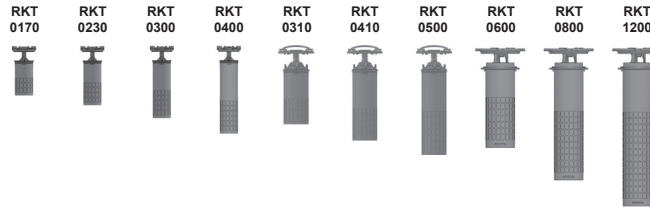




# RT FILTER TECHNIK

## Return Line Filter RKT

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 small to large flow rates. The filter is mounted in the inter-mediate chamber that is formed in the top part of the tank.

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 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 cover and an element location spigot.

The filter element can be removed from the top!

#### Standard equipment

- magnetic core integrated into clamp (only for RKT 0170 – 0500)
- magnetic core mounted on cover (only for RKT 0600 – 1200)
- Housing tube with diffuser
- with bypass valve

#### 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	RKT 0170, 0230, 0300, 0400: EN-AC-43300 RKT 0310, 0410, 0500: EN-AC-47100 RKT 0600, 0800, 1200: EN-AC-43000
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 magnetic core
- without housing tube (only RKT 0170 – 0500)
- with housing tube
- Outlet grille in openings in housing tube
- Seals made of FKM

#### 1.7 SPARE PARTS

See Original Spare Parts List

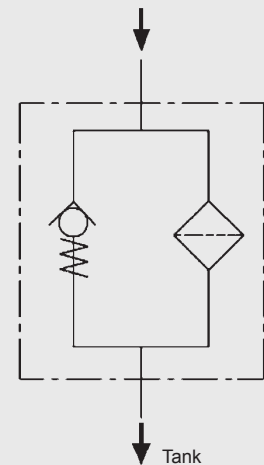
#### 1.8 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- 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
- When using electrical clogging indicators, the electrical power supply to the system must be switched off before removing the clogging indicator connector

#### Symbol



## 2. MODEL CODE (also order example)

RKT 0500 UMC 010 V M B L B N VX X 1 /-XXX

### 2.1 FILTER ASSEMBLY

#### Filter type

RKT

#### Size

0170, 0230, 0300, 0400, 0310, 0410, 0500, 0600, 0800, 1200

#### Filter material

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

#### Filtration rating in $\mu\text{m}$

ULP 010, 025  
UMC 010, 020  
WPI 100

#### Bypass valve

C with bypass valve 0.8 bar  
V Standard: with bypass valve 2.5 bar  
X without bypass valve

#### Magnetic core

M with magnetic core  
X without magnetic core

#### Setting range

B 10 bar

#### Tube version

X without housing tube (only RKT 0170, 0230, 0300, 0400, 0310, 0410, 0500)  
B with housing tube, floor open  
L Standard: with diffuser (perforated)  
R with diffuser (openings with outlet grille)

#### Cover

A with cover  
B cover with filling port  
D cover with handle  
X without cover

#### Seals

N NBR (Perbunan)  
V FKM

#### Clogging indicator

VX without clogging indicator

#### Response pressure of clogging indicator

X without (no clogging indicator)

#### 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 $\mu\text{m}$

ULP 0010, 0025

UMC 0010, 0020

WPI 0100

### RT code

### Seals

N NBR (Perbunan)

V FKM

### Packaging

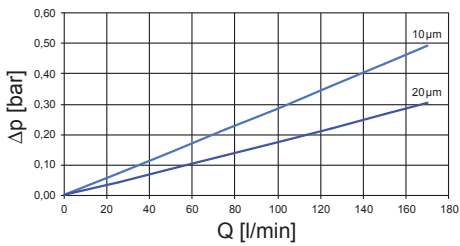
### Supplementary details

## 3. FILTER CALCULATION / DIMENSIONING

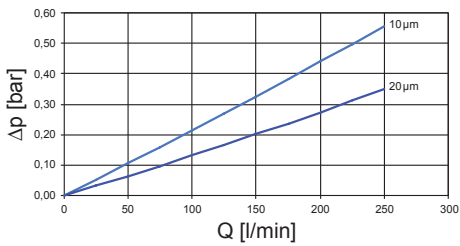
### 3.1 PERFORMANCE CURVES FOR FILTER ASSEMBLY

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

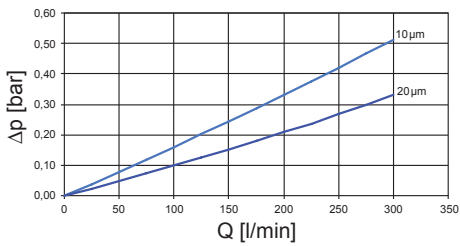
#### RKT 0170



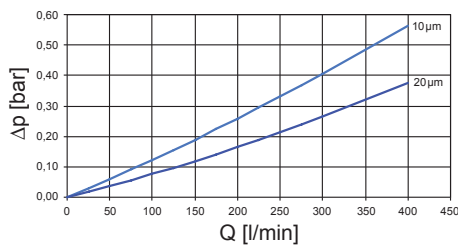
#### RKT 0230



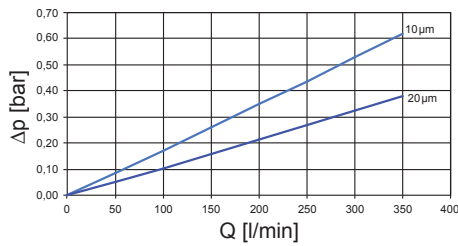
#### RKT 0300



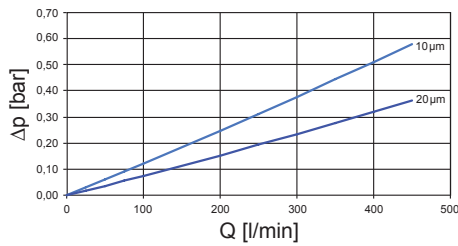
#### RKT 0400



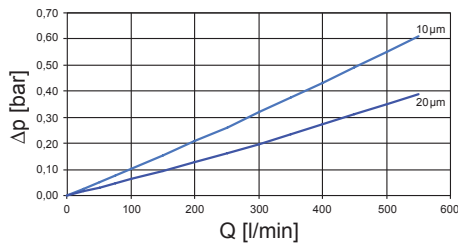
#### RKT 0310



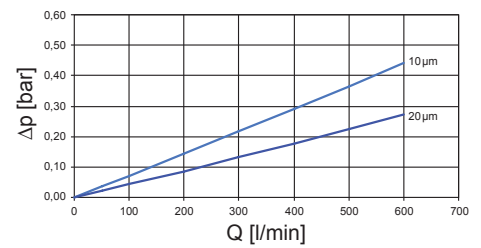
#### RKT 0410



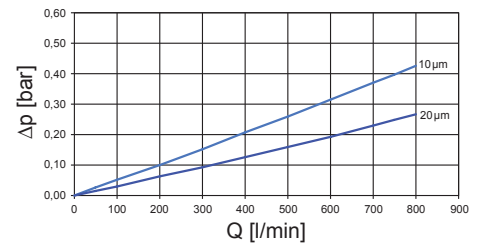
#### RKT 0500



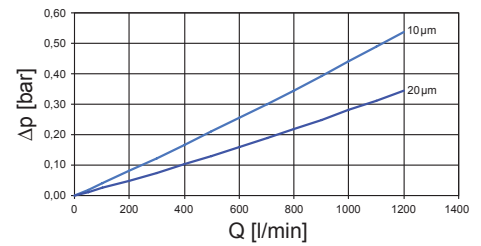
#### RKT 0600



#### RKT 0800



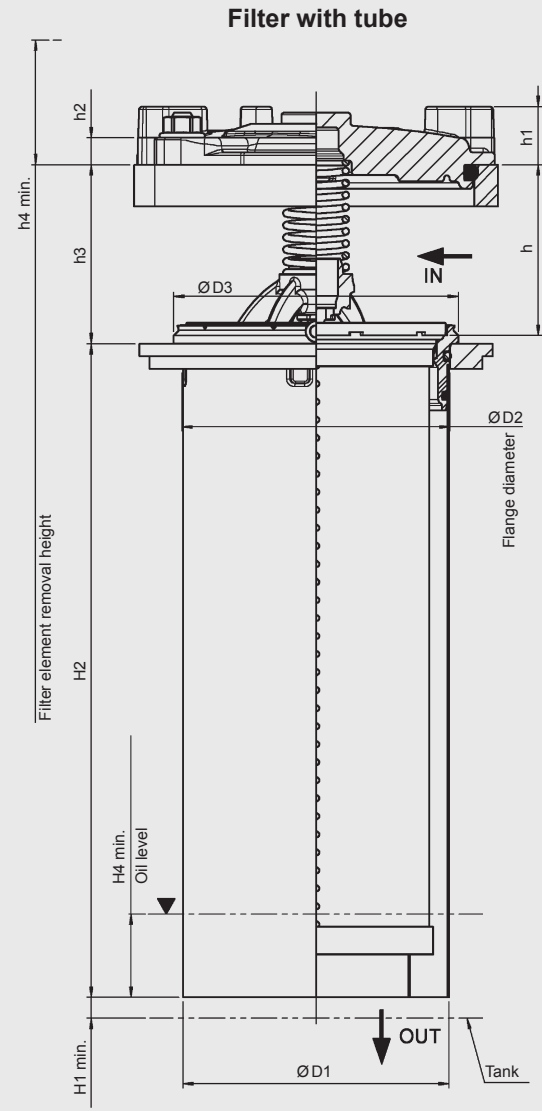
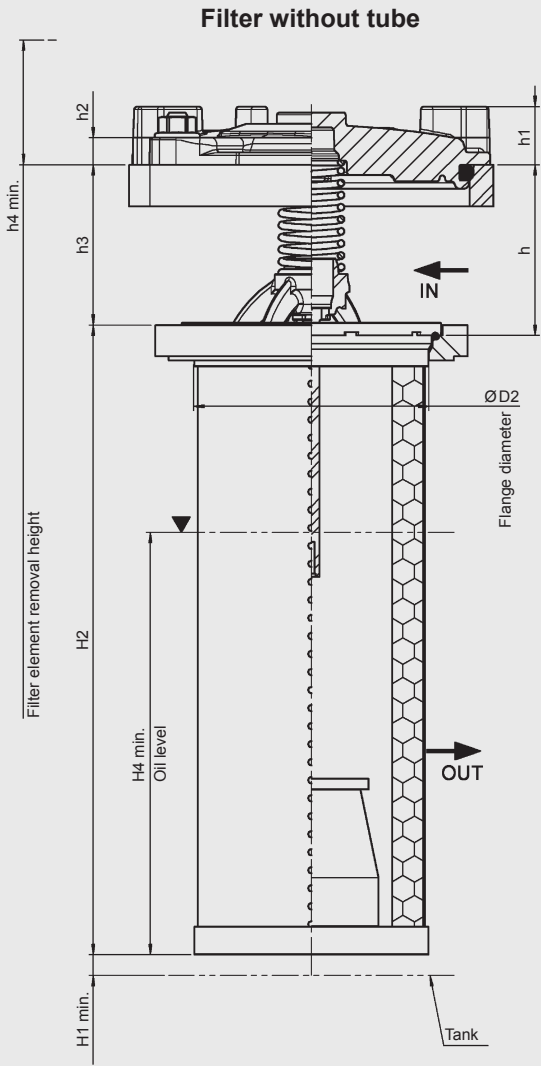
#### RKT 1200



Other curves on request

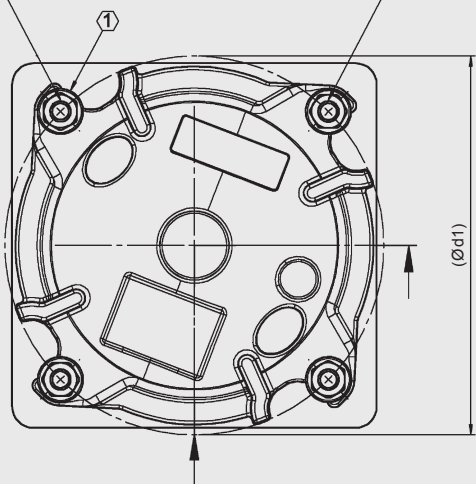
# 4. DIMENSIONS

RKT 0170, 0230, 0300, 0400

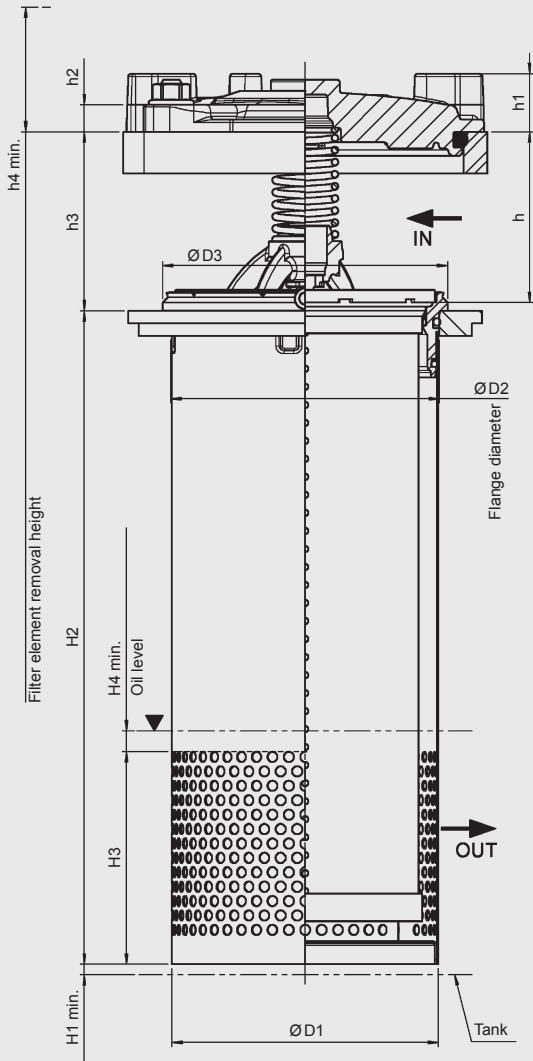


Recommended torque  
25 +5 Nm (when  
specified standard part  
is used with steel as  
material for the flange)

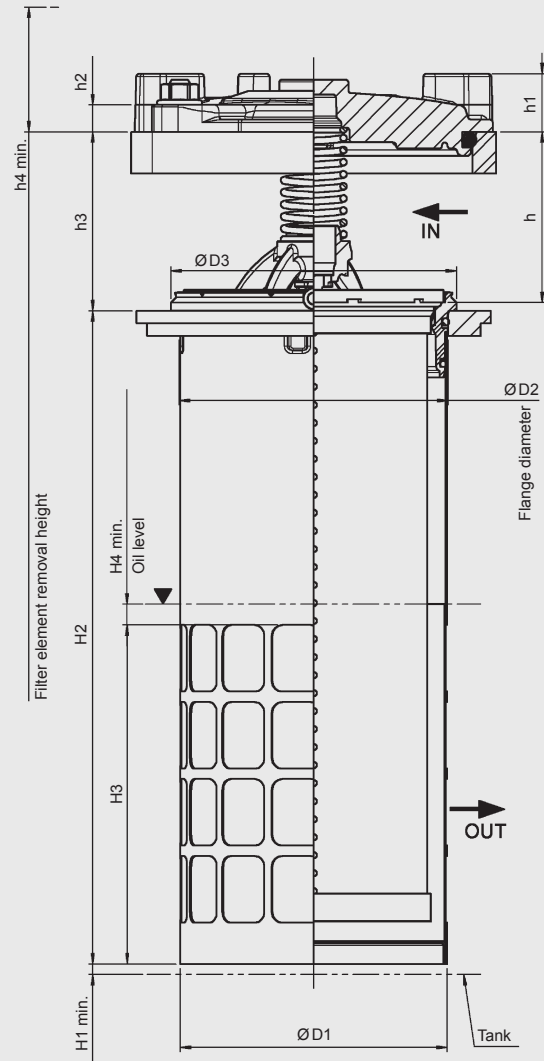
Fastening elements, e.g.:  
Hexagon nut with collar DIN EN 1661 - M10  
Stud DIN938 - M10x25 - 8.8



Filter with diffuser

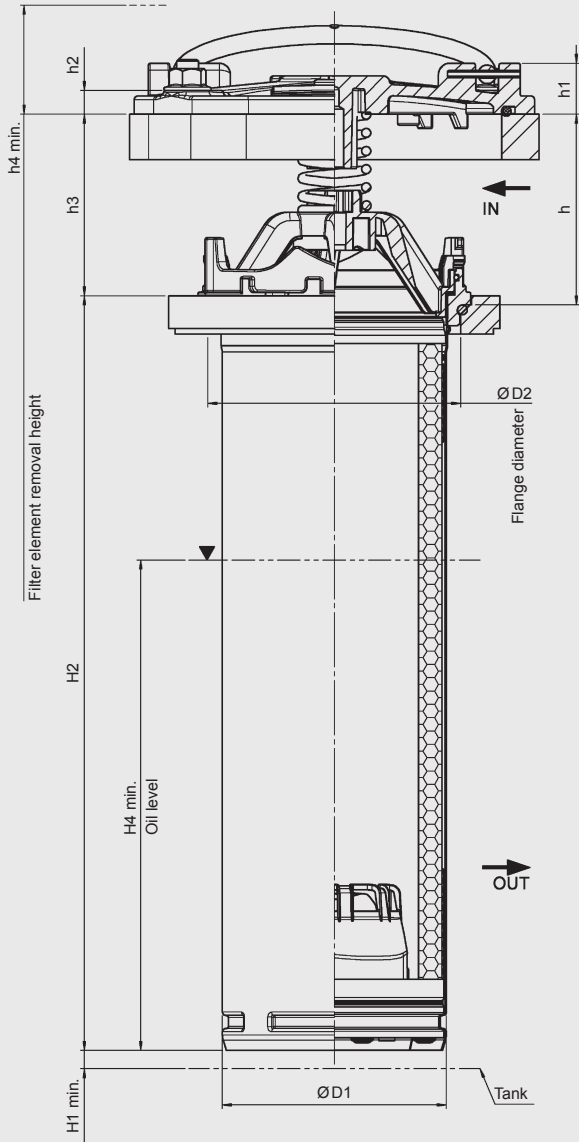


Filter with diffuser (opening with grille)

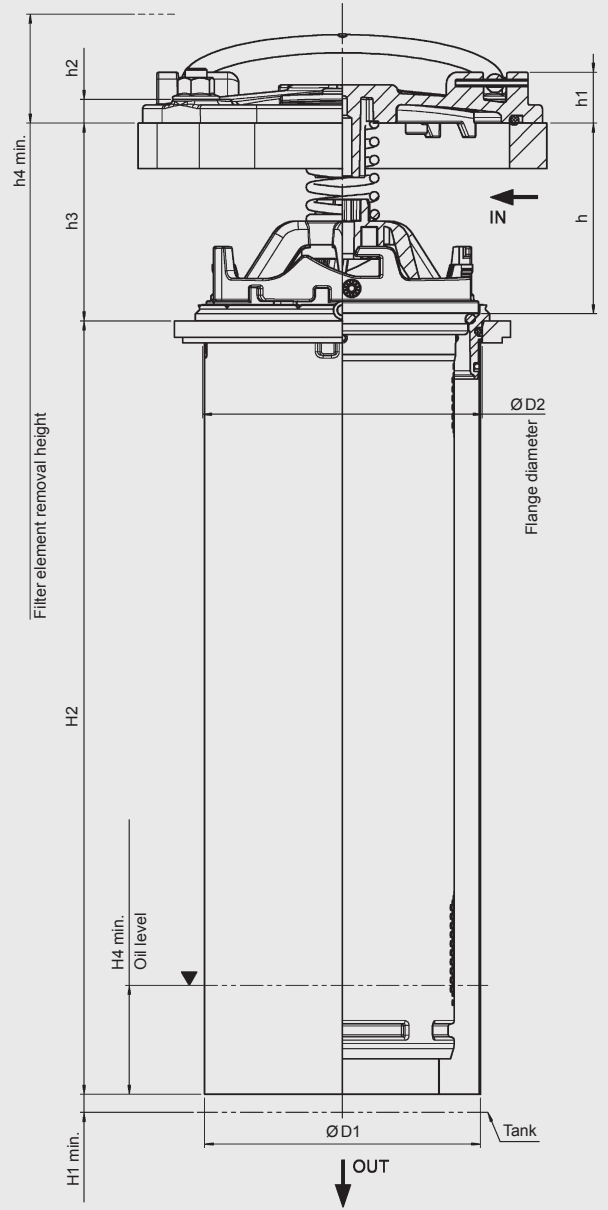


Type	Design	H1	H2	H3	H4	h	h1	h2	h3	h4	ØD1	ØD2	ØD3	Ød1	Weight incl. element [kg]
RKT 0170	Without tube	10	232	-	155	82	28	13	77	264	-	113	-	182	2.0
	With tube		-	40	-				-		2.5				
	With diffuser	5	243	102	10				86		128	129	137		2.6
	Diffuser with opening			126					2.7						
RKT 0230	Without tube	10	303	-	203				77	-	113	-	2.3		
	With tube		-	40	-				-	2.9					
	With diffuser	5	314	102	10				86	335	128	129	137		3.0
	Diffuser with opening			163					3.1						
RKT 0300	Without tube	10	399	-	267	77	-	113	-	2.6					
	With tube		-	40	-	-	3.4								
	With diffuser	5	410	102	10	86	431	128	129	137	3.6				
	Diffuser with opening			200		3.7									
RKT 0400	Without tube	10	512	-	336	77	-	113	-	3.0					
	With tube		-	40	-	-	4.0								
	With diffuser	5	524	102	10	86	540	128	129	137	4.2				
	Diffuser with opening			237		4.3									

Filter without tube

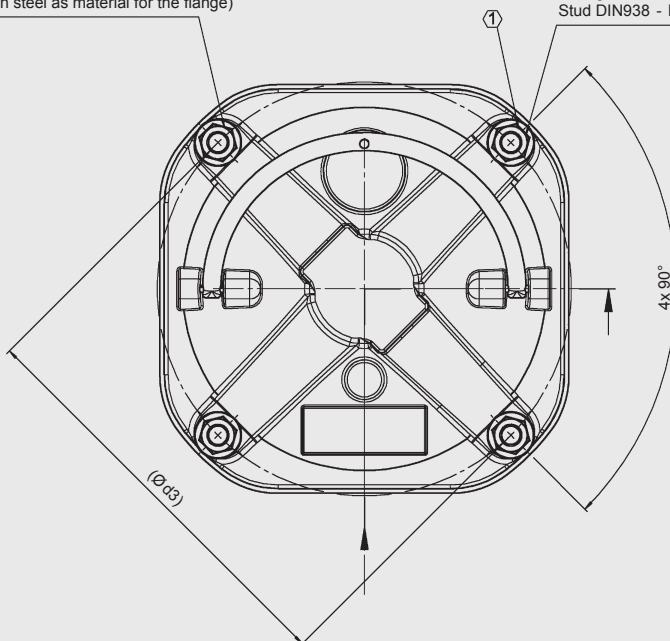


Filter with tube

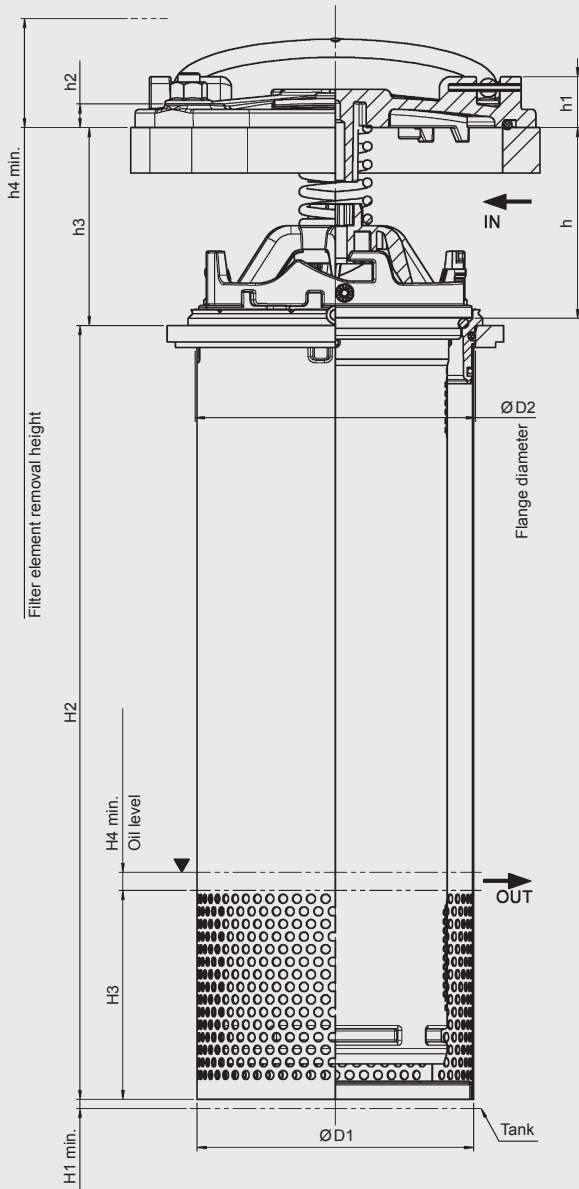


Recommended torque 30 +5 Nm  
(when specified standard part is used  
with steel as material for the flange)

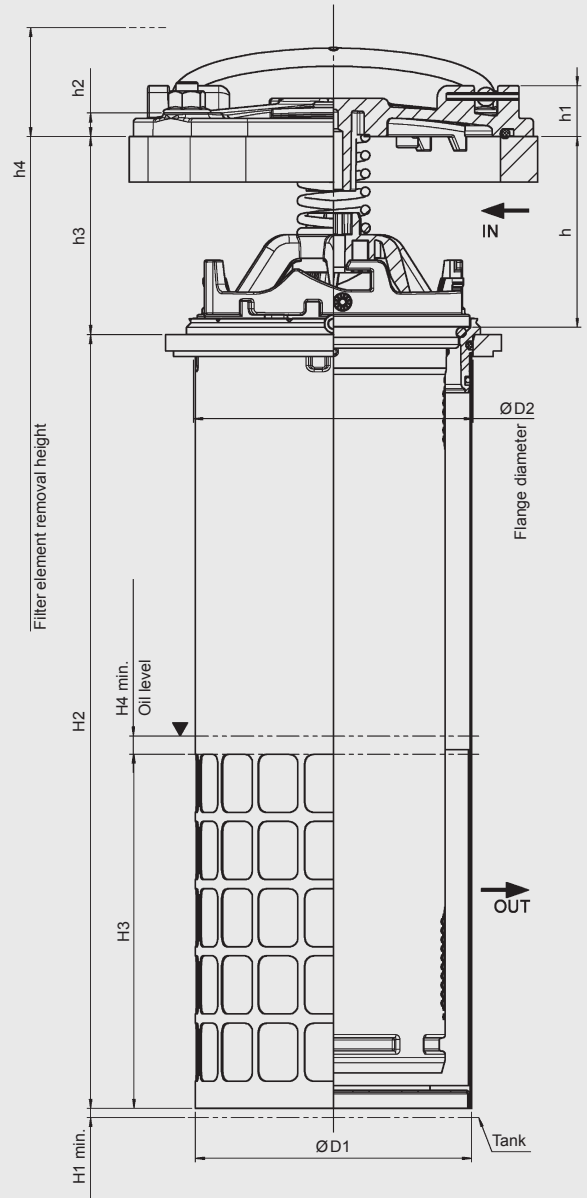
Fastening elements, e.g.:  
Hexagon nut with collar DIN EN 1661 - M12  
Stud DIN938 - M12x30 - 8.8



Filter with diffuser

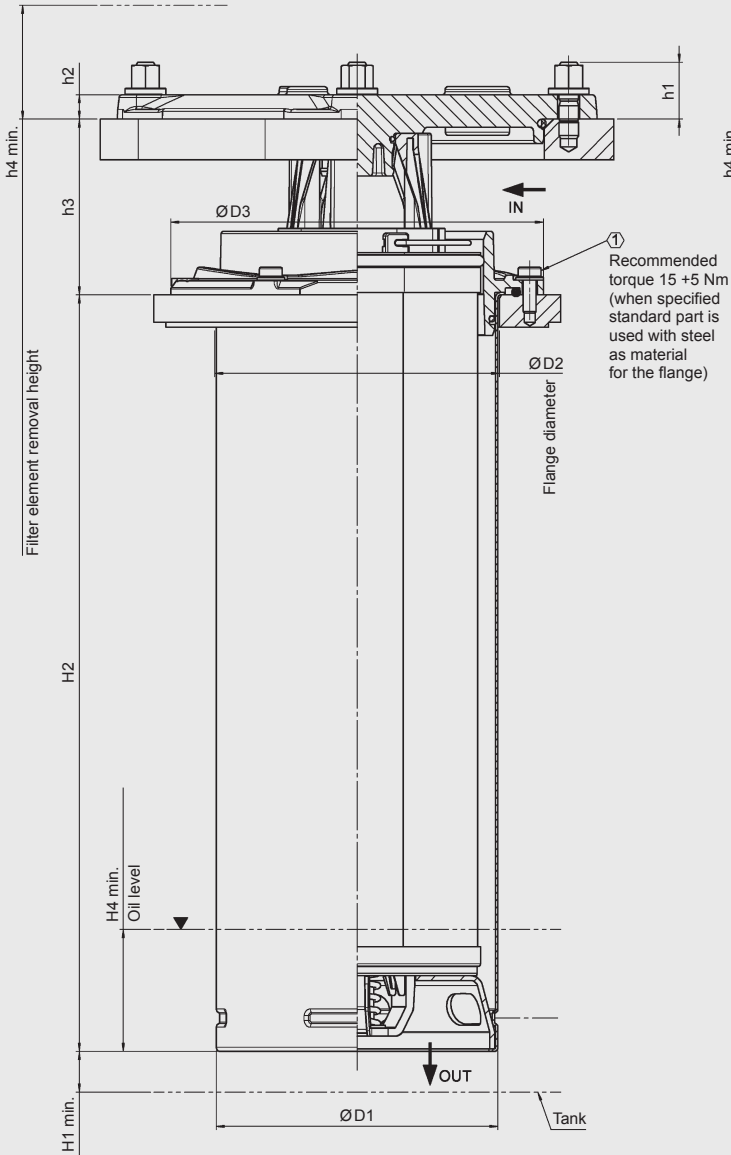


Filter with diffuser (opening with grille)

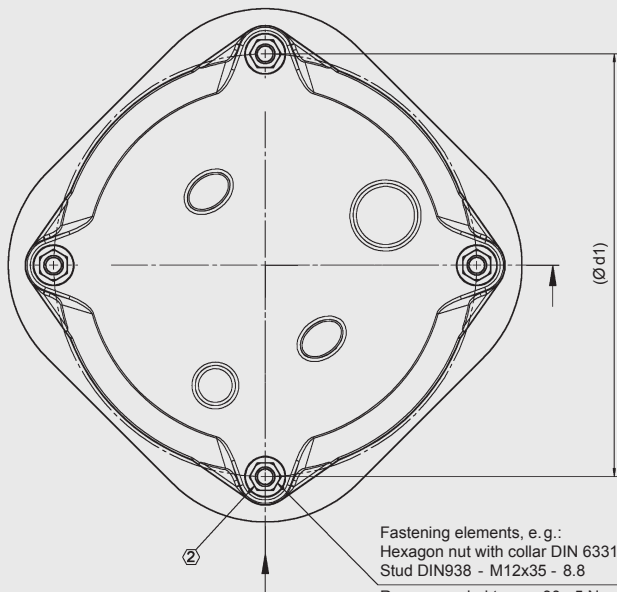
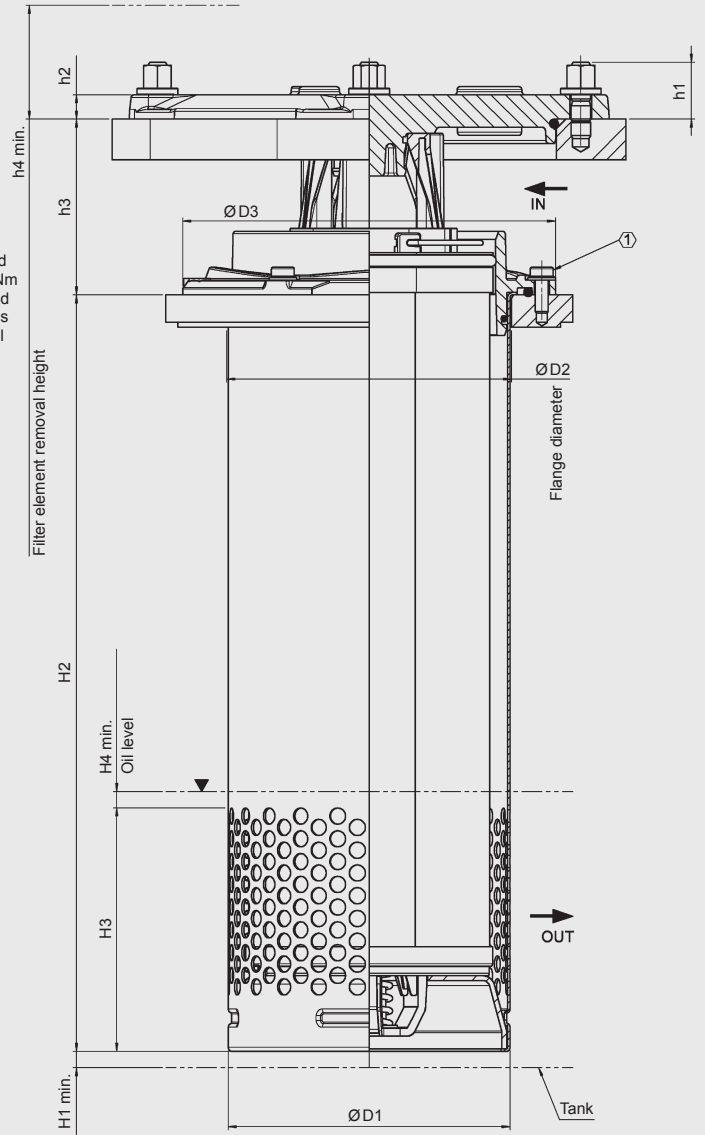


Type	Design	H1	H2	H3	H4	h	h1	h2	h3	h4	ØD1	ØD2	Ød3	Weight incl. element [kg]
RKT 0310	Without tube	10	315.5	-	200	105	28	13	100	420	123	139	228	1.7
	With tube			-	60									2.4
	With diffuser	5	326	115	10				109		152	154		2.5
	Diffuser with opening			158										2.6
RKT 0410	Without tube	10	415.5	-	270	105	28	13	100	520	123	139	228	2.0
	With tube			-	60									2.9
	With diffuser	5	426	115	10				109		152	154		3.0
	Diffuser with opening			195										3.1
RKT 500	Without tube	10	505.5	-	330	105	28	13	100	610	123	139	228	2.5
	With tube			-	60									3.5
	With diffuser	5	516	130	10				109		152	154		3.6
	Diffuser with opening			270										3.7

Filter with tube



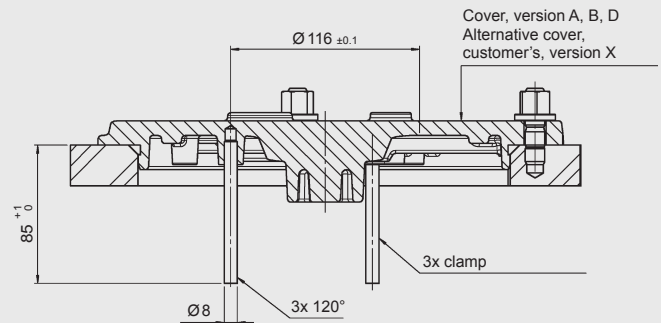
Filter with diffuser



Fastening elements, e.g.:  
Hexagon nut with collar DIN 6331 - M12  
Stud DIN938 - M12x35 - 8.8

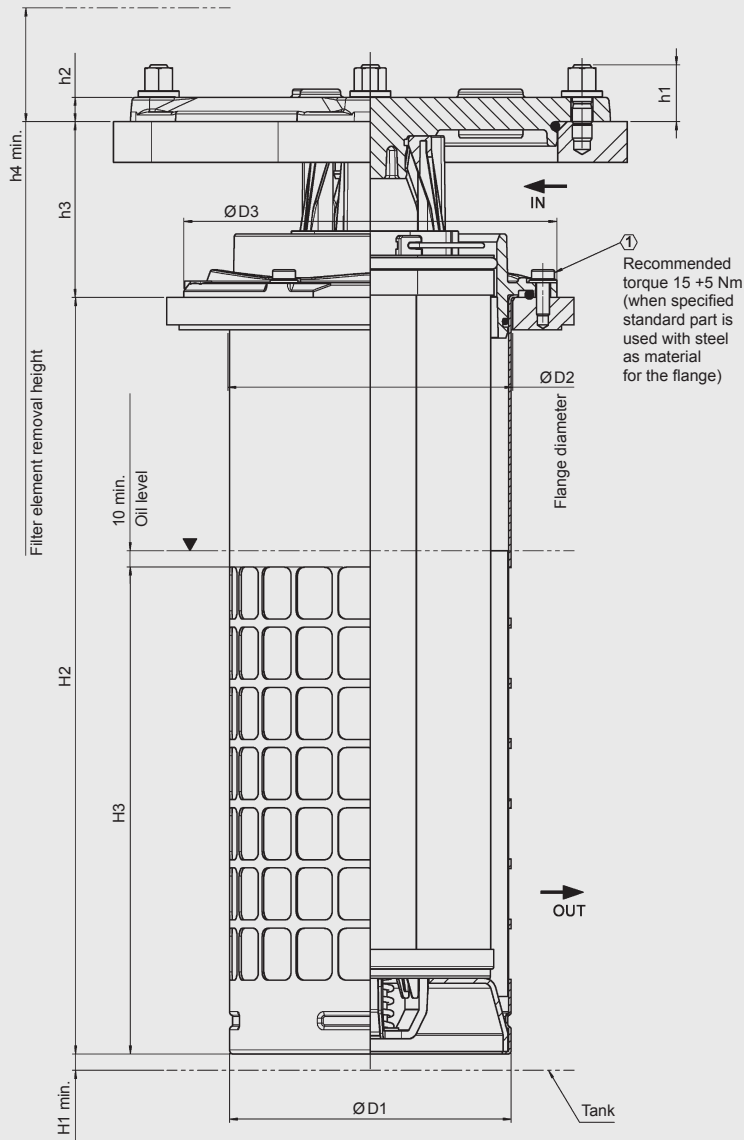
Recommended torque 30 +5 Nm  
(when specified standard part is used with steel as material for the flange)

Cover, standard version





### Filter with diffuser (opening with grille)



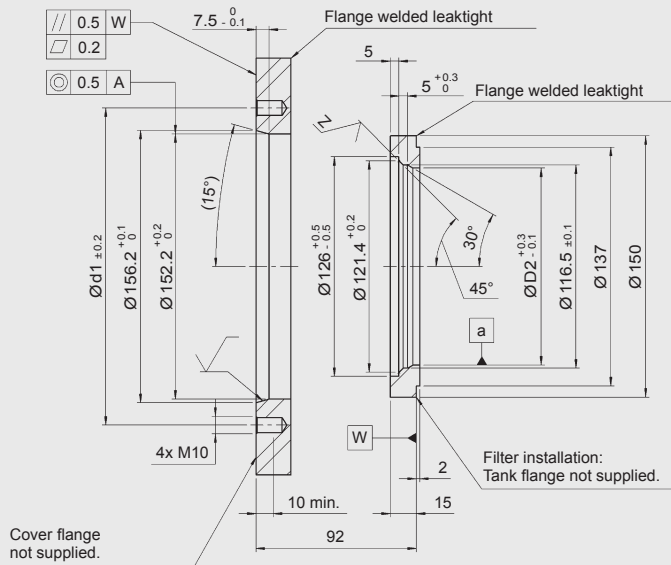
Type	Design	H1	H2	H3	H4	h1	h2	h3	h4	ØD1	ØD2	ØD3	Ød1	Weight incl. element [kg]
RKT 0600	With tube	25	465	–	75	35	15	108	550	173	175	229	260	15.0
	With diffuser	10		150	10									
	Diffuser with opening			300										
RKT 0800	With tube	25	658	–	75	35	15	108	750	173	175	229	260	17.5
	With diffuser	10		150	10									
	Diffuser with opening			411										
RKT 1200	With tube	25	812	–	75	35	15	108	950	173	175	229	260	20.0
	With diffuser	10		150	10									
	Diffuser with opening			559										

## 5. SPECIFICATIONS FOR THE TANK FLANGE

1. In the filter mounting interface, the tank flange should have a maximum flatness of 0.3 mm and maximum roughness of Ra 3.2  $\mu\text{m}$ .
2. In addition, the mounting interface should be free from damage and scratches.
3. The fixing holes of the flange must be blind, or stud bolts with threadlocker must be used to fix the filter. As an alternative, the tank 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 RKT 0170, 0230, 0300, 0400

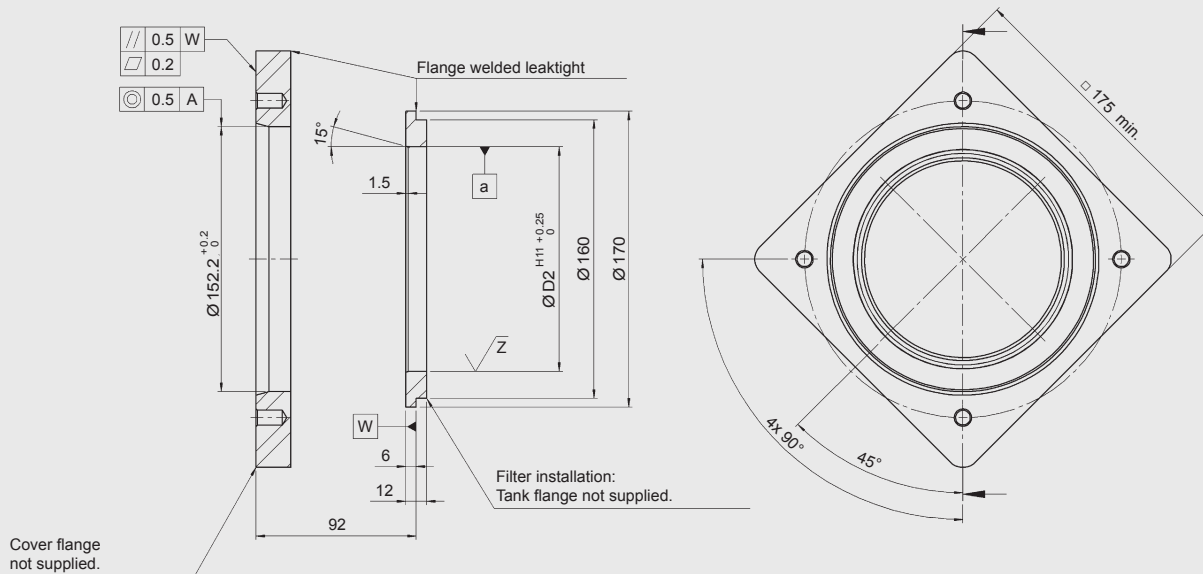
Tube design X



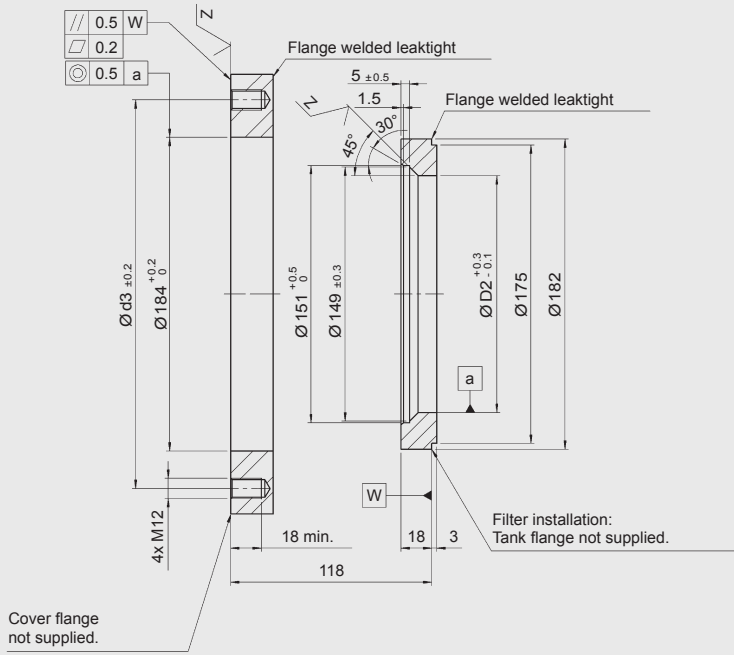
$$\sqrt{\text{Ra}12.5} \left( \sqrt{\text{Ra}1.6} \right)$$

$$\sqrt{Z} = \sqrt{\text{Ra}1.6}$$

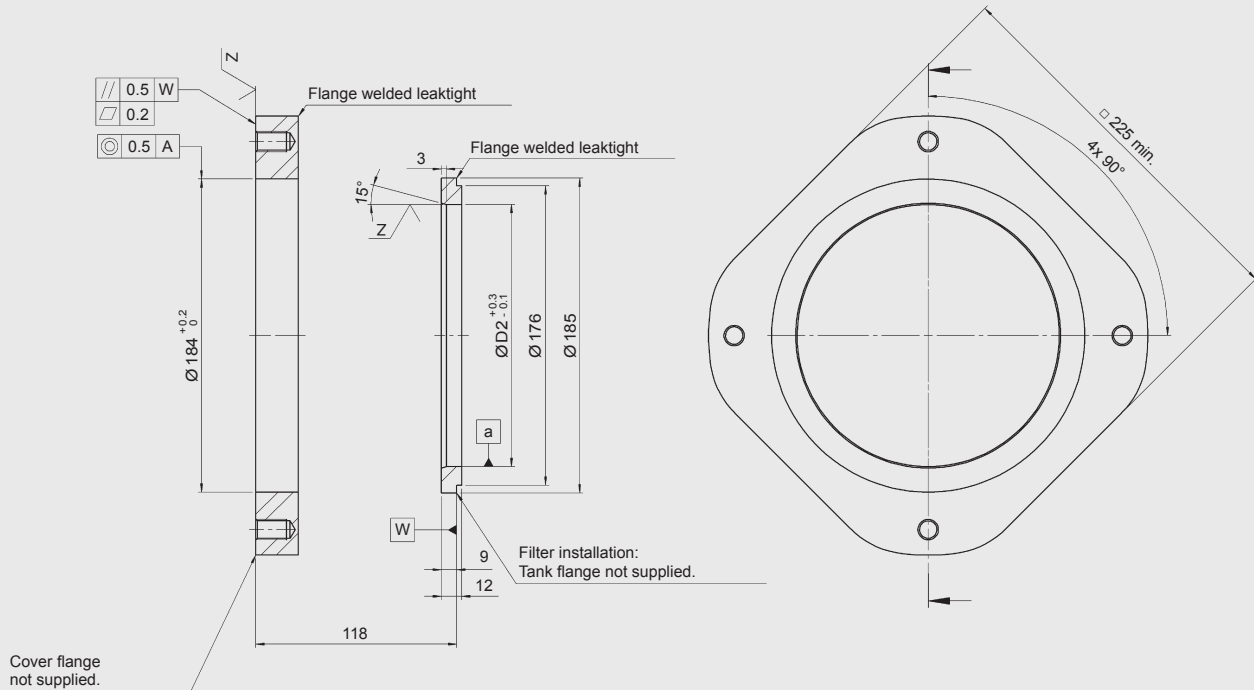
Tube design B - L - R



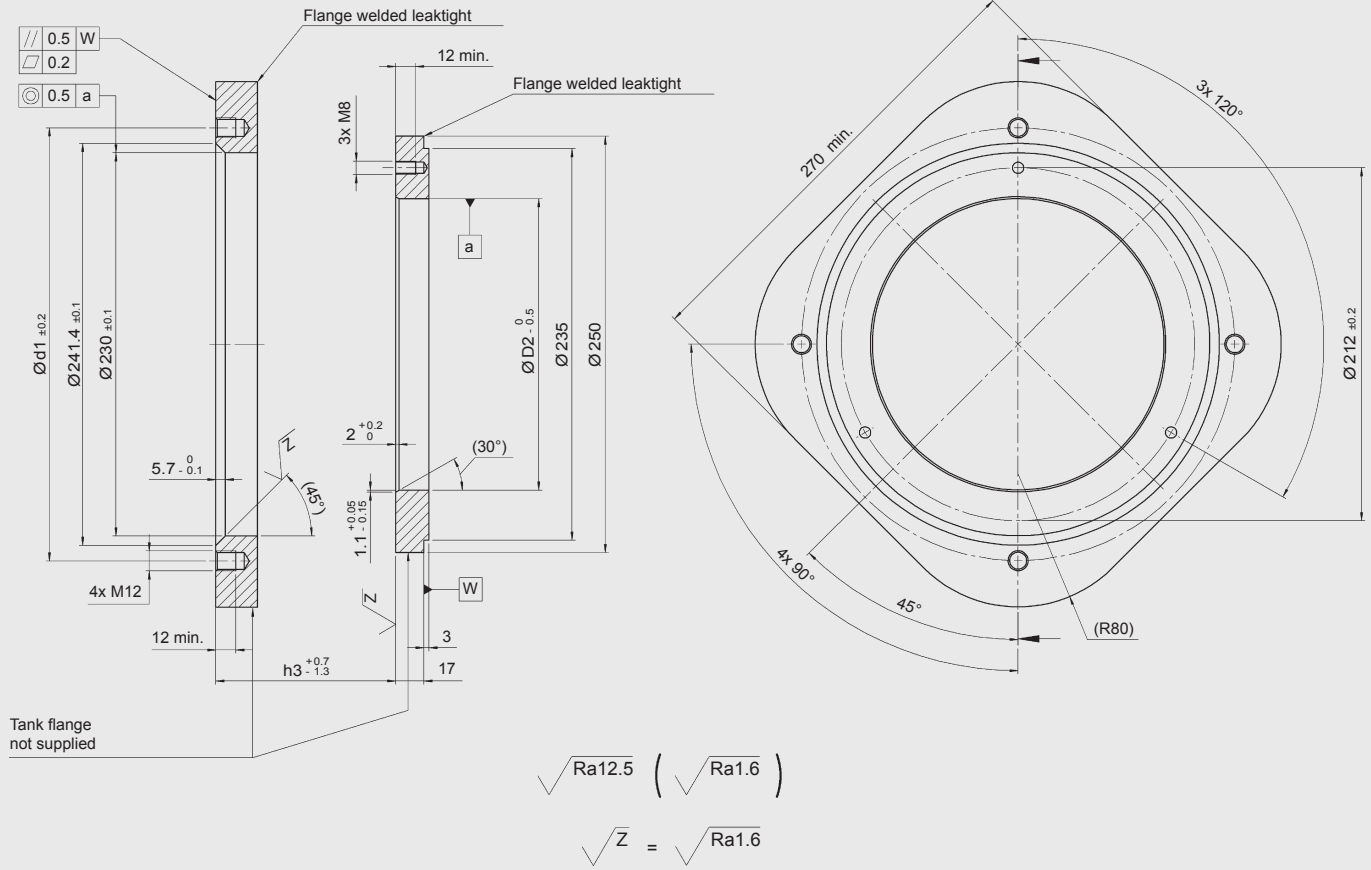
Tube design X



Tube design B - L - R



### 5.3 RKT 0600, 0800, 1200



#### 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.

**RT-Filtrertechnik GmbH**  
 Postfach 21 60  
**D-88011 Friedrichshafen**  
 Tel.: +49 7541 508-0  
 Fax: +49 7541 508-101  
 e-mail: sales@rt-filter.de  
 Internet: www.rt-filter.de