



KEH Series
Electro Hydraulic Actuators



Quifer Actuators, sl



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KEH Series

General Description

Quifer Actuators KEH series go a step forward to the quarter turn Automation valves market. These electro hydraulic actuators are a safety and compact solution due to their new housing design where there is no need of tubing and hydraulic connections.

These actuators consist in a closed hydraulic loop driven by a motor and hydraulic pump that through electric and hydraulic devices guide the oil to the desired position. In case of fail of the power supply the actuator will move automatically to the safe position.

The KEH series is defined by a spring return pneumatic actuator with on/off and modular applications and is designed according ISO 5211.

There is also the explosion proof version with these actuators that allow them to be located in hazardous areas classified Zone 1, 2, 21 and 22.

The multiple options that the KEH allow to the customer to be able to size the actuator at his own needs adding more or less safety or control options

The range of the KEH products is so wide because use the standard rack and pinion pneumatic actuators KPM series that after few modifications can work with hydraulic oil and can arrive to torques up to 1800 Nm and also these units can be available for the scotch yoke actuators with torques up to 50.000 Nm.

Power supply can be under request and cover all the electrical scope (from 12 VDC to 400 VAC) and the local control of the actuator is always 24 VDC as standard.

For these reasons: safety, functionality, customization and the regular services of **Quifer Actuators**, the new electro hydraulic KEH series is an important and trustable option in the electro hydraulic actuators field.



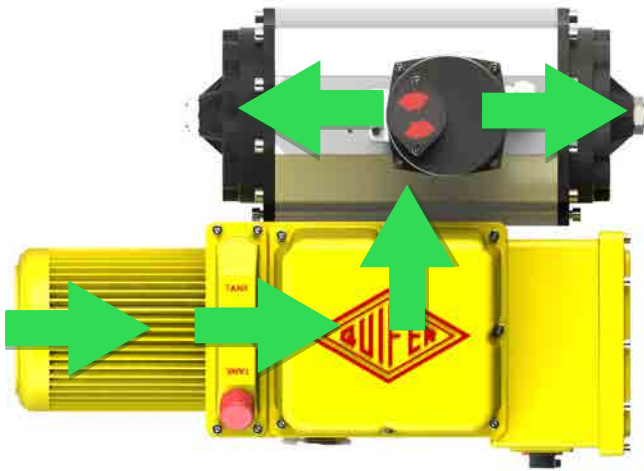
Functions

The basic function of the electro hydraulic fail safe actuators is to run the actuator electrically with a motor and hydraulic pump system to keep it in open position.

In case of failure of the power supply, the actuator automatically will go to the safe position.

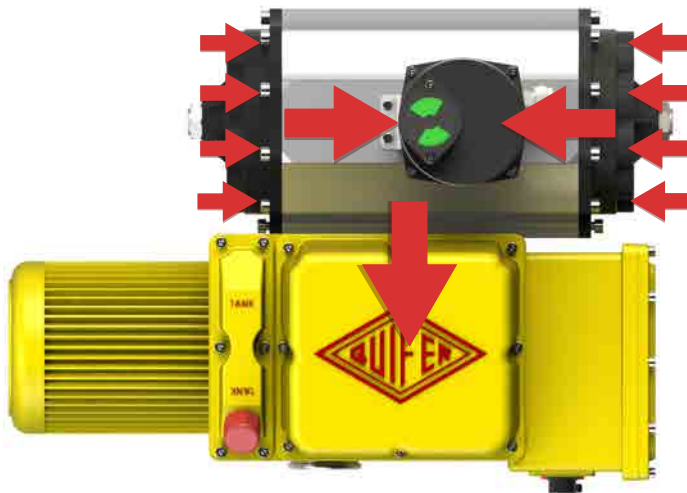
Below detailed the 2 actions of the actuator:

Power Supply Action



- Actuator is energized with electric supply and starts the motor that makes run the hydraulic pump.
- The oil is pumped to the actuator.
- When actuator arrives to the operation position, the motor stops and the actuator keeps the position.

Spring (FailSafe) Action:



- When actuator is de energized or the power supply fails, the springs of the actuator close the actuator.
- The oil turn back from the pistons chamber to the tank of the unit.
- When the actuator arrive to the operation position, a signal is given to the control that actuator is in the failsafe position

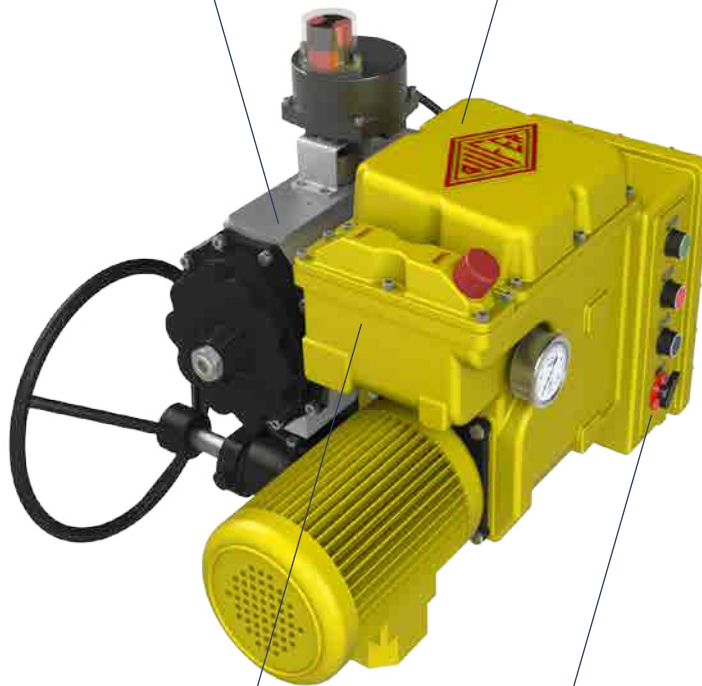
Specifications Of The KEH/KEXH Actuators

Actuator

- Rack and pinion actuator series KPM is used with the electro hydraulic unit.
- Actuator is specially designed to receive hydraulic oil from the electro hydraulic housing.
- Available from size KPM 030 till KPM 500.

Hydraulic Unit

- The hydraulic unit contains all the hydraulic devices of the control to make the actuator work properly
- Part of these devices is: Solenoid Valve, Hydraulic block, flow valves, pressure switches, etc.
- This part is completely covered to ensure to protect the devices against the environment and manipulations



Electro Hydraulic Housing

- The electro hydraulic housing connect the actuator with the unit without any wire or fitting
- The oil tank is in the unit with capacity to fill all sizes of actuators
- Motor and hydraulic pump are enclosed in the housing

Electric Unit

- The electric unit contains all the electric part of the KEH actuator.
- The actuator is wired with the electric line in this box.
- Available in Explosion proof Version
- Local control can be switched in this unit with push buttons or selector switch.



Standard Actuator Scope

Torques:	Maximum spring torque 1800Nm
Working pressure:	From 5 to 10 Bar
Supply:	Hydraulic Oil
Working temperature:	From -20 to +80°C
Rotation:	Anticlockwise in opening
Lubrication:	Lubricated for thir normal working life
Movement R&P	Rotation of 0° +2,5° and 0° -2,5° Rotation of 90°+2,5° and 90° -2,5°

According to

ISO 9001:2015
IEC 61508:2010 (SIL3)
LOM 10ATEX6092 X
European Pressure Equipment Directive 97/23/C

Technical Data

- ✓ Single acting actuators failure to fail position
- ✓ Compact actuator without hydraulic tubes
- ✓ Suitable for Zone 1, Zone 2, Zone 21 and Zone 22
- ✓ Hydraulic oil working fluid ISO viscosity grade 15-18
- ✓ Control box as standard 24 VDC or 110 VAC
- ✓ Anodized aluminum actuator body
- ✓ Nitrile seals as standard
- ✓ Main case painted in Ral 1017
- ✓ IP 66 protection

Options

- ✓ Low temperature application
- ✓ High temperature application
- ✓ Local panel with buttons or selector switch
- ✓ 4-20 mA modular drive
- ✓ Manual gearbox or manual hand pump
- ✓ 24VDC motor
- ✓ Available with Scotch Yoke actuators
- ✓ Fast closing time
- ✓ Special coating for corrosive environments

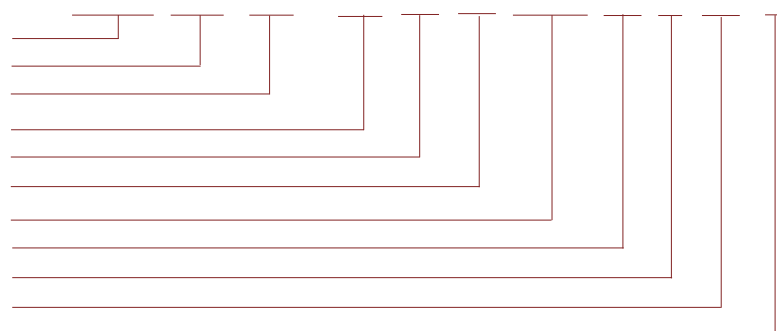
Actuator Selection

Electro Hydraulic Actuator Selection	
KE	Basic composition
Harzardous Area	
H	Actuator for safe area
XH	Explosion proof Actuator
Electric Power Supply	
XXXAC	VAC Motor power supply
XXXDC	VDC Motor power supply
0	Local control voltage
12	
24	
48	
Safety Pressure Switch	
0	Without safety pressure switch
P1	With safety pressure switch
Pressure Switch	
0	Without pressure switch
P2	With safety pressure switch
Electric Drive	
0	Basic electric drive
RY	Electric drive by relay with more fuctions
MOD	Electric drive with PCL for 4-20mA signal
Local Control Selection	
0	Without local control
S	Local control with selector OPEN- CLOSE- REMOTE
L	Local control unit with buttons OPEN - CLOSE - REMOTE/LOCAL
LR	Customized local control
0	Without lights
H	With lights
Manual override	
0	Without manual override
MH	Manual hand pump
MO	Declutchable gear box
Others	
0	No other options
YYY	Other options

Example

Electrohydraulic actuator for hazardous area
 Pneumatic actuator size KPM 100
 Power supply 380VAC
 Local control 24 DC
 With safety pressure switch
 With pressure switch
 Modular control for 4-24mA signal
 Without local control
 Without lights in local control
 With declutchable gearbox
 Without other options

KEXH - 100 - 380VAC24 - P1 - P2 - MOD - 00 - 0 - M0 - 0





Actuator basic composition (KEH)

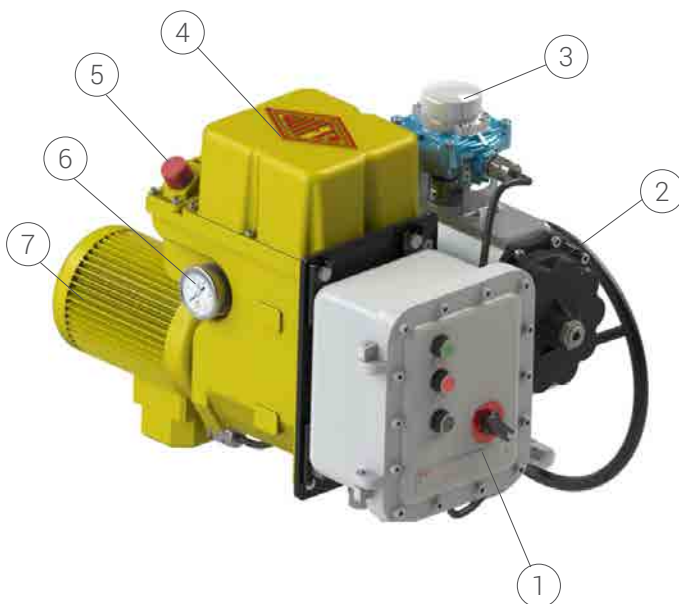
- Pneumatic actuator
- Motor and hydraulic pump
- Solenoid Valve hydraulic block and gauge
- Electro hydraulic unit with oil tank, wiring and cable glands
- Safety Valve
- Relief valve
- Limit switch box

Standard Version Bill Of Materials



Item n°	Description
1	Electric Box
2	Quifer standard actuator
3	Quifer standard limit switch
4	Hydraulic circuit
5	Tank oil intake
6	Gauge
7	Electric engine

Explosion Proof Version Bill Of Materials



Item n°	Description
1	Electric Box EJB
2	Quifer standard actuator
3	Explosion proof limit switch
4	Hydraulic circuit
5	Tank oil intake
6	Gauge
7	Electric engine

Torque Values

Actuator Size	Spring Return Torque (Nm)		Hydraulic torques (Nm) 8 bar	
	0°	90°	0°	90°
KEH-030	90	142	202	150
KEH-040	123	219	315	219
KEH-060	185	305	497	377
KEH-100	270	480	742	532
KEH-140	323	564	970	729
KEH-200	441	753	1332	1020
KEH-250	535	930	1718	1323
KEH-370	935	1776	3011	2170
KEH-500	1817	3429	4553	2941

Torque values are in Nm
Is recommended 25% of safety factor to size the actuator

Operating Time

Actuator Size	Oil Volume Per Stroke	Opening Time (sec)*	Closing Time (sec)*
KEH-030	1,12	10	4
KEH-040	1,72	14	6
KEH-060	2,64	20	9
KEH-100	3,93	22	14
KEH-140	4,71	26	17
KEH-200	6,29	35	22
KEH-250	7,66	38	23
KEH-370	14,15	45	33
KEH-500	21,00	66	49

* Fast operator option available under request



Electric Data

	Motor Power Supply (KW)	400V 3-Phase	220V 3-Phase	110V 3-Phase	24V DC
KEH 030 - KEH 140	0,44	YES	YES	YES	YES
KEH 200 - KEH 500	0,66	YES	YES	YES	YES
Local Control		NO	NO	YES	YES
Solenoid Valve		NO	YES	YES	YES
Limit Switch Box		2Xspd CONTACT 24 VDC - 380 VAC			
Pressure Switch		2Xspd CONTACT 24 VDC - 380 VAC			

Standard features | For other options contact us

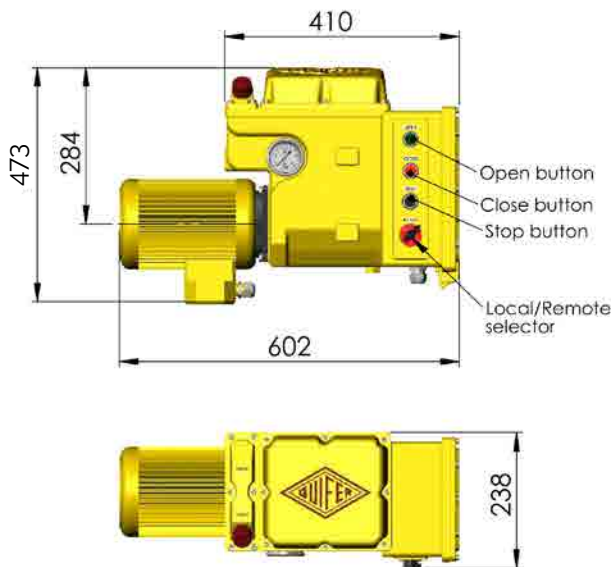
Hydraulic Data

Pump Type	Gear pump
Pump Pressure	Pre-adjusted at 8 bar
Loop Pressure	Min pressure: 5 bar - Max pressure: 12 bar
Oil Type	ISO viscosity, grade 15-18
Temp. Range	From -20 °C to +85 °C

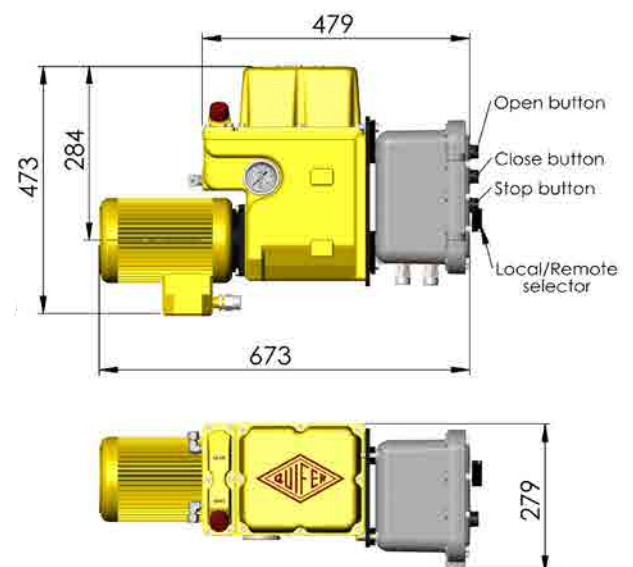
Standard features | For other options contact us

Dimensions

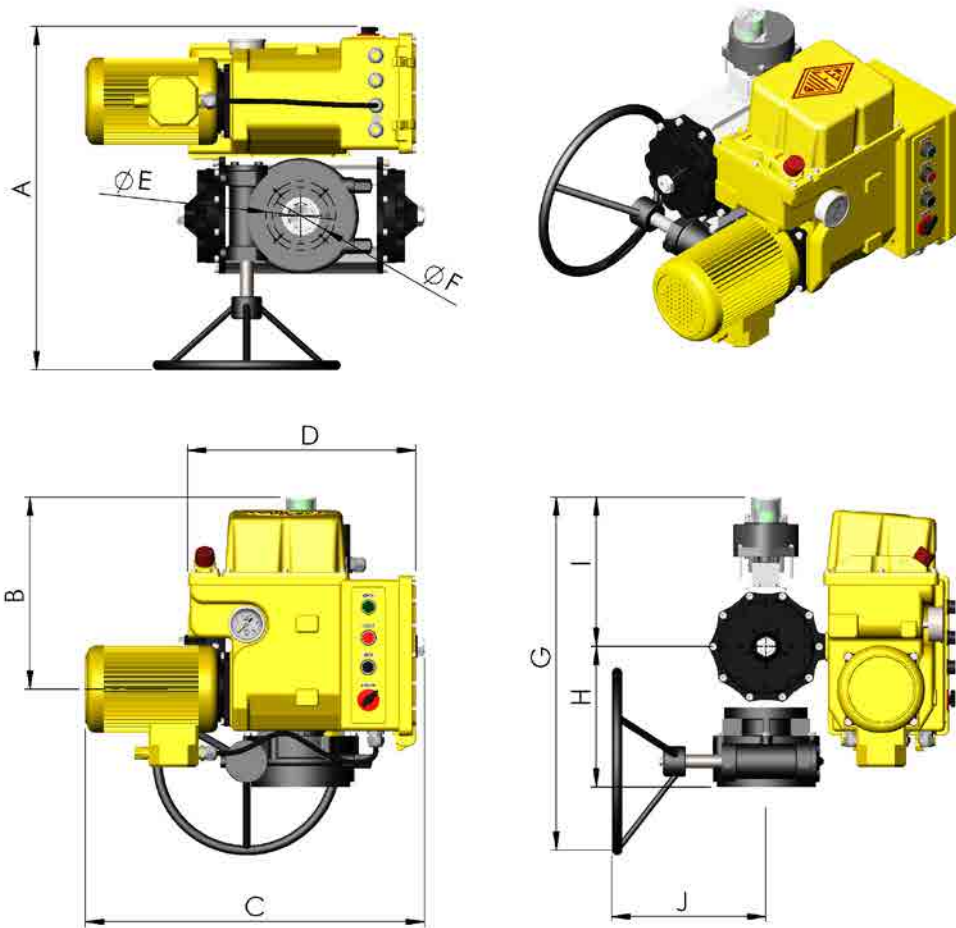
Standard Version



Explosion Proof Version



General Dimensions Standard KEH With Manual Override

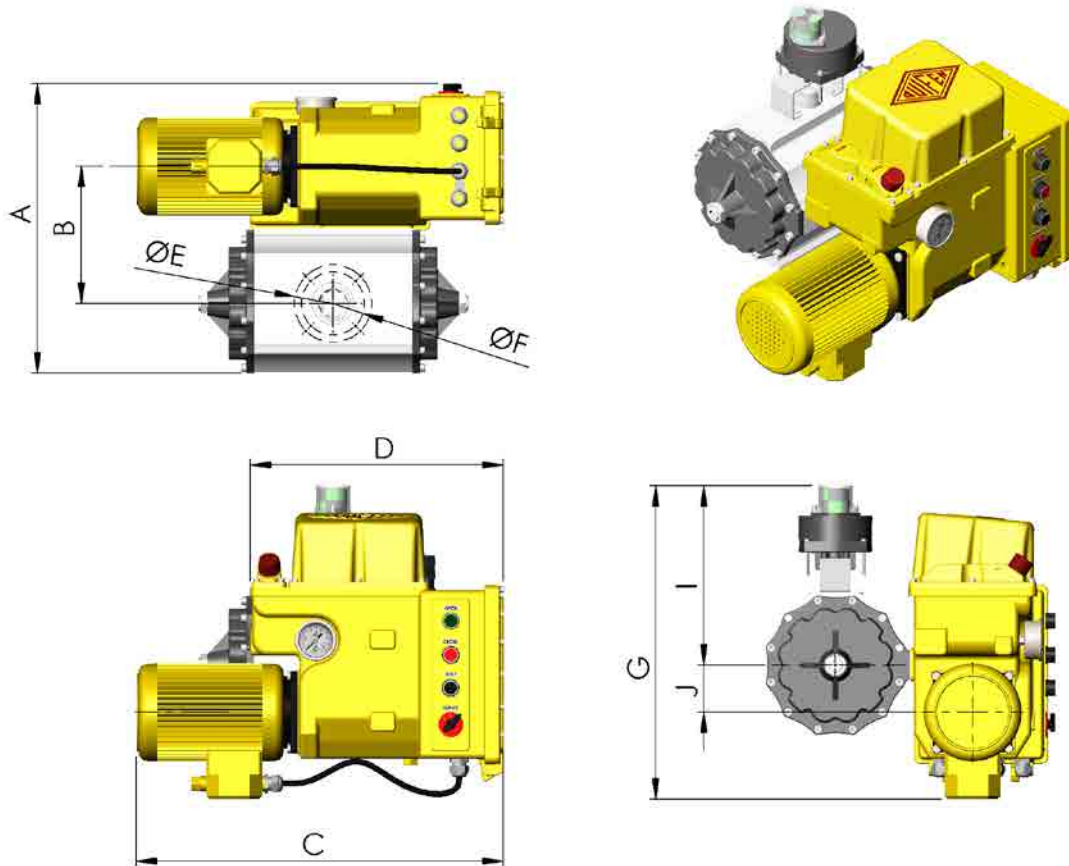


	A	B	C	D	E	F	G	H	I	J	ISO5221	ALTER. *	RKS
KEH-30	564	320	594	410	102	70	534	198	243	245	F07	F10	45
KEH-40	564	320	594	410	102	70	534	198	243	245	F07	F10	45
KEH-60	564	337	594	410	102	70	565	212	260	245	F07	F10	45
KEH-100	618	337	594	410	140	125	635	253	269	277	F12	F14	75
KEH-140	633	345	610	410	140	125	670	266	290	277	F12	F14	75
KEH-200	633	366	638	410	140	125	670	266	290	277	F12	F14	75
KEH-250	789	401	638	410	165	140	866	344	323	386	F16	F14	125
KEH-370	789	401	715	410	165	140	866	344	323	386	F16	F14	125
KEH-500	835	435	800	410	165	140	978	402	377	409	F16	F14	400

All dimensions are in mm | All dimensions are without brackets | Drawing is not scaled



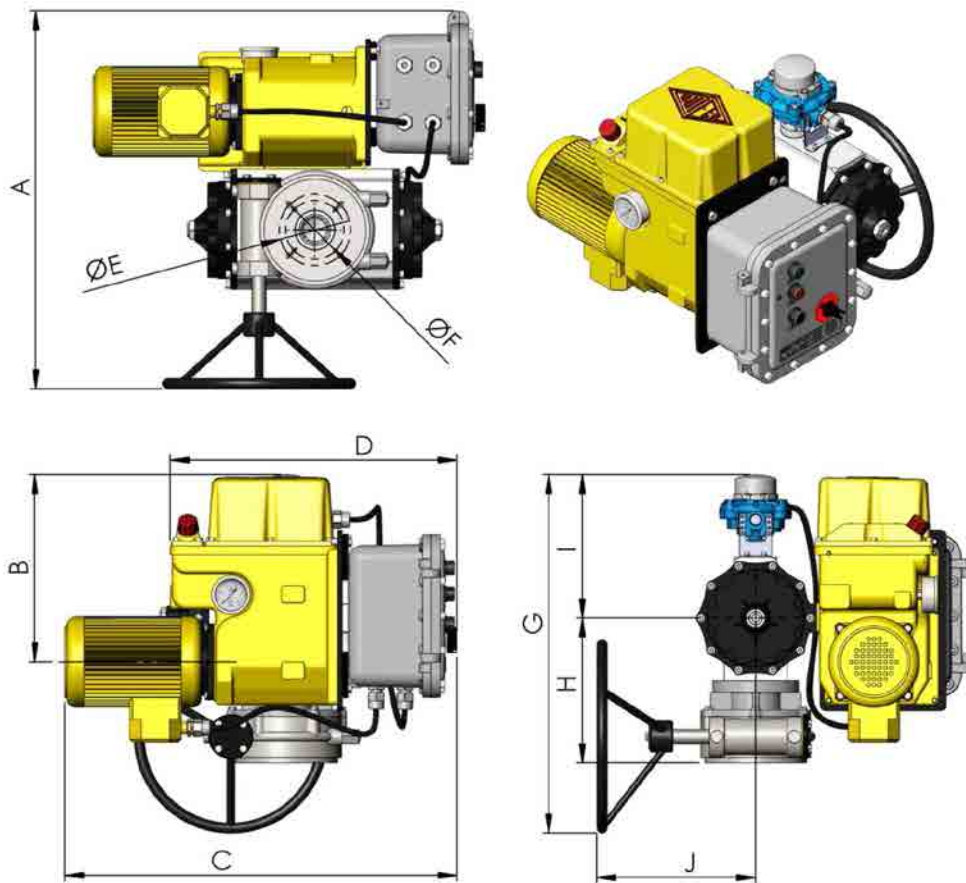
General Dimensions Standard KEH Without Manual Override



	A	B	C	D	E	F	G	J	I	ISO5221	ALTER. *
KEH-30	402	185	594	410	102	70	460	77	243	F07	F10
KEH-40	402	185	594	410	102	70	460	77	243	F07	F10
KEH-60	433	207	594	410	102	70	477	77	260	F07	F10
KEH-100	444	207	610	410	125	102	485	77	269	F10	F12
KEH-140	469	222	638	410	125	102	506	77	290	F10	F12
KEH-200	467	222	638	410	140	-	506	77	290	F14	-
KEH-250	542	256	594	410	140	-	541	77	323	F14	-
KEH-370	542	256	715	410	165	-	541	77	323	F16	-
KEH-500	641	307	800	410	165	-	593	77	377	F16	-

All dimensions are in mm | All dimensions are without brackets | Drawing is not scaled

General Dimensions Standard KEHX With Manual Override

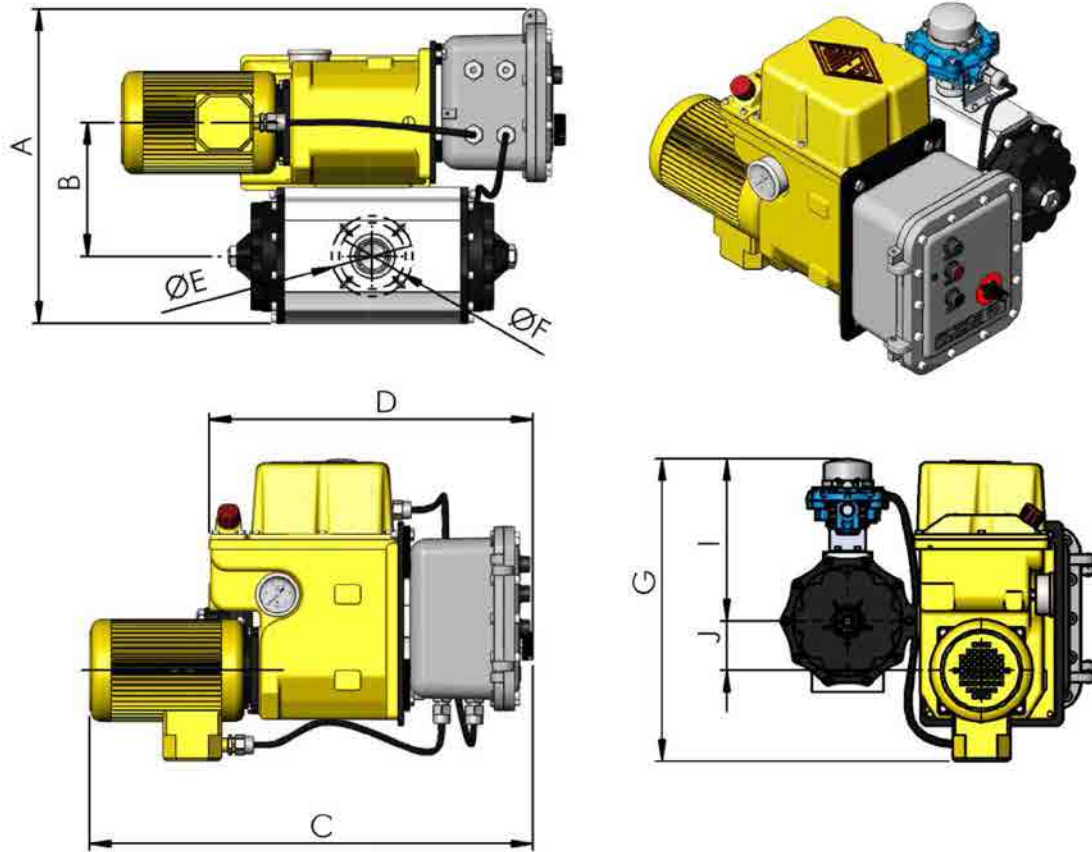


	A	B	C	D	E	F	G	H	I	J	ISO5221	ALTER. *	RKS
KEH-30	560	323	683	500	102	70	537	198	242	245	F07	F10	45
KEH-40	560	323	683	500	102	70	537	198	242	245	F07	F10	45
KEH-60	560	323	683	500	102	70	547	212	242	245	F07	F10	45
KEH-100	659	323	683	500	140	125	626	253	250	277	F12	F14	75
KEH-140	674	340	683	500	140	125	651	267	262	277	F12	F14	75
KEH-200	674	340	683	500	140	125	653	267	263	277	F12	F14	75
KEH-250	817	372	683	500	165	140	832	345	295	386	F16	F14	125
KEH-370	817	372	715	500	165	140	832	345	295	386	F16	F14	125
KEH-500	876	424	800	500	165	140	950	345	349	409	F16	F14	400

All dimensions are in mm | All dimensions are without brackets | Drawing is not scaled



General Dimensions Standard KEHX Without Manual Override



	A	B	C	D	E	F	G	J	I	ISO5221	ALTER. *
KEH-30	444	185	683	500	102	70	460	77	247	F07	F10
KEH-40	444	185	683	500	102	70	460	77	247	F07	F10
KEH-60	474	207	683	500	102	70	460	77	247	F07	F10
KEH-100	486	207	683	500	140	102	467	77	250	F12	F12
KEH-140	510	222	683	500	140	102	480	77	262	F12	F12
KEH-200	508	222	683	500	140	-	480	77	263	F12	-
KEH-250	584	256	683	500	165	-	512	77	295	F16	-
KEH-370	584	256	715	500	165	-	512	77	295	F16	-
KEH-500	682	307	800	500	165	-	564	77	349	F16	-

All dimensions are in mm | All dimensions are without brackets | Drawing is not scaled

References





Quifer Actuators, SL. is Spanish producer of pneumatic and hydraulic actuators since 1975. Quifer Actuators has a big experience manufacturing, rack and pinion aluminum pneumatic actuators, rotary ductile Iron pneumatic actuators, scotch yoke pneumatic actuators, scotch yoke hydraulic actuators, electro-hydraulics actuators, manual gearboxes, declutch-able gearboxes limit switches, couplings and accessories for any a quarter turn valves as plug valves, ball vales or butterfly valves. Quifer Actuators has a design technician department with extensive experience and has over 30 years creating its own products and evolving existing products

