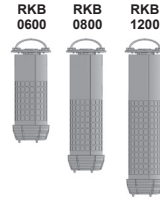




Return Line Filter RKB

Flow direction from in to out
up to 1,200 l/min, up to 10 bar



1. TECHNICAL SPECIFICATIONS

1.1 FILTER HOUSING

Design

This filter system provides an economic solution for full-flow return line filtration for medium to large flow rates. The filter is mounted in the intermediate chamber that is formed in the bottom part of the tank. The oil flows into the filter from below and, after filtration, into the tank via the riser tube. This integrates the filter into the tank so any design is possible for the return port connections and several filters can be used without splitting up the return lines. The optimal flow conditions in the chamber guarantee optimum air separation, effective magnetic pre-filtration and very long filter service lives.

The filter housings are designed in accordance with international regulations. They consist of a housing tube, filter head and a filter cover. The filter element can be removed from the top!

Standard equipment

- with bypass valve
- with diffuser
- with element location spigot

1.2 FILTER ELEMENTS

RT filter elements are validated and their quality is constantly monitored according to the following standards: ISO 2941, ISO 2942, ISO 2943, ISO 3724, ISO 3968, ISO 11170, ISO 16889

Filter elements are available with the following pressure stability values:

Glass fibre (ULP): 6 bar
Glass fibre with pre-filter (UMC): 6 bar
Wire mesh (WPI): 6 bar

Other filtration ratings on request.

1.3 FILTER SPECIFICATIONS

| | |
|--------------------------|-----------------------------|
| Nominal pressure | 10 bar |
| Temperature range | -30 °C to +100 °C |
| Material of filter cover | EN AC-47000 |
| Material of housing tube | Steel |
| Bypass cracking pressure | 2.5 bar (others on request) |

1.4 SEALS

NBR (= Perbunan)

1.5 INSTALLATION

As in-tank filter

1.6 SPECIAL MODELS AND ACCESSORIES

- without element location spigot
- Outlet grille in openings in protective tube
- Seals made of FKM

1.7 SPARE PARTS

See Original Spare Parts List

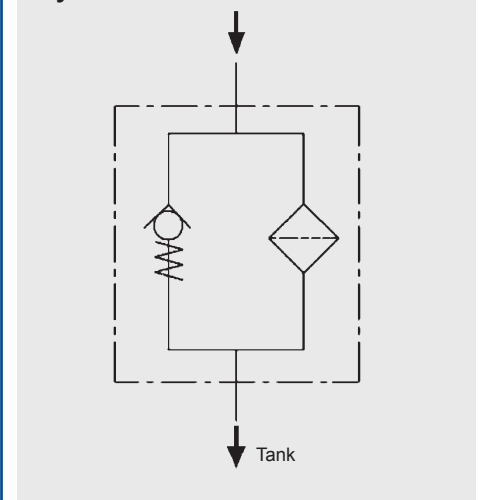
1.8 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG

1.9 IMPORTANT INFORMATION

- Filter housings must be earthed.

Symbol



2. MODEL CODE (also order example)

RKB 0600 UMC 010 V X B L X E N VX X 1 /-XXX

2.1 FILTER ASSEMBLY

Filter type

RKB

Size

0600, 0800, 1200

Filter material

ULP Glass fibre
UMC Glass fibre with pre-filter
WPI Wire mesh

Filtration rating in μm

ULP: 010, 025
UMC: 010, 020
WPI: 100

Bypass valve

C with bypass valve 0.8 bar
V with bypass valve 2.5 bar, standard
X without bypass valve

Magnetic core

X without magnetic core

Setting range

B 10 bar

Design: perforated plate

L Standard: with diffuser, perforated
R with diffuser (openings with outlet grille)

Non-return valve in element

V with non-return valve
X without non-return valve

Flange

X without flange
B Version E with welding flange
C Version I with welding flange
E with die-cast aluminium flange
I with die-cast aluminium flange and poka yoke

Seals

N NBR (Perbunan)
V FKM

Clogging indicator

VX without clogging indicator

Response pressure of clogging indicator

X none

Modification number

X the latest version is always supplied

Supplementary details

2.2 REPLACEMENT ELEMENT

UMC-0010-xxx-xxxx-x-N-RT /-XXX

Filter material

ULP, UMC, WPI

Filtration rating in μm

ULP 0010, 0025

UMC 0010, 0020

WPI 0100

RT code

Seals

N NBR (Perbunan)

V FKM

Packaging

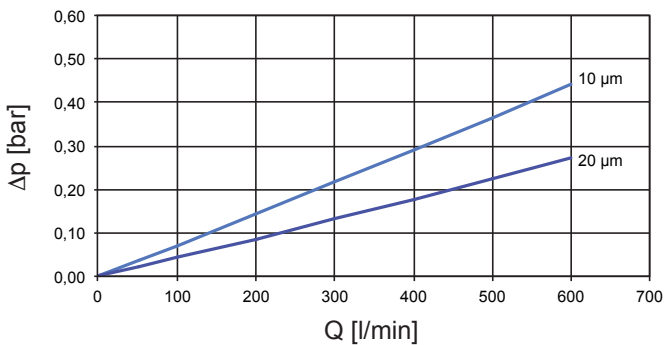
Supplementary details

3. FILTER CALCULATION / DIMENSIONING

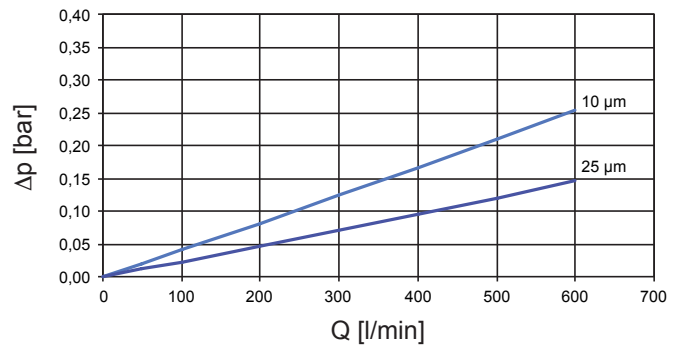
3.1 PERFORMANCE CURVES FOR FILTER ASSEMBLY

The total performance curves with element... apply to mineral oil with a density of 0.86 kg/dm^3 and a kinematic viscosity of $30 \text{ mm}^2/\text{s}$.

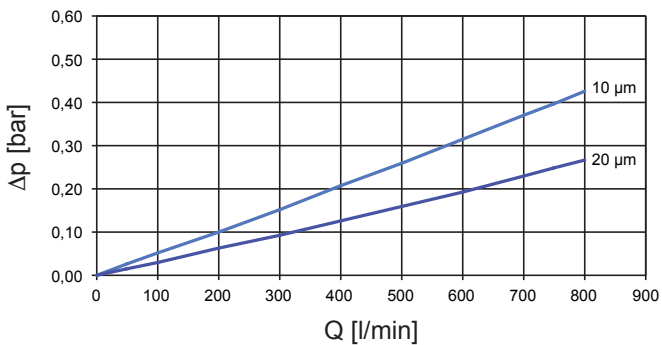
RKB 0600, filter elements UMC



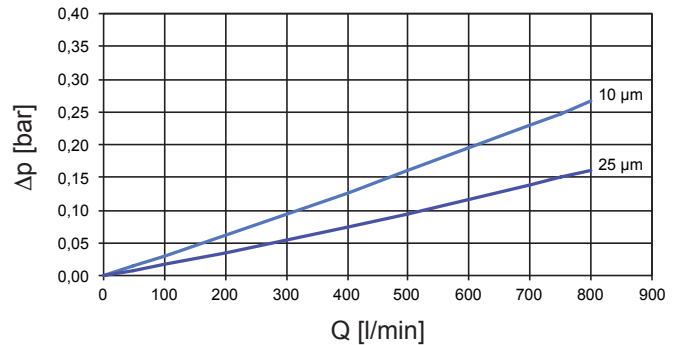
RKB 0600, filter elements ULP



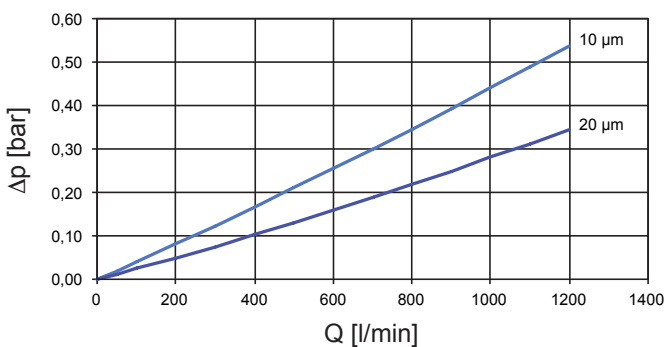
RKB 0800, filter elements UMC



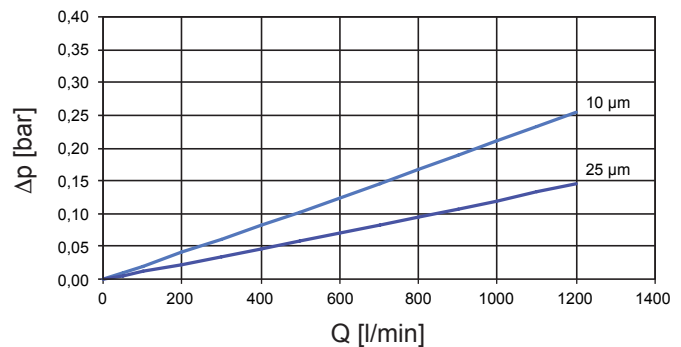
RKB 0800, filter elements ULP



RKB 1200, filter elements UMC



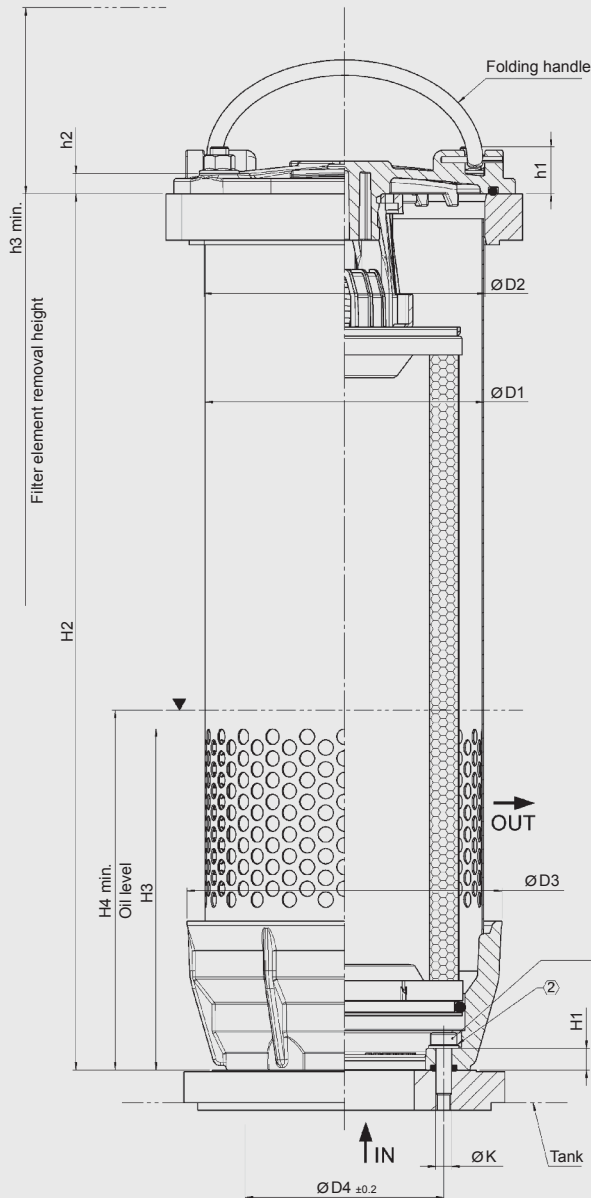
RKB 1200, filter elements ULP



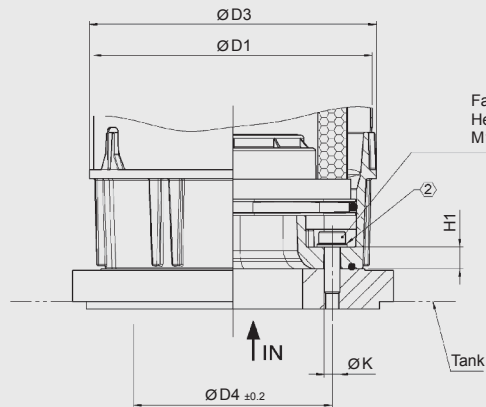
Other curves on request

4. DIMENSIONS

4.1 RKB with diffuser (perforated)

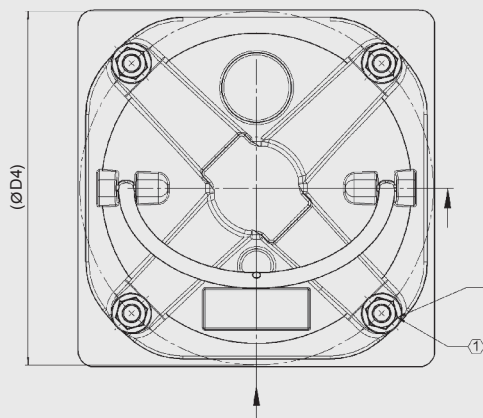


Filter with poka yoke
(tank flange version C; I)



Fastening elements:
Hex. socket serrated bolt
M10x30 - 10.9 - A2A

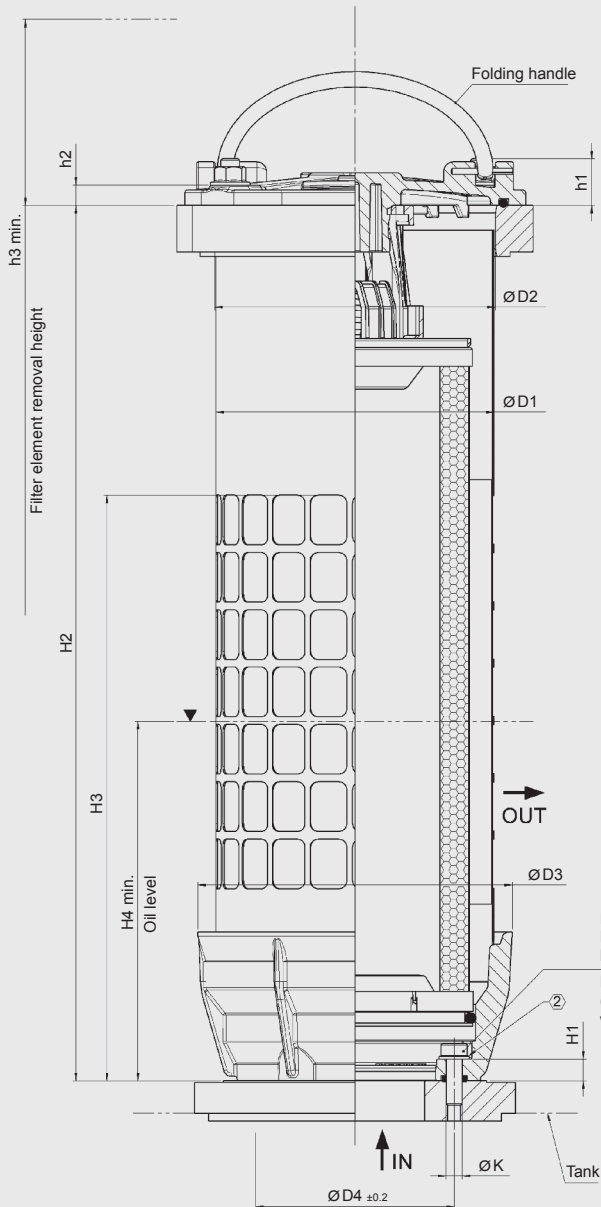
Fastening elements:
Hex. socket serrated bolt
M10x30 - 10.9 - A2A
Recommended torque 40 +5 Nm
(when specified standard part is used
with steel as material for the flange)



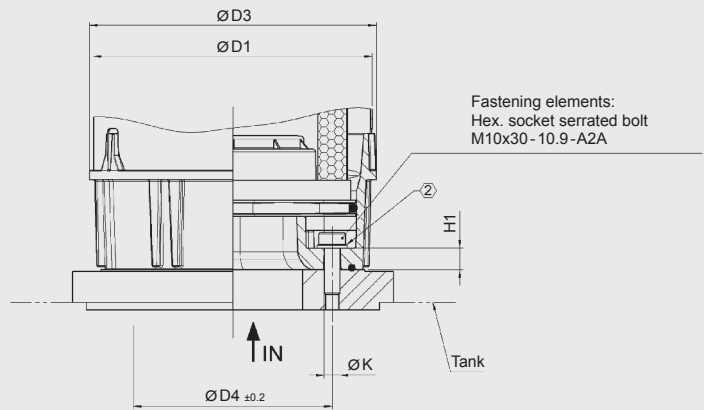
Fastening elements, e.g.:
Hexagon nut with collar
DIN EN 1661-M12
Stud DIN938 - M12x30 - 8.8
Recommended torque 30 +5 Nm
(when specified standard part is used
with steel as material for the flange)

| Type | Tube version | Tank flange | H1 | H2 | H3 | H4 | h1 | h2 | h3 | ØD1 | ØD2 | ØD3 | ØD4 | ØK | Ød1 | Weight [kg] |
|----------|--------------|-------------|----|-----|-----|-----|----|----|-----|-------|-----|-----|-----|------|-----|-------------|
| RKB 0600 | L | B; E | 14 | 565 | 220 | 232 | 30 | 13 | 485 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 8.6 |
| | | C; I | | | | | | | | | | 185 | | | | 8.5 |
| RKB 0800 | L | B; E | 14 | 758 | 220 | 232 | 30 | 13 | 678 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 11.3 |
| | | C; I | | | | | | | | | | 185 | | | | 11.2 |
| RKB 1200 | L | B; E | 14 | 912 | 220 | 232 | 30 | 13 | 832 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 13.6 |
| | | C; I | | | | | | | | | | 185 | | | | 13.5 |

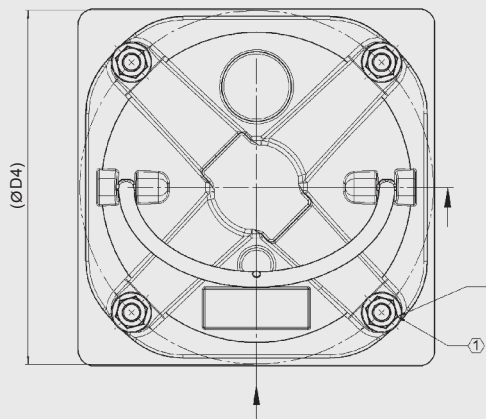
4.2 RKB with diffuser (opening with grille)



Filter with poka yoke
(tank flange version C; I)



Fastening elements:
Hex. socket serrated bolt
M10x30-10.9-A2A
Recommended torque 40 +5 Nm
(when specified standard part is used
with steel as material for the flange)



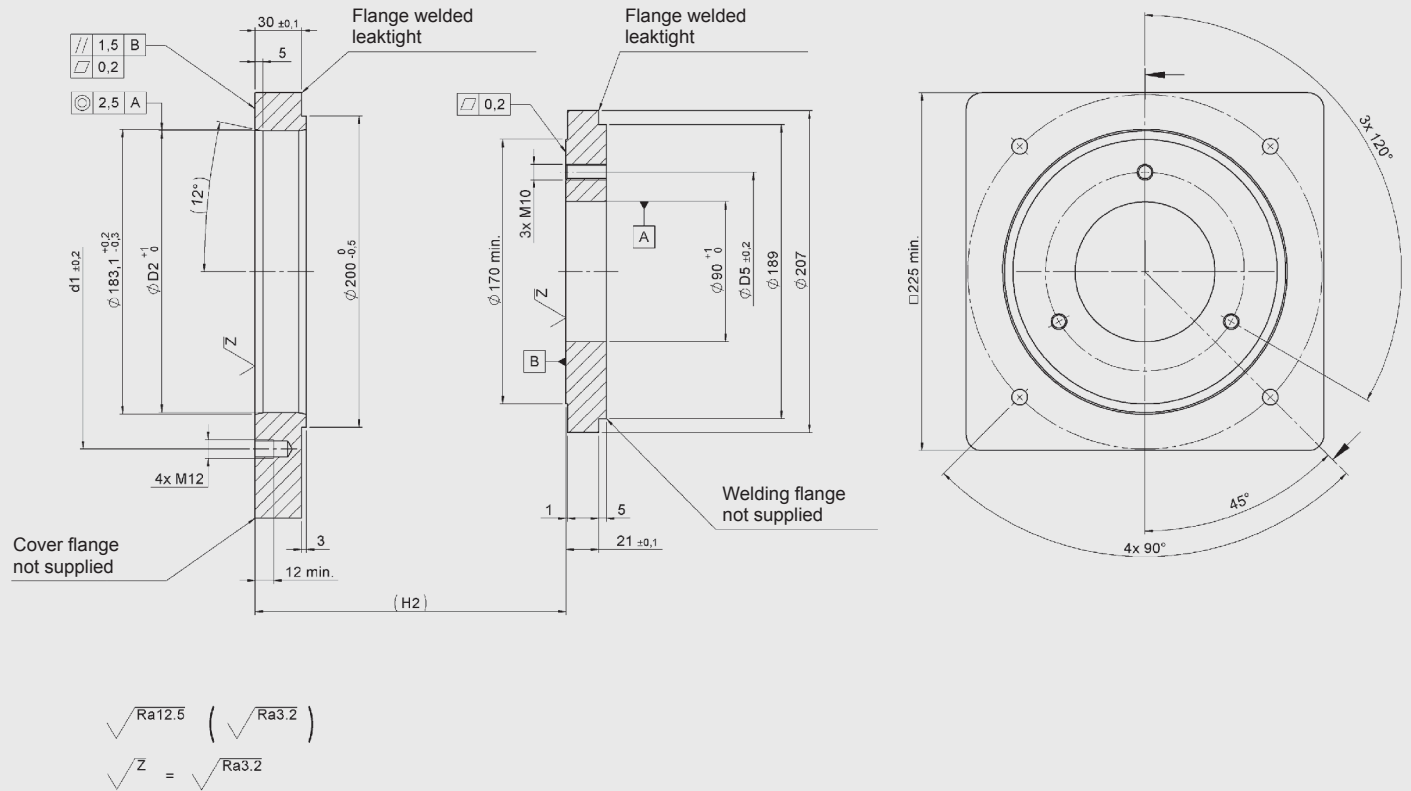
Fastening elements, e.g.:
Hexagon nut with collar
DIN EN 1661-M12
Stud DIN938-M12x30-8.8
Recommended torque 30 +5 Nm
(when specified standard part is used
with steel as material for the flange)

| Type | Tube version | Tank flange | H1 | H2 | H3 | H4 | h1 | h2 | h3 | ØD1 | ØD2 | ØD3 | ØD4 | ØK | Ød1 | Weight [kg] | | | | | | | | | | | | | | | | | | |
|----------|--------------|-------------|----|-----|-----|-----|----|----|-----|-------|-----|-----|-----|------|-----|-------------|----|-----|-------|-----|-----|-----|------|-----|------|----|-----|-------|-----|-----|-----|------|-----|------|
| RKB 0600 | R | B; E | 14 | 565 | 378 | 232 | 30 | 13 | 485 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 8.8 | | | | | | | | | | | | | | | | | | |
| | | C; I | | | | | | | | | | | | | | 8.7 | | | | | | | | | | | | | | | | | | |
| RKB 0800 | R | B; E | | 758 | 452 | 269 | | | | | | | | | | 30 | 13 | 678 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 11.6 | | | | | | | | | |
| | | C; I | | | | | | | | | | | | | | | | | | | | | | | 11.5 | | | | | | | | | |
| RKB 1200 | R | B; E | | 912 | 600 | 343 | | | | | | | | | | | | | | | | | | | 30 | 13 | 832 | 179.5 | 181 | 203 | 128 | 10.5 | 228 | 14.0 |
| | | C; I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 13.9 |

5. SPECIFICATIONS FOR THE TANK FLANGE

1. In the filter mounting interface, the tank flange should have a maximum flatness of 0.2 mm and maximum roughness of Ra 3.2 µm.
2. In addition, the mounting interface should be free from damage and scratches.
3. The fixing holes of the cover flange must be blind, or stud bolts with threadlocker must be used to fix the filter.
As an alternative, the cover flange can be continuously welded from the inside.
4. Both the tank sheet metal and the filter mounting flange must be sufficiently robust so that neither deform when the seal is compressed during tightening.

5.1 RKB 0600 – 1200



The cover flange must be aligned to the welding flange with a welding gauge.

NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. All technical details are subject to change without notice.

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