

# Installation, Operating & Maintenance Instructions

## Description

The A-60 Marine Fire Damper is tested and approved for fitting to class A-60 divisions (bulkheads and decks), when suitably insulated (see page 2 for details).

## Tests and Approvals

A60 Fire Rated.  
Lloyds Register of Shipping Approved.  
Marine Equipment Directive Compliant.  
USCG Approved.  
Germanischer Lloyds Approved  
Det Norske Veritas Approved.  
American Bureau of Shipping Approved to max size of 750mm x 750mm for single dampers, 1580mm x 750mm for 2x1 multiple dampers.  
Corrosion Tested.  
Vibration Tested.

## Health and Safety

Care must be taken when installing and inspecting dampers, as they are likely to close without warning due to loss of electrical power, or a temperature rise in the ductwork. This is their prime function.

**Do not introduce any items, fingers or limbs between the blades.**

Larger dampers are heavy and must be handled in accordance with current regulations and good practice.

All wiring should be carried out in accordance with the wiring details provided, to the IEC regulations.

## General Information

The A-60 Marine Fire Damper is suitable for both vertical and horizontal applications, with airflow in either direction. The dampers which are A60 fire rated to IMO fire test procedures Code, Annex 1 Pt 3, are normally open, and fail-safe to the closed position. The A-60 Marine Fire Dampers are supplied with the blades in the fully interlocked closed position to avoid damage during transit and installation. It is recommended that the dampers remain closed until actual date of commissioning. All fire dampers are life safety products and should be treated with care during handling, storage and installation. A-60 Marine Fire Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme, with cleaning and light oil lubrication to blades, casing and actuator, in accordance with good industry practice. When exposed to fresh air intakes and/or inclement conditions this may need to be performed more regularly based on experience gained from previous inspections.

**Testing-Maintenance and cleaning** A-60 Dampers are supplied in 2 casing and blade options:-

1. 430 Standard steel blades, Galvanised Steel casing - only suitable for installation in dry filtered systems.
2. 316 Standard steel blades, casing and drive - more suited for corrosive conditions, but even this will rapidly corrode and fail if not properly maintained, when used in air intake systems at sea. The addition of a mist eliminator is highly recommended and access must be provided for maintenance.

Pay particular attention to the blade rivets, where crevice corrosion will cause rapid failure of blades if not kept in check.

**Testing** Two levels of testing exists.

### 1. Routine testing

Monthly, or in accordance with maintenance programme, release and reset damper (via control system or ETR test switch). Check remote indication or visual check of mechanical pointer as appropriate.

### 2. Visual check at damper

At commissioning and at least once a year, check damper operation by removing and re-applying power to actuator. (via ETR test switch). Visually check blades for damper closed and open positions. Prove remote indication if applicable.

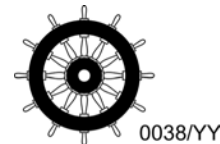
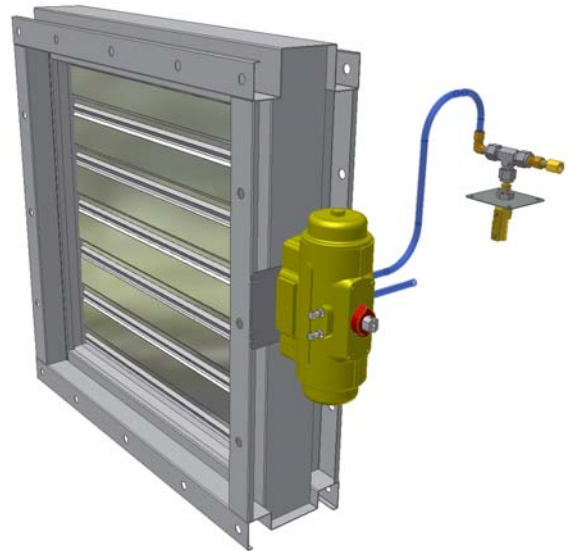
## Routine Maintenance

Depending upon environmental conditions, each damper will merit its own cleaning regime. Particularly hostile areas may require monthly cleaning and lubrication.

*'Frequency of maintenance'* should be determined by collecting historical data from previous visits, and for this reason, commence maintenance programmes at very frequent intervals. Dampers in *'Dry Filtered Air'* require very limited maintenance.

Using Duck Oil (recommended lubricant, or similar equivalent), clean all exposed surfaces, using a cloth. Remove all traces of surface staining, as this will deteriorate further causing deeper material corrosion.

If damper is stiff to operate, lubricate blade ends and open and close damper successively until the damper moves with ease. (This may necessitate removal of the actuator and operating the blades manually by the drive shaft). Refit actuator, and re-test. Clean off excessive lubricant.



YY Denotes last two digits of year the Wheelmark is affixed to damper

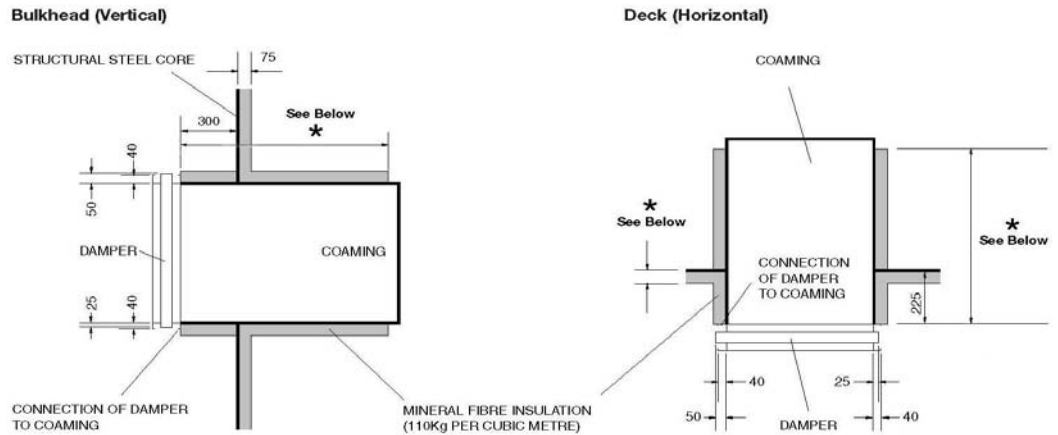
# A-60 Marine Fire Damper

## Damper installation

All installations must be carried out in accordance with the relevant Marine/Offshore Authority requirements.

The damper should be installed in accordance with Insulation details (as shown) that represent a typical A-60 installation. Bolt holes are provided as standard on the damper flanges (unless otherwise stated) at 150mm maximum centres. Matching hole positions are necessary on mating coaming/duct flanges. Apply approved fire resistant sealant/gasket to mating flanges and position damper. Bolt damper using M8 minimum diameter steel bolts, at a maximum of 200mm centres.

## Insulation Details:

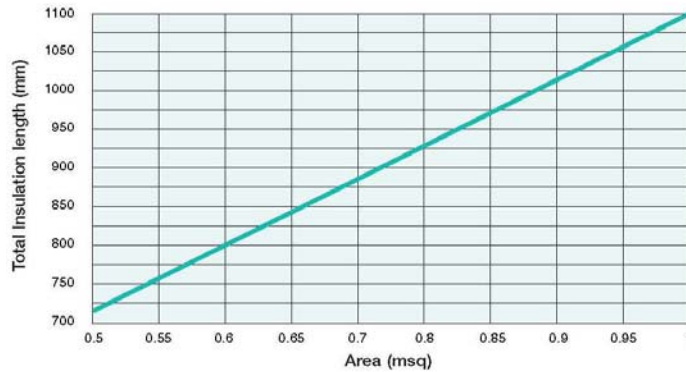


\* Table of Minimum Total Coaming Insulation Length (Applies to all approval bodies)

Application	Insulation Thickness	Minimum Total Insulation Length
Vertical bulkhead up to 750 x 750 (0.5625msq)	75mm	725mm
Vertical bulkhead above 0.5625 msq		refer to graph below
Horizontal deck up to 750 x 750 (0.5625msq)	40mm	725mm
Horizontal deck above 0.5625 msq		refer to graph below
Horizontal deck (all sizes)	75mm	725mm

The same area/insulation criteria applies for multiple arrangements

Graph Showing Minimum Insulation length for Damper above 750mm x 750mm Base Damper (Applies to all approval bodies with the exception of ABS)



Note: for circular, use square base damper area.

### Coaming Insulation Example

For a damper size of 910mm x 925mm.  
Area = 0.85 msq

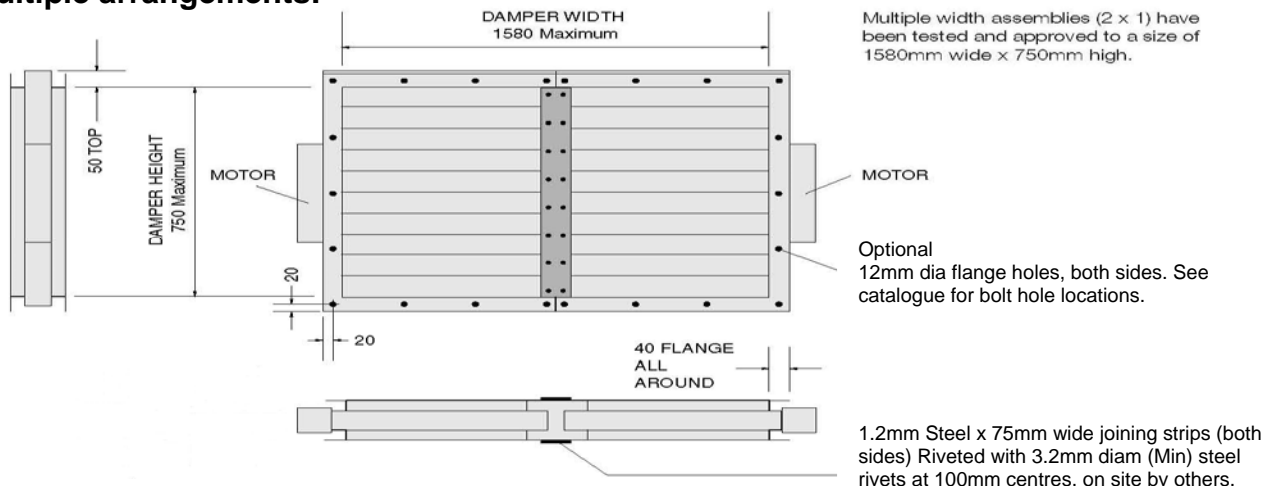
#### Vertical Installation

Insulation Thickness = 75mm (line 2 of table)  
Insulation Length = 975mm (refer to graph)

#### Horizontal Installation

Insulation Thickness = 40mm (line 4 of table)  
Insulation Length = 975mm (refer to graph)  
Insulation Thickness = 75mm (line 5 of table)  
Insulation Length = 725mm (line 5 of table)

## Multiple arrangements:



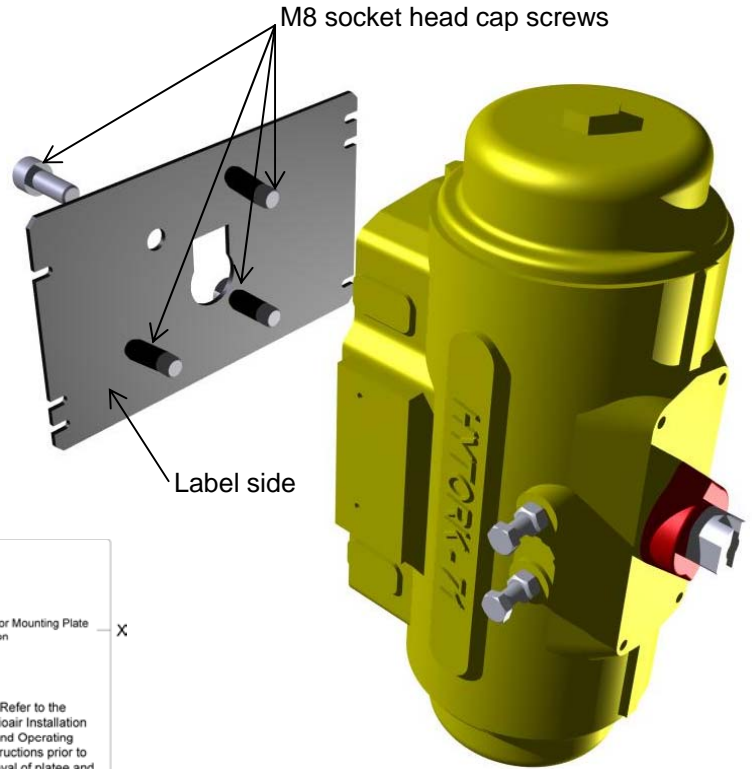
## Actuator Installation:

The actuator mounting plate is also used as a transit plate prior to fitting of the actuator on site. The transit plate keeps the damper blades closed by retaining the damper drive shaft in a fixed position. When the plate is removed the drive shaft is **not** secured.

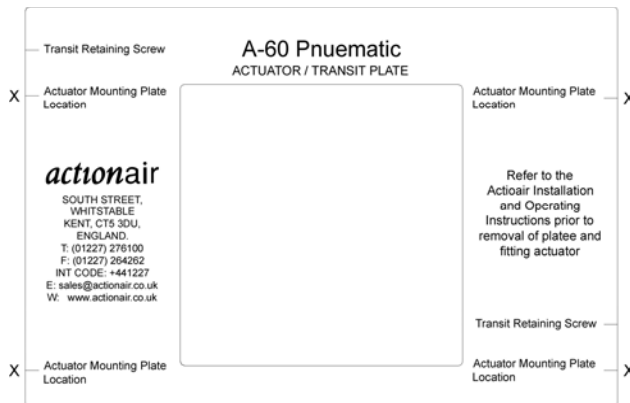
1, Remove the 2No cross-recessed (Pozi) head screws retaining the transit plate and discard the screws.

2, Using the 4No M8 socket head cap screws supplied, fit transit plate (hereafter referred to as the mounting plate) to the actuator.

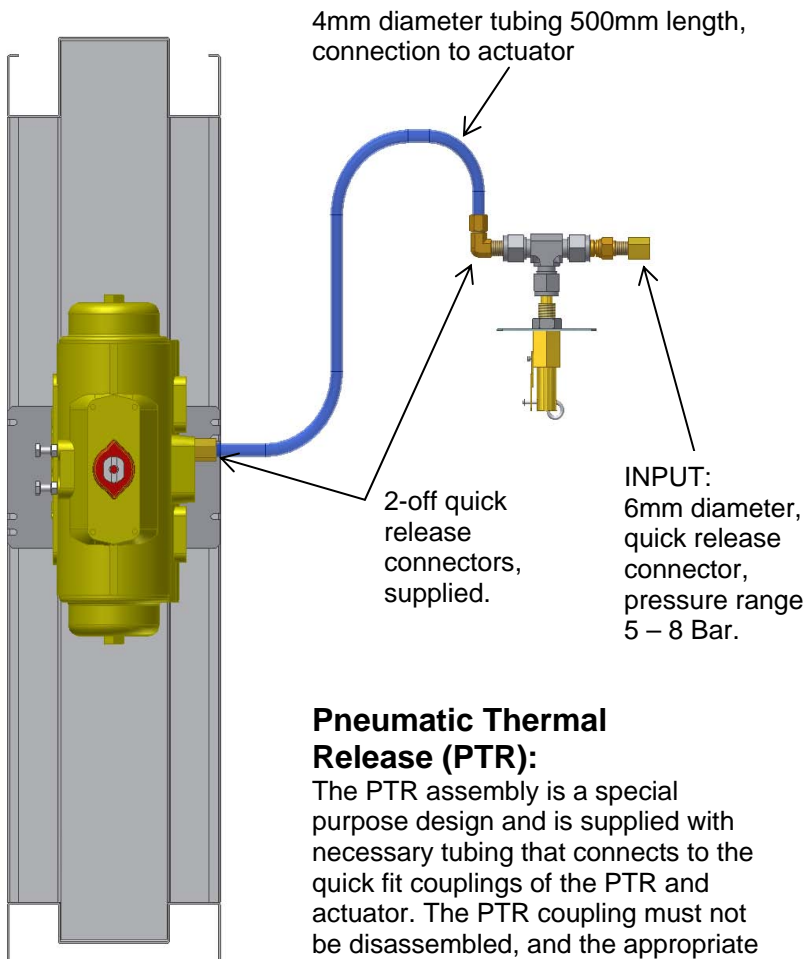
3, Refit mounting plate to damper casing or bracket, (which ever is the case) using 4No steel rivets supplied, ensuring that the 4 holes in the damper casing line up with the appropriate slots in the mounting plate (Marked 'X' on figure, below).



Actuator Orientation



Actuator / Transit / Mounting Plate alignment



## Pneumatic Thermal Release (PTR):

The PTR assembly is a special purpose design and is supplied with necessary tubing that connects to the quick fit couplings of the PTR and actuator. The PTR coupling must not be disassembled, and the appropriate size tubing must be connected to ensure correct operation.

## PTR Installation:

1, Select position for PTR, Ideally this should be in the top half of the duct and sufficiently close to the actuator to allow easy connection of the 4mm diameter nylon tube supplied.

2, Drill hole in selected position using a 30mm diameter hole cutter, removing sharp edges.

3, Position PTR and drill the 4No 3mm diameter fixing holes.

4, Remove PTR and apply approved fire retardant sealant on the duct around the hole.

5, Refit PTR and secure with the 4No cross-recessed (Pozi) head screws provided.

6, Connect 4mm diameter tube to the actuator and PTR.

7, Connect 6mm diameter tube to input side of PTR

8, Connect air supply. Damper opens fully,

**9, Important:** Test operation: This must be undertaken, see overleaf for test method.

## Test Method

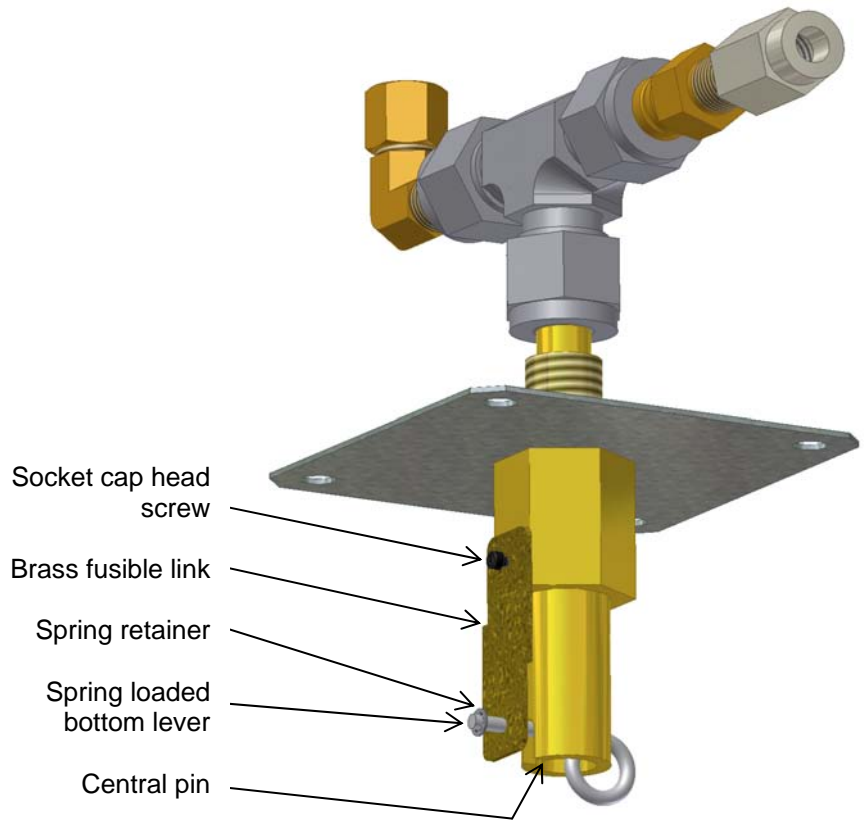
This **MUST** be carried out for each and every installation.  
(With air supply connected)

Test fail-safe operation by temporarily removing and refitting the brass fusible link, on the PTR.

1, Push spring loaded bottom lever upwards – Link will lift over the small socket cap head screw, on the fusible link body

2, Release bottom lever. Air exhausts from the PTR, ensure complete damper closure.

3, Refit link by pushing the central pin at the bottom of the PTR upwards with a small screwdriver, whilst rotating bottom lever upwards and refitting brass link over the small socket cap head screw



## Troubleshooting:

Fault	Possible problem	Recommended action
<b>Damper fails to open or partially opens.</b>	Insufficient air pressure / leak / blockage.	Check correct 5 bar (minimum) air pressure is present at actuator.
	Brass fusible link not fitted	Refit link
	Brass fusible link has activated.	Replace fusible link.
	Actuator mounting plate fitted incorrectly	Refer to Actuator installation – Actuator / Transit / Mounting Plate alignment figure, page 3.
	Actuator open 'End Stop' adjustment incorrect.	Refer to Actionair Technical sales office.
<b>Damper fails to fully close when air pressure is removed.</b>	Damper not correctly synchronised with the actuator	Remove air supply to actuator. Remove actuator from damper. Fully close damper. Refit actuator in accordance with Actuator installation – Actuator / Transit / Mounting Plate alignment figure, page 3.
<b>Damper fails fully close when Fusible Link element is removed.</b>	Air supply connections incorrect.	Check fittings. (Refer to page 3) Refer to Actionair Technical sales office.
	Actuator closed 'End Stop' adjustment incorrect.	Refer to Actionair Technical sales office.

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no compromise...

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