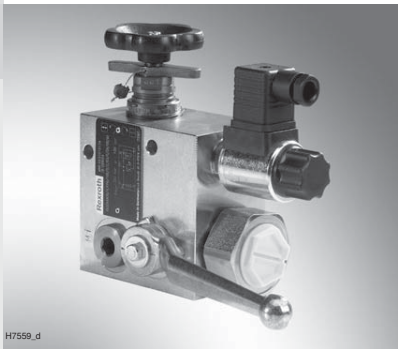
Accumulator safety block

RE 50128/07.10 1/20
Replaces: 03.08

Type 0532VAW



Nominal diameter DN20; DN32
Component series A1
Maximum operating pressure 330 bar *[4800 psi]*

Table of contents

Features

- Ready for connection
- Manual or electro-magnetic unloading
- Large number of variants
- Compact design

Ordering code

0532VAW / / / / / / / / / /

Accumulator safety block = **0532VAW**

Nominal diameter
DN20 = **20**
DN32 = **32**

Switching symbol (see standard types page 3 and 4)
Symbol 1 = **1**
Symbol 2 = **2**
Symbol 3 = **3**
Symbol 4 = **4**
Symbol 5 = **5**[1)]
Symbol 6 = **6**[1)]
Symbol 7 = **7**[1)]
Symbol 8 = **8**
Symbol 9 = **9**[1)]
Symbol 10 = **10**

Seal material
FKM seal (other seals upon request!) = **FKM**

Pressure adjustment
40 bar *[585 psi]* = **40**
50 bar *[730 psi]* = **50**
70 bar *[1015 psi]* = **70**
100 bar *[1450 psi]* = **100**
140 bar *[2030 psi]* = **140**
160 bar *[2320 psi]* = **160**
211 bar *[3060 psi]* = **211**
250 bar *[3625 psi]* = **250**
280 bar *[4060 psi]* = **280**
330 bar *[4800 psi]* = **330**
without pressure relief valve = **—** [2)]

Adjustment type at the pressure relief valve
D = With hand wheel
K = Spindle with protective cap
— = [2)] **Without** pressure relief valve

Connection thread P
Z = Imperial
F = [1)] Flange

Unloading
00 = [3)] Without directional valve
01 = [4)] Manually operated 2/2 directional valve
03 = [5)] Electrically operated 2/2 directional valve normally open

Voltage type
G24/00 = [5)] DC voltage 24 V / frequency
—/— = [6)] Without directional valve

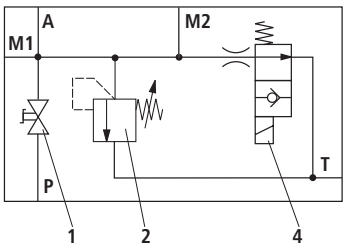
Component series
A1 = Component series A with standard version 1
AS = Component series A with special version S

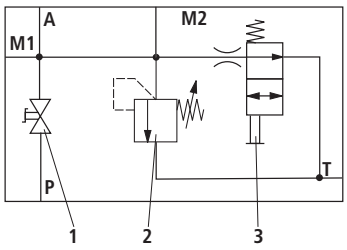
Order example:
0532VAW20/1/FKM/-/-/Z/00/-/-/A1

[1)] Not possible with 0532VAW20….
[2)] Only applies to symbol 1, 2, 5, 8 and 9
[3)] Only applies to symbol 1, 3 and 6
[4)] Only applies to symbol 8, 9 and 10
[5)] Only applies to symbol 2, 4, 5 and 7
[6)] Only applies to symbol 1, 3, 6, 8, 9 and 10

Standard types and units are contained in the EPS (standard price list).

Symbols



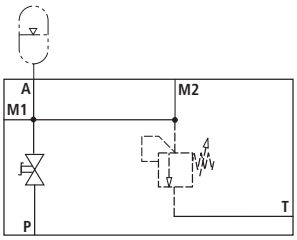


1 System shut-off cock
2 Pressure relief valve
3 Manual unloading
4 Electro-magnetic unloading

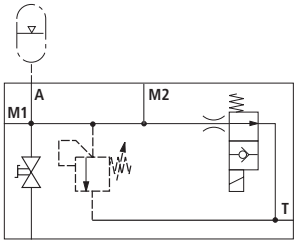
Connection designation:
M1, M2 = Measuring port
P = Pump connection
A = Accumulator port
T = Tank port

Standard types DN20

Symbols



Symbol 1



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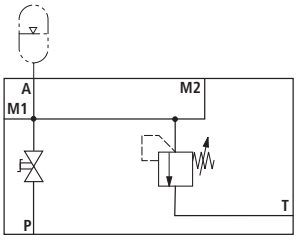

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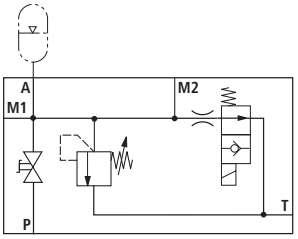

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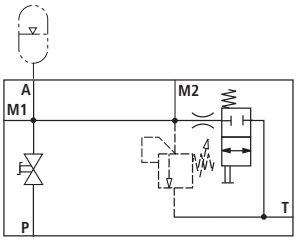
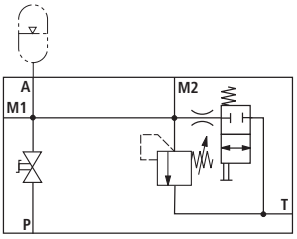


Symbol 8

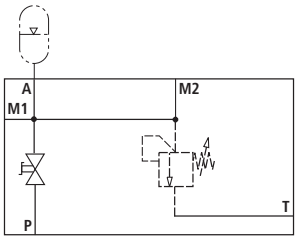


Symbol 10

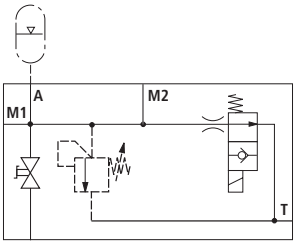
Symbol	Set pressure of the pressure relief valve in bar *[psi]*	Maximum securable delivery volume l/min *[gpm]*	Denomination	Material no.
1	–	–	0532VAW20/1/FKM/-/-/Z/00/-/-/A1	**0532015120**
2	–	–	0532VAW20/2/FKM/-/-/Z/03/G/24/00/A1	**0532015121**
3	50 *[730]*	40 *[10.56]*	0532VAW20/3/FKM/050/D/Z/00/-/-/A1	**R901192665**
3	70 *[1015]*	50 *[13.20]*	0532VAW20/3/FKM/070/D/Z/00/-/-/A1	**0532015123**
3	100 *[1450]*	100 *[26.40]*	0532VAW20/3/FKM/100/D/Z/00/-/-/A1	**0532015125**
3	140 *[2030]*	100 *[26.40]*	0532VAW20/3/FKM/140/D/Z/00/-/-/A1	**0532015127**
3	160 *[2320]*	100 *[26.40]*	0532VAW20/3/FKM/160/D/Z/00/-/-/A1	**0532015129**
3	211 *[3060]*	100 *[26.40]*	0532VAW20/3/FKM/211/D/Z/00/-/-/A1	**0532015131**
3	250 *[3625]*	130 *[34.32]*	0532VAW20/3/FKM/250/D/Z/00/-/-/A1	**0532015133**
3	280 *[4060]*	130 *[34.32]*	0532VAW20/3/FKM/280/D/Z/00/-/-/A1	**0532015137**
3	330 *[4800]*	150 *[39.60]*	0532VAW20/3/FKM/330/D/Z/00/-/-/A1	**0532015135**
4	70 *[1015]*	50 *[13.20]*	0532VAW20/4/FKM/070/D/Z/03/G/24/00/A1	**0532015122**
4	100 *[1450]*	100 *[26.40]*	0532VAW20/4/FKM/100/D/Z/03/G/24/00/A1	**0532015124**
4	160 *[2320]*	100 *[26.40]*	0532VAW20/4/FKM/160/D/Z/03/G/24/00/A1	**0532015126**
4	211 *[3060]*	100 *[26.40]*	0532VAW20/4/FKM/211/D/Z/03/G/24/00/A1	**0532015128**
4	250 *[3625]*	130 *[34.32]*	0532VAW20/4/FKM/250/D/Z/03/G/24/00/A1	**0532015130**
4	280 *[4060]*	130 *[34.32]*	0532VAW20/4/FKM/280/D/Z/03/G/24/00/A1	**0532015134**
4	330 *[4800]*	150 *[39.60]*	0532VAW20/4/FKM/330/D/Z/03/G/24/00/A1	**0532015132**
8	–	–	0532VAW20/8/FKM/-/-/Z/01/-/-/A1	**0532015139**
10	211 *[3060]*	100 *[26.40]*	0532VAW20/10/FKM/211/K/Z/01/-/-/A1	**R901131132**
10	330 *[4800]*	150 *[39.60]*	0532VAW20/10/FKM/330/K/Z/01/-/-/A1	**R901174602**

Standard types DN32

Symbols



Symbol 1



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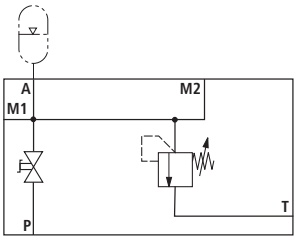

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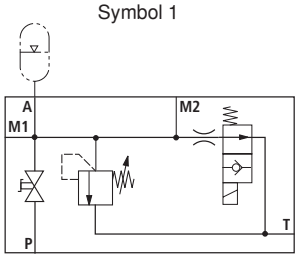

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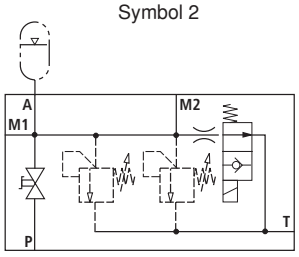

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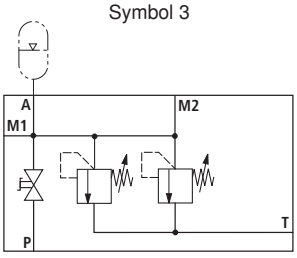

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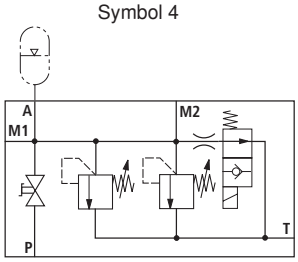

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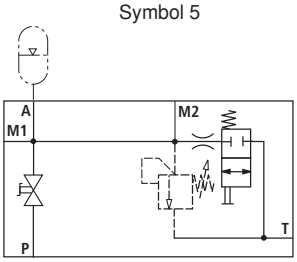
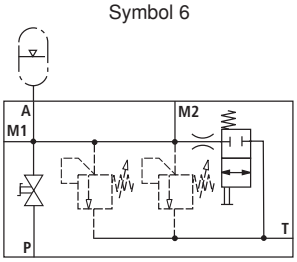


Symbol 8



Symbol 9

Symbol	Set pressure of the pressure relief valve in bar *[psi]*	Maximum securable delivery volume l/min *[gpm]*	Denomination	Material no.
1	–	–	0532VAW32/1/FKM/-/-/Z/00/-/-/A1	**0532016051**
2	–	–	0532VAW32/2/FKM/-/-/Z/03/G/24/00/A1	**0532016050**
3	211 *[3060]*	100 *[26.40]*	0532VAW32/3/FKM/211/D/Z/00/-/-/A1	**0532016053**
3	330 *[4800]*	150 *[39.60]*	0532VAW32/3/FKM/330/D/Z/00/-/-/A1	**0532016055**
4	160 *[2320]*	100 *[26.40]*	0532VAW32/4/FKM/160/D/Z/03/G/24/00/A1	**0532016054**
4	211 *[3060]*	100 *[26.40]*	0532VAW32/4/FKM/211/D/Z/03/G/24/00/A1	**0532016056**
4	330 *[4800]*	150 *[39.60]*	0532VAW32/4/FKM/330/D/F/03/G/24/00/A1	**0532016060**
4	330 *[4800]*	150 *[39.60]*	0532VAW32/4/FKM/330/D/Z/03/G/24/00/A1	**0532016058**
5	–	–	0532VAW32/5/FKM/-/-/Z/03/G/24/00/A1	**0532016052**
7	211 *[3060]*	200 *[52.80]*	0532VAW32/7/FKM/211/DK/F/03/G/24/00/A1	**0532016070**
7	250 *[3625]*	260 *[68.63]*	0532VAW32/7/FKM/250/DK/F/03/G/24/00/A1	**0532016072**
7	330 *[4800]*	300 *[79.20]*	0532VAW32/7/FKM/330/DK/F/03/G/24/00/A1	**R901166828**
8	–	–	0532VAW32/8/FKM/-/-/Z/01/-/-/A1	**0532016061**
9	–	–	0532VAW32/9/FKM/-/-/F/01/-/-/A1	**R901115110**
9	–	–	0532VAW32/9/FKM/-/-/Z/01/-/-/A1	**0532016063**

Function

The accumulator safety block is used for safety, isolating and unloading functions in hydraulic accumulators.

It meets the requirements and safety regulations according to the Technical rules for pressure containers (TRB 403 and/or TRB 404).
The connection between the accumulator safety block and the accumulator is established by means of an accumulator adapter. An optional, additional electrically operated 2 way valve (normally open) allows for the automatic unloading of the accumulator upon shut-down or “emergency stop function”.

By means of the pressure relief valve, the accumulator is protected from inadmissible overpressure.
The **pressure relief valve** must **not assume control tasks**! Care must be taken that the distance between the pressure set at the pressure relief valve and the operating pressure is sufficient. Responding of the pressure relief valve is to be prevented as far as possible.

Technical data (For applications outside these parameters, please consult us!)

general

Direct operated pressure relief valve		Type	0532VAW…													
Weight	Nominal diameter	DN	20						32							
	Symbol		1	2	3	4	8	10	1	2	3	4	5	7	8	9
		kg	4.4	4.7	4.8	5.6	4.6	4.5	13.8	14.3	15.2	14.7	14.2	14.4	14.4	14.3
		[lbs]	9.7	10.3	10.5	12.3	10.1	9.9	30.3	31.4	33.4	32.3	31.2	31.6	31.6	31.4
Installation position			Any													
Ambient temperature range		°C, *[° F]*	–15 to +80 *[5 to 176]*													

hydraulic

Maximum operating pressure	bar *[psi]*	330 *[4800]*
Maximum, securable flow	l/min *[gpm]*	See page 3 and 4
Δ*p*-*Q* characteristic curve		See page 6 and 7
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 and flame-resistant fluids according to DIN 24320
Hydraulic fluid temperature range	°C, *[° F]*	–15 to +80 *[5 to 176]*
Seal material		FKM seals
Viscosity range	mm^2/s	12 to 380
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)		Class 20/18/15 [1]

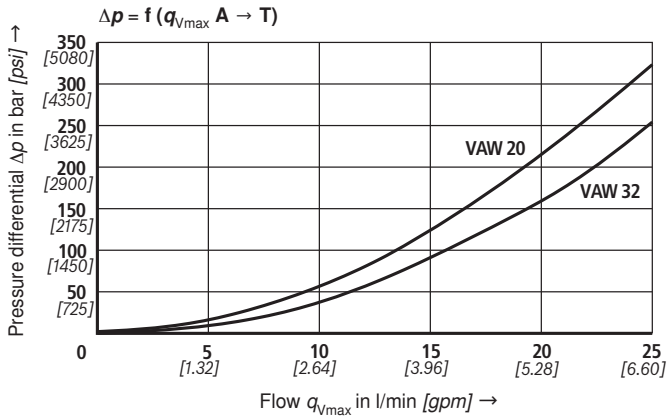
electrical

Voltage type			Direct voltage
Available voltages		*U* V	24
Protection class according to VDE 0470-1 (DIN EN 60529), DIN 40050-9		Version K4	IP 65 with mating connector mounted and locked

[1] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.
For selecting the filters, see data sheets RE 50070, RE 50076, RE 50081, RE 51400, RE 51421, RE 51422, RE 51418, RE 51419, RE 51424 and RE 51425.

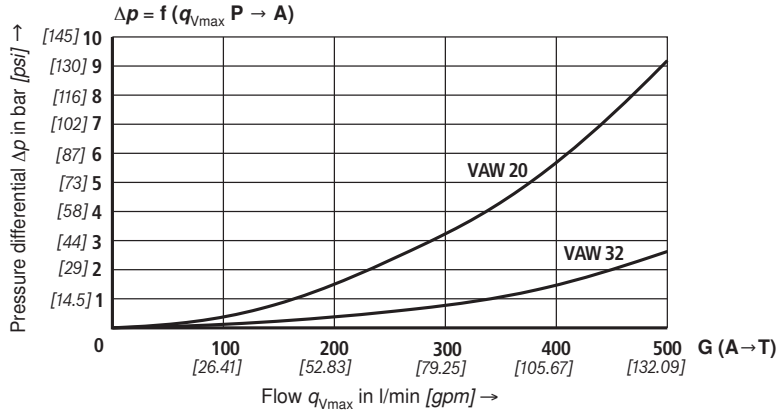
Characteristic curves (measured with ν = 35 mm^2/s and ϑ = 50 °C *[122 °F]*)

Flow accumulator via unloading valve to the tank

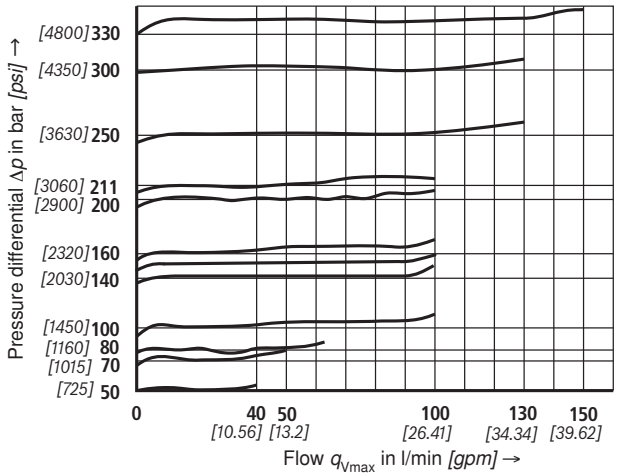


Characteristic curves (measured with ν = 35 mm²/s and ϑ = 50 °C *[122 °F]*)

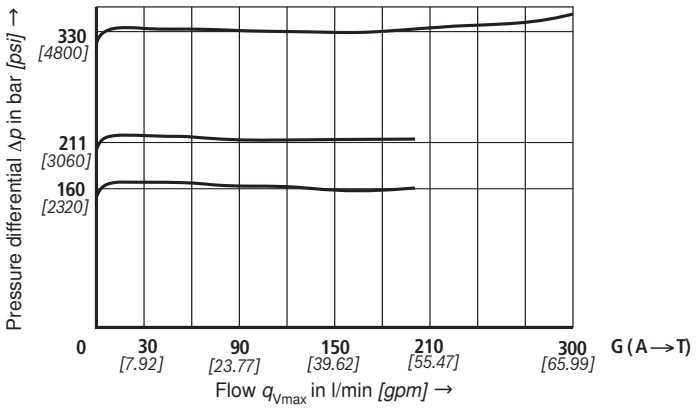
Flow from the pump to the accumulator



Maximum securable delivery volume of the pressure relief valve applies to only one DB valve

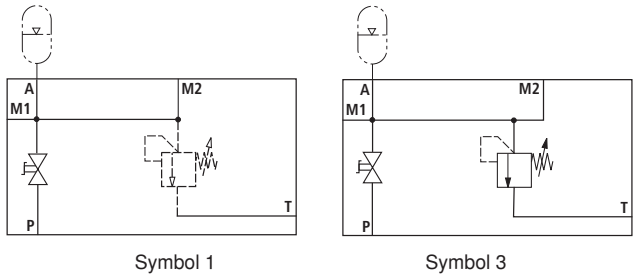


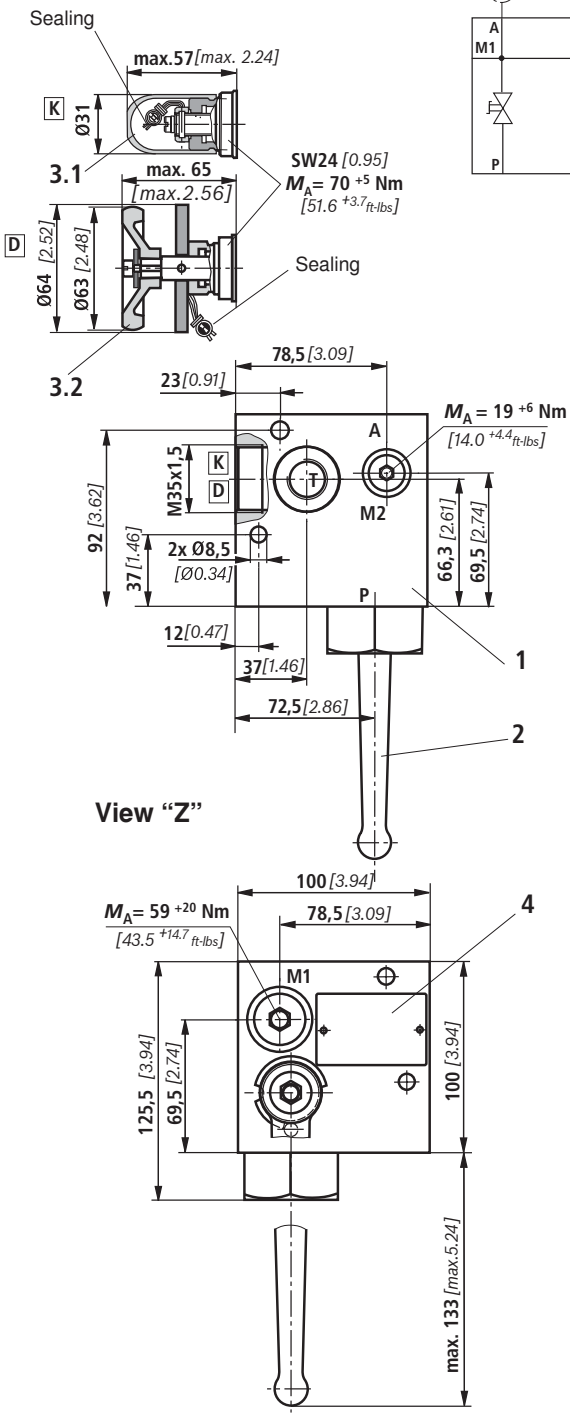
Maximum securable delivery volume of the pressure relief valve applies to two DB valves



Unit dimensions: Type 0532VAW20…DN 20, (dimensions in mm *[inch]*)

Switching symbol 1 and 3





1 Block

2 System shut-off cock

3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed

3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed

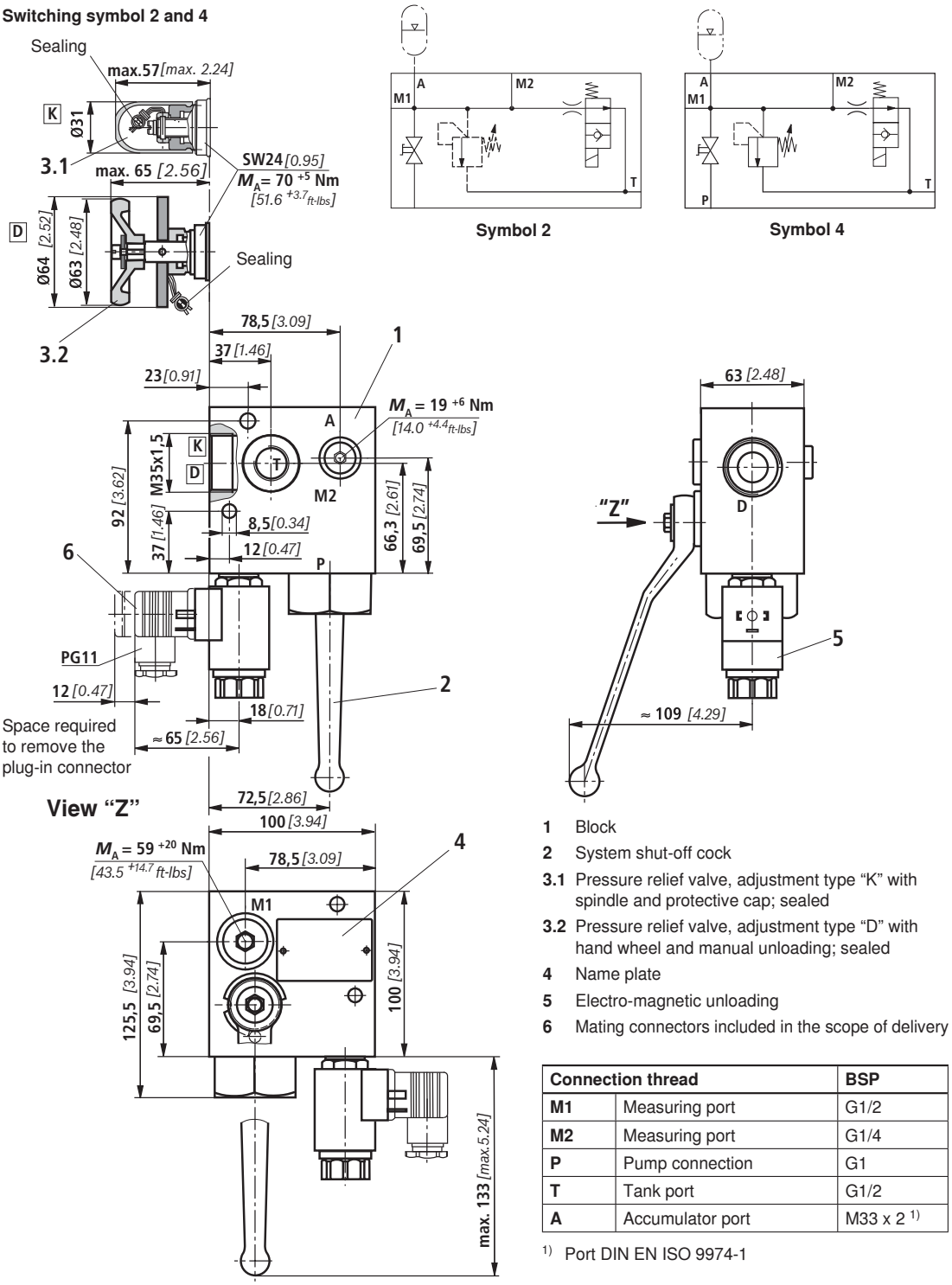
4 Name plate

Connection thread		**BSP**
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1]

[1] Port DIN EN ISO 9974-1

Unit dimensions: Type 0532VAW20 ...DN20 (dimensions in mm *[inch]*)

Switching symbol 2 and 4



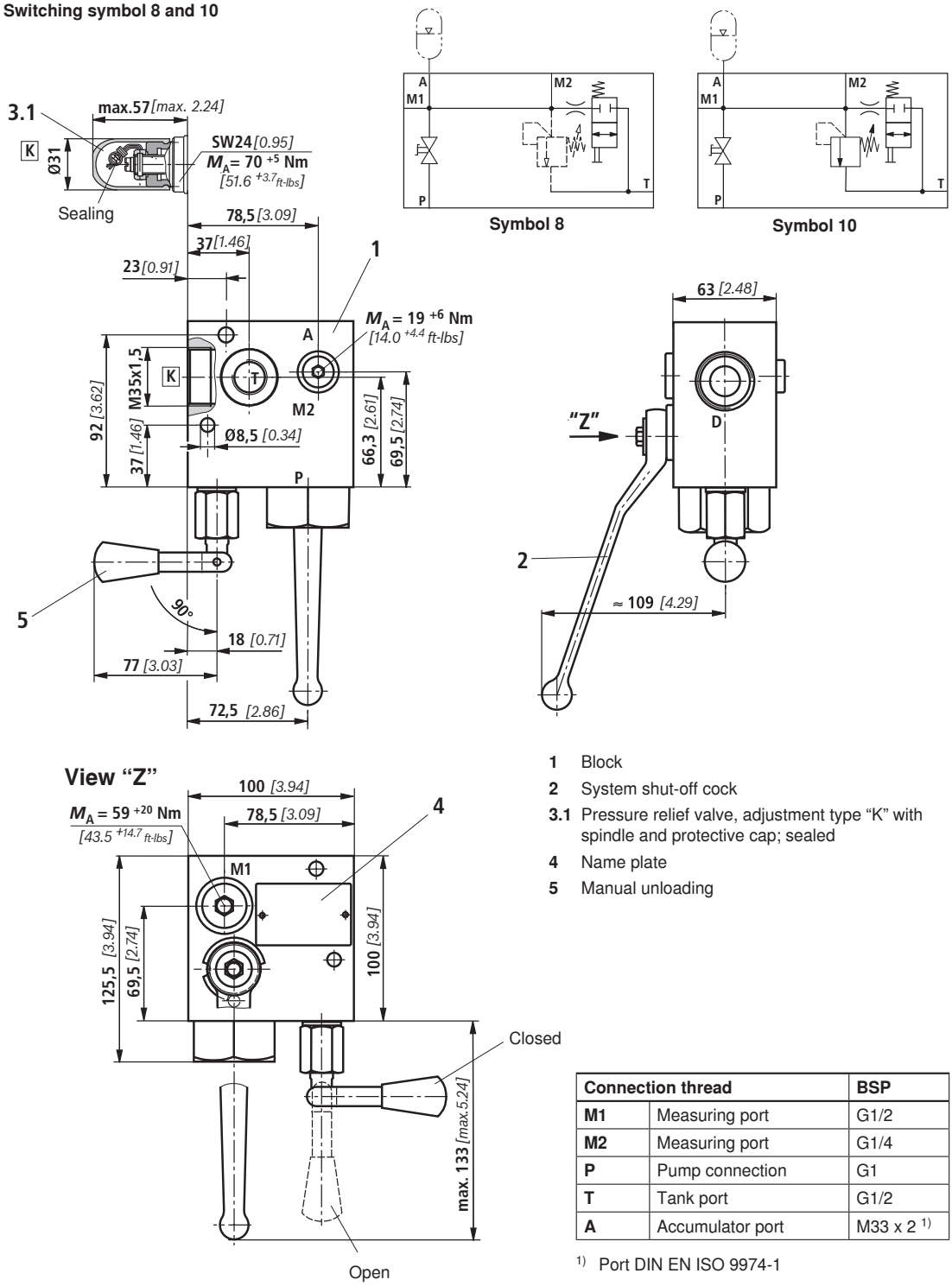
1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed
4 Name plate
5 Electro-magnetic unloading
6 Mating connectors included in the scope of delivery

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1]

[1] Port DIN EN ISO 9974-1

Unit dimensions: Type 0532VAW20…DN 20, (dimensions in mm *[inch]*)

Switching symbol 8 and 10



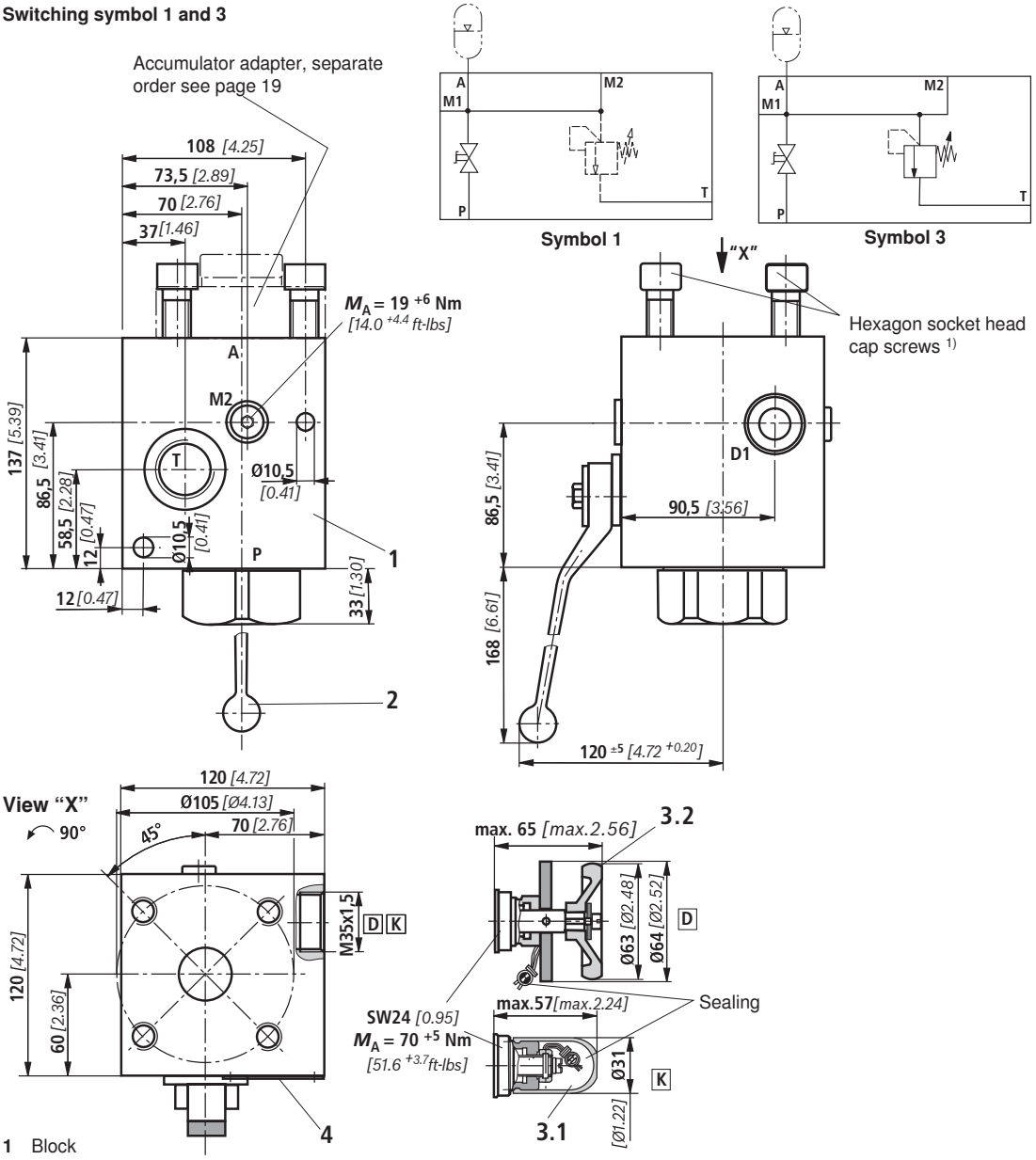
1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
4 Name plate
5 Manual unloading

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1]

[1] Port DIN EN ISO 9974-1

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 1 and 3



1 Block

2 System shut-off cock

3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed

3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed

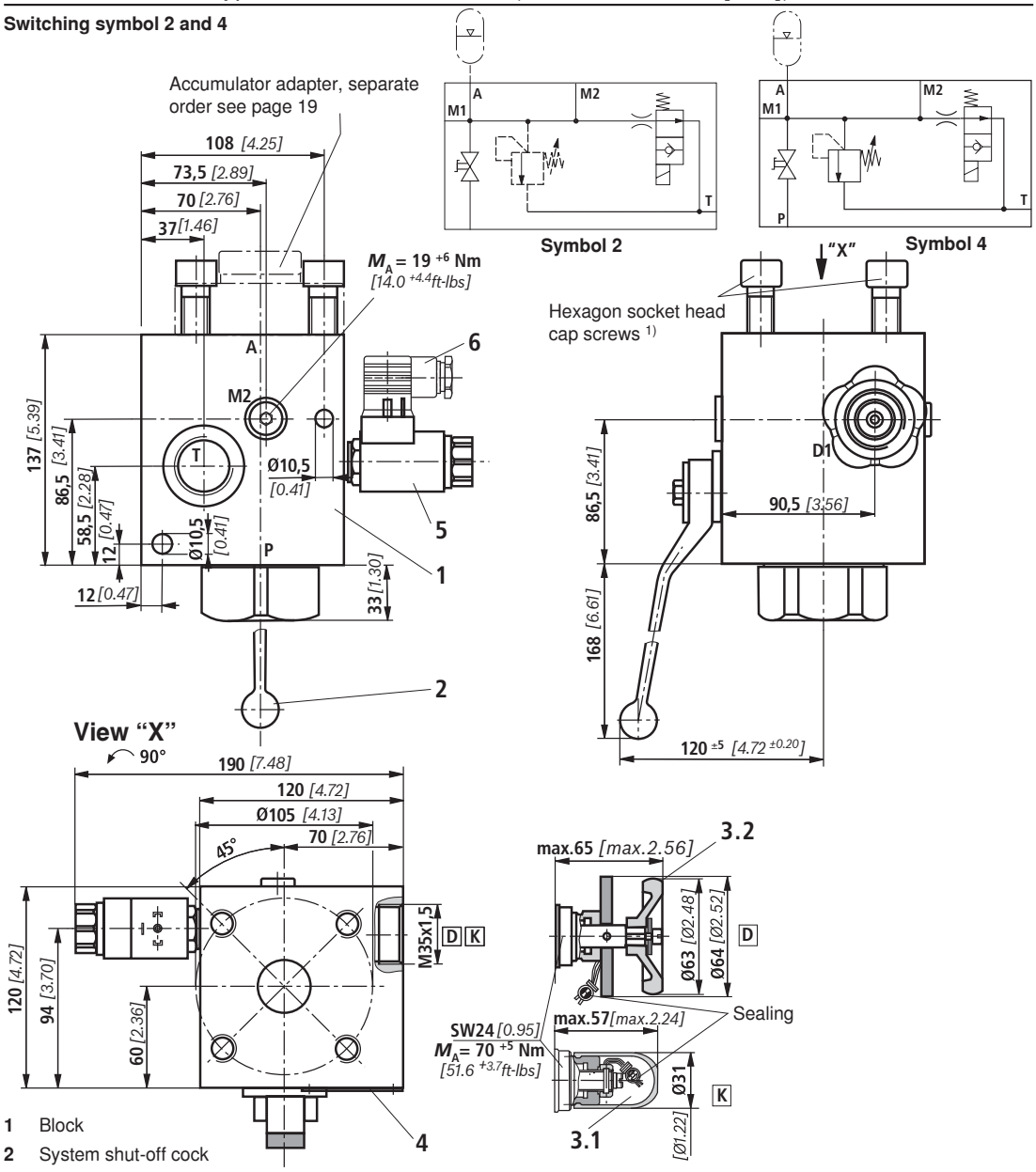
4 Name plate

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 19

[1] **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 2 and 4



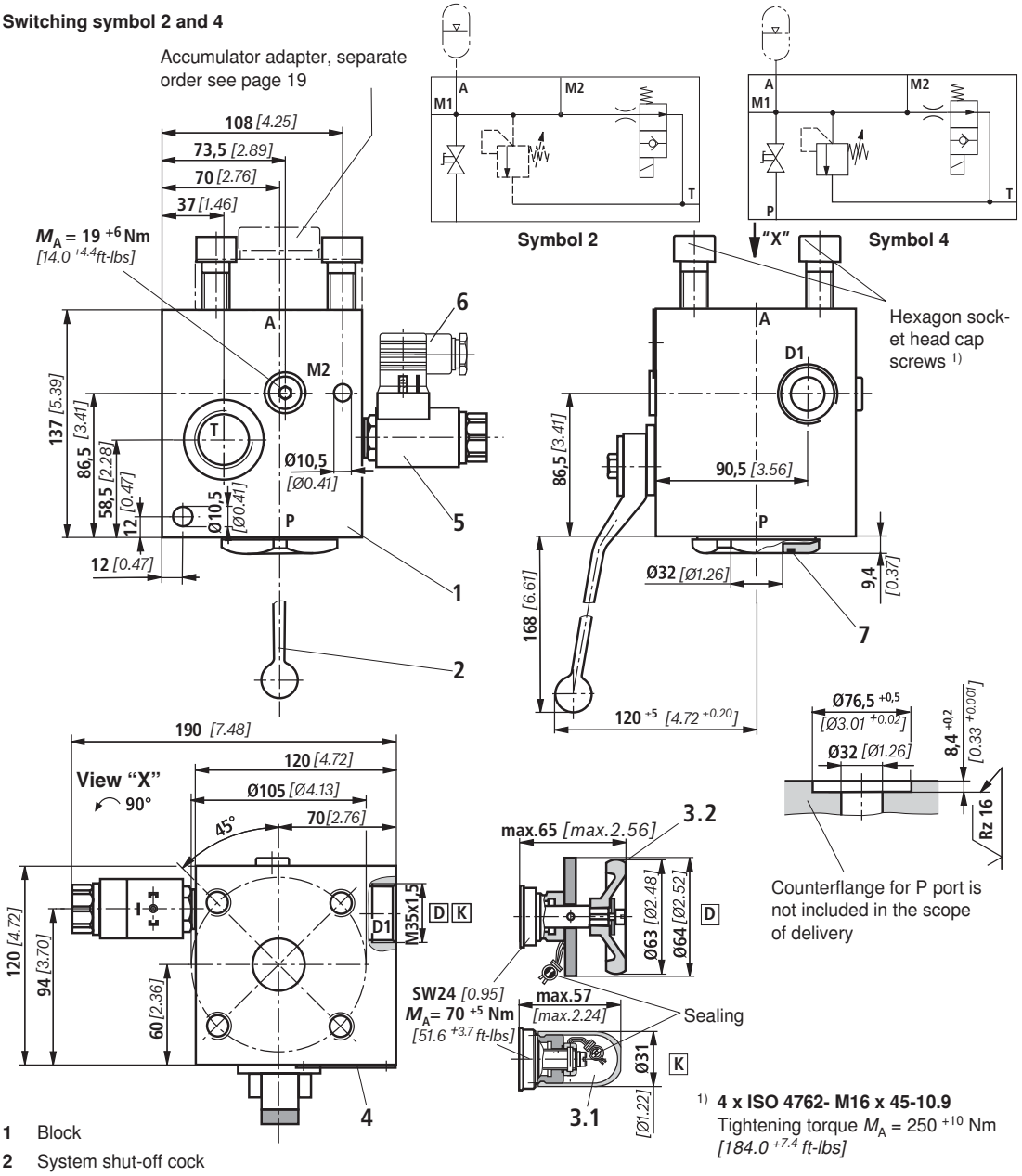
1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed
4 Name plate
5 Electro-magnetic unloading
6 Mating connectors, included in the scope of delivery

1) **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*

Connection thread		**BSP**
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump	G1 1/2
T	Tank	G1
A	Accumulator	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 2 and 4

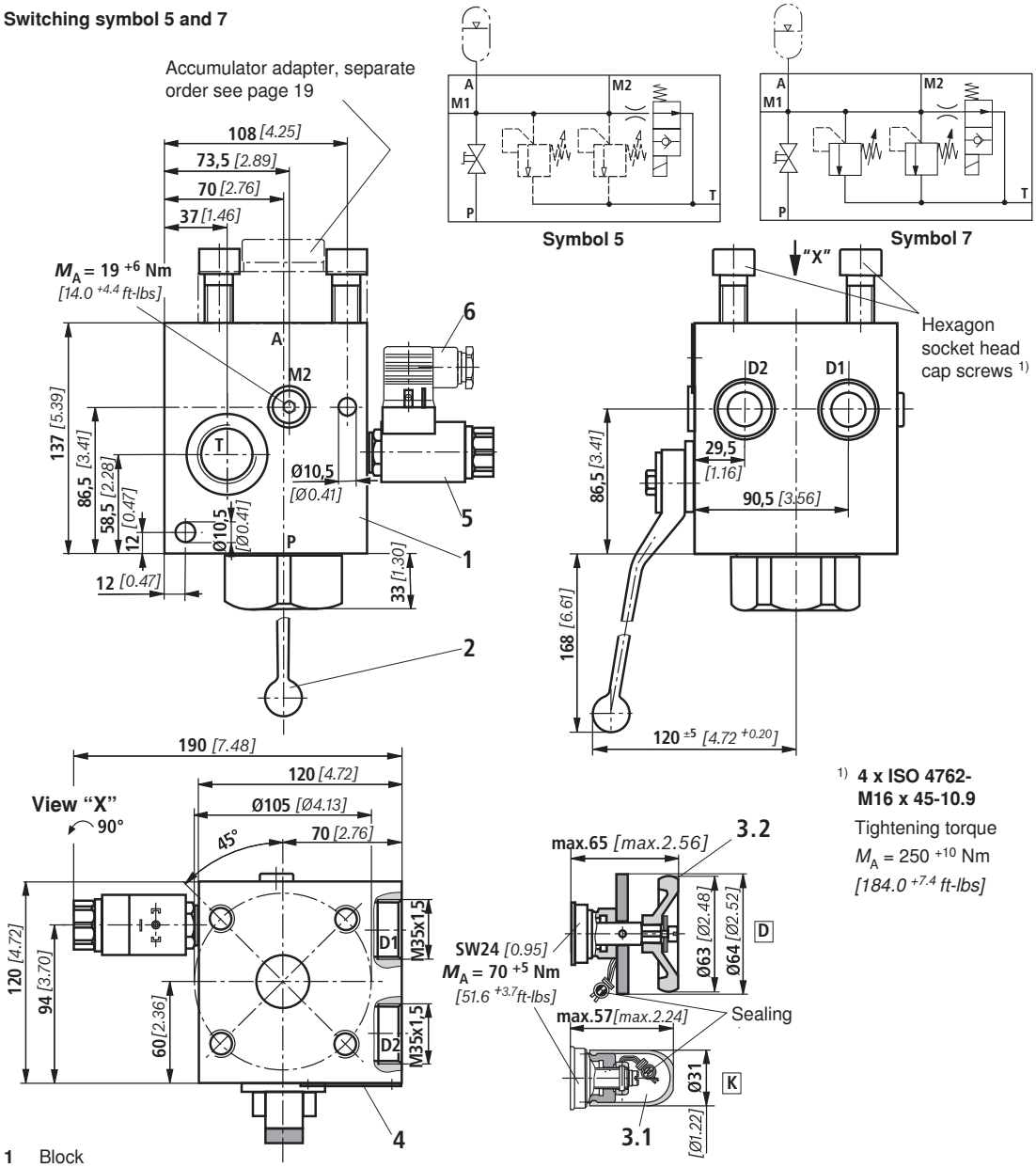


1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed
4 Name plate
5 Electro-magnetic unloading
6 Mating connectors, included in the scope of delivery
7 Seal ring Ø40 x 3

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump (flange)	TK = Ø98; 4 x M16
T	Tank port	G1
A	Accumulator port	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 5 and 7



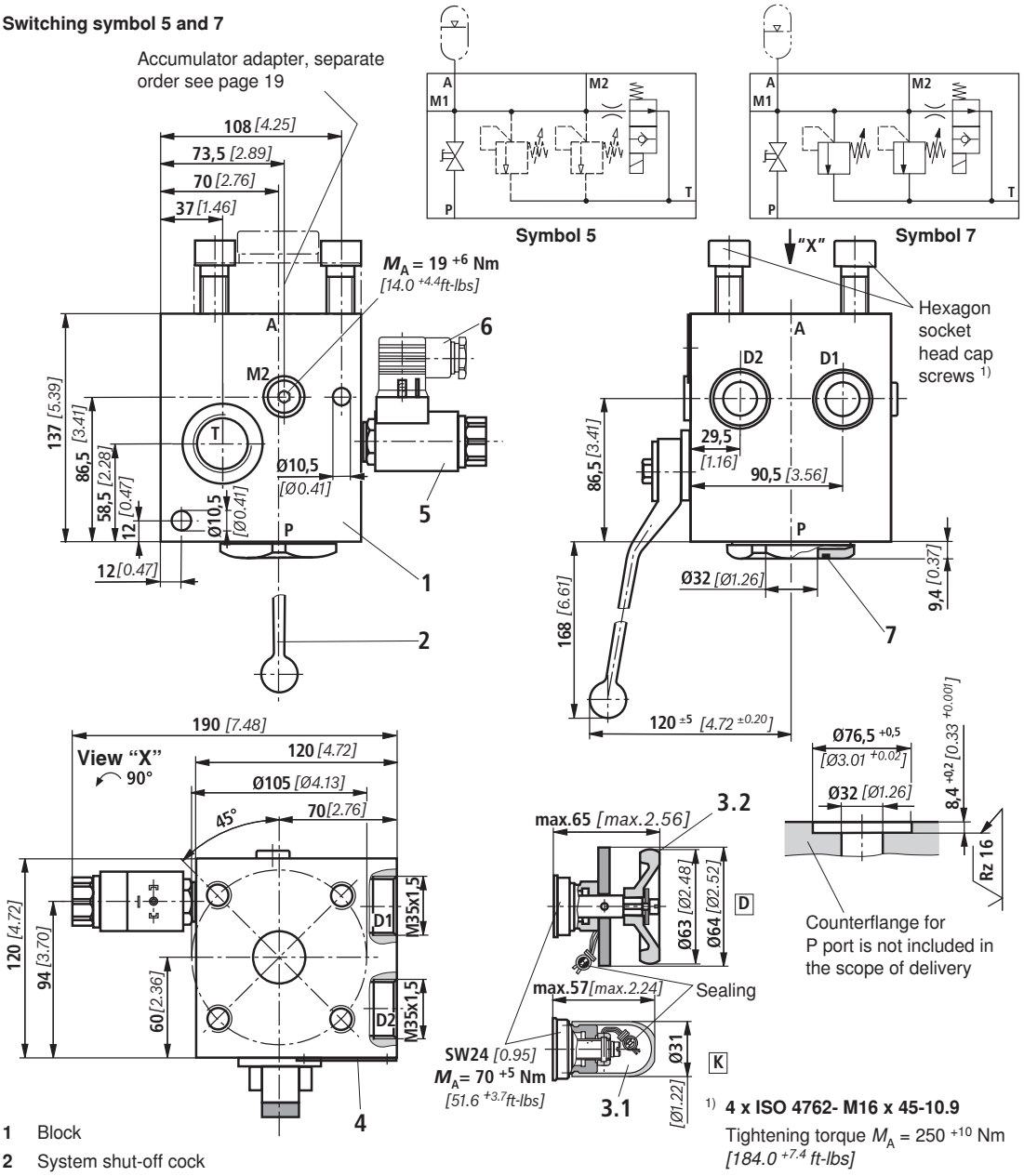
1) **4 x ISO 4762-M16 x 45-10.9**
Tightening torque
M_A = 250 +10 Nm
[184.0 +7.4 ft-lbs]

1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed
4 Name plate
5 Electro-magnetic unloading
6 Mating connectors, included in the scope of delivery

Connection thread		**BSP**
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 5 and 7



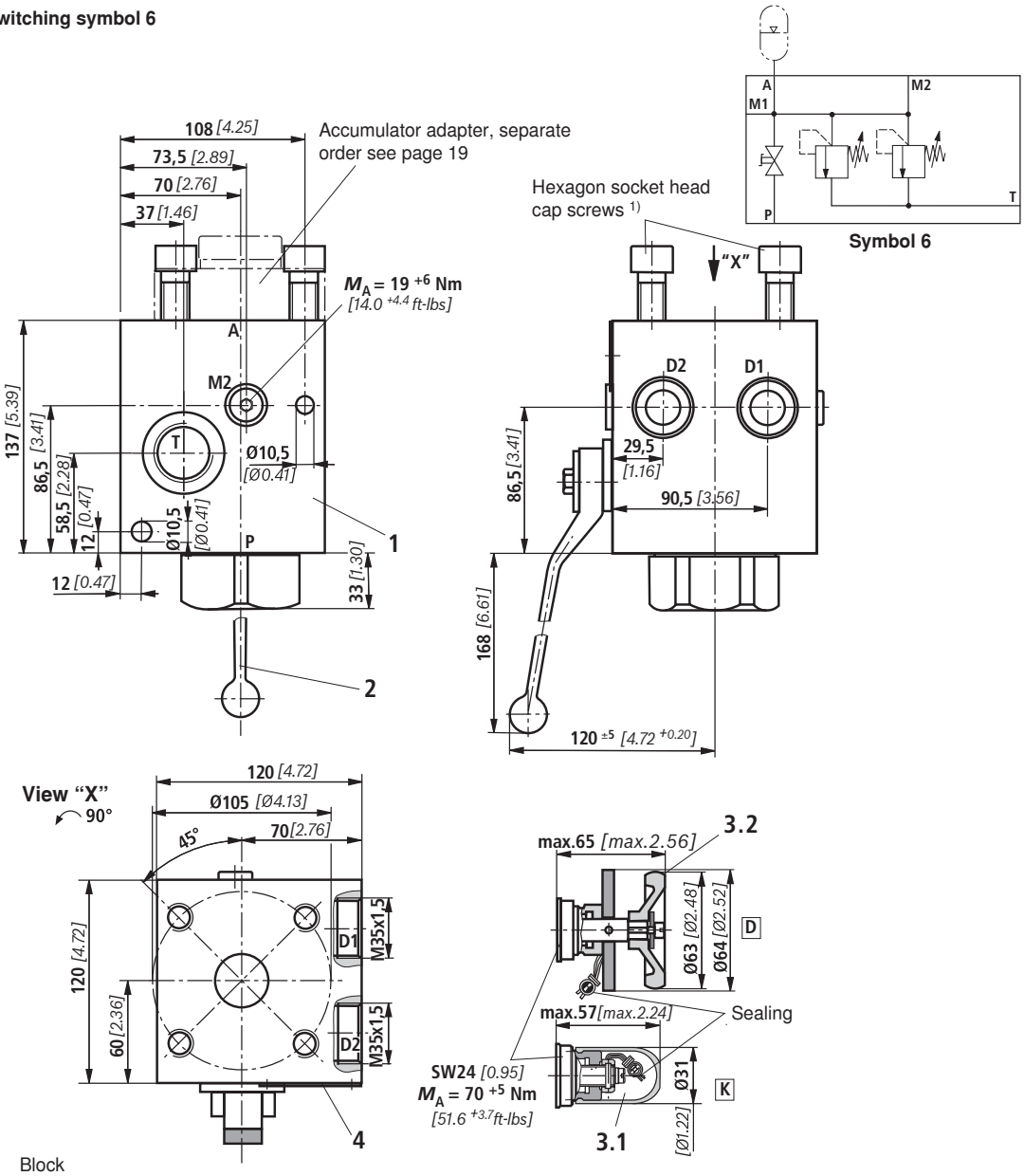
1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed
4 Name plate
5 Electro-magnetic unloading
6 Mating connectors, included in the scope of delivery
7 Seal ring Ø40 x 3

1) **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm
[184.0 +7.4 ft-lbs]

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump (flange)	TK = Ø98; 4 x M16
T	Tank port	G1
A	Accumulator port	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 6



1 Block

2 System shut-off cock

3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed

3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed

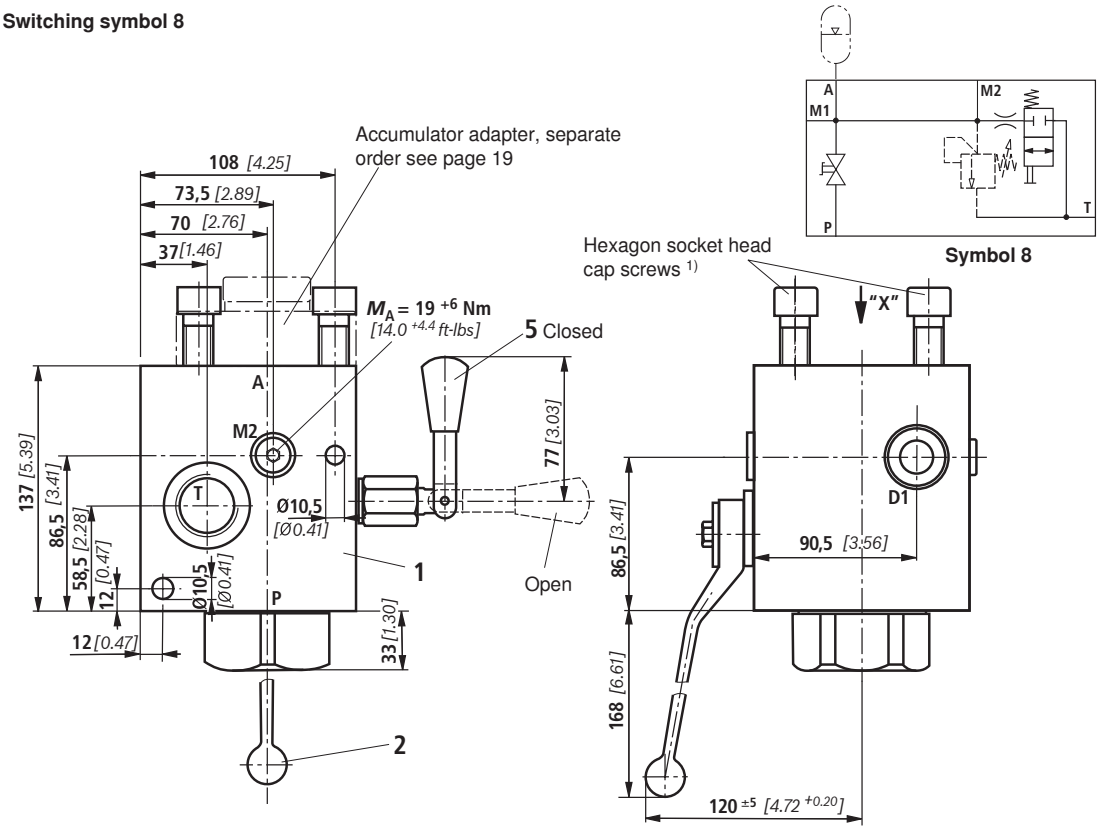
4 Name plate

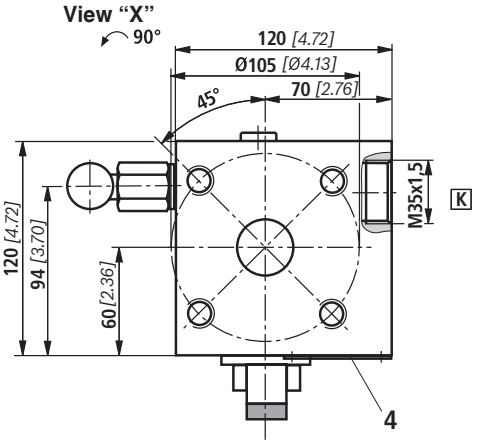
1) **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*

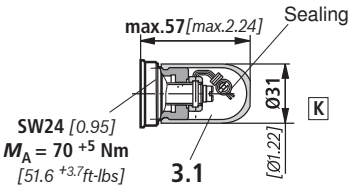
Connection thread		**BSP**
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 8







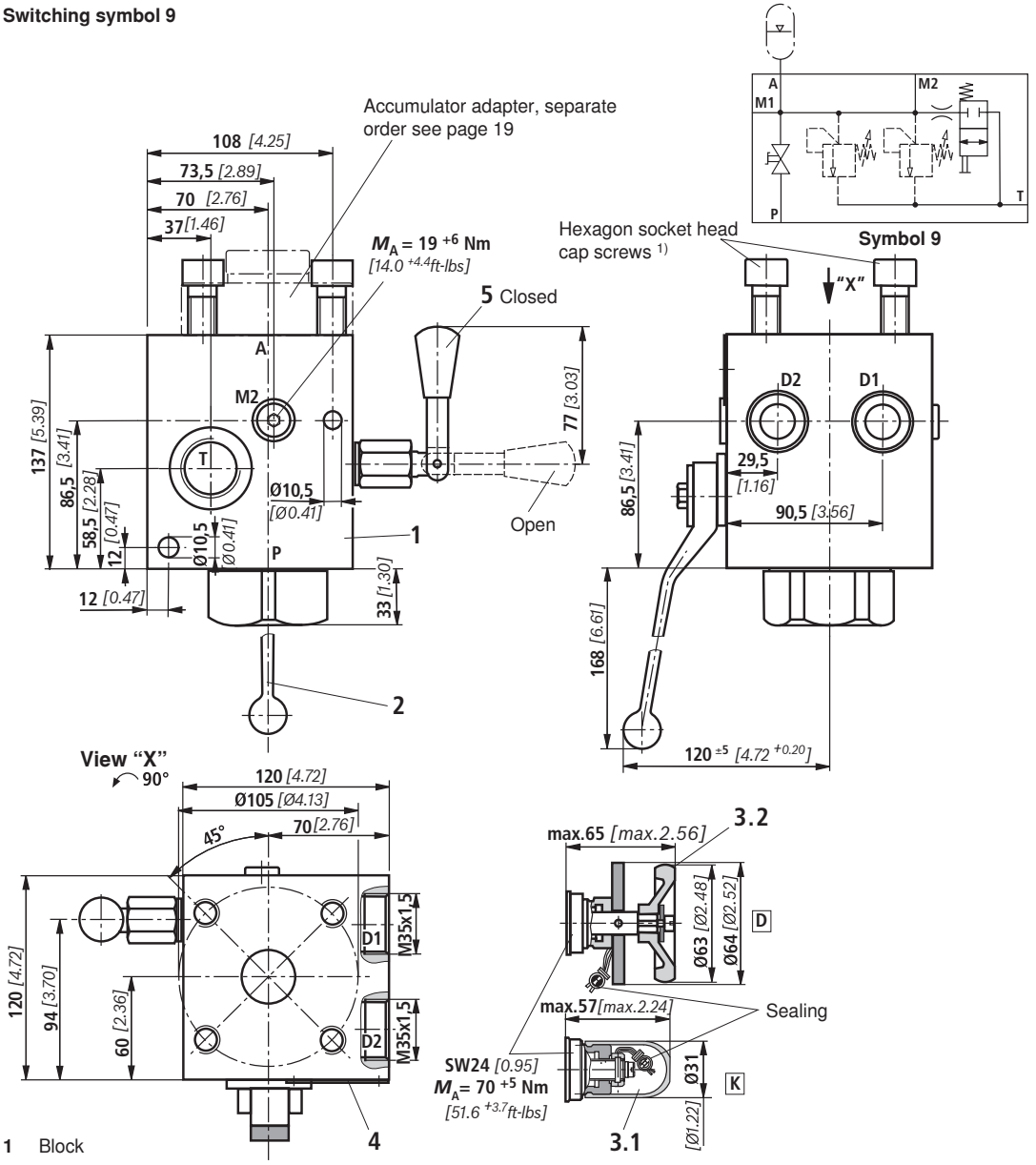
1) **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*

1 Block
2 System shut-off cock
3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed
4 Name plate
5 Manual unloading

Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 19

Unit dimensions: Type 0532VAW32…DN 32, (dimensions in mm *[inch]*)

Switching symbol 9



1 Block

2 System shut-off cock

3.1 Pressure relief valve, adjustment type "K" with spindle and protective cap; sealed

3.2 Pressure relief valve, adjustment type "D" with hand wheel and manual unloading; sealed

4 Name plate

5 Manual unloading

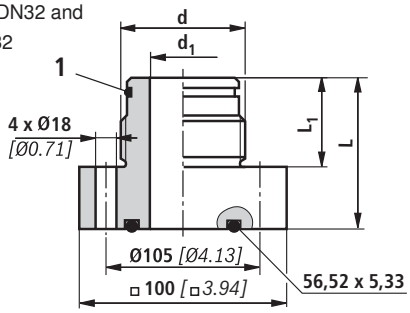
1) **4 x ISO 4762- M16 x 45-10.9**
Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*

Connection thread		**BSP**
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump connection	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 19

Accessories: Accumulator adapter BSP thread (dimensions in mm *[inch]*)

Accumulator adapter for Type 0352VAW32..., max. operating pressure 330 bar *[4800 psi]*

Type: S307V/G1 1/4-DN32 and S309V/G2-DN32



Scope of delivery comprises 4 hexagon socket head cap screws **ISO 4762 - M16 x 45 - 10.9**

1) For more information on the accumulator adapter Type S307 and S309 please refer to AB22-18

1 Seal ring, see table

Short designation	Accumulator adapter 1)	Material no.	d	d_1	L	L_1	Seal ring
S307	S307V/G1 1/4-DN32	**R900085303**	G1 1/4	20	67	37	Ø30.00 x 3.00
S309	S309V/G2-DN32	**R900545858**	G 2	32	73	43	Ø48.00 x 3.00

Accessories: Pressure relief valve

Set pressure of the pressure relief valve in bar *[psi]*	Adjustment type at the pressure relief valve		Maximum securable delivery volume l/min *[gpm]*	Material no. (Seal material FKM)
	Hand wheel	Spindle with protective cap		
50 *[730]*			40 *[10.56]*	0532004200
70 *[1015]*			50 *[13.20]*	0532004201
100 *[1450]*			100 *[26.40]*	0532004202
120 *[1740]*			100 *[26.40]*	0532004211
140 *[2030]*			100 *[26.40]*	0532004203
160 *[2320]*			100 *[26.40]*	0532004204
200 *[3480]*			100 *[26.40]*	0532004209
211 *[3060]*			100 *[26.40]*	0532004205
250 *[3625]*			130 *[34.32]*	0532004206
280 *[4060]*			130 *[34.32]*	0532004210
300 *[4350]*			130 *[34.32]*	0532004207
330 *[4800]*			150 *[39.60]*	0532004208
50 *[730]*			40 *[10.56]*	0532004102
70 *[1015]*			50 *[13.20]*	0532004103
80 *[1160]*			60 *[15.84]*	0532004111
100 *[1450]*			100 *[26.40]*	0532004104
120 *[1740]*			100 *[26.40]*	0532004114
140 *[2030]*			100 *[26.40]*	0532004107
160 *[2320]*			100 *[26.40]*	0532004105
180 *[2610]*			100 *[26.40]*	0532004113
200 *[3480]*			100 *[26.40]*	0532004110
211 *[3060]*			100 *[26.40]*	0532004100
250 *[3625]*			130 *[34.32]*	0532004106
260 *[3770]*			130 *[34.32]*	0532004115
280 *[4060]*			130 *[34.32]*	0532004112
300 *[4350]*			130 *[34.32]*	0532004101
330 *[4800]*			150 *[39.60]*	0532004108

Safety instructions: Type tested safety valves Type 0532VA according to pressure equipment – directive 97/23/EC

– Before ordering a type tested safety valve, it must be observed that with the desired **response pressure *p*** the maximum admissible **flow q_{Vmax}** of the safety valve is higher than the maximum possible flow of the system of the accumulator to be secured.

  In this connection, the corresponding regulations are to be observed!

– According to **PED 97/23/EC,** the increase in the system pressure due to the flow must not be larger than 10 % of the set response pressure (see component marking).

  The maximum admissible flow specified in the component marking q_{Vmax} must not be exceeded.

  Discharge lines of safety valves must end in a non-dangerous manner. In the discharge system, the accumulation of fluids must not be possible (see AD2000 sheet A2).

☞ **Application instructions must be observed!**

– In the plant, the response pressure specified in the part marking is set.

– The maximum admissible flow specified in the part marking applies to applications without backpressure in the discharge line (port T).

– By removing the lead seal at the safety valve, the approval according to PED becomes void!

– Basically, the requirements of the pressure equipment directive and of data sheet AD2000 sheet A2 have to be observed!

– We recommend securing type tested safety valves against in admissible removal from the screw-in housing/block by wiring and sealing with the housing/block (bore available in the adjustment device).

⚠ **Attention!**

Due to the increasing flow, the system pressure increases by the backpressure in the discharge line (port T). (Observe AD2000 sheet A2, section 6.3!)

For this increase in system pressure caused by the flow not exceeding the value of 10 % of the set response pressure, the admissible flow has to be reduced depending on the backpressure in the discharge line (port T) (see diagram page 6 and 7).