

Features and certifications

Series of cylinders with reduced overall dimensions, available in bores from Ø 125 to 250, single acting or double acting, magnetic, with female thread. The end caps are made of powder painted die-cast aluminium, while the body is made of round tube and tie-rods (type CLS and CLD) or special profiled barrel with internal tie-rods (type CLB). Supplied as standard in compliance with Reach and RoHS directives, and SIL certificated. On request, can be also supplied according to the 2014/34/EU ATEX Directive.



3358



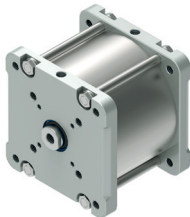
5210



3845

Type CLS Ø 125 ÷ 200

from page 1.21.20



Reduced overall dimension cylinders, available in bores from Ø 125 to 200, single acting, magnetic, with female thread, made with round tube and tie-rods.

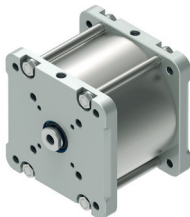
The end caps are made of powder painted die cast aluminium. The front end cap has got drilling according to DIN 3358 / ISO 5210 standards, that makes the cylinder suitable for mounting on gate valves.

Magnetic limit switch can be mounted on tie-rods (with a specific bracket to be ordered separately). These features makes this cylinder also suitable for use in process automation.



Type CLD Ø 125 ÷ 250

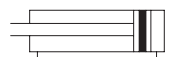
from page 1.21.40



Reduced overall dimension cylinders, available in bores from Ø 125 to 250, double acting, magnetic, with female thread, made with round tube and tie-rods.

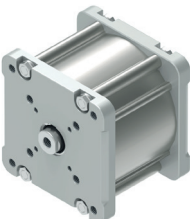
The end caps are made of powder painted die cast aluminium. The front end cap has got drilling according to DIN 3358 / ISO 5210 standard, that makes the cylinder suitable for mounting on gate valves.

Magnetic limit switch can be mounted on tie-rods (with a specific bracket to be ordered separately). These features makes this cylinder also suitable for use in process automation.



Type CLB Ø 125 ÷ 200

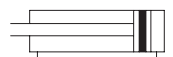
from page 1.21.60



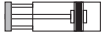
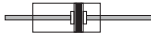
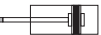
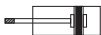
Reduced overall dimension cylinders, available in bores from Ø 125 to 200, double acting, magnetic, with female thread, realized with a special profiled barrel and internal tie-rods, which has several interesting features:

- clean desing;
- easy installation and maintenance;
- resistance to external contamination thanks to the integrated air supply and to the internal air ducting, which does not require the application of any fittings;
- DIN3358 / ISO5210 compliant drilling on the front end cap allows direct mounting to the application;
- NAMUR compliant drilling on the rear head allows direct mounting of valves and solenoid valves;
- grooves for direct application of concealed magnetic limit switch.

These features make this cylinder an integrated element particularly suitable for use in process automation, such as gate valves, guillotine valves and the like, and thus in segments such as water treatment, mining, paper processing, and so on.



Options

Description	Symbol	Suffix
Male threaded rod		M
Anti-rotating plate (available for type CLD only up to Ø 200)		N
Through rod (available for type CLD only)		P
FKM seals -20°C ÷ +150°C		V
Extended rod (indicate the requested WH dimension in mm, E.g.: WH=100; for further information please contact the sales department)		WH=..
Special male thread (indicate the requested thread. E.g.: R-M 20x1,5; the special thread AM quote will be the same of the standard thread; the cylinder will be supplied without rod nut; for further information please contact the sales department)*		R-M..
Extension or reduction of male thread length (indicate the requested AM quote in mm, E.g.: AM=100; for further information please contact the sales department)*		AM=..
Special length of front tie-rod (indicate the requested length in mm, E.g.: T1=25; for threads, please refer to the "dimensions with options" drawings of each type; for further information please contact the sales department)		T1
ATEX versions on request		/ATEX
Special versions on request		/S

The options, when possible, can be combined with each other. For options matching see page 1.21.4; For code key see page 1.21.5

*Available only in combination with option M. For further information please contact the sales department.

Options matching

Series	Bore	Model	Standard options matching								
			M	N (Ø125÷200)	P	V	WH=.. ⁽²⁾	R-M.. ⁽³⁾	AM=.. ⁽⁴⁾	T1 ⁽⁵⁾	/ATEX
CLS	Ø 125 ÷ 200	Standard	●	-	-	●	● ⁽²⁾	-	-	●	●
	Ø 125 ÷ 200	Male threaded rod (M)		-	-	●	●	●	●	●	●
CLD	Ø 125 ÷ 250	Standard	●	●	●	●	● ⁽²⁾	-	-	●	●
	Ø 125 ÷ 250	Anti-rotating plate (N)	● ⁽¹⁾		●	●	-	-	-	-	●
	Ø 125 ÷ 200	Through rod (P)	● ⁽¹⁾	-		●	● ⁽²⁾	● ⁽³⁾	● ⁽⁴⁾	●	●
	Ø 125 ÷ 250	Male threaded rod (M)		-	● ⁽¹⁾	●	●	●	●	●	●
CLB	Ø 125 ÷ 200	Standard	●	-	-	●	● ⁽²⁾	-	-	●	●
	Ø 125 ÷ 200	Male threaded rod (M)		-	-	●	●	●	●	●	●

Key

● allowed matching; - not allowed matching

Option combinations - notes

(1) The male threaded rod (option **M**) in combination with through rod (option **P**) is applied on both sides of rod, except when combined with the anti-rotation plate (option **N**), in which case the male rod will only be applied on the side opposite the plate.

(2) Option **WH=..** require to indicate the desired dimension in mm (E.g.: "WH=100"). For further information please contact the sales department.

(3) Option **RM=..** require to indicate the desired ale thread (E.g.: "R-M20x1,5") with option **M**. For further information please contact the sales department.

(4) Option **AM=..** require to indicate the desired male thread length in mm (E.g.: "AM=100") with option **M**. For further information please contact the sales department.

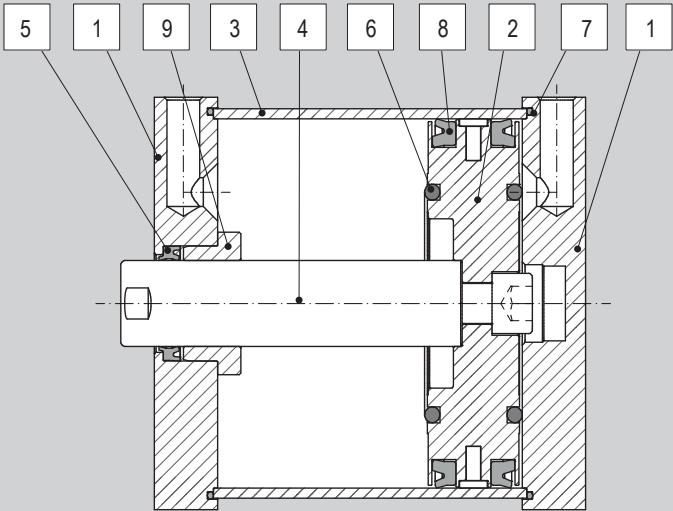
(5) Option **T1** require to indicate the desired tie-rod length in mm (E.g.: "T1=25"). For thread, please refer to the "dimension with option" drawings of each type. For further information please contact the sales department.

Code key

Bore	/	Stroke	Type	Options								/	ATEX version	Special version
160	/	50	CLD			P						/		
				M	N (2)	P (1)	V	WH=..	R-M	AM=..	T1			

Standard materials

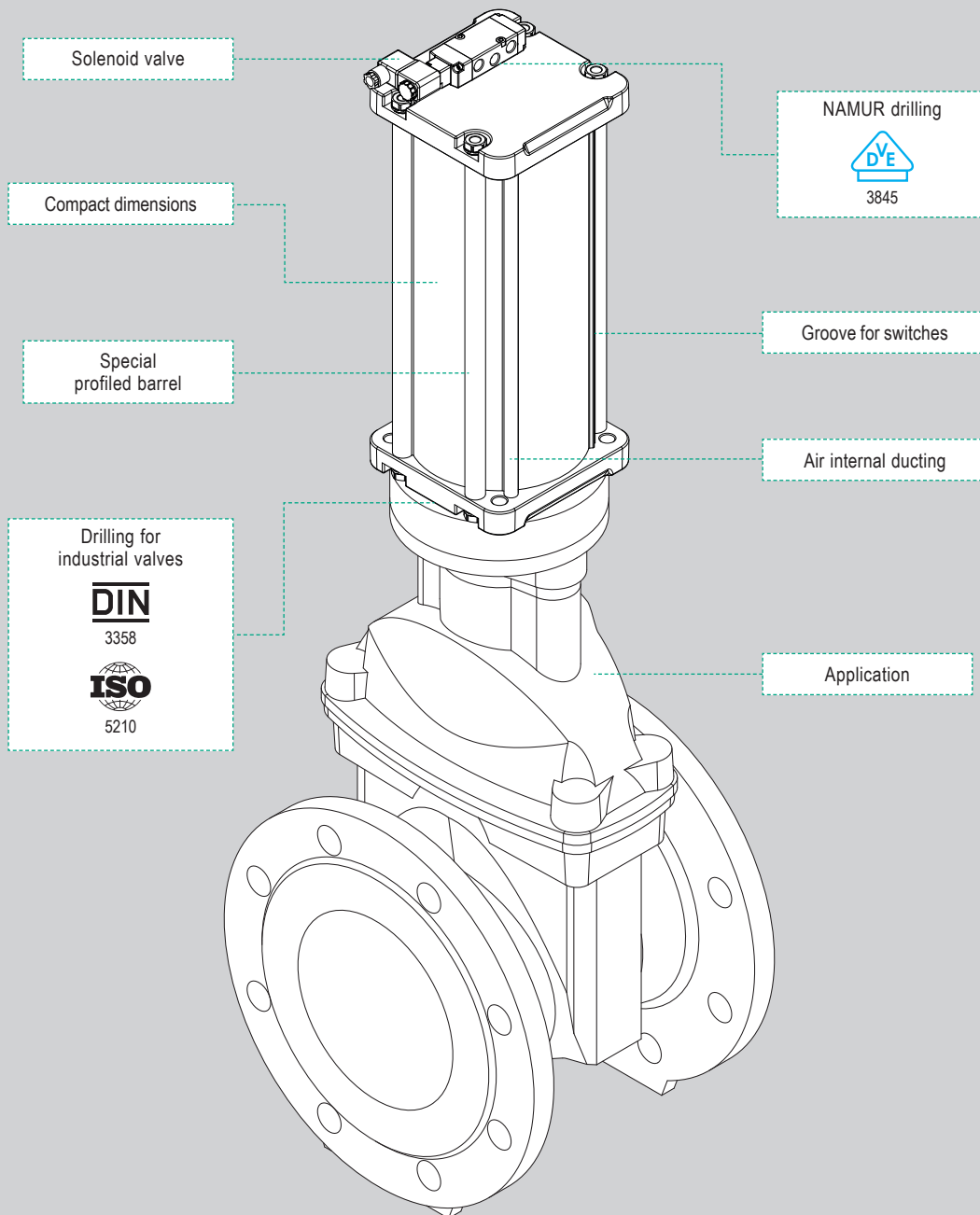
1 - CYLINDERS



Position	Description	Materials
1	End caps	Poweder painted die cast aluminium
2	Piston	Die cast aluminium
3	Tube	Anodised aluminium
4	Rod	Stainless Steel AISI 304
5	Rod seal	NBR
6	Elastic damper	NBR
7	Barrel o-ring	NBR
8	Piston seal	NBR
9	Bushing	Steel + PTFE
-	Tie-rods	Steel

Direct mounting on process automation

Type: **CLB**



Thanks to the drilling conforming to DIN 3358 / ISO 5210 standards on the front end cap, the CLB compact cylinders are suitable for direct mounting to gate valves, guillotine valves, butterfly valves and similar.

The rear end cap, on the other hand, has a drilling conforming to the NAMUR (VDI/VDE 3845) standards, allowing direct mounting to the cylinder of valves or solenoid valves with NAMUR interface.

The integrated air supply and internal air ducting, do not require any connection with fittings.

The special profiled barrel also with two grooves allowing the direct mounting of magnetic reed switches.

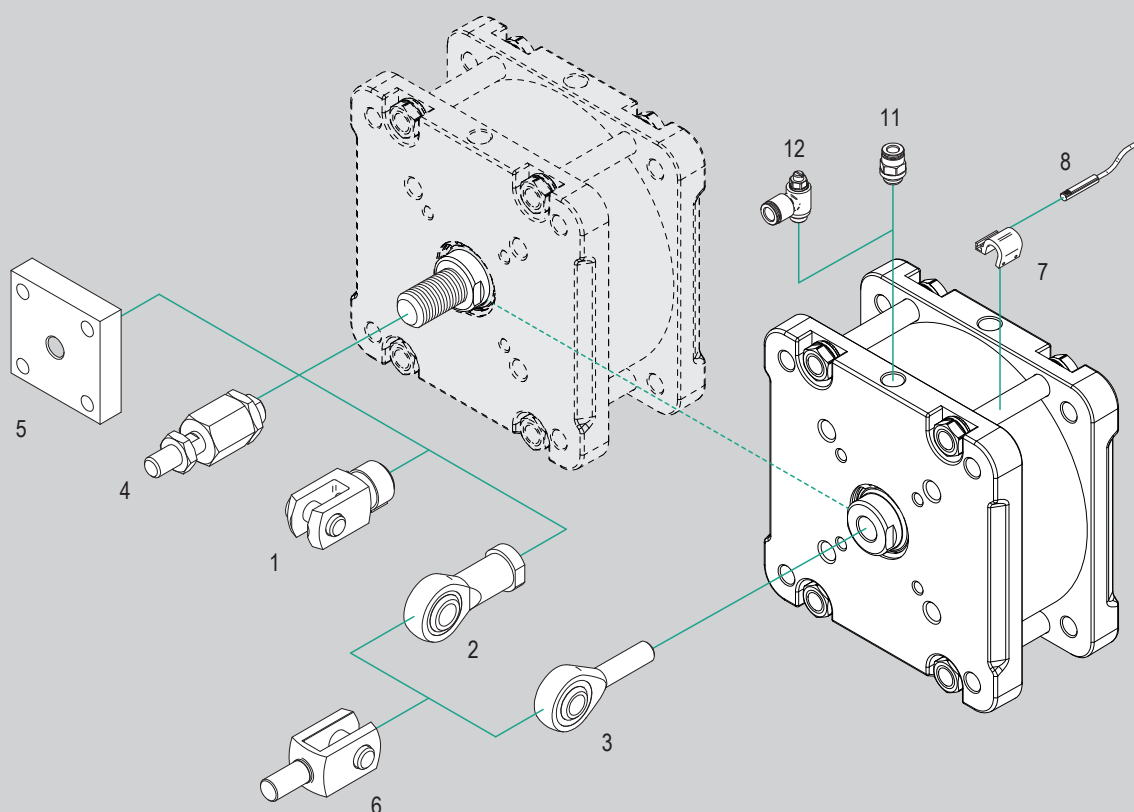
The integrated air supply, the air internal ducting and the grooves for magnetic reed switches provide to the cylinder an extremely clean design, which make the component very resistant to external contamination, with no cavities where dirt could settle.

All the above described features make this series of compact cylinders particularly suitable for use in process automation, and therefore in sectors such as water treatment, mining, paper processing, and similar.

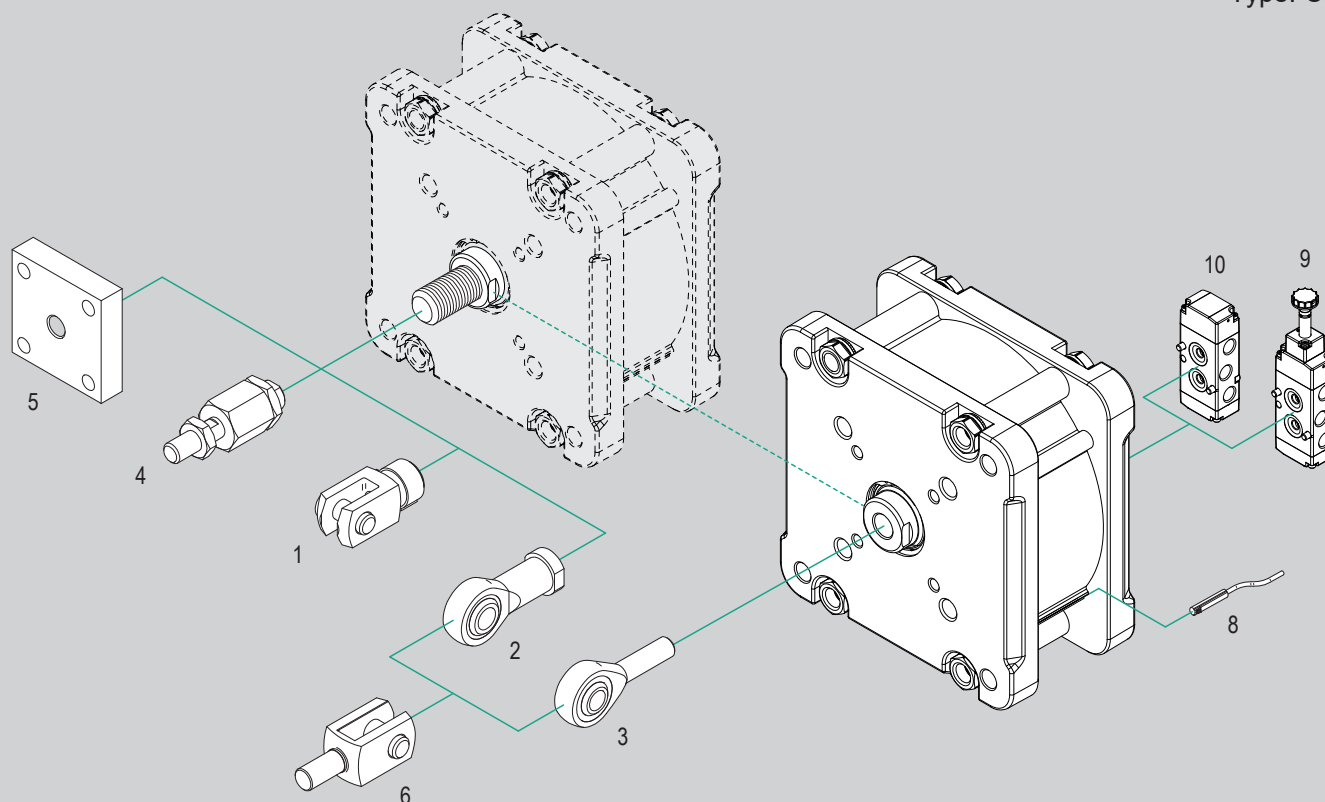
Accessories

1 - CYLINDERS

Type: **CLS**
CLD



Type: **CLB**



N.	Cylinder bore	Item	Description	Compliance	Matching		Code page	Data sheet page
					CLS-CLD	CLB		
1	Ø 125	FF..ISO	ISO female clevis with clip	ISO 8140	-	● ⁽¹⁾	1.21.90	1.85.10
	Ø 125 ÷ 250	FFP..ISO	ISO female clevis with pin and seeger		● ⁽¹⁾	● ⁽¹⁾		
	Ø 125 ÷ 250	FFN..ISO	ISO female clevis (body only)		● ⁽¹⁾	● ⁽¹⁾		1.85.11
2	Ø 125 ÷ 250	RF..SE	Bearing head (DIN 648K) with female thread	ISO 8139	● ⁽¹⁾	● ⁽¹⁾		1.90.1
3	Ø 125 ÷ 200	RM..SE	Bearing head (DIN 648K) with male thread	DIN	●	●		1.90.2
4	Ø 125 ÷ 250	GB..	Bearing - Self-aligning articulated coupling	-	● ⁽¹⁾	● ⁽¹⁾		1.90.10
5	Ø 125 ÷ 250	GC..	Self-aligning coupling		● ⁽¹⁾	● ⁽¹⁾		1.90.40
6	Ø 125 ÷ 160	FEM..	Female clevis with male thread		●	●		1.88.1
7	Ø 125 ÷ 250	AS..	Bracket for reed switches type "T"		●	-		1.120.3
8	Ø 125 ÷ 250	ASV..	Magnetic reed switch T groove		●	●		1.110.10
		MK..	ATEX magnetic reed switch T groove	2014/34/UE	●	●		1.113.1
9	Ø 125 ÷ 200	A1NE..	Namur solenoid operated valve	NAMUR	-	●	1.21.91	2.44.1
		A1NE..X..	Namur solenoid operated ATEX valve	NAMUR 2014/34/UE	-	●		2.320.1
10		A1NP..	Namur air operated valve	NAMUR	-	●		2.50.1
		A1NP..X..	Namur air operated ATEX valve	NAMUR 2014/34/UE	-	●		2.320.1
11	Ø 125 ÷ 250	R..	Push-in fittings	-	●	-	4.2.1	
12	Ø 125 ÷ 250	V..C	Flow controls, for cylinders		●	-	4.94.1	

Key

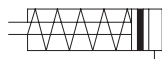
● matching accessory; - not matching accessory

(1) Matching only with option M

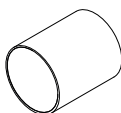
Main features

125 ÷ 200

Bores Ø



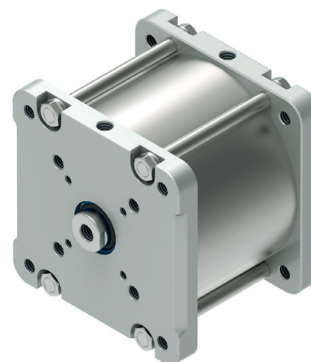
Single acting
Magnetic
With female thread



Tube profile

CLS

Type



Technical data

Bore Ø mm	125	160	200
Fluid	Filtered compressed air with or without lubrication. Lubrication, if started, must be continued.		
Pressure range	2 ÷ 10 bar		
Temperature range	-20°C ÷ +80°C (standard) -20°C ÷ +150°C (V)		
Port	1/4"	3/8"	
Strokes	10 ÷ 50 mm		
Rod thread	M14	M20	

Standard strokes

Stroke mm	CLS Bore Ø mm		
	125	160	200
10			
25			
50			

Key

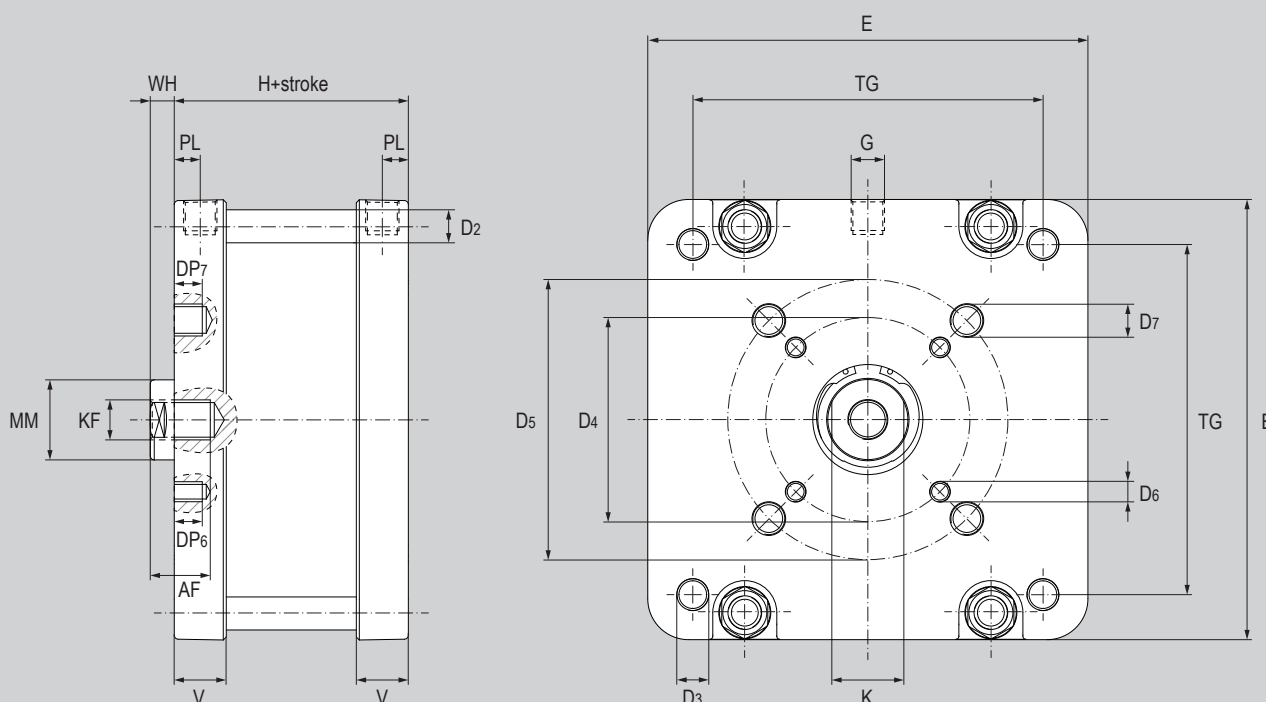
Standard stroke

1.21.20

Standard dimensions

Type: CLS

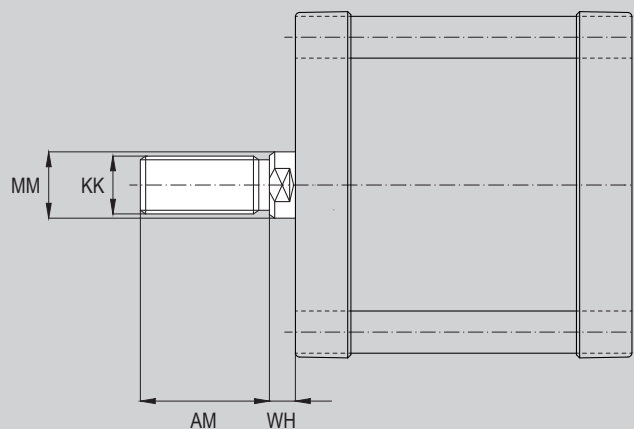
1 - CYLINDERS



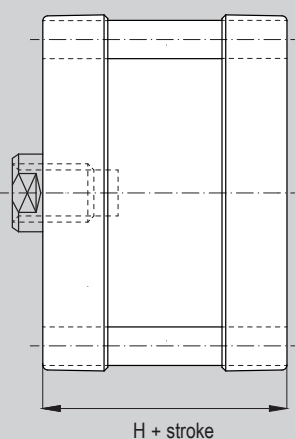
Ø (mm)	E	MM	KF	ØD ₂	ØD ₃	ØD ₄	ØD ₅	ØD ₆	DP ₆	ØD ₇	DP ₇	G	PL	TG	K	AF	V	WH	H
125	140	32	M14	10	M12	102	-	M10	15	-	-	1/4"	11	110	28	25	22	10	78
160	180	40	M20	12	M16	102	-	M10	15	-	-	3/8"	13	140	36	25	26	12	87
200	220	40	M20	16	M16	102	140	M10	15	M16	24	3/8"	13	175	36	25	26	12	87

Dimensions with options

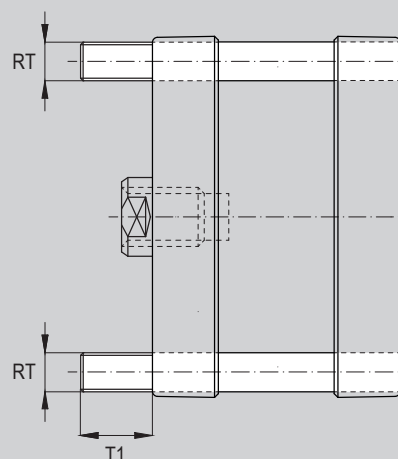
Type: ..M



Type: ..V



Type: ..T1



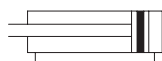
Ø (mm)	KK	MM	WH	AM	H	RT	T1
125	M27x2	32	10	54	83	M10	*
160	M36x2	40	12	72	91	M12	*
200	M36x2	40	12	72	105	M16	*

* Indicate the desired dimension in mm (E.g.: "T1=25")

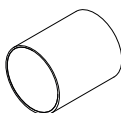
Main features

125 ÷ 250

Bores Ø



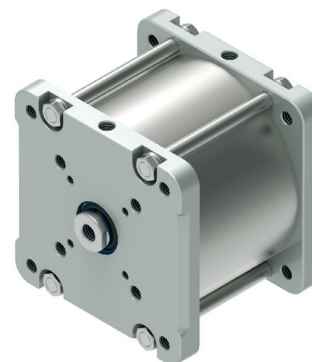
Double acting
Magnetic
With female thread



Tube profile

CLD

Type



Technical data

Bore Ø mm	125	160	200	250
Fluid	Filtered compressed air with or without lubrication. Lubrication, if started, must be continued.			
Pressure range	2 ÷ 10 bar			
Temperature range	-20°C ÷ +80°C (standard) -20°C ÷ +150°C (V)			
Port	1/4"	3/8"		1/2"
Strokes	25 ÷ 300 mm			
Rod thread	M14	M20		M24

Standard strokes

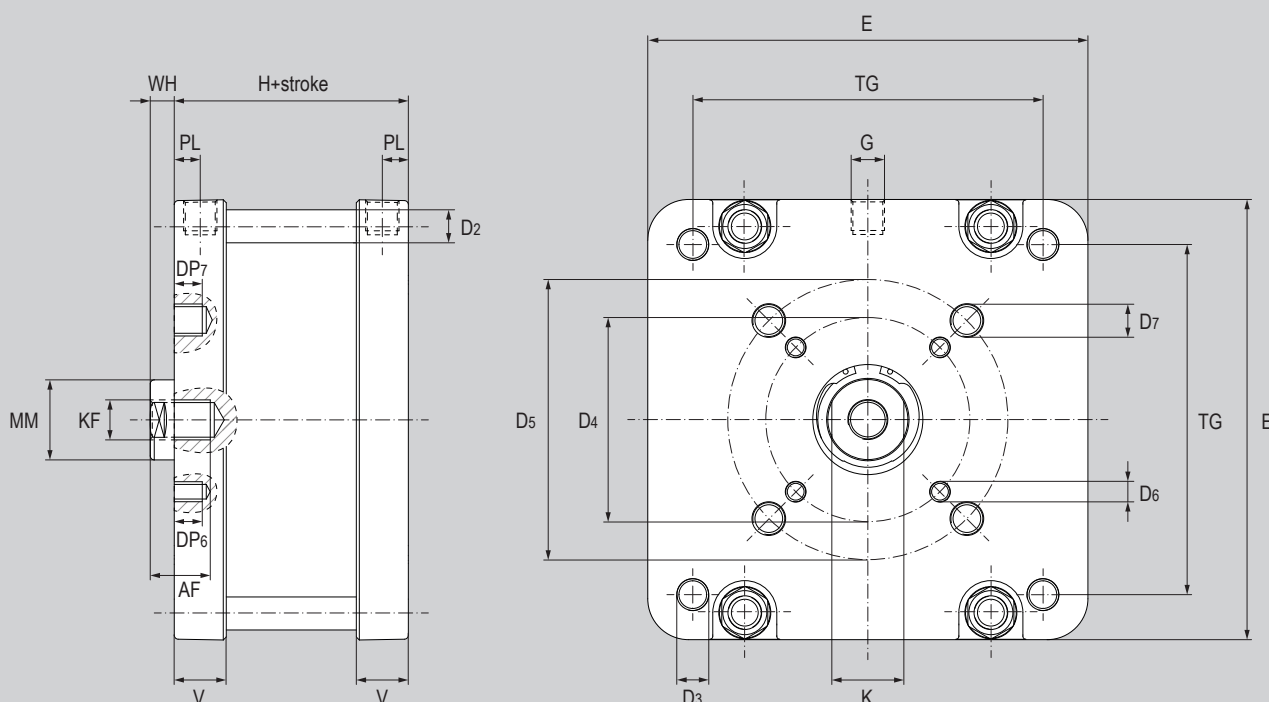
Stroke mm	CLD Bore Ø mm			
	125	160	200	250
25				
50				
75				
100				
125				
160				
200				
250				
300				

Key

Standard stroke

Standard dimensions

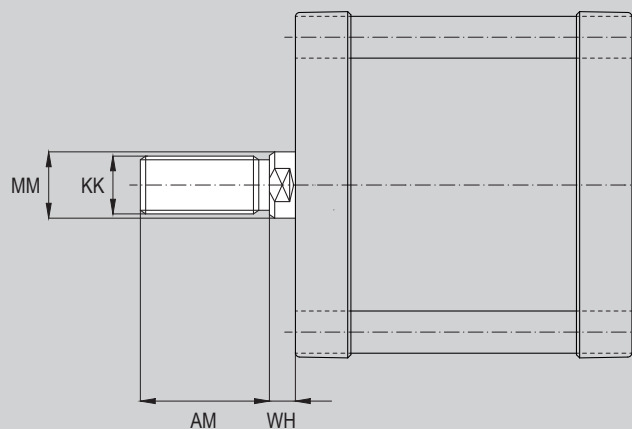
Type: CLD



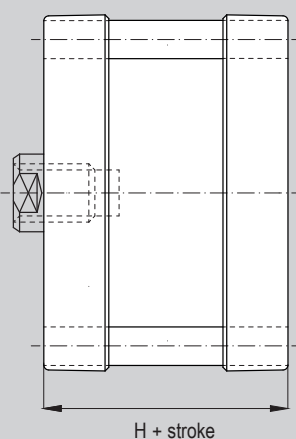
Ø (mm)	E	MM	KF	ØD ₂	ØD ₃	ØD ₄	ØD ₅	ØD ₆	DP ₆	ØD ₇	DP ₇	G	PL	TG	K	AF	V	WH	H
125	140	32	M14	10	M12	102	-	M10	15	-	-	1/4"	11	110	28	25	22	10	78
160	180	40	M20	12	M16	102	-	M10	15	-	-	3/8"	13	140	36	25	26	12	87
200	220	40	M20	16	M16	102	140	M10	15	M16	24	3/8"	13	175	36	25	26	12	87
250	270	40	M24	16	M20	102	140	M10	15	M16	24	1/2"	15	220	36	35	-	12	116

Dimensions with options

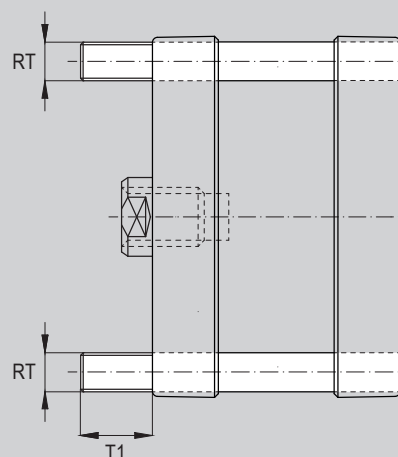
Type: ..M



Type: ..V



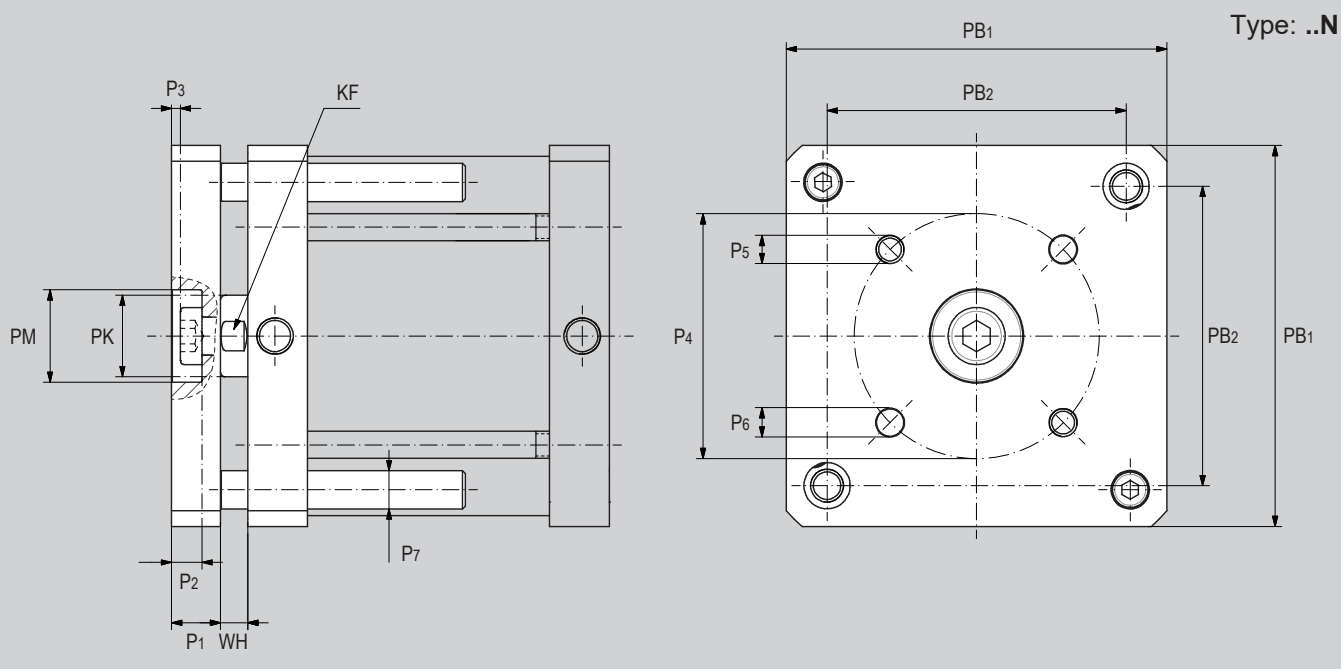
Type: ..T1



Ø (mm)	KK	MM	WH	AM	H	RT	T1
125	M27x2	32	10	54	83	M10	*
160	M36x2	40	12	72	91	M12	*
200	M36x2	40	12	72	105	M16	*
250	M36x2	40	12	72	116	M20	*

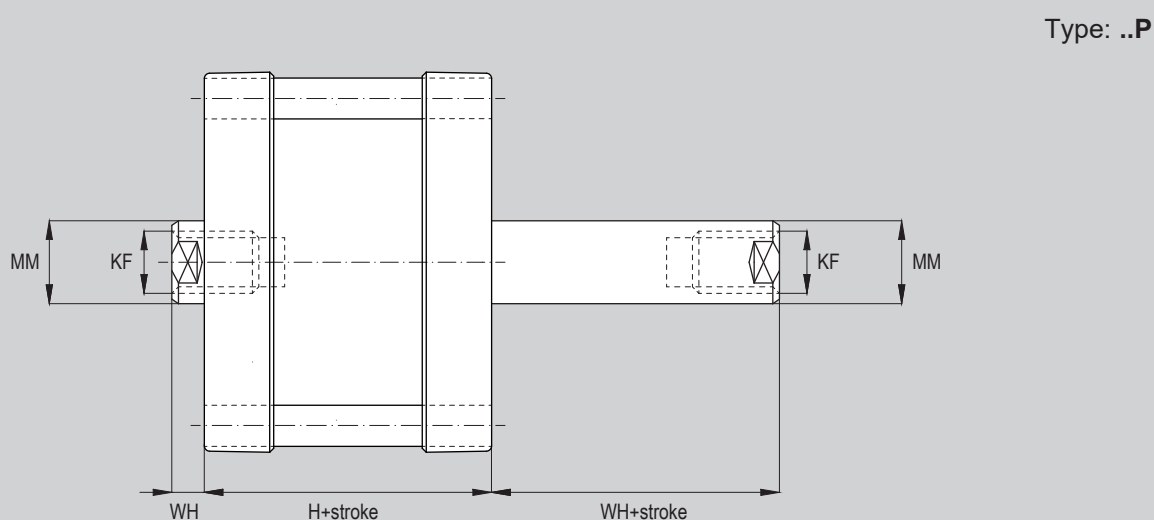
* Indicate the desired dimension in mm (E.g.: "T1=25")

Dimensions with options



Ø (mm)	PB ₁	PB ₂	PK	PM	P ₁	P ₂	P ₃	ØP ₄	ØP ₅	ØP ₆	ØP ₇	KF	WH
125	140	110	30	34	18	12	3	90	M10	10	14	28	10
160	180	140	40	46	23	16	3	110	M12	12	20	36	12
200	220	175	40	46	23	16	3	110	M12	12	20	36	12

Dimensions with options

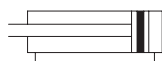


Ø (mm)	MM	KF	WH	H
125	32	M14	10	78
160	40	M20	12	87
200	40	M20	12	87
250	40	M24	12	116

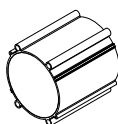
Main features

125 ÷ 200

Bores Ø



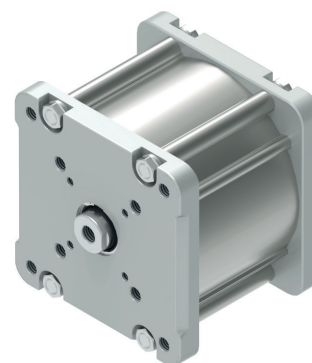
Double acting
Magnetic
With female thread



Tube profile

CLB

Type



Technical data

Bore Ø mm	125	160	200	250
Fluid	Filtered compressed air with or without lubrication. Lubrication, if started, must be continued.			
Pressure range	2 ÷ 10 bar			
Temperature range	-20°C ÷ +80°C (standard) -20°C ÷ +150°C (V)			
Port	1/4"	3/8"		1/2"
Strokes	10 ÷ 1600 mm			
Rod thread	M14	M20		M24

Standard strokes

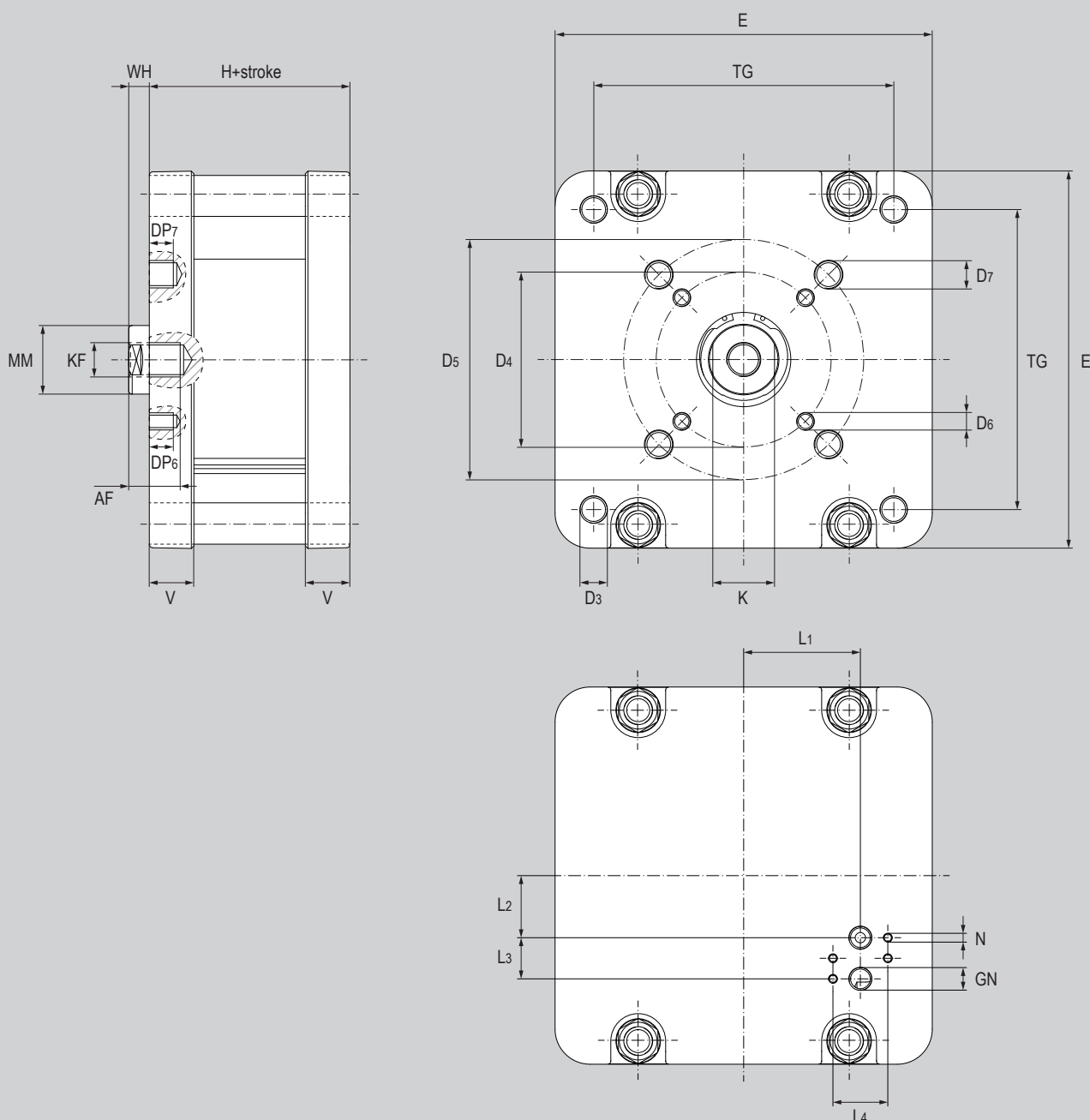
Stroke mm	CLB Bore Ø mm		
	125	160	200
10			
25			
50			
75			
100			
125			
160			
200			
250			
300			

Key

■ Standard stroke

Standard dimensions

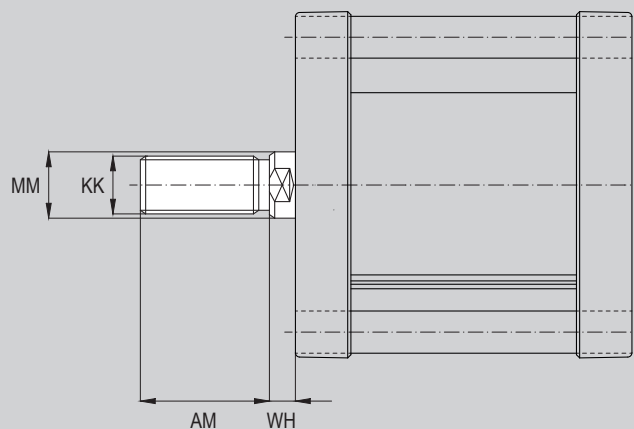
Type: CLB



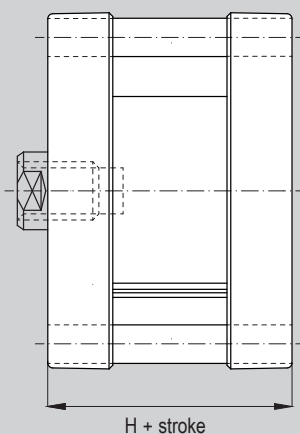
Ø (mm)	E	MM	KF	ØD ₃	ØD ₄	ØD ₅	ØD ₆	DP ₆	ØD ₇	DP ₇	GN	N	TG	K	AF	V	WH	H	L ₁	L ₂	L ₃	L ₄
125	140	32	M14	M12	102	-	M10	15	-	-	G1/4"	M5x0,8	110	28	25	22	10	78	40	13,5	24	32
160	180	40	M20	M16	102	-	M10	15	-	-	G1/4"	M5x0,8	140	36	25	26	12	87	57	22	24	32
200	220	40	M20	M16	102	140	M10	15	M16	24	G1/4"	M5x0,8	175	36	25	26	12	87	68	22	24	32

Dimensions with options

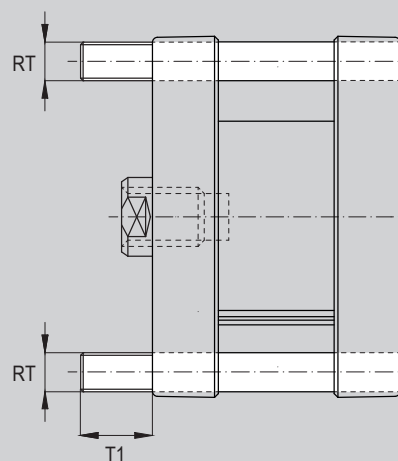
Type: ..M



Type: ..V



Type: ..T1



Ø (mm)	KK	MM	WH	AM	H	RT	T1
125	M20x1,5	32	20	40	83	M10	*
160	M27x2	40	24	54	91	M12	*
200	M36x2	40	30	72	105	M16	*

* Indicate the desired dimension in mm (E.g.: "T1=25")

Female clevis* with clip FFP..ISO

	For cylinder Ø mm	Code	Item	Matching	Compliance
	125	**	FF27ISO	CLS, CLD	
		041007	FF20ISO	CLB	
	160	**	FF36ISO	CLS, CLD	
		**	FF27ISO	CLB	
	200	**	FF36ISO	CLS, CLD	
				CLB	
	250	**	FF36ISO	CLS, CLD	

*Compatibile solo con variante M

**Su richiesta

Female clevis* with pin and seeger FFP..ISO

	For cylinder Ø mm	Code	Item	Matching	Compliance
	125	041009	FFP27ISO	CLS, CLD	
		041017	FFP20ISO	CLB	
	160	041010	FFP36ISO	CLS, CLD	
		041009	FFP27ISO	CLB	
	200	041010	FFP36ISO	CLS, CLD	
				CLB	
	250	041010	FFP36ISO	CLS, CLD	

*Compatibile solo con variante M

Female clevis* (body only) FFN..ISO

	For cylinder Ø mm	Code	Item	Matching	Compliance
	Ø mm	**	FFN27ISO	CLS, CLD	
		041015	FFN20ISO	CLB	
	160	**	FFP36ISO	CLS, CLD	
		**	FFN27ISO	CLB	
	200	**	FFN36ISO	CLS, CLD	
				CLB	
	250	**	FFN36ISO	CLS, CLD	

*Compatibile solo con variante M

**Su richiesta

Bearing head (DIN 648K) with female thread* RF..SE

	For cylinder Ø mm	Code	Item	Matching	Compliance
	125	041562	RF30SE	CLS, CLD	
		041559	RF20SE	CLB	
	160	041563	RF35SE	CLS, CLD	
		041562	RF30SE	CLB	
	200	041563	RF35SE	CLS, CLD	
				CLB	
	250	041563	RF35SE	CLS, CLD	

*Compatibile solo con variante M

Bearing head (DIN 648K) with male thread RM..SE

	For cylinder Ø mm	Code	Item	Compliance
	125	041506	RM14SE	
	160÷200	041521	RM20SE	

Female clevis with male thread FEM..

	For cylinder Ø mm	Code	Item	Compliance
	***	041064	FEM20	-
	***	041065	FEM27	

***per la compatibilità con teste a snodo vedi pag. 1.88.1 e pag. 1.90.1

Self-aligning articulated coupling* GB..

	For cylinder Ø mm	Code	Item	Matching	Compliance
	Ø mm	041711	GB130	CLS, CLD	-
		041709	GB120	CLB	
	160	041712	GB160-200	CLS, CLD	
		041711	GB130	CLB	
	200	041712	GB160-200	CLS, CLD	
				CLB	
	250	041712	GB160-200	CLS, CLD	

*Compatibile solo con variante M

Self-aligning coupling* GC..

	For cylinder Ø mm	Code	Item	Matching	Compliance
	125	041726	GCM27x2	CLS, CLD	-
		041725	GCM20x1,5	CLB	
	160	041727	GCM36x2	CLS, CLD	
		041726	GCM27x2	CLB	
	200	041727	GCM36x2	CLS, CLD	
				CLB	
	250	041727	GCM36x2	CLS, CLD	

*Compatibile solo con variante M

Magnetic reed switch T groove ASV..

	For cylinder Ø mm	Code	Item	Cylinder matching
	125 ÷ 250	070946	ASV1C525	CLS* CLD* CLB
		071863	ASV1C550	
		071864	ASV1C51K	
		071189	ASV1C5M8	
		073639	ASV4D225	
		070246	ASV4D2M8	
		074900	ASV7N225	
		070247	ASV7N2M8	
		070372	ASV7M2M8	
		072918	ASV1H525	

*With bracket type AS.. for magnetic reed switches T groove

ATEX magnetic reed switch T groove MK..

	For cylinder Ø mm	Code	Item	Compliance	Cylinder matching
	125 ÷ 250	071120	MK500A	Ex 3D	CLS* CLD* CLB
		071108	MK502A	Ex II1G	

*With bracket type AS.. for magnetic reed switches T groove

Solenoid operated valves Namur* 1/4"

	Code	Item	Matching
	034059	A1NE230	CLB
	034060	A1NE232	
	034057	A1NE250	
	034058	A1NE251	
	034174	A1NE270	
	034179	A1NE271	
	034254	A1NE272	

*For ATEX solenoid operated NAMUR valves, see from page 2.320.1

Bracket AS.. for magnetic reed switches T groove

	For cylinder Ø mm	Code	Item	Cylinder matching
	125	072908	AS101	CLS CLD
	160	072909	AS102	
	200	072910	AS103	
	250	072911	AS104	

Air operated valves Namur* 1/4"

	Code	Item	Matching
	034238	A1NP230	CLB
	034239	A1NP232	
	034108	A1NP250	
	034240	A1NP251	
	034251	A1NP270	
	034252	A1NP271	
	034253	A1NP272	

*For ATEX air operated NAMUR valves, see from page 2.320.1