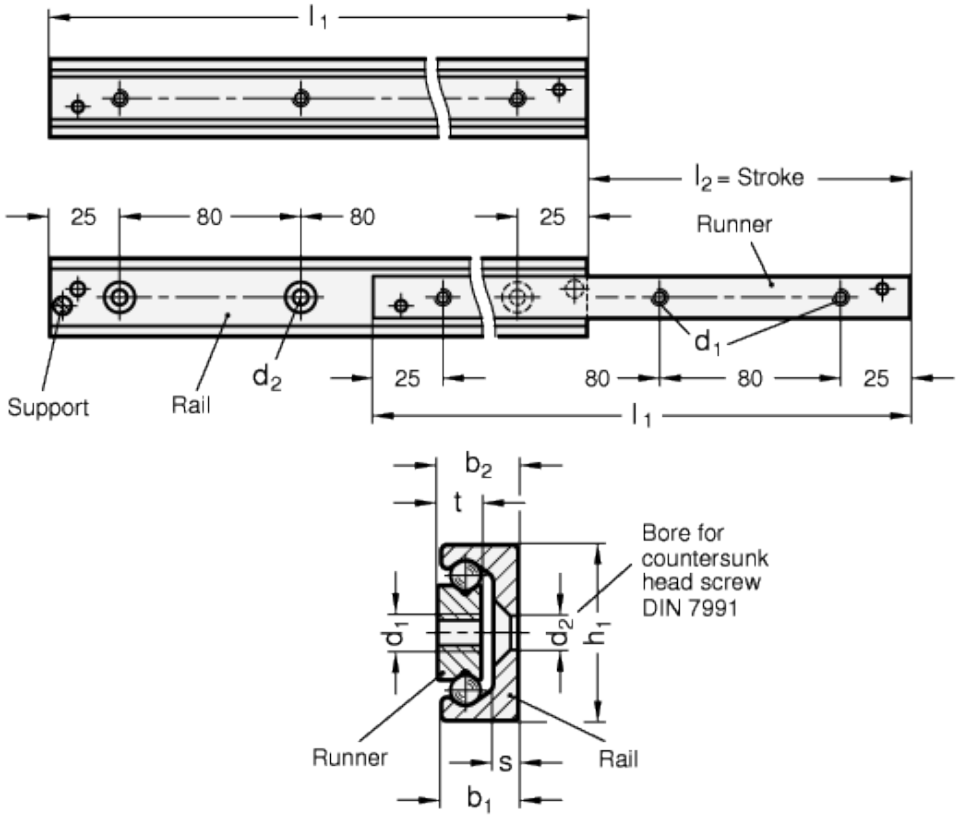
GN 2404

Telescope-Linear motion bearings



technical informations

Specification

Rail / Runner

Heat treatable steel

- zinc plated, blue passivated
- Raceways hardened

Balls

Anti-friction bearing steel, hardened

Ball cage
Steel, zinc plated

Information

Telescope-Linear motion bearings GN 2404 with partly outside traversal distance are used e.g. for storing drawers and sliding doors or in jigmaking for the traversal in linear direction. Rail and runner are equal in length.

The traversal distance of the runner lies on side, and with the support screw removed on both sides, just over half outside the rail. This creates a stroke which slightly exceeds half, resp. the full length of the rail.

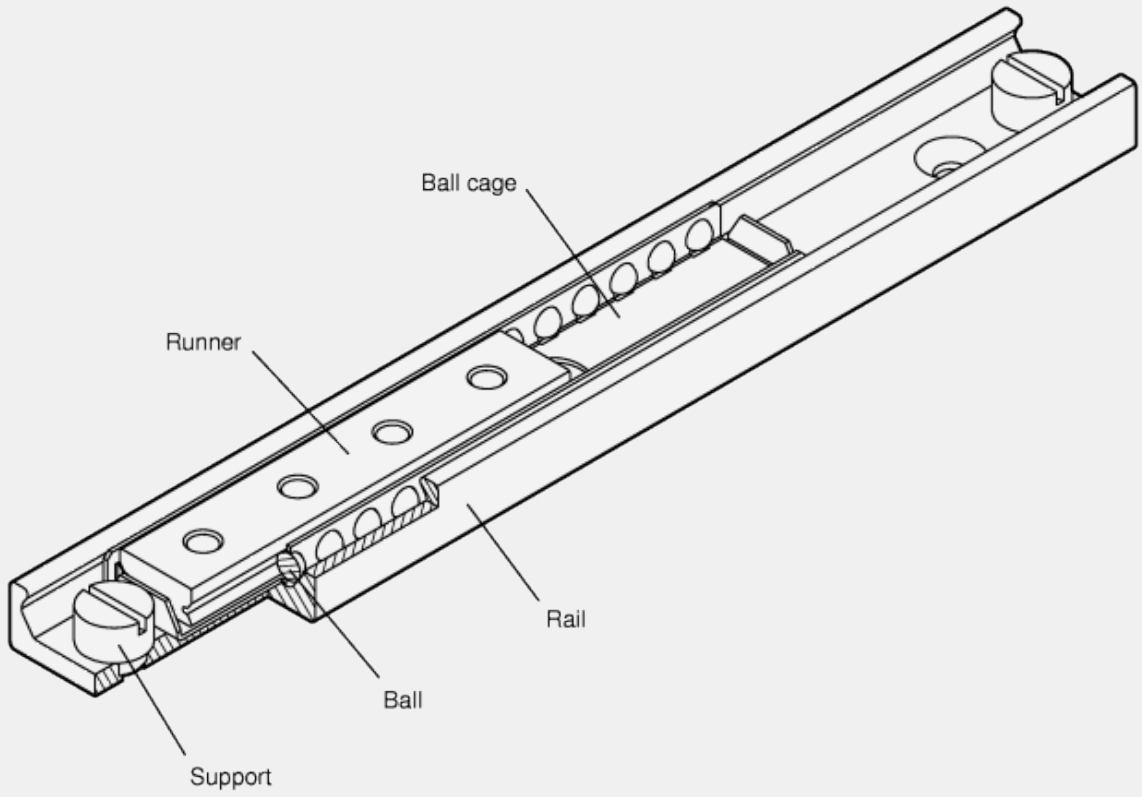
Limiting the maximum stroke should be ensured by external elements; the supports of the rail have been designed to guard against the inadvertent extraction of the runner.

On request

- other lengths (based on the Standard lengths grid dimensions of 80 mm)
- Special lenghts (bore, start and end distances

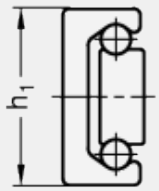
Linear motion bearings

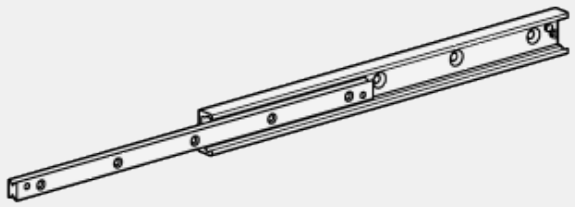
All linear motion bearings consist of an outer rail with a runner moving inside. Anti-friction bearings, kept at a distance and in position by means of a ball cage, lie between the rail and the runner. Rail and runner are made of heat treatable steel, allowing their use in the industrial environment with higher requirements in terms of load rating, quiet running and useful service life.
All designs are available in the nominal rail dimensions h1 = 28, 35 and 43 mm and may also be supplied beyond the standard range in lengths from 130 mm to 1970 mm for individual requirements.
The linear motion bearings are normally adjusted such that a clearance-free (i.e. moderately pre-stressed) pairing is generated between rail and runner. The raceways of the rails and runners are induction hardened, combined with the anti-friction bearings resulting in lower wear and longer service life. The linear motion bearings are permanently lubricated with a high-grade special grease designed for linear guide systems.
Depending on requirements, a variety of different types are available for selection. The traversal distances of the runners are inside, partly outside or entirely outside the length of the rails. The fully extendable telescope linear motion bearings consist of linear motion bearing units directly interconnected at the rails, the runners or with the help of an intermediate profile.
To mount the linear motion bearings, countersinks in the rails and, depending on type of construction, threaded or countersunk bores in the runners are available. The compact style is generally advantageous for use in tight spaces.

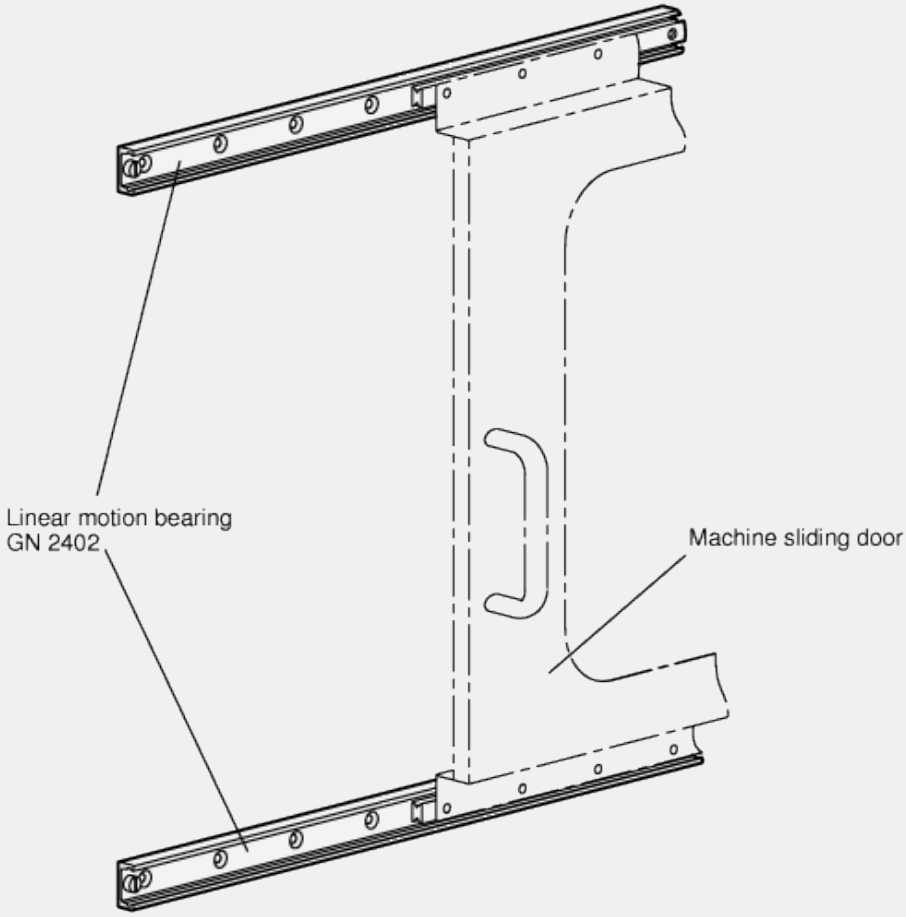


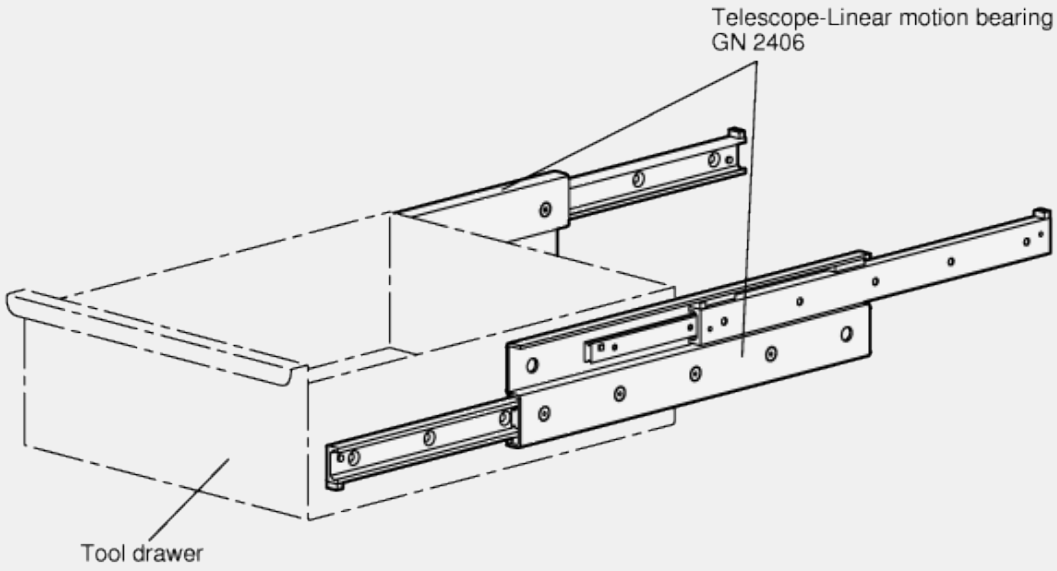
Telescope-Linear motion bearings

with partly outside traversal distance (Partial extension)


h_1

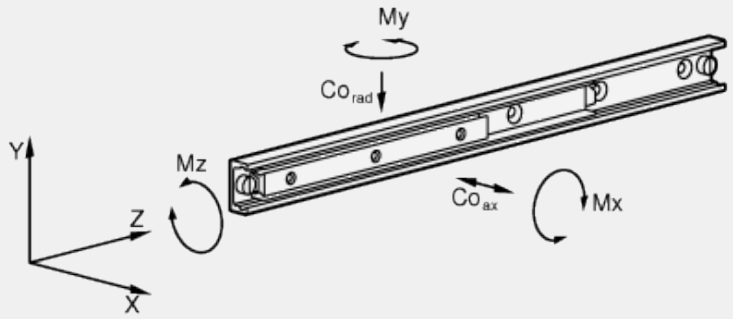






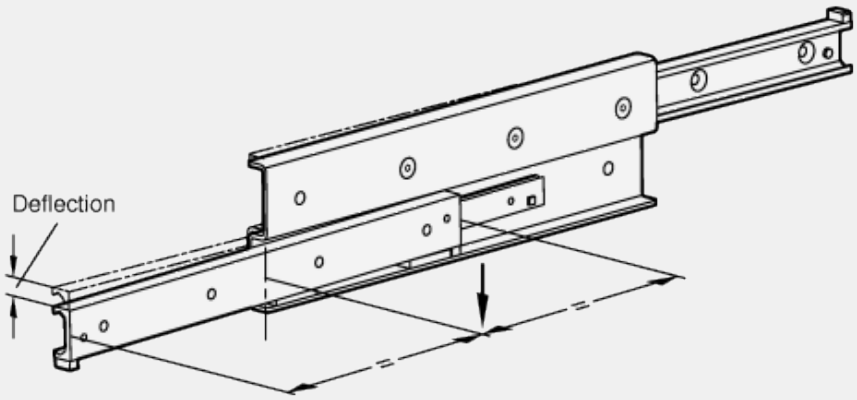
Load rating of Telescope-Linear motion bearings

When selecting a suitable linear motion bearing, it is primarily the available space, the desired stroke and the load carried which must be taken into consideration. The values listed below are intended as guidelines for selecting the most suitable nominal rail size.
The details on load rating are non-binding guide values given without liability and do not constitute a warranty of a certain quality. The user must determine in each individual case whether a product is suitable for the intended application. Environmental factors and ageing may influence the stated values.



Static load and deflection

The load values given in the tables refer to a maximum permissible force allowed to act in the middle of the fully extended profile rail at the third segment.
If the given values are observed and if the telescope linear motion bearing is fully extended, a minor deflection (sag) occurs at the end of the runner or of the rail. This has normally no detrimental effect on the proper function of the application. If required, guide values may be given if requested.



Fixing screws, assignment of the fixing holes

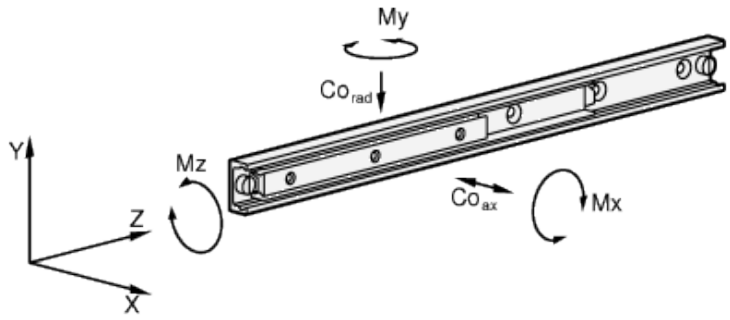
The standard fixing elements are DIN 7991-10.9 countersunk head screws, to be mounted with the prescribed tightening torque. Depending on type, not all fixing holes may be reached or assigned. In general, these holes can be left unused. In exceptional cases, especially in bilateral stroke, the fixing holes can be reached by loosening the support screws and by pulling out the runner. The support screws are then put back in place.

Traversal speed, cage slip

The traversal speed in linear motion bearings can be as much as 0,8 m/s, with the application in hand and the installation length having an effect on this value. In the event of rapid changes of direction and high accelerating forces, cage slip may occur in some cases, especially in long ball cages. In cases such as these, the cage does not move synchronous with half the speed of the runner, but gradually loses its correct position owing to the slip. Whenever possible, running a blank stroke to the end of the traversal distance should be provided for back positioning.

Standard Elements	Main dimensions								Weight
Description	h_1	l_{1-l}	b_1	b_2	d_1	d_2	s	t	g
GN 2404-28-130	28	130 - 74	12.3	12.9	M 5	5.5	4	7	290
GN 2404-28-210	28	210 - 116	12.3	12.9	M 5	5.5	4	7	460
GN 2404-28-290	28	290 - 148	12.3	12.9	M 5	5.5	4	7	640
GN 2404-28-370	28	370 - 190	12.3	12.9	M 5	5.5	4	7	810
GN 2404-28-450	28	450 - 232	12.3	12.9	M 5	5.5	4	7	990
GN 2404-28-530	28	530 - 274	12.3	12.9	M 5	5.5	4	7	1170
GN 2404-35-290	35	290 - 159	16.5	17	M 6	6.5	3.5	10	1170
GN 2404-35-370	35	370 - 203	16.5	17	M 6	6.5	3.5	10	1210
GN 2404-35-450	35	450 - 247	16.5	17	M 6	6.5	3.5	10	1350

GN 2404-35-530	35	530 - 279	16.5	17	M 6	6.5	3.5	10	1590
GN 2404-35-610	35	610 - 323	16.5	17	M 6	6.5	3.5	10	1830
GN 2404-35-690	35	690 - 367	16.5	17	M 6	6.5	3.5	10	2070
GN 2404-43-370	43	370 - 208	21	22	M 8	8.5	4.5	13.5	1920
GN 2404-43-450	43	450 - 243	21	22	M 8	8.5	4.5	13.5	2340
GN 2404-43-530	43	530 - 278	21	22	M 8	8.5	4.5	13.5	2760
GN 2404-43-610	43	610 - 313	21	22	M 8	8.5	4.5	13.5	3170
GN 2404-43-690	43	690 - 363	21	22	M 8	8.5	4.5	13.5	3590
GN 2404-43-770	43	770 - 398	21	22	M 8	8.5	4.5	13.5	3790



Article No.	Load ratings		permissible load torque		
Description	Co rad in N	Co ax in N	Mx in Nm	My in Nm	Mz in Nm
GN 2404-28-130	645	452	30	23	17
GN 2404-28-210	1165	816	86	60	27
GN 2404-28-290	2015	1410	190	135	41
GN 2404-28-370	2540	1780	309	215	52
GN 2404-28-450	3065	2145	540	316	64
GN 2404-28-530	3595	2515	625	435	74
GN 2404-35-290	2100	1470	218	1555	56
GN 2404-35-370	2685	1880	348	247	69
GN 2404-35-450	3270	2285	515	365	80
GN 2404-35-530	4350	3045	787	553	101
GN 2404-35-610	4930	3450	1025	722	113
GN 2404-35-690	5510	3860	1295	914	125
GN 2404-43-370	3540	2480	444	313	119
GN 2404-43-450	4905	3435	735	514	151
GN 2404-43-530	6305	4415	1090	766	184
GN 2404-43-610	7725	5410	1525	1065	210
GN 2404-43-690	8185	5730	1850	1295	240
GN 2404-43-770	9490	6530	2405	1685	273

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