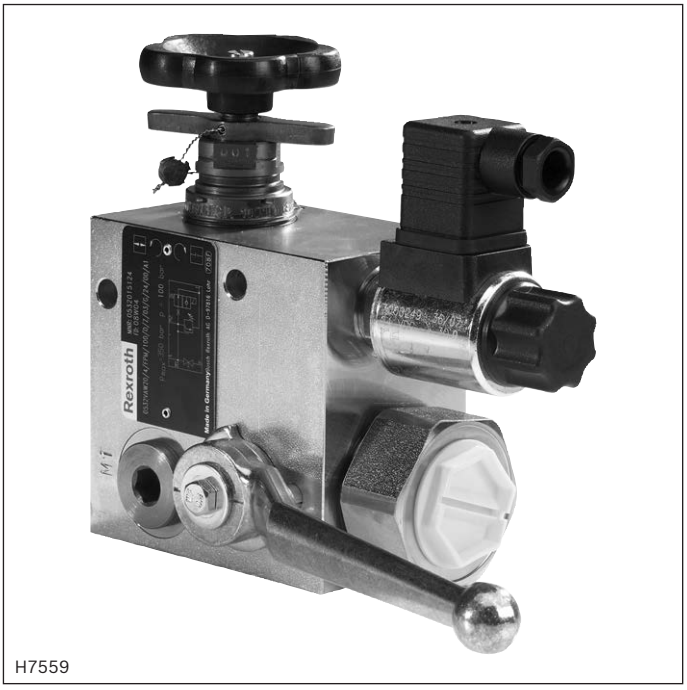
Accumulator shut-off block

Type 0532VAW

RE 50128
Edition: 2016-06
Replaces: 07.10



H7559

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

Features

- Ready for connection
- Manual or electro-magnetic unloading
- Large number of variants
- Compact design
- Direct operated pressure relief valve according to data sheet 50153

Contents

Ordering code

01	02	03	04	05	06	07	08	09	10
0532VAW	/	/	/	/	/	/	/	/	/

01	Accumulator shut-off block	**0532VAW**

Nominal diameter

02	DN20	**20**
	DN32	**32**

Symbol (see preferred types on pages 4 and 5)

03	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

04	FKM seal	**FKM**
	Observe compatibility of seals with hydraulic fluid used! (Other seals upon request)	

Pressure adjustment

05	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

06	With hand wheel	**D**
	Spindle with protective cap	**K**
	Without pressure relief valve	**–** [2]

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

☞ **Notice:** Preferred types and standard units are contained in the EPS (standard price list).

Ordering code

01	02	03	04	05	06	07	08	09	10
0532VAW	/	/	/	/	/	/	/	/	/

Connection thread P

07	Inch	**Z**
	Flange	**F** [1]

Unloading

08	**Without** directional valve	**00** [3]
	2/2 directional valve, **manual** operation	**01** [4]
	2/2 directional valve, **electrical** operation, normally open	**03** [5]

Voltage type

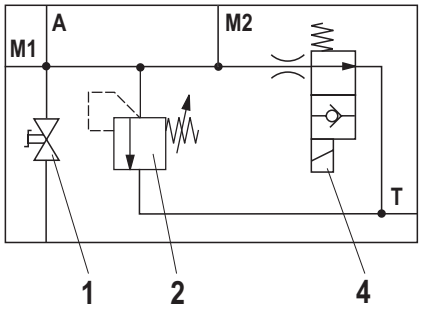
09	Direct voltage 24 V / Frequency	**G24/00** [5]
	Without directional valve	**–/–** [6]

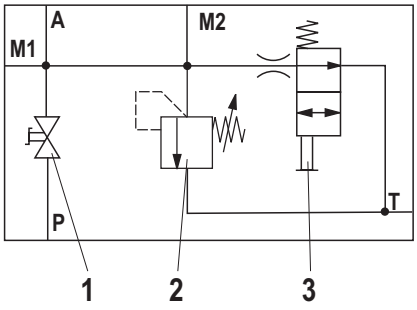
Component series

10	Component series A with standard version 1	**A1**
	Component series A with special version S	**AS**

[1] Not possible with version "20"
[2] Only for symbols 1, 2, 5, 8 and 9
[3] Only for symbols 1, 3 and 6
[4] Only for symbols 8, 9 and 10
[5] Only for symbols 2, 4, 5 and 7
[6] Only for symbols 1, 3, 6, 8, 9 and 10

Symbols

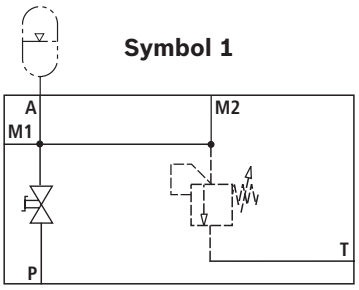


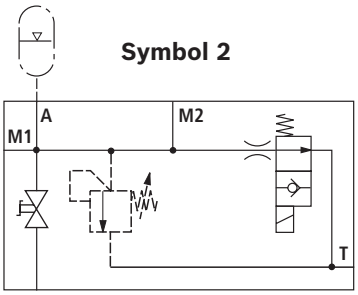


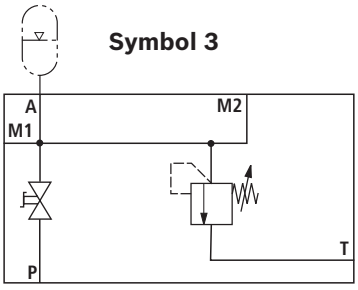
1 System shut-off cock
2 Pressure relief valve
3 Manual unloading
4 Electro-magnetic unloading

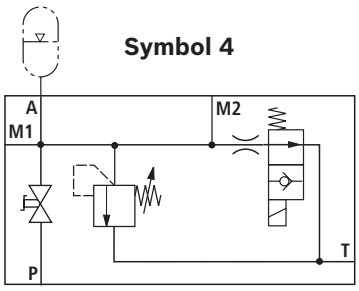
Connection designation:
M1, M2 Measuring port
P Pump port
A Accumulator port
T Tank port

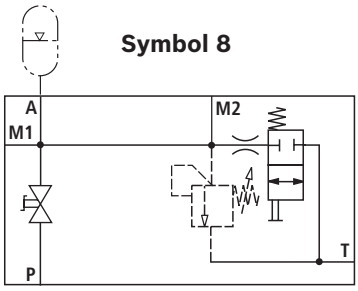
Preferred types DN20

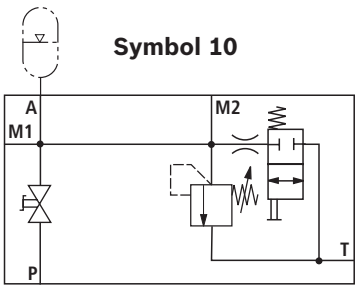








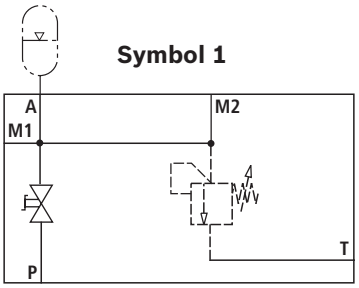




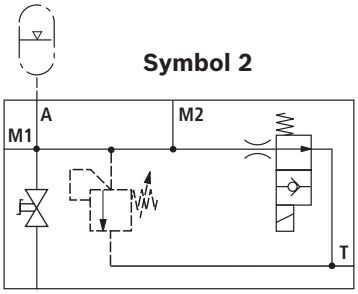
Symbol	Pressure set at the pressure relief valve in bar *[psi]*	Maximum securable flow l/min *[gpm]*	Denomination	Material no.
1	–	–	0532VAW20/1/FKM/-/-/Z/00/-/-/A1	**0532015120**
2	–	–	0532VAW20/2/FKM/-/-/Z/03/G/24/00/A1	**0532015121**
3	50 *[730]*	40 *[10.56]*	0532VAW20/3/FKM/050/D/Z/00/-/-/A1	**R901192665**
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**

Preferred types DN32

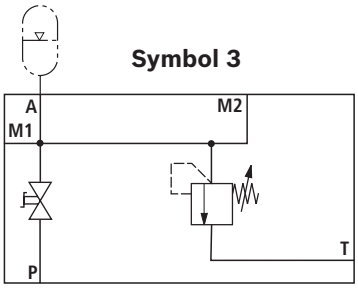
Symbol 1



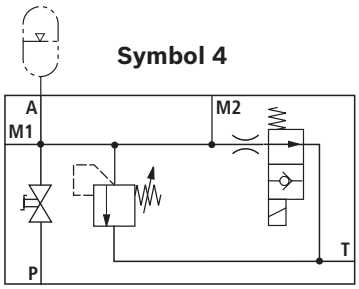
Symbol 2



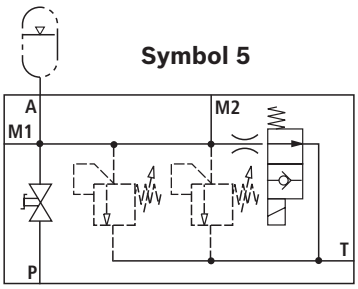
Symbol 3



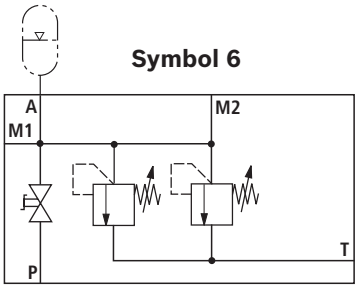
Symbol 4



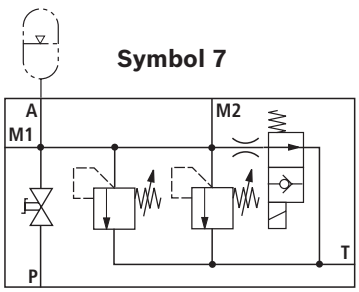
Symbol 5



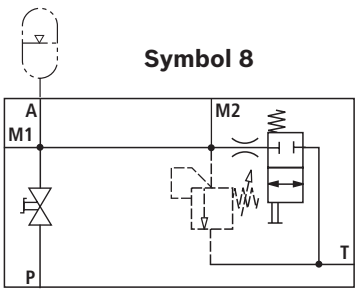
Symbol 6



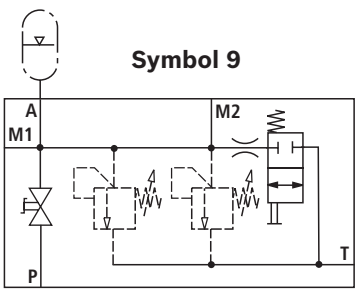
Symbol 7



Symbol 8



Symbol 9



Symbol	Pressure set at the pressure relief valve in bar *[psi]*	Maximum securable flow 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 shut-off block serves for protection, isolation and unloading of hydraulic accumulators. It is classified according to its use according to Pressure Equipment Directive 2014/68/EU article 4, section 3.

The connection between the accumulator shut-off block and the accumulator is realized by means of an accumulator adapter. An optional additional 2-way valve with electrical operation (normally open) enables automatic unloading of the accumulator in case of shutdown or "emergency off function".

The accumulator is protected from inadmissible overpressure by means of the pressure relief valve.
The **pressure relief valve** must **not be applied for any control tasks**!
Sufficient difference between the pressure set at the pressure relief valve and the operating pressure must be ensured. Response of the pressure relief valve should be prevented.

Technical data

(For applications outside these parameters, please consult us.)

general		
Weight		See table below
Installation position		Any
Ambient temperature range	°C *[°F]*	–15 ... +80 *[+5 ... +176]*

hydraulic		
Maximum operating pressure	bar *[psi]*	330 *[4800]*
Maximum securable flow	l/min *[US gpm]*	See pages 4 and 5
Δp-q_V characteristic curve		See page 8 and 9
Hydraulic fluid		See table below
Hydraulic fluid temperature range	°C *[°F]*	–15 ... +80 *[+5 ... +176]*
Seal material		FKM seals
Viscosity range	mm²/s *[SUS]*	12 ... 380 *[56 ... 1761]*
Maximum admissible degree of contamination of the hydraulic fluid Cleanliness class according to ISO 4406 (c)		Class 20/18/15 [1]

Hydraulic fluid	**Classification**	**Suitable sealing materials**	**Standards**	**Data sheet**
Mineral oils	HL, HLP, HLPD, HVLP, HVLPD	FKM	DIN 51524	90220
Other hydraulic fluids on request				

[1] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and simultaneously increases the life cycle of the components.

For the selection of the filters, see www.boschrexroth.com/filter.

Weight

	Nominal diameter	
	DN20	**DN32**
Symbol	kg *[lbs]*	kg *[lbs]*
1	4.4 *[9.7]*	13.8 *[30.3]*
2	4.7 *[10.3]*	14.3 *[31.4]*
3	4.8 *[10.5]*	15.2 *[33.4]*
4	5.6 *[12.3]*	14.7 *[32.3]*
5	–	14.2 *[31.2]*
7	–	14.4 *[31.6]*
8	4.6 *[10.1]*	14.4 *[31.6]*
9	–	14.3 *[31.4]*
10	4.5 *[9.9]*	–

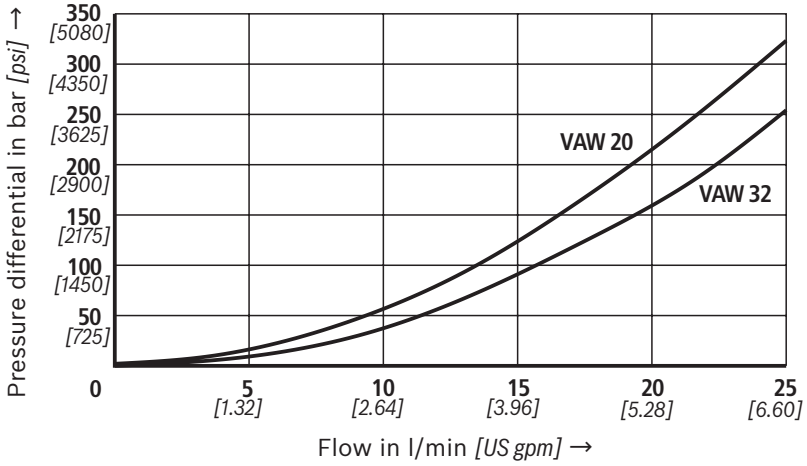
electrical		
Voltage type		Direct voltage
Available voltages	V	24
Protection class according to DIN EN 60529	▶ With connector "K4"	IP 65 (with mating connector mounted and locked)

Characteristic curves

(measured at ν = 35 mm²/s, ϑ_{oil} = 50 °C *[122 °F]*)

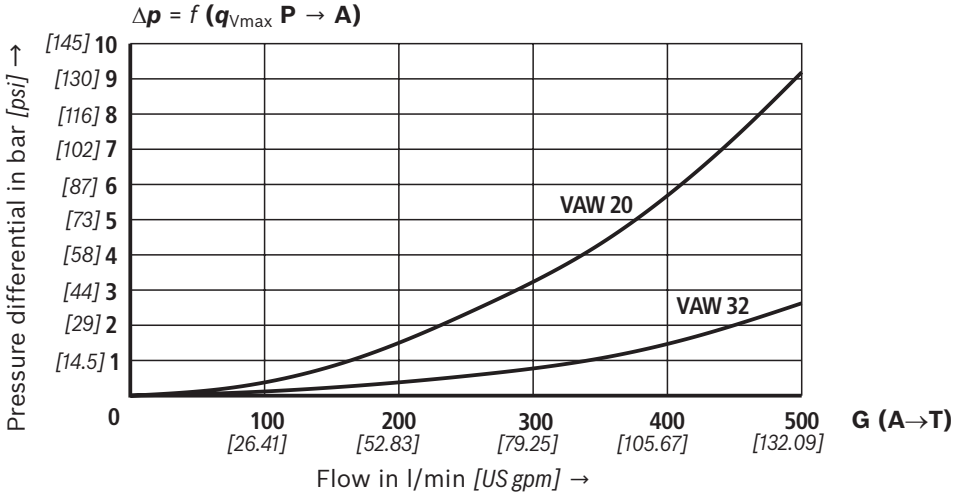
Flow accumulator via unloading valve to the tank

$\Delta p = f\ (q_{Vmax}\ \mathbf{A \rightarrow T})$



Flow from pump to accumulator

$\Delta p = f\ (q_{Vmax}\ \mathbf{P \rightarrow A})$

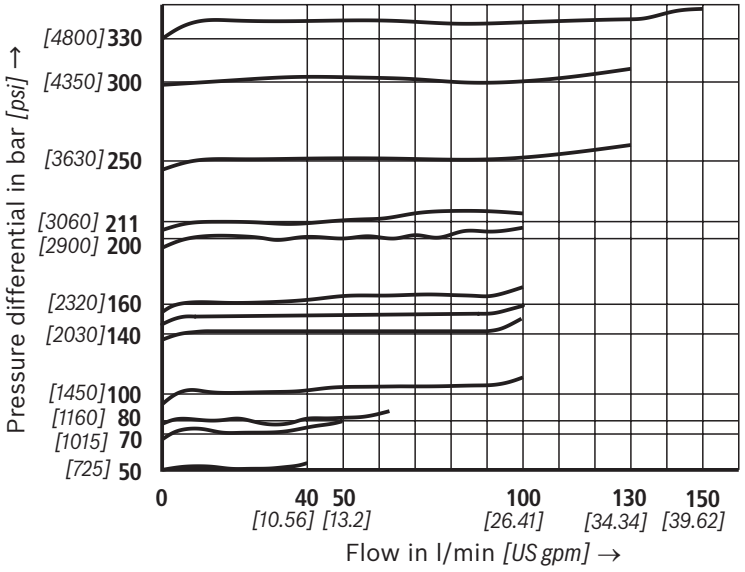


Characteristic curves

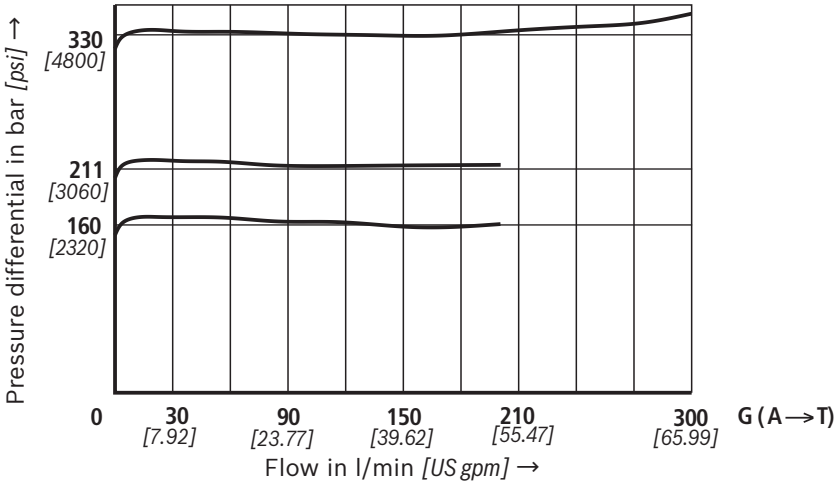
(measured at ν = 35 mm²/s, ϑ_{oil} = 50 °C *[122 °F]*)

Maximum securable flow of the pressure relief valve

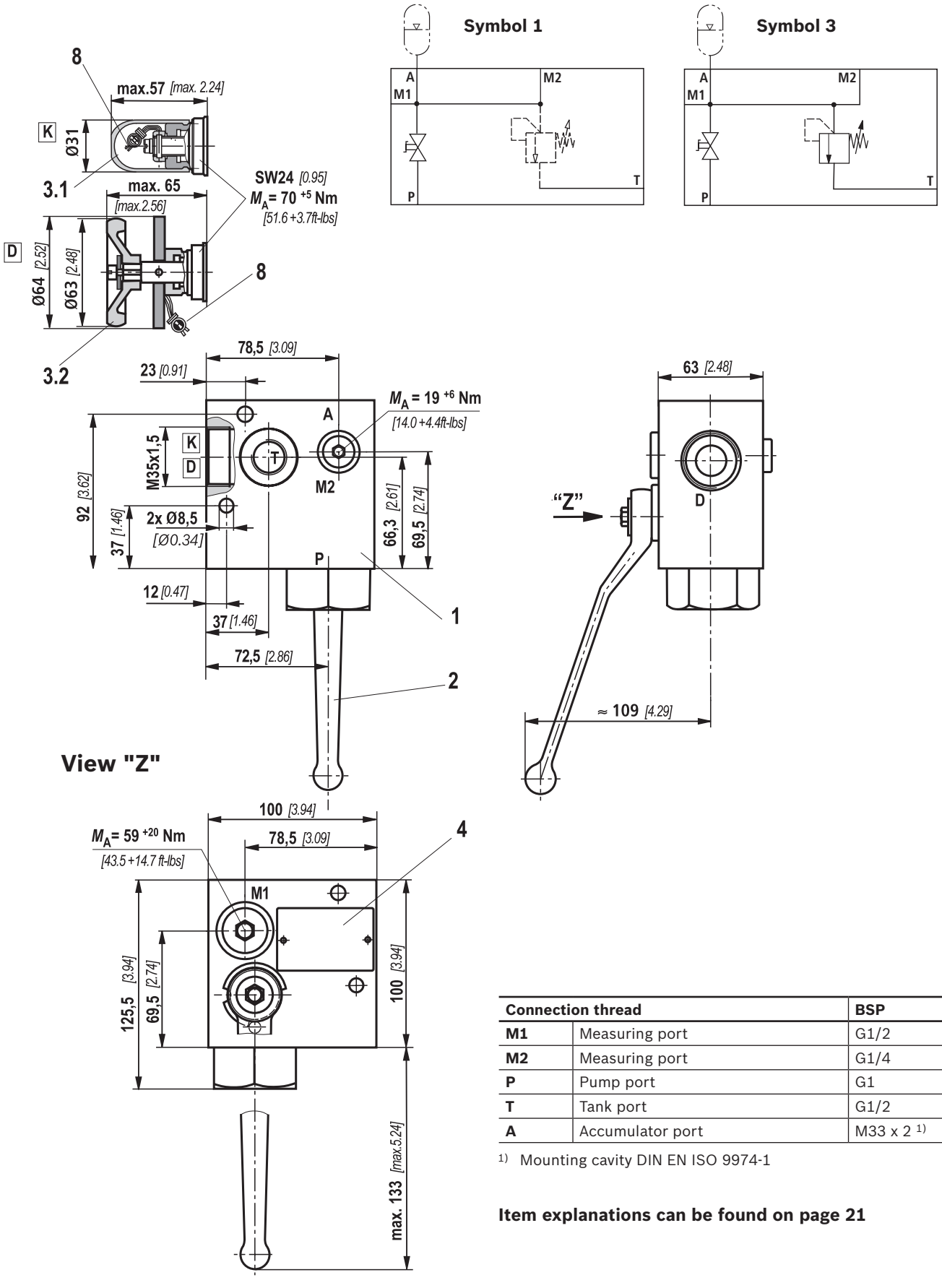
One pressure relief valve



Two pressure relief valves



Dimensions: Version "20", symbol 1 and 3
(dimensions in mm *[inch]*)

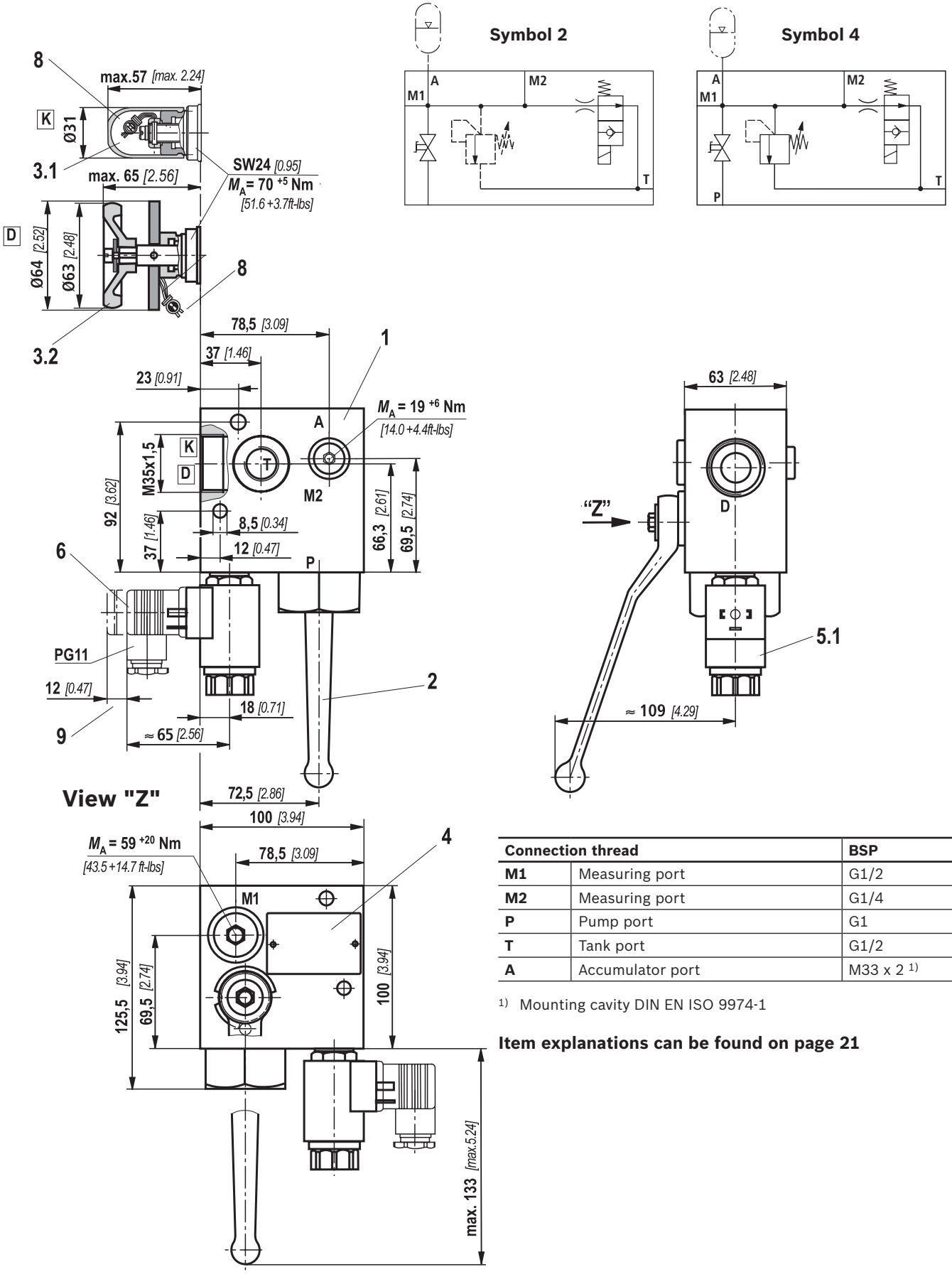


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1]

[1] Mounting cavity DIN EN ISO 9974-1

Item explanations can be found on page 21

Dimensions: Version "20", symbol 2 and 4
(dimensions in mm *[inch]*)

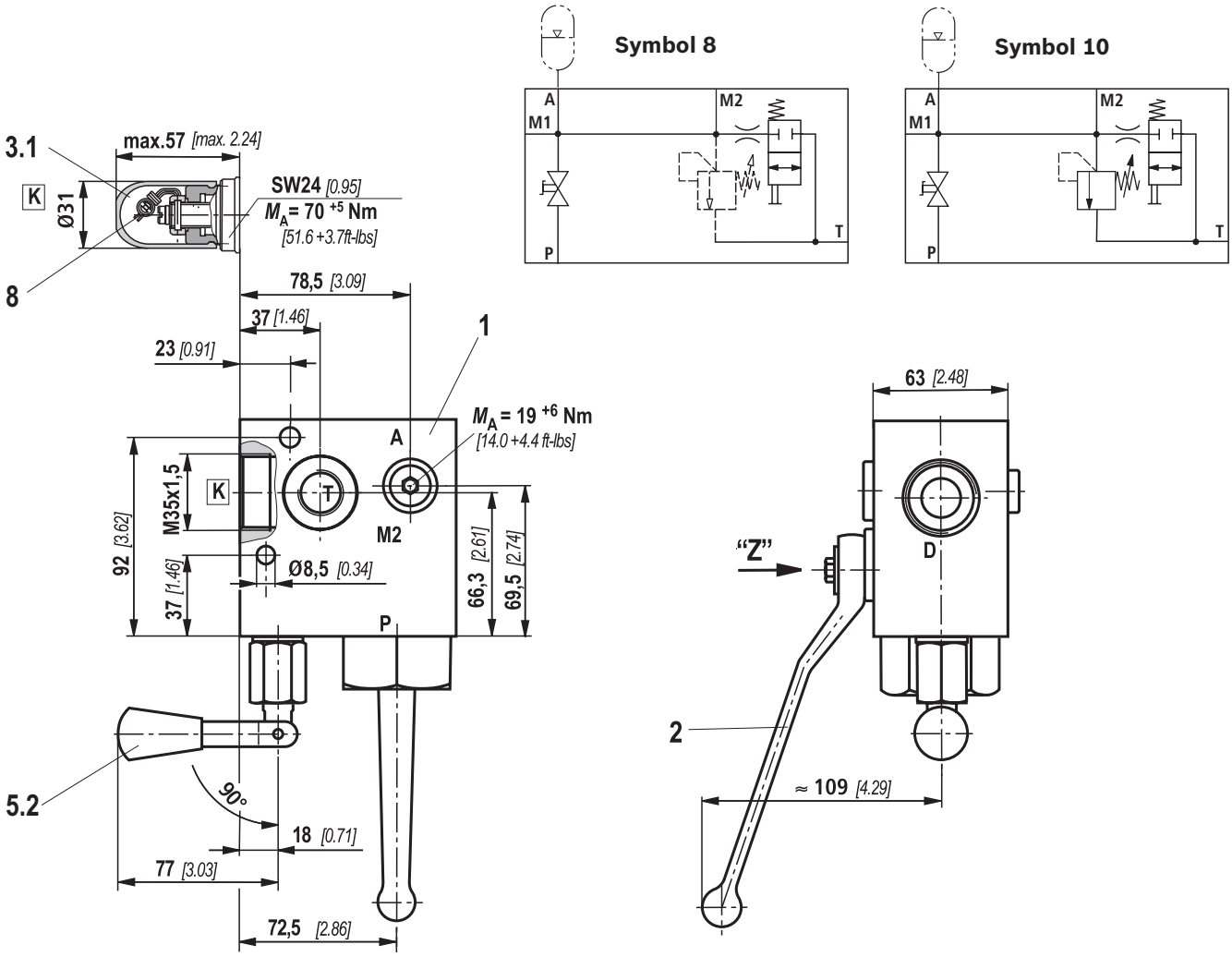


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1]

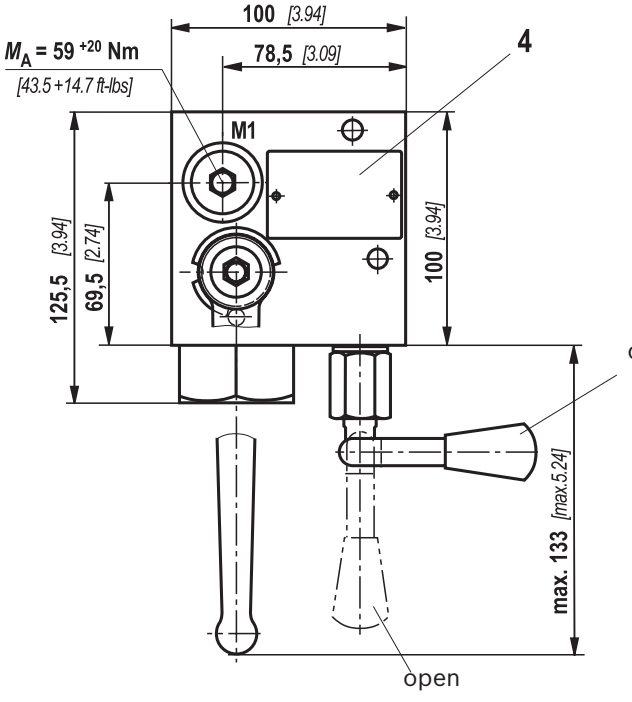
[1] Mounting cavity DIN EN ISO 9974-1

Item explanations can be found on page 21

Dimensions: 0532VAW20...DN20, symbol 8 and 10
(dimensions in mm *[inch]*)



View "Z"

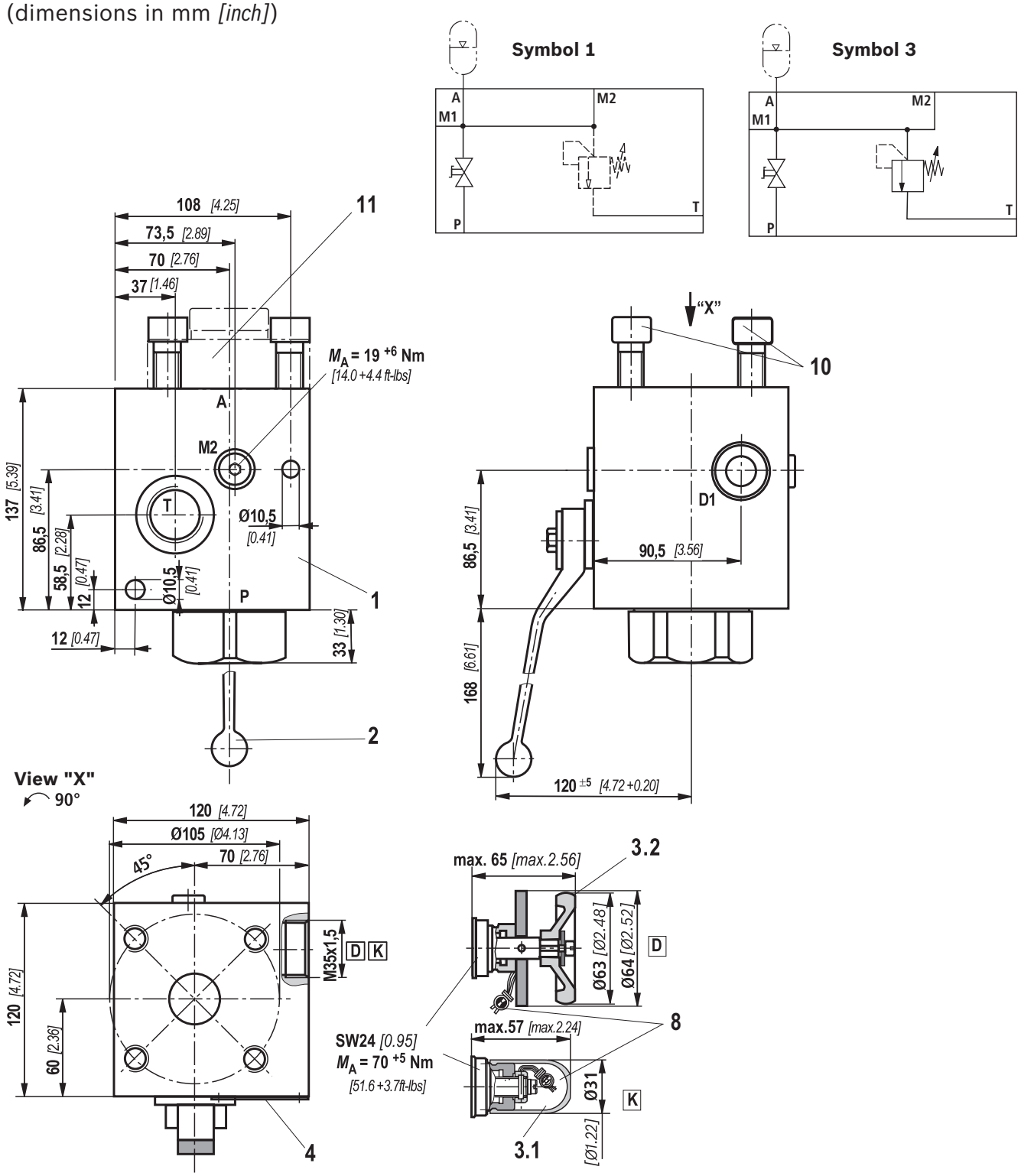


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1
T	Tank port	G1/2
A	Accumulator port	M33 x 2 [1)]

[1)] Mounting cavity DIN EN ISO 9974-1

Item explanations can be found on page 21

Dimensions: Version "32", symbol 1 and 3
(dimensions in mm *[inch]*)

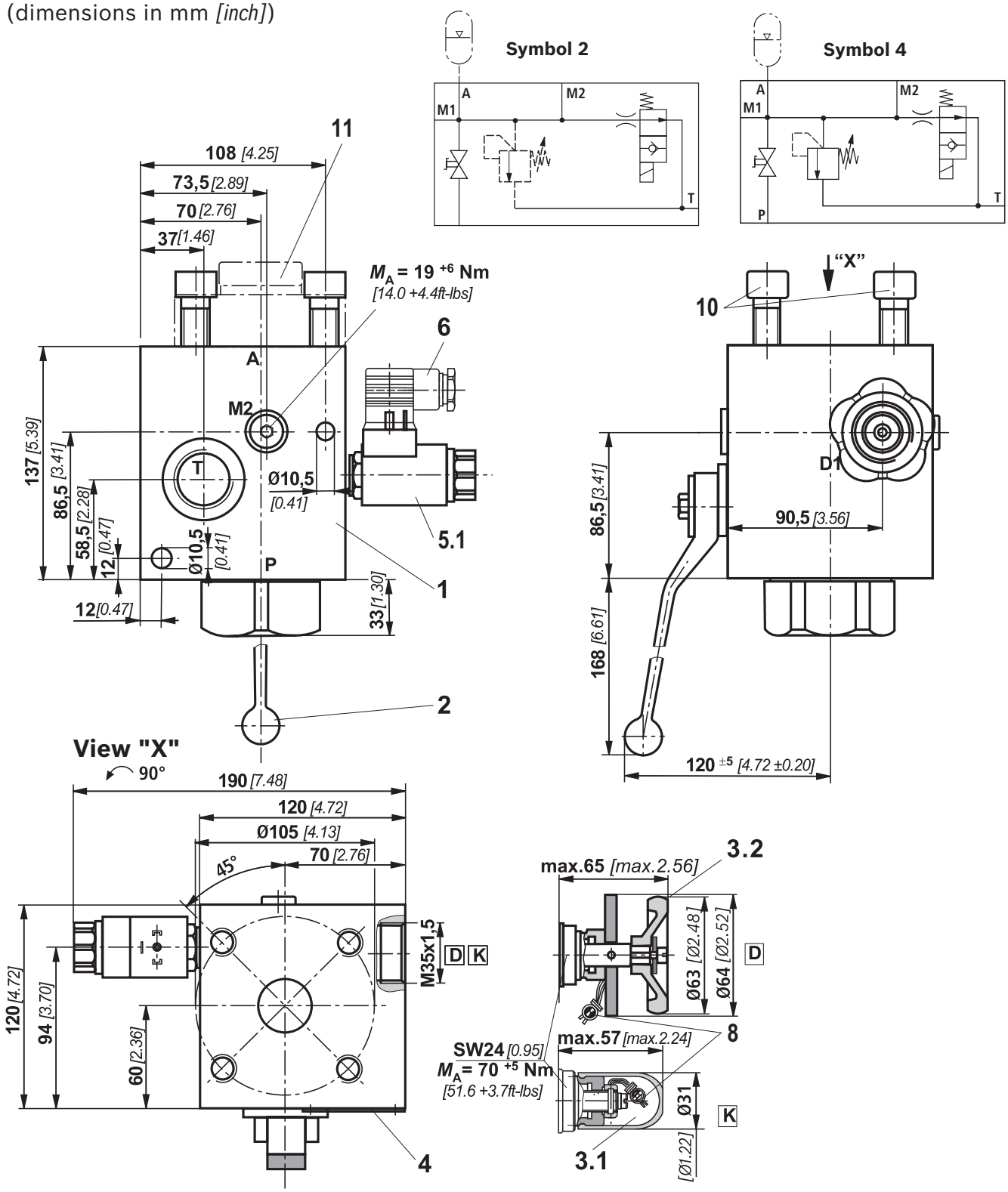


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 2 and 4
(dimensions in mm *[inch]*)

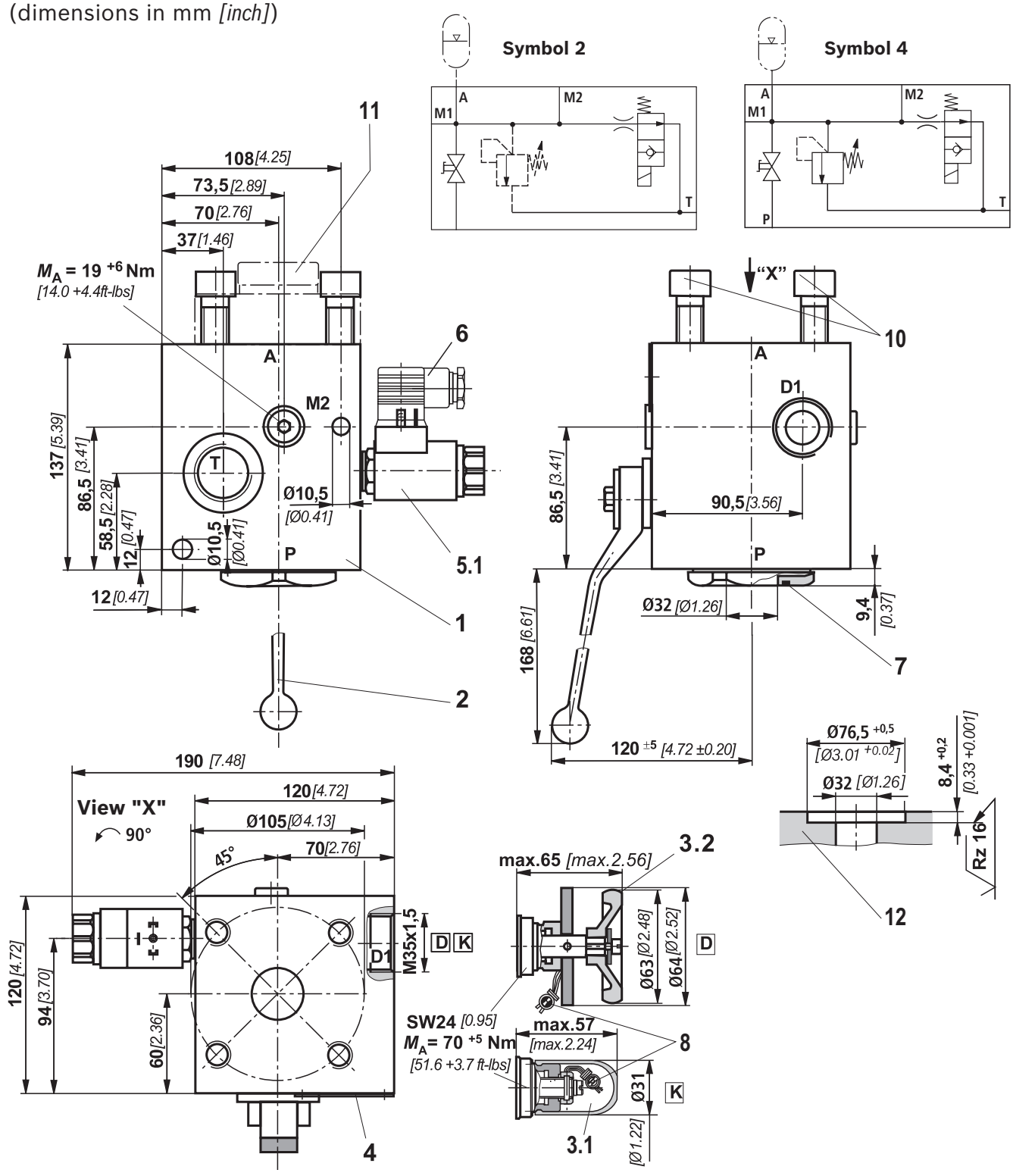


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", switching symbol 2 and 4
(dimensions in mm *[inch]*)

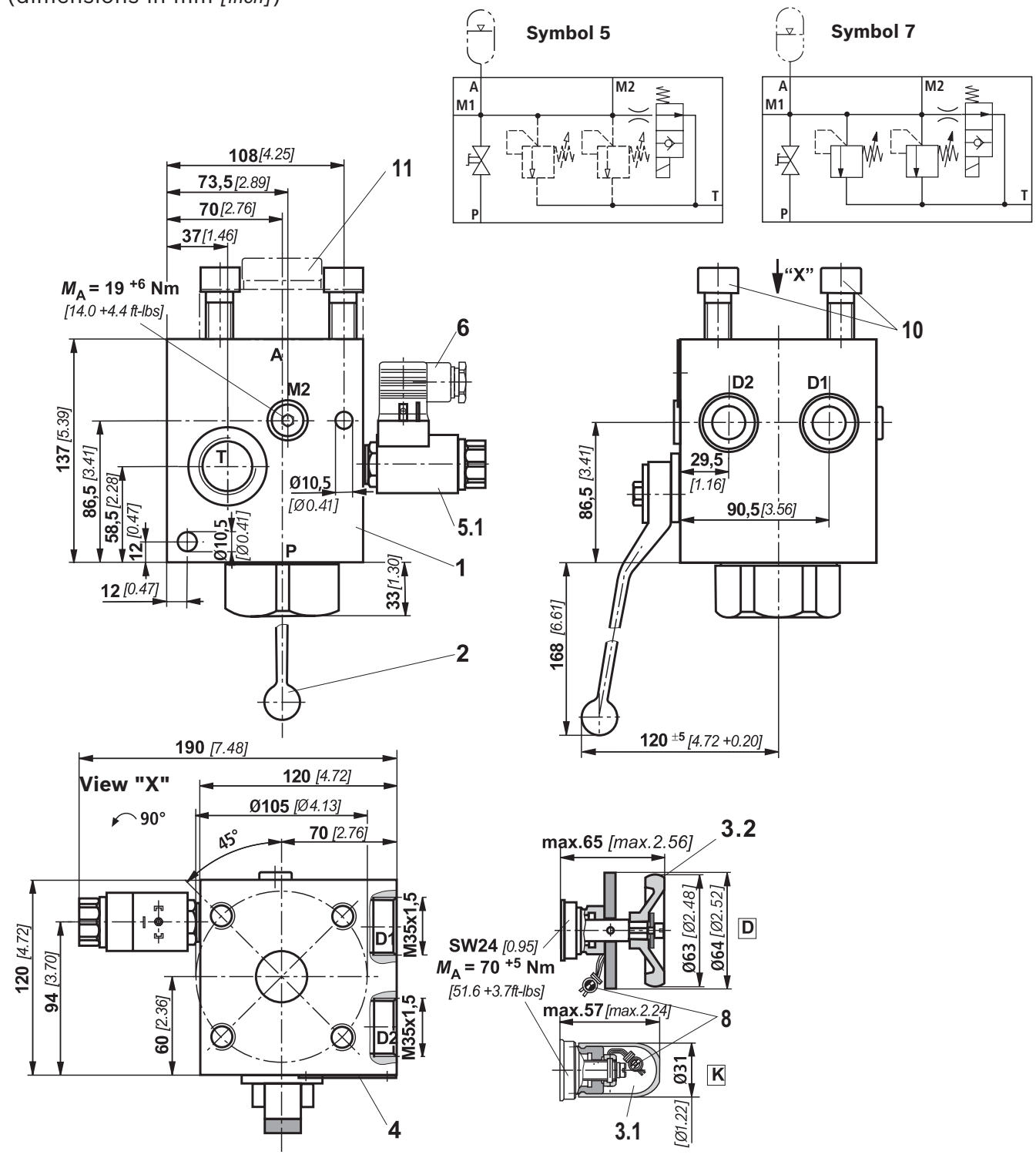


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port (flange)	TK = Ø98; 4 x M16
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 5 and 7
(dimensions in mm *[inch]*)

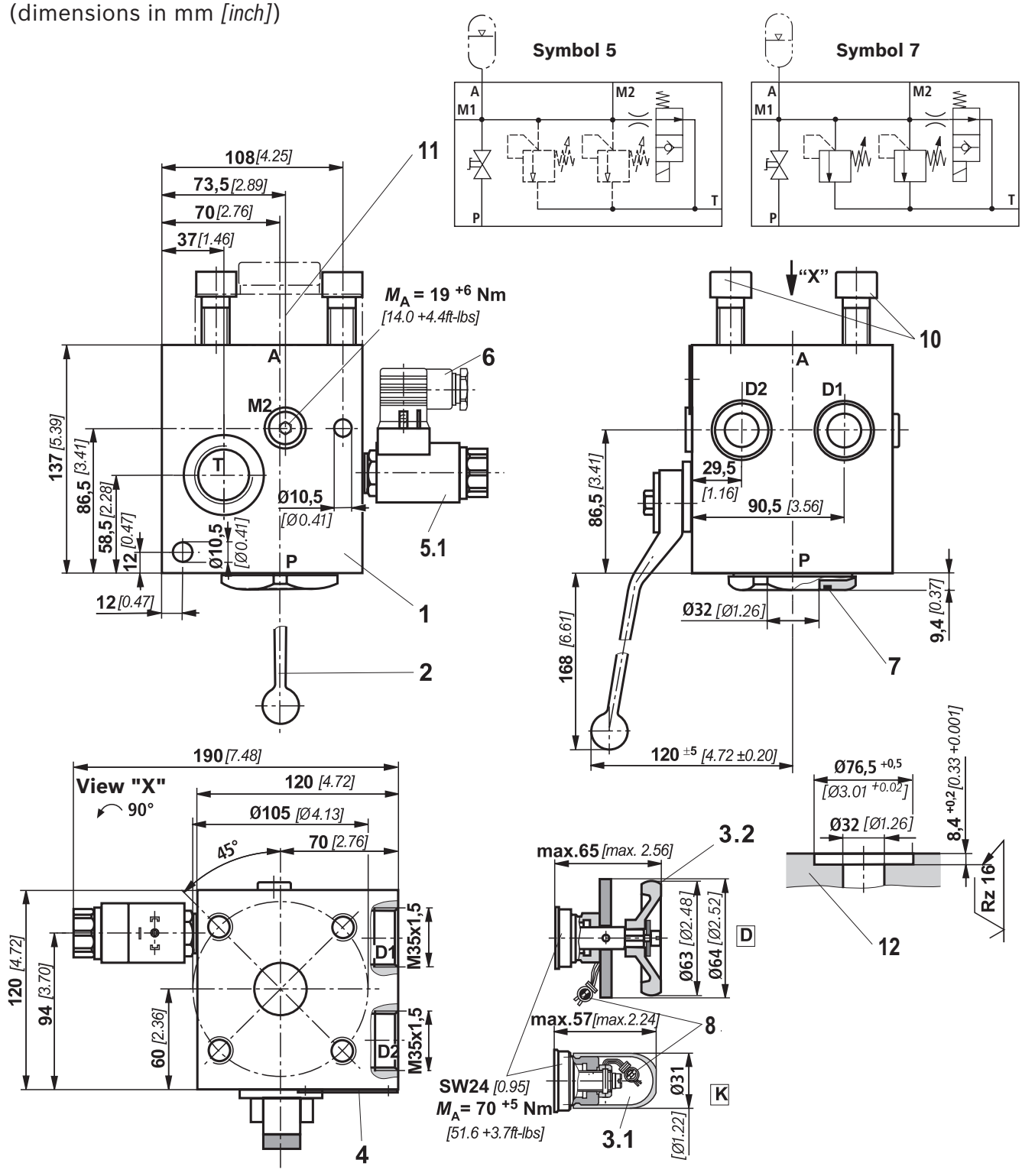


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 5 and 7
(dimensions in mm *[inch]*)

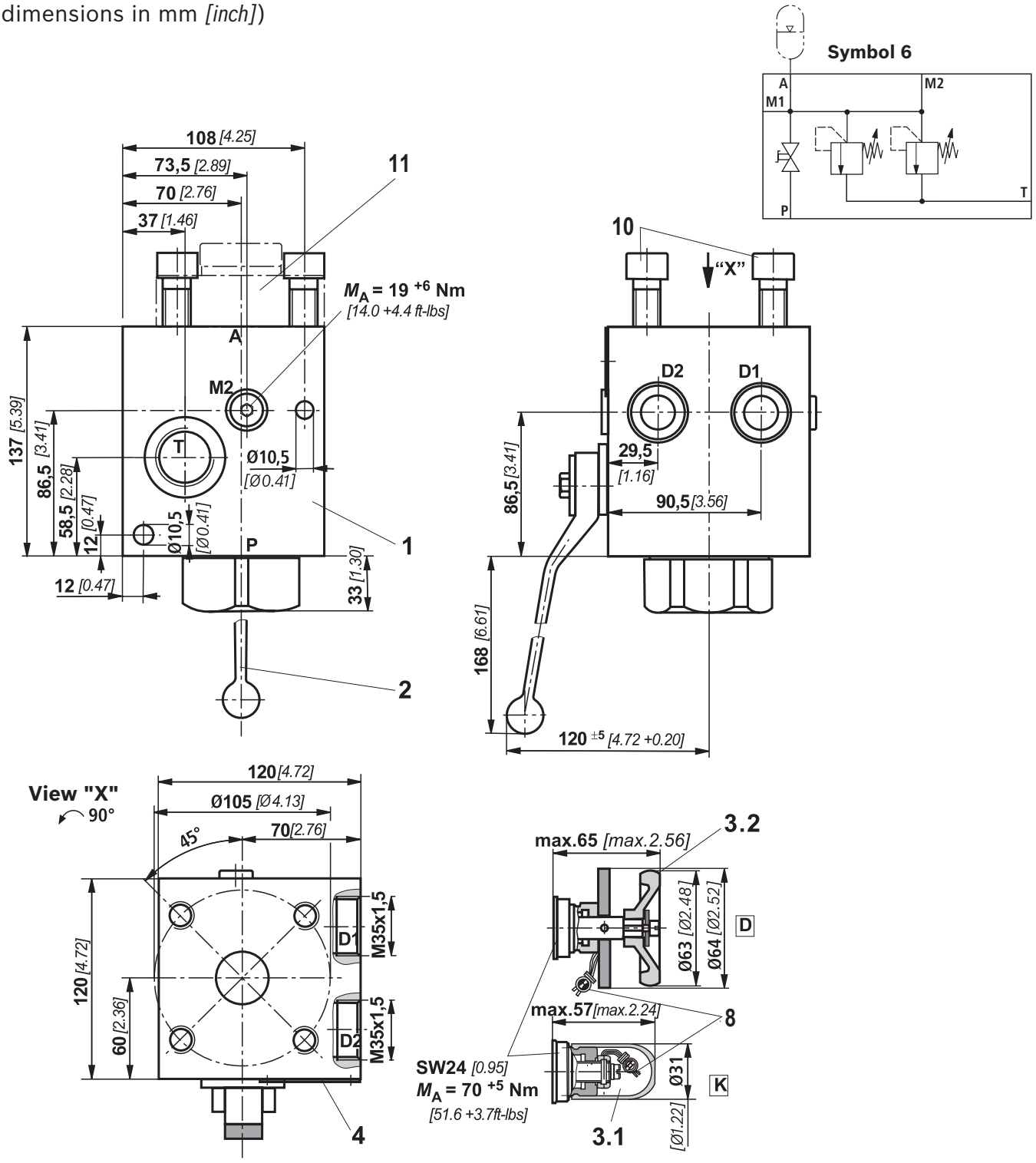


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port (flange)	TK = Ø98; 4 x M16
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 6
(dimensions in mm *[inch]*)

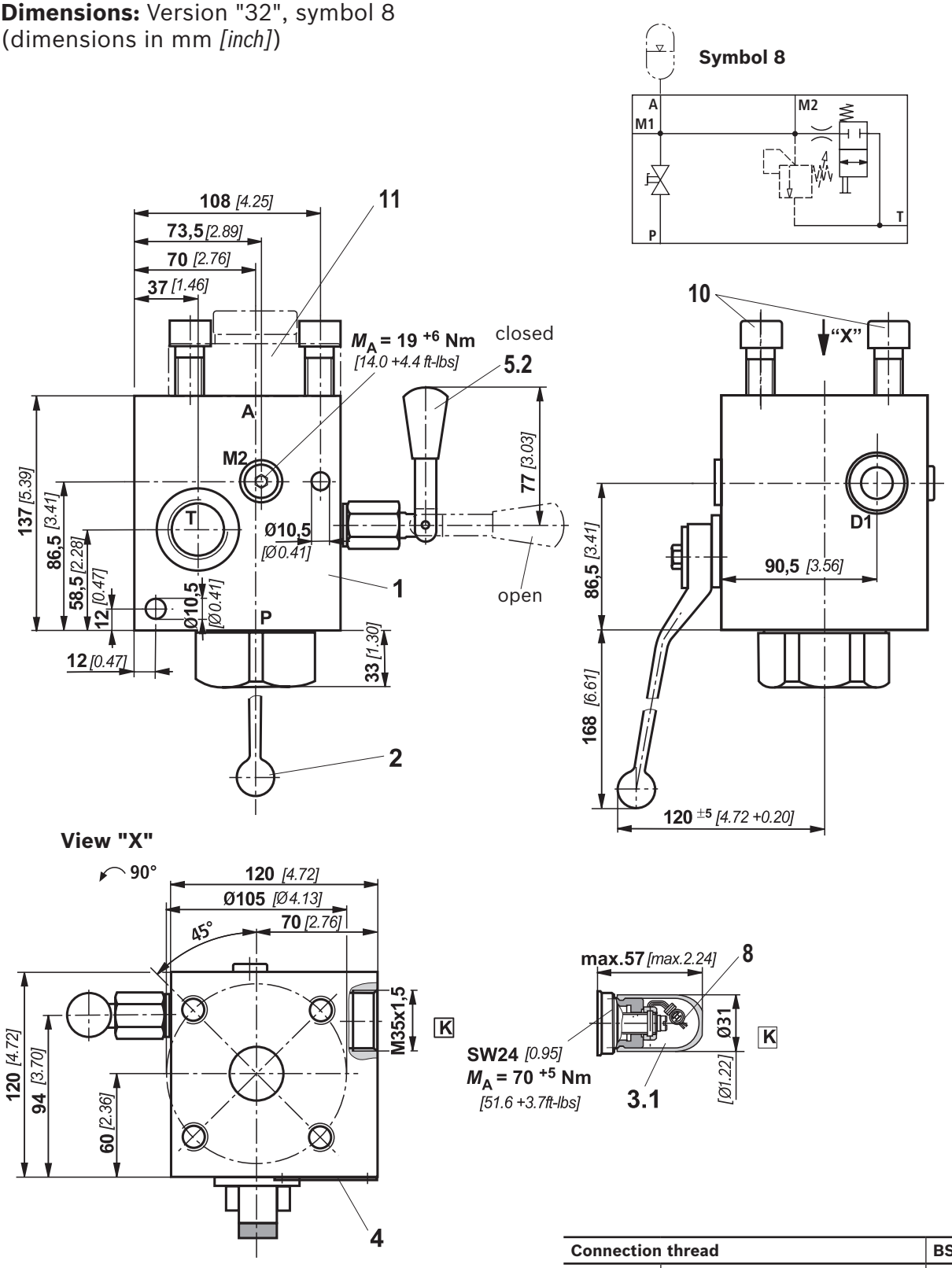


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 8
(dimensions in mm *[inch]*)

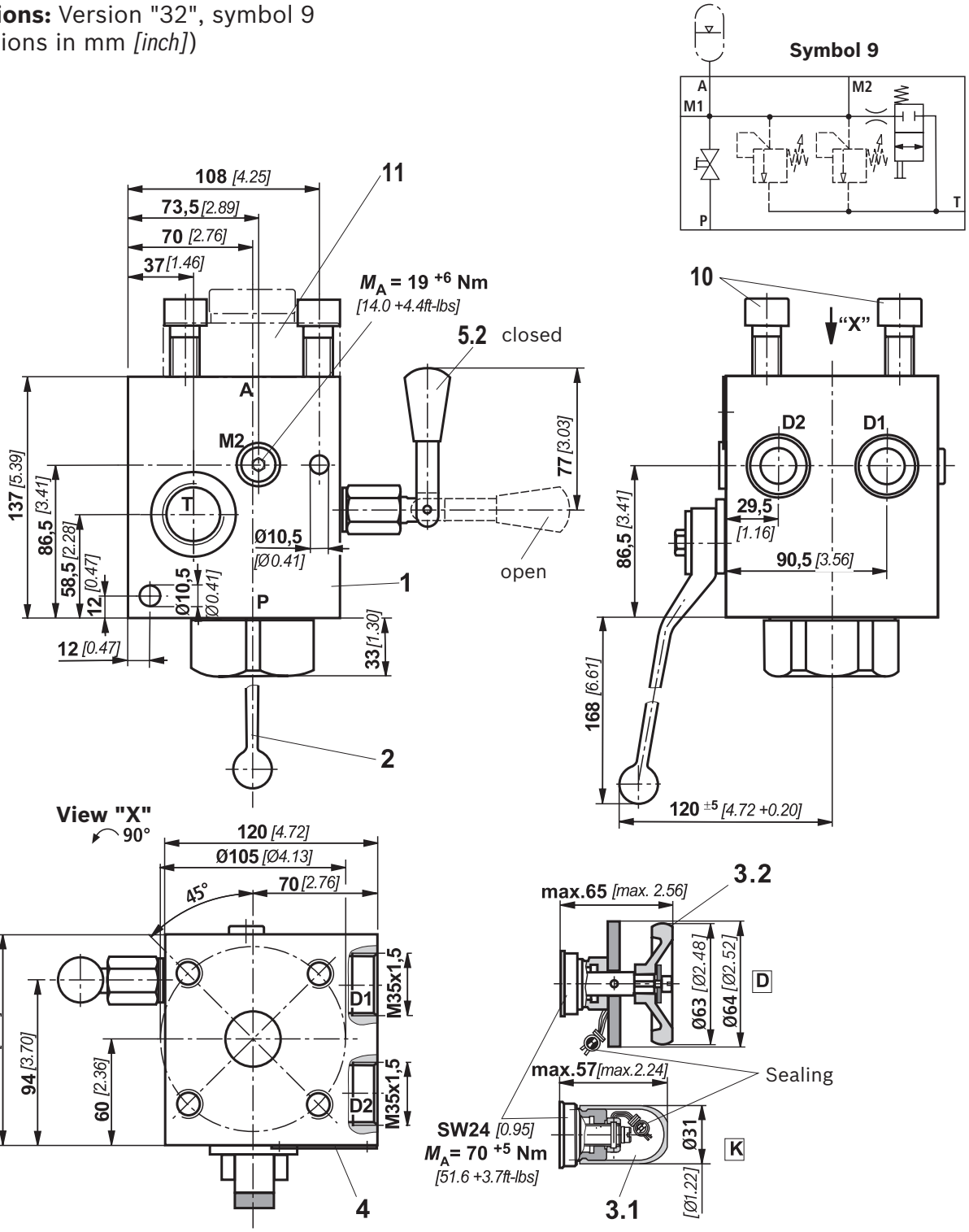


Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

Dimensions: Version "32", symbol 9
(dimensions in mm *[inch]*)



Connection thread		BSP
M1	Measuring port	G1/2
M2	Measuring port	G1/4
P	Pump port	G1 1/2
T	Tank port	G1
A	Accumulator port	Page 21

Accumulator adapter separate order, see page 21

Item explanations can be found on page 21

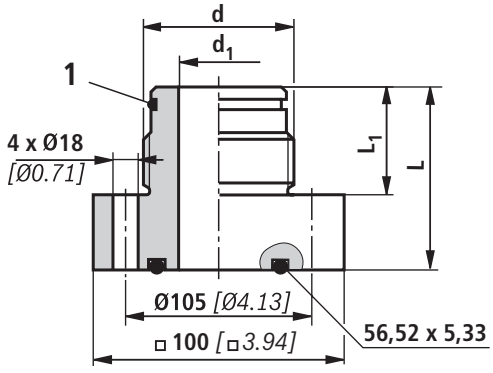
Dimensions: Item explanations

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
5.1	Electro-magnetic unloading
5.2	Manual unloading, closed
6	Mating connector included in the scope of delivery
7	Seal ring Ø40 x 3
8	Sealing
9	Space required to remove the connector
10	Hexagon socket head cap screw **4 x ISO 4762- M16 x 45-10** Tightening torque M_A = 250 +10 Nm *[184.0 +7.4 ft-lbs]*
11	Accumulator adapter, separate order, see page 20
12	Counterflange for port P (separate order)

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

Accumulator adapter for version "32", maximum operating pressure 330 bar *[4800 psi]*

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



4 x hexagon socket head cap screw,
ISO 4762 - M16 x 45 - 10.9
included in the scope of delivery

1 Seal ring, see table

Short designation	Accumulator adapter	Material no.	d	d1	L	L1	Seal ring
S307	S307V/G1 1/4-DN32	**R900085303**	G 1 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

Pressure set at the pressure relief valve in bar *[psi]*	**Adjustment type at the pressure relief valve**		**Maximum securable flow** l/min *[gpm]*	**Material no.** (FKM seal material)
	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-examination tested safety valves type 0532VA according to Pressure Equipment Directive 2014/68/EU

- Before ordering a type-examination tested safety valve, it must be observed that for the desired **response pressure *p***, the maximum admissible **flow q_{Vmax}** of the safety valve must be larger than the maximum possible flow of the system/accumulator to be secured.
  In this respect, the applicable regulations must be observed!
- According to the **Pressure Equipment Directive 2014/68/EU**, the increase in the system pressure due to the flow must not exceed 10% of the set response pressure (see component marking).
- The maximum admissible flow q_{Vmax} stated in the component marking must not be exceeded.
- Discharge lines of safety valves must end in a risk-free manner. Accumulation of fluids in the discharge system must **not** be possible (see AD2000 - data sheet A2).

☞ **Application notes must always be observed!**

- The response pressure specified in the component marking is set at the plant.
- The maximum admissible flow stated in the component marking applies for applications without counter pressure in the discharge line (port T).
- By removing the lead seal at the safety valve, the approval according to the Pressure Equipment Directive becomes void!
- The requirements of the Pressure Equipment Directive and of data sheet AD2000 A2 must be generally observed!
- It is recommended to secure type-examination tested safety valves against inadmissible removal from the screw-in housing/block by means of wiring and sealing with the housing/block (bore available in the adjustment element).

☞ **Notice:**
The system pressure increases by the counter pressure in the discharge line (port T) due to the increasing flow. (Observe the data sheet AD2000 A2, point 6.3!)
To ensure that this increase in system pressure caused by the flow does not exceed the value of 10% of the set response pressure, the admissible flow has to be reduced depending on the counter pressure in the discharge line (port T) (see diagram on pages 8 and 9).

Further information

▶ Accumulator shut-off block operating instructions; type ABZSS, 0532VAW	Data sheet 50129-B
▶ Pressure relief valve, direct operated; type DBD	Data sheet 25402
▶ Type-examination tested safety valves	Data sheet 50153
▶ Operating instructions for safety valves	Data sheet 50153-B
▶ Hydraulic fluids on mineral oil basis	Data sheet 90220
▶ Selection of the filters	www.boschrexroth.com/filter
▶ Information on available spare parts	www.boschrexroth.com/spc

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52 / 18-0
documentation@boschrexroth.de
www.boschrexroth.de