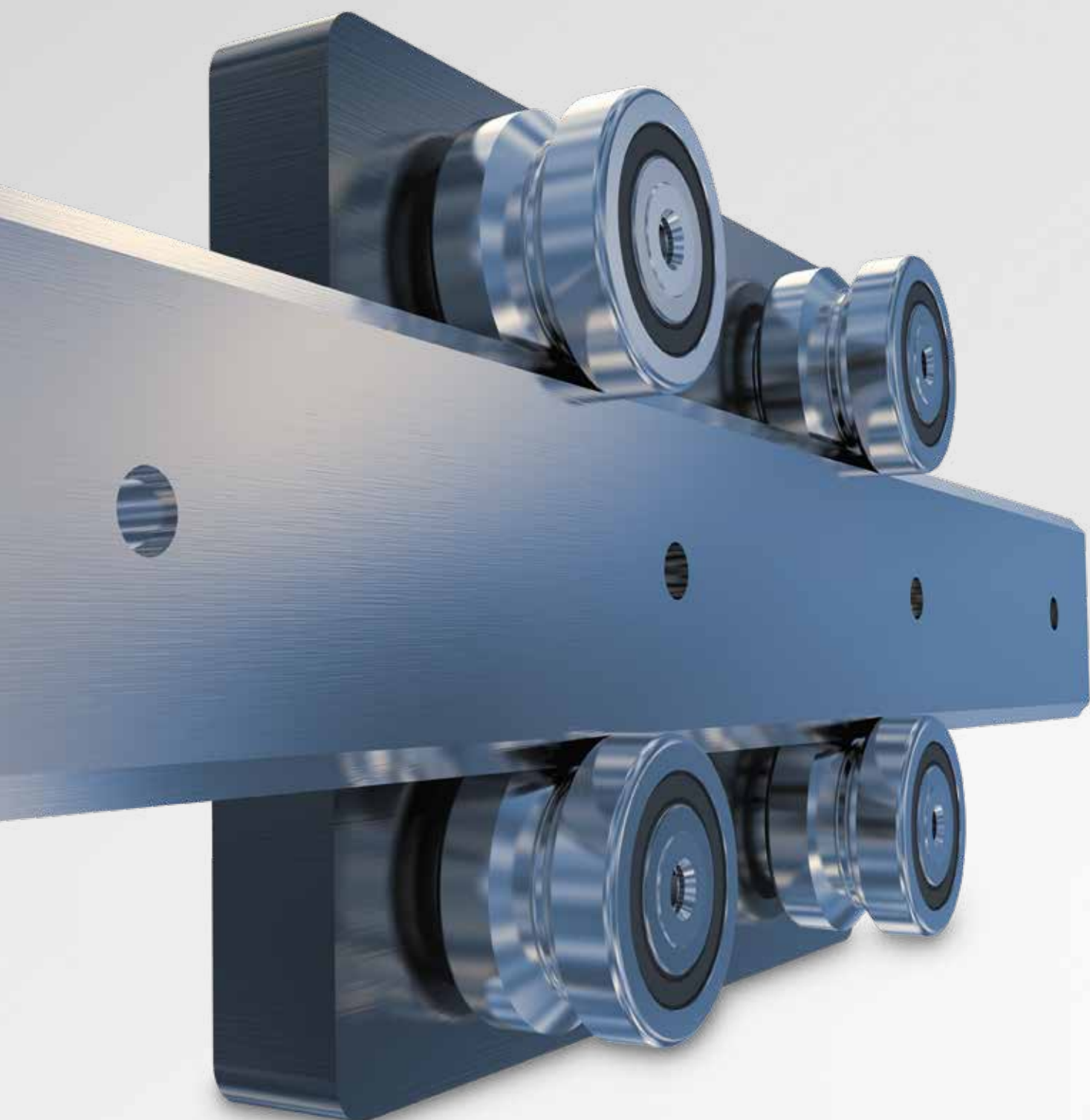




V-LINE



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5.1 SISTEMI V-LINE / FS

For medium-heavy loads

- Guide rails FS ... MT
- Guide rails FS ... M
- Guide rails FSH ... MT, FSX ... MT
- Guide rails FSH ... M, FSX ... M
- Guide rails FSHZ - FSXZ
- Guide rollers FR ... EU
- Guide rollers FR ... EU AS, FR ... EU AZ
- Guide rollers FRN ... EI
- Guide rollers RKY ..., RKX ...
- Guide wheels FKY ..., FKX ...
- Floating guide rollers FRL ... EU
- Floating guide rollers RKXL, RKYL
- Spacers for FS e FSH
- Pinion PZ..
- Lubricator LUBZ..
- Lubricator LUBY for FS guide rollers up to size 40
- Lubricator LUBY, LUBX for FS guide rollers up to size 52 and higher

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5.2 GUIDE ROLLERS COMBINATION

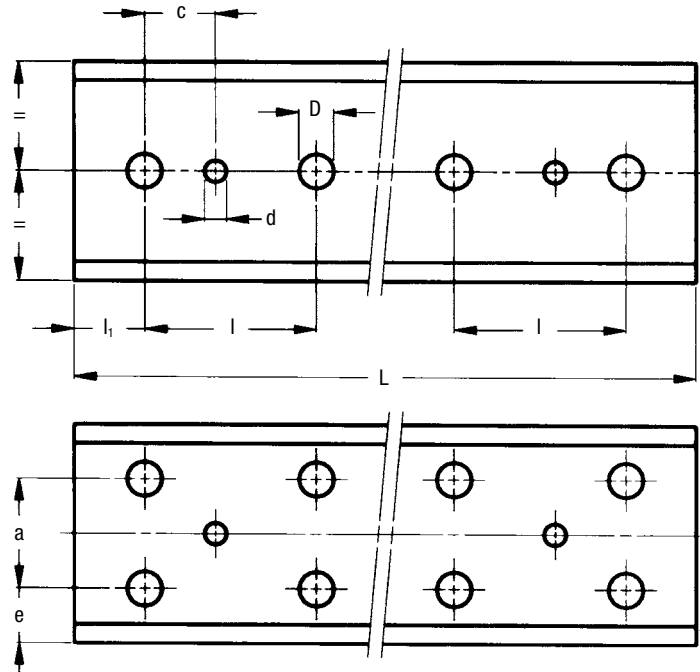
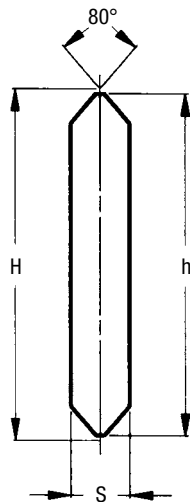
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5.3 MOUNTING EXAMPLES

V-LINE – FS SYSTEM

GUIDE RAILS FS ... MT

Rail in steel with sandblasted raceways.



from FS 19 MT
up to FS 62 MT

FS 72 MT

Type	Dimensions (mm)										Weight ²⁾ (kg/m)
	H ± 0.1	h ± 0.1	S ± 0.1	d ¹⁾ + 0.05	D	c ¹⁾	e	a	l	l ₁	
FS 19 MT	22.2	21	5.3	4	6.5	15	–	–	90	30	0.8
FS 22 MT	28.8	27	5.8	5	6.5	15	–	–	90	30	1.1
FS 32 MT	43.8	42	6.8	6	6.5	15	–	–	90	30	2.1
FS 35 MT	48.8	47	8.8	6	9	20	–	–	90	30	3.0
FS 40 MT	64.5	62	8.8	6	9	20	–	–	90	30	4.1
FS 47 MT	80.15	77.2	11	6	11.5	20	–	–	90	30	6.3
FS 52 MT	91.35	88.2	13	8	13.5	20	–	–	90	30	8.5
FS 62 MT	106	103	15.7	8	13.5	20	–	–	90	30	11.7
FS 72 MT	124.6	121	19	10	17.5	30	30.5	60	90	30	16.9

Max. length in single element L = 6000 mm.

Longer rails are made by juxtaposing several elements with ground end.

1) Standard layout without pin holes (pin holes only on request)

2) Weight without holes

RAILS FINISHING

- Drawn, induction hardened and sandblasted tracks (MT)
- Induction hardening on raceways only

HOLE LAYOUT

- Holes according to catalogue (SB)
- Finishes to drawing (NZ)
- Without holes (NF)

OPTIONAL FEATURES

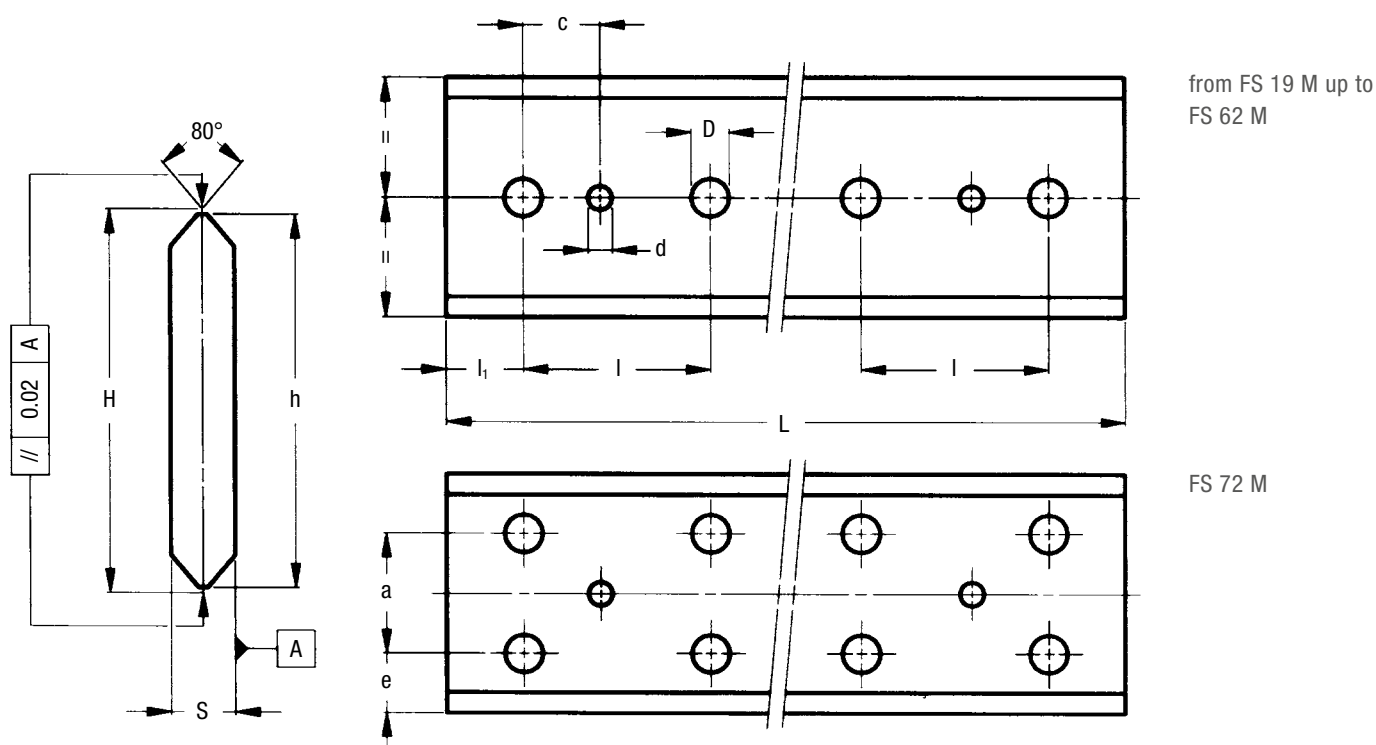
- Ground one end: side of the first hole (1R), side of the last hole (2R)
- Ground both ends (RR)
- Chemical nickel-plating (NW)
- Pin holes¹⁾ (DP).

Example of standard designation: FS 52 MT 5280 SB

GUIDE FS ... M

Rail in steel with ground raceways.

Available in stainless steel version.



Type	Dimensions (mm)										Weight ³⁾ (kg/m)
	H ± 0.05	h ± 0.1	S ± 0.05	d ²⁾ + 0.05	D	c ²⁾	e	a	l	l ₁	
FS 19 M	20.95	20	4.5	4	6.5	15	—	—	90	30	0.6
FS 22 M ¹⁾	27.86	26	5	5	6.5	15	—	—	90	30	0.9
FS 32 M	42.86	41	6	6	6.5	15	—	—	90	30	1.8
FS 35 M ¹⁾	47.86	46	8	6	9	20	—	—	90	30	2.6
FS 40 M	63.58	61	8	6	9	20	—	—	90	30	3.7
FS 47 M ¹⁾	78.58	76	10	6	11.5	20	—	—	90	30	5.6
FS 52 M	89.78	87	12	8	13.5	20	—	—	90	30	7.7
FS 62 M	104.76	102	15	8	13.5	20	—	—	90	30	11.2
FS 72 M	122.98	120	18	10	17.5	30	30	60	90	30	15.8

Max. length in single element L = 4020 mm.

Longer rails are made by juxtaposing several elements with ground end.

1) Size 22, 35 e 47 available in stainless steel (NX)

2) Standard layout without pin holes (pin holes only on request)

3) Weight without holes

RAILS FINISHING

- Drawn, induction hardened and ground profile (M)
- Induction hardening on raceways only

HOLE LAYOUT

- Holes according to catalogue (SB)
- Finishes to drawing (NZ)
- Without holes (NF)

OPTIONAL FEATURES

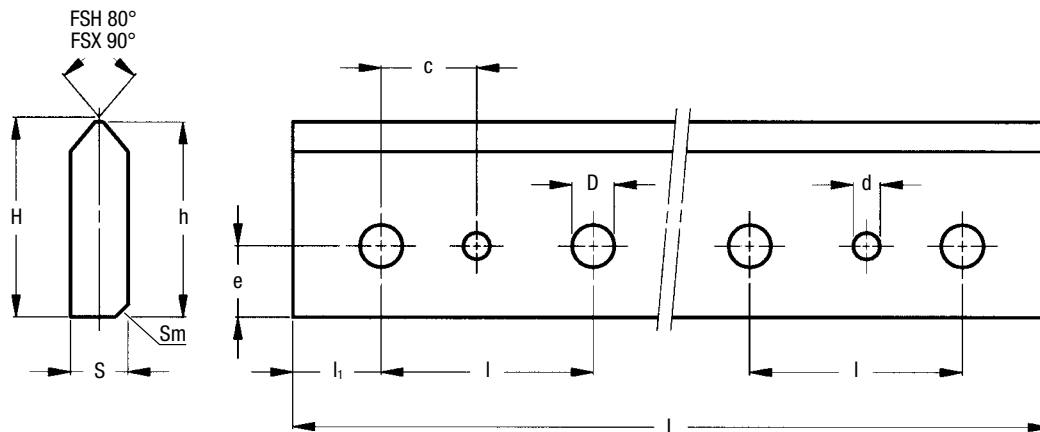
- Stainless steel (NX) ¹⁾
- Ground one end: side of the first hole (1R), side of the last hole (2R)
- Ground both ends (RR)
- Chemical nickel-plating (NW)
- Pin holes ²⁾ (DP).

Example of standard designation: FS 40 M 2760 SB

V-LINE – FS SYSTEM

GUIDE RAILS FSH ... MT, FSX ... MT

Rail in steel with sandblasted raceways.



Type	Dimensions (mm)										Weight ²⁾ (kg/m)
	H ± 0.1	h ± 0.1	S ± 0.1	Sm	d ¹⁾ + 0.05	D	c ¹⁾	e	l	l ₁	
FSH 22 MT	23.9	23	5.8	0.9 x 45°	5	6.5	15	9	90	30	1.0
FSH 32 MT	29.9	29	6.8	1.4 x 45°	6	6.5	15	11	90	30	1.5
FSH 40 MT	37.2	36	8.8	1.4 x 45°	6	9	20	16	90	30	2.4
FSH 52 MT	40.75	39.2	13	2 x 45°	8	13.5	20	17	90	30	3.7
FSH 62 MT	50.75	49.2	16	2 x 45°	8	13.5	20	17	90	30	5.7
FSH 72 MT	60.85	59.2	19	2 x 45°	10	17.5	30	20	90	30	8.2
FSX 90 MT	62.85	61	26.5	1.5 x 45°	10	13.5	30	22	90	30	11.6

Max. length in single element L = 6000 mm.

Longer rails are made by juxtaposing several elements with ground end.

1) Standard layout without pin holes (pin holes only on request)

2) Weight without holes

RAILS FINISHING

- Drawn, induction hardened and sandblasted tracks (MT)
- Induction hardening on raceways and base only

HOLE LAYOUT

- Holes according to catalogue (SB)
- Finishes to drawing (NZ)
- Without holes (NF)

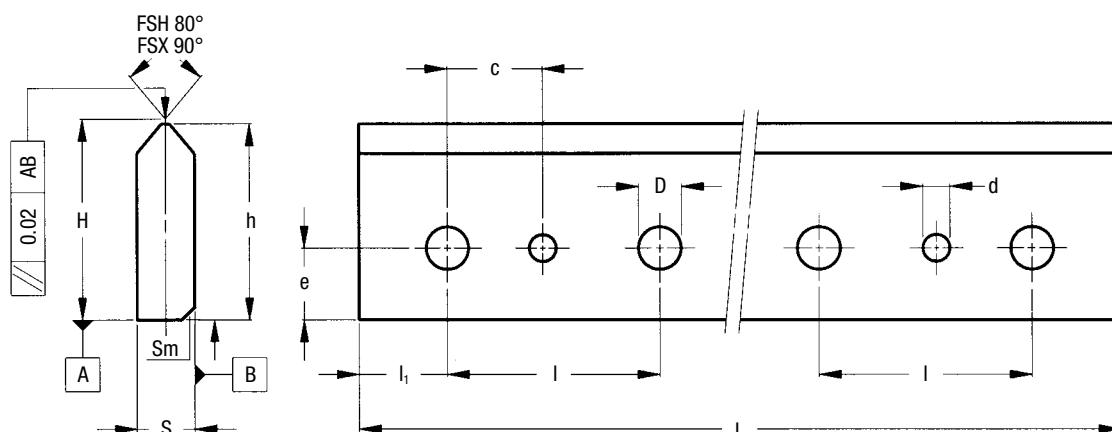
OPTIONAL FEATURES

- Ground one end: side of the first hole (1R), side of the last hole (2R)
- Ground both ends (RR)
- Chemical nickel-plating (NW)
- Pin holes¹⁾ (DP).

Example of standard designation: FSH 52 MT 5280 SB

GUIDE FSH ... M, FSX ... M

Rail in steel with ground raceways.



Type	Dimensions (mm)										Weight ²⁾ (kg/m)
	H ± 0.05	h ± 0.1	S ± 0.05	Sm	d ¹⁾ + 0.05	D	c ¹⁾	e	l	l ₁	
FSH 19 M	18.98	18.5	4.5	0.5 x 45°	4	6.5	15	8	90	30	0.6
FSH 22 M	22.93	22	5	0.2 x 45°	5	6.5	15	9	90	30	0.8
FSH 32 M	28.93	28	6	0.5 x 45°	6	6.5	15	11	90	30	1.2
FSH 40 M	36.29	35	8	0.5 x 45°	6	9	20	16	90	30	2.1
FSH 52 M	39.39	38	12	1 x 45°	8	13.5	20	17	90	30	3.4
FSH 62 M	49.38	48	15	1 x 45°	8	13.5	20	17	90	30	5.2
FSH 72 M	59.49	58	18	1 x 45°	10	17.5	30	20	90	30	7.6
FSX 90 M	61.79	60	26	0.5 x 45°	10	13.5	30	22	90	30	11

Max. length in single element L = 4020 mm.

Longer rails are made by juxtaposing several elements with ground end.

1) Standard layout without pin holes (pin holes only on request)

2) Weight without holes

RAILS FINISHING

- Drawn, induction hardened and ground profile (M)
- Induction hardening on raceways and base only

HOLE LAYOUT

- Holes according to catalogue (SB)
- Finishes to drawing (NZ)
- Without holes (NF)

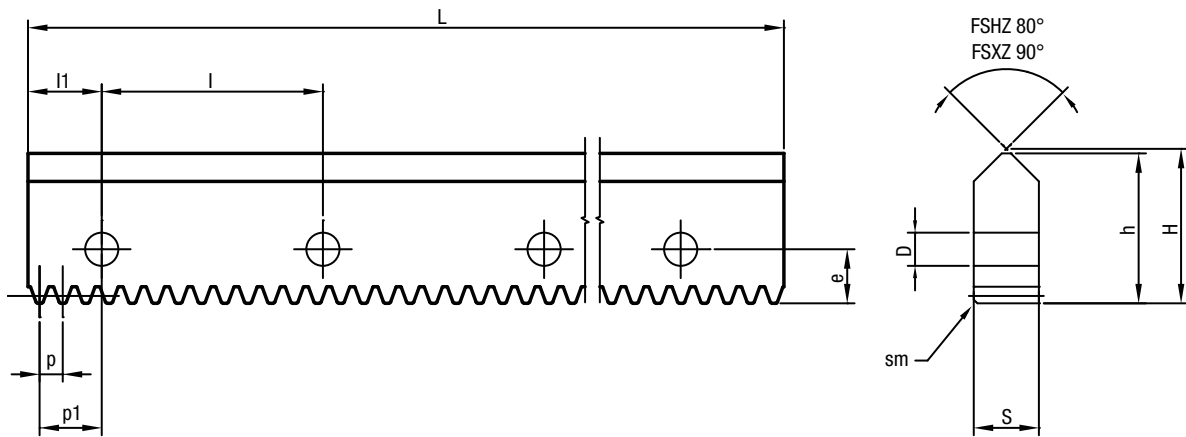
OPTIONAL FEATURES

- Ground one end: side of the first hole (1R), side of the last hole (2R)
- Ground both ends (RR)
- Chemical nickel-plating (NW)
- Pin holes ¹⁾ (DP).

Example of standard designation: FSH 40 M 2760 SB

GUIDE FSHZ FSXZ

Steel guides with integrated rack



Type	H	h	S	Sm x 45°	Module	Step p	D	e	l	l ₁	p ₁	Push ²⁾ (N)	Weight ¹⁾ (kg/m)
FSHZ 52 MT	40.75	39.2	13	2	m 1.5	4.712	13.5	17	90	30	27.64	1100	3.6
FSHZ 72 MT	60.85	59.2	19	2	m 2	6.283	17.5	20	90	30	26.86	2100	8
FSXZ 90 MT	62.85	61	26.5	1.5	m 3	9.425	13.5	22	90	30	25.29	4400	11

Maximum length of single element $L = 3000$ mm.
Longer rails are made by juxtaposing several elements with ground end.

1) Weight without holes

2) Calculated thrust with lubricated rack coupled with a Z20 pinion to achieve a long service life.
Apply a safety factor according to the type of application.

FINISHING ..MT

- Drawn induction hardened on raceway and sand blaster
- Standard rack type: straight, cut and hardened Quality 10

ON REQUEST

- Ground rail ..M
- Induction hardened and ground rack
- Angle rack - special rack on request

HOLE LAYOUT:

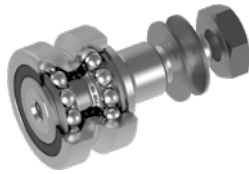
- Holes accordingly to catalogue (SB)
- Finished to drawing (NZ)
- Without holes (NF)

Example of standard designation: FSXZ90MT 2300 SB

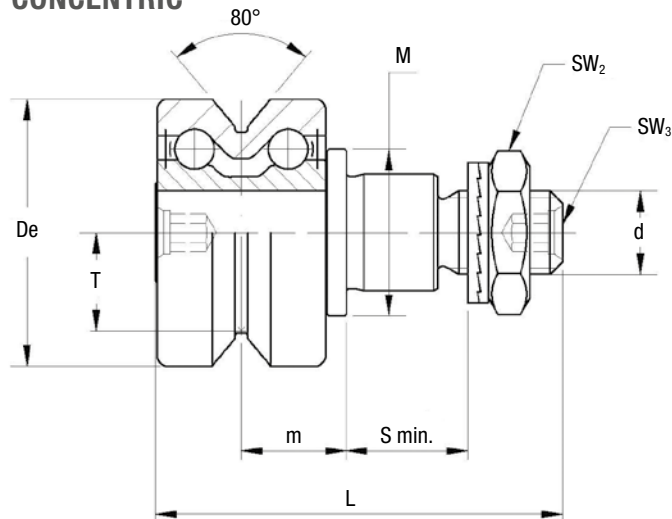
V-LINE / FS SYSTEM

GUIDE ROLLERS FR ... EU

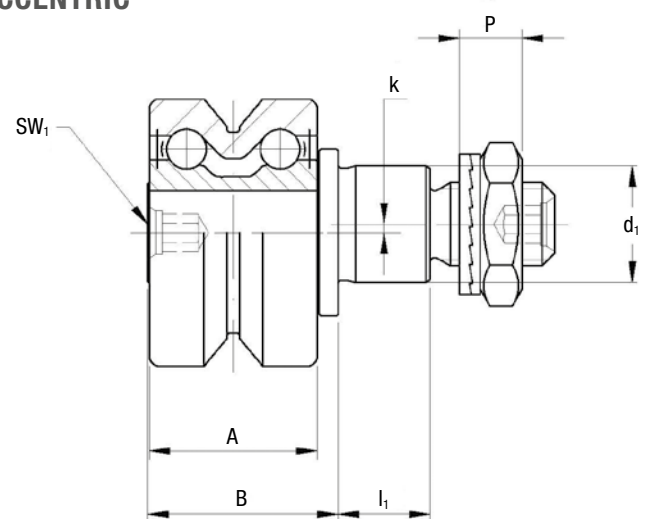
Guide roller with ball bearings.
The sides of the race are slightly convex.



CONCENTRIC



ECCENTRIC



Type		Dimensions (mm)															
concentric	eccentric	De	d ₁ ²⁾	d	T	m	S _{min.}	P	L	A	B	I ₁	M	SW ₁	SW ₂	SW ₃	k
FR 22 EU ^{1) 3)}	FRR 22 EU ^{1) 3)}	22	9	M6 x 1	7.7	9.4	9	6.5	36.8	15	18	8	14	4	10	2,5	0.5
FR 32 EU ¹⁾	FRR 32 EU ¹⁾	32	14	M10 x 1.25	11.8	12.6	12	8.5	48.9	20.2	22.9	11	20	4	17	4	1
FR 40 EU ¹⁾	FRR 40 EU ¹⁾	40	16	M12 x 1.5	14.6	15.5	12	10.4	58.5	25	29.5	11	22	5	19	5	1
FR 52 EU	FRR 52 EU	52	21	M16 x 1.5	19.1	19.8	15	11.4	69.5	32	36.5	14	28	6	24	6	1.5
FR 62 EU	FRR 62 EU	62	27	M20 x 1.5	22.1	20.8	18.5	12.4	80	33.6	39	17.5	35	8	30	8	2

1) FR/R 22, 32, 40 are available in stainless steel (NX)

2) Housing bore tolerance: H7

3) FR/R 22 EUNX: VAC for high vacuum applications on request

Type		Dynamic load (N)	Limit loads (N)		Life coefficients		Torque wrench settings ⁵⁾ (Nm)	Weight (g)
		C _w ⁴⁾	Radial F _r	Axial F _a	X	Y		
FR 22 EU	FRR 22 EU	2900	1400	420	1	2	5	45
FR 32 EU	FRR 32 EU	5800	2000	800	1	1.9	20	125
FR 40 EU	FRR 40 EU	8500	3650	1400	1	1.9	26	230
FR 52 EU	FRR 52 EU	11700	8500	3000	1	1.9	64	510
FR 62 EU	FRR 62 EU	13900	11000	3500	1	1.9	120	765

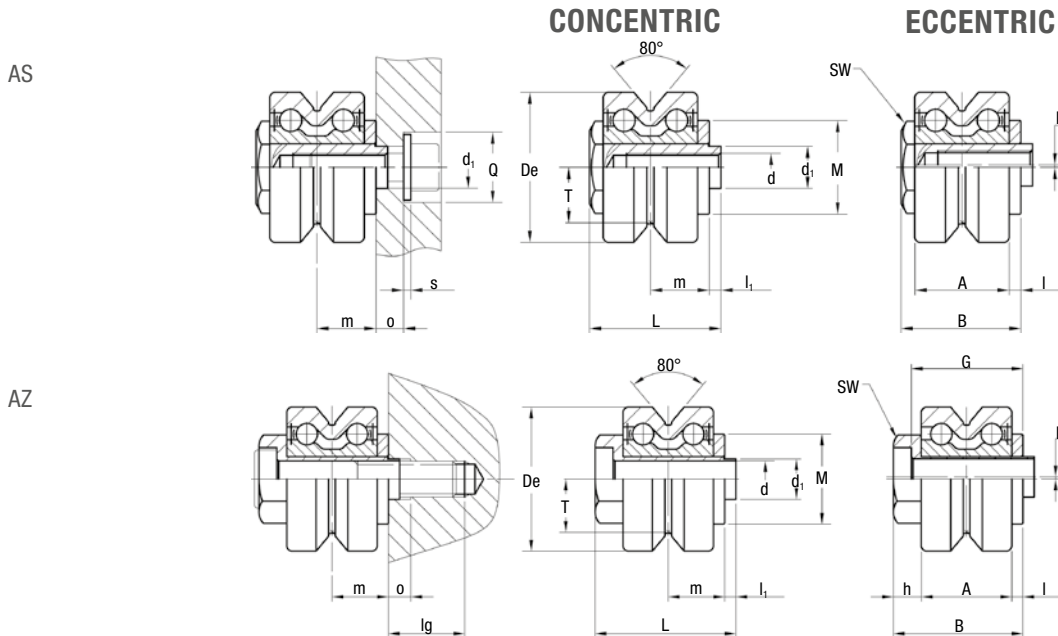
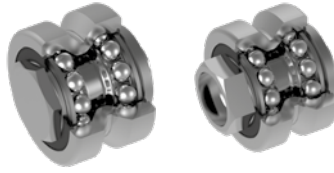
4) C_w basic load for 100 km

5) The torque wrench settings are given for non-lubricated threads; for lubricated threads, multiply figure by 0.8

- The guide rollers are complete with self-locking washers and hexagonal nut (DIN 439B) for fitting
- Standard: NBR seals RS type
- Pressure angle α for load calculation: 40°

GUIDE ROLLERS FR ... EU AS, FR ... EU AZ

Guide rollers with ball bearings.



Type		Dimensions (mm)																		
concentric	eccentric	De	d ₁ ²⁾	d ³⁾	T	m	L	A	B	I ₁	I	h	M	SW	G	o	Q	lg ⁴⁾	s	k
FR 22 EU AS ¹⁾ 7)	FRR 22 EU AS ¹⁾ 7)	22	6	M 5	7.7	9.4	21.8	15	19.8	2	1.9	—	14	10	—	4.5	10	—	0	0.5
FR 32 EU AS ¹⁾	FRR 32 EU AS ¹⁾	32	9	M 6	11.8	12.6	28.1	20.2	25.6	2.5	2.5	—	20	17	—	6	15	—	1.5 ⁵⁾	0.5
FR 40 EU AS ¹⁾	FRR 40 EU AS ¹⁾	40	11	M 8	14.6	15.5	33.5	25	31	2.5	3	—	22	22	—	6.5	20	—	2 ⁵⁾	1
FR 52 EU AS	FRR 52 EU AS	52	16	M10	19.1	19.8	43.2	32	40	3.2	3.8	—	28	27	—	8	24	—	2.5 ⁵⁾	1.5
FR 62 EU AS	FRR 62 EU AS	62	19	M12	22.1	20.8	46	33.6	41.8	4.2	4	—	35	30	—	9	26	—	2.5 ⁶⁾	1.5
FR 22 EU AZ ¹⁾	FRR 22 EU AZ ¹⁾	22	6	5.1	7.7	9.4	23.9	15	21.9	2	1.9	5	14	11	18.9	4	—	13	—	0.5
FR 32 EU AZ ¹⁾	FRR 32 EU AZ ¹⁾	32	9	8.1	11.8	12.6	31.4	20.2	28.9	2.5	2.5	6.2	20	17	24.9	5	—	17	—	0.5
FR 40 EU AZ ¹⁾	FRR 40 EU AZ ¹⁾	40	11	10.1	14.6	15.5	38	25	35.5	2.5	3	7.5	22	22	30.5	5	—	26	—	0.8
FR 52 EU AZ	FRR 52 EU AZ	52	16	14.1	19.1	19.8	49.5	32	46.3	3.2	3.8	10.5	28	27	39.3	5.5	—	27	—	1.5
FR 62 EU AZ	FRR 62 EU AZ	62	19	16.1	22.1	20.8	54.5	33.6	50.3	4.2	4	12.7	35	32	42.3	6.5	—	30	—	1.5

1) FR / R 22, 32, 40 AS and AZ are available in stainless steel (NX)

2) Housing bore tolerance: H7

3) Safety threads SPIRALOCK

4) AZ: minimum length of the thread engaged

steel = 1 x d; cast iron = 1.25 x d; aluminium = 2 x d

AS: screws length: min. = d + o + s; max. = m + 4 + o + s

5) Guide roller with washers DIN 134 without screw DIN 7984 or DIN 912

6) Guide roller with washers DIN 125 without screw DIN 7984 or DIN 912

7) FR/R 22 EUNX: VAC for high vacuum applications on request

Guide roller size	Dynamic load (N)	Limit loads (N)		Life coefficients		Weight AS (g)	Weight AZ (g)	On request for AZ screw DIN 7984
	C _w ⁸⁾	Radial F _r	Axial F _a	X	Y			
22	2900	470	210	1	2	33	31	M5 x 30
32	5800	1590	710	1	1.9	95	93	M8 x 40
40	8500	2120	940	1	1.9	173	173	M10 x 50
52	11700	5830	2560	1	1.9	374	365	M14 x 60
62	13900	9200	3500	1	1.9	582	587	M16 x 65

8) C_w basic load for 100 km

- NBR seals RS type
- Pressure angle α for load calculation: 40°

V-LINE / FS SYSTEM

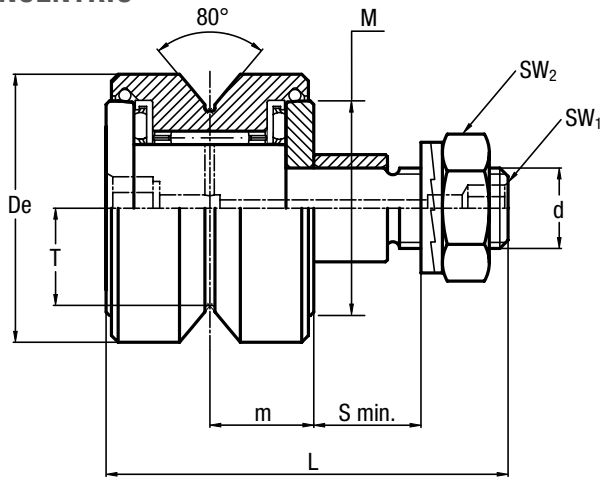
GUIDE ROLLERS FRN ... EI

Guide roller with needle roller bearings.
The sides of the race are slightly convex.

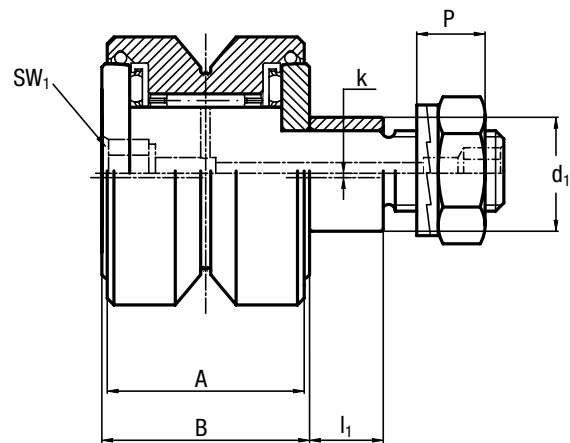
Available in stainless
steel version.



CONCENTRIC



EXCENTRIC



Type		Dimensions (mm)														
concentric	eccentric	De	d ₁ ²⁾	d	T	m	S min.	P	L	A	B	I ₁	M	SW ₁	SW ₂	k
FRN 19 EI ¹⁾	FRNR 19 EI ¹⁾	19	7	M5 x 0.8	7	8.8	6.5	4.2	34	17	18	5.5	14	³⁾	8	0.5
FRN 22 EI ¹⁾	FRNR 22 EI ¹⁾	22	9	M6 x 1	7.7	9.4	9	6.5	39	18.2	20	8	16.5	³⁾	10	0.5
FRN 32 EI ¹⁾	FRNR 32 EI ¹⁾	32	14	M10 x 1.25	11.8	12.6	12	10.4	52	24.2	26	11	25	4	16	1
FRN 40 EI ³⁾	FRNR 40 EI ³⁾	40	16	M12 x 1.5	14.6	15.5	12	11.4	60	29.4	31	11	32	8	19	1

1) Lubrication hole only on head side

2) Housing bore tolerance: H7. Lubrication hole also on stud side

3) Relubrication hole at the roller and stud side

For size 19 and 22: screw driver slot on the head and hexagonal socket at the threaded end of the stud

Type		Dynamic load (N)		Limit loads (N)		Torque wrench settings ⁵⁾ (Nm)	Weight (g)
		C _{wr} ⁴⁾	C _{wa} ⁴⁾	Radial F _r	Axial F _a		
FRN 19 EI	FRNR 19 EI	1800	600	490	270	1.8	35
FRN 22 EI	FRNR 22 EI	3280	800	590	290	3	53
FRN 32 EI	FRNR 32 EI	5600	2100	2030	950	20	160
FRN 40 EI	FRNR 40 EI	12300	2600	2800	1350	26	290

4) C_w basic load for 100 km

5) The torque wrench settings are given for non-lubricated threads; for lubricated threads, multiply figure by 0.8

- On request, the guide rollers can be supplied with external parts in stainless steel (suffix NX). Internal rolling elements in standard bearing steel
- The guide rollers are complete with self-locking washers and hexagonal nut (DIN 439B) for fitting

- Pressure angle α for load calculation: 40°
- Standard Viton seals to fit temperature up to 120°C

GUIDE ROLLERS RKY ..., RKX ...

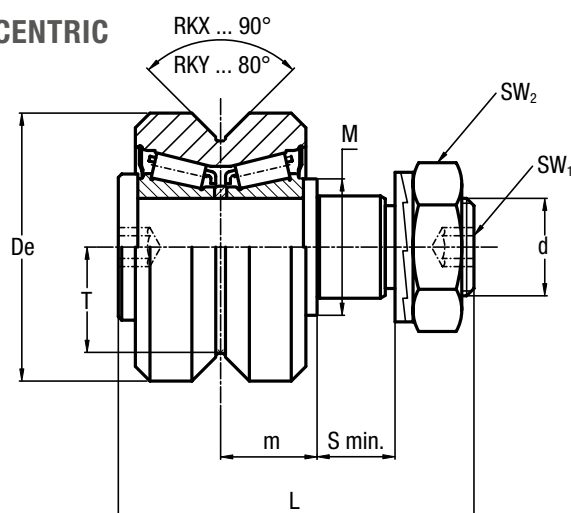
Guide rollers with tapered roller bearings.

The sides of the race are convex with radius $R = 400$.

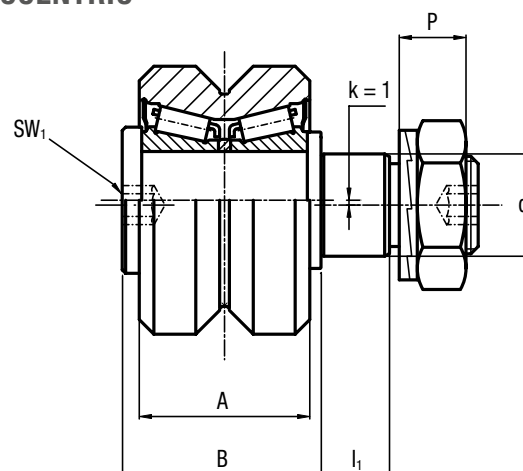
Available in stainless steel version.



CONCENTRIC



ECCENTRIC



Type		Dimensions (mm)														
concentric	eccentric	De	d ₁ ¹⁾	d	T	m	S min.	P	L	A	B	I ₁	M	SW ₁	SW ₂	k
RKY 52	RKYR 52	52	21	M20 x 1.5	19.1	19.8	15	13.4	73	35	41	14	28	8	30	1
RKY 62	RKYR 62	62	27	M24 x 1.5	22.1	20.8	19	15.4	83	37	44	18	35	10	36	1
RKY 72	RKYR 72	72	36	M30 x 1.5	25.5	27	19	21.6	100	45	55	18	44	12	46	1
RKX 90 C	RKXR 90 C	90	38	M36 x 1.5	32.5	30	24	24.6	115	53 56 ²⁾	62	23	50	14	55	1
RKX 110 C	RKXR 110 C	110	42	M36 x 1.5	39.5	34	33	24.6	135	60 63 ²⁾	70	32	56	14	55	1

1) Housing bore tolerance: H7

2) Dimensions relating to the stainless-steel rollers (suffix NX)

Type		Dynamic load (N)	Limit loads (N)		Life coefficients		Torque wrench settings ⁴⁾ (Nm)	Weight (kg)
		C _w ³⁾	Radial F _r	Axial F _r	X	Y		
RKY 52	RKYR 52	41000	11900	4800	1	3.7	80	0.6
RKY 62	RKYR 62	46000	19000	8300	1	3.5	160	0.9
RKY 72	RKYR 72	66000	30000	12300	1	3.2	300	1.6
RKX 90 C	RKXR 90 C	130000	41000	15300	1	3.8	450	2.8
RKX 110 C	RKXR 110 C	185000	55000	20900	1	3.9	450	4.9

3) C_w basic load for 100 km

4) The torque wrench settings are given for non-lubricated threads; for lubricated threads, multiply figure by 0.8

- Standard seals: material NBR, RS type
- On request, the guide rollers can be supplied with external parts in stainless steel (suffix NX) and with Viton seals for operating temperatures up to 120°C (suffix V), not available for dimension RKX (R) 110 C. Internal rolling elements in standard bearing steel
- The guide rollers are complete with self-locking washers and hexagonal nut (DIN 439B) for fitting
- Pressure angle α for load calculation: guide rollers RKY 40° – guide rollers RKX 45°

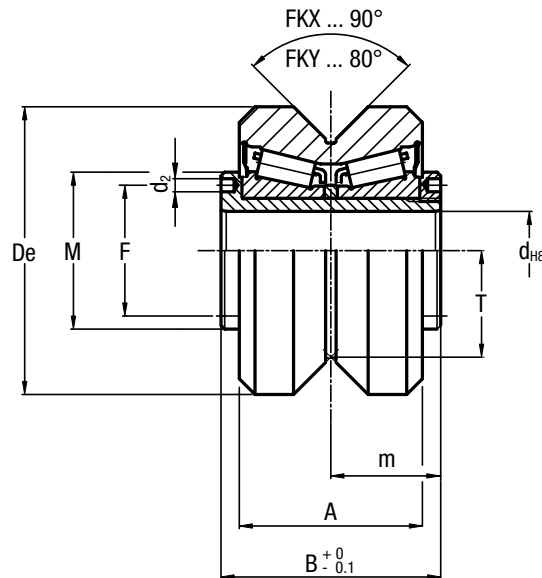
V-LINE / FS SYSTEM

GUIDE WHEELS FKX ..., FKX ...

Guide wheel with tapered roller bearings.
The sides of the race are convex.



Available in stainless steel version.



Type	Dimensions (mm)									Weight (kg)
	De	d	T	m	A	B	F	d ₂	M	
FKY 52 C	52	15	19.1	21	35	42	25	2.5	30	0.5
FKY 62 C	62	20	22.1	22.5	37	45	29	3	35	0.6
FKY 72 C	72	25	25.5	28	45	56	37	4	44	1.2
FKX 90 C	90	28	32.5	32	53 56 ¹⁾	64	42	4	49	2.3
FKX 110 C	110	35	39.5	36	60 63 ¹⁾	72	52	4	59	3.9

1) Dimensions relating to the stainless-steel rollers (suffix NX)

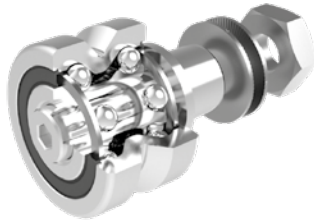
Type	Dynamic load (N)	Limit loads (N)		Life coefficients	
	C _w ²⁾	Radial F _r	Axial F _a	X	Y
FKY 52 C	41000	11900	4800	1	3.7
FKY 62 C	46000	19000	8300	1	3.5
FKY 72 C	66000	30000	12300	1	3.2
FKX 90 C	130000	41000	15300	1	3.8
FKX 110 C	185000	55000	20900	1	3.9

2) C_w basic load for 100 km

- On request, the guide rollers can be supplied with external parts in stainless steel (suffix NX) and with Viton seals for operating temperatures up to 120°C (suffix V), not available for dimension FKX 110 C. Internal rolling elements in standard bearing steel
- To prevent rotation between roller and shaft a pin can be fitted in one of the holes "d2" positioned in the side flange
- Pressure angle α for load calculation: guide rollers FKY 40° – guide rollers FKX 45°
- Standard seals: material NBR, RS type

FLOATING GUIDE ROLLERS FRL ... EU

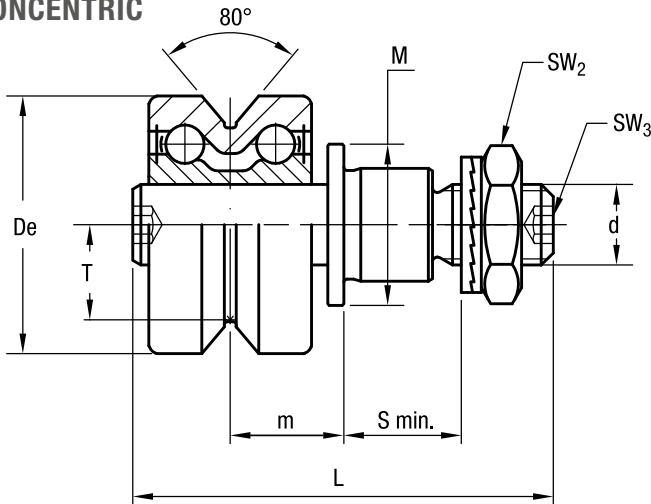
Floating guide rollers with ball bearings.
The race ways are slightly convex.



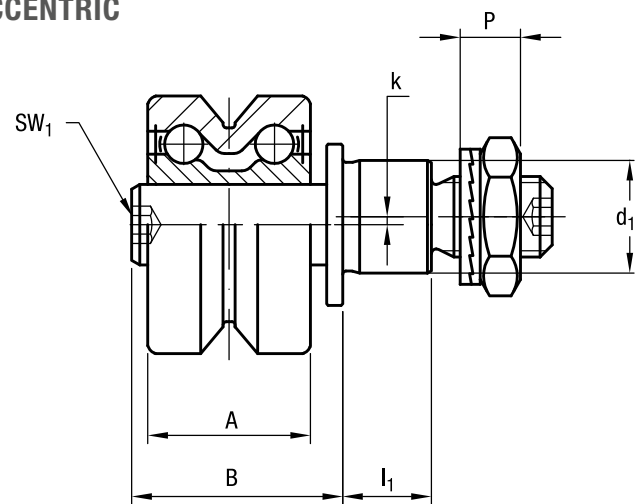
Available in stainless steel version.



CONCENTRIC



EXCENTRIC



Type		Dimensions (mm)																
concentric	eccentric	De	d ₁ ²⁾	d	T	S min.	P	L	A	B	I ₁	M	m min. ³⁾	m max. ³⁾	SW ₁	SW ₂	SW ₃	k
FRL 22 EU ¹⁾	FRLR 22 EU ¹⁾	22	9	M6 x 1.0	7.7	9	6.5	39.3	15	20.5	8	14	9	13	4	10	3	0.8
FRL 32 EU ¹⁾	FRLR 32 EU ¹⁾	32	14	M10 x 1.25	11.8	12	8.5	52.2	20.2	26.2	11	20	12.1	16.1	4	17	4	1
FRL 40 EU ¹⁾	FRLR 40 EU ¹⁾	40	16	M12 x 1.5	14.6	12	10.4	61.4	25	32.4	11	22	14.9	19.9	5	19	5	1
FRL 52 EU	FRLR 52 EU	52	21	M16 x 1.5	19.1	15	11.4	74	32	41	14	28	19	25	6	24	6	1.5
FRL 62 EU	FRLR 62 EU	62	27	M20 x 1.5	22.1	18.5	12.4	83.6	33.6	42.6	17.5	35	19.8	25.8	8	30	8	2

1) Available in stainless steel (NX) version

2) Housing bore tolerance: H7

3) To ensure a safe and proper functioning the dimension m must not be higher than m max.

Type		Dynamic load (N)	Limit loads (N)	Limit loads Inox version NX (N)	Torque wrench settings ⁵⁾ (Nm)	Weight ⁶⁾ (g)
		C _w ⁴⁾	Radial F _r	Radial F _r		
FRL 22 EU	FRLR 22 EU	2900	1050	900	3	46
FRL 32 EU	FRLR 32 EU	5800	1700	1500	20	127
FRL 40 EU	FRLR 40 EU	8500	3000	2700	26	233
FRL 52 EU	FRLR 52 EU	11700	7600	—	64	520
FRL 62 EU	FRLR 62 EU	13900	11000	—	120	776

4) C_w = Basic load for 100 km

5) The torque wrench settings are given for non-lubricated threads; for lubricated threads multiply figure by 0.8

6) Weight without fittings

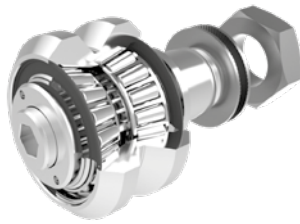
- Standard seals: material NBR, RS type
- Guide rollers include self-locking washers and hexagonal nut (DIN 439B)

- Pressure angle α for load calculation: 40°.

V-LINE / FS SYSTEM

FLOATING GUIDE ROLLERS RKXL, RKYL

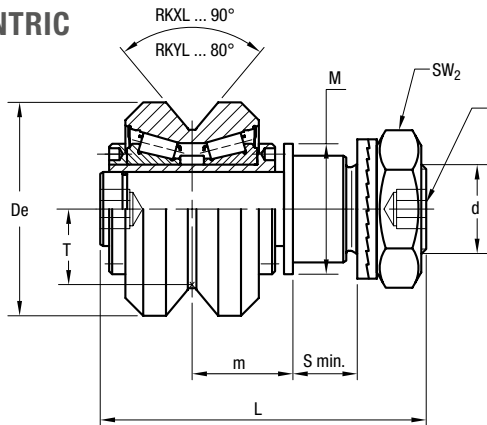
Floating guide rollers with tapered roller bearings for FS.



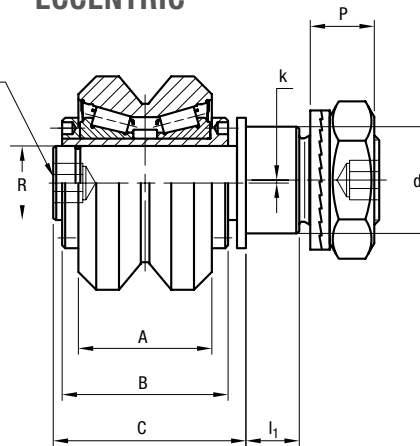
Available in stainless steel version.



CONCENTRIC



ECCENTRIC



Type		Dimensions (mm)																	
concentric	eccentric	De	d ₁ ¹⁾	d	T	m min. ²⁾	m max. ²⁾	S min.	R	P	L	A	B	C	I ₁	M	SW ₁	SW ₂	k
RKYL 52	RKYL 52	52	21	M20 x 1.5	19.1	24	30	15	15	13.4	83	35	42	51	14	30	8	30	1
RKYL 62	RKYL 62	62	27	M24 x 1.5	22.1	25.5	31.5	19	20	15.4	93	37	45	54	18	35	10	36	1
RKYL 72	RKYL 72	72	36	M30 x 1.5	25.5	31	37	19	25	21.6	110	45	56	65	18	44	12	46	1
RKXL 90	RKXL 90	90	38	M36 x 1.5	32.5	36	43	24	28	24.6	128	53 56 ³⁾	64	75	23	49	14	55	1
RKXL 110	RKXL 110	110	42	M36 x 1.5	39.5	40	47	33	35	24.6	148	60 63 ³⁾	72	83	32	59	14	55	1

1) Housing bore tolerance: H7

2) To ensure a safe and proper functioning the dimension m must not be higher than m max.

3) Dimensions for stainless steel (NX) version

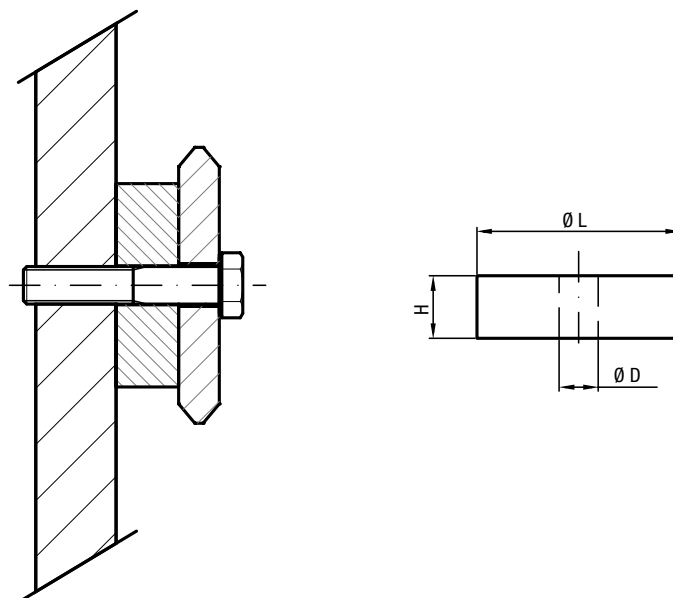
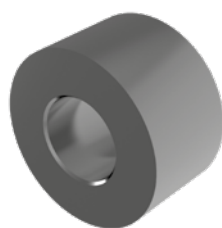
Type		Dynamic load (N)	Limit loads (N)	Torque wrench settings ⁵⁾ (Nm)	Weight (g)
		C _w ⁴⁾	Radial F _r		
RKYL 52	RKYL 52	41000	3050	80	630
RKYL 62	RKYL 62	46000	6850	160	950
RKYL 72	RKYL 72	66000	11200	300	1680
RKXL 90	RKXL 90	130000	13800	450	2900
RKXL 110	RKXL 110	185000	24000	450	5000

4) C_w = Basic load for 100 km

5) The torque wrench settings are given for non-lubricated threads; for lubricated threads multiply figure by 0.8

- On request, the guide rollers can be supplied with viton seals for operating temperatures up to 120°C (suffix V), not available for RKXL 110
- Internal rolling elements in standard bearing steel
- Standard seals: material NBR, RS type
- Pressure angle α for load calculation: 40°

SPACERS FOR FS AND FSH



Type	Dimensions (mm)			Suggested combinations
	Ø L	Ø D	H	
DIST FS 19	12	6.5	10	FS 19, FSH 19
DIST FS 22	15	6.5	10	FS 22, FSH 22, FSR 22
DIST FS 32	30	6.5	15	FS 32
DIST FS 35	35	8.5	15	FS 35, FSR 35
DIST FS 40	50	8.5	15	FS 40
DIST FS 47	60	10.5	20	FS 47, FSR 47
DIST FS 52	65	12.5	20	FS 52
DIST FS 62	80	12.5	20	FS 62
DIST FS 72	35	16.5	20	FS 72, FSH 72
DIST FSH 32	20	6.5	15	FSH 32
DIST FSH 40	25	8.5	15	FSH 40
DIST FSH 52	25	12.5	20	FSH 52
DIST FSH 62	25	12.5	20	FSH 62
DIST FSX 90	43	12.5	30	FSX 90

- The spacers, mounted between the guide and the supporting structure, guarantee adequate distance for the sliding of the rollers
- The spacers DIST are designed for guides FS and FSH of V-Line and guides FSR of Multi-Motion-Line
- Delivery without screws

FINISHING

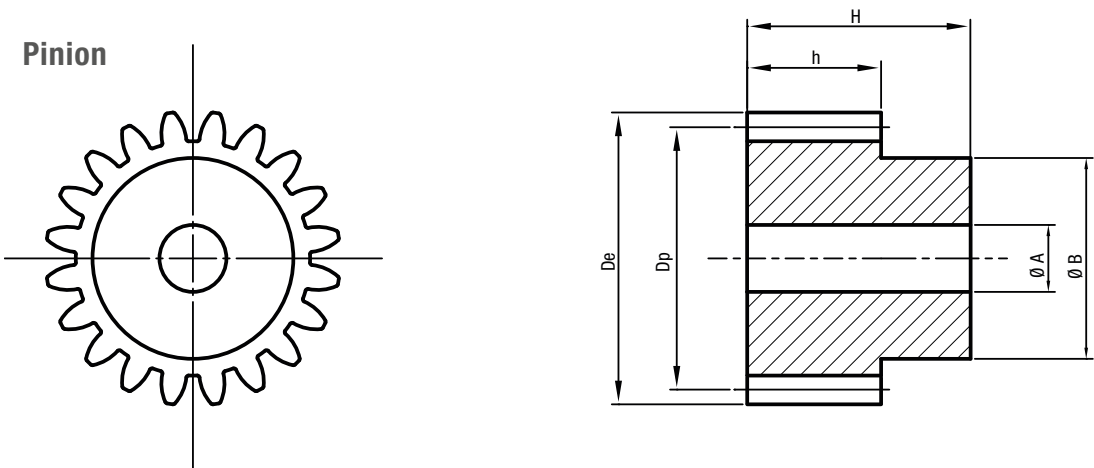
- Anodized aluminium

OPTIONAL FEATURES

- Steel

GUIDE FSHZ FSXZ

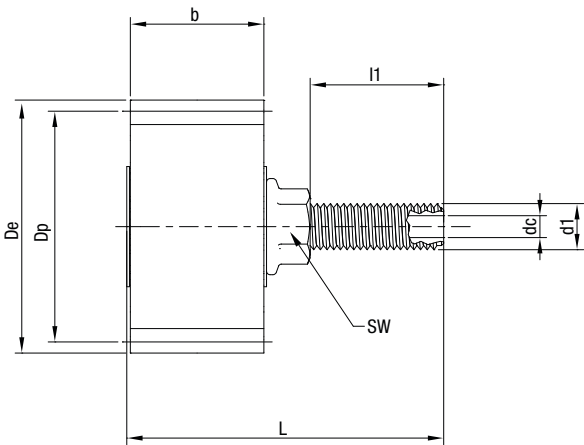
PINION PZ..



Type		Z	m	De	Dp	h	H	A H7	B	Weight (Kg)
PZ20M15HD	Material: C45 Milled teeth Induction hardened	20	m 1.5	33	30	17	30	8	25	0.13
PZ20M20HD		20	m 2	44	40	20	35	10	30	0.26
PZ20M30HD		20	m 3	66	60	30	50	14	45	0.84

Straight teeth | Pressure angle 20° | Other gear type available on request

GUIDE FSHZ FSXZ
LUBRICATION WHEEL LUBZ..

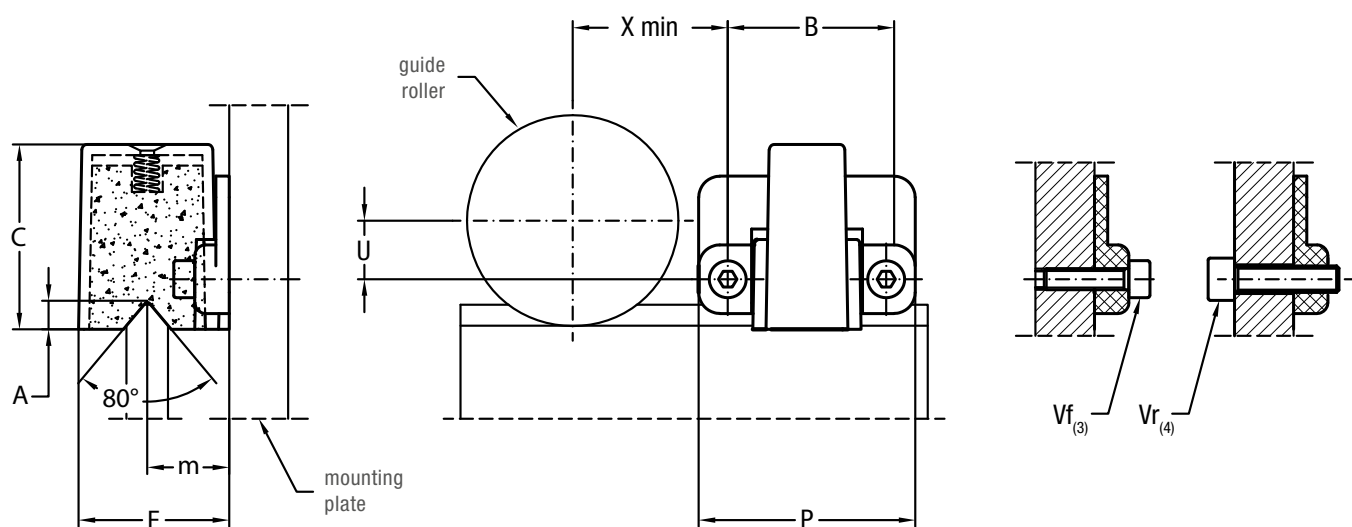
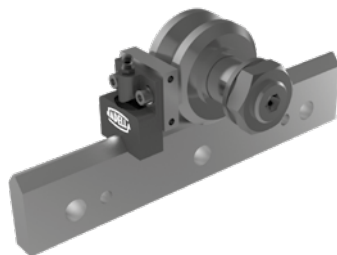


Type		Z	m	De	Dp	b	dc	d1	L	l1	SW	Weight (Kg)
LUBZ15D	Material: open cell poliuretane foam	24	m 1.5	39	36	15	M6	M10	60.2	34	17	0.07
LUBZ20D		17	m 2	38	34	20	M6	M10	61	30	17	0.08
LUBZ30D		17	m 3	57	51	30	M6	M10	71	30	17	0.11

V-LINE – FS SYSTEM

LUBRICATOR LUBY

FOR FS GUIDE ROLLERS UP TO SIZE 40



Type	Dimensions (mm)										Weight (g)	Suggested combinations
	X	U	B	F	m	A	C	P	Vf ¹⁾	Vr ²⁾		
LUBY 19	15	1.5	25	15.6	8.8	2.5	19	32.5	M3 x 12	M4	10	FR ... 19 ...
LUBY 22	16.5	3	25	16.8	9.4	3.3	22	32.5	M3 x 12	M4	10	FR ... 22 ...
LUBY 32	21.5	8	25	23.2	12.6	4.2	30	32.5	M3 x 12	M4	15	FR ... 32 ...
LUBY 40	27.5	10.5	30	28.5	15.5	5.4	35	41	M4 x 16	M5	30	FR ... 40 ...

1) The screws Vf for the frontal mounting are included in the packaging. Arrange two thread holes for dimension Vf in the mounting rollers plate

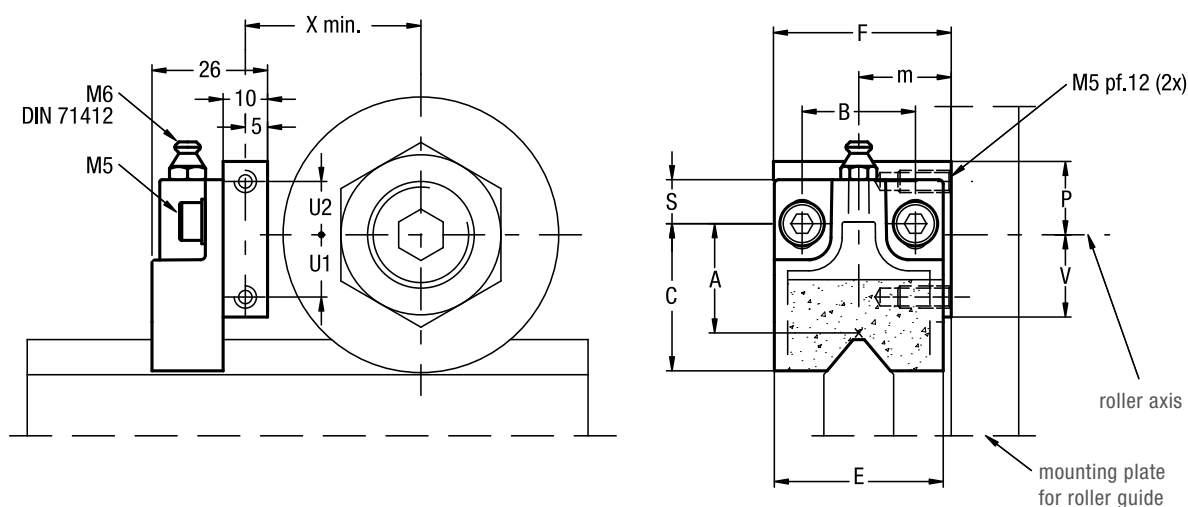
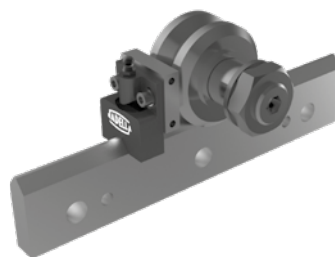
2) The screws for the mounting on the nut side of the roller are not included in the packaging. Arrange on the mounting rollers plate the holes in order to insert the screws Vr

- The lubricator is supplied with the felt already lubricated. The lubricant has a mineral oil base
- At the mounting, insert the screws inside the rollers plate, without tightening them, adjust the height of the plastic part in order to put it in contact with the raceways and then block it

OPTIONAL FEATURES

- Felt without lubricant (D)

LUBRICATOR LUBY, LUBX FOR FS GUIDE ROLLERS SIZE 52 AND HIGHER



Type	Dimensions (mm)												Weight (g)	Suggested combinations
	X	U1	U2	F	m	B	S ¹⁾	C ¹⁾	A ¹⁾	E	V	P		
LUBY 52	33.5	12	14	40	19.8	25.5	10	34	24.5	38	16.5	18.5	65	RKY 52, RKYR 52, FKY 52, FR 52 EU, FRR 52, EU ... AS/AZ
LUBY 62	38.5	14	12	40	20.8	25.5	10	34	24.5	38	18.5	16.5	65	RKY 62, RKYR 62, FKY 62, FR 62 EU, FRR 62, EU ... AS/AZ
LUBY 72	43.5	19	11	50	27	25.5	10	40	29	44	24	16	85	RKY 72, RKYR 72, FKY 72
LUBX 90	52.5	21	9	60	27	30	16.5	45.5	33.5	58	31	19	140	RKX 90 C, RKXR 90 C, FKX 90 C
LUBX 110	62.5	30	0	63	34	30	16.5	45.5	33.5	58	40	10	140	RKX 110 C, RKXR 110 C, FKX 110 C

1) The dimension of the plastic part refers to the centre of the regulation slot. The regulation slot allows a translation of +/- 3 mm

- The lubricator is supplied with the felt already lubricated. The lubricant has a mineral oil base
- During the mounting fix the aluminium support to the rollers plate, adjust the height of the plastic part in order to put it in contact with the raceways and than block it in that position with the M5 screws

OPTIONAL FEATURES

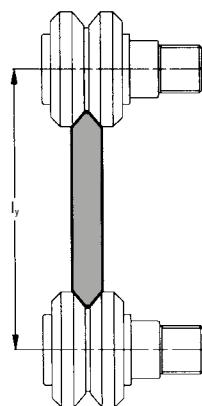
- Felt without lubricant (D)

V-LINE – FS SYSTEM

GUIDE ROLLERS COMBINATION

Guide rollers FR ... EU, FR ... EU AS, FR ... EU AZ, FRN ... EI, RKY, RKX, FKY, FRL ... EU, RKXL, RKYL.

FS



FS ... MT

l _y (mm)	Guide roller size						
	19 ...	22 ...	32 ...	40 ...	52 ...	62 ...	72 ...
FS 19 MT	36.2	37.6					
FS 22 MT		44.2					
FS 32 MT			67.4				
FS 35 MT			72.4	78 ¹⁾			
FS 40 MT			88.1 ¹⁾	93.7			
FS 47 MT				109.3 ¹⁾	118.3		
FS 52 MT					129.5	135.5 ¹⁾	
FS 62 MT					144.2	150.2	
FS 72 MT						168.8 ¹⁾	175.6

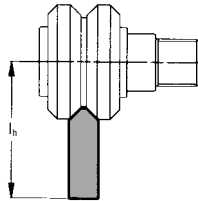
1) Possible combination

FS ... M

l _y (mm)	Guide roller size						
	19 ...	22 ...	32 ...	40 ...	52 ...	62 ...	72 ...
FS 19 M	35	36.4					
FS 22 M	41.9	43.3					
FS 32 M			66.5				
FS 35 M			71.5	77 ²⁾			
FS 40 M			87.2	92.8			
FS 47 M				107.8 ²⁾	116.8		
FS 52 M					128	134 ²⁾	
FS 62 M					143	149	
FS 72 M						167.2 ²⁾	174

2) Possible combination

FSH / FSX



FSH ... MT, FSX ... MT

I _h (mm)	Guide roller size								
	19 ...	22 ...	32 ...	40 ...	52 ...	62 ...	72 ...	90 ...	110 ...
FSH 22 MT	30.9	31.6							
FSH 32 MT			41.7						
FSH 40 MT			49 ³⁾	51.8					
FSH 52 MT				55.4 ³⁾	59.9				
FSH 62 MT					69.9 ³⁾	72.9			
FSH 72 MT						83 ³⁾	86.4		
FSX 90 MT								95.3	102.3

3) Possible combination

FSH ... M, FSX ... M

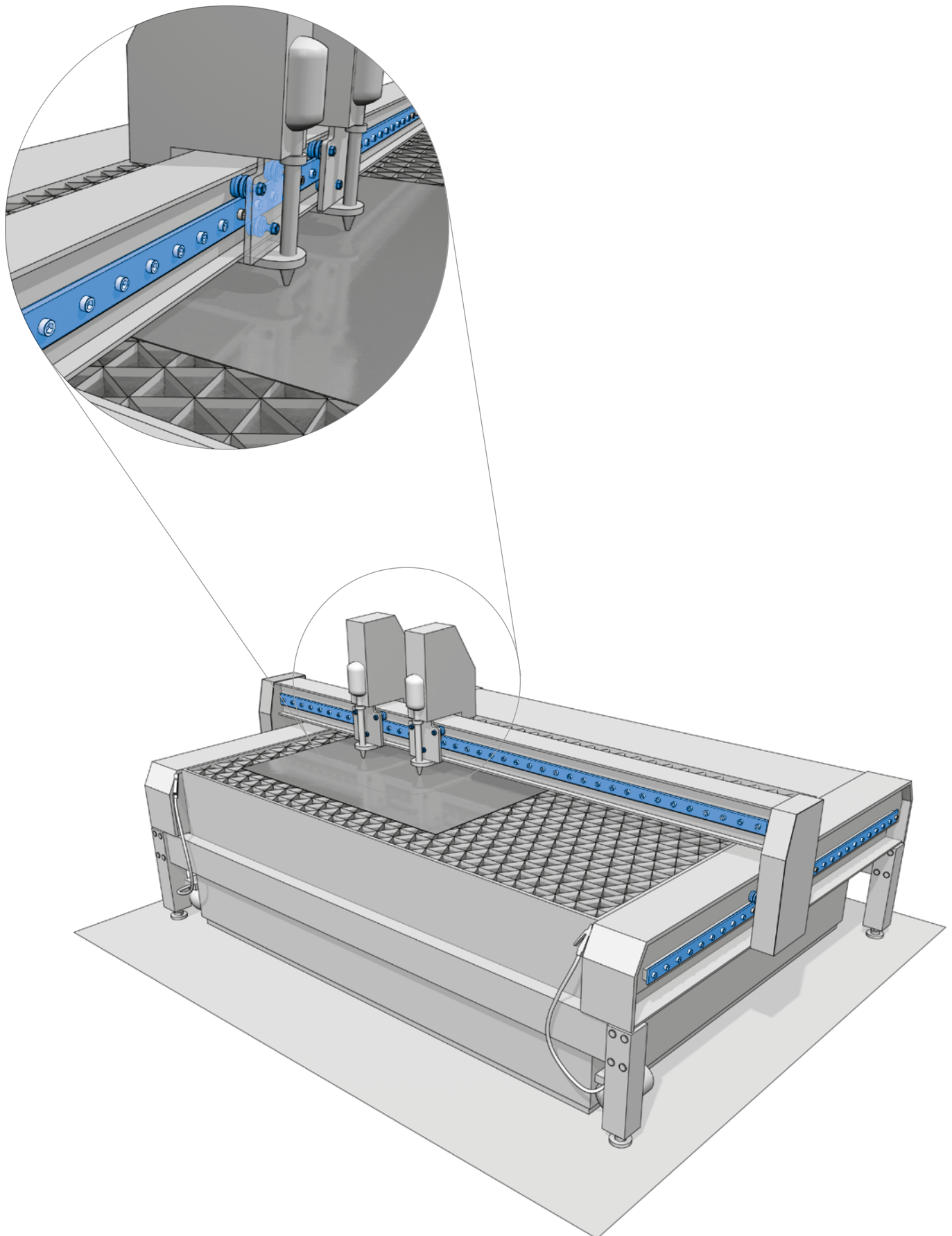
I _h (mm)	Guide roller size								
	19 ...	22 ...	32 ...	40 ...	52 ...	62 ...	72 ...	90 ...	110 ...
FSH 19 M	26	26.7							
FSH 22 M	29.9 ⁴⁾	30.6							
FSH 32 M			40.7						
FSH 40 M			48 ⁴⁾	50.9					
FSH 52 M				54 ⁴⁾	58.5				
FSH 62 M					68.5 ⁴⁾	71.5			
FSH 72 M						81.6 ⁴⁾	85		
FSX 90 M								94.3	101.3

4) Possible combination

V-LINE – FS SYSTEM

MOUNTING EXAMPLES

Waterjet cutting machine
V-Line

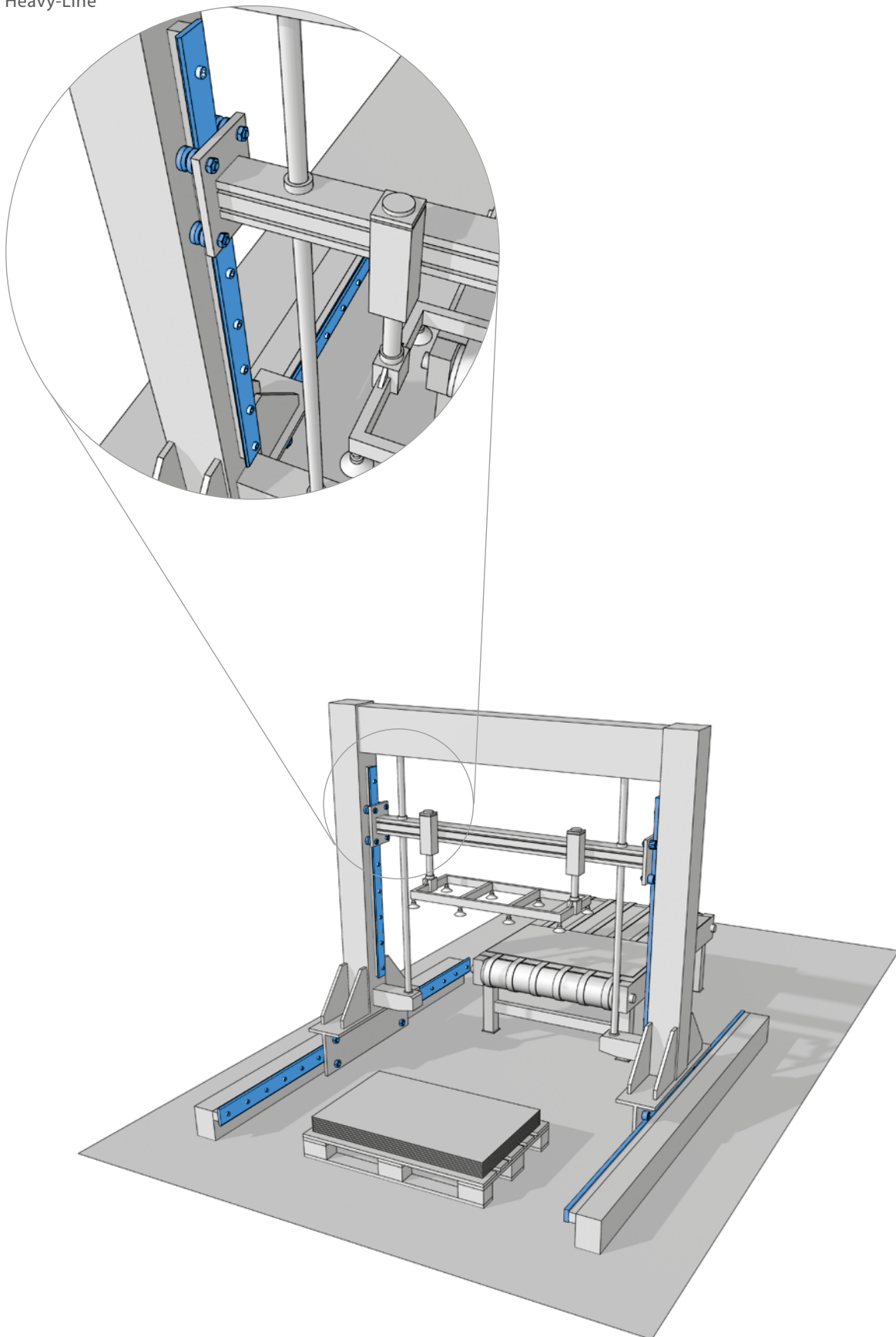


5.3

Portable loader for steel sheet

V-Line

Heavy-Line



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