

M4 Parts Manual

The Drive & Control Company

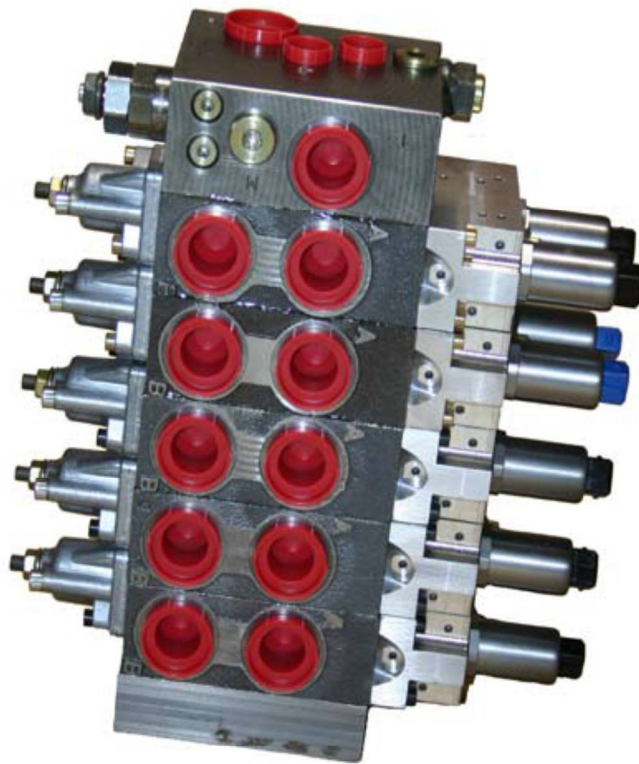


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Technical data

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
			l/min	150 with lateral inlet element
	A, B	$q_{V, \max}$	l/min	130
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				Class 20/18/15, for this we recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$
Cleanliness class to ISO 4406 (c)				

Electrical

Electrical pilot control valves	FTWE 2 K...; see RE 58008 FTDRE 2 K...; see RE 58032	} without plug-in connector ¹⁾
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	

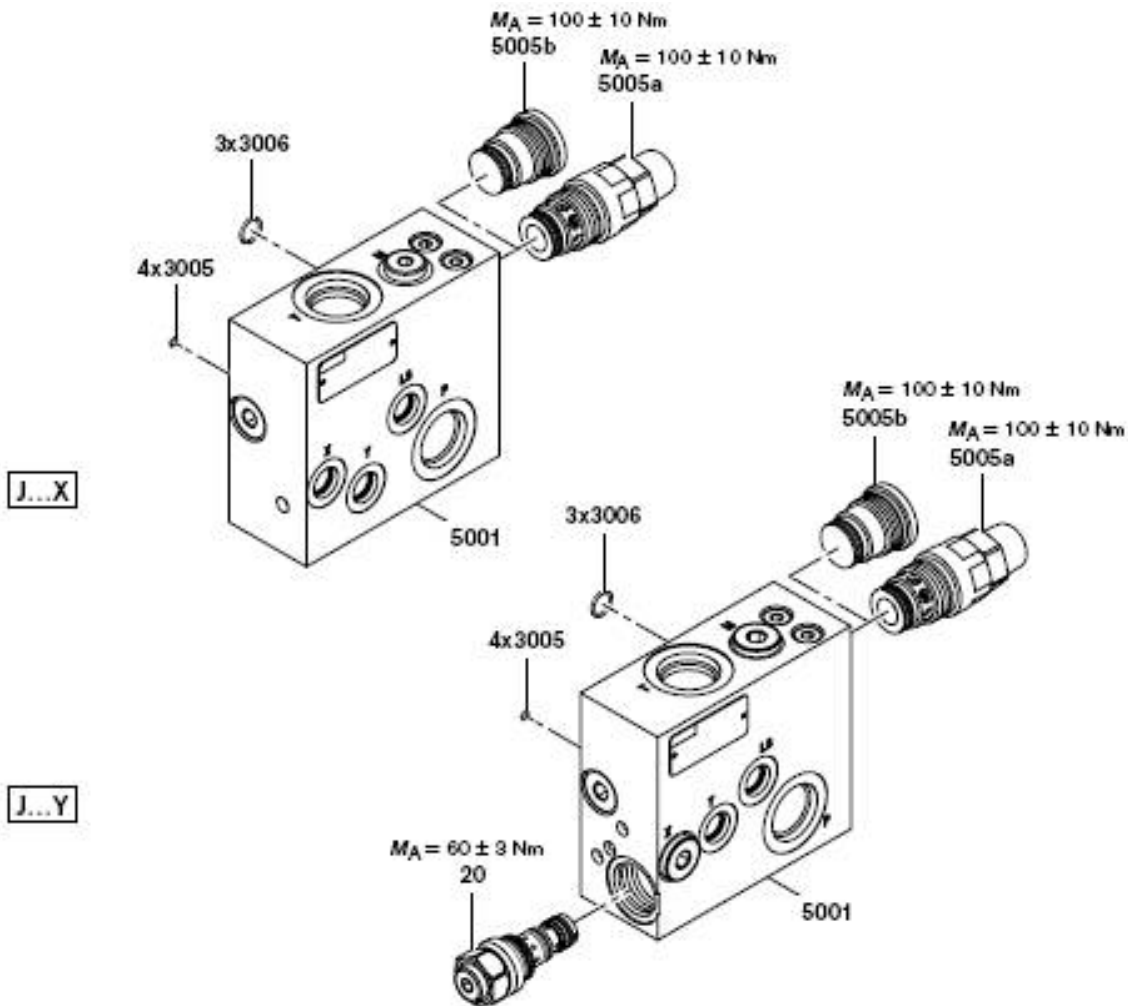
¹⁾ Plug-in connectors are not included in the scope of supply and must be ordered separately.

 **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

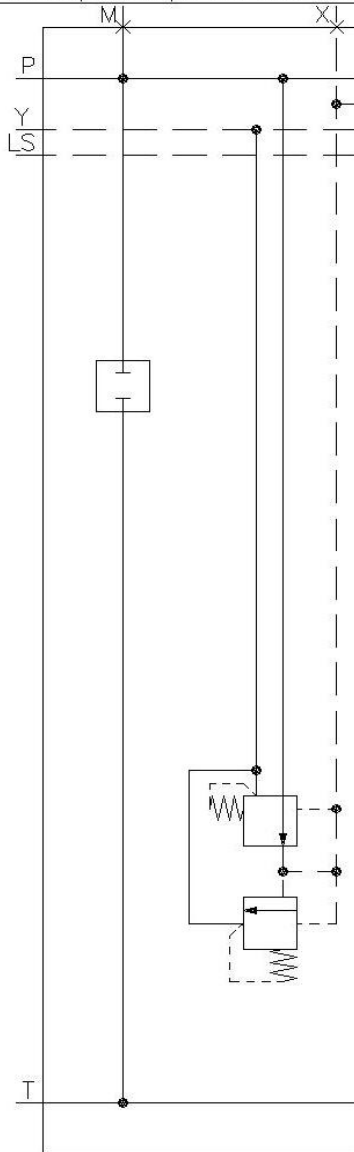


Part	Model Code	Description	Number
5001	M4-12-1X/J(...)X V19	Closed center inlet side ported external pilot	R901015900 (224133)
5001	M4-12-1X/J(...)Y V19	Closed center inlet side ported internal pilot	R901015899 (211712)
5005b	MHDB22K10/VFC	Plug for Relief Valve Cavity	R900329140 (170633)
5005a	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
3006	AS-115 VIT 80	O-ring	R900009093 (211831)
3005	AS-010 VIT 80	O-ring	R900004492 (225530)
20	MHDRDB04KO-1X/030VLA	Pressure Reducing Valve	R900641606 (247372)

M4 PARTS MANUAL

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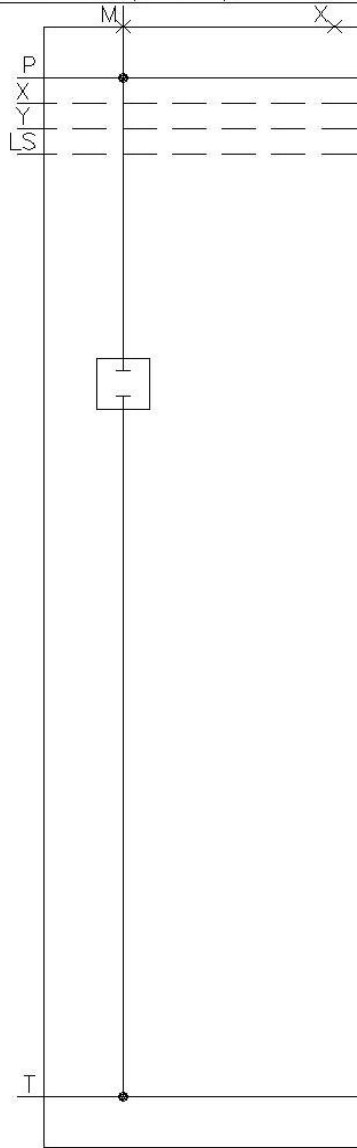
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		A			
Schematic		Customer Name:		BRCA	
		Customer order No:		COMPU-SPREAD	
Reference drawings:					
Drawn: 08-04-28 By: g.b	Inventory Code:		Description: M4-12-1X~J(XXX)Y V19 INLET ELEMENT CLOSED CENTRE, W/O PRIMARY RELIEF, W/INTERNAL PILOT OIL SUPPLY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

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

M4 PARTS MANUAL

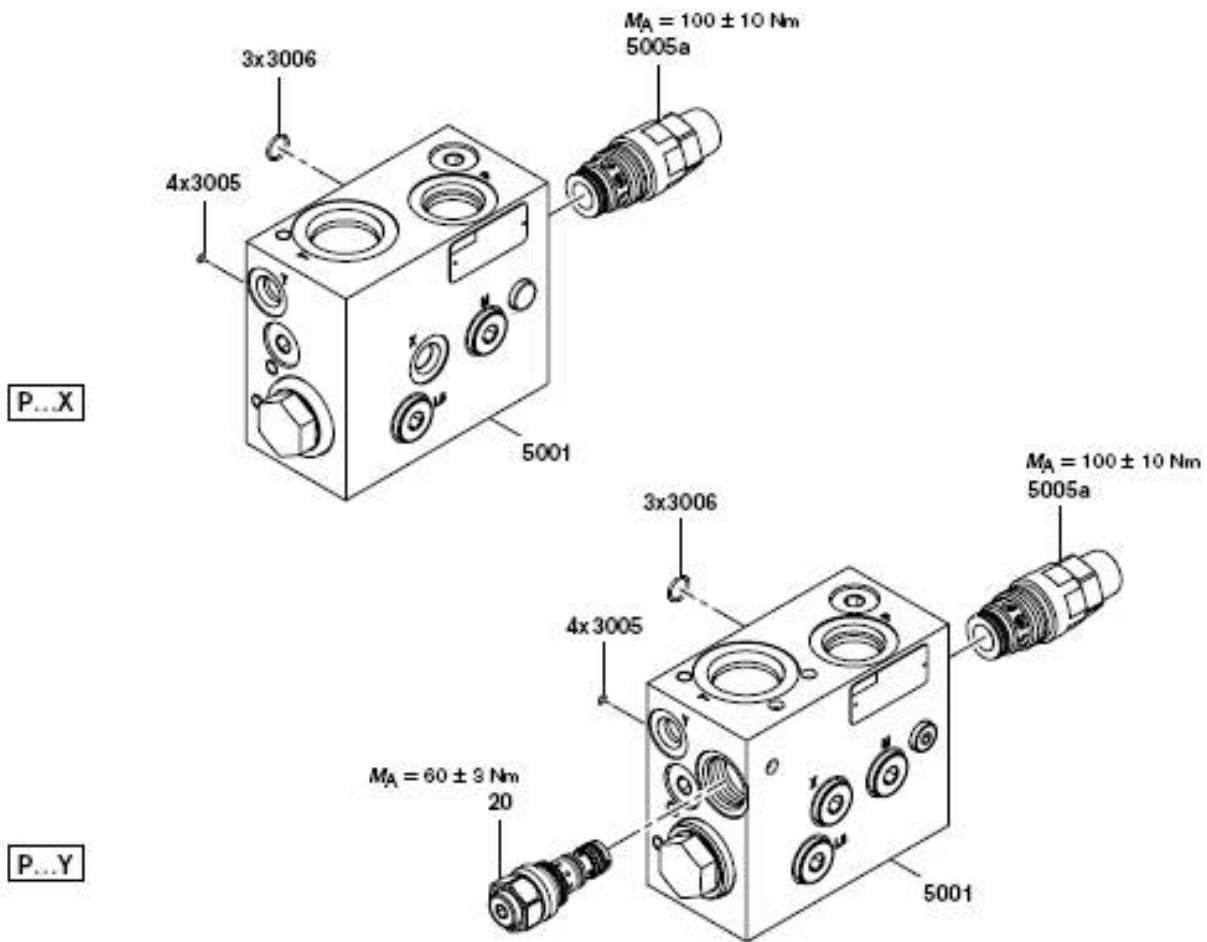
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			BRCA	
Customer order No:		COMPU-SPREAD		
Reference drawings:				
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Chk'd: 08-04-28 By: Jc	224133			
App'd: By:	Pressure:			
Rexroth Bosch Group	Sheet:	Scale:	Drawing number:	Rev:
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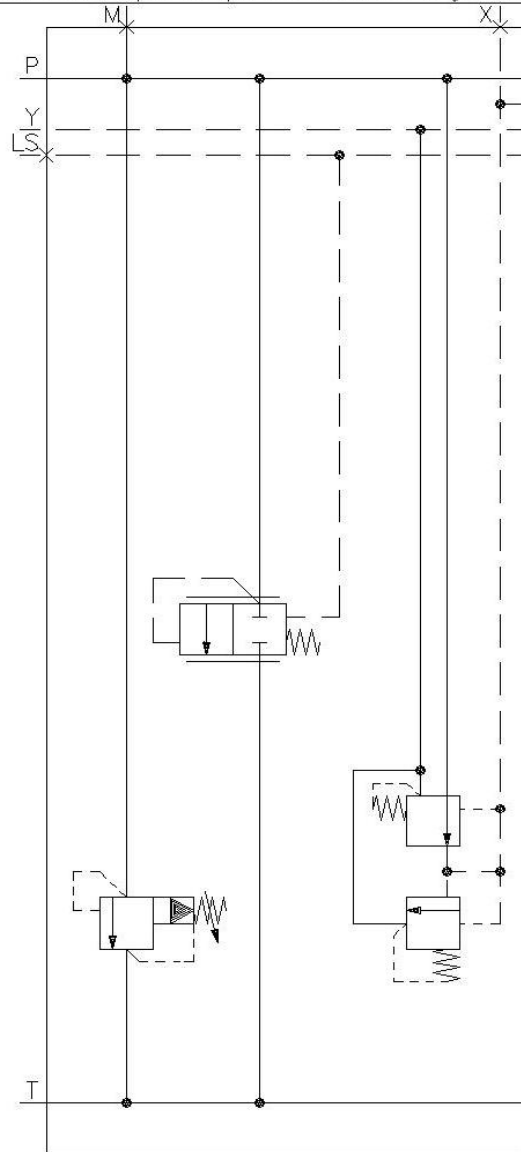
Bosch Rexroth Canada Corp. 490 Prince Charles Drive, Welland, Ontario, Canada L3B 5X7
www.boschrexroth.ca/compuspread



Part	Model Code	Description	Number
5001	M4-12-1X/P(XXX)X	Open center inlet side ported external pilot	R901015904 (232328)
5001	M4-12-1X/P(XXX)Y	Open center inlet side ported internal pilot	R901015902 (211713)
5005a	MHDBN22K2-3X/420VFC	Anti-cavitations Relief Valve	R901192378 (262485)
3006	AS-115 VIT 80	O-ring	R900009093 (211831)
3005	AS-010 VIT 80	O-ring	R900004492 (225530)
20	MHDRDB04KO-1X/030VLA	Pressure Reducing Valve	R900641606 (247372)

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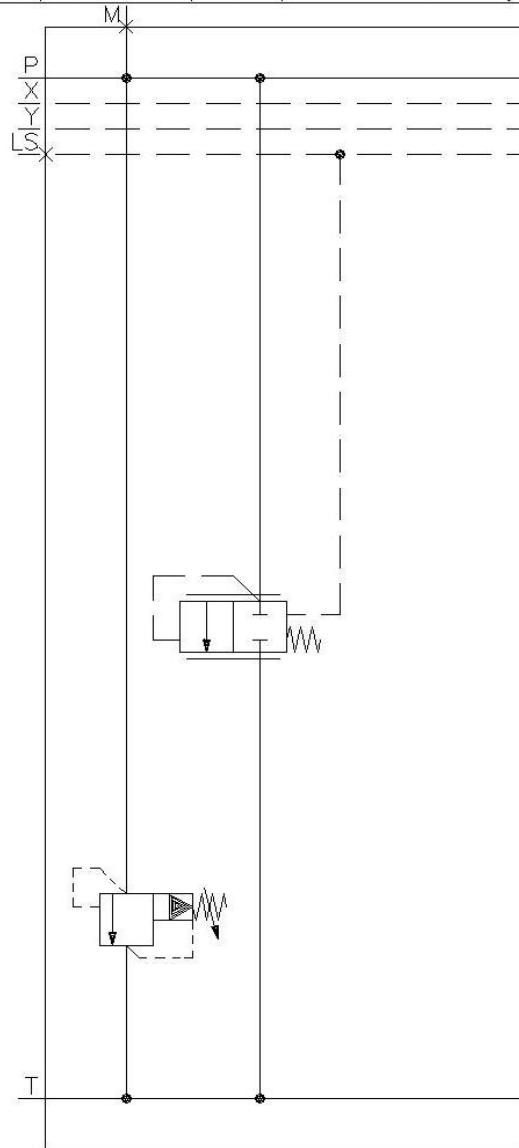
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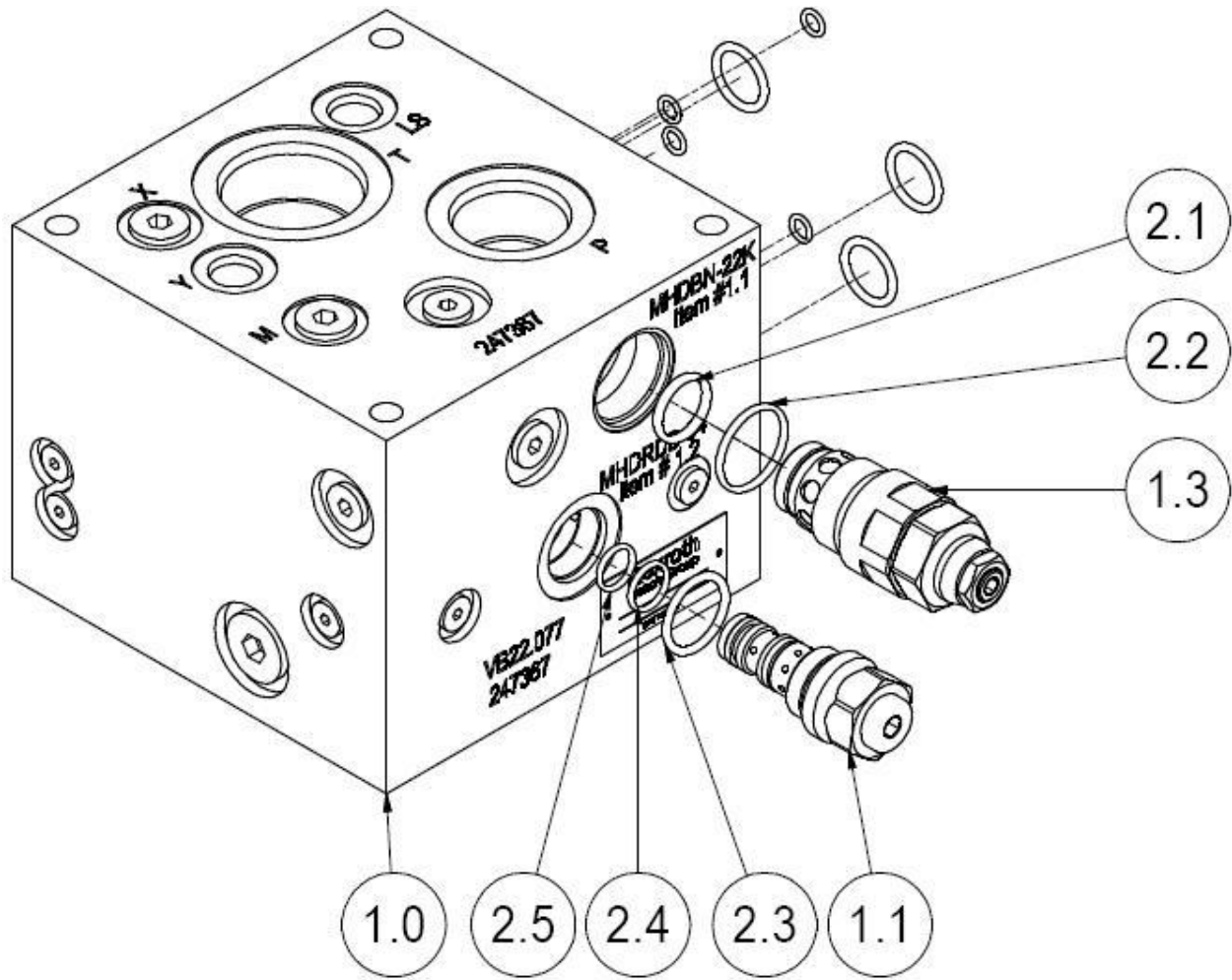
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		Schematic	Customer Name: BRCA		
			Customer order No: COMPU-SPREAD		
		Reference drawings:			
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Chk'd: 08-04-28 By: Jc	Pressure:				
App'd: By:					
Rexroth Bosch Group		Sheet: 1 of 1	Scale: 1:1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

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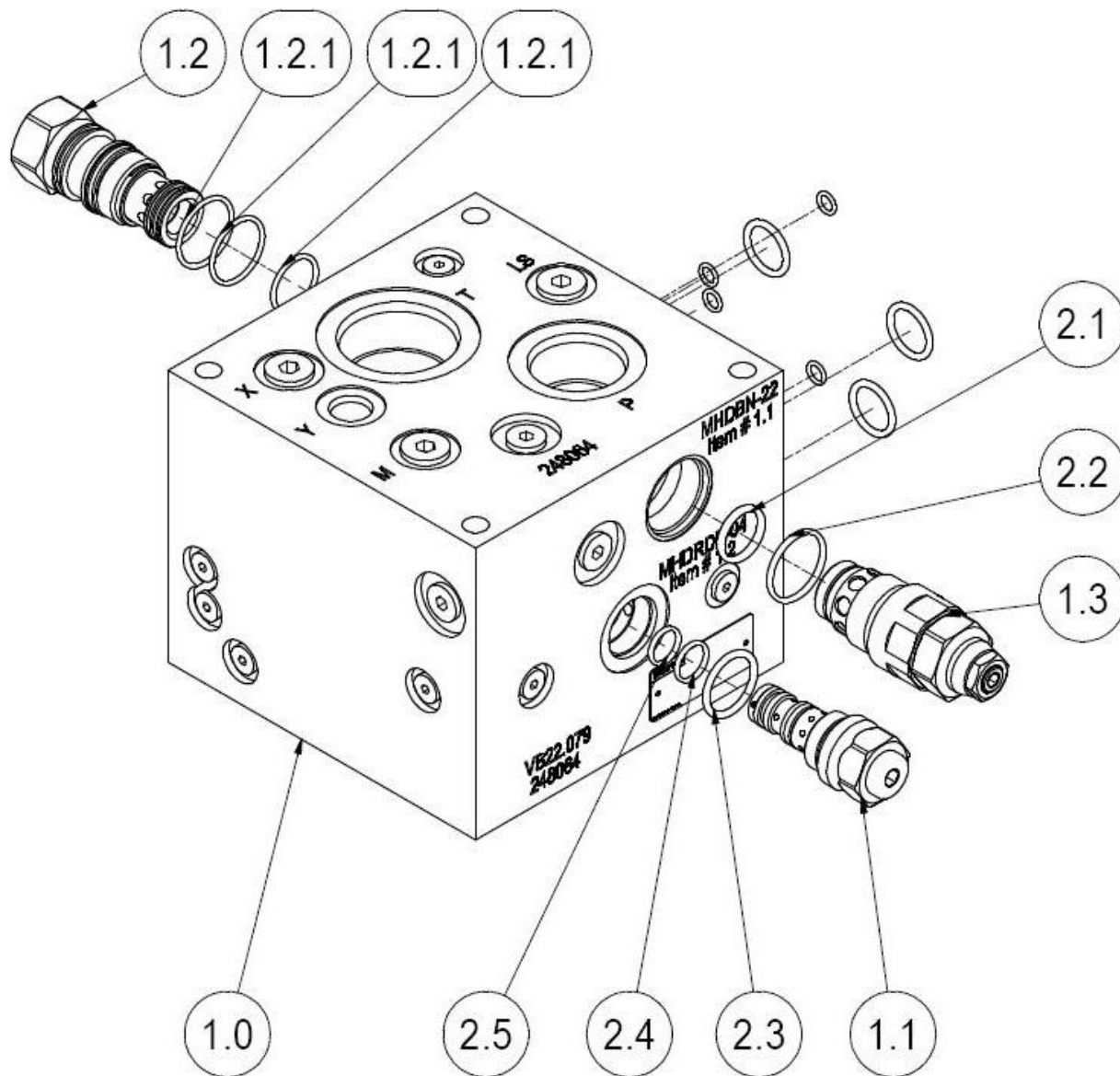


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		Schematic	Customer Name: BRCA		
			Customer order No: COMPU-SPREAD		
			Reference drawings:		
Drawn: 08-04-28 By: g.b	Inventory Code: 232328	Description: M4-12-1X/P(XXX)X INLET ELEMENT OPEN CENTRE, W/PRIMARY RELIEF VALVE W/EXT. OIL SUPPLY			
Chk'd: 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



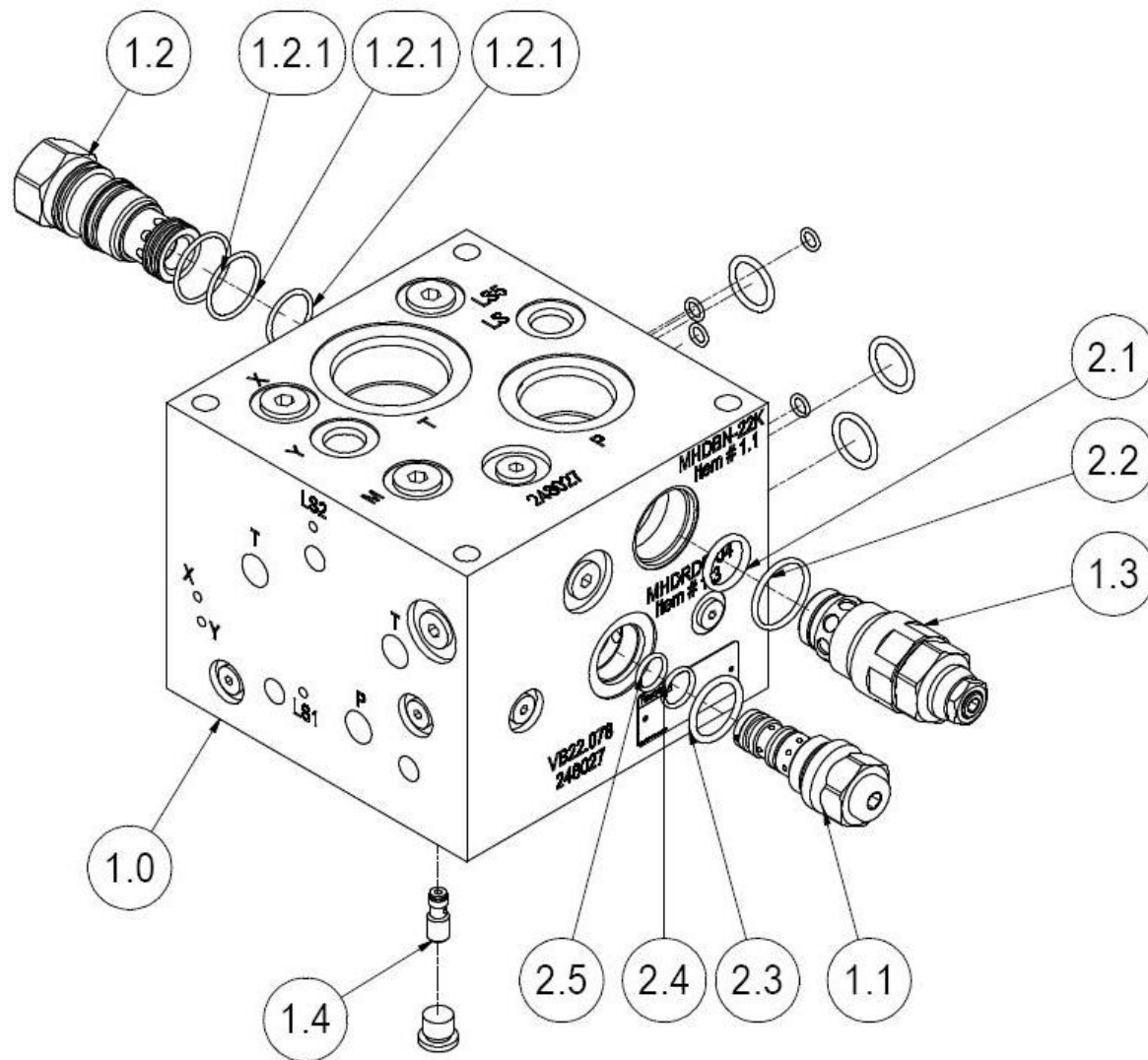
Part	Model Code	Description	Number
1.0	M4-12-2X/J(XXX)Y(TP)V19	Closed center inlet top ported	R987379564 (247369)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641601 (247372)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (015904)
2.5	AS-018 VIT 80	O-Ring	(239120)

* 247369 Inlet Manifold Replaced by Inlet Manifold R987379564 262595 in 01-01-2011*



Part	Model Code	Description	Number
1.0	M4-12-2X/P(XXX)Y(TP)	Open center inlet top ported	R987379574 (248067)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641606 (247372)
1.2	LRFC-XGV	Bypass compensator valve	R987379487 (248028)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (015904)
2.5	AS-018 VIT 80	O-Ring	(239120)

248067 Inlet Manifold Replaced by Inlet Manifold R987379574 262610 in 01-01-2011



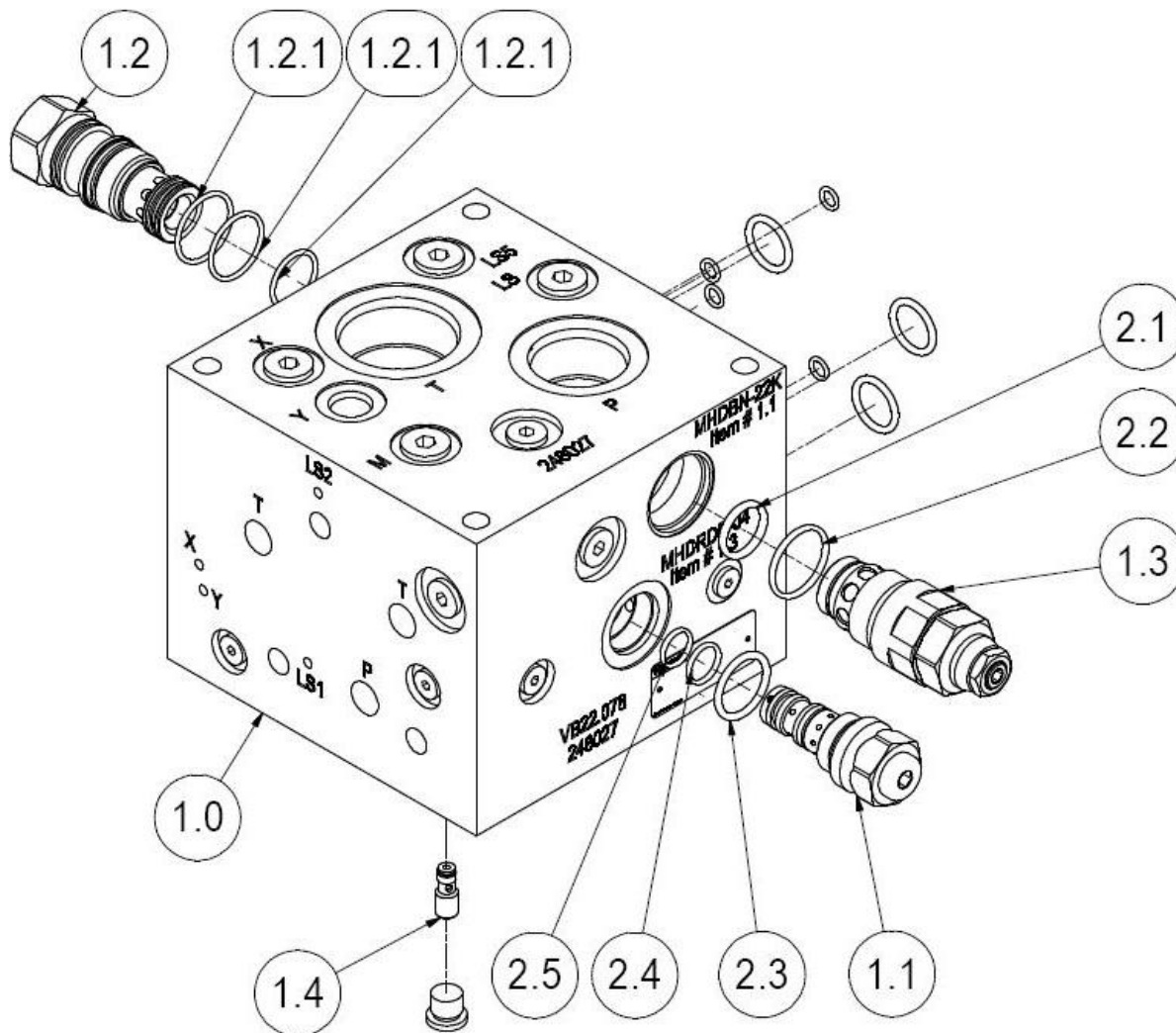
Part	Model Code	Description	Number
1.0	M4-12-2X/JZ(XXX)Y(TP)V19	Center Inlet for closed center systems	R987379566 (248040)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641606 (247372)
1.2	CAVITY PLUG, XBCAXXV	Cavity Plug	R904021166 (248042)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
1.4	MHSU2KA1X/420-7MX	Cartridge Shuttle Valve	R900541374 (248087)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (015904)
2.5	AS-018 VIT 80	O-Ring)239120)

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M4 PARTS MANUAL



Part	Model Code	Description	Number
1.0	M4-12-2X/PZ(XXX)Y(TP)V19	Center inlet for Open center systems	R987379575 (248041)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641606 (247372)
1.2	LRFC-XGV	Bypass compensator valve	R987379487 (248028)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
1.4	MHSU2KA1X/420-7MX	Cartridge Shuttle Valve	R900541374 (248087)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (015904)
2.5	AS-018 VIT 80	O-Ring	(239120)

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1 VB22.078 : PART NUMBER 248027
2 VB22.078.A2 : PART NUMBER 248041

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

Stamp:

DRAWN: 2006-09-08 By: VK	CHECKED: 2006-09-10 By: Len K.	APPROVED: 2007-08-29 By: g.l.b
Inventory Code: 248041		Max Pressure: 350 bar

DESCRIPTION:

248041 M4-12-2X~PZ(XXX)Y(TP)VP
 OPEN CENTRE MID INLET
 (VB22.078.A2)

REVISIONS:

Rev.	Description
1	47-CSS-248041-0-B
6	

CONNECTIONS:

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
GP/M(GP)X1Y12LS1S	6				X				X				X				
Y	6				X				X				X				
TANK	20				X				X				X				
PRESSURE	16				X				X				X				

MANIFOLD MACHINING DETAIL:

VB22.078 : P/N: 248041

1.1: MHDGN2K2-2X/420VFC : P/N:031835

1.2: LRFC-XGV (SUN) : P/N:248028

1.3: MHDREB04K0-1X/030VLA : P/N:247372

1.4: MHSU 2 KA1X/420-TMX : P/N:248087

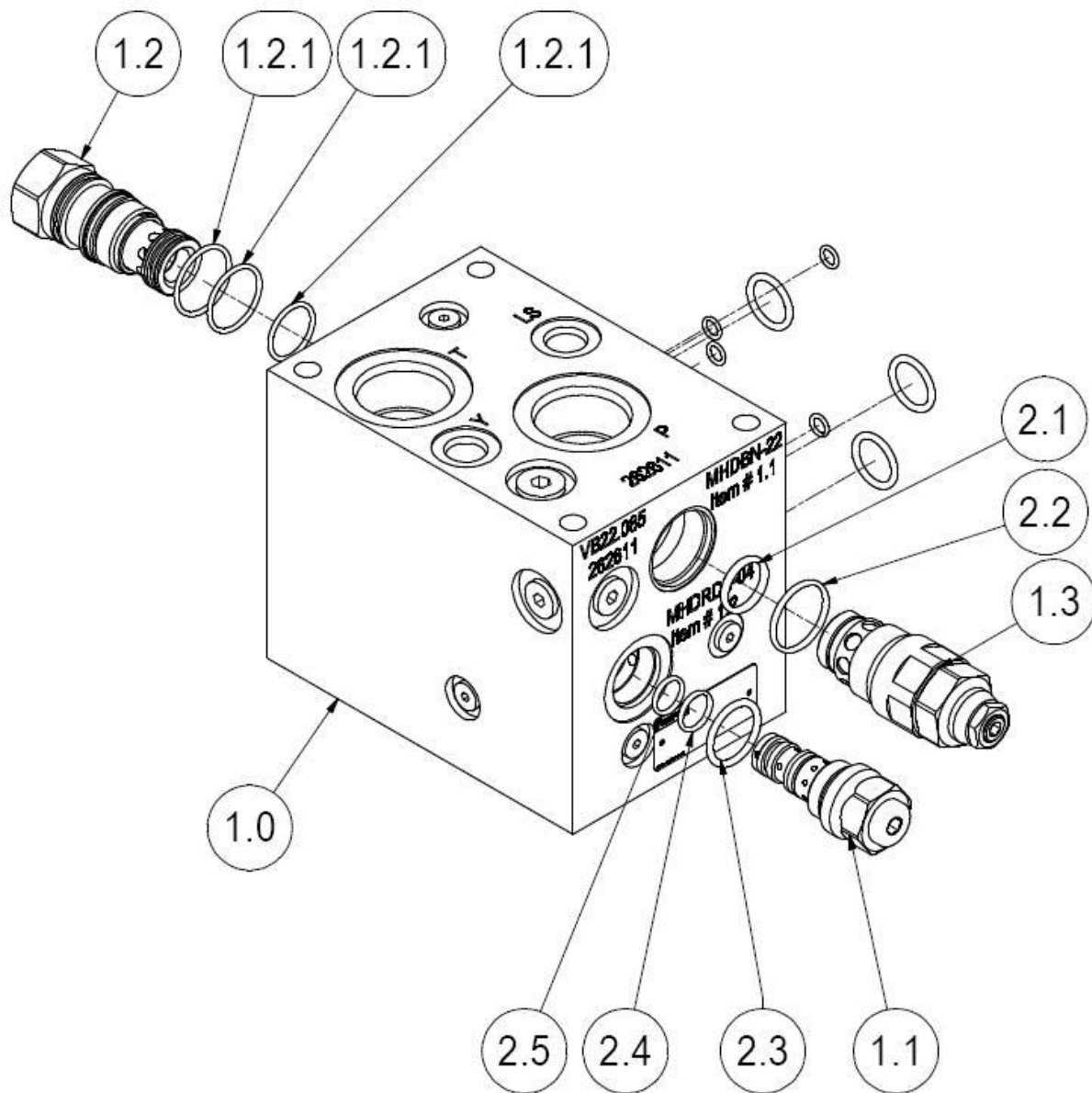
PORTS SIZES:

PRESSURE : #16 SAE O-RING BOSS

TANK : #20 SAE O-RING BOSS

M.X.Y1LS1S5.GP.M(GP)Y1.Y2 : #06 SAE O-RING BOSS

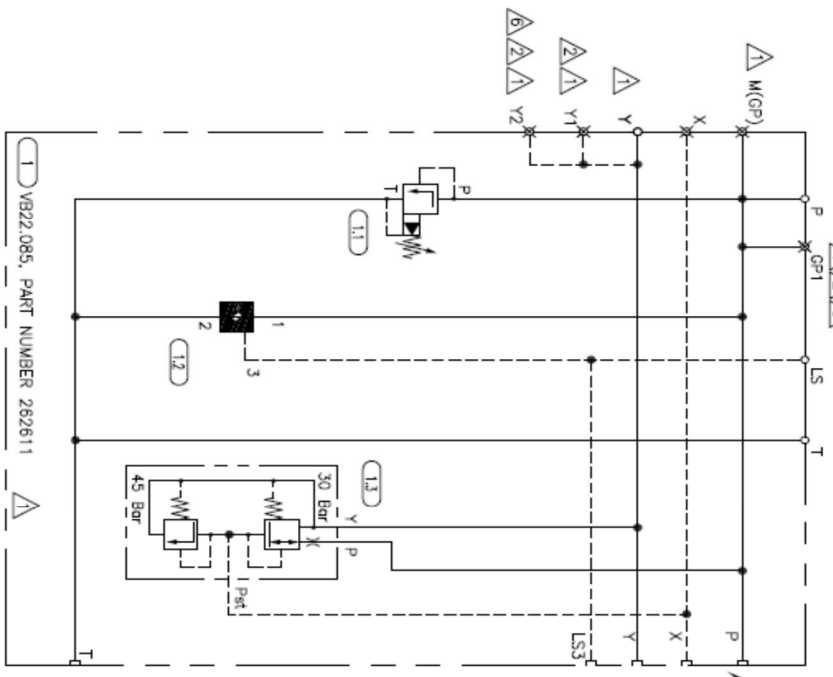
4 x 3/8" -16 UNC x 15.00 mm DEEP, MOUNTING HOLES
 6X M10 THREAD HOLES TO RECEIVE STUD BOLTS ON THE BOTH SECTIONAL SIDES
 MID-INLET for OPEN CENTRE CIRCUIT
 - Top Ported c/w Primary Relief Valve,
 - Internal Pilot Oil Supply,
 - With SAE Ports.



Part	Model Code	Description	Number
1.0	M4-12-2X/J(XXX)Y V19 CS	Closed center inlet top ported	R987379564 (262595)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641606 (247372)
1.2	CAVITY PLUG, XBCAXXV	Cavity Plug	R409021166 (248042)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (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.

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

VB22.085.A1, PART NUMBER 262811

CONNECTION:	SIZE:	FOR PIPE	FOR TUBE	FEMALE NPT	37° FLARE-0 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
W(GP), X, Y, Z, GP1	6					X	X						X				
Y (DRAIN)	6					X	X						X				
LOAD SENSE (LS)	6					X	X						X				
TANK (T)	16					X	X						X				
PRESSURE (P)	16					X	X						X				

Stamp: _____

Size: B

Customer Name: BRCA

Customer Order No.: COMPUS-SEB00

Reference drawings: 47-46-262811-0-0

Description: 262595 M4-12-2X~J(XXX)(TP)V19 CLOSED CENTRE INLET

Inventory Code: 262595

Max Pressure: 400 BAR (MAX.)

App'd: _____

By: _____

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

Drawn: 2007-11-12 By: ET

Stamp: _____

Sheet: 1 of 1

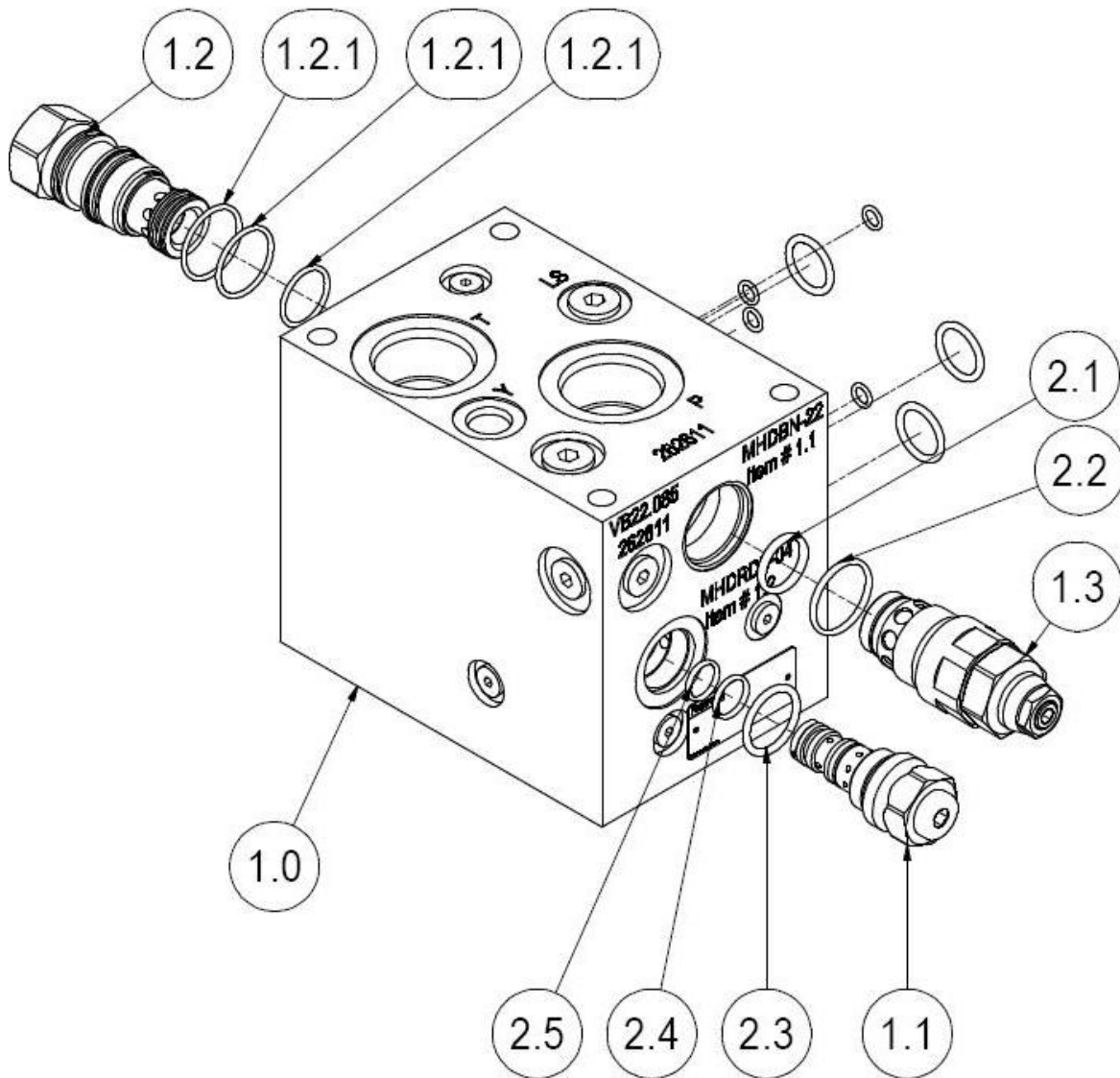
Scale: NTS

Drawing number: 47-CSS-262595-0-B

Rev: 6

Bosch Rexroth

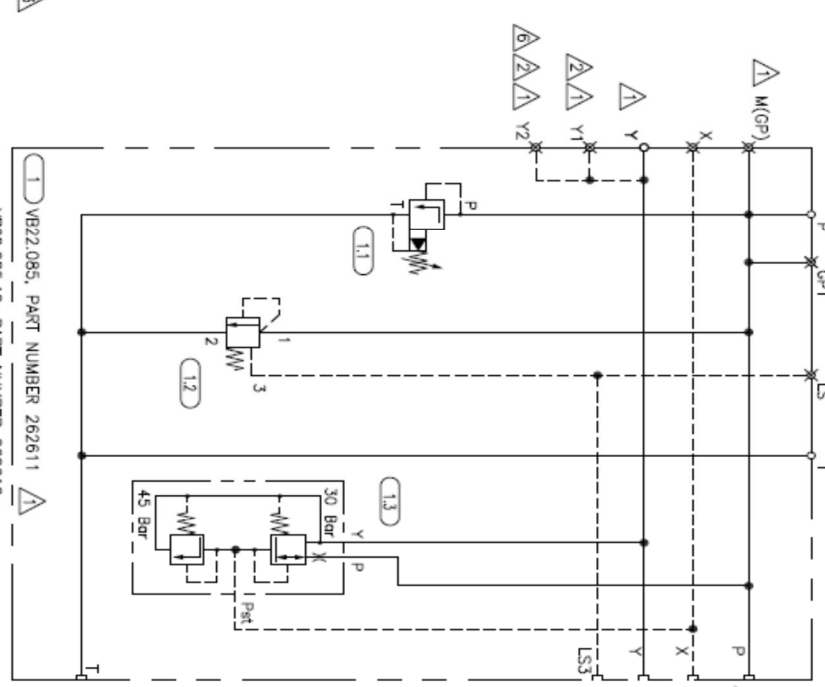
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Part	Model Code	Description	Number
1.0	M4-12-2X/P(XXX)Y V19 CS	Open center inlet top ported	R987379574 (262610)
1.1	MHDRDB04KO-1X/030VLA	Pressure reducing Relieving Valve	R900641606 (247372)
1.2	LRFC-XGV	Bypass compensator valve	R987379487 (248028)
1.3	MHDBN22K2-3X/420VFC	Anti-cavitation Relief Valve	R901162378 (262485)
2.1	AS-115 VIT 80	O-Ring	R900009093 (211831)
2.2	AS-119 VIT 80	O-Ring	R900002525 (225528)
2.3	AS-014 VIT 80	O-Ring	R900009098 (225526)
2.4	AS-013 VIT 80	O-Ring	R987375396 (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
1	2010-08-25	VK	18463
2	2010-08-25	VK	18462
3	2010-08-25	VK	18461
4	2010-04-07	DT	18115
5	2009-07-17	DT	17431
6	2009-04-30	DT	17286

Stamp: _____

Size: **B**

Customer Name: BRCA

Customer order No: _____

Reference drawings: COMPU-SPREAD

Description: 262610 M4-12-2X-P(XXX)(TP)V19 OPEN CENTRE INLET

Inventory Code: 262610

Max Pressure: 400 BAR (MAX.)

App'd: _____

Scale: _____

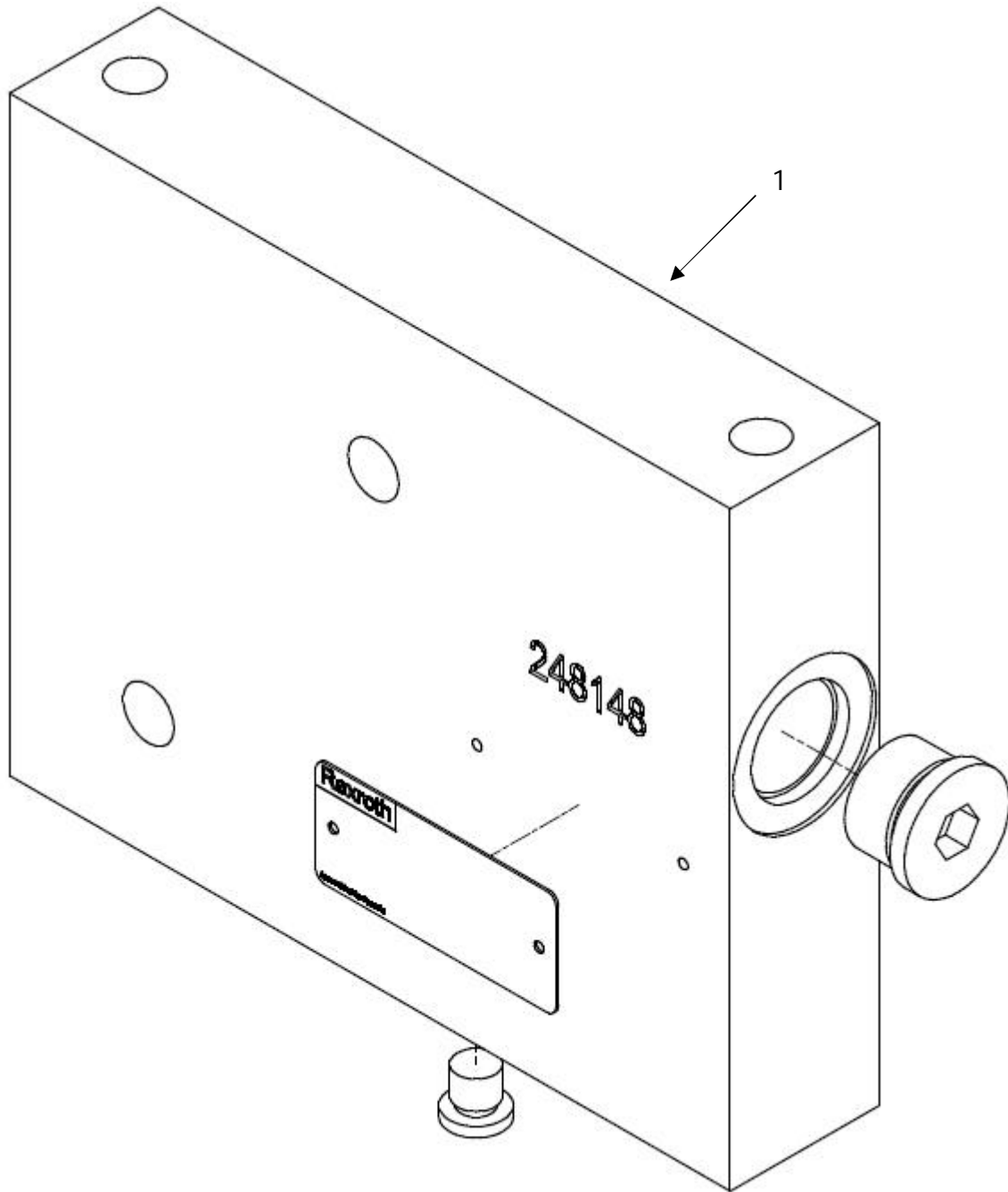
Ordering number: 47-CSS-262610-0-B

Sheet: 1 of 1

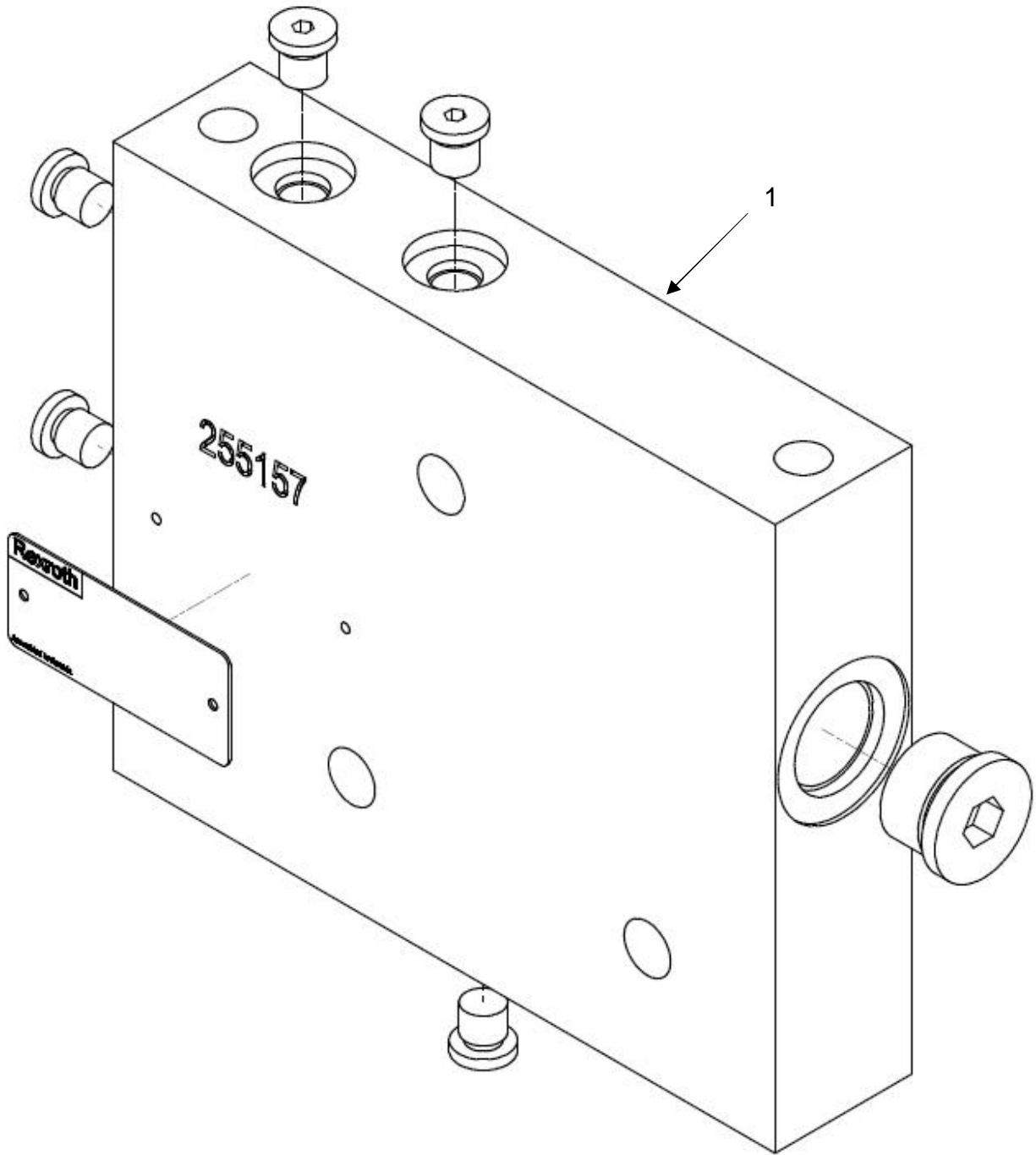
NTS

Rev: 6

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



Part	Model Code	Description	Number
1	M4-12-2X/LATT END COVER ASSEMBLY	End Cover Right Side (Assy.)	R987379569 (243352)
-	M4-12-2X/LATT END COVER BARE BLOCK	End Cover Right Side (Bare)	R987379570 (248148)



Part	Model Code	Description	Number
1	M4-12-2X/LUTT END COVER ASSEMBLY	End Cover Left Side (Assy.)	R987379571 (270297)
-	M4-12-2X/LUTT END COVER BARE	End Cover Left Side (Bare)	R987384453 (255157)

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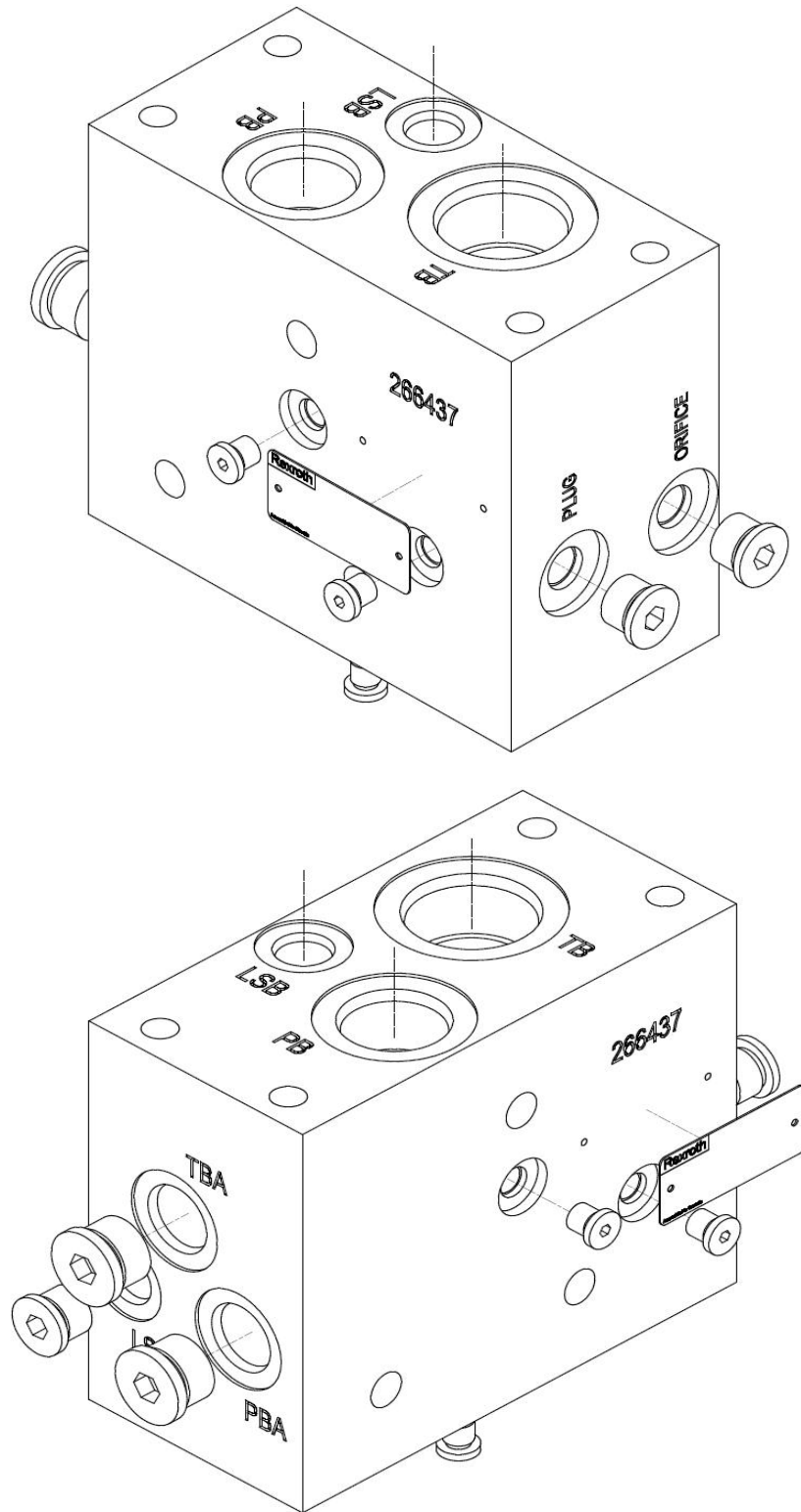
SPECIFICATIONS:
 MANIFOLD ASSEMBLY:
 M4-12-2X/LUTT
 MANIFOLD MACHINING DETAIL: P/N: 255157

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

	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

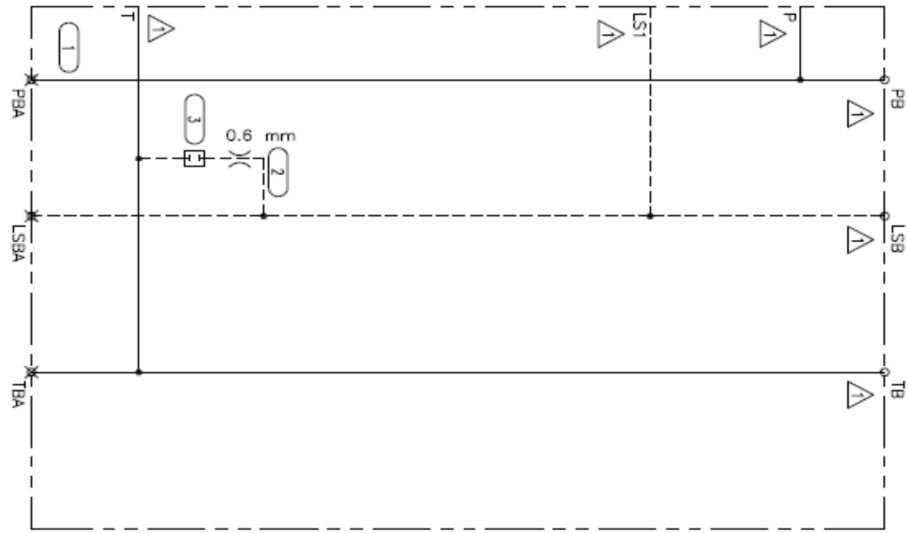
Revision	Date	Name	ECN Number

Drawn: 2007-03-18 By: V.K.	Inventory Code: 255157	Description: 255157 M4-12-2X~LUTT
CHK'd: 2007-03-18 By: Len K	Max Pressure: 350 bar	LEFT SIDE END COVER ELEMENT
App'd:	Scale:	Reference drawings: COMPU-SPREAD
Rexroth Bosch Group		Customer Name: BRCA
Sheet: 1 of 1		Customer order No:
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	R987379573 (267037)
2	157934 ORIFICE	Bleed Orifice	R900157934 (021085)
3	DIN906-5.8M8X1	Bleed Plug	R900023099 (019126)
-	M4-12-2X-02 END COVER BARE BLOCK	Bare Block	R987379674 (266437)

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R:\Manufacturing\Compuspread-M\CS SCH\47-CSS-267037-8 DESIGN 2010-03-18 14:26
DESIGN 2010-03-18 14:10

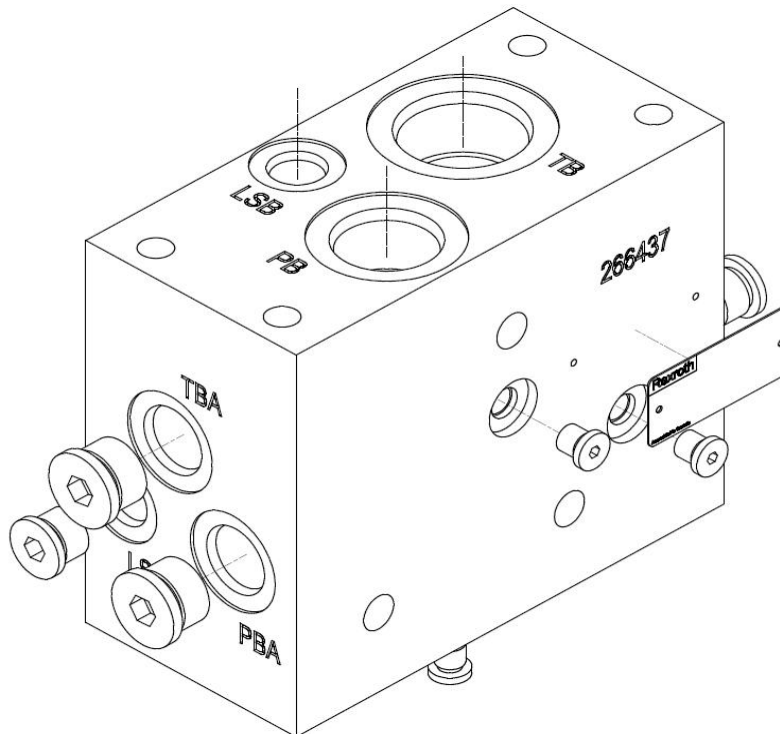
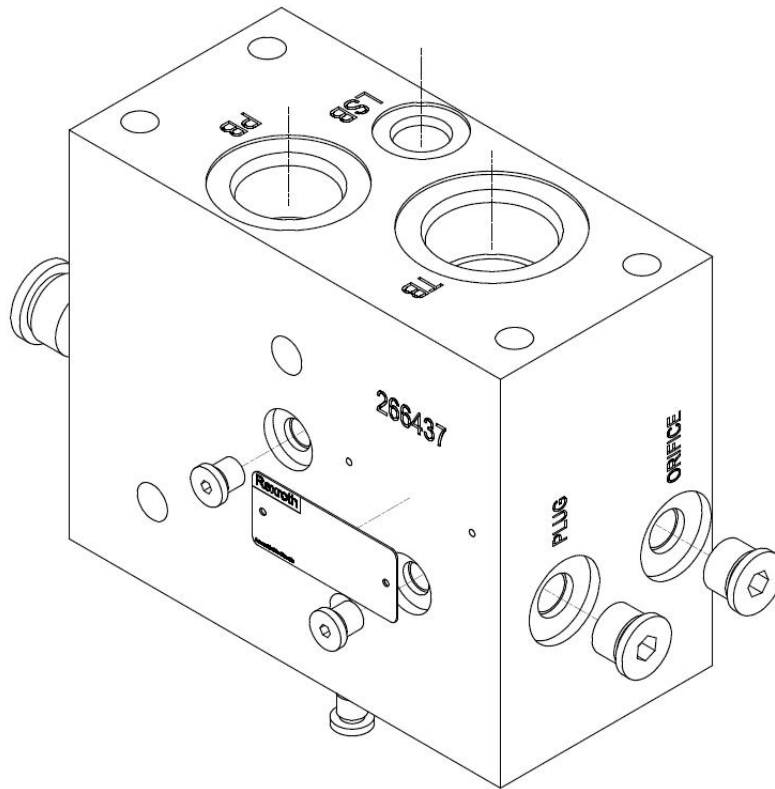
SPECIFICATIONS:
MANIFOLD ASSEMBLY: : P/N: 267037
 M4-12-2X/LZPT(TP)-S2 V19
MANIFOLD MACHINING DETAIL: : P/N: 266437
 4 x 3/8" -16 UNC x 15.00 mm DEEP MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for R.H.Side; Without O-Ring Grooves
 - Top Ported
 - With SAE Ports.

△
△
△

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

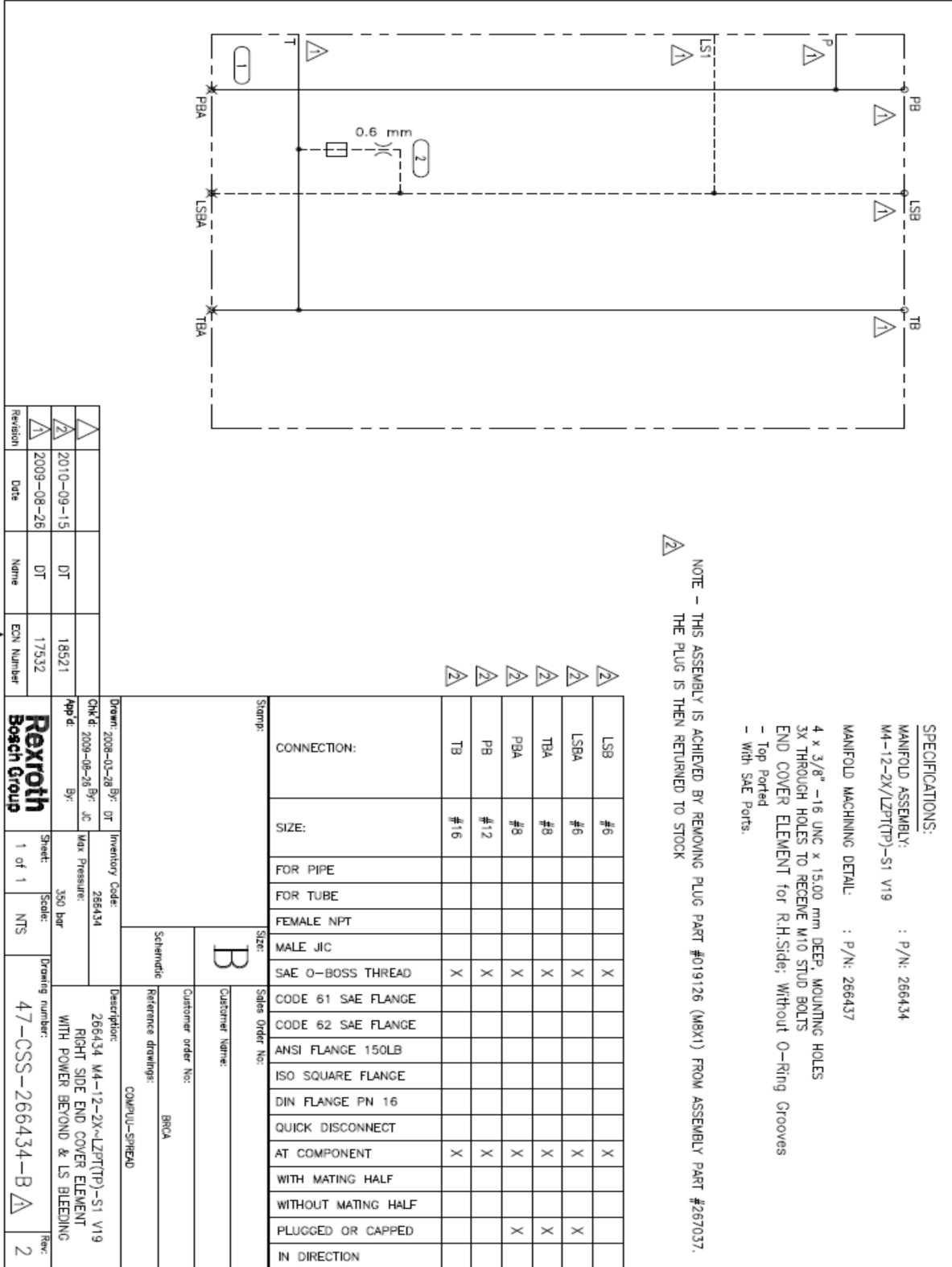
Drawn: 2008-03-26 By: DT	Inventory Code: 267037	Description: 267037 M4-12-2X~LZPT(TP)-S2 V19 RIGHT SIDE END COVER ELEMENT WITH POWER BEYOND
App'd: 2009-08-26 By: JC	Max Pressure: 350 bar	Reference drawings: COMPU-SMHEAD
Sheet: 1 of 1	Scale: NTS	Drawing number: 47-CSS-267037-B
		Rev: 2

Stamp:	Size: B	Sales Order No:
Customer Name:	Customer order No:	BRCA
Connection:	SIZE:	FOR PIPE
LSBA #6	#8	FOR TUBE
TBA #8	#6	FEMALE NPT
PBA #8	#16	MALE JIC
LSB #6	#12	SAE O-BOSS THREAD
TB #16		CODE 61 SAE FLANGE
PB #12		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/LZPT(TP) S1 V19 END COVER ASSY.	Power Beyond Cover	R987379572 (266434)
2	157934 ORIFICE	Bleed Orifice	R900157934 (021085)

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NOTE - THIS ASSEMBLY IS ACHIEVED BY REMOVING PLUG PART #019126 (M8X1) FROM ASSEMBLY PART #267037. THE PLUG IS THEN RETURNED TO STOCK

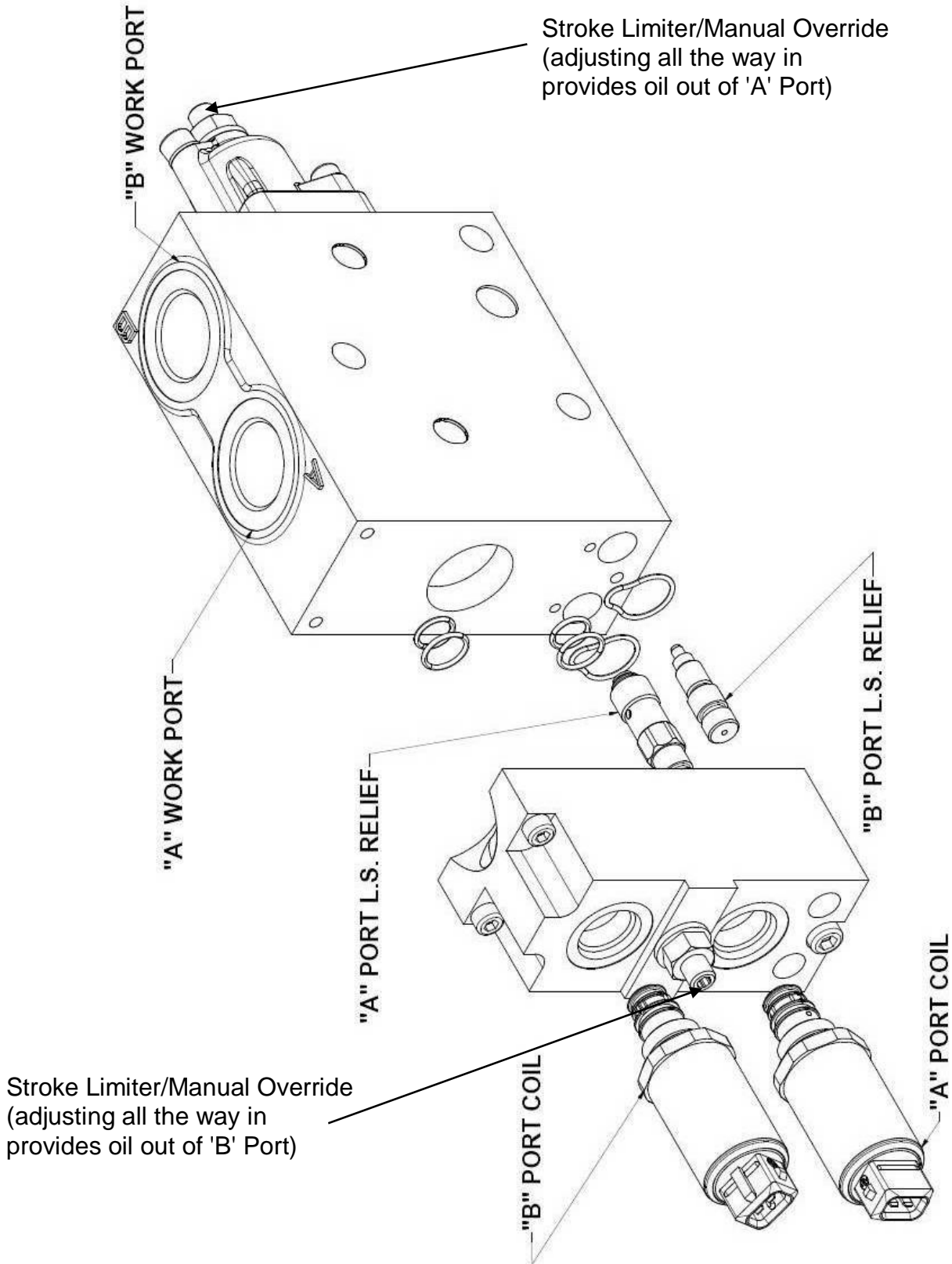
SPECIFICATIONS:
 MANIFOLD ASSEMBLY: : P/N: 266434
 M4-12-2X/LZPT(TP)-S1 V19
 MANIFOLD MACHINING DETAIL: : P/N: 266437
 4 x 3/8" -16 UNC x 15.00 mm DEEP MOUNTING HOLES
 3X THROUGH HOLES TO RECEIVE M10 STUD BOLTS
 END COVER ELEMENT for R.H Side; without O-Ring Grooves
 - Top Ported
 - With SAE Ports.

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

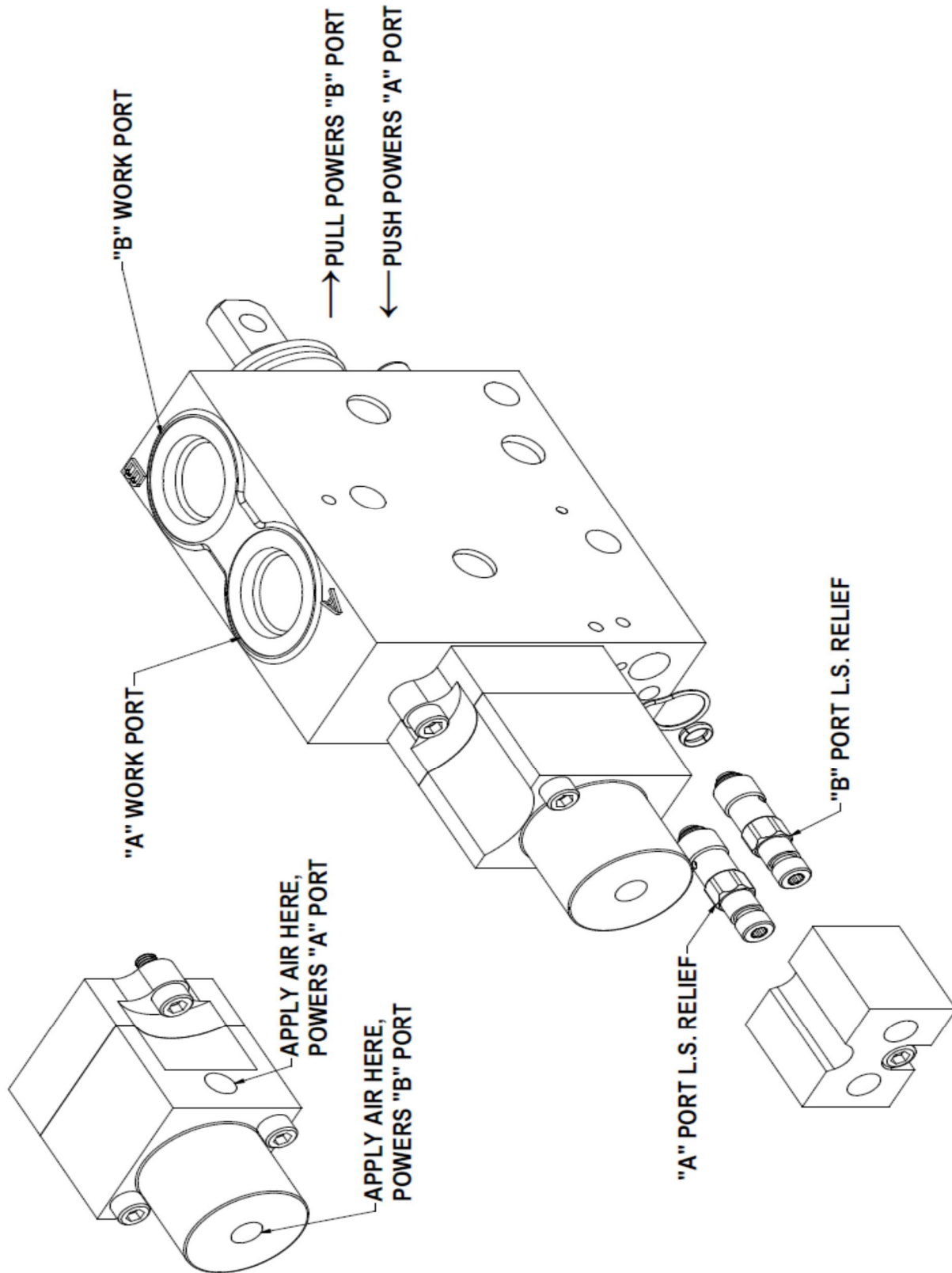
Drawn: 2008-02-28 By: DT	Inventory Code: 266434	Description: 266434 M4-12-2X(LZPT(TP)-S1 V19 RIGHT SIDE END COVER ELEMENT WITH POWER BEYOND & LS BLEEDING
App'd: 2009-08-26 By: JC	Max Pressure: 350 bar	Reference drawings: COMQU-SIMBUD
Sheet: 1 of 1	Scale: NTS	Drawing number: 47-CSS-266434-B
Rexroth Bosch Group		Rev: 2

Stamp:	Size:	Customer Name:
B	B	Customer order No:
		Reference drawings:
		BRCA

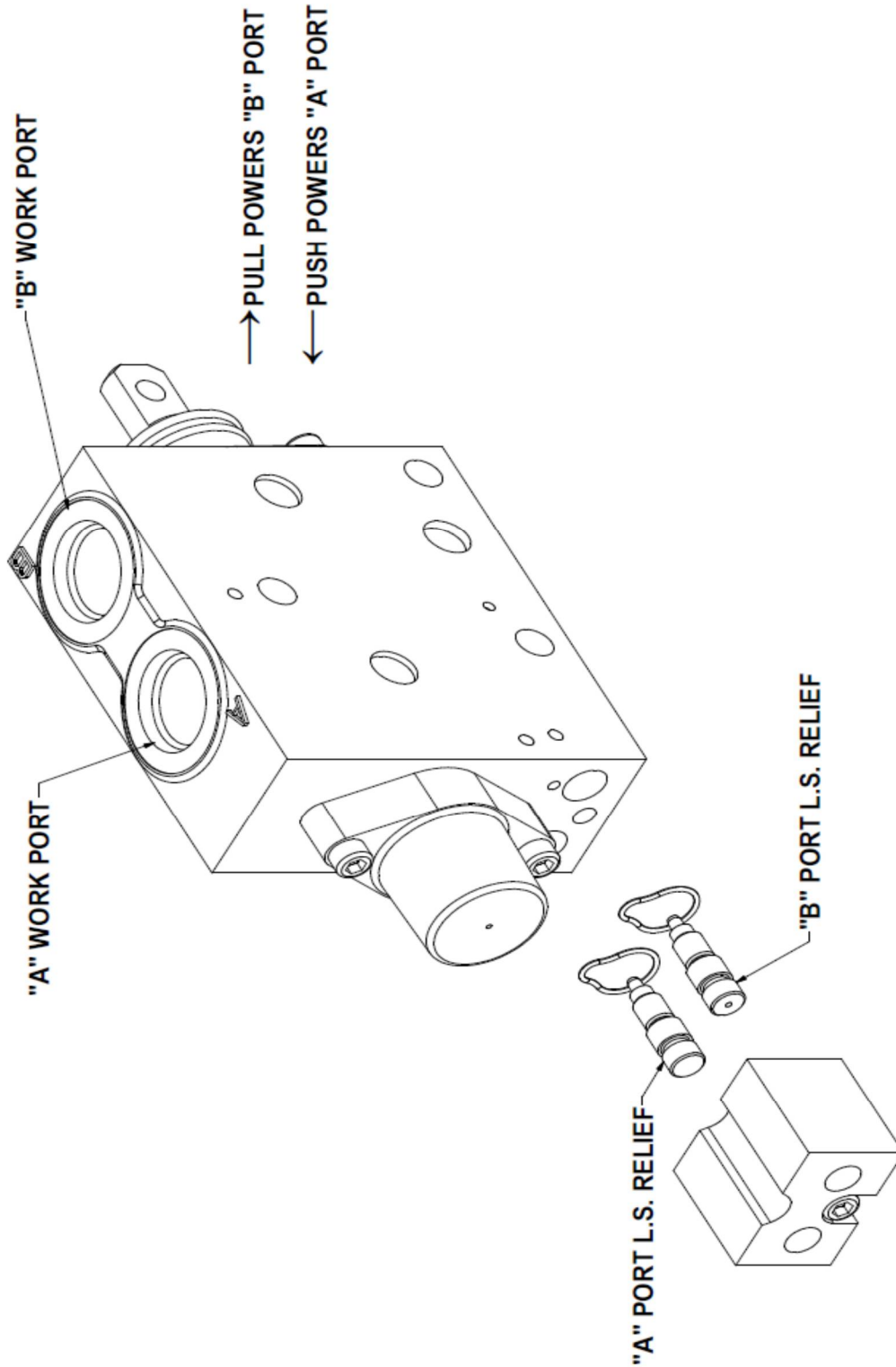
Electrical Section Layout

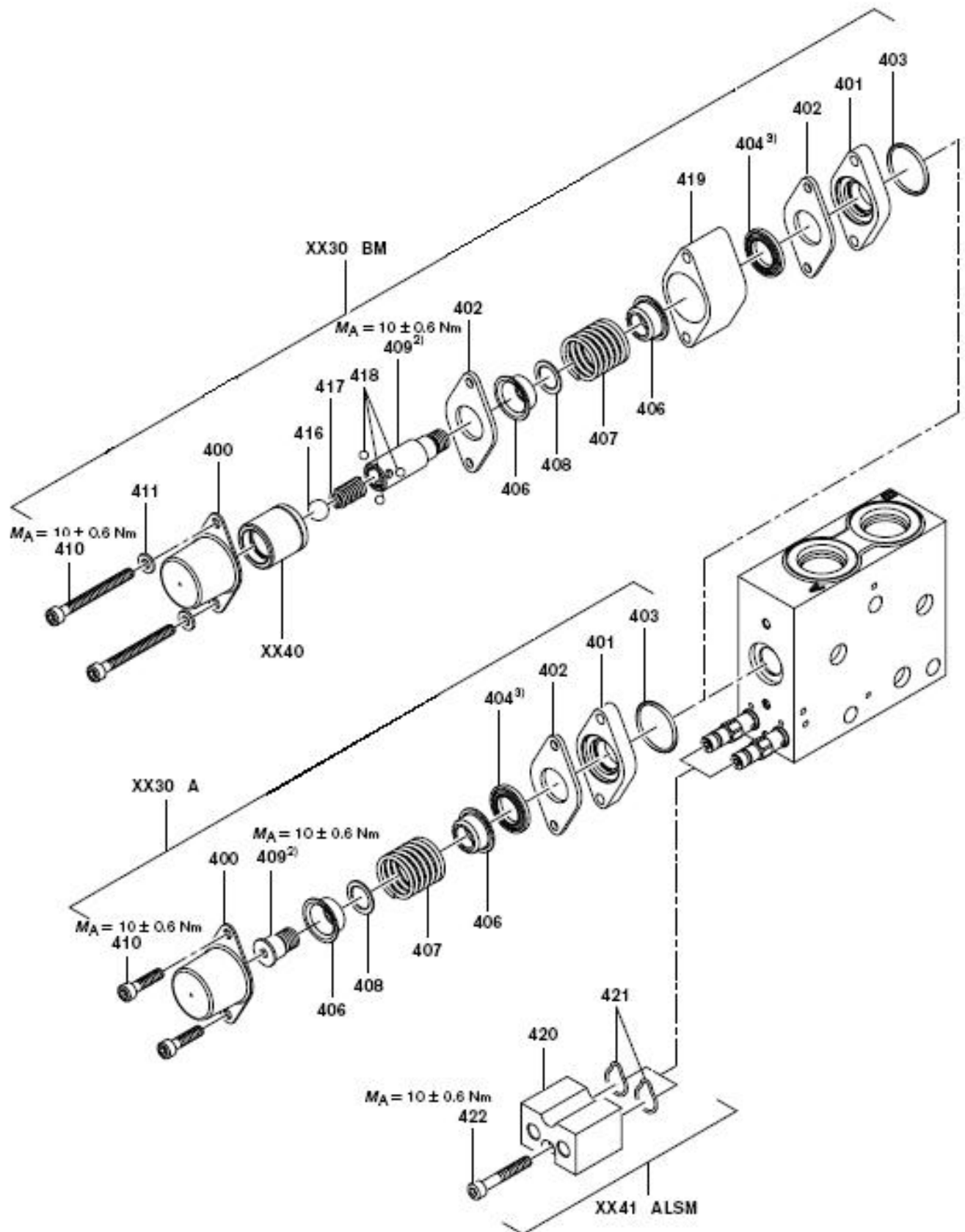


Pneumatic Section Layout



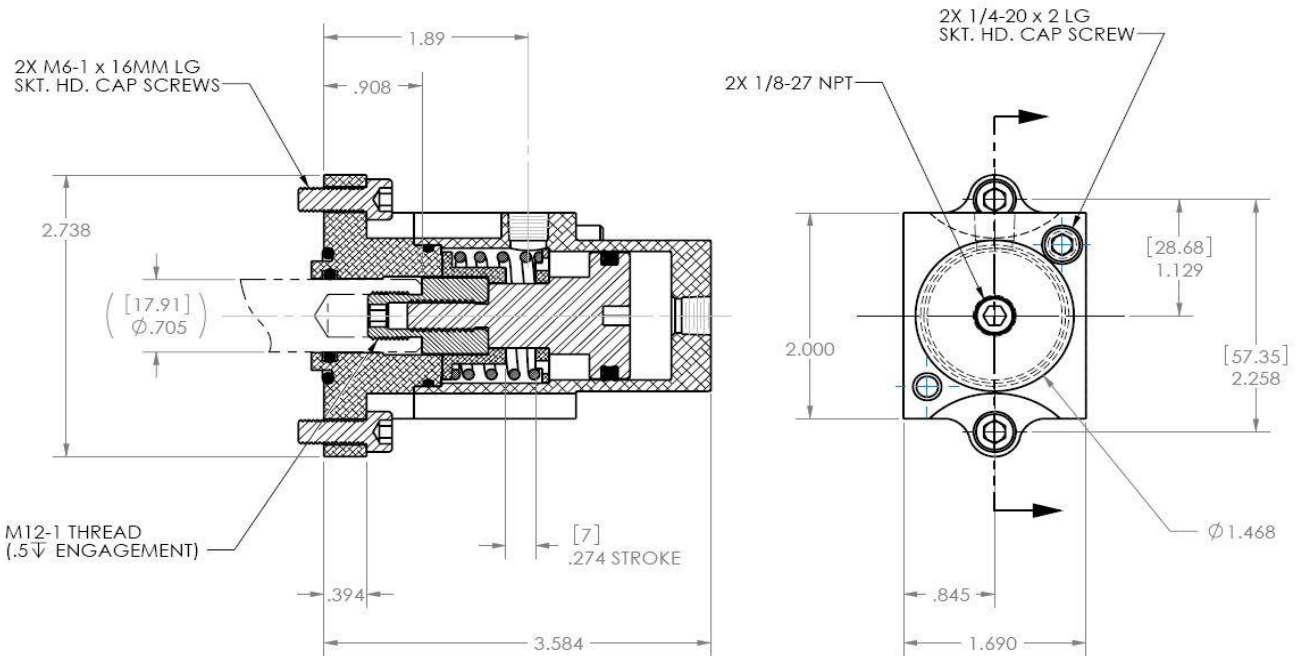
Mechanical Section Layout

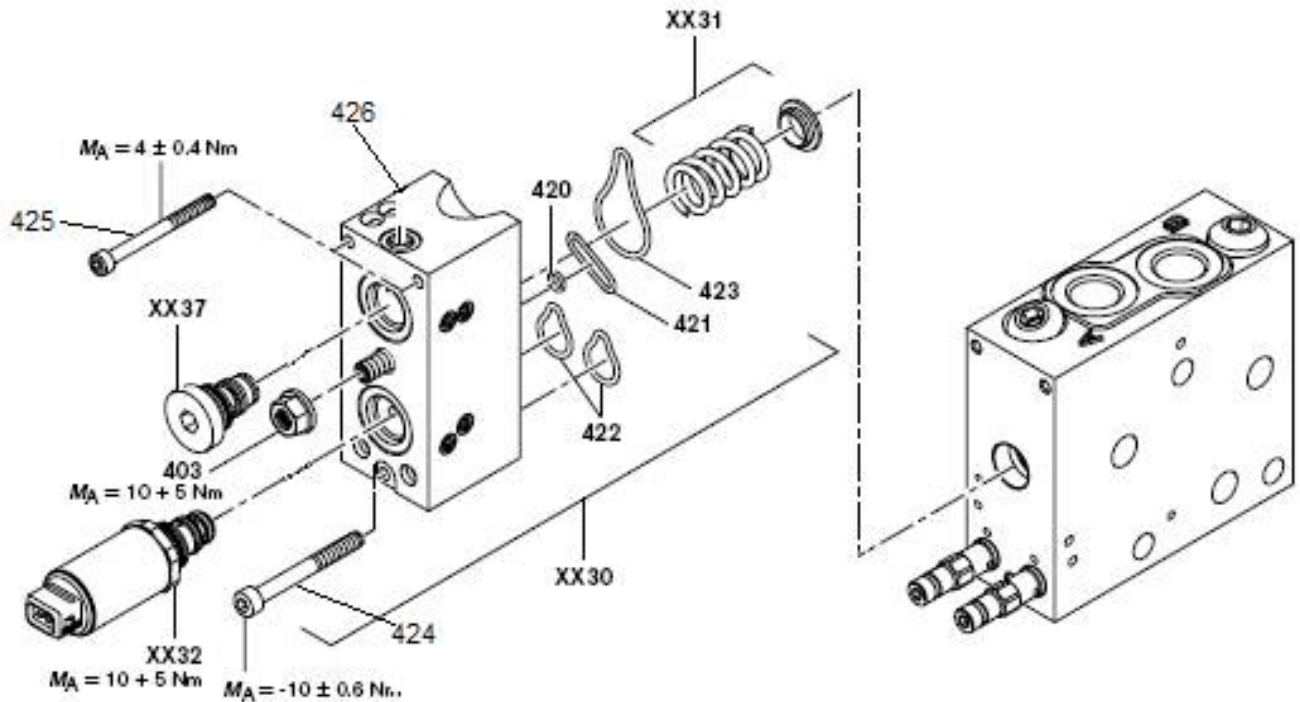




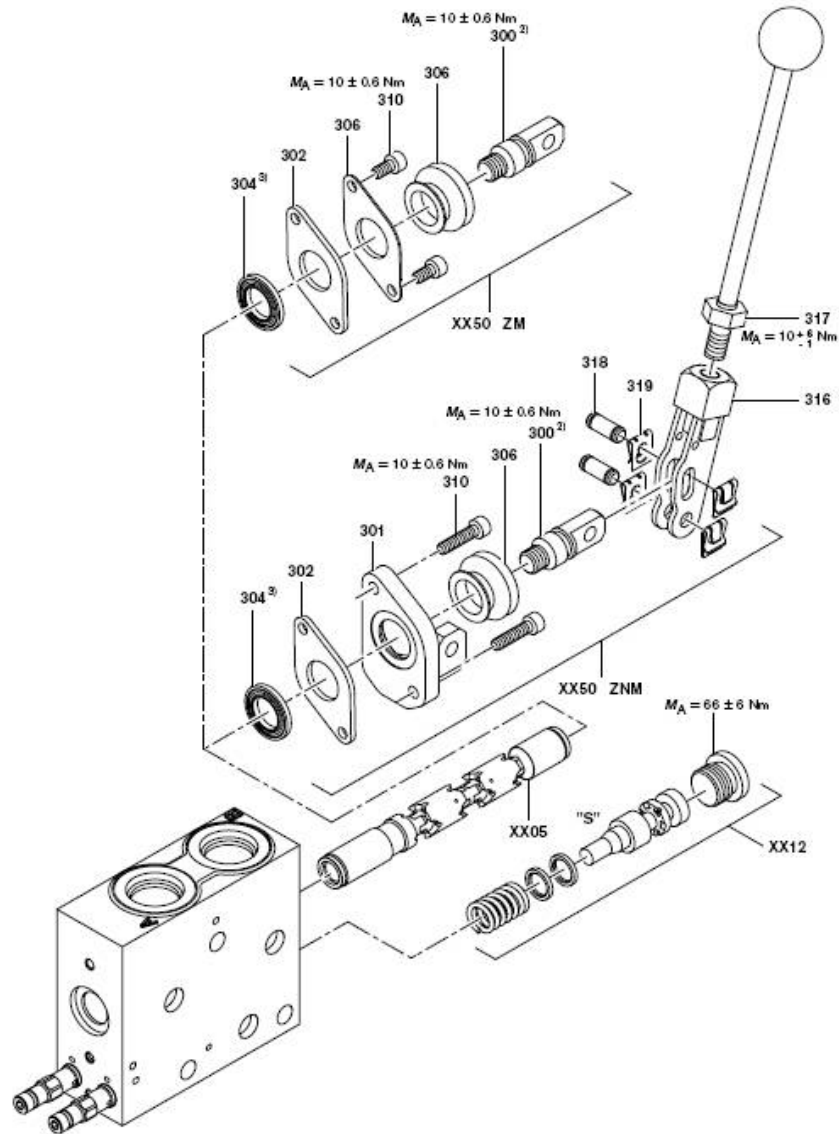
M4 PARTS MANUAL

Part	Model Code	Description	Number
XX30 A		Spring Return Kit	R901051549 (244234)
XX30 BM		Detent Kit B1 pressure to A	n/a (281416)
		Detent Kit B2 pressure to B	n/a (281417)
		Detent Kit B4 pressure to A&B	n/a (281418)
XX40	Sleeve, R901089389	Detent A (B1)	R901089389 (244238)
	Sleeve, R901091408	Detent B (B2)	R901091408 (244239)
	Sleeve, R901089384	Detent A&B (B4)	R901089384 (244240)
400	R907182232	Cover	R907182232 (248645)
401	FLANGE 62,0x 40,0x 13,0	Flange	R901132434 (248643)
402	FLANGE 62.0X40.0X3.0 D22	Flange	R907182231 (248646)
403	AS-025 VIT75	O-ring	R987375418 (021902)
404	30 X 4,5 MM (LIP) SEAL	Seal Ring	R908106176 (243365)
406	RETAINER 28X11 D14.2	Retainer	R907182349 (248665)
407	R907182249	Spring	R907182249 (248666)
408	WASHER 14.5/21.0X1.0	Washer	R901050941 (248667)
409	PIN M12X1X56.5	Pin for detent kit only	R901091349 (248650)
409	PIN M12X1X23.5	Pin for spring center kit only	R907182397 (248648)
410	SHCS-M6X60-8.8-A2C	Bolts for Detent kit	R900202980 (248651)
410	SHCS-M6X25-8.8-A2C	Bolts for Spring Kit	R900003023 (004976)
411	WASHER DIN1440-6-ST	Washer	R900003826 (248652)
416	2PF2V2 10.0 KL.3 DIN5401	Ball	R900004978 (105053)
417	10.00/1.50X27.71/7.40	Spring	R907260526 (248655)
418	5.0 KL.3 DIN 5401	Ball	R900004966 (014249)
419	62.0X39.0X30.0 D32	Flange	R901091353 (248656)
420	M4-12-10/ALS COVER	Cover	R901092452 (248657)
421	AS-017 NBR 90	O-Ring	R909084939 (002774)
422	SHCS-M6X40-DIN912-8.8 Bolts		R900003026 (243526)
-	C-3513-DM-02 AIR SHIFTER	Air Shifter for mechanical sections	R987376062 (269354)
-	C-3513-DM-02 SEAL KIT	Seal Kit for 269354 Air Shifter	R987381336 (294513)
-	C3514-DM-BR Air Shifter Kit	Air Shifter Kit for field replacement	R987376063 (311470)

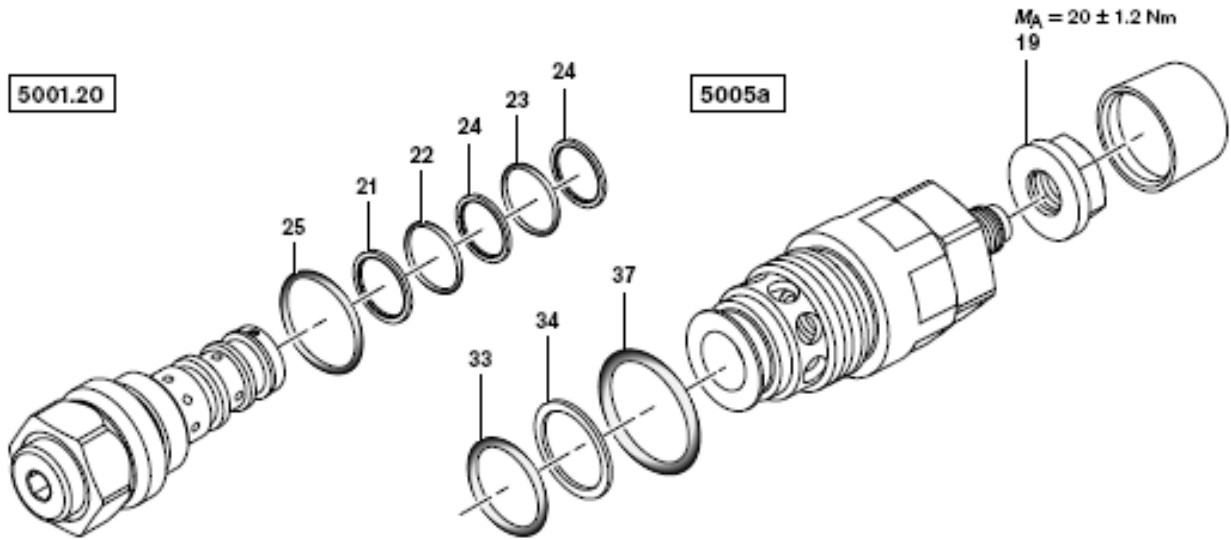




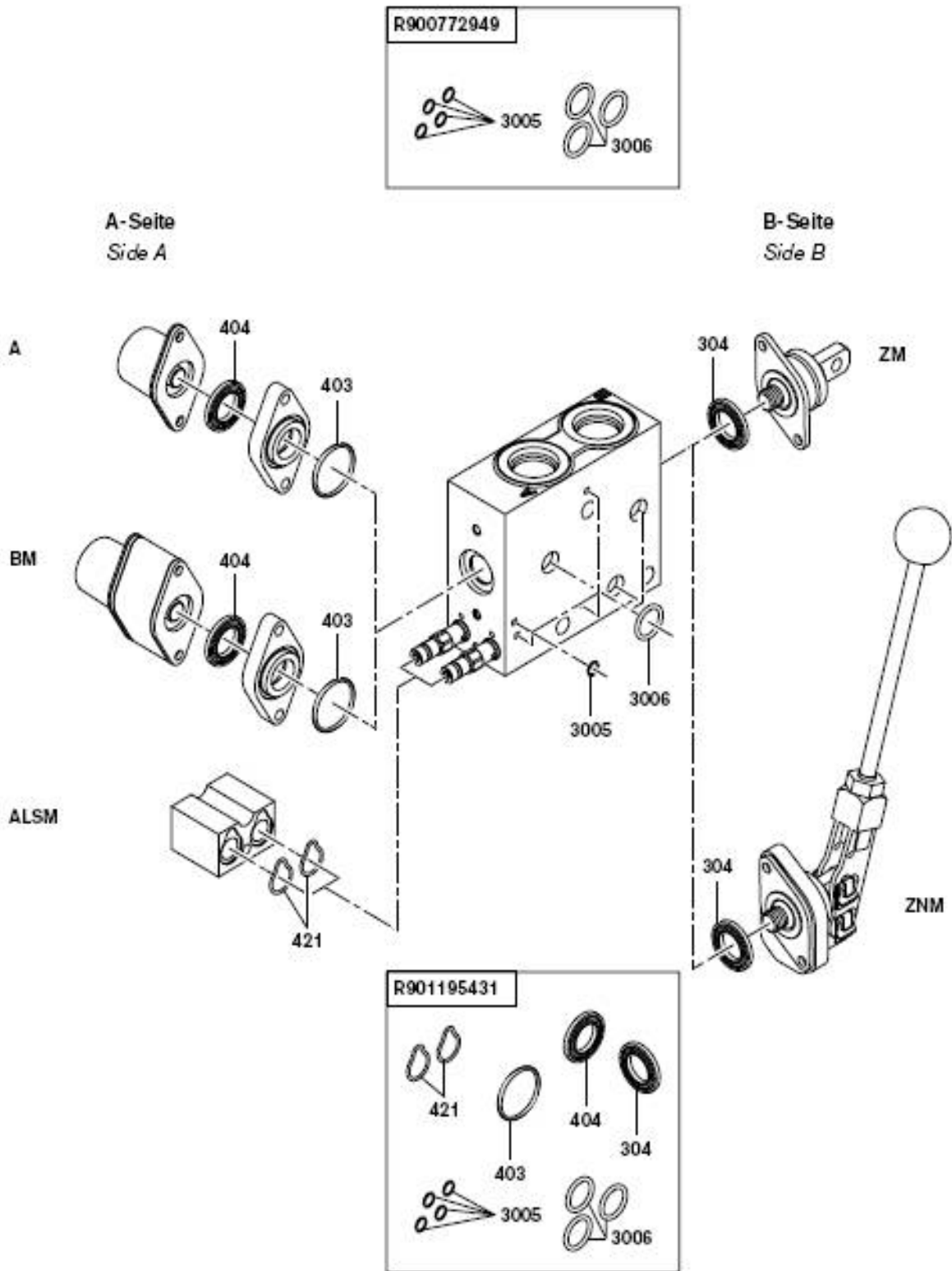
Part	Model Code	Description	Number
403		Sealing Nut	R901160395 (264726)
420	AS-009 VIT 80	O-Ring	R987375387 (015140)
421	25.9X21.8X1.78	Seal	R901128940 (264730)
422	23.35X18.5X1.78	Seal	R901128942 (264731)
423	47.9X28.8X1.78	Seal	R901128943 (264733)
424	SHCS-M6X55-8.8-A2P	Socket head Cap Screw	R900202941 (256180)
425	SHCS-M5X55-8.8-A2C	Socket head Cap Screw	R900012973 (256181)
426	M4-12&15-30/WLSV COVER	Cover	R901121220 (256179)
XX37	FTDRE2K10/V A-T*BG	Plug	R900545018 (211814)
XX32	FTDRE2K32/18AG12C4V-8	Proportional Coil	R900726604 (201688)
XX32	FTWE2KC3X/100AG12C4V	On/Off Coil	R900578533 (033286)
XX31	M4-12-1X SPRING	Spring	R900991345 (211808)
	M4-12-1X/15-2X RETAINER	Retainer	R900829022 (211807)
	R900765771	Coil Installation Tool	R987386206 (234320)
		Seal Kit Complete	R901169375



Part	Model Code	Description	Number
300	TONGUE M12X1X51	Mechanical Tongue	R907260541 (248662)
301		Flange	
302	FLANGE 62.0X40.0X3.0 D22	Flange	R907182231 (248646)
304	30 X 4,5 MM (LIP) SEAL	Seal Ring	R908106176 (243365)
306	FLANGE & DUST BOOT KIT	Assembly Kit	R907261078 (248663)
310	SHCS M6X12-8.8-A2C	Bolts	R900003018 (248664)
316			
317			
318			
319			
XX12	M4-12-20/S	COMPENSATOR KIT	R901095116 (244227)
	M20X1.5-ST-A3C-FKM	Plug	R900031305 (248640)
	M4-12-10/COMPENSATOR	SPOOL	R900889710 (248638)
	14.7/2.5X33/5	Spring	R900991348 (248639)
	00889721 SHIM	Pressure Shims	R900889721 (211811)



Part	Model Code	Description	Number
5001.20		Pressure Reducing Valve	R900641606 (247372)
21	R900870592	Seal Kit	R900870592 (268122)
22	R900870592	Seal Kit	R900870592 (268122)
23	R900870592	Seal Kit	R900870592 (268122)
24	R900870592	Seal Kit	R900870592 (268122)
25	R900870592	Seal Kit	R900870592 (268122)
5005a		Combined Relief / Anti-cav Pilot Operated	R901162378 (262485)
19	R961003380	Seal Kit	R961003380 (248504)
33	R961003380	Seal Kit	R961003380 (248504)
34	R961003380	Seal Kit	R961003380 (248504)
37	R961003380	Seal Kit	R961003380 (248504)



M4 PARTS MANUAL

Part	Model Code	Description	Number
304	30 X 4,5 MM (LIP) SEAL	Shaft Seal	R908106176 (243365)
404	30 X 4,5 MM (LIP) SEAL	Shaft Seal	R908106176 (243365)
403	AS-025 VIT75	O-ring	R961003380 (021902)
421	AS-017 NBR 90	O-ring	R961003380 (002774)
3005	AS-010 VIT 80	O-ring	R900004492 (225530)
3006	AS-115 VIT 80	O-ring	R900009093 (211831)
	R900772949	Seal Kit	R900772949 (268123)
	R901195431	Seal Kit	R901195431 (268200)

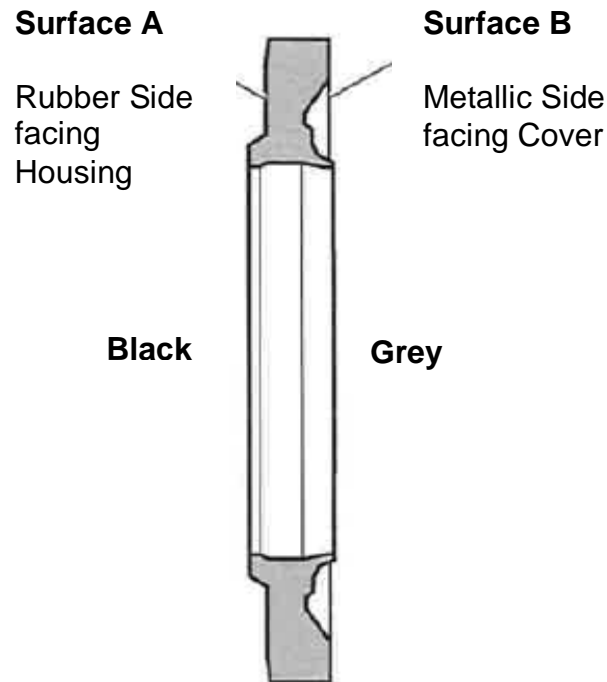
Spring Centering Kits Required

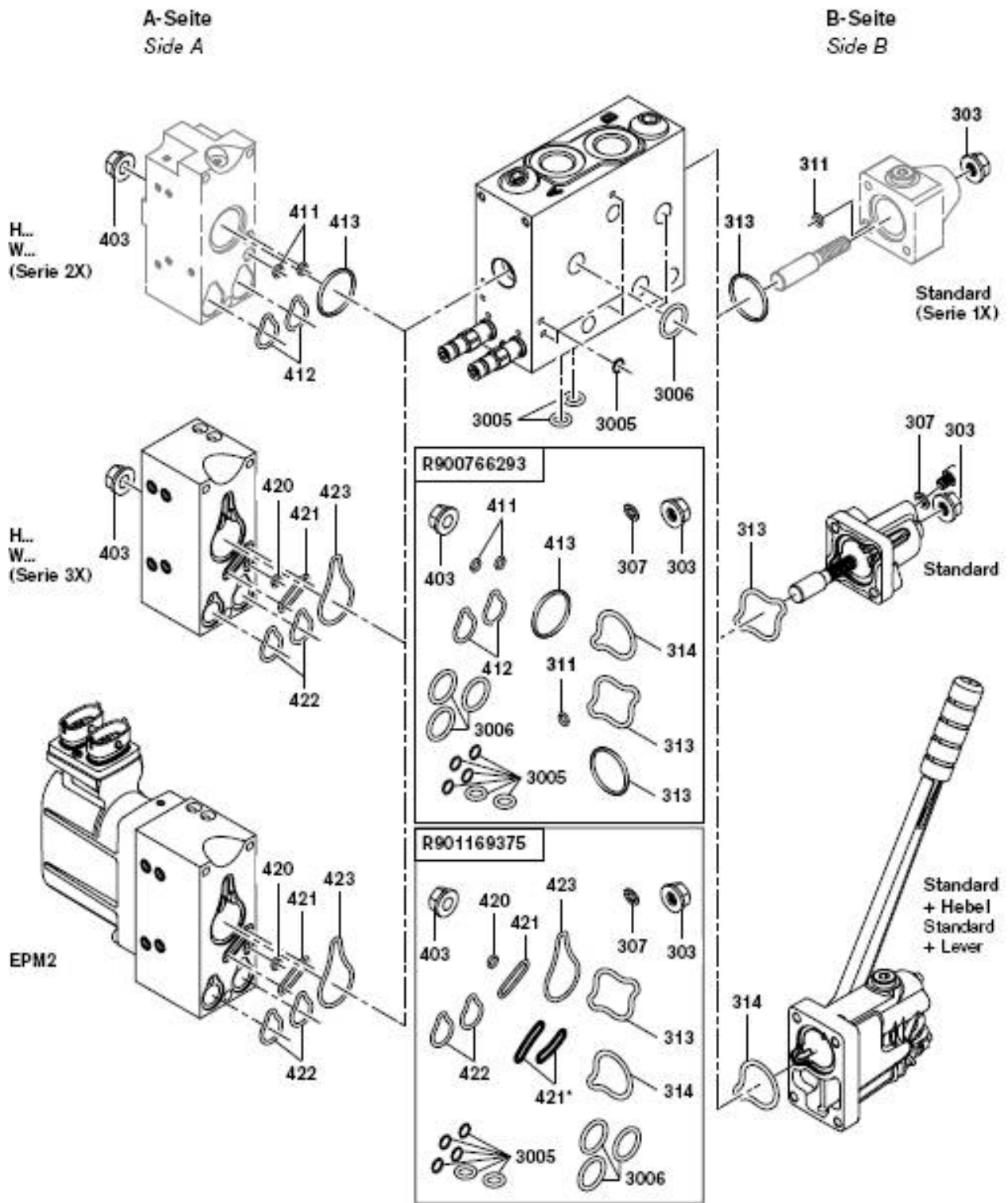
Part	Model Code	Description	Number
XXX	M4-12-20/AM M4-15-20/*PG	Cover Kit	R901051549 (244234)
XXX	M4-12-20/_Z *PG SPRING	Spring Kit	R901119931 (244295)

R901051549 (244234) and R901119931 (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	R900766293 (222029)
303	M8X1-8 VZ	Seal Nut	R901160395 (264726)
307	00001446 SEAL	Usit Ring	R900001446 (030006)
311	AS-009 VIT 80	O-ring	R987375387 (015140)
313	AS-127 VIT 80	Seal	R900002697 (233905)
	51.6X32.8X2.62 FKM80+/-5SH	Seal	R901112182 (264728)
314	AS-124 VIT 80	O-ring	R900002835 (216461)
403	M8X1-8 VZ	Seal Nut	R901160395 (264726)
411	AS-009 VIT 80	O-ring	R987375387 (015140)
412	AS-017 VIT 75	O-ring	R987375402 (021899)
413	AS-120 VIT75	O-ring	R987375497 (021939)
3005	AS-010 VIT 80	O-ring	R900004492 (225530)
3006	AS-115 VIT 80	O-ring	R900009096 (211831)

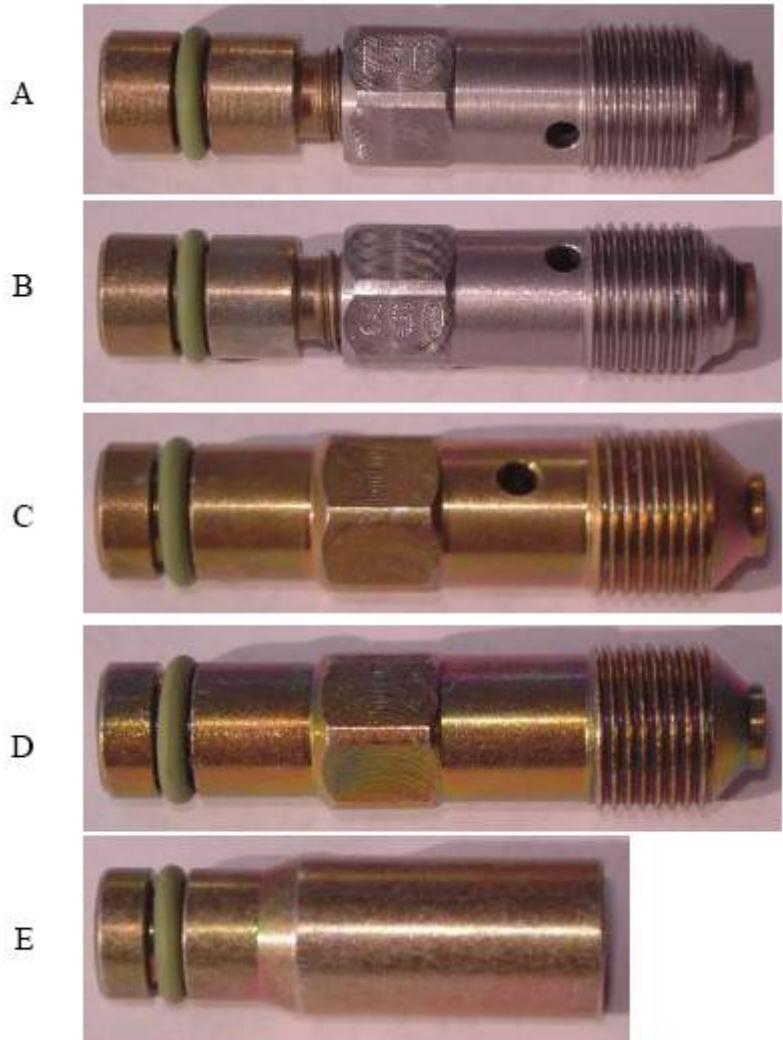
The A-side cover R9101121220 need:

Qty 2- R900012973 SOCKET HEAD SCREW ISO4762-M5X55-8.8-A2C
 Qty 1- R900202941 SOCKET HEAD SCREW ISO4762-M6X55-8.8-A2P

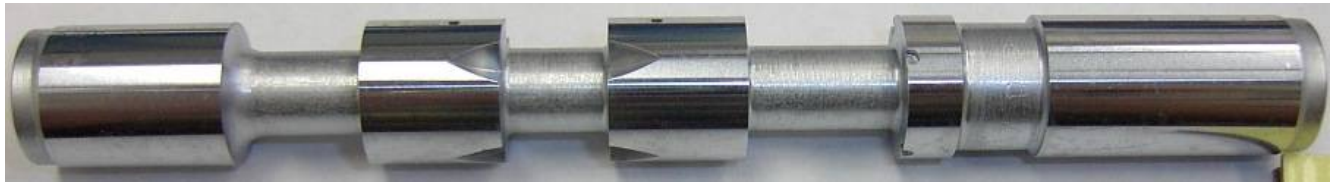
The B-side cover R901082676 need:

Qty 2- R900202591 SOCKET HEAD SCREW ISO4762-M5X25-8.8-A2C

Part	Model Code	Description	Number
Cover Series 3X			
-	R901169375	Seal Kit	R901169375 (152798)
303	M8X1-8 VZ	Seal Nut	R901160395 (264726)
307	00001446 SEAL	Usit Ring	R900001446 (030006)
313	51.6X32.8X2.62 FKM80+/-5SH	Seal	R901112182 (264728)
314	AS-124 VIT 80	O-ring	R900002835 (216461)
403	M8X1-8 VZ	Seal Nut	R901160395 (264726)
420	AS-009 VIT 80	O-ring	R987375387 (015140)
421	25.85X16.55X1.78 FKM80+/-5	Seal (Hydraulic Cover)	R901128938 (264729)
	25.9X21.8X1.78 FKM80+/-5	Seal (Electro-hydraulic Cover)	R901128940 (264730)
	AS-017 VIT 75	O-ring	R987375402 (021899)
422	23.35X18.5X1.78 FKM80+/-5	Seal	R901128942 (264731)
423	47.9X28.8X1.78 FKM80+/-5	Seal	R901128943 (264733)
3005	AS-010 VIT 80	O-ring	R900004492 (225530)
3006	AS-115 VIT 80	O-ring	R900009096 (211831)

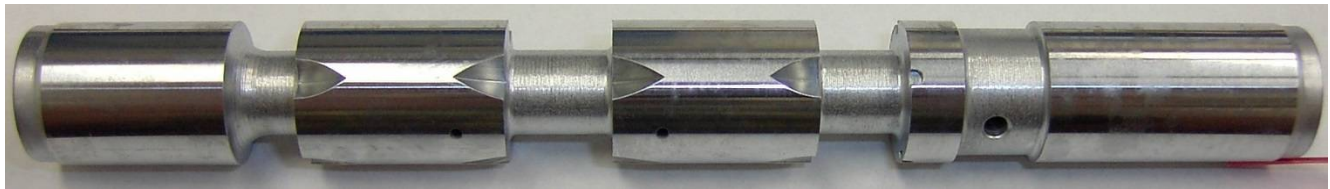


Part	Model Code	Description	Number
(A	MHDBD 02 C10/150V	L.S. Relief Valve (50 – 150 Bar) or (725 – 2200 Psi)	R900890249 (211813)
B	MHDBD 02 C10/350V	L.S. Relief Valve (150 – 350 Bar) or (2200 - 5000 Psi)	R900890248 (222024)
C	M12X1,0X 46,0V	L.S. Unloading Plug (Drain) Used for no L.S. function	R900729941 (243853)
D	12.0X37.0Z10.0N7.0X2.7 V	Plug for L.S. Function with L.S. Drilled Housing	R900724246 (214559)
E	MHDB02K10/FPM*BG	Plug for L.S. Function without L.S. drilled Housing	R901005193 (232352)
-	007038 O-RING	O-Ring for Above L/S Plug, Drin and Relief Valve	R900007038 (019523)



MECHANICAL ACTUATED SPOOLS FOR MOTOR FUNCTIONS

Model Code	Description	Number
M4-12-20/J012-012AZ	12 Lpm Spool	R901130112 (258901)
M4-12-20/J045-045C	45 Lpm Spool	R901199368 (263869)
M4-12-20/J065-065C	65 Lpm Spool	R901199356 (263867)
M4-12-20/J120-120C	120 Lpm Spool	R901199411 (263871)



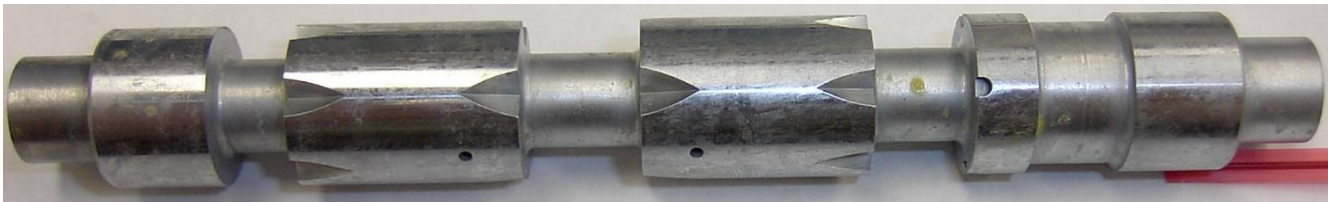
MECHANICAL ACTUATED SPOOLS FOR CYLINDER FUNCTIONS

Model Code	Description	Number
M4-12/20/E012-012C	12 Lpm Spool	R901199354 (263866)
M4-12-20/E012-012C	12 Lpm Spool	R901199354 (263866)
M4-12/20/E030-030C	30 Lpm Spool	R901199375 (263873)
M4-12-20/E045-045C33-33Z	45 Lpm Spool	R901199364 (265210)
M4-12-20/E000-045C	45 Lpm Spool Single acting	R901199366 (263870)
M4-12-20/E065-065C	65 Lpm Spool	R901199371 (263868)
M4-12-20/E120-120C	120 Lpm Spool	R901199410 (263872)



ELECTRIC ACTUATED SPOOLS FOR MOTOR FUNCTIONS

Model Code	Description	Number
M4-12-20/J005-005A	5 Lpm Spool	R901108579 (249037)
M4-12-20/J012-012A	12 Lpm Spool	R901039167 (243863)
M4-12-20/J020-020A	20 Lpm Spool	R901039166 (249031)
M4-12-20/J030-030A 026034	30 Lpm Spool	R901039165 (244220)
M4-12-20/J045-045A 038052	45 Lpm Spool	R901039163 (244222)
M4-12-20/J065-065A 057073	65 Lpm Spool	R901039162 (244224)
M4-12-20/J085-085A 070099	85 Lpm Spool	R901039161 (244225)
M4-12/20/J120-120A 100130	120 Lpm Spool	R901107723 (244226)



ELECTRIC ACTUATED SPOOLS FOR CYLINDER FUNCTIONS

Model Code	Description	Number
M4-12/20/E005-005A04-04	5 Lpm Spool	R901094304 (249032)
M4-12-20/E012-012A06-06	12 Lpm Spool	R901039175 (249029)
M4-12-20/E020-020A12-12	20 Lpm Spool	R901039173 (249030)
M4-12-20/E030-030A17-17	30 Lpm Spool	R901039172 (244214)
M4-12-20/E045-045A24-24	45 Lpm Spool	R901039171 (244215)
M4-12-20/E065-065A55-55	65 Lpm Spool	R901019169 (244216)
M4-12-20/E085-085A85-85	85 Lpm Spool	R901039168 (244217)
M4-12/20/E120-120AX1-X1	120 Lpm Spool	R901107414 (244219)

Auxiliary Spool Products

M4-Spool Clamp	Spool Disassembly Tool	R987379717 (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	R900023339/232374	R900023339/232374	R900023339/232374	R900023697/232375
2	3x	R900023697/232375	R900023697/232375	R900023697/232375	R900023640/232376
3	3x	R900023640/232376	R900023640/232376	R900023640/232376	R900023007/211823
4	3x	R900023007/211823	R900023007/211823	R900023007/211823	R900017426/217076
5	3x	R900017426/217076	R900017426/217076	R900017426/217076	R900076427/222213
6	3x	R900076427/222213	R900076427/222213	R900076427/222213	R900076402/232378
7	3x	R900076402/232378	R900076402/232378	R900076402/232378	R900076404/224471
8	3x	R900076404/224471	R900076404/224471	R900076404/224471	R900075187/232379
9	3x	R900075187/232379	R900075187/232379	R900075187/232379	R987379643/209157
Mid Inlet 10	3x/3x	NA	NA	R900017426/217076 R900017426/217076	R900017426/217076 R900017427/222213
Mid Inlet 11	3x/3x	NA	NA	R900017426/217076 R900017427/222213	R900017426/217076 R900076402/232378
Mid Inlet 12	3x/3x	NA	NA	R900017427/222213 R900017427/222213	R900017427/222213 R900076402/232378
Mid Inlet 13	3x/3x	NA	NA	R900017427/222213 R900076402/232378	R900017427/222213 R900076404/224471
Mid Inlet 14	3x/3x	NA	NA	R900076402/232378 R900076402/232378	R900076402/232378 R900076404/224471
Mid Inlet 15	3x/3x	NA	NA	R900076402/232378 R900076404/224471	R900076402/232378 R900075187/232379
Mid Inlet 16	3x/3x	NA	NA	R900076404/224471 R900076004/224471	R900076404/224471 R900075187/232379

Enclosure Hardware

Part #	Standard Cut-out Quantity	Power Beyond Cut-out Quantity	Centre Inlet Cut-out Quantity	Part Description
R987381060 129844	4	4	4	3/8-16x1 1/4-ss HHCS
R987372743 151240	4	4	8	3/8 Flat Washer-SS
R987375291 129848	4	4	8	3/8 Nylock Nut
R987381062 032535	6	8	8	3/8-16x3/4-ss HHCS
R978020449 129849	6	8	8	3/8 Lock Washer-SS
266704	6	8	8	M10 Flat Washer-SS
R987381464 237248	16	16	16	5/32 Rivets
R987372869 248859	enclosure specific	enclosure specific	enclosure specific	Snap-in Plugs
R987374247 174289	4	4	4	Latch Assembly-SS
R987372598 247275	1	1	1	Red Rexroth Placard
R987373383 119756	2	2	2	Handles
R987370577 128474	1	1	1	Strain Relief
R987376911 240018	1	1	1	Corrosion Label
R987381067 136369	0	0	4	3/8-16x1-SS HHCS

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