Summary of CVQ 1200-2400 specifications and instructions marked in yellow. Complete manual can be downloaded through website

Performance Summaries

1 Performance Summaries

1.1 Mechanical Performance

The rated force (thrust or torque) for each size of actuator is detailed below. The minimum settable force is 40% of the maximum rated. Operating time tolerance +/-10%.

Measurement of force has an accuracy of +/-5% of unit rated force.

The CVA can resist back driving forces from the valve up to 125% of rated without movement. An optional lock mechanism prevents back drive to 300% of rated force. All CVA actuators are factory calibrated.

CVL - Linear

Model	Min Thrust	Rated Thrust*	Max Stroke	Speed	Full Stroke Time (sec)
CVL-500	200	500	1.5	0.25	6
	890	2,224	38.1	6.35	
CVL-1000	400	1,000	2	0.1	20
	1,780	4,448	50.8	2.54	
CVL-1500	600	1,500	2	0.1	20
	2,669	6,672	50.8	2.54	
CVL-5000	2,000	5,000	4.5	0.1	45
	8,869	22,241	114.3	2.54	

Lbf - inches - inches/second
Newtons - mm - mm/second

*Corresponds to 100% thrust sensor setting. Minimum thrust corresponds to 40% thrust sensor setting.

CVQ - Quarter-Turn

Model	Min Torque	Rated Torque	Operating Time* (sec)
CVQ-1200	480	1,200	15
	54.2	135.5	
CVQ-2400	960	2,400	20
	108.4	271	

lbf.in
Nm

*Corresponds to 100% torque sensor setting.
Minimum torque corresponds to 40% torque sensor setting.

Performance Summaries

1.2 CVA Electrical Power Consumption

CVA is designed to be very efficient with very low power consumption.

The relatively low power consumption measured during modulation (Continuous 2 Hz, 2% Cycling Test) is due to the inertial energy in the motor being converted back to electrical energy and stored. This energy can then be used to accelerate the motor in the opposite direction.

If the reserve powerpack option is fitted, charging of the super capacitors will take place on power up. The LED will flash during charging and operation is inhibited during charging. Charging times are listed in the table below.

refer to the CVA Electric Motor Performance Data document PUB042-010.

Model	CVL-500	CVL-1000	CVL-1500	CVL-5000	CVQ-1200	CVQ-2400
Charge Time (sec)	30	100	100	300	100	200

1.3 Positioning Control Performance

The following control positioning performance is based on a 4 to 20 mA control system with CVA operating over its maximum stroke, rated speed and constant force with minimum deadband set and with a linear demand/valve characteristic. Resolution is defined as: minimum change in input signal required for guaranteed response.

4 to 20 mA Control - Positioning: % demand signal range	
Resolution	≥ 0.1%
Linearity	≤ 0.5%

1.4 Position Feedback Performance

The following position feedback performance is based on CVA operating at maximum stroke with a linear characteristic set. Feedback calibration is automatic to the set limit positions.

Resolution is defined as: minimum change in position/thrust required for feedback signal change.

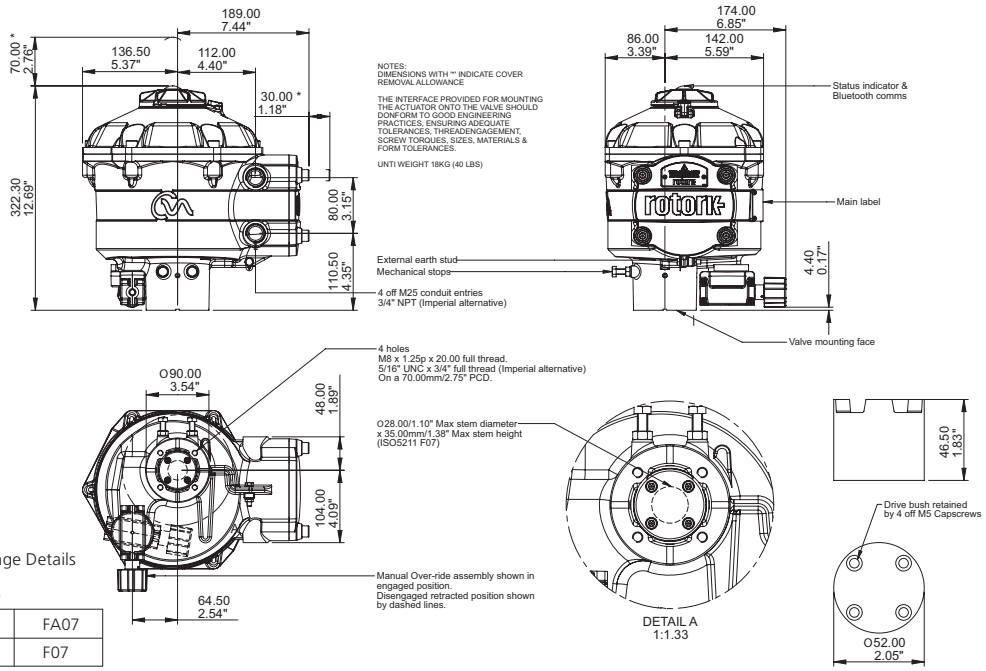
4 to 20 mA Feedback - % feedback signal range	
Resolution	≥ 0.1%
Linearity	≤ 0.5%

Ultimate performance will be determined by the process, valve and control system.

Standard Specifications

4 CVA General Dimensions

CVQ-1200



CVQ-1200 Flange Details

Mounting ref.

MSS SP-101	FA07
ISO 05211	F07

Standard Specifications

6 Non-Hazardous & Hazardous Certified Enclosures

All CVA actuator hazardous and non-hazardous area enclosures are watertight to IP68/NEMA 4 & 6.

Through the use of wireless *Bluetooth* commissioning and adjustment, covers never need removing and therefore the hermetic, factory-sealed enclosure protects internal components for life. The terminal compartment is sealed from other areas by the Rotork double-seal, maintaining watertight integrity even during site connection when terminal cover is removed.

CVA actuators are available with the following enclosure types for which the ambient working temperature ranges are stated. Where option temperatures are indicated, changes to some actuator components are required and therefore the temperature requirement must be specified. Hazardous area approvals for other country standards are available; please contact Rotork.

6.1 Non-Hazardous Area Enclosures

WT: Standard Watertight

Standard	Rating	Standard Temperature	Low Temp Option
BS EN 60529 (1992)	IP68 – 7 metres / 72 Hrs	-30 to +70 °C (-22 to +158 °F)	-40 to +60 °C (-40 to +140 °F)
NEMA (US)	4 & 6	-30 to +70 °C (-22 to +158 °F)	-40 to +60 °C (-40 to +140 °F)
CSA (Canadian)	4 & 4X	-30 to +70 °C (-22 to +158 °F)	-40 to +60 °C (-40 to +140 °F)

6.2 Hazardous Area Enclosures

CVA range actuators are built in accordance with the following standards:

European Hazardous Directive - ATEX

Directive/Standard	Rating	Standard Temperature	Low Temp Option
II 2GD	Exd [ia] IIB T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II 2GD	Exd [ia] IIC T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II 2GD	Exde [ia] IIB T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II 2GD	Exde [ia] IIC T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)

International Hazardous Area IECEx

Directive/Standard	Rating	Standard Temperature	Low Temp Option
IECEx	Exd [ia] IIB T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
IECEx	Exd [ia] IIC T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
IECEx	Exde [ia] IIB T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
IECEx	Exde [ia] IIC T4	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)

Note: The Intrinsically Safe interface [ia] is an optional extra.

Standard Specifications

6.2 Hazardous Area Enclosures cont.

USA Hazardous Area – Factory Mutual Certified Explosionproof to NEC Article 500

Class	Division	Group	Standard Temperature	Low Temp Option
I	1	C, D	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II	1	E, F, G		
I	1	B, C, D	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II	1	E, F, G		

Canadian Hazardous Area – Canadian Standards Association (CSA EP) to NEC Article 500

Class	Division	Group	Standard Temperature	Low Temp Option
I	1	C, D	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II	1	E, F, G		
I	1	B, C, D	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
II	1	E, F, G		

INMETRO

Directive / Standard Rating	Standard Temperature	Low Temp Option
Ex d IIB T4 Gb IP6X	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
Ex de IIB T4 Gb IP6X	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
Ex d IIC T4 Gb IP6X	-20 to +60 °C (-4 to +140 °F)	-40 to +60 °C (-40 to +140 °F)
Ex de IIC T4 Gb IP6X	-20 to +60 °C (-4 to +140 °F)	-20 to +60 °C (-4 to +140 °F)

GOST

Directive / Standard Rating	Standard Temperature
1ExdIIBT4	-40 to +60 °C (-40 to +140 °F)
1ExdIICT4	-40 to +60 °C (-40 to +140 °F)
1ExdeIIBT4	-40 to +60 °C (-40 to +140 °F)
1ExdeIICT4	-40 to +60 °C (-40 to +140 °F)

Standard Specifications

7 Regulatory Standards

Compliance with the following European Economic Community Directives permits the CVA range of actuators to be CE marked under the provision of the Machinery Directive.

Directive	Applicable to	Reference
Electromagnetic compatibility (EMC)	Immunity to/emissions of electromagnetic energy	2004/108/EC by application of BS EN 61326-1:2006
Low Voltage (LV)	Electrical Safety	2006/95/EC by application of BS EN 601010-1:2001
Machinery*	Product Safety	Actuators follow the provision of the Machinery Directive (98/37/EC) as amended by 98/79/EC. The CVA must not be put into service until the equipment into which it is being incorporated has been declared to be in conformity with the provisions of the European Community Machinery Directive 98/37/EC and 98/79/EC*
Waste Electrical Equipment (WEE)	Exempt under the scope of the directive	

*Actuators are not classified as machines within the scope of the machinery directive.
Contact Rotork for a copy of our Declaration of Conformity and Incorporation.

8 Paint Finish

The standard paint finish is RAL5010 (blue) polyester powder coated to Rotork specification RS237. Optional paint colours and finishes are available, please apply for more information.

Notes

Definition of T86:

ISA-75.25.01-2000 (R2006) - Test Procedure for Control Valve Response Measurement from Step Inputs. (Formerly ANSI/ISA-75.25.01-2000)

Defined as:

3.28 Step response time (T86):

The interval of time between initiation of an input signal step change and the moment that the response of a dynamic *(actuator and valve)* reaches 86.5% of its full steady state value. The step response time includes the dead time before the dynamic response.

T86b *(base response time) is the greater T861 (retract/open) or 862 T862 (extend/close).*

Operating your actuator

Local Controls

The actuator is supplied with a 3 position selector knob located on the top cover assembly. The knob assembly has a locking latch to enable the control knob to be padlocked in position. In the centre of the knob assembly is a tri-state LED. Refer to Table 1 for full details of LED indication.

The LED has 3 colour states RED,GREEN or BLUE.

The LED can be 'ON' or FLASHING depending on the actuator status.

Stop

With the selector knob in the 'STOP' position no electrical operation is possible.

Run

With the selector knob in the 'RUN' position the actuator will respond to remote control commands. During commissioning or diagnostic procedures using PDA or Smartphone Bluetooth™ enabled devices the actuator may not be operated remotely.

Note when STOP or RUN is selected the control knob will rotate between the two positions without having to depress the locking latch. It is also possible to lock the selector in the 'RUN' or 'STOP' only position.

Test

With the selector knob in the 'TEST' position an Auto Test routine will be initiated if the function is enabled.

This is a quick method of testing the actuators ability to control its output independent of the external control system. The actuator will perform a series of step and cycle routines centred around the last demand position. No greater than +/- 4% of last set point.

The test will measure the following parameters:

- Deadtime
- Step Response Time.
- Setting time
- Average Thrust/Torque in each direction of travel
- Full Stroke Speed
- Valve Friction

The user LED on the selector knob will fast flash for 10 seconds.

Flashing Green - All Parameters in acceptable limits

Flashing Red - One or more parameters outside of acceptable limits.

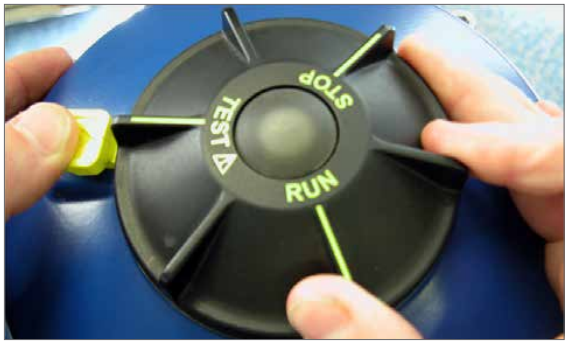


Fig. 9.1

Fig. 9.2

Fig. 9.3

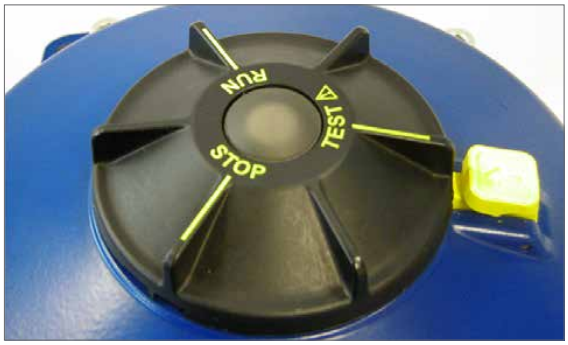


Fig. 9.4

Operating your actuator

LED Indication	Actuator Status	Mode of Operation
	Solid Green - No Faults	**Run or Test** **Note - Electrical operation is not possible whilst the RPP is charging.**
	Green - Slow Flash - Auto Test in progress or Reserve Power Pack (RPP) charging (if fitted).	
	Green - Fast Flash Auto Test completed successfully.	
	Blue - Fast Flash Initiating Bluetooth™ connection	**Run**
	Blue - Slow Flash Bluetooth™ Communication Active.	
	Green/Blue - Alternate Flash Bluetooth™ communication active No faults.	**Run or Test**
	Red/Blue - Alternate Fast Flash Initiating Bluetooth™ connection	**Stop**
	Red/Blue - Alternate Slow Flash Bluetooth™ communication active Fault found or Stop selected.	
	Solid Red Major Fault Found.	**Run/Test/Stop**
	Flashing Red Stop selected or minor fault found.	**Stop**
	Red/Green Alternate Flash Power Failure and UPS active	**Run/Test/Stop**

Table 1

Note: Slow Flash = 0.5Hz
Fast Flash = 1.0Hz

Operating your actuator

RESERVE POWER PACK - (OPTIONAL)

The actuator can be fitted with an optional 'Reserve Power Pack' consisting of Super Capacitors to allow the actuator to go to a pre-determined position on power failure.

On power up the super capacitors require a charging period during which time the actuator electrical operation will be inhibited. This could take up to two minutes.

NOTE: Electrical operation is inhibited and the LED will flash during the charging period.

On loss of power supply the actuator will carry out its designated failsafe function. The LED remains illuminated until the energy stored in the capacitors has depleted.

⚠⚠ WARNING

Where actuators are supplied with the reserve Power Pack Assembly please note that the actuator output shaft may move after removal of the power supply.

Move the Knob Selector to the 'STOP' position to prevent any unwanted electrical movement before carrying out any maintenance or removal of the unit from the valve.

After disconnection of the actuator power supply wait until the LED indicator on the top cover assembly has extinguished before attempting to remove the actuator from the valve. Under no circumstances attempt to remove the actuator or adjust the output drive shaft connection to the valve stem whilst the top cover LED is illuminated.

The CVA main housing of the actuator and in particular the power pack contain no user serviceable components and the top cover assembly must be removed by suitably qualified personnel only.

DO NOT REMOVE ANY COVER ASSEMBLY TO GAIN ACCESS TO THE ELECTRICAL COMPARTMENTS WHILST THE LED LOCATED ON THE SELECTOR KNOB IS ILLUMINATED.

Installation & Setup Guide

Commissioning

The Rotork CVA Range of actuators provide simple, safe and rapid non-intrusive commissioning using a Bluetooth enabled PDA. Actuator limit setting can be achieved using the Automatic setup feature.

Tools & Equipment Required

Bluetooth enabled hand held computer (PDA) or Smartphone (screen resolution 240 x 320 minimum) running Windows Mobile operating system.

Note: Local operation is only possible with a PDA or Smartphone. Alternatively if the HART option card is fitted a Hart communicator can be used.

Software

The Rotork Enlight CVA software must be installed on the PDA or Smartphone before carrying out any commissioning procedures.

The software is free and is available for download from the Rotork website at www.rotork.com.

⚠ CAUTION

It is essential that the setup procedure is carried out when the valve is not under working process conditions, as full valve movement will occur.

If actuators are fitted with a failsafe capacitor pack the unit may operate the valve on removal of the power supply.

To prevent this occurrence, it will be necessary to reconfigure the failsafe action, see page 39. Alternatively 'STOP' can be selected to prevent unwanted movement.

⚠ IMPORTANT

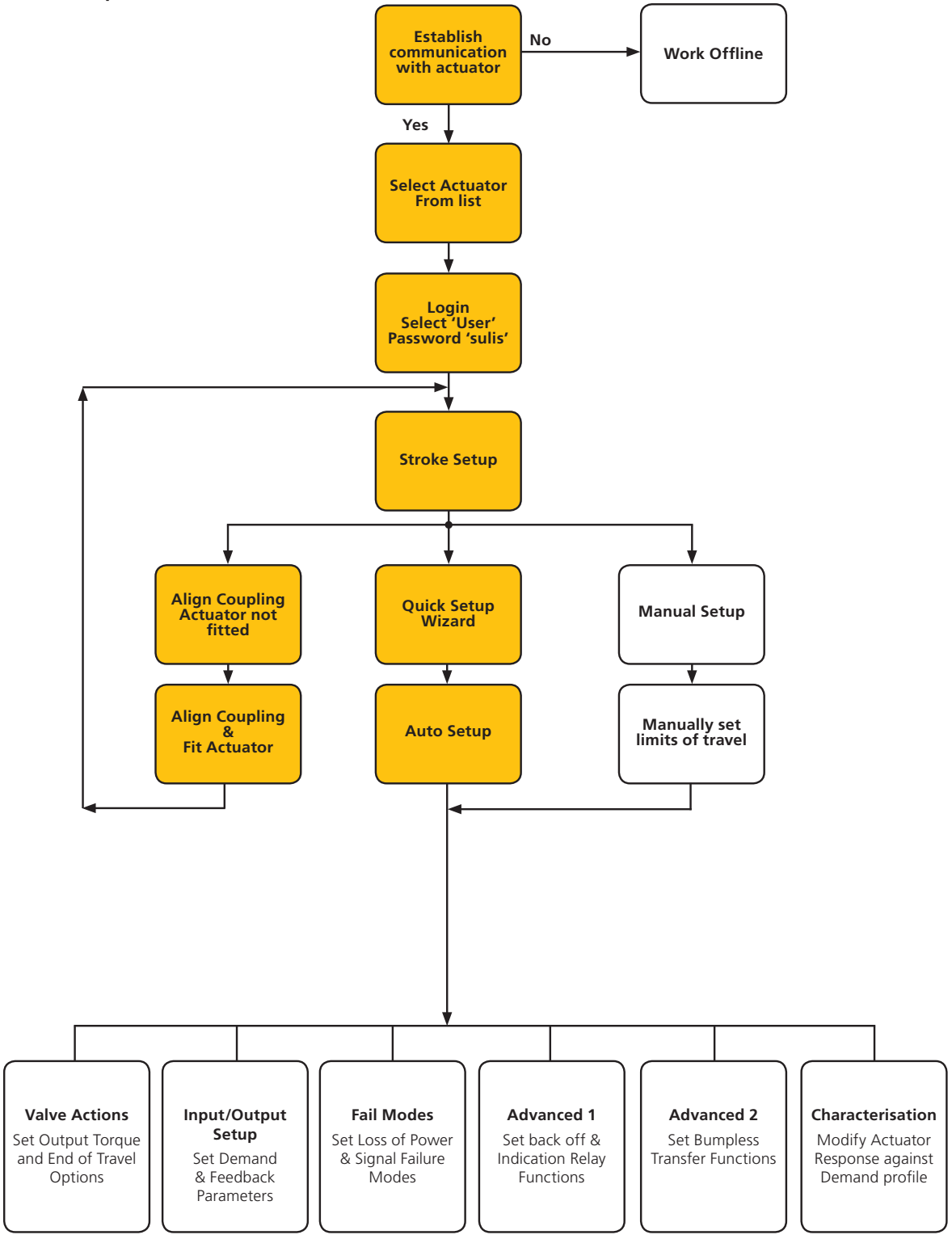
It is essential that the actuator is mounted correctly to the valve!

Refer to Rotork PUB042-001-00 for further details.

The Installation & Setup will include the following procedures:

1. Prepare the Drive Bush.
2. Ensure Valve position is noted and safe (Offline).
3. Mount and align actuator to valve.
4. Adjust Mechanical stops.
5. Use of PDA to set limits of travel.
6. Use of PDA to configure control and indication parameters.

Quick Setup Flow Chart



Mounting the Actuator

Prepare Drive Bush

Remove four caphead screws securing the blank drive bush. Machine drive bush to suit valve stem. Ensure machined position allows correct orientation of actuator to valve flange and direction to close the valve.

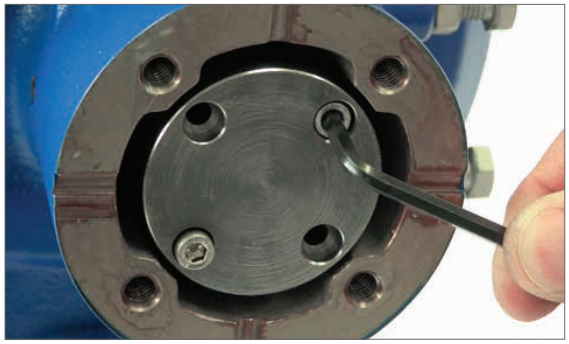


Fig. 14.1

Fitting the Drive Bush

Note: The drive bush can be fitted in four possible positions 90 degrees apart.

Fig. 14.2

Check the Drive bush for fit and orientation against the valve stem before assembly.

Whilst the Drive Bush is removed it is possible to note the position of the actuator output shaft.

Fig 14.4 shows the actuator output shaft position indent (circled) in the 'Clockwise Closed' position.

Fit the drive bush in to centre column assembly ensuring that the stem orientation, actuator position and direction of operation are correct for valve operation. Secure the drive bush with cap screws supplied.

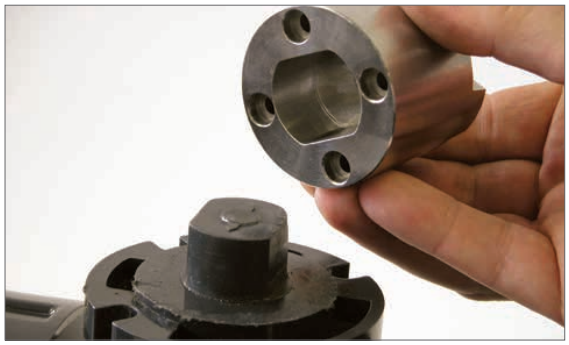


Fig. 14.3

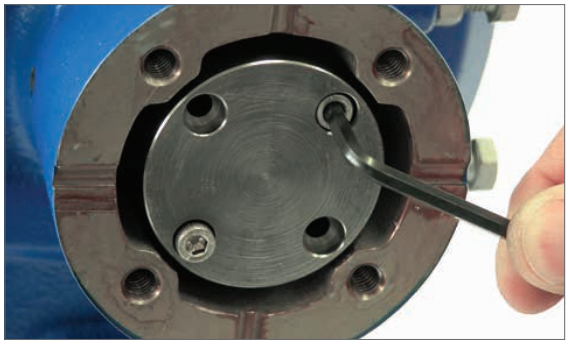


Fig. 14.4

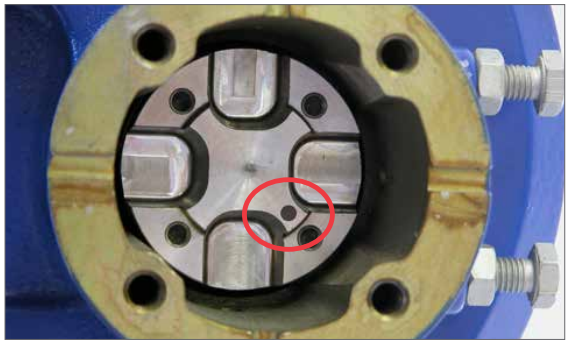


Fig. 14.4

Installation & Setup Guide

Securing Actuator to Valve

Before fitting actuator to the valve ensure that the actuator and valve are in the same position. The position of the actuator can be confirmed by either using the hand wheel when fitted or by application of the electrical power supply and use of a PDA.

A suitable mounting flange conforming to ISO 5211 or USA standard MSS SP-101 depending on the actuator supplied must be provided to mount the unit to the valve top works assembly.

Actuator to mounting flange assembly fixings must conform to Material Specification ISO Class 8.8. Delta GZ coated Grade A4 stainless steel fixings are recommended.

Position actuator on to the valve mounting flange.

It may be necessary to adjust the position of the actuator to enable alignment of the fixing bolts.

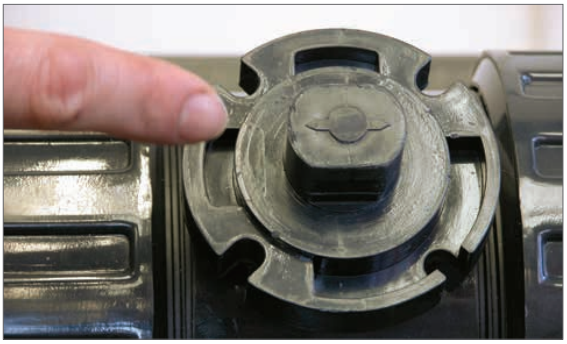


Fig. 15.1

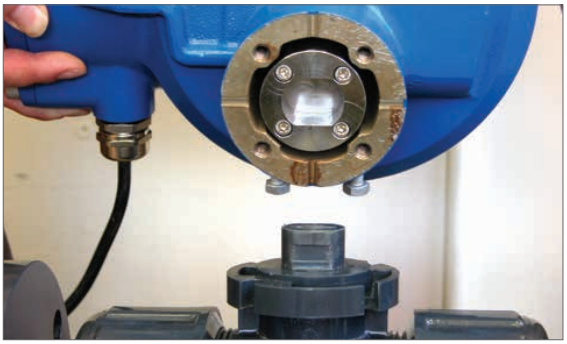


Fig. 15.2

Tighten base fixings in accordance with Table 2.

NOTE: Should electrical operation be required to set the stop bolts it will be necessary to connect electrical power cables, establish Bluetooth communication using a PDA or Smartphone then carry out the Align Coupling Procedure.

Go to Page 24 for STOP BOLT adjustment procedure.

Thread Size	Torque Nm	Torque lb/ft
5/16 UNC	12.8	9.4
M8	12.6	9.3

Table 2

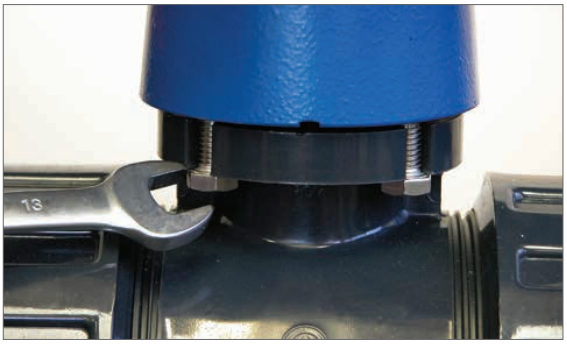


Fig. 15.3

Cable Connections

Move the Mode selector knob on top of the required actuator to the 'STOP' position. This will inhibit electrical operation.

⚠ WARNING

Ensure all power supplies are isolated before removing actuator covers.

Check that the supply voltage agrees with that stamped on the actuator nameplate. A fuse or circuit breaker must be included in the wiring installation of the actuator. The switch or circuit breaker must be installed as close as possible to the actuator and shall be marked to indicate that it is the disconnecting device for that particular actuator. The actuator must be protected with an over current protection device rated in accordance with publication PUB042-001-00, which details the electric motor performance data for CVA range actuators.

Earth Ground Connections

A lug with a 6mm diameter hole is cast adjacent to the conduit entries for attachment of an external protective earthing strap by nut and bolt. An internal earth terminal is also provided. However it must not be used alone as the protective Earth Connection.

Removing Terminal cover

Using an 8mm Allen key loosen the captive fixings securing the terminal compartment cover. Do not attempt to lever off the cover with a screwdriver as this will damage the 'O' ring seal and may damage the flamepath on a certified unit. Remove the power terminal insulated cover and connect temporary or site wiring in accordance with the supplied wiring diagram.

Note: The Red (Power) and (Control) terminal protective covers should be replaced prior to refitting of the electrical cover assembly.

When the actuator is supplied with an Intrinsically safe terminal compartment, the unit is supplied with a Red (Power & Non IS control connections) and Blue terminal cover. The Blue terminal cover identifies the IS Circuit connections.

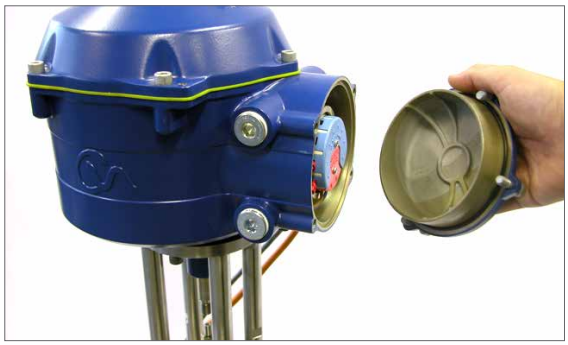


Fig. 16.5

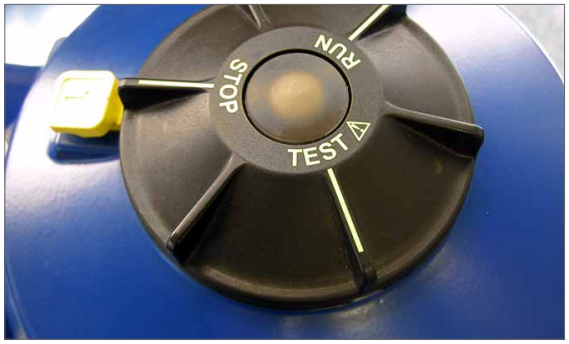
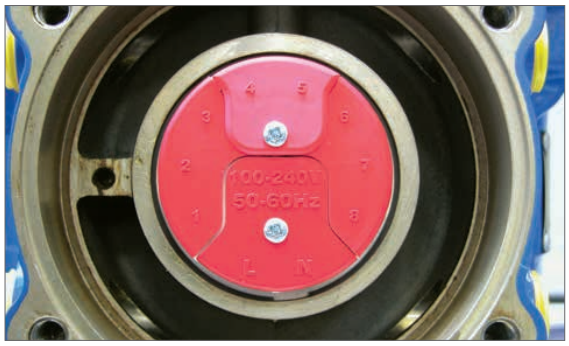
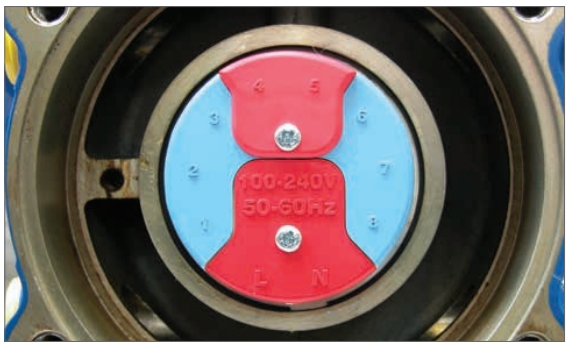


Fig. 16.1

Fig. 16.2



Standard Terminal Block - Fig. 16.3



IS Terminal Block - Fig. 16.4

Installation & Setup Guide

Cable entry

The cable entries are tapped either ¾" NPT or M25. Remove any plastic transit plugs. Make off cable entries appropriate to the cable type and size. Ensure that threaded adaptors, cable glands or conduit are tight and fully waterproof. Seal unused cable entries with steel or brass threaded plugs.

If the actuator is to be installed in a hazardous area, a suitably certified cable gland must be fitted with the use of a certified thread adaptor where appropriate.

Unused entries must be closed with a suitably certified stopping plug.

Wiring installation must comply with local statutory regulations.

Connecting to Terminals

On EExde enclosure units connections to the power and control terminals must be made using AMP type 160292 ring tabs for power and earth terminals and AMP type 34148 ring tabs for the control terminals.

Refer to the wiring diagram to identify functions of terminals. Check that the supply voltage is the same as that marked on the actuator nameplate.

Remove power and control terminal screens. Begin by connecting the power cables followed by the control cables (as required).

Refit power and control terminal screens. When all connections are made refit protective terminal covers.

Note: The Power and the Control terminal protective covers should be refitted prior to refitting of the electrical cover assembly.

When the actuator is supplied with an Intrinsically Safe terminal compartment the Red and Blue terminal covers MUST be fitted to maintain certification.

Replacing Terminal Cover

Ensure cover 'O' ring seal and spigot are in good condition and lightly greased before refitting cover.

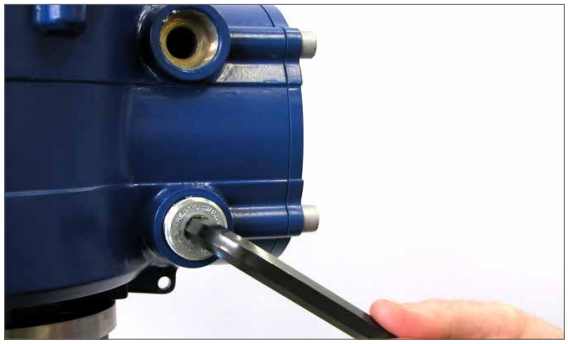


Fig. 17.1

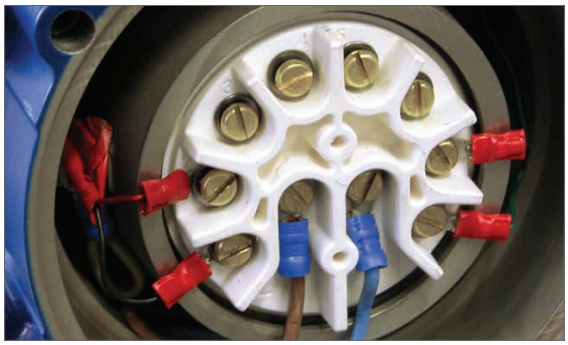
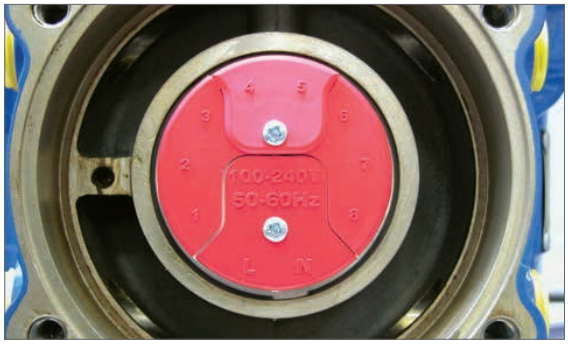
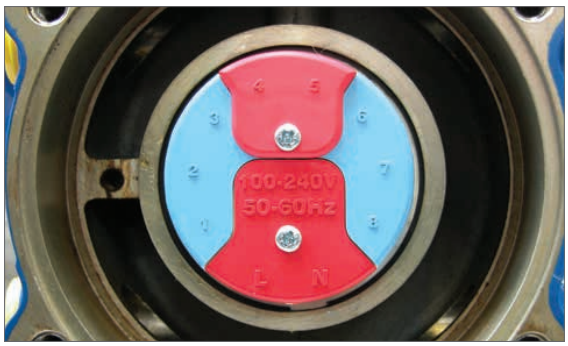


Fig. 17.2



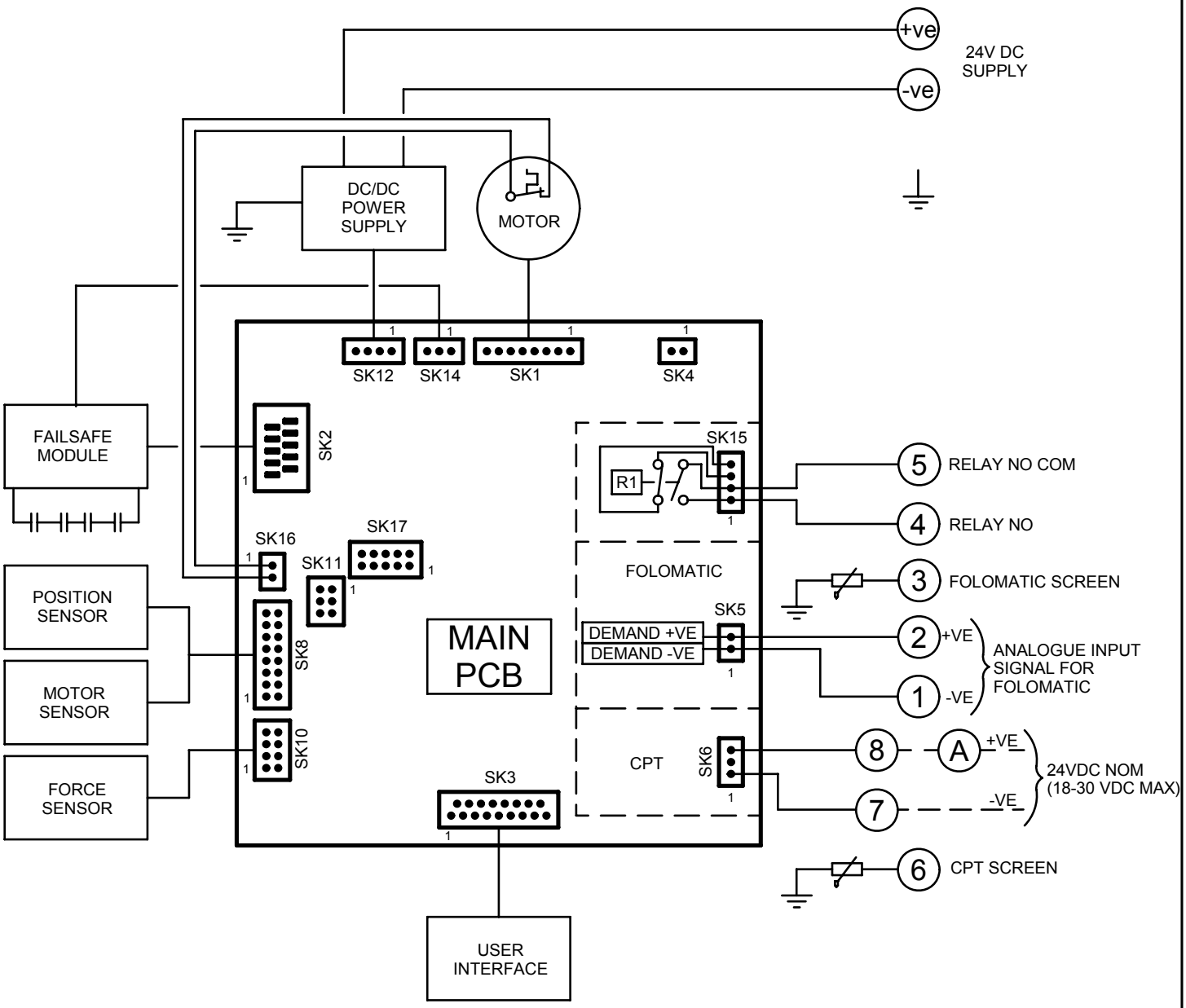
Standard Terminal Block - Fig. 17.3

Fig. 17.5



IS Terminal Block - Fig. 17.4

CIRCUIT DRAWN WITH
POWER SUPPLY OFF



RELAY R1 CAN BE CONFIGURED TO
INDICATE ANY ONE OF THE FOLLOWING:-

0 DISABLED
1 REMOTE CONTROL AVAILABLE
2 FAULT
3 FULLY OPEN
4 FULLY CLOSED
5 FORCE TRIP OPENING
6 FORCE TRIP CLOSING
7 FORCE TRIP ANY POSITION
8 FAILSAFE OPERATION

Iss	Date	Chkd	Revision Details
2	290909 BJS	AGM	Voltage source added for CPT.
1	160709 DA	AW	First Issue.

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ROTORK CONTROLS LTD
BATH, BA1 3JQ
ENGLAND
Tel:01225-733200

ROTORK CONTROLS INC
ROCHESTER
NY 14624, USA
Tel:585-247-2304

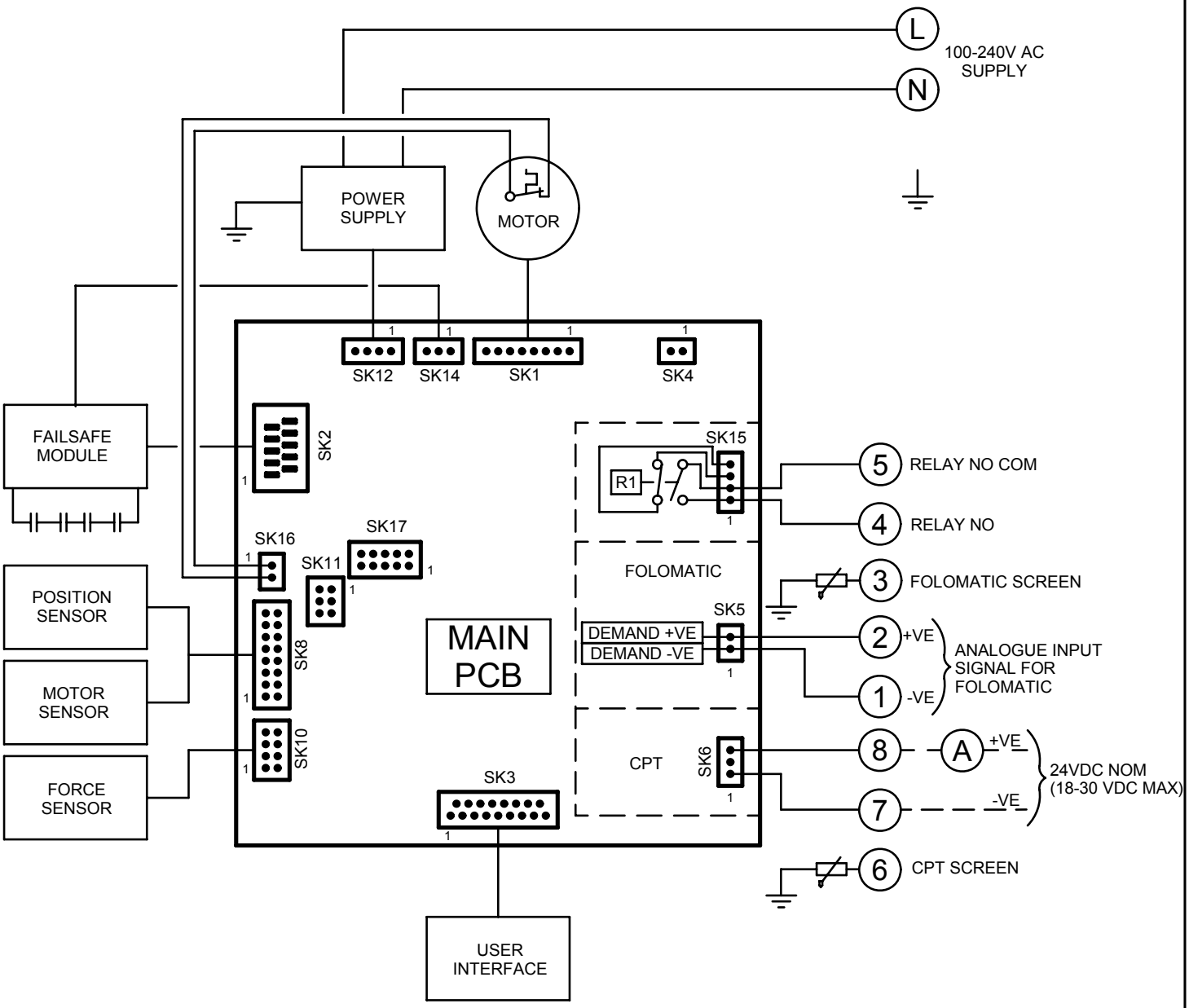
CVA, D/C SUPPLY, N/O CONTACT & FAILSAFE.

Drawn by: D.Adams
Date : 160709
Base WD: C30-00
Job No : - -
MI No : - -

Circuit Diagram No: C30-00
Issue No: 2

cva

CIRCUIT DRAWN WITH
POWER SUPPLY OFF



RELAY R1 CAN BE CONFIGURED TO
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8 FAILSAFE OPERATION

Iss	Date	Chkd	Revision Details
2	260809 BJS	AGM	Voltage source added for CPT.
1	081008 DA	SM	First Issue.

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Tel:585-247-2304

CVA, A/C SUPPLY, N/O CONTACT & FAILSAFE.

Drawn by: D.Adams
Date : 081008
Base WD: C20-00
Job No : - -
MI No : - -

Circuit Diagram No: C20-00
Issue No: 2

cva

Commissioning

Move the actuator selector knob to the 'STOP' position.

Apply Electrical Power

On completion of the correct assembly and electrical connection procedures, the electrical power supply can now be applied to the actuator.

NOTE: If the unit is fitted with failsafe capacitors the Green or Red LED (depending on Mode selected) on the selector will flash until the capacitors are fully charged.

Movement is not possible whilst the LED is flashing.

Fig. 18.1

Establish Bluetooth™ Communications

It is now required to establish communications in order to complete the fitting procedure.

Ensure Bluetooth is enabled on the PDA then click on the Enlight Icon to start the program.

The maximum range of Bluetooth communication is 10 Meters.

The first screen gives the option to connect to an actuator or open a saved file.

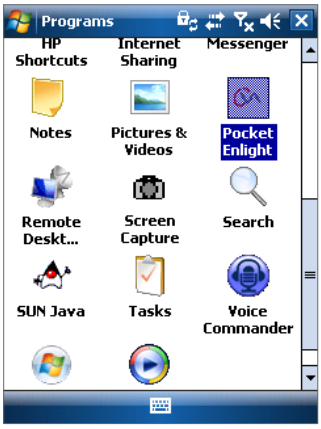

Fig. 18.2

WORK OFF LINE

If there is a configuration file stored in the PDA it can be opened to review files.

RECONNECT AN ACTUATOR

If a link between the PDA and actuator has previously been established a list will appear and a search for new devices will not occur.

DISCOVER A NEW ACTUATOR

The PDA will search a radius of 10 meters for CVA actuators.

QUIT

Exit the menu.

Fig. 18.3

Reconnect or discover an actuator

Searching for Actuator

The PDA will now search for any CVA actuators within Bluetooth range.

If there is more than one device a list will be generated.

Highlight, then select the required actuator from the list of units within range.

The actuator will generally report its identity by its serial number (shown on nameplate).

This can be modified to add an MOV or Tag reference. (See full PDA menu details)

If there are numerous Bluetooth devices in range the search process will take longer to complete and in some cases may have to be repeated.

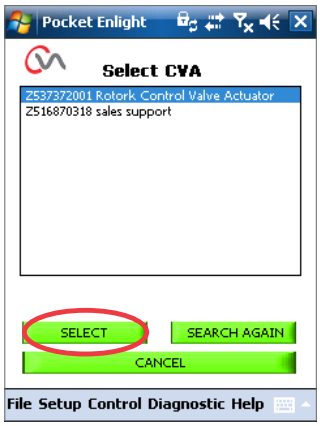

Fig. 19.1

Login procedure

Before the link can be established it is necessary to log in.

There are three levels of login with password protection to limit higher level access.

View

Allows review of actuator settings only. No changes can be made.

Password : **view**

User

Allows access to review and change actuator settings. Includes the facility to set limits of travel and take local control of the actuator.

Default Password : **sulis**

This password can be changed using the 'Setup' menu to provide additional site security.

DO NOT LOSE THE PASSWORD INFORMATION

Rotork Engineer

Rotork use only.

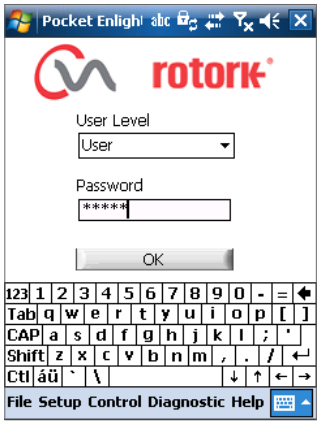

Fig. 19.2

Login

Select **'User '** on the User Level drop down menu.
Note, user is the default and will appear in the box.

Using the keyboard at the bottom of the screen, type in the password then click on 'OK' to start the procedure. If communication is successful you will be prompted to wait whilst the setup data is retrieved from the actuator.

Fig. 19.3

If the incorrect password is entered an error message will be displayed. The actuator password cannot be reset. An error code will be generated, make a note of the code then please contact your local Rotork representative stating the full error code.

The actuator's current password may then be verified and confirmed.

Fig. 20.1

Stroke Setup Menu

There are three choices from this menu.

Align Coupling

If the actuator is not fully fitted to the valve this procedure must be carried out to enable alignment of the actuator coupling and adjustment of Stop Bolts.

Quick Setup Wizard

Use this menu to automatically set actuator limits of travel.

Go to Page 26

Manual Setup

Use this menu to manually set actuator limits of travel.

Go to Page 31

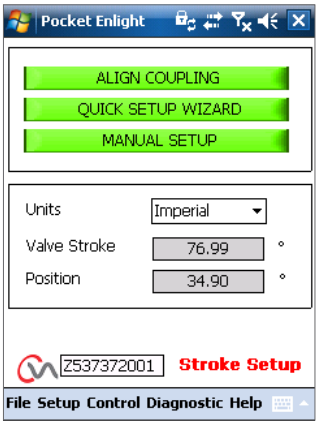

Fig. 20.2

It is possible on this screen to choose Imperial or Metric units. The actuator serial number, current valve stroke and position are also displayed.

⚠ WARNING

The default setting of a new actuator is **minimum torque and clockwise to close**. If the actuator has previously been commissioned it is essential that its basic settings be checked before fitting the coupling and operating the actuator electrically. Check the settings in the Manual Setup menu, adjust if necessary.

⚠ WARNING

When RUN mode is selected the actuator will respond to any active remote control commands.

Select 'STOP' on the Actuator Selector Knob to prevent any unwanted movement.

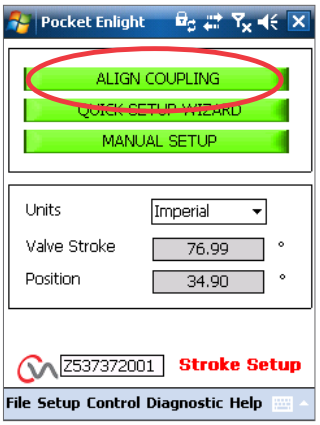

Fig. 20.3

Fitting Actuator to Valve

Select the **'ALIGN COUPLING'** option.
Select Metric or Imperial Units as required.

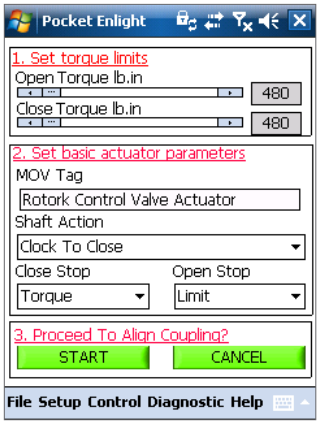

Fig. 21.1

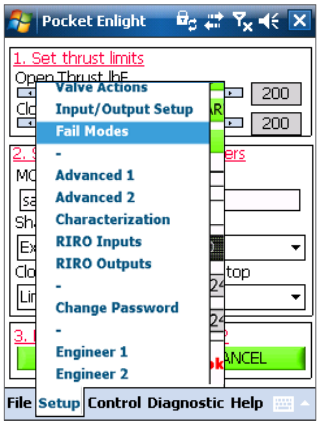

Fig. 21.2

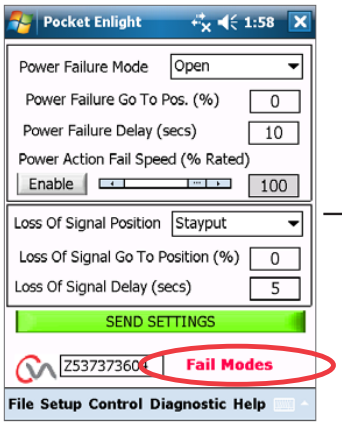

Fig. 21.3

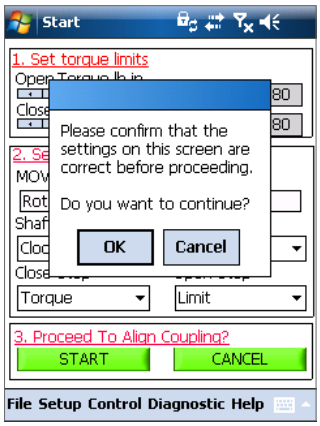

Fig. 21.4

1. Set torque limits

The maximum amount of torque available for the open and close direction of travel can be adjusted by dragging the slider from left to right.

2. Set basic actuator parameters

MOV Tag

The actuator can be given a TAG number for ease of identification in the field.

Shaft Action

Set Clock or Anticlock direction to close the output drive shaft.

Close/Open Stop

Torque - Apply set torque to the valve stem at end of travel limit where valve tight shutoff is required.

Limit - Stop the actuator at the set limit where valve does not require tight shutoff.

Select the START option to save changes.

Select basic parameters and torque limit settings as required.

3. Proceed To Align Coupling

To commence manual alignment of coupling and adjustment of Stop Bolts, click on the start box.

⚠ **WARNING**

When RUN mode is selected the actuator will respond to any active remote control commands.

If no Analogue request is applied the actuator will carry out its loss of control signal fail to position function. If necessary go to the Fail Modes Menu and select the STAYPUT option and send the settings back to the actuator.