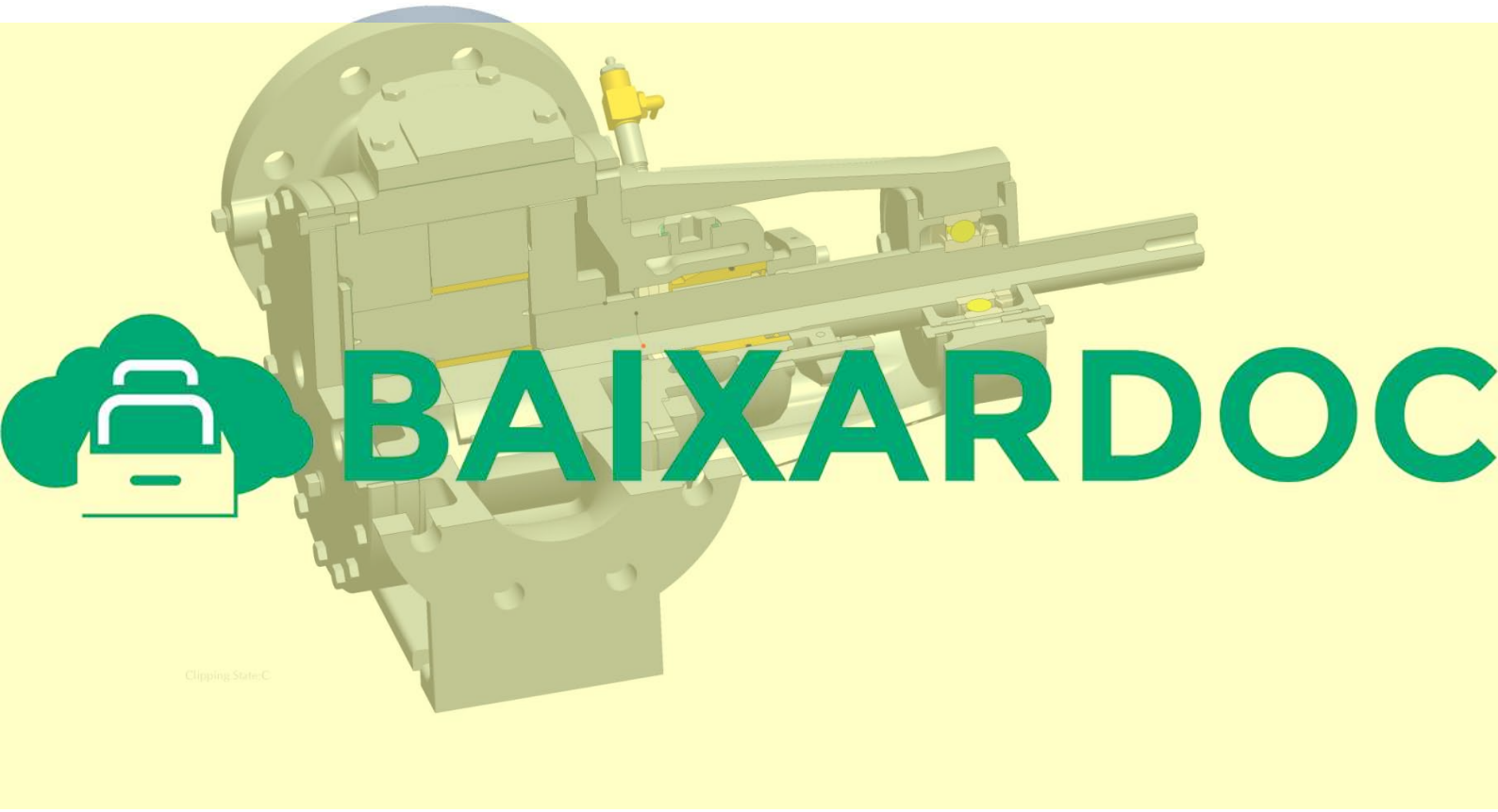
ROTAN CHD Pumps

Annex to Manual T1456



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DESMI

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Illustrations in this manual are only used to demonstrate the different working procedures. To a degree they are dependent on the size of the pump as there are different model constructions used for different applications

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- When ordering spare parts the following information must be provided:
- Pump serial number
- Pump S/N number
- The article number

The above information can be found on the pump flanges or the pump's nameplate

Introductions

This service manual only contains information about startup, service and maintains of Rotan CHD pumps.

For general information about Rotan pumps please refer to manual T1456

Rotan pumps are designed for pumping media with high viscosity such as chocolate, Cocoa Mass , Cocoa Butter, sugar powder etc. The Pump are equipped with heating jacket on the front and rear end. The Rotor, Idler and idler bushing are with special clearances

The Rotan CHD pumps are not Pressure or flow tested from the factory.
The front cover and rear cover is pressure tested separately
CHD pumps are preserved with vegetable oil

Rotan CHD pumps are <u>not approved</u> for pumping foods requiring FDA and 3 A approval.

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EC Declaration of Conformity
The Machinery Directive 2006/42/EC

Manufacturer: DESMI Pumping Technology A/S
Address: Tagholm 1, DK-9400 Nørresundby, Denmark
Tel.: +45 96 32 81 11
E-mail: desmi@desmi.com

CE

DESMI A/S hereby declares that the product in question has been produced in accordance with the following essential health and safety requirements of the Machinery Directive 2006/42/EC Annex I.

Product: ROTAN pumps complete with motor
Type: HD, CD, PD, GP, CC, ED(MD)

which are installed and applied in conformity with DESMI A/S' user manual.

The following harmonized standards have been applied:
EN 292-1:1994 Safety dis[illegible]s
EN 809:1998+A1:2009 + A[illegible] – Pumps and pump units for liqui[illegible]
EN [illegible]:2001 - Proc[illegible] for [illegible]c testing of liqui[illegible] pump[illegible]
EN 60204-1:2006 Electrical equipment on machines (item 4, general requirements)

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Reservations For application in explosive atmospheres the pump with motor must also comply with ATEX Directive 94/9/EC.
If applied for hazard-classified liquids, the user company's attention is drawn to the section of the user manual on emptying and cleaning of the pump.

ISO 9001 BUREAU VERITAS Certification

Nørresundby 2010

Kurt Bech Christensen
Technical Director
DESMI A/S

Component Declaration

Manufacturer: DESMI A/S
Address: Tagholm 1, DK-9400 Nørresundby, Denmark.
Tel.: +45 96 32 81 11
E-mail: desmi@desmi.com

Product: ROTAN pumps
Type: HD, CD, PD, GP, CC, ED(MD)

which are installed and applied in conformity with DESMI A/S' user manual

DESMI A/S hereby declares that the product in question has been produced in accordance with the essential health and safety requirements of the Machinery Directive 2006/42/EC Annex I.

The following harmonised standards have been applied:
EN 294:1994 Safety distances
EN 809:2002 + AC – Pumps and pump units for liquids
EN 12[illegible]2001 – Proc[illegible] for hy[illegible]atic te[illegible]ng o[illegible]qui[illegible] pump
The [illegible]des[illegible]ned f[illegible] whe[illegible]ted a[illegible]lectri[illegible]moto[illegible]with[illegible]e aim
cre[illegible]ng a jo[illegible]m[illegible]chi[illegible]

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Reservation For application in explosive atmospheres the pump must also comply with ATEX Directive 94/9/EC.

If applied for hazard-classified liquids, the user company's attention is drawn to the section of the user manual on emptying and cleaning of the pump.

The pump must <u>not</u> be put into use until pump, motor and control have been risk assessed and the unit has been CE marked in conformity with the provisions of the Machinery Directive.

Nørresundby 2010

Kurt Bech Christensen
Technical Director
DESMI A/S

EC Declaration of Conformity
ATEX – 94/9/EC

Manufacturer: DESMI A/S
Address: Tagholm 1, DK-9400 Nørresundby, Denmark.
Tel.: +45 96 32 81 11
E-mail: desmi@desmi.com

Product: ROTAN pumps
Type: HD, CD, PD, GP, CC, ED(MD)

which are marked: Ex II category 2 or 3, "c" X and with temperature class and installed and applied in conformity with DESMI A/S' user manual

The entire user manual must be read thoroughly before a ROTAN ATEX pump is installed and put into use

DESMI A/S hereby declares that the product in question has been produced in accordance with ATEX Directive 94/9/EC.

The following harmonised standards have been applied: EN 13463-1:2009
EN 13463-5:2003

The product is designed for use when connected to an electric motor, with the aim of creating a joint machine. The conformity also applies to complete pumps with motor if, according to the manufacturer, the motor conforms to a corresponding category and temperature class and has been fitted in conformity with DESMI A/S' user guide.
If DESMI A/S supplies pump and electric motor connected, the EC Declaration of Conformity and user manual for the electric motor will be attached.

Nørresundby 2010

ISO 9001 BUREAU VERITAS Certification

Kurt Bech Christensen
Technical Director
DESMI A/S

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MANUFACTURER'S CERTIFICATE

This is to certify that

DESMI

Rotan® Chocolate pumps in cast iron (material code 1) and stainless steel (material code 3) type ECHD/BCHD (in line / 90° angle) are designed specifically
for the chocolate industry. Consequently all materials - various steel types, sealing materials and surface treatments which are in contact with the product are suitable for this type of application and according to:

REGULATION (EC) No 1935/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 October 2004.

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Nørresundby d. 05-04-2011

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Before start-up

Rotan CHD pumps are preserved with vegetable oil at the factory, If this oil is not compatible with the media that is pumped, the pump should be cleaned before startup.

Rotan CHD pumps is fitted with a special shaft seal, and may not be mistaken for a standard soft shaft packing (see Figure 1)

WARNING

The main bushing and the soft packing rings are not lubricated from the factory.
The main bushing and the soft packing is to be lubricated before startup. Make sure that the lubrication media is compatible with the media that's is pumped

WARNING

When lubricating the main bushing and the soft packing, the lubrication pressure must not exceed 20 bar / 290 psi. If the lubrication pressure exceeds this, there is a risk of damaging the Lip seal and the packing gland.

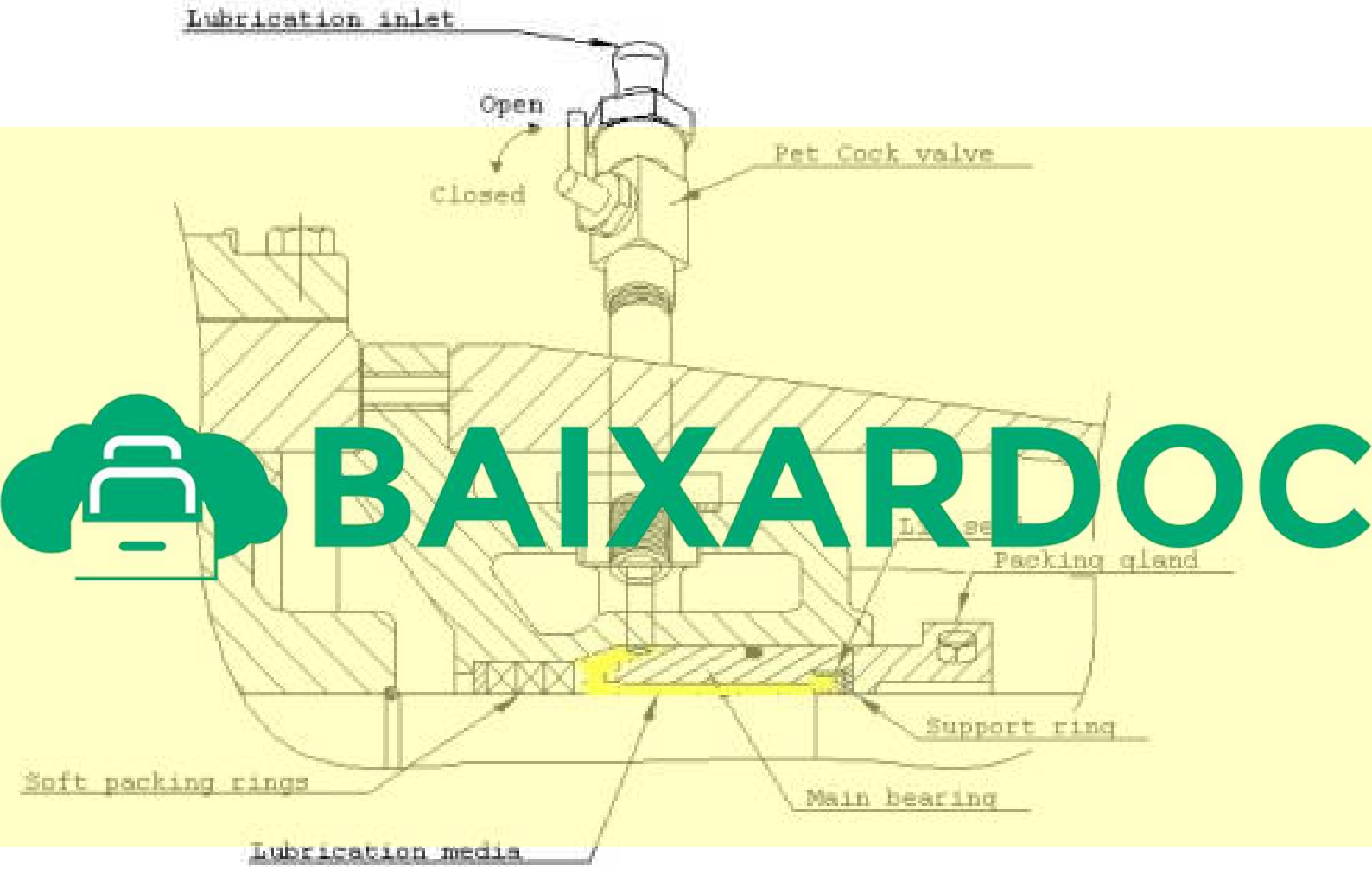
Prelubrication amounts of main bearing

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Pump type HD - CD	Grease in cm3 (cubic centimeters)
33	5,0
41	7,5
51/66	25,5
81/101	27,0
126	24,0
151	28,0
152	42,0

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Remember to close the pet cock valve after lubrication



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Figure 1. Shows Construction of CHD shaft seal

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Before starting the pump, check:
• That the main bushing and soft packing is lubricated with Food grade grease
• That the pump is correctly aligned with the gear and motor. See chapter: "Aligning the pump and gear/motor" Main manual T1456
• That the pump is heated, to secure a free rotation of the shaft
• That the ball bearings maximum service life is observed See main manual T1456
• That all isolating valves in the suction and pressure pipe are fully open, to avoid the pressure being too high, and the pump running dry
• That there is no coagulated liquid in the pump or pipe system, after last operation, that can cause blockage or breakdown
• That all necessary monitoring and safety system are connected and adjusted according to the operation conditions

After starting the pump, check:
• That the pump is drawing the liquid
• That ther[illegible] sig[illegible]f cav[illegible]ti[illegible].e[illegible]xcess[illegible] nois[illegible]r vi[illegible]
• [illegible]the s[illegible]s co[illegible]ed
• T[illegible]e d[illegible]n [illegible]rotat[illegible]n i[illegible]co[illegible]ct
• That there is no leakage from the pump
• That the shaft seal not leaking (the shaft seal on a CHD pump is a isolated construction and there for leak free)
• That the operation pressure is correct
• That the pressure in the heating jackets not exceeds 10 bar
• That the magnetic clutch (type ED) is not slipping and then causing an inadequate flow. And that the temperature in the magnetic clutch does not exceed the permitted
• That the power consumption is correct
• That all surveillance equipment is working correctly
• That any pressurized water pipes, Heating/cooling and lubricating systems, etc. are working correctly

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Maintenance

Normal Maintenance of the Rotan CHD pumps will typically include the following.

1. Lubrication of the soft shaft seal and main bushing
2. Inspection of leakage from the lip seal (the lip seal is leak free)
3. Inspection of wear on the idler pin and idler bushing

The implementation of the above mentioned maintenance points, can vary a lot, depending of the operations conditions.

WARNING

Desmi A/S recommend that the soft packing and main bushing is lubricated at an 8 hour intervals (see diagram below) it is important that the lubrication interval is adjusted to the operations conditions, so that the media is kept away from the main bushing and lip seal. Automatic grease pots may be fitted

After roughly one month operation it is recommended that the front cover is removed for inspection for wear on the idler pin/bushing, and disassembly of the rear end for inspection of wear on the shaft – main bushing and the lip seal if there is traces of the pumped media in the main bushing, it is recommended that the lubrication interval is adjusted.

The operating conditions, can be very different, so it is recommended that the company work out a procedure for servicing the pumps (lubrications interval, inspection of wear) that is adapted to the actual operation conditions.

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Lubrication of idler bearings CHD

		Fat quantity in grams
Pump type: HD – CD - ED	**Relubrication interval in hours**	**Main bearing**
33	8 hours	1
41		1
51		1,5
66		1,5
81		2
101		2,5
126		4
151		6
152		10

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