95000

Conveyor and movement technology

Apparatuses swivel and fixed castors

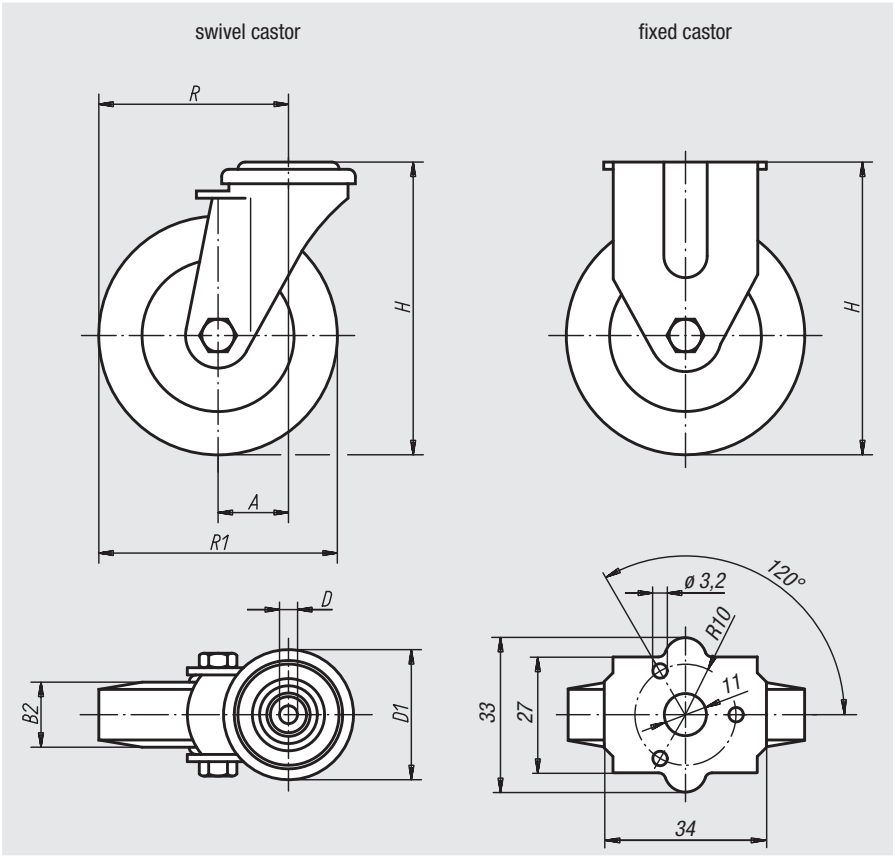
standard version

Material:
Housing in sheet steel; wheels in standard solid rubber tyre, rim in polyamide

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head; wheels with slide bearing

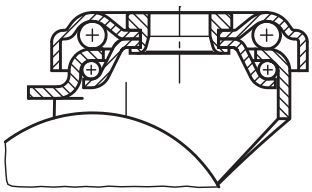
Sample order:
nlm 95010-07525

Note:
Wheel axle screwed. Swivel and fixed castor with bolt hole. Wheels grey, non-marking.



wheel and swivel head brake „stop-fix“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B2	D	D1	H	R	R1	Permissible load kg
95010-05018	**95010-050181**	**95010-050182**	slide bearing	25/-	18	11/-	43/-	69	50/-	50	40
95010-07525	**95010-075251**	**95010-075252**	slide bearing	28/-	25	11/-	43/-	98	65,5/-	75	60
95010-10025	**-**	**95010-100252**	slide bearing	33	25	11	43	121	83	100	70

Sheet steel swivel and fixed castors

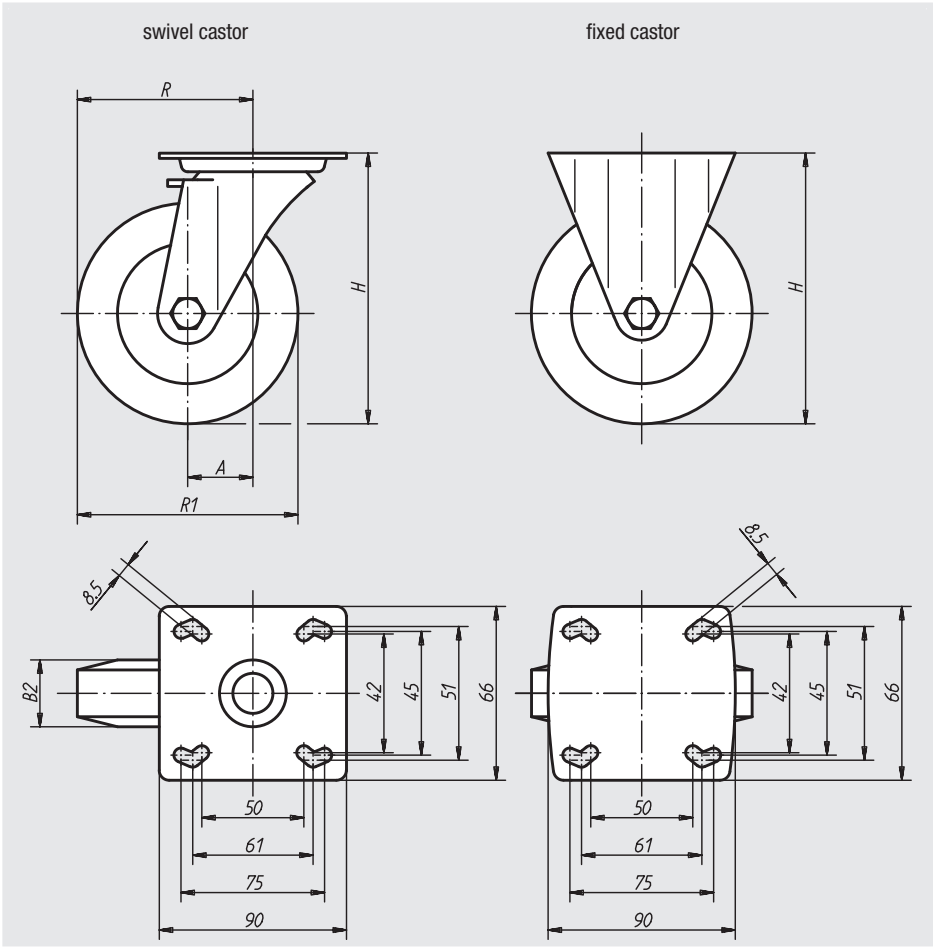
heavy-duty version

Material:
Housing in sheet steel; wheels in standard solid rubber tyre, rim in polyamide

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head; wheels with slide bearing

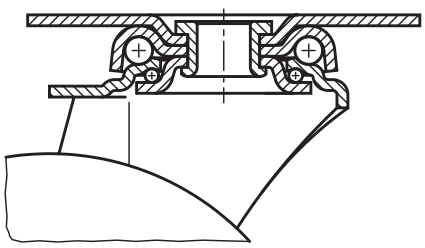
Sample order:
nlm 95012-10032

Note:
Wheel axle screwed. Standard solid rubber tyres are shock-, impact- and corrosion resistant.



wheel and swivel head brake „stop-fix“

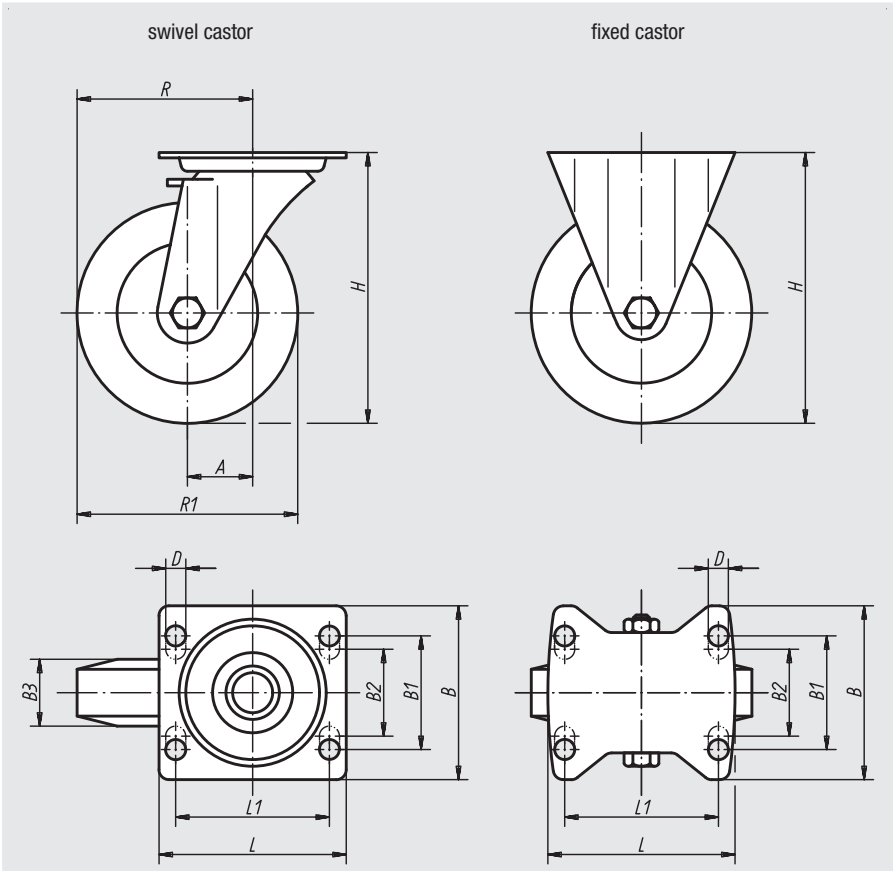
swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B2	H	R	R1	Permissible load kg
95012-08025	95012-080251	95012-080252	slide bearing	40/-	25	111	80/-	80	60
95012-10032	95012-100321	95012-100322	slide bearing	40/-	32	136	90/-	100	90
95012-12525	95012-125251	95012-125252	slide bearing	40/-	25	161	102,5/-	125	80
95012-12532	95012-125321	95012-125322	slide bearing	40/-	32	161	102,5/-	125	100

Sheet steel swivel and fixed castors

standard version



Material:
Housing and rim in sheet steel; wheels with solid rubber tyre; hub in steel tube

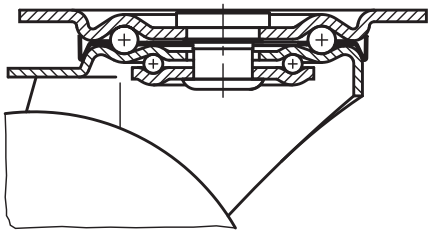
Version:
Pressed housing and rim; swivel castor housing with double ball bearing in the swivel head and ball protection; wheels with ball bearing

Sample order:
nlm 95016-10030

Note:
Wheel axle screwed.

wheel and swivel head brake „stop-fix“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95016-08025	**95016-080251**	**95016-080252**	roller bearing	38/-	85	60	-	25	100	80	102	9	78/-	80	50
95016-10030	**95016-100301**	**95016-100302**	roller bearing	36/-	85	60	-	30	100	80	125	9	86/-	100	70
95016-12538	**95016-125381**	**95016-125382**	roller bearing	40/-	85	60	-	37,5	100	80	150	9	102,5/-	125	100
95016-16040	**95016-160401**	**95016-160402**	roller bearing	60/-	110	80	75	40	140	105	195	11	140/-	160	135
95016-20050	**95016-200501**	**95016-200502**	roller bearing	65/-	110	80	75	50	140	105	235	11	165/-	200	205

Sheet steel swivel and fixed castors

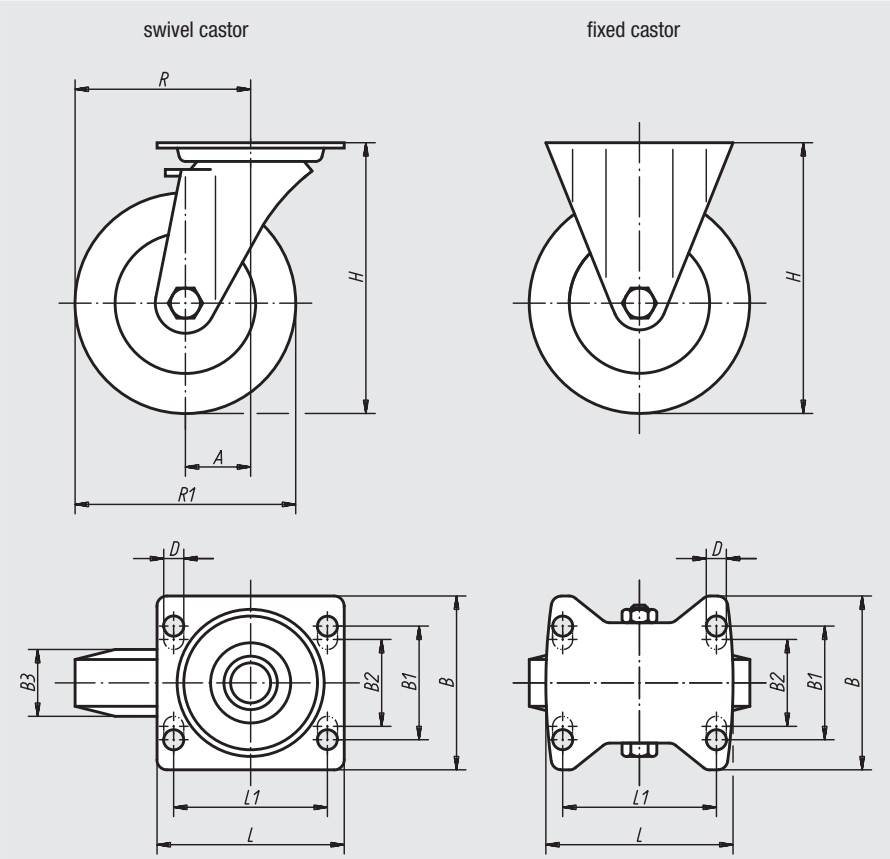
standard version

Material:
Housing in sheet steel; wheel body in PA 6 with vulcanised elastic solid rubber tyre

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head and ball protection; wheels with ball bearing

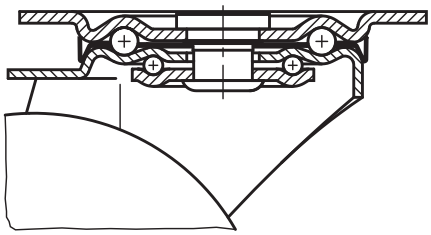
Sample order:
nlm 95018-12537

Note:
Wheel axle screwed. Wheels are shock- and impact-resistant.



wheel and swivel head brake „stop-fix“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95018-10037	**95018-100371**	**95018-100372**	roller bearing	36/-	85	60	-	38	100	80	125	9	86/-	100	170
95018-12537	**95018-125371**	**95018-125372**	roller bearing	40/-	85	60	-	40	100	80	150	9	102,5/-	125	200
95018-16050	**95018-160501**	**95018-160502**	roller bearing	60/-	110	80	75	50	140	105	195	11	140/-	160	350
95018-20050	**95018-200501**	**95018-200502**	roller bearing	65/-	110	80	75	50	140	105	235	11	165/-	200	400

Sheet steel swivel and fixed castors

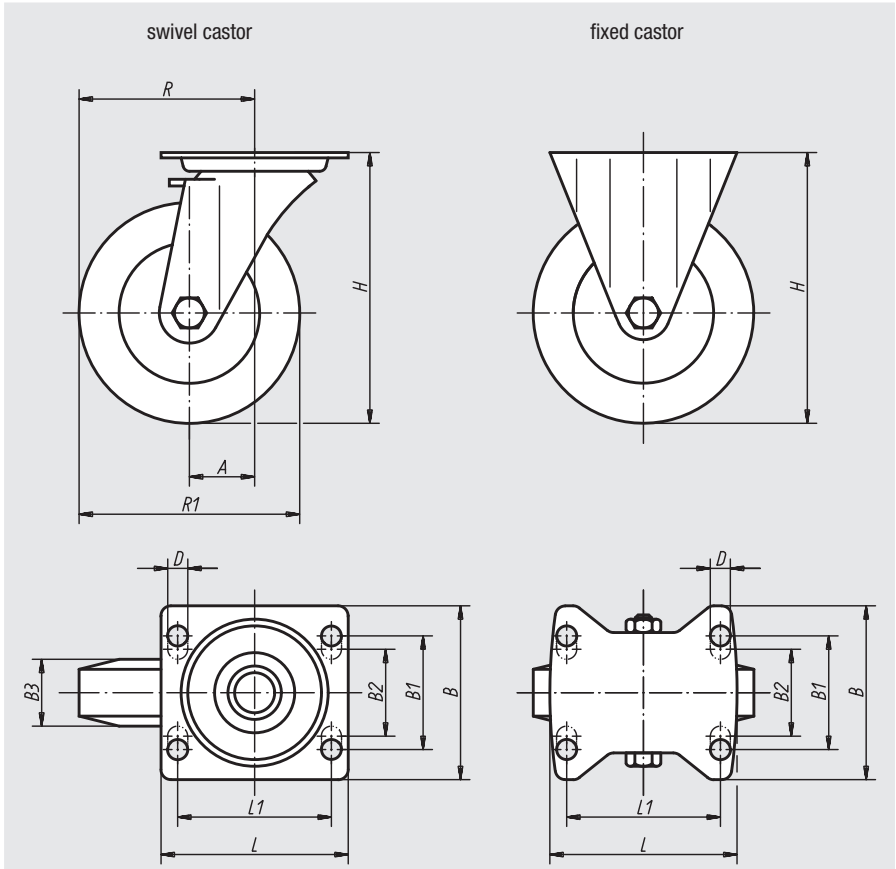
heavy-duty version

Material:
Housing in strong sheet steel; wheels with steel-wire reinforced elastic solid rubber tyre; steel welded wheel body

Version:
Pressed housing; reinforced fork, top plate and swivel head bolt; swivel castor housing with double ball bearing in the swivel head and hardened bearing seats; wheels with precision ball bearing

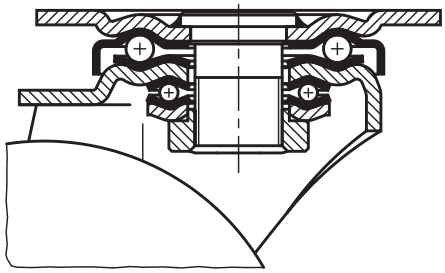
Sample order:
nlm 95020-12550

Note:
These castors and wheels are particularly insensitive against impact and shock loads and promise a high service life. Wheel axle screwed.



wheel and swivel head brake „stop-top“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95020-10040	**95020-100401**	**95020-100402**	ball bearing	45/-	85	60	-	40	100	80	140	9	95/-	100	180
95020-12550	**95020-125501**	**95020-125502**	ball bearing	55/-	110	80	75	50	140	105	170	11	117,5/-	125	280
95020-16050	**95020-160501**	**95020-160502**	ball bearing	65/-	110	80	75	50	140	105	202	11	145/-	160	400
95020-20050	**95020-200501**	**95020-200502**	ball bearing	70/-	110	80	75	50	140	105	245	11	170/-	200	500
95020-25060	**95020-250601**	**95020-250602**	ball bearing	82/-	110	80	75	60	140	105	295	11	207/-	250	700

Sheet steel swivel and fixed castors

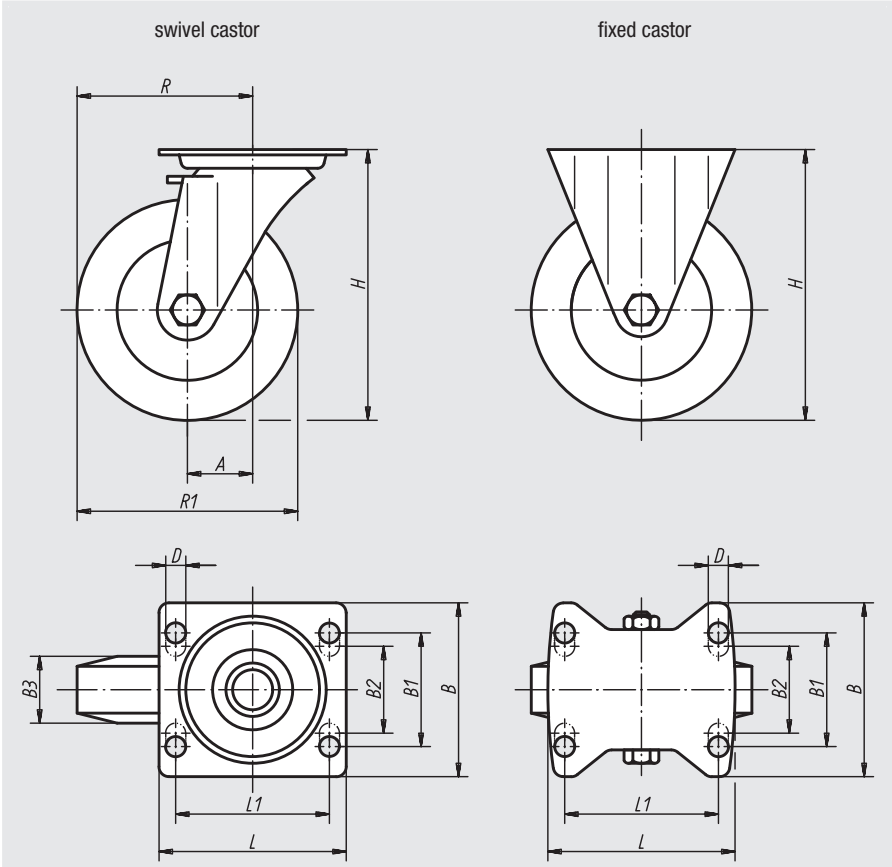
standard version

Material:
Housing in sheet steel; wheel body in PA 6 with abrasion-resistant tread in polyurethane

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head and ball protection; wheels with slide bearing

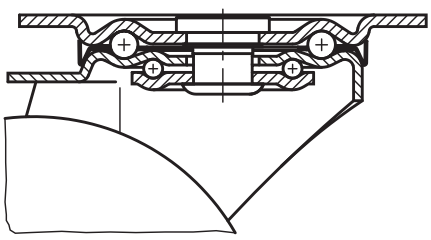
Sample order:
nlm 95024-12535

Note:
The wheels are maintenance-free, fracture and corrosion resistant. Wheel axle screwed. Wheels non-marking.



wheel and swivel head brake „stop-fix“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95024-10035	**95024-100351**	**95024-100352**	slide bearing	36/-	85	60	-	35	100	80	125	9	86/-	100	200
95024-12535	**95024-125351**	**95024-125352**	slide bearing	40/-	85	60	-	40	100	80	150	9	102,5/-	125	200
95024-15040	**95024-150401**	**95024-150402**	slide bearing	60/-	110	80	75	45	140	105	190	11	135/-	150	400
95024-20050	**95024-200501**	**95024-200502**	slide bearing	65/-	110	80	75	50	140	105	235	11	165/-	200	400

Sheet steel swivel and fixed castors

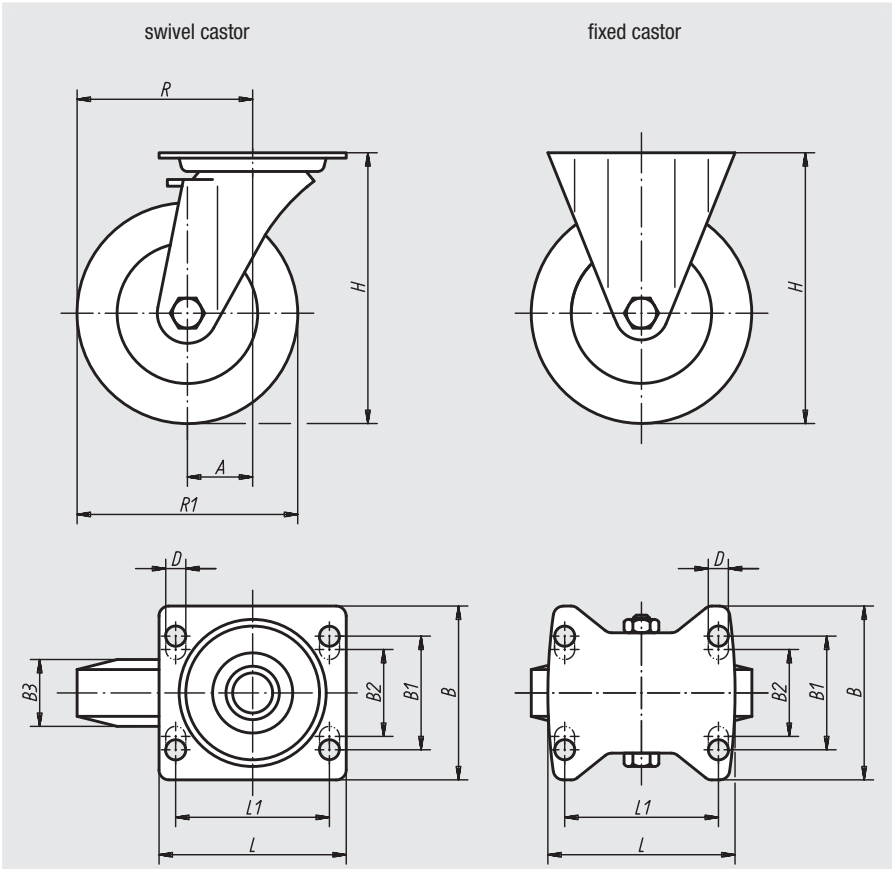
medium-duty version

Material:
Housing in sheet steel; wheel body in die cast aluminium; with tread in Extrathane

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head and ball protection; wheels with precision ball bearing

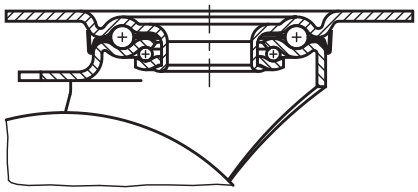
Sample order:
nlm 95028-12540

Note:
The wheels are corrosion resistant and they have a low rolling resistance. Wheel axle screwed.

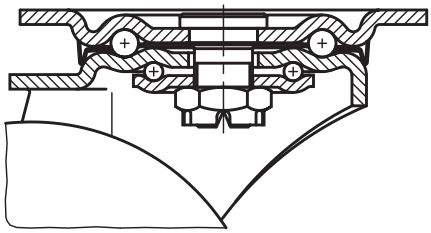


wheel and swivel head brake „stop-top“

swivel head bearing up to R1 = 125



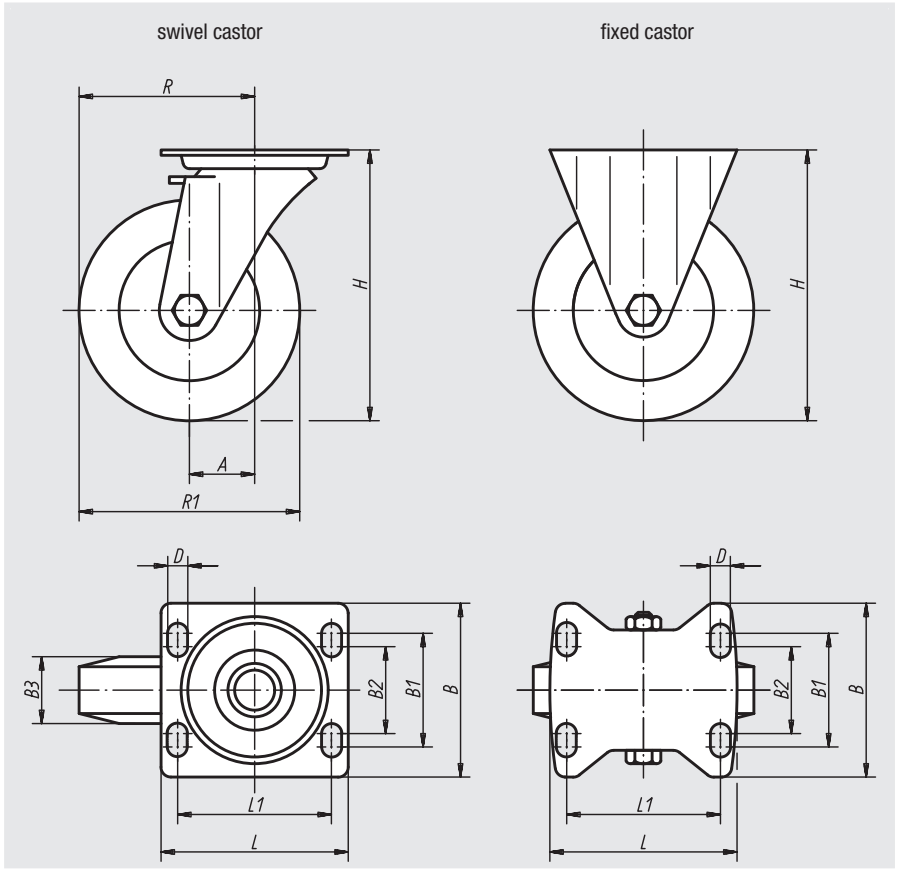
swivel head bearing as of R1 = 160



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95028-10040	**95028-100401**	**95028-100402**	ball bearing	45/-	85	60	-	40	100	80	130	9	95/-	100	250
95028-12540	**95028-125401**	**95028-125402**	ball bearing	48/-	85	60	-	40	100	80	155	9	110,5/-	125	250
95028-16050	**95028-160501**	**95028-160502**	ball bearing	63/-	110	80	75	50	140	105	202	11	143/-	160	550
95028-20050	**95028-200501**	**95028-200502**	ball bearing	70/-	110	80	75	50	140	105	245	11	170/-	200	800

Sheet steel swivel and fixed castors

heavy-duty version



Material:
Housing in strong sheet steel; wheels with steel welded wheel body and tread in Extrathane

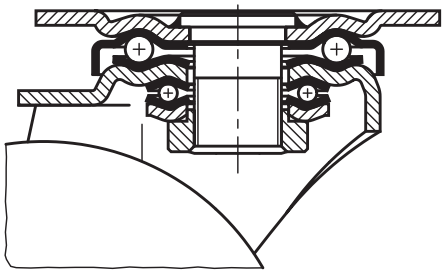
Version:
Pressed housing; swivel castor housing with heavy fork and top plate, screwed and secured with a very robust swivel head bolt; additionally reinforced swivel head by special shaped and hardened bearing seats

Sample order:
nlm 95030-16050

Note:
These castors and wheels are particularly insensitive against shock and impact loads. They are characterised by their abrasion-resistance, elasticity and low-noise rolling performance. Wheel axle screwed.

wheel and swivel head brake „stop-top“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95030-12550	**95030-125501**	**95030-125502**	ball bearing	55/-	110	80	75	50	140	105	170	11	117,5/-	125	500
95030-16050	**95030-160501**	**95030-160502**	ball bearing	65/-	110	80	75	50	140	105	202	11	145/-	160	700
95030-20050	**95030-200501**	**95030-200502**	ball bearing	70/-	110	80	75	50	140	105	245	11	170/-	200	900

Steel welded swivel and fixed castors

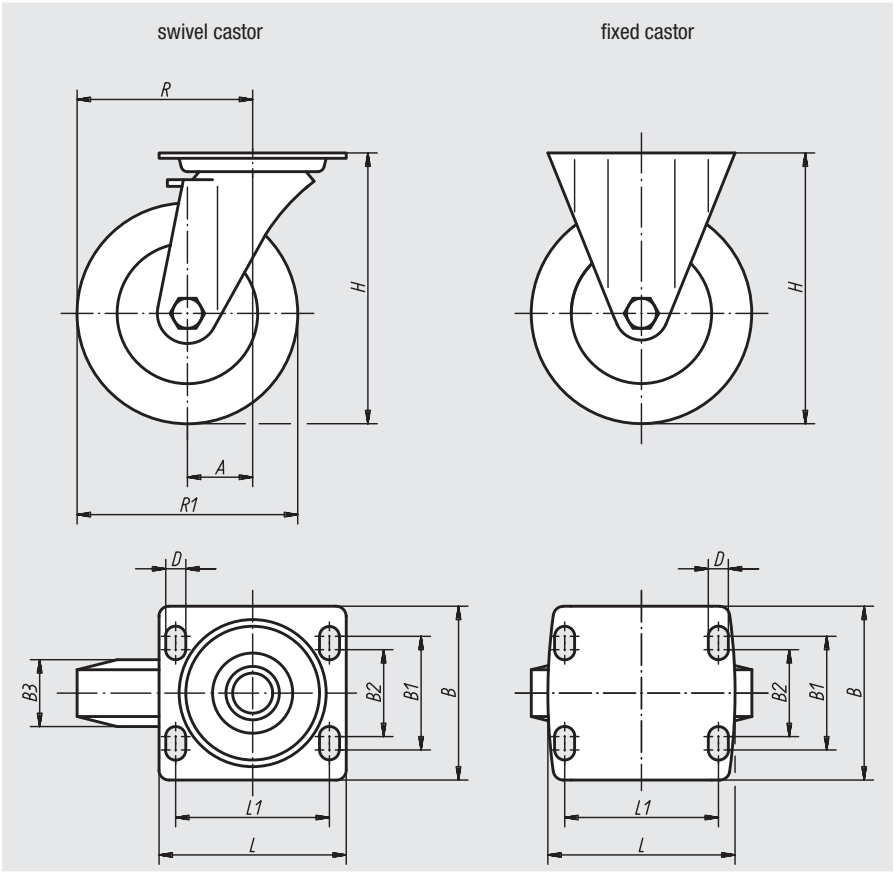
heavy-duty version

Material:
Housing in solid welded steel construction; wheels with steel welded wheel body and tread in Extrathane

Version:
The housing is a rugged welded steel construction; swivel castor housing with axial grooved ball bearing DIN 711 and taper roller bearing DIN 720 in the swivel head; dust and splash-proof; with grease nipple; wheels with precision ball bearing

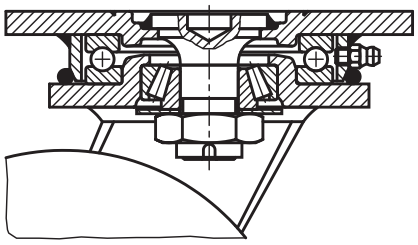
Sample order:
nlm 95032-20050

Note:
Swivel head bolt welded on, screwed and secured. Wheel axle screwed.



wheel and swivel head brake „stop-top“

Swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95032-16050	**95032-160501**	**95032-160502**	ball bearing	55/-	110	80	75	50	140	105	205	11	135/-	160	700
95032-20050	**95032-200501**	**95032-200502**	ball bearing	60/-	110	80	75	50	140	105	245	11	160/-	200	1000
95032-25060	**95032-250601**	**95032-250602**	ball bearing	75/-	140	105	-	60	175	140	305	14	200/-	250	1350

Sheet steel swivel and fixed castors

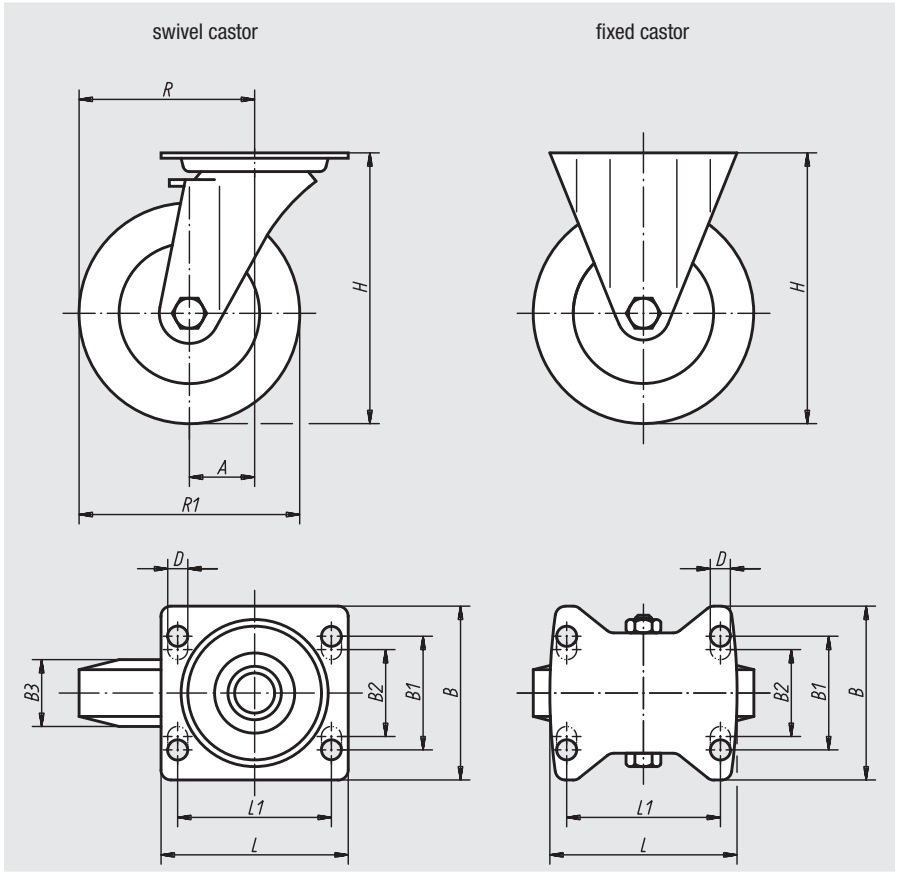
standard version

Material:
Housing in sheet steel; wheels in PA 6

Version:
Pressed housing; swivel castor housing with double ball bearing in the swivel head and ball protection; wheels with slide bearing

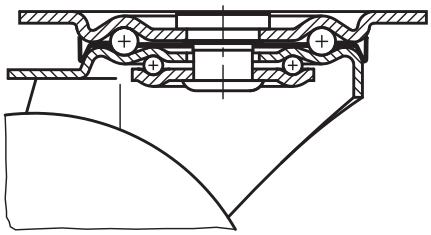
Sample order:
nlm 95034-10037

Note:
Wheels in PA 6 have a low rolling resistance. They are characterised by their corrosion- and abrasion-resistance and particularly shock- and impact-resistant.



wheel and swivel head brake „stop-fix“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-fix“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95034-07532	**95034-075321**	**95034-075322**	slide bearing	35/-	85	60	-	32	100	80	98	9	72,5/-	75	200
95034-10037	**95034-100371**	**95034-100372**	slide bearing	35/-	85	60	-	37	100	80	125	9	85/-	100	200
95034-12540	**95034-125401**	**95034-125402**	slide bearing	40/-	85	60	-	40	100	80	150	9	102,5/-	125	200
95034-15050	**95034-150501**	**95034-150502**	slide bearing	60/-	110	80	75	50	140	105	190	11	135/-	150	400

Sheet steel swivel and fixed castors

heavy-duty version

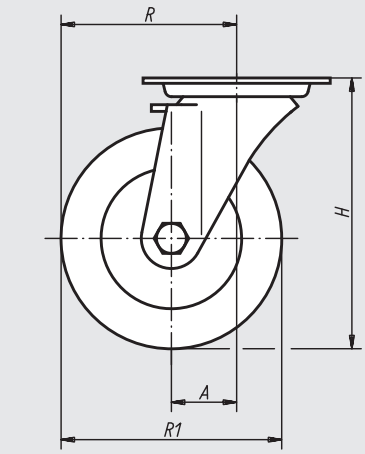
Material:
Housing in strong sheet steel; wheels in PA 6

Version:
Pressed housing; swivel castor housing with heavy fork and top plate, screwed and secured with a very rugged swivel head bolt; additionally reinforced swivel head by special shaped and hardened bearing seats; wheels with slide bearing

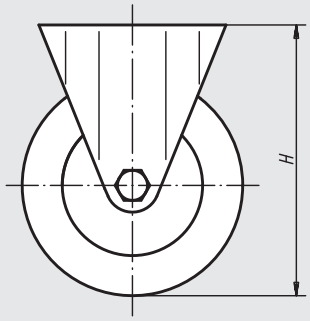
Sample order:
nlm 95036-12540

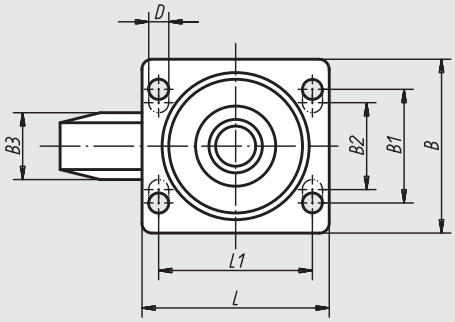
Note:
Wheel axle screwed. The wheels are particularly shock and impact resistant and have a high abrasion-resistance.

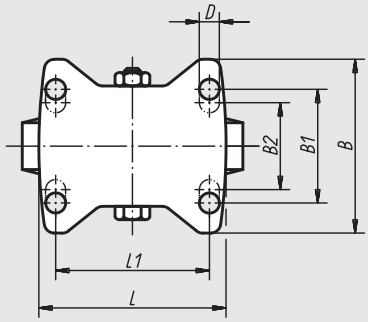
swivel castor



fixed castor

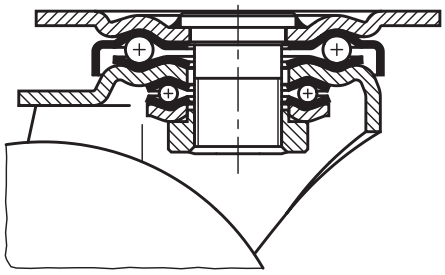






wheel and swivel head brake „stop-top“

swivel head bearing:



Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95036-10037	**95036-100371**	**95036-100372**	slide bearing	45/-	85	60	-	37	100	80	140	9	95/-	100	280
95036-12540	**95036-125401**	**95036-125402**	slide bearing	45/-	85	60	-	40	100	80	165	9	107,5/-	125	300
95036-15050	**95036-150501**	**95036-150502**	slide bearing	65/-	110	80	75	50	140	105	197	11	140/-	150	400
95036-20050	**95036-200501**	**95036-200502**	slide bearing	70/-	110	80	75	50	140	105	245	11	170/-	200	600

Sheet steel swivel and fixed castors

heavy-duty version

Material:
Housing in strong sheet steel; wheels in high-quality PA 6

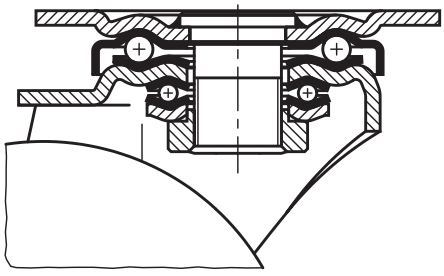
Version:
Pressed housing; swivel castor housing with heavy fork and top plate, screwed and secured with a very robust swivel head bolt; additionally reinforced swivel head by special shaped and hardened bearing seats

Sample order:
nlm 95040-10037

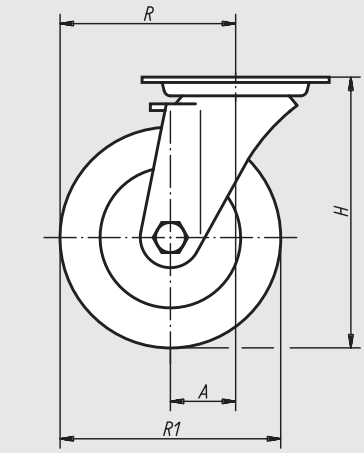
Note:
Due to the hardened bearing-seats the castors are particularly shock- and impact-resistant. The wheels are high abrasion-resistant. Wheel axle screwed.

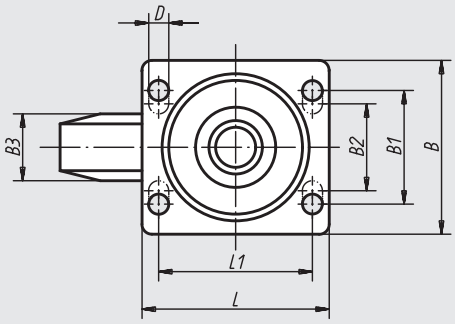
wheel and swivel head brake „stop-top“

swivel head bearing:

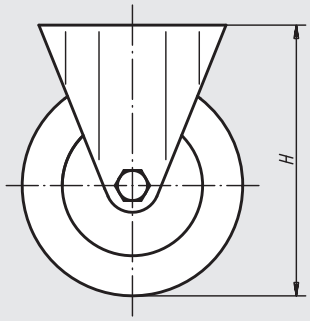


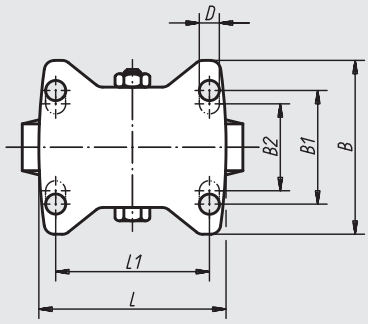
swivel castor





fixed castor





Order No. swivel castor	Order No. fixed castor	Order No. swivel castor with „stop-top“	Wheel bearing	A	B	B1	B2	B3	L	L1	H	D	R	R1	Permissible load kg
95040-07532	**95040-075321**	**95040-075322**	slide bearing	45/-	85	60	-	32	100	80	118	9	82,5/-	75	300
95040-075323	**95040-075324**	**95040-075325**	ball bearing	45/-	85	60	-	32	100	80	118	9	82,5/-	75	300
95040-10037	**95040-100371**	**95040-100372**	slide bearing	45/-	85	60	-	37	100	80	140	9	95/-	100	500
95040-100373	**95040-100374**	**95040-100375**	ball bearing	45/-	85	60	-	37	100	80	140	9	95/-	100	500
95040-12540	**95040-125401**	**95040-125402**	slide bearing	45/-	85	60	-	40	100	80	165	9	107,5/-	125	700
95040-125403	**95040-125404**	**95040-125405**	ball bearing	45/-	85	60	-	40	100	80	165	9	107,5/-	125	700
95040-15050	**95040-150501**	**95040-150502**	slide bearing	65/-	110	80	75	50	140	105	197	11	140/-	150	800
95040-150503	**95040-150504**	**95040-150505**	ball bearing	65/-	110	80	75	50	140	105	197	11	140/-	150	800

Sheet steel swivel caster

compact version

Material:
Housing sheet steel, galvanized and blue passivated .
Roller light brown polyurethane, Shore 92° A
or white polyamide, Shore 80° D.

Version:
Housing pressed.
Swivel castor housing with 2x ball bearing in the swivel head and ball protection.
Roller with two pressed-in ball bearings.

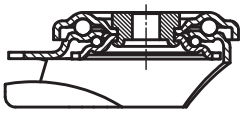
Sample order:
nlm 95045-0352701

Note:
Wheel axle threaded.

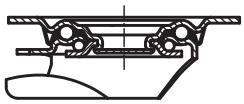
Roller polyurethane: quiet running, low rolling resistance, elastic, floor-protecting, very wear resistant , non-staining.

Roller polyamide: very low roll and swivel resistance, smooth running on smooth floors, very wear resistant.

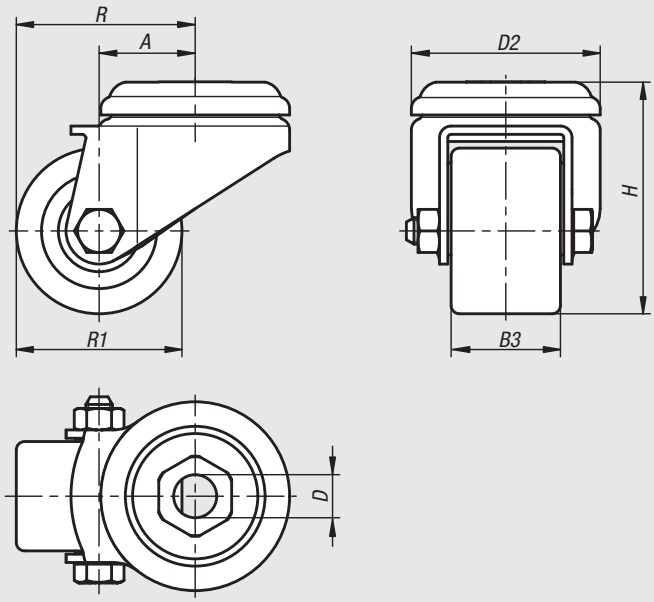
Swivel head bearing:
bolt hole



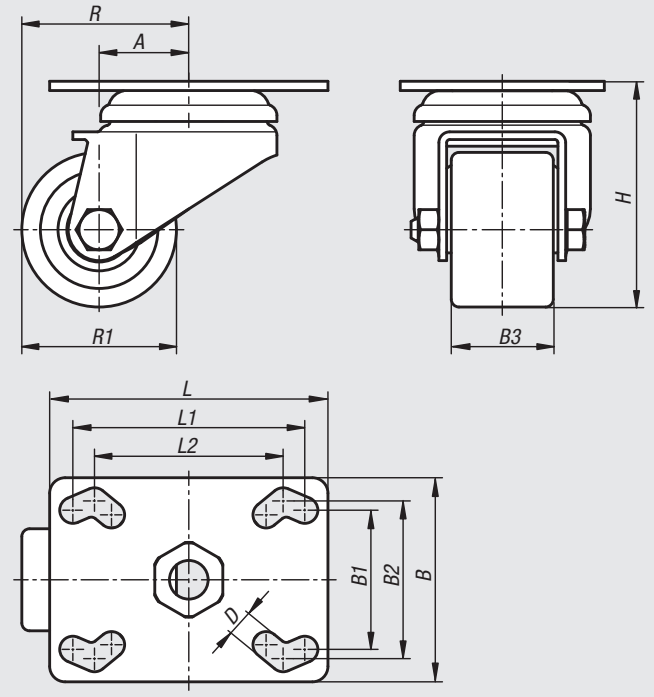
Swivel head bearing:
mounting plate



bolt hole



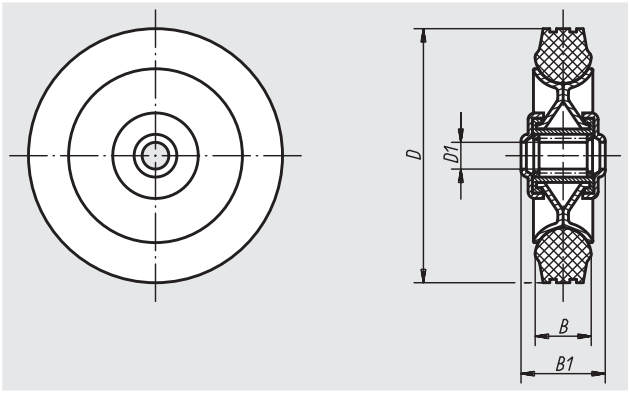
mounting plate



Order No.	Version	Material roller	Wheel bearing	D	D2	A	B	B1	B2	B3	H	L	L1	L2	R	R1	Permissible load kg	Approx. weight kg
95045-0352701	bolt hole	polyurethane	ball bearing	11	43	15	-	-	-	27	50	-	-	-	32,5	35	100	0,206
95045-0352802	bolt hole	Polyamide	ball bearing	11	43	15	-	-	-	28	50	-	-	-	32,5	35	100	0,158
95045-0503301	bolt hole	polyurethane	ball bearing	13	57	29	-	-	-	33	70	-	-	-	54	50	150	0,518
95045-0503202	bolt hole	Polyamide	ball bearing	13	57	29	-	-	-	32	70	-	-	-	54	50	150	0,456
95045-0352711	mounting plate	polyurethane	ball bearing	6,2	-	15	60	38	48	27	52	60	48	38	32,5	35	100	0,257
95045-0352812	mounting plate	Polyamide	ball bearing	6,2	-	15	60	38	48	28	52	60	48	38	32,5	35	100	0,206
95045-0503311	mounting plate	polyurethane	ball bearing	8,5	-	29	66	45	51	33	73	90	75	61	54	50	150	0,659
95045-0503212	mounting plate	Polyamide	ball bearing	8,5	-	29	66	45	51	32	73	90	75	61	54	50	150	0,553

Standard solid rubber tyres

on pressed steel rim



Material:
Rim in sheet steel.
Wheel standard solid rubber tyre.

Version:
Rim galvanized and chromated.
Black tyre.

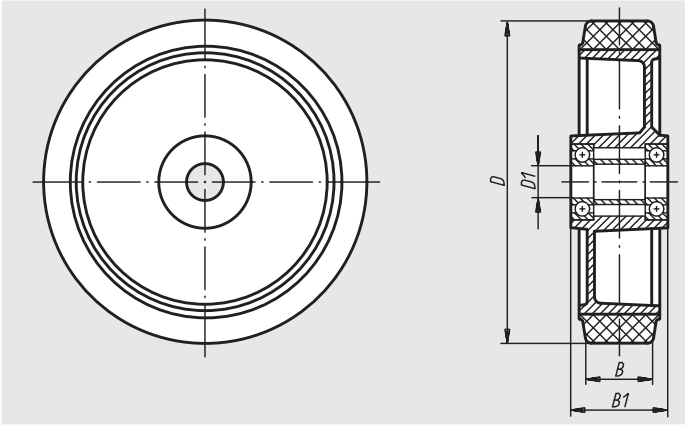
Sample order:
nlm 95050-14038

Note:
This special rim design is extremly storng, even under extreme shock and impact loads. Low rolling resistance.
Temperature resistant from -30 °C to +80 °C.
Wheels are suitable for 95016.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95050-08025	roller bearing	80	12	25	35	50	0,200
95050-10030	roller bearing	100	15	30	45	70	0,400
95050-12538	roller bearing	125	15	37,5	45	100	0,700
95050-14038	roller bearing	140	15	37,5	45	115	0,800
95050-16040	roller bearing	160	20	40	60	135	1,200
95050-18050	roller bearing	180	20	50	60	170	1,700
95050-20050	roller bearing	200	20	50	60	205	2,100

95053

Elastic solid rubber tyre



Material:
Wheel body in die cast aluminium.
Tyre in elastic solid rubber.

Sample order:
nlm 95053-200501

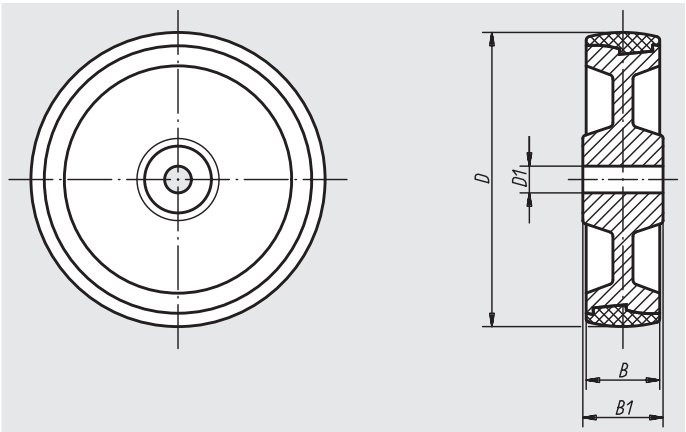
Note:
The tyre is vulcanised onto the rim. Wheels with elastic solid rubber tyres have a high wear resistance, a low rolling resistance and an excellent operational comfort.
Application temperature from -30 °C to +80 °C.
Wheels are used for pallet trucks as front wheels.
Other sizes on request.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95053-200501	ball bearing	200	20	35	60	450	1,580

95056

Nylon wheels

with injection-moulded tread



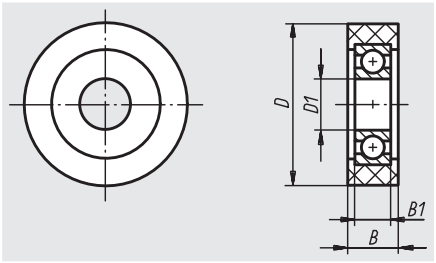
Material:
Wheel body PA; tread in thermoplastic polyurethane-elastomer

Sample order:
nlm 95056-12535

Note:
Wheels with polyurethane tread are characterised by a high load capacity, abrasion-resistance, floor-saving, shock and vibration absorption. They are robust and resistant against lots of chemicals and acids.
Temperature resistant from -30 °C to +80 °C.
Wheels are suitable for 95024.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95056-10035	slide bearing	100	15	35	45	200	0,200
95056-12535	slide bearing	125	15	35	45	250	0,300
95056-15040	slide bearing	150	20	40	60	400	0,500
95056-20050	slide bearing	200	20	50	60	700	1,100

Guide rollers



Material:
Tread in Extrathane, hardness 92° Shore A, light brown or polyamide 6, hardness 80° Shore A.

Sample order:
nlm 95057-05015

Note:
The tread is firmly bonded onto a ball bearing.

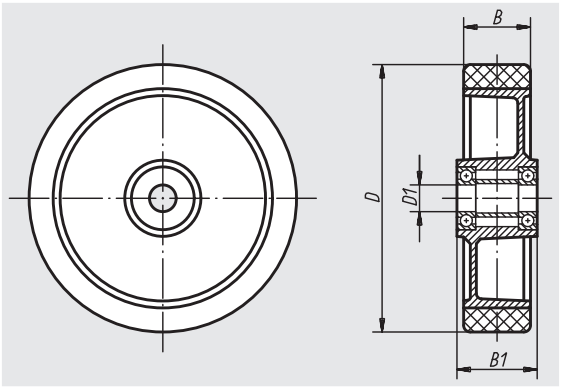
Tread Extrathane: quiet running, low rolling resistance, elastic, floor-protecting, very wear resistant, high cut and tear resistance, non-marking, non-staining.

Tread in polyamide 6: with high fracture strength, very low roll resistance, smooth running on smooth floors, very wear resistant.
Application area: conveyer belts, doors, etc.
Other sizes on request.

Order No.	Material tread	Wheel bearing	D	D1	B	B1	Permissible load kg	Ball bearing	Approx. weight kg
95057-03008	extrathane	ball bearing	30	6	8	6	20	626 2RS	0,010
95057-03514	extrathane	ball bearing	35	12	14	8	40	6001 2RS	0,030
95057-04020	extrathane	ball bearing	40	10	20	9	40	6000 2RS	0,050
95057-05015	extrathane	ball bearing	50	10	15	9	60	6200 2RS	0,050
95057-06020	extrathane	ball bearing	60	17	20	12	90	6203 2RS	0,110
95057-07020	extrathane	ball bearing	70	25	20	15	125	6205 2RS	0,172
95057-030081	polyamide 6	ball bearing	30	6	8	6	35	626 2RS	0,011
95057-035111	polyamide 6	ball bearing	35	8	11	7	55	608 2RS	0,019
95057-040201	polyamide 6	ball bearing	40	10	20	9	100	6200 2RS	0,046
95057-050151	polyamide 6	ball bearing	50	10	15	9	100	6200 2RS	0,053
95057-060201	polyamide 6	ball bearing	60	17	20	12	165	6203 2RS	0,101
95057-070201	polyamide 6	ball bearing	70	25	20	15	185	6205 2RS	0,165

Aluminium wheels

with injection-moulded tread



Material:
Wheel body in die cast aluminium.
Tread in Extrathane.

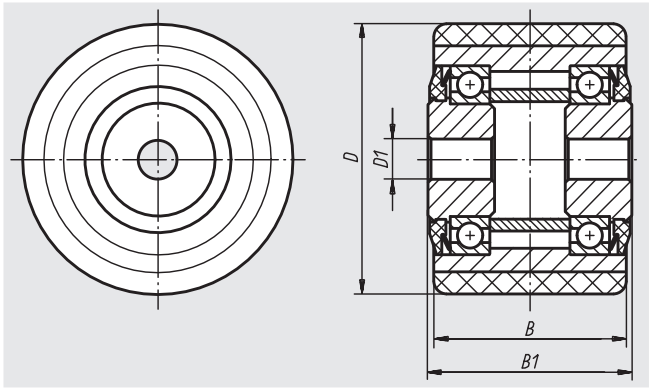
Sample order:
nlm 95058-12540

Note:
These wheels are elastic, abrasion-resistant, floor-saving and have a low-noise rolling performance as well as a low rolling resistance.
Wheels are suitable for 95028.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95058-10040	ball bearing	100	15	40	45	250	0,500
95058-12540	ball bearing	125	15	40	45	350	0,600
95058-16050	ball bearing	160	20	50	60	550	1,100
95058-18050	ball bearing	180	20	50	60	600	1,430
95058-20050	ball bearing	200	20	50	60	800	1,500

95059

Heavy-duty castors



Material:
Wheel body in steel tube, with ball bearing; tread in Extrathane, hardness 92° shore A.

Sample order:
nlm 95059-0857520

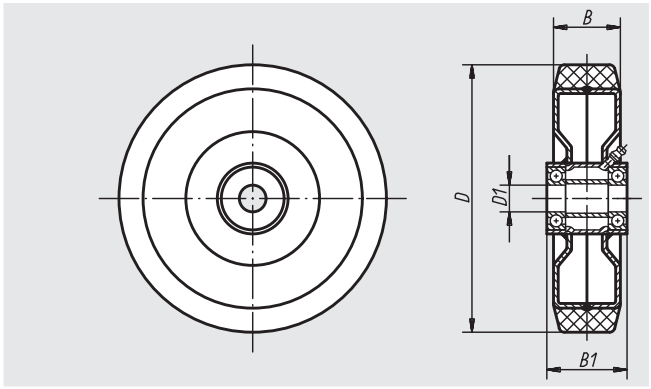
Note:
Optimum ball bearing protection against splash water. The tread is firmly bonded. These wheels are characterised by particularly high rebound resilience with long endurance times as well as high cut and tear propagation resistance. They are also abrasion-resistant, non-staining, floor-saving, elastic and have a low-noise rolling performance as well as a low rolling resistance.
Application area: pallet trucks, forklift, etc.
Other sizes on request.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95059-0856020	ball bearing	85	20	60	65	450	1,040
95059-0856025	ball bearing	85	25	60	65	450	0,980
95059-0857520	ball bearing	85	20	75	80	570	1,300
95059-0857525	ball bearing	85	25	75	80	570	1,280
95059-0859525	ball bearing	85	25	95	100	720	1,630

95060

Heavy-duty wheels

wheel body welded



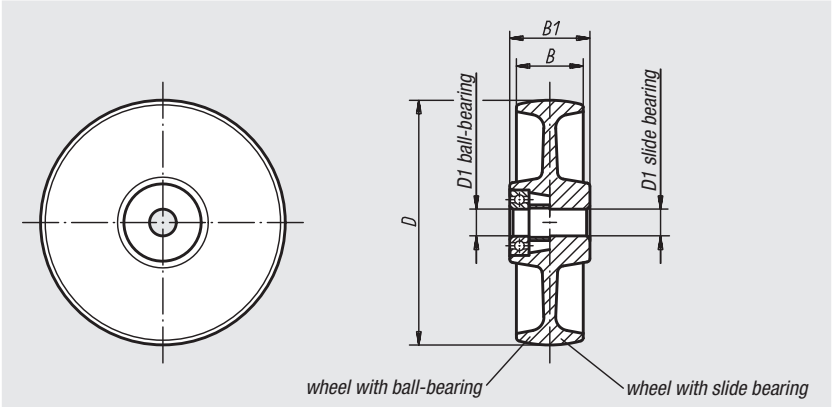
Material:
Wheel body welded steel construction; tread in Extrathane

Sample order:
nlm 95060-16050

Note:
The tread made of Extrathane polyurethane is characterised by particularly high rebound resilience with long endurance times, low-noise rolling performance, elastic, floor-saving and abrasion-resistance. The wheel is fitted with a grease nipple for bearing maintenance.
Application temperature from -40 °C to +80 °C.
Wheels are suitable for 95030 and 95032.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95060-12550	ball bearing	125	20	50	60	500	1,300
95060-16050	ball bearing	160	20	50	60	700	1,800
95060-20050	ball bearing	200	20	50	60	1000	2,400
95060-25060	ball bearing	250	25	60	70	1350	4,110

Nylon wheels



Material:
Polyamide

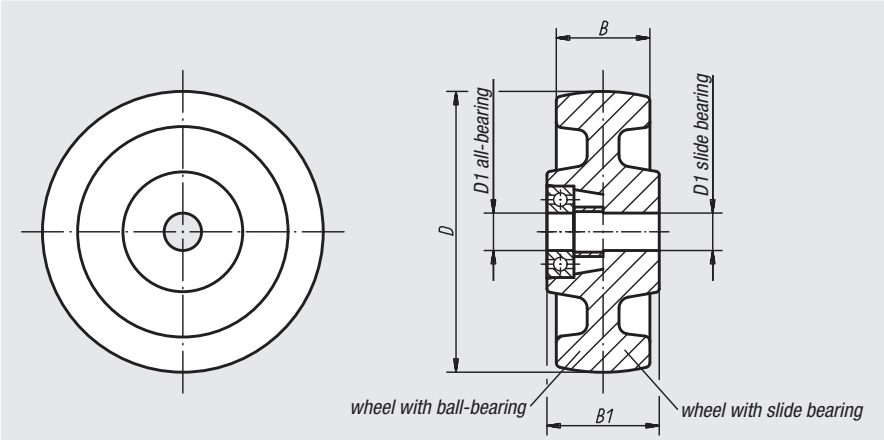
Sample order:
nlm 95062-12540

Note:
Wheels in polyamide are fracture and corrosion resistant, shock- and impact-resistant and chemical resistant. Furthermore they are high abrasion-resistant and have a low rolling resistance.
Other sizes with ball bearing on request.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95062-07532	slide bearing	75	12	32	35	200	0,100
95062-10037	slide bearing	100	15	37	45	280	0,200
95062-12540	slide bearing	125	15	40	45	300	0,200
95062-15050	slide bearing	150	20	50	60	400	0,400
95062-20050	slide bearing	200	20	50	60	600	0,720

Nylon wheels

heavy-duty version



Material:
Polyamide

Sample order:
nlm 95064-10037

Note:
Wheels in polyamide are fracture and corrosion resistant, shock- and impact-resistant and chemical resistant. Furthermore they are high abrasion-resistant and have a low rolling resistance.
Wheels are suitable for 95040.

Order No.	Wheel bearing	D	D1	B	B1	Permissible load kg	Approx. weight kg
95064-07532	slide bearing	75	12	32	35	300	0,100
95064-10037	slide bearing	100	15	37	45	500	0,240
95064-12540	slide bearing	125	15	40	45	700	0,400
95064-15050	slide bearing	150	20	50	60	800	0,700
95064-20050	slide bearing	200	20	50	60	1500	1,300
95064-25065	slide bearing	250	25	65	65	2000	2,300
95064-075321	ball bearing	75	15	32	35	300	0,200
95064-100371	ball bearing	100	15	37	45	500	0,350
95064-125401	ball bearing	125	20	40	45	700	0,580
95064-150501	ball bearing	150	20	50	60	800	1,000
95064-200501	ball bearing	200	25	50	60	1500	1,800
95064-250651	ball bearing	250	25	65	65	2000	2,900

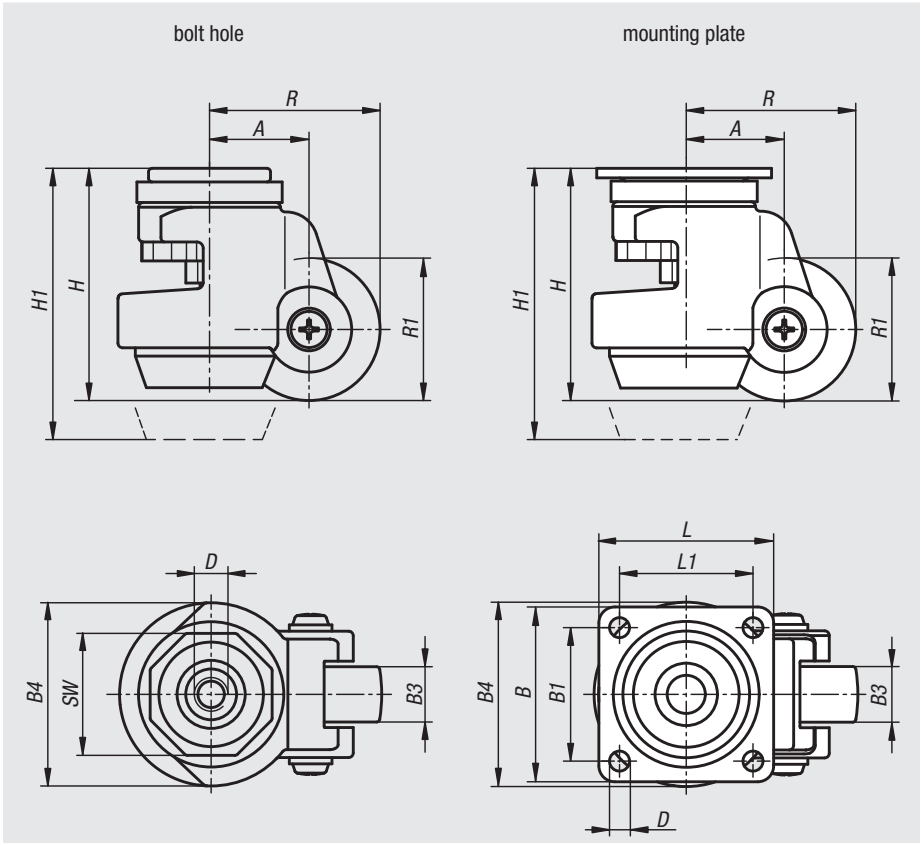
Compact and levelling castors

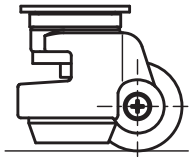
with integrated locking foot with bolt hole or mounting plate

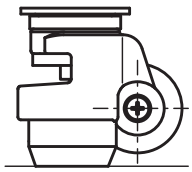
Material, version:
Housing die cast aluminium, powder-coated, ivory.
Steel parts galvanized, blue-passivated.
Roller unbreakable polyamide 6, Shore 70° D, black.
Locking foot black hard rubber.

Sample order:
nlm 95090-045180

Note:
Levelling castor with integrated locking foot. With sealed ball bearing in the swivel head. Height adjustment with a 13 mm spanner or by the integrated adjustment screw. Wheel axle threaded.



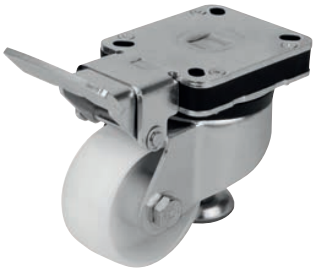


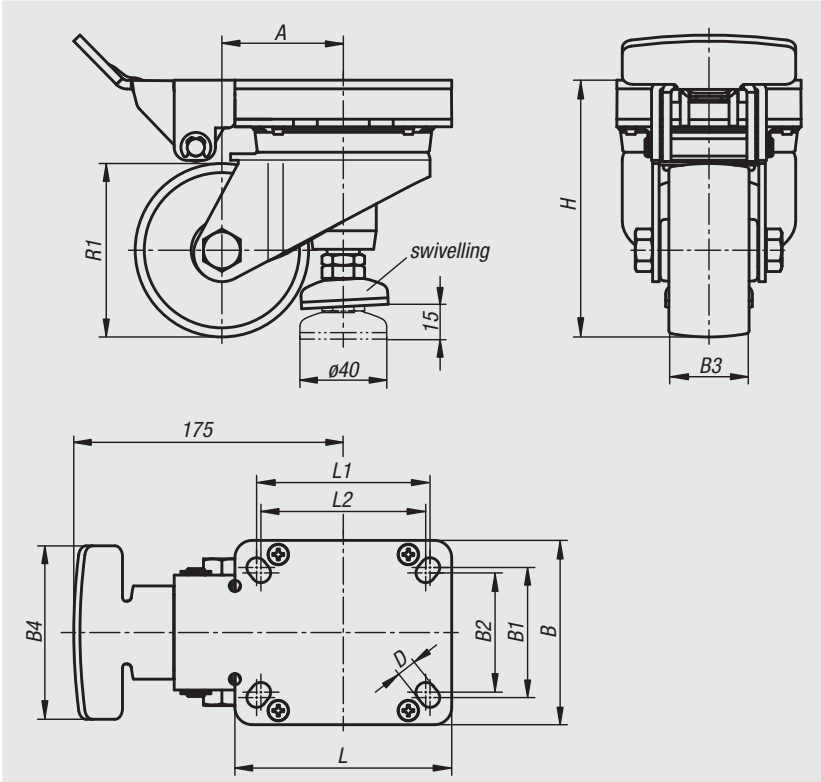


Order No.	Version	Wheel bearing	D	A	B	B1	B3	B4	H	H1	L	L1	R	R1	SW	Permissible load kg	Approx. weight kg
95090-045180	bolt hole	plain bearing	M8x12	32	-	-	18	58	72	82	-	-	54,5	45	40	180	0,43
95090-050220	bolt hole	plain bearing	M12x15	38	-	-	22	72	84	94	-	-	63	50	46	250	0,626
95090-063290	bolt hole	plain bearing	M12x15	46	-	-	29	85	104	119	-	-	77,5	63	65	500	1,228
95090-045181	mounting plate	plain bearing	7	32	55	42	18	58	72	82	55	42	54,5	45	-	180	0,445
95090-050221	mounting plate	plain bearing	7	38	73	58	22	72	84	94	73	58	63	50	-	250	0,736
95090-063291	mounting plate	plain bearing	9	46	90	70	29	85	104	119	90	70	77,5	63	-	500	1,339

Compact and levelling castors

with integrated machine base





Material, version:
Housing sheet steel, galvanized and blue passivated.
Roller unbreakable polyamide 6, Shore 70° D, white..
Machine foot galvanized steel with grey rubber pads.

Sample order:
nlm 95092-08037

Note:
Levelling castor in the swivel castor version with integrated levelling machine foot. With sealed ball bearing in the swivel head. Wheel axle threaded. The ergonomic form of the actuating lever, that does not swivel with the roller, allows ease of operation. The short actuation travel with simultaneous long plunger stroke and very high lifting force allows heavy weights to be easily raised and safely fixated.

Order No.	Wheel bearing	D	A	B	B1	B2	B3	B4	H	L	L1	L2	R1	Permissible load kg
95092-08037	plain bearing	9	56	85	60	55	37	80	120	100	80	76	80	230
95092-10037	plain bearing	9	65	85	60	55	37	80	142	100	80	76	100	230

Mounting instructions and specifications for ball rollers

Ball rollers allow bulky goods to be easily transported, rotated and directed. They have long proven their worth in conveyor systems, feeder systems, machining centres and packaging plants.

Applications:

Conveyor technology

– ball pallets, rotary tables and sorting and distribution switch points
– crossing points in permanent conveyance systems
– Airport luggage sorting plants
– Steel pipe transport
– Lifting platforms

General machine shops

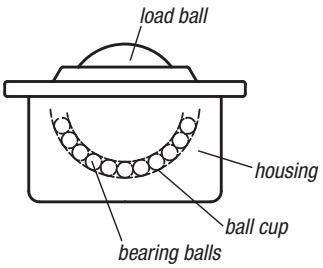
– Feed tables for sheetmetal cutting machines
– Fixtures for metal forming presses
– Feeders for machining centres and drilling machines
– Motor driven assembly aids in heavy engineering

Other applications

– Custom machine construction
– Aerospace technology
– Beverage production and stone cutting

Ball rollers have a steel housing with a hardened ball cup. This serves as the track for a number of small bearing balls. These bearing balls roll in the cup with the rotation of the load ball.

Ball rollers are designed so that precise rolling and load carrying is guaranteed in all positions. Ball rollers are low maintenance and almost all types have an oil soaked felt seal to protect from dirt.



Calculating the ball roller loading

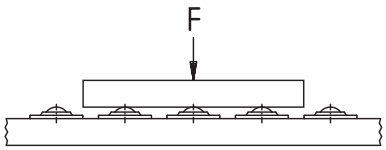
To calculate the loading for a ball roller divide the weight of the transported goods by 3. With good coordination of the load ball surface and, depending on the properties of the goods transported, the number of load bearing ball rollers can also be calculated.

Example:

Weight of the transported goods = 300 kg

Ball roller loading:

$$F = \frac{300\ kg}{3} = 100\ kg$$



Arrangement of the ball rollers

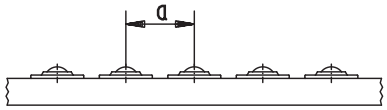
The arrangement of the ball rollers depends on the surface area of the goods to be transported. By goods with a uniform, level surface area, such as the base of boxes, the distance between the ball rollers is simply calculated from the length of the shortest edge divided by 2.5.

Example:

Surface area of goods = 500 x 1000 mm

Distance between ball rollers:

$$a = \frac{500\ mm}{2{,}5} = 200\ mm$$



Transport speed and load capacity

The recommended conveyance speed is 1 m/sec. With polyamid load balls 0.25 m/sec. The specified load capacity applies to all mounting positions and relates to 106 revolutions of the load ball. By extended use in excess of 1 m/sec and depending on the loading, the temperature can be expected to rise and the useful life reduced, particularly with balls Ø60 to Ø90.

Calculating the lifespan

$$L = \left(\frac{C}{F}\right)^3 . 10^6 \text{ revs}$$

L = lifespan
C = load capacity (N)
F = loading (N)

Attention:
Use high temperature lubricant!
Follow manufacturer's instructions!
It is possible that the existing lubrication oil may have to be washed out.

Temperature load ball		Temperature factor fT
steel °C	polyamid °C	
125	40	0,9
150	50	0,8
175	60	0,7
-	70	0,6
200	80	0,5

Temperature resistance

For ball rollers with a felt seal the temperature resistance is 100 °C by constant temperature.

Only non-galvanised ball rollers with a steel ball and no felt seal can be used at temperatures in excess of 100 °C. Note the load capacity reduction! Multiply the load capacity by the temperature factor (table).

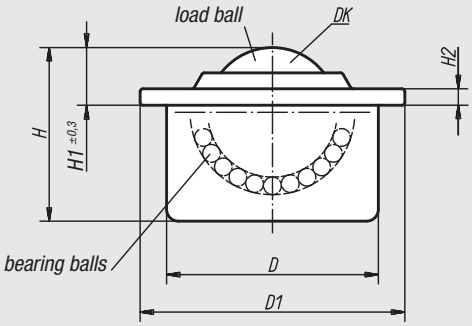
Calculating the loading by undersprung ball rollers.

For these types the determining factor is the value given in the „Pre-tension" column of the table. The weight of the transported goods is divided by the number of supporting ball rollers.

Ball rollers

with steel housing

Type B: cap and housing galvanized, balls steel
Type C: cap and housing galvanized, balls stainless steel
Type D: cap, housing and balls stainless steel

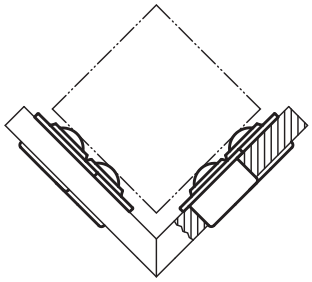


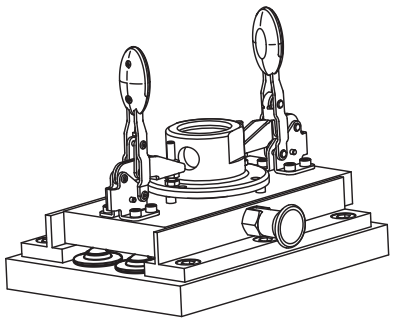
Material, version:
Galvanized steel or stainless steel

Sample order:
nlm 95150-122

Note:
Ball rollers with steel housing have a felt seal to protect against dirt.

mounting option:



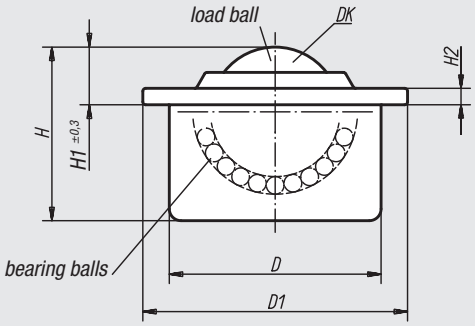


Order No.	Version	DK	D	D1	H	H1	H2	Base load C (N)	Approx. weight kg	Tolerance ring suitable for ball rollers
95150-115	B	15,8	24 ±0,065	31	21	9,5	2,8	600	0,043	95164-024
95150-122	B	22,2	36 ±0,080	45	30	9,8	2,8	1600	0,132	95164-036
95150-130	B	30	45 ±0,080	55	37	13,8	4	3000	0,278	95164-045
95150-145	B	44,5	62 ±0,095	75	53,5	19	4	6100	0,725	95164-062
95150-215	C	15,8	24 ±0,065	31	21	9,5	2,8	600	0,043	95164-024
95150-222	C	22,2	36 ±0,080	45	30	9,8	2,8	1600	0,132	95164-036
95150-230	C	30	45 ±0,080	55	37	13,8	4	3000	0,278	95164-045
95150-245	C	44,5	62 ±0,095	75	53,5	19	4	6100	0,725	95164-062
95150-315	D	15,8	24 ±0,065	31	21	9,5	2,8	380	0,043	95164-024
95150-322	D	22,2	36 ±0,080	45	30	9,8	2,8	1000	0,132	95164-036
95150-330	D	30	45 ±0,080	55	37	13,8	4	2000	0,278	95164-045

Ball rollers

with steel housing and plastic ball

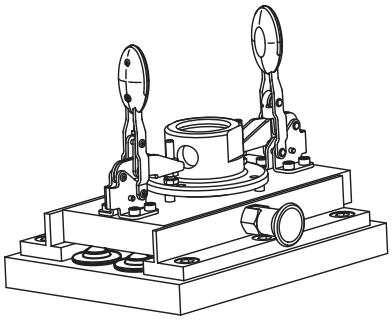
Type B: cap and housing galvanized, bearing balls steel
Type C: cap and housing galvanized, bearing balls stainless steel



Material, version:
Galvanized steel or stainless steel housing.
Polyamid PA 66 ball.

Sample order:
nlm 95152-122

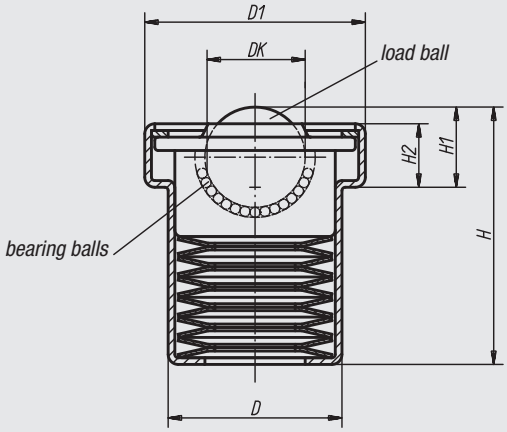
Note:
Ball rollers with plastic balls are particularly suitable for transporting sensitive materials such as polished aluminium, brass and steel sheets or glass.
They have a felt seal to protect against dirt.



Order No.	Version	DK	D	D1	H	H1	H2	Base load C (N)	Approx. weight kg	Tolerance ring suitable for ball rollers
95152-115	B	15,8	24 ±0,065	31	21	9,5	2,8	100	0,028	95164-024
95152-122	B	22,2	36 ±0,080	45	30	9,6	2,8	200	0,096	95164-036
95152-130	B	30	45 ±0,080	55	37	13,6	4	250	0,182	95164-045
95152-215	C	15,8	24 ±0,065	31	21	9,5	2,8	100	0,028	95164-024
95152-222	C	22,2	36 ±0,080	45	30	9,6	2,8	200	0,096	95164-036
95152-230	C	30	45 ±0,080	55	37	13,6	4	250	0,182	95164-045

Ball rollers undersprung

Type B: cap and housing galvanized, balls steel
Type C: cap and housing galvanized, balls stainless steel



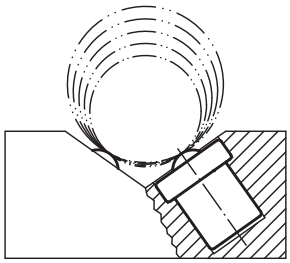
Material, version:
Galvanized steel

Sample order:
nlm 95154-122

Note:
Undersprung ball rollers allow for even distribution of loads for goods with uneven surfaces.
When used in machines such as punch presses and bend form machines the ball rollers spring back up after the forming process and the finished article can be rolled off.

By the „End tension (N)“ the ball has completely receded into the housing.

Mounting option:



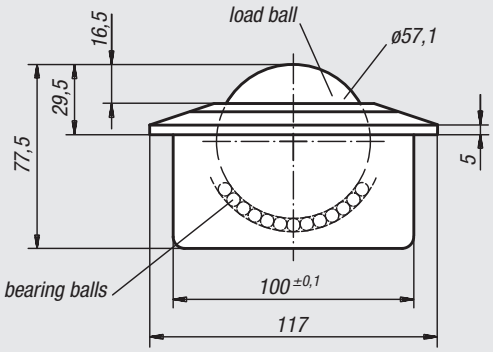
Order No.	Version	DK	D	D1	H	H1	H2	Pre-tension (N)	End tension (N)	Tol. for pre and end tension (%)	Approx. weight kg
95154-122	B	22,2	39	50 ±0,100	51,5	18,5	14	730	860	+25 / -7,5	0,300
95154-130	B	30	48,2	62 ±0,125	70	24,4	17,7	1350	1600	+15 / -7,5	0,600
95154-145	B	45	66,4	85 ±0,150	100,5	35,6	24,2	2280	2770	+15 / -7,5	1,600
95154-222	C	22,2	39	50 ±0,100	51,5	18,5	14	730	860	+25 / -7,5	0,300
95154-230	C	30	48,2	62 ±0,125	70	24,4	17,7	1350	1600	+15 / -7,5	0,600
95154-245	C	45	66,4	85 ±0,150	100,5	35,6	24,2	2280	2770	+15 / -7,5	1,600

95156

Ball roller

with solid steel housing

Type B: cap and housing galvanized, balls steel
Type C: cap and housing galvanized, balls stainless steel



Material, version:
Galvanized steel

Sample order:
nlm 95156-160

Note:
Ball rollers with solid housings remain functional even under heavy impact loads and extreme conditions.
They have a felt seal to protect against dirt.

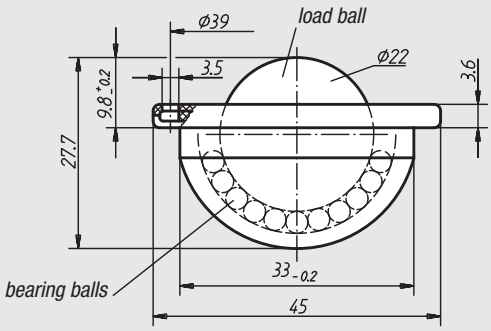
Order No.	Version	Base load C (N)	Approx. weight kg	Tolerance ring suitable for ball rollers
95156-160	B	15000	3,800	95164-100
95156-260	C	10000	3,800	95164-100

95158

Ball rollers

with fastening holes, without housing

Type B: cap and housing galvanized, balls steel
Type C: cap and housing galvanized, balls stainless steel



Material, version:
Galvanized steel

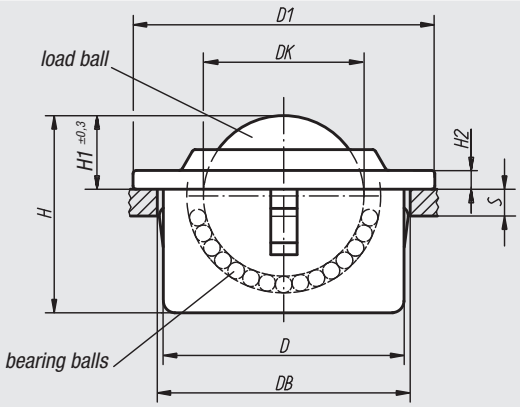
Sample order:
nlm 95158-122

Note:
Ball rollers with fastening holes for easy installation and removal.

Order No.	Version	Number of fastening holes	Base load C (N)	Approx. weight kg
95158-122	B	3	1200	0,100
95158-222	C	3	900	0,100

Ball rollers with spring clips

Type B: cap and housing galvanized, balls steel
Type C: cap and housing galvanized, balls stainless steel

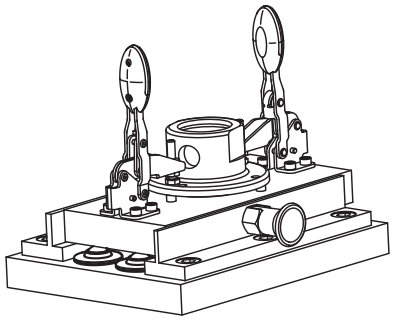


Material, version:
Galvanized steel

Sample order:
nlm 95160-122

Note:
Ball rollers with spring clip for easy installation and removal from the functional side. The roller is held in place with spring clips, this permits generous tolerances in the receiving hole. They have a felt seal to protect against dirt.

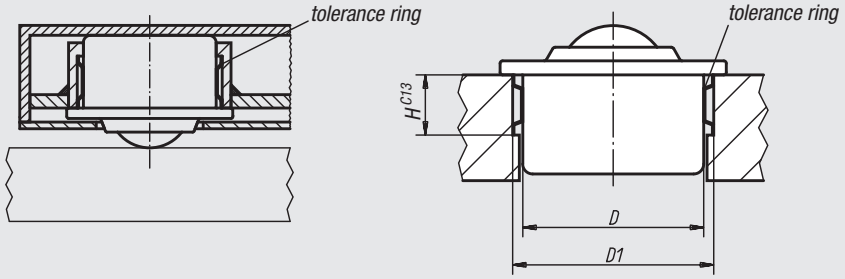
S = Minimum nominal thickness of mounting base.



Order No.	Version	DK	D	D1	Receiving-Ø DB	H	H1	H2	S	Base load C (N)	Approx. weight kg
95160-115	B	15,8	24 ±0,1	31	25 +0,5	21	9,5	2,8	2	600	0,043
95160-122	B	22,2	36 ±0,1	45	37 +0,5	30	9,8	2,8	3	1600	0,132
95160-130	B	30	45 ±0,1	55	46 +0,5	37	13,8	4	6	3000	0,278
95160-215	C	15,8	24 ±0,1	31	25 +0,5	21	9,5	2,8	2	600	0,043
95160-222	C	22,2	36 ±0,1	45	37 +0,5	30	9,8	2,8	3	1600	0,132
95160-230	C	30	45 ±0,1	55	46 +0,5	37	13,8	4	6	3000	0,278

Tolerance rings

Mounting example:



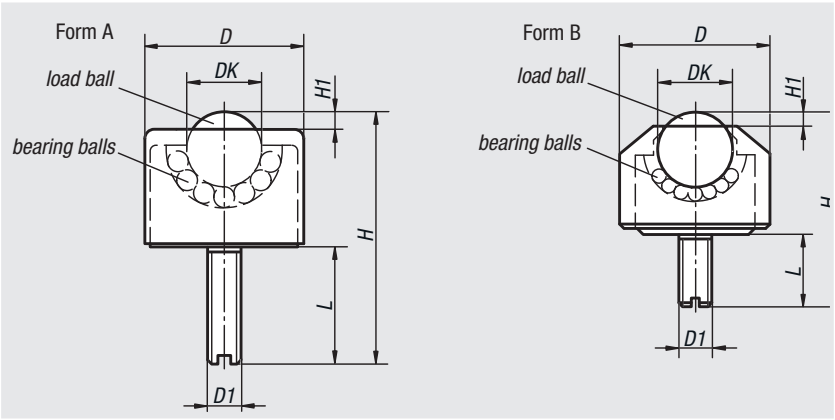
Material:
Spring band steel

Sample order:
nlm 95164-024

Note:
The use of tolerance rings allows for a greater tolerance range between the parts being assemble.
The ball rollers can be fitted quickly and cost effectively.

Order No.	D	Assembly dimensions D1	Assembly dimensions H
95164-024	24	25,7 +0,2	7
95164-036	36	37,7 +0,2	12
95164-045	45	46,7 +0,2	12
95164-062	62	64,1 +0,3	15
95164-100	100	102,5 +0,35	19

Mini ball transfer units



Material, version:
Steel version:
steel load ball.
Steel supporting ball.
Housing galvanized steel.Cover galvanized steel.

Stainless steel version:
stainless steel load ball.
Stainless steel supporting ball.
Stainless steel housing.
Aluminium cover.

Sample order:
nlm 95180-1105

Note:
The ball rollers comprise a housing with integrated bearing shell, a cover, a load ball and several supporting balls. For use in measuring instruments, material conveyance in clean rooms and miniature mechanisms.

Order No.	Version	Form	DK	D	D1	H	H1	L	Base load C (N)	Approx. weight kg
95180-1105	Steel	A	4,8	13	M6	24	1	15	100	0,01
95180-1106	Steel	A	6,4	17	M6	26	2	15	200	0,02
95180-1108	Steel	A	7,9	18	M8	32	2	18	300	0,03
95180-1110	Steel	A	9,6	23	M8	40	2	20	400	0,06
95180-1113	Steel	A	12,7	28	M8	48	3,5	23	500	0,1
95180-1216	Steel	B	15,8	24	M6	32,5	4	12	700	0,06
95180-2205	Stainless steel	B	4,8	8	M2	8,5	1	2,5	50	0,003
95180-2206	Stainless steel	B	6,4	13	M3	16,5	2	6	100	0,007
95180-2208	Stainless steel	B	7,9	15	M4	20,5	2	8	150	0,012