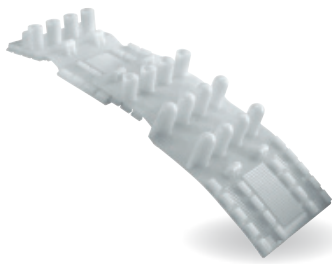
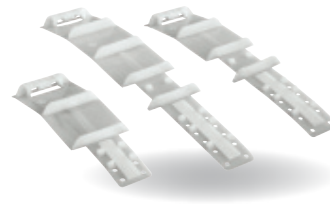


# Casing Spacers 4 pipes - System raci



## F/G Type spacers

Max. load capacity 500 kg/ring  
 Available skid heights:  
 25, 41 and 60 mm  
 Length of elements usable:  
 Type F = 198-228 mm  
 Type G = 95-121 mm  
 Width 130 mm



## ICD Type spacers

Max. load capacity  
 200 kg/ring  
 Available skid height 15 mm  
 Length of elements usable:  
 Type I = 130-160 mm  
 Type C = 180-250 mm  
 Type D = 240-310 mm  
 Width 63 mm

Use tightening clamp Type F/G, M/N, L or lever

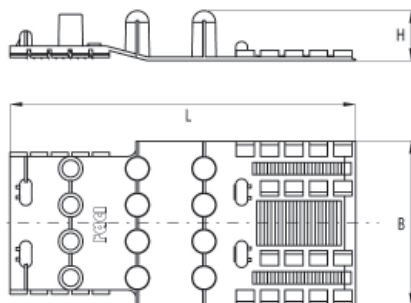
No special tool necessary!

OD pipe in mm		No. of elements per ring		max. distance recommended
min.	max.	F	G	
116*	145*	2	-	2 m
124*	150*	1	2	2 m
154	182	2	1	2 m
189	217	3	-	2 m
219	256	3	1	1.5 m
254	282	4	-	1.5 m
283	315	4	1	1.5 m
316	345	5	-	1.5 m

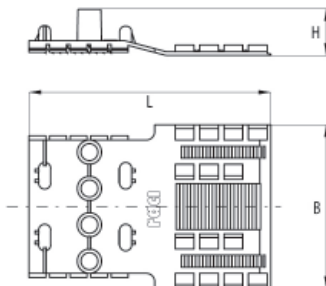
\*S/T or A/B spacers are recommended for these pipe sizes

OD pipe in mm		No. of elements per ring			max. distance recommended
min.	max.	I	C	D	
42	52	1	-	-	1 m
58	79	-	1	-	1 m
80	93	-	-	1	1 m
94	100	2	-	-	1 m
101	120	1	1	-	1 m
121	145	-	2	-	1 m
146	165	-	1	1	1 m
166	197	-	-	2	1 m

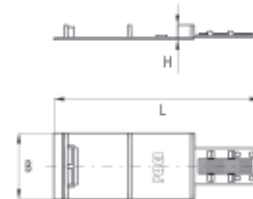
## F Type spacers



## G Type spacers



## I Type spacers



## C Type spacers



## D Type spacers



Type	Length		Width (B)		Height (H)		max. load kg
	mm	inch	mm	inch	mm	inch	
F	197-237	7.7-9.3	130	5.1	25, 41 60	0.98 - 1.61 2.36	500
G	91-129	3.6-5	130	5.1	25, 41 60	0.98 - 1.61 2.36	500

Max. load has been calculated for a static state. If there are dynamic forces, these need to be considered in addition.

Type	Length		Width (B)		Height (H)		max. load kg
	mm	inch	mm	inch	mm	inch	
I	130-160	5-6.3	63	2.5	15	0.6	200
C	180-250	7-9.8	63	2.5	15	0.6	200
D	240-310	9.4-12	63	2.5	15	0.6	200

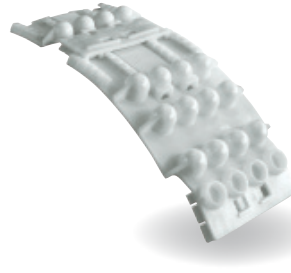
Max. load has been calculated for a static state. If there are dynamic forces, these need to be considered in addition.

# Casing Spacers 4 pipes - System raci



## M/N Type spacers

Max. load capacity  
1.000 kg/ring  
Available skid heights:  
18, 36, 50, 75 and 90 mm  
Length of elements usable:  
Type M = 265-320 mm  
Type N = 185-240 mm  
Width 180 mm



## E/H Type spacers

Max. load capacity  
2.700 kg/ring  
Available skid heights:  
25, 41, 60, 90, 110, 130 mm  
Length of elements usable:  
Type E = 280-320 mm  
Type H = 130-170 mm  
Width 225 mm

Use tightening clamp Type F/G, M/N, L

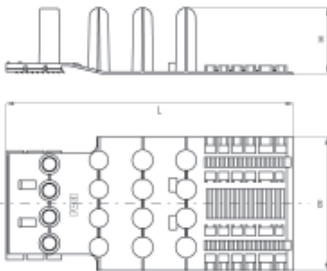
OD pipe in mm		No. of elements per ring		max. distance recommended
min.	max.	M	N	
160*	201	2	-	2 m
202	227	1	2	2 m
228	252	2	1	2 m
253	286	3	-	2 m
287	311	2	2	2 m
312	337	3	1	2 m
338	395	4	-	2 m
396	421	4	1	2 m
422	505	5	-	2 m
506	590	6	-	1.5 m
591	674	7	-	1.5 m
675	759	8	-	1.5 m

\*F/G spacers are recommended for these pipe sizes

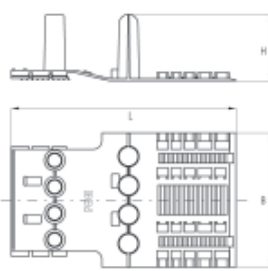
Use tightening clamp Type E/H

OD pipe in mm		No. of elements per ring		max. distance recommended
min.	max.	E	H	
306*	354	3	1	2 m
355	397	4	-	2 m
398	457	4	1	2 m
458	489	5	-	2 m
490	549	5	1	2 m
550	580	6	-	2 m
581	641	6	1	2 m
642	732	7	-	2 m
733	800	8	-	1.8 m
801	900	9	-	1.8 m
901	1000	10	-	1.8 m
1001	1099	11	-	1.8 m
1100	1191	12	-	1.8 m
1192	1283	13	-	1.5 m
1284	1374	14	-	1.5 m
1375	1466	15	-	1.2 m
1467	1558	16	-	1.2 m
1559	1650	17	-	1.2 m
1651	1741	18	-	1 m
1742	1833	19	-	1 m
1834	1925	20	-	0.8 m
1926	2108	21	-	0.7 m
2109	2200	23	-	0.7 m
2201	2292	24	-	0.7 m

## M Type spacers



## N Type spacers

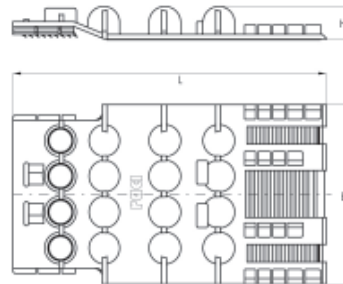


Type	Length		Width (B)		Height (H)		max. load kg
	mm	inch	mm	inch	mm	inch	
M	265-320	10.4-12.6	180	7.1	18, 36, 50, 75, 90	0.7 - 1.42 1.97 - 2.95	1000
N	185-240	7.3-9.4	180	7.1			1000

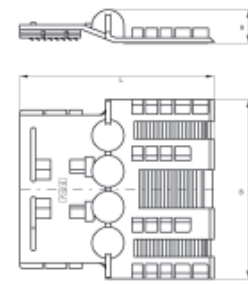
Max. load has been calculated for a static state. If there are dynamic forces, these need to be considered in addition.

**Attention: For spacers with skids above 125 mm, the max. load capacity reduces to 50% of the given value. NEVER forget anti sliding tape.**

## E Type spacers



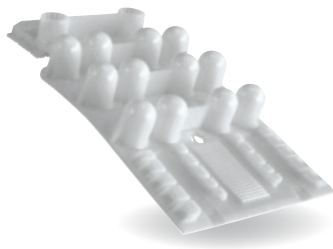
## H Type spacers



Type	Length		Width (B)		Height (H)		max. load kg
	mm	inch	mm	inch	mm	inch	
E	280-335	11 - 13.2	225	8.8	25, 41, 60	0.98 - 1.61 2.36	2700
					90	3.54	
H	130-185	5.1-7.3	225	8.8	110, 130	4.33 - 5.12	

Max. load has been calculated for a static state. If there are dynamic forces, these need to be considered in addition.

# Casing Spacers 4 pipes - System raci



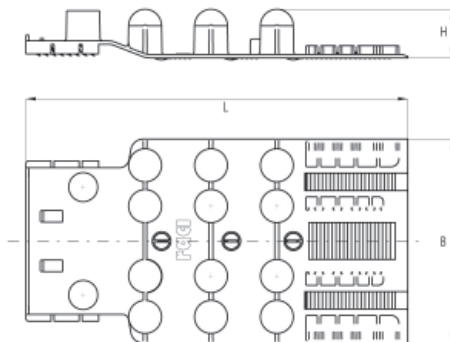
## L Type spacers

Available skid heights:  
25, 50, 75, 100, 125, 150,  
175 and 200 mm  
Length of element usable:  
Type L = 280-325 mm  
Width 210 mm

Use tightening clamp Type F/G M/N, L

OD pipe in mm	min. max.	No. of elements per ring	max. distance recommended	
			Water	Gas
355	397	4	2.5 m	2.5 m
450	510	5	2.5 m	2.5 m
540	610	6	2.5 m	2.5 m
625	715	7	2.5 m	2.5 m
715	805	8	2.5 m	2.5 m
805	895	9	2 m	2.5 m
895	985	10	2 m	2.5 m
985	1075	11	1.5 m	2.5 m
1075	1160	12	1 m	2 m
1160	1250	13	1 m	2 m
1250	1340	14	1 m	2 m
1340	1430	15	0.8 m	2 m
1430	1520	16	0.8 m	2 m
1520	1610	17	0.5 m	2 m
1610	1750	18	0.5 m	2 m

## L Type spacers



Type	Length		Width (B)		Height (H)		max. load kg
	mm	inch	mm	inch	mm	inch	
L25 L50					25, 50	0.98 1.97	3000
L75 L100	280- 325	11- 12.8	210	8.3	75, 100	2.95 3.94	2500
L125					125	4.92	2000
L150 L175 L200					150, 175, 200	5.91 6.89 7.87	1500

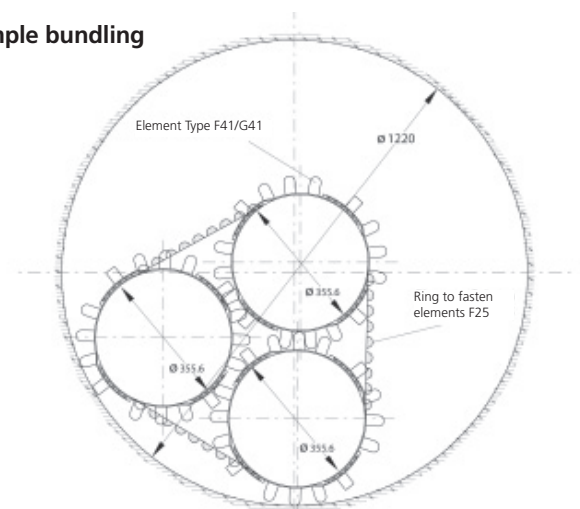
Max. load has been calculated for a static state. If there are dynamic forces, these need to be considered in addition.

## Special Applications

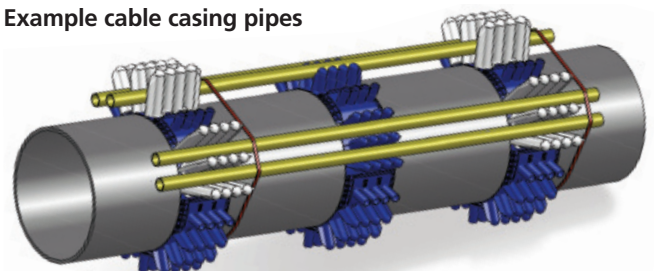
You need to bring **several pipes** through one casing!  
We calculate the **bundle** for you or find a **customized solution**.



## Example bundling



## Example cable casing pipes



# Spacers System raci 4 pipes with Integrated High-performance Plastic Rollers



## E41 Roller Type spacers

Max. load capacity: 2000 kg  
Available skid height: 41 mm  
Length of elements usable:  
280-320 mm  
Width 225 mm



## Product Information

These plastic spacer rings are a combination of the tried and trusted spacers in the series E/H with additional **rollers made from glass-fibre-reinforced high-performance plastic (PA 30)**. The roller elements have a ball shape that ensures a **particularly high load capacity**. The combination of materials and the stability of the roller axles mean that **frictional force is reduced** by up to 54% **during feedthrough**, in comparison to a feedthrough without rollers. As this product does not contain any metallic connecting pieces, it is absolutely suitable for deployment with cathodically-protected steel pipeline constructions.

## Advantages:

- Rollers pre-installed by supplier
- Frictional force reduced by up to 54% during feedthrough
- Low roller height means they are suitable for use in tight spaces
- **Completely metal-free design**
- Fast and easy installation
- Our modular system ensures that this product is fully compatible with existing spacers and tools



Use tightening clamp Type E/H

OD pipe in mm		No. of elements per ring		max. distance recommended
from	to	E41 roller	H41*	
355	397	4	–	2 m
398	457	4	1	2 m
458	489	5	–	2 m
490	549	5	1	2 m
550	580	6	–	2 m
581	641	6	1	2 m
642	732	7	–	2 m
733	800	8	–	1.8 m
801	900	9	–	1.8 m
901	1000	10	–	1.8 m
1001	1099	11	–	1.8 m
1100	1191	12	–	1.8 m
1192	1283	13	–	1.5 m
1284	1374	14	–	1.5 m
1375	1466	15	–	1.2 m
1467	1558	16	–	1.2 m
1559	1650	17	–	1.2 m
1651	1741	18	–	1 m
1742	1833	19	–	1 m
1834	1925	20	–	0.8 m
1926	2108	21	–	0.7 m
2109	2200	23	–	0.7 m
2201	2292	24	–	0.7 m

\*Type H41 is a connecting piece with only one row of skids without rollers

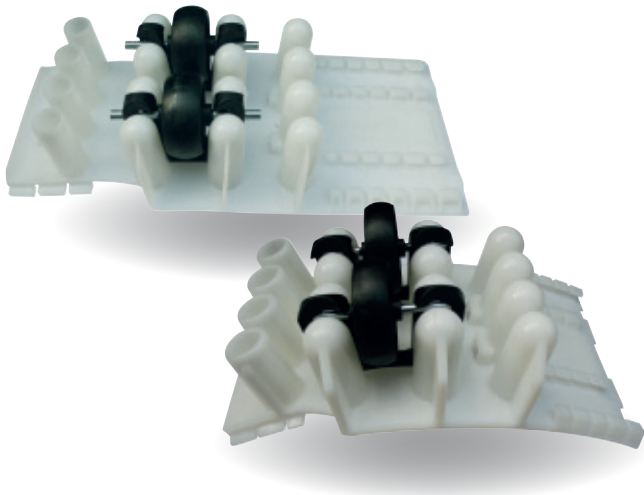


Demonstration Video

Installation as with system raci  
without rollers



## Rollers for Spacers 4 pipes - System raci



### Rollers for Spacers M75 and E90

- One or two rollers per element usable
- 300 kg max. load per roller
- Roller M max. height 85 mm
- Roller E max height 110 mm
- Reduces friction more than 50%
- Roller made from fibre-reinforced polyamide
- Wheel axle made from galvanised steel
- Easy plug-in mounting

Item	Skid height	Article No.
<b>Roller for casing spacer M/75</b> Max. load 300 kg/Roller at vertical load	height 85 mm overall	17086
<b>Roller for casing spacer E/90</b> Max. load 300 kg/Roller at vertical load	height 110 mm overall	17085



Plug rollers into the flat spacer before fastening onto pipe



# Casing Spacers 4 pipes - System raci

## Application instructions:

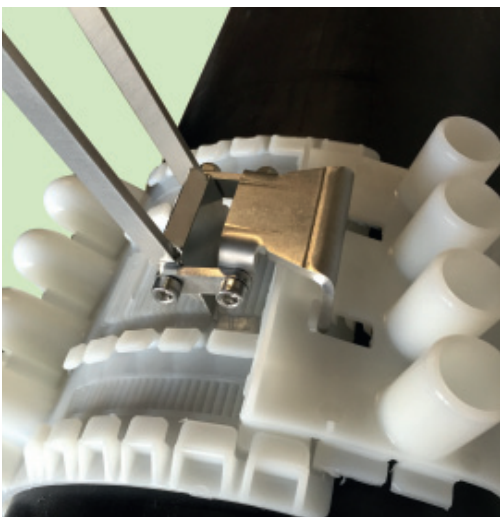
Before mounting please choose the right spacer and the right **number of elements** per ring for your application. A double ring of spacers is mounted at the end and the beginning of the crossing.

1. For preparation, pre-fix the right number of elements per ring by inserting two or three teeth. **DO NOT CLOSE THE RING.** Decide the spacers' position on the carrier pipe. Apply **anti slide tape** under each ring to avoid movement of the rings on the pipe surface.
2. To mount on the pipe, connect ends of the ring by inserting two or three teeth deep.
3. Tighten all element connections evenly until the ring is fixed on the pipe properly. Do not fasten the elements unequally.
4. The minimum **overlap of the connection zones is 50%**, better 2/3. If the spacers are applied one or more days before insertion, the rings **MUST be tightened again**.

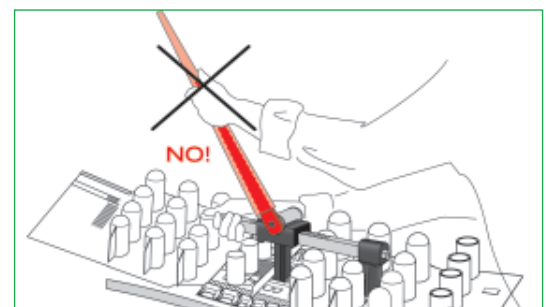
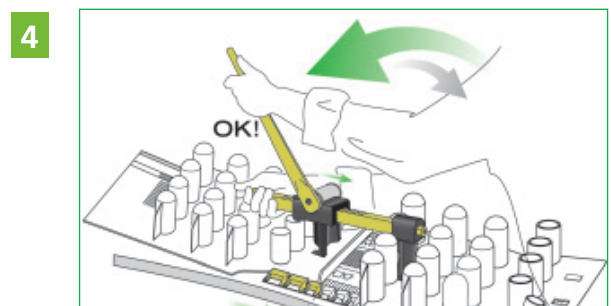
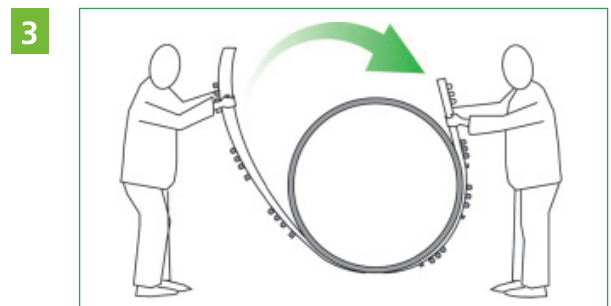
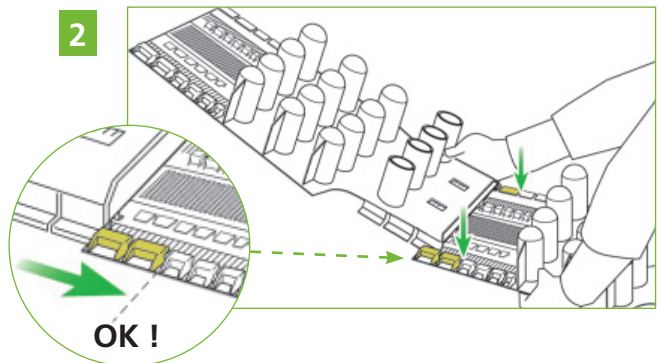
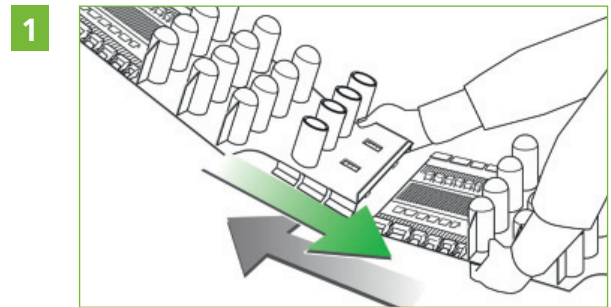
## NO Special clamp for type A/B, S/T and I/C/D



## Assembly with F/G tightening lever



Installation video



Never use an extended lever.