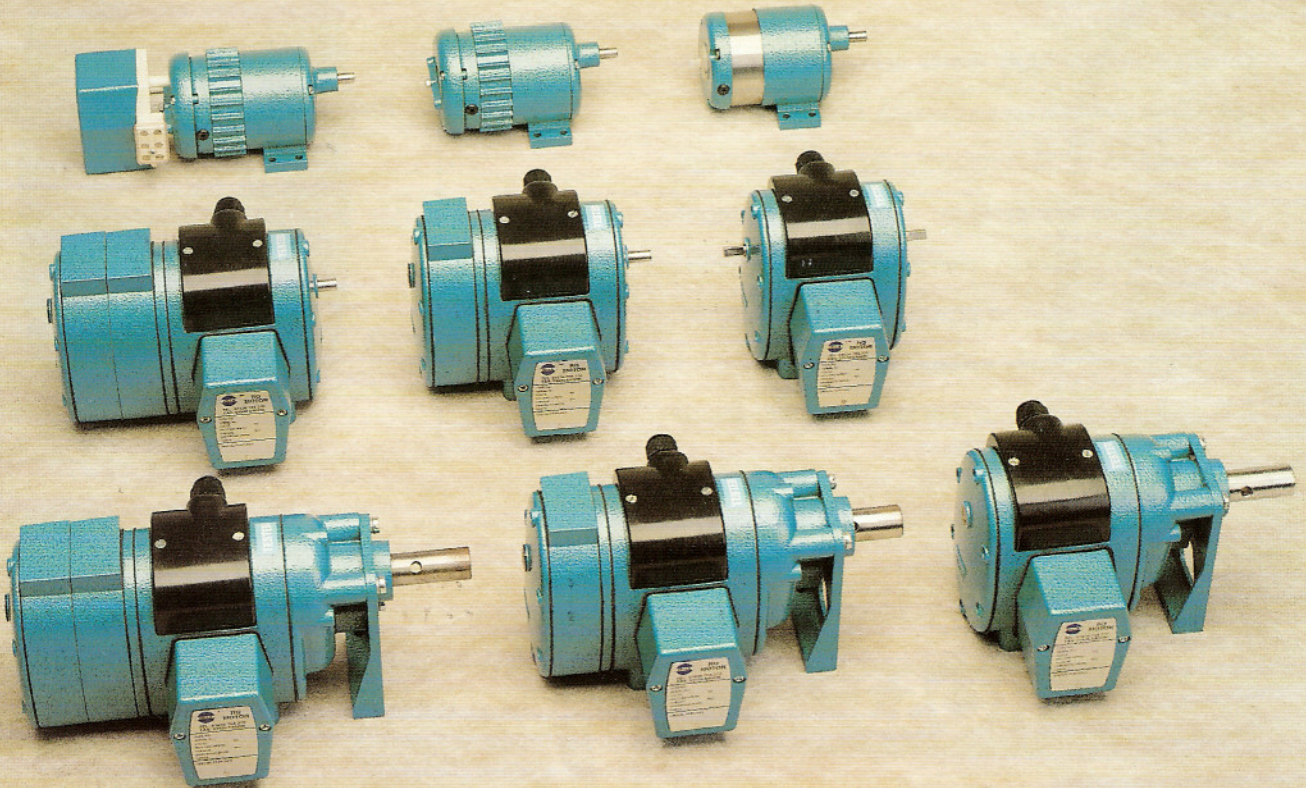
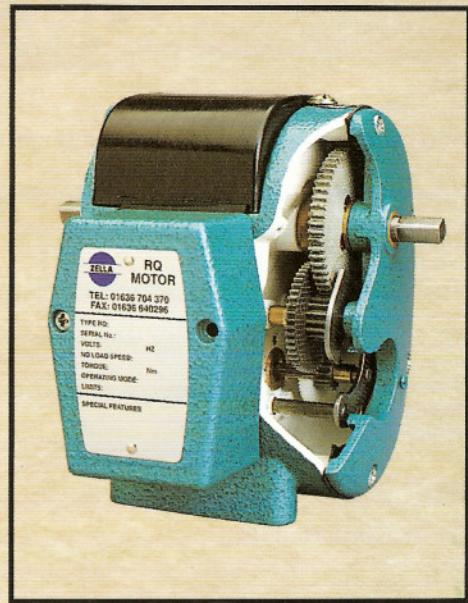


Small • Geared • Reversible Actuating • Positioning • Motors

This unique range of reversible geared motors provides powerful, compact units in which rotation can be controlled in numerous ways to meet widely differing design needs. Within three basic types there is an impressive variety of final shaft speeds and torques, positioning and feedback facilities, end-of-travel and programme switching. 'RQ' motors are ideal for all kinds of control and automation applications — particularly where pre-set or remotely controllable positioning is important. All models offer a choice of operating voltage. In short, the rugged and reliable 'RQ' motors bridge the gap between the basic fractional horse power unit and expensive servo motors.



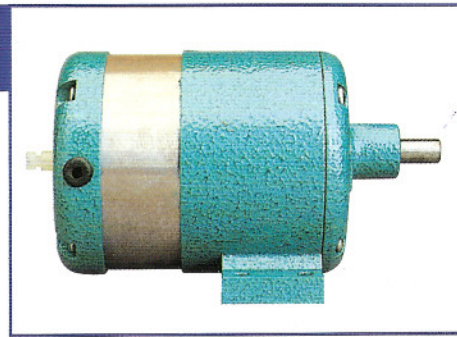
ZELLA

Instrumentation & Control Ltd

RQ MOTOR RANGE

RQH

The 'RQH' motor is a relatively light duty geared motor for continuous rotation over speeds ranging from 1.8 to 113 revolutions per minute and up to 46 kg.cm torque. It is available with capacitor mounted on the motor or supplied separately, with or without fan and cooling ring, and can be fitted with alternative output shafts.



RQR

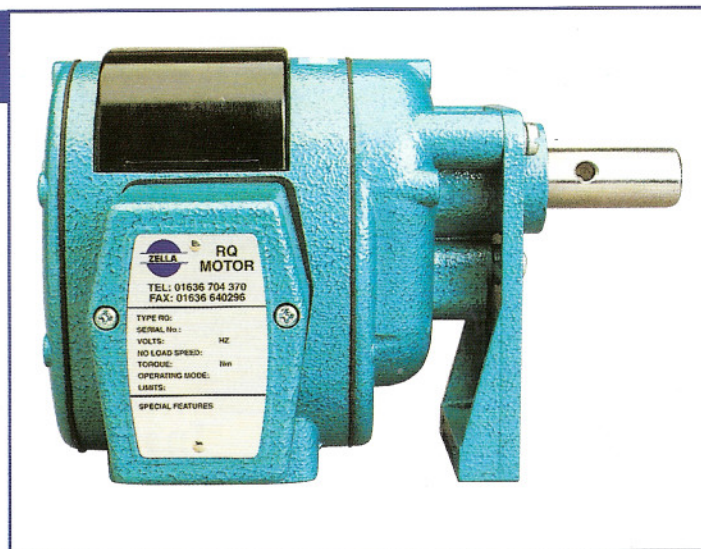
The medium-duty 'RQR' motor delivers torque up to 104 kg.cm and operates at speeds from 60 minutes per revolution to 32 revolutions per minute through alternative gear arrangements. It can have an integral or separate capacitor, alternative output shafts, built-in limit switches to provide for pre-set angular rotation, and adjustable auxiliary switches.

A feedback potentiometer can be built in for remote positional control.



RQ53

The 'RQ53' is a heavier-duty motor for high torque at low speeds. With similar optional features to the 'RQR', it can take as long as four hours to complete one revolution with a torque of 230 kg.cm. Crank arms available for both the 'RQ53' and the 'RQR' make them ideal for positioning dampers etc.



General Specification - 'RQH'

Speeds	113 RPM down to 1.8 RPM
Torque available	Up to 46kg. cm.
Electrical Supplies	24, 110* or 200/250* volts AC 50 or 60 Hz. *Available for tropical duty
Power Consumption	15 to 17 VA Standard motor; 30 to 34 VA High Torque motor
Insulation	Class E (BS 2757 : 1956)
Recommened normal ambient temp. limits	34°F to 120°F (1°C to 49° - 51°C) For tropical duty: 34°F to 160°F (1°C to 71°C)
Testing standards	BS 170 : 1962 on every motor
Output shaft	Ground stainless steel
Capacitor	Separate: all motors, or built-in: all except those without fan or for 50V motors
Lubricator	Shaft bearings: self lubricated sintered bronze. Gearbox: grease-packed for life
Weight (approx)	1.4kg

General Specification - 'RQR'

Speeds	32 RPM down to 60 MPR
Torque available	Up to 104kg. cm.
Electrical Supplies	24, 110* or 200/250* volts AC 50 or 60 Hz. *Available for tropical duty
Power Consumption	15 to 17 VA Standard motor; 30 to 34 VA High Torque motor
Feedback potentiometer (optional)	135 ohm x 4 watt on motors with 160° travel and 1/4 in. sq. final shaft. Also available for 90° or 180° travel and certain multi-turn versions with either 5/16 dia or 1/4 sq shaft
Insulation	Class E (BS 2757 : 1956)
Recommened normal ambient temp. limits	34°F to 120°F (1°C to 49° - 51°C) For tropical duty: 34°F to 160°F (1°C to 71°C)
Testing standards	BS 170 : 1962 on every motor
Output shaft	Ground stainless steel
Limit switch accuracy	±5° of rotation on factory-set switches
Capacitor	Built-in: all motors or separate: all motors
Lubricator	Shaft bearings: self lubricated sintered bronze. Gearbox: grease-packed for life
Weight (approx)	2kg

General Specification - 'RQ53'

Speeds	8 RPM down to 240 MPR
Torque available	Up to 230kg. cm.
Electrical Supplies	24, 110* or 200/250* volts AC 50 or 60 Hz. *Available for tropical duty
Power Consumption	15 to 17 VA Standard motor: 30 to 34 VA High Torque motor
Feedback potentiometer (optional)	135 ohm x 4 watt on motors with 160° travel Also available for 90° or 180° travel and certain multi-turn versions with 3/4" dia shaft.
Insulation	Class E (BS 2757 : 1956)
Recommened normal ambient temp. limits	34°F to 120°F (1°C to 49° - 51°C) For tropical duty: 34°F to 160°F (1°C to 71°C)
Testing standards	BS 170 : 1962 on every motor
Output shaft	Ground stainless steel
Limit switch accuracy	±5° of rotation on factory-set switches
Capacitor	Built-in: all motors or Separate: all motors
Lubricator	Shaft bearings: self lubricated sintered bronze. Gearbox: grease-packed for life
Weight	2.9kg

Operating Modes - RQH



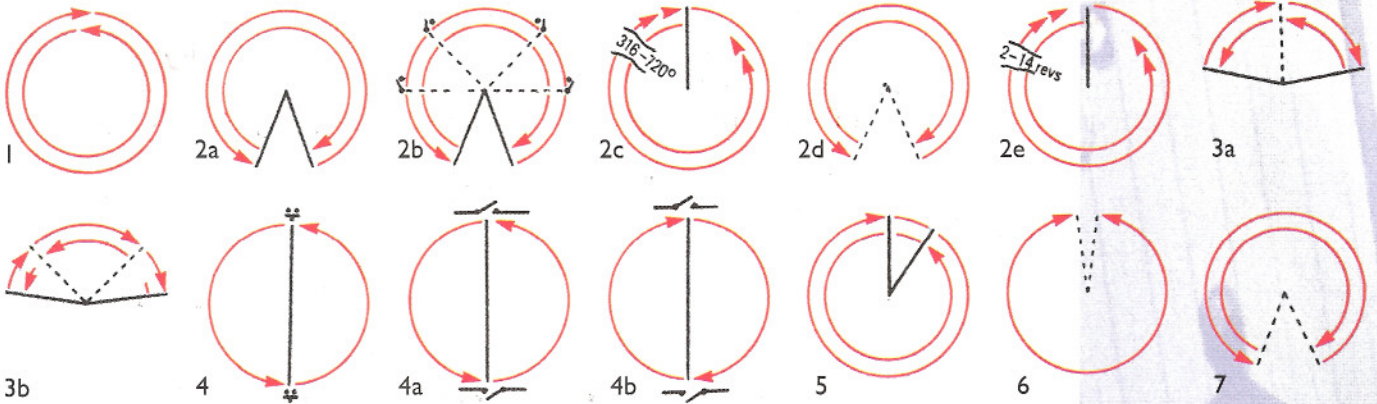
Key to Operating Modes

1. Continuous rotation motor (reversible).
2. Limited rotation motor (reversible).
 - (a) Fixed limits up to 315°.
 - (b) Fixed limits upto 315C, and up to four auxiliary switches, all adjustable.
 - (c) Fixed limits, between 316° and 720°.
 - (d) Adjustable limits, up to 315°.
 - (e) Adjustable limits, between two and fourteen revolutions.
3. Limited rotation, switched position motor (reversible).
 - (a) Fixed limits between 10° and 160°, one intermediate adjustable position.
 - (b) Fixed limits between 20° and 160°, two intermediate adjustable positions.
4. Half-revolution, self-completing motor (non-reversible). Only a starting signal is required.
- 4a./4b. Half-revolution,, (non-reversible).
5. One revolution, self-completing motor (reversible). Only a start-ing signal is required. Index points are set 35° apart.
6. Oscillating motor. Oscillation adjustable up to 350°.
7. Limited-Rotation motor fitted with changeover limit switches for remote control positional proving circuit or sequence control facility.

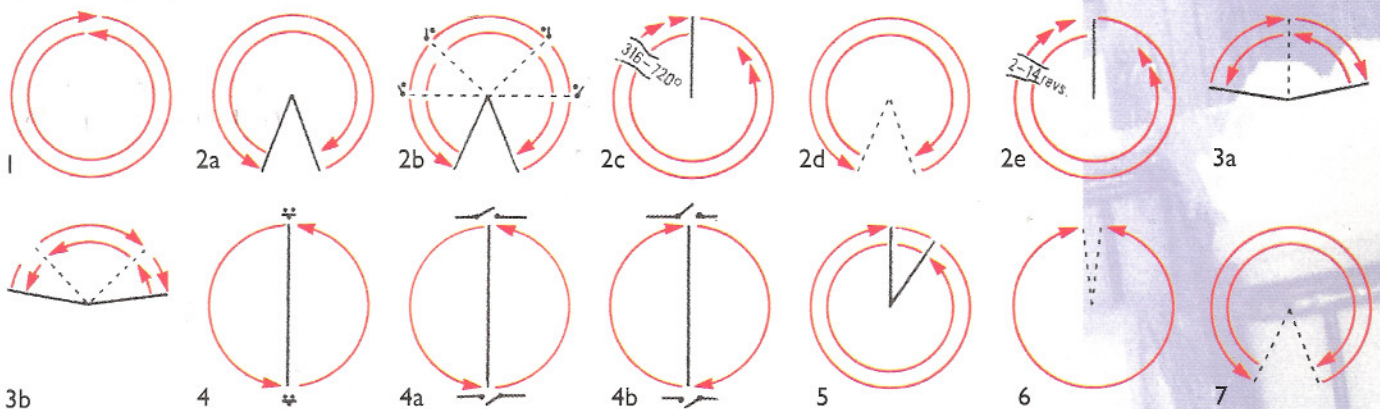
NOTE: The 'RQR' with 32 r.p.m. no-load speed cannot be supplied as a limited-rotation motor.

NOTE: When push-button is used for mode 4 it must be of the non-shorting type.

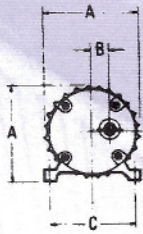
Operating Modes - RQR



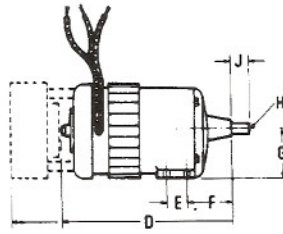
Operating Modes - RQ53



RQH dimensions

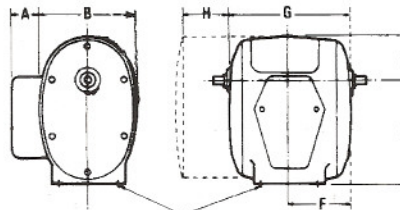
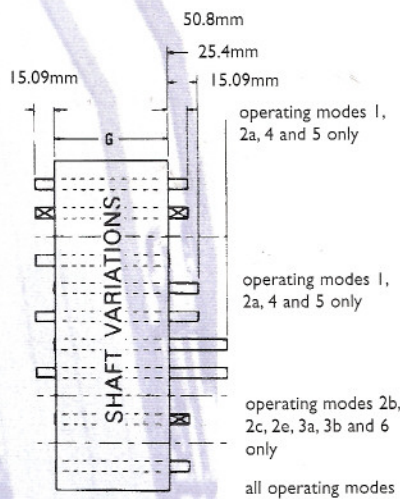


Four Fixing holes
5.5mm. dia



	mm	
A	77.8	
B	13.5	
C	65.1	
D	min. with integral capacitor max. with integral capacitor	175.4 188.1
D	with separate capacitor, with fan	128.6
D	with separate capacitor, without fan	115.9
E		19.1
F		32.5
G		40.1
H	(dia.)	7.9
J	(round shaft)	12.7
	or	25.4
	or	50.8
H	(square)	6.3
J	(square shaft)	12.7

RQR dimensions



4 Fixing holes M6x10mm deep

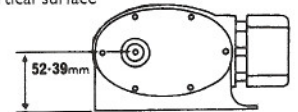
All holes 7.1mm dia.

□ All round shafts 7.9mm dia.

⊠ All square shafts 6.35mm Sq.

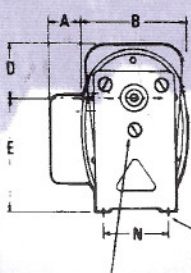
RQR with horizontal mounting

Cadium plated steel brackets also available, horizontal mounting or against a vertical surface



	mm	
A	min. with integral capacitor max. with integral capacitor	28.6 41.3
B		84.1
D	max.	44.4
E		88.9
F		51.6
G		103.2
H	for operating modes 2b, 2c, 2d, 2e, 3a, 3b and 6 only	28.6
H	for motors with feed-back potentiometers	57.1

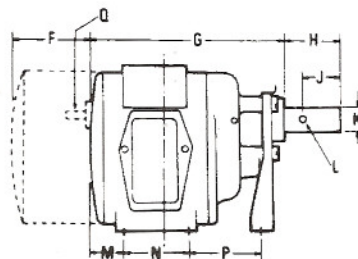
RQ53 dimensions



6 Fixing holes M6x10mm deep

3 Holes M6x12mm. Full thread on 54mm P.C.D.

All holes 7.1mm dia.



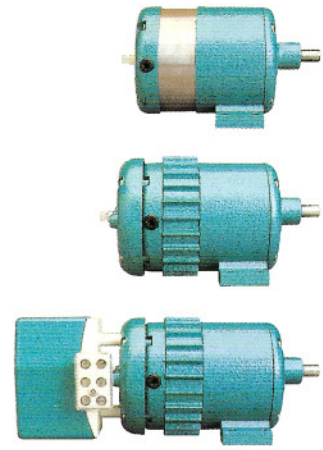
	mm	
A to E inclusive	As 'RQR'	
F	for operating modes 2b, 2c, 2d, 2e, 3a, 3b and 6 only	28.6
F	for motors with feed-back potentiometers	57.1
G		152.4
H		44.4
J		30.2
K	(dia.)	19
L	(dia.)	6.4
M		26.2
N		50.8
P		55.6
Q	7.9mm. dia. x25.4mm: or 50.8mm. long-optional for operating modes 1, 2a, 4 and 5 only	

Magnetic Brakes - All Motors

Any 'RQ' can be fitted with a magnetic brake to give a positive stop with minimum overrun or run-back. The following 'RQR' and 'RQ53' variants must have magnetic brakes to avoid the possibility of limit-switch overrun: (a) limited-rotation motor, no-load speed 3 r.p.m. or over; (b) limited-rotation multiposition motor, no-load speed 1 r.p.m. or over.

The brake pattern incorporated depends on whether the motor is to be mounted with: (a) output shaft horizontal; (b) output shaft vertical, gearbox up; or (c) output shaft vertical, gearbox down.

Note: The gearbox is at the output shaft end of the 'RQH' and the 'RQ53'. The diagram shows its location on the 'RQR'.



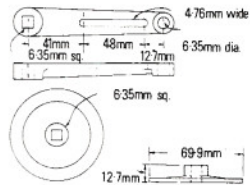
An 'RQH' can give you continuous or intermittent rotation in either direction. It is small—can be smaller without its fan, if you are providing external cooling facilities—even smaller without its cooling ring, if you don't need to run it more than 45 minutes in each hour.

You can choose from various output shaft arrangements, speeds, torques and voltages. Braking may be incorporated and it can be tropicalised. A thermal cut-out, set at 50°C (122°F), can be fitted internally if required.

Altogether—A MULTIPLICITY OF MOTORS

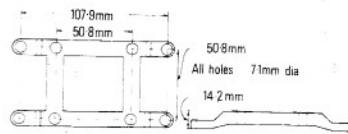
Crank Arm & Driving Disk

If linear motion is required, 'RQR' motors with square shaft can be fitted with a crank arm or a driving disc. Power off-take from the crank arm is from a slot or a hole at the end; the driving disc is suitable for drilling at any desired position.



Baseplate

This can be provided for use where the motor is to be mounted on a surface to which there is no access from the back.



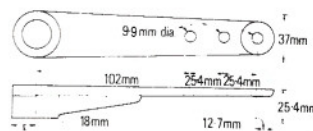
An 'RQR' can give you fixed or adjustable end of travel limits, auxiliary switches to stop the motor at intermediate positions which you can adjust, programme switches which you can use to control external circuits, a built-in potentiometer for control feedback purposes, plus a choice of rotational features, output shaft arrangements, speeds, torques and voltages. Braking may be incorporated and it can be tropicalised.

A thermal cut out set at 50°C (122°F) can be fitted internally if required.

Altogether—A MULTIPLICITY OF MOTORS

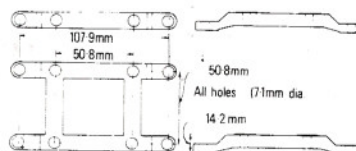
Crank Arm

If linear motion is required, 'RQ53' motors can be fitted with a crank arm. Three drilled holes are provided for power off-take.



Baseplate

This can be provided for use where the motor is to be mounted on a surface to which there is no access from the back.



An 'RQ53' can give you similar switching and rotational features to the 'RQR'—but a great deal more power—up to 200 lb in torque within its six or so inches of length. That's why there's a bigger output shaft with a 1/4 in. drilled hole for pinning. If you don't require auxiliary switches or a feedback potentiometer, you can have the option of an additional smaller output shaft at the other end. A thermal cut out set at 50°C (122°F) can be fitted internally if required.

Altogether—A MULTIPLICITY OF MOTORS

