

RSP retraction system

Pneumatic retraction system

Up to 780mm retraction length possible 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

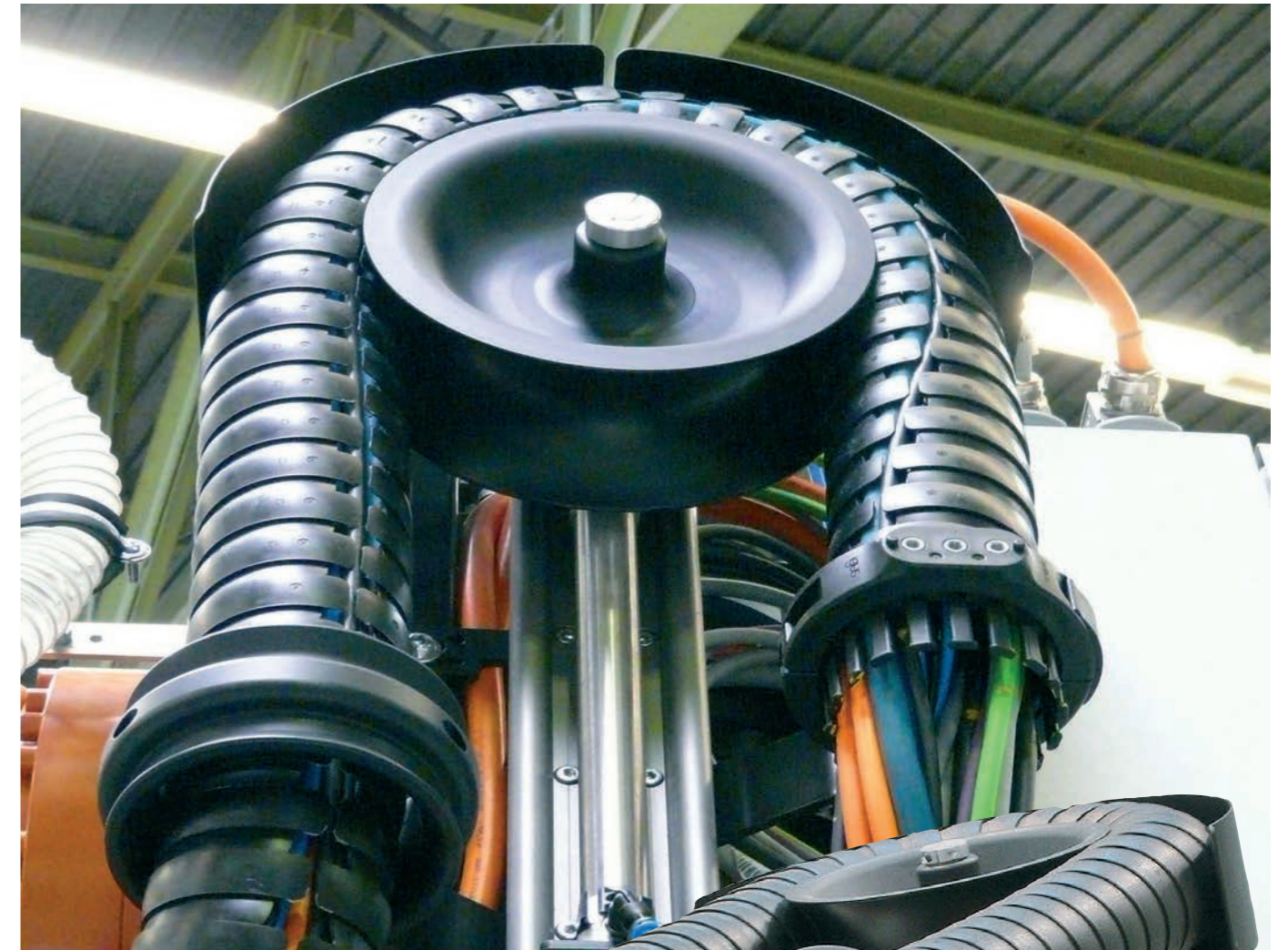
Pneumatic retraction system - triflex® RSP

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.

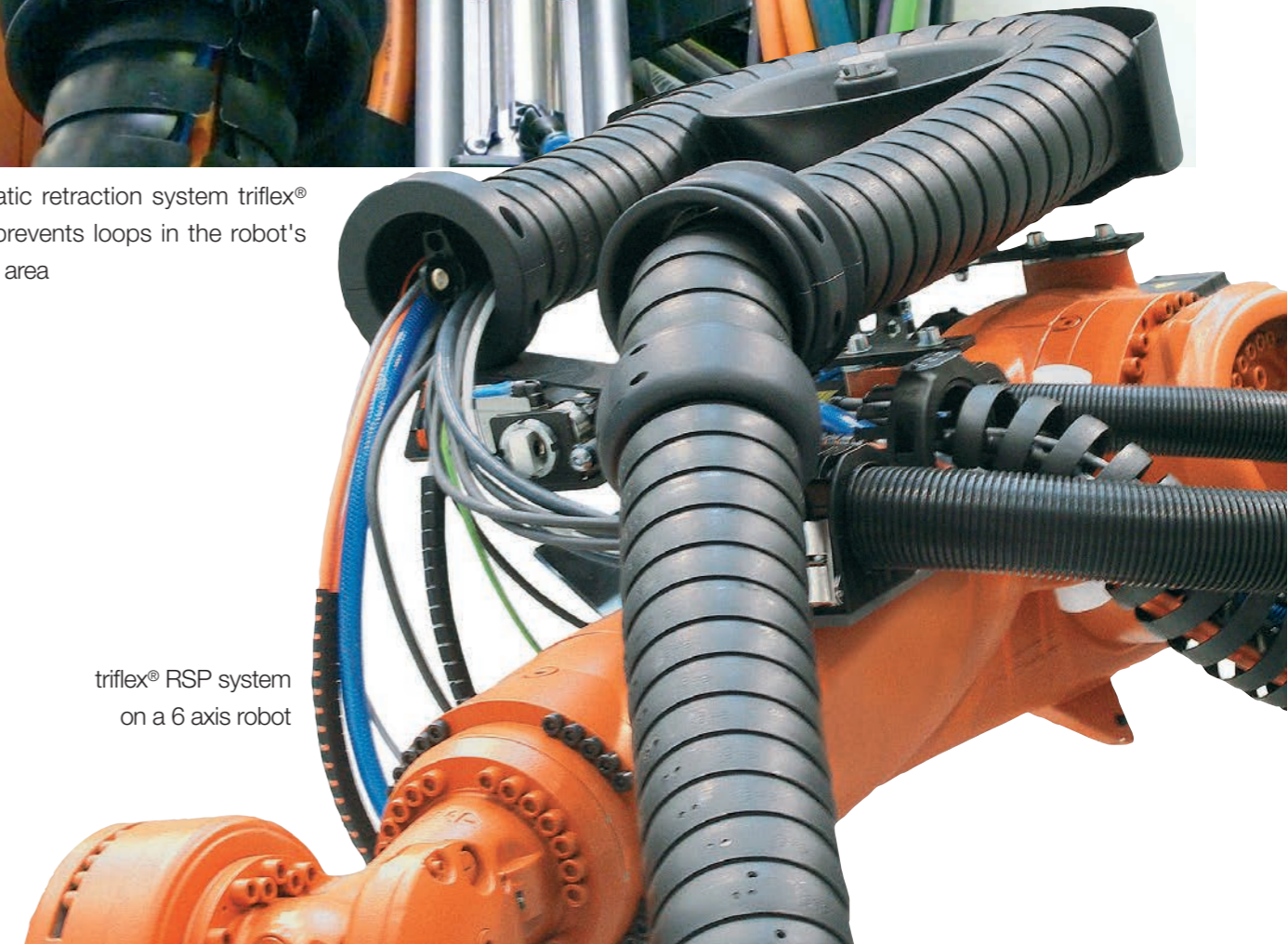
- For axis 3-6 on industrial robots
- Larger retraction forces than RS system
- Even larger e-chains® up to Ø 125mm can be guided safely
- Almost constant force over the complete travel, even with heavy fill weights
- The end position can be monitored so damage can be prevented
- Mounting options for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

RSP applications

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



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



triflex® RSP system on a 6 axis robot

RSP retraction system

System design with matching e-chain®

Matching triflex® R e-chains® for RSP

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

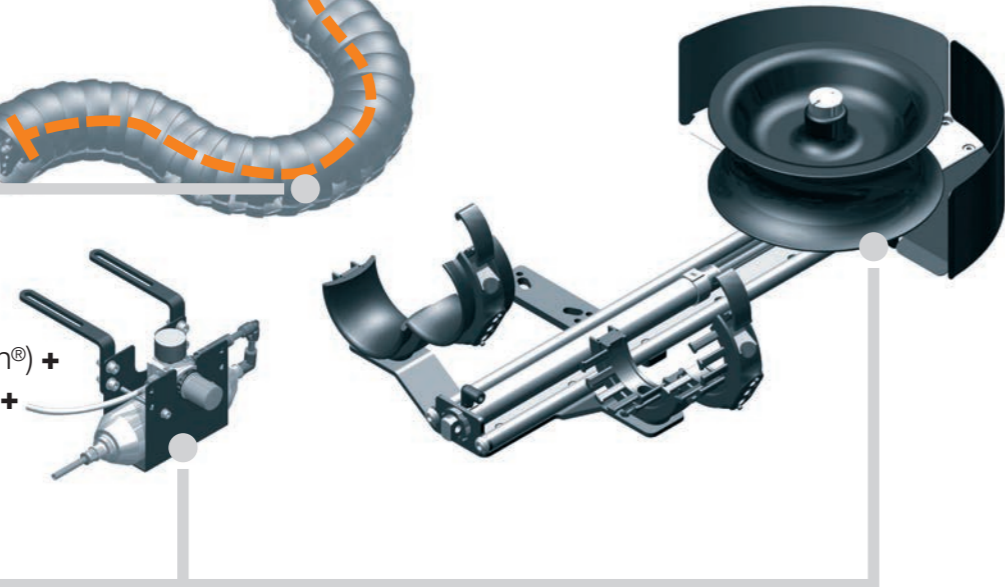


Overall e-chain® length =

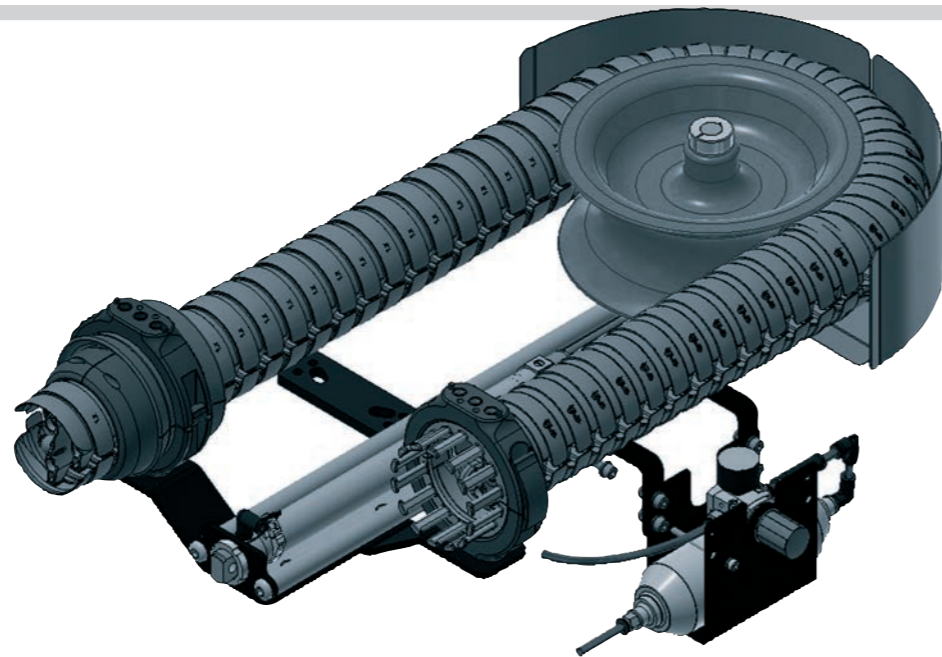
additional length from the
 gliding feed-through LLLL +
 the e-chain® length
 within the system



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



Complete, pneumatic retraction
 system RSP with fixed end left
 and triflex® R e-chain® TRE 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

Order examples for 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	



Order key
 retraction system

TR.RSP.85.L
 TR.RSP.85.R



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



Order key
 e-chains®

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-chain® series

More optional accessories | RSP pneumatic retraction system



Adjustment unit
 For accurate adjustment of
 the system position
 ▶ Page 110



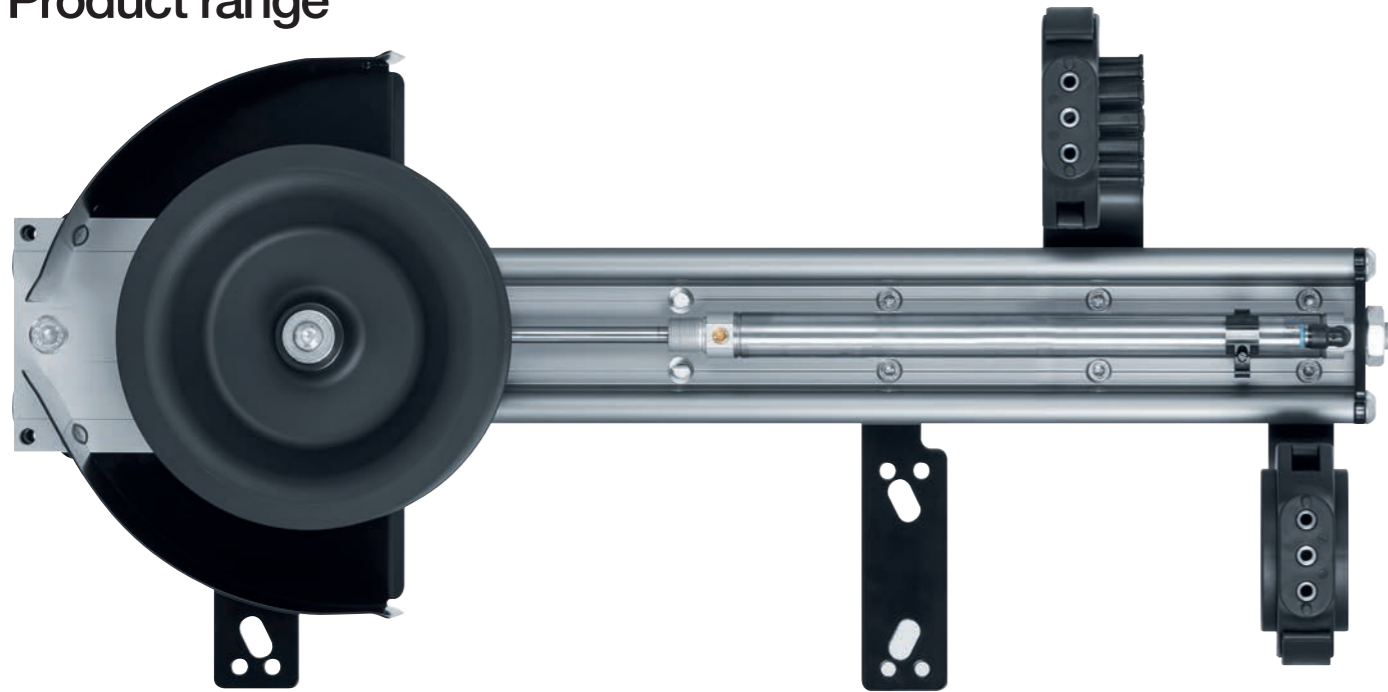
Adapter consoles
 For custom
 mounting options
 ▶ Page 111



Axis 6 clamp
 For triflex® R mounting
 brackets
 ▶ Page 114

RSP retraction system

Product range



Product range | RSP pneumatic retraction system

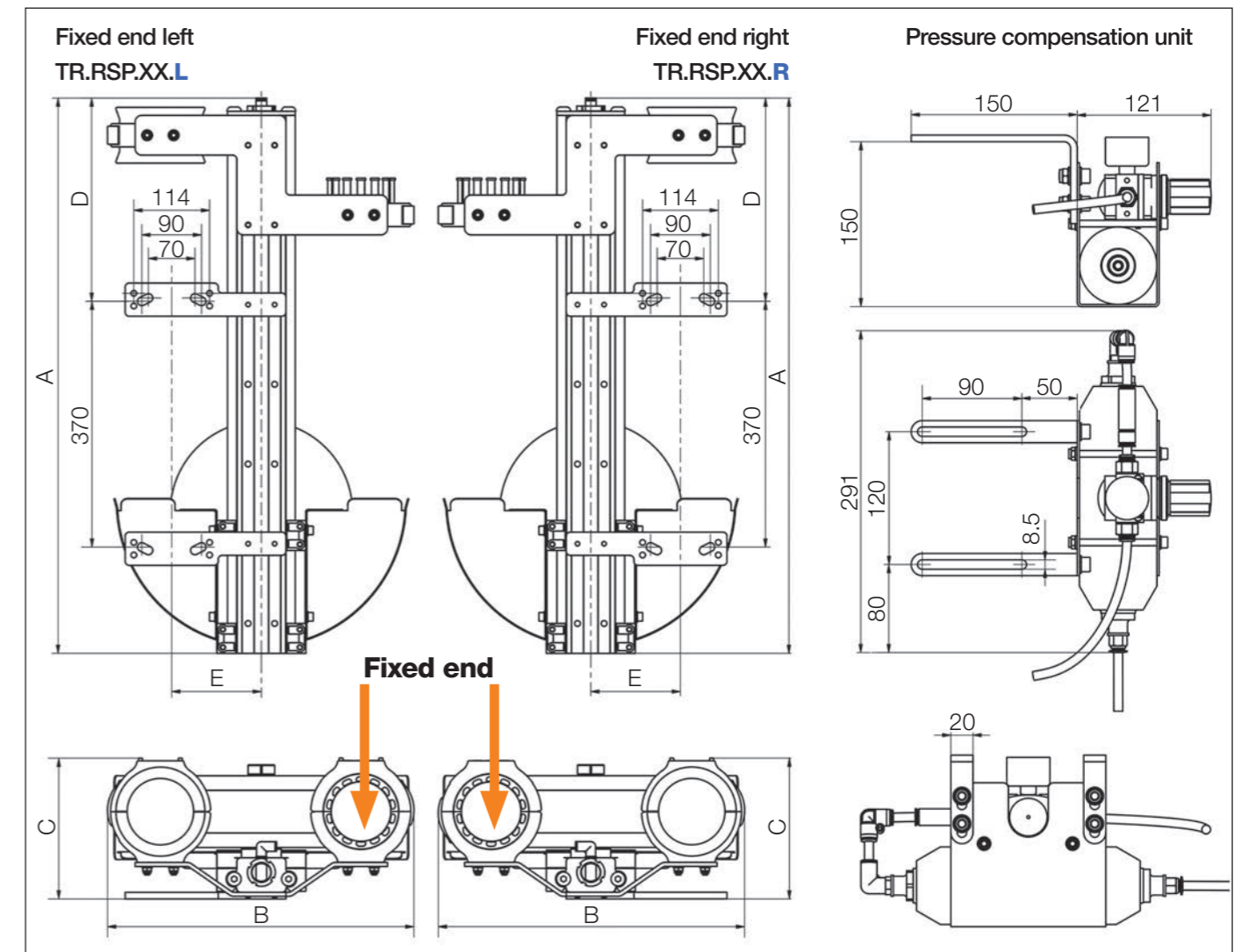
Ø Index	Part No. fixed end left	Part No. fixed end right	Retraction length ¹⁾ ≤ [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight ²⁾ [kg]
30.	▶ -	-	-	-	-	-	-	-	-
40.	▶ -	-	-	-	-	-	-	-	-
50.	▶ -	-	-	-	-	-	-	-	-
60.	▶ TR.RSP.60.L	TR.RSP.60.R	580	792	396	177	277	135	16.1
65.	▶ TR.RSP.65.L	TR.RSP.65.R	580	792	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	1043	570	245	405	135	24.1

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

1) Retraction length maximum 2) Plus 2.3 kg for pressure compensation unit

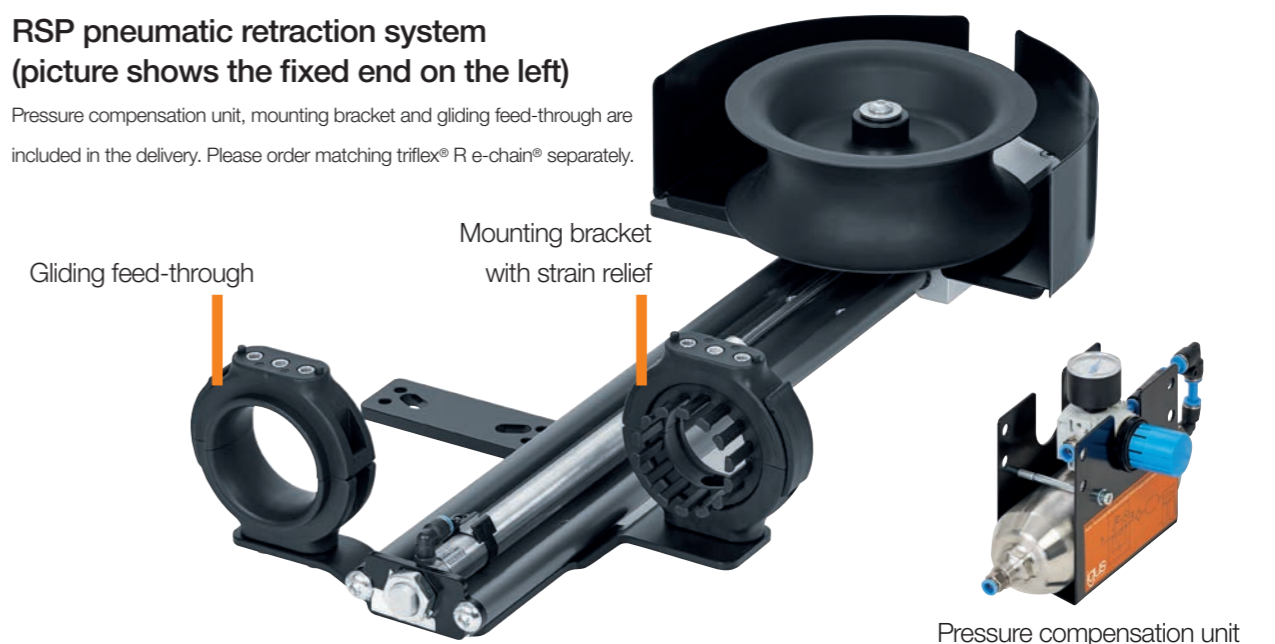
RSP retraction system

Installation dimensions



RSP pneumatic retraction system (picture shows the fixed end on the left)

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

Calculating the overall e-chains® length | RSP e-chains®

Ø Index	Bend radius R [mm]	e-chain® length* [mm]	Number of e-chains® links	Overall e-chain® length [mm]
30.	-	-	-	-
40.	-	-	-	-
50.	-	-	-	-
60.	▶ 087	1489	73	LLLL + 1489
65.	▶ 100	1432	62	LLLL + 1432
65. (R 200)	▶ -	-	-	-
70.	▶ 110	1484	58	LLLL + 1484
85.	▶ 135	1622	53	LLLL + 1622
85. (R 240)	▶ -	-	-	-
100.	▶ 145	1656	48	LLLL + 1656
125.	▶ 182	1962	44	LLLL + 1962

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

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



More information and installation height | RSP e-chains®

- TRC series - enclosed 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 - enclosed design with snap-lock mechanism, chip-repellent, smooth outer contour ▶ from page 32