

CK Range Multi-turn and Part-turn Electric Valve Actuators

Technologically innovative while incorporating proven engineering, Centork watertight CK range actuators are suitable for all valves in non-hazardous locations.

Centork has developed the CK range actuators to provide a state-of-the-art product to the valve industry. The CK product range includes standard multi-turn actuators through to intelligent Centronik (CKc) equipped actuators.

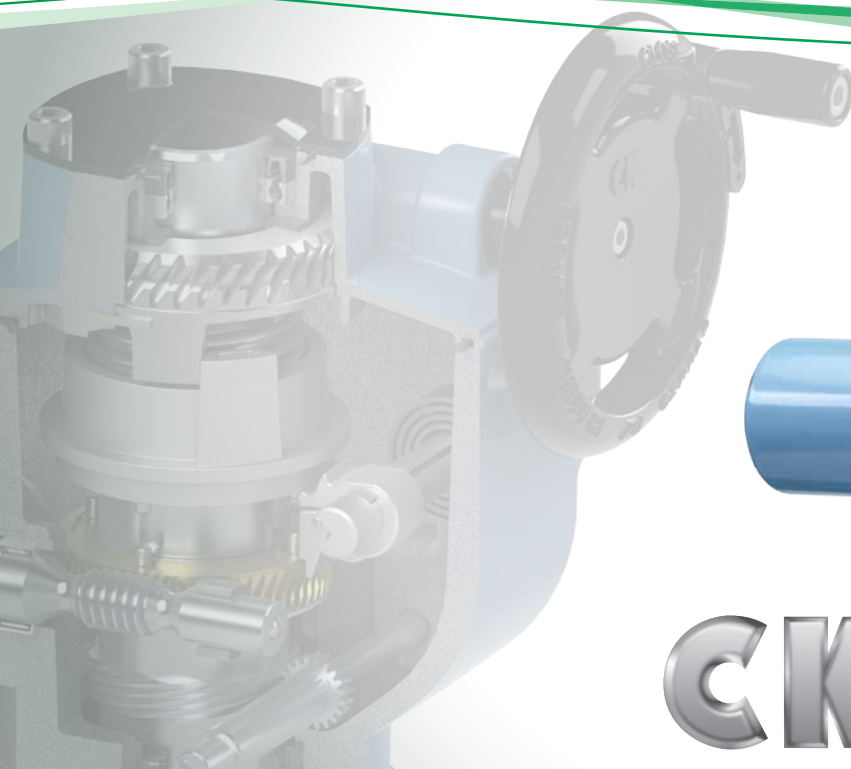
Centork has an international network of offices and distributors to support our customers. Centork's service includes sales, commissioning and long-term maintenance support.

The CK range is available from stock held at Centork centres located around the world. These centres provide sales support and service backup for the full range of Centork products.

CK	Standard isolating duty actuator
CKR	Standard modulating duty actuator
CKc	Centronik isolating duty actuator
CKRC	Centronik modulating duty actuator

Features and Benefits:

- Multi-turn output torque up to 10,800 Nm (8,000 lbf.ft)
- Part-turn output torque up to 205,600 Nm (151,600 lbf.ft)
- Modular design allows easy upgrading to any control configuration through plug-in technology
- Plug and socket connection for easier field wiring and modularity
- Continuous valve position indication even during power loss
- Non-intrusive setting via infrared or optional *Bluetooth*® wireless with the intelligent CKc - Centronik module
- Hollow output drive to accept rising valve stems
- Detachable thrust and non-thrust base options
- Secure manual handwheel drive fully independent of the motor drive train
- IP68 rating (8m / 96 hrs) as standard provides enhanced environmental protection



CK
range

CK Range Multi-turn Electric Valve Actuators

Centork actuators have been developed with 20 years of experience in actuation solutions and comply with global safety standards. Our valve actuation products range from simple actuators to advanced electronic control systems.

We have the experience, know-how and product range to supply any valve actuation solution. Our products are designed to provide competitive, cost effective, safe, reliable and efficient valve operation.

IP68 watertight construction

An IP68 (8 metres - 96 hrs) rating according to EN 60529 is achieved using spigot and O-ring joints for actuator covers and between modules.

Modular design

The major components of the CK range are modular; speed changes, control package upgrades and indication outputs can be altered to suit the user's exact requirements. CK actuators can be adapted to meet user specification quickly and efficiently to achieve fast turnarounds and quick delivery.

Temperature range options

The standard range is rated for -30 to +70 °C (-22 to +158 °F). Low temperature options available between -50 and +60 °C (-40 to +140 °F) with a change of lubricant and seals. High temperature option available between 0 to +120 °C (+32 to +248 °F).

International Standards

CK range products fully comply with international design standards, actuator standards EN15714-2, EN ISO 5210, MSS SP 102 and manual handwheel operation standard EN12570.

Plug and socket connection

Power, control and indication wiring is connected into a plug located in the terminal cover allowing simple mechanical connection/disconnection of the actuator. Plug and socket connections between actuator modules provide a simple connection platform for adaption and field upgrades.

Double sealing

An optional module is available to preserve the IP68 enclosure protection even whilst the actuator terminal housing is removed.

Torque protection and position limits

The Centork CK actuator includes torque measurement and independently adjustable torque limiting, for both open and close control. This ensures precise valve control whether by position limit or torque seating. Torque limiting protection is available mid-stroke to prevent valve damage should the valve be obstructed. Simple mechanical limit and torque adjustment is provided for the CK while the CKc can be non-intrusive. Both CK Standard and CKc measure position with the power on or off.

CK actuators

Comprising electric motor, drive gearing, independent handwheel drive, torque and position limit control & indication with plug and socket field wiring correction. The CK range provides the right solution for users with centralised motor control centres or for high temperature and sustained vibration applications.

CKc actuators

The addition of the Centronik module to the CK Standard provides intelligent, integral control for integration with all site control systems. It permits the use of hardwired, fieldbus or analogue control & indication, offering cost-effective implementation with centralised control systems. Centronik actuators allow valvemakers/integrator testing with just the power supply, using local control with no extra wiring or motor control gear required. Non-intrusive, password protected configuration may be carried out using open/close selector switches and also by using the optional Centork Setting Tool, over the infrared or optional *Bluetooth* interfaces. The Centronik display provides position indication, status and alarms for operation plus simple menu driven configuration screens. Centronik includes data logging capabilities showing actuator starts, status and events on screen.

Power supply phase correction

All three-phase power supplies for the Centronik range include automatic phase correction to rectify incorrect power cable connection. This is an integral feature to prevent damage to the actuator and improve the ease of commissioning and will ensure correct travel direction when receiving operation commands.

Accent software

For *Bluetooth* wireless enabled CKc actuators, the actuator configuration, set-up and data logger files can be extracted to the Centork Setting Tool over a *Bluetooth* interface. The file can then be uploaded to a PC running Centork Accent software for analysis and asset management. Alternatively, a *Bluetooth* wireless enabled PC running Accent can connect with the actuator directly in the field.

Accent software is free to download from www.centork.com

Network communication

Centronik (CKc) actuators are compatible with most industry standard fieldbus systems.



CK Range Multi-turn Electric Valve Actuators



Modular design with plug and socket connections

Through the use of bespoke plug and sockets, the Centork CK can be adapted with extra modules to suit system integration and control requirements. All plug and socket connections maintain the IP68 integrity of the actuator on assembly.

Motor

High starting torque - low inertia motors are available for single-phase and 3-phase supplies. The motor module is detachable and can be replaced without draining internal lubricant.

Robust drive gearing

A simple single stage worm-and-wheel gear drive runs in an oil bath for effective lubrication within the specified temperature range, in any orientation. The standard oil is an automotive grade widely available throughout the world. Food grade and low temperature lubricants are available when specified.

Hand operation

The handwheel drive is independent of the motor drive and is selected with a lockable hand/auto lever acting on a slow speed clutch for safe operation. When the motor runs, the actuator automatically returns to motor drive.

Detachable bases

Thrust base types are separate to the gearcase allowing easy installation. Should the actuator be removed, the base can be left on the valve to maintain its position. All base dimensions and couplings conform to attachment standards ISO 5210 or MSS SP 102.

Field Service

Centork understands the value of prompt and reliable support for actuators in the field. We cater for installation, commissioning, servicing or emergencies.

With over 1,000 service technicians employed by our partners and representatives, we have the necessary worldwide infrastructure to fully support our customer's needs. Original OEM parts are used to ensure the continued reliability of our actuators in the field. A full 12 month warranty is provided for all the work performed by our service network.

- Installation and commissioning of actuators to ensure correct configuration for the application
- Actuator upgrades including addition of new modules and fieldbus options
- System commissioning to ensure actuators function and integrate correctly with site control systems
- Detailed inspection, maintenance and service of actuators
- Emergency call-out service
- Preventive maintenance programmes and service contracts available
- Centork field technicians are factory trained and experienced in all industry applications



Detailed Specification

Isolating

Frame Size	Torque (Nm)				Speeds Available	
	Maximum		Operational		RPM at 50 Hz	RPM at 60 Hz
	Nm	lbf.ft	Nm	lbf.ft		
CK 30	30	22	10	7	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 22, 29, 43, 58, 86, 115, 173
	25	18	10	7	192	230
CK 60	60	44	20	15	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 22, 29, 43, 58, 86, 115, 173
	50	37	20	15	192	230
CK 120	120	89	40	30	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 22, 29, 43, 58, 86, 115, 173
	100	74	40	30	192	230
CK 250	250	184	83	61	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 22, 29, 43, 58, 86, 115, 173
	200	148	83	61	192	230
CK 500	500	369	167	123	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 22, 29, 43, 58, 86, 115, 173
	400	295	167	123	192	230

Note: Torque rating is maximum torque setting in both directions. Stall torque will be an average of 1.4 to 2.0 times this value depending on speed and voltage.

Note: Due to the effects of inertia and drive nut wear, 144 & 192 rpm speeds are not recommended for direct mounted gate valve applications.

Modulating

Frame Size	Torque (Nm)				Max. Starts per hour	Speeds Available	
	Maximum		Modulating			RPM at 50 Hz	RPM at 60 Hz
	Nm	lbf.ft	Nm	lbf.ft			
CK _R 30	30	22	10	7	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 22, 29, 43, 58, 86, 115
CK _R 60	60	44	20	15	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 22, 29, 43, 58, 86, 115
CK _R 120	120	89	45	33	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 22, 29, 43, 58, 86, 115
CK _R 250	250	184	90	66	1200	9, 12, 18*, 24*, 36*, 48*, 72*, 96*	11, 14, 22*, 29*, 43*, 58*, 86*, 115*
CK _R 500	500	369	180	133	1200	9, 12, 18*, 24*, 36*, 48*, 72*, 96*	11, 14, 22*, 29*, 43*, 58*, 86*, 115*

Note: Actuator builds listed with an asterisk * will have a reduced maximum starts per hour rating. Please refer to PUB111-001 for further details.

Actuator Fixings

Frame Size	Unit	CK 30 & CK 60	CK 120	CK 250 & CK 500	
Type 'A' Coupling	Flange Size (ISO5210)	-	F07 / F10	F14	
	Flange Size (MSS SP -102)	-	FA07 / FA10	FA14	
	Stem Acceptance Rising	mm (in)	26 / 34 (1 / 1 ¹ / ₄)	40 (1 ⁵ / ₈)	57 (2 ¹ / ₄)
	Maximum Axial Thrust	kN (lbf)	40 (8,992)	70 (15,737)	160 (35,969)
	Stem Acceptance Non-Rising	mm (in)	20 / 26 (3/4 / 1)	32 (1 ¹ / ₄)	45 (1 ³ / ₄)
Type 'B' Coupling	Type 'B1' (Fixed bore)	mm (in)	28 / 42 (1 ¹ / ₈ / 1 ⁵ / ₈)	42 (1 ⁵ / ₈)	60 (2 ³ / ₈)
	Type 'B3' (Fixed bore)	mm (in)	16 / 20 (5/8 / 3/4)	20 (3/4)	30 (1 ¹ / ₈)
	Type 'B4' (Maximum)	mm (in)	20 / 30 (3/4 / 1 ¹ / ₈)	30 (1 ¹ / ₈)	45 (1 ³ / ₄)

Supply Voltages

Single-Phase Supply					
Duty	Isolating				
50 Hz	110	115	220	230	240
60 Hz	110	115	220	230	240

Three-Phase Supply										
Duty	Isolating and Modulating								Isolating	
50 Hz	220	240	380	400	415	440	-	-	500	-
60 Hz	220	240	380	-	-	440	460	480	-	600

Note: Voltage tolerance ± 10%. Frequency Tolerance ± 5%.

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Spain
tel +34 943 316137
fax +34 943 223657
email Sales@centork.com

USA
tel +1 585 247 2304
fax +1 585 247 2308
email USASales@centork.com

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