



Series Ecolight

Construction characteristics

Piston rod bushings	spheroid bronze on steel band with P.T.F.E. coat
Barrel	anodised aluminium alloy
Seals	standard: NBR Oil resistant rubber, PUR Piston rod seals V version: FPM P version: PUR Q version: NBR and PUR with plastic rod scraper with high wear resistance R version: PUR with metallic rod scraper L version: special PUR
Pistons	Ø32 ... Ø100 acetal resin, aluminium on request Ø125 ... Ø200 aluminium V, Q, R, L Version (Ø32 ... Ø100): aluminium
Piston rod	C43 chromed steel or stainless steel
End caps	die-casting aluminium
Cushion adjustment screws	brass

Operational characteristics

Fluid	filtered and preferably lubricated air or not (if lubricated the lubrication must be continuous) L version (for low temperature): dried air, guarantee a dew point lower than the minimum operating temperature
Pressure	max 10 bar
Working temperature	-5°C ... +70°C with standard seals -30 °C ... +80 °C with PUR seals (P version) -5 °C ... +80 °C with FPM seals for 1390 and 1391 series (magnetic piston) (V version) -5 °C ... +150 °C with FPM seals for 1392 series (Non magnetic rod) (V Version) -20°C ... +80°C (Q Version) -10 °C ... +80 °C (R Version) -50 °C ... +80 °C (L Version)

Bore	Ø	32	40	50	63	80	100	125	160	200
Cushioning lenght	mm	27	31	31	37	40	44	44	50	55
Cushioning lenght, version with aluminum piston	mm	20	20	22	22	32	32	44	50	55



Please follow the suggestions below to ensure a long life for these cylinders:

- use clean and lubricated air.
- correct alignment during assembly with regard to the applied load so as to avoid radial components or bending the rod.
- avoid high speeds together with long strokes and heavy loads: this would produce kinetic energy which the cylinder cannot absorb, especially if used as a limit stop (in this case use mechanical stop device).
- evaluate the environmental characteristics of cylinder used (high temperature, hard atmosphere, dust, humidity etc.).

VERSIONS WITH ADDITIONAL ROD SCRAPER

Version with plastic rod scraper (Q)

The pneumatic seal is manufactured using a special NBR seal material, with the rod scraper that comes in contact with the external environment made of a plastic material with a high wear resistance. The geometric shape with its excellent scraping capacity guarantees additional protection of the piston rod and nose seal against the impurities, liquids, water, and debris.

Version with metallic rod scraper (R)

The pneumatic seal is manufactured using a special FPM seal material with its own scraping lip with the additional rod scraper that comes into contact with the external environment made of metal. This combination of scraping lip and metal rod scraper enable these actuators to be used in particularly extreme environments.

Here are some examples:

Aluminum foundries: To remove the residues of alumina or fluorine compounds that are deposited on the piston rod during the preparation phase of aluminum casting.

Automotive: To prevent debris which has collected on the piston rod damaging the nose seal during operation especially waste produced during the welding process.

Industrial ovens: To eliminate cement powders or those produced during the manufacture of bricks/tiles Thanks to the high-performance nose seal and scraper protection of the piston rod, the cylinder will be protected against premature wear that you would normally experience using standard cylinders in these harsh environments.

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Low temperature version (L): The special seals compound allows the use of the cylinders up to a temperature of -50°C. The rod scraper seal is equipped with a metallic scraper which removes ice crystals which might form at minus temperature

Please note: air must be dried for applications with lower temperature.

Use hydraulic oils H class (ISO VG32) for correct continued lubrication.

Standard strokes (for all diameters)

- from 0 to 150, every 25 mm
- from 150 to 500, every 50 mm
- from 500 to 1000, every 100 mm
- On request are available strokes up to: 2800 mm

Stroke tolerance (ISO 15552)

Bore	Stroke	Tolerance
32-40-50	up to 500 mm	+2 0
	over 500 up to 1000	+3,2 0
63-80-100	up to 500 mm	+2,5 0
	over 500 up to 1000	+4 0
125-160-200	up to 500 mm	+4 0
	over 500 up to 1000	+5 0

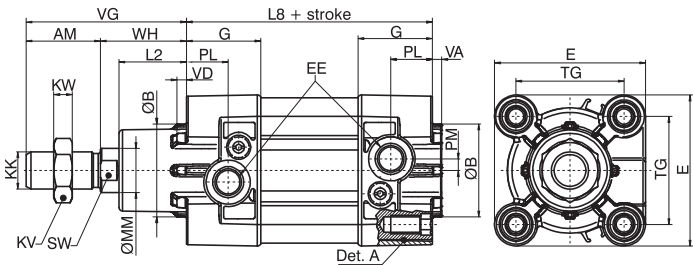
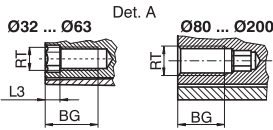


Basic version "01"

Coding:13V.Ø.stroke.01T

V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
Ø	BORE
	32 = Ø32
	40 = Ø40
T	...
	200 = Ø200
	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
T	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)

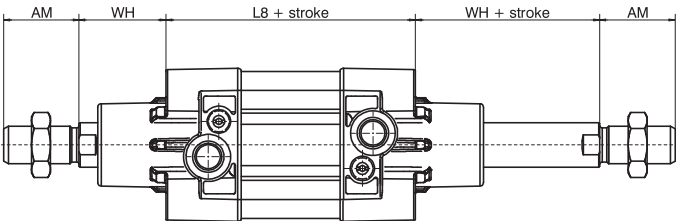
This is the configuration representing the basic cylinder according to ISO –VDMA standards. It can be directly anchored on machine parts using the four threads on the end cap screws. For other applications see "Cylinder section" on the General Catalogue, where different types of attachments are shown.



Through rod cylinder version "02"

Coding: 13V.Ø.stroke.02T

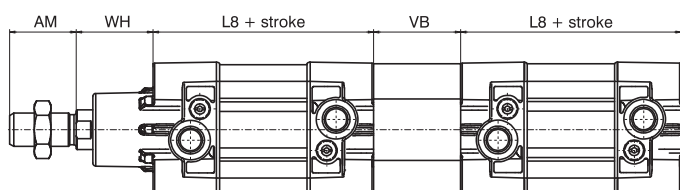
V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
Ø	BORE
	32 = Ø32
	40 = Ø40
T	...
	200 = Ø200
	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
T	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)



Tandem push with a common rods "G"

Coding: 13V.Ø.stroke.GT

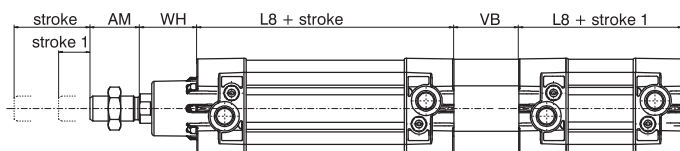
V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
	92 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	...
	200 = Ø200
T	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)



Tandem push with independent rods "F"

Coding: 13V.Ø.stroke.stroke1.FT

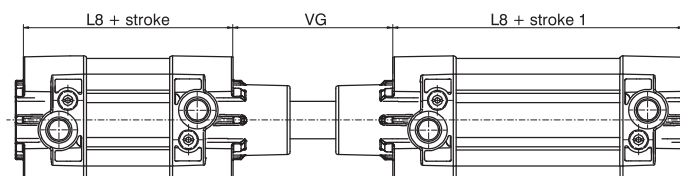
V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
	92 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	...
	200 = Ø200
T	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)



Opposed tandem with common rod "D"

Coding: 13V.Ø.stroke.stroke1.DT

V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
	92 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	...
	200 = Ø200
T	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)



Tandem with opposed rods "E"

Coding: 13V.Ø.stroke.stroke1.E1

V	VERSION
	90 = Magnetic chromed rod
	91 = Magnetic stainless steel rod
Ø	92 = Non magnetic chromed rod
	BORE
	32 = Ø32
	40 = Ø40
T	...
	200 = Ø200
	TYPE
	= Version with NBR seals
	P = Version with PUR seals
	K = Version with aluminium piston (Ø32 ... Ø100)
	PK = Version with PUR seals and aluminium piston (Ø32 ... Ø100)
	V = Version with FPM seals and aluminium piston
	R = Version with PUR seals, with metallic rod scraper and aluminium piston (Ø32 ... Ø100)
	Q = Version with PUR seals, with plastic rod scraper and aluminium piston (Ø32 ... Ø100)
	L = Version for low temperature and aluminium piston (-50°C) (Ø32 ... Ø100)

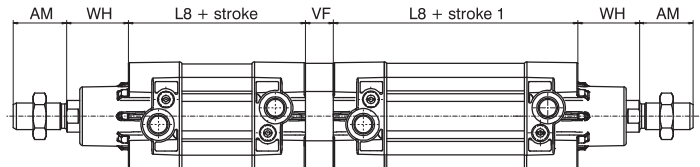


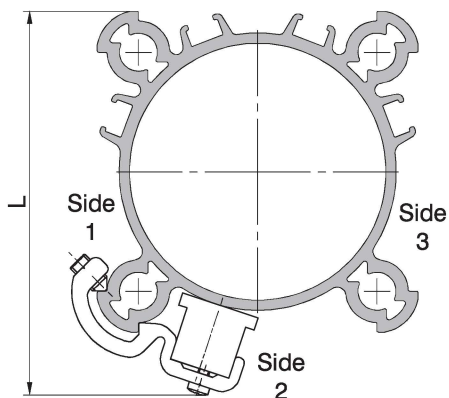
Table of dimensions

Bore	32	40	50	63	80	100	125	160	200
AM	22	24	32	32	40	40	54	72	72
B (d 11)	30	35	40	45	45	55	60	65	75
BG	16	16	18	18	16	16	21	25	25
E	47	54	65	76	95	113	138	180	216
EE	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 3/4"	G 3/4"
G	29.5	33	32	36	38.5	41.5	48	49	49
KK	M10X1.25	M12X1.25	M16x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M36x2	M36x2
KV	17	19	24	24	30	30	41	55	55
KW	6	7	8	8	9	9	12	18	18
L2	19	22	29	29	35	36	45	50	60
L3	4	4	5	5	/	/	/	/	/
L8	94	105	106	121	128	138	160	180	180
MM	12	16	20	20	25	25	32	40	40
PL	13	16	18	18	16	18	25	26	25
PM	3	4	5	4.5	2.5	6	8	11	11
RT	M6	M6	M8	M8	M10	M10	M12	M16	M16
SW	10	13	17	17	22	22	27	36	36
TG	32.5	38	46.5	56.5	72	89	110	140	175
VA	4	4	4	4	4	4	6	6	6
VB	33	41	51	51	65	71	75	70	75
VD	4	4	4	4	4	4	6	6	6
VF	12	12	16	16	20	20	25	30	30
VG	48	54	69	69	86	91	119	152	167
WH	26	30	37	37	46	51	65	80	95
Weight g	Stroke 0	460	650	1030	1360	2180	2890	5700	11200
	every 10 mm	23	32	45	49	75	81	130	195
								245	

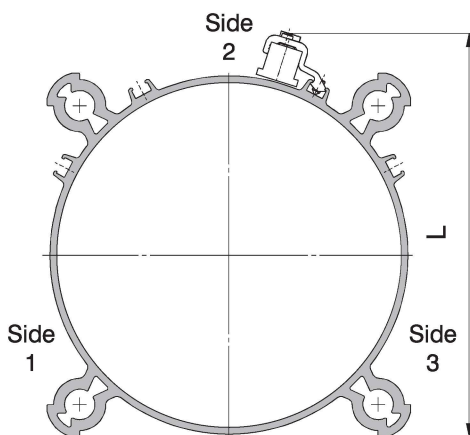
On the ECOLIGHT series it is possible to use three sensor types, according to bore, as indicated below:

Sensors code **1500._**

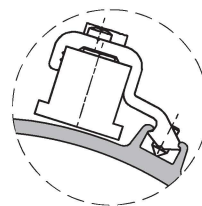
RS._
HS._



Ø32 ... Ø100 the sensor can be fixed on the three sides as indicated in the drawing, by using suitable bracket (except for Ø32 on side 2)



Ø125 ... Ø200 the sensor can be fixed on the three sides as indicated in the drawing, by using suitable bracket



Code	Bore	L
1390.A	Ø32	58
	Ø40	65
1390.B	Ø50	75
	Ø63	86
1390.C	Ø80	105
	Ø100	122
1390.D	Ø125	150
	Ø160	190
	Ø200	225

Sensors code **1580._**

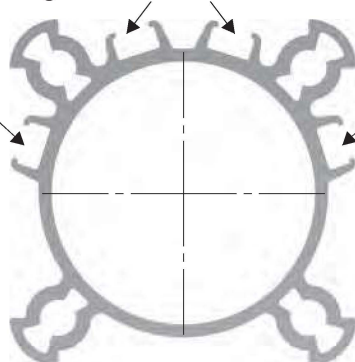
MRS._
MHS._



Feeding connections side sensors slots

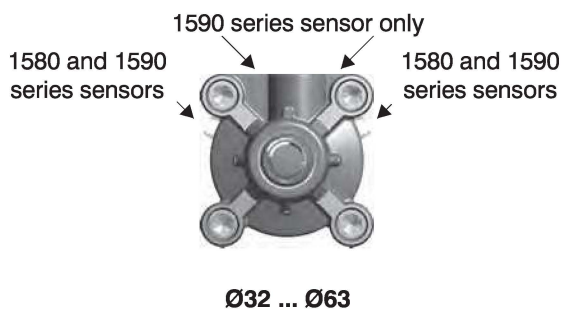
lateral sensor slot

lateral sensor slot



Sensors code **1590._**

LRS._
LHS._

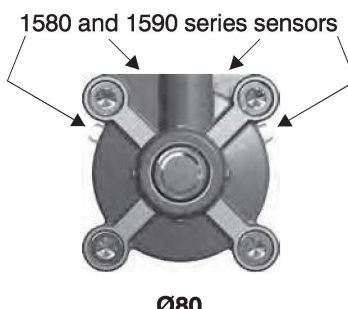


Ø32 ... Ø63



CYLINDERS - BORE SIZES Ø32 ... Ø63

The two slots on connection side are plugged, therefore only sensor 1590 can be used. Suitable for top housing and once placed by means of its screw, it can be fixed in desired position.

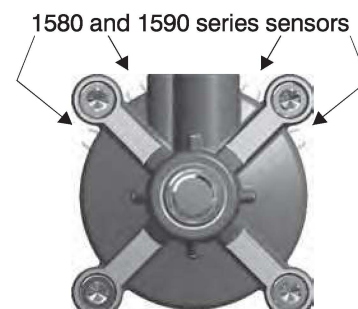


Ø80



CYLINDERS - BORE SIZES Ø80

The two top housings can be accessed from the front of the unit, once housing can be accessed from the front end cap and opposite housing from the rear end cap. It is therefore possible to use both type of sensor: 1580-1590.



Ø100 ... Ø200



CYLINDERS - BORE SIZES Ø100 ... Ø200

All four housings can be accessed from the front of the unit. It is therefore possible to use both type of sensors: 1580-1590.

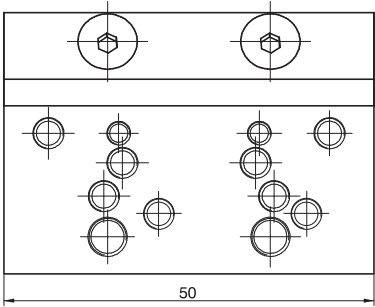
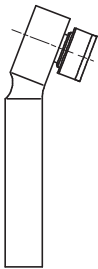


Support for solenoid valves

Coding: 1390.T

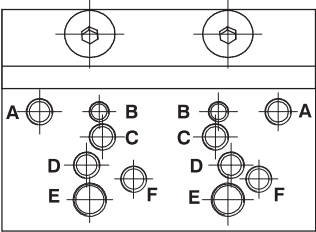
	SIZE
	25 = Ø32
	26 = Ø40
T	27 = Ø50
	28 = Ø63
	29 = Ø80
	30 = Ø100

Attention: do not use ISO distributor for base mounting



Fixing holes for valves series:

- A = 488 / 484
- B = 2400
- C = T488
- D = 2600
- E = T424
- F = 888_



This accessory permits to mount a valve or an electrovalve on a side of the cylinder. The plate can be fitted on the cylinder profiled barrel. Once installed the connections must be done with fittings and pipes. All of the threaded holes on the support plate are dedicated to different valves series as per attached drawing.