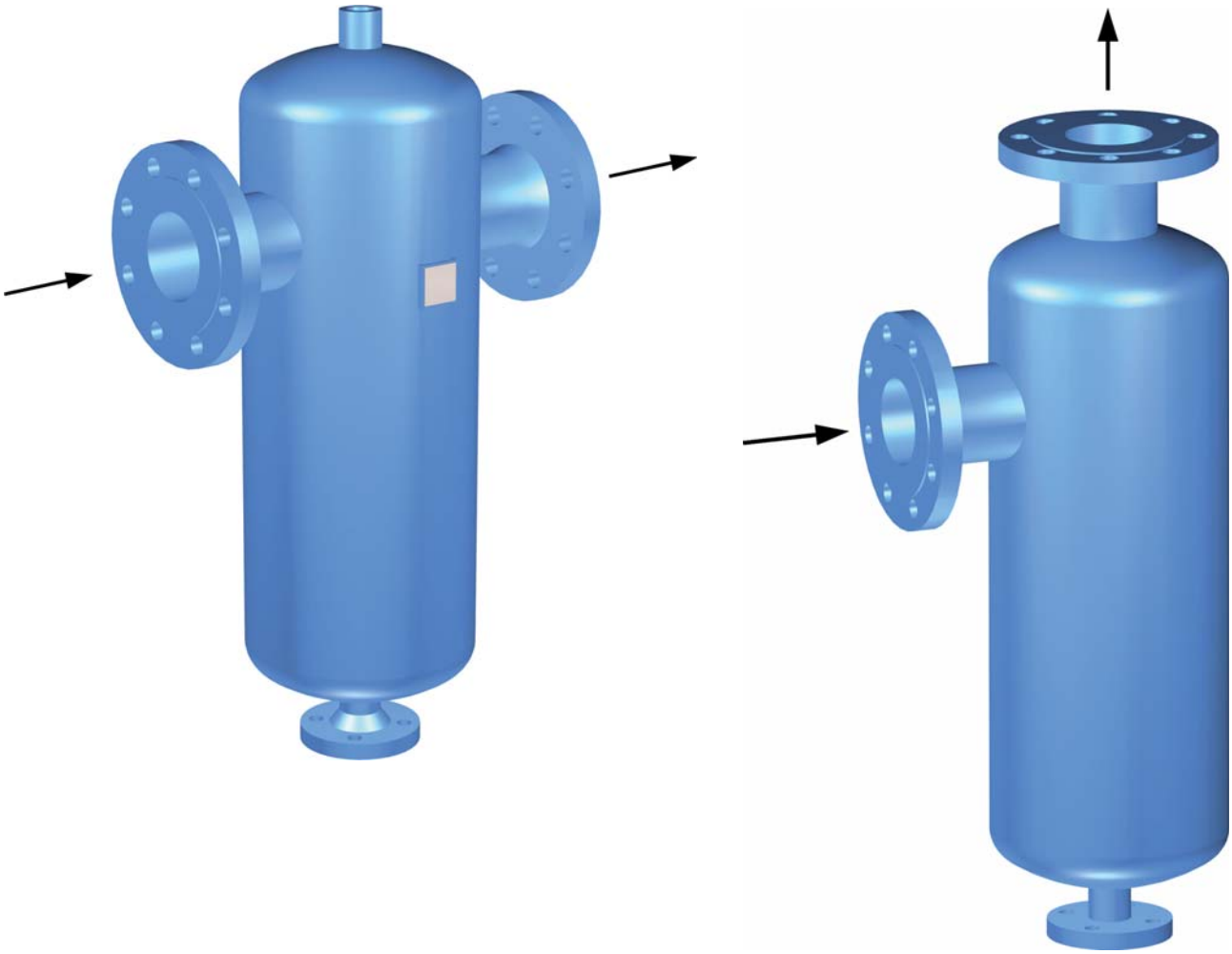
INSTALLATION, START-UP AND MAINTENANCE HANDBOOK



CENTRIFUGAL SEPARATORS

DATRO®

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1. – GENERAL INFORMATION. WORKING PRINCIPLE.

COMEVAL Centrifugal Separators are devised to improve the quality of steam or compressed air by separating heavier materials as water, oil droplets, dirt from Steam and Compressed Air pipelines.

Steam and Compressed Air traps properly selected and installed can efficiently eliminate water flowing along the bottom of the pipe. Nevertheless droplets in suspension are more difficult to pick up and be removed by these systems. Centrifugal Separators are ideal for such purpose.

Steam or compressed air enters the separator; thanks to centrifugal forces and swirling effects provided by internal design, the relatively heavier materials as water, oil droplets, dirt, etc. are separated and collected to the bottom of the separator and finally drained by a steam trap or compressed air trap connected to the bottom outlet. The steam leaves the separator with virtually no water droplets in suspension.

2. – STANDARDS & APPROVALS.

Equipment is designed, manufactured and tested in conformity to the most strict quality standards that the DIN EN ISO 9001 standard dictates.
All equipment are subject to individual hydro and leakage tests at our QC Dept.
-Compliant with Pressure Equipment Directive PED 2014/68/EU for fluids group 2 (Steam, Compressed Air). CE marked when it applies.
-Limits of use according to rating plate and declaration of conformity.

3 – GUARANTEE.

Centrifugal Separators are guaranteed against any manufacturing default in accordance to the 'Sound Engineering Practice' and provided the application, installation and maintenance operations have been properly followed and bearing in mind that:
-No claims derived from incorrect handling or use of the equipment outside of technical parameters are accepted.
-The guarantee coverage does not apply to damages caused by operating the equipment outside of the technical parameters and service conditions stated.
-The guarantee coverage does not cover for any commissioning or in site maintenance jobs or either products proved to have been tampered or faulted by material that has under gone fair wear and tear.
-The buyer is responsible to check that the in-coming product is received in good condition and in conformity to the ordered specifications. In case of damage caused during transit it is necessary to immediately complain to the carrier in a period of 24 hours. After this time normally carriers don't assume the derived costs.

4. – ESSENTIAL SAFETY GUIDELINES.

-DO NOT INSTALL the equipment before having carefully read this Manual together with the Technical Hand book of the equipment, in order to avoid prospective damages to people and property.
-Always use the equipment within the scope of intended service and operating duties as per described in the Technical Handbook and name-plate in the equipment; essential safety working regulations are to be strictly kept.
-Only qualified personnel should start up and regularly follow maintenance jobs at the plant.
-Any deviation from the usual installation guidelines should be notified to us for recommendation and approval.

5. – HANDLING.

-When loading or unloading the equipment ensure that all procedures for correct lifting are strictly followed.
-When loading or unloading ensure that the equipment is not subjected to any severe knocks.
-In the case where a equipment is dropped or subjected to a severe knock it should be thoroughly checked for external damage and replaced if necessary.
-Try not to damage external painting used to protect the equipment during handling and storage (equipment painted or not depending on type and material).

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6. – INSTALLATION & START-UP.

Bear in mind the following guidelines along with general installation practices:

-Check that the equipment specification meets any standards and codes of practice applicable to the plant.
-Consider hazardous environment around the product: explosion risk areas, lack of oxygen, dangerous gases, extremes of temperature, hot surfaces, fire hazard, excessive noise, moving machinery.
-Consider the effect on the complete system of the work proposed. Check whether any proposed action (e.g. closing isolation valve) will put any other part of the system or any personnel at risk.
-Check material suitability, pressure and temperature and their maximum and minimum values (refer to limits stated in the name plate and/or chapter 7- OPERATION).
-If the maximum operating limits of the product could be lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or over temperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations. For overpressure protection a safety valve properly sized for the system must be installed. No stop valves to be fitted between separator and safety device. Also install a pressure gauge to control the pressure. Safety valves and pressure gauges are both available from Comeval.
-A float trap should be fitted beneath the condensate/residual blowdown outlet. For steam systems, a suitable air vent should be fitted in the air vent connection at the top in case where air can be present. If not the air vent connection must be properly closed. Fitting of a vacuum breaker may be advisable when vacuum condition by steam condensation is expected.
-We strongly recommend the use of insulation jacket to avoid heat losses and to keep dryness fraction of steam, as well as to prevent from personnel injury (avoiding burns by direct contact). Please contact COMEVAL for further information.
-Centrifugal Separators offers a great performance in systems with velocities under normal practice limits. Excessive velocity reduces the efficiency of the Separator and also the life of the whole system.
-Centrifugal Separators working under normal practice velocities offer a negligible pressure drop.
-Allow for enough space to ease maintenance operations.
-All systems should be flushed to remove loose particles that could damage the equipment. Consider what may have been in the pipeline at some previous time: flammable materials, substances hazardous to health, extremes of temperature, etc.
-Determine the correct installation situation and direction of fluid flow (follow the direction of the arrow in the equipment).
The SC H type Separator must be mounted in horizontal pipeline, with draining connection downwards.
The SC V type Separator must be mounted with inlet in horizontal pipeline and outlet in vertical pipeline with flow direction upwards.
-Remove any transit protection from all connections just before installation.
-Check that connections fit smoothly. Check that all pipe work is well placed, supported and aligned before installing the separator. Avoid gradients, rotation and pipe misalignment that could cause stress and leakage once installed. Select the correct union gaskets according to process conditions.
Weight of the equipment should not be supported by the pipe. Check for tightness during start-up and correct any leakage.
-Warning! Temperatures above 50ºC or below 0ºC may cause personnel injures if vessel is touched. Ensure that the corresponding warning signs are displayed in the equipment or surrounding site, or insulate the equipment in case of risk.
-Ensure that bottom isolation valves are open and the ball float trap is correctly sized and installed to allow the condensate collected to be properly drained.
-Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

IT IS THE RESPONSIBILITY OF THE INSTALLER / OPERATOR TO ENSURE THAT ALL HEALTH & SAFETY REQUIREMENTS AS LAID DOWN BY THE CONTROLLING COMPANY ARE FOLLOWED.

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7. –OPERATION.
Operation limits according to rating plate / declaration of conformity

Operation of Separators is inherently simple and no special operating instructions are required.
As explained in previous point, special care to be taken to prevent personnel from direct contact with hot or cold equipment. It is recommended to insulate the equipment in order to avoid burn due to direct contact.
Ensure that operation limits are respected at any time.
Trace heating should be considered under severe environmental conditions, in order to prevent the operating temperature of the separator dropping below 0ºC during service.

8. – MAINTENANCE & SPARE PARTS.
Always wait the valve medium to cool down before starting any maintenance job at the plant, release the pressure from the system, drain the line and pipe system in the event of toxic, corrosive, flammable or caustic fluids.

Blanking plugs should be checked periodically for tightness and, where used, insulation for security. Vessels should be included in a written scheme of examination including regular internal visual inspection for signs of reduction of thickness by excessive corrosion or abrasion; to be carried out by qualified personnel, responsible for determining the frequency of examination (recommended once a year), or at programmed shutdowns of the plant.
Follow maintenance instructions for external equipment as ball float traps, isolation valves, safety valves, etc.

No spare parts are required or available for separators. Repairs to pressure vessels are not recommended as specialist design procedures and welding operations are required, as well as reinspection by qualified personnel.

Full Technical Support is always available from COMEVAL

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