

# RCE-SR

## Electro-hydraulic actuators

## Instruction

### INSTALLATION AND ADJUSTMENT

1. RCE230-240: Remove the plug 1/8" in the venting hole nearest to the intermediate piece. Mount the angular coupling and the indicator tube.  
RCE250-280: Remove the transport plug fitted in the oil refill hole. Screw on the filler cap included in the shipment. Remove the plug 1/8" in the venting hole nearest to the intermediate piece. Mount the angular coupling and the indicator tube.  
Under very wet, windy or dusty conditions it is advantageously to use a closed loop hydraulic system. The closed loop system is achieved by only connecting the indicator tube (pos.13 page 3) to the hydraulic tank and keeping the filling plug mounted in the tank.
2. When the electrical connection has been accomplished, check that:
  - a. The motor runs in the correct direction, see the arrow on the cover.
  - b. The valve opens and closes correctly. The stem key grip must be parallel with the centre line of the piping for open position and in 90° to the same in closed position (actuators mounted alongside piping).
  - c. The limit switches are effected.
3. Vent the actuator with the aid of venting key included in the shipment. The motor should be running. If solenoid valves or speed restrictors are supplied, they should be in position pressurising the actuator
4. Check the oil level when the actuator is in spring return position. The pump motor must be turned off.
5. Make sure that there is **no** oil in the indicator tube for piston leakage. The tube is emptied by loosening the lower coupling.
6. Adjust the opening speed (only actuators in modulating design) and the closing speed with the aid of the speed restrictors.
7. Mount the protective cover, if supplied. Rod and screws are supplied.
8. The emergency operation handwheel is locked in neutral position (see instructions for each model) with a chain or similar around a fixed device (example: pipe line).  
Valid for actuators with manual/emergency override option only.
9. The seal on the pressure restriction valves must **not** be broken.

### MAINTENANCE INSTRUCTIONS

1. Check the oil level at least twice a year when the pump motor is turned off and the actuator is in spring return positions.  
RCE230-240 are equipped with a level glass, where the oil level is visible.  
Other models: Check using the dip stick on the filler cap that the oil level is between min. and max. **Note:** The cap must be tightened. Avoid overfilling. For normal operation conditions an oil change is recommended once every second year. Rinsing fluids must not be used, only hydraulic oil.
2. Check that there is no oil in the indicator tube for piston leakage. The tube is emptied by loosening the lower coupling. If oil flows in the tube after emptying, **please contact the supplier.**
3. If "noise" occurs:
  - a. Check the oil level.
  - b. Vent the actuator with a venting key.
4. Test run the unit regularly to prevent the valve from sticking due to long stand still periods.
5. The unit is cleaned from oil spill and similar.
6. Keep the unit clean from snow and ice. Especially "open-mounted" extra equipment.
7. Check the anti-corrosion treatment. Improve when necessary.
8. Check tubes, hoses and cables. Exchange damaged parts.
9. All manual operation must be carried out with the actuator in pressureless condition. See further instructions on page 2.  
Valid for actuators with manual/emergency override option only.

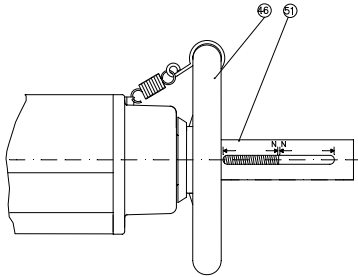
### NOTE

The hydraulic system is factory filled with hydraulic fluid ExxonMobile Univis HVI 13.  
Only use this or alternatively Aero Shell Fluid 4 or 41 Castrol Aero HF585B when refilling.

**MANUAL OPERATION / EMERGENCY OPERATION**

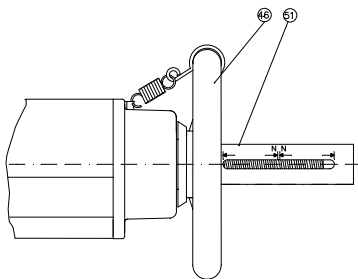
All manual operation must be carried out with the actuator in pressureless condition.

**Manual override unit M1**



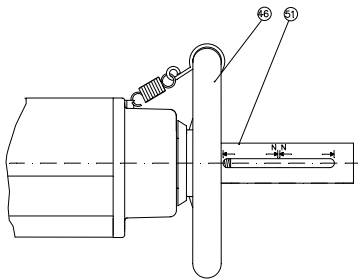
**Neutral position**

With stem (51) in neutral position, the actuator can be operated manually. The neutral position also works as limit position adjustment in open position (closed position in fail open design).



**Manual operation to open position**

To open, turn handwheel (46) anti-clockwise. When returning to remote operation, the manual override must first be reset into neutral position.

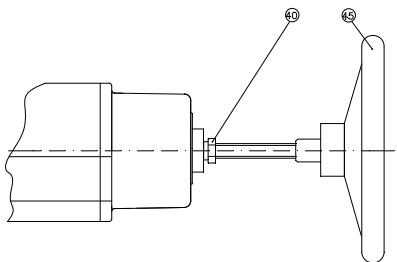


**Manual operation to closed position**

To close, turn handwheel (46) clockwise. When returning to remote operation, the manual override must first be reset into neutral position.

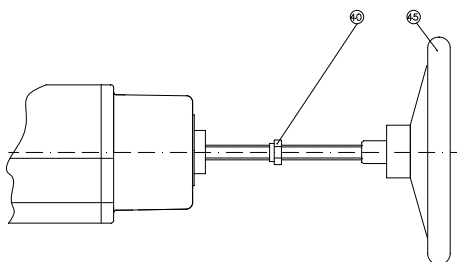
*Also see product sheet No 836F, page 4.*

**Manual override unit M2**



**Neutral position**

With nut (40) in contact with the bush on the spring housing, the actuator can be remote-operated. The neutral position also works as limit position adjustment in open position (closed position in fail open design).

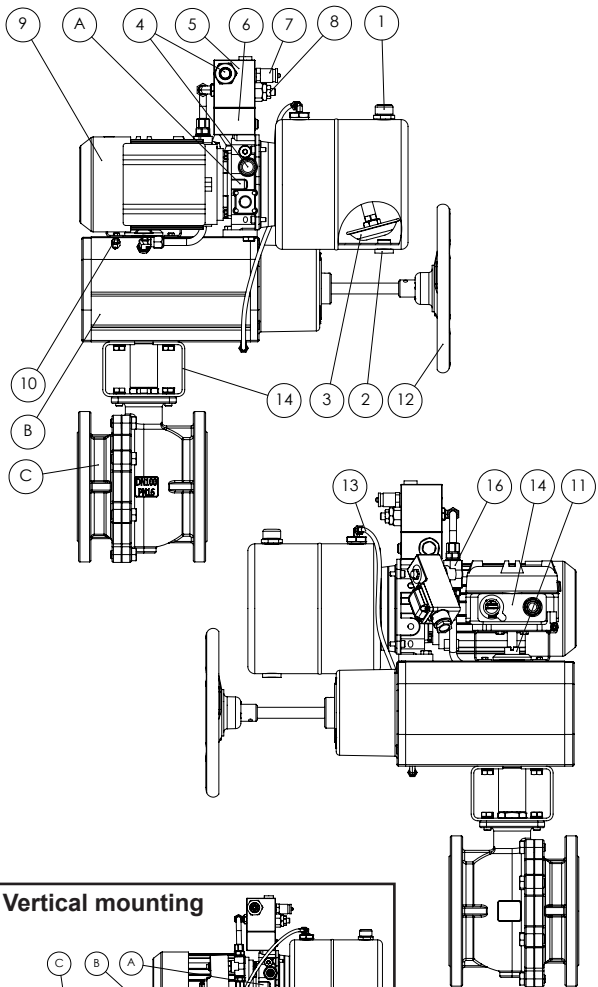


**Manual operation**

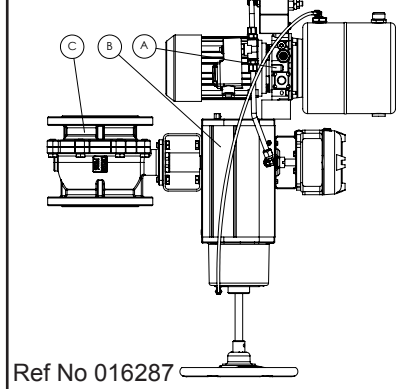
Fail close: Handwheel (45) is turned anti-clockwise for open position.  
 Fail open: The handwheel is turned anti-clockwise for closed position.

When returning to remote operation, the manual override must be reset in neutral position.

### Horizontal mounting



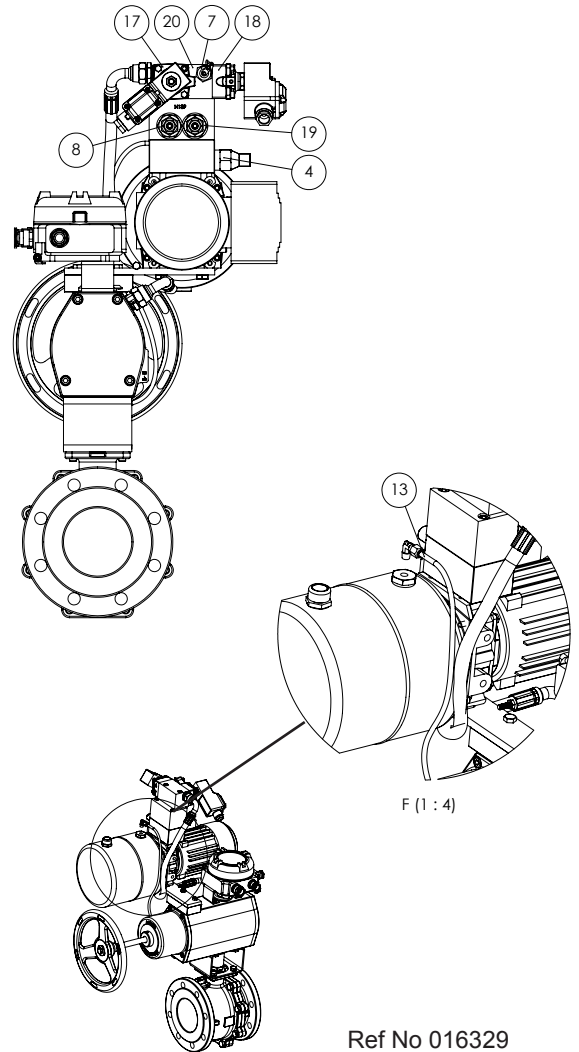
### Vertical mounting



Ref No 016287

Ref No 016278

### Design with modulating block



F (1 : 4)

Ref No 016329

## PARTS LIST

- A. Hydraulic device
- B. Actuator
- C. Valve

- |  |   |
|--|---|
| 1. Oil filling cap with dip stick                        | 10. Venting nipple  |
| 2. Plug for draining                                     | 11. Stem  |
| 3. Filter, on suction tube inside oil tank               | 12. Handwheel for emergency / manual operation            |
| 4. Pressure restriction valves, 2 pcs                    | 13. Indicating tube (transparent) for leakage over piston |
| <b>Note: Sealed valves. Do not touch!</b>                | 14. Switchbox   |
| 5. Valve block   | 16. Solenoid valve  |
| 6. Directional valve                                     | 17. Solenoid valve. NO normally open                      |
| 7. Manometer connection                                  | 18. Solenoid valve. NC normally closed                    |
| 8. Speed restrictor for adjustment of spring return flow | 19. Speed restrictor for adjustment of pump flow          |
| 9. Electric motor  | 20. Valve block for solenoid valves                       |

## TROUBLE SHOOTING AND MEASURES

### 1. Cavitation

This will not occur with the correct maintenance.

### 2. The pump is sucking air (noise occurs)

- Oil level too low. *Fill up with oil.*
- Loose suction tube. *Tighten the same.*
- Faulty shaft sealing by the pump. *Replace shaft sealing.*

### 3. Pressure too low (the valve only opens partially)

- Pressure restriction valve is incorrectly adjusted. The sealing must **not** be broken. *Contact the supplier.*
- Pressure restriction valve is worn. *Contact the supplier.*
- Motor or pump is faulty. *Replace each unit. Check the shaft connection.*  
**Note:** The hydraulic unit has 2 pcs pressure restriction valves.
- Dirt in the pressure relief valve. *Clean.*

### 4. No pressure (the valve does not open).

- Oil level too low. *Fill up with oil.*
- O-ring sealing faulty between hydraulic pump and intermediate piece. *Replace O-ring.*
- Pressure restriction valve incorrectly adjusted. *Contact the supplier.*  
**Note:** The hydraulic unit has 2 pcs pressure restriction valves.
- Motor or pump faulty. *See 3 c.*
- Dirt in the solenoid valve. *Must be cleaned.*
- Broken coil. *Replace coil.*
- Dirt in the pressure relief valve. *Clean.*
- Oil strainer clogged. *Clean.*

### 5. Opens slowly

- See points 3, 4 e and 4 f.*
- The speed restrictor is incorrectly adjusted (note: only modulating design). *Must be adjusted.*
- Oil strainer clogged. *Clean.*

### 6. Closes slowly or not at all

- The directional valve does not shift gear. *Must be cleaned.*
- The speed restrictor is incorrectly adjusted. *Must be adjusted.*
- The manual / emergency handwheel has not been manually reset after forced opening. *See Maintenance Instruction point 5.*
- See point 4 e.*

### 7. Oil flow in the indication tube.

- Leakage in piston sealing. *Contact the supplier.*
- Worn cylinder. *Contact the supplier.*

### 8. If the fault cannot be found or corrected after reading points 1-7: **Contact the supplier.**

