

## ATOS HYDRAULIC CYLINDERS OVERVIEW

*We offer a Full Range of Hydraulic Products from a comprehensive range of manufacturers for any application to bring you the products and systems most suited to your needs*

Contact Us on 02392 607060  
e-mail: [enquiries@tms-hydraulics.co.uk](mailto:enquiries@tms-hydraulics.co.uk)



THE ONE STOP ONLINE SHOP FOR ALL YOUR HYDRAULIC  
AND PNEUMATIC REQUIREMENTS

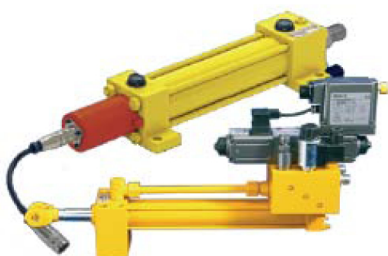
# Index Cylinders

## ISO Standard range



- 250 bar Max. pressure
- 25-320 mm bore

## Servo-cylinders



- 40-200 mm bore
- Magnetosonic, Magnetostrictive, Potentiometric and Inductive types
- Available with ATEX certification and Integral subplate

## Stainless steel cylinders



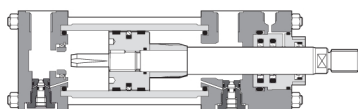
- 250 bar Max. pressure
- 25-200 mm bore



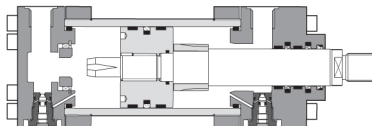
# HYDRAULIC CYLINDERS



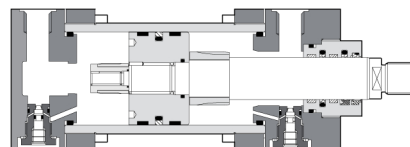
**ISO standard hydraulic cylinders, double acting**  
engineered design and high quality machining, to suit the  
requirements of modern machines and systems: top  
reliability, easy installation & service, long service life



**CK ISO 6020-2**  
square heads  
nominal pressure up to 160 bar  
max 250 bar



**CN ISO 6020-1**  
round heads  
nominal pressure up to 160 bar  
max 250 bar



**CC ISO 6022**  
round heads heavy duty  
nominal pressure up to 250 bar  
max 320 bar



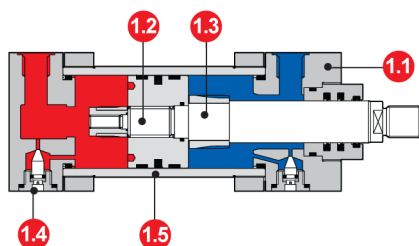
**103 CK cylinders, mounting styles G, E, N    104 CN cylinder    105 CC cylinders, mounting styles S and A**

### Standard hydraulic cylinders

details on tables B137, B180, B241

[illegible]

### CC heavy duty cylinder



- 1.1 round head & abundant guide
- 1.2 piston, largely sized
- 1.3 progressive cushion & adjusting screw 1.4
- 1.5 ISO seals

### Cylinder's code

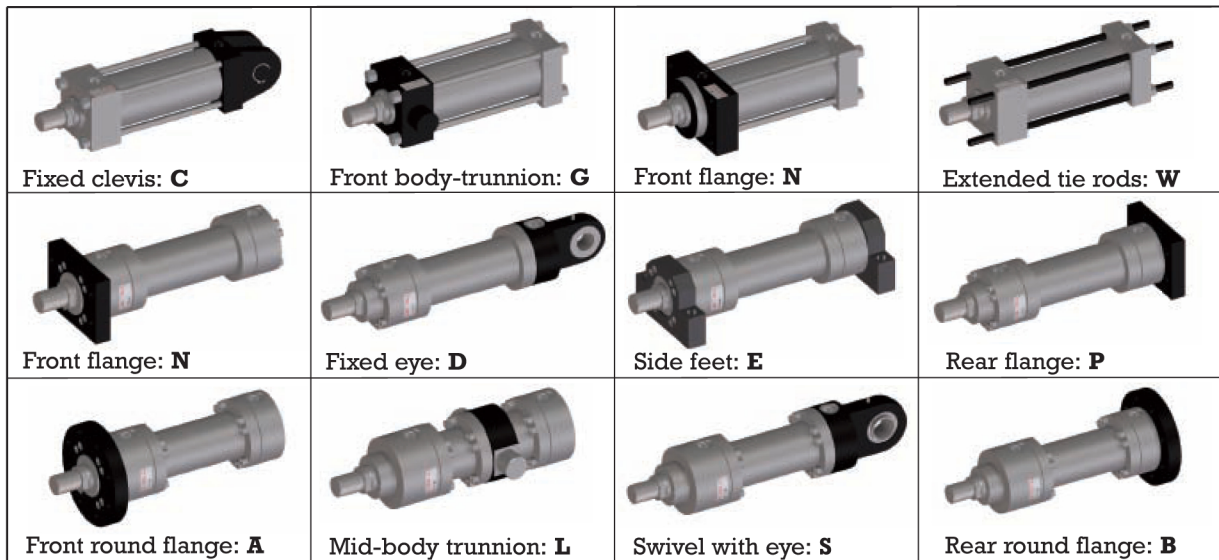
**CK - 63/45 \* 0500 - S 0 0 1 \***

<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <b>CK</b>  <b>CN</b> (1)  <b>CC</b> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">         Bore/rod diameter (2)       </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">         Stroke - mm (3)       </div> <div style="border: 1px solid black; padding: 2px;">         Mounting style       </div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">         options          seals, page 35       </div> <div style="border: 1px solid black; padding: 2px;">         spacer (5)       </div>	<div style="border: 1px solid black; padding: 2px;">         cushioning (4)       </div>
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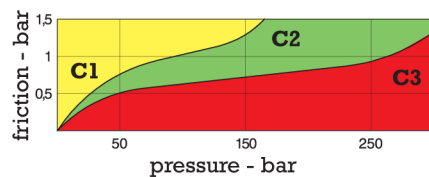
notes

- (1) CH big bores cylinders also available, see On-line Master Catalog
- (2) Double rod cylinders available: add the second rod diameter
- (3) Standard strokes for CK: 25, 50, 100, 160, 200, 250, 320, 400, 500
- (4) Fast or slows, fixed or adjustable
- (5) Spacer: normally requested for stroke over 1000 mm to increase the rod guide and protect against overload and premature wear

## ISO standard mounting style



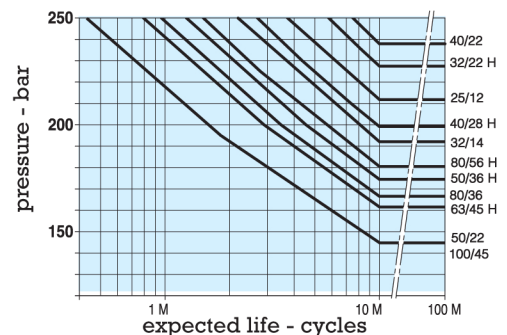
## Seals options



seals	material	characteristics	friction
1	Poliurethane	high static and dynamic sealing	C1
2	FKM + PTFE	high fluid temperature	C3
4	NBR + PTFE	high speed, up to 4m/s	C3
6/7	NBR + PTFE	single acting - pushing/pulling	C3
8	Poliurethane+PTFE	low friction	C2

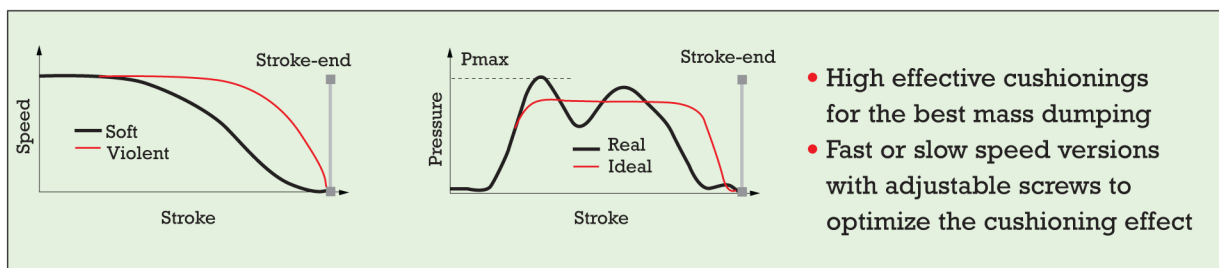
## Rod features and options

- Hardened and tempered alloy steel rod and rolled rod threads for high strength and improved fatigue working life
- Optional NIKROM treatment and induction hardening to improve rod hardness and corrosion resistance



## Engineered cushionings

*details on table B015*



# DVC Cylinder Designer

- Technical information on variants and options: cushioning, seals, etc.
- Computer assisted compilation of the cylinder's code
- 2D & 3D drawing can be directly imported in any CAD system
- Calculation software for cylinder's sizing
- Compilation modules for requests, orders, bill of materials, etc



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# HYDRAULIC SERVO CYLINDERS



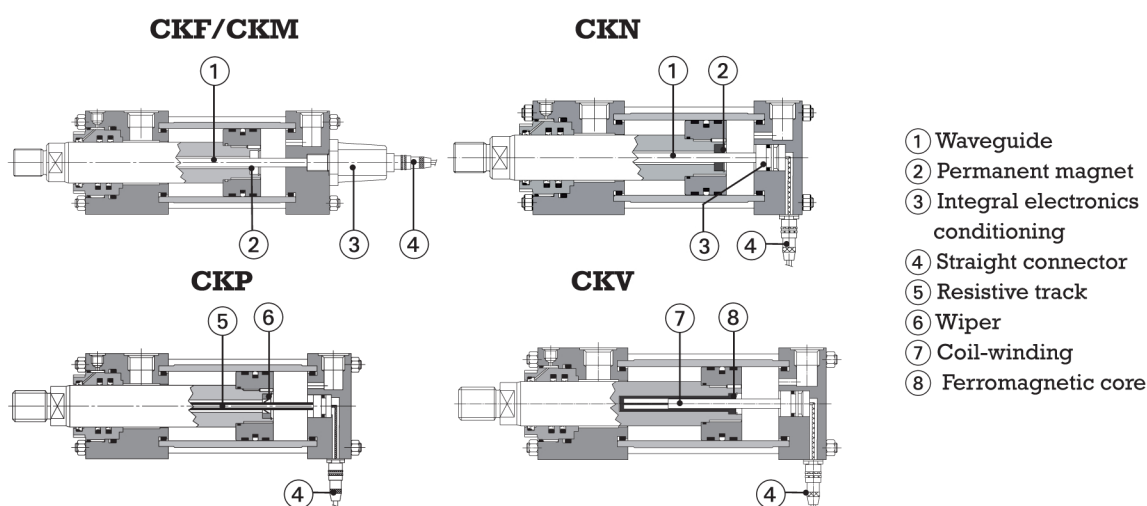
**Atos servocylinders** derive from hydraulic cylinders by incorporation of an integral rod position transducer and mounting of special anti-low friction seals

The integration of the electronic transducer inside the cylinder ensures protection also in hard conditions - shocks, vibrations, high working frequency, dirt, etc. - and consequently a long working life

## Rod position transducers

code	CKF	CKM	CKN	CKP	CKV
transducer type	Magnetosonic	Magnetosonic	Magnetostrictive	Potentiometric	Inductive
electronic conditioning	Integral	Integral	Integral	None	Separate
linearity error (1)	$< \pm 0,03\%$	$< \pm 0,01\%$	$< \pm 0,02\%$	$\pm 0,1\%$	$\pm 0,2\%$
repeatability (1)	$< \pm 0,005\%$	$< \pm 0,001\%$	$< \pm 0,005\%$	$\pm 0,05\%$	$\pm 0,05\%$
max speed	1 m/s	2 m/s	1 m/s	0,5 m/s	1 m/s
strokes	100 to 1000	100 to 3000	100 to 4000	100 to 900	100 to 1000
output	0 ÷ 10 V	0 ÷ 10 V, 4 ÷ 20 mA digital SSI, CANopen PROFIBUS DP	0,1 ÷ 10,1 V 4 ÷ 20 mA	0 ÷ 10 V	0 ÷ 10 V 4 ÷ 20 mA
typical applications	sawing & bending machines	steel plants, plastic & rubber machines	foundry and energy	various	simulators & energy
temperature limits	-20°C to + 75°C	-20°C to + 75°C	-20°C to + 90°C	-20°C to + 75°C	-20°C to + 120°C

**Note:** (1) percentage of the total stroke



## ATEX Certified CKA cylinder *tables B400, B310*

CKA cylinders are designed to limit the external surface temperature, according to ATEX 94/9/CE Directive, thus to avoid self-ignition of gas, vapours and dust mixtures.

CKA are also available with ex-proof built-in digital magnetostrictive transducer, ATEX certified see picture 113

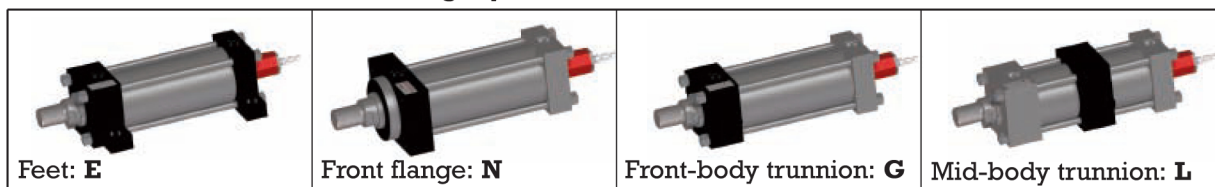


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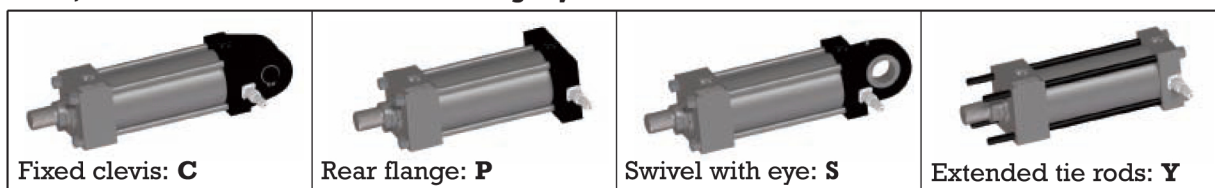
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### CKM and CKF standard mounting style

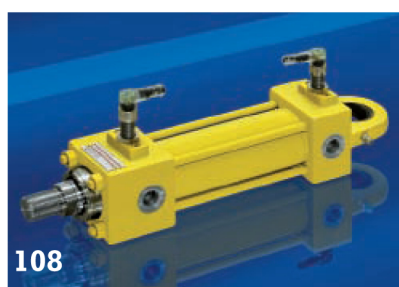


### CKN, CKP and CKV standard mounting style



### Sizes of hydraulic servocylinders - mm

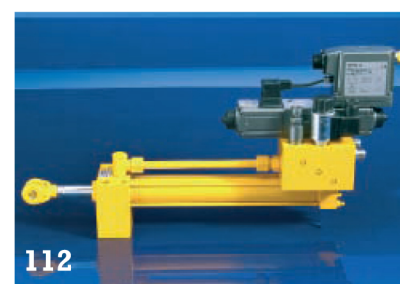
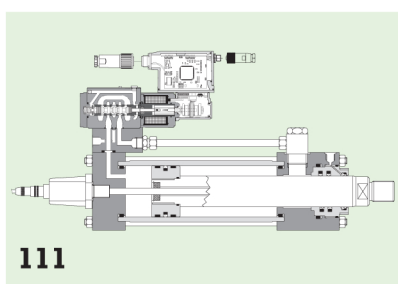
bore $\varnothing$	40	50	63	80	100	125	160	200
rod $\varnothing$	28	36	45	56	70	90	110	140



**108 CK with proximity end stroke sensors**, fixed, on front and rear heads: motion cycles, operating sequences, fast-slow cycles and safety functions can be easily performed,  
**109 CKS with proximity sensors**, "Reed" or "Hall effect" adjustable along the rod stroke,  
**110 CKV servocylinders** with external electronic card for signal conditioning,

### Integral subplates

Servocylinders can be supplied with integral subplates for mounting of valves to realize any kind of servoactuators, page 17



## STAINLESS STEEL CYLINDERS

Atos cylinders are available in stainless steel **CNX** executions for sea water and aggressive environment conditions & water hydraulics applications, page 23

- 113 CKX** ex-proof servocylinder in stainless steel execution,
- 114** Special stainless steel cylinder with reinforced rod guide for marine applications
- 115** Special stainless steel cylinder for railway switches



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