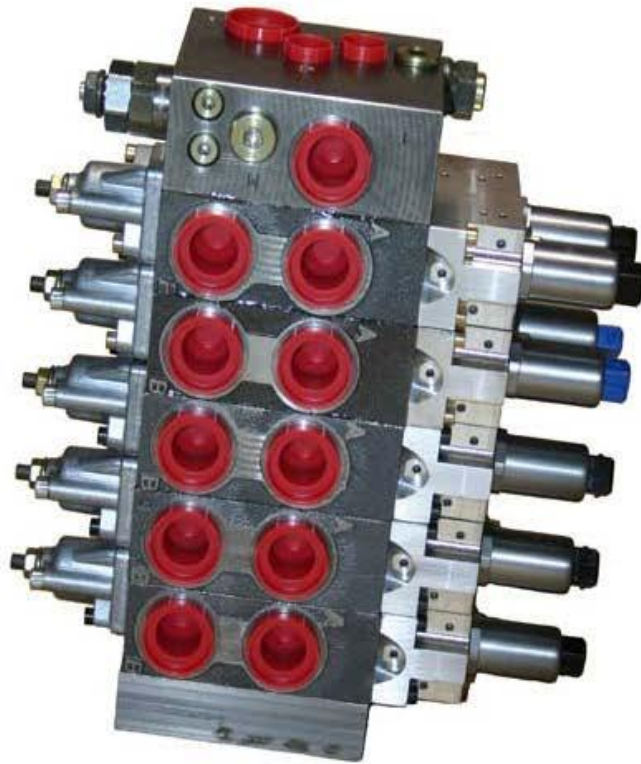



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Technical data

General				
Installation orientation			Optional	
Type of connection			Pipe thread to ISO 228/1	
Weight	Inlet element:	Closed Center J	kg	4.3
		Open Center P	kg	6.0
	Central inlet element Closed Center JZ		kg	8.4
	Directional valve element, mechanical		kg	4.9
	Directional valve element, hydraulic		kg	4.2
	Directional valve element, electro-hydraulic		kg	4.5
	Directional valve element, electro-hydraulic, with on-board electronics		kg	4.8
	Additional weight for hand lever		kg	0.6
	End element		kg	2.6
Hydraulic fluid and ambient temperature range ϑ			°C -20 to +80	
Painting			Standard painting	
Hydraulic				
Max. flow in port	P	$q_{V, max}$	l/min	200 with central inlet element
	A, B	$q_{V, max}$	l/min	150 with lateral inlet element
Nominal pressure		p_{nom}	bar	350 (400 on enquiry)
Max. operating pressure in port	P	p	bar	350 (400 on enquiry)
	A / B	p	bar	420
	LS	p	bar	330
	T	p	bar	30
	Y	p	bar	At zero pressure to tank
Max. pilot pressure in port	X	p	bar	35
	a, b	p	bar	35
Pilot pressure range	Hydraulic	p	bar	8.5 to 22.5
	Electro-hydraulic	p	bar	6.5 to 17.2
Required control Δp across control block	Version S; C	p	bar	18
Recommended hydraulic pilot control devices			Characteristic curve TH 6... , see RE 64552	
LS pressure limitation (adjustment ranges)			bar 50 to 149; 150 to 330 (selected in the factory)	
Hydraulic fluid			Mineral oil (HL, HLP) to DIN 51524, other hydraulic fluids on enquiry, e.g. HEES (synthetic esters) to VDMA 24568 and hydraulic fluids as specified in RE 90221	
Viscosity range			ν mm ² /s	10 to 380
Max. permissible degree of contamination of the hydraulic fluid Cleanliness class to ISO 4406 (c)			Class 20/18/15, for this we recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$	
Electrical				
Electrical pilot control valves			FTWE 2 K...; see RE 58008 } without plug-in connector ¹⁾ FTDRE 2 K...; see RE 58032 }	
Recommended amplifiers (further control options on enquiry)			RA 1-0/10; 1 axis, see RE 95230 RA 2-1/10; 4 to 6 axes, see RE 95230 Control devices RC, see RE 95200	
On-Board Electronics (OBE)			Data from page 26	

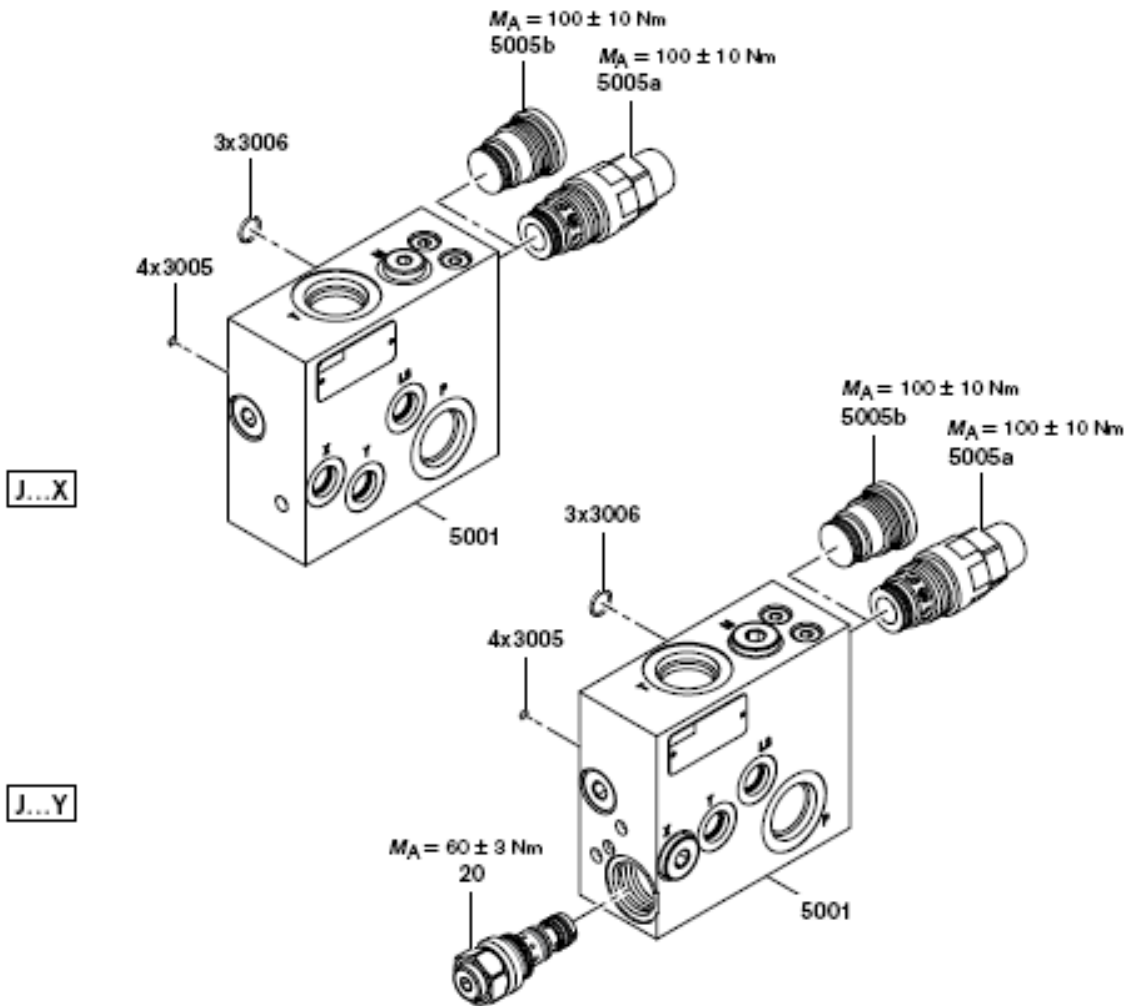
¹⁾ Plug-in connectors are not included in the scope of supply and must be ordered separately.

 **Note!**

The technical data were determined at a viscosity of $\nu = 30 \text{ mm}^2/\text{s}$ (HLP46: 50°C).

 **Note!**

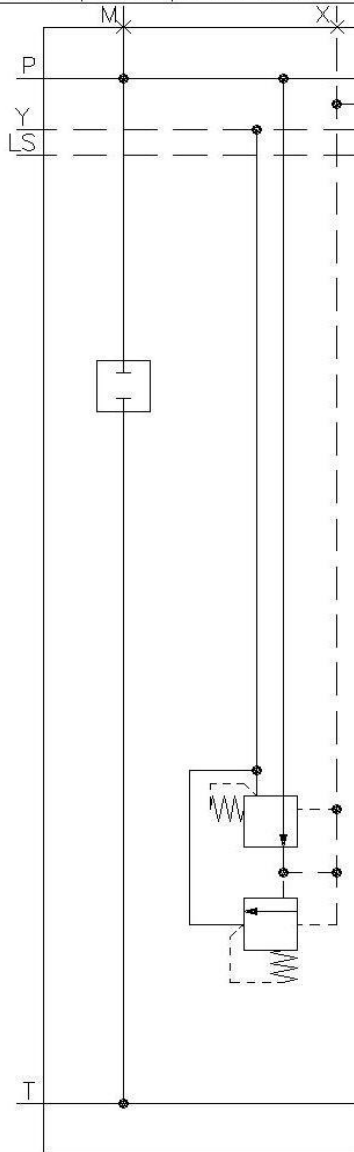
Further information about the correct handling of hydraulic products of Bosch Rexroth can be found in the brochure "Hydraulic valves for mobile applications – general information", RE 64 020-B1



Part	Model Code	Description	Number
5001	M4-12-1X/J(...)X V19	Closed center inlet side ported external pilot	224133
5001	M4-12-1X/J(...)Y V19	Closed center inlet side ported internal pilot	211712
5005b	MHDB22K10/VFC	Plug for Relief Valve Cavity	170633
5005a	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
3006	AS-115 VIT 80	O-ring	211831
3005	AS-010 VIT 80	O-ring	225530
20	MHDRDB04KO-1X/030VLA	Pressure Reducing Valve	247372

R:\CAD_Library\Symbols_Compuspread\COMPU-SCHEM\M4-Inlet\47-CSS-211712-0-A g.b 2008-04-29 07:41

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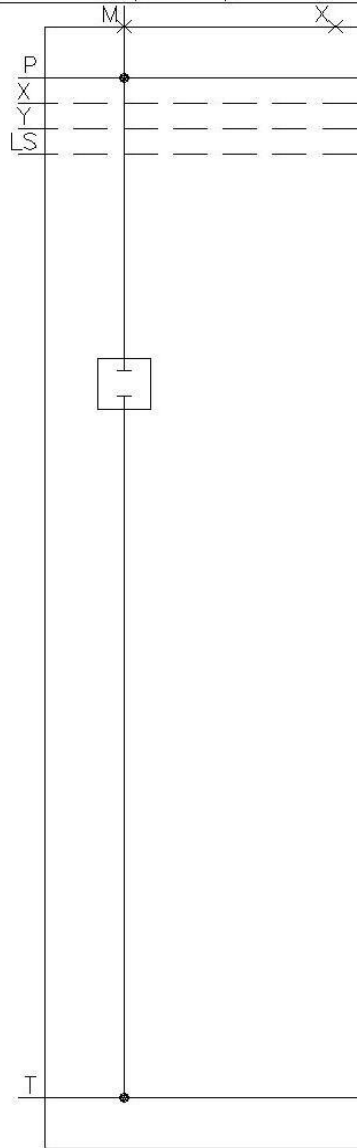


Stamp:		Size: A	Sales Order No:		
		Schematic	Customer Name: BRCA		
			Customer order No: COMPU-SPREAD		
			Reference drawings:		
Drawn: 08-04-28 By: g.b	Inventory Code: 211712	Description: M4-12-1X~J(XXX)Y V19 INLET ELEMENT CLOSED CENTRE, W/O PRIMARY RELIEF, W/INTERNAL PILOT OIL SUPPLY			
Chk'd: 08-04-28 By: Jc	Pressure:				
App'd: By:					
Rexroth Bosch Group		Sheet: 1 of 1	Scale: 1:1	Drawing number: 47-CSS-211712-0-A	Rev: 0

M4 PARTS MANUAL

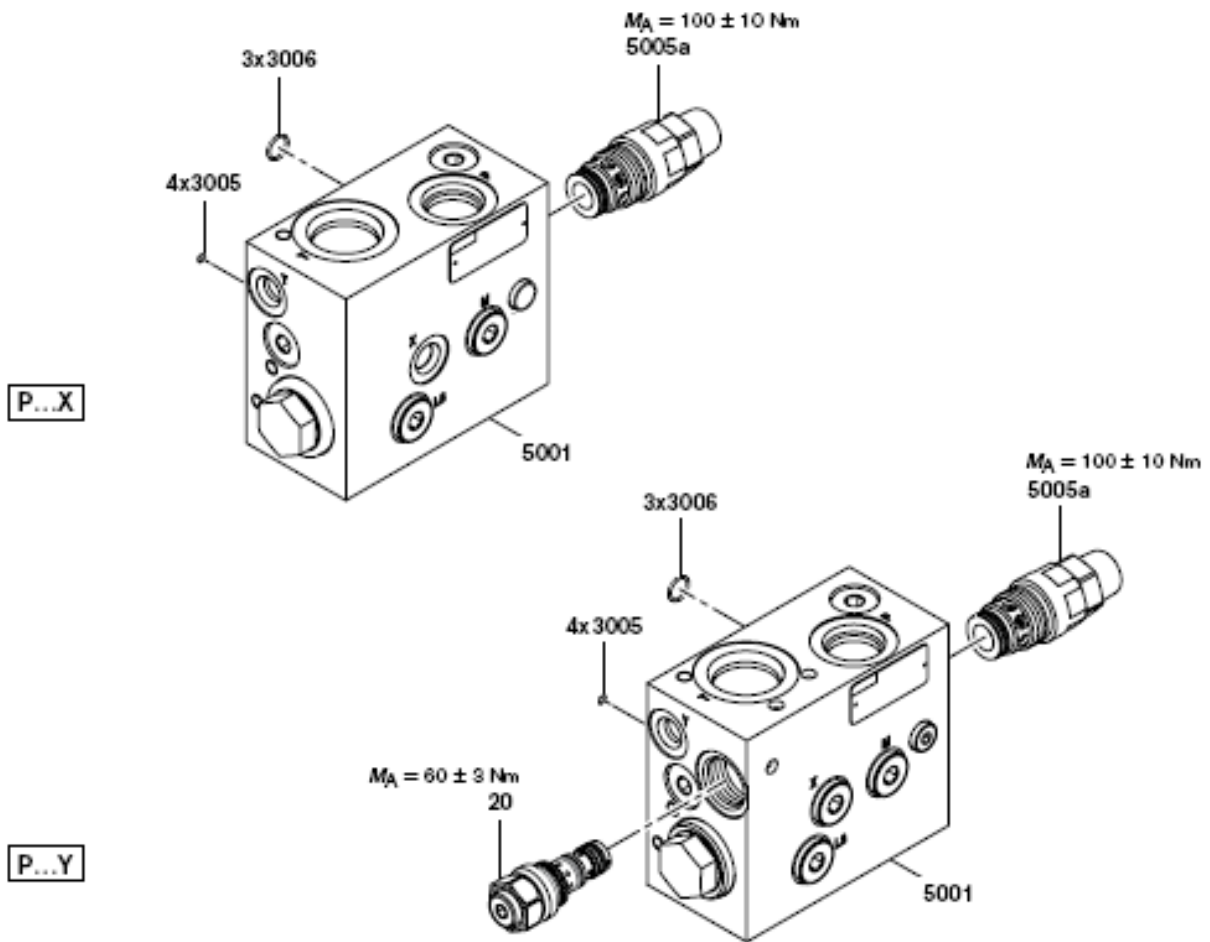
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		Schematic	Customer Name: BRCA
			Customer order No: COMPU-SPREAD
			Reference drawings:
Drawn: 08-04-28 By: g.b	Inventory Code: 224133	Description: M4-12-1X/J(XXX)X V19 INLET ELEMENT CLOSED CENTRE,W/O PRIMARY RELIEF VALVE PLUG INSTALLED, EXT. OIL SUPPLY	
Chk'd: 08-04-28 By: Jc	Pressure:		
App'd: By:			
Rexroth Bosch Group		Sheet: 1 of 1	Scale: 1:1
		Drawing number: 47-CSS-224133-0-A	Rev: 0

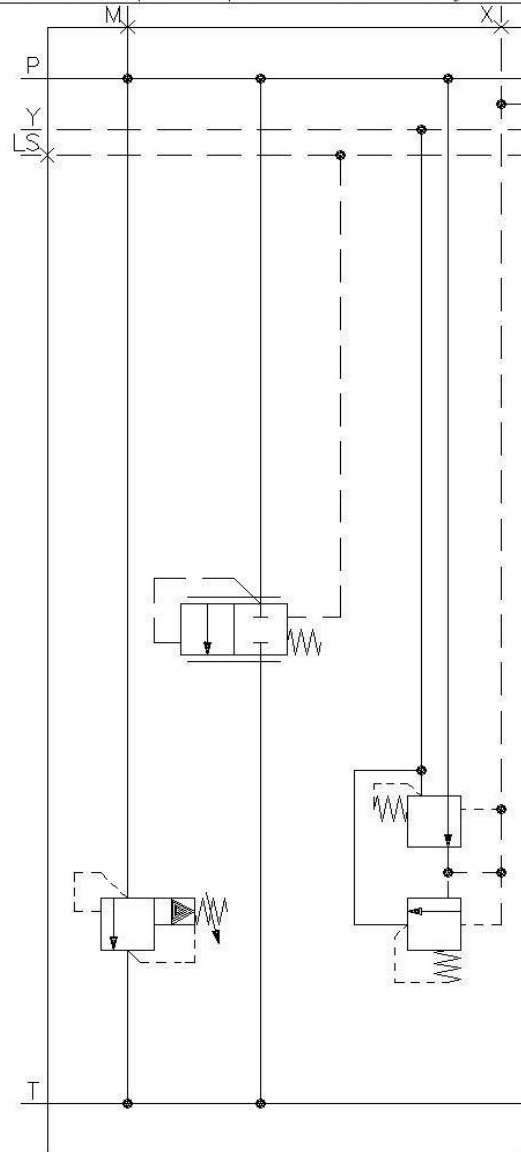
Bosch Rexroth Canada Corp. 490 Prince Charles Drive, Welland, Ontario, Canada L3B 5X7
www.boschrexroth.ca/compuspread



Part	Model Code	Description	Number
5001	M4-12-1X/P(XXX)X	Open center inlet side ported external pilot	232328
5001	M4-12-1X/P(XXX)Y	Open center inlet side ported internal pilot	211713
5005a	MHDBN22K2-3X/420VFC	Anti-cavitations Relief Valve	262485
3006	AS-115 VIT 80	O-ring	211831
3005	AS-010 VIT 80	O-ring	225530
20	MHDRDB04KO-1X/030VLA	Pressure Reducing Valve	247372

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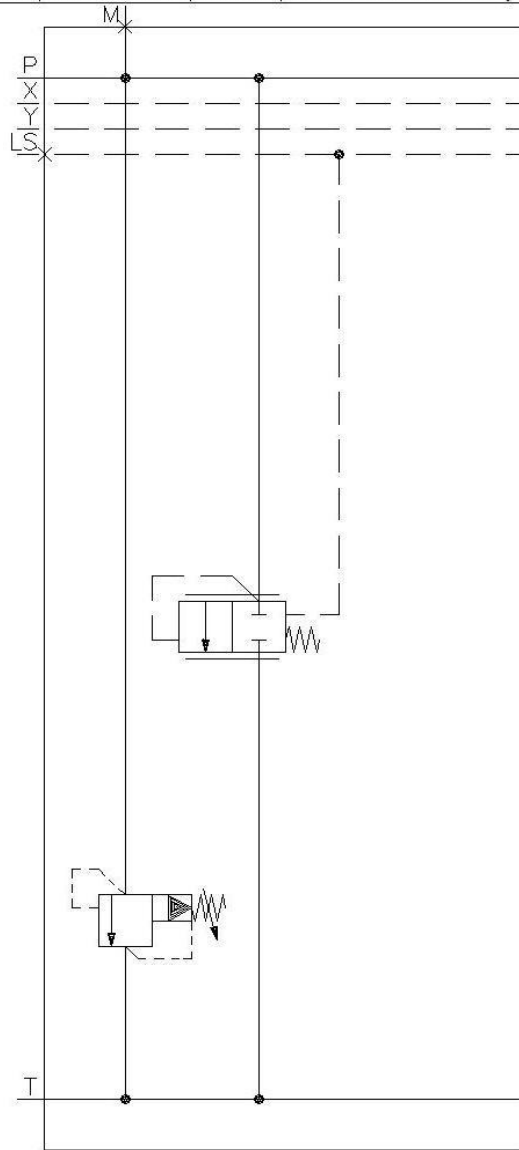


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			Customer order No: COMPU-SPREAD		
		Reference drawings:			
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Chk'd: 08-04-28 By: Jc	Pressure:				
App'd: By:					
Rexroth Bosch Group		Sheet: 1 of 1	Scale: 1:1	Drawing number: 47-CSS-211713-0-A	Rev: 0

M4 PARTS MANUAL

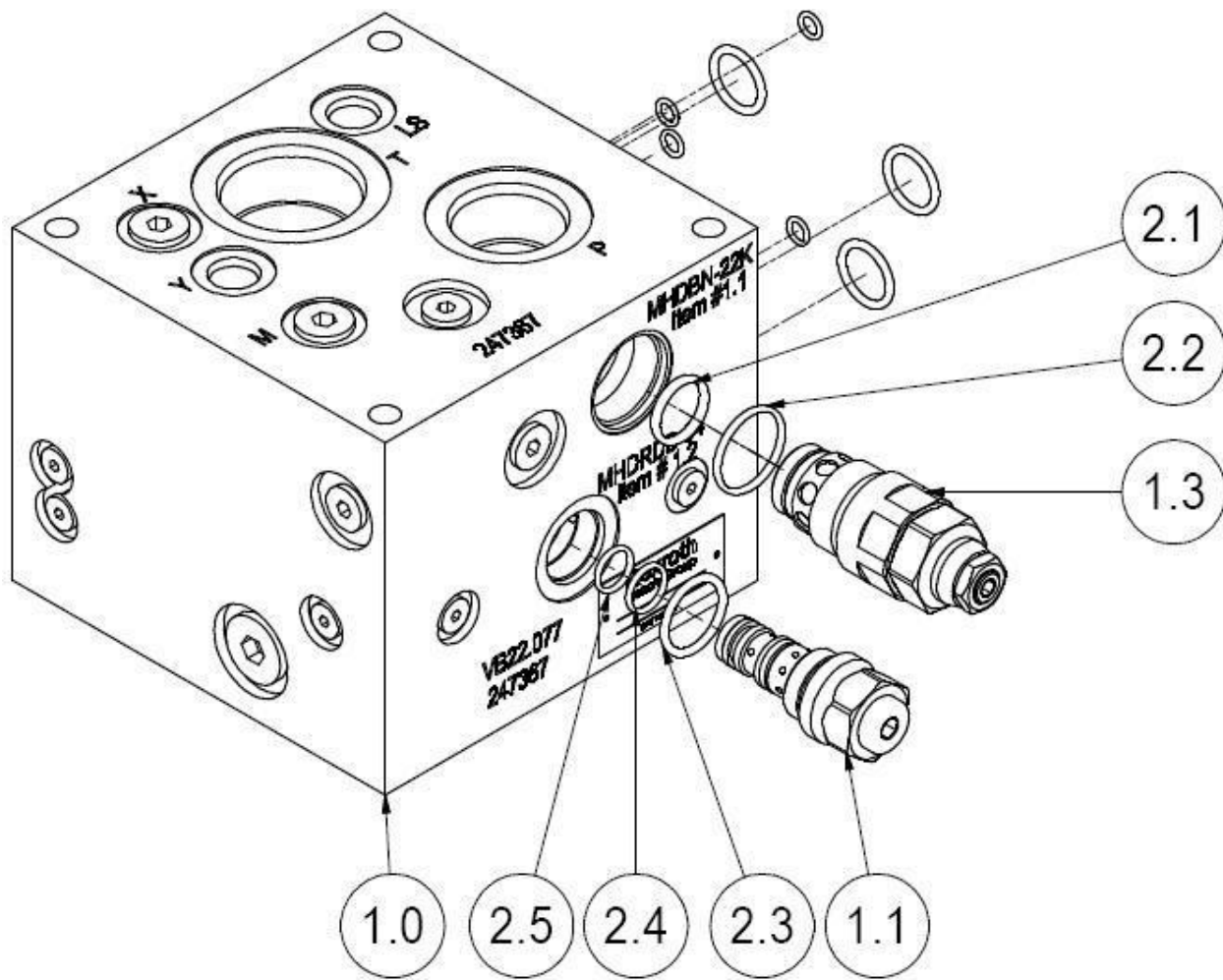
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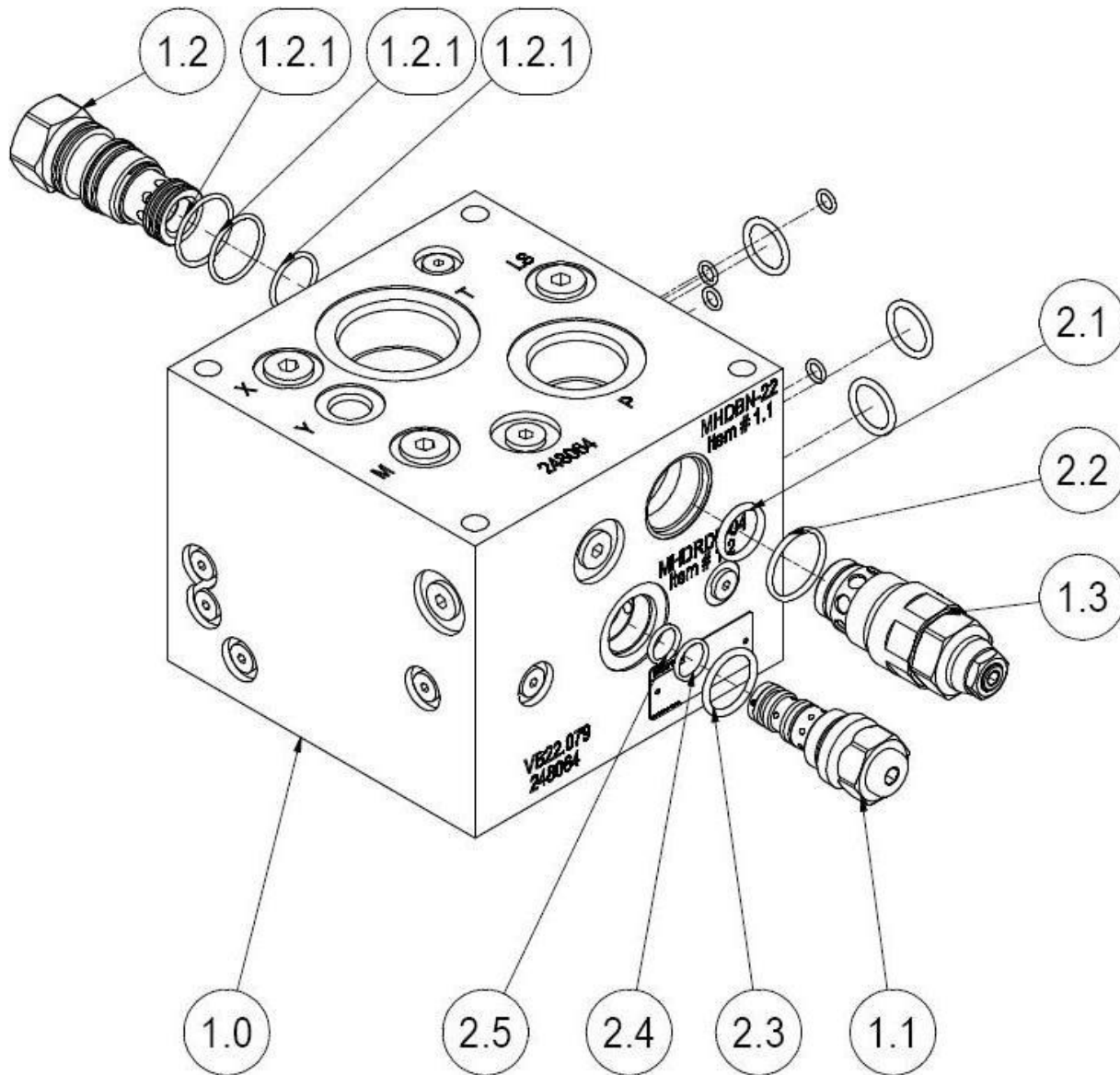
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		Schematic	Customer Name: BRCA
			Customer order No: COMPU-SPREAD
			Reference drawings:
Drawn: 08-04-28 By: g.b	Inventory Code: 232328	Description: M4-12-1X/P(XXX)X INLET ELEMENT OPEN CENTRE, W/PRIMARY RELIEF VALVE W/EXT. OIL SUPPLY	
Chk'd: 08-04-28 By: Jc	Pressure:		
App'd: By:			
Rexroth Bosch Group	Sheet: 1 of 1	Scale: 1:1	Drawing number: 47-CSS-232328-0-A
			Rev: 0

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www.boschrexroth.ca/compuspread



Part	Model Code	Description	Number
1.0	M4-12-2X/J(XXX)Y(TP)V19	Closed center inlet top ported	247369
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

* 247369 Inlet Manifold Replaced by Inlet Manifold 262595 in 01-01-2011*



Part	Model Code	Description	Number
1.0	M4-12-2X/P(XXX)Y(TP)	Open center inlet top ported	248067
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.2	LRFC-XGV	Bypass compensator valve	248028
	990-202-006	Seal Kit for item 1.2	268201
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

248067 Inlet Manifold Replaced by Inlet Manifold 262610 in 01-01-2011

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VB22.079.A1 : P/N # 248067
 VB22.079 : P/N # 248064

SPECIFICATIONS:

MANIFOLD ASSEMBLY:
 M4-12-2X/P(XXX)Y(TP)V19
 VB22.079.A1 : P/N: 248067

MANIFOLD MACHINING DETAIL:
 VB22.079 : P/N:248064
 1.1: MHDN22K2-2Y/420VFC : P/N:031835
 1.2: MHDRO04K0-1X/030VLA : P/N:247372
 1.3: LRF0-XSV (SUN) : P/N:248028

PORTS SIZES:
 PRESSURE : #16 SAE O-RING BOSS
 TANK : #20 SAE O-RING BOSS
 M.X,Y,LS,GP,Y1 : #06 SAE O-RING BOSS
 4 x 3/8" -16 UNC x 15.00 mm DEEP MOUNTING HOLES
 3X M10 THREAD HOLES TO RECEIVE STUD BOLTS ON THE SECTIONAL SIDE
 STANDARD-INLET for OPEN CENTRE CIRCUIT
 - Top Ported c/w Primary Relief Valve.
 - Internal Pilot Oil Supply,
 - With SAE Ports.

GP,M,X,Y1,LS	6																					
Y	6								X													X
TANK	20								X	X												
PRESSURE	16								X	X												

CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	MALE JIC	SAE O-BOSS THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION
						X							X	X			

Stamp: B

Customer Name: _____
 Sales Order No: _____
 Customer order No: _____
 Reference drawings: BRCA _____
 Description: 248067 M4-12-2X-P(XXX)Y(TP)V19
 OPEN CENTRE INLET
 COMPU-SPREAD

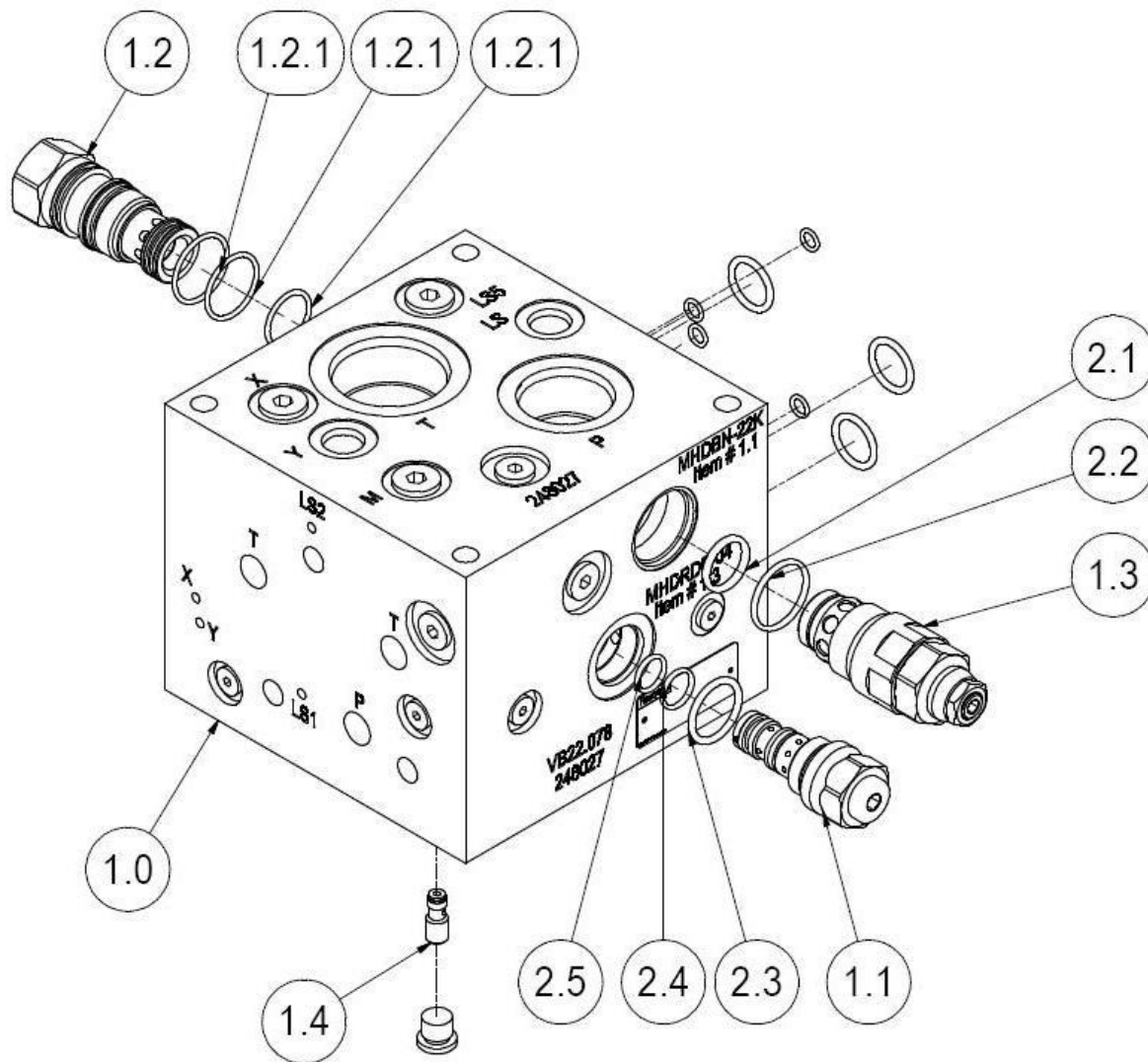
Inventory Code: 248067
 Max Pressure: _____
 App d: 2006-09-29 Br: Len K
 Drawn: 2006-09-29 Br: V.K.
 Chk d: 2006-09-29 Br: Len K

Revision	Date	Name	ECN Number
△	07-08-29	g b	15982
△			
△			

Rexroth
Bosch Group

Sheet: 1 of 1
 Scale: 350 bar
 Drawing number: 47-CSS-248067-0-B
 Rev: 1

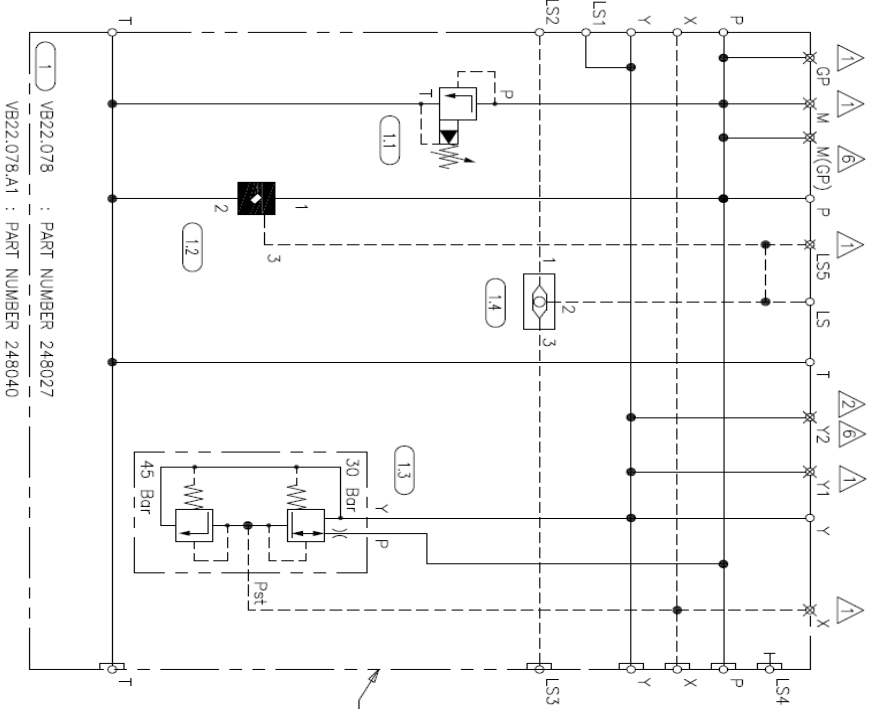
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Part	Model Code	Description	Number
1.0	M4-12-2X/JZ(XXX)Y(TP)V19	Center Inlet for closed center systems	248040
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.2	CAVITY PLUG, XBCAXXV	Cavity Plug	248042
	990-202-006	Seal kit for item 1.2	268201
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
1.4	MHSU2KA1X/420-7MX	Cartridge Shuttle Valve	248087
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

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VB22.078 : PART NUMBER 248027
 VB22.078.A1 : PART NUMBER 248040

Revision	Date	Name	ECN Number
1	2007-08-29	g.b	15982
2	2010-01-25	V.K.	17904
3	2010-04-07	DT	18111
4	2010-06-24	VK	18333
5	2010-08-27	VK	18478
6	2010-08-27	VK	18479

SPECIFICATIONS:
 MANIFOLD ASSEMBLY:
 M4-12-2Y/JZ(XXX)(TP)V19
 VB22.078.A1 : P/N: 248040

MANIFOLD MACHINING DETAIL:
 VB22.078 : P/N:248027

1.1: MHDNB2K2-2X/420VFC : P/N:031835
 1.2: T-2A CAVITY PLUG : P/N:248042
 1.3: MHDRO4K0-1X/030VLA : P/N:247372
 1.4: MHSU 2 KA1X/420-7MX : P/N:248087

PORTS SIZES:
 PRESSURE : #16 SAE O-RING BOSS
 TANK : #20 SAE O-RING BOSS
 M.X.Y.LS.LS5,GP.M(GP),Y1,Y2 : #06 SAE O-RING BOSS

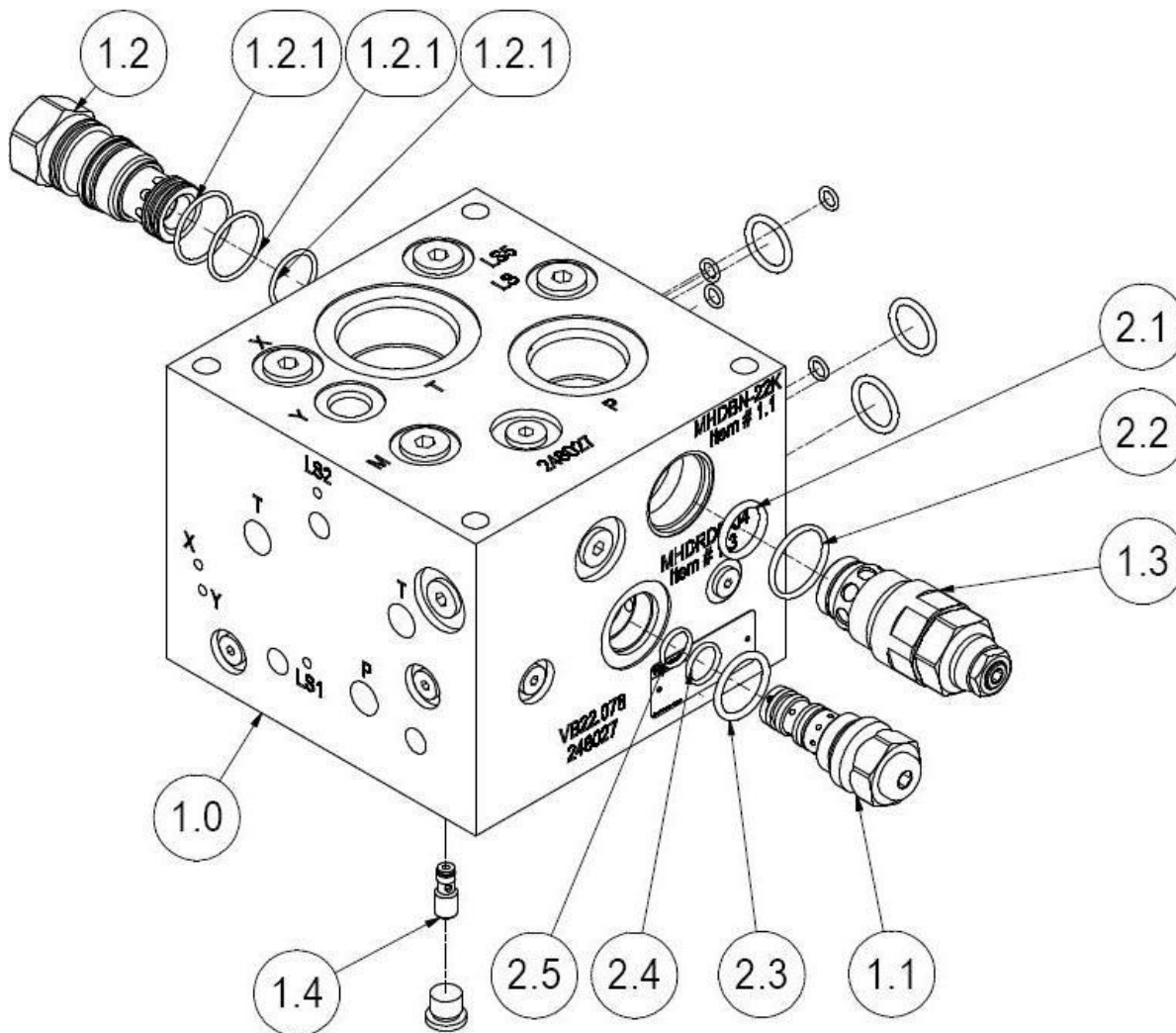
CONNECTIONS:
 4 x 3/8" -16 UNC x 15,00 mm DEEP, MOUNTING HOLES
 6X M10 THREAD HOLES TO RECEIVE STUD BOLTS ON THE BOTH SECTIONAL SIDE
 MID-INLET for CLOSED CENTRE CIRCUIT
 - Top Ported c/w Primary Relief Valve,
 - Internal Pilot Oil Supply,
 - With SAE Ports.

Stamp:	Stamp:	Stamp:
CONNECTION:	SIZE:	SIZE:
GP M(GP)X,Y1,Y2,LS5	6	6
Y, LS	6	6
TANK	20	20
PRESSURE	16	16
FOR PIPE		
FOR TUBE		
FEMALE NPT		
MALE JIC		
SAE O-BOSS THREAD	X	X
CODE 61 SAE FLANGE		
CODE 62 SAE FLANGE		
ANSI FLANGE 150LB		
ISO SQUARE FLANGE		
DIN FLANGE PN 16		
QUICK DISCONNECT		
AT COMPONENT	X	X
WITH MATING HALF		
WITHOUT MATING HALF		
PLUGGED OR CAPPED		X
IN DIRECTION		

Inventory Code: 248040
Description: 248040 M4-12-X~JZ(XXX)(TP)V19
 CLOSED CENTRE MID-INLET
 (VB22.078.A1)

Customer Name: BRCA
Customer order No.: COMP-U-SPREAO
Reference drawings: COMP-U-SPREAO

Sheet: 1 of 1
Drawing number: 47-CSS-248040-0-B
Rev: 6

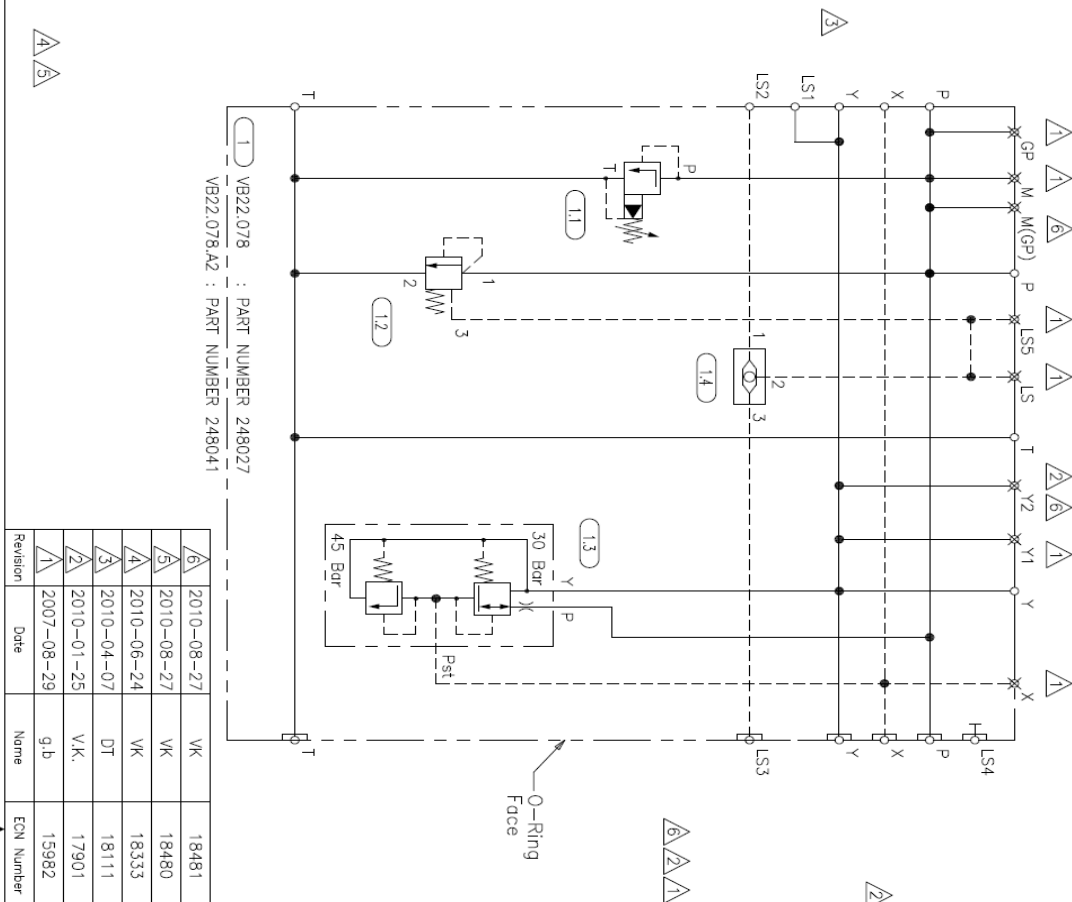


Part	Model Code	Description	Number
1.0	M4-12-2X/PZ(XXX)Y(TP)V19	Center inlet for Open center systems	248041
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.2	LRFC-XGV	Bypass compensator valve	248028
	990-202-006	Seal Kit for item 1.2	268201
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
1.4	MHSU2KA1X/420-7MX	Cartridge Shuttle Valve	248087
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

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SPECIFICATIONS:

MANIFOLD ASSEMBLY:
 M4-12-2X/PZ(XXX)Y(TP)V19
 VB22.078.A2 : P/N: 248041

MANIFOLD MACHINING DETAIL:
 VB22.078 : P/N:248027

1.1: MHDEN2K2-2X/420VFC : P/N:031835
 1.2: LRFC-XGV (SUN) : P/N:248028
 1.3: MHDROB04K0-1X/030V1A : P/N:247372
 1.4: MHSU 2 KA1X/420-7MX : P/N:248087

PORTS SIZES:
 PRESSURE : #16 SAE O-RING BOSS
 TANK : #20 SAE O-RING BOSS
 M.X.Y.L.S5.GP.M(GP).Y1.Y2 : #06 SAE O-RING BOSS

4 x 3/8" -16 UNC x 15.00 mm DEEP, MOUNTING HOLES
 6X M10 THREAD HOLES TO RECEIVE STUD BOLTS ON THE BOTH SECTIONAL SIDE
 MID-INLET for OPEN CENTRE CIRCUIT
 - Top Ported c/w Primary Relief Valve,
 - Internal Pilot Oil Supply,
 - With SAE Ports.

Stamp:	SIZE:	SALES ORDER No:	Customer Name:	Customer Order No:	Description:
GP/M(GP)/Y1/Y2/LS/LS	6	B	BRCA	COMPU-SPREAD	248041 M4-12-2X~PZ(XXX)Y(TP)V19 OPEN CENTRE MID INLET (VB22.078.A2)
Y	6				
TANK	20				
PRESSURE	16				
CONNECTION:					
SIZE:					
FOR PIPE					
FOR TUBE					
FEMALE NPT					
MALE JIC					
SAE O-BOSS THREAD					
CODE 61 SAE FLANGE					
CODE 62 SAE FLANGE					
ANSI FLANGE 150LB					
ISO SQUARE FLANGE					
DIN FLANGE PN 16					
QUICK DISCONNECT					
AT COMPONENT					
WITH MATING HALF					
WITHOUT MATING HALF					
PLUGGED OR CAPPED					
IN DIRECTION					

Revision	Date	Name	ECN Number
1	2007-08-29	gib	15982
2	2010-01-25	V.K.	17901
3	2010-04-07	DT	18111
4	2010-06-24	VK	18333
5	2010-08-27	VK	18480
6	2010-08-27	VK	18481

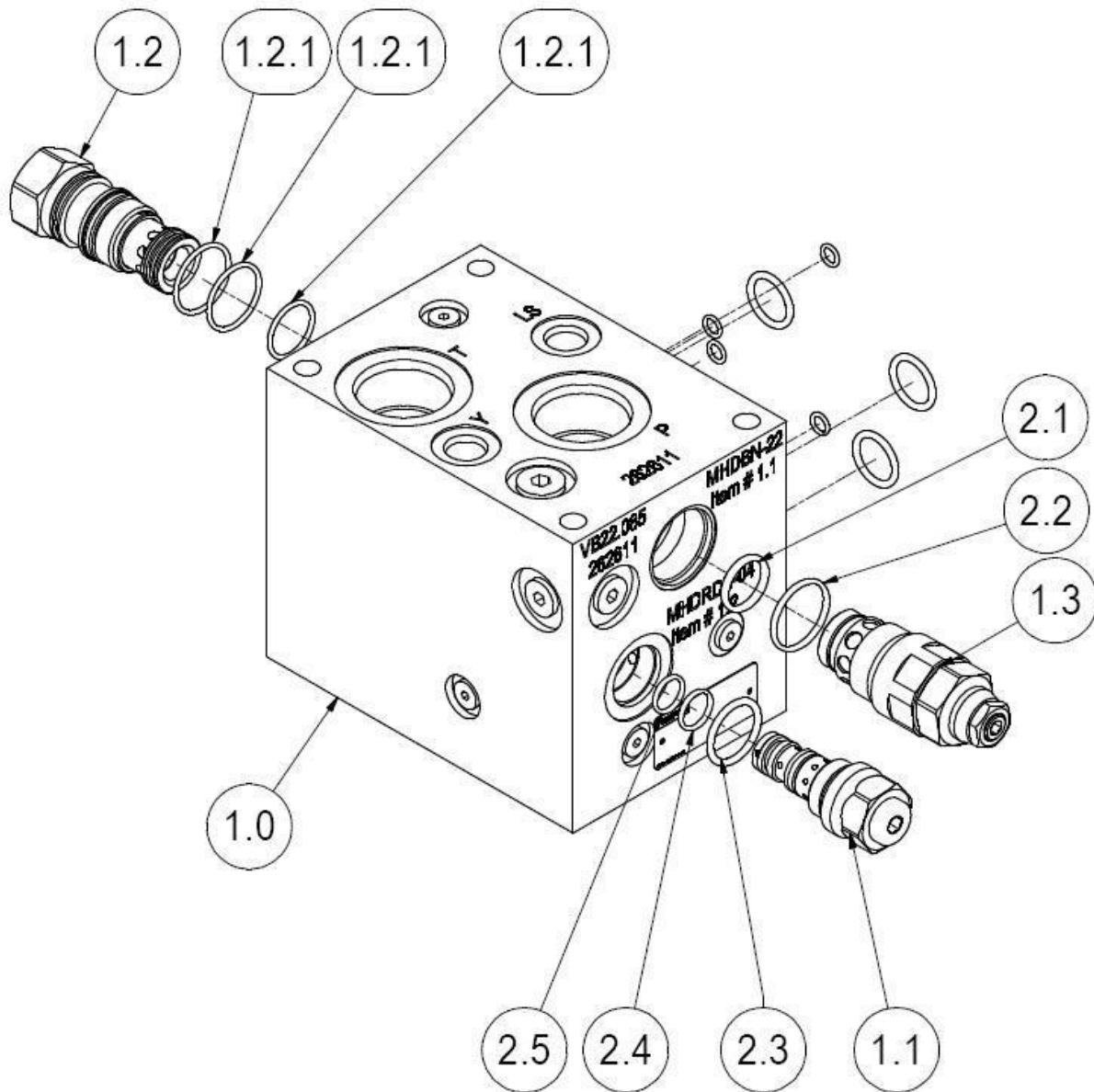
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Inventory Code: 248041
 Max Pressure: 350 bar

Drawn: 2006-09-08 By: VK
 Chk'd: 2006-09-10 By: Len K.
 App'd: By:

Sheet: 1 of 1
 Scale: 350 bar
 Drawing number: 47-CSS-248041-0-B
 Rev: 6

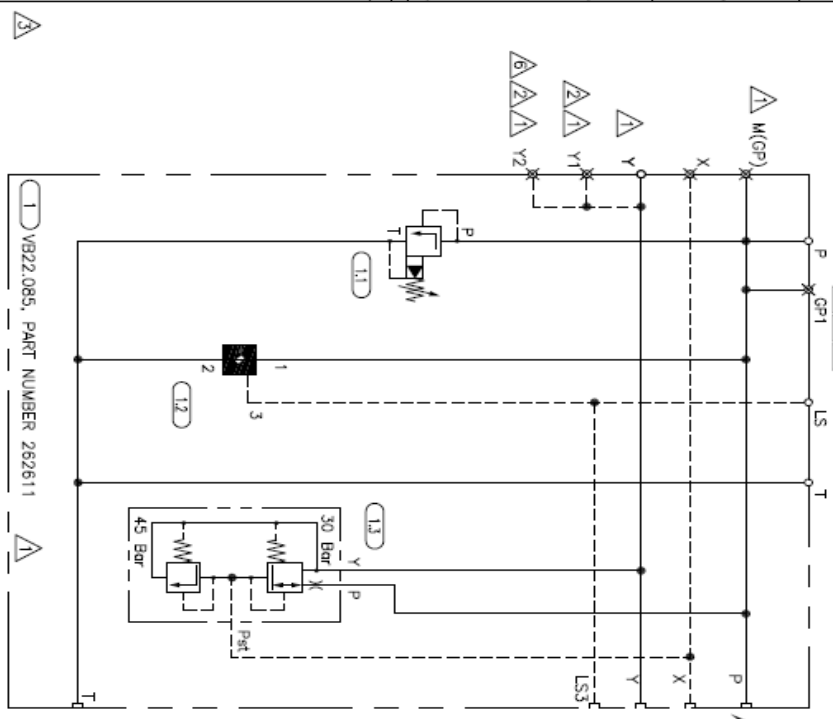
DESIGN 2010-08-27 17:41
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Part	Model Code	Description	Number
1.0	M4-12-2X/J(XXX)Y V19 CS	Closed center inlet top ported	262595
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.2	CAVITY PLUG, XBCAXXV 990-202-006	Cavity Plug Seal kit for item 1.3	248042 268201
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

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NOTE - CONNECTIONS ON THIS SIDE OF THE OUTLINE ARE NOT STAMPED ON BLOCK.

- SCHEMATIC NOTES:**
1. WORKING PRESSURE: 5075 PSI (350 BAR)
 2. MAXIMUM SYSTEM PRESSURE: 5800 PSI (400 BAR)
 3. HYDRAULIC FLUID: MINERAL OIL
 4. ISO CLEANLINESS LEVEL: 20/18/15
 5. WARNING - PER ISO4413 IF THIS SYSTEM UTILIZES AN ACCUMULATOR, DRAIN OIL TO TANK BEFORE COMMENCING WITH ANY MAINTENANCE.

CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	37° FLARE-O FITTING	SAE STRAIGHT THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION
M(GP), X, Y, 11/2, GP1	6						X						X				
Y (DRAIN)	6						X						X				
LOAD SENSE (LS)	6						X						X				
TANK (T)	16						X						X				
PRESSURE (P)	16						X						X				

Revision	Date	Name	ECN Number
1	2010-08-25	VK	18459
2	2010-08-25	VK	18457
3	2010-08-25	VK	18456
4	2010-04-07	DT	18115
5	2009-07-17	DT	17432
6	2009-04-30	DT	17287

Stamp: CONNECTION: SIZE: FOR PIPE FOR TUBE FEMALE NPT 37° FLARE-O FITTING SAE STRAIGHT THREAD CODE 61 SAE FLANGE CODE 62 SAE FLANGE ANSI FLANGE 150LB ISO SQUARE FLANGE DIN FLANGE PN 16 QUICK DISCONNECT AT COMPONENT WITH MATING HALF WITHOUT MATING HALF PLUGGED OR CAPPED IN DIRECTION

Customer Name: BRCA
Customer Order No.: COMPUSPREAD
Reference drawings: 47-M6-262595-0-0
Description: 262595 M4-12-2X-J(XXX)(TP)V19
 CLOSED CENTRE INLET

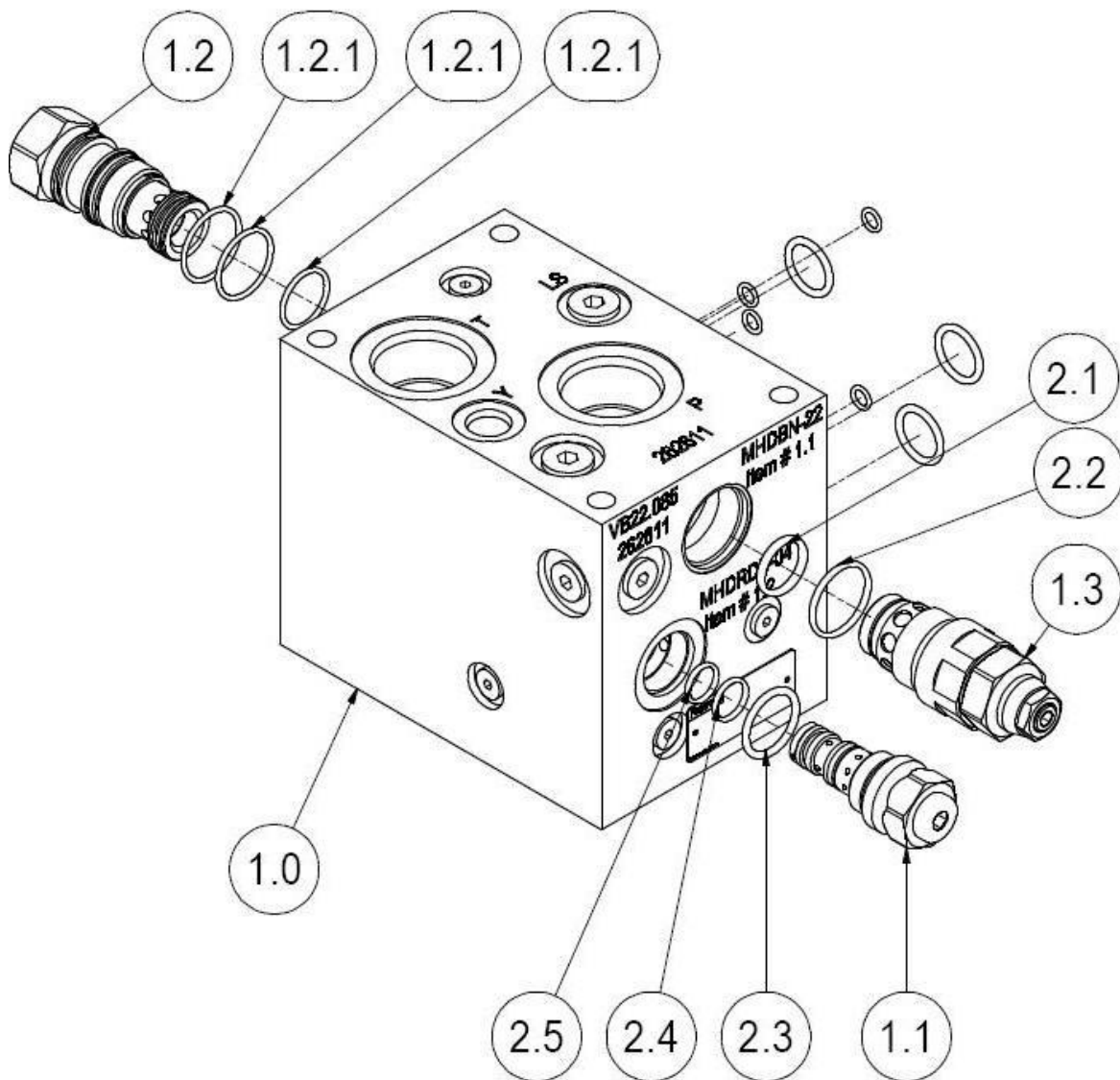
Inventory Code: 262595
Max Pressure: 400 BAR (MAX.)

App'd: 400 BAR (MAX.)
By: 400 BAR (MAX.)

Stamp: 2007-11-12 By: ET
 2010-04-07 By: JC
 2009-04-30

Revision: 1 of 1
Sheet: 1 of 1
Scale: NTS
Drawing number: 47-CSS-262595-0-B
Rev: 6

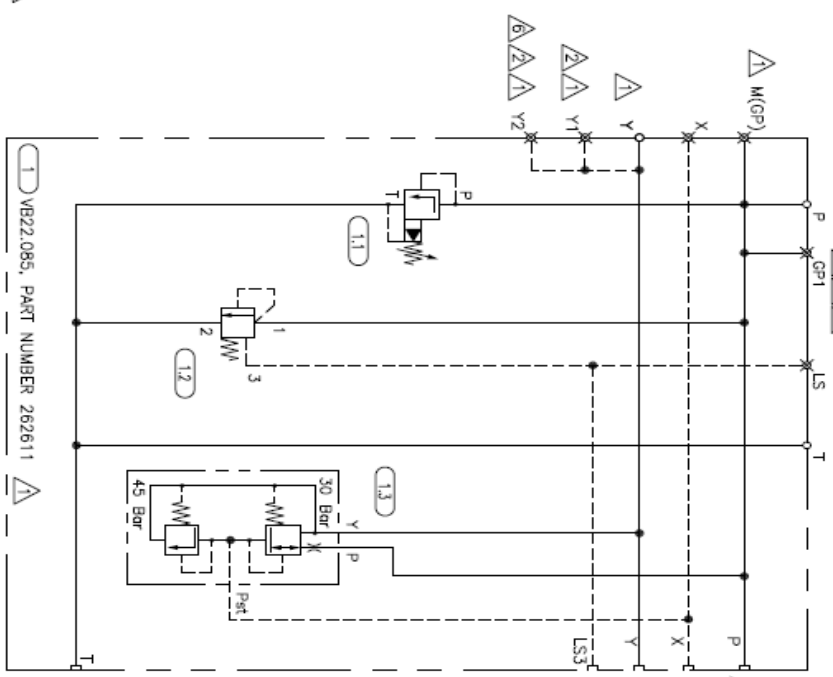
DESIGN 2010-08-27 15:27
 R:\Manufacturing\Compu-spread-V1\CS SCH\47-CSS-262595-0-B DESIGN 2010-08-27 16:45



Part	Model Code	Description	Number
1.0	M4-12-2X/P(XXX)Y V19 CS	Open center inlet top ported	262610
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	247372
1.2	LRFC-XGV	Bypass compensator valve	248028
	990-202-006	Seal kit for item 1.3	268201
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	262485
2.1	AS-115 VIT 80	O-Ring	211831
2.2	AS-119 VIT 80	O-Ring	225528
2.3	AS-014 VIT 80	O-Ring	225526
2.4	AS-013 VIT 80	O-Ring	015904
2.5	AS-018 VIT 80	O-Ring	239120

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NOTE - CONNECTIONS ON THIS SIDE OF THE OUTLINE ARE NOT STAMPED ON BLOCK.

- SCHEMATIC NOTES:**
1. WORKING PRESSURE: 5075 PSI (350 BAR)
 2. MAXIMUM SYSTEM PRESSURE: 5800 PSI (400 BAR)
 3. HYDRAULIC FLUID: MINERAL OIL
 4. ISO CLEANLINESS LEVEL: 20/18/15
 5. WARNING - PER ISO4413 IF THIS SYSTEM UTILIZES AN ACCUMULATOR, DRAIN OIL TO TANK BEFORE COMMENCING WITH ANY MAINTENANCE.

CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	37° FLARE-O FITTING	SAE STRAIGHT THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION
M(GP), X, Y1, Y2, GP1	6					X	X						X			X	
LOAD SENSE (LS)	6					X	X						X			X	
Y (DRAIN)	6					X	X						X				
TANK (T)	16					X	X						X				
PRESSURE (P)	16					X							X				

Revision	Date	Name	ECN Number
6	2010-08-25	VK	18463
5	2010-08-25	VK	18462
4	2010-08-25	VK	18461
3	2010-04-07	DT	18115
2	2009-07-17	DT	17431
1	2009-04-30	DT	17286

Stamp: _____

Size: **B**

Sales Order No: _____

Customer Name: BRCA

Customer order No: COMPUS-SPREG40

Schematic

Inventory Code: 262610

Max Pressure: 400 BAR (Max.)

Drawn: 2007-11-12 By: ET

Chk'd: 2010-04-07 By: JC

App'd: _____

Scale: _____

Sheet: 1 of 1

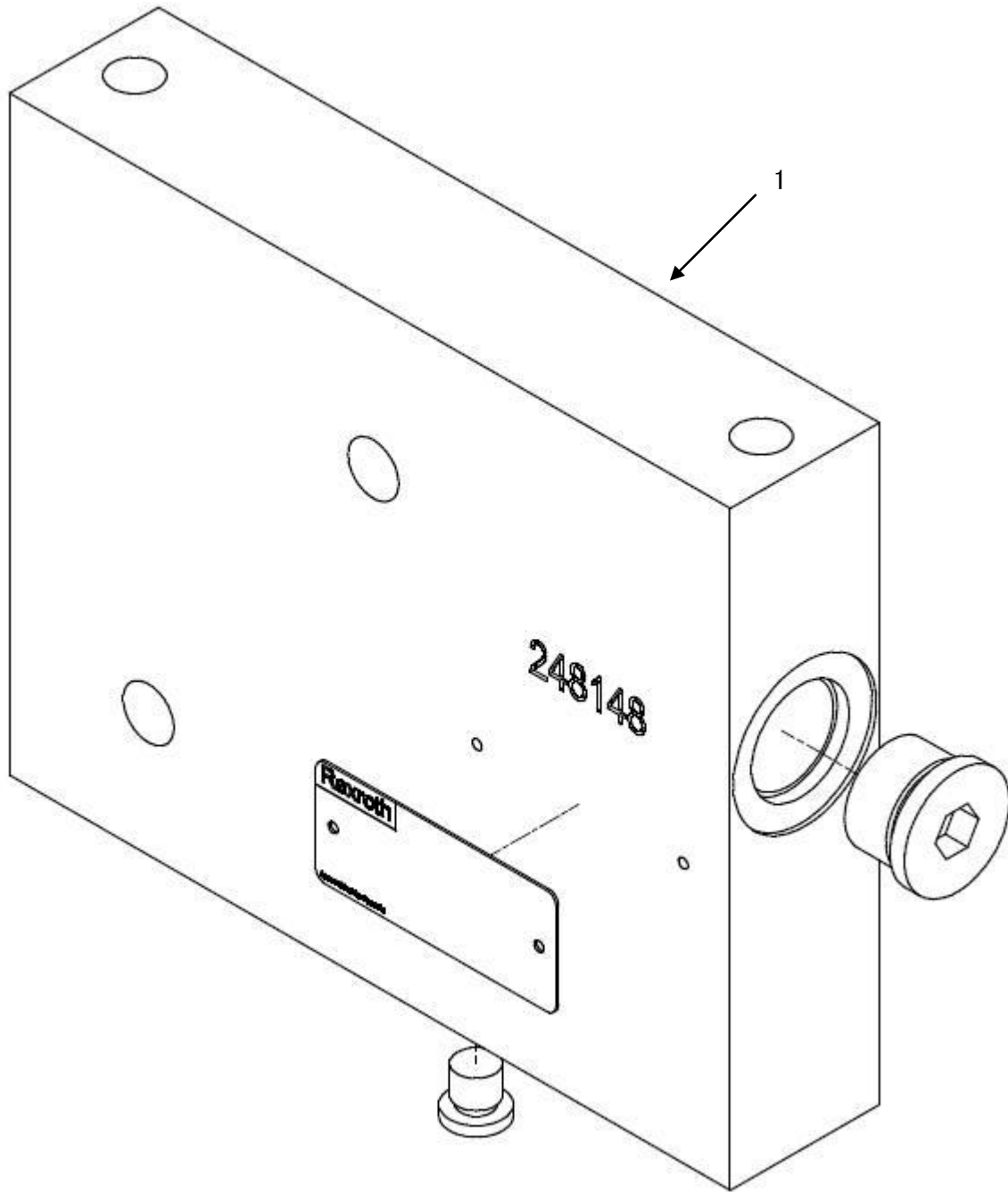
NTS

Ordering number: 47-CSS-262610-0-B

Rev: 6

Rexroth
Bosch Group

R:\Manufacturing\Compu-spread-M\CS SICH 47-CSS-262610-0-B DESIGN 2010-08-27 16:45
 DESIGN 2010-08-27 15:31



Part	Model Code	Description	Number
1	M4-12-2X/LATT END COVER ASSEMBLY	End Cover Right Side (Assy.)	243352
-	M4-12-2X/LATT END COVER BARE BLOCK	End Cover Right Side (Bare)	248148

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g.b 2007-09-05 16:31
 R:\Manufacturing_Data\Compuspread-1\CS SCH\47-CSS-248148-0-B g.b 2007-09-30 07:50

SPECIFICATIONS:
MANIFOLD ASSEMBLY
 M4-12-2X/LATT
 MANIFOLD MACHINING DETAIL : P/N: 248148

2 x 3/8" -16 UNC x 15.00 mm DEEP MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for R.H.Side; Without O-Ring Grooves & W/O ports

Stamp:	CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	37° FLARE-O FITTING	SAE O-BOSS THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION

Inventory Code:	248148	Max Pressure:	350 bar	Drawing number:	47-CSS-248148-0-B
Drawn: 2006-08-25 By: V.K.	App'd: 2006-08-25 By: Len K				
Customer Name: BRCA		Description: 248148 M4-12-2X~LATT RIGHT SIDE END COVER ELEMENT			
Customer order No:		Reference drawings: COMPUL-SPREAD			
Size: B					
Sales Order No:					
Sheet: 1 of 1					
Scale: 350 bar					
Rev: 0					

Revision	Date	Name	ECN Number

Stamp:

Inventory Code: 248148

Max Pressure: 350 bar

Drawing number: 47-CSS-248148-0-B

Rev: 0

CONNECTION:

SIZE:

FOR PIPE

FOR TUBE

FEMALE NPT

37° FLARE-O FITTING

SAE O-BOSS THREAD

CODE 61 SAE FLANGE

CODE 62 SAE FLANGE

ANSI FLANGE 150LB

ISO SQUARE FLANGE

DIN FLANGE PN 16

QUICK DISCONNECT

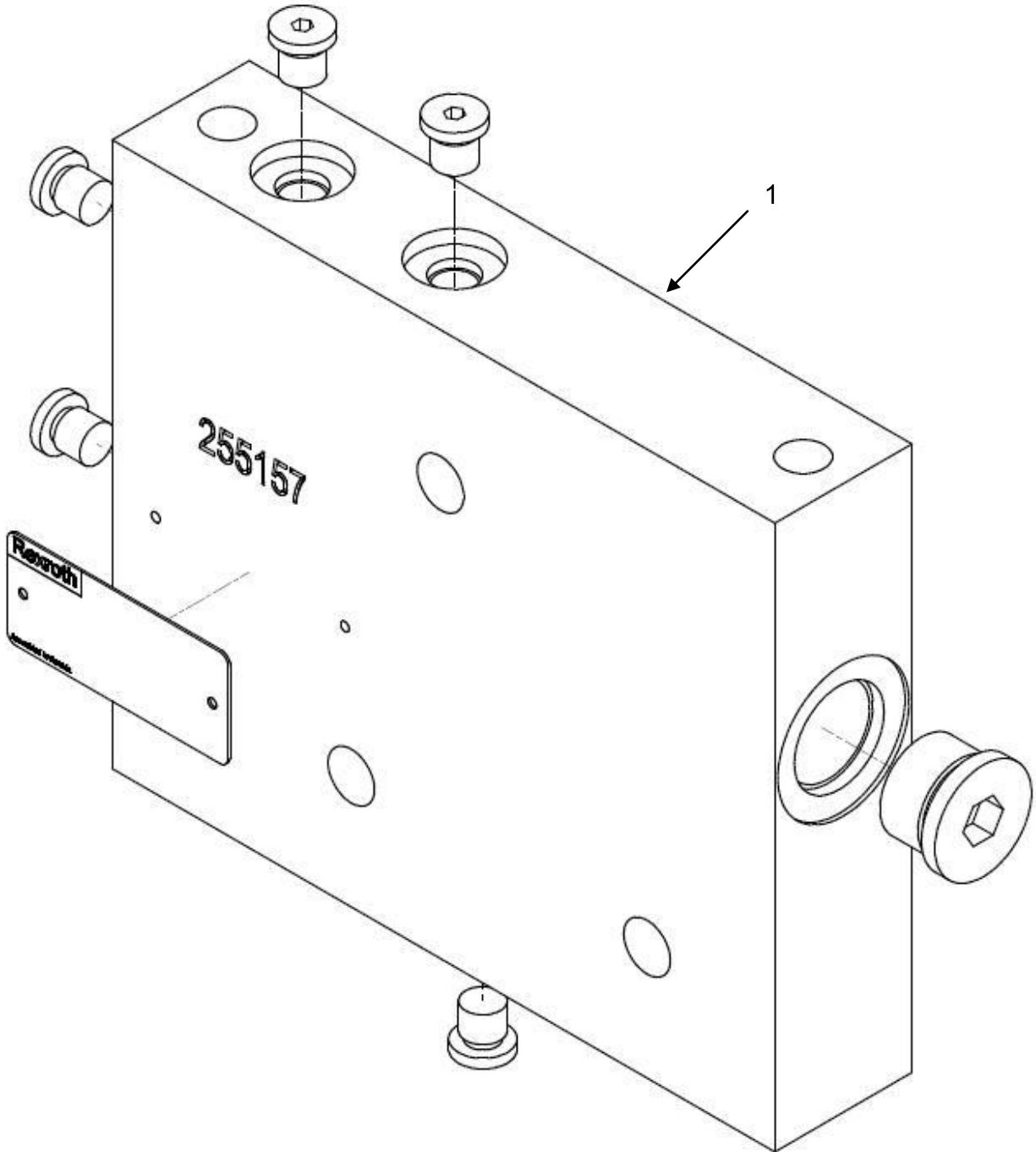
AT COMPONENT

WITH MATING HALF

WITHOUT MATING HALF

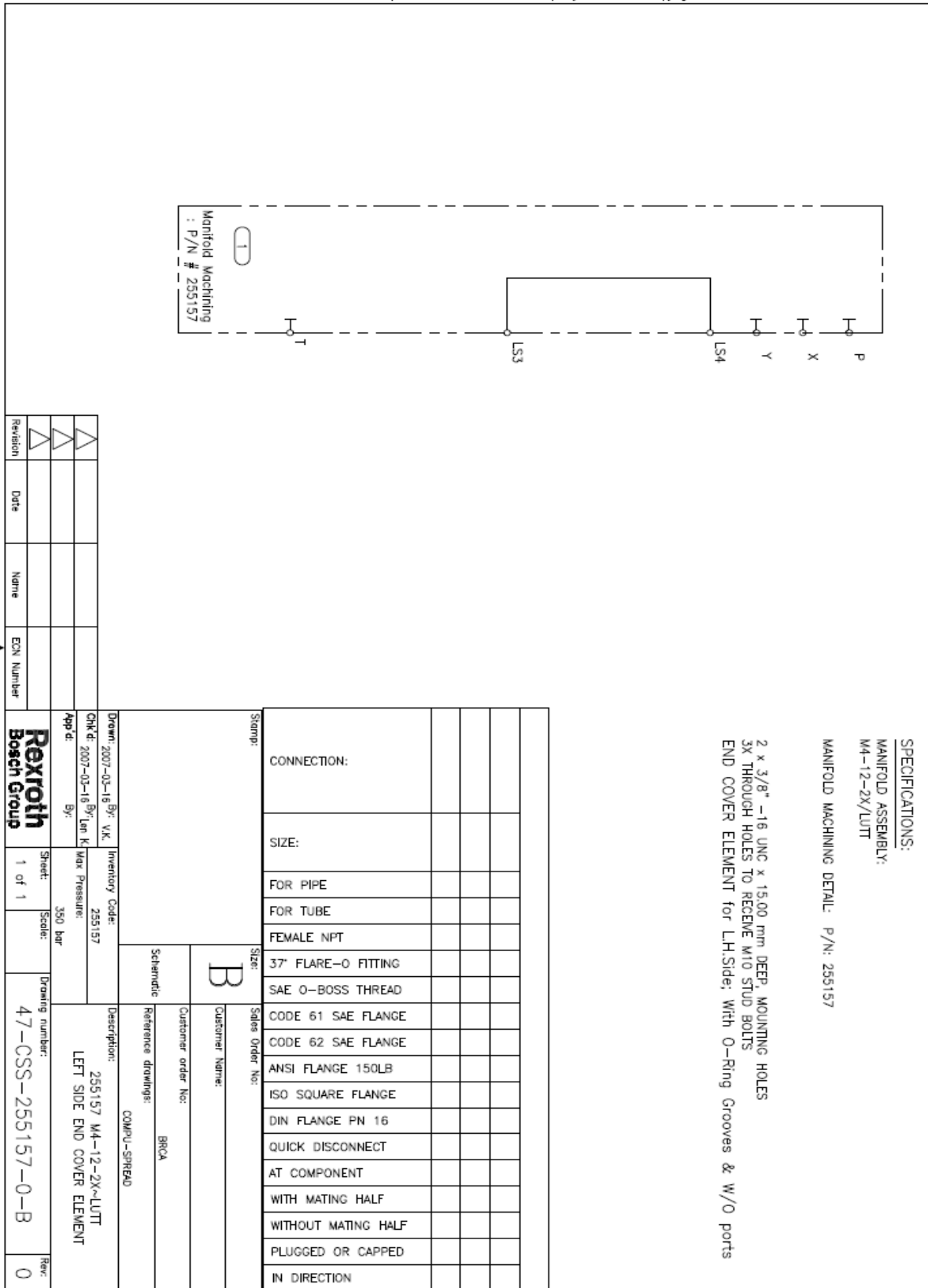
PLUGGED OR CAPPED

IN DIRECTION



Part	Model Code	Description	Number
1	M4-12-2X/LUTT END COVER ASSEMBLY	End Cover Left Side (Assy.)	270297
-	M4-12-2X/LUTT END COVER BARE	End Cover Left Side (Bare)	255157

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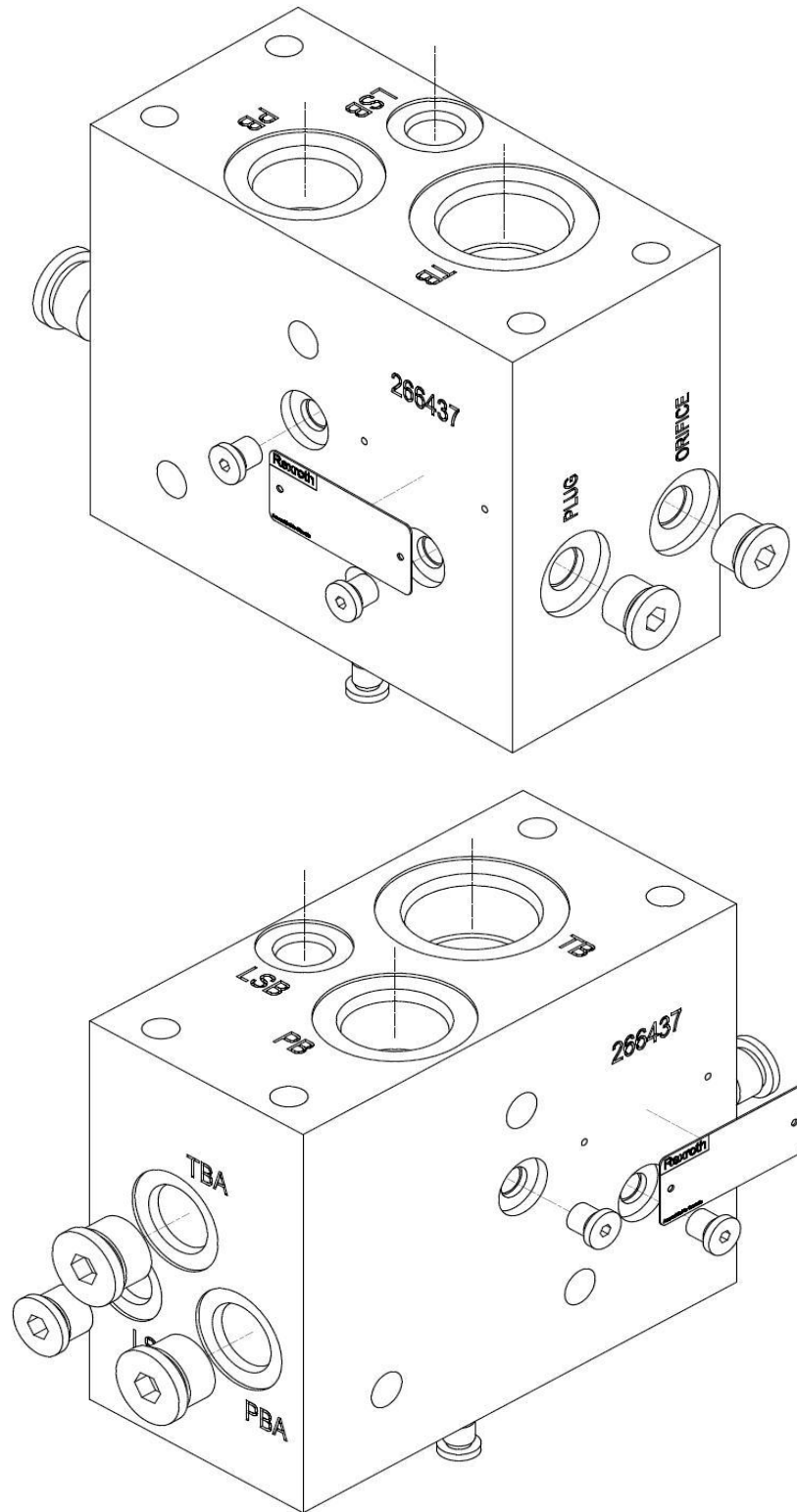
SPECIFICATIONS:
 MANIFOLD ASSEMBLY:
 M4-12-2X/LUTT
 MANIFOLD MACHINING DETAIL: P/N: 255157

2 x 3/8" -16 UNC x 15,00 mm DEEP, MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for L.H.Side; With O-Ring Grooves & w/o ports

R:\Manufacturing_Data\Compuspread\MCS SOH 47-CSS-255157-0-B g.b 2007-08-30 07:48
 g.b 2007-08-05 16:51

Revision	Date	Name	ECN Number
△			
△			
△			

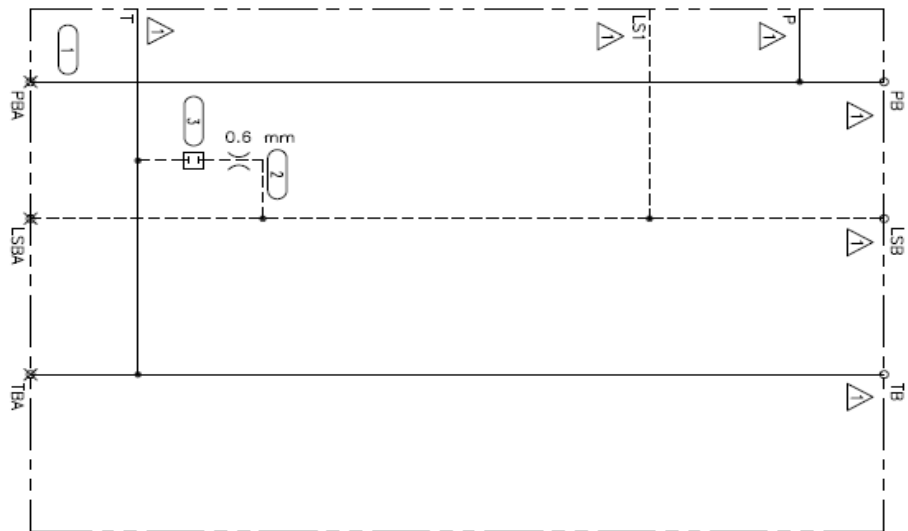
Stamp: CONNECTION: SIZE: FOR PIPE FOR TUBE FEMALE NPT 37° FLARE-O FITTING SAE O-BOSS THREAD CODE 61 SAE FLANGE CODE 62 SAE FLANGE ANSI FLANGE 150LB ISO SQUARE FLANGE DIN FLANGE PN 16 QUICK DISCONNECT AT COMPONENT WITH MATING HALF WITHOUT MATING HALF PLUGGED OR CAPPED IN DIRECTION		Size: B	Sales Order No: Customer Name: Customer order No: Reference drawings: BRCA COMPUS-SPREAD
Drawn: 2007-03-16 By: V.K. Chk'd: 2007-03-16 By: Lan K. App'd: By:	Inventory Code: 255157 Max Pressure: 350 bar	Description: 255157 M4-12-2X-LUTT LEFT SIDE END COVER ELEMENT	Rexroth Bosch Group
Sheet: 1 of 1	Scale: 350 bar	Drawing number: 47-CSS-255157-0-B	Rev: 0



Part	Model Code	Description	Number
1	M4-12-2X/LZPT(TP) S2 V19 END COVER ASSY	Power Beyond Cover	267037
2	157934 ORIFICE	Bleed Orifice	021085
3	DIN906-5.8M8X1	Bleed Plug	019126
-	M4-12-2X-02 END COVER BARE BLOCK	Bare Block	266437

Bosch Rexroth Canada Corp. 490 Prince Charles Drive, Welland, Ontario, Canada L3B 5X7
www.boschrexroth.ca/compuspread

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SPECIFICATIONS:

MANIFOLD ASSEMBLY: P/N: 267037
 M4-12-2X/LZPT(TP)-S2 V19

MANIFOLD MACHINING DETAIL: P/N: 266437

4 x 3/8" -16 UNC x 15.00 mm DEEP, MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for R.H. Side; without O-Ring Grooves
 - Top Ported
 - With SAE Ports.



SIZE:	LSBA	TBA	PBA	LSB	TB	PB
#6						
#8						
#8						
#6						
#16						
#12						

CONNECTION:	FOR PIPE	FOR TUBE	FEMALE NPT	MALE JIC	SAE O-BOSS THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION
LSBA						X						X				
TBA						X						X			X	
PBA						X						X			X	
LSB						X						X				
TB						X						X				
PB						X						X				

Revision	Date	Name	ECN Number
△	2010-03-18	DT	18060
△	2009-08-26	DT	17533

Stamp: **B**

Customer Name: BRCA
 Customer Order No: [blank]
 Sales Order No: [blank]

Inventory Code: 267037
 Max Pressure: 350 bar

Description: 267037 M4-12-2X~LZPT(TP)-S2 V19
 RIGHT SIDE END COVER ELEMENT
 WITH POWER BEYOND

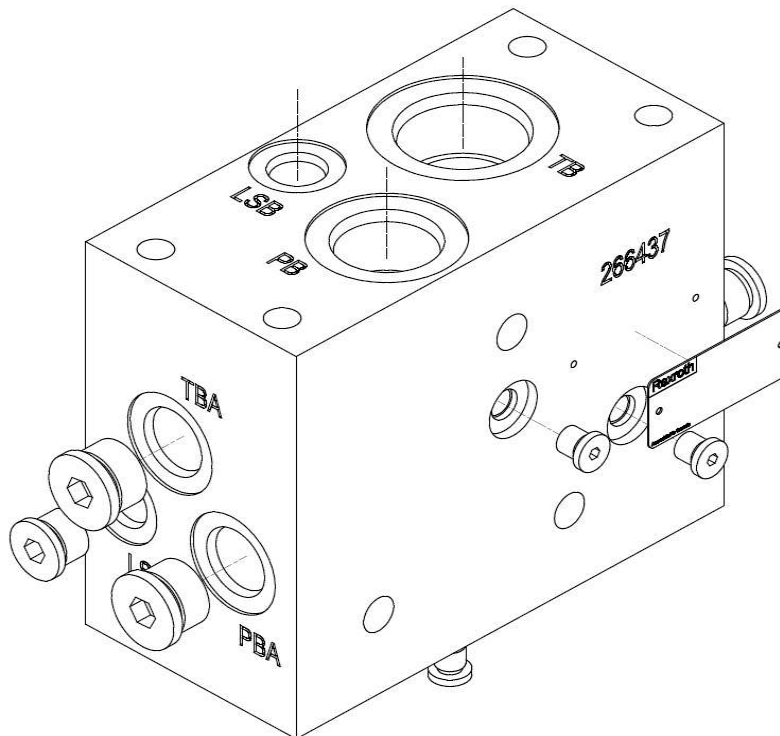
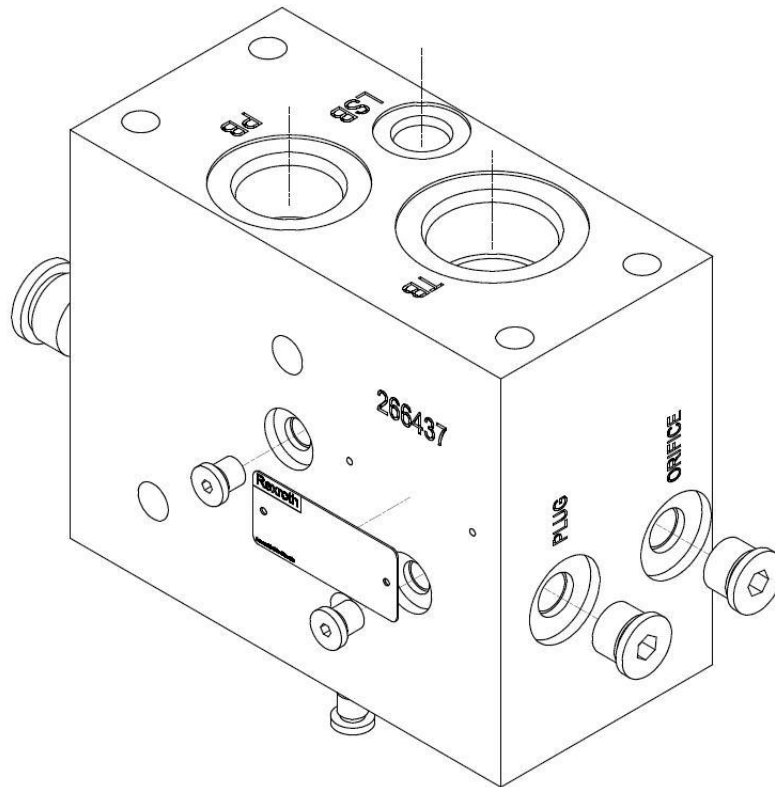
App'd: [blank] By: JC
 Drawn: 2008-03-26 By: DT
 Chk'd: 2009-08-26 By: JC

Sheet: 1 of 1
 Scale: NTS
 Drawing number: 47-CSS-267037-B

Rev: 2

Rexroth
 Bosch Group

R:\Manufacturing\Compuspread-M\CS SCH\47-CSS-267037-B DESIGN 2010-03-18 14:26
 DESIGN 2010-03-18 14:10



Part	Model Code	Description	Number
1	M4-12-2X/LZPT(TP) S1 V19 END COVER ASSY.	Power Beyond Cover	266434
2	157934 ORIFICE	Bleed Orifice	021085

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NOTE - THIS ASSEMBLY IS ACHIEVED BY REMOVING PLUG PART #019126 (MBX1) FROM ASSEMBLY PART #267037. THE PLUG IS THEN RETURNED TO STOCK

SPECIFICATIONS:
 MANIFOLD ASSEMBLY: : P/N: 266434
 M4-12-2X/LZPT(TP)-S1 V19

MANIFOLD MACHINING DETAIL: : P/N: 266437
 4 x 3/8" -16 UNC x 15.00 mm DEEP, MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for R.H. Side; without O-Ring Grooves
 - Top Ported
 - With SAE Ports.

CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	MALE JIC	SAE O-BOSS THREAD	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	ANSI FLANGE 150LB	ISO SQUARE FLANGE	DIN FLANGE PN 16	QUICK DISCONNECT	AT COMPONENT	WITH MATING HALF	WITHOUT MATING HALF	PLUGGED OR CAPPED	IN DIRECTION
LSB	#6					X							X				
LSBA	#6					X							X				
TBA	#8					X							X				
PBA	#9					X							X				
PB	#12					X							X				
TB	#16					X							X				

Drawn: 2008-03-28 By: DT	Inventory Code: 266434	Description: 266434 M4-12-2X-LZPT(TP)-S1 V19 RIGHT SIDE END COVER ELEMENT WITH POWER BEYOND & LS BLEEDING
App'd: 2009-08-26 By: JC	Max Pressure: 350 bar	

Stamp: B

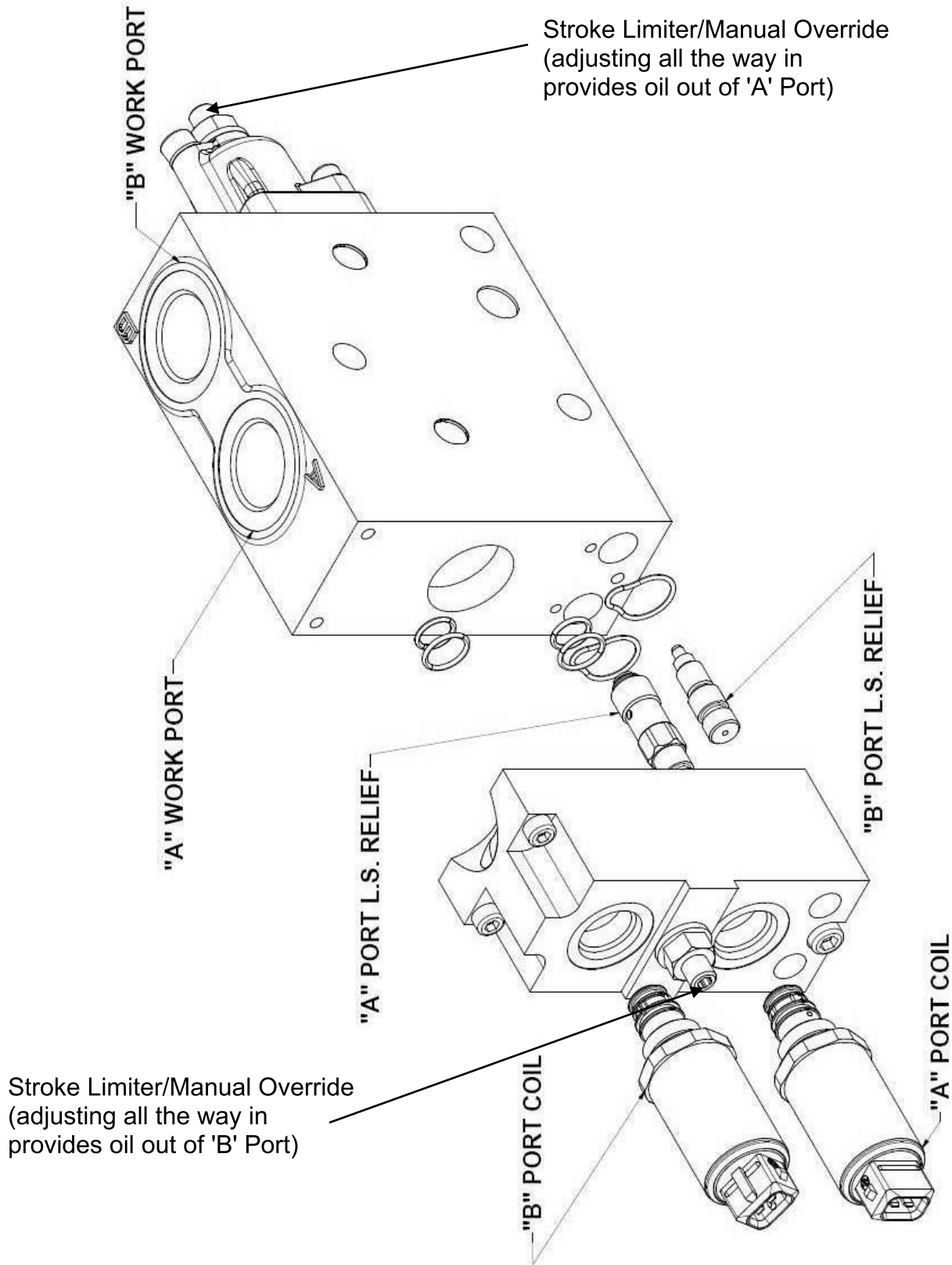
Customer Name: BRCA
 Customer order No:
 Reference drawings: COMQU-SHMEAD

Revision	Date	Name	ECN Number
1	2010-09-15	DT	18521
2	2009-08-26	DT	17532

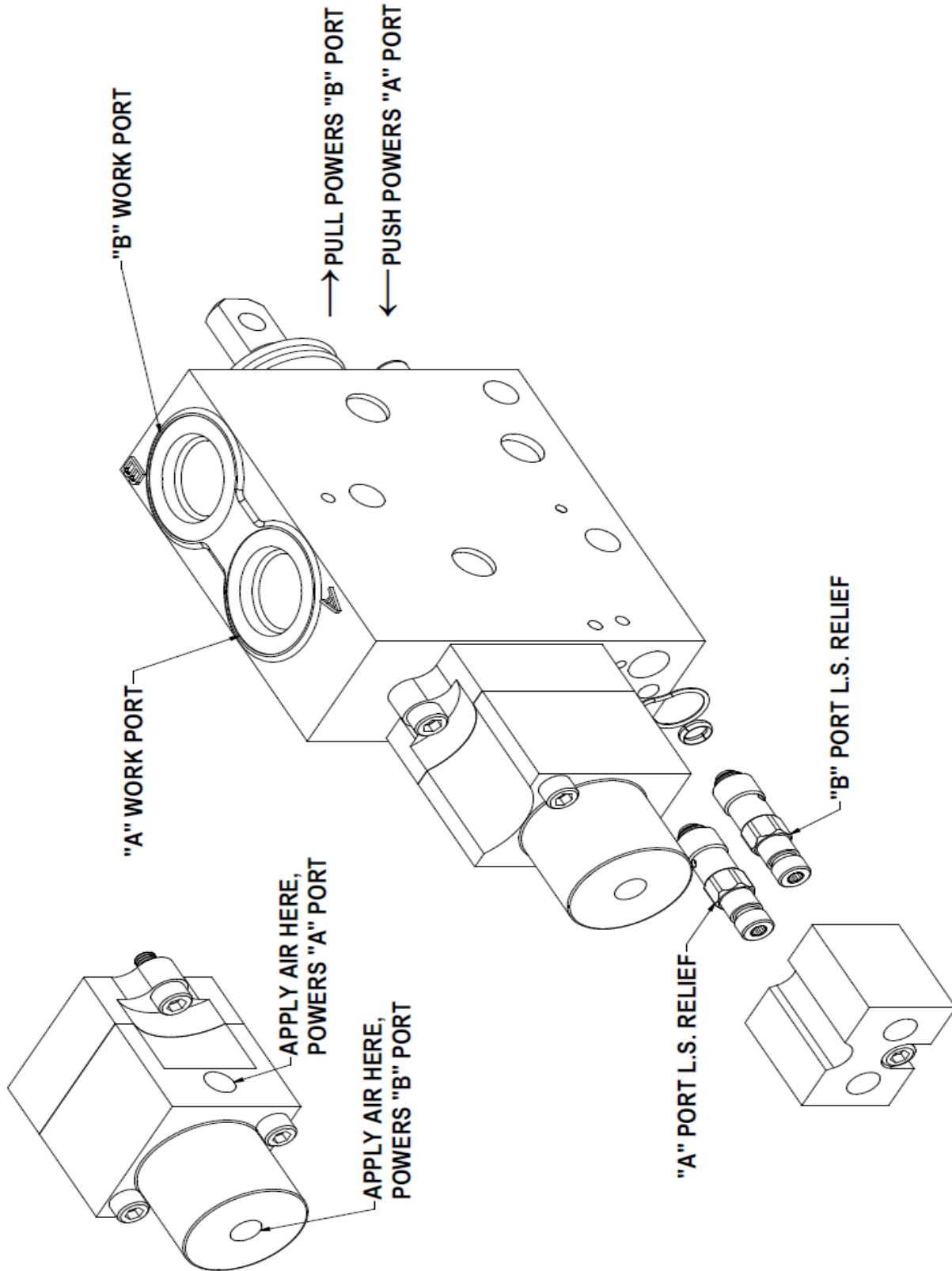
Bosch Rexroth
 1 of 1 NTS
 Drawing number: 47-CSS-266434-B
 Rev: 2

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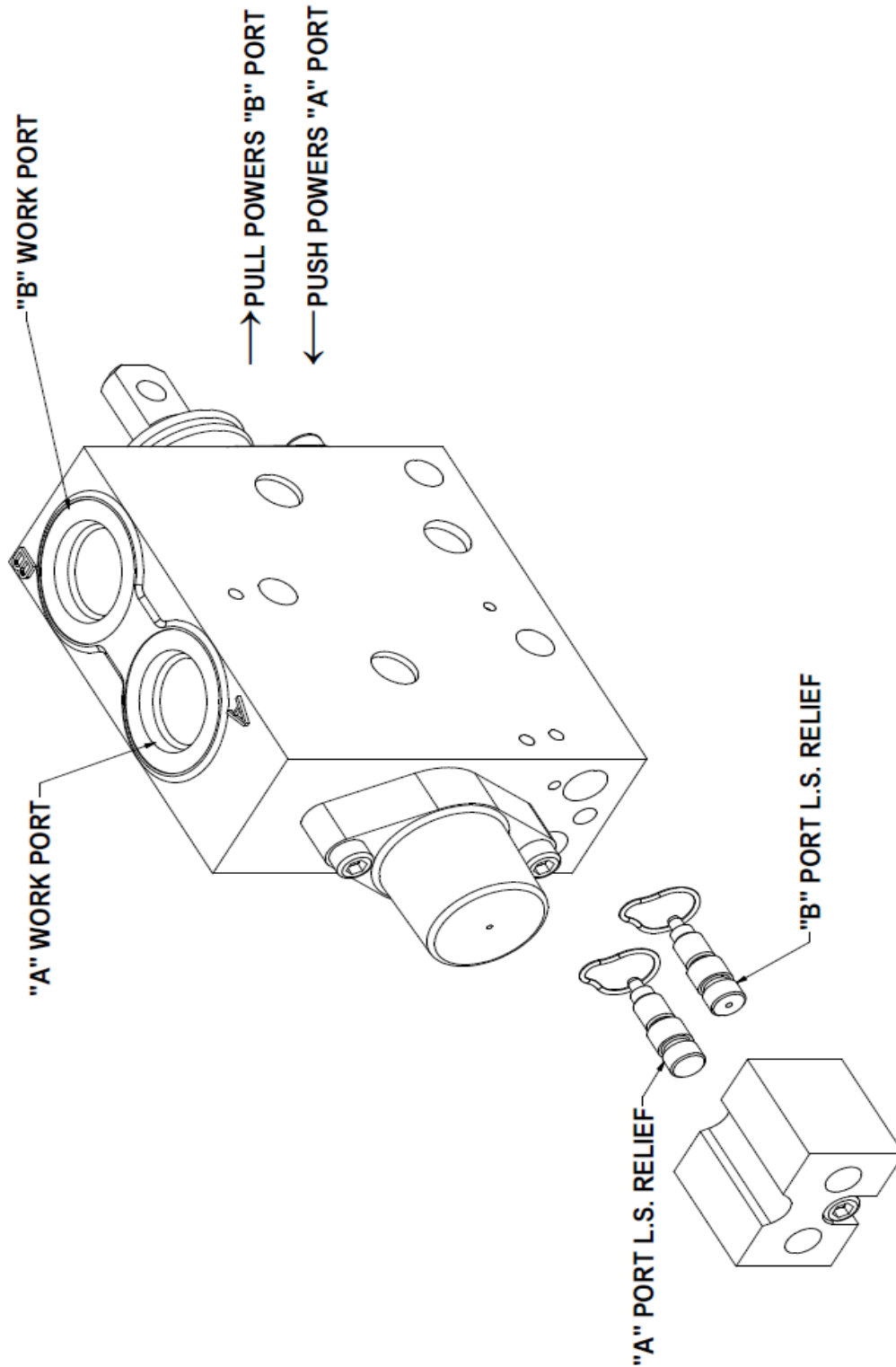
Electrical Section Layout

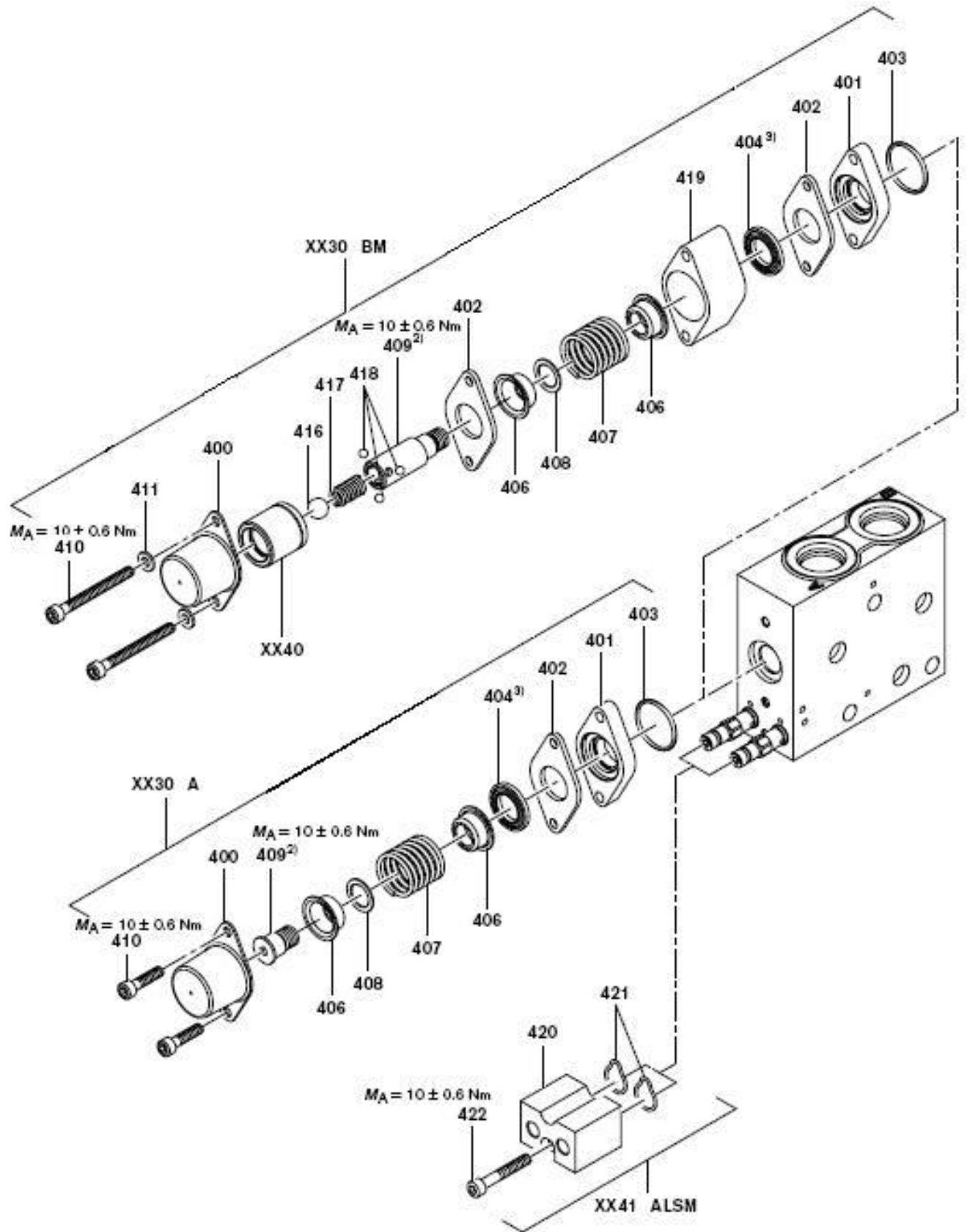


Pneumatic Section Layout



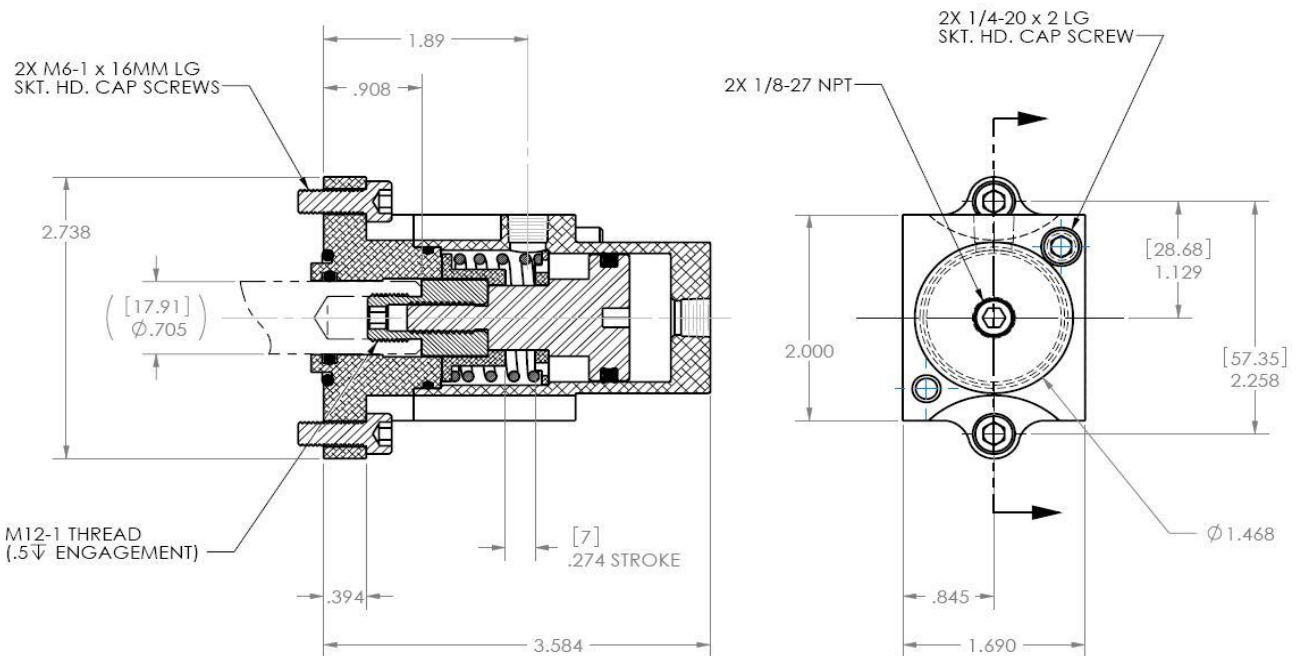
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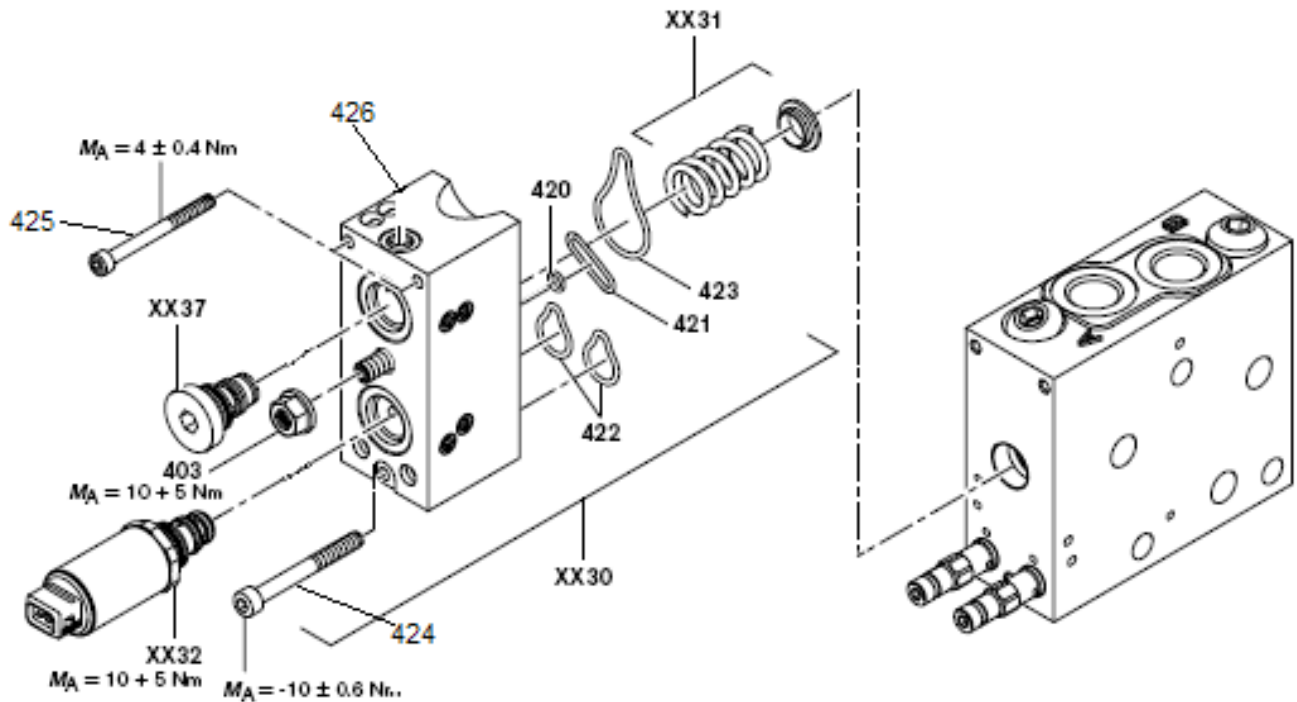




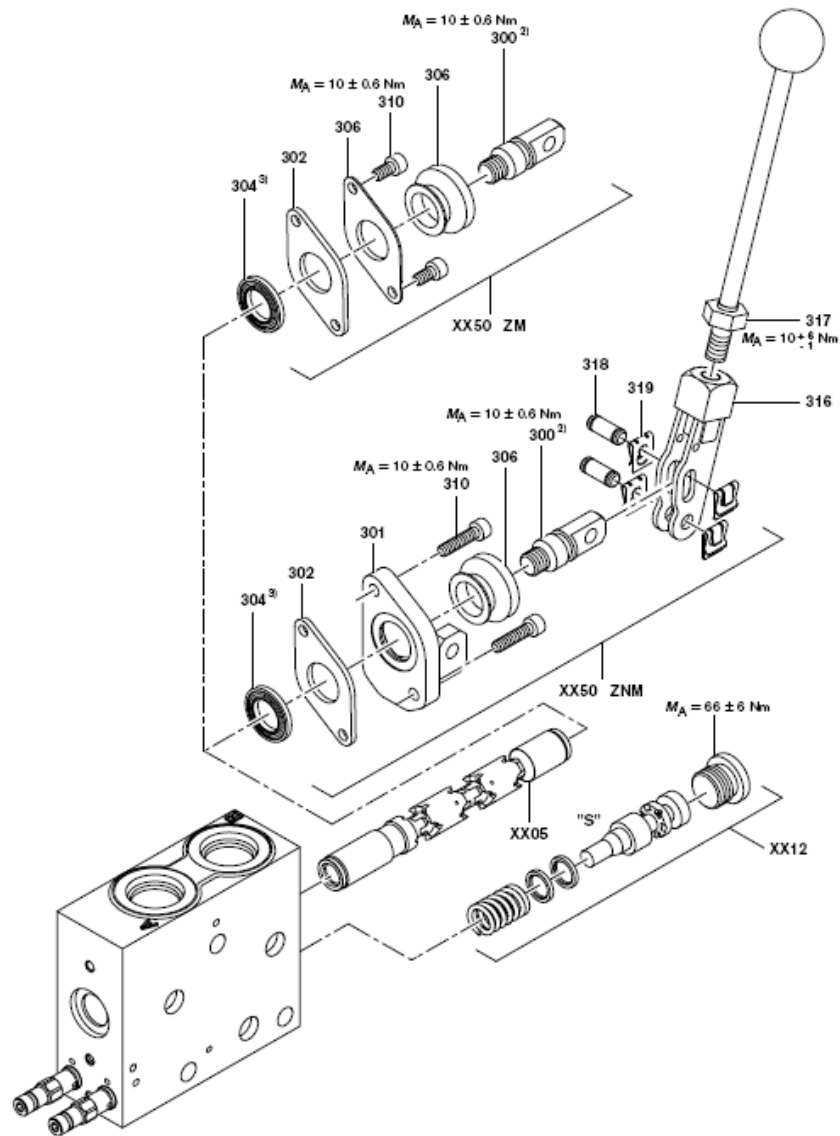
M4 PARTS MANUAL

Part	Model Code	Description	Number
XX30 A		Spring Return Kit	244234
XX30 BM		Detent Kit B1 pressure to A	281416
		Detent Kit B2 pressure to B	281417
		Detent Kit B4 pressure to A&B	281418
XX40	Sleeve, R901089389	Detent A (B1)	244238
	Sleeve, R901091408	Detent B (B2)	244239
	Sleeve, R901089384	Detent A&B (B4)	244240
400	R907182232	Cover	248645
401	FLANGE 62,0x 40,0x 13,0	Flange	248643
402	FLANGE 62.0X40.0X3.0 D22	Flange	248646
403	AS-025 VIT75	O-ring	021902
404	30 X 4,5 MM (LIP) SEAL	Seal Ring	243365
406	RETAINER 28X11 D14.2	Retainer	248665
407	R907182249	Spring	248666
408	WASHER 14.5/21.0X1.0	Washer	248667
409	PIN M12X1X56.5	Pin for detent kit only	248650
409	PIN M12X1X23.5	Pin for spring center kit only	248648
410	SHCS-M6X60-8.8-A2C	Bolts for Detent kit	248651
410	SHCS-M6X25-8.8-A2C	Bolts for Spring Kit	004976
411	WASHER DIN1440-6-ST	Washer	248652
416	2PF2V2 10.0 KL.3 DIN5401	Ball	105053
417	10.00/1.50X27.71/7.40	Spring	248655
418	5.0 KL.3 DIN 5401	Ball	014249
419	62.0X39.0X30.0 D32	Flange	248656
420	M4-12-10/ALS COVER	Cover	248657
421	AS-017 NBR 90	O-Ring	002774
422	SHCS-M6X40-DIN912-8.8	Bolts	243526
-	C-3513-DM-02 AIR SHIFTER	Air Shifter for mechanical sections	269354
-	C-3513-DM-02 SEAL KIT	Seal Kit for 269354 Air Shifter	294513
-	C3514-DM-BR Air Shifter Kit	Air Shifter Kit for field replacement	311470

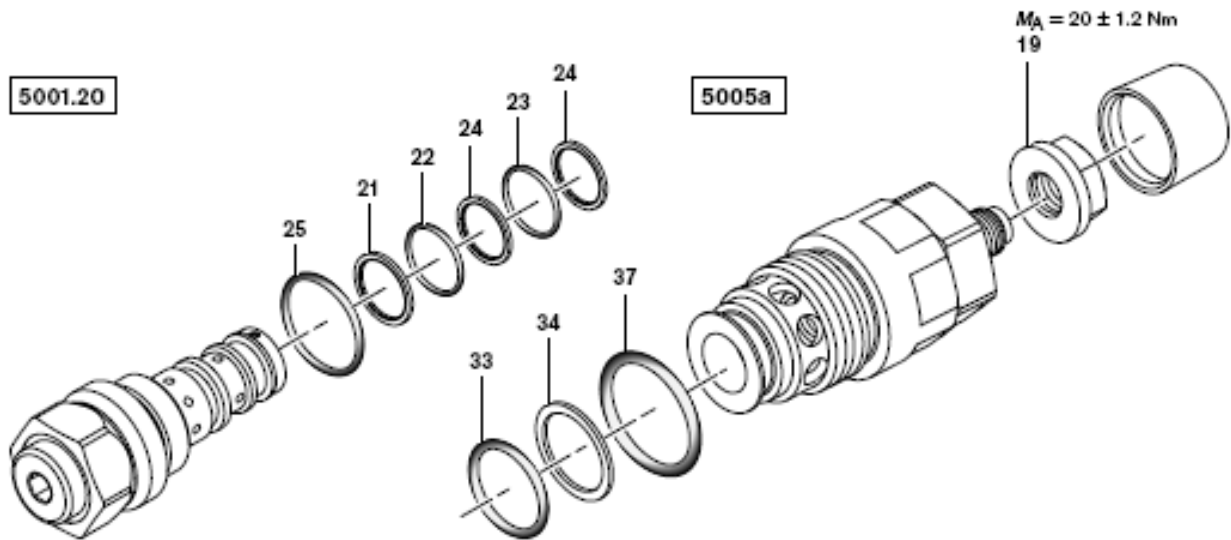




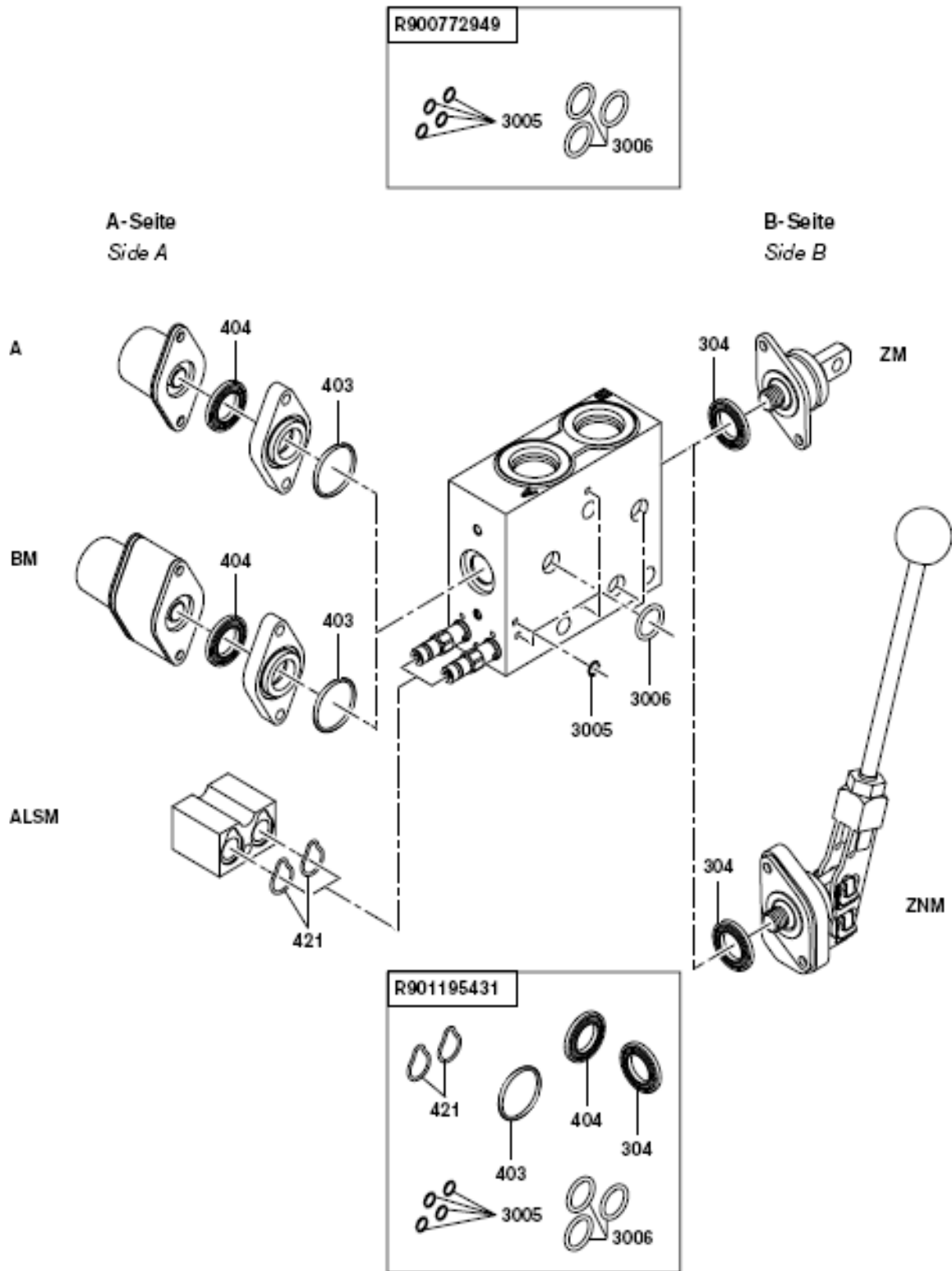
Part	Model Code	Description	Number
403		Sealing Nut	264726
420	AS-009 VIT 80	O-Ring	015140
421	25.9X21.8X1.78	Seal	264730
422	23.35X18.5X1.78	Seal	264731
423	47.9X28.8X1.78	Seal	264733
424	SHCS-M6X55-8.8-A2P	Socket head Cap Screw	256180
425	SHCS-M5X55-8.8-A2C	Socket head Cap Screw	256181
426	M4-12&15-30/WLSV COVER	Cover	256179
XX37	FTDRE2K10/V A-T*BG	Plug	211814
XX32	FTDRE2K32/18AG12C4V-8	Proportional Coil	201688
XX32	FTWE2KC3X/100AG12C4V	On/Off Coil	033286
XX31	M4-12-1X SPRING	Spring	211808
	M4-12-1X/15-2X RETAINER	Retainer	211807
	R900765771	Coil Installation Tool	234320



Part	Model Code	Description	Number
300	TONGUE M12X1X51	Mechanical Tongue	248662
301		Flange	
302	FLANGE 62.0X40.0X3.0 D22	Flange	248646
304	30 X 4,5 MM (LIP) SEAL	Seal Ring	243365
306	FLANGE & DUST BOOT KIT	Assembly Kit	248663
310	SHCS M6X12-8.8-A2C	Bolts	248664
316			
317			
318			
319			
XX12	M4-12-20/S	COMPENSATOR KIT	244227
	M20X1.5-ST-A3C-FKM	Plug	248640
	M4-12-10/COMPENSATOR	SPOOL	248638
	14.7/2.5X33/5	Spring	248639
	00889721 SHIM	Pressure Shims	211811



Part	Model Code	Description	Number
5001.20		Pressure Reducing Valve	247372
21	R900870592	Seal Kit	268122
22	R900870592	Seal Kit	268122
23	R900870592	Seal Kit	268122
24	R900870592	Seal Kit	268122
25	R900870592	Seal Kit	268122
5005a		Combined Relief / Anti-cav Pilot Operated	262485
19	R961003380	Seal Kit	248504
33	R961003380	Seal Kit	248504
34	R961003380	Seal Kit	248504
37	R961003380	Seal Kit	248504



Part	Model Code	Description	Number
304	30 X 4,5 MM (LIP) SEAL	Shaft Seal	243365
404	30 X 4,5 MM (LIP) SEAL	Shaft Seal	243365
403	AS-025 VIT75	O-ring	021902
421	AS-017 NBR 90	O-ring	002774
3005	AS-010 VIT 80	O-ring	225530
3006	AS-115 VIT 80	O-ring	211831
	R900772949	Seal Kit	268123
	R901195431	Seal Kit	268200

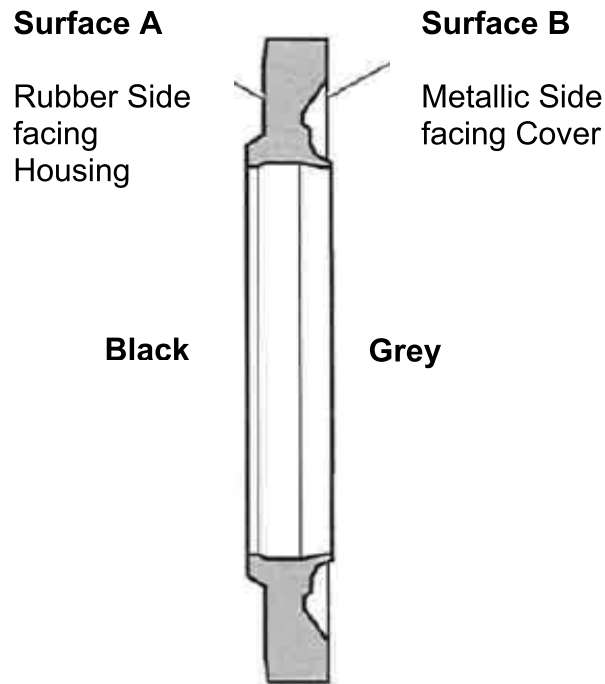
Spring Centering Kits Required

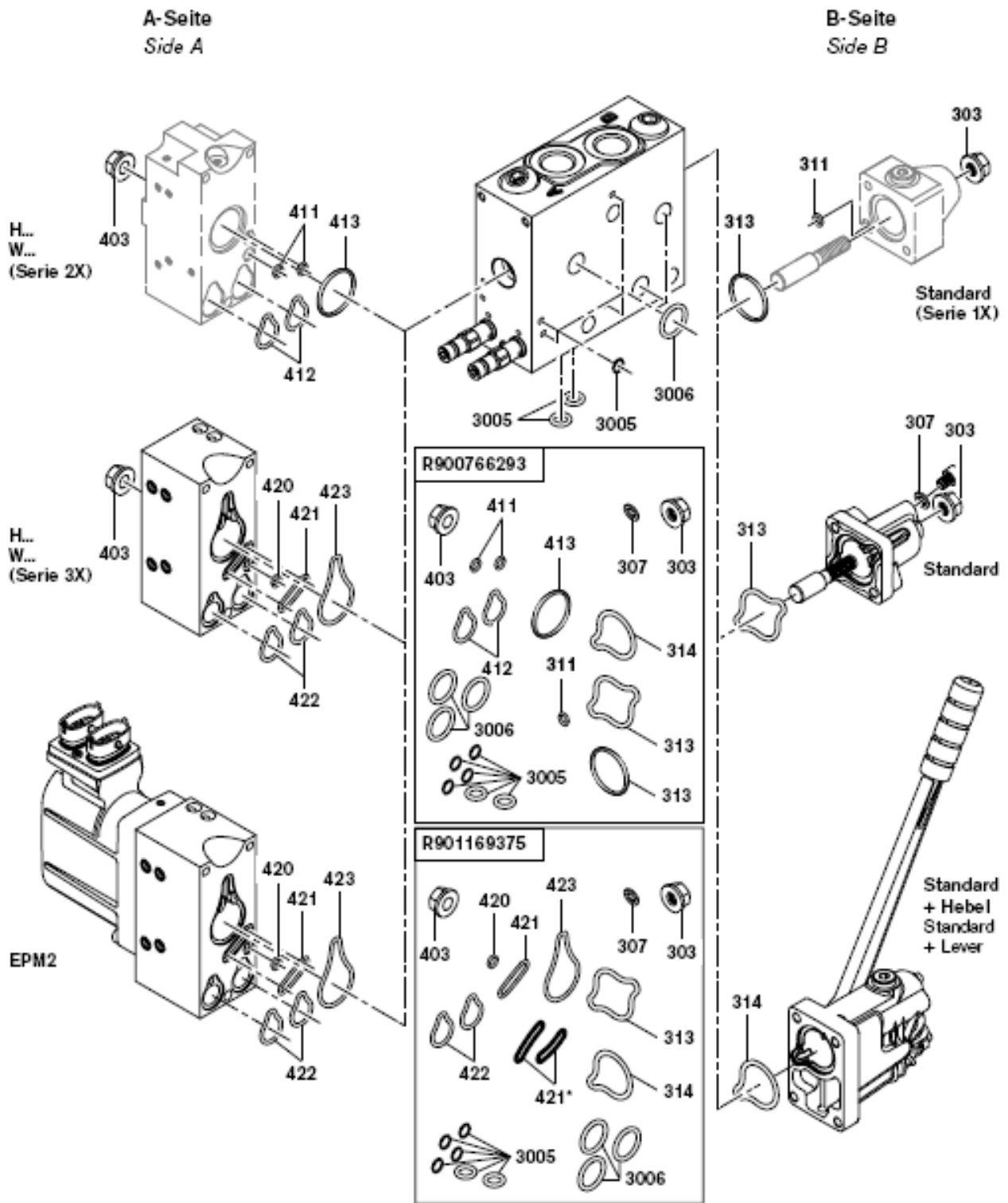
Part	Model Code	Description	Number
XXX	M4-12-20/AM M4-15-20/*PG	Cover Kit	244234
XXX	M4-12-20/_Z *PG SPRING	Spring Kit	244295

* 244234 and 244295 required for Mechanical M4 Valve Section*

Spool Seal Installation Note

Item 304 and 404 must be installed with the black seal material facing the valve and the grey steel material side must be facing the end cover. See below:

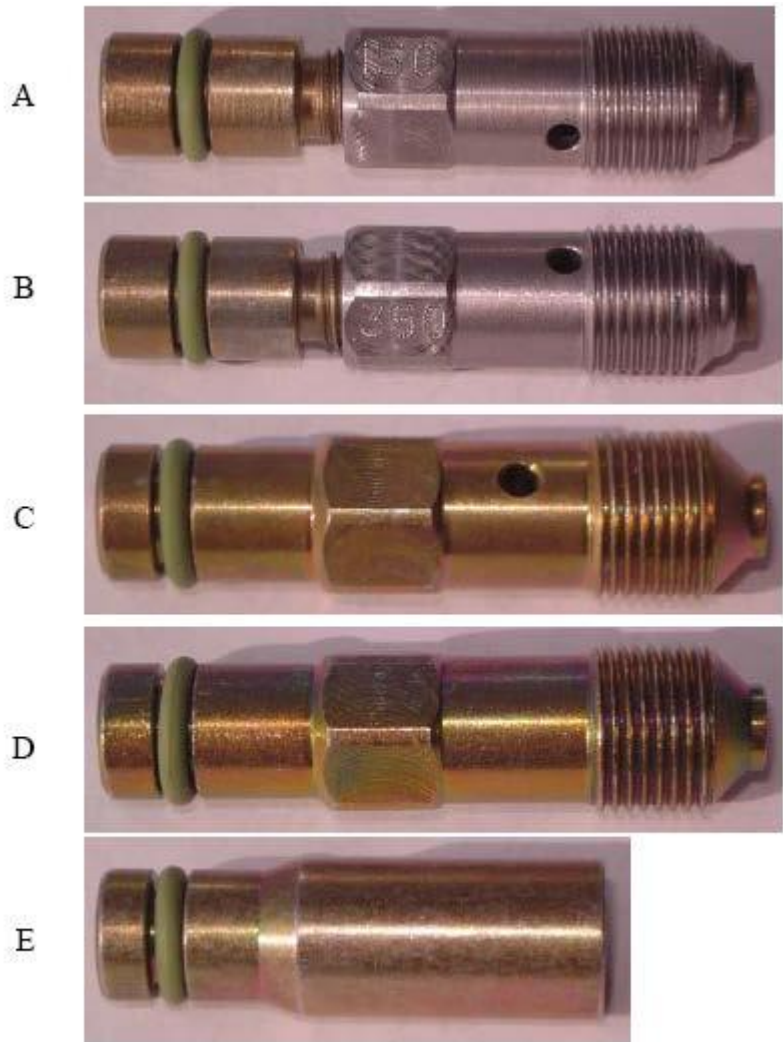




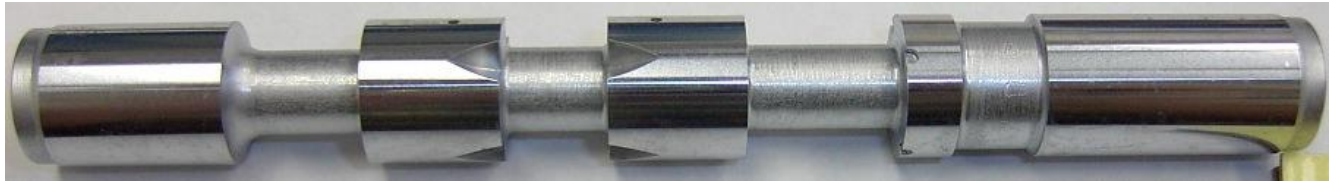
M4 PARTS MANUAL

Part	Model Code	Description	Number
Cover Series 2X			
-	R900766293	Seal Kit	222029
303	M8X1-8 VZ	Seal Nut	264726
307	00001446 SEAL	Usit Ring	030006
311	AS-009 VIT 80	O-ring	015140
313	AS-127 VIT 80	Seal	233905
	51.6X32.8X2.62 FKM80+/-5SH	Seal	264728
314	AS-124 VIT 80	O-ring	216461
403	M8X1-8 VZ	Seal Nut	264726
411	AS-009 VIT 80	O-ring	015140
412	AS-017 VIT 75	O-ring	021899
413	AS-120 VIT75	O-ring	021939
3005	AS-010 VIT 80	O-ring	225530
3006	AS-115 VIT 80	O-ring	211831

Part	Model Code	Description	Number
Cover Series 3X			
-	R901169375	Seal Kit	152798
303	M8X1-8 VZ	Seal Nut	264726
307	00001446 SEAL	Usit Ring	030006
313	51.6X32.8X2.62 FKM80+/-5SH	Seal	264728
314	AS-124 VIT 80	O-ring	216461
403	M8X1-8 VZ	Seal Nut	264726
420	AS-009 VIT 80	O-ring	015140
421	25.85X16.55X1.78 FKM80+/-5	Seal (Hydraulic Cover)	264729
	25.9X21.8X1.78 FKM80+/-5	Seal (Electro-hydraulic Cover)	264730
	AS-017 VIT 75	O-ring	021899
422	23.35X18.5X1.78 FKM80+/-5	Seal	264731
423	47.9X28.8X1.78 FKM80+/-5	Seal	264733
3005	AS-010 VIT 80	O-ring	225530
3006	AS-115 VIT 80	O-ring	211831

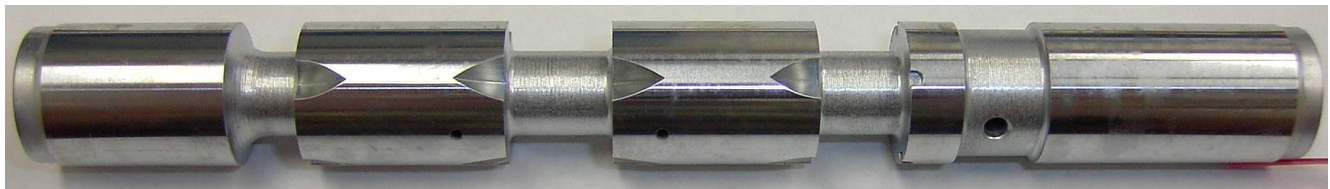


Part	Model Code	Description	Number
A	MHDBD 02 C10/150V	L.S. Relief Valve (50 – 150 Bar) or (725 – 2200 Psi)	211813
B	MHDBD 02 C10/350V	L.S. Relief Valve (150 – 350 Bar) or (2200 - 5000 Psi)	222024
C	M12X1,0X 46,0V	L.S. Unloading Plug (Drain) Used for no L.S. function	243853
D	12.0X37.0Z10.0N7.0X2.7 V	Plug for L.S. Function with L.S. Drilled Housing	214559
E	MHDB02K10/FPM*BG	Plug for L.S. Function without L.S. drilled Housing	232352
-	007038 O-RING	O-Ring for Above L/S Plug, Drin and Relief Valve	019523



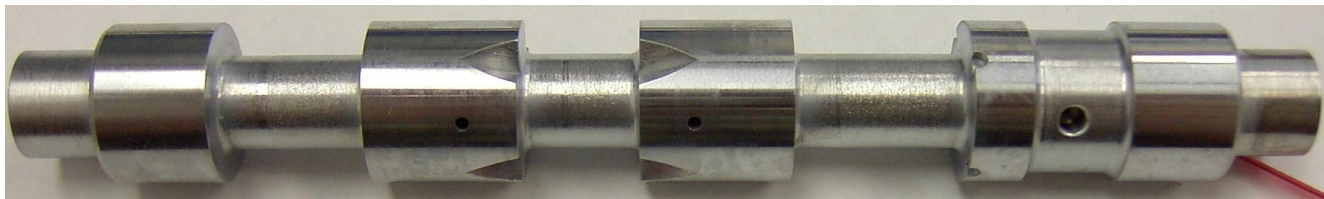
MECHANICAL ACTUATED SPOOLS FOR MOTOR FUNCTIONS

Model Code	Description	Number
M4-12-20/J012-012AZ	12 Lpm Spool	258901
M4-12-20/J045-045C	45 Lpm Spool	263869
M4-12-20/J065-065C	65 Lpm Spool	263867
M4-12-20/J120-120C	120 Lpm Spool	263871



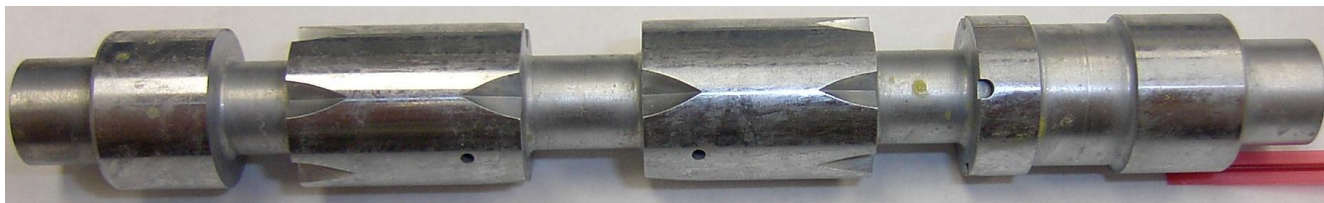
MECHANICAL ACTUATED SPOOLS FOR CYLINDER FUNCTIONS

Model Code	Description	Number
M4-12/20/E012-012C	12 Lpm Spool	263866
M4-12-20/E012-012C	12 Lpm Spool	263866
M4-12/20/E030-030C	30 Lpm Spool	263873
M4-12-20/E045-045C33-33Z	45 Lpm Spool	265210
M4-12-20/E000-045C	45 Lpm Spool Single acting	263870
M4-12-20/E065-065C	65 Lpm Spool	263868
M4-12-20/E120-120C	120 Lpm Spool	263872



ELECTRIC ACTUATED SPOOLS FOR MOTOR FUNCTIONS

Model Code	Description	Number
M4-12-20/J005-005A	5 Lpm Spool	249037
M4-12-20/J012-012A	12 Lpm Spool	243863
M4-12-20/J020-020A	20 Lpm Spool	249031
M4-12-20/J030-030A 026034	30 Lpm Spool	244220
M4-12-20/J045-045A 038052	45 Lpm Spool	244222
M4-12-20/J065-065A 057073	65 Lpm Spool	244224
M4-12-20/J085-085A 070099	85 Lpm Spool	244225
M4-12/20/J120-120A 100130	120 Lpm Spool	244226



ELECTRIC ACTUATED SPOOLS FOR CYLINDER FUNCTIONS

Model Code	Description	Number
M4-12/20/E005-005A04-04	5 Lpm Spool	249032
M4-12-20/E012-012A06-06	12 Lpm Spool	249029
M4-12-20/E020-020A12-12	20 Lpm Spool	249030
M4-12-20/E030-030A17-17	30 Lpm Spool	244214
M4-12-20/E045-045A24-24	45 Lpm Spool	244215
M4-12-20/E065-065A55-55	65 Lpm Spool	244216
M4-12-20/E085-085A85-85	85 Lpm Spool	244217
M4-12/20/E120-120AX1-X1	120 Lpm Spool	244219

Auxiliary Spool Products

M4-Spool Clamp	Spool Disassembly Tool	255586
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M4-12 Tie Bolts (29.5 ft/lbs for Nut Installation onto Stud – 22ft/lbs for Stud Installation into Inlet)

# of Sections	# of Bolts	Bosch Inlet (Standard) with Bosch Standard End Cover	Bosch Inlet (Standard) with Bosch Power Beyond End Cover	CS Inlet (Top Ported) with Standard End Cover	CS Inlet (Top Ported) with CS Power Beyond End Cover
1	3x	232374	232374	232374	232375
2	3x	232375	232375	232375	232376
3	3x	232376	232376	232376	211823
4	3x	211823	211823	211823	217076
5	3x	217076	217076	217076	222213
6	3x	222213	222213	222213	232378
7	3x	232378	232378	232378	224471
8	3x	224471	224471	224471	232379
9	3x	232379	232379	232379	209157
Mid Inlet 10	3x/3x	NA	NA	217076/217076	217076/222213
Mid Inlet 11	3x/3x	NA	NA	217076/222213	217076/232378
Mid Inlet 12	3x/3x	NA	NA	222213/222213	222213/232378
Mid Inlet 13	3x/3x	NA	NA	222213/232378	222213/224471
Mid Inlet 14	3x/3x	NA	NA	232378/232378	232378/224471
Mid Inlet 15	3x/3x	NA	NA	232378/224471	232378/232379
Mid Inlet 16	3x/3x	NA	NA	224471/224471	224471/232379

Enclosure Hardware

Part #	Standard Cut-out Quantity	Power Beyond Cut-out Quantity	Centre Inlet Cut-out Quantity	Part Description
129844	4	4	4	3/8-16x1 1/4-ss HHCS
151240	4	4	8	3/8 Flat Washer-ss
129848	4	4	8	3/8 Nylock Nut
32535	6	8	8	3/8-16x3/4-ss HHCS
129849	6	8	8	3/8 Lock Washer-ss
266704	6	8	8	M10 Flat Washer-ss
237248	16	16	16	5/32 Rivets
248859	enclosure specific	enclosure specific	enclosure specific	Snap-in Plugs
174289	4	4	4	Latch Assembly-ss
247275	1	1	1	Red Rexroth Placard
119756	2	2	2	Handles
128474	1	1	1	Strain Relief
240018	1	1	1	Corrosion Label
136369	0	0	4	3/8-16x1-ss HHCS

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