



- PROJECT: AVANTE 2200
- SHIPYARD: NAVANTIA S.A.
- SYSTEM: HVAC



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FIRE DAMPERS

REF.: D-MO5462-009

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TABLE OF CONTENTS

1.	TRANSPORT AND STORAGE.....	3
3.1	Safety prescriptions	3
3.2	Scope of delivery.....	3
3.3	Packaging	3
3.4	Transport – Hoisting instructions	4
3.5	Preservation method	4
2.	INSTALLATION	4
3.	COMMISSIONING	5
5.1	Safety inspection.....	5
5.2	Checking the unit	5
5.3	Switch on unit	5
4.	TROUBLESHOOTING	6
5.	MAINTENANCE	7
7.1	Preventive maintenance.....	7
a)	Functional testing	8
b)	Complete visual and functional testing	8
7.2	Corrective maintenance.....	8
a)	Replacing the actuator.....	8

TECHNICAL AND FUNCTIONAL DESCRIPTION

Fire dampers are usually in open position, and its opening or closing is not associated to any fan/fan coil, but fan/fan coil start is interlocked with the open position limit switch of the fire damper.

For each fire damper two local operation panels (LOP) will be provided (inside and outside of the local associated). In both panels “open” and “close” push buttons are available (these operations are not available in the control panel, CTP, associated).

1. TRANSPORT AND STORAGE

3.1 Safety prescriptions



- *Danger due to improper transport!*
- *Risk of damage to the unit. If the unit has been damaged or dropped, check that it works correctly.*
- *Take care when transporting the unit!*

WARNING



- *Danger due to overhead loads!*
- *It is extremely dangerous to stand under overhead loads.*
- *Make sure that no-one is standing under an overhead load!*

3.2 Scope of delivery

As soon as the unit has been delivered, remove the packaging and check the unit for any damage caused in transit (if so, submit a complaint to the carrier), and check that the shipment is complete and correct. To do so, compare the details of the unit nameplate with the details on the delivery note.

This also applies to all accessories. Missing parts or damage in transit can only be claimed against the transport insurance if the damage has been confirmed by the carrier.

3.3 Packaging

The unit is shipped on pallets and packaged in shrink wrap.

3.4 Transport – Hoisting instructions

WARNING



- *Danger when transporting the unit!*
- *Improper transport can cause injury to the personal.*
- *Ensure that at least two people carry the unit. Secure the load during transit to prevent it from tipping or falling. In the case of palletized deliveries, use only lifting and transport vehicles with sufficient carrying capacity.*



- *Danger when transporting the unit!*
- *Improper transport can cause damage to the unit.*
- *Ensure the load during transit to prevent it from tipping or falling. In the case of palletized deliveries, use only lifting and transport vehicles with sufficient carrying capacity.*

3.5 Preservation method

When storing the unit for a temporary period, the following points must be noted:

- Store the unit in its original packaging.
- The storage location must be protected from the elements, dry and free of dust.
- The unit must be protected from impacts, vibrations etc.

2. INSTALLATION



- *Power supply voltage 3x440V.*
- *Risk of electric accidents.*
- *Ensure that the intended drilling area is free from electrical cables or pipes before drilling.*



- *Parts dropping down and sharp edges.*
- *Risk of accidents and personal injury.*
- *When installing the unit wear a helmet, safety footwear and protective globes.*

NOTE

You must ensure that no mechanical deformation or twisting occurs during installation of all models in all installation locations.

3. COMMISSIONING

WARNING



- *Power supply voltage 3x440V.*
- *Risk of electric accidents.*
- *Before performing any work on the unit, ensure that it is powered down. Ensure that the unit is secured against being switched back on at an appropriate point of the on-site power supply*



- *Rotating wheels*
- *Risk of injury!*
- *Before performing any work on the unit, ensure that it is powered down. Ensure that the unit is secured against being switched back on at an appropriate point of the on-site power supply.*

5.1 Safety inspection

Before commissioning, ensure that the following conditions are true:

- The entire system of which this unit is part has been installed both mechanically and electrically.
- The system, and thus this unit, is powered down.

5.2 Checking the unit

The following checks should be made before commissioning:

- Check that the unit has been properly mounted.
- Check all electrical connections and check the terminal strip screws for tightness.
- Check that any devices used to secure the equipment in transit have been removed.

5.3 Switch on unit

WARNING



- *The electrical control box (terminal box) is open.*
- *Direct interventions in the electrical terminal box are not permitted!*
- *Before finishing with the unit, ensure that the electrical terminal box is properly closed.*
- *Switch the supply voltage on.*

4. TROUBLESHOOTING

The following table should serve as a starting point for maintenance personnel regarding possible causes of trouble and their correction:

Troubleshooting Code	Fault	Possible cause of fault	Remedy	Associated Maintenance Task
TB-1	Damper does not open	No electrical voltage	Check power supply (electrician)	--
		Fire damper controls are inhibited (alarm is on)	Check the inhibit controls and reset the controls if conditions are safe (electrician)	--
		Operating mechanism is jammed	Check the activating mechanism for any foreign matter and clean if necessary (electrician)	--
TB-2	Damper does not close	Fire damper blade is blocked	Clean the insides of the damper casing (mechanic)	--
		Spring operation fails	Check function of the Actuator / replace if necessary (electrician)	CM-1
		Operating mechanism is jammed	Check the activating mechanism for any foreign matter and clean if necessary (electrician)	--

Table 2 – Causes of malfunction and possible remedies

5. MAINTENANCE

The unit is a high-quality and reliable unit. However, to guarantee the permanent functioning and performance of the unit, regular maintenance and inspection by technical experts is necessary.

NOTE

Maintenance must only be performed by trained technical personnel in observance of this operation manual and the regulations in force.

WARNING



- Rotating wheels
- Risk of injury!
- Before performing any work on the unit, ensure that it is powered down. Ensure that the unit is secured against being switched back on at an appropriate point of the on-site power supply.



- High voltage installed
- Risk of electric accident!
- Disconnect the unit before attempting any maintenance work. Ensure that the unit is secured against being switched back on at an appropriate point of the on-site power supply.

NOTE

The warranty will be invalidated by damage which is attributable to the non-performance of regular essential inspections.

7.1 Preventive maintenance

The following maintenance tasks must be performed at the indicated time intervals.

Task Code	Task	Frequency	Task duration	Skill of personnel	Required tools
PM-1	Functional testing	Quarterly (2.160 operating hours)	15 min.	Electrician	None
PM-2	Complete visual and functional test	Annual (8.640 operating hours)	45 min.	Mechanic and Electrician	Screwdriver

Table 3 – Regular maintenance tasks

a) Functional testing

- To select damper 'OPEN': energize control power supply.
- To select damper 'CLOSED' de-energize the control power supply. The spring return actuator closes the damper.

Required tools: none.

b) Complete visual and functional testing

- Disconnect the ducting from the fire damper
- Remove the ducting.
- Check on the blades inside the housing for any dirt or foreign matter.
- Remove the dirt (if found) and clean the inside of the damper housing with a cotton cloth.
- All electrical components shall be checked for any signs of failure.

Required tools: screwdriver.

7.2 Corrective maintenance

The following corrective maintenance tasks must be performed as indicated by the Troubleshooting indications in Section 6.

Task Code	Task Description	Task Duration	Skill of personnel	Required tools
CM-1	Replacing the actuator	1h	Electrician	Insulated screwdriver

Table 4 – Corrective maintenance

a) Replacing the actuator

WARNING



- *High voltage installed*
- *Risk of electric accident!*
- *Before performing the following work, you must ensure that the unit is powered down and that the mains voltage is secured against being switched back on. Before finishing with the unit, ensure that the electrical terminal box is properly closed.*
- *Disconnect the electrical cables.*
- *Unscrew the fixing bolts.*
- *Replace the actuator with the new one.*
- *Retighten the fixing bolt.*
- *Connect the electrical cables.*

Required tools: insulated screwdriver.