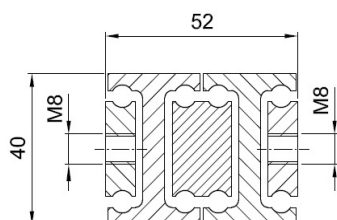


■ Over extension

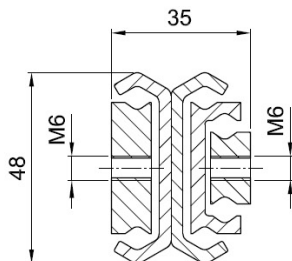
NTSU040

See page 27



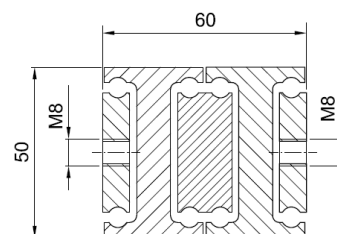
NTU048

See page 28



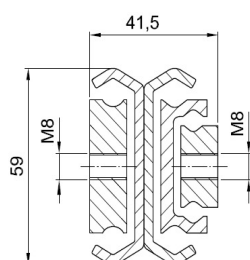
NTSU050

See page 29



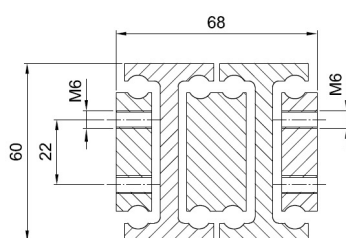
NTU059

See page 30



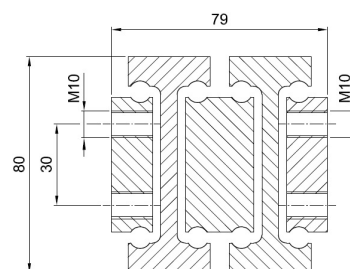
NTSU060

See page 31



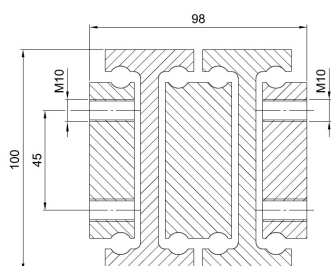
NTSU080

See page 32



NTSU100

See page 33

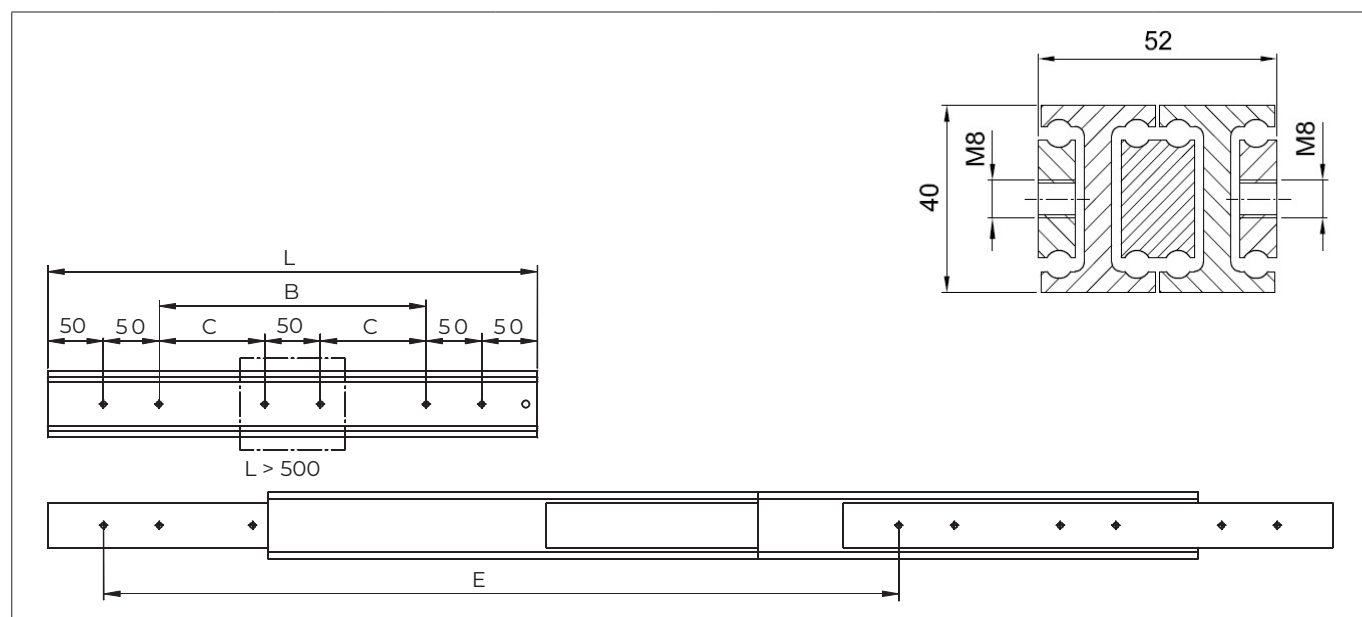
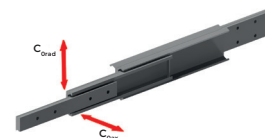


		Technical Manual				Material				Options											
Product group	Designation	L from	L to	Extension length	Load (N)	ST	NX2	NX4	A	VG	VO	VOG	EHG	EHO	EOG	EDG	NC4	FDOG	VR	VRM	
Over Extension	NTSU040	250	1200	~200%	- *	x	x	x	x								x				
	NTU048	250	1200	~150%	300-750	x										x	x				
	NTSU050	300	1500	~200%	- *	x	x	x	x								x				
	NTU059	300	1500	~150%	700-2000	x				x			x	x	x	x	x				
	NTSU060	500	1500	~200%	- *	x	x		x	x							x	x	x		
	NTSU080	500	1500	~200%	- *	x	x			x							x	x	x		
	NTSU100	650	1500	~200%	- *	x	x			x							x	x	x		

Legend	
ST	Standard steel with Zinc-Plating
NX2	AISI 304 profiles, cage and balls
NX4	AISI 316 profiles, cage and balls
A	Aluminium profiles, AISI 304 cage and balls
VG	guide locking in closed position with manual lever
VO	guide locking in open position with manual lever
VOG	guide locking in open and closed position with manual lever
EHG	forced opening and closing by spring pressure plungers
EHO	forced closure by spring pressure plungers
EOG	forced opening by spring plungers
EDG	rubber damper when retracted
NC4	zinc-nickel plating treatment on profiles - AISI 304 balls and cages
FDOG	spring damper when retracted
VR	extraction in both directions
VRM	synchronous extraction in both directions by means of a cam system
AZ	special extraction length NTT48-22T-1000-AZ1080 = Extension Length 1080 mm
VS1	reduced clearance – preload class VS1
VS2	reduced clearance – preload class VS2
LL	increased clearance for temperatures up to 200 °C
LS	increased clearance for temperatures > 200 °C

* on request, please contact our application engineering division

NTSU040 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTSU040-250	50		250	500	- *	2.0
NTSU040-300	100		300	600	- *	2.5
NTSU040-350	150		350	700	- *	2.9
NTSU040-400	200		400	800	- *	3.3
NTSU040-450	250		450	900	- *	3.7
NTSU040-500	300		500	1000	- *	4.1
NTSU040-550		150	550	1100	- *	4.5
NTSU040-600		175	600	1200	- *	4.9
NTSU040-650		200	650	1300	- *	5.3
NTSU040-700		225	700	1400	- *	5.7
NTSU040-750		250	750	1500	- *	6.1
NTSU040-800		275	800	1600	- *	6.5
NTSU040-850		300	850	1700	- *	7.0
NTSU040-900		325	900	1800	- *	7.4
NTSU040-950		350	950	1900	- *	7.8
NTSU040-1000		375	1000	2000	- *	8.2
NTSU040-1100		425	1100	2200	- *	9.0
NTSU040-1200		475	1200	2400	- *	9.8

Tab. 18

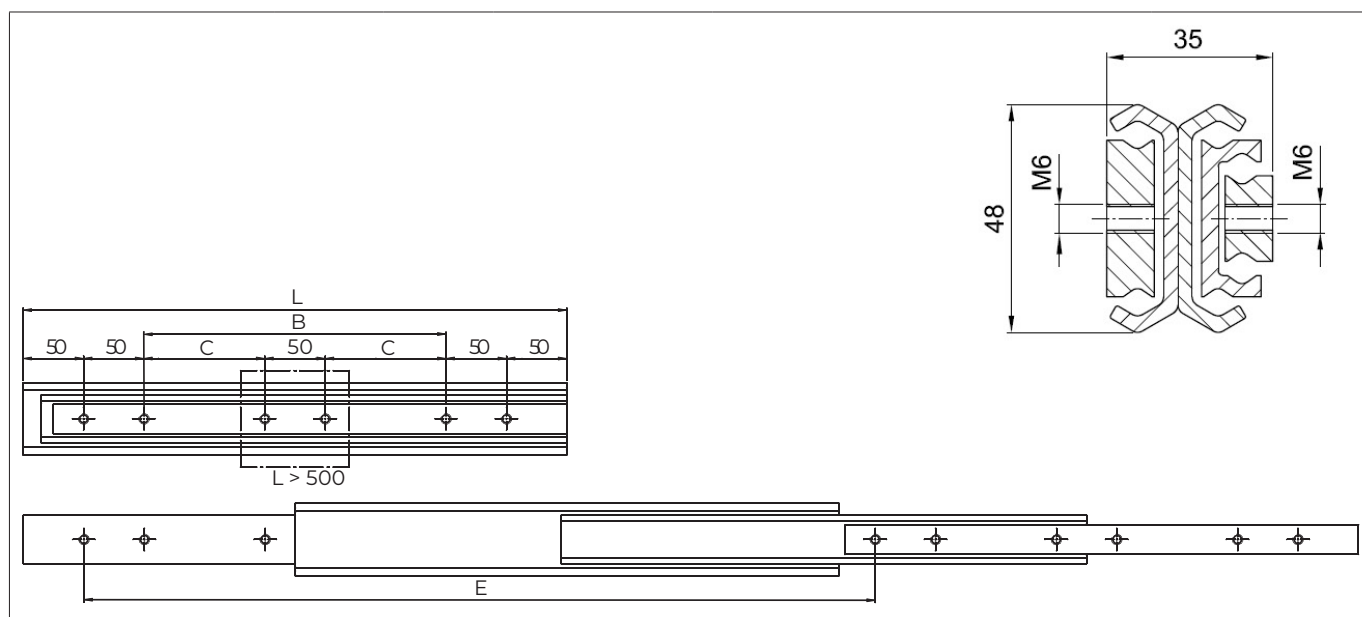
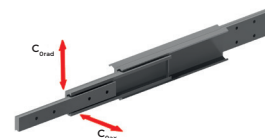
MATERIAL: Zinc-plated steel

ON REQUEST: Aluminum, AISI 304 or 316 stainless steel

For options or special request, please contact our application engineering

* on request, please contact our application engineering division

NTU048 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTU048-250	50		250	375	600	2.0
NTU048-300	100		300	450	650	2.5
NTU048-350	150		350	525	710	2.9
NTU048-400	200		400	600	750	3.3
NTU048-450	250		450	675	750	3.7
NTU048-500	300		500	750	750	4.1
NTU048-550		150	550	825	750	4.5
NTU048-600		175	600	900	710	4.9
NTU048-650		200	650	975	710	5.3
NTU048-700		225	700	1050	650	5.7
NTU048-750		250	750	1125	600	6.1
NTU048-800		275	800	1200	550	6.5
NTU048-850		300	850	1275	500	7.0
NTU048-900		325	900	1350	450	7.4
NTU048-950		350	950	1425	380	7.8
NTU048-1000		375	1000	1500	350	8.2
NTU048-1100		425	1100	1675	320	9.0
NTU048-1200		475	1200	1750	300	9.8

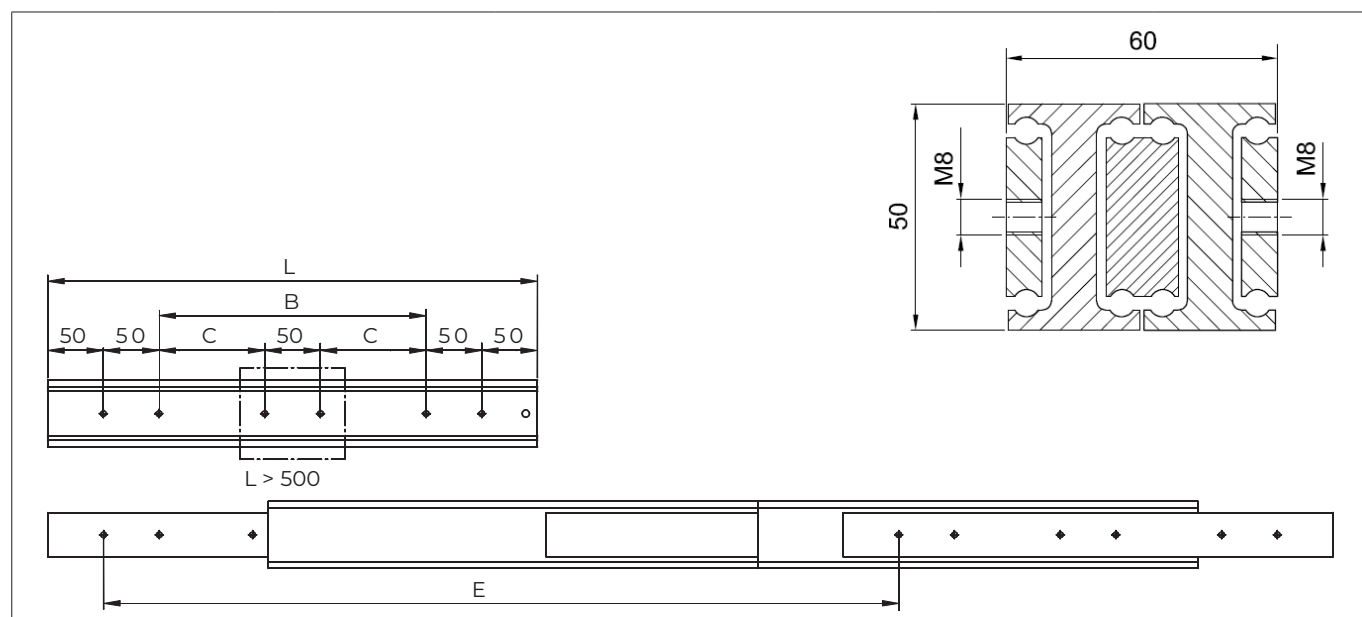
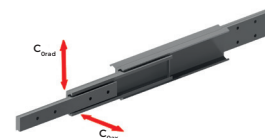
Tab. 19

MATERIAL: Zinc-plated steel

ON REQUEST: Aluminum, AISI 304 or 316 stainless steel

For options or special request, please contact our application engineering division

NTSU050 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTSU050-300	100		300	600	- *	3,3
NTSU050-350	150		350	700	- *	3,8
NTSU050-400	200		400	800	- *	4,4
NTSU050-450	250		450	900	- *	4,9
NTSU050-500	300		500	1000	- *	5,5
NTSU050-550		150	550	1100	- *	6,0
NTSU050-600		175	600	1200	- *	6,6
NTSU050-650		200	650	1300	- *	7,1
NTSU050-700		225	700	1400	- *	7,7
NTSU050-750		250	750	1500	- *	8,2
NTSU050-800		275	800	1600	- *	8,8
NTSU050-850		300	850	1700	- *	9,3
NTSU050-900		325	900	1800	- *	9,9
NTSU050-950		350	950	1900	- *	10,4
NTSU050-1000		375	1000	2000	- *	11,0
NTSU050-1100		425	1100	2200	- *	12,1
NTSU050-1200		475	1200	2400	- *	13,2
NTSU050-1300		525	1300	2600	- *	14,3
NTSU050-1400		575	1400	2800	- *	15,4
NTSU050-1500		625	1500	3000	- *	16,5

Tab. 20

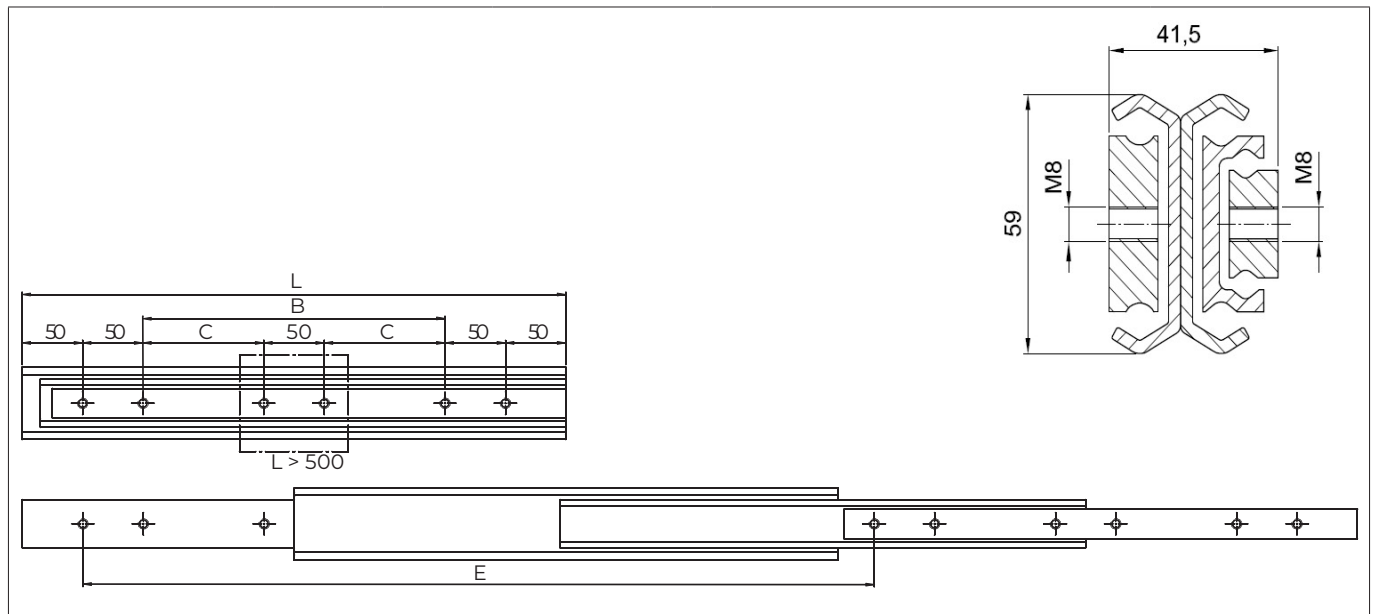
MATERIAL: Zinc-plated steel

ON REQUEST: Aluminum, AISI 304 or 316 stainless steel

For options or special request, please contact our application engineering division

* on request, please contact our application engineering division

NTU059 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTU059-300	100		300	450	1800	3.3
NTU059-350	150		350	525	1900	3.8
NTU059-400	200		400	600	1950	4.4
NTU059-450	250		450	675	2000	4.9
NTU059-500	300		500	750	2000	5.5
NTU059-550		150	550	825	1950	6.0
NTU059-600		175	600	900	1900	6.6
NTU059-650		200	650	975	1850	7.1
NTU059-700		225	700	1050	1800	7.7
NTU059-750		250	750	1125	1750	8.2
NTU059-800		275	800	1200	1700	8.8
NTU059-850		300	850	1275	1630	9.3
NTU059-900		325	900	1350	1560	9.9
NTU059-950		350	950	1425	1490	10.4
NTU059-1000		375	1000	1500	1420	11.0
NTU059-1100		425	1100	1650	1290	12.1
NTU059-1200		475	1200	1800	1160	13.2
NTU059-1300		525	1300	1950	1020	14.3
NTU059-1400		575	1400	2100	860	15.4
NTU059-1500			1500	2250	700	16.5

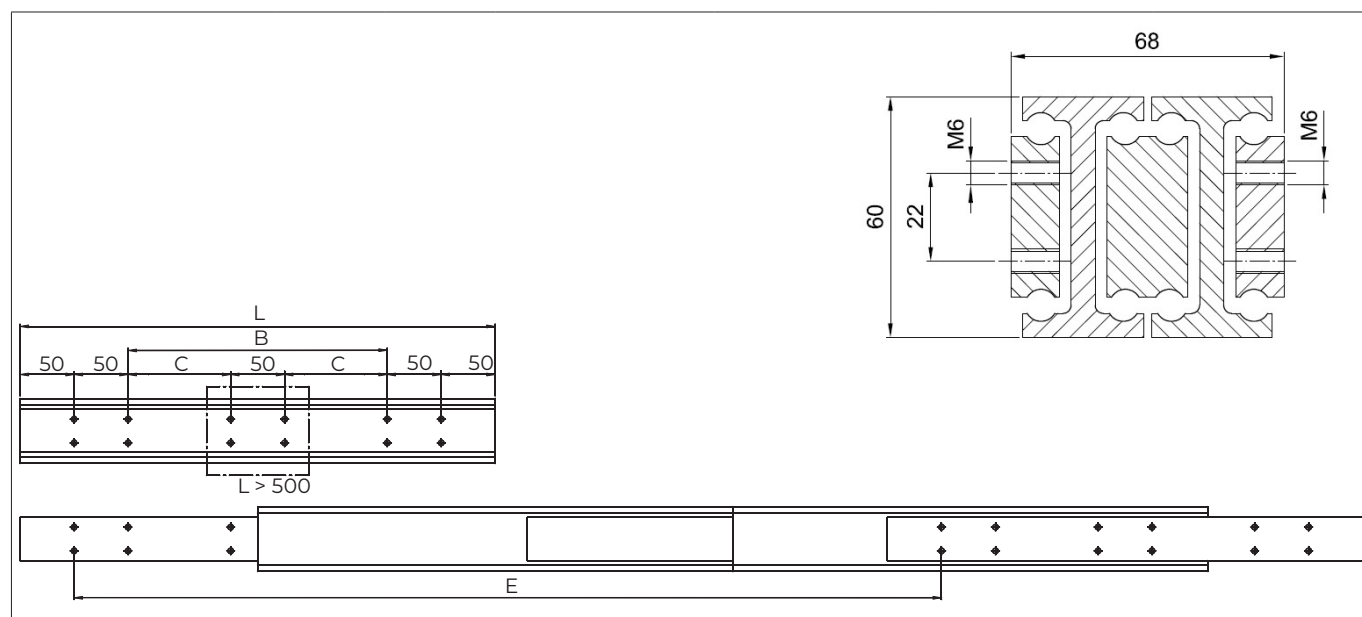
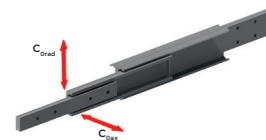
Tab. 21

MATERIAL: Zinc-plated steel

ON REQUEST: AISI 304 or 316 stainless steel

For options or special request, please contact our application engineering division

NTSU060 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTSU060-500	300		500	1000	- *	11.5
NTSU060-550		150	550	1100	- *	12.6
NTSU060-600		175	600	1200	- *	13.8
NTSU060-650		200	650	1300	- *	14.9
NTSU060-700		225	700	1400	- *	16.0
NTSU060-750		250	750	1500	- *	17.1
NTSU060-800		275	800	1600	- *	18.2
NTSU060-850		300	850	1700	- *	19.4
NTSU060-900		325	900	1800	- *	20.5
NTSU060-950		350	950	1900	- *	21.7
NTSU060-1000		375	1000	2000	- *	22.8
NTSU060-1100		425	1100	2200	- *	25.0
NTSU060-1200		475	1200	2400	- *	27.3
NTSU060-1300		525	1300	2600	- *	29.6
NTSU060-1400		576	1400	2800	- *	31.8
NTSU060-1500		625	1500	3000	- *	34.1

Tab. 22

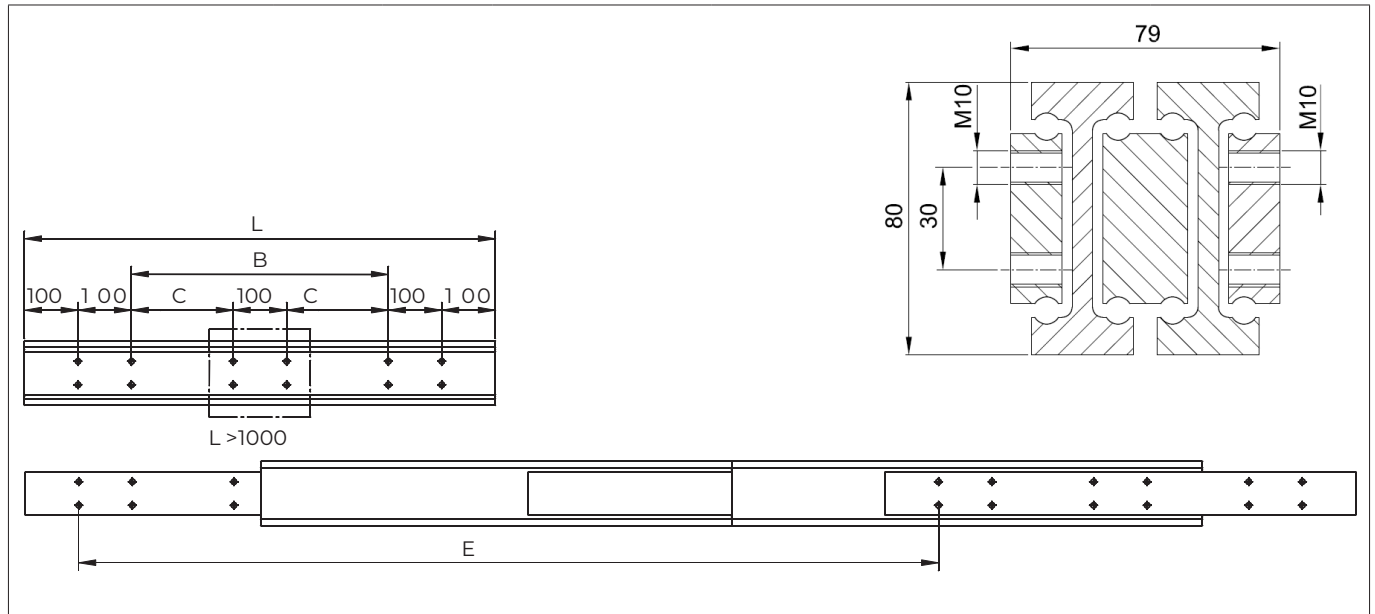
MATERIAL: Zinc-plated steel

ON REQUEST: Aluminum, AISI 304 or 316 stainless steel contact our application engineering division.

For options or special request, please contact our application engineering division

* on request, please contact our application engineering division

NTSU080 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTSU080-500	100		500	1000	- *	17.6
NTSU080-550	150		550	1100	- *	19.3
NTSU080-600	200		600	1200	- *	21.1
NTSU080-650	250		650	1300	- *	22.8
NTSU080-700	300		700	1400	- *	24.8
NTSU080-750	350		750	1500	- *	26.3
NTSU080-800	400		800	1600	- *	28.0
NTSU080-850	450		850	1700	- *	29.8
NTSU080-900	500		900	1800	- *	31.5
NTSU080-950	550		950	1900	- *	33.3
NTSU080-1000	600		1000	2000	- *	35.0
NTSU080-1100		300	1100	2200	- *	38.5
NTSU080-1200		350	1200	2400	- *	42.0
NTSU080-1300		400	1300	2600	- *	45.4
NTSU080-1400		450	1400	2800	- *	48.9
NTSU080-1500		500	1500	3000	- *	52.4

Tab. 23

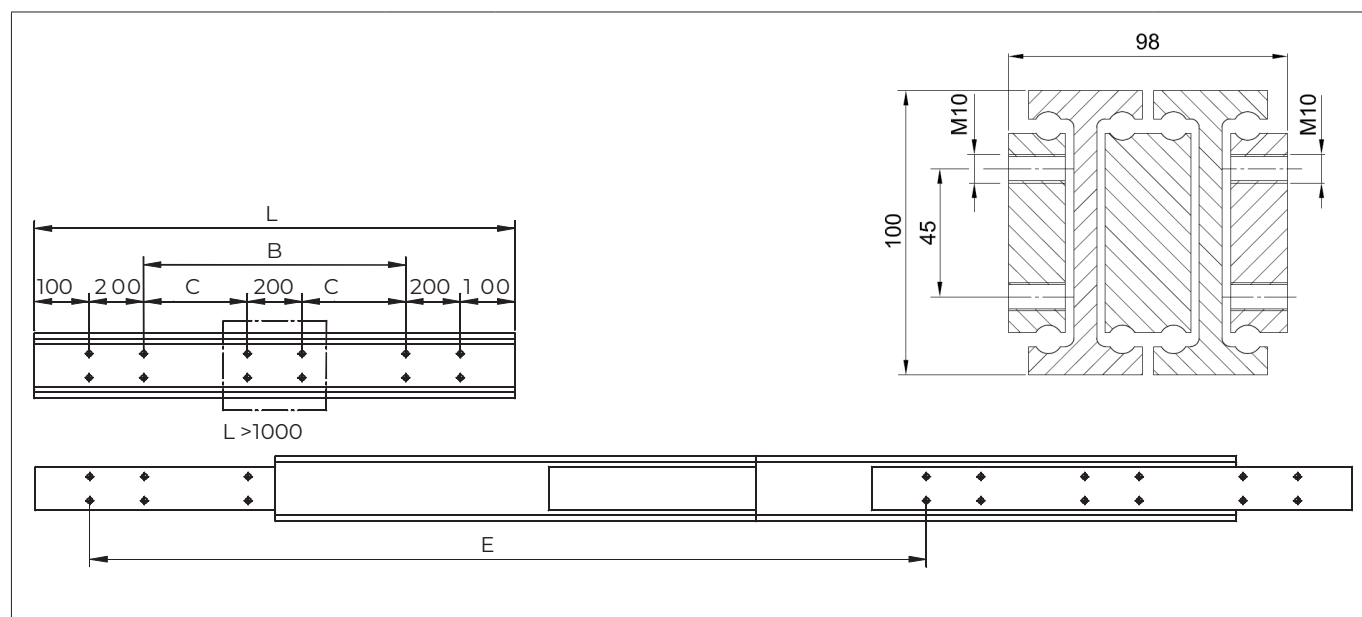
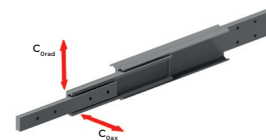
MATERIAL: Zinc-plated steel

ON REQUEST: AISI 304 or 316 stainless steel

For options or special request, please contact our application engineering division

* on request, please contact our application engineering division

NTSU100 - Over extension



Order Number	Hole Separation		Length	Extension	Maximum Load/Pair	Net Weight
	B [mm]	C [mm]	L [mm]	E [mm]	[N]	[kg]
NTSU100-650	50		650	1300	- *	39.1
NTSU100-700	100		700	1400	- *	42.1
NTSU100-750	150		750	1500	- *	45.1
NTSU100-800	200		800	1600	- *	48.2
NTSU100-850	250		850	1700	- *	51.2
NTSU100-900	300		900	1800	- *	54.2
NTSU100-950	350		950	1900	- *	57.2
NTSU100-1000	400		1000	2000	- *	60.2
NTSU100-1100		150	1100	2200	- *	66.2
NTSU100-1200		200	1200	2400	- *	72.2
NTSU100-1300		250	1300	2600	- *	78.3
NTSU100-1400		300	1400	2800	- *	84.3
NTSU100-1500		350	1500	3000	- *	90.3

Tab. 24

MATERIAL: Zinc-plated steel

ON REQUEST: AISI 304 or 316 stainless steel

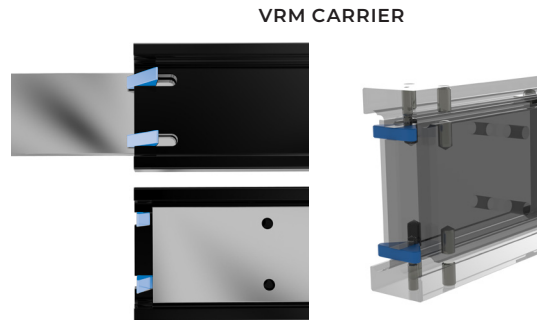
For options or special request, please contact our application engineering division

* on request, please contact our application engineering division

► ACCESSORIES

■ Forward and Backward Extension (VR, VRM)

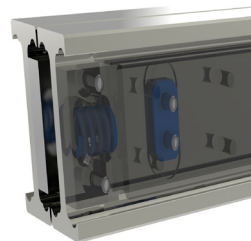
Several telescopic rails of the full extensions range can be delivered with extraction in both directions (VR). The intermediate member can be controlled as synchronous extraction by means of cams (VRM). The advantage is a higher security because the unintentional moving of the middle element can be prevented. The loads at the end of a telescopic slide can be better supported with an optimum distribution.



■ End Stops and Dampers (EDG, FDOG)

End stops are standardized equipment for all telescopic slides. Furthermore special dampers can be provided for numerous extensions. There is the possibility to choose between simple cheap plastic or elastomer dampers – fixed directly at the end – or special spring dampers.

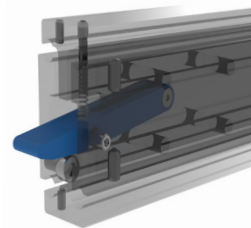
FDOG DAMPER



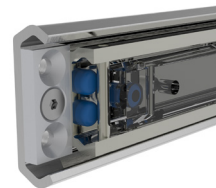
■ Catches (EHG, EHO, EOG) or Lockings (VO, VG, VOG)

Lockings are non-positive fixings by means of spring pressure pieces, which can be integrated in many telescopic guides for the closed position, the extended end position or for both end positions. This effectively prevents the drawers from opening and closing independently. With some telescopic pull-outs, brackets in intermediate positions are also possible. Locks are form-fitting locks that fix the pullouts in the respective end positions using locking bolts or snap locks. Unintentional extension or retraction is not possible without mechanical unlocking, even with effort. This variant can be implemented for the inner, outer or both end positions and thus offers good protection for people and material in special applications.

LOCKING



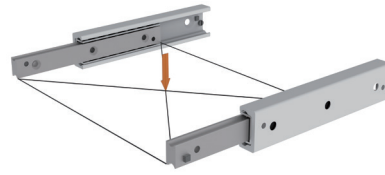
CATCHES



► USE AND MAINTENANCE

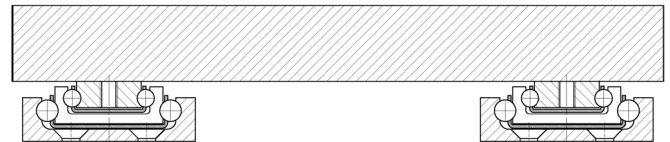
■ General Basic Conditions:

- ▣ Pair wise operation
- ▣ Cross section in vertical position
- ▣ Center of gravity of load in the middle between telescopic slide pairs
- ▣ Center of gravity of load in the middle of the rail drawers
- ▣ Permissible loads can only be reached when using all standard fixing points



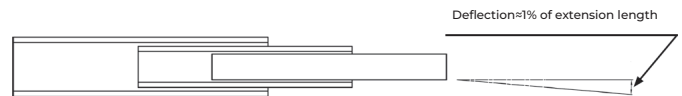
■ Standard application: Drawer extension telescopic rails vertical.

With flat mounting of the telescopic rails up to 50 % of the allowed loads can be used depending on the type of rail. Besides the deflection will be significantly higher. Therefore a horizontally installation is recommended for a limited extend only when using small rails or extensions less than 600 mm. If this is the case, please contact Nadella's technical service for additional information.



■ Spring deflection

spring deflection means the deflection of the full telescopic guide under maximum load. Telescopic rails which are correctly installed and with equally divided load between the extension pairs only have a very low deflection because of their rigid body. The standard telescopic rails have a spring deflection of approx. 1 % with the maximum use of the load, pair wise use and radial load (vertically mounted). Spring Deflection for very long telescopic guides is higher than 1%. For any application with tangential load or horizontal installations, please contact Nadella's technical service.



■ Dynamic and Lifetime

Telescopic rails are mainly aimed for static applications. The recommended operating speed is lower than 0.5 m/s. Continuous operation or more than 10 strokes/min will negatively influence the lifetime. If higher dynamics are required you should use a bigger oversized guide rail. You have also the possibility to use telescopic rails with hardened raceways. The standard operating temperature is between +10°C and +80°C, but depending on the application, the temperature range can be higher up to 300°C. In this case, adaptations must be made regards bearing air and eventually surface coating and special high temperature lubricants are necessary.

■ Installation of Telescopic Rails

The telescopic rails with nearly zero play must be mounted parallel and angled for a perfect operating behaviour. All fixing holes and/or threads should be used for an optimum use of load.

Telescopic rails must be mounted by using screws with a class 8.8 for assembly and to be fixed according to the screw producer's guidelines. Under certain circumstances the guide rails can be equipped with increased bearing air and can be mounted with a slight stroke.

■ Maintenance and Lubrication

Standard rails are delivered fully assembled and greased. Rails made of stainless steel or aluminium will be delivered ungreased. Depending on the surrounding conditions they should be checked from time to time, dirt should be removed and "dry" rails should be regreased. This prevents friction, protects the assembly parts and provides a long life. The regreasing term is variable and should be calculated regards use conditions such as load, travel conditions, temperature, dirt etc.. The ball cages of the telescopic slides are not restraint-guided, consequently the cage can move. In this case the end positions have to be reset.