

# EU RO Mutual Recognition Technical Requirements

## Technical Interpretation (MR TI)

MR TI Ref: TI003	Relating to: <b>MR TECHNICAL REQUIREMENTS FOR AIR COMPRESSOR (Rev. 0.2 adopted 01/04/16)</b>	MR TI Version	0.0
		MR TI Status	Released
		MR TI Date of Issue	10/05/16
		Tier	3
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### Background:

In April 2015, an Industry Association representing the marine equipment manufacturing industry sought the following clarification of the following requirements within the MR Technical Requirement (MR TR) for '**AIR COMPRESSOR**':

#### 1.b Application limitations:

Type approval certification (TAC) is not prescribed by the EU RO's for a large majority of compressors.

#### 2.a i. a)

It seems that the regulation does not match real practices onboard a vessel with regard to adjustments and replacements of the safety relief valve as made by a vessel's crew.

#### 2.a i. d)

Open filters for air intake that do allow water and/or oil to enter are commonly used. Clarification is sought for the current types as used and the location of the filters on board (on top of compressors).

#### 2.a i. j)

Local temperature reading of discharge air is not ever requested by clients.

#### 4. Marking requirements

**Rated power/ Design pressure / Inlet volume flow rate:** clarification is sought as to why these are required.

**Maximum ambient air temperature:** This varies according to customer prerequisites as some customers require a High Ambient (HA) air compressor that is custom built and differs from the standard product range.

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### EU RO MR Technical Committee Response:

The EU RO MR technical Committee confirms the following:

#### 1.b Application limitations:

There are certain cases where compressors are required to have a Type Approval certificate (TAC).

Also, Mutual Recognition Type Approval Certification (MR TAC) is not a mandatory requirement and it relates to class requirements for Type Approval that exist in one or more EU RO's Rules, but not necessarily all EU RO Rules

#### 2.a i. a)

The MR technical requirement has now been updated to reflect actual practice as per the industry's suggestion– see version 0.2 released in XX/XX/2016 (<http://www.euomr.org/technical-requirements>)

#### 2.a i. d)

The requirement is considered fulfilled by using the common type with air intake located on top of the compressor, with a muffler and a simple strainer/filter fitted.

#### 2.a i. j)

Local temperature reading of discharge air is a requirement for several EU ROs and, therefore is included in the MR TR for Air Compressors based on the 'most demanding and rigorous' principle of Article 10.1 of the Regulation (EC) No. 391/2009.

### 4. Marking requirements

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**Rated power:** the rated power of the compressor (shaft power) is required to be able to select a driver with sufficient power, which may be an electric motor, a diesel engine, or a hydraulic drive.

**Design pressure:** Type approvals of any kind are generally based on design pressures. The same applies to the strength calculation of compressor parts such as crankshafts (worst case consideration). The actual working pressure depends on the individual compressor application and may be lower than the design pressure. The working pressure is not relevant for the purpose of type approval.

**Inlet volume flow rate:** This is the same as the more commonly used designation 'FAD' (free air delivery) which is the compressor's volume flow rate in the outlet but converted back to the inlet conditions. Conversion needs to be corrected to the standard inlet conditions as defined in recognized standards e.g. ISO 1217 in order to make compressor performances comparable.

NB: The term 'Inlet volume flow rate' was amended to 'Free Air Delivery (FAD)', in version 0.1 of the MR technical Requirement, dated 31 January 2015 and published on 17/04/15.

**Maximum ambient air temperature:** For the purpose of type approval, the maximum ambient temperature under which the compressor can be safely operated is to be determined by the compressor manufacturer. It is an important design criterion, e.g. for the correct size of air coolers, oil coolers and the selection of lubricating oil (worst case consideration). This is one item of a basic data that needs to be stated in the MR Type Approval Certificate (MR TACMR).

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The actual working temperature depends on the individual compressor application and is, in most cases, lower than the design temperature. The working temperature is not relevant for the purposes of (MR) type approval.

See controlled version of the relevant MR TR here:

<http://www.euromr.org/technical-requirements>

### MR TI APPROVAL DATE AND REVISION NUMBER

Date	Revision	Comment
09/05/16	0.0	Approved