

## Operation and maintenance manual

### NCA Series 400A motorised single blade leakage rated fire damper

Regular inspection and maintenance of fire dampers is essential to ensure they remain in good working condition. It is the system owner's responsibility to ensure this is carried out.

In accordance with EN 15650:2010 fire damper maintenance routines, such as that given below, must be carried out at intervals not exceeding 6 months.

Some automatic systems may allow more frequent testing (48 hours or less) and this may be required by national regulation.

**Please note:** This document is relevant only to actuator operated S400 dampers. For S400 dampers equipped with a manual handle please see the relevant document.



#### **Danger!** Risk of electric shock

- Do not touch any live electrical components.
- Only qualified electricians should work on electrical equipment.
- Switch off the power supply before working on any electrical equipment.



#### **Caution** Risk of entrapment in mechanism

- During maintenance dampers should remain powered open and could close while being inspected/cleaned.
- Never put hands or arms through damper blades during maintenance.

### Periodic maintenance procedure

<b>Damper type:</b>	NCA Series 400A motorised leakage rated fire damper
<b>Thermal probe rated temperature:</b>	72°C
<b>Damper reference (if applicable):</b>	
<b>Damper location (within site):</b>	
<b>Date of inspection:</b>	

Step	Operation	Notes	Yes/No
1	Is the thermal probe LED lit?	<i>Fitted to ductwork near the damper, this indicates the damper is powered open (its normal working state)</i>	
2	Are the actuator and thermal probe secure?	<i>Check these are secure and that all fixings are present and tight (2 qty M6 bolts on actuator, 2 qty screws on probe)</i>	
3	Is all wiring undamaged?	<i>Actuators are not user servicable If damaged the actuator must be replaced</i>	
4	Remove access door/s to access the inside of ductwork and damper blade	<i>Both sides of the damper blade should be easily accessible.</i>	N/A
5	Is the damper blade in the fully open position and secure?	<i>The damper blade should be in the fully open position. Gently try to move the blade by hand, it should not rotate.</i>	
6	Is the damper blade unobstructed?	<i>Ensure there is nothing present which is obstructing or could obstruct the damper blade operating</i>	
7	Is the damper clean and free from damage and corrosion?	<i>Use a damp cloth, brush or vacuum cleaner to remove any dirt and debris. If damaged or corroded dampers must be replaced Caution - Blade sealing fabric is sharp, PPE should be used</i>	
9	Does the damper close correctly, quietly and smoothly?	<i>Depress the 'TEST' button on the thermal probe and visually confirm the damper closes correctly in around 16 seconds.</i>	
10	Does the damper open correctly, quietly and smoothly?	<i>Release the 'TEST' button on the thermal probe and visually confirm the damper opens correctly in under 120 seconds.</i>	
11	Do you have any concerns about the installation?	<i>Is there anything that does not look correct, do you have any doubts etc.?</i>	
12	Refit access door/s securely	N/A	N/A

If any of questions 1 - 10 is answered 'no', or if the answer to question 11 is 'yes', please see troubleshooting overleaf.

Troubleshooting overleaf →

## Troubleshooting

Symptom	Possible causes	Action
The thermal probe's LED is not lit and the damper is closed	No power or incorrect supply	Check supply
	Thermal probe has been tripped or is faulty	Replace thermal probe tripping element, part reference 'Belimo ZBAT72'
	Actuator faulty or damaged	Replace actuator See below: 'Actuator removal and replacement procedure'
Damper blade not fully opening or closing	Damper motion obstructed by debris	Remove debris Ensure no damage has been caused to damper
	Actuator fitted incorrectly	Remove and refit actuator correctly See below: 'Actuator removal and replacement procedure' Ensure no damage has been caused to damper
	Damper seized	Lubrication required See below: 'Lubrication procedure'
	Mechanical failure	Contact HVC
Damper blade loose	Mechanical failure	Contact HVC
Damper is noisy or judders during operation	Lack of maintenance	Lubrication required See below: 'Lubrication procedure'

Contact HVC if the above does not solve your problem.

## Additional procedures

### Actuator removal and replacement procedure

1. Isolate and disconnect existing actuator from power supply actuator will spring closed.
2. Remove actuator from damper (2 qty M6 bolts), retain bolts and form fit adaptor (8mm internal, 12mm external square steel sleeve).
3. Remove thermal probe from ductwork (2 qty screws)
4. Ensure the new actuator is in its closed position by inserting the winding handle (supplied) and relieving the factory set spring tension.
5. Ensure the damper is still in its closed position.
6. Insert the retained form fit adaptor into the side labelled 'L' of the actuator.
7. With the side labelled 'R' of the actuator facing away from the damper (the 'L' side towards the damper), slide the actuator onto the 8mm square spindle.
8. Using the retained M6 bolts fit the new actuator to the damper, and the thermal probe to ductwork if one was previously removed.
9. Connect the new actuator to an appropriate power supply, allow the damper to open and then conduct a cycle test as per steps 9 and 10 of the periodic maintenance procedure.

### Lubrication procedure

1. Remove access door/s to access the inside of ductwork and damper blades
2. Clean damper if required following step 7 of the periodic maintenance procedure.
3. Apply a small amount of light oil (WD40 spray grease recommended) directly into the blade axle bushes.
4. Remove any excess oil with a cloth.
5. Conduct a cycle test as per steps 9 and 10 of the periodic maintenance procedure and observe whether the operation has improved. Several reapplications/cycles may be required to permit the lubricant to reach all required areas.

Periodic maintenance procedure overleaf →