

## **Maintenance / Repair of Water Chamber of Water Cooled Variable Vacuum Capacitors**

The water cooled vacuum capacitors with a lead screw mechanism like type CVMA-650EW/50-AAE, CVLA-1000BW/50-AAE-R, CVHA-1600AW/60-ABG-N etc. have established an excellent performance record in a multitude of applications. There are customers in broadcasting and in a variety of industrial applications who have skilled personnel available and who like to perform an overhaul of the water chamber of these capacitors if or before there is a water leak.

It is for these customers that the enclosed maintenance instruction has been written. If you use capacitors of the push-pull type, the overhaul is executed in a similar way. Please, write for our special maintenance instruction.

Gasket, O-rings and greases can be ordered from us. Please, indicate type of capacitor.

Quite often, before the overhaul of the water chamber, a replacement capacitor is installed in the equipment. So the overhauled component goes on the shelf. Prior to that, the capacitor should be dried internally using a vacuum pump in order to prevent corrosion. In our experience, any other method than vacuum drying has not been successful, please refers to our Service Bulletin SB-31.

## 1. Tools required

- 1 Plier "Seeger" ZGJ-3 ("Truarc" 0300) english version
- 1 Screwdriver 5 mm blade
- 2 Allen wrenches 2 and 4 mm
- 1 COMET drawing R-1.0 (see enclosure)

## 2. Replacement parts

- 5 O-rings P/N 054-002/054-004/054-006 and 2 pieces 054-011
- Dust gasket P/N 054-022
- grease COMET P/N 026-009 and 026-020

## 3. Disassembly of the water chamber

- 3.1. Protect the ceramic insulator of the capacitor with paper or plastic.
- 3.2. Remove the 6 retaining screws P/N 056-029 on top of the chamber.
- 3.3. Remove the retaining ring P/N 056-049.
- 3.4. Unscrew completely the lead screw (shaft) P/N 116-...
- 3.5. Remove the six set screws P/N 056-020.
- 3.6. Remove aluminium cap P/N 117-...
- 3.7. Remove the 4 screws P/N 056-008 holding the water chamber.
- 3.8. Lift off the water chamber P/N 122-... **carefully applying the force in the direction of the capacitor axis** (avoid any side loading).
- 3.9. Remove the brass tube P/N 121-...
- 3.10. Remove washer "Seeger" P/N 056-088.
- 3.11. Remove spacer ring P/N 122-057.
- 3.12. Remove the bearing system P/N 122-045.
- 3.13. Remove all O-rings and the dust gasket P/N 054-022.
- 3.14. Remove clips P/N 056-085 and the 2 half rings P/N 056-086, also the thrust (ball) bearing P/N 118-002 of the lead screw P/N 116-...

## 4. Cleaning

- 4.1. Clean all disassembled parts in alcohol (CH<sub>3</sub>OH).
- 4.2. Clean also the polished chrome plated tube which sits on top of the capacitor as well as the pressure O-ring P/N 054-004 with alcohol.

Never clean the tubulation with an abrasive product!

Make sure that no particles enter the holes in the tubulation and the capacitor.

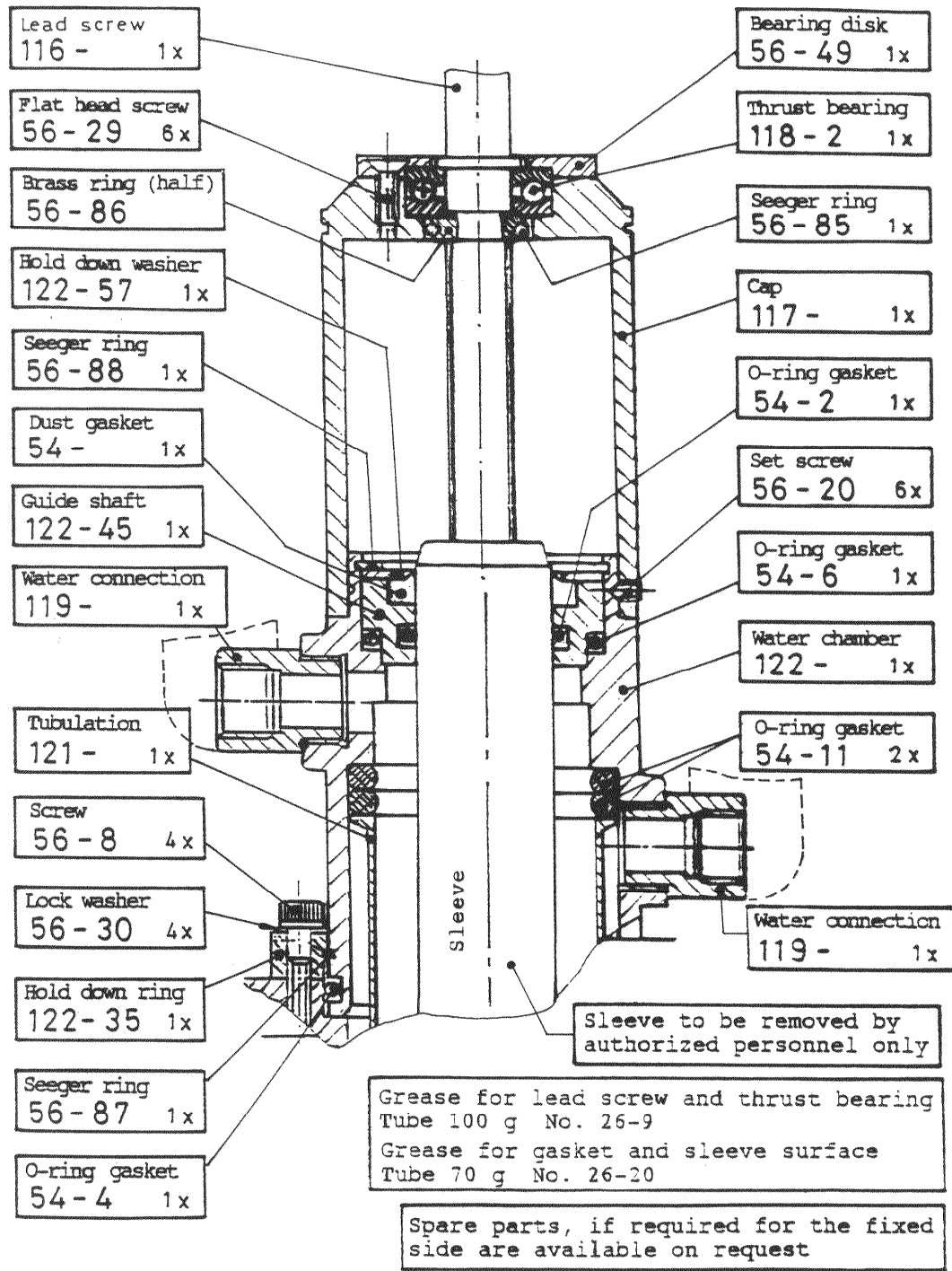
## 5. Reassembly of water chamber

- 5.1. Install new O-rings P/N 054-004/054-006 and two P/N 054-011 using a film of grease P/N 026-020.
- 5.2. Install O-ring P/N 054-002 with as much grease P/N 026-020 as possible.
- 5.3. Install dust gasket P/N 054-022.
- 5.4. Mount bearing system P/N 122-045 into its place.
- 5.5. Add spacer ring P/N 122-057 and the washer "Seeger" P/N 056-088.
- 5.6. Put a film of grease P/N 026-020 onto the chrome plated tube, sitting on the capacitor.
- 5.7. Install brass tube P/N 121-... in the correct direction (see figure).
- 5.8. Mount water chamber onto the capacitor while turning it gently, applying adequate pressure permitting O-ring P/N 054-004 to seat properly (grease P/N 026-020).
- 5.9. Fix position of the water connections in the desired direction by turning water chamber.
- 5.10. Attach water chamber with the 4 screws P/N 056-008 and with lock washers P/N 056-030. It is **important** to tighten the 4 screws progressively crosswise.
- 5.11. Remount thrust (ball) bearing P/N 118-002 onto lead screw P/N 116-... using grease P/N 026-020 as well as the 2 half rings P/N 056-086, securing same with clips P/N 056-085.

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- 5.12. Place a little grease P/N 026-009 onto thread of chromed tubing, as well as onto thread of lead screw P/N 116-...
- 5.13. Install aluminium cap. P/N 117-... and secure with the 6 set screws P/N 056-020.
- 5.14. Mount lead screw P/N 116-... onto capacitor, turn to stop.
- 5.15. Replace the retaining washer P/N 056-049.
- 5.16. Attach washer with the six screws P/N 056-019.
- 5.17. Operate lead screw P/N 116-... by hand from maximum to minimum capacitance value and back to check mechanism.
- 5.18. Place cooling course under one bar (15 PSI) of air pressure to check for leaks.
- 5.19. Remove paper or plastic protection from capacitor and clean same with alcohol.
- 5.20. If the capacitor has been in use prior to this maintenance procedure and will not be returned to service within a short period of time (approx. 2 weeks), dry the inside of the capacitor by means of a vacuum pump (cf. Service Bulletin SB-31).

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Änderungen / Rev.:

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Replacement for:

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—	Gepr.:		

TYPICAL WATER CHAMBER  
VARIATION BY SCREW  
COMET HIGH VACUUM CAPACITOR



VAKUUM-KONDENSATOREN

Zeichnung Nr. / Drawing No.:

R-1.0

**COMET**

COMET AG Herrengasse 10, CH-3175 Flamatt  
Tel. +41 31 744 9000, www.comet-pct.com

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