









Square Heads ISO 6020-2	CK tech. table B137 	HMI 	CDT3 

SIZE AND OPTIONS COMPARISON

Type	Square heads with tie rods	Square heads with tie rods	Square heads with tie rods
Pressure	Nominal 160 bar (Max 250 bar) according to ISO	Max 210 bar, equivalent to Atos pressure range	Nominal 160 bar according to ISO
Bore sizes	From Ø25 to Ø200 mm	From Ø25 to Ø200 mm	From Ø25 to Ø200 mm
Rod sizes	Up to 3 per bore, from Ø12 to Ø140 mm	Up to 3 per bore, from Ø12 to Ø140 mm	Up to 3 per bore, from Ø12 to Ø140 mm
Mounting styles	15 styles	13 styles (not available MX5 and MX7)	13 styles (not available MX7 and MS2 with key)
Cushionings	Fast adjustable or fixed, slow adjustable	Fast adjustable	Fast adjustable or fixed, slow fixed
Sealing systems	6 types of seals , also for single acting , speed up to 4 m/s, temperature from -20 to 120°C	5 types of seals, not available for single acting , speed up to 1 m/s, temperature from -20 to 150°C	3 types of seals, not available for single acting , speed up to 1 m/s, temperature from -20 to 150°C
Oil ports	GAS thread (optional oversized oil ports)	GAS or Metric thread (not available oversized oil ports)	GAS or Metric thread (optional oversized oil ports)
Proximity inductive sensors options	Front and rear sensors, bore sizes from Ø40 to Ø200 mm	Front and rear sensors, bore sizes from Ø40 to Ø200 mm	Front and rear sensors, bore sizes from Ø40 to Ø200 mm
Head options	Front and rear air bleeds, rod side draining	Front and rear air bleeds	Front and rear air bleeds, rod side draining
Rod options	Nickel and chrome plating , Induction surface hardening	Induction surface hardening, supplied as standard	Induction surface hardening and chrome plating

TECHNICAL COMPARISON

Sealing systems	G1 sealing system with the best sealing thanks to polyurethane seal for rod and piston Piston seal preloaded with O-ring for low friction	Piston seal is composed by a polyamide wear ring with lower sealing effect respect to polyurethane Piston seal preloaded with square rings which causes higher friction	Sealing systems similar to Atos
Bushing guide	Bronze bushing with unscrewing system : prefixed tightening torque or radial screw Longer guide compared to competitors for a better resistance to temporary lateral loads	No unscrewing system may cause possible disassembling of the bushing in heavy duty application	Rod guide bushing manufactured in grey cast iron may involve a premature wear of the sealing system compared to bronze bushing No unscrewing system may cause possible disassembling of the bushing in heavy duty application
Rod material	Rod manufactured with hardened and tempered alloy steel 42CrMo4 which grants a longer life compared to competitors Rolled thread for rods up to 70	Rod manufactured with Carbon alloy steel Cromax 42CrMo4 is recommended for heavy duty applications Rolled thread for rods up to 28	Rod manufactured with hardened alloy steel, no information available about the prediction of the expected rod working life No rolled threads
Cushionings	Cushionings profile with nr. 2 external grooves for the best damping effect and reduced wear Cushionings adjustment is realized on the cartridge to ensure a more accurate and repeatable regulation	Cushionings profile with nr. 3 diameters involves high sensitivity to mechanical wear typical of heavy duty application Cushionings adjustment is realized on the cylinder's head	Cushionings profile with nr. 1 external grooves Cushionings adjustment is realized on the cylinder's head







			
Round Heads ISO 6020-1	CN tech. table B180 	MMB 	CDM1 

SIZE AND OPTIONS COMPARISON

Type	Round heads with counterflanges	Round heads with counterflanges	Round heads with counterflanges
Pressure	Nominal 160 bar (Max 250 bar) according to ISO	Max 210 bar, equivalent to Atos pressure range	Nominal 160 bar according to ISO
Bore sizes	From Ø50 to Ø200 mm	From Ø40 to Ø320 mm	From Ø25 to Ø200 mm
Rod sizes	Up to 2 per bore, from Ø28 to Ø140 mm	Up to 2 per bore, from Ø22 to Ø220 mm	Up to 2 per bore, from Ø14 to Ø140 mm
Mounting styles	9 styles	8 styles	9 style
Cushionings	Fast adjustable or fixed	Fast adjustable	Fast adjustable or fixed
Sealing systems	3 types of seals, speed up to 4 m/s, temperature from -20 to 120°C	5 types of seals, speed up to 0,5 m/s, temperature from -20 to 150°C	5 types of seals, speed up to 0,5 m/s, temperature from -20 to 120°C
Oil ports	GAS thread, SAE Flange (optional oversized oil ports)	GAS or Metric thread, SAE Flange (not available oversized oil ports)	GAS or Metric thread, SAE Flange (optional oversized oil ports)
Proximity inductive sensors options	Available on request	Available on request	Front and rear sensors
Head options	Front and rear air bleeds, rod side draining	Front and rear air bleeds, rod side draining	Front and rear air bleeds, rod side draining
Rod options	Nickel and chrome plating , Induction surface hardening	Not available	Induction surface hardening, stainless steel

TECHNICAL COMPARISON

Mounting styles	MP5 (fixed eye with spherical bearing) without welded joint	MP5 (fixed eye with spherical bearing) with welded joint	MP5 (fixed eye with spherical bearing) without welded joint
Sealing systems	Piston seals made of PTFE bronze filled for the best resistance to pressure picks (up to 800 bar) Piston seal preloaded with O-ring for low friction	Piston seal composed by a polyamide wear ring for pressure up to 500 bar Piston seal preloaded with square rings which causes higher friction	Sealing systems similar to Atos
Rod material	Rod manufactured with hardened and tempered alloy steel 42CrMo4 which grants a longer life compared to competitors Rolled thread for rods up to 70	Rod manufactured with Carbon alloy steel Cromax 42CrMo4 is recommended for heavy duty applications No rolled threads	Rod manufactured with hardened alloy steel, no information available about the prediction of the expected rod working life No rolled threads
Cushionings	Cushionings profile with nr. 2 external grooves for the best damping effect and reduced wear Cushionings adjustment is realized on the cartridge to ensure a more accurate and repeatable regulation	Cushionings profile with nr. 3 diameters involves high sensitivity to mechanical wear typical of heavy duty application Cushionings adjustment is realized on the cylinder's head	Cushionings profile with nr. 1 external grooves Cushionings adjustment is realized on the cylinder's head




			
Heavy Duty Cylinders ISO 6022	CC tech. table B241 	MMA 	CDH2 

SIZE AND OPTIONS COMPARISON

Type	Round heads with counterflanges	Round heads with counterflanges	Round heads with counterflanges
Pressure	Nominal 250 bar (Max 320 bar) according to ISO	Nominal 250 bar according to ISO	Nominal 250 bar according to ISO
Bore sizes	From Ø50 to Ø320 mm	From Ø50 to Ø320 mm	From Ø40 to Ø320 mm
Rod sizes	One rod per bore, from Ø36 to Ø220 mm	Up to 2 per bore, from Ø32 to Ø220 mm	Up to 2 per bore, from Ø25 to Ø220 mm
Mounting styles	6 styles	6 styles	9 styles
Cushionings	Fast adjustable	Fast adjustable	Fast adjustable or fixed
Sealing systems	3 types of seals, speed up to 4 m/s, temperature from -20 to 120°C	5 types of seals, speed up to 1 m/s, temperature from -20 to 150°C	5 types of seals, speed up to 0,5 m/s, temperature from -20 to 80°C
Oil ports	GAS thread, SAE Flange (optional oversized oil ports)	GAS or Metric thread, SAE Flange (not available oversized oil ports)	GAS or Metric thread, SAE Flange (not available oversized oil ports)
Proximity inductive sensors options	Available on request	Available on request	Front and rear sensors
Head options	Front and rear air bleeds, rod side draining	Front and rear air bleeds, rod side draining	Front and rear air bleeds, rod side draining
Rod options	Nickel and chrome plating, Induction surface hardening	Induction surface hardening, supplied as standard	Nickel and chrome plating, Induction surface hardening

TECHNICAL COMPARISON

Mounting styles	MP5 (fixed eye with spherical bearing) without welded joint	MP5 (fixed eye with spherical bearing) with welded joint	MP5 (fixed eye with spherical bearing) without welded joint
Sealing systems	Piston seals made of PTFE bronze filled for the best resistance to pressure picks (up to 800 bar) Piston seal preloaded with O-ring for low friction	Piston seal composed by a polyamide wear ring for pressure up to 500 bar Piston seal preloaded with square rings which causes higher friction	Sealing systems similar to Atos
Rod material	Rod manufactured with hardened and tempered alloy steel 42CrMo4 which grants a longer life compared to competitors Rolled thread for rods up to 70	Rod manufactured with Carbon alloy steel Cromax 42CrMo4 is recommended for heavy duty applications No rolled threads	Rod manufactured with hardened alloy steel, no information available about the prediction of the expected rod working life No rolled threads
Cushionings	Cushionings profile with nr. 2 external grooves for the best damping effect and reduced wear Cushionings adjustment is realized on the cartridge to ensure a more accurate and repeatable regulation	Cushionings profile with nr. 3 diameters involves high sensitivity to mechanical wear typical of heavy duty application Cushionings adjustment is realized on the cylinder's head	Cushionings profile with nr. 1 external grooves Cushionings adjustment is realized on the cylinder's head

			
Servocylinders	CKF, CKM, KKN, CKP, CKV tech. table B310	LDT, PLT, LVDT	CST3

SIZE AND OPTIONS COMPARISON

Type	Magnetostrictive (CKF, CKM or KKN), Potentiometric (CKP), Inductive (CKV)	Magnetostrictive (LDT or PLT), Inductive (LVDT)	Magnetostrictive (CST3)
Pressure	Nominal 160 bar (Max 250 bar) according to ISO	Max 210 bar, equivalent to Atos pressure range	Nominal 160 bar according to ISO
Bore sizes	From Ø40 to Ø200 mm	From Ø40 to Ø200 mm	From Ø40 to Ø200 mm
Output signals	Analog (current & voltage output), SSI, CANopen & Profibus DP	Analog (current & voltage output), SSI	Analog (current & voltage output), SSI
General features	Derived from CK standard according to ISO 6020-2	Derived from HMI standard according to ISO 6020-2	Derived from CDT3 standard according to ISO 6020-2

Cylinders with adjustable proximity Sensors	CKS tech. table B450	HMI	Not available
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SIZE AND OPTIONS COMPARISON

Type	Square heads with adjustable proximity sensors	Square heads with adjustable proximity sensors	
Pressure	Nominal 100 bar (Max 150 bar)	Nominal 100 bar	
Bore sizes	From Ø25 to Ø100 mm	From Ø32 to Ø125 mm	
Proximity sensors	"Reed" or "Hall effect" sensors	"Read.me" position sensors	
General features	Derived from CK standard according to ISO 6020-2	With additional overall dimension (not ISO)	

Square heads with counterflanges	CH tech. table B140	Not available	Not available
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ATEX Cylinders	CKA, CKAM tech. table B400	Not available	Not available
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Stainless Steel Cylinders	CNX, CNXM tech. table B470	Not available	Not available
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