

**HEAVY LOADS**

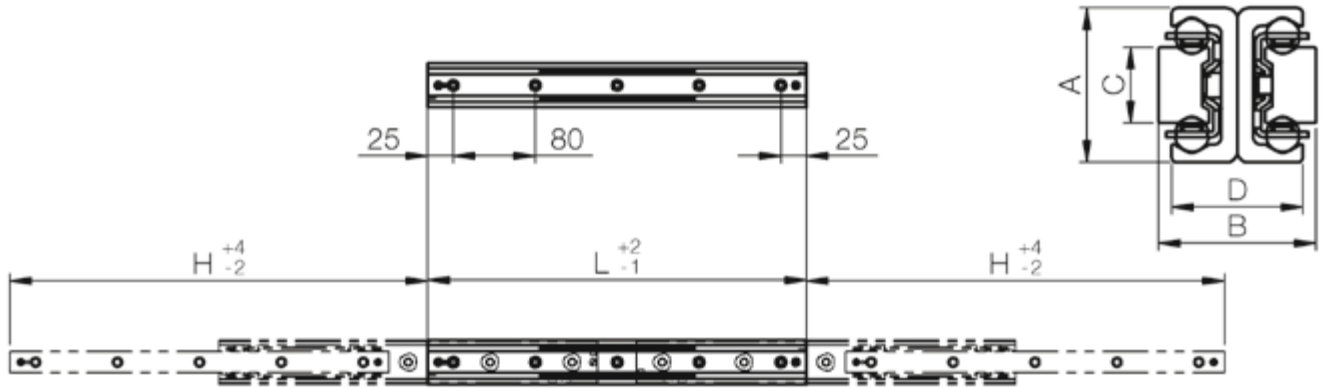
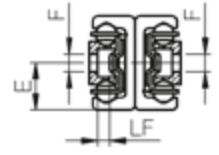
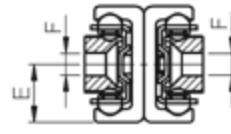
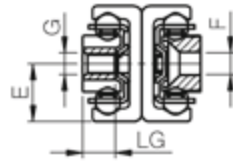
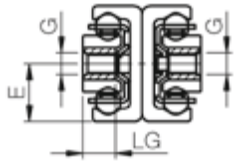
**BALLCAGE TELESCOPIC SLIDES T'SQ SERIES WITH BILATERAL STROKE**

TSQ. **VERSION WITH THREADED HOLES**

TSQ.M WITH MIXED HOLES

TSQ.S **VERSION WITH C'SUNK HOLES**

**ONLY TSQ35DC VERSION WITH COUNTERBORED HOLES**



HEAVY LOADS

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**Note:** The telescopic slide is provided with a set screw which limits the movement of the movable slider in one direction for a stroke equal to H, removing this screw it is possible to move the movable beam in the opposite direction also getting a double stroke equal to 2H. The TSQ35D version is not equipped with the extraction limiting screws in one side only, so it is always free to make bilateral stroke.

Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	LG (mm)	F (mm)	Hole type	LF (mm)
TSQ28.	28	26	14,5	23	14	M5	6	Ø 5,5 for screw M5 DIN7991	∨	-
TSQ35D.	35	34	16	31,4	17,5	M6	7	Ø 6,5 for screw M6 DIN7984	└┘	4,5
TSQ43.	43	44	21	36,6	21,5	M8	11,5	Ø 8,5 for screw M8 DIN7991	∨	-

Attention ! In closed position the intermediate element can freely move for about half it's length left or right side.

The listed load capacities Co rad, are per single slide, with the load centered, i.e. in the middle of the extended lower rail, P. In case the load is not centered, ex. The load is more towards tip, the load capacity is reduced, please refer to page 48. For further info and flexion "F" indications.

ORDER CODE	VERSION	CHARACTERISTICS
TSQ43-1010	BASIC	Cold drawn steel rails with patented "T RACE-NOX 1.0" ; high depth nitride hardening and black oxidation treatment. The rails are cut to size after treatment, so the rail ends are protected by protective spray. All threaded holes are without treatment. Ball-cages in zinc plated steel, while balls hardened steel.
TSQ43-1010-KL	KL	As a basic TSQ product but with additional black "T RACE e-coating 1.0" on the rails, for high corrosion resistance (min 700 hours resistance in salt fog) . The rail has no T RACE e-coating on the raceway contact area with the rollers, as masked before the treatment. The raceways are anyhow with standard oxidation while the wipers with incorporated pre-oiled felt assure lubrication and corrosion protection of raceways.
TSQ43-1010-KB	KB	As the version KL but with the ball-cages made in stainless steel AISI304 and the balls in hardened AISI440C

Code	Lenght L (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQ28.-130	130	132	392	259	151	0,4
TSQ28.-210	210	238	685	454	265	0,7
TSQ28.-290	290	326	979	649	379	1,1
TSQ28.-370	370	414	1273	844	358	1,4
TSQ28.-450	450	484	1759	1173	316	1,7
TSQ28.-530	530	570	2051	1037	266	2
TSQ28.-610	610	640	2547	944	242	2,3
TSQ28.-690	690	728	2839	825	211	2,6
TSQ28.-770	770	798	3340	765	196	2,9
TSQ28.-850	850	886	3630	685	175	3,2
TSQ28.-930	930	954	4134	643	165	3,5
TSQ28.-1010	1010	1042	4422	585	150	3,8
TSQ28.-1090	1090	1130	4712	537	138	4,1
TSQ28.-1170	1170	1200	5217	511	131	4,4

Code	Lenght L (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQ35D.-210	210	242	675	441	263	1,6
TSQ35D.-290	290	306	1.387	921	550	2,3
TSQ35D.-370	370	394	1.794	1.191	711	2,9
TSQ35D.-450	450	482	2.201	1.461	788	3,5
TSQ35D.-530	530	546	2.970	1.986	723	4,1
TSQ35D.-610	610	634	3.374	1.964	622	4,8
TSQ35D.-690	690	722	3.779	1.723	546	5,4
TSQ35D.-770	770	786	4.565	1.623	514	6,0
TSQ35D.-850	850	874	4.967	1.455	461	6,6
TSQ35D.-930	930	962	5.370	1.318	417	7,3
TSQ35D.-1010	1010	1026	6.164	1.259	399	7,9
TSQ35D.-1090	1090	1114	6.564	1.155	366	8,5
TSQ35D.-1170	1170	1202	6.965	1.067	338	9,1
TSQ35D.-1250	1250	1266	7.764	1.028	325	9,8
TSQ35D.-1330	1330	1354	8.163	958	303	10,4
TSQ35D.-1410	1410	1442	8.563	896	284	11,0
TSQ35D.-1490	1490	1506	9.365	869	275	11,6

Code	Lenght L (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQ43.-210	210	228	968	636	410	1,9
TSQ43.-290	290	304	1657	1098	709	2,7
TSQ43.-370	370	408	1891	1246	804	3,4
TSQ43.-450	450	484	2583	1710	1104	4,2
TSQ43.-530	530	560	3289	2187	1105	4,9
TSQ43.-610	610	636	4005	2670	992	5,7
TSQ43.-690	690	740	4727	3158	901	6,4
TSQ43.-770	770	816	4924	2733	774	7,2
TSQ43.-850	850	892	5642	2532	717	7,9
TSQ43.-930	930	968	6363	2359	668	8,7
TSQ43.-1010	1010	1044	7088	2208	625	9,4
TSQ43.-1090	1090	1120	7816	2075	587	10,2
TSQ43.-1170	1170	1196	8545	1957	554	10,9
TSQ43.-1250	1250	1272	9277	1852	524	11,7
TSQ43.-1330	1330	1376	9450	1690	478	12,4
TSQ43.-1410	1410	1478	10178	1611	456	13,2
TSQ43.-1490	1490	1554	10908	1539	436	13,9
TSQ43.-1570	1570	1630	11639	1473	417	14,7
TSQ43.-1650	1650	1706	12371	1413	400	15,4
TSQ43.-1730	1730	1782	13104	1357	384	16,2
TSQ43.-1810	1810	1858	13838	1306	370	16,9
TSQ43.-1890	1890	1962	14001	1223	346	17,7
TSQ43.-1970	1970	2038	14733	1181	334	18,4

## TECHNICAL CHARACTERISTICS

TSQ ball-cage telescopic slides are composed by connecting 2 SR semi-telescopic slides to make a square cross-section, with the two central rails forming a H shaped intermediate element. This configuration offers very compact size with good radial and axial load capacities, for shorter to medium length slides.

The SR semi-telescopic slides are with patented T RACE NOX 1.0 treatment; high depth nitride hardened rails with black oxidation, assuring a long lifetime without wear and a good corrosion resistance.

The TSQ slide is completely symmetric, so it can be used left and right hand side.

The slide can also perform single and double strokes with the same extension. For TSQ28/43 this is obtained just by removing two small stopper-screws fixed at the ends, while for TSQ35 the version is standard made for single/double stroke. NB for TSQ35, this also means that when used for single stroke, the intermediate element can freely move to both left and right side, unlike the TSQ28/43.

Unlike all TRACE's other telescopic slides, the TSQ has small square-head metal pins for dragging the intermediate element, when opening/closing. Hereby some "metallic-noise" of the impact is created when the pin hits the intermediate element to drag it out/in.

For single stroke applications we recommend the new designed TSQR28/43 and TSQS35S which have incorporated robust rubber stoppers between the rails and intermediate element to ensure a smooth and silent dragging of the intermediate element even for high frequency industrial automation.

Patented T RACE-NOX 1.0 treatment guarantees a constant preload setting during the complete lifetime, unlike traditional zinc-plated ball-cage slides, which very soon has the zinc depleted at the raceway contact points, with the result in a short space of time being much increased play/shaky movements.

Upon request, customized versions with longer extension or both customized length and stroke is available.

Load Co rad/ax refers to a single slide.



# HEAVY LOADS

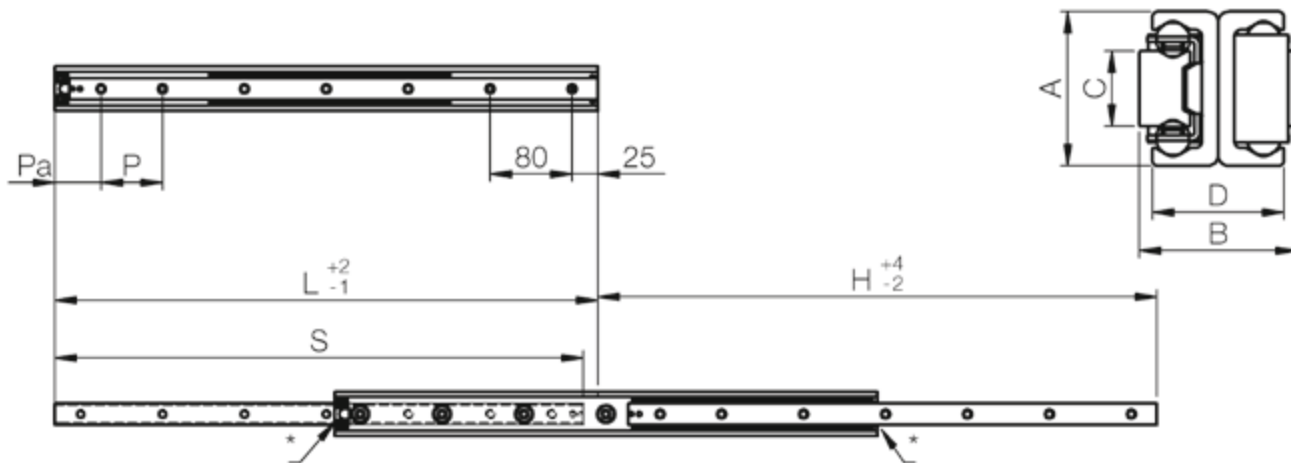
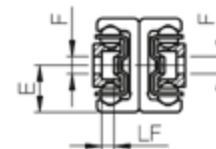
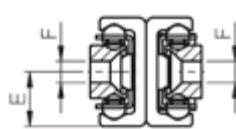
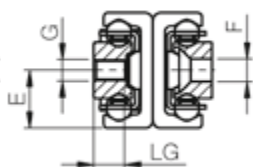
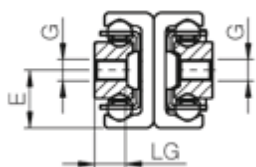
## BALLCAGE TELESCOPIC SLIDES TSQR.-TSQS. SERIES

TSQR.. **VERSION** WITH THREADED HOLES

TSQR..M WITH MIXED HOLES

TSQR..S **VERSION** WITH C'SUNK HOLES

**ONLY** TSQ35SC VERSION WITH COUNTERBORED HOLES



Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	LG (mm)	F (mm)	Hole type	LF (mm)	P (mm)	Pa (mm)
TSQR28.	28	26	14,5	23	14	M5	6	Ø 5,5 for screw M5 DIN7991	∇	-	60	45
TSQ35S.	35	34	16	31,4	17,5	M6	7	Ø 6,5 for screw M6 DIN7984	□	4,5	80	25
TSQR43.	43	44	21	36,6	21,5	M8	11,5	Ø 8,5 for screw M8 DIN7991	∇	-	60	45

To mount the TSQR..S, TSQR..M, TSQ35SC version you must remove the end-stroke block limit Y. Replace the block limit Y once the fixing terminated.

The listed load capacities  $C_{o\ rad}$ , are per single slide, with the load centered, i.e. in the middle of the extended lower rail, P. In case the load is not centered, ex. The load is more towards tip, the load capacity is reduced, please refer to page 48. For further info and flexion "F" indications.

ORDER CODE	VERSION	CHARACTERISTICS
TSQR43-1010	BASIC	Cold drawn steel rails with patented "T RACE-NOX 1.0"; high depth nitride hardening and black oxidation treatment. The rails are cut to size after treatment, so the rail ends are protected by protective spray. All threaded holes are without treatment. Ball-cages in zinc plated steel, while balls hardened steel.
TSQR43-1010-KL	KL	As a basic TSQ product but with additional black "T RACE e-coating 1.0" on the rails, for high corrosion resistance (min 700 hours resistance in salt fog). The rail has no T RACE e-coating on the raceway contact area with the rollers, as masked before the treatment. The raceways are anyhow with standard oxidation while the wipers with incorporated pre-oiled felt assure lubrication and corrosion protection of raceways.
TSQR43-1010-KB	KB	As the version KL but with the ball-cages made in stainless steel AISI304 and the balls in hardened AISI440C

Code	Lenght L (mm)	Lenght S (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQR28.-130	130	116	134	392	259	151	0,4
TSQR28.-210	210	196	222	685	454	265	0,7
TSQR28.-290	290	276	292	979	649	379	1,1
TSQR28.-370	370	356	380	1273	844	358	1,4
TSQR28.-450	450	436	450	1759	1173	316	1,7
TSQR28.-530	530	516	554	2051	1037	266	2
TSQR28.-610	610	596	624	2547	944	242	2,3
TSQR28.-690	690	676	712	2839	825	211	2,6
TSQR28.-770	770	756	782	3340	765	196	2,9
TSQR28.-850	850	836	870	3630	685	175	3,2
TSQR28.-930	930	916	938	4134	643	165	3,5
TSQR28.-1010	1010	996	1026	4422	585	150	3,8
TSQR28.-1090	1090	1076	1096	4712	537	138	4,1
TSQR28.-1170	1170	1156	1184	5217	511	131	4,4

Code	Lenght L (mm)	Lenght S (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQ35S.-210	210	198	242	499	323	193	1,6
TSQ35S.-290	290	278	306	1.172	775	462	2,3
TSQ35S.-370	370	358	394	1.578	1.044	623	2,9
TSQ35S.-450	450	438	482	1.984	1.313	783	3,5
TSQ35S.-530	530	518	546	2.740	1.827	808	4,1
TSQ35S.-610	610	598	634	3.145	2.096	695	4,8
TSQ35S.-690	690	678	722	3.551	1.925	610	5,4
TSQ35S.-770	770	758	786	4.329	1.814	574	6,0
TSQ35S.-850	850	838	874	4.733	1.626	515	6,6
TSQ35S.-930	930	918	962	5.137	1.473	466	7,3
TSQ35S.-1010	1010	998	1026	5.925	1.407	445	7,9
TSQ35S.-1090	1090	1078	1114	6.327	1.291	409	8,5
TSQ35S.-1170	1170	1158	1202	6.729	1.192	378	9,1
TSQ35S.-1250	1250	1238	1266	7.523	1.149	364	9,8
TSQ35S.-1330	1330	1318	1354	7.924	1.070	339	10,4
TSQ35S.-1410	1410	1398	1442	8.325	1.002	317	11,0
TSQ35S.-1490	1490	1478	1506	9.123	971	307	11,6

Code	Lenght L (mm)	Lenght S (mm)	Stroke H (mm)	Dynamic coefficient C (N)	Capacity load Co rad (N)	Capacity load Co ax (N)	Weight (kg)
TSQR43.-210	210	196	242	968	636	410	1,9
TSQR43.-290	290	276	290	1657	1098	709	2,7
TSQR43.-370	370	356	394	1891	1246	804	3,4
TSQR43.-450	450	436	470	2583	1710	1104	4,2
TSQR43.-530	530	516	546	3289	2187	1105	4,9
TSQR43.-610	610	596	622	4005	2670	992	5,7
TSQR43.-690	690	676	726	4727	3158	901	6,4
TSQR43.-770	770	756	774	4924	2733	774	7,2
TSQR43.-850	850	836	878	5642	2532	717	7,9
TSQR43.-930	930	916	954	6363	2359	668	8,7
TSQR43.-1010	1010	996	1030	7088	2208	625	9,4
TSQR43.-1090	1090	1076	1106	7816	2075	587	10,2
TSQR43.-1170	1170	1156	1210	8545	1957	554	10,9
TSQR43.-1250	1250	1236	1258	9277	1852	524	11,7
TSQR43.-1330	1330	1316	1362	9450	1690	478	12,4
TSQR43.-1410	1410	1396	1436	10178	1611	456	13,2
TSQR43.-1490	1490	1476	1512	10908	1539	436	13,9
TSQR43.-1570	1570	1556	1588	11639	1473	417	14,7
TSQR43.-1650	1650	1636	1664	12371	1413	400	15,4
TSQR43.-1730	1730	1716	1740	13104	1357	384	16,2
TSQR43.-1810	1810	1796	1844	13838	1306	370	16,9
TSQR43.-1890	1890	1876	1892	14001	1223	346	17,7
TSQR43.-1970	1970	1956	1996	14733	1181	334	18,4

## TECHNICAL CHARACTERISTICS

TSQR28/43 and TSQ35S are designed for single stroke, with rubber stoppers for smooth and silent movement of the intermediate element. The slides are composed by connecting two SR semi-telescopic slides to make a square cross-section, with the two central rails forming a H-shaped intermediate element. This configuration offers a very compact size with good radial and axial load capacities, for short to medium length slides.

The SR semi-telescopic slides features the patented T RACE NOX 1.0 treatment; high depth nitride hardened rails with black oxidation, assuring a long lifetime without wear and a good corrosion resistance. The TSQ slide is completely symmetric, so it can be used left and right side (Un-handed).

Patented T RACE-NOX1.0 treatment guarantees a constant preload setting during the complete lifetime, unlike traditional zinc-plated ball-cage slides, which very soon have the zinc diminished at the raceway contact points, with the result being quickly seen as increased play/shaky movements. Upon request, customized versions with longer extension or both customized length and stroke can be accommodated. Load Co rad/ax refers to a single slide.

