



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-13763

This is to certify that the
Pneumatic Actuator

with type designation(s)
TDA, TSR, WMDA, WMSR:
2, 4, 8, 12, 20, 35, 55, 70, 100, 150, 250 and 400

Manufactured by
TRUTORQ ITALIA SRL
ROVATO BS, Italy

is found to comply with
Det Norske Veritas' Rules for Classification of Ships

Application
May be used on quarter turn valves

Dsgn. press./Torque **2 - 10 bar/torque from 7 to 8260 Nm.**

Høvik, 2011-03-02
for Det Norske Veritas AS



This Certificate is valid until
2015-06-30

Stein Ulla
FOR **Marianne Spæren**
Head of Section

DNV local office:
Milan

M. Mohebbi
Mohsen Mohebbi
Surveyor

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: P-13763
File No.: 777.91
Job Id.: 262.1-010904-1

Product description

Design:

The pneumatic actuators covered by this approval are of double acting (type DA) and single acting with spring return (type SR). Type DA has a constant torque throughout the angle of rotation. The actuator can be modified from type DA to type SR by removing the end caps and fit springs into spring wells and refitting the end caps. The direction of rotation can be easily altered by turning the pistons.

Materials in actuator:

Cylinder:

Anodized or chemical nickel impregnated (CNI) aluminium to SS4107, SS4245

Piston:

Aluminium or chemical nickel impregnated (CNI) aluminium to SS4244, SS4253, and SS4263

Shaft:

Zinc plated steel, stainless steel or chemical nickel impregnated (CNI) aluminium SS1914, SS1957, and SS2346

Application/Limitation

The applicable temperature range of the actuators is limited to the gaskets and O-ring materials:

Material	Temperature	
	Min	Max.
Nitrile (standard)	-30°C	70°C
Viton (special order)	-20°C	120C

Bilge valves must at any time be accessible and arranged for manual operation in addition to the remote control. Manual operation by means of a portable hand pump is not accepted.

These actuators can be accepted for use in submerged condition in topside tanks for water ballast. In case of emergency it must be possible to operate the actuators from a portable hand pump on deck.

These actuators can be used in submerged condition in systems where this is permitted according to the Rules.

Actuators used on remote controlled ship side valves are to have indicators that will function satisfactory even if the actuators accidentally should be submerged in water.

The maximum output torque from actuators used on butterfly valves must not exceed the limit at which the valve spindle or disc can be damaged if the disc is restrained in any position.

Materials for stem and the pressure exposed parts to be delivered with Work's certificate indicating mechanical and chemical properties and heat treatment.

Each product is to be accompanied by the following documents:

- Product certificate prepared by the manufacturer and signed by DNV surveyor when it is required by DNV Rules or purchaser.
- Instruction manual/specification sheet.

Type Approval documentation

The approval is based on the following documentation:

- Manufacturer's catalogue "Pneumatic Actuators" without date
- Survey report dated 2010-12-28

Moffah



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Marking of product

For traceability to this type approval the products are at least to be marked with:

- Manufacturer's name or trade mark
- Type designation
- Max. air working pressure
- Part no.
- Serial no.

Certificate Retention Survey

For retention of the Type Approval, DNV Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with.

END OF CERTIFICATE

Alstrup