

Top Mounted Handwheel

T2, T3, T4, T5

Index	
1	Using Kämmer valves and actuators correctly.
2	Unpacking
3	Disassemble / assemble handwheel

1 USING KÄMMER VALVES AND ACTUATORS CORRECTLY

1.1 General

The following instructions are designed to assist in unpacking, installing and performing maintenance as required on Kämmer products. Product users and maintenance personnel should thoroughly review this bulletin prior to installing, operating or performing any maintenance.

In most cases Kämmer valves and actuators are designed for specific applications (e.g. with regard to medium, pressure, temperature). For this reason they should not be used in other applications without first contacting the manufacturer.

1.2 Terms concerning safety

The safety terms **DANGER**, **WARNING**, **CAUTION** and **NOTE** are used in these instructions to highlight particular dangers and/or to provide additional information on aspects that may not be readily apparent.



DANGER: indicates that death, severe personal injury and/or substantial property damage will occur if proper precautions are not taken.



WARNING: indicates that death, severe personal injury and/or substantial property damage can occur if proper precautions are not taken.



CAUTION: indicates that minor personal injury and/or property damage can occur if proper precautions are not taken.



NOTE: indicates and provides additional technical information, which may not be very obvious even to qualified personnel.

Compliance with other, not particularly emphasised notes, with regard to transport, assembly, operation and maintenance and with regard to technical documentation (e.g. in the operating instruction, product documentation or on the product itself) is essential, in order to avoid faults, which in themselves might directly or indirectly cause severe personal injury or property damage.

1.3 Protective clothing

Kämmer products are often used in problematic applications (e.g. extremely high pressures, dangerous, toxic or corrosive mediums). In particular valves with bellows seals point to such applications. When performing service, inspection or repair operations always ensure, that the valve and actuator are depressurised and that the valve has been cleaned and is free from harmful substances. In such cases pay particular attention to personal protection (protective clothing, gloves, glasses etc.).

1.4 Qualified personnel

Qualified personnel are people who, on account of their training, experience and instruction and their knowledge of relevant standards, specifications, accident prevention regulations and operating conditions, have been authorised by those responsible for the safety of the plant to perform the necessary work and who can recognise and avoid possible dangers.

1.5 Installation



DANGER: Before installation check the order-no, serial-no. and/or the tag-no. to ensure that the valve/actuator/accessory is correct for the intended application.

Do not insulate extensions that are provided for hot or cold services.

Pipelines must be correctly aligned to ensure that the valve is not fitted under tension.

1.6 Spare parts

Use only Kämmer original spare parts. Kämmer cannot accept responsibility for any damages that occur from using spare parts or fastening materials from other manufactures. If Kämmer products (especially sealing materials) have been on store for longer periods check these for corrosion or deterioration before using these products. Fire protection for Kämmer products must be provided by the end user.

1.7 Service / repair

To avoid possible injury to personnel or damage to products, safety terms must be strictly adhered to. Modifying this product, substituting nonfactory parts, or using maintenance procedures other than outlined in this instruction could drastically affect performance and be hazardous to personnel and equipment, and may void existing warranties. Between actuator and valve there are moving parts. To avoid injury FLOWSERVE provides pinch-point-protection in the form of cover plates, especially where side-mounted positioners are fitted. If these plates are removed for inspection, service or repair special attention is required. After completing work the cover plates must be refitted.

Apart from the operating instructions and the obligatory accident prevention directives valid in the country of use, all recognised regulations for safety and good engineering practices must be followed.



WARNING: Before products are returned to Kämmer for repair or service Kämmer must be provided with a certificate which confirms that the product has been decontaminated and is clean. Kämmer will not accept deliveries if a certificate has not been provided (a form can be obtained from Kämmer).

1.8 Opening and closing the valve



DANGER: The handwheel size has been engineered to provide tight shut-off with normal hand operation. If this cannot be achieved the valve must be isolated or removed from the process system for maintenance. It is strictly prohibited to use an extension bar, pipe wrench or other mechanical leverage to operate the handwheel.

1.9 Storage

In most cases Kämmer Products are manufactured from stainless steel. Products not manufactured from stainless steel are provided with an epoxy resin coating. This means that Kämmer products are well protected from corrosion. Nevertheless Kämmer products must be stored adequately in a clean, dry environment. Plastic caps are fitted to protect the flange faces to prevent the ingress of foreign materials. These caps should not be removed until the valve is actually mounted into the system.

1.10 Valve and actuator variations

These instructions cannot claim to cover all details of all possible product variations, nor in particular can they provide information for every possible example of installation, operation or maintenance. This means that the instructions normally include only the directions to be followed by qualified personal where the product is being used for its defined purpose. If there are any uncertainties in this respect particularly in the event of missing product-related information, clarification must be obtained via the appropriate FLOWSERVE sales office.

2 UNPACKING

2.1 Each delivery includes a packing slip. When unpacking, check all delivered valves and accessories using this packing slip.

2.2 Larger valves can be lifted using slings on the yoke rods or, if present, on the lugs provided for this purpose. If slings are used, attach them so that the outer tubing or attaching parts are not damaged.



WARNING: If slings are used, be aware that the centre of gravity of the valve may be above the lifting point. In this case, secure or support the valve against rotating, to prevent damage or personnel injury.

2.3 Report transport damage to the carrier immediately.

2.4 In case of discrepancies, contact your nearest FLOWSERVE sales office.

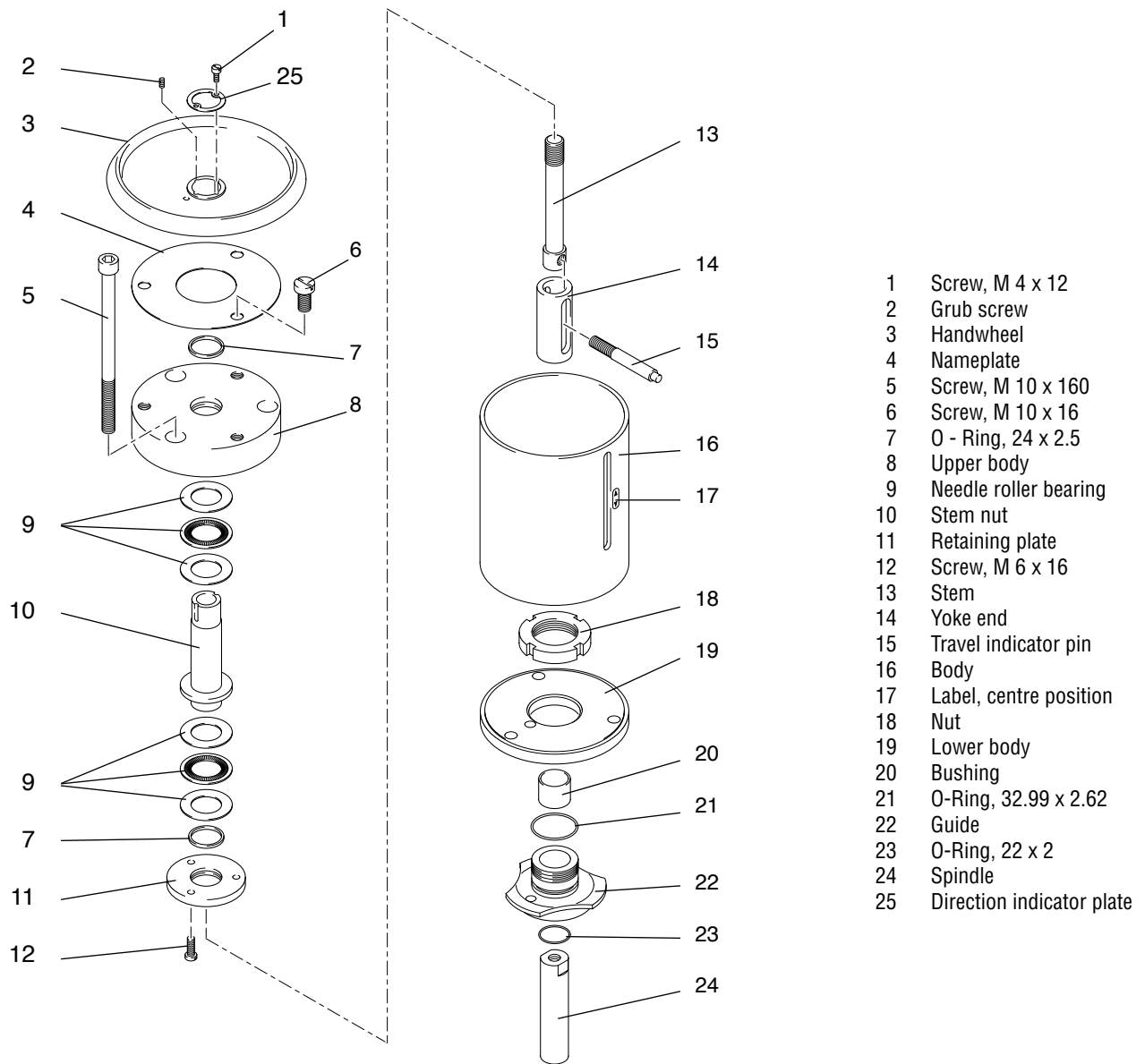


Figure: 1

3 DISASSEMBLE / ASSEMBLE THE TOP MOUNTED HANDWHEEL

3.1 Disassemble top mounted handwheel

(see figure 1)



NOTE: Operate the handwheel to a neutral position and ensure it is not under pressure from the actuator springs.

- 3.1.1 Remove screws (1) and direction indicator plate (25).
- 3.1.2 On larger size handwheels remove grub screws (2).
- 3.1.3 Remove handwheel (3).
- 3.1.4 Remove plastic screws (6) and nameplate (4).
- 3.1.5 Remove mounting screws (5).
- 3.1.6 Unscrew the upper body (8) clockwise (LH thread) to remove it from the stem (13).
- 3.1.7 Remove body (16) and unscrew yoke end (14).
- 3.1.8 Remove retaining screws (12) and plate (11).
- 3.1.9 Separate stem nut (10) and needle bearings (9).

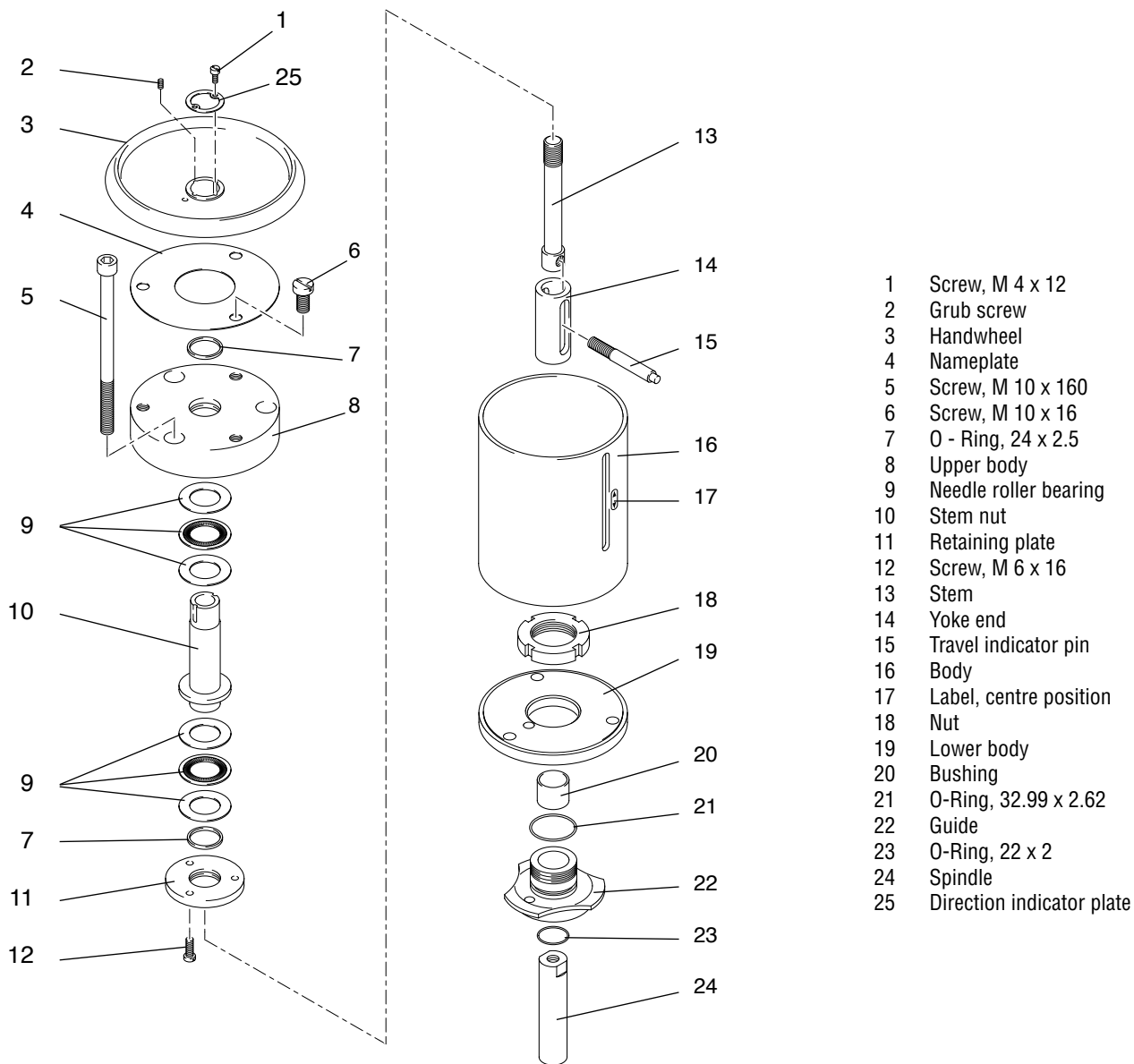
- 3.1.10 Remove and discard O-rings (7).

3.2 Assemble top mounted handwheel



Note: all worn or damaged parts must be replaced. Apply lubrication to the O-Rings and needle bearings when fitting (process permitting).

- 3.2.1 Fit new O-rings (7)
- 3.2.2 Assemble the stem nut (10) with needle bearings (9) to the upper body (8) and secure with retaining plate (11) and screws (12).
- 3.2.3 Screw yoke end (14) onto actuator spindle (24) ensuring the travel indicator pin (15) faced to the front.
- 3.2.4 Replace body (16).
- 3.2.5 Screw upper body assembly (8) anticlockwise (LH thread) onto stem (13) until it contacts the body (16). Align the holes for the mounting screws and secure with screws (5).



- 1 Screw, M 4 x 12
- 2 Grub screw
- 3 Handwheel
- 4 Nameplate
- 5 Screw, M 10 x 160
- 6 Screw, M 10 x 16
- 7 O - Ring, 24 x 2.5
- 8 Upper body
- 9 Needle roller bearing
- 10 Stem nut
- 11 Retaining plate
- 12 Screw, M 6 x 16
- 13 Stem
- 14 Yoke end
- 15 Travel indicator pin
- 16 Body
- 17 Label, centre position
- 18 Nut
- 19 Lower body
- 20 Bushing
- 21 O-Ring, 32.99 x 2.62
- 22 Guide
- 23 O-Ring, 22 x 2
- 24 Spindle
- 25 Direction indicator plate

Figure: 1

Continued.....

- 3.2.6 Replace nameplate (4) and plastic screws (6).
- 3.2.7 Replace the handwheel (3) and align the punch marks.
On larger size handwheels replace the grub screws (2).

- 3.1.8 Replace direction indicator plate (25) and secure with screws (1).
- 3.1.9 Turn the handwheel clockwise until an initial resistance is felt and then back-off 1/4 turn.

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