BIERI
HYDAC INTERNATIONAL

Directional seat valves ATEX

Type WVMX / WVHX

NG 4
up to 12 l/min

Features

- Direct operated
- Leakage free
- Good resistance to corrosion
- As 2/2-, 3/2- or 4/2*-valve with solenoid actuation

* pilot-operated

CE Ex II 2G Ex e mb IIC T4 Gb

Design

- With hardened closing elements as cone or ball seat
- Solenoids with slide on coil technology turnable in 90° steps
- Mounting on single subplate (EAP) as stand-alone valve or in valve bank with supplate (APXH)

Application

- Hydraulic cunstructions in explosion-prone zones where devices marking **CE Ex II 2G c IIC T4 (Valve)** and **CE Ex II 2G Ex e mb IIC T4 Gb (Solenoid coil)** are needed according to RL 94/4 EG.

Technical Data

Hydraulic fluid	Mineral oil according to DIN 51524 with ignition temperatures up to 185 °C (other fluids on request)
Fluid temperature range	-20 up to 80 °C (in- and outflow)
Ambient temperature range	-20 up to 55 °C (multistation manifold mounting with min. clearance 14 mm) -20 up to 65 °C (individual mounting)
Viscosity range	5 up to 400 mm^2/s
Porting	NG 4
Max. operating pressure	500 bar (Type WVMX) 700 bar (Type WVHX) Pressure difference from P to A, B to T must be adhered ($p_p > p_A \geq p_B > p_T$)!
Duty cycle DC	100% (S1)
Max. flow rate	12 l/min
Filtration (recommendation)	According NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
DIN connector (2P + E)	According EN 175301-803 / ISO 4400 / DIN 43650
Power	24 VDC (17 W) / further versions on request!
Power tolerance	+/- 10%
Switching time	40 - 120 ms
Degree of protection	IP 63 (solenoid IP 66) according DIN 40050
Material (outer parts)	Corrosion-resistant steel and aluminium (coil housing: ZnNi - corrosion protection)

Ordering codes WVMX/WVHX

Example WVXM/WVHX

WV	M	X	-	4B	-	2	/	2	-	WS	-	24	-	V	-	A		00

Seated valve

Types
M 500 bar
H 700 bar

Atex
X

Nominal sizes
4
Connection Bieri
..B

Ports
2, 3 or 4

Positions
2

Functions
see product information valve types

Actuations
24 Magnet 24 VDC

Seal materials
V FPM / other seal materials on request

Special design
01 ... 99
(00 for standard)

Part index
Please leave blank (small letters a-d; defferent letters do not effect inter-changeability)

Desing revision
Capital letters A-Z; identical letters equal same connecting dimensions

Ordering codes APHX and EAP

Example APXH

APH	X	-	4	B	-	2	/	2	-	AT	-	G3/8	-	V	-	A		00

Subplate ATEX

ATEX

Nominal sizes 4 NG 4

Interface type B connection Bieri

Ports 2, 3 or 4

Positions 2

Internal connection
PA P - A (function 2/2)
AT A - T (function 2/2)
PT P - T (function 2/2)
X for 3/2 and 4/2

Threaded connections
G3/8 G 3/8“-connection
X no external port (P - T)

Seal materials
V [FPM]
other seal materials on request

Special design
01 ... 99
(00 for standard)

Part index
Please leave blank (small letters a-d; defferent letters do not effect interchangeability)

Desing revision
Capital letters A-Z; identical letters equal same connecting dimensions

Example EAP

EAP	-	4	B	-	2	/	2	-	G3/8	-	A		00

Single subplate

Nominal size 4 NG 4

Connections B connection Bieri

Ports 2, 3 or 4

Positions 2

Threaded connections
G1/4 G 1/4“-connection
G3/8 G 3/8“-connection
G1/2 G 1/2“-connection

Special design
01 ... 99
(00 for standard)

Part index
Please leave blank (small letters a-d; defferent letters do not effect interchangeability)

Desing revision
Capital letters A-Z; identical letters equal same connecting dimensions

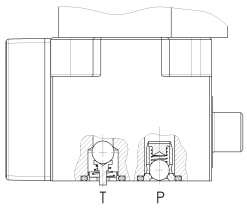
Spare parts set

	Items list	Part No.
5 pcs.	O-Ring, 5x1,5 mm, FPM	3853409
5 pcs.	O-Ring, 8x1,5 mm, FPM	
4 pcs.	Fixing screw, M6x35 mm	
4 pcs.	Fixing screw, M6x60 mm	
1 pce.	Seal cover plate for port B	

Solenoids	Part No.
Solenoid 24 VDC	4006062
Solenoid 110 VAC	4006150
Solenoid 230 VAC	4006151

Accessories

Type	Valve type	Item description	Part No.
RVH700-4B-D6,5-X-A*00	2/2, 3/2, 4/2, 3/3	Check valve (fitting in connection P)	3680704
RDH700-4B-D6,5-X-A*00	2/2, 3/2, 4/2, 3/3	Return pressure stop (fitting in connection T)	3687580



Product information 2/2-valves

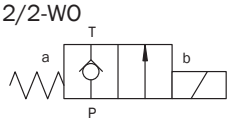
Functions WO and WS

Operting pressure max. [bar]	Actuation	Weight ca. [kg]	Part No.	
			2/2-WO	2/2-WS
700 bar	24 VDC	1,9	3986173	3986174
500 bar	24 VDC	1,9	3986226	3966527

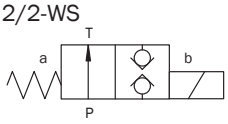
Notes:
Further actuations on request!
Characteristics see pages 12-13!

Hydraulic symbol

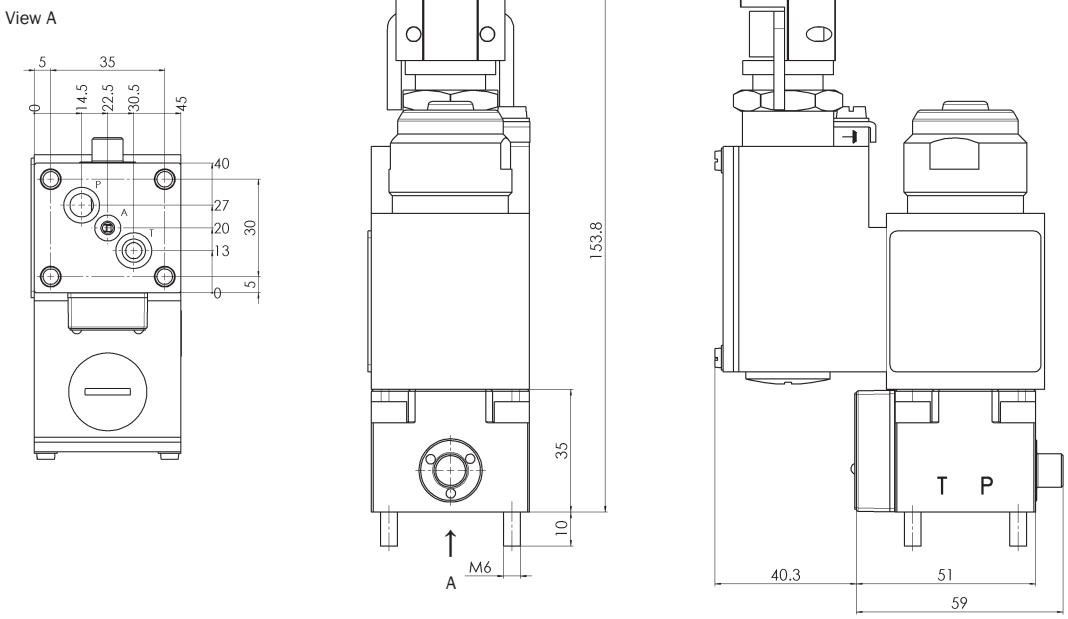
2/2-WO



2/2-WS



Dimensional drawing



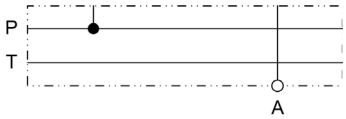
Subplates APXH for 2/2-valves (valve bank - example see page 12)

Internal connection	Threaded connection [”]	Weight ca. [kg]	Part No.
P - A	G 3/8	0,50	3986252
A - T	G 3/8	0,50	3986266
P - T	-	0,50	3986267

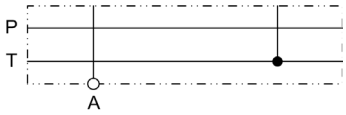
Notes:
Mounting elements for APXH have to be ordered seperately (see page 11)!

Hydraulic symbols

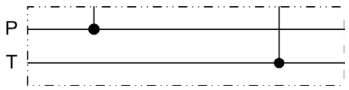
P - A



A - T

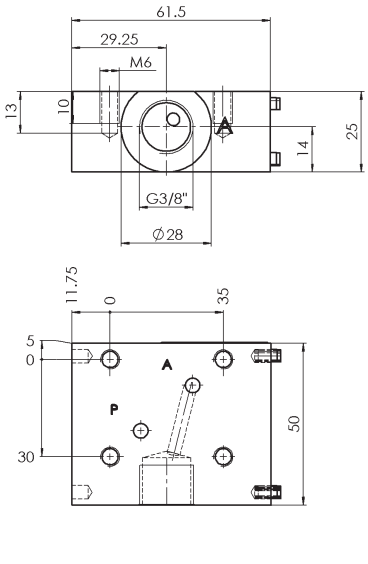


P - T

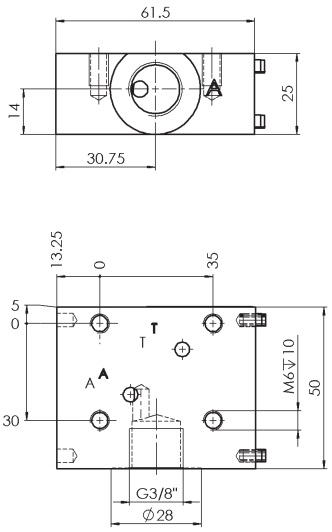


Dimensional drawings

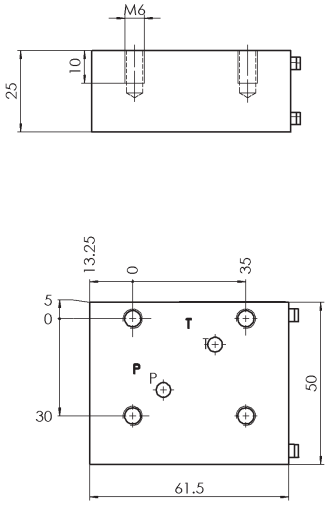
P - A



A - T



P - T



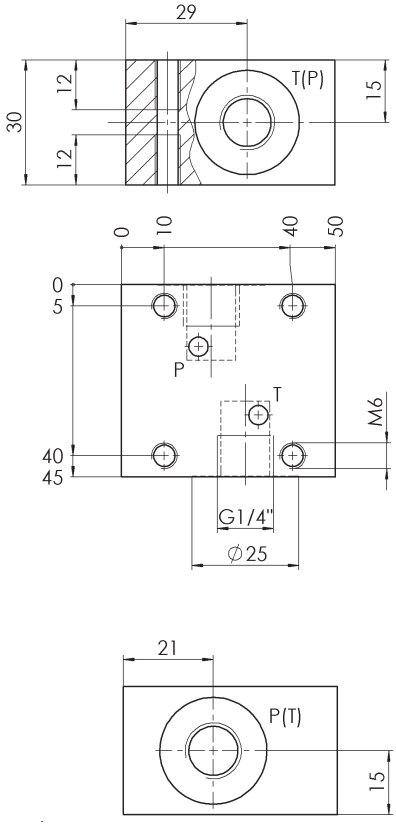
Single subplates EAP for 2/2-valves (in-line mounting)

Threaded connection [”]	Weight ca. [kg]	Part No.
G 1/4	0,45	3763413
G 3/8	0,45	3807978
G 1/2	0,45	3832462

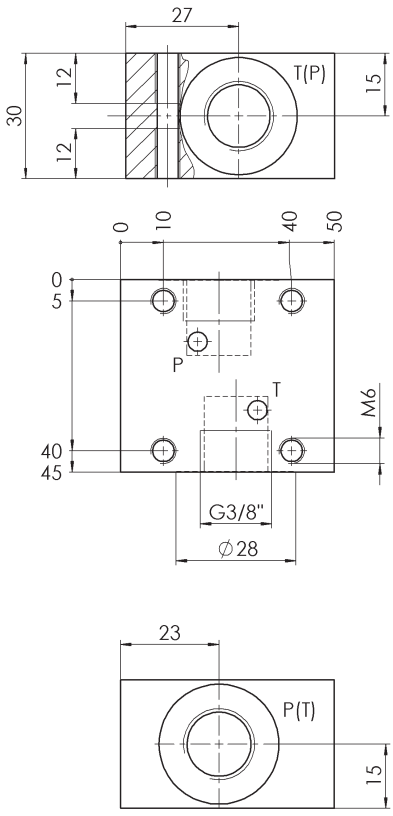
Hydraulic symbol

Dimensional drawings

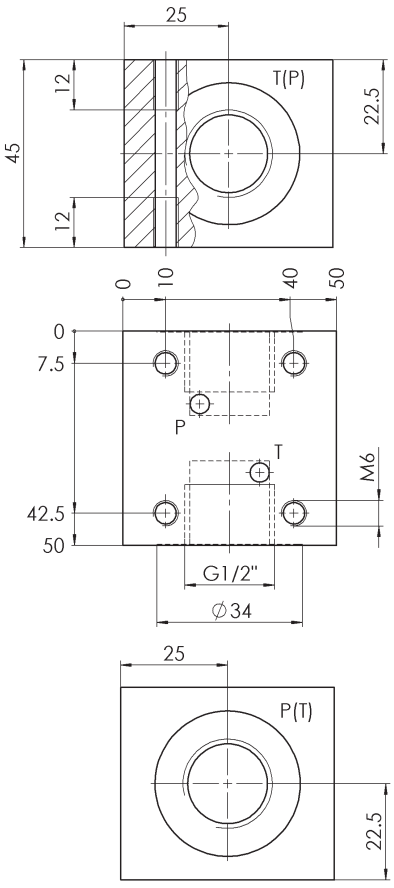
G 1/4“



G 3/8“



G 1/2“



Product information 3/2-valves

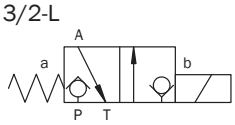
Functions L and N

Operating pressure max. [bar]	Actuation	Weight ca. [kg]	Part No.	
			3/2-L	3/2-N
700 bar	24 VDC	1,9	3986220	3986223
500 bar	24 VDC	1,9	3935067	3986250

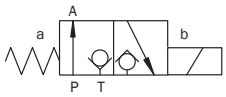
Notes:
Further actuations on request!
Characteristics see pages 12-13!

Hydraulics symbol

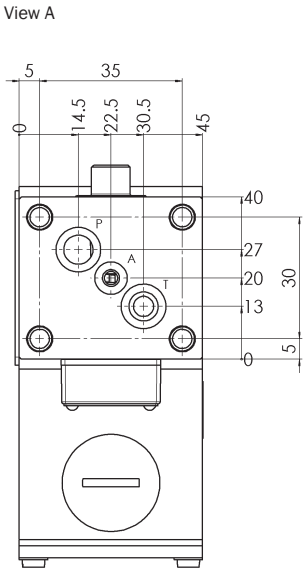
3/2-L

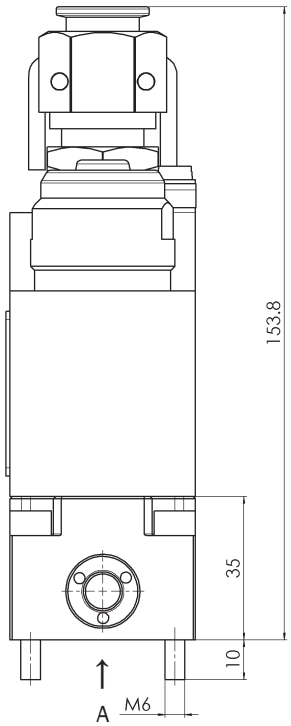


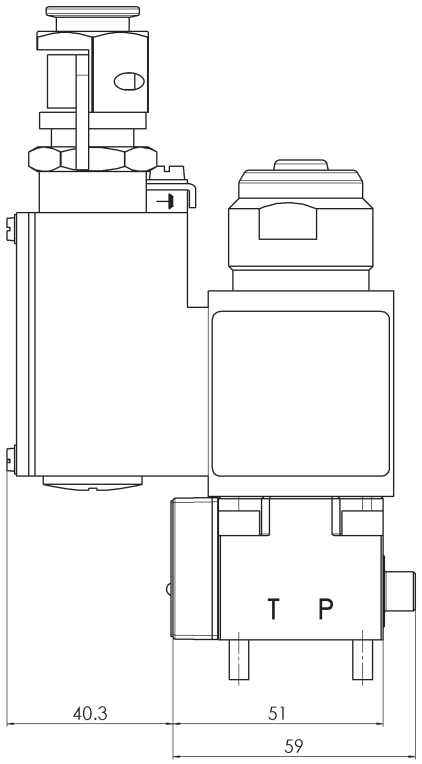
3/2-N



Dimensional drawing





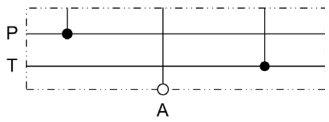


Subplate APXH for 3/2-valves (valve bank - example see page 12)

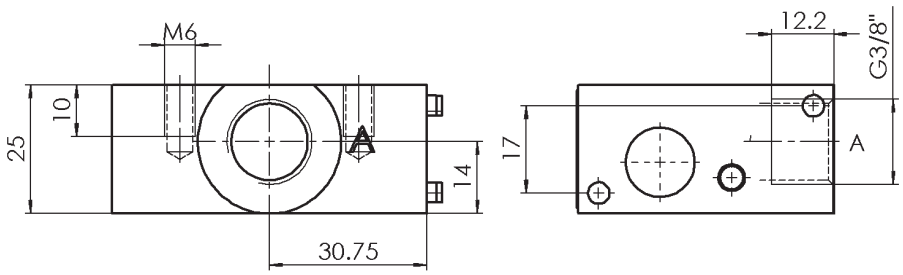
Threaded connection [”]	Weight ca. [kg]	Part No.
G 3/8	0,50	3979196

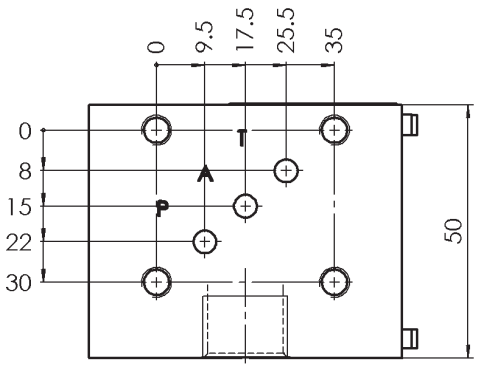
Notes:
Mounting elements for APXH have to be ordered seperately (see page 11)!

Hydraulic symbol



Dimensional drawing





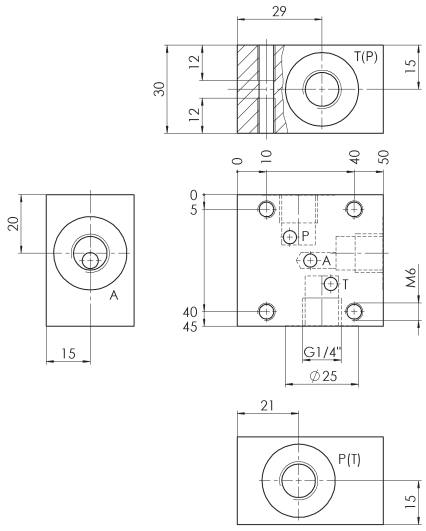
Single subplate EAP for 3/2-valves (in-line mounting)

Threaded connection [”]	Weight ca. [kg]	Part No.
G 1/4	0,45	3832498
G 3/8	0,45	3832499
G 1/2	0,45	3832497

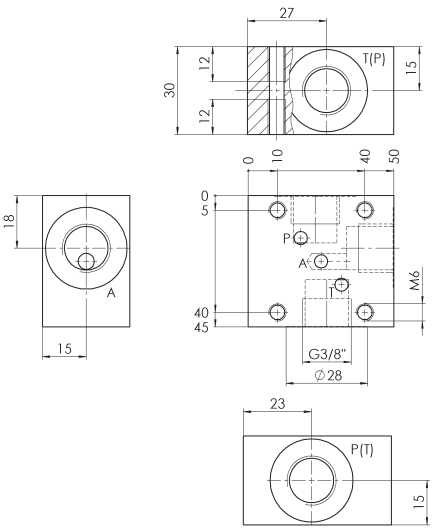
Hydraulic symbol

Dimensional drawings

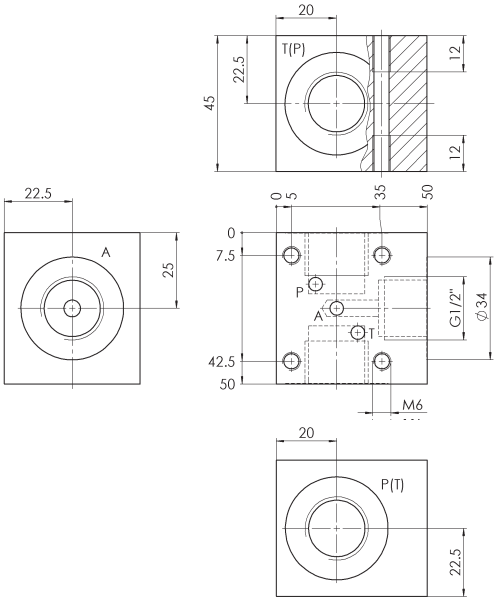
G 1/4“



G 3/8“



G 1/2“



Product information 4/2-valves

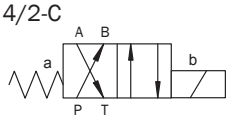
Functions C and D

Operating pressure max. [bar]	Actuation	Weight ca. [kg]	Part No.	
			4/2-C	4/2-D
700 bar	24 VDC	2,2	3986215	3986218
500 bar	24 VDC	2,2	3986234	3986246

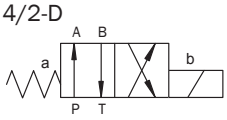
Notes:
Further actuations on request!
Characteristics see pages 12-13!
Seal cover plate (see spare parts set page 3) has to be mounted in port B when a subplate from Bieri is used!

Hydraulic symbols

4/2-C

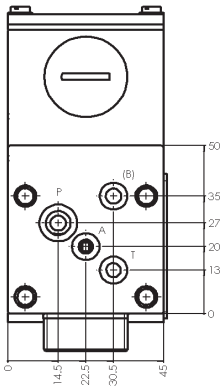


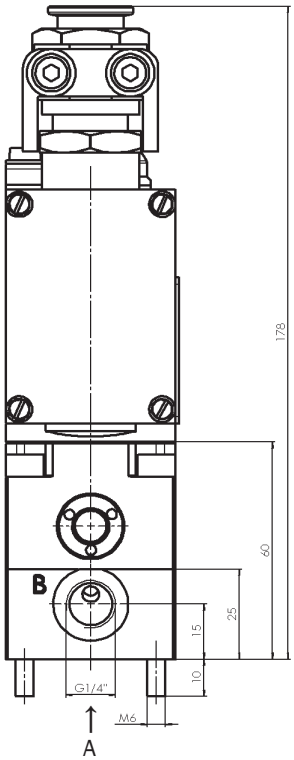
4/2-D

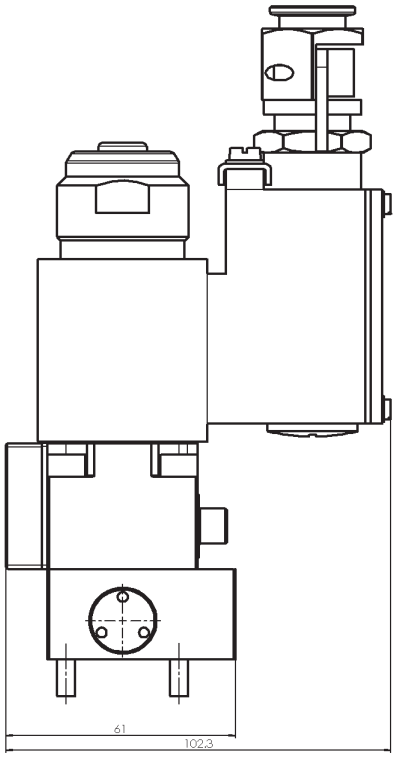


Dimensional drawing

View A





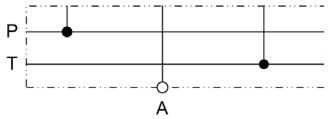


Subplates APXH for 4/2-valves (valve bank - example see page 12)

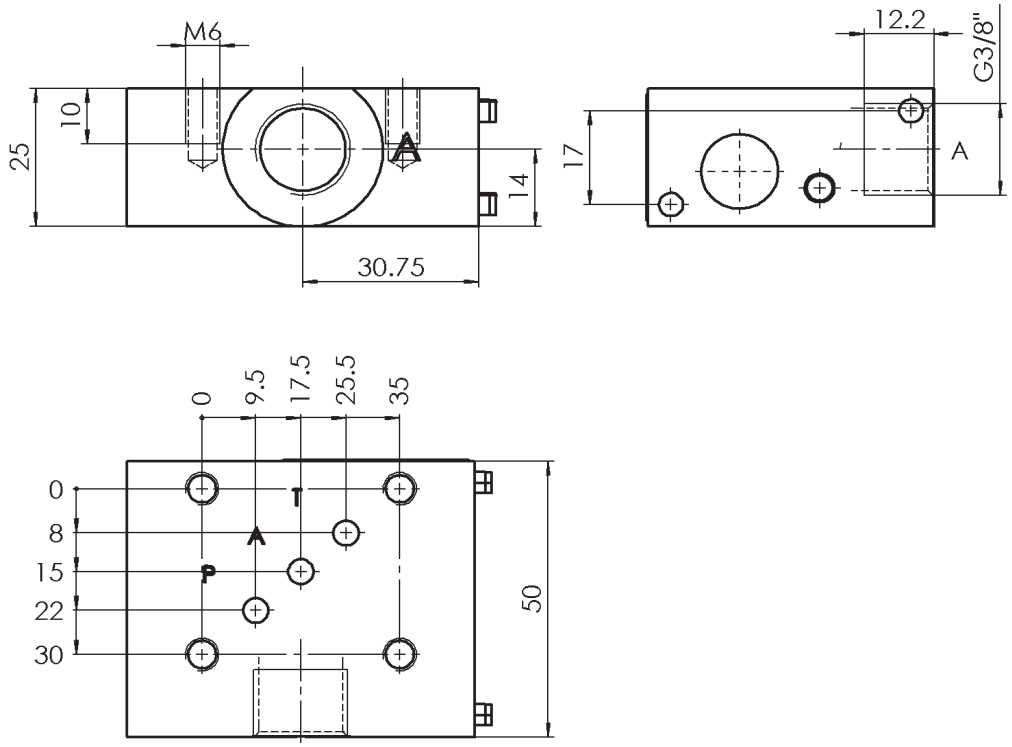
Threaded connection [”]	Weight ca. [kg]	Part No.
G 3/8	0,50	3986270

Notes:
Mounting elements for APXH have to be ordered seperately (see page 11)!

Hydraulic symbol



Dimensional drawing



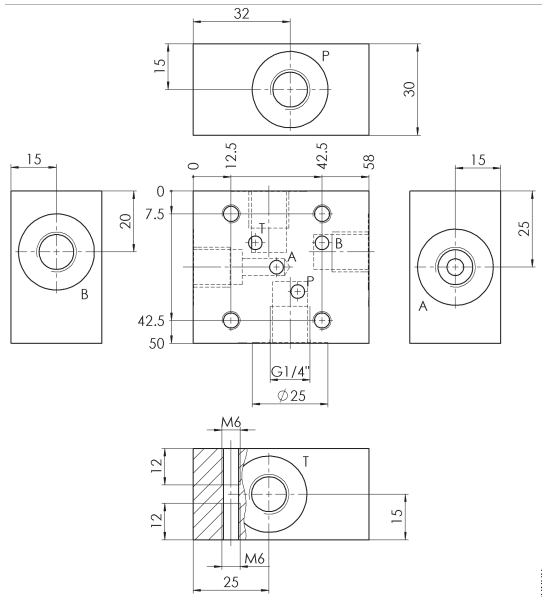
Single subplates EAP for 4/2-valves (in-line mounting)

Threaded connection [”]	Weight ca. [kg]	Part No.
G 1/4	0,45	3832534
G 3/8	0,45	3832535
G 1/2	0,70	3832533

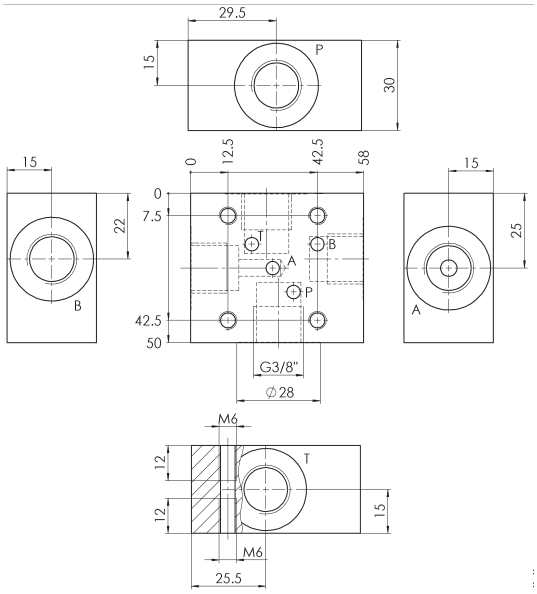
Hydraulic symbol

Dimensional drawings

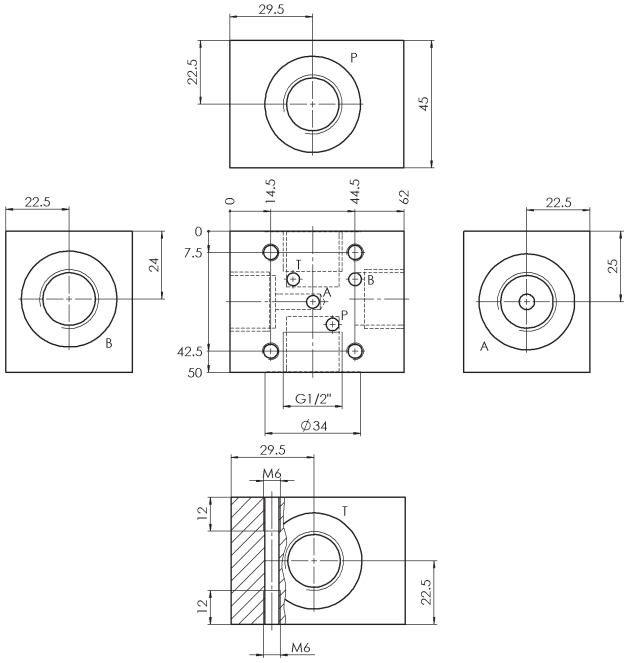
G 1/4“



G 3/8“



G 1/2“



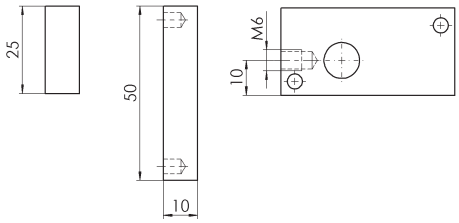
Valve bank (example see following page)

Mounting elements for subplates APXH

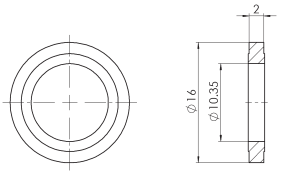
Item description	Dimensions	Weight ca. [kg]	Part No.
Subplate „starting block“ / without connection for DV	see drawing below	0,30	3845391
End plate	see drawing below	0,10	3845392
Tie bolt	see drawing below	see dimensional table below	see dimensional table below
Cap nut	see drawing below	-	6112447
Usit-ring	10,35 x 16 x 2 mm	-	6116776

Dimensional drawings

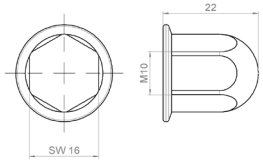
End plate



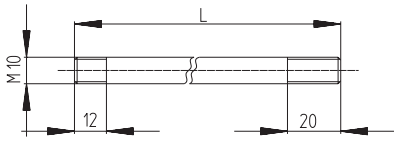
Usit-ring



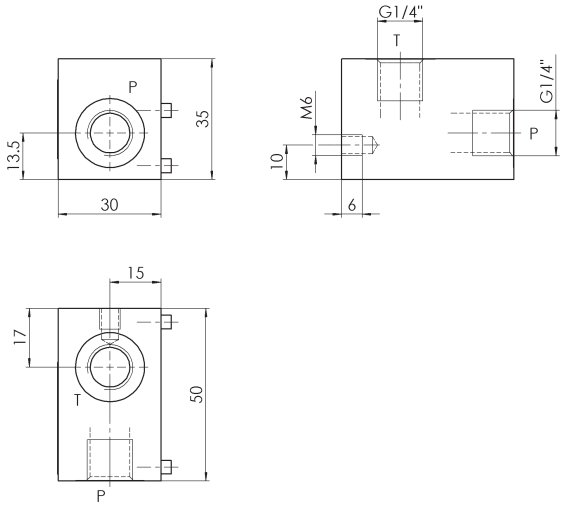
Cap nut



Tie bolt



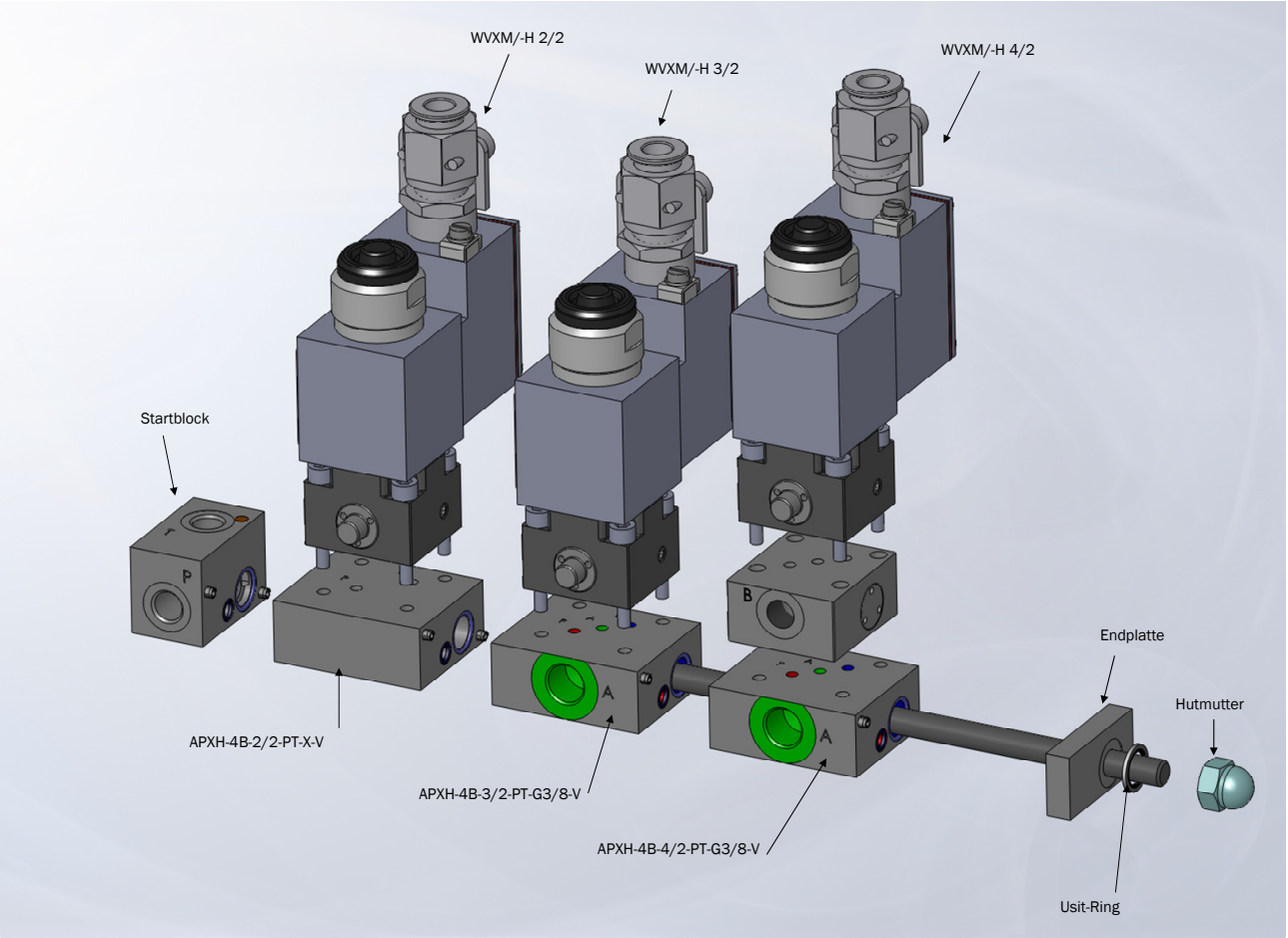
Subplate „starting block“
(without connection for pressure relief valve)



Dimensional table tie bolts

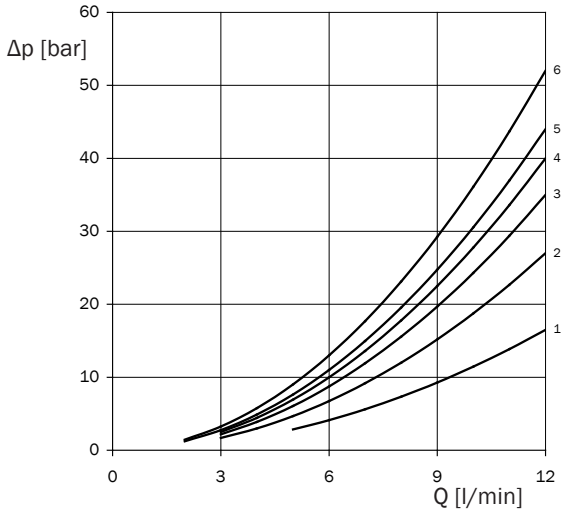
Number of sections [section length = 46 mm]	Length [mm]	Part No.	Weight ca. [kg]
1	95,5	on request	0,06
2	157,0	on request	0,10
3	218,5	3689284	0,13
4	280,0	on request	0,18
5	341,5	on request	0,21
6	402,5	3689299	0,25

Example valve bank



Characteristics

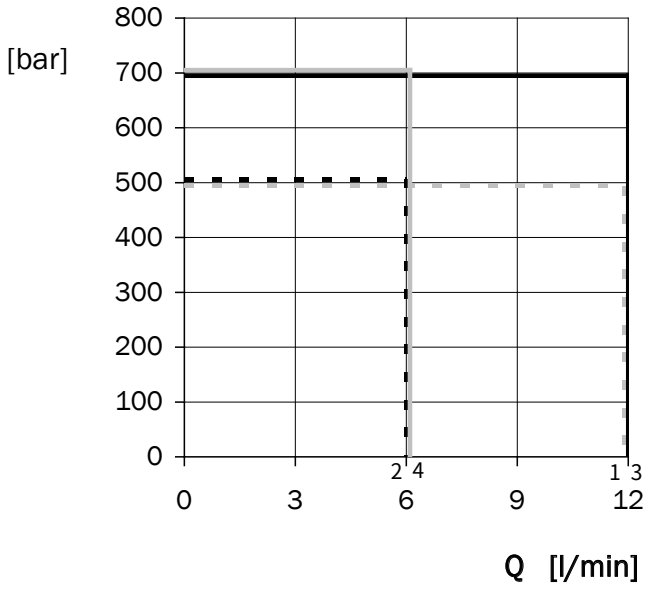
Pressure drop



Valve type	P - A	P - B	A - T	B - T	P - T
4/2-C	5	3	6	5	
4/2-D	5	5	5	6	
3/2-L	4		6		
3/2-N	3		4		
2/2-WO					1
2/2-WS					2

( ) = for mid-position

Hydraulic operating powerlimits



Hydraulics operating powerlimits at rated voltage and ambient temperature T_a = 40° C.

1 C, D, L, N, WO (Type WVMX)

2 WS (Type WVMX)

3 C, D, L, N, WO (Type WVHX)

4 WS (Type WVHX)

Bieri Hydraulik AG
Könizstrasse 274
CH-3097 Liebefeld
Tel. +41 31 970 09 09 | Fax +41 31 970 09 10
info@bierihydraulics.com | www.bierihydraulics.com