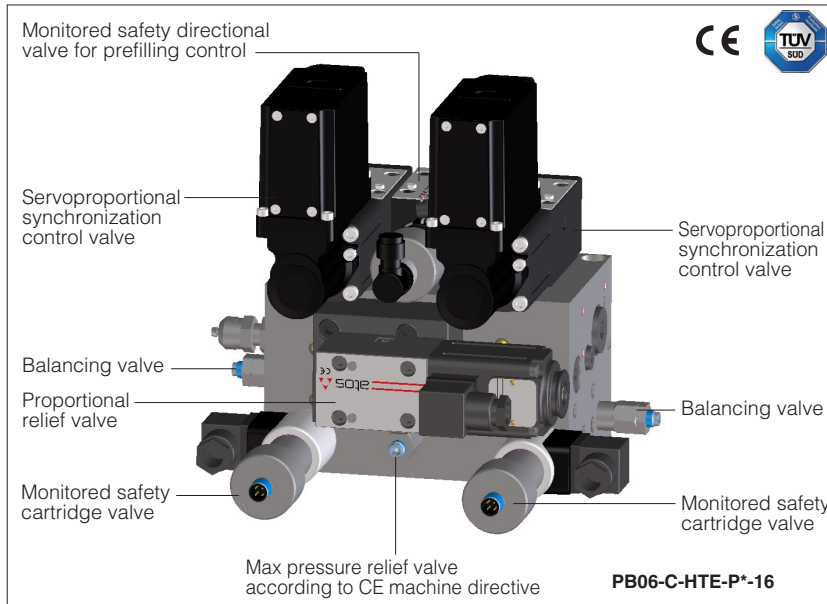


# Standard solutions for CNC press brakes

CE and non CE design



Standard electrohydraulic solutions for CNC synchronized press brakes are available in three sizes with different executions:

**PB06**, solution with central block design for small / medium machines, including:

- central manifold with proportional pressure control, size 06 synchronization servoproportional valves, safety valves.

**PB10**, solution with modular blocks design for medium / big machines, including:

- size 16 or 25 pressure control block
- n°2 size 10 synchronization control blocks, at choice to be installed on the prefilling blocks or assembled in any other point of the press brake.

**PB11**, solution like PB10, but with size 10P pilot operated proportional directional valves for synchronization control with high flow performances

PB\*-**C** designs are CE certified by TÜV according to the EN 12622.

PB\*-**N** are non CE version, without monitored safety valves.

See sections (1) and (5) for blocks composition and available proportional controls.

## 1 MODEL CODE OF BLOCKS SOLUTION

<b>PB</b>	<b>06</b>	-	<b>N</b>	-	<b>HTEB</b>	-	<b>NP</b>	-	<b>P3</b>	-	<b>16</b>	-	<b>CR</b>
Press brake solution													Optional crowning function, see sect. <a href="#">10</a> , <a href="#">11</a>
Size and design <b>06</b> = size 06, central block <b>10</b> = size 10, modular block <b>11</b> = size 10P, modular block													Pressure control block size <b>16</b> = size 16 for PB06 and PB10 <b>25</b> = size 25 for PB10 and PB11
Design certified <b>C</b> = CE certified <b>N</b> = non CE													Regulation characteristic (at $\Delta p$ 15 bar per edge) <b>size 06-H:</b> <b>P2</b> = 28 l/min <b>P3</b> = 40 l/min <b>P5</b> = 50 l/min <b>size 06-L:</b> <b>L31</b> = 9 l/min <b>L51</b> = 18 l/min <b>L71</b> = 27 l/min <b>size 10-H:</b> <b>P2</b> = 60 l/min <b>P3</b> = 80 l/min <b>P5</b> = 105 l/min <b>size 10-L:</b> <b>L31</b> = 40 l/min <b>L71</b> = 60 l/min <b>size 11-H:</b> <b>P5</b> = 160 l/min
Double solenoid, 3 position, w/o driver and transducer (driver functions included in machine CNC or by separated driver) <b>HE</b> = ZE solenoid <b>HA</b> = ZO solenoid Double solenoid, 3 position, with transducer <b>HT</b> = without driver (1) <b>HTE</b> = analog driver <b>HTEB</b> = basic digital driver <b>HTES</b> = full digital driver with optional fieldbus interfaces Single solenoid, 4 position, sleeve execution with fail safe <b>LT</b> = without driver (1) <b>LTE</b> = analog driver <b>LTEB</b> = basic digital driver <b>LTES</b> = full digital driver with optional fieldbus interfaces													Optional fieldbus interfaces only for HTEB, LTEB, HTES and LTES: (HTEB and LTEB basic executions available only in <b>NP</b> ) <b>NP</b> = none <b>BC</b> = CANopen <b>BP</b> = PROFIBUS BP <b>EH</b> = EtherCAT

(1): including separated card driver E-ME-T-2\*H (Eurocard format)

## 2 MODEL CODE OF PREFILLING BLOCKS

<b>PFB</b>	-	<b>25</b>
Prefilling block		
Prefilling size (2) <b>25, 32, 40</b> normally coupled with solution type PB06 <b>50, 63</b> normally coupled with solution type PB10 (11)		

(2): Other prefilling sizes or based on customized mounting surfaces available on request

### 3 BASIC FOR THE SIZING OF THE BLOCKS SOLUTIONS

Pressing Force (kN)	Pump flow (l/min)	Working pressure (bar)	Block solution model code	Proportional valve nominal flow at $\Delta p$ 15 bar per edge (l/min)	Typical Prefilling valve size	Nominal prefilling valve flow in suction condition (l/min)
400 - 1250	Up to 50	Up to 315	PB06-*-16 all models	28, 40, 50 for control type HE, HA, HT, HTE, HTEB, HTES 9, 18, 27 for control type LT, LTE, LTEB, LTES	25	150
1250 - 2000					32	225
2000 - 3000					40	350
3000 - 6000	Up to 150		PB10-*-16 all models	60, 80, 105 for control type HA, HT, HTE, HTEB, HTES 40, 60 for control type LT, LTE, LTEB, LTES	50	500
6000 - 10000					63	800
10000 - 15000	Up to 220		PB10-*-25 PB11-*-25 all models			To be defined, depending to the machine characteristics

**Note:** The above data are indicative. The sizing of the block solutions must be checked by Atos according to the specific machine characteristics

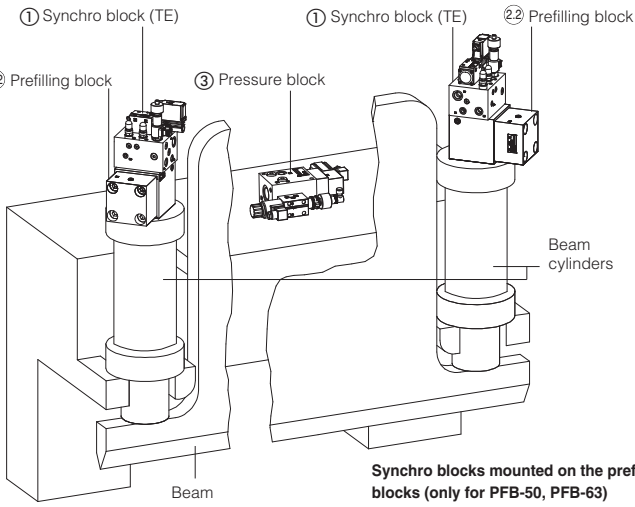
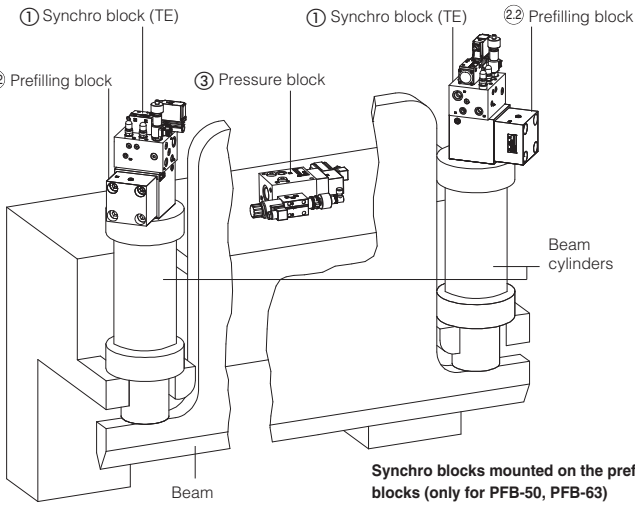
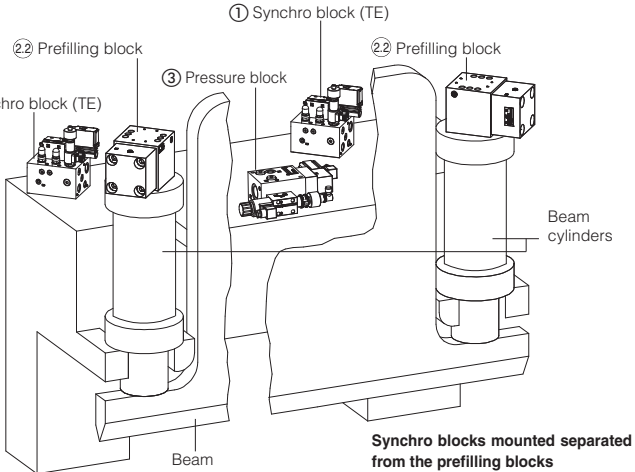
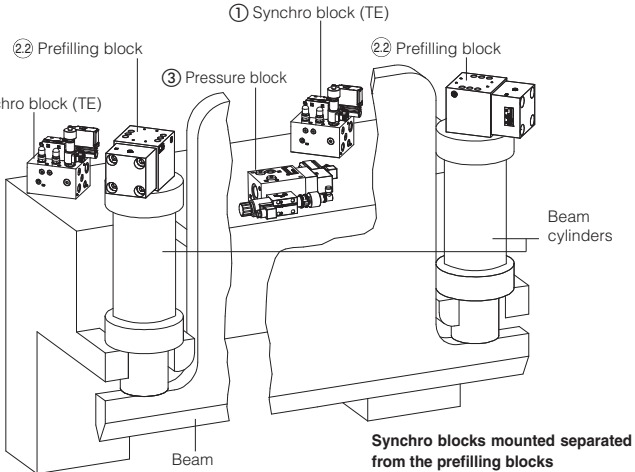
### 4 MAIN CHARACTERISTICS

Ambient temperature	-20°C to +70°C for -A execution; -20°C to +60°C for -T, -TE, -TEB and -TES executions.
Fluid	Hydraulic oil as per DIN 51524 .... 535
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 18/15, achieved with in line filters at 10 µm value to $\beta_{10} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C

### 5 BLOCKS ASSEMBLING

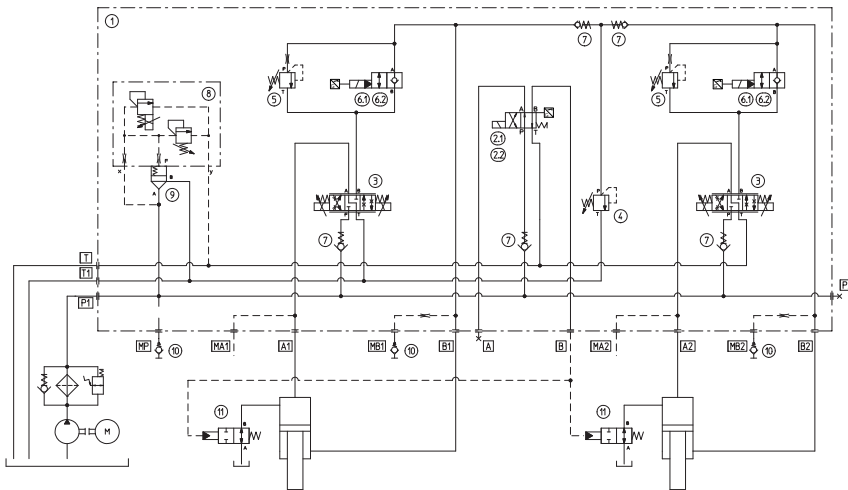
Control block solution	Composition	
<b>PB06-*-HE P*-16</b> <b>PB06-*-HA P*-16</b>	N° 1 central synchro block ① with size 06 proportional valves without transducer, driver functions integrated in the machine CNC, and size 16 proportional pressure control.	<p>The diagram illustrates the assembly of the hydraulic block. It features a central synchro block (TE) with two prefilling blocks (2:1) on either side. The prefilling blocks are connected to beam cylinders. A beam is shown at the bottom of the assembly.</p>
<b>PB06-*-HT P*-16</b>	N° 1 central block ① with size 06 double solenoid proportional valves with position transducer and size 16 proportional pressure control. N° 1 Eurocard driver E-ME-T-25H.	
<b>PB06-*-HTE P*-16</b> <b>PB06-*-HTEB P*-16</b> <b>PB06-*-HTES P*-16</b>	as PB06-*-HT but with size 06 servoproportional valves with transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)	
<b>PB06-*-LT L*-16</b>	as PB06-*-HT but with size 06 single solenoid servoproportional valves, 4 position, sleeve execution, with transducer	
<b>PB06-*-LTE L*-16</b> <b>PB06-*-LTEB L*-16</b> <b>PB06-*-LTES L*-16</b>	as PB06-*-HT but with size 10 single solenoid servoproportional valves, 4 position, sleeve execution, with transducer and integral electronics: analog (LTE), digital basic (LTEB), digital full with optional fieldbus interfaces (LTES)	

**5 BLOCKS ASSEMBLING**

Control block solution	Composition	
<p><b>PB10*-HE P*-16</b>  <b>PB10*-HE P*-25</b>  <b>PB10*-HA P*-16</b>  <b>PB10*-HA P*-25</b></p>	<p>N° 1 proportional pressure control block size 16 or size 25 ③.                      N° 2 synchronization blocks ① with size 10 proportional valves without transducer, driver functions integrated in the machine CNC.</p>	
<p><b>PB10*-HT P*-16</b>  <b>PB10*-HT P*-25</b></p>	<p>N° 1 proportional pressure control block size 16 or size 25 ③.                      N° 2 synchronization blocks ① with size 10 servoproportional valves with transducer.                      N° 1 Eurocard driver E-ME-T-21H</p>	
<p><b>PB10*-HTE P*-16</b>  <b>PB10*-HTEB P*-16</b>  <b>PB10*-HTES P*-16</b>  <b>PB10*-HTE P*-25</b>  <b>PB10*-HTEB P*-25</b>  <b>PB10*-HTES P*-25</b></p>	<p>as PB10*-HT but with size 10 servoproportional valves, with transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)</p>	
<p><b>PB10*-LT L*-16</b>  <b>PB10*-LT L*-25</b></p>	<p>as PB10*-HT but with size 10 single solenoid servoproportional valve, 4 position, sleeve execution, with position transducer</p>	
<p><b>PB10*-LTE L*-16</b>  <b>PB10*-LTE L*-25</b></p>	<p>as PB10*-HT but with size 10 single solenoid servoproportional valve, 4 position, sleeve execution, with position transducer and integral electronics: analog (LTE), digital basic (LTEB), digital full with optional fieldbus interfaces (LTES)</p>	
<p><b>PB11*-HT P*-25</b></p>	<p>as PB10*-HT but with size 10P pilot operated servoproportional valve, with position transducer</p>	
<p><b>PB11*-HTE P*25</b>  <b>PB11*-HTEB P*25</b>  <b>PB11*-HTES P*25</b></p>	<p>as PB10*-HT but with size 10P pilot operated servoproportional valve, with position transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)</p>	
<p><b>Prefilling block model code</b></p>	<p><b>Description</b></p>	
<p><b>PFB-25, 32, 40</b>  <b>PFB-50, 63</b></p>	<p>Separated prefilling blocks ②, size 25, 32, 40 to be selected according to the machine characteristics - normally coupled with PB06 solution                       Prefilling blocks ②, size 50 or 63 to be selected according to the machine characteristics - normally coupled with PB10, PB11 solution</p>	

## 6 CENTRAL BLOCK DESIGN TYPE PB06

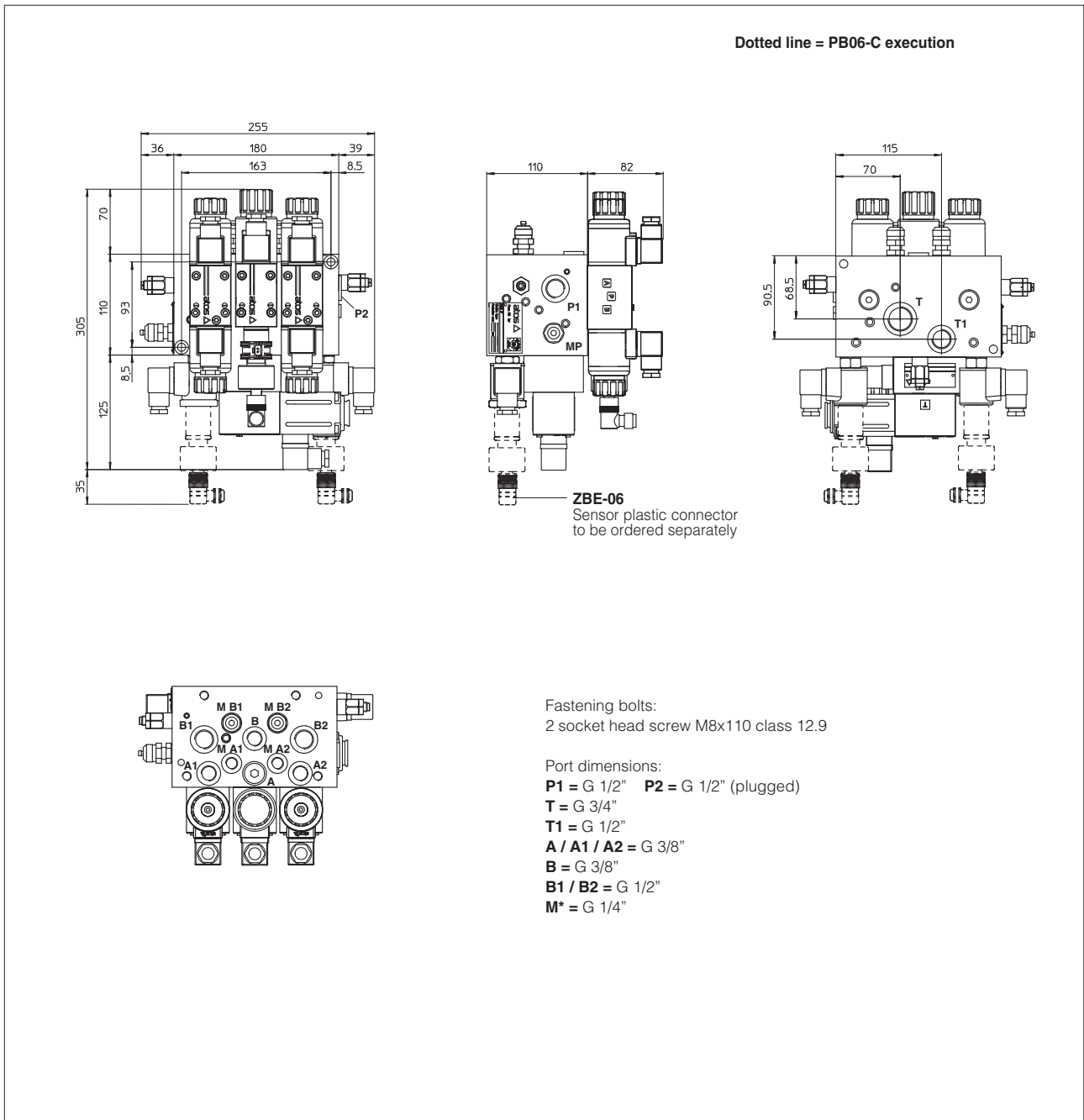
### 6.1 Certified hydraulic scheme -C (with -HE proportional control type)



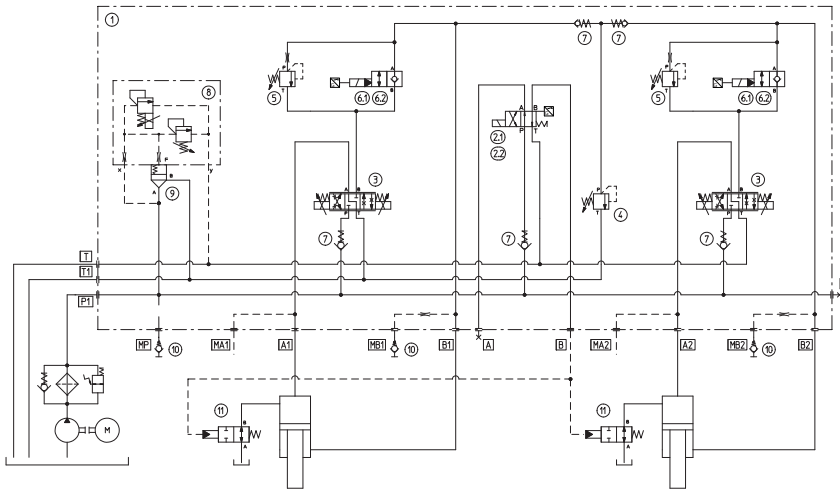
Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3	PROPORTIONAL VALVE	150101 SDHZE-A-071-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMISS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ⑥

### 6.2 Installation dimensions of PB06\*-HE central block



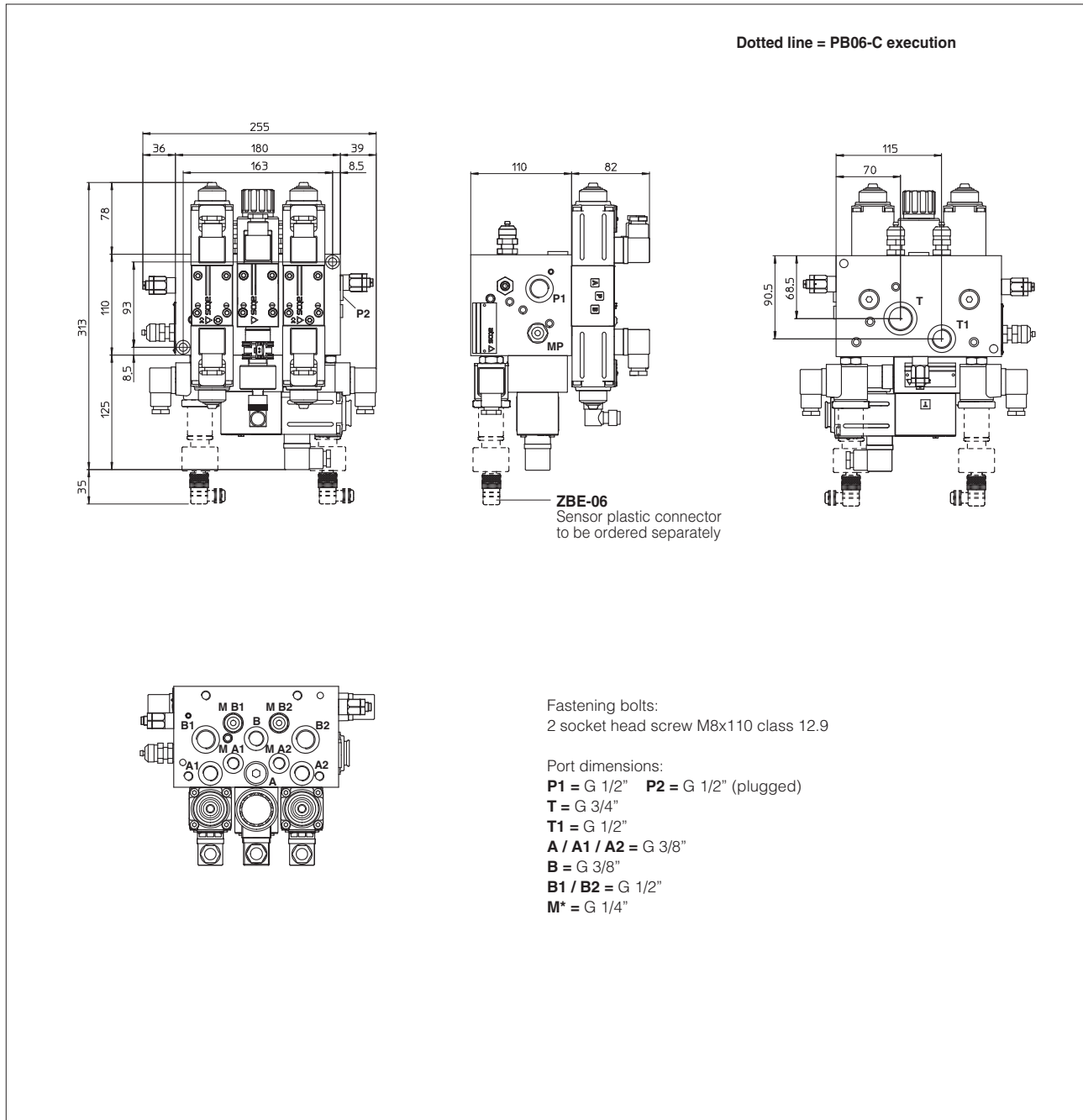
### 6.3 Certified hydraulic scheme -C (with -HA proportional control type)



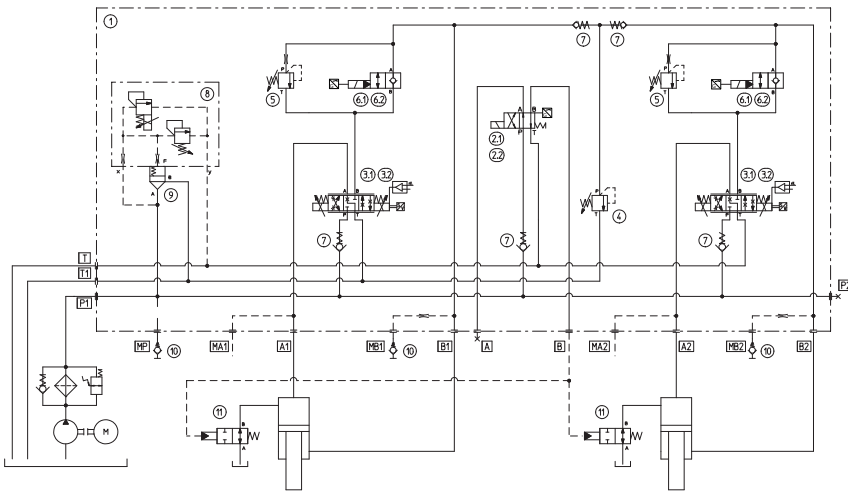
Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3	PROPORTIONAL VALVE	090290 DHZO-A-071-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMISS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ⑥

### 6.4 Installation dimensions of PB06\*-HA central block



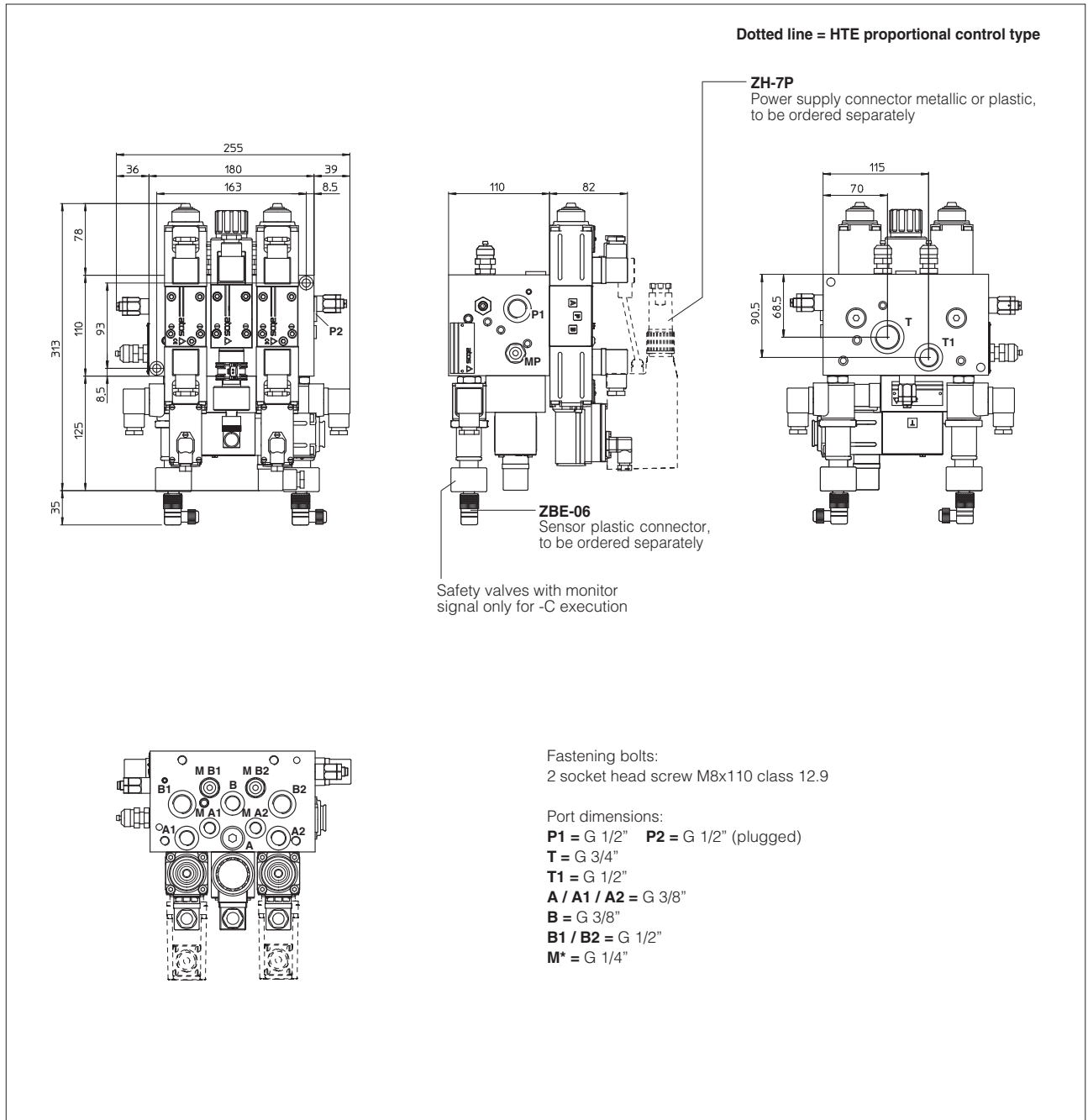
### 6.5 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)



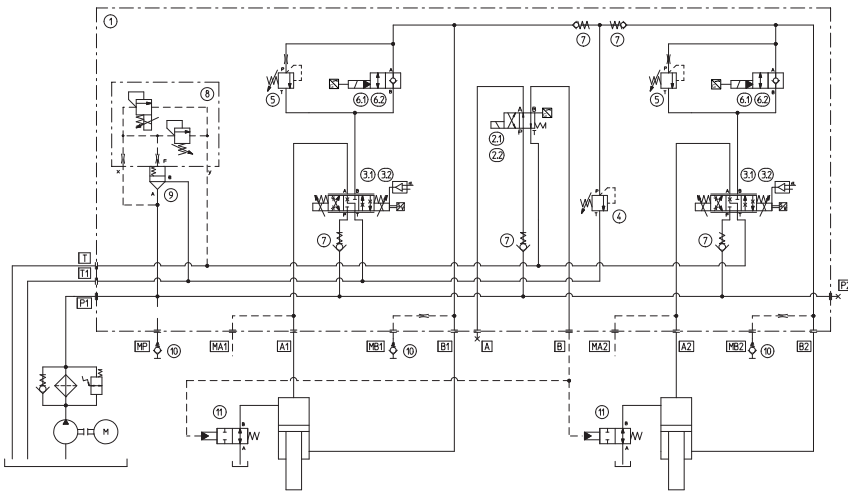
Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3.1	PROPORTIONAL VALVE	090290 DHZO-T-071-L*	●	●
3.2	PROPORTIONAL VALVE	090290 DHZO-TE-071-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMESS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ⑥

### 6.6 Installation dimensions of PB06\*-HT(E) central block



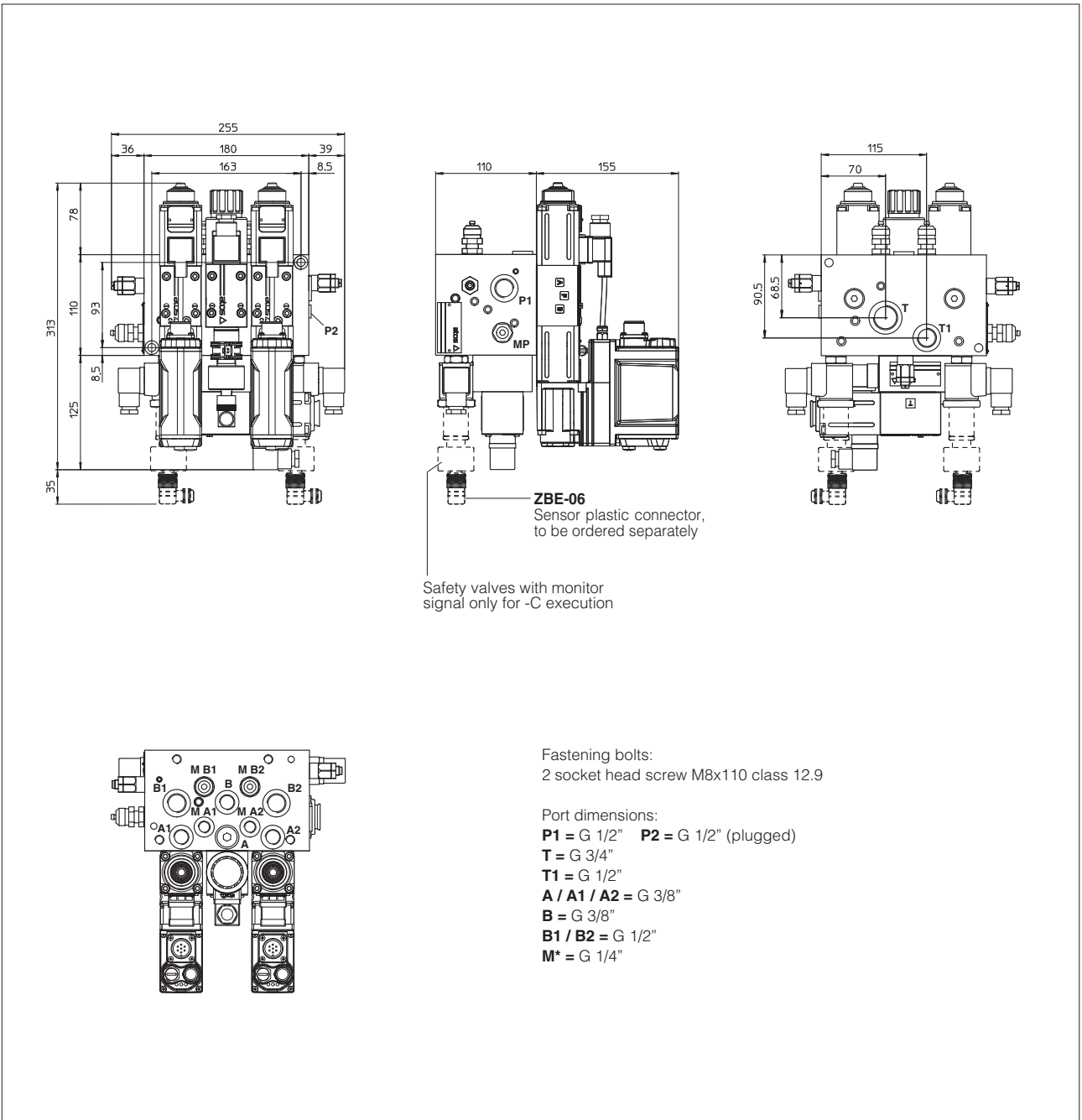
### 6.7 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)



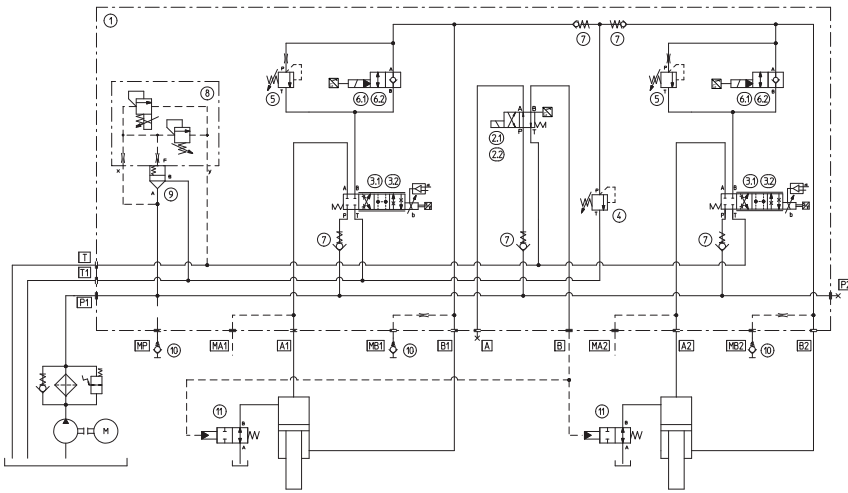
Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ⑥

Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3.1	PROPORTIONAL VALVE	090290 DHZO-TEB-NP-071-L*	●	●
3.2	PROPORTIONAL VALVE	090290 DHZO-TES-NP-071-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMESS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

### 6.8 Installation dimensions of PB06-\*-HTES central block



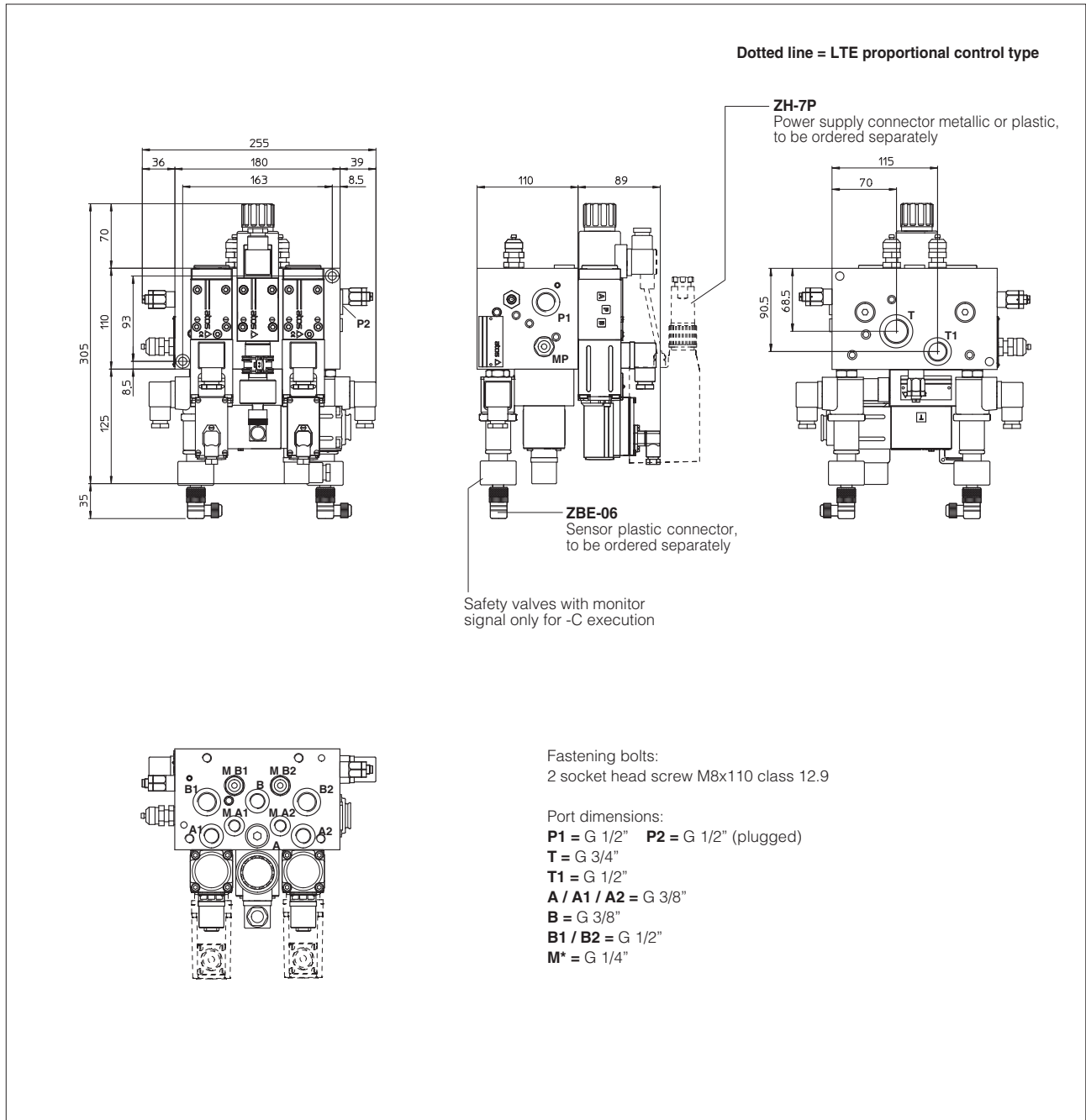
### 6.9 Certified hydraulic scheme -C (with -LT , -LTE proportional control type)



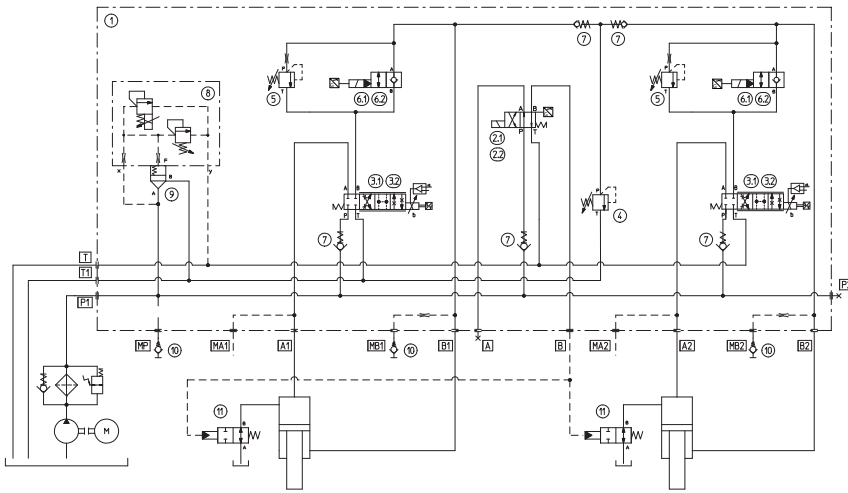
Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3.1	SERVOPROPORTIONAL VALVE	DLHZO-T-040-L*	●	●
3.2	SERVOPROPORTIONAL VALVE	DLHZO-TE-040-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMESS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ⑥

### 6.10 Installation dimensions of PB06\*-LT(E) central block



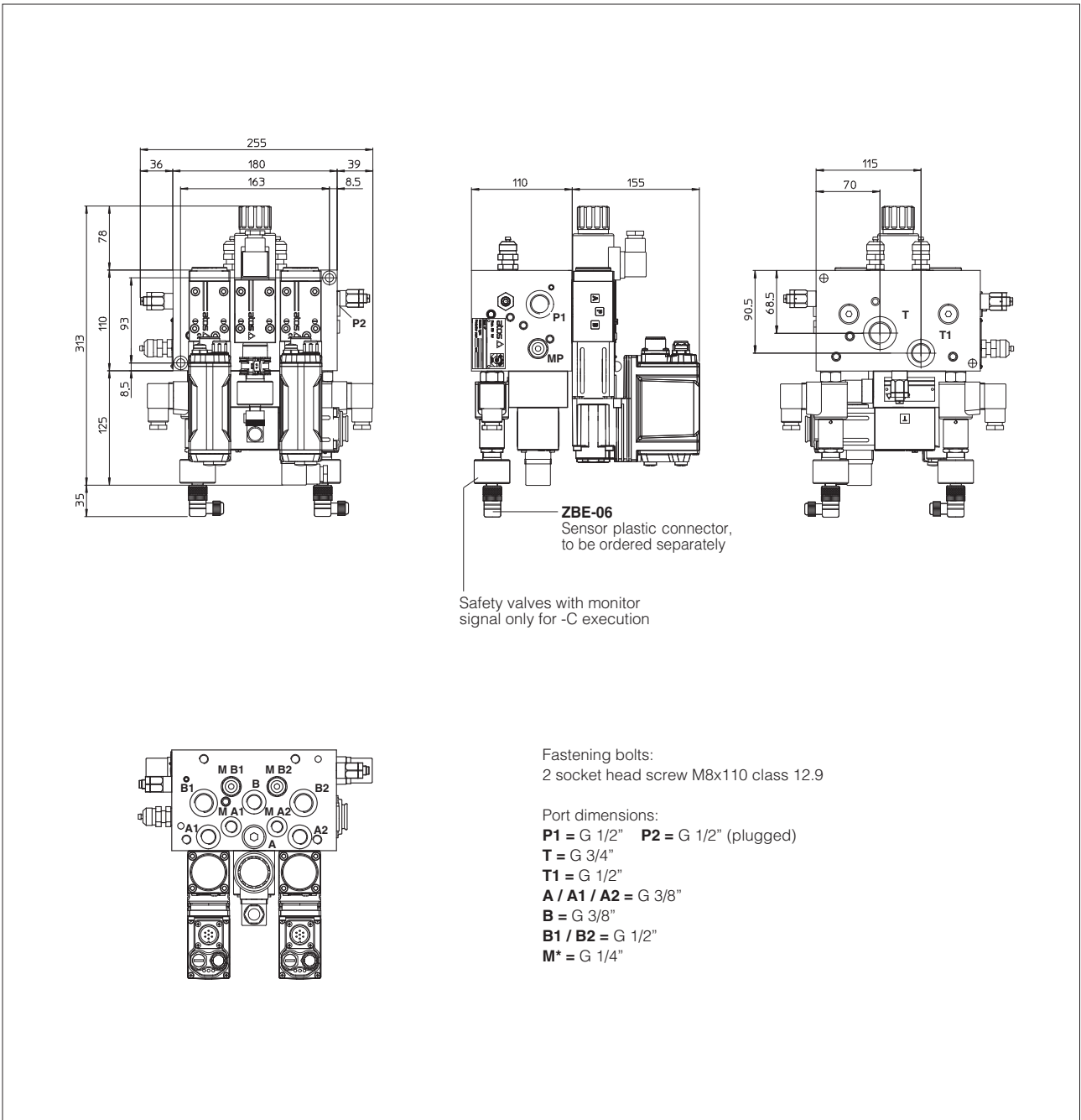
### 6.11 Certified hydraulic scheme -C (with -LTEB , -LTES proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SAFETY VALVE	DHE-0631/2/FV-X		●
2.2	DIRECTIONAL VALVE	DHE-0631/2/-X	●	
3.1	SERVOPROPORTIONAL VALVE	DLHZO-TEB-NP-040-L*	●	●
3.2	SERVOPROPORTIONAL VALVE	DLHZO-TES-NP-040-L*	●	●
4	SAFETY PRESSURE RELIEF VALVE	CART M4/350/RS	●	●
5	BALANCING VALVE	CART M4/350/R	●	●
6.1	SAFETY VALVE	JO-DL-4-2/FV-X		●
6.2	CARTRIDGE	JO-DL-4-2/NC-X	●	
7	CHECK VALVE	DR-5/G	●	●
8	PROP. RELIEF VALVE	LIMZO-A-1/315/18	●	●
9	CARTRIDGE	15 -KM-503600	●	●
10	MINIMESS	Y-AK-04-GOR	●	●
11	PREFILLING VALVE		●	●

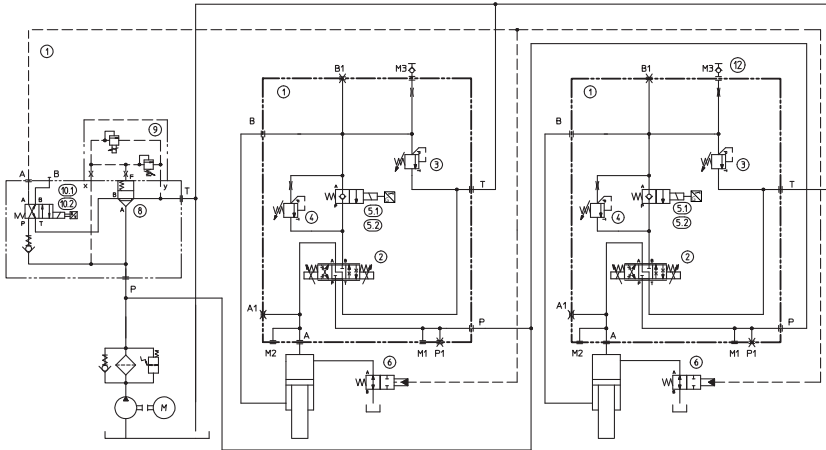
Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ② and ④

### 6.12 Installation dimensions of PB06\*-LTES central block



**7 MODULAR BLOCK DESIGN TYPE PB10**

**7.1 Certified hydraulic scheme -C (with -HE proportional control type)**



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2	PROPORTIONAL VALVE	150102 DKZE-A-171-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE	SEE SECTION 9		
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMISS	Y-AK-04-GOR	●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

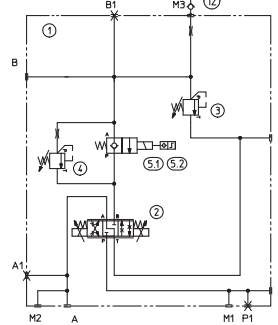
**7.2 Installation dimensions of PB10\*-HE synchronization block (for pressure control blocks see section 9.2)**

**SYNCHRONIZATION CONTROL BLOCK**

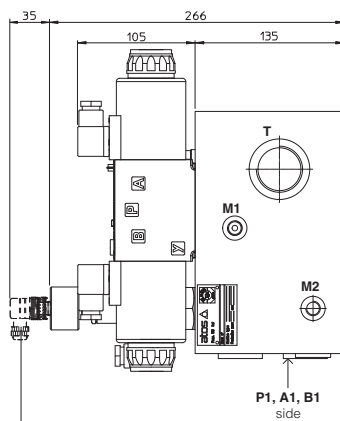
Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

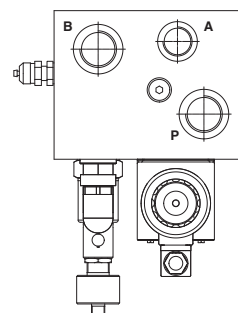
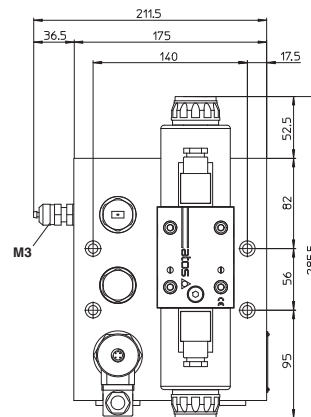
**Hydraulic scheme**



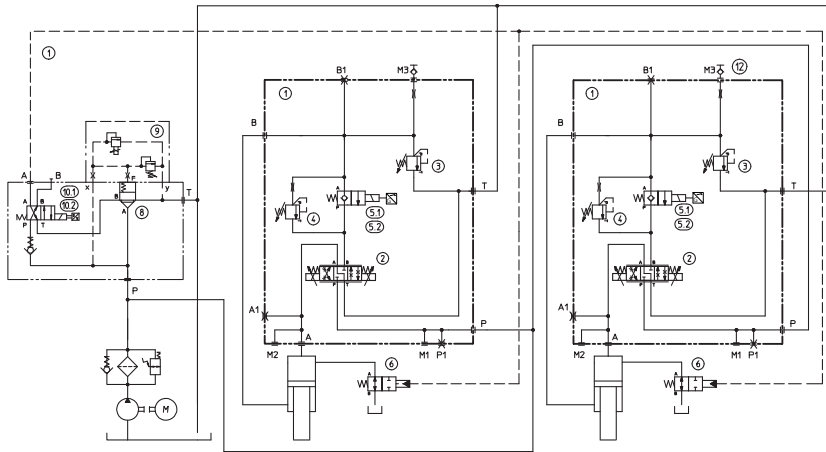
Dotted line = PBBC execution



**ZBE-06**  
Sensor plastic connector  
to be ordered separately



### 7.3 Certified hydraulic scheme -C (with -HA proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2	PROPORTIONAL VALVE	070256 DKZOR-A-171-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE	SEE SECTION 9		
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMESS	Y-AK-04-GOR	●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

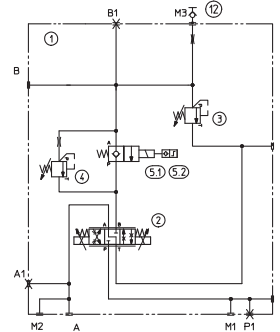
### 7.4 Installation dimensions of PB10<sup>-</sup>-HA synchronization block (for pressure control blocks see section 9.2)

#### SYNCHRONIZATION CONTROL BLOCK

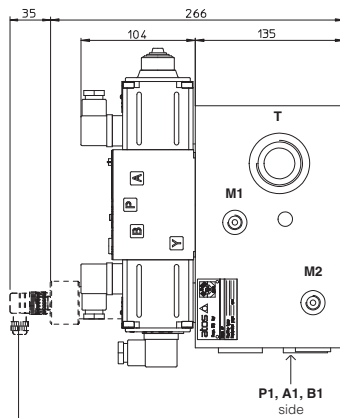
Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

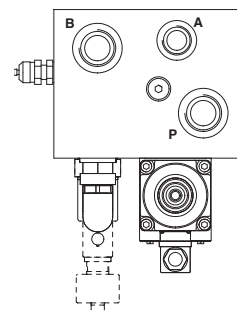
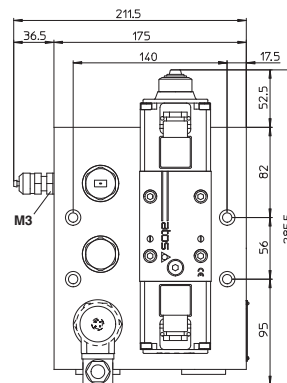
#### Hydraulic scheme



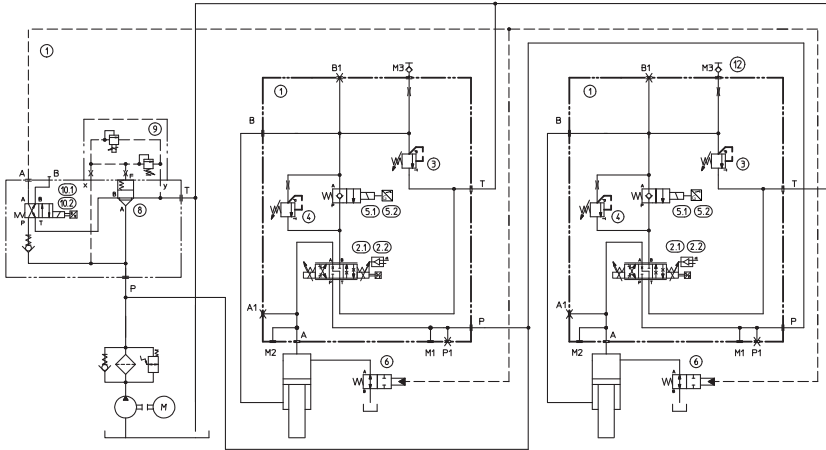
Dotted line = PBBC execution



**ZBE-06**  
Sensor plastic connector  
to be ordered separately



7.5 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	PROPORTIONAL VALVE	070256 DKZOR-T-171-L*	●	●
2.2	PROPORTIONAL VALVE	070256 DKZOR-TE-171-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE			
8	CARTRIDGE			
9	PROP. PRESSURE RELIEF VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMESS	Y-AK-04-GOR	●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

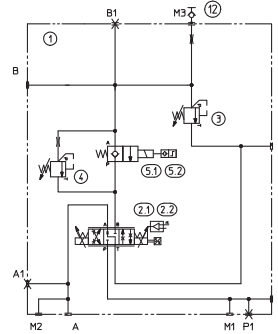
7.6 Installation dimensions of PB10<sup>-</sup>-HT(E) synchronization block (for pressure control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

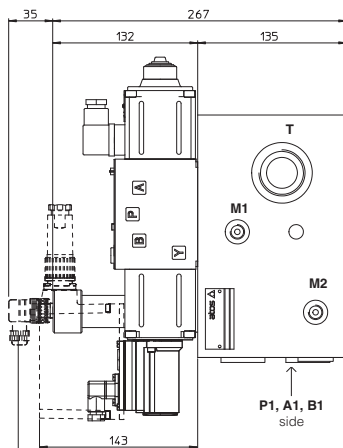
Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

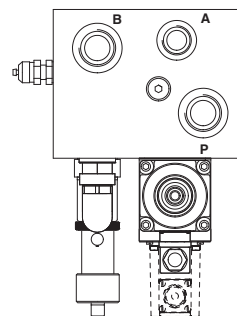
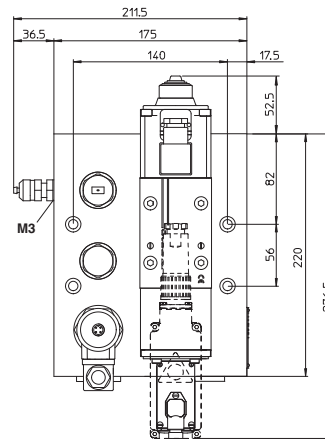
Hydraulic scheme



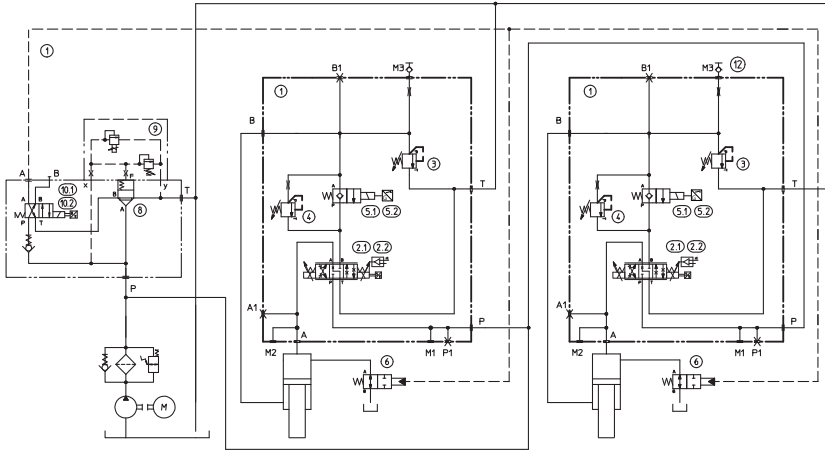
Dotted line = HTE execution



**ZBE-06**  
Sensor plastic connector  
to be ordered separately



7.7 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	PROPORTIONAL VALVE	150102 DKZOR-TEB-NP-171-L*	●	●
2.2	PROPORTIONAL VALVE	150102 DKZOR-TES-NP-171-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE			
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMESS	Y-AK-04-GOR	●	●

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

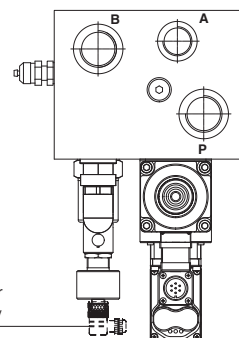
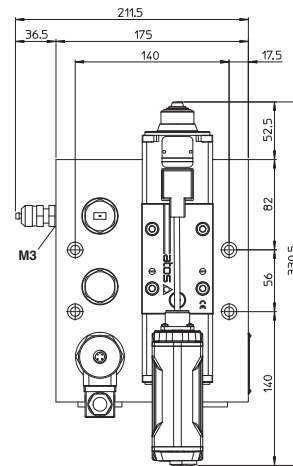
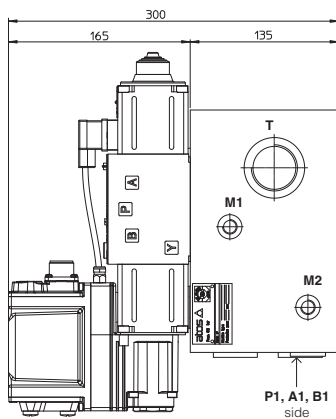
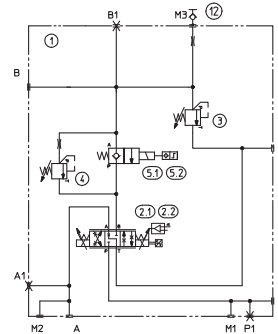
7.8 Installation dimensions of PB10\*-HTES synchronization block (for pressure control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:  
4 socket head screw M8x140 class 12.9

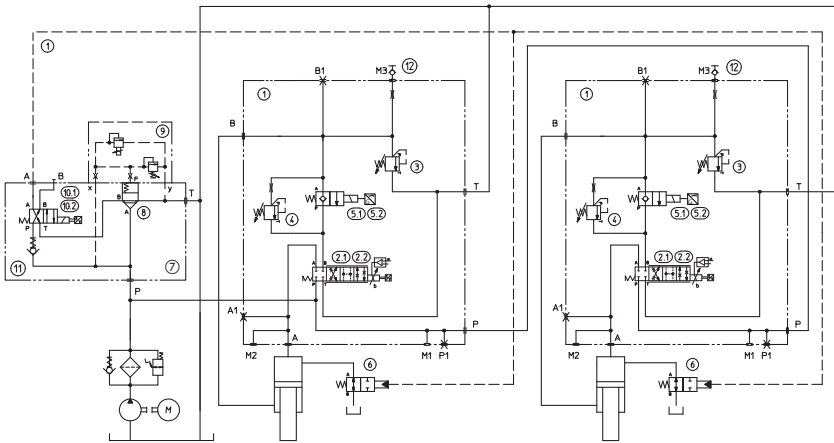
Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

Hydraulic scheme



**ZBE-06**  
Sensor plastic connector  
to be ordered separately

7.9 Certified hydraulic scheme -C (with -LT, -LTE proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SERVOPROPORTIONAL VALVE	DLKZOR-T-140-L*	●	●
2.2	SERVOPROPORTIONAL VALVE	DLKZOR-TE-140-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE	SEE SECTION 9		
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMESS	Y-AK-04-GOR	●	●

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

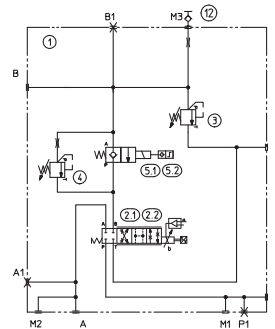
7.10 Installation dimensions of PB10\*-LT(E) synchronization block (for pression control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

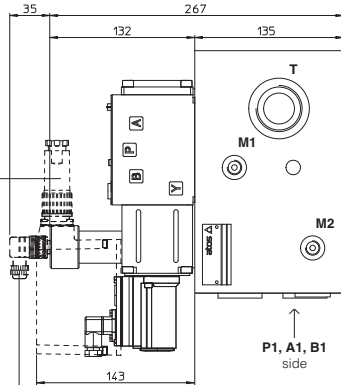
Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

Hydraulic scheme

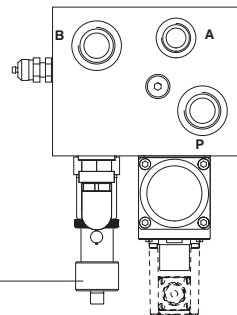
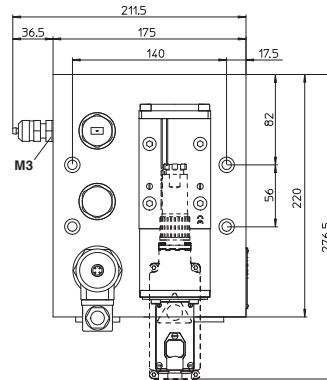


Dotted line = TE proportional control type



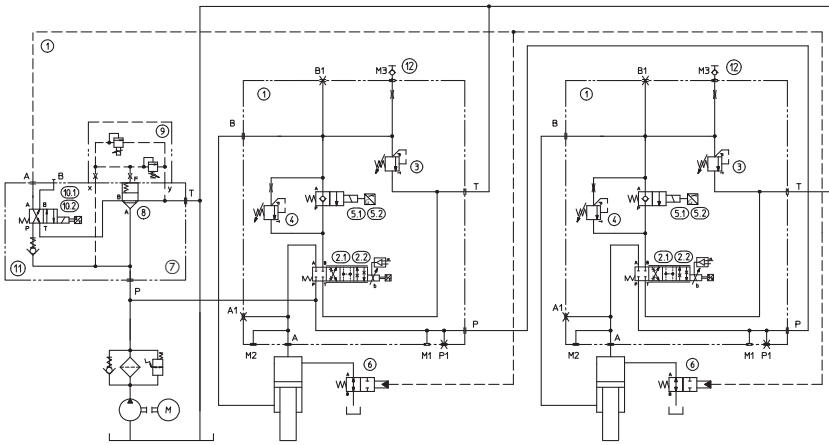
**ZH-7P**  
Power supply connector metallic or plastic, to be ordered separately

**ZBE-06**  
Sensor connector plastic to be ordered separately



Safety valve with monitor signal only for -C execution

7.11 Certified hydraulic scheme -C (with -LTEB, -LTES proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	SERVOPROPORTIONAL VALVE	DLKZOR-TEB-SN-NP-140-L*	●	●
2.2	SERVOPROPORTIONAL VALVE	DLKZOR-TES-SN-NP-140-L*	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE			
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMISS	Y-AK-04-GOR	●	●

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

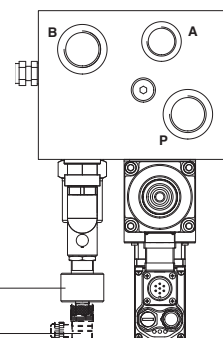
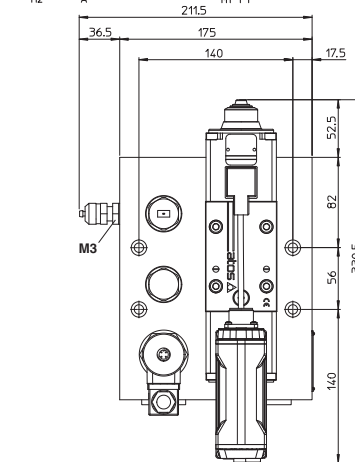
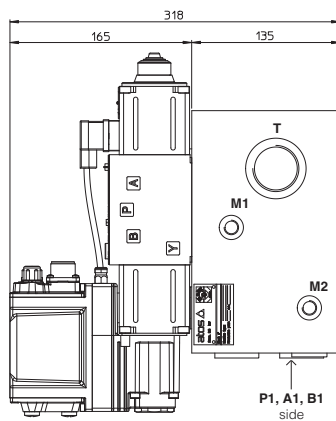
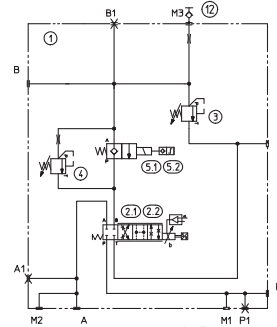
7.12 Installation dimensions of PB10\*-LTES synchronization block (for pression control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

Hydraulic scheme

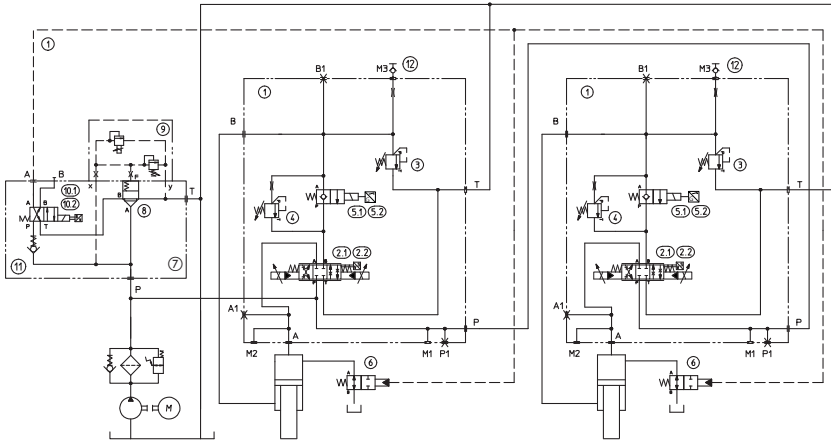


Safety valve with monitor signal only for -C execution

**ZBE-06**  
Sensor connector plastic to be ordered separately

**8 MODULAR BLOCK DESIGN TYPE PB11**

**8.1 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)**



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	PROPORTIONAL VALVE	100270 DPZO-T-171-L5	●	●
2.2	PROPORTIONAL VALVE	100270 DPZO-TE-171-L5	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE	SEE SECTION 9		
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINIMESS	Y-AK-04-GOR	●	●

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑩

**8.2 Installation dimensions of PB11-\* -HT(E) synchronization block (for pression control blocks see section 9.2)**

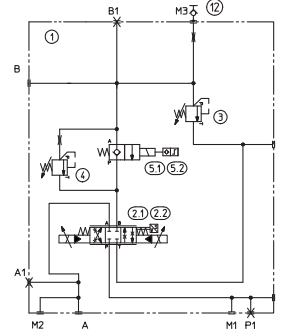
**SYNCHRONIZATION CONTROL BLOCK**

Fastening bolts:  
4 socket head screw M8x140 class 12.9

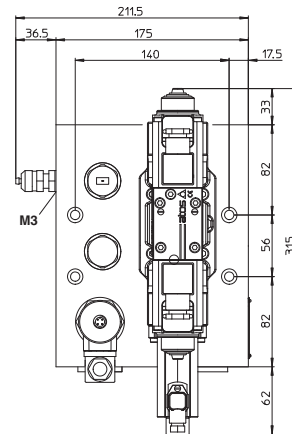
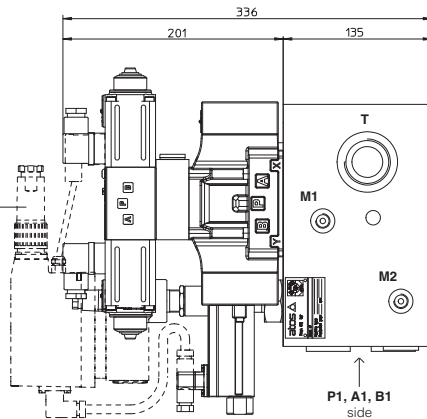
Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

Dotted line = TE proportional control type

**Hydraulic scheme**

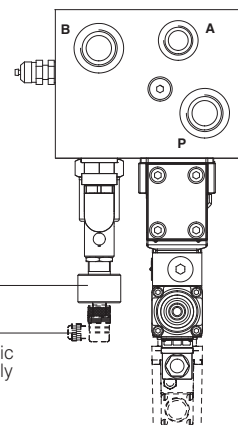


**ZH-7P**  
Power supply connector metallic or plastic, to be ordered separately

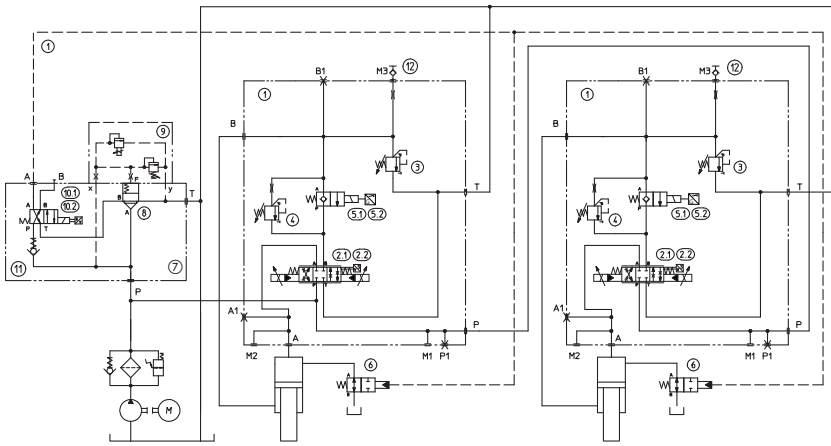


Safety valve with monitor signal only for -C execution

**ZBE-06**  
Sensor connector plastic to be ordered separately



### 8.3 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)



Pos	Description	Atos code	-N	-C
1	SUBPLATE		●	●
2.1	PROPORTIONAL VALVE	150104 DPZO-TEB-NP-171-L5	●	●
2.2	PROPORTIONAL VALVE	150104 DPZO-TES-NP-171-L5	●	●
3	SAFETY PRESSURE RELIEF VALVE	CART M6/350/RS	●	●
4	BALANCING VALVE	CART M6/350/R	●	●
5.1	SAFETY VALVE	JO-DL-10-2/FV-X		●
5.2	CARTRIDGE	JO-DL-10-2/NC-X	●	
6	PREFILLING VALVE		●	●
7	SUBPLATE			
8	CARTRIDGE			
9	PROP. PRESSURE VALVE			
10.1	SAFETY VALVE			
10.2	DIRECTIONAL VALVE			
11	CHECK VALVE			
12	MINI-MESS	Y-AK-04-GOR	●	●

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves 5 and 10

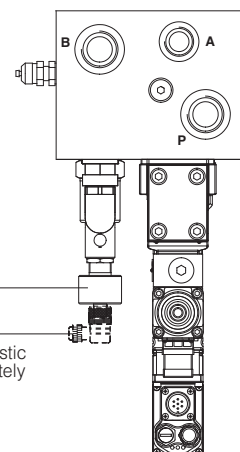
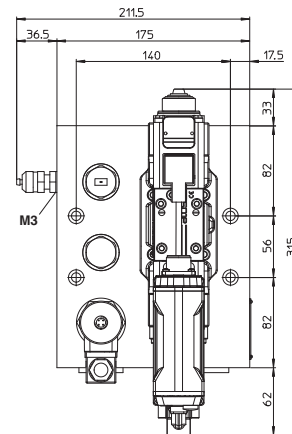
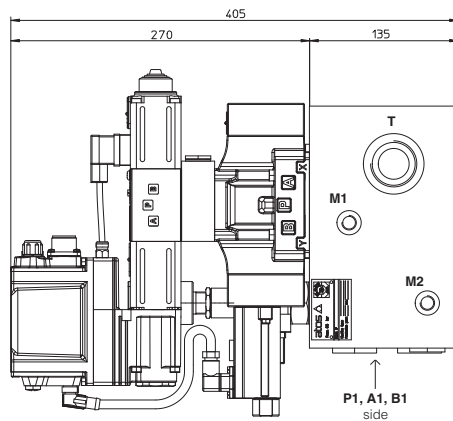
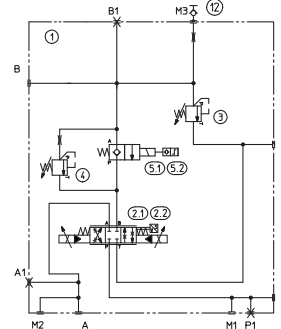
### 8.4 Installation dimensions of PB11\*-HTES synchronization block (for pression control blocks see section 9.2)

#### SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:  
4 socket head screw M8x140 class 12.9

Port dimensions:  
**P** = G 1" **P1** = G 1" (plugged)  
**T** = G 1 1/4"  
**A / A1** = G 3/4"  
**B / B1** = G 1"  
**M\*** = G 1/4"

#### Hydraulic scheme

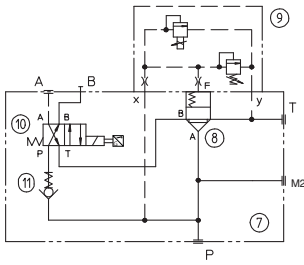


Safety valve with monitor signal only for -C execution

**ZH-4P/68**  
Sensor connector plastic to be ordered separately

## 9 PRESSURE CONTROL BLOCK (FOR PB-10 AND PB-11)

### 9.1 Hydraulic scheme of pressure control blocks for PB1\*



Composition of pressure control block size 16

Pos	Description	Atos code	-N	-C
7	SUBPLATE		●	●
8	CARTRIDGE	SC LI-16313	●	●
9	PROP. PRESSURE VALVE	LIMZO-A-1/315/18	●	●
10.1	SAFETY VALVE	DHE-0631/2/AFV-X		●
10.2	DIRECTIONAL VALVE	DHE-0631/2/A/NC-X	●	
11	CHECK VALVE	CART ADR-10	●	●

Composition of pressure control block size 25

Pos	Description	Atos code	-N	-C
7	SUBPLATE		●	●
8	CARTRIDGE	SC LI-25313	●	●
9	PROP. PRESSURE VALVE	LIMZO-A-2/315/18	●	●
10.1	SAFETY VALVE	DHE-0631/2/AFV-X		●
10.2	DIRECTIONAL VALVE	DHE-0631/2/A/NC-X	●	
11	CHECK VALVE	CART ADR-10	●	●

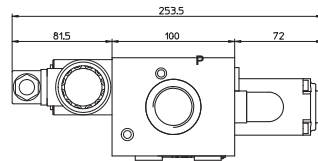
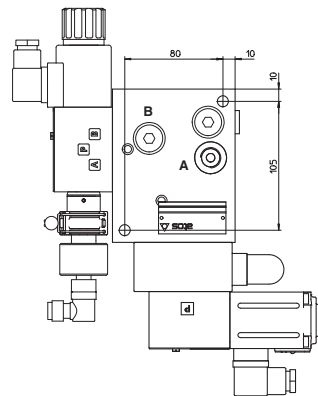
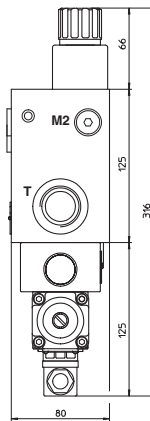
### 9.2 Installation dimensions of PB10 and PB11 pressure control blocks

#### PRESSURE CONTROL BLOCK size 16

Fastening bolts:  
2 socket head screw M8x95 class 12.9

Port dimensions:

**P** = G 1"  
**T** = G 1"  
**A** = G 3/8"  
**B** = G 3/8"  
**M2** = G 1/4"

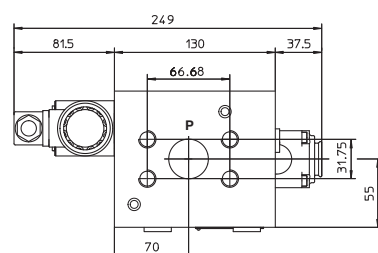
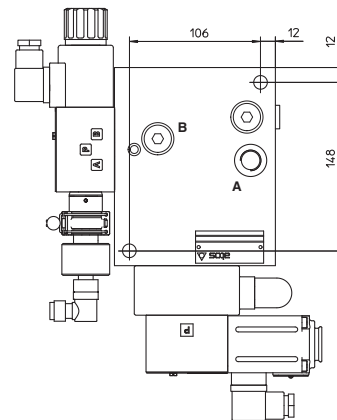
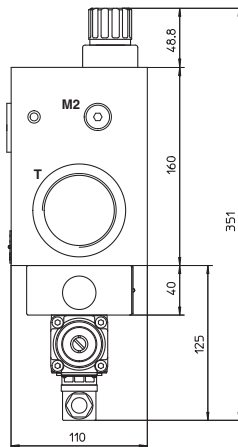


#### PRESSURE CONTROL BLOCK size 25

Fastening bolts:  
2 socket head screw M10x115 class 12.9

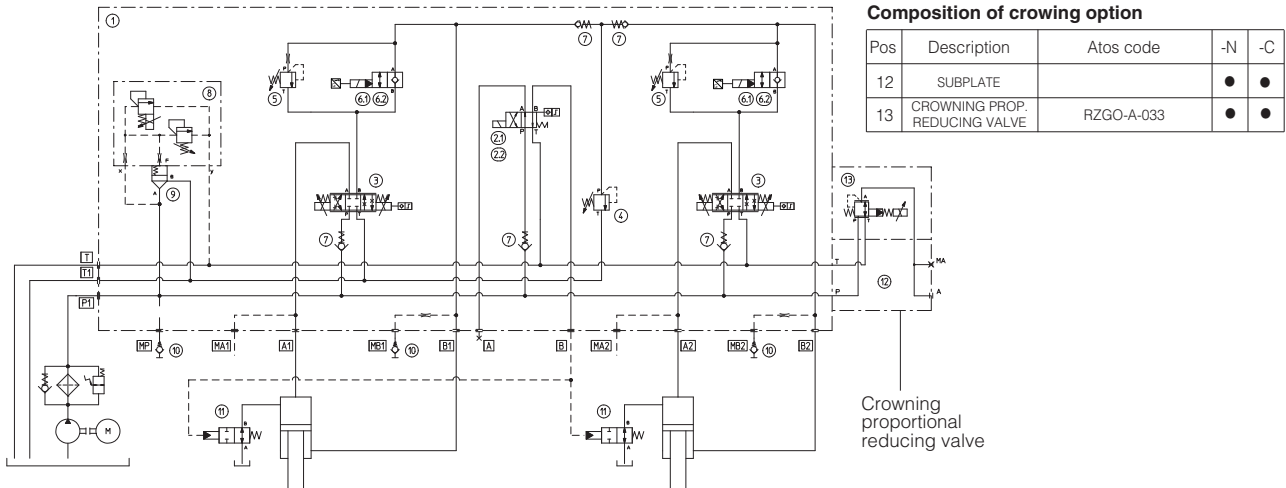
Port dimensions:

**P** = 1 1/4" SAE 6000  
**T** = G 2"  
**A** = G 3/8"  
**B** = G 3/8"  
**M2** = G 1/4"



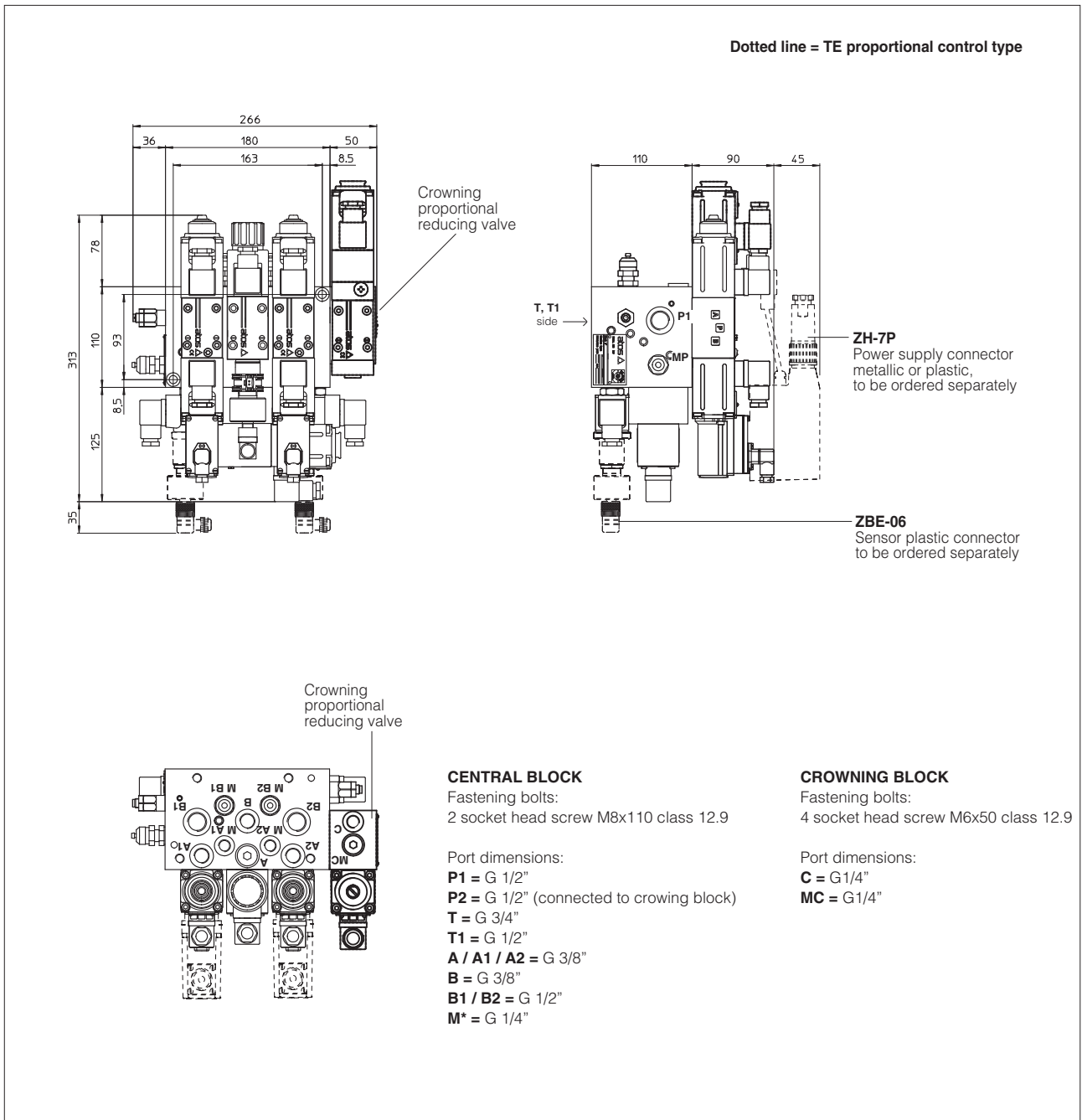
**10 CROWNING OPTION FOR CENTRAL BLOCK DESIGN TYPE PB06**

**10.1 Certified hydraulic scheme with crowning option PB-06C (example with -HT\* proportional control type)**



Note: the PB06-N solution has the same hydraulic scheme but without monitor signal on valves ② and ④

**10.2 Installation dimensions of PB06-\* central block with crowning option (example with -T\* proportional control type)**



**11 CROWNING OPTION FOR MODULAR BLOCK DESIGN TYPE PB1\***

**11.1 Installation dimensions of pressure control block with crowning option for PB1\* solution**

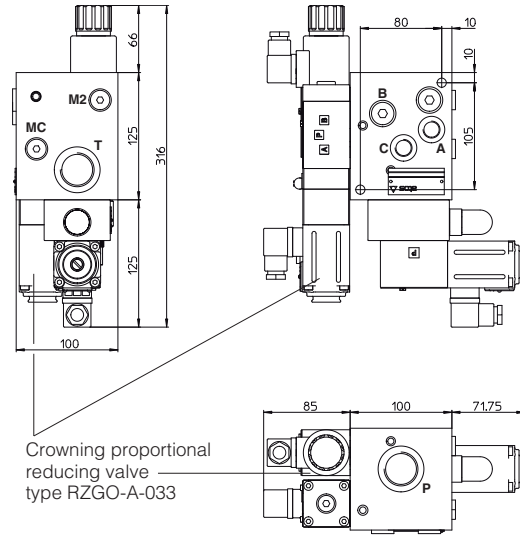
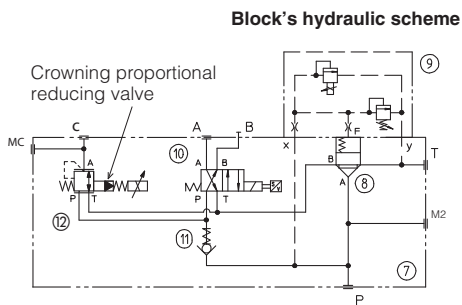
**Size 16**

For solution PB1\* the crowning proportional reducing valve ⑫ is installed on the pressure control block

Fastening bolts:  
2 socket head screw M8x115 class12.9

Port dimensions:

- P** = G 1"
- T** = G 1"
- A** = G 3/8"
- B** = G 3/8"
- C** = G 3/8"
- M2** = G 1/4"
- MC** = G 1/4"



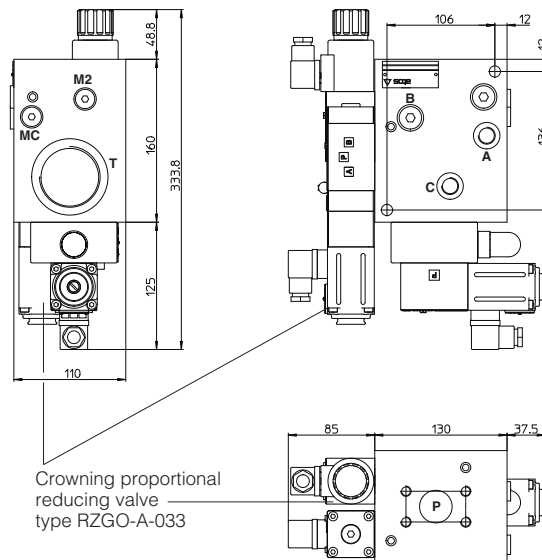
**Size 25**

For solution PB1\* the crowning proportional reducing valve ⑫ is installed on the pressure control block

Fastening bolts:  
2 socket head screw M8x115 class12.9

Port dimensions:

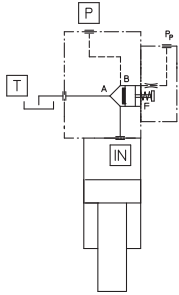
- P** = G 1 1/4" SAE 3000
- T** = G 2"
- A** = G 3/8"
- B** = G 3/8"
- C** = G 3/8"
- M2** = G 1/4"
- MC** = G 1/4"



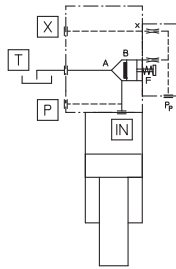
12 INSTALLATION DIMENSIONS OF PREFILLING BLOCKS TYPE PFB-\*

Model code	Size	Dimensions							Bolts	Seal	Port			
		A	B	D	E	F	I	L			T	X	P	Pp
<b>PFB-25</b>	25	70	28	Ø24	90	95	115	155	M10X90	OR 4137	G 1 1/4"	-	G3/8"	G1/4"
<b>PFB-32</b>	32	100	62	Ø32	130	125	125	185	M12X125	OR 149	G 1 1/2"	G3/8"	G3/8"	G1/4"
<b>PFB-40</b>	40	122	78	Ø50	165	150	150	250	M16X170	OR 4237	2" SAE 3000	G3/8"	G1/2"	G1/4"

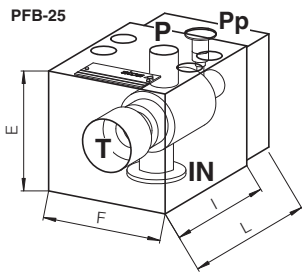
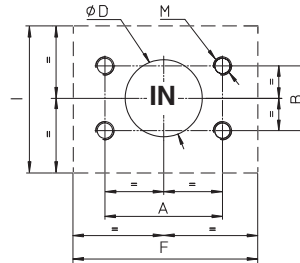
**PFB-25**  
Hydraulic scheme



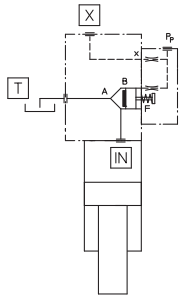
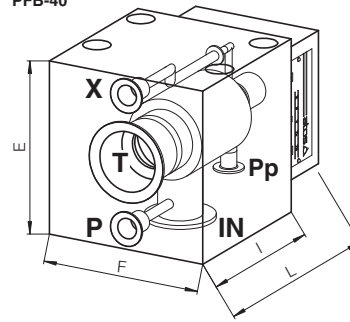
**PFB-32, PFB-40**  
Hydraulic scheme



Cylinder surface



**PFB-32**  
**PFB-40**



Model code	Size	Dimensions							Bolts	Seal	Port		
		D	E	F	I	L	N	P			T	X	Pp
<b>PFB-50</b>	50	Ø50	160	180	160	270	45.5	17.5	M16X150	OR 4237	2 1/2" SAE 3000	G3/8"	G1/4"
<b>PFB-63</b>	63	Ø63	200	200	200	330	62.5	27.5	M16X190	OR 4275	3" SAE 3000	G3/8"	G3/8"

Cylinder surface

