

For multi-axis movements and robots - triflex® R

triflex® R (R for "round") is the third generation of multi-axis igus® e-chains®. The key design characteristics of igus® triflex® R have made this product very successful in the robot industry.


- Defined torsion stop-dog on each e-chain® link
- Defined minimum bend radius
- High tensile strength ball and socket joint
- Compact retraction system options to prevent loop formation
- Fibre-rod option for partial directional control and reinforcement
- No extra support elements required e.g. steel cables, spring suspensions etc.
- Wide range of accessories

triflex® R available in 5 versions from stock

- TRC** closed design with smooth and robust exterior
- TRE** "easy" design, easy to fill from outside
- TRCF** closed design with snap lock mechanism
- TRL** very lightweight, with "easy" design
- TRLF** light version with snap lock mechanism

Typical industries and applications

- The first choice for multi-axis robots
- Machine tools
- Handling machines - 6-axis
- Conveyor systems
- Packaging machines
- General mechanical engineering, etc.

 Assembly video available online at
▶ www.igus.eu/triflexR_assembly

 Available from stock. Ready to ship in 24 - 48hrs.*
*Average time before the ordered goods are dispatched.



The defined torsion stop ensures an even distribution of the torsional load across the entire length



A tough, bend radius stop-dog actively prevents cables and hoses from kinking



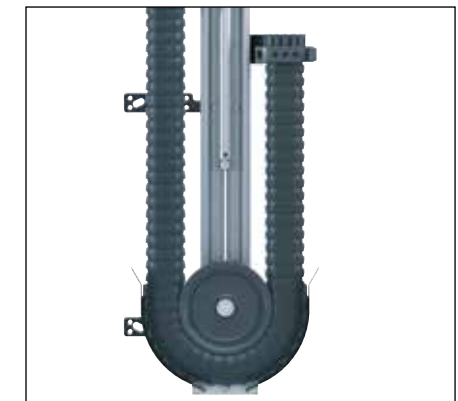
Interior separation: two or three chamber design for reliable cable guidance



Openable - series TRCF and TRLF have snap lock mechanism for easy filling



Tensile strength is absorbed directly by the e-chain® - no additional supports are necessary



4 retraction system options available to prevent formation of loops in the robot's working area



Standard and light mounting brackets available with or without integrated strain relief. Some versions available in ESD material, from stock




Mounting brackets options with gliding feed-through and swivel bearing. Bearing with a maintenance-free igubal® ball and socket joint






Various heavy duty and compact connections and quick-change units are available

 Serie TRC - electrically conductive
ESD e-chains® - several series available from stock

 UL94-V2 classification

 **iF product design award**
2004 for igus® series TRC
2007 for igus® series TRL
2013 for igus® series TRLF

Technical data

	Speed / acceleration	upon request
	Material - permitted temperature °C, igumid G (TRLF/TRCF)	-40°C / +120°C
	Material - permitted temperature °C, igumid NB (TRC/TRE/TRL)	-40°C / +80°C
	Flammability class, igumid G (TRLF/TRCF)	VDE 0304 IIC UL94-HB
	Flammability class, igumid NB (TRC/TRE/TRL)	VDE 0304 IIC UL94-V2

Reduce installation times with easy-to-use disassembly tools



Easy-to-use disassembly tools for triflex® TRE (B version) and TRCF. Easy disassembly at any point along the e-chain®, even when full.

More information

► www.igus.eu/triflex_B_disassemblytool



Assembly video available online at

► www.igus.eu/triflexR_assembly

For series	Part No.
TRE.B	Disassembly tool
TRE.40.B	MAT0050175
TRE.50.B	MAT0051190
TRE.60.B / TRE.70.B	MAT0051135
TRE.85.B	MAT0050170
TRE.100.B	MAT0050172

For series	Part No.
TRE.B	Disassembly tool
TRCF.65	MAT0051135
TRCF.85	MAT0050170
TRCF.100	MAT0050172



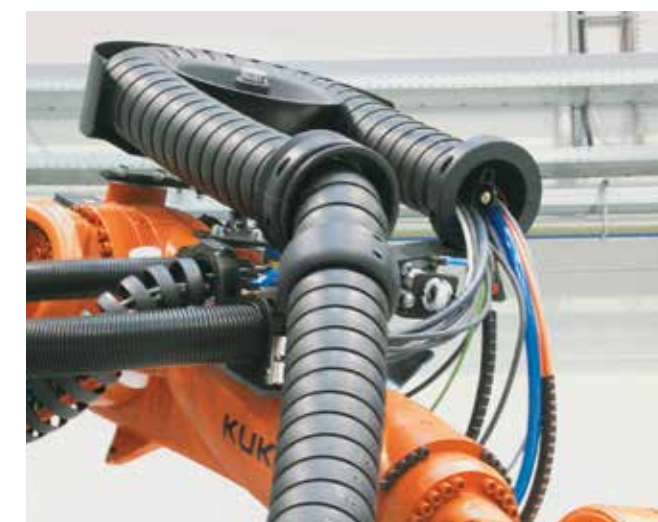
igus® triflex® R TRLF - light version, easily openable by hand or with a screwdriver



igus® triflex® R TRCF - closed version, openable with a screwdriver



triflex® RS for a low profile retraction system. Integrated fibre rods generate the directed pretension so that loops do not form in the working area



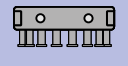
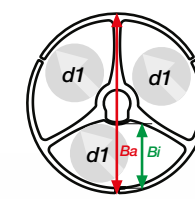
Pneumatic retraction system triflex® RSP - prevents loop forming on the robot



triflex® TR.RSE.40.L or R, cost-effective and lightweight retraction system with deflection roller, for small robots



TR.RSE linear retraction system for triflex® R, sizes 40-125



TRL - light and cost-effective with "easy" design

High tensile strength thanks to special ball and socket design

Defined torsion stop, allows free movement in any direction but still protects the cables

"Easy" design for fast filling with cables and hoses

Easy assembly and disassembly

Extremely lightweight due to one-piece design

Small bend radii and short pitch

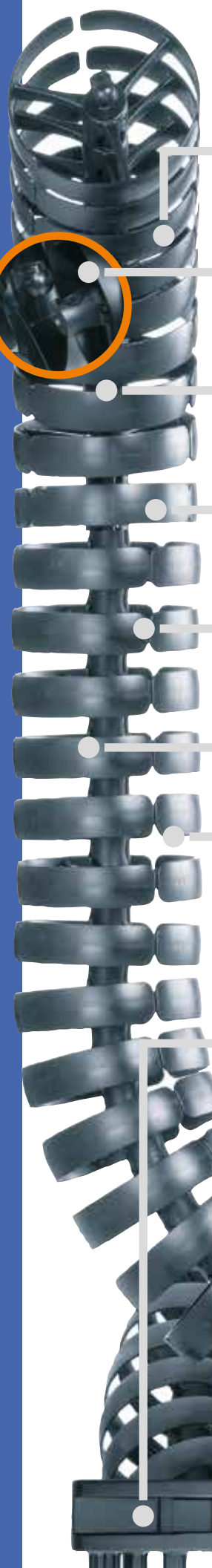
Mounting bracket with strain relief also available as intermediate bracket

Lightweight and cost-effective - TRL

- Very easy to fill
- Multi-axis e-chain® for simple applications
- Easy to lengthen and shorten

Typical industries and applications

- Robot axes 1-3
- Non-robotic applications
- Bundling cables for operator controls
- Filament feeds on 3D printers
- Office applications

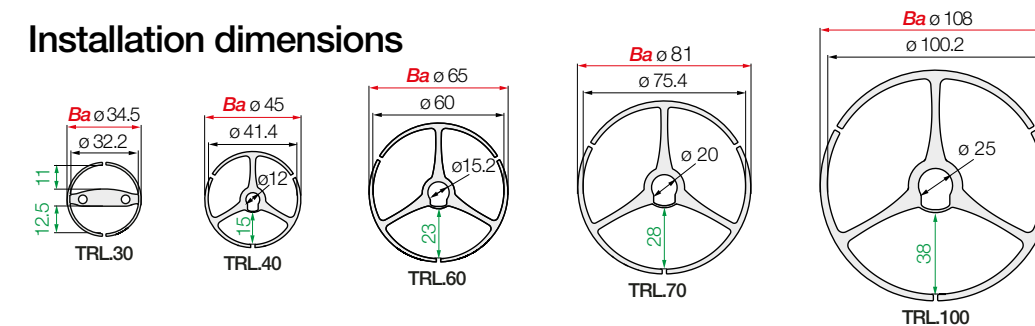


e-chains® | TRL series | Light version with "easy" design - simply press cables in

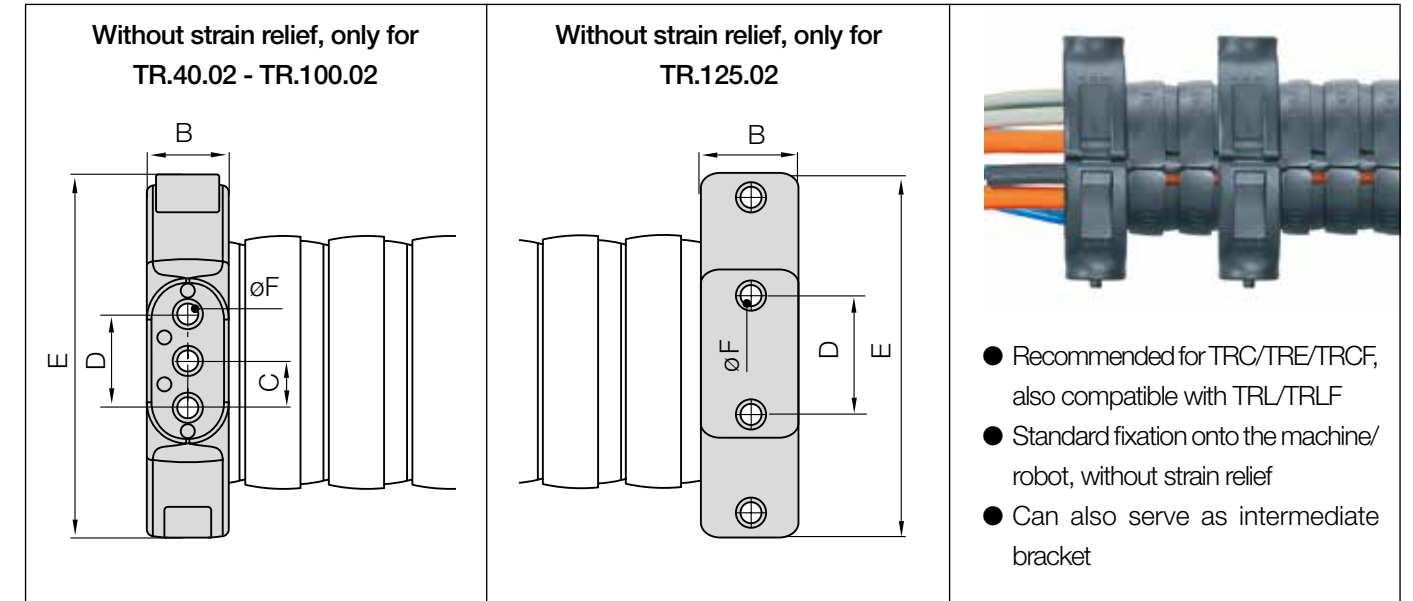
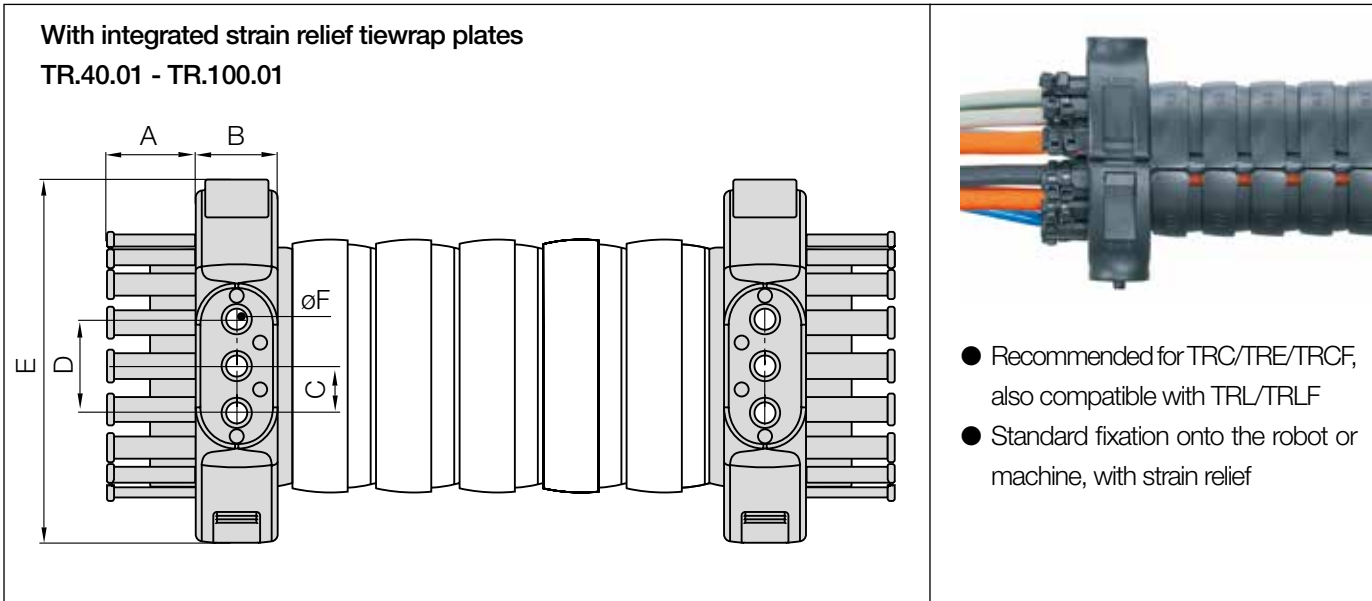
Part No.	Bi1	Bi2	Ba	R	d1	d2	Pitch	Links per m	Weight [kg/m]
e-chains®	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
TRL.30. 050.0 ¹⁾	12.5	11	34.5	050	10	8	11.3	89	≈ 0.26
TRL.40. 058.0	15	-	45	058	13	-	13.9	72	≈ 0.29
TRL.60. 087.0	23	-	65	087	20.5	-	20.4	49	≈ 0.49
TRL.70. 110.0	28	-	81	110	26	-	25.6	39	≈ 0.82
TRL.100.145.0	38	-	108	145	35.5	-	34.5	29	≈ 1.42

1) Only available with 2-chamber design

Installation dimensions



Available from stock. Ready to ship in 24 - 48hrs.*
*Average time before the ordered goods are dispatched.



Standard mounting brackets | **With strain relief**



Ø Index	Part No. with strain relief	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
30.	Alternative: light mounting bracket	-	-	-	-	-	-
40.	TR.40.01.M6 ^{1) 2)}	17.8	21	13.5	27	84.5	6.5
50.	TR.50.01.M6 ¹⁾	21	21	13.5	27	84.5	6.5
60.	TR.60.01.M8 ^{1) 2)}	25	32	20	40	126	9
65.	TR.65.01.M8 ¹⁾	25	32	20	40	126	9
65. (R 200)	TR.65.200.01.M8 ^{1) 4)}	25	32	20	40	126	9
70.	TR.70.01.M8 ^{1) 2)}	25	32	20	40	126	9
85.	TR.85.01.M8 ¹⁾	38	35	20	40	155	9
85. (R 240)	TR.85.240.01.M8 ^{1) 4)}	38	35	20	40	155	9
100.	TR.100.01.M8 ¹⁾	38	35	20	40	155	9
125.	Alternative: standard mounting bracket without strain relief	-	-	-	-	-	-

Strain reliefs are for use on the fixed end and/or moving end.

Standard: through holes in Ø F - 1) option: with threaded bushings, steel, M6/M8

2) ⚠ ESD version (Electro Static Discharge) available from stock. More information ▶ From page 142

4) Only for special size with larger bend radius

Standard mounting brackets | **Without strain relief**

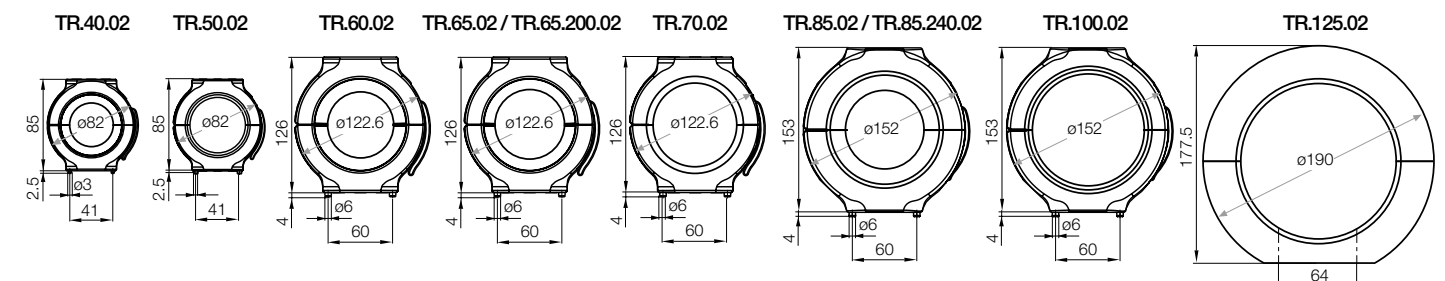
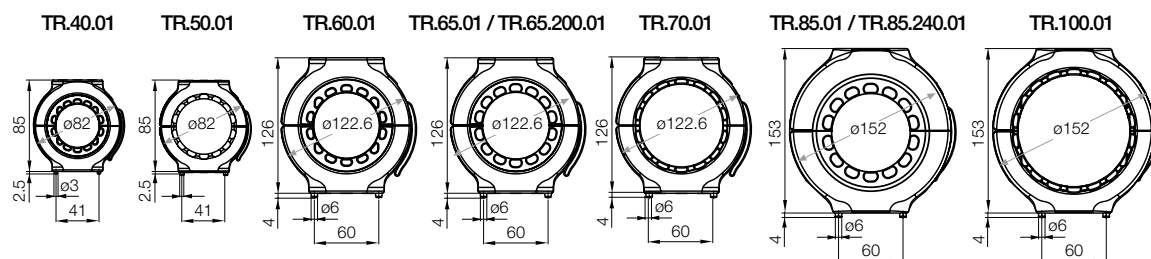


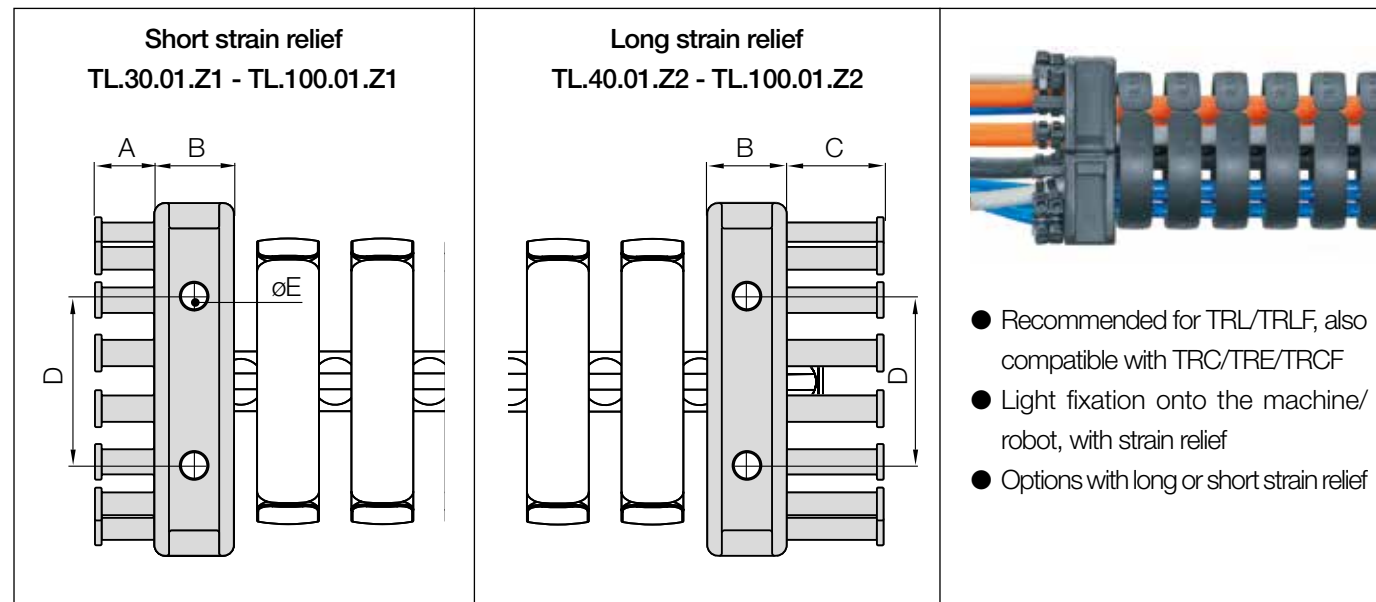
Ø Index	Part No. without strain relief or as intermediate bracket	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
30.	Alternative: light mounting bracket	-	-	-	-	-	-
40.	TR.40.02.M6 ¹⁾	-	21	13.5	27	84.5	6.5
50.	TR.50.02.M6 ¹⁾	-	21	13.5	27	84.5	6.5
60.	TR.60.02.M8 ¹⁾	-	32	20	40	126	9
65.	TR.65.02.M8 ¹⁾	-	32	20	40	126	9
65. (R 200)	TR.65.200.02.M8 ^{1) 4)}	-	32	20	40	126	9
70.	TR.70.02.M8 ¹⁾	-	32	20	40	126	9
85.	TR.85.02.M8 ¹⁾	-	35	20	40	155	9
85. (R 240)	TR.85.240.02.M8 ^{1) 4)}	-	35	20	40	155	9
100.	TR.100.02.M8 ¹⁾	-	35	20	40	155	9
125.	TR.125.02.M8 ¹⁾	-	40	-	64	190	9

Standard: through holes in Ø F - 1) option: with threaded bushings, steel, M6/M8

2) ⚠ ESD version (Electro Static Discharge) available from stock. More information ▶ From page 142

4) Only for special size with larger bend radius





- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/robot, with strain relief
- Options with long or short strain relief

Standard Light mounting brackets | **With strain relief**



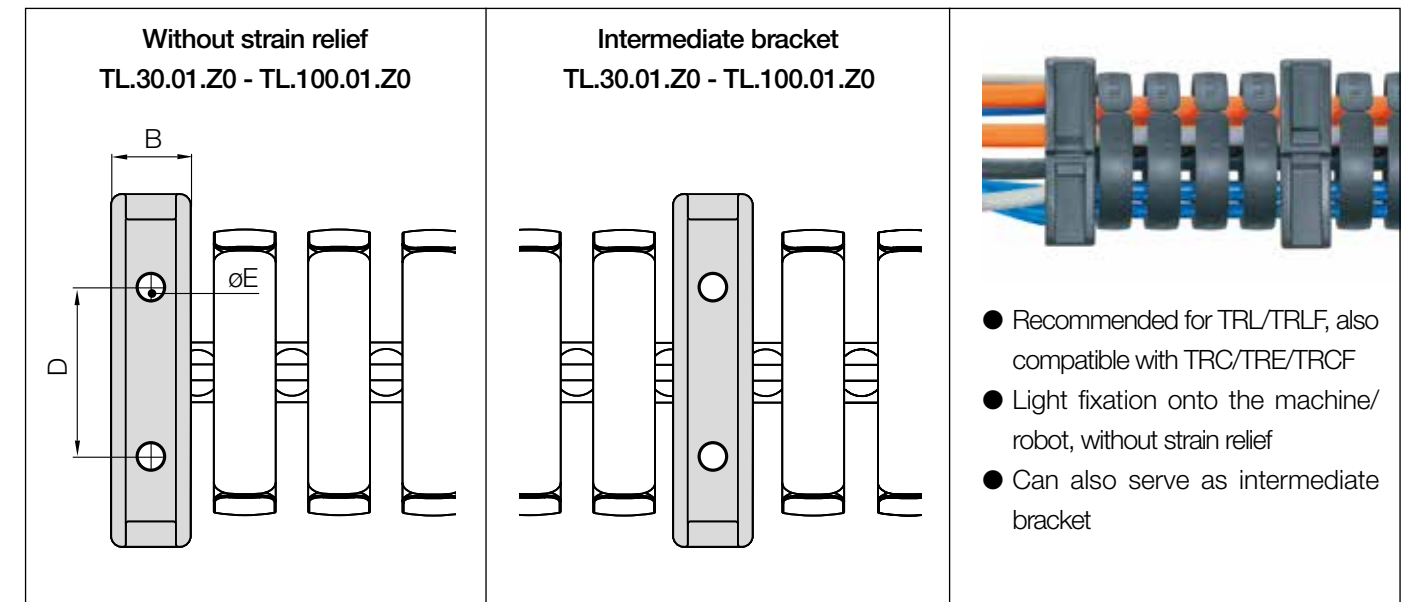
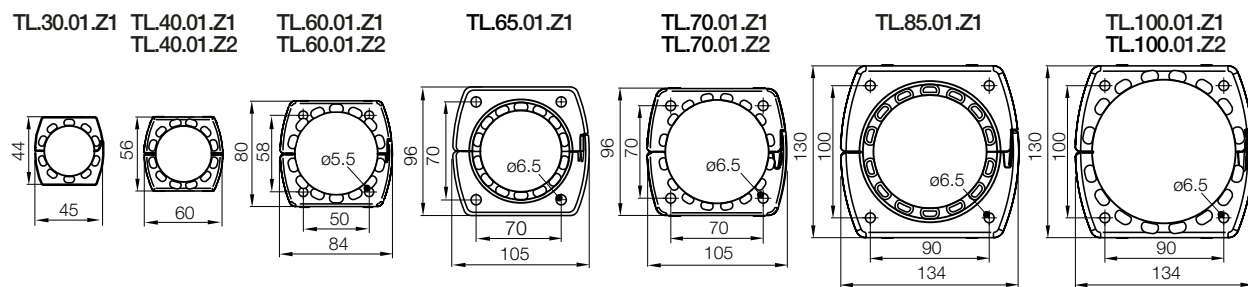
TL.30.01.Z1 - TL.100.01.Z1



TL.40.01.Z2 - TL.100.01.Z2

Ø Index	Part No. with short strain relief	Part No. with long strain relief	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
30.	▶ TL.30.01.Z1	–	12.5	13	–	24	4.5
40.	▶ TL.40.01.Z1 ¹⁾	TL.40.01.Z2	12.5	14	20	36	5.8
50.	▶ Alternative: standard mounting bracket		–	–	–	–	–
60.	▶ TL.60.01.Z1 ¹⁾	TL.60.01.Z2	17	20	27	48	5.8
65.	▶ TL.65.01.Z1 ¹⁾	–	13.5	27	–	64	6.5
65. (R 200)	▶ Alternative: standard mounting bracket		–	–	–	–	–
70.	▶ TL.70.01.Z1 ¹⁾	TL.70.01.Z2	17.5	27	27.5	64	6.5
85.	▶ TL.85.01.Z1	–	26.5	30	–	64	6.5
85. (R 240)	▶ Alternative: standard mounting bracket		–	–	–	–	–
100.	▶ TL.100.01.Z1 ¹⁾	TL.100.01.Z2	22.5	30	42.5	64	6.5
125.	▶ Alternative: standard mounting bracket		–	–	–	–	–

¹⁾ For moving end (ball) suitable only for series TRL/TRLF



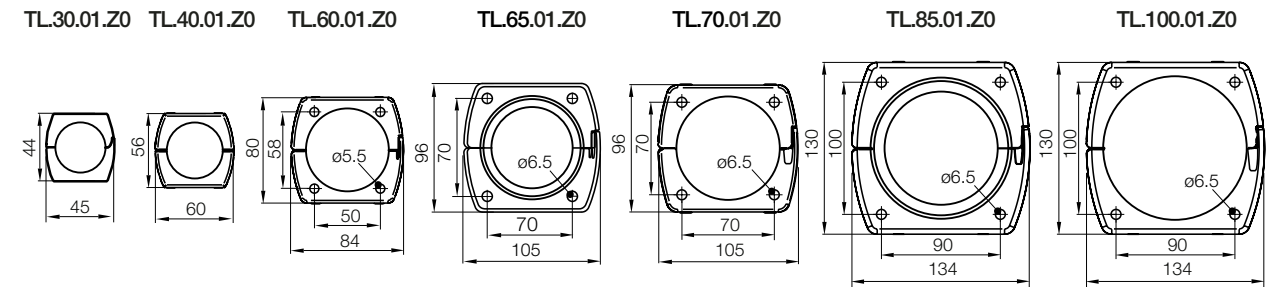
- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/robot, without strain relief
- Can also serve as intermediate bracket

Light mounting brackets | **Without strain relief**

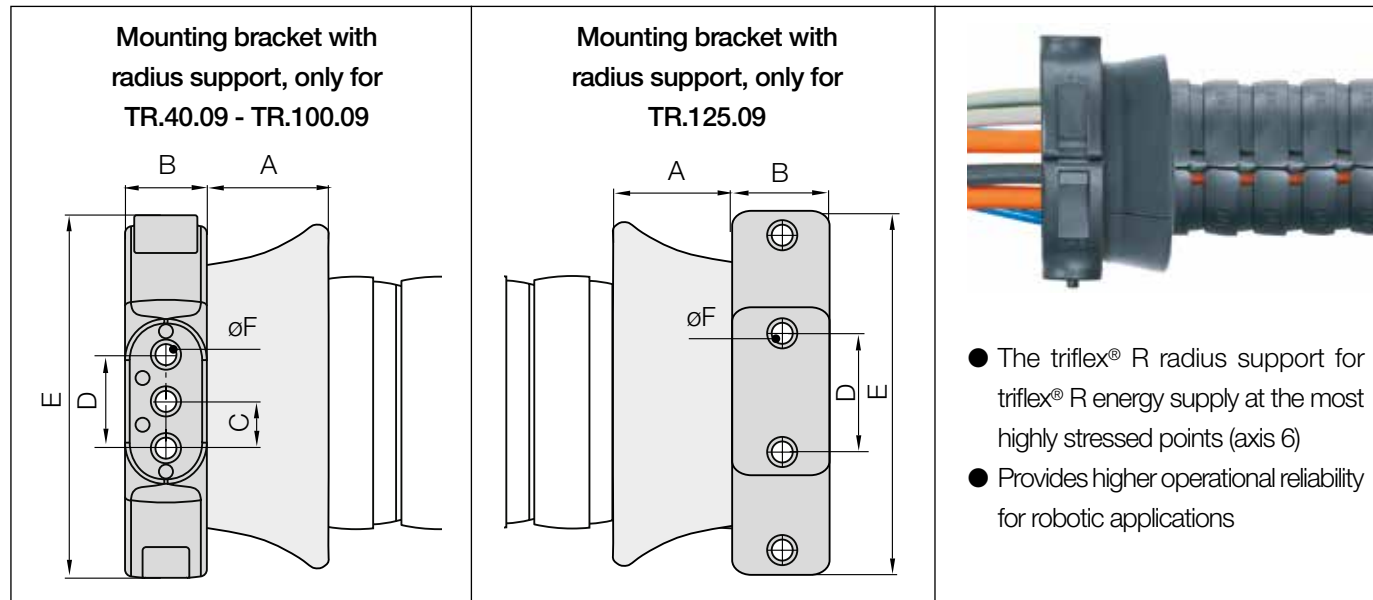


TL.30.01.Z0 - TL.100.01.Z0

Ø Index	Part No. without strain relief or as intermediate bracket	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
30.	▶ TL.30.01.Z0	–	13	–	24	4.5
40.	▶ TL.40.01.Z0	–	14	–	36	5.8
50.	▶ Alternative: standard mounting bracket	–	–	–	–	–
60.	▶ TL.60.01.Z0	–	20	–	48	5.8
65.	▶ TL.65.01.Z0	–	27	–	64	6.5
65. (R 200)	▶ Alternative: standard mounting bracket	–	–	–	–	–
70.	▶ TL.70.01.Z0	–	27	–	64	6.5
85.	▶ TL.85.01.Z0	–	30	–	64	6.5
85. (R 240)	▶ Alternative: standard mounting bracket	–	–	–	–	–
100.	▶ TL.100.01.Z0	–	30	–	64	6.5
125.	▶ Alternative: standard mounting bracket	–	–	–	–	–



Mounting brackets | With radius support



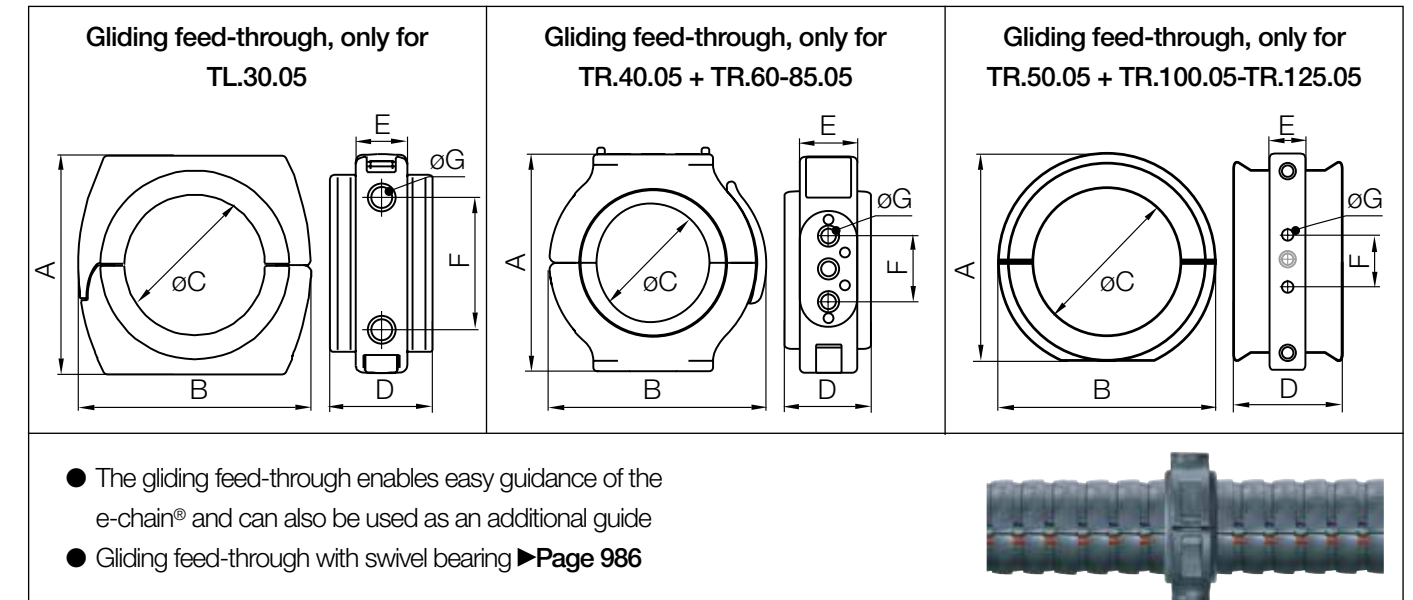
Mounting brackets | With radius support | For TRC·TRE·TRCF·TRL·TRLF

Ø Index	Part No. with radius support	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
30.	▶ -	-	-	-	-	-	-
40.	▶ TR.40.09.M6 ¹⁾	28	21	13.5	27	84.5	6.5
50.	▶ TR.50.09.M6 ¹⁾	38	21	13.5	27	84.5	6.5
60.	▶ TR.60.09.M8 ¹⁾	38	32	20	40	126	9
65.	▶ TR.65.09.M8 ¹⁾	45	32	20	40	126	9
65. (R 200)	▶ -	-	-	-	-	-	-
70.	▶ TR.70.09.M8 ¹⁾	43	32	20	40	126	9
85.	▶ TR.85.09.M8 ¹⁾	49	35	20	40	155	9
85. (R 240)	▶ -	-	-	-	-	-	-
100.	▶ TR.100.09.M8 ¹⁾	67	35	20	40	155	9
125.	▶ TR.125.09.M8 ¹⁾	72	40	-	64	190	9

Standard: through holes in Ø F

1) Option: with threaded bushings, steel, M6/M8

Gliding feed-throughs



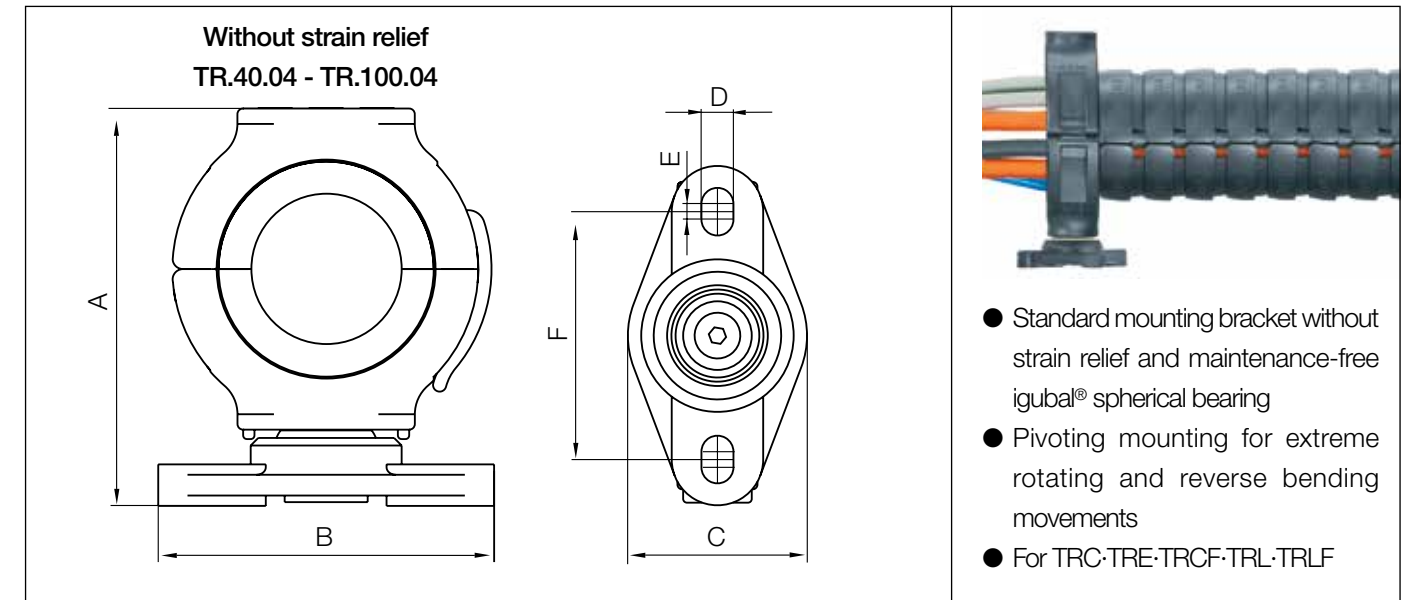
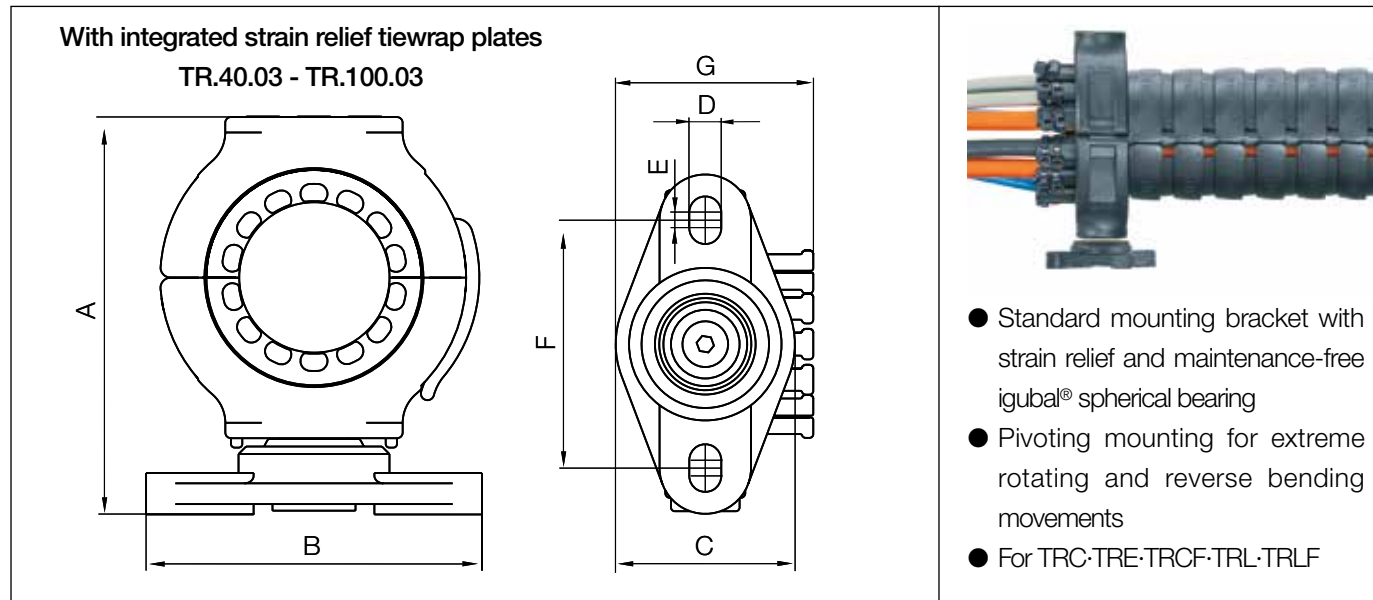
Gliding feed-through | For TRC·TRE·TRCF

Ø Index	Part No. Gliding feed-through	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
30.	▶ TL.30.05	56	60	36	28	14	36	5.8
40.	▶ TR.40.05.M6 ¹⁾	85	84.5	46	32	21	27	6.5
50.	▶ TR.50.05.M6 ¹⁾	96	102	58	67	21	27	6.5
60.	▶ TR.60.05.M8 ¹⁾	126	126	70	50	32	40	9
65.	▶ TR.65.05.M8 ¹⁾	126	126	75	75	32	40	9
65. (R 200)	▶ TR.65.05.M8 ¹⁾	126	126	75	75	32	40	9
70.	▶ TR.70.05.M8 ¹⁾	153	155	86	70	35	40	9
85.	▶ TR.85.05.M8 ¹⁾	153	155	100	84	35	40	9
85. (R 240)	▶ TR.85.05.M8 ¹⁾	153	155	100	84	35	40	9
100.	▶ TR.100.05.M8 ¹⁾ *	162.5	169.5	115	85	28	40	8.5
125.	▶ TR.125.05.M8 ¹⁾	179	190	142	84	40	64	9

*TR.100.05 with 3 holes

Standard: through holes in Ø G

1) Option: with threaded bushings, steel, M6/M8

Swivel bearing-mounting brackets | **With strain relief** | For TRC·TRE·TRCF·TRL·TRLF

TR.40.03 - TR.100.03

Ø Index	Part No. with strain relief	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
30.	▶ -	-	-	-	-	-	-	-
40.	▶ TR.40.03	105	89	47	8.4	4.1	65	51.8
50.	▶ TR.50.03	105	89	47	8.4	4.1	65	55
60.	▶ TR.60.03	152	118	65	10.5	5.5	87.5	73.5
65.	▶ TR.65.03	152	118	65	10.5	5.5	87.5	73.5
65. (R 200)	▶ TR.65.200.03 ⁴⁾	152	118	65	10.5	5.5	87.5	73.5
70.	▶ TR.70.03	152	118	65	10.5	5.5	87.5	73.5
85.	▶ TR.85.03	179	118	65	10.5	5.5	87.5	88
85. (R 240)	▶ TR.85.240.03 ⁴⁾	179	118	65	10.5	5.5	87.5	88
100.	▶ TR.100.03	179	118	65	10.5	5.5	87.5	88
125.	▶ -	-	-	-	-	-	-	-

4) Only for special size with larger bend radius

Swivel bearing mounting brackets | **Without strain relief** | For TRC·TRE·TRCF·TRL·TRLF

TR.40.04 - TR.100.04

Ø Index	Part No. without strain relief	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
30.	▶ -	-	-	-	-	-	-	-
40.	▶ TR.40.04	105	89	47	8.4	4.1	65	-
50.	▶ TR.50.04	105	89	47	8.4	4.1	65	-
60.	▶ TR.60.04	152	118	65	10.5	5.5	87.5	-
65.	▶ TR.65.04	152	118	65	10.5	5.5	87.5	-
65. (R 200)	▶ TR.65.200.04 ⁴⁾	152	118	65	10.5	5.5	87.5	-
70.	▶ TR.70.04	179	118	65	10.5	5.5	87.5	-
85.	▶ TR.85.04	179	118	65	10.5	5.5	87.5	-
85. (R 240)	▶ TR.85.240.04 ⁴⁾	179	118	65	10.5	5.5	87.5	-
100.	▶ TR.100.04	-	-	-	-	-	-	-
125.	▶ -	-	-	-	-	-	-	-

4) Only for special size with larger bend radius