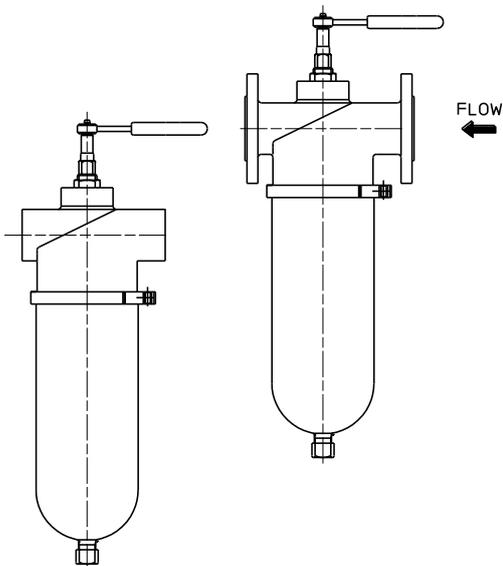


**OXFORD**  
FILTRATION  
LIMITED

Unit 15, Bridgewater Way, Windsor, Berkshire SL4 1RD. U.K.  
Tel: +44 (0)1628 440906 Fax: +44 (0)1628 476667  
e-mail: sales.oxfordfiltration.com

**INSTALLATION, OPERATING & MAINTENANCE**  
**MANUAL**

FOR THE  
OXFORD FILTRATION LIMITED  
**MANUALLY OPERATED**  
**SELF CLEAN FILTER**



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## **Important Safeguards**

- Use the filter only as described in this manual.
- The filter is for use on liquids only.
- Operators should be suitably trained.
- A competent person should undertake installation and maintenance.
- Do not attempt to maintain, repair or adjust the filter whilst it is pressurised.
- If the fluid to be filtered is in any way hazardous, toxic or flammable, or is at a temperature extreme, the operator and environment should be suitably protected. Extreme care should be exercised if the fluid, at maximum operating temperature, but at room pressure, is above its boiling point. Unless specifically stated otherwise strainers that are sold or used within the European Union, are offered only for fluids (not gases) defined by the Pressure Equipment Directive 97/32/EC at pressures that mean the strainer fall under a self certified conformity assessment as defined by Directive 97/32/EC. A fluid whose vapour pressure at the maximum allowable temperature is greater than 1.5 barg must be treated as a gas and it is assumed for the purposes of the self certification of this vessel that this is not the case. Please discuss with our technical sales team if in doubt.
- The maximum operating pressure for the standard filter structure is 14 barg at 50°C. But other higher-pressure filters are available. Please see the relevant standard for the flange pressure rating. The maximum working pressure of the assembly is the lower of the above two pressures. The maximum working pressure reduces as the temperature increases. Please consult with Oxford Filtration for further information.
- The maximum operating temperature we would suggest is 100°C on our standard Self Clean Filter. If the temperature is in excess of this please discuss with our technical department.
- Ensure the inlet pressure and temperature is less than that shown on the filter identification label and that the flange drillings are suitable for the application.
- Check filter housing material and seals for the intended duty.  
Use depends on factors such as chemical compatibility, temperature of use etc.  
If in doubt at all please consult with our technical sales team.  
Seals used with stainless steel filter are fitted as standard in viton but available in Nitrile/Buna n or EP/EPDM on request or with high pressure adaption FEP encapsulated may be used throughout. The seal temperature limits assume complete chemical compatibility with the fluid. Care should be taken with any fluid at elevated temperature especially above 100°C. Do not allow the fluid to freeze in the filter.
- The filters, when shipped from Oxford Filtration Ltd, do not contain substances specifically hazardous to health. However, the filter may have a thin coating of oil based corrosion preventative on some of its surfaces. So care should be taken should this be unacceptable in the given application.
- If a used filter is to be stored or transported, ensure that the filter is clean, suitably protected (including corrosion protection if appropriate) and does not contain substances that could be hazardous to health.
- If the filter has been subjected to overpressure, mechanical damage, corrosion or erosion, or any form of abuse that may reduce it's strength, the filter should be scrapped or returned to Oxford Filtration Ltd for examination and if practical repair and re-test.
- Use only the manufacturers recommended attachments and genuine spares.
- Retain this Manual for future reference.

## **1. Installation**

Install the filter in the pipeline using appropriate seals and attachments that comply with the relevant codes. Fit a suitable discharge valve to the base of the filter and pipe the waste away appropriately. Confirm:

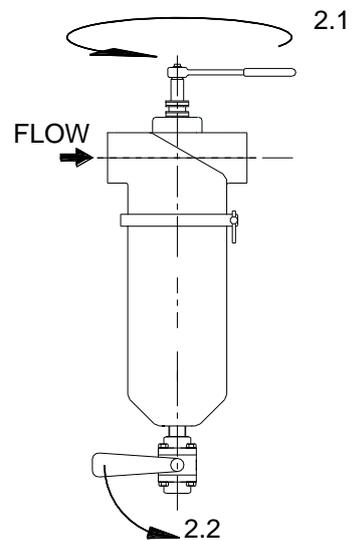
- That the flow direction is correct (as shown by the arrows cast on the head of the filter).
- There is enough space around the filter for maintenance and routine operation.
- That there are no leaks and that the ratchet cleaning handle operates smoothly in the direction shown by the arrow cast on the head of the filter. (ie anti-clockwise rotation when viewed from above.)

- NOTE:
1. Ideally it should be possible to isolate the filter.
  2. For efficient operation, it should be possible to determine the pressure drop across the filter.
  3. Ensure the differential pressure is less than 3 bar at all times.

## **2. Operation**

**2.1** **Cleaning the element:** Operating the ratchet handle cleans the filter element. The handle should be cranked before the pressure drop across the filter reaches 0.35 bar (5 lb/in<sup>2</sup>) and should be cranked at least once per day.

**2.2** **Discharging the Debris:** The collected debris should be regularly discharged from the sump of the filter. (Typically every 20 times the element has been cleaned) This is achieved by opening the discharge valve that should be fitted to the base of the filter.

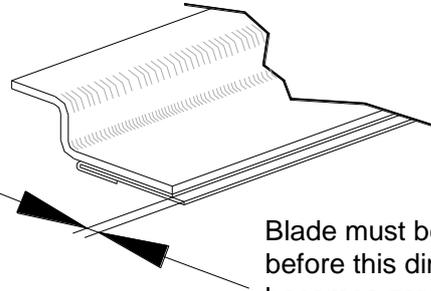


### **3. Routine Maintenance**

**3.1 Leakage:** Any leakage should be cured immediately. See Section 4 'Trouble Shooting'.

**3.2 Blade wear:** The rate of blade wear varies from application to application. Initially the blades should be checked ever 3 months and as experience is gained this period can be extended. It is the users responsibility that blade wear does not allowed to an unacceptable level.

**CAUTION:** The blades are sharp – handle with care



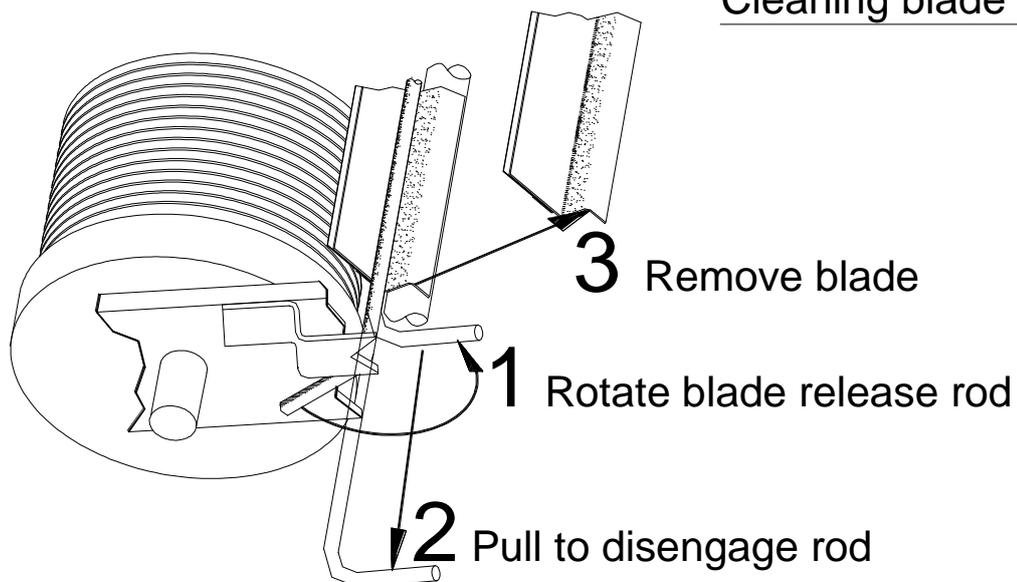
Blade must be replaced before this dimension becomes zero!

**3.3 Element wear:** Elements wear very slowly compared with the blades. However, they should be examined for wear regularly and replaced as necessary.

**3.4 Bearing wear:** The shaft bearing and element bearing should be checked for wear regularly and replaced as necessary.

**3.5 Other Components:** All other components should be checked for wear, corrosion or deterioration and replaced as necessary.

### **Cleaning blade removal**



#### **4. Trouble Shooting**

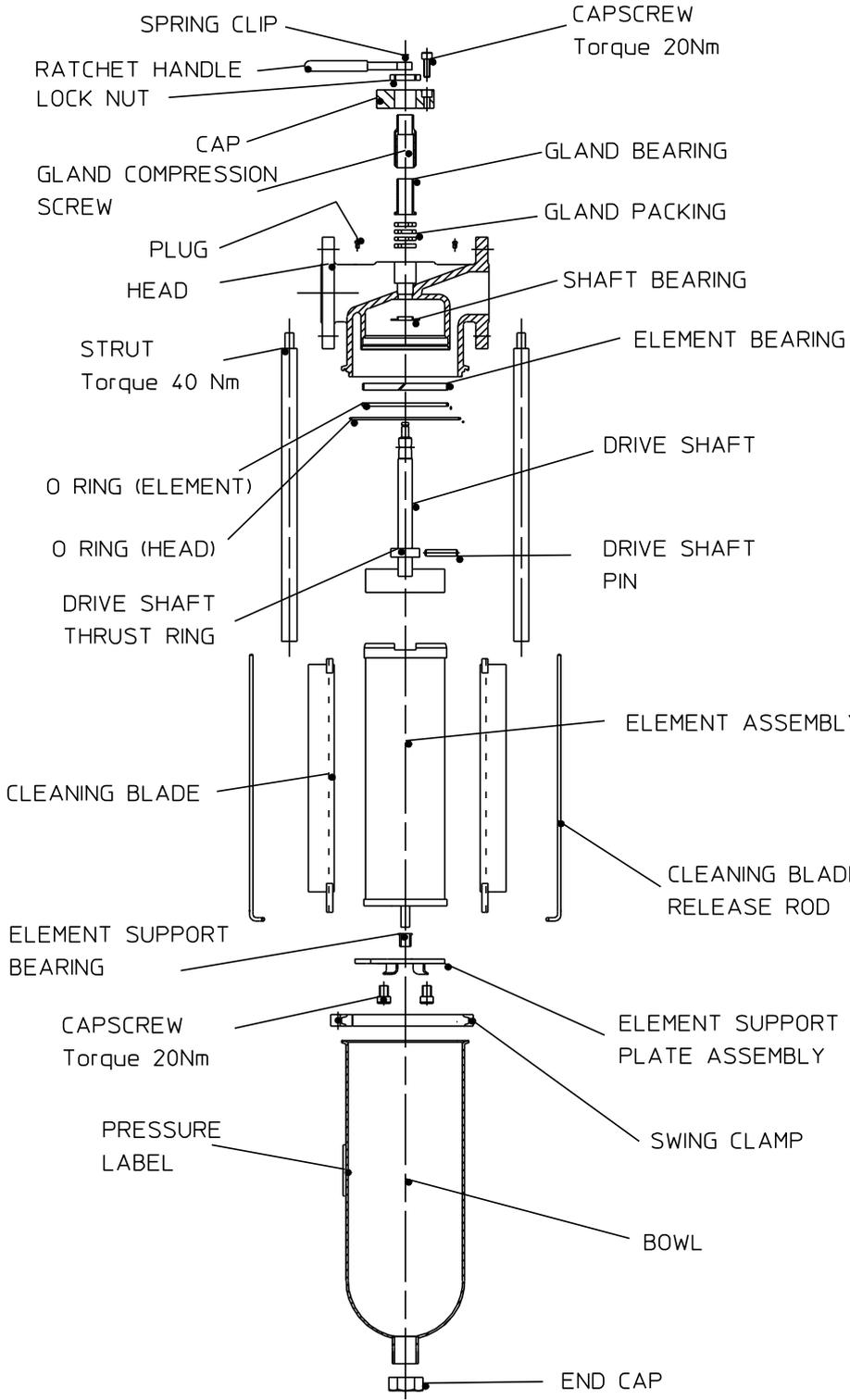
Problem	Cause	Cure
4.1 <u>Leaks.</u> 4.1.1 Head to bowl leak  4.1.2 Leakage around the shaft.	(i) Dirt on seal face.  (ii) Bowl displaced. (iii) Seal missing. (i) Gland packing not compressed sufficiently.  (ii) Leaks persist after gland compression screw tightened.	(i) Clean seal face and re-fit the bowl. (ii) Re-fit the bowl. (iii) Replace the seal. (i) Tighten the gland compression screw (but do not over-tighten!) (ii) Re-pack the gland and if worn, replace the shaft.
4.2 <u>Element not clean.</u>	(i) Blades incorrectly assembled. (ii) Blades worn. (iii) Ratchet handle fitted up-side-down.  (iv) Debris loading too high.  (v) Fibrous material present.	(i) Re-fit blades.  (ii) Fit new blades. (iii) Re-fit handle to give anti-clockwise rotation when viewed from above. (iv) Reduce flow or reduce debris load or increase element rating or fit cleaning motor or pre-filter. (v) Eliminate fibrous material.

#### **5. Recommended Spares**

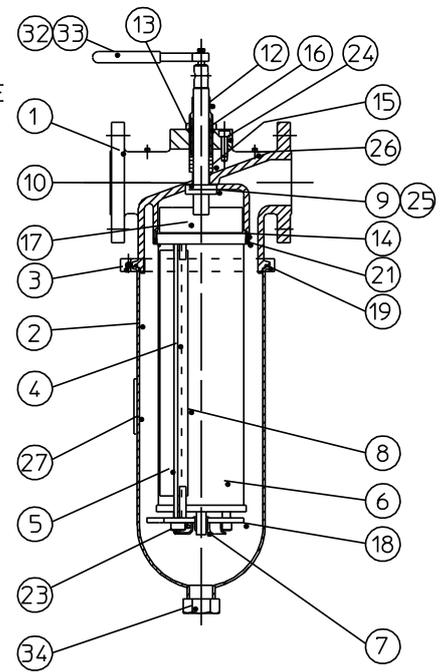
The end user should consider the consequences of filter wear or failure and the level of on-site spares holding. The following is a recommended spares holding for most normal applications:

Cleaning blades	2 off
Seal kit	1 off
Element support bearing	1 off
Shaft bearing	1 off
Element	1 off

# SPARES IDENTIFICATION



Item No	No Off	Description
1	1	Head
2	1	Bowl
3	1	Band Clamp
4	2	Strut
5	2	Cleaning blade release rod
6	1	Element (see order for micron rating)
7	1	Element support bearing
8	2	Cleaning blade
9	1	Drive shaft thrust ring
10	1	Shaft bearing
11	1	Cap
12	1	Gland compression screw
13	1	Compression Screw Lock
14	1	Element Bearing (St.St Head Only)
15	4	Gland packing
16	1	Gland bearing
17	1	Drive shaft Assembly
18	1	Element End plate Assembly
19	1	O-ring cover
20		
21	1	O-ring element
22		
23	2	Socket head setscrew
24	3	Socket head setscrew
25	1	Roll pin
26	2	Mate plug
27	1	Label
32	1	Ratchet Handle
33	1	Clip
34	1	Drain Cap



- ❖ The user must satisfy himself as to the suitability of the equipment for the intended application.
- ❖ Oxford Filtration Ltd., cannot be held responsible for any damage caused by the filter or for any consequential damages.
- ❖ The right is reserved to amend specifications without notice.