

ABBREVIATIONS

AP	HIGH PRESSURE CONNECTION
AS	PHASE LAG (DEGREES)
BP	LOW PRESSURE CONNECTION
C	STROKE (MM)
CH	ACROSS FLATS
Ch	INTERNAL ACROSS FLATS
DA	AMPLITUDE DECAY (dB)
Dp	DIFFERENTIAL PRESSURE (BAR)
F	FORCE (N)
I%	INPUT CURRENT (A)
M	MANOMETER CONNECTION
NG	KNOB TURNS
OR	SEAL RING
P	LOAD PRESSURE (BAR)
PARBAK	PARBAK RING
PL	PARALLEL CONNECTION
Pr	REDUCED PRESSURE (BAR)
Q	FLOW (L/MIN)
Qp	PUMP FLOW (L/MIN)
SE	ELASTIC PIN
SF	BALL
SR	SERIES CONNECTION
X	PILOTING
Y	DRAINAGE

**CARTRIDGE VALVES
ISO 7368 (DIN 24342)**



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**CARTRIDGE VALVES
CARTRIDGE SOLENOID VALVES WITH CHECK VALVE
CARTRIDGE SOLENOID VALVES**

SEE ALSO CATALOGUE
CODE DOC00044

2/2 CARTRIDGE VALVES LOGIC ELEMENTS ACCORDING TO ISO 7368 (DIN 24342)



2/2 LOGIC ELEMENTS AND COVERS

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NG16 / NG25 KEL SEATS	CH. V PAGE 4
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C*.P.16/25...	CH. V PAGE 10
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PROXIMITY FOR KRA	CH. V PAGE 16

ARON cartridge valves are basically composed of a cover and an operating unit insert in the ISO 7368 (DIN 24342) mounting frame. Each cartridge valve is characterized by 2 main way for the nominal flow (up to 350 l/min).

Nominal size (max. diameter)	16mm / 25mm
Max. opening pressure	350 bar
Max. nominal flow rate NG16	150 l/min
Max. nominal flow rate NG25	350 l/min
Fluid temperature	-20°C ÷ 75°C
Max. contamination level	class 10 in accordance with NAS 1638 with filter $\beta_{25} \geq 75$

By combining the various covers, operating units and connections within the block, many different functions can be obtained like: direct control, non-return, hydraulically piloted non-return, pressure control, flow rate regulation, as well as a combination of these same functions.

Thanks to their design features and operational flexibility, cartridge valves can be used to:

- speed-up machine cycles, and therefore increase productivity and efficiency (better response time compared to traditional valves);
- ensure minimum thermal dissipation (thanks to the passageway dimensions);
- reduce the hydraulic plant weight (thanks to the compact functions block);
- reduce to a minimum any internal leakages;
- provide ease of installation and serving.

The logic units 2/2 (Fig. 1) are formed by a cover (1), a functional unit (2), a spacer (3), a closure spring (4) and a guide bush (5) for each functional unit. Covers can be changed according to the required application and the functional unit can be combined with different springs in order to obtain various opening pressure.

Covers

Covers serve to enclose the functional unit and to house the piloting ports and any incorporated valves or manual adjustment devices. Inside the cover are housed also the seats for the calibrated orifice used to optimize the valve opening/closed response time in accordance to the type of hydraulic system being implemented.

CETOP 3 interface covers are available, ready to accept solenoid valves or other modular valves for the implementation of particular control functions.

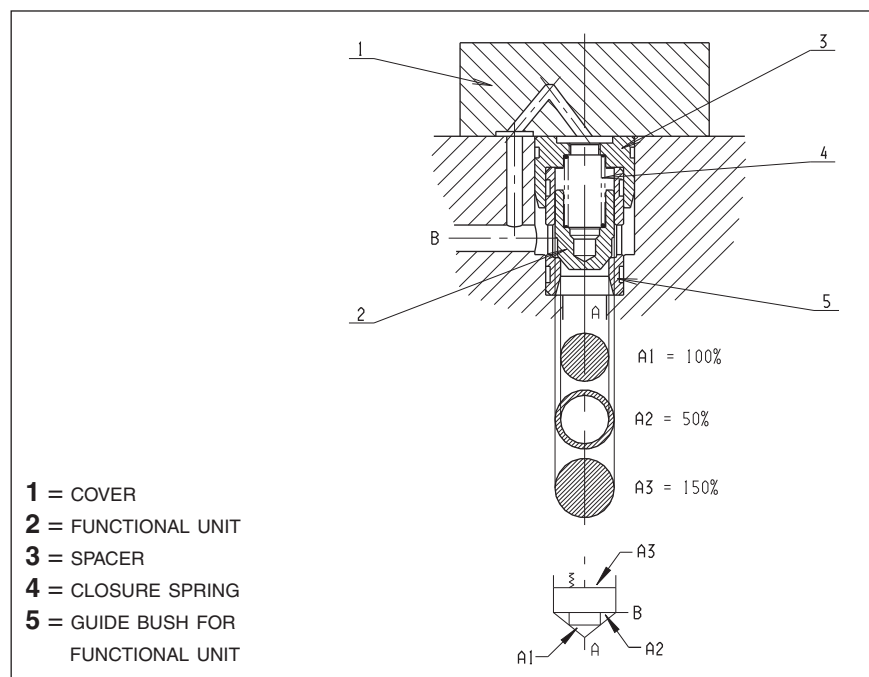
The maximum allowed pressure is a function of the flow rate (max.400 bar).

FIG. 1 - AREA RATIO

A	MAIN FLOW
B	MAIN FLOW
X	EXTERNAL PILOTING
Z1	EXTERNAL PILOTING
Z2	EXTERNAL PILOTING
Y	DRAINAGE
A1	A PORT EFFECTIVE CROSS SECTION
A2	B PORT EFFECTIVE CROSS SECTION
A3	SPRING CHAMBER EFFECTIVE CROSS SECTION

ORIFICE FUNCTIONAL SYMBOLS

	STANDARD ORIFICE (ALREADY INSERTED) Ø 1mm (DIAMETER)
	A GRUB SCREW ORIFICE CAN BE INSERTED IN THE THREADED SEAT
	BLIND



The logic unit operates as a function of the pressures acting on the relevant areas, and different opening pressures are obtained, depending on the dimensions of these areas.

A description of how to interpret the ARON cartridge opening ratios is as follows:

- there are three relevant areas A1, A2, A3;
- area A1 is taken to represent 100%, i.e. it is the reference area;
- area A2, when a 2:1 ratio is shown, is equal to 50% of area A1 and all the other ratios shown in the Table 2 can be calculated on this basis.

As consequence of these area ratios there are different opening pressures whether proceeding from A → B or from B → A.

ORDERING CODE

KEL

Logic element 2/2

********16** = NG16
25 = NG25*****

Function: see table 1

Areas ratio:

U = 1 : 1**S** = 12.5 : 1**B** = 2 : 1

(for version with drilled poppet see CF variant)

F = 2 : 1**R** = 2 : 1*****

Opening pressure (bar)

(Tab.1 pressure values)

(Tab.2 spring's colour and code)

Calibrated orifices:

00 = blind**08** = 0.8 mm**09** = 0.9 mm**10** = 1.0 mm**12** = 1.2 mm**14** = 1.4 mm********00** = No variant**V1** = Viton**CF** = With drilled poppet
only for KEL.**.B...**2**

Serial No.

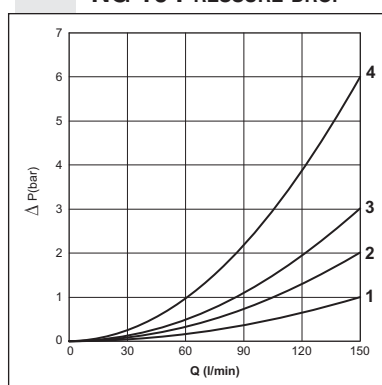
TAB. 1 - SYMBOL, FUNCTION, AREA RATIO AND OPENING PRESSURE

Function	Symbol	Area ratio	Code	Opening pressure (bar)	
				A→B	B→A
Directional (U) (normally used for relief valve)		A1 : A3 1 : 1	KEL*.U.L.00... KEL*.U.M.00... KEL*.U.H.00... KEL*.U.J.00...	L = 0.3 M = 1.6 H = 4 J = 9	
Directional (U) with orifice		A1 : A3 1 : 1	KEL*.U.L.**... KEL*.U.M.**... KEL*.U.H.**...	L = 0.3 M = 1.6 H = 4	
Directional (S)		A1 : A2 12.5 : 1	KEL*.S.L.00... KEL*.S.M.00... KEL*.S.H.00...	L = 0.3 M = 0.6 H = 1.5	L = 4 M = 8 H = 20
Directional (S) with orifice		A1 : A2 12.5 : 1	KEL*.S.L.**... KEL*.S.M.**... KEL*.S.H.**...	L = 0.3 M = 0.6 H = 1.5	L = 4 M = 8 H = 20
Directional (B) (normally used for check valve)		A1 : A2 2 : 1	KEL*.B.L.00... KEL*.B.M.00... KEL*.B.H.00...	L = 0.5 M = 1 H = 2.5	L = 1 M = 2 H = 5
Flow control (F)		A1 : A2 2 : 1	KEL*.F.L.**... KEL*.F.M.**... KEL*.F.H.**...	L = 0.5 M = 1 H = 2.5	L = 1 M = 2 H = 5
With sensitized cover (R)		A1 : A2 2 : 1	KEL*.R.L.00... KEL*.R.M.00... KEL*.R.H.00... KEL*.R.J.00...	A → B	
				NG16	NG25
				L = 0.7 M = 1.5 H = 4	L = 0.6 M = 1.5 H = 3.5 J = 9

TAB. 2 - SPRING'S COLOUR AND CODE

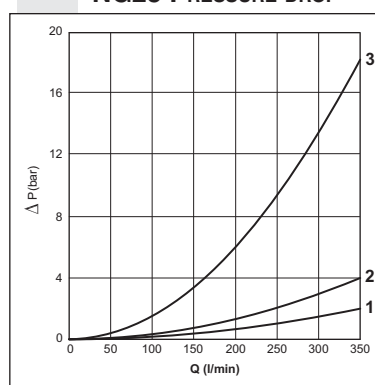
Spring type	U		S		B-F		R	
	NG16	NG25	NG16	NG25	NG16	NG25	NG16	NG25
Cod. L	without colour	red	without colour	red	without colour	red	without colour	red
Cod. M	green	yellow	green	green	green	green	green	green
Cod. H	blue	blue	red	yellow	red	yellow	red	yellow
Cod. J		without colour	yellow	yellow	green	yellow	green	blue

NG 16 PRESSURE DROP



1 = KEL16U
KEL16S
2 = KEL16B
3 = KEL16R
4 = KEL16F

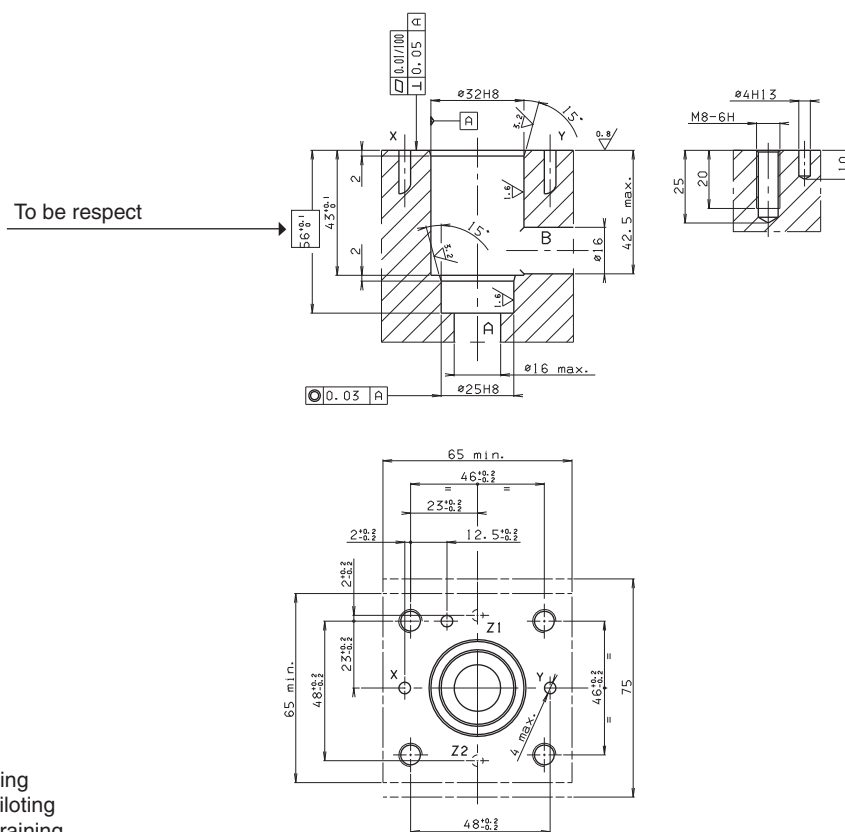
NG25 PRESSURE DROP



1 = KEL25U
KEL25B
KEL25R
2 = KEL25S
3 = KEL25F

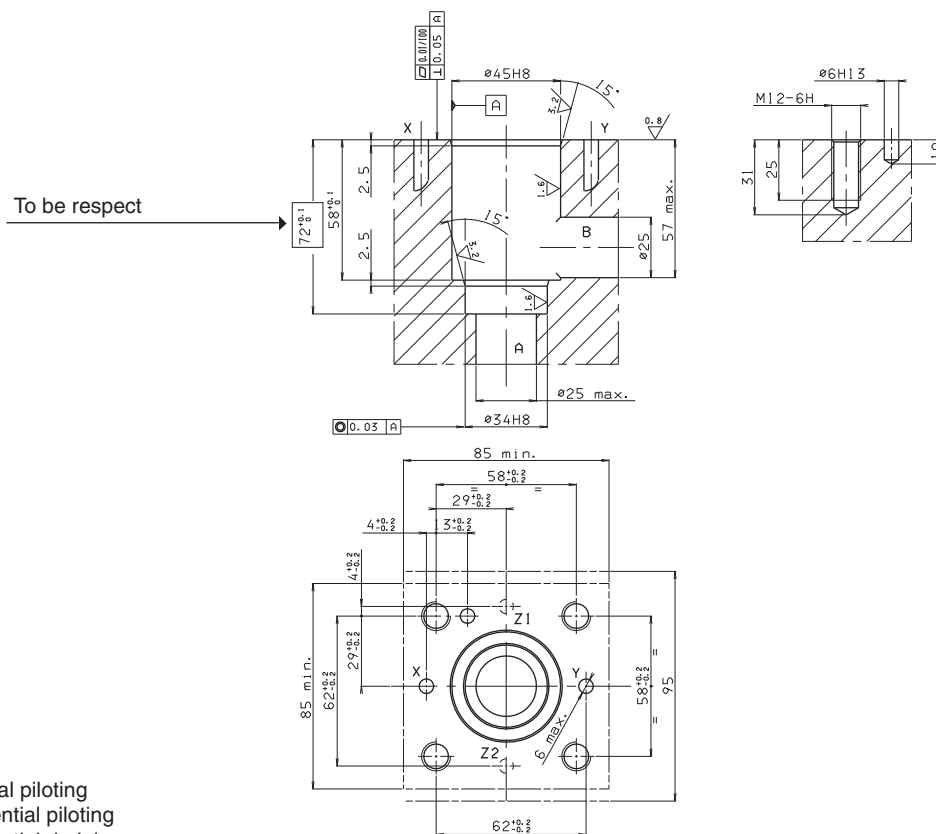
The fluid used is a mineral oil with a viscosity of 46 mm²/s at 40°C. The tests were performed at a fluid temperature of 50°C.

OVERALL DIMENSIONS OF TWO-WAY VALVE SEAT ISO 7368/BA-06-2-A NG16 (DIN 24342)



X = piloting
Y = draining
Z = additional piloting
Z1 = preferential piloting
Z2 = preferential draining

OVERALL DIMENSIONS OF TWO-WAY VALVE SEAT ISO 7368/BB-08-2-A NG25 (DIN 24342)



X = piloting
Y = draining
Z = additional piloting
Z1 = preferential piloting
Z2 = preferential draining

COVERS ORDERING CODE

KEC

Covers for
logic element 2/2

**

16 = NG16
25 = NG25

**

Type of cover (see Tab. 3)
RI = Directional with external piloting
CQ = Directional with stroke adjustment
RC = Directional with interface NG6
PC = With hydraulic outlet pilot valve
SH = With built-in-exchange (shuttle)
SP = With built-in-exchange and interface NG6

**

00 = No variant
V1 = Viton

2

Serial No.

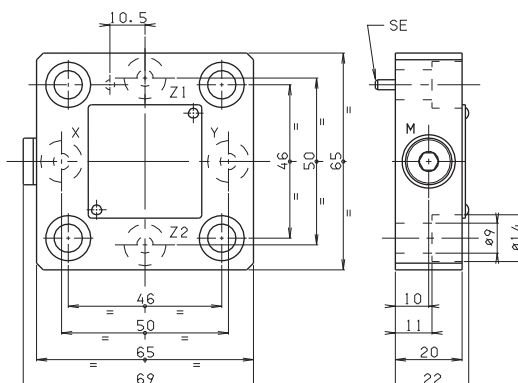
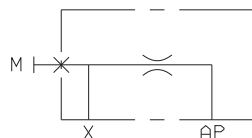
TAB. 1 - COVERS HYDRAULIC SYMBOLS

Type	Symbol
KEC.**.RI.**.2 Directional with external piloting	
KEC.**.CQ.**.2 Directional with stroke adjustment	
KEC.**.RC.**.2 Directional with interface NG6	
KEC.**.PC.**.2 With hydraulic outlet pilot valve	
KEC.**.SH.**.2 With built-in-exchange valve (shuttle)	
KEC.**.SP.**.2 With built-in-exchange valve (shuttle) and interface NG6	

HYDRAULIC MOUNTING SCHEMES FOR KEC COVERS AND KEL LOGIC ELEMENTS

KEC.16/25.RI... COVER WITH EXTERNAL PILOTING PORT A = External piloting X allows flow in both directions A → B and B → A. B = For rapid sequence safety circuit; A → B flow is allowed; when pressure reaches X valve closes. Only for CF variant (KEL.**:B... with drilled poppet), with no pressure in X it operates as a check valve between A and B.	
KEC.16/25.CQ... COVER WITH STROKE LIMITATION Allows flow regulation in both directions A → B and B → A. By limiting the spool stroke the flow in both direction can be limited.	
KEC.16/25.RC... COVER WITH INTERFACE NG6 These covers have one mounting surface preset for a solenoid pilot valve. Proper connection of Y and Z2 to the A and/or B ports will allowing piloting of the valve opening and closing functions.	
KEC.16/25.PC... COVER WITH HYDRAULIC RELEASE PILOT VALVE This is a cover with external piloting to be connected to B port to obtain the standard unit function. Z1 pressure piloting allows flow transfer from B → A. Normally, in order to ensure the holding condition the main port B is connected to the load; piloting in Z1 should be at least 50% of the load pressure in B.	
KEC.16/25.SH... COVER WITH INTEGRAL CHANGEOVER VALVE The logic element closes as function of the larger pressure in X and Z1, selected by the shuttle valve.	
KEC16/25.SP... COVER WITH INTEGRAL CHANGEOVER VALVE AND INTERFACE NG6 The AP branch of the cartridge valve spring is connected with the pilot valve port. External piloting operates from Z2 → A of the pilot valve. An example is shown in the diagram of a type of connection used to keep the conical seat valve closed on both sides (interrupted flow both from A → B and from B → A).	
KRA.16/25... COVER WITH ELECTRICAL CONTROL OF THE CLOSED POSITION AND INTERFACE NG6 See cartridge type KRA... next pages	

OVERALL DIMENSIONS KEC.16.RI... CHECK VALVE COVER



Weight: 0,5 Kg

M = pressure gauge attachment

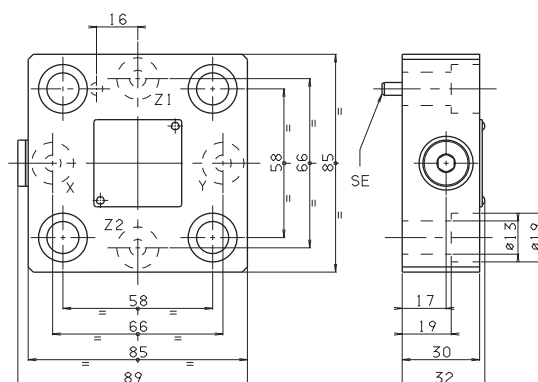
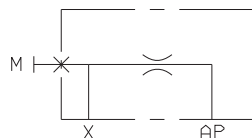
Orifice with calibrated ø1 mm standard diameter

The covers are supplied with M8x25 UNI 5931

fixing screws, reference pin SE ø3x12 UNI 6873-71

Tightening torque 19÷24 Nm/1.9÷2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.25.RI... CHECK VALVE COVER



Weight: 1,3 Kg

M = pressure gauge attachment

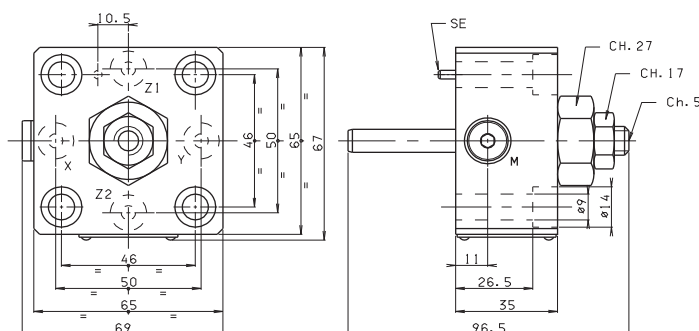
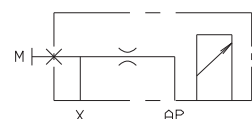
Orifice with calibrated ø1 mm standard diameter

The covers are supplied with M12x35 UNI 5931

fixing screws, reference pin SE ø5x12 UNI 6873-71

Tightening torque 69÷80 Nm/6.9÷8 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.16.CQ.. COVER WITH STROKE ADJUSTMENT



Weight: 0,9 Kg

M = pressure gauge attachment

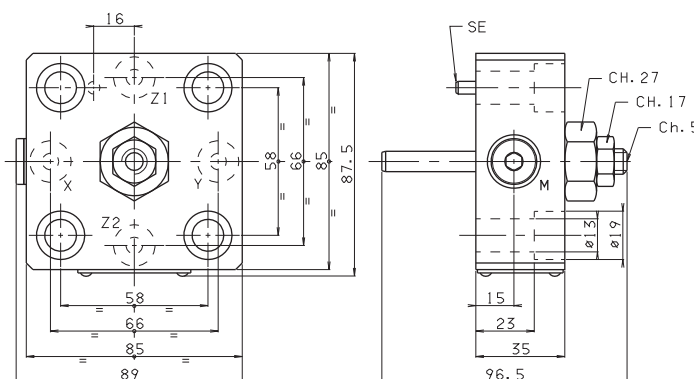
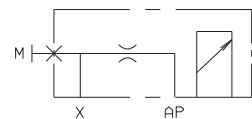
Orifice with calibrated ø1 mm standard diameter

The covers are supplied with M8x40 UNI 5931

fixing screws, reference pin SE ø3x12 UNI 6873-71

Tightening torque 19÷24 Nm/1.9÷2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.25.CQ.. COVER WITH STROKE ADJUSTMENT



Weight: 1,6 Kg

M = pressure gauge attachment

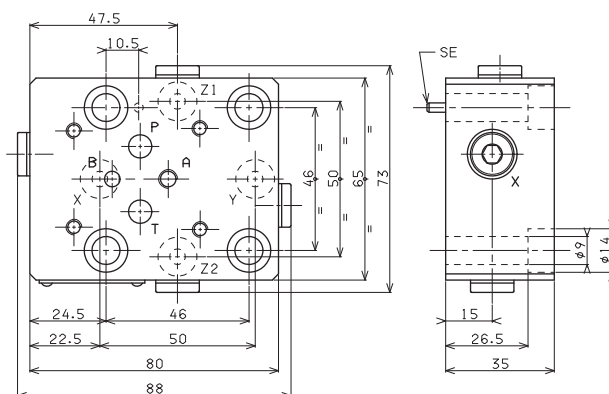
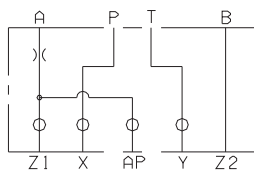
Orifice with calibrated ø1 mm standard diameter

The covers are supplied with M12x40 UNI 5931

fixing screws, reference pin SE ø5x12 UNI 6873-71

Tightening torque 69÷80 Nm/6.9÷8 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.16.RC... COVER WITH INTERFACE CETOP 3/NG6



Weight: 1,2 Kg

M = pressure gauge attachment

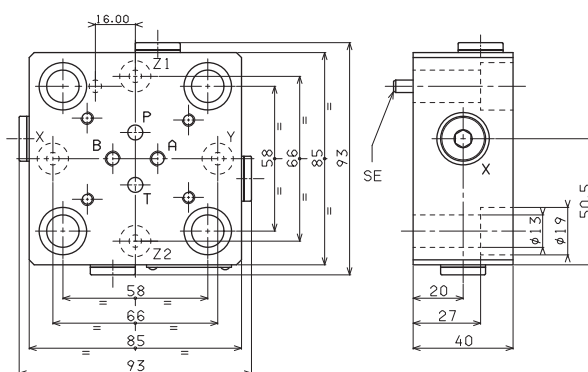
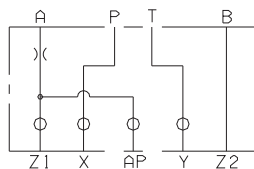
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M8x40 UNI 5931

fixing screws, reference pin SE ø3x12 UNI 6873-71

tightening torque 19÷24 Nm/1.9÷2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS **KEC.25.RC...** COVER WITH INTERFACE **CETOP 3/NG6**



Weight: 1,8 Kg

M = pressure gauge attachment

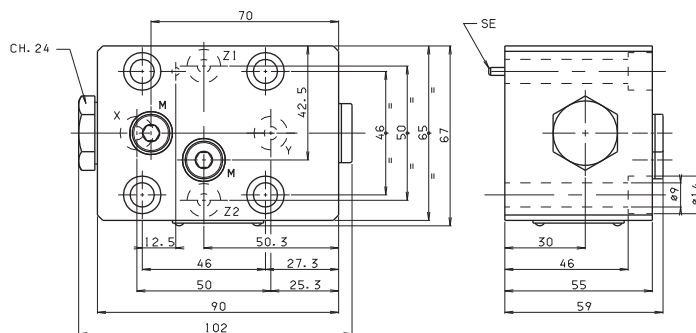
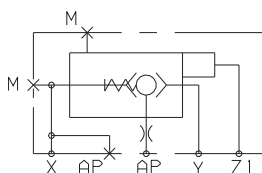
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M12x45 UNI 5931

The covers are supplied with M12X45 UNI 9581
fixing screws, reference pin SE Ø5X12 UNI 6873-71

tightening torque 69÷80 Nm/6.9÷8 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.16.PC... COVER WITH HYDRAULIC OUTLET PILOT VALVE



Weight: 2,1 Kg

M = pressure gauge attachment

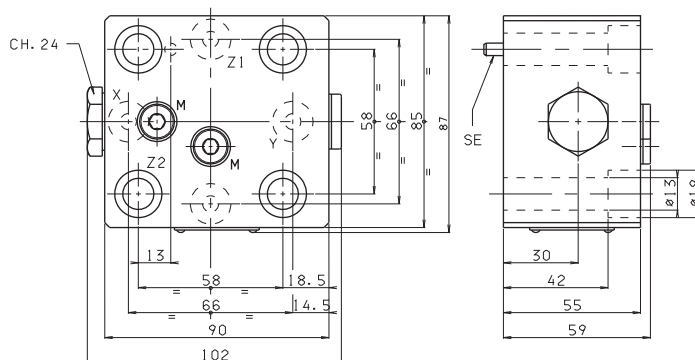
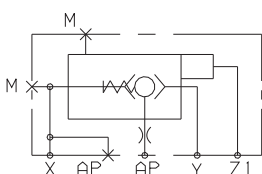
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M8x60 UNI 5931

fixing screws, reference pin SE $\varnothing 3 \times 12$ UNI 6873-71

tightening torque 19÷24 Nm/1.9÷2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.25.PC... COVER WITH HYDRAULIC OUTLET PILOT VALVE



Weight: 2,7 Kg

M = pressure gauge attachment

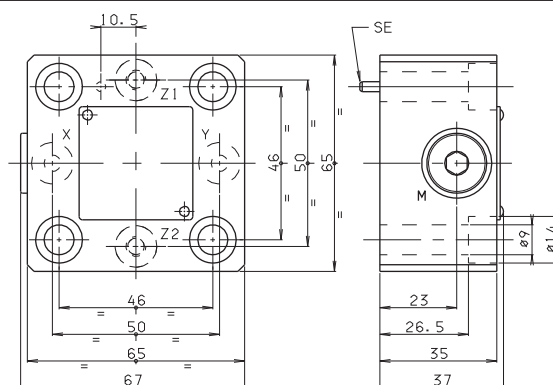
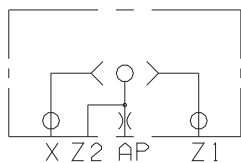
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M12x60 UNI 5931

The covers are supplied with M12x60 UNI 5581
fixing screws, reference pin SE ø5X12 UNI 6873-71

tightening torque 69÷80 Nm/6.9÷8 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.16.SH... COVER WITH BUILT-IN EXCHANGE VALVE



Weight: 0,9 Kg

M = pressure gauge attachment

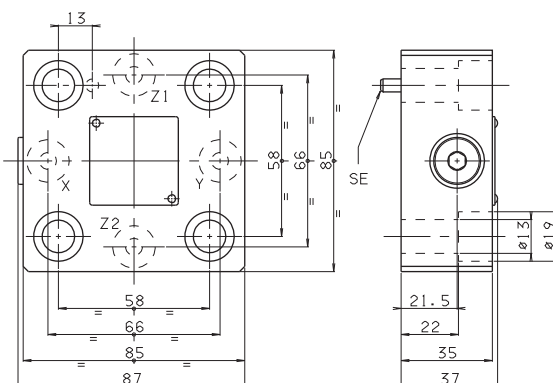
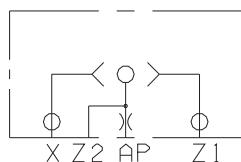
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M8x40 UNI 5931

fixing screws, reference pin SE $\varnothing 3 \times 12$ UNI 6873-71

tightening torque $19 \div 24$ Nm/1.9 $\div$ 2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.25.SH... COVER WITH BUILT-IN EXCHANGE VALVE



Weight: 1,5 Kg

M = pressure gauge attachment

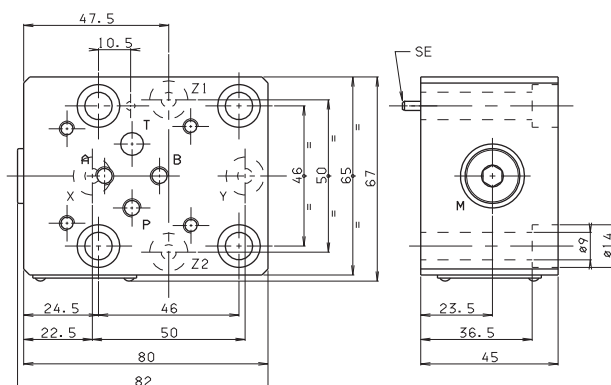
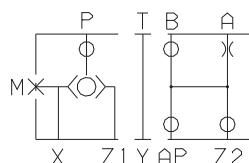
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M12x40 UNI 5931

fixing screws, reference pin SE $\varnothing 5 \times 12$ UNI 6873-71

tightening torque $69 \div 80$ Nm/6.9 $\div$ 8 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.16.SP COVER WITH BUILT-IN EXCHANGE VALVE AND INTERFACE CETOP 3/NG6



Weight: 1,4 Kg

M = pressure gauge attachment

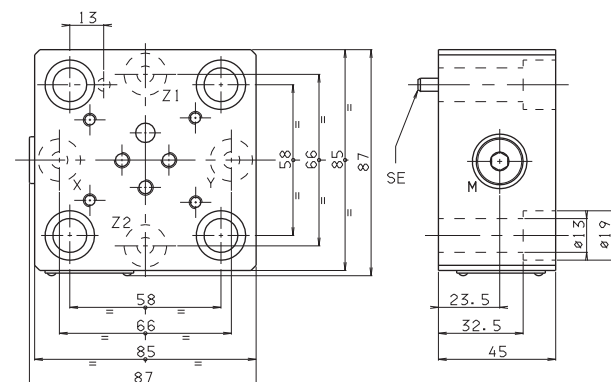
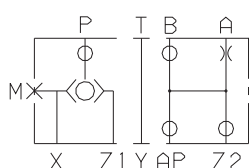
Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M8x50 UNI 5931

fixing screws, reference pin SE $\varnothing 3 \times 12$ UNI 6873-71

tightening torque $19 \div 24$ Nm/1.9 $\div$ 2.4 Kgm with 8.8 screws

OVERALL DIMENSIONS KEC.25.SP COVER WITH BUILT-IN EXCHANGE VALVE AND INTERFACE CETOP 3/NG6



Weight: 2 Kg

M = pressure gauge attachment

Orifice with calibrated $\varnothing 1$ mm standard diameter

The covers are supplied with M12x50 UNI 5931

fixing screws, reference pin SE $\varnothing 5 \times 12$ UNI 6873-71

tightening torque $69 \div 80$ Nm/6.9 $\div$ 8 Kgm with 8.8 screws



MAX. PRESSURE COVERS

KEC.16/25... WITH CMP	CH. V PAGE 11
C*.P.16/25...	CH. V PAGE 12
CETOP 3/NG06	CH. I PAGE 8
AD3E...	CH. I PAGE 11
AM3VM...	CH. IV PAGE 9
XP3...	CH. VIII PAGE 26

MAXIMUM PRESSURE CARTRIDGE VALVES



Aron maximum pressure cartridge valves allow control of hydraulic circuit pressures up to 400 bar and 350 l/min maximum flow rate (NG25).

Besides the normal manual pressure regulation mode, function like

electrical command for discharge to drain, remote control, proportional pressure control or electrically selected dual pressure levels are also available.

Nominal size (max. diameter)	16mm / 25mm
Max. operating pressure	400 bar
Maximum nominal flow rate NG16	150 l/min
Maximum nominal flow rate NG25	350 l/min
Setting ranges	15 ÷ 400 bar

The cover interface allows the mounting of a CETOP 3/NG06 valve. A standard cartridge valve DIN 24342 is used. A cover not according to DIN rules is also available.

The valve response specification may be modified by selection of different internal orifices according to the required application. **The standard version has calibrated orifices of Ø 1 mm in X and AP.**

DIN STANDARDS COVER ORDERING CODE

KEC

DIN standards cover

16 = NG16
25 = NG25

Type of cover

ME = Max. pressure valve with interface CETOP 3

MP = Max. pressure valve

UE = Exclusion valve with interface CETOP 3

UN = Exclusion valve

SL = Sequencing valve

Setting ranges

1 = 15 ÷ 45 bar (**white spring**)

2 = 15 ÷ 145 bar (**yellow spring**)

3 = 60 ÷ 400 bar (**green spring**)

Type of adjustment

M = Plastic knob

C = Grub screw

00 = No variant

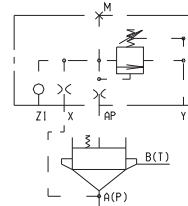
V1 = Viton

3

Serial No.

MANUAL PRESSURE REGULATION

This regulation facility is incorporated in the cartridge closing cover. A Z1 port is provided on the cover for remote piloting via directional or pressure control valves.

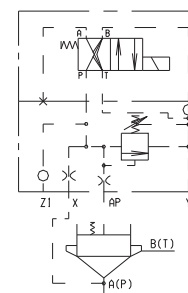


KEC. **. MP. .
CMP. **. .

KEL. **. U. .

MANUAL PRESSURE REGULATION AND ELECTRICAL COMMAND FOR DISCHARGE TO DRAIN

This arrangement uses an electrically controlled valve type AD3E15.. which normally, in the de-energized position, allows discharge to drain of the controlled flow. When energized, the system operates at the pressure set on the piloting unit incorporated in the closing cover.



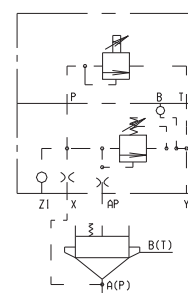
AD. 3. E. .

KEC. **. ME. .
CMP. E. **. .

KEL. **. U. .

MANUAL REGULATION AND PROPORTIONAL CONTROL OF THE PRESSURE

This arrangement uses a proportional pressure valve type XP3.. as the pilot, which allows proportional regulation of the controlled system pressure as a function of an electrical command signal.



XP. 3. .

KEC. **. ME. .
CMP. E. **. .

KEL. **. U. .

PLATE MOUNTING COVERS ORDERING CODE

C*P

M = Cover with max. pressure valve

U = Cover with exclusion valve

S = Cover with sequencing valve

E = Presetting for solenoid valve (Omit if not required)

16 = NG16
25 = NG25

Type of adjustment

M = Plastic knob

C = Grub screw

Setting ranges

1 = 15 ÷ 45 bar (**white spring**)

2 = 15 ÷ 145 bar (**yellow spring**)

3 = 60 ÷ 400 bar (**green spring**)

00 = No variant

V1 = Viton

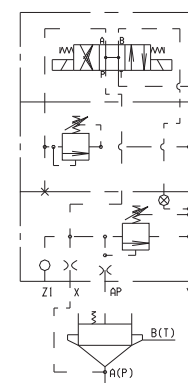
2

Serial No.

MANUALLY ADJUSTABLE AND ELECTRICALLY SELECTED TWO LEVEL PRESSURE UNIT

This arrangement uses a dual solenoid electrically controlled valve type AD3E02C.. and a modular maximum pressure valve type AM3VMA... which, when combined, allow implementation of an electrically selected two level pressure system.

Normally, with the solenoid valve de-energized, the controlled flow is discharged to drain.



AD. 3. E. .

AM. 3. VM. . .

KEC. **. ME. .
CMP. E. **. .

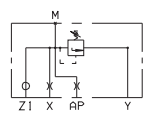
KEL. **. U. .

KEC.16.MP/UN/SL... With MAX. PRESSURE VALVE / EXCLUSION / SEQUENCING - IN LINE MOUNTING

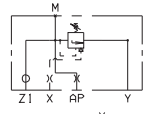


DIN STANDARD

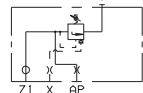
Weight: 1,3 Kg
The covers are supplied with
M8x35 UNI 5931 fixing screws and
reference pins dia $\varnothing 3 \times 12$ UNI 6874-71



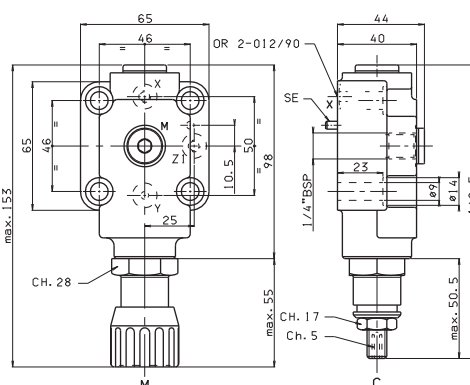
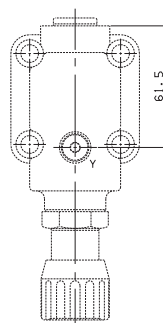
KEC.16.MP...



KEC.16.UN...



KEC.16.SL...

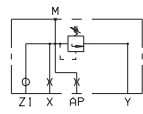


KEC.25.MP/UN/SL... With MAX. PRESSURE / EXCLUSION / SEQUENCING - IN LINE MOUNTING

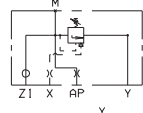


DIN STANDARD

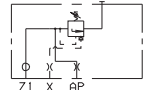
Weight: 1,8 Kg
The covers are supplied with
M12x45 UNI 5931 and
reference pins dia $\varnothing 5 \times 12$ UNI 6874-71



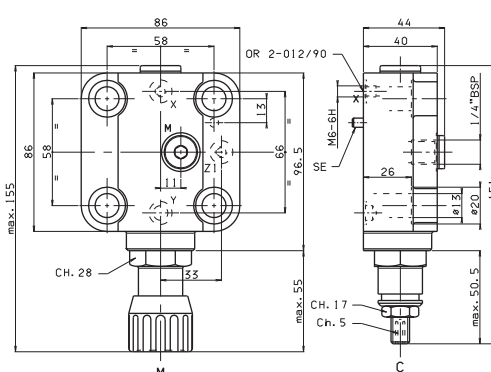
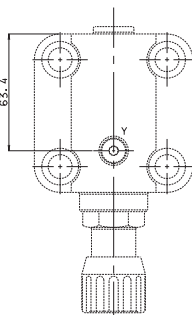
KEC.25.MP...



KEC.25.UN...



KEC.25.SL...

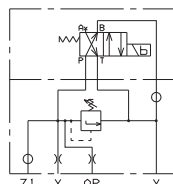


KEC.16.ME/UE With MAX. PRESSURE VALVE / EXCLUSION WITH INTERFACE CETOP 3 - IN LINE MOUNTING

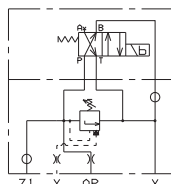


DIN STANDARD

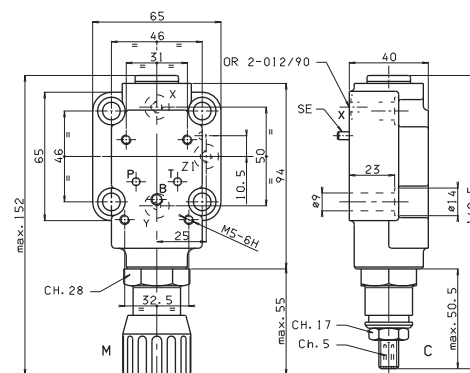
Weight: 1,3 Kg
The covers are supplied with
M8x35 UNI 5931 fixing screws and
reference pins dia $\varnothing 3 \times 12$ UNI 6874-71



KEC.16.ME...



KEC.16.UE...

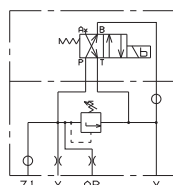


KEC.25.ME/UE With MAX. PRESSURE VALVE / EXCLUSION WITH INTERFACE CETOP 3 - IN LINE MOUNTING

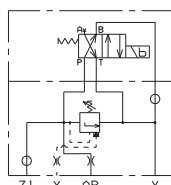


DIN STANDARD

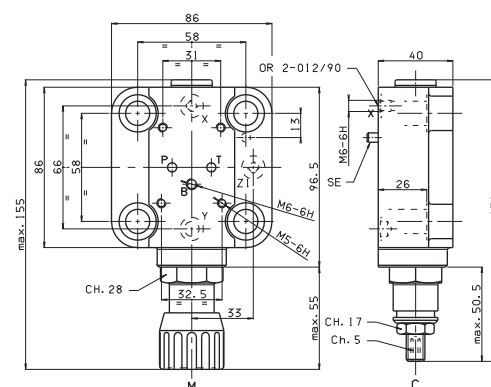
Weight: 1,8 Kg
The covers are supplied with
M12x45 UNI 5931 fixing screws and
reference pins dia $\varnothing 5 \times 12$ UNI 6874-71



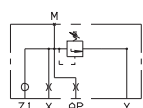
KEC.25.ME...



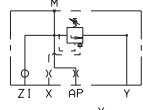
KEC.25.UE...



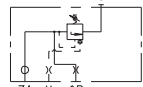
C*P.16... WITH MAX. PRESSURE VALVE / EXCLUSION / SEQUENCING - PLATE MOUNTING



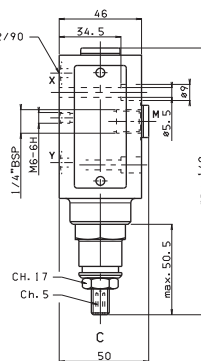
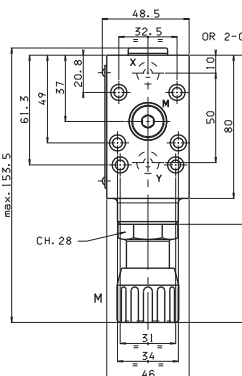
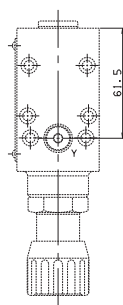
CMP.16...



CUP.16...



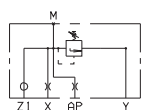
CSP.16...



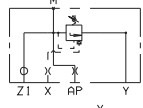
Weight: 1,3 Kg
The covers are supplied with
M5x45 UNI 5931 fixing screws

C*P.25... WITH MAX. PRESSURE VALVE / EXCLUSION / SEQUENCING - PLATE MOUNTING

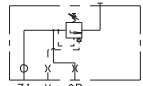
5



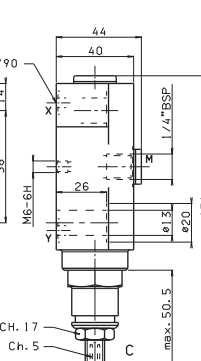
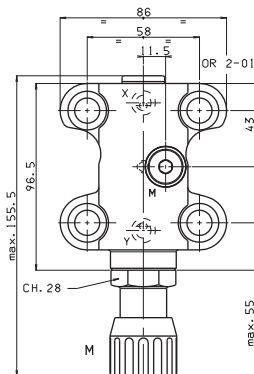
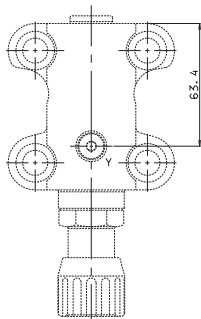
CMP.25...



CUP.25...

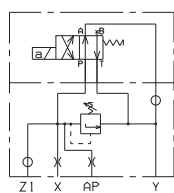


CSP.25...

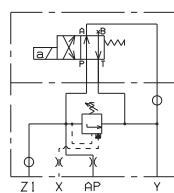


Weight: 1,5 Kg
The covers are supplied with
M12x45 UNI 5931 fixing screws

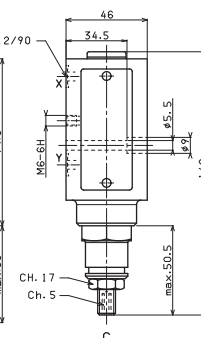
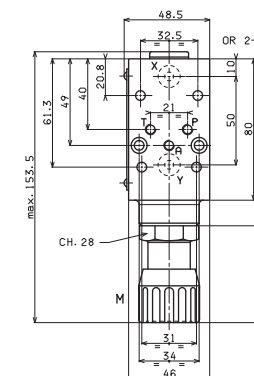
C*P.E.16 WITH MAX. PRESSURE VALVE / EXCLUSION WITH INTERFACE CETOP 3 - PLATE MOUNTING



CMPE.16...

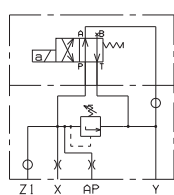


CUPE.16...

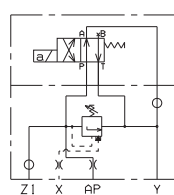


Weight: 1,3 Kg
The covers are supplied with
M5x45 UNI 5931 fixing screws

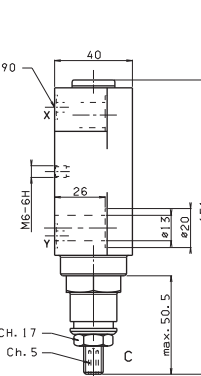
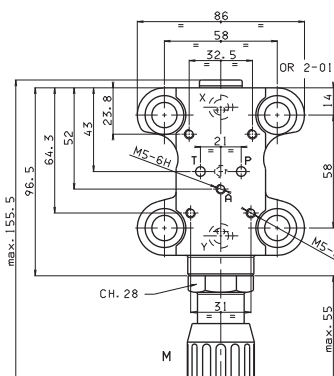
C*P.E.25 WITH MAX. PRESSURE VALVE / EXCLUSION WITH INTERFACE CETOP 3 - PLATE MOUNTING



CMPE.25...



CUPE.25...



Weight: 1,5 Kg
The covers are supplied with
M12x45 UNI 5931 fixing screws

KRA.16/25... CARTRIDGE VALVES WITH ELECTRICAL POSITION CONTROL



KRA.16/25...

OVERALL DIMENSIONS	CH. V PAGE 14
KRA.16/25... + AD3.V...	CH. V PAGE 15
PROXIMITY FOR KRA	CH. V PAGE 16
AD3V...	CH. I PAGE 14
"D15" DC COILS	CH. I PAGE 19
LVDT FOR AD3V	CH. I PAGE 22
STANDARD CONNECTORS	CH. I PAGE 20

ORDERING CODE

KRA

Cartridge valve with electrical position control (logic element 2/2 incorporated)

16 = NG16
25 = NG25

Calibrated orifices at ports A and P:
0 = no orifice
1 = Ø 1 mm dia opening (NG16 in standard configuration)
2 = Ø 1.2 mm dia opening (NG25 in standard configuration)

Opening pressure (bar):
NG16 NG25
H = 4 (green spring) 3.5 (yellow spring)
J = 12 (no colour spring) 9 (blue spring)

00

No variant

1

Serial No.

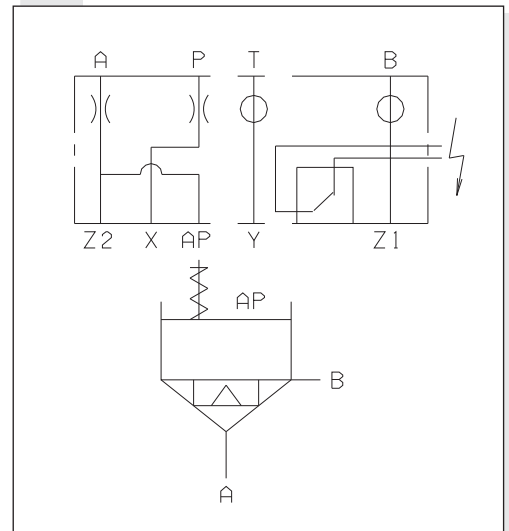
This valve series is used in those applications where monitoring of the "actual" valve position is required for managing machine safety cycles as required by current accident prevention legislation. Typical examples of applications where this product is used include: hydraulic presses in general, plastic component injection and blow-form presses, die-casting presses.

The valve is composed of a closure cover where the inductive position monitoring proximity sensor is inserted to signal the two possible states of logic element manufactured to DIN 24342 standard.

This valve, in view of its being placed inside a safety system loop, can detect movement dangerous both for the safety of the operator and of the machine itself.

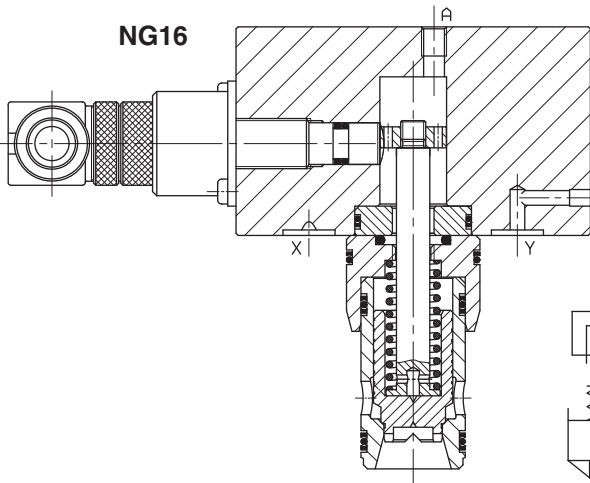
Availability of the CETOP 3 mounting interface on closure cover allows direct insertion of the piloting valves into the main valve, offering in this way to the designer the possibility to produce compact systems which can be easily mounted inside the machine.

HYDRAULIC SYMBOL

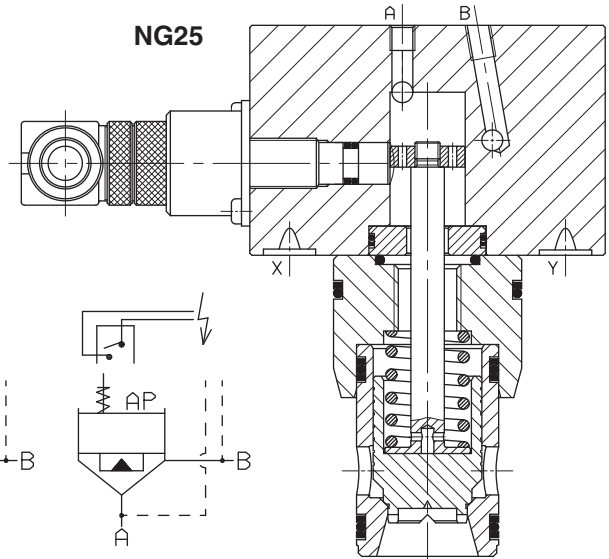


5

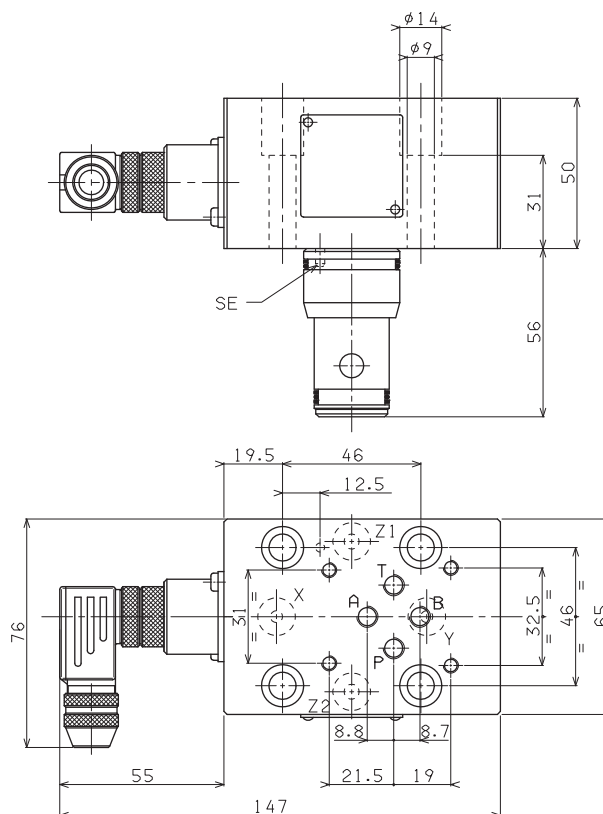
NG16



NG25



OVERALL DIMENSIONS KRA.16...



These covers are supplied complete with dowels and calibrated orifices on inputs A (AP) and P (X); mounting screws can be supplied on request.

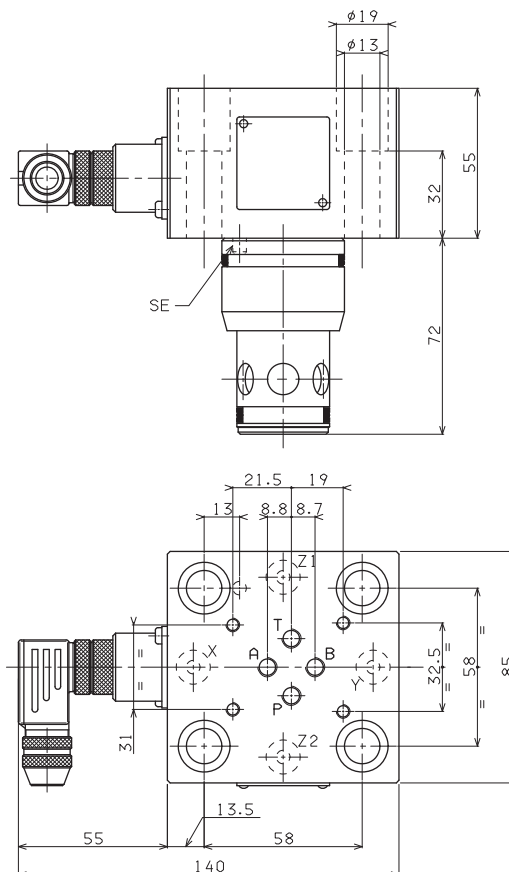
Fixing screws T.C.E.I. M8X45 UNI 5931

Reference pin dia Ø 3X12 UNI 6873

Screws S.T.E.I. M6X1X6 UNI 5923 dia Ø 1mm

Weight 2,2 Kg

OVERALL DIMENSIONS KRA.25...



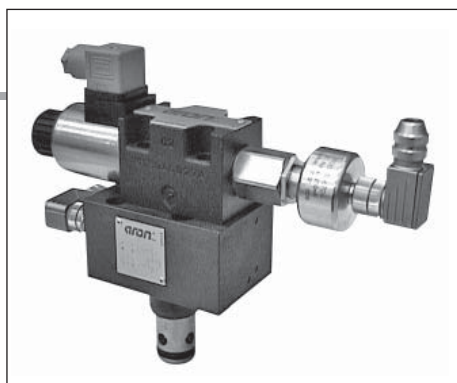
These covers are supplied complete with dowels and calibrated orifices on inputs A (AP) and P (X); mounting screws can be supplied on request.

Fixing screws T.C.E.I. M12X50 UNI 5931

Reference pin dia Ø 5X12 UNI 6873

Screws S.T.E.I. M6X1X6 UNI 5923 dia Ø 1.2mm

Weight 3,42 Kg



KRA.16/25... + AD3V... CARTRIDGE VALVES

WITH ELECTRICAL POSITION CONTROL VALVE

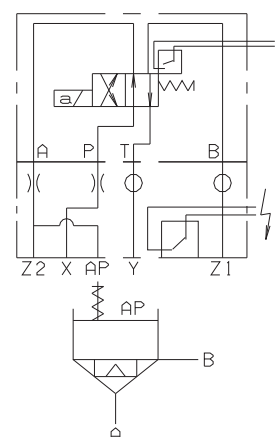


This valve series is used in those applications where monitoring of the "actual" valve position is required for managing machine safety cycle as required by current accident prevention legislation.

Typical example of application where this product is used include: hydraulic presses in general, plastic components injection and blow-form presses, die-casting presses. The valve is composed of closure cover where the inductive position monitoring proximity sensor is inserted to signal the two possible states of logic element manufactured to DIN 24342 standard.

This valve, in view of its being placed inside a safety system loop, can detect movements dangerous both for the safety of the operator and of the machine itself. Use a single solenoid directional valve AD.3.V... as piloting unit allows increase in the safety system control level, since even the piloting unit is equipped with a position monitoring proximity sensor capable of signalling the two possible valve states.

HYDRAULIC SYMBOL



KRA.16/25... + AD3V...

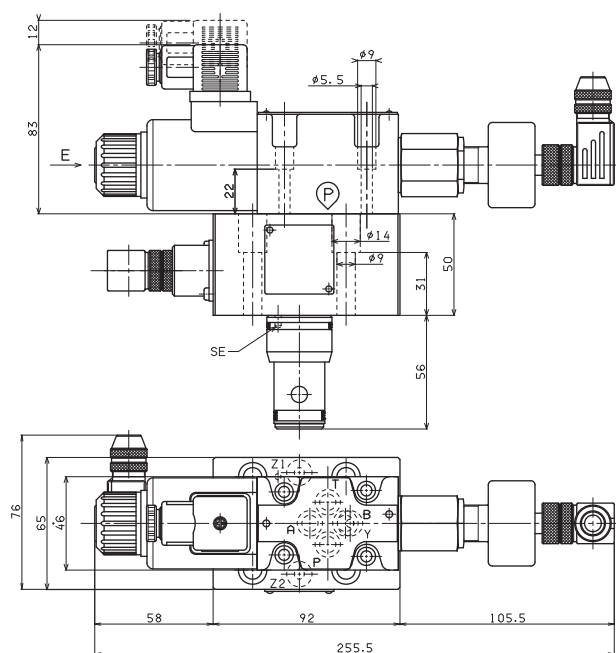
PROXIMITY FOR KRA	CH. V PAGE 16
AD3V...	CH. I PAGE 14
D15 DC COIL	CH. I PAGE 19
LVDT FOR AD3V	CH. I PAGE 22
STANDARD CONNECTORS	CH. I PAGE 20

By combining these two monitoring systems it becomes possible to evaluate the hydraulic system response speed to prevent any possible malfunctioning or dangerous situations

These covers are supplied complete with dowel and calibrated orifices on inputs A (AP) /P (X); mounting screws can be supplied on request

5

KRA.16... + AD3V...

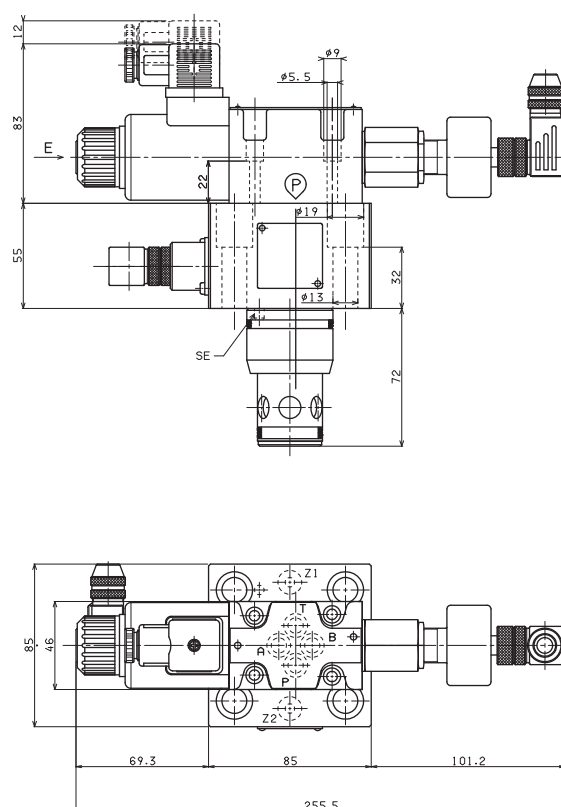


Fixing screws T.C.E.I. M8X45 UNI 5931

Reference pin dia Ø 3X12 UNI 6873

Screw S.T.E.I. M6X1X6 UNI 5923 dia Ø 1mm

KRA.25... + AD3V...



Fixing screws T.C.E.I. M12X50 UNI 5931

Reference pin dia Ø5X12 UNI 6873

Screw S.T.E.I. M6X1X6 UNI 5923 dia Ø 1.2mm



The inductive proximity sensors make it possible to detect metal objects; the operating principle is based on a high frequency oscillator which produces an electromagnetic field in the immediate vicinity of the sensor.

The presence of a metal object (activator) inside the field dampens the amplitude of the oscillation because part of electromagnetic energy is transferred from the sensor to the activator and from there it is dissipated through the effect of the induced currents.

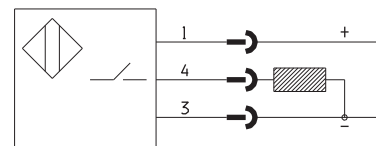
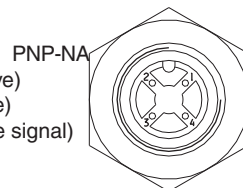
In addition to the shape and the dimensions of the sensor, its sensitivity also depends on the type of metal from which the activator is made.

SPECIFICATIONS

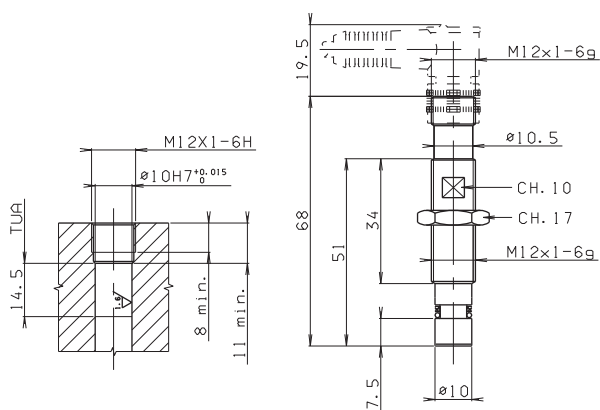
Max. pressure	500 bar
External diameter	M12x1
Release distance	0 ÷ 1.1 mm
Outlet function	PNP - NA
Stabilized supply	10 ÷ 30 VDC
Release hysteresis	≤ 0.2 mm
Type of mounting	wire
Max. current supplied	130 mA
Residual undulation	≤ 15%
Max switching frequency	1000 Hz
Casing material	stainless steel
Type of attachment	connector
Degree of protection	IP68 on active surface
Ambient temperature	-25°C ÷ 70°C
Protection against short circuit	yes

CONNECTION WIRING DIAGRAM

Outlet
1 = brown (positive)
3 = blue (negative)
4 = black (positive signal)

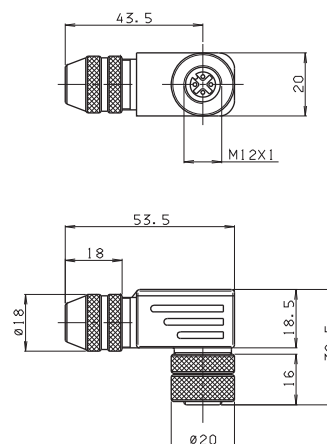


HOUSING AND SENSOR OVERALL DIMENSIONS



TUA = Reamed working length

OVERALL DIMENSIONS CONNECTOR



Type of protection IP67
 Ambient temperature -40°C ÷ 85°C

Ordering code: V86400003