

Hand wheel operator For cylinder actuators

Types B1C_K/L/R and
B1C_RK/RL/RR

Installation, maintenance and
operating instructions

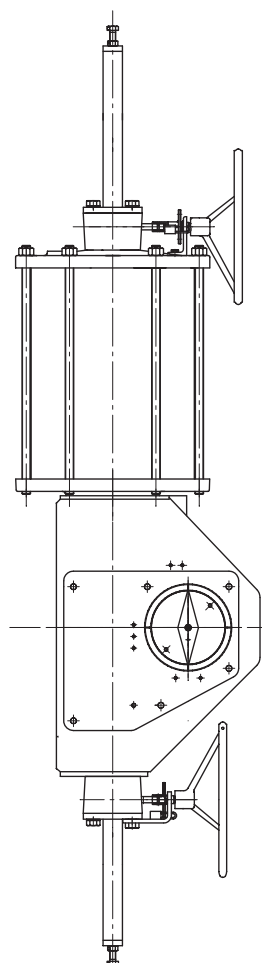


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READ THESE INSTRUCTIONS FIRST! These instructions provide information about safe handling and operation of the valve. If you require additional assistance, please contact the manufacturer or manufacturer's representative.	SAVE THESE INSTRUCTIONS! Addresses and phone numbers are printed on the back cover.
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1. GENERAL

These manual hand wheel operators are designed for Neles B1C-actuators. Hand wheel operator is intended to be used for operating the pneumatic actuator in case of supply power (air) or signal (air, electric) failure takes place. These instructions contains the information needed for operating the hand wheel operator, additional information on B1-actuators are available from the instructions on installation, operation and maintenance of the model in question. See the IMO 6BC71en.

Manual hand wheel operator in B1C series can be recognized from type codes as follows: letter K and RK in type code is for hand wheel on cylinder head, letter L and RL means that hand wheel is installed on the bottom of the housing and R and RR means that hand wheel is on both cylinder head and bottom of the housing.

2. SAFETY PRECAUTIONS

CAUTION:

Before operating the hand wheel make sure it is permitted to manually operate the valve (without disturbing the process).

CAUTION:

Air pressure must always be released before operating manual hand wheel operator!

CAUTION:

Be careful when adjusting actuator travel stops. The spindle nut (51) may come out if turned too much. If the actuator is pressurized it can cause uncontrolled pressure release which may result in damage or personal injury.

3. B1C ACTUATORS, SIZES 9 TO 25

3.1 B1C_K/L/R actuator

The **B1C_K actuator** is otherwise like the B1C except that it can be operated manually to bring the piston to lower position in case there is no air supply.

The **B1C actuator** can be changed into a B1C_K by replacing the cylinder end (44) accordingly and adding parts (33a, 50a to 56a), see Fig. 1.

The **B1C_L actuator** is otherwise like the B1C except that it can be operated manually to bring the piston to upper position in case there is no air supply.

The B1C actuator can be changed into a B1C_L by replacing the housing (1) accordingly and adding parts (50b to 56b), see Fig. 2.

The **B1C_R actuator** is otherwise like the B1C except that it can be operated manually to bring the piston either to upper or lower position in case there is no air supply.

The B1C actuator can be changed into a B1C_R by replacing the cylinder end (44) and housing (1) accordingly and adding parts (33a, 50a to 56b), see Fig. 1 and 2.

NOTE:

There is some air bleed through the spindle thread when the spindle (50a) with the O-ring (54a) is positioned inside the cylinder. I.e. when the valve has been manually operated to open position during compressed air loss and then the air pressure is restored. To stop the leakage operate the manual override to non-operated position. See Fig. 1 and 2

NOTE:

Hand wheel operator is not correct device for safety lock up of valve.

Locking device, (e.g. code Q, W, or D), is intended to be used for safety lock up function during service operation. See IMO 6B70en for Q/W service lock up option instructions.

B1C_K/L/R_9: 19 turns / 90° operation

B1C_K/L/R_11: 22 turns / 90° operation

B1C_K/L/R_13: 28 turns / 90° operation

B1C_K/L/R_17: 34 turns / 90° operation

B1C_K/L/R_20: 43 turns / 90° operation

B1C_K/L/R_25: 43 turns / 90° operation

4. MAINTENANCE

CAUTION:

Air pressure must always be released before operating or servicing manual hand wheel operator!

If air escapes between the spindle (50a) and spindle nut (51a), check the O-ring (54a) and replace it if necessary. Also check the condition of the cylindrical roller (56a). See Fig. 1 and 2. Other maintenance as described for the B1C actuator, see the IMO 6BC71en and the section 4.

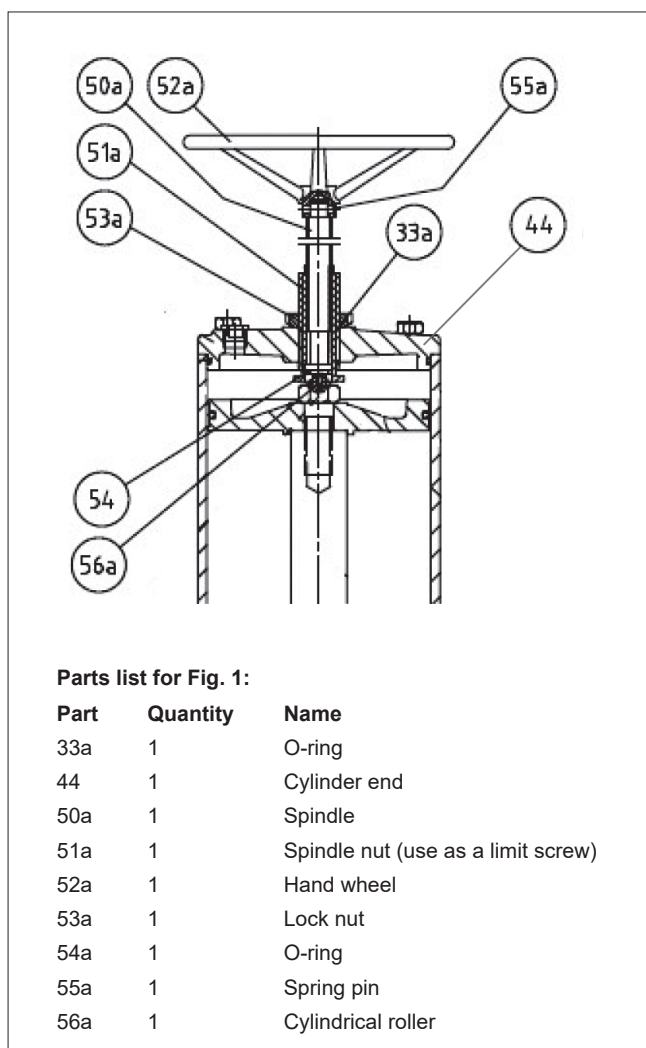


Fig. 1 B1C_K_ actuator

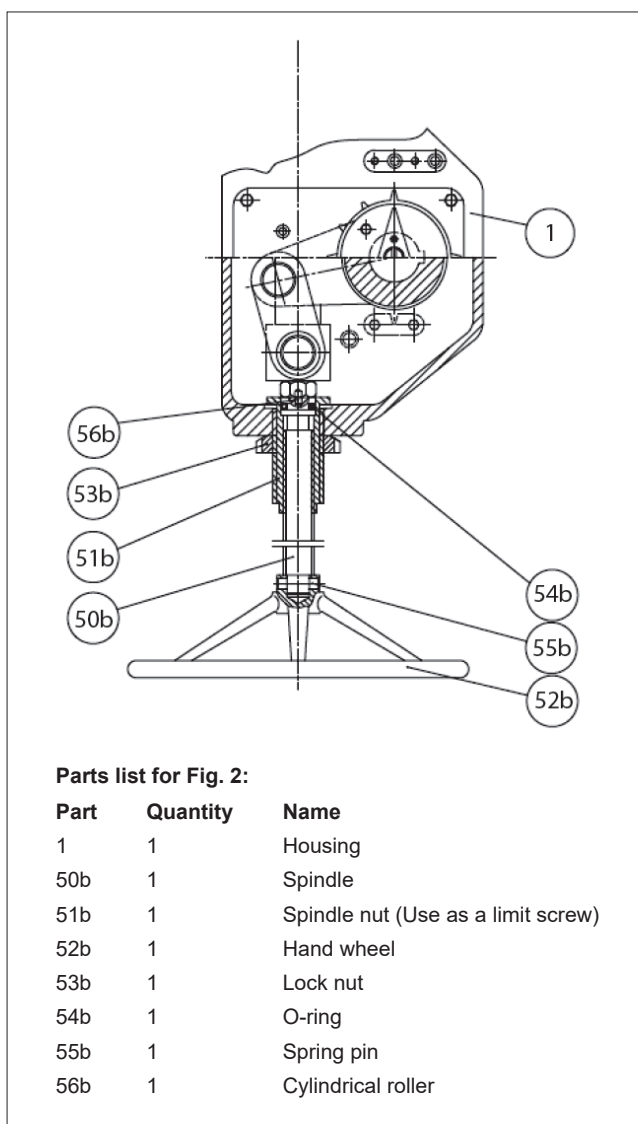


Fig. 2 B1C_LU_ actuator

5. VALVE CLOSE AND OPEN POSITION ADJUSTMENT

In the B1C_K actuator, unlike in the B1C, the upper valve position limit is adjusted with the spindle nut (51a) secured with the lock nut (53a). During adjusting, the spindle (50a) must be in the extreme outer position. Clockwise rotation open.

In the B1C_L actuator, unlike in the B1C, the lower valve position limit is adjusted with the spindle nut (51b) secured with the lock nut (53b). During adjusting, the spindle (50b) must be in the extreme outer position. Clockwise rotation to close.

In the B1C_R actuator, unlike in the B1C, the upper and lower valve position limit is adjusted with the spindle nut (51a, 51b) secured with the lock nut (53a, 53b). During adjusting, the spindle (50a, 50b) must be in the extreme outer position.

6. B1C ACTUATORS, SIZES 32 TO 75

6.1 B1C_RK/RL/RR actuator

The **B1C_RK actuator** is otherwise like the B1C except that it can be operated manually to bring the piston to lower position in case there is no air supply.

The B1C actuator can be changed into a B1C_RK by replacing the cylinder end (44) accordingly and adding parts (306...330), see Fig. 4.

The **B1C_RL actuator** is otherwise like the B1C except that it can be operated manually to bring the piston to upper position in case there is no air supply.

The B1C actuator can be changed into a B1C_RL by replacing the housing (1) accordingly and adding parts (306...330) see Fig. 5.

The **B1C_RR actuator** is otherwise like the B1C except that it can be operated manually to bring the piston either to upper or lower position in case there is no air supply.

The B1C actuator can be changed into a B1C_RR by replacing the cylinder end (44) and housing (1) accordingly and adding parts (306...330), see Fig. 4 and 5.

NOTE:

There is some air bleed trough the spindle thread and the relief valve (58) when the sealing slide (15) with the Orings (16) is positioned inside the cylinder. I.e. when the valve has been manually operated to open position during compressed air loss and then the air pressure is restored. To stop the leakage operate the manual override to closed position. See Fig. 3

The manual gear is disengaged when the handwheel is turned counter clockwise to the extreme position:

B1C_RK / RL / RR _U32: 377 turns / 90° operation

B1C_RK / RL / RR _U40: 470 turns / 90° operation

B1C_RK / RL / RR _U50: 598 turns / 90° operation

B1C_RK / RL / RR _U60: 598 turns / 90° operation

B1C_RK / RL / RR _U75: 598 turns / 90° operation

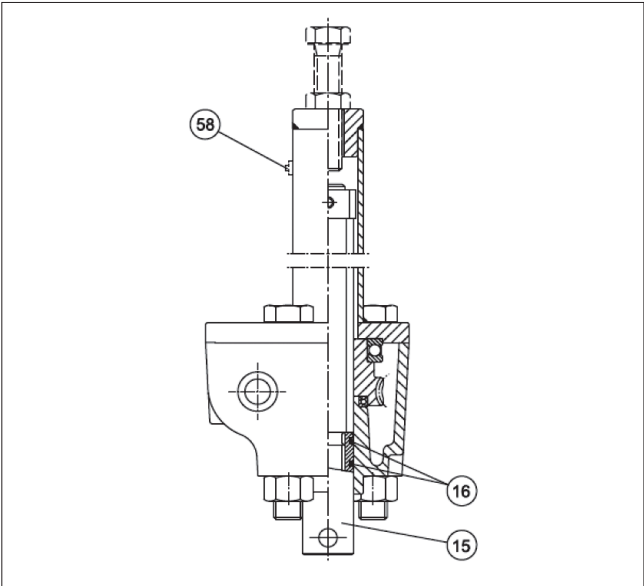


Fig. 3 Manual override

7. MAINTENANCE

CAUTION:

Air pressure must always be released before operating or servicing manual hand wheel operator!

The manual override requires no regular maintenance. Grease can be added to the gear through the hole of the outermost fitting screw, if needed.

Other maintenance as described for the B1C actuator, see the IMO 6BC71en and the section 4.

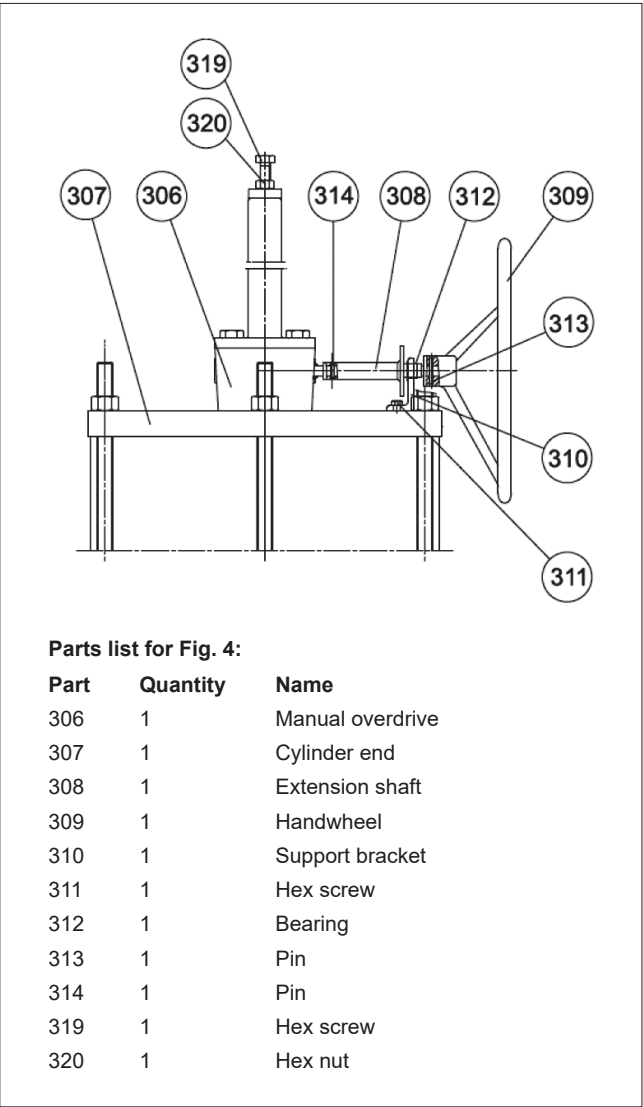


Fig. 4 B1C_RK

8. VALVE CLOSE AND OPEN POSITION ADJUSTMENT

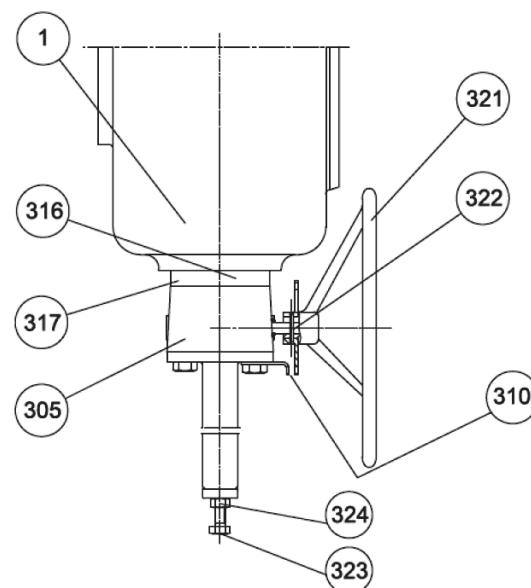
In the B1C_RK actuator, the close position limit of valve is adjusted with the handwheel (309), secured with screw (319) and locked with the hex nut (320).

B1C_RK_: Clockwise rotation of the handwheel opens the valve.

In the B1C_RL actuator, the open position limit of valve is adjusted with the handwheel (321), secured with screw (323) and locked with the hex nut (324).

B1C_RL: Clockwise rotation of the handwheel closes the valve.

In the B1C_RR actuator, see function from the texts above.



Parts list for Fig. 5:

Part	Quantity	Name
1	1	Housing
305	1	Manual overdrive
310	1	Support bracket
316	1	Fitting plate (size 20 only)
317	1	Socket screw (size 20 only)
321	1	Handwheel
322	1	Pin
323	1	Hex screw
324	1	Hex nut

Fig. 5 B1C_RL

NOTE:

Turn the handwheel back to the starting position, before applying supply pressure to the actuator again.

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