



Keeping the World Flowing
for Future Generations

IQTF actuators benefit from the advanced design of the IQ range multi-turn and part-turn actuators, resulting in a lightweight, compact and resilient actuator designed for long life applications in the field.

IQTF provides the reliability, accuracy and high resolution movement required in arduous applications associated with oil and gas field and general process control.

IQTF actuators have low output speeds for increased positional accuracy and are designed for limited turn or stroke valve applications such as control valves. IQTF is available with output options for rising stem linear valves, valves requiring a multi-turn output actuator and also part-turn valves requiring more than 90° such as 180° and 270° diverter valves.

- › Explosionproof to international standards
- › Water ingress protection, not reliant on terminal cover or cable gland sealing – double-sealed to IP66/68 7 m for 72 hours
- › Rapid and secure commissioning even without power, via non-intrusive and intrinsically safe *Bluetooth*® setting tool
- › Safe, motor-independent, handwheel operation available at all times
- › Continuous position tracking at all times, even without power
- › Detailed trend analysis and diagnostic data available for asset management
- › Oil bath lubrication provides extended life and the ability to mount in any orientation
- › Real time valve and actuator performance information viewable on screen
- › Backed by Rotork Site Services (RSS)



IQTF Range

Full-turn Intelligent Electric Choke
and Control Valve Actuators

IQTF-A optimised for rising stem applications

IQTF-B optimised for non-rising stem applications

IQTF-L optimised for direct drive linear applications

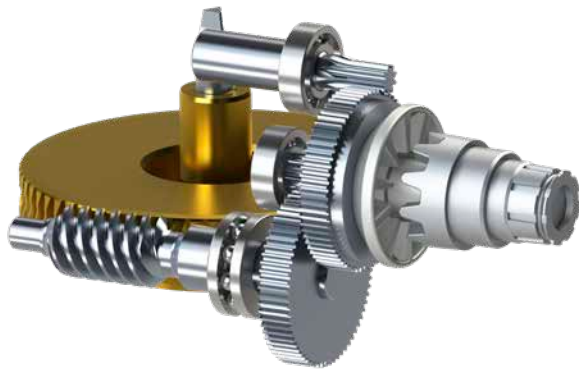


IQTF Range

Performance

- Adjustable speed, including slow mode for accurate positioning
- High accuracy and high resolution micro-step movement
- Adjustable torque/thrust protection
- Extended duty cycle for modulating applications
- 1,800 starts/hour at 75% rated torque/thrust
- 0.1% resolution
- 0.3% accuracy

Overall accuracy and resolution will be a function of the control method used and valve characteristics.



IQTF full turn gear wheel and drive train

The IQTF multi-turn 360° gear wheel provides multi-turn, self locking operation for limited turns applications.

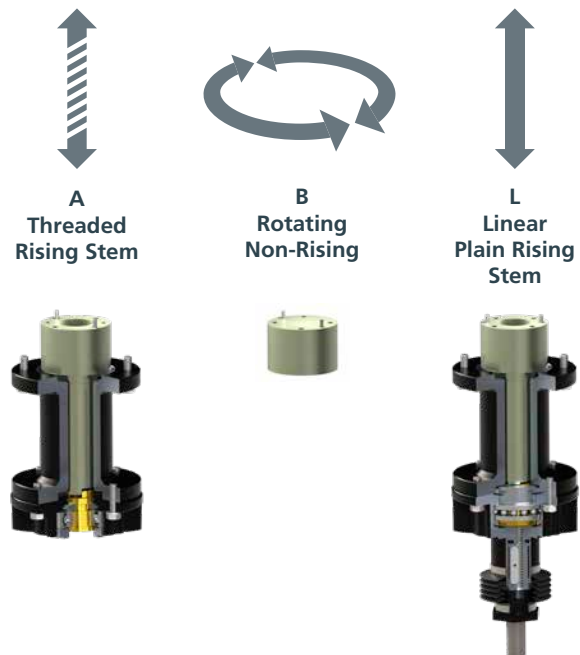
Drive Outputs

To meet all the requirements of choke and control valve drive mechanisms, three drive outputs are available conforming to actuator interface standards ISO 5210 for multi-turn and linear output drives.

- **A – Threaded rising stem; torque and thrust**
- **B – Rotating non-rising; torque only**
- **L – Linear plain rising stem; thrust only**

Drive outputs A, B and L have been extensively tested and have a long installed pedigree with IQ actuators. Optimised for choke and control application, they provide reliable and flexible drives for all valve types.

The performances for the IQTF choke and control actuator with drives A, B and L are shown on the following pages. Where higher operating times or longer strokes are required, please refer to Rotork.



Performance and Mechanical Data

IQTF - Performance Data

Actuator	IQTF50	IQTF100	IQT125 IQTF125 IQTM125	IQT250 IQTF250 IQTM250	IQT500 IQTF500 IQTM500	IQT1000 IQTF1000 IQTM1000	IQT2000 IQTF2000 IQTM2000	IQT3000 IQTF3000 IQTM3000
	Torque ²		Nm	lbf.ft				
	50	100	125	250	500	1,000	2,000	3,000
	37	74	92	185	369	738	1,476	2,214

Modulating Torque - IQTM and IQTF only

	25	50	63	125	250	500	1,000	1,000
	19	37	46	93	185	369	738	738

Operating Time (seconds) - IQT and IQTM only

90° Min	-	-	5	8	15	30	60	60
90° Max	-	-	20	32	60	120	240	120

Operating Speed - IQTF only

rpm	2.5 - 10	1.5 - 6	0.75 - 3	0.5 - 1.88	0.25 - 1	0.125 - 0.5	0.125 - 0.5	0.125 - 0.5
max turns, min rpm	22	22	12	7.5	3.75	1.88	1.88	1.88
max turns, max rpm	22	22	22	22	15	8	4	4

IQT/IQTM/IQTF actuator output torque is configurable to 40 - 100% of seating torque.
Operating speed of IQT/IQTM/IQTF 24 VDC actuators will vary with load.

IQTF L - Performance Data

Actuator size	Stem Lead	Rated Thrust		Max Stroke		Max Speed	Min Speed
	mm	kN	lbf	mm	in	mm/sec	mm/sec
IQTF50 L	3	23.45	5,271	66	2.60	0.50	0.13
	5	20.88	4,695	110	4.33	0.83	0.21
	7	18.82	4,232	153	6.02	1.17	0.29
IQTF100 L	3	46.90	10,543	66	2.60	0.30	0.08
	5	41.77	9,389	110	4.33	0.50	0.13
	7	37.65	8,463	153	6.02	0.70	0.18
IQTF125 L	5	37.89	8,518	110	4.33	0.25	0.06
	7	35.10	7,891	153	6.02	0.35	0.09
	10	31.61	7,107	153	6.02	0.50	0.13
	15	27.03	6,077	153	6.02	0.75	0.19
IQTF250 L	5	75.78	17,036	110	4.33	0.16	0.04
	7	70.21	15,783	153	6.02	0.22	0.05
	10	63.23	14,214	153	6.02	0.31	0.08
	15	54.06	12,154	153	6.02	0.47	0.12

In accordance with ISO 22153, thrust is calculated using a constant value coefficient of friction (CoF). CoF can vary with load, speed and lubrication.
Refer to PUB002-065 for the recommended lubrication routine.

IQTF - Mechanical Data

Actuator	IQTF50	IQTF100	IQTF125 IQTF125 IQTM125	IQTF250 IQTF250 IQTM250	IQTF500 IQTF500 IQTM500	IQTF1000 IQTF1000 IQTM1000	IQTF2000 IQTF2000 IQTM2000	IQTF3000 IQTF3000 IQTM3000
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Approximate weight

kg	22	22	22	22	22	37	37	39
lbs	49	49	49	49	49	82	82	86

Handwheel details

Turns for 90°	26	26	88	88	88	83	83	83
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Type B Coupling - Torque only

Bore & key max mm	F05*	F07*	F10	F05*	F07*	F10	F05*	F07*	F10	F07*	F10	F10	F12	F14	F14	F16
Bore & key max in	FA05*	FA07*	FA10	FA05*	FA07*	FA10	FA05*	FA07*	FA10	FA07*	FA10	FA10	FA12	FA14	FA14	FA16
Shaft height max mm	14	19	32	14	19	32	14	19	32	19	32	32	41	41	46	
Shaft height max in	0.56	0.75	1.25	0.56	0.75	1.25	0.56	0.75	1.25	0.75	1.25	1.25	1.62	1.62	1.81	
Square AF max mm	22	28	42	22	28	42	22	28	42	28	42	42	60	60	60	
Square AF max in	0.87	1.1	1.65	0.87	1.1	1.65	0.87	1.1	1.65	1.1	1.65	1.65	2.36	2.36	2.36	
Shaft height max mm	65	65	45	65	65	45	65	65	45	65	45	45	65	65	80	
Shaft height max in	2.56	2.56	1.77	2.56	2.56	1.77	2.56	2.56	1.77	2.56	1.77	1.77	2.56	2.56	3.15	

* Optional flanges F05, FA05, F07 and FA07 use a base adapter plate. Required base type must be specified.

Type A Coupling - Torque and Thrust

ISO 5210	F10	F10	F14	F14
MSS SP-101	FA10	FA10	FA14	FA14
Thrust rating kN	44	44	100	100
Thrust rating lbf	10,000	10,000	22,480	22,480
Max rising stem diameter mm	32	32	44	44
Max rising stem diameter in	1.25	1.25	1.7	1.7
Extra weight kg	10	10	25	25
Extra weight lbs	22	22	55	55



Type L Coupling - Linear Thrust

ISO 5210	F10	F10	F14	F14
Coupling	M20 x 1.5	M20 x 1.5	M36 x 3	M36 x 3
Extra weight kg	10	10	25	25
Extra weight lbs	22	22	55	55

The linear drive coupling is available with an additional yoke if required. F10 linear drive with yoke is 13 kg (28.7 lbs). F14 linear drive with yoke is 33 kg (72.8 lbs).

A full listing of the Rotork sales and service network is available on our website.

www.rotork.com

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