

RSP retraction system

Pneumatic retraction system

Up to 780mm retraction length with TRC, TRE and TRCF e-chains® (please order matching e-chain® separately)

Increased protection against failure by optional end position monitoring

Standard pneumatic components for easy integration

Pressure compensation unit for an adjustable retraction force

Open system, low profile design

Custom connection possibilities using adapter consoles

Double retraction distance relative to the overall length

Pneumatic retraction system - triflex® RSP

triflex® RSP prevents loops on the robot head, with a continuously adjustable retraction force. Extension lengths of up to 780mm enable a secure guidance of the cables and hoses, even with large arm diameters and very complex movements. The retraction forces can be adjusted using a pneumatic cylinder. Whether light or heavy fill weights, long or short robot arms - with the igus® RSP retraction system the retraction force can be adjusted to the individual application.

- For axis 3-6 on industrial robots
- Larger retraction forces than RS system
- Even larger e-chains® up to Ø 125mm can be guided safely
- Almost constant force over the complete travel, even with heavy fill weights
- The end position can be monitored so damage can be prevented
- Mounting options for numerous robot models and manufacturers with adapter consoles
- Very low energy consumption with integrated air reservoir



Assembly video online:
Please scan the QR code or visit
► www.igus.eu/assembly-RSP-system

RSP applications

RSP - R(etraction) S(ystem) P(neumatic)



Pneumatic retraction system triflex® RSP - prevents loops forming in the robot's working area

triflex® RSP system on a 6 axis robot

RSP retraction system

System design with matching e-chains®

Matching triflex® R e-chain® for RSP

TRC .RSP.XX.R.LLLL.0

TRE .RSP.XX.R.LLLL.0.(B)

TRCF.RSP.XX.R.LLLL.0



e-chain® overall length = additional length from the gliding feed-through LLLL + the e-chain® length within the system



RSP system (without e-chain®) + Pressure compensation unit + Mounting bracket + Gliding feed-through = TR.RSP.XX.L or TR.RSP.XX.R



Complete RSP pneumatic retraction system with fixed end on the left and TRE triflex® R series. Pressure compensation unit, mounting bracket and gliding feed-through are included in the delivery. Please order matching triflex® R e-chain® separately.



RSP retraction system

Sample order of a retraction system including e-chain®



Sample order of a complete TR.RSP system, ø index 85, fixed end on the left, and e-chain® (standard length: 500mm)

System	Insert Ø index / select fixed end .L / .R	TR.RSP.85.L
+ e-chain®	Insert ø index / Insert bend radius R / Insert standard length LLLL	TRC.RSP.85.135.1000.0
Order text:	TR.RSP.85.L + TRC.RSP.85.135.1000.0	



Retraction system order key

TR.RSP.85.L

TR.RSP.85.R



L = Fixed end right or
R = Fixed end left
ø index
Retraction system
Series



e-chains® order key

TRC .RSP.85.135.1000.0

TRE .RSP.85.135.1000.0.B

TRCF.RSP.85.135.1000.0



Default colour black
LLLL = Additional length
R Bend radius
ø index
Retraction system
e-chains® series

Optional accessories | RSP pneumatic retraction system



Adjustment unit
for accurate adjustment of
the system position
► Page 122



Adapter consoles
for custom
mounting options
► Page 123



Axis 6 clamp
for triflex®
mounting bracket
► Page 126

RSP retraction system

Product range



Product range | RSP pneumatic retraction system

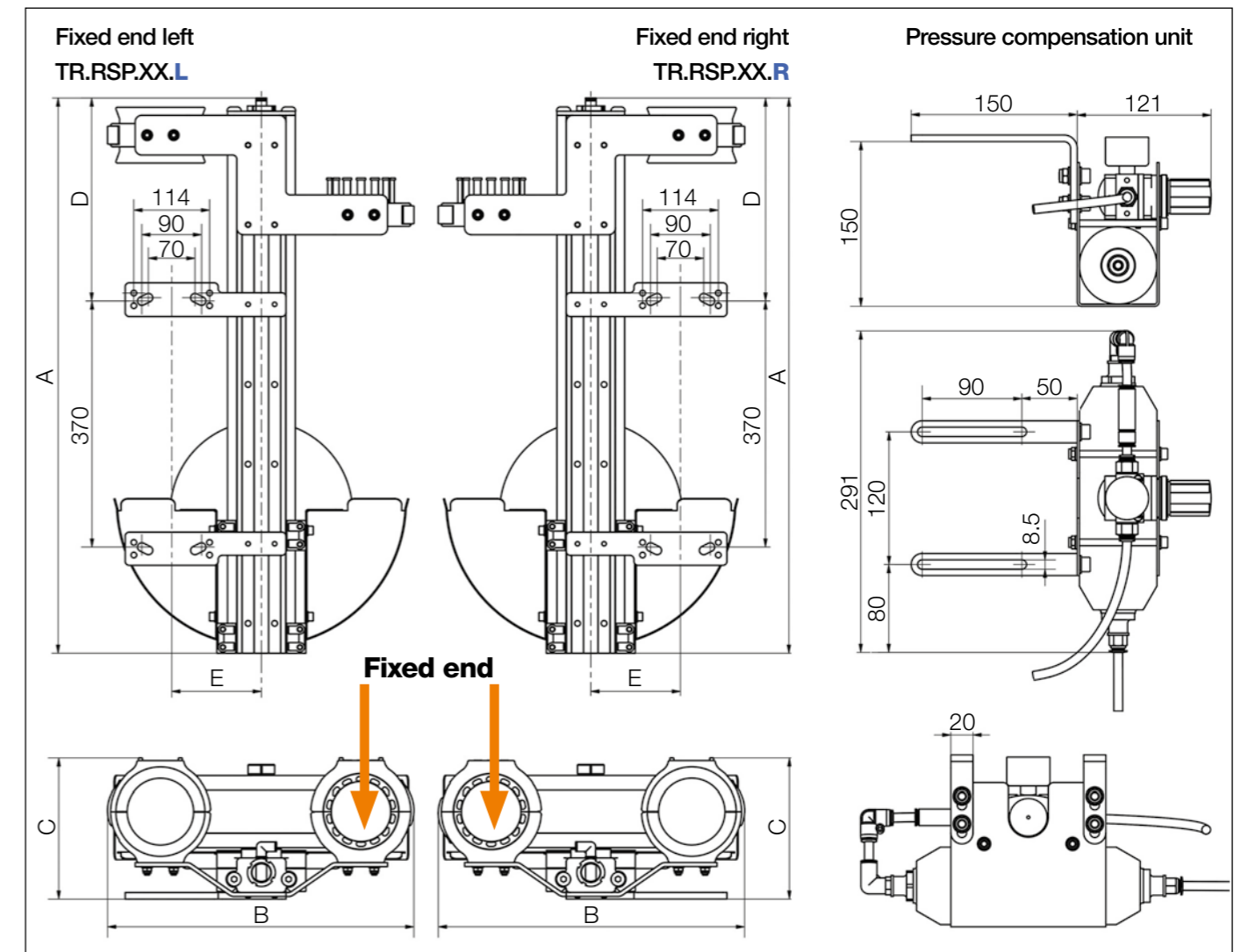
Ø Index	Part No. fixed end left	Part No. fixed end right	Retraction length ¹⁾ ≤ [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight ²⁾ [kg]
30.	▶ -	-	-	-	-	-	-	-	-
40.	▶ -	-	-	-	-	-	-	-	-
50.	▶ -	-	-	-	-	-	-	-	-
60.	▶ TR.RSP.60.L	TR.RSP.60.R	580	792	396	177	277	135	16.1
65.	▶ TR.RSP.65.L	TR.RSP.65.R	580	792	396	177	277	135	16.1
65. (R 200)	▶ -	-	-	-	-	-	-	-	-
70.	▶ TR.RSP.70.L	TR.RSP.70.R	580	792	396	177	277	135	16.2
85.	▶ TR.RSP.85.L	TR.RSP.85.R	620	836	461	213	306	135	19.4
85. (R 240)	▶ -	-	-	-	-	-	-	-	-
100.	▶ TR.RSP.100.L	TR.RSP.100.R	620	845	467	213	306	135	19.5
125.	▶ TR.RSP.125.L	TR.RSP.125.R	780	1,043	570	245	405	135	24.1

Pressure compensation unit, mounting bracket and gliding feed-through are included. Please order matching triflex® R e-chain® separately.

1) Max. retraction length 2) Plus 2.3kg for pressure compensation unit

RSP retraction system

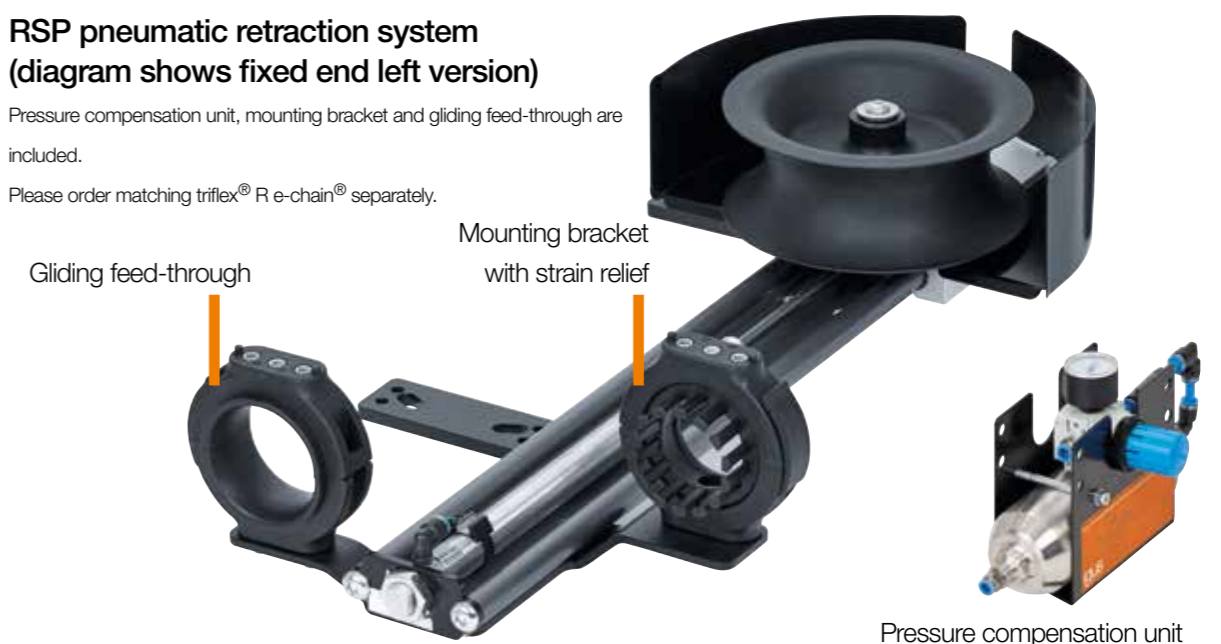
Installation dimensions



RSP pneumatic retraction system (diagram shows fixed end left version)

Pressure compensation unit, mounting bracket and gliding feed-through are included.

Please order matching triflex® R e-chain® separately.



RSP e-chains®

Product range



Product range | Matching e-chains® for RSP

Ø Index	Part No. TRC enclosed	Part No. TRE "easy" design	Part No. TRCF with snap-lock mechanism
30.	▶ -	-	-
40.	▶ -	-	-
50.	▶ -	-	-
60.	▶ TRC.RSP.60.087.LLLL.0	TRE.RSP.60.087.LLLL.0.B	-
65.	▶ -	-	TRCF.RSP.65.100.LLLL.0
65. (R 200)	▶ -	-	-
70.	▶ TRC.RSP.70.110.LLLL.0	TRE.RSP.70.110.LLLL.0.B	-
85.	▶ TRC.RSP.85.135.LLLL.0	TRE.RSP.85.135.LLLL.0.B	TRCF.RSP.85.135.LLLL.0
85. (R 240)	▶ -	-	-
100.	▶ TRC.RSP.100.145.LLLL.0	TRE.RSP.100.145.LLLL.0.B/C ¹⁾	TRCF.RSP.100.145.LLLL.0
125.	▶ TRC.RSP.125.182.LLLL.0	TRE.RSP.125.182.LLLL.0	-

1) Available for B- and C-versions

*Standard lengths from the gliding feed-through outside the system - special lengths upon request.

e-chains® standard lengths*

LLLL [mm] | 0500 | 1000 | 1500 | 2000 |

Part No. with LLLL standard length value (measured from the gliding feed-through) corresponds to the robot arm length from axis

3. For example: TRC.RSP.60.087.0500.0

RSP e-chains®

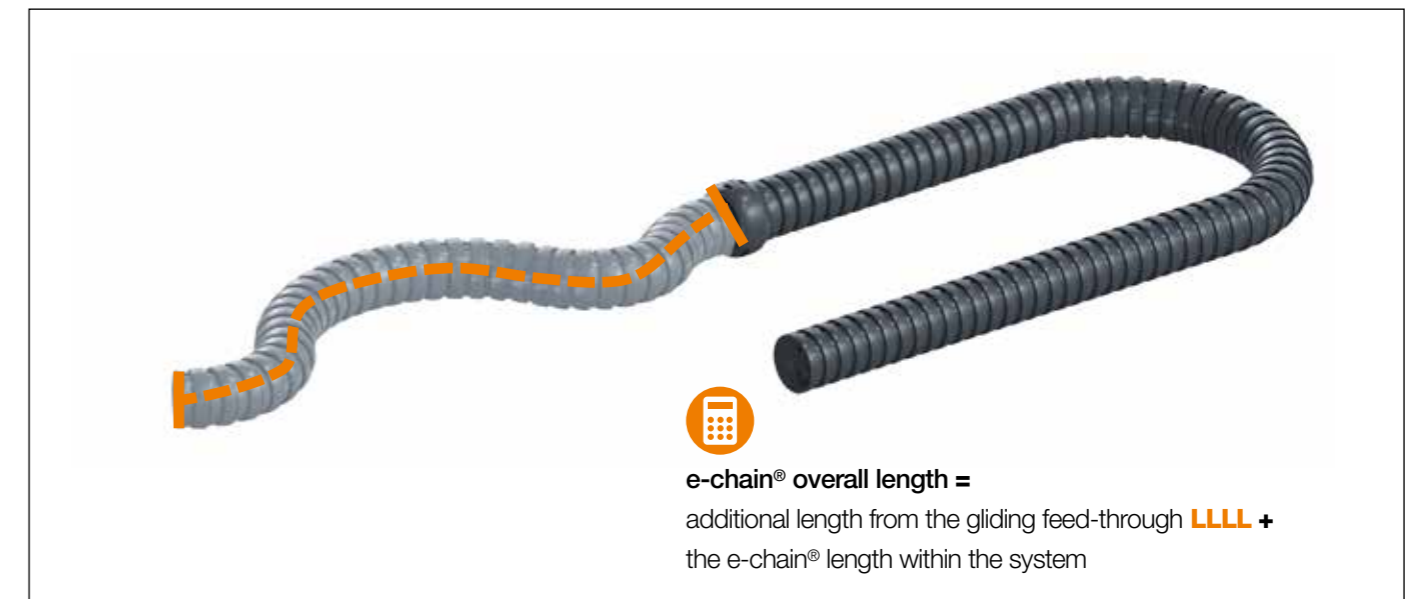
Cable length calculation

Calculation of the e-chain® total length | RSP e-chain®

Ø Index	Bend radius R [mm]	e-chain® length* [mm]	Number of e-chains® links	e-chain® overall length [mm]
30.	-	-	-	-
40.	-	-	-	-
50.	-	-	-	-
60.	▶ 087	1,489	73	LLLL + 1,489
65.	▶ 100	1,432	62	LLLL + 1,432
65. (R 200)	▶ -	-	-	-
70.	▶ 110	1,484	58	LLLL + 1,484
85.	▶ 135	1,622	53	LLLL + 1,622
85. (R 240)	▶ -	-	-	-
100.	▶ 145	1,656	48	LLLL + 1,656
125.	▶ 182	1,962	44	LLLL + 1,962

*Values are related to the e-chain® length within the system

To calculate the total e-chain® length: please add the e-chain® length* within the system to the LLLL standard length (measured from the gliding feed-through)



More information and installation dimensions | RSP e-chains®

- TRC series - closed design, chip protection, smooth outer contour ▶ From page 28
- TRE series - "easy" design, very easy to fill, simply press cables in ▶ From page 30
- TRCF series - closed design with snap-lock mechanism, chip protection, smooth outer contour ▶ Page 32