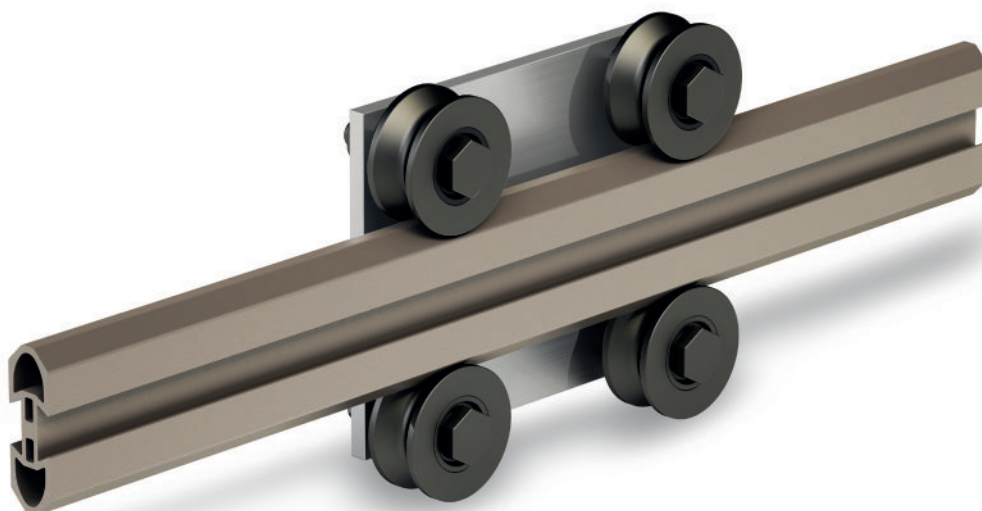


SPEEDY RAIL

Data sheet - rev. 1.0



LINEAR COMPONENTS

myRollon

myRollon is Rollon's **digital working platform** designed to simplify the selection and configuration of linear and rotary motion solutions. It enables users to identify the most suitable motion system based on their specific application requirements, enhancing design precision and efficiency.

By centralizing essential tools and resources in a unified environment, myRollon empowers users to access necessary services and information — saving time and boosting productivity in search of high-performance motion solutions.

SCAN ME!



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► ORDERING KEY

■ Rail

SR	060	02000	T				
	090		F				
	120						
	180						
	250						
			Type of ends: T standard F with drilled ends				
			Rail length [mm]				
	Size						
Series							

Ordering example: **SR06002000-T**

■ Rollers

ROL	C	032	V	C			
	E		C				
			Roller cover material: C= plastic compaund				
			Roller type V: 'V' shaped C: "C" Cylindrical shaped				
			Diameter				
	Type C: concentric E: eccentric						
Series							

Ordering example: **ROL-C032VC**

Ordering key list or other components:
sliders, dovetails, fishplates, etc.



► FEATURES AND ADVANTAGES

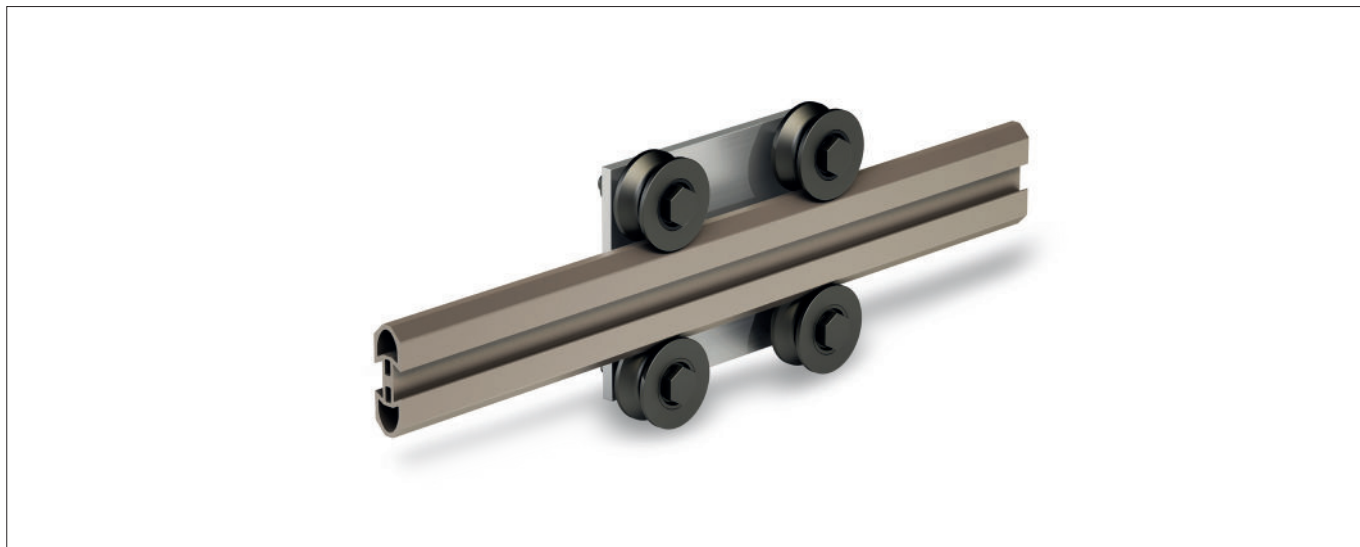


Fig.1

Speedy Rail is a lightweight, self-supporting linear guide made of extruded anodized aluminum alloy with hollow cross-sections. This set up provides great resistance to torsion and deflection stresses.

Its beams undergo a patented surface treatment, resulting in a smooth, hard finish (700 HV) comparable to tempered steel. The non-stick surface, with a fusion point of 2100°C (3812 °F), helps ensuring durability and resistance to welding splatter.

Speedy Rail linear motion systems designed for versatility and efficiency, offering a lightweight, self-supporting structure that is easy to assemble, modular, clean, quiet, and cost-effective.

Speedy Rail components are available ex stock and feature standard bolted dovetails and fishplate clamps for end-to-end joining.

Rails are available in single beams up to 7.5 meters (24.6 feet) and can be joined to build transfer systems of unlimited length. Dovetail grooves on each side allow for easy fixture attachment without drilling or welding.

Speedy Rail is particularly suitable for automotive assembly, appliance production, food processing, laser cutting, plastic extrusion, and machine tooling. It is also suited for painting, packaging, welding lines, woodworking, furniture manufacturing, and glass processing.

Performance characteristics

- Available sizes: 60, 90, 120, 180, 250
- Max. operating speed: 15 m/s (591 in/s)
- Max. acceleration: 10 m/s² (394 in/s²)
- Temperature range: - 30 °C to + 80 °C (- 22 °F to + 176 °F)
- Fusion temperature of surface layer: 2100 °C (3812 °F)
- Surface layer electric resistance at 20 °C (68 °F): 4x10¹⁵ Ohm/cm/cm²/in²

Rails

- Material: anodized aluminium alloy
- Standard lengths: from 1000 mm up to 7500 mm (from 39,37 in to 295,28 in)
- Surface hardening: low temperature deep anodizing to give a surface hardness of 600 ÷ 700 HV
- Surface layer depth:
 - 50÷60 micron (0.050÷0.060 mm) for rails;
 - 40÷50 micron (0.040÷0.050 mm) for supports, bodies and plates.

Rollers

- Type: cylindrical or "V" shaped.
- Material: steel covered by a sintered plastic compound.
- Roller sliders: equipped with concentric and eccentric pins for a quick adjustment of the contact between rollers and rail.

MAIN ADVANTAGES

Self-aligning system

Thanks to the self-alignment feature, Speedy Rail can absorb potential structural misalignments up to 8 mm.

Self-supporting linear guide

Speedy Rail is a self-supporting system, eliminating the need for external supports during installation.

Endless strokes

Owing to its precisely machined joint systems, the rail stroke is not affected by sliding problems, so the roller does not jump. This leads to potentially endless strokes.

High dynamics

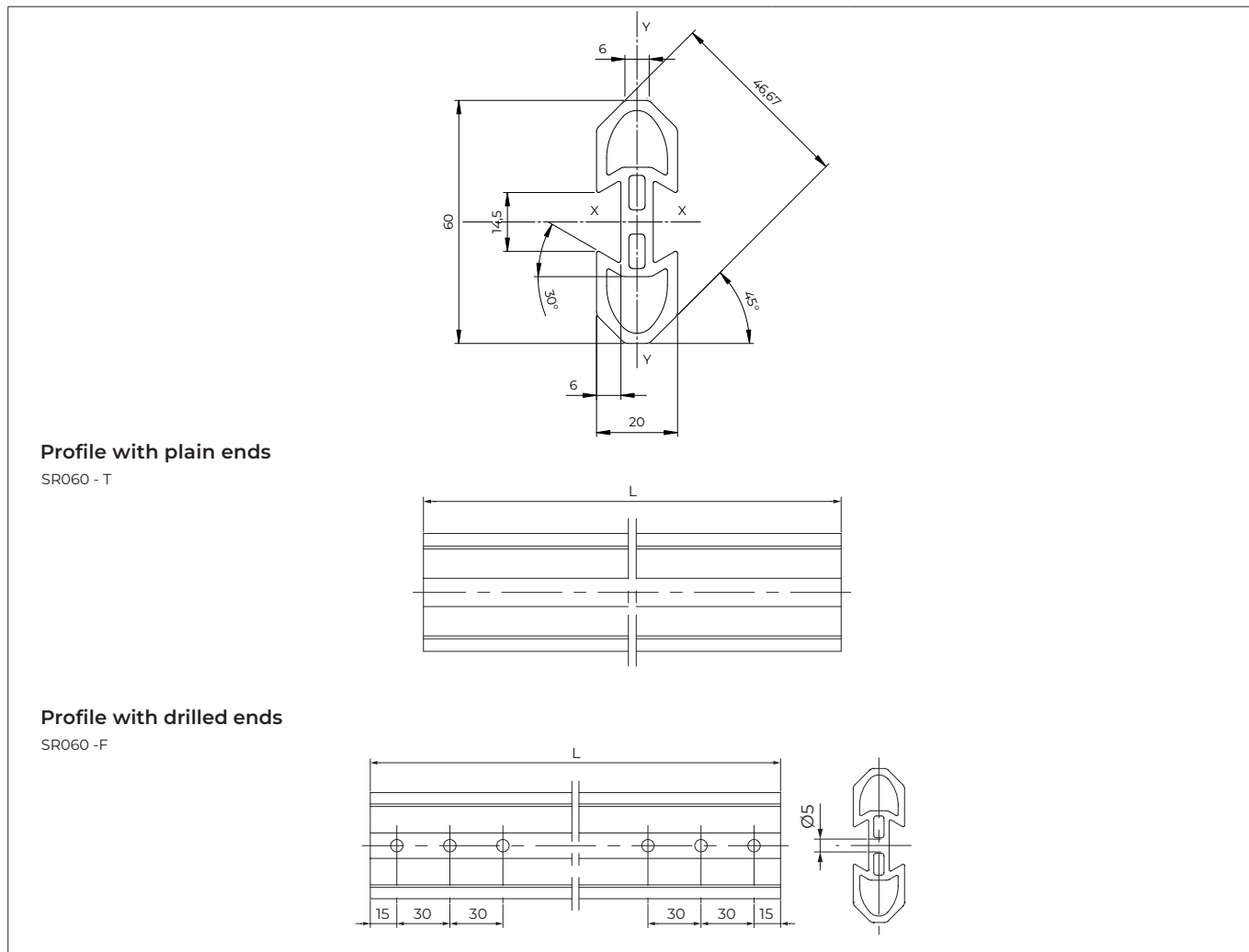
Made of extruded aluminum with a hard anodized surface, Speedy Rail delivers dynamic performance and high load capacity. Its versatile design allows it to function as both a linear rail and an actuator.

Reliability in dirty environments

The absence of lubrication helps ensuring consistent performance even in dirty environments, making Speedy Rail a dependable solution for challenging industrial settings.

► COMPONENTS AND DIMENSIONS

■ SPEEDY RAIL 60



Drillings on the guide end are required as a safety measure with end-to-end joining in moving rails.

Fig.2

Max. manufacturing tolerances = ± 0.15 mm across opposite rolling surfaces.

Max. angular distortion = $\pm 20''/m$.

Max. linear distortion = ± 0.4 mm/m.

Standard lengths: 1000-1500-2000-2500-3000-3500-4000-4500-5000-5500-6000-6500-7000-7500 mm.

Ext. surface: deep hard anodizing

Profile type and code N°	Surface quadratic moment I (X) mm ⁴	Surface quadratic moment I (Y) mm ⁴	Section modulus W (X) mm ³	Section modulus W (Y) mm ³	Section mm ²	Distance d mm: (Roller contact axis)	Linear mass t kg/mt
SR060 - T SR060 - F	138.600	18.000	4.620	1.800	470	29	1,27

Tab.1

■ Assemblies and components

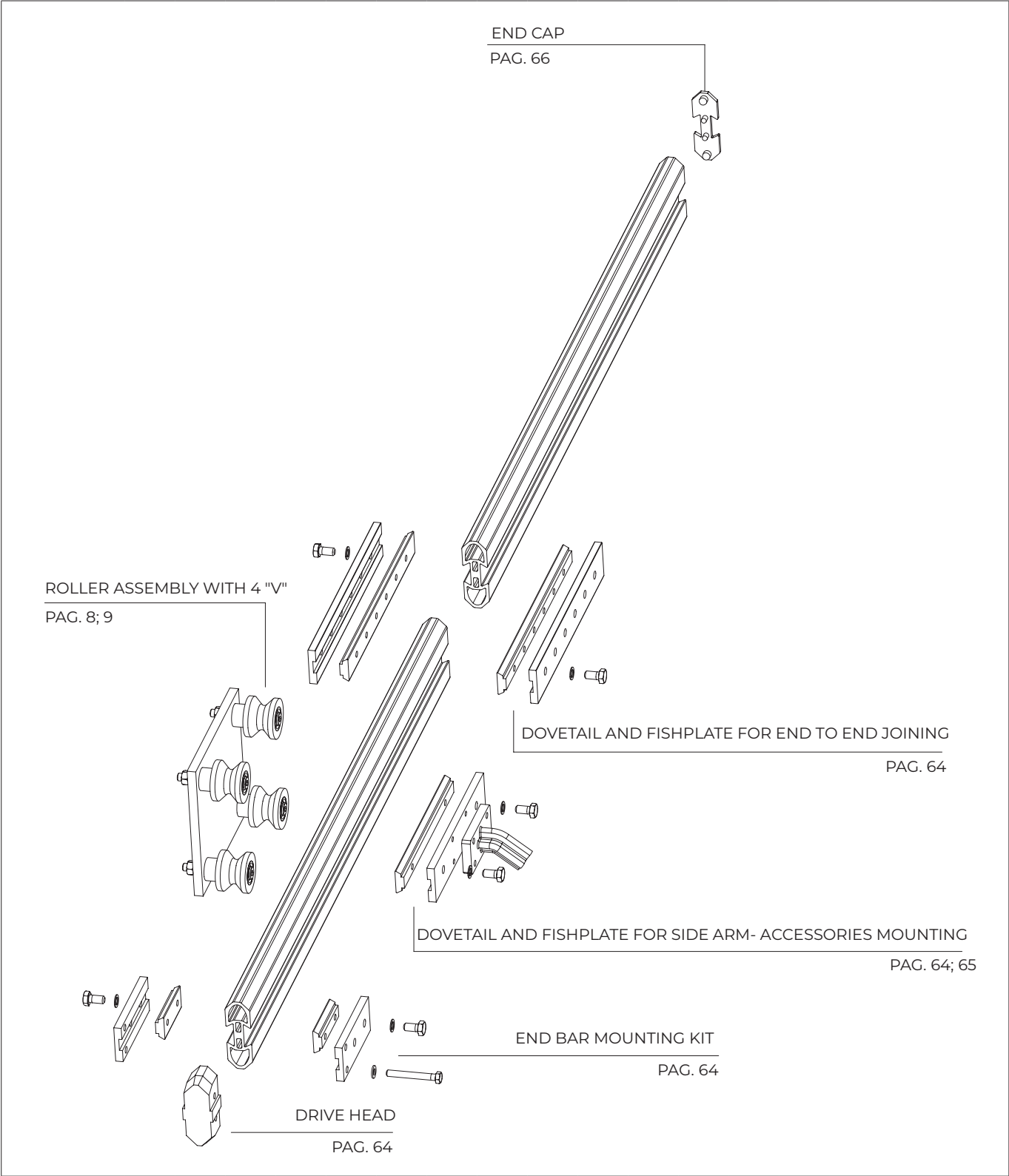
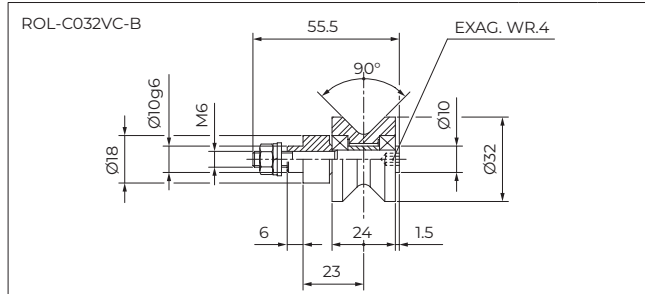


Fig.3

■ **ROLLERS AND ROLLER ASSEMBLIES Ø 32**

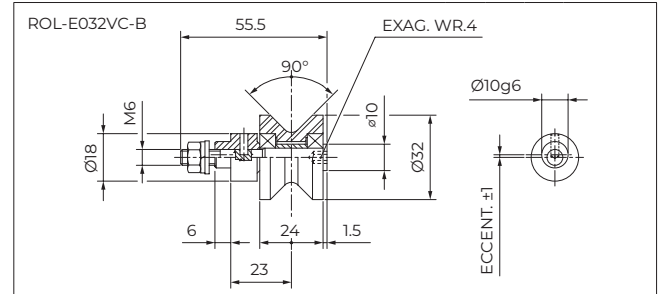
Plastic compound concentric roller



Max. load: radial 270 N axial 100 N.

Fig.4

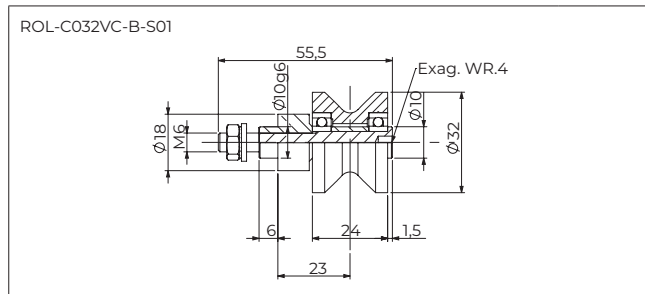
Plastic compound/stainless steel eccentric roller



Max. load: radial 270 N axial 100 N.

Fig.5

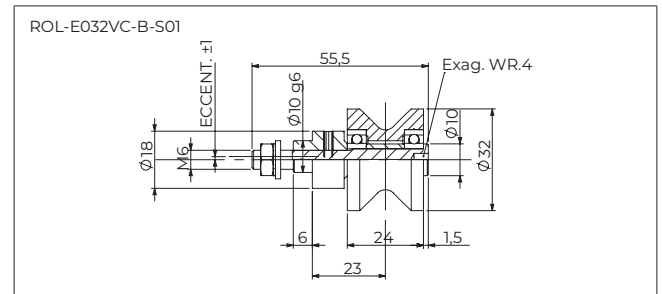
Stainless Steel concentric roller



Max. load: radial 270 N / axial 100 N - Lifetime lubrication

Fig.6

Stainless Steel eccentric roller



Max. load: radial 270 N / axial 100 N - Lifetime lubrication

Fig.7

Roller assembly with 4 rollers

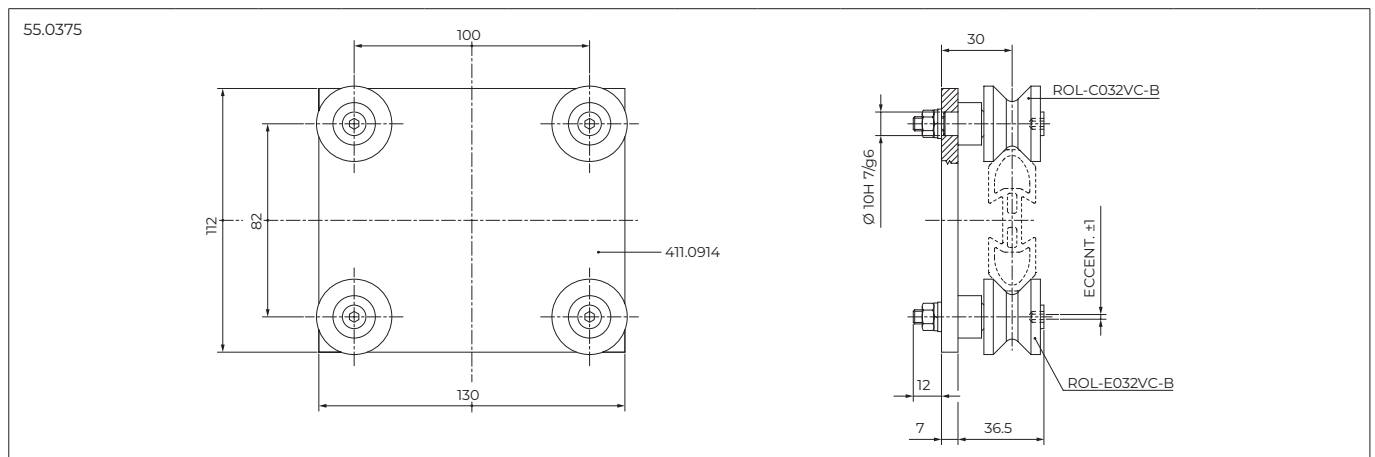
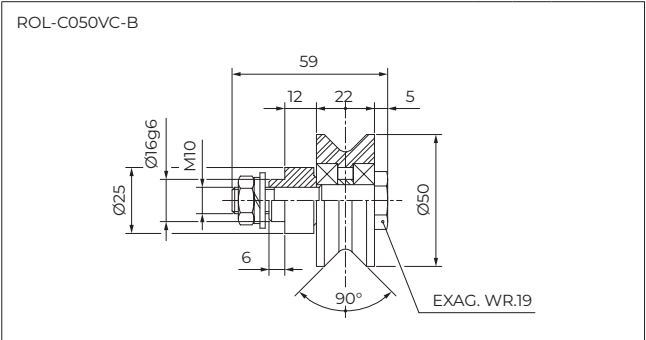


Fig.8

■ ROLLERS AND ROLLER ASSEMBLIES Ø 50

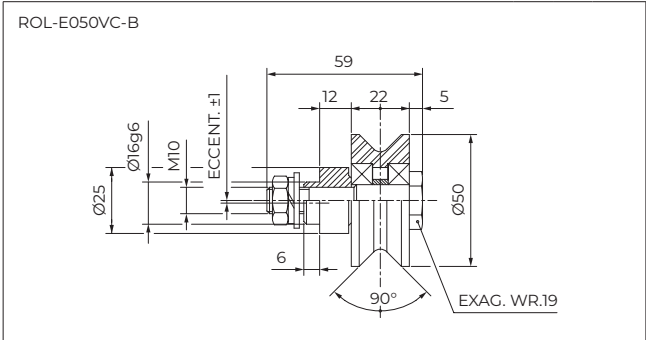
Plastic compound concentric roller



Max. load: radial 400 N axial 100 N

Fig.9

Plastic compound eccentric roller



Max. load: radial 400 N axial 100 N

Fig.10

Roller assembly with 3 rollers

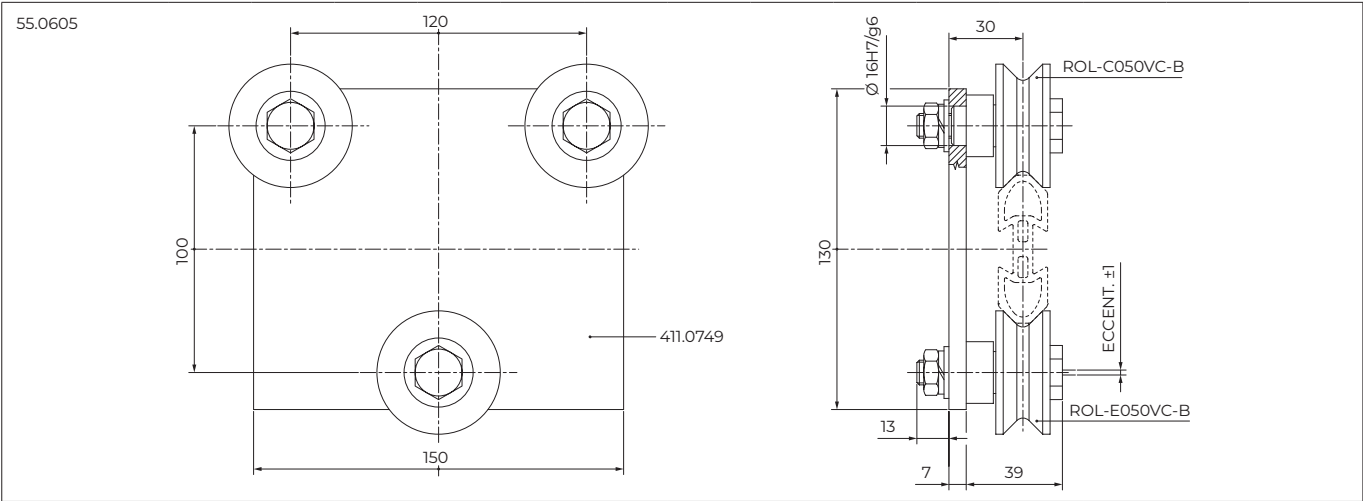


Fig.11

Roller assembly with 4 rollers

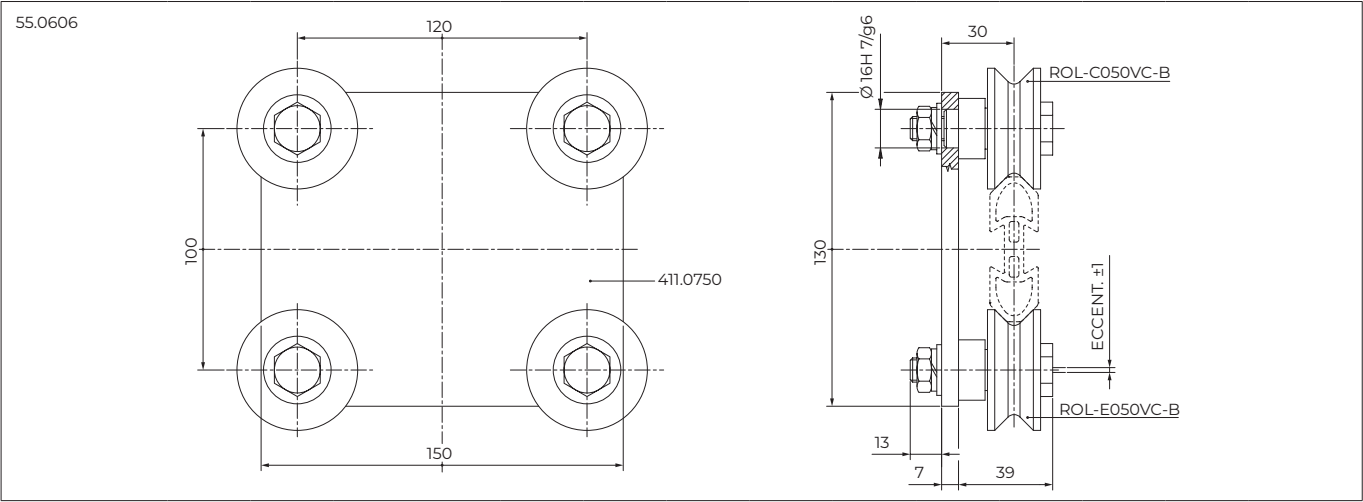
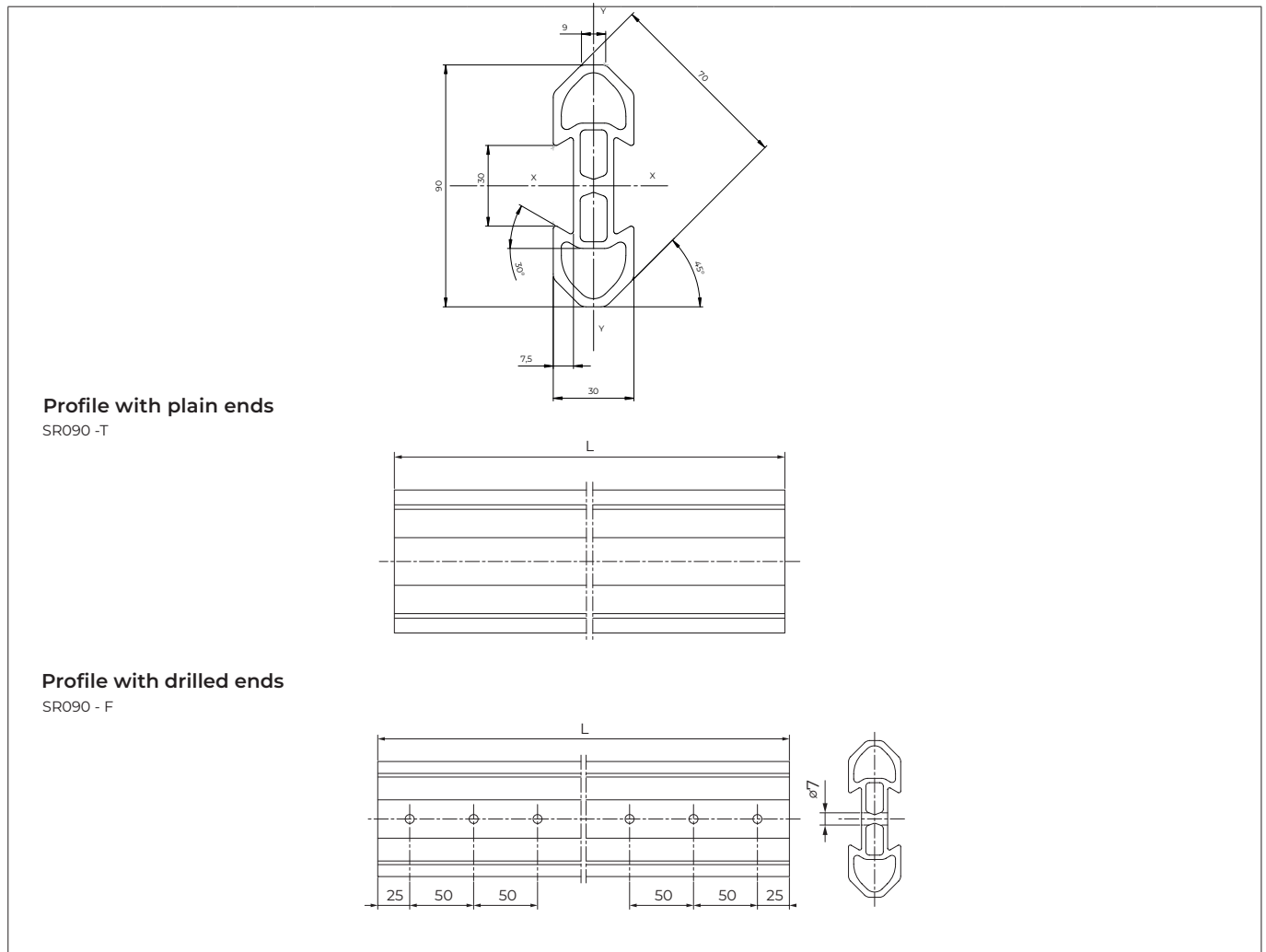


Fig.12

■ SPEEDY RAIL 90



Drillings on the guide end are required as a safety measure with end-to-end joining in moving rails.

Fig.13

Max. manufacturing tolerances = ± 0.20 mm across opposite rolling surfaces.

Max. angular distorsion = $\pm 20''/m$.

Max. linear distorsion = ± 0.4 mm/m.

Standard lengths: 1000-1500-2000-2500-3000-3500-4000-4500-5000-5500-6000-6500-7000-7500 mm.

External surface: deep hard anodizing

Profile type and code N°	Surface quadratic moment I (X) mm ⁴	Surface quadratic moment I (Y) mm ⁴	Section modulus W (X) mm ³	Section modulus W (Y) mm ³	Section mm ²	Distance d mm: (Roller contact axis)	Linear mass t kg/mt
SR090 - T SR090 - F	630.000	76.500	14.250	5.170	965	39,6	2,6

Tab.2

■ Assemblies and components

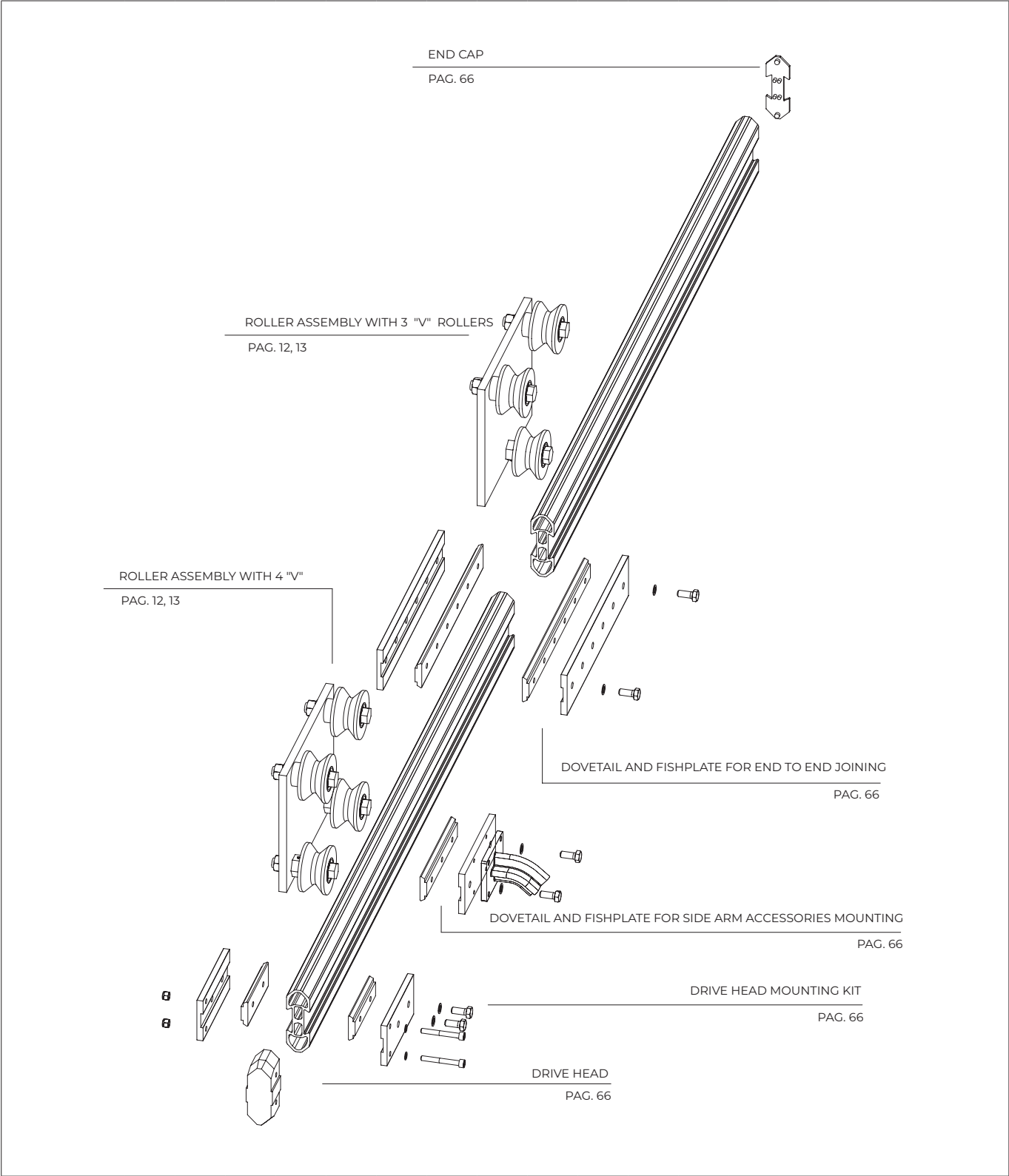
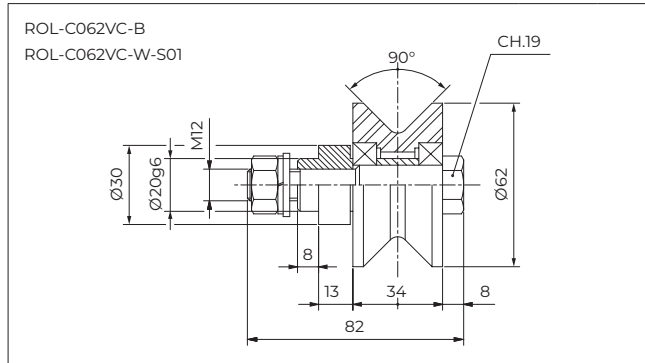


Fig.14

■ **ROLLERS AND ROLLER ASSEMBLIES Ø 62**

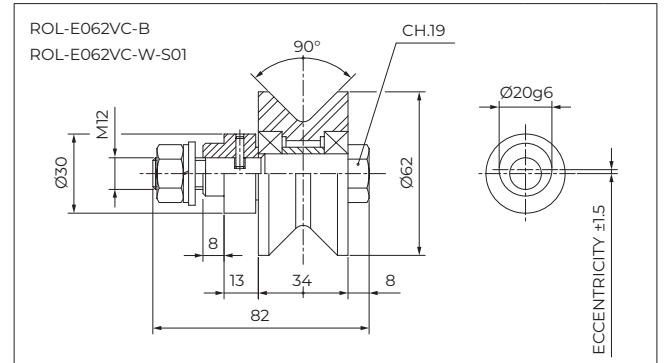
Plastic compound/stainless steel concentric roller



Max. load: radial 450 N / axial 150 N - lifetime lubrication

Fig.15

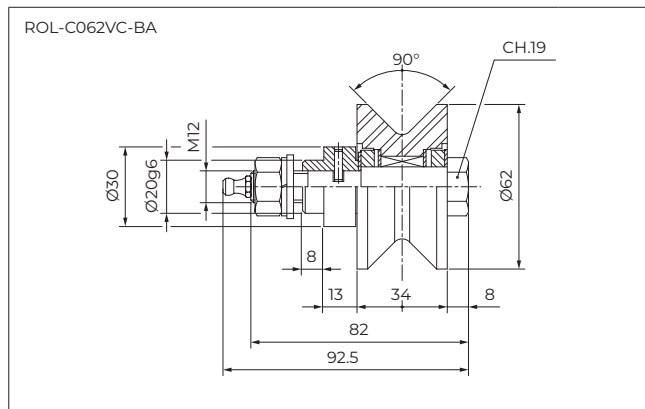
Plastic compound/stainless steel eccentric roller



Max. load: radial 450 N / axial 150 N - lifetime lubrication

Fig.16

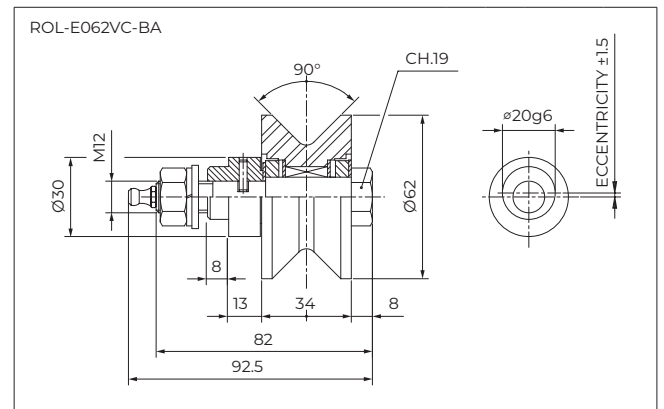
Axially free ±1.75 mm concentric roller



Max. radial load: 700 N - Optional lifetime lubrication

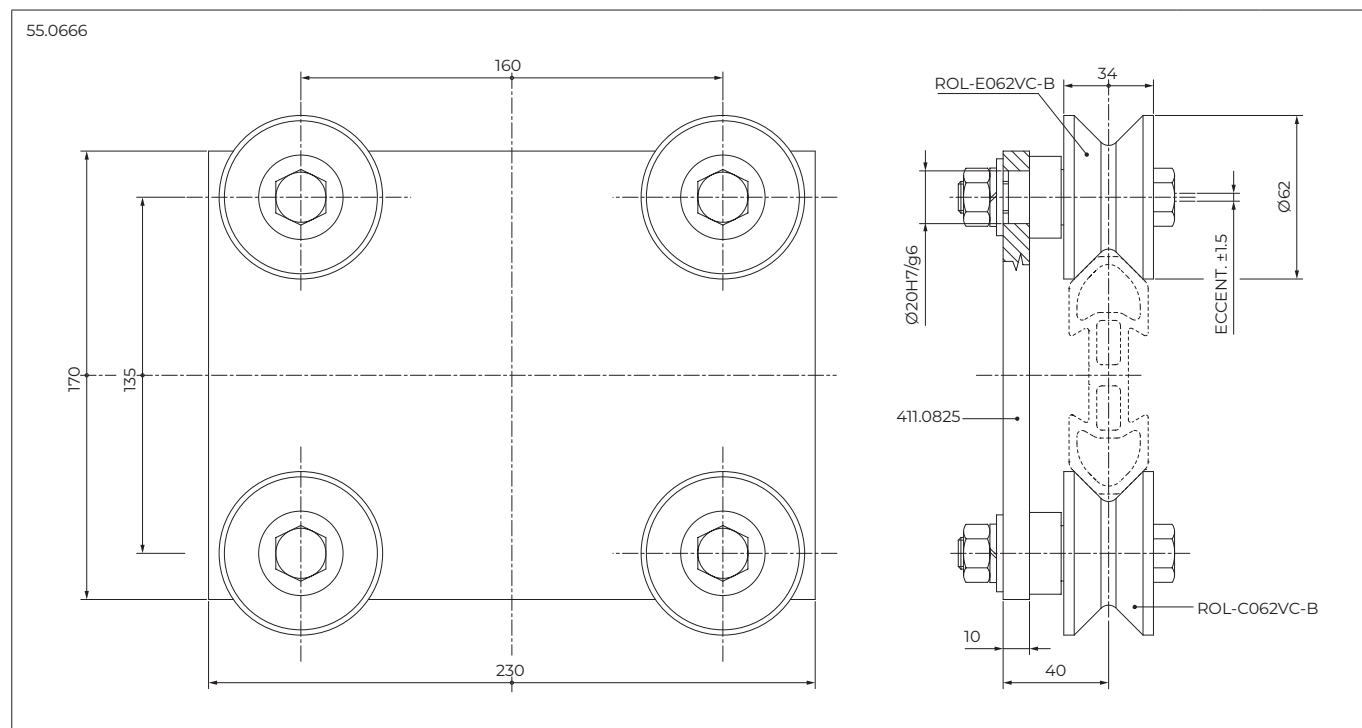
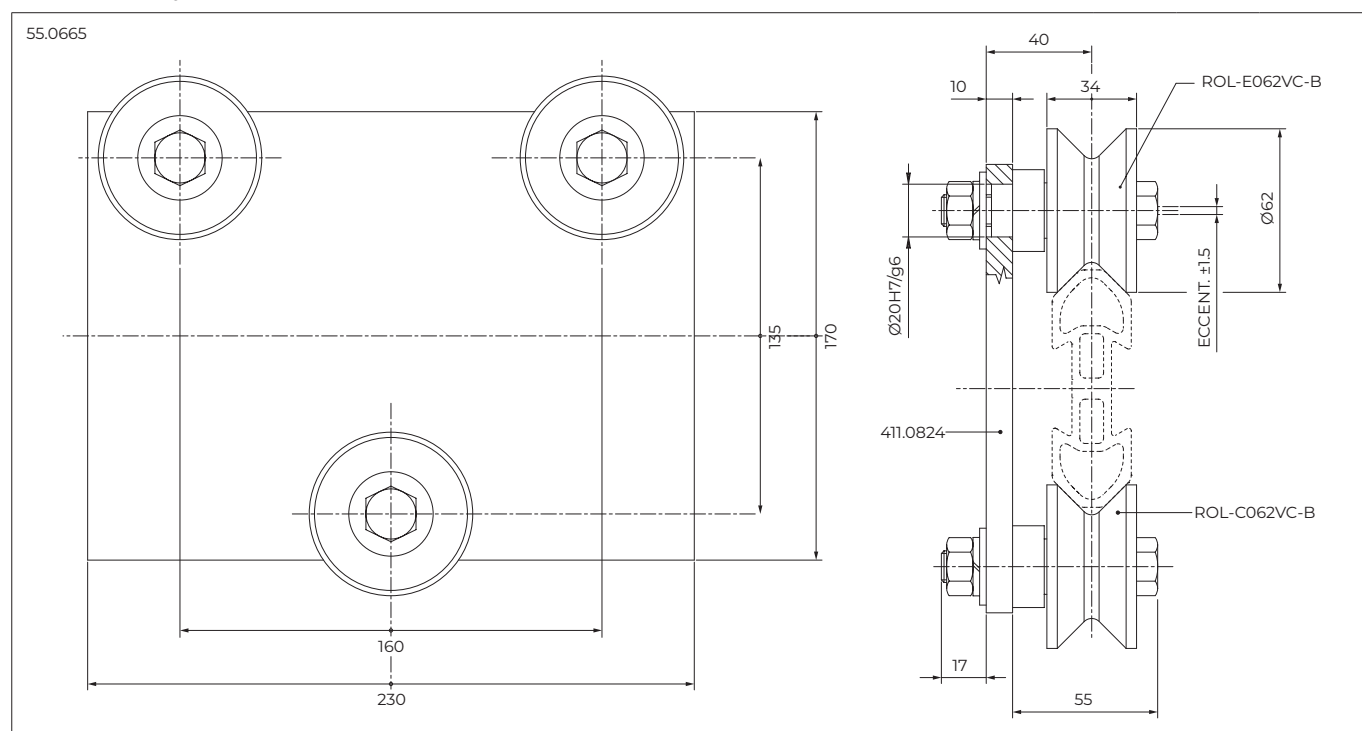
Fig.17

Axially free ±1.75 mm eccentric roller



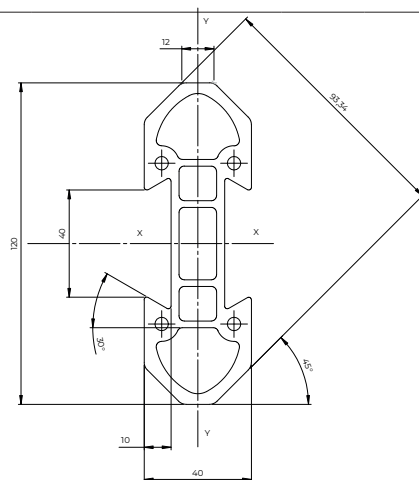
Max. radial load: 700 N - Optional lifetime lubrication

Fig.18

Roller assembly with 4 rollers

Roller assembly with 3 rollers


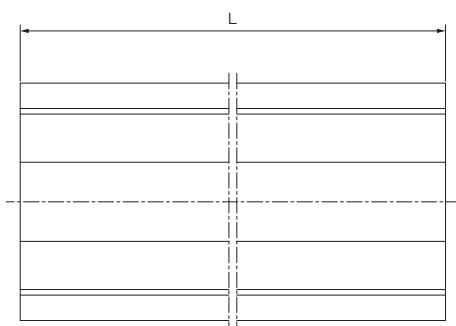
The plates -cod. 411.0825 and 411.0824 are made in aluminium alloy with hard anodization. The rollers -cod. 55.0760, 4 rollers ROL-c062vc-ba + rol-e062vc-ba and 55.0759 3 rollers and/or different combinations from the ones shown on this page can be mounted on the above plates after consulting our technical department.

■ SPEEDY RAIL 120



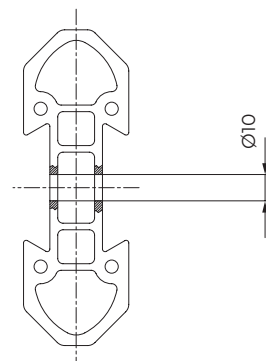
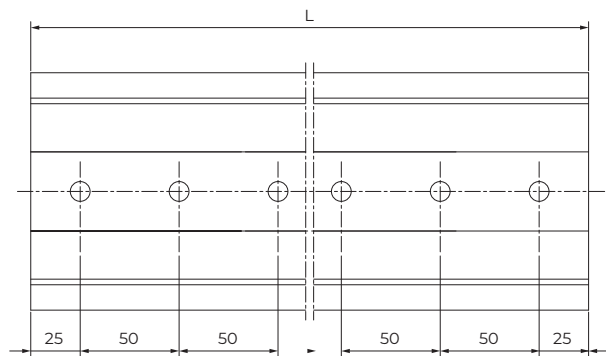
Profile with plain ends

SR120 - T



Profile with drilled ends

SR120 - F



Drillings on the guide end are required as a safety measure with end-to-end joining in moving rails.

Fig.21

 Max. manufacturing tolerances = ± 0.20 mm across opposite rolling surfaces.

 Max. angular distortion = $\pm 20'$ /m.

 Max. linear distortion = ± 0.5 mm/m.

Standard lengths: 1000-1500-2000-2500-3000-3500-4000-4500-5000-5500-6000-6500-7000-7500 mm.

External surface: deep hard anodizing

Profile type and code N°	Surface quadratic moment I (X) mm ⁴	Surface quadratic moment I (Y) mm ⁴	Section modulus W (X) mm ³ :	Section modulus W (Y) mm ³ :	Section mm ²	Distance d mm: (Roller contact axis)	Linear mass t kg/mt
SR Standard (120) SR120 - T SR120 - F	2.138.988	259.785	35.650	12.989	1.645	56,1	4,4

Tab.3

■ Assemblies and components

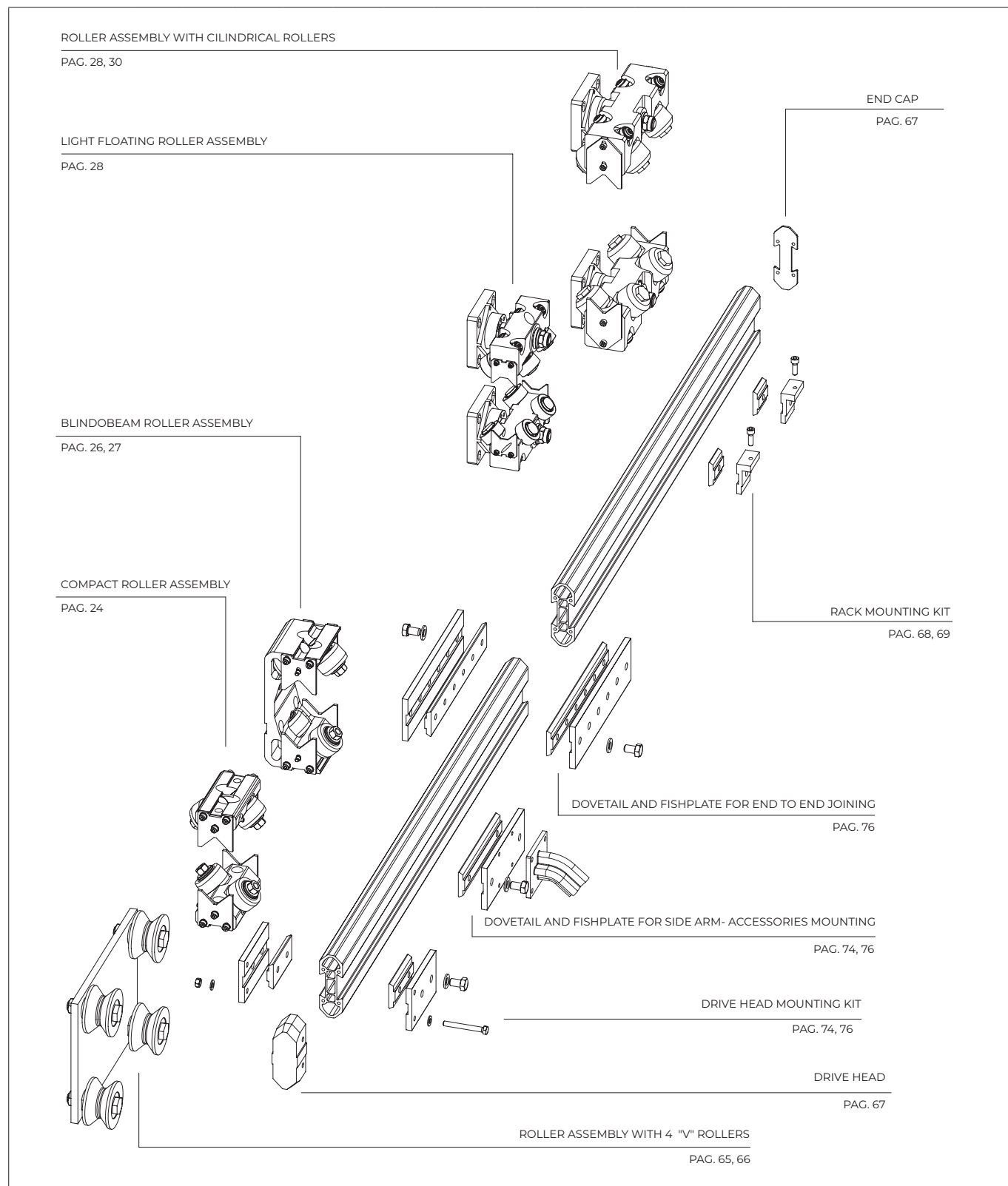
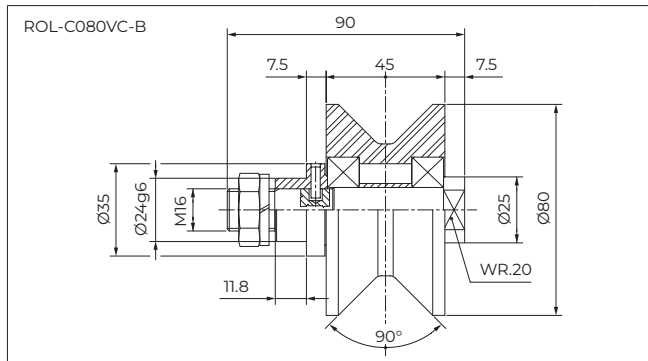


Fig.22

■ ROLLERS AND ROLLER ASSEMBLIES Ø 80

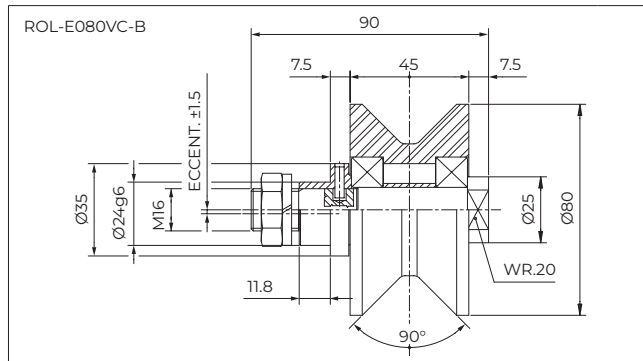
Plastic compound concentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.23

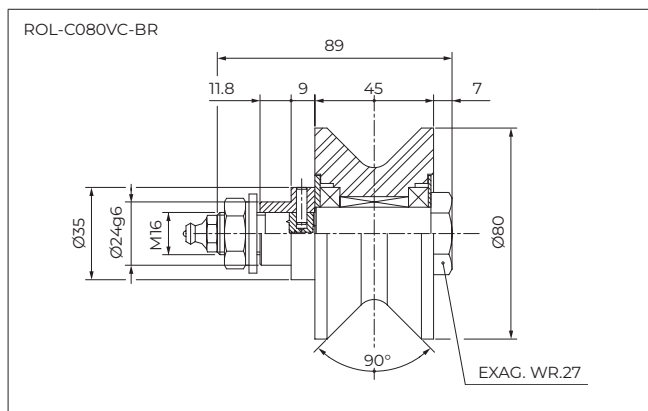
Plastic compound eccentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.24

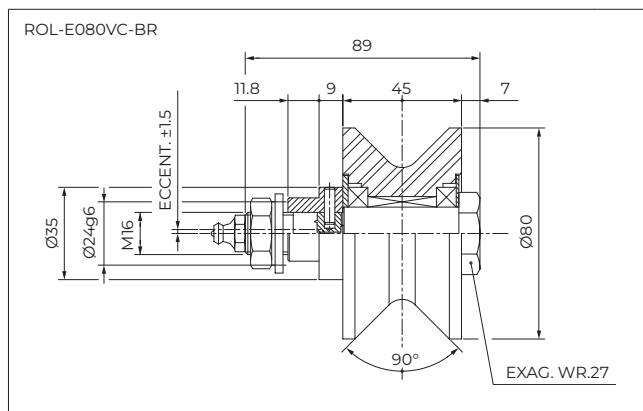
High stiffness concentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication (end play 0.010/0.030 mm)

Fig.25

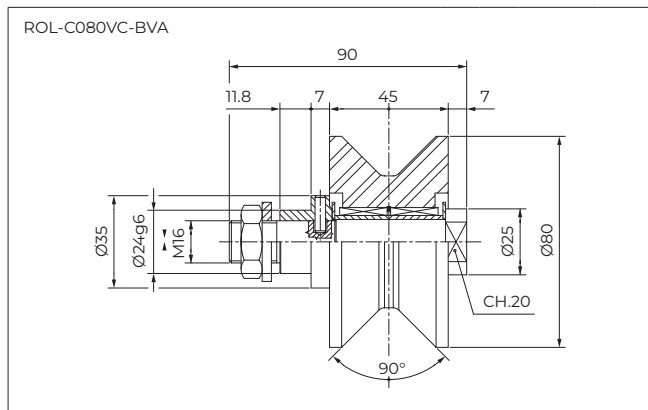
High stiffness eccentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication (end play 0.010/0.030 mm)

Fig.26

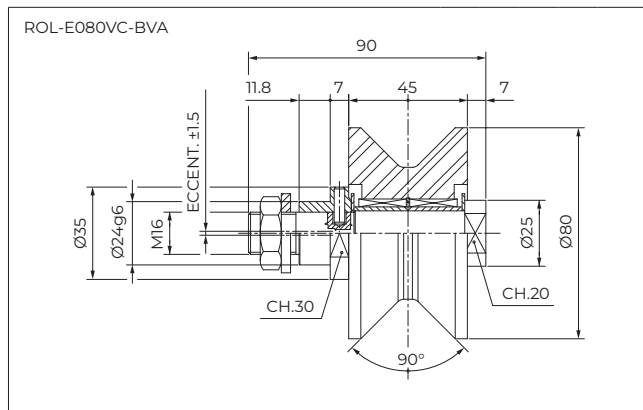
Axially free: ±1.9 mm concentric roller



Radial load: 1000 N max. - lifetime lubrication

Fig.27

Axially free: ±1.9 mm eccentric roller



Radial load: 1000 N max. - lifetime lubrication

Fig.28

Light weight roller assembly with 4 rollers

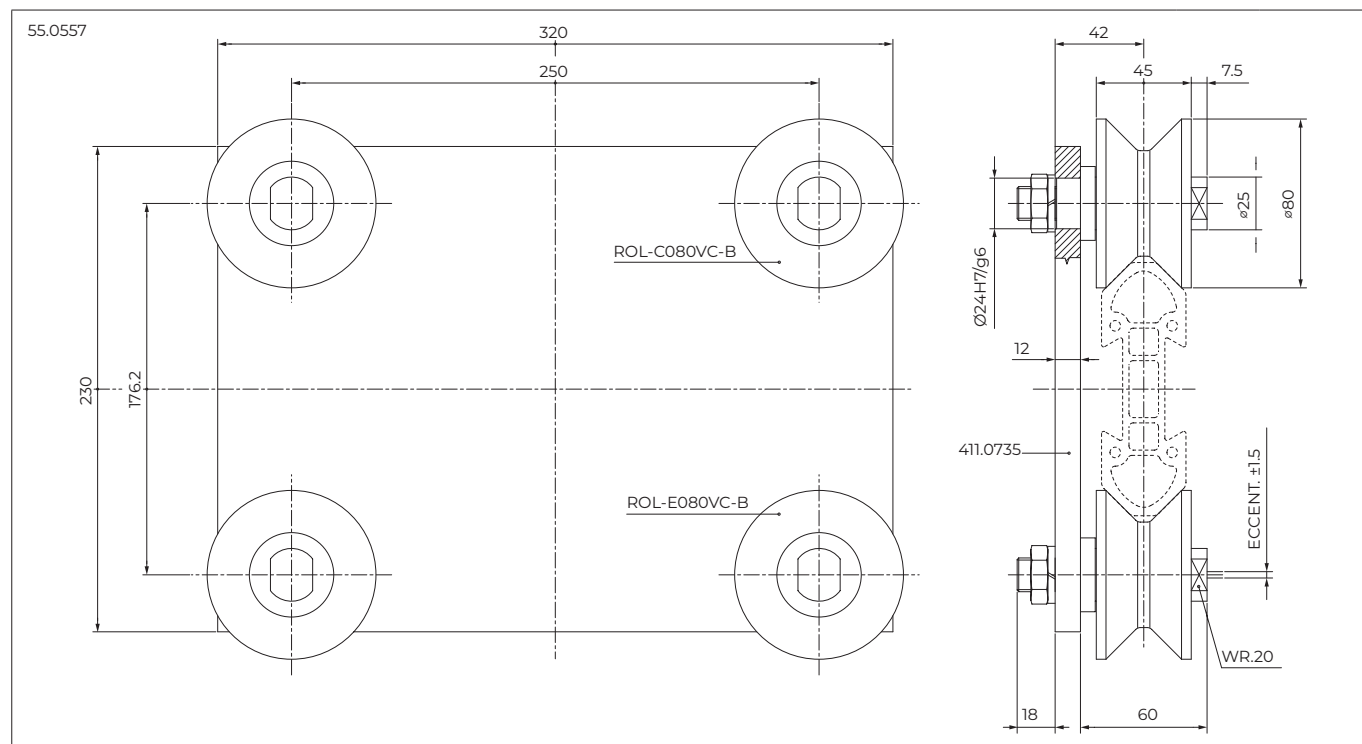


Fig.29

Roller assembly with 4 high stiffness rollers

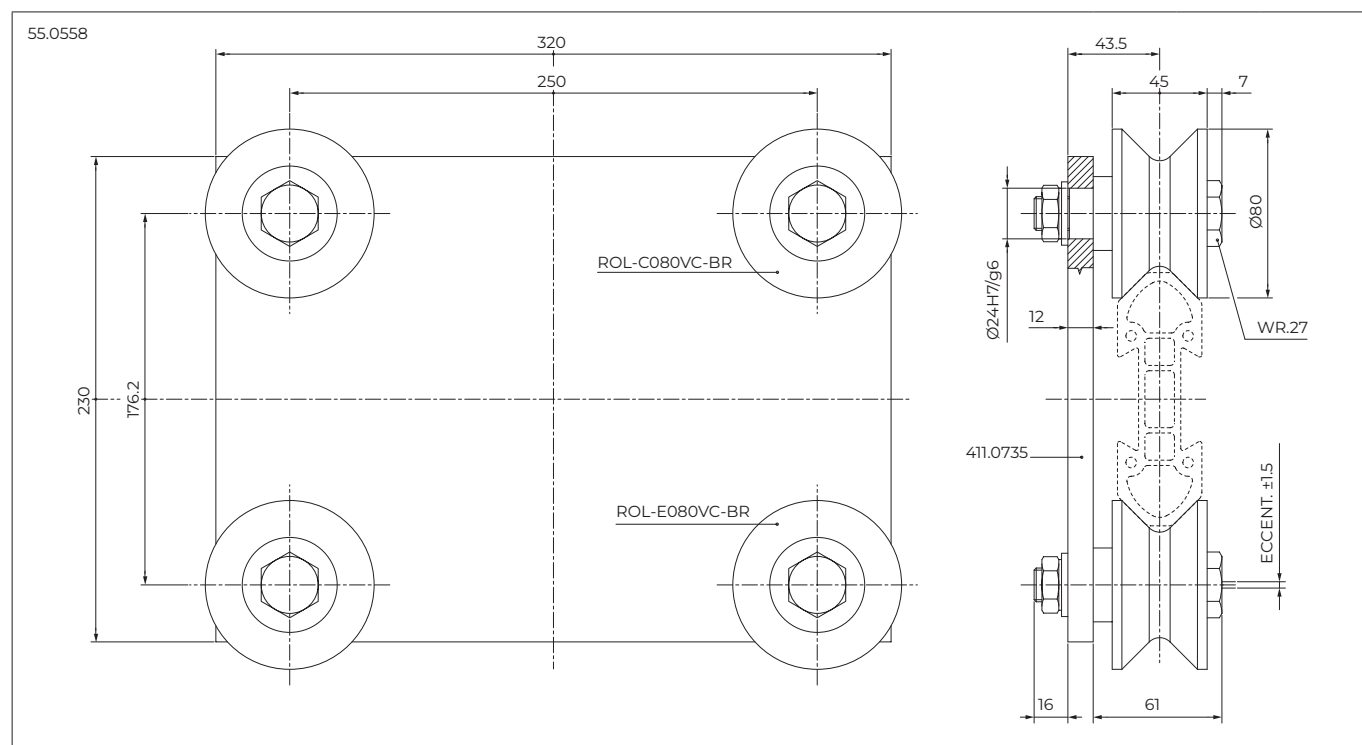
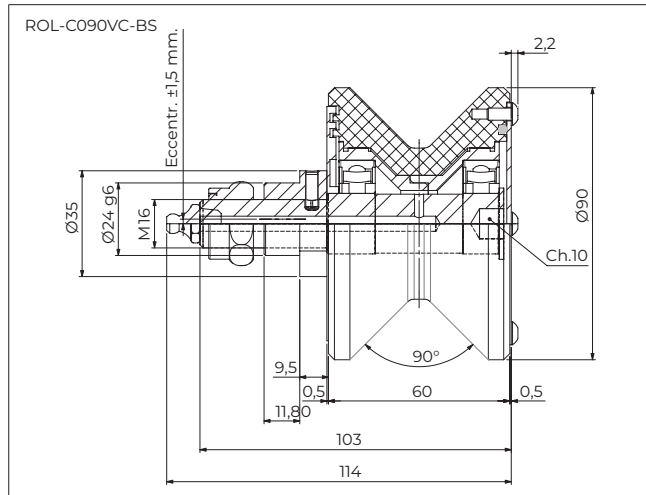


Fig.30

The plate -cod. 411.0735 - is made in aluminium alloy with hard anodization. The rollers -cod. ROL-C080VC-BVA ROL-E080VC-BVA, carriage cod. 55.0636, - and/or different combinations from the ones shown on this page can be mounted on the above plates after consulting our technical department.

■ ROLLERS AND ROLLER ASSEMBLIES Ø 90

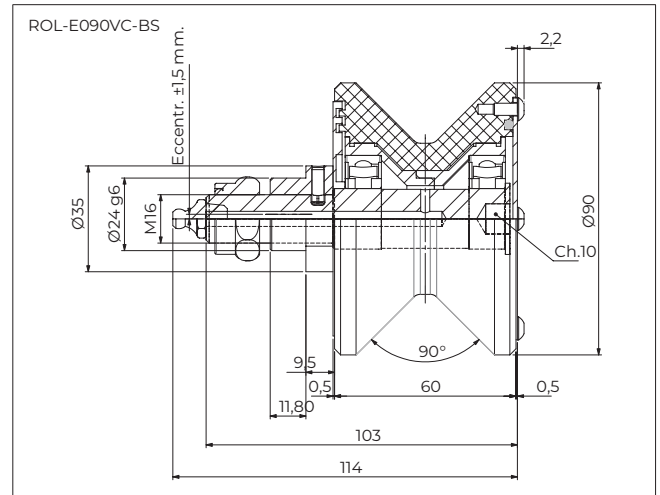
Protected concentric 'V' roller for heavy duties



Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.31

Protected eccentric 'V' roller for heavy duties



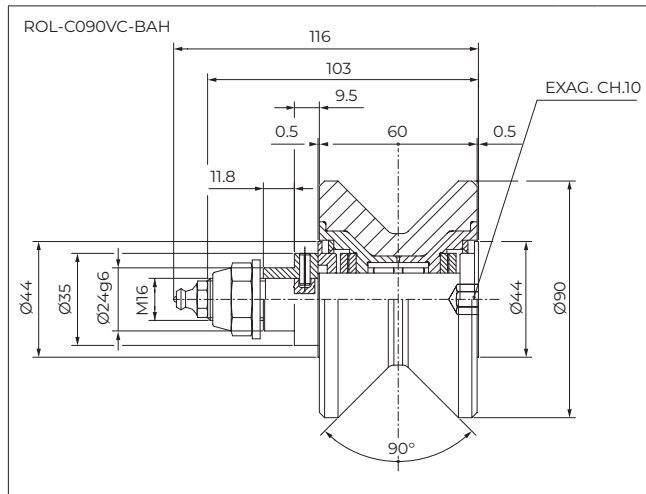
Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.32

Wheelbase for all 'V' shaped rollers on Speedy Rail:

Wheelbase beetwen roller centers for SR120 = 176.2 mm

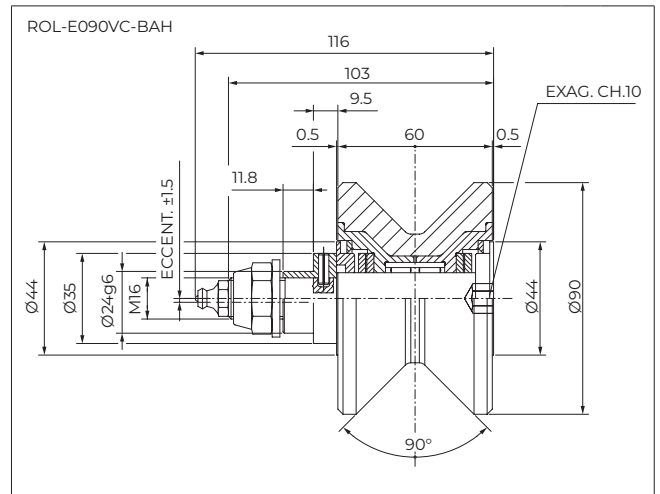
Axially free: ± 1.5 mm heavy duty concentric 'V' roller



Radial load: 1150 N max. - Optional lifetime lubrication

Fig.33

Axially free: ± 1.5 mm heavy duty eccentric 'V' roller

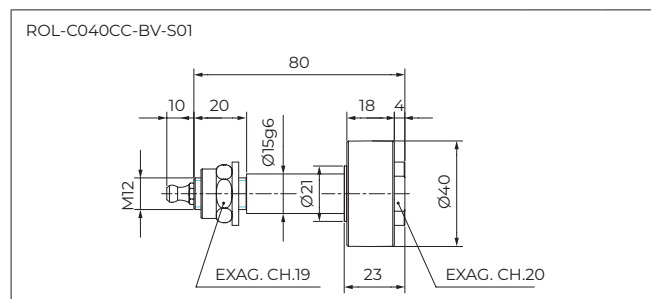


Radial load: 1150 N max. - Optional lifetime lubrication

Fig.34

■ ROLLER AND ASSEMBLIES Ø 40

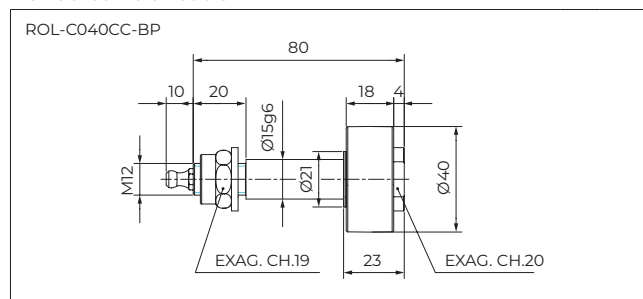
Concentric roller radial load: 880 N max.



Lifetime lubrication cod. ROL-C040CC-BV
 Periodical lubrication cod. ROL-C040CC-BV-S01 - Stainless steel

Fig.35

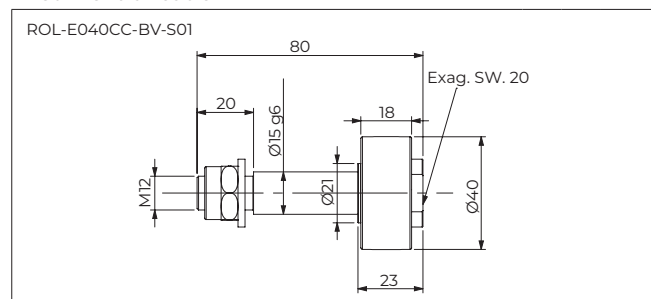
Concentric roller radial load: 880 N max.
Periodical lubrication



Lifetime lubrication cod. ROL-C040CC-BV

Fig.36

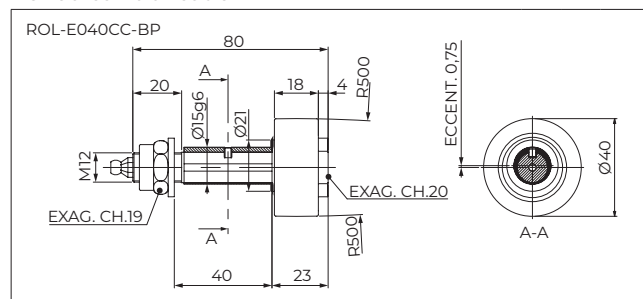
Eccentric roller radial load: 880 N max.
Lifetime lubrication



Periodical lubrication cod. ROL-C040CC-BV-S01 - Stainless steel

Fig.37

Eccentric roller radial load: 880 N max.
Periodical lubrication



Lifetime lubrication cod. ROL-E040CC-BV

Fig.38

2 Rollers light full-block assembly

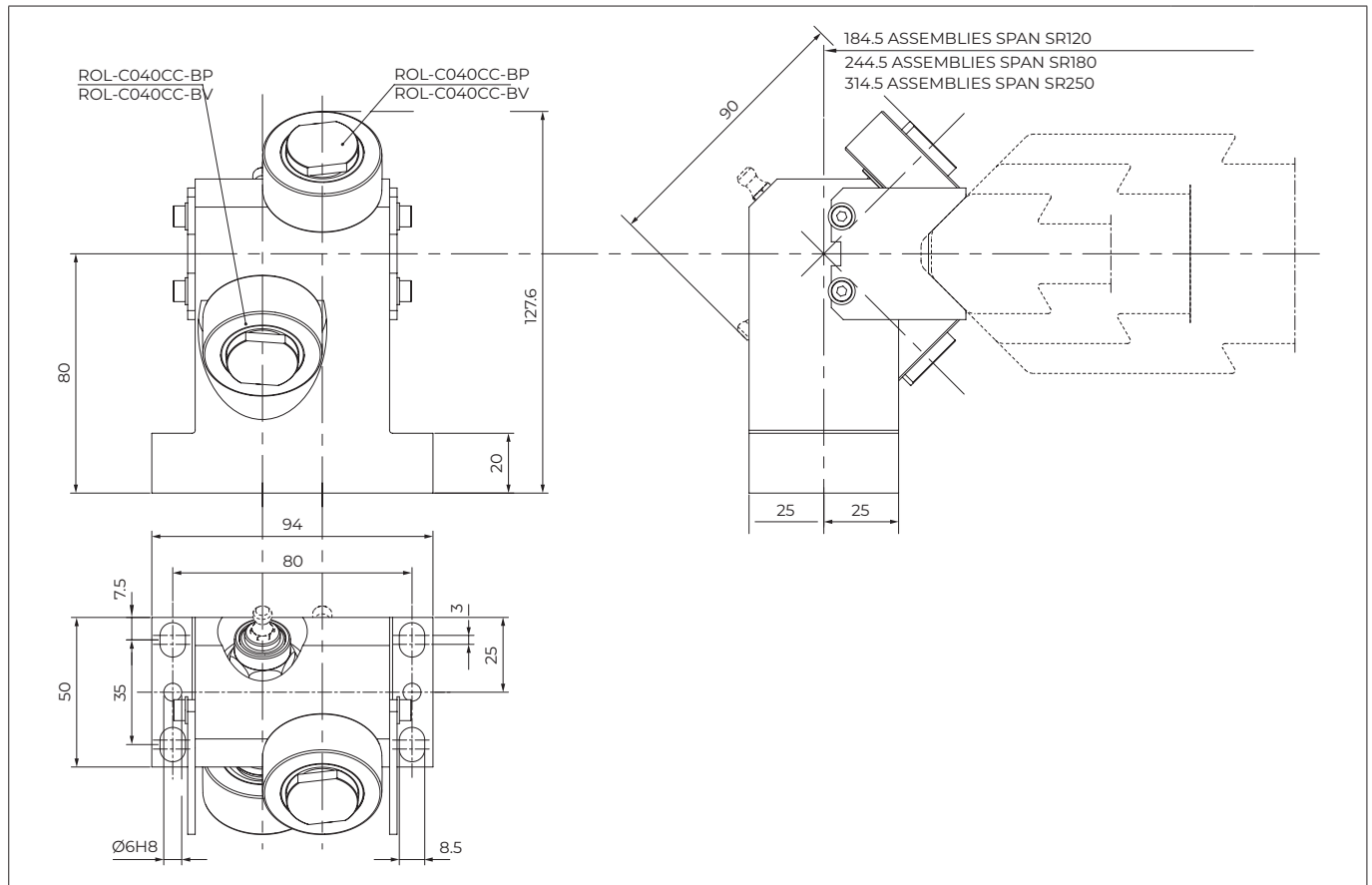


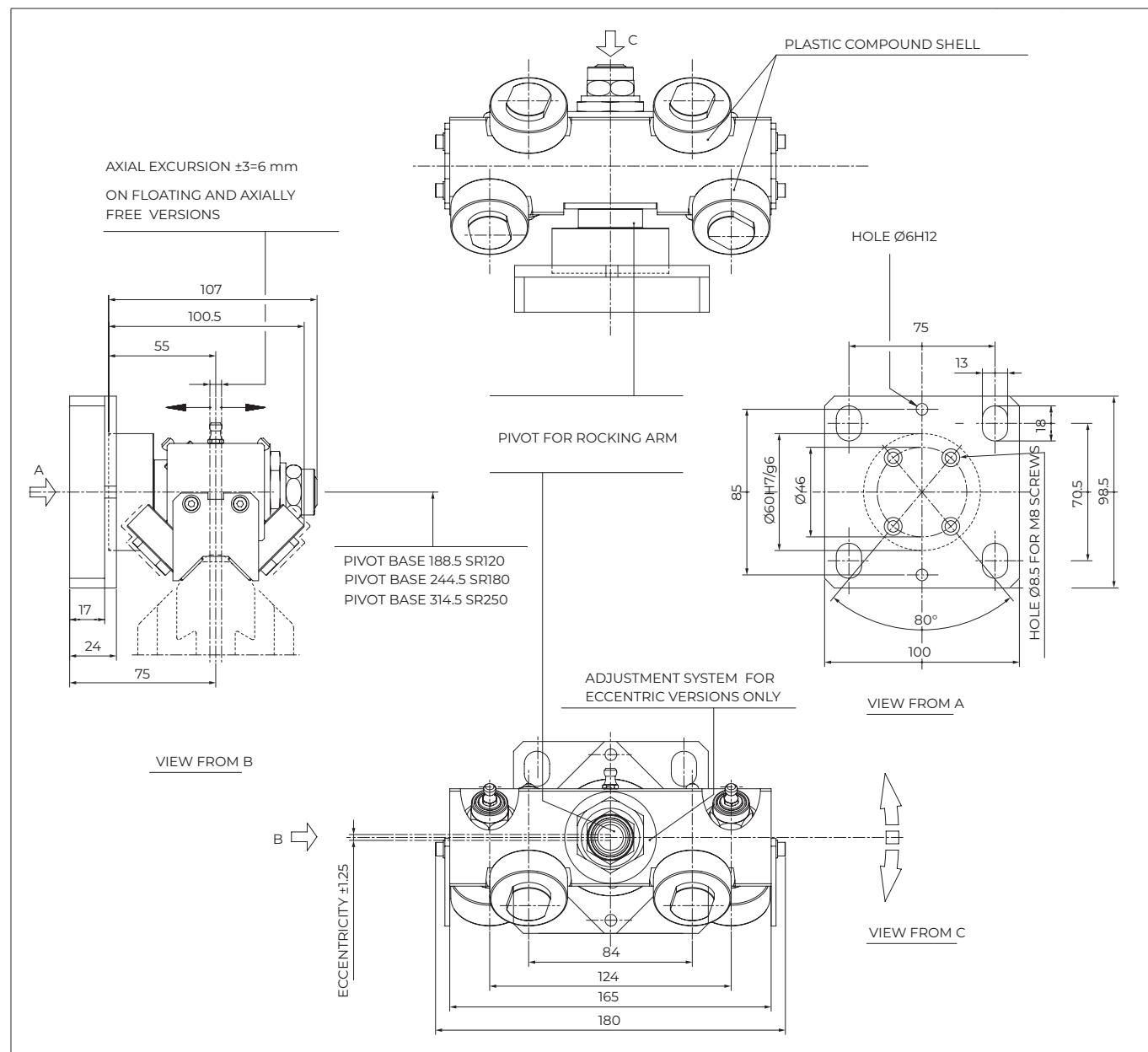
Fig.39

55.1550

Light alloy rollers assembly with 2 $\varnothing 40$ rollers. ROL-C040CC-BP
Periodical lubrication.

55.1570

Light alloy rollers assembly with 2 $\varnothing 40$ rollers, ROL-C040CC-BV
Lifetime lubricated.

Light 4 rollers floating assembly for speedy rail guides


* Lubrication nipple mounted for periodic lubrication versions only

Fig.40

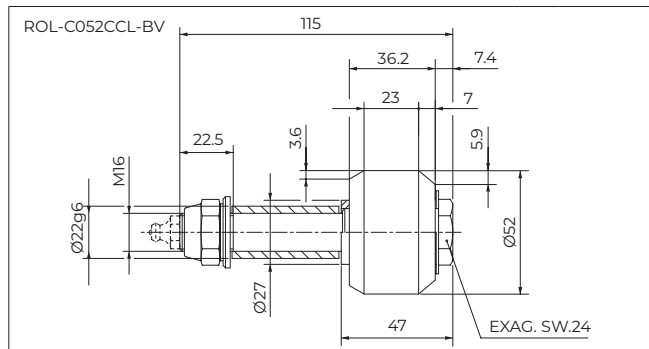
Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1565/SP)

Roller assemblies reference		Axially constrained	Axially free	Rollers code
PERIODICAL LUBRICATION	ECC.	55.1565	55.3563	ROL-C040CC-BP
	CONC.	55.1566	55.3564	
LIFETIME LUBRICATION	ECC.	55.1555	55.3553	ROL-C040CC-BV
	CONC.	55.1556	55.3554	

Tab.4

■ ROLLER AND ASSEMBLIES Ø 52

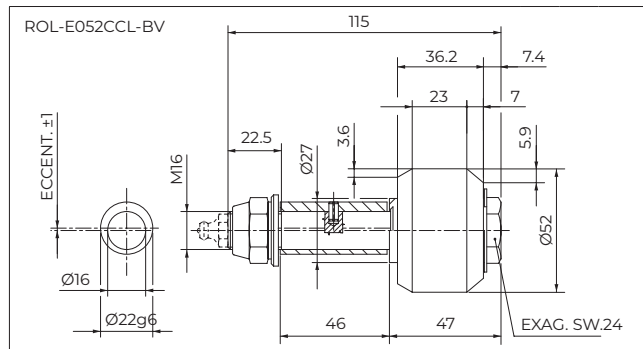
**Concentric roller radial load: 1280 N max.
Lifetime lubrication**



Periodical lubrication cod. ROL-C052CCL-BP

Fig.41

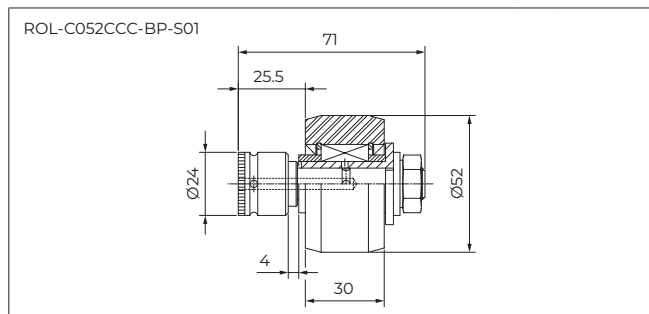
**Eccentric roller radial load: 1280 N max.
Lifetime lubrication**



Periodical lubrication cod. ROL-E052CCL-BP

Fig.42

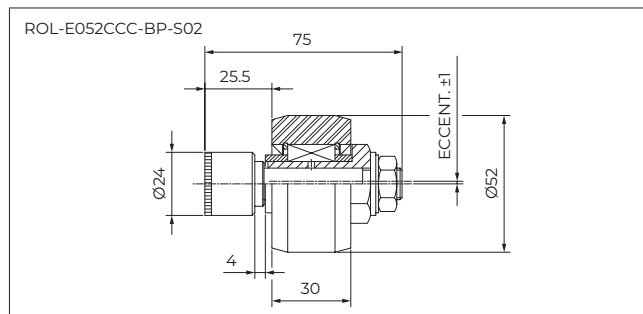
**Concentric roller radial load: 1280 N max.
Periodical lubrication**



Lifetime lubrication cod. ROL-C052CCC-BV-S01

Fig.43

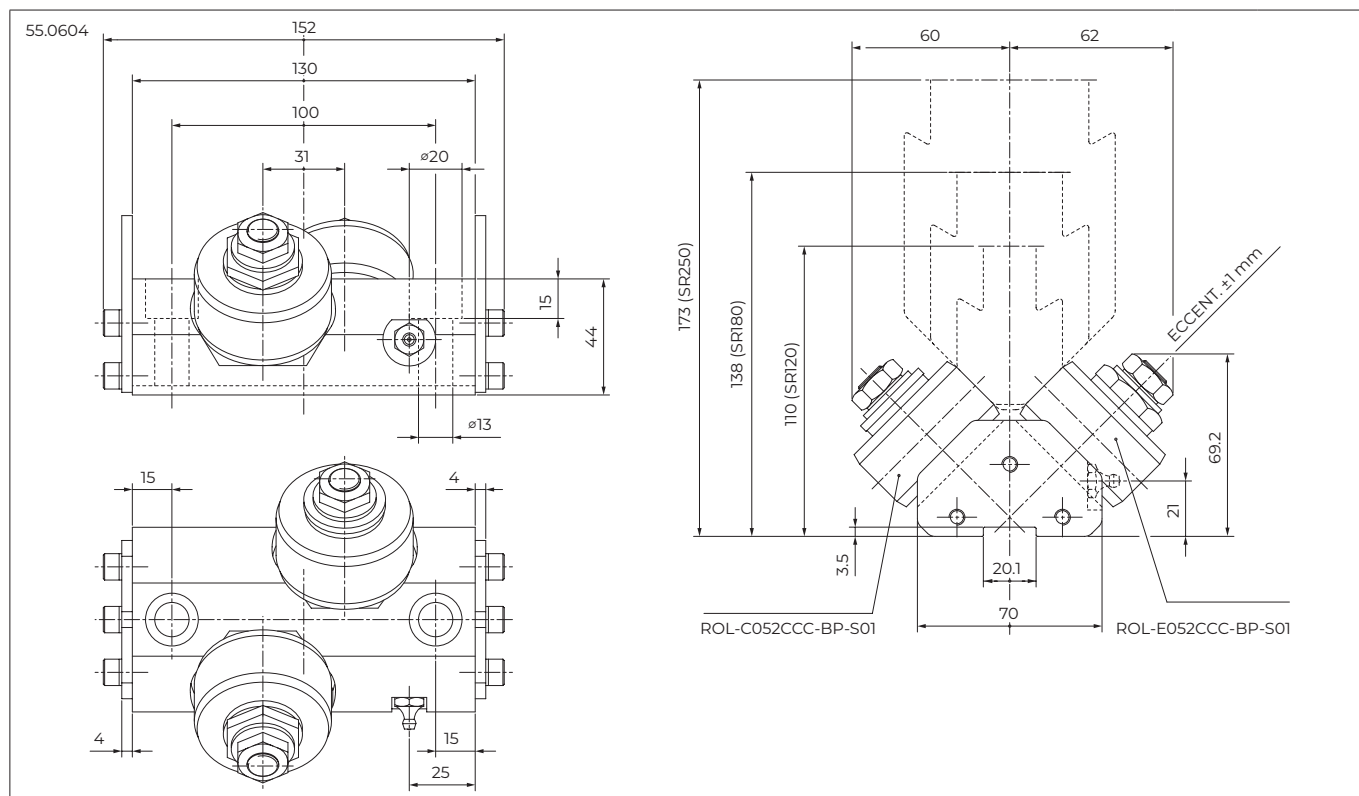
**Eccentric roller radial load: 1280 N max.
Periodical lubrication**



Lifetime lubrication cod. ROL-E052CCC-BV-S02

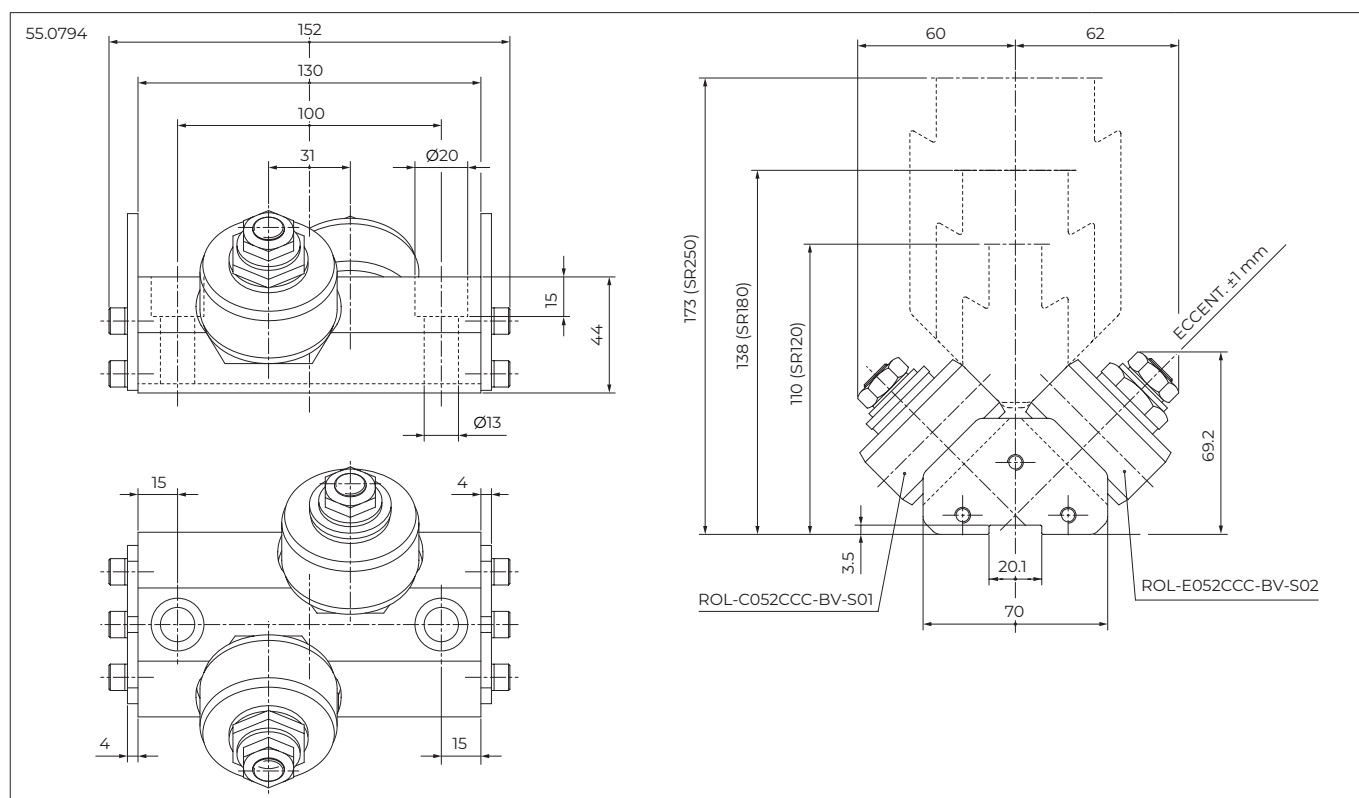
Fig.44

Compact roller assembly with plastic compound rollers



Light alloy compact roller assembly periodical lubrication version

Fig.45



Light alloy compact roller assembly lifetime lubrication version

Fig.46

Full-block roller assembly

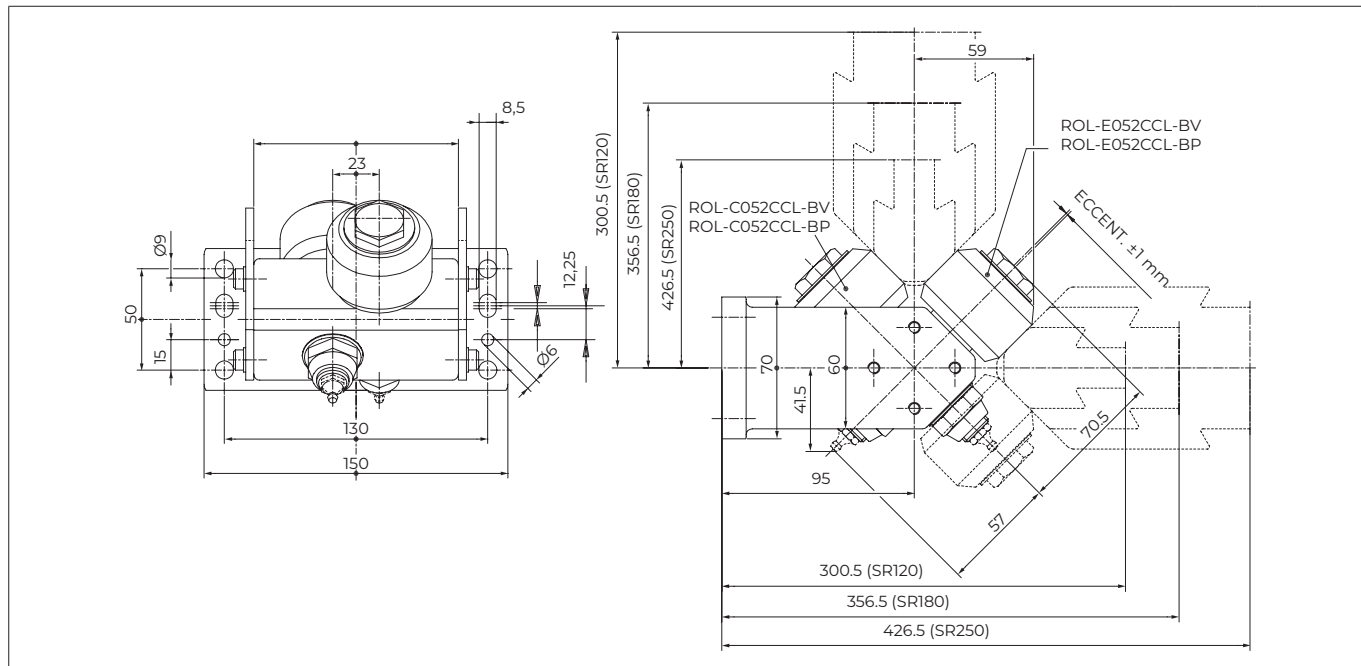


Fig.47

55.0325

Light alloy body roller assembly with mounting holes on short sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0725

Lifetime lubrication version rollers ROL-C052CCL-BV, ROL-E052CCL-BV

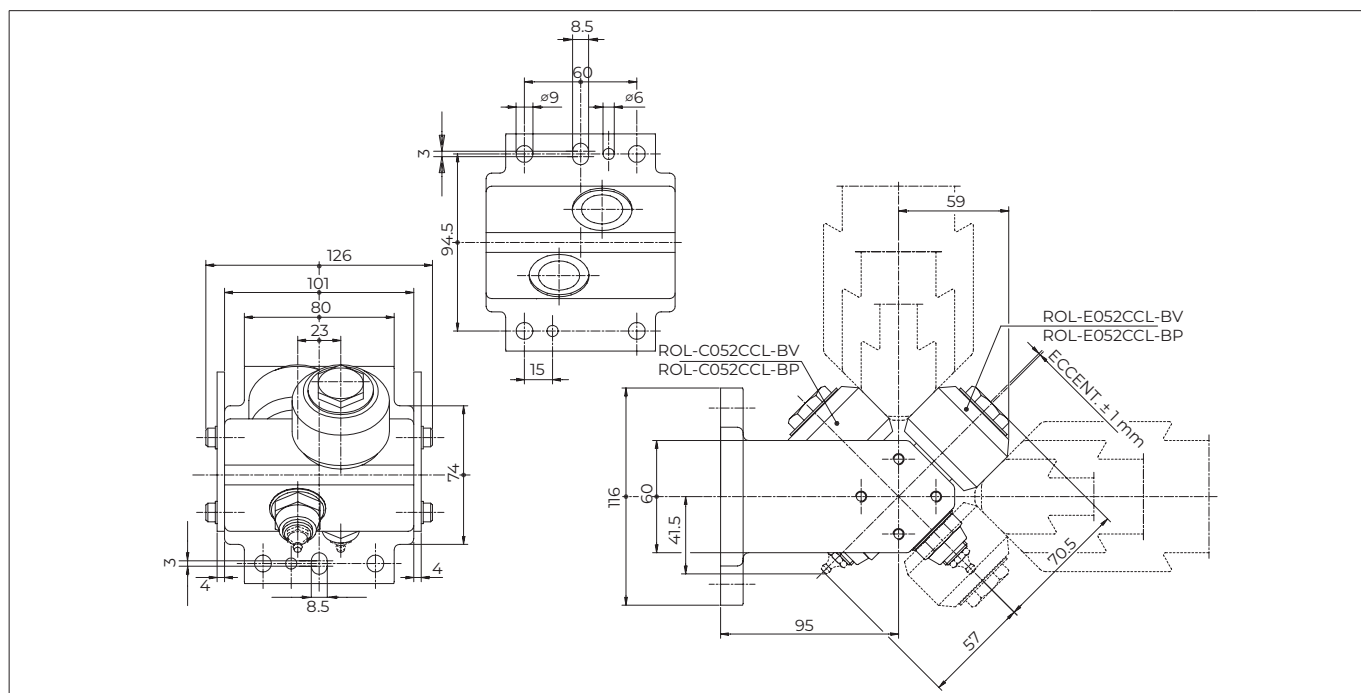


Fig.48

55.0433

Light alloy body roller assembly with mounting holes on long sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0733

Light alloy body roller assembly with mounting holes on long sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCL-BV, ROL-E052CCL-BV

Narrow base roller assembly

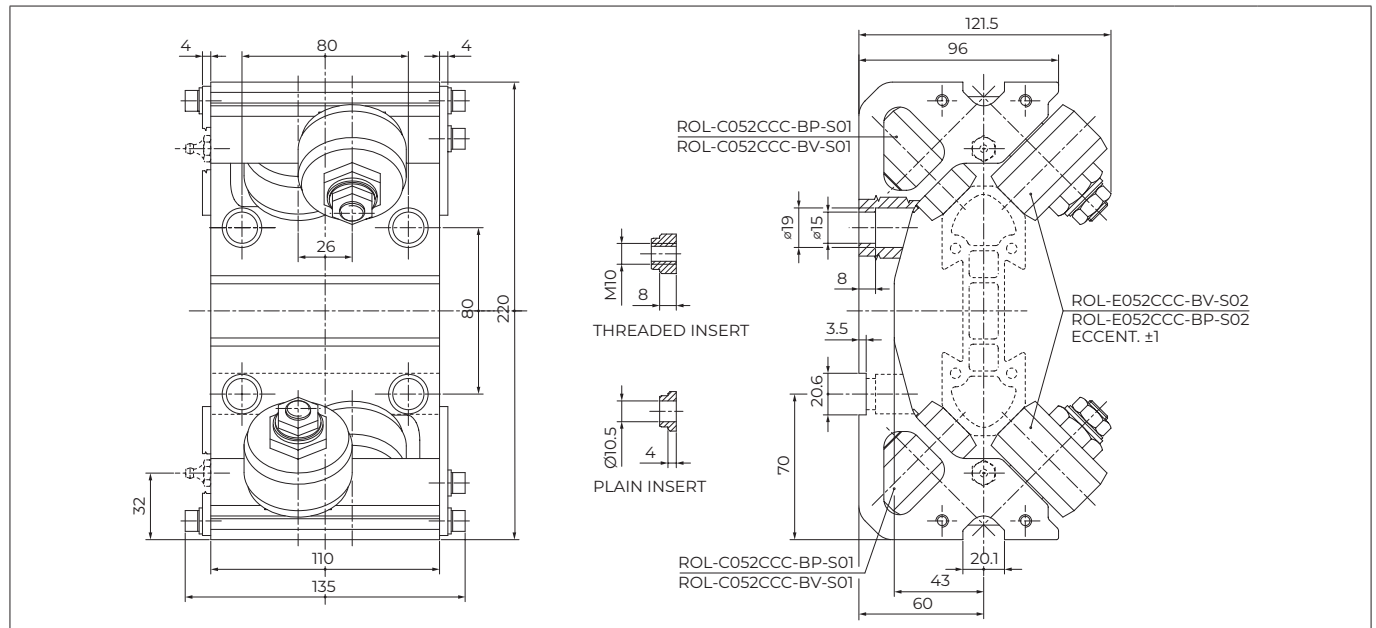


Fig.49

55.0472-FIL

Equipped with 4 threaded fixing inserts
Periodical lubrication

55.0772-FIL

Equipped with 4 threaded fixing inserts
Lifetime lubrication

55.0472-PAS

Equipped with 4 through hole fixing inserts
Periodical lubrication

55.0772-PAS

Equipped with 4 through hole fixing inserts
Lifetime lubrication

Wide base roller assembly

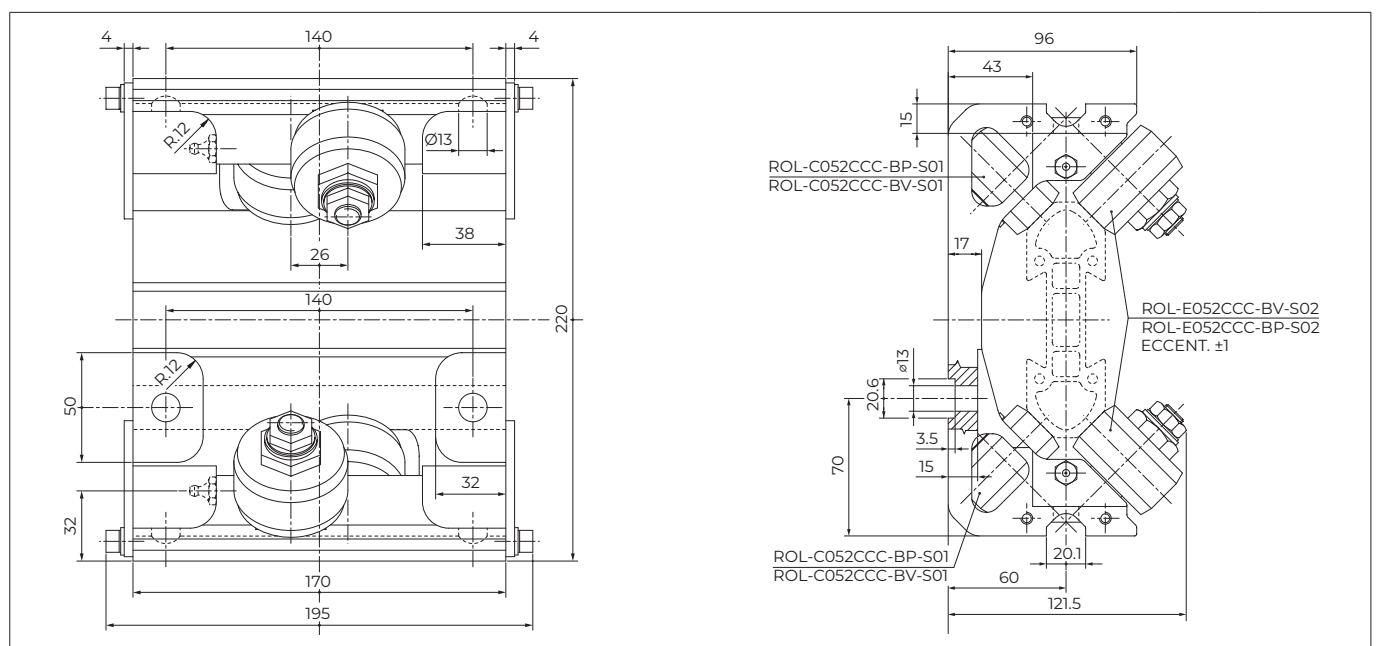


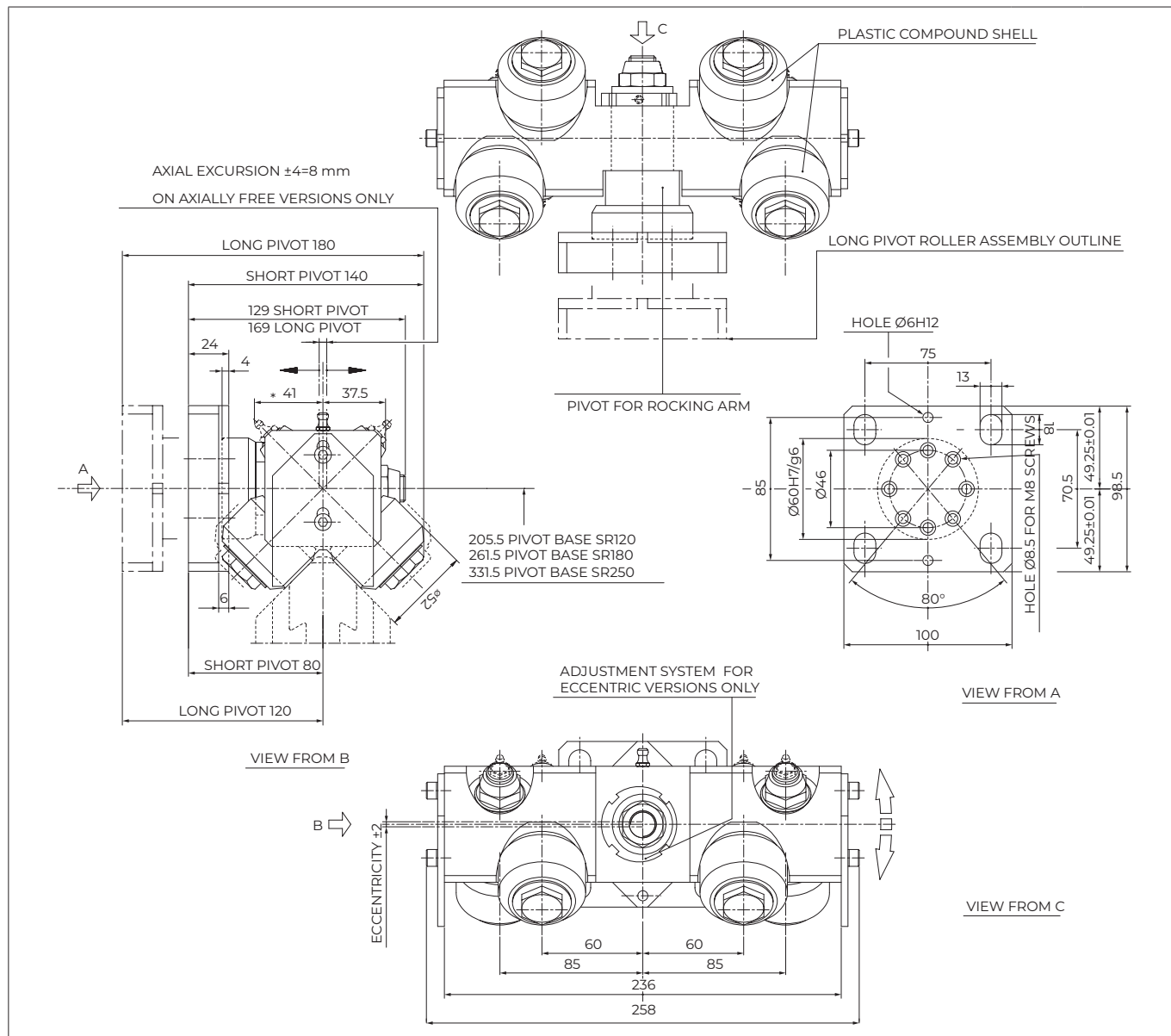
Fig.50

55.0411

Periodical lubrication

55.0711

Lifetime lubrication

Floating roller assembly with 4 rollers - short/long pivot


* Lubrication nipple mounted for periodic lubrication versions only

Fig.52

Notes:

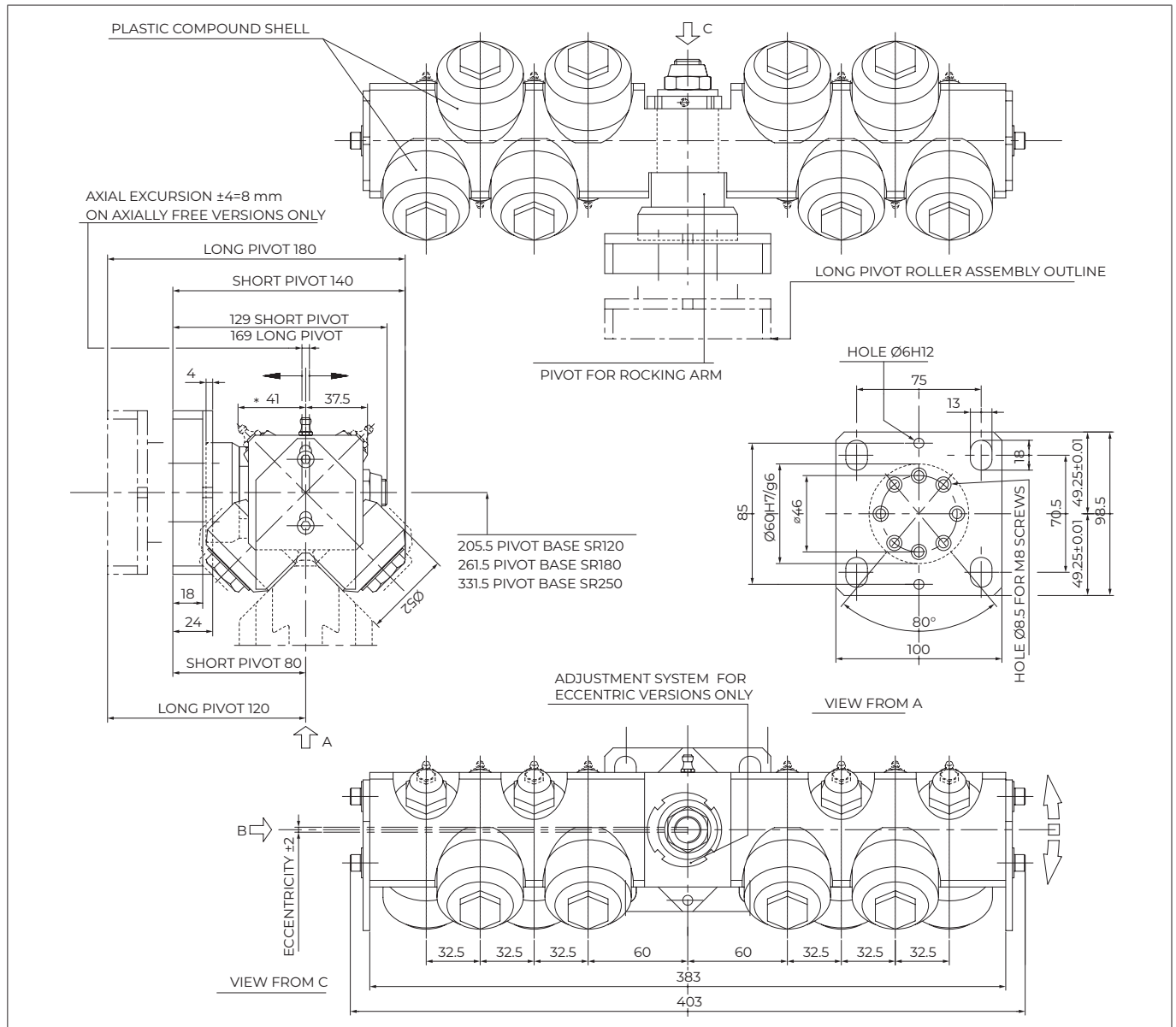
The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1361/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1361	55.3361	ROL-C052CCL-BP
		CONC.	55.1364	55.3364	
	LIFETIME LUBRICATION	ECC.	55.1354	55.1358	ROL-C052CCL-BV
		CONC.	55.1355	55.1359	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1363	55.3363	ROL-C052CCL-BP
		CONC.	55.1365	55.3365	
	LIFETIME LUBRICATION	ECC.	55.1350	55.3350	ROL-C052CCL-BV
		CONC.	55.1351	55.3351	

Tab.5

Floating roller assembly with 8 rollers - short/long pivot



* Lubrication nipple mounted for periodic lubrication versions only

Fig.53

Notes:

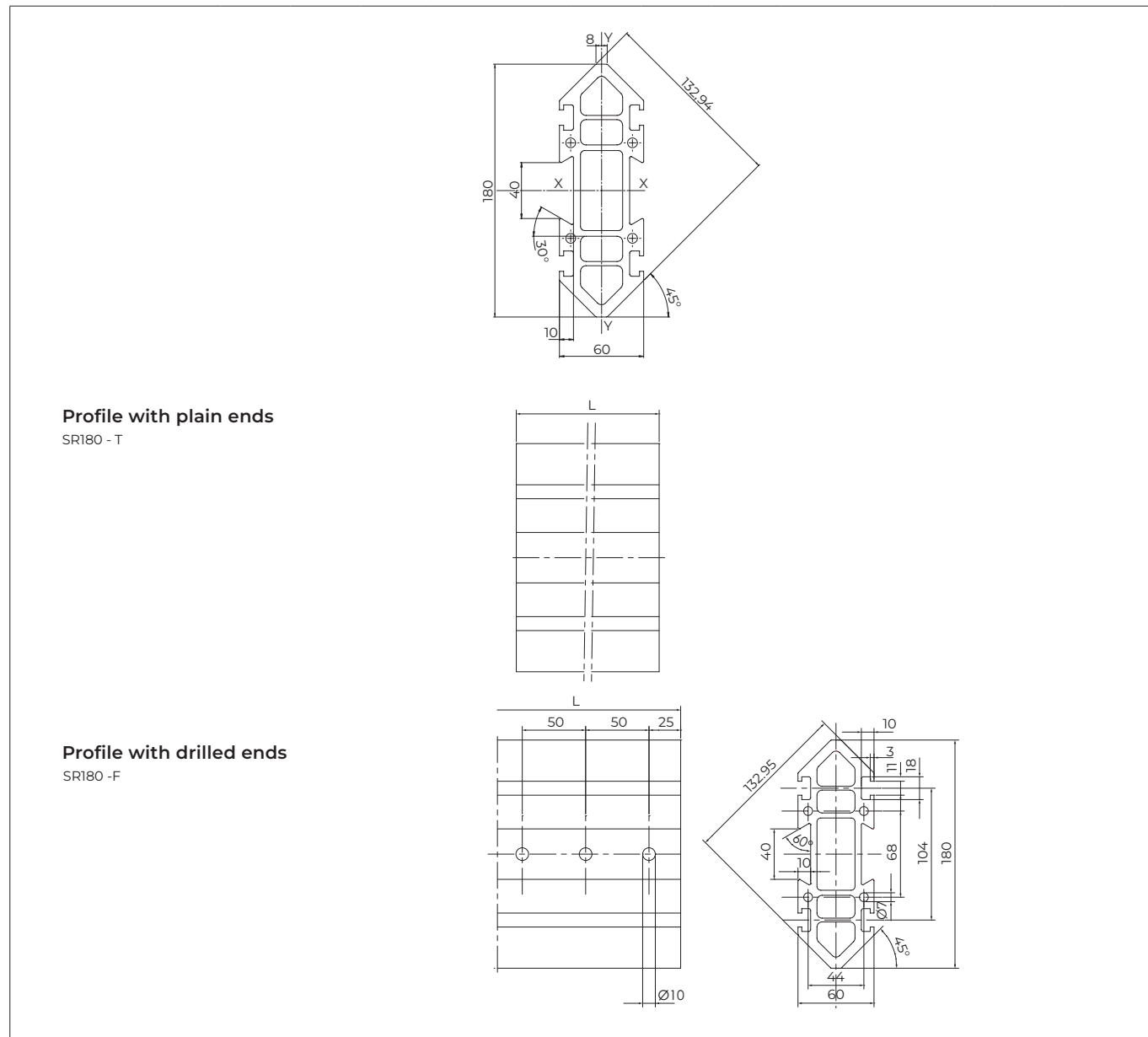
The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1366/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1143	55.3143	ROL-C052CCL-BP
		CONC.	55.1144	55.3144	
	LIFETIME LUBRICATION	ECC.	55.1145	55.3145	ROL-C052CCL-BV
		CONC.	55.1146	55.3146	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1147	55.3147	ROL-C052CCL-BP
		CONC.	55.1148	55.3148	
	LIFETIME LUBRICATION	ECC.	55.1149	55.3149	ROL-C052CCL-BV
		CONC.	55.1150	55.3150	

Tab.6

■ SPEEDY RAIL 180



Drillings on the guide end are required as a safety measure with end-to-end joining in moving rails.

Fig.54

Max. manufacturing tolerances = ± 0.30 mm across opposite rolling surfaces.

Max. angular distortion = $\pm 20''/m$.

Max. linear distortion = ± 0.7 mm/m.

Standard lengths: 3000-3500-4000-4500-5000-5500-6000-6500-7000-7500 mm.

External surface: deep hard anodizing

Profile type and code N°	Surface quadratic moment I (X) mm ⁴	Surface quadratic moment I (Y) mm ⁴	Section modulus W (X) mm ³	Section modulus W (Y) mm ³	Section mm ²	Distance d mm: (Roller contact axis)	Linear mass t kg/mt
SR180 - T SR180 - F	10.291.100	1.278.700	114.345	42.620	3.730	95,7	10,2

Tab.7

■ **Roller assemblies and components**

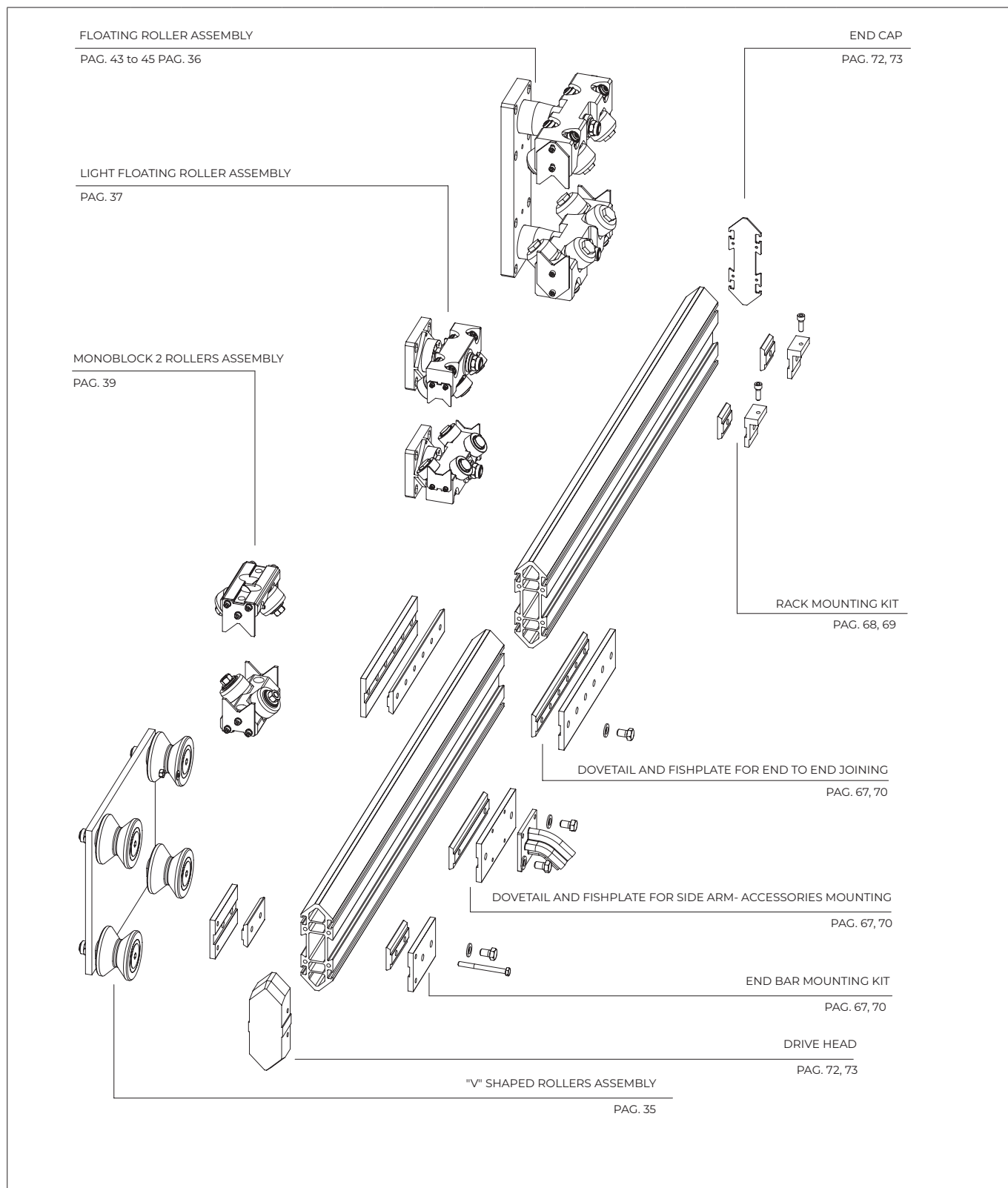
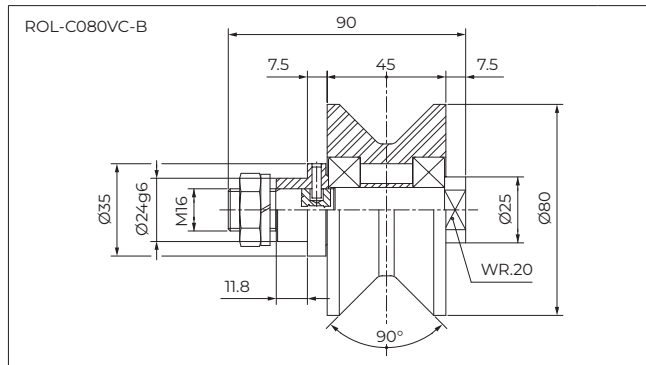


Fig.55

■ ROLLER AND ASSEMBLIES Ø 80

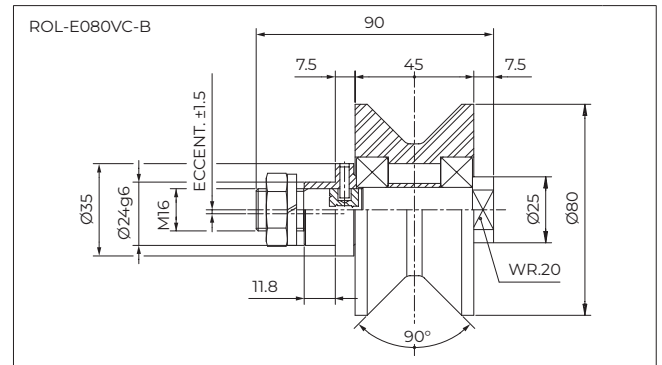
Concentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.56

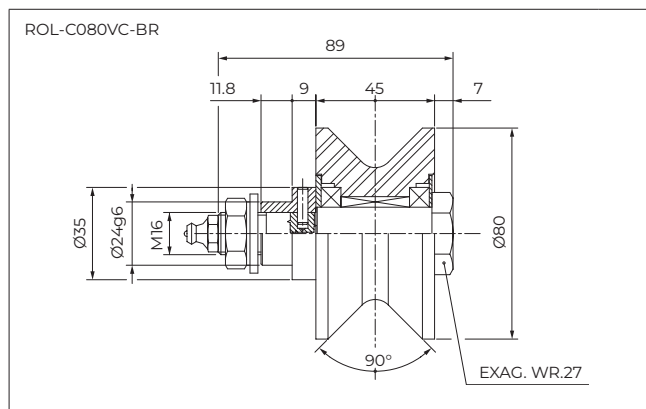
Eccentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.57

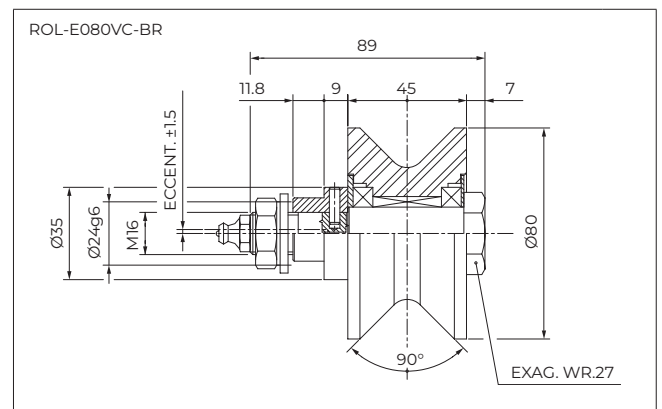
High stiffness concentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication

Fig.58

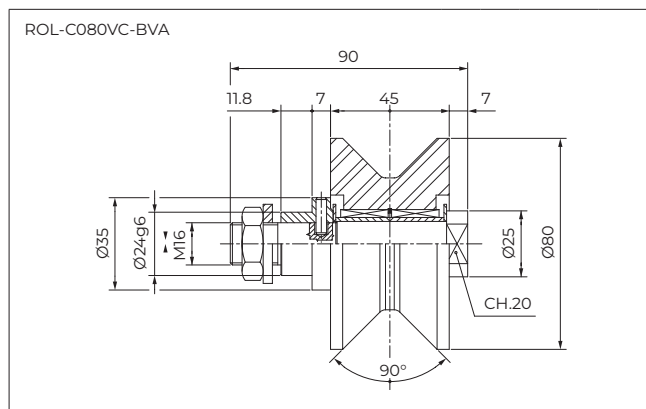
High stiffness eccentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication

Fig.59

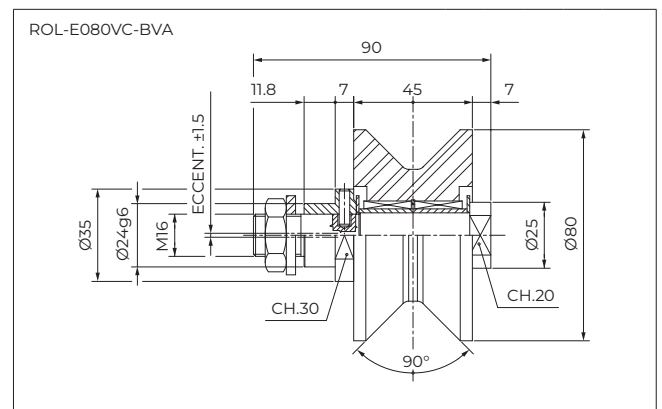
Axially free ±1.9 mm concentric roller



Radial load: 1000 N max. - lifetime lubrication

Fig.60

Axially free ±1.9 mm eccentric roller

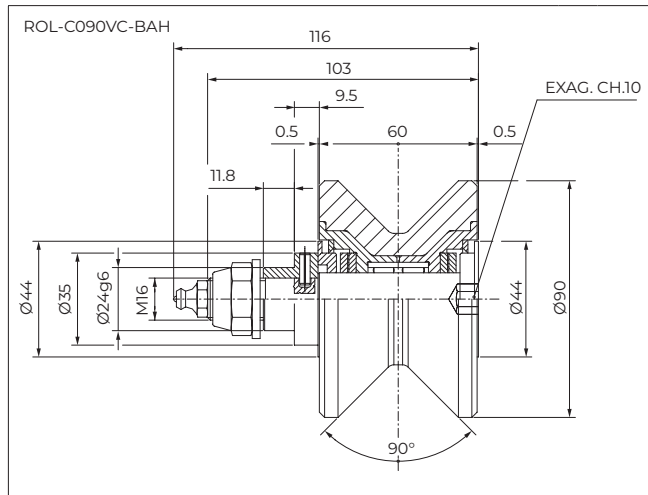


Radial load: 1000 N max. - lifetime lubrication

Fig.61

■ **ROLLER AND ASSEMBLIES Ø 90**

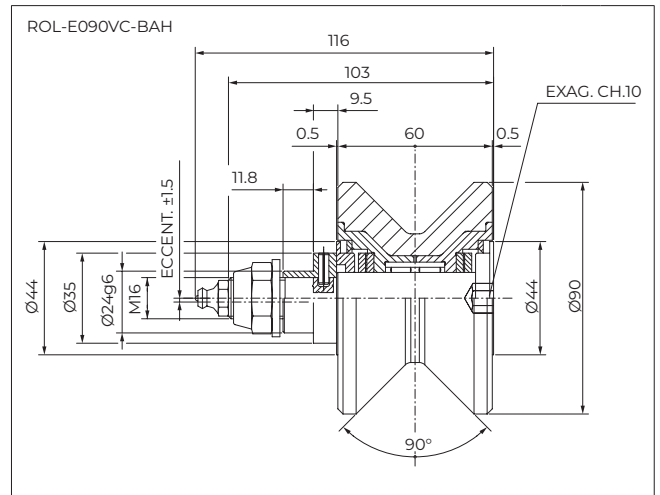
Axially free: ±1.5 mm heavy duty concentric 'V' roller



Radial load: 1150 N max. - Optional lifetime lubrication

Fig.62

Axially free: ±1.5 mm heavy duty eccentric 'V' roller



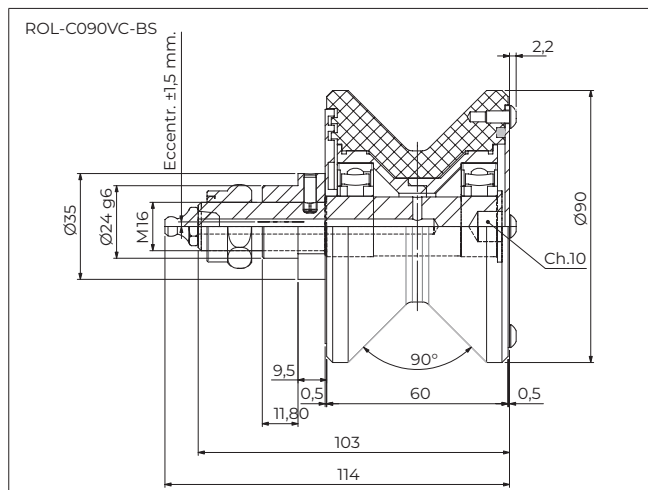
Radial load: 1150 N max. - Optional lifetime lubrication

Fig.63

Wheelbase for all 'V' shaped rollers on Speedy Rail:

Wheelbase between roller centers for SR180 = 232,2 mm

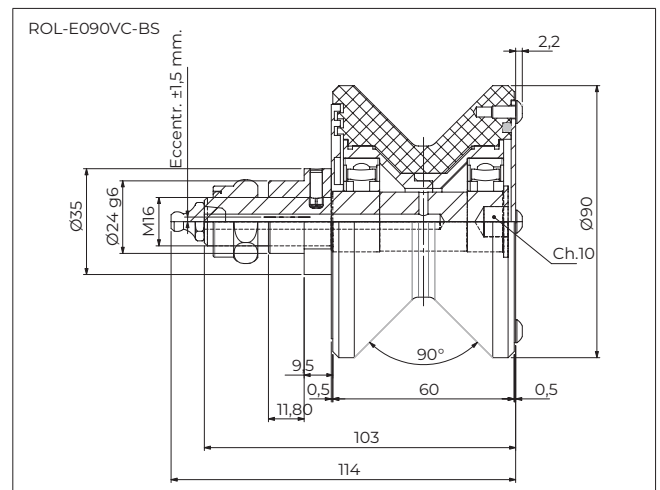
Protected concentric 'V' roller for heavy duties



Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.64

Protected eccentric 'V' roller for heavy duties



Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.65

Roller assembly with "V" shaped rollers

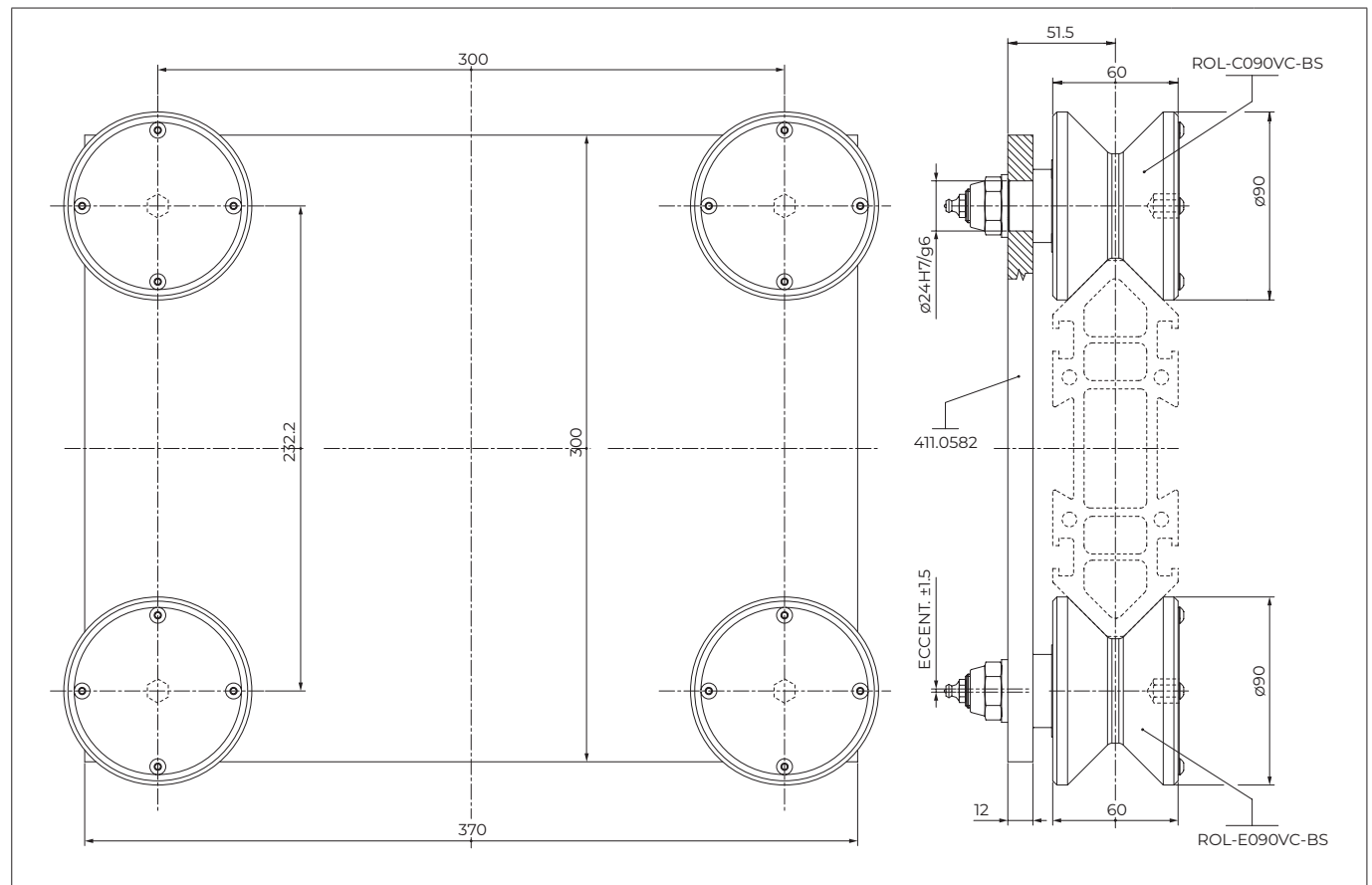


Fig.66

55.1180

Heavy duty roller assembly with 4 rollers, two ROL-C090VC-BS and two ROL-E090VC-BS.

Backing plate - Material: hard anodized aluminium alloy

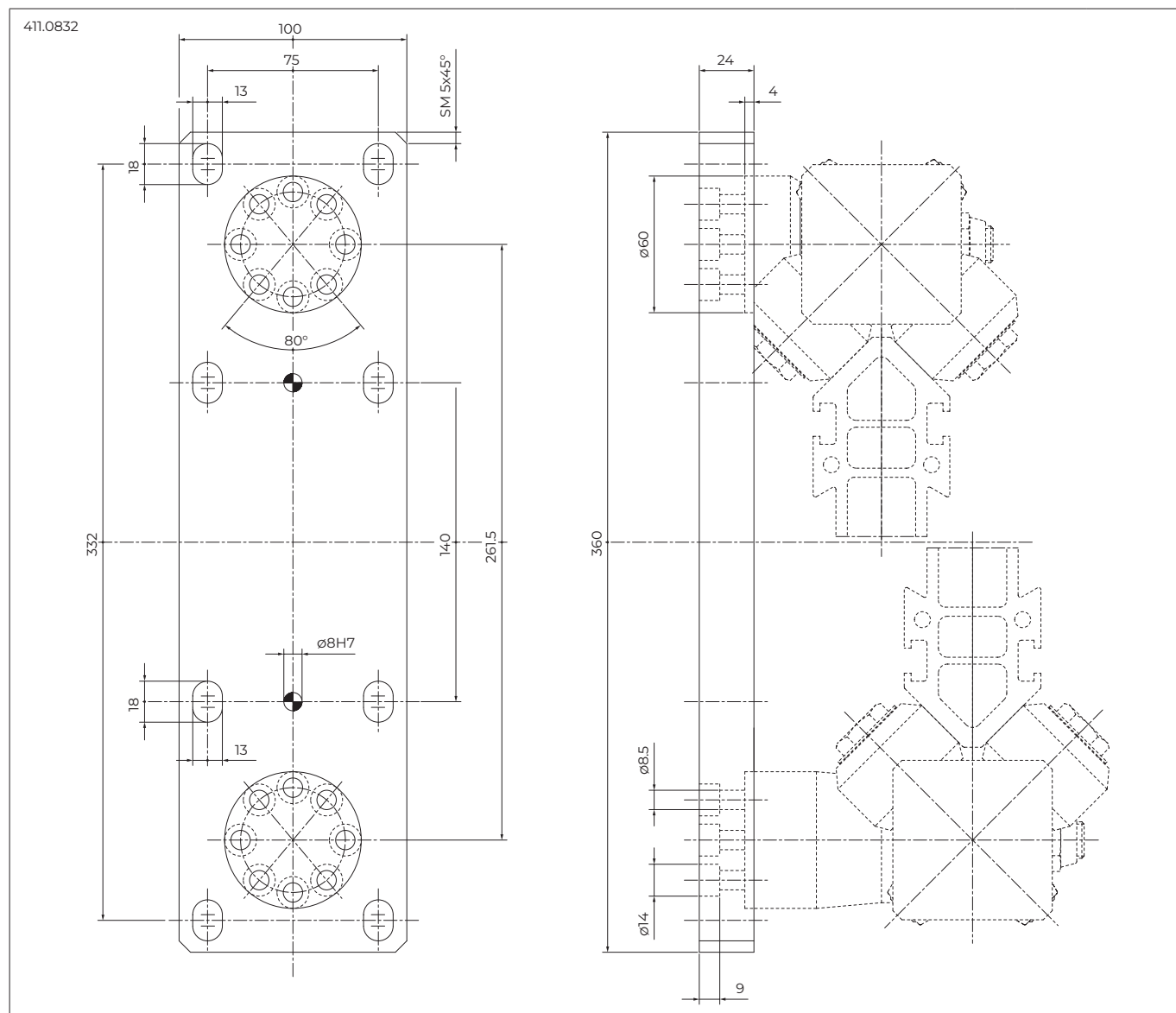


Fig.67

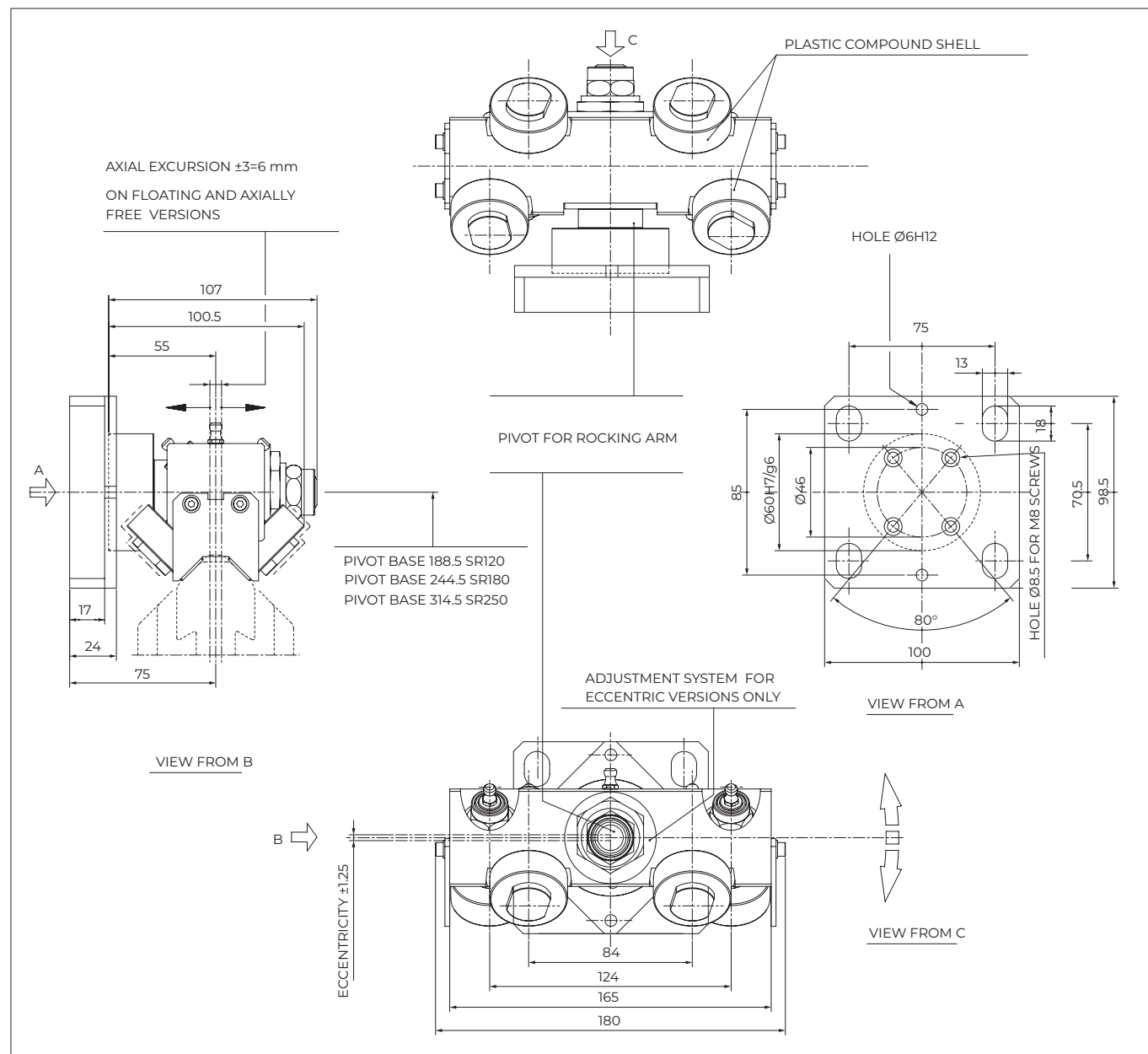
Light 4 rollers floating assembly for Speedy Rail guides


Fig.68

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1565/SP)

Roller assemblies reference		Axially constrained	Axially free	Rollers code
PERIODICAL LUBRICATION	ECC.	55.1565	55.3563	ROL-C040CC-BP
	CONC.	55.1566	55.3564	
LIFETIME LUBRICATION	ECC.	55.1555	55.3553	ROL-C040CC-BV
	CONC.	55.1556	55.3554	

Tab.8

Concentric roller radial load: 880 N max.
Periodical lubrication



Fig.69



Fig.70

Concentric roller radial load: 1280 N max.
Lifetime lubrication



Fig.71



Fig.72



Fig.73

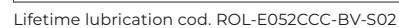
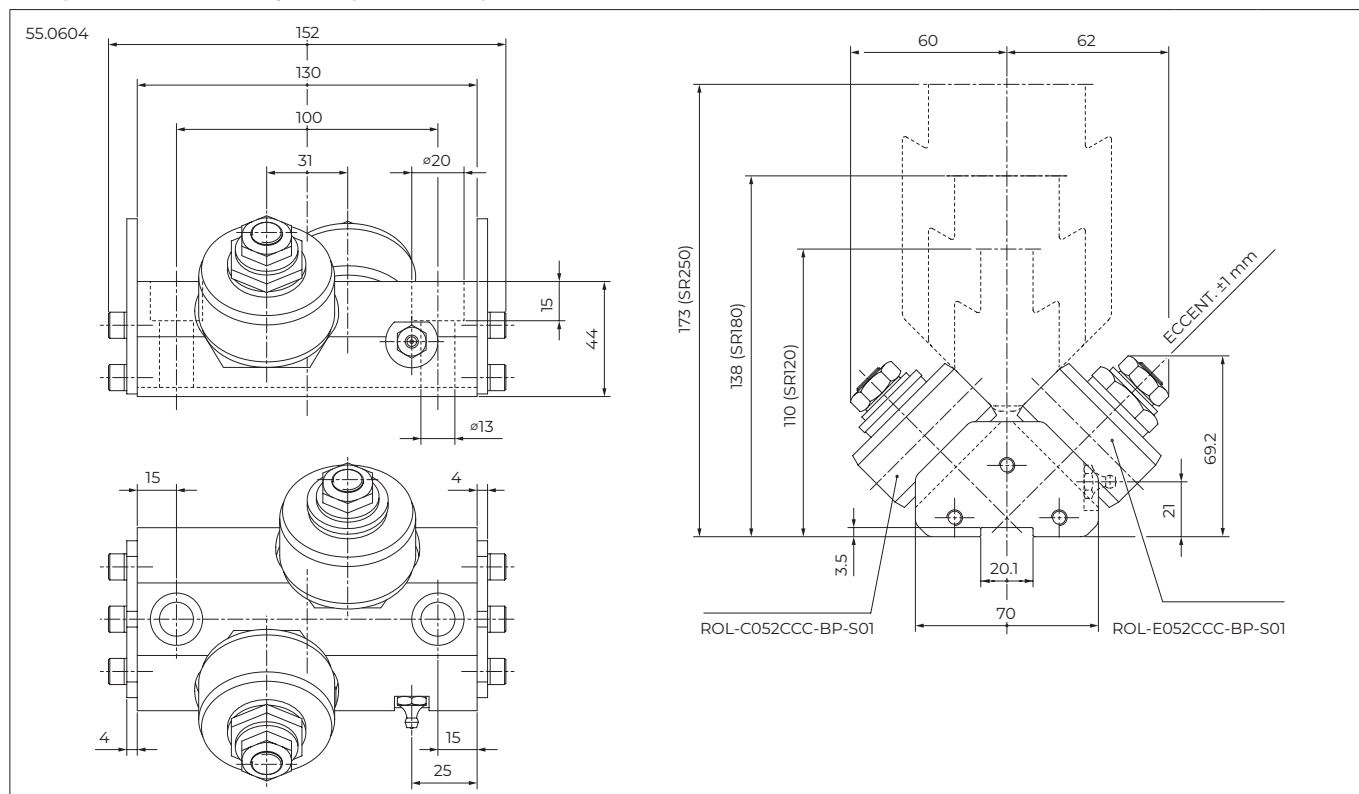


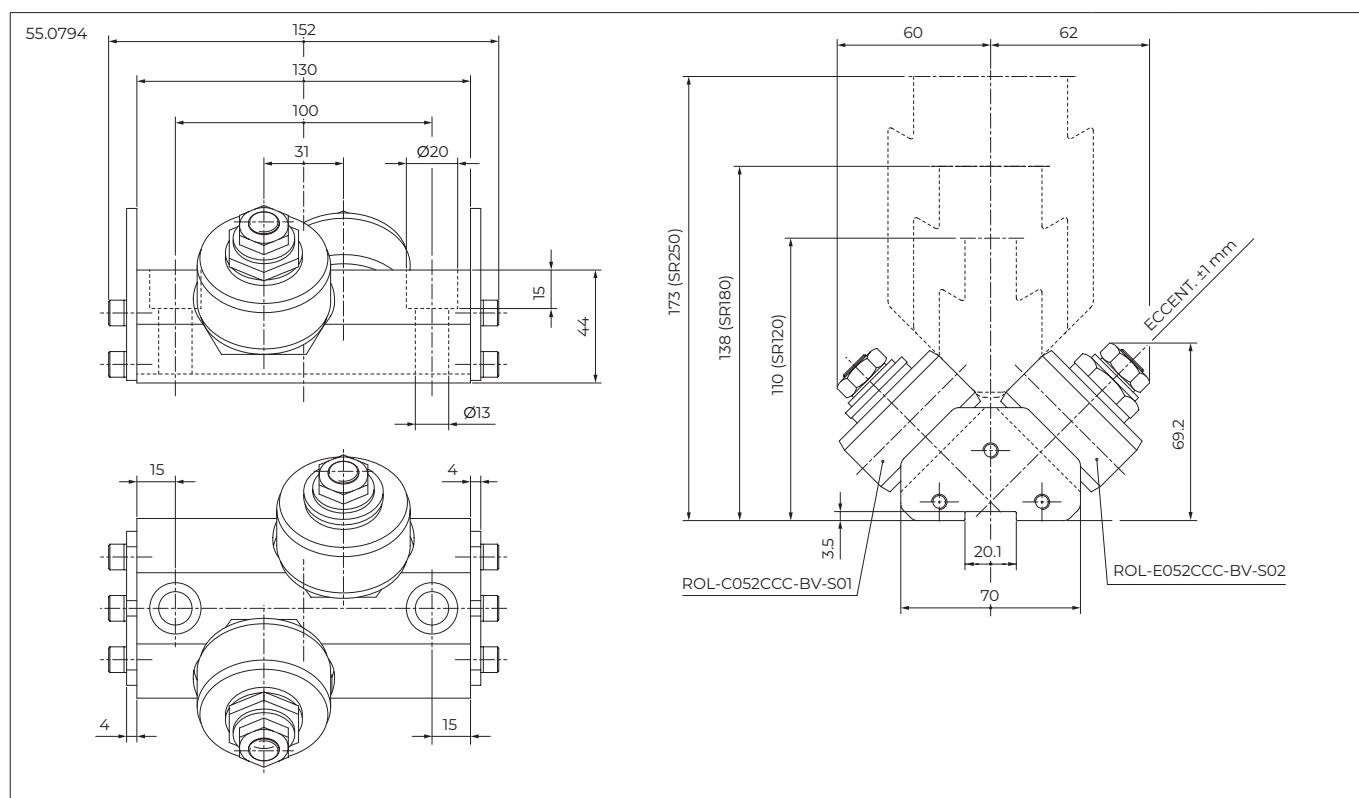
Fig.74

Compact roller assembly with plastic compound rollers



Light alloy compact roller assembly periodical lubrication version

Fig.75



Light alloy compact roller assembly lifetime lubrication version

Fig.76

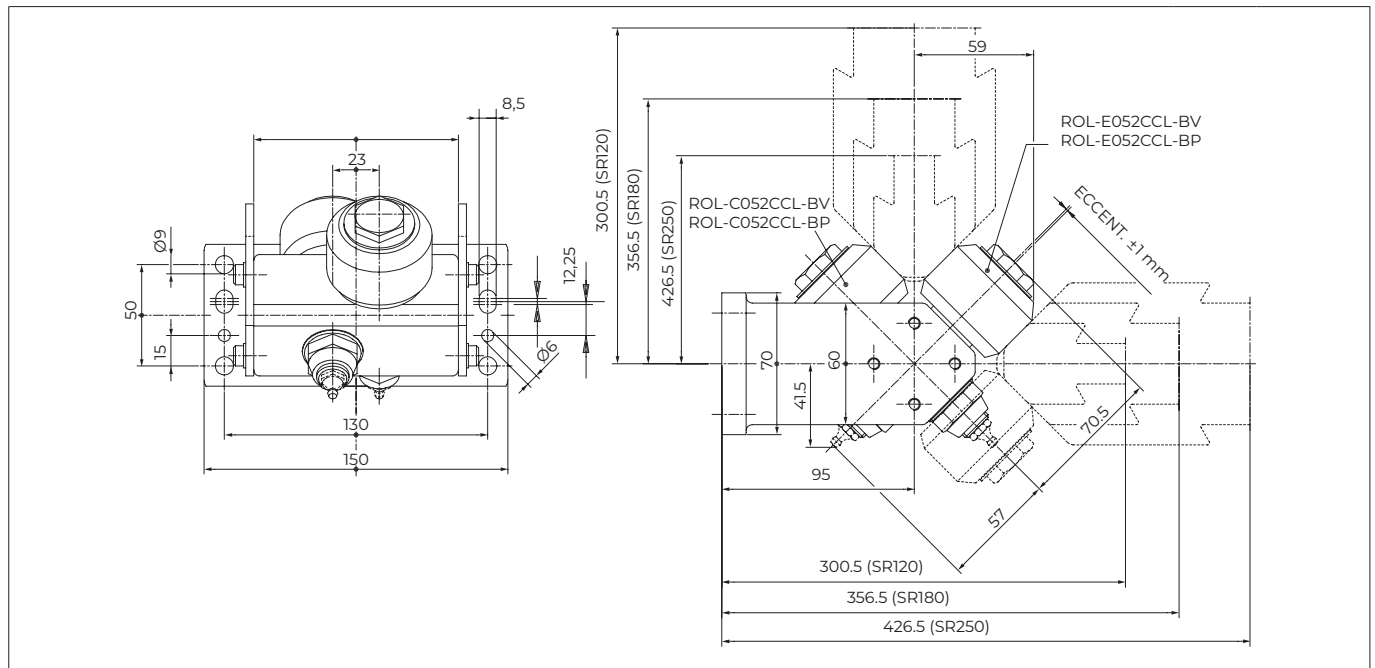
Full-block roller assembly


Fig.77

55.0325

Light alloy body roller assembly with mounting holes on short sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0725

Light alloy body roller assembly with mounting holes on short sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCL-BV, ROL-E052CCL-BV

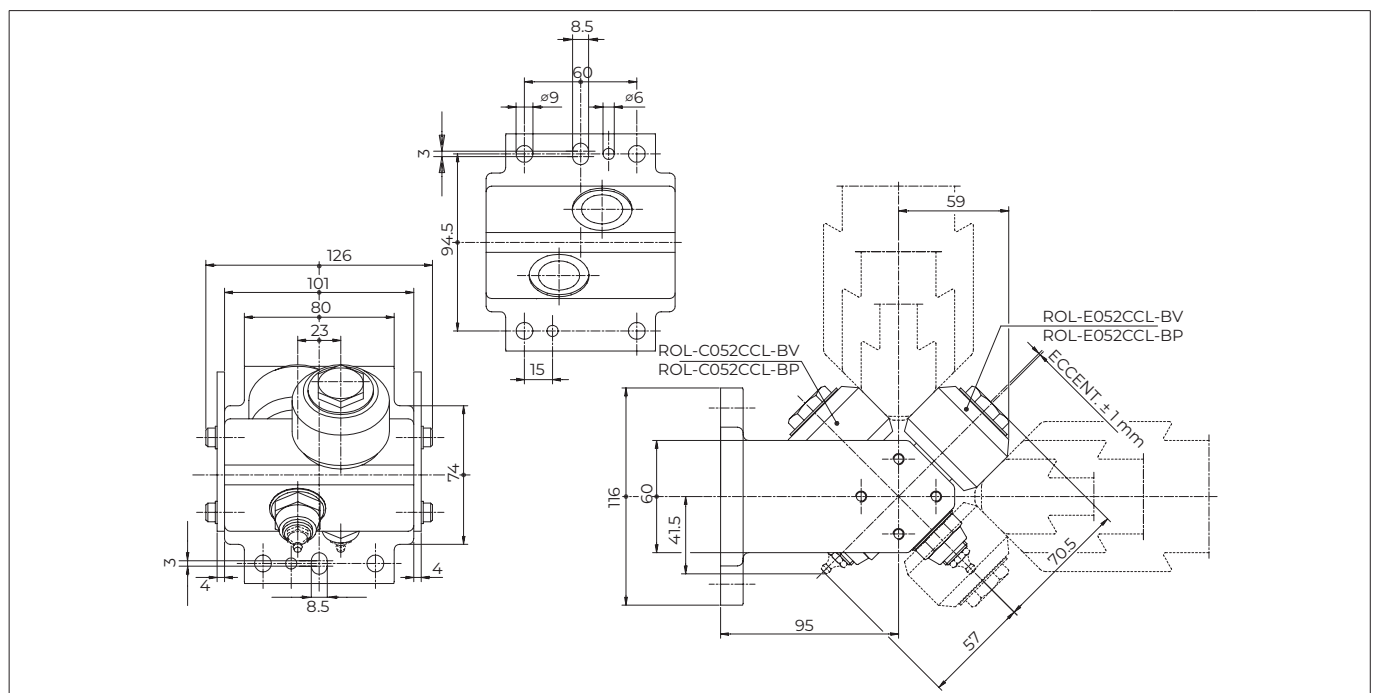


Fig.78

55.0433

Light alloy body roller assembly with mounting holes on long sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0733

Light alloy body roller assembly with mounting holes on short sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCL-BV, ROL-E052CCL-BV

Narrow base roller assembly

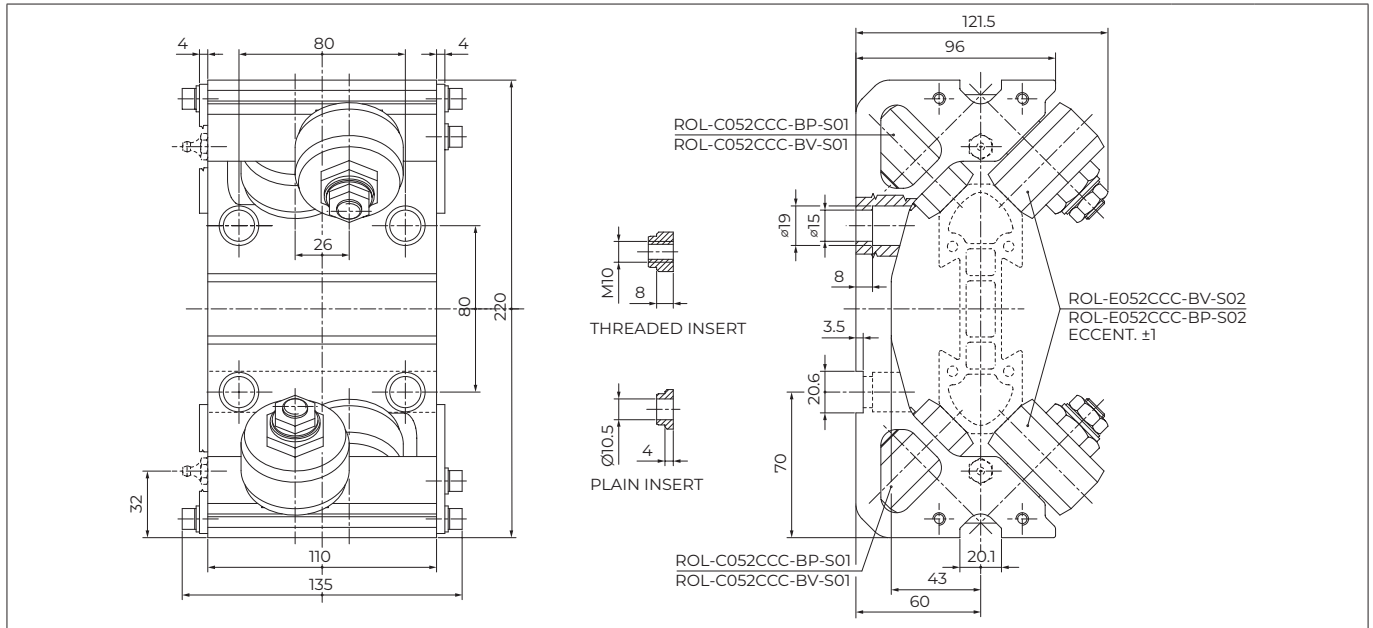


Fig.79

55.0472-FIL

Equipped with 4 threaded fixing inserts
 Periodical lubrication

55.0772-FIL

Equipped with 4 threaded fixing inserts
 Lifetime lubrication

55.0472-PAS

Equipped with 4 through hole fixing inserts
 Periodical lubrication

55.0772-PAS

Equipped with 4 through hole fixing inserts
 Lifetime lubrication

Wide base roller assembly

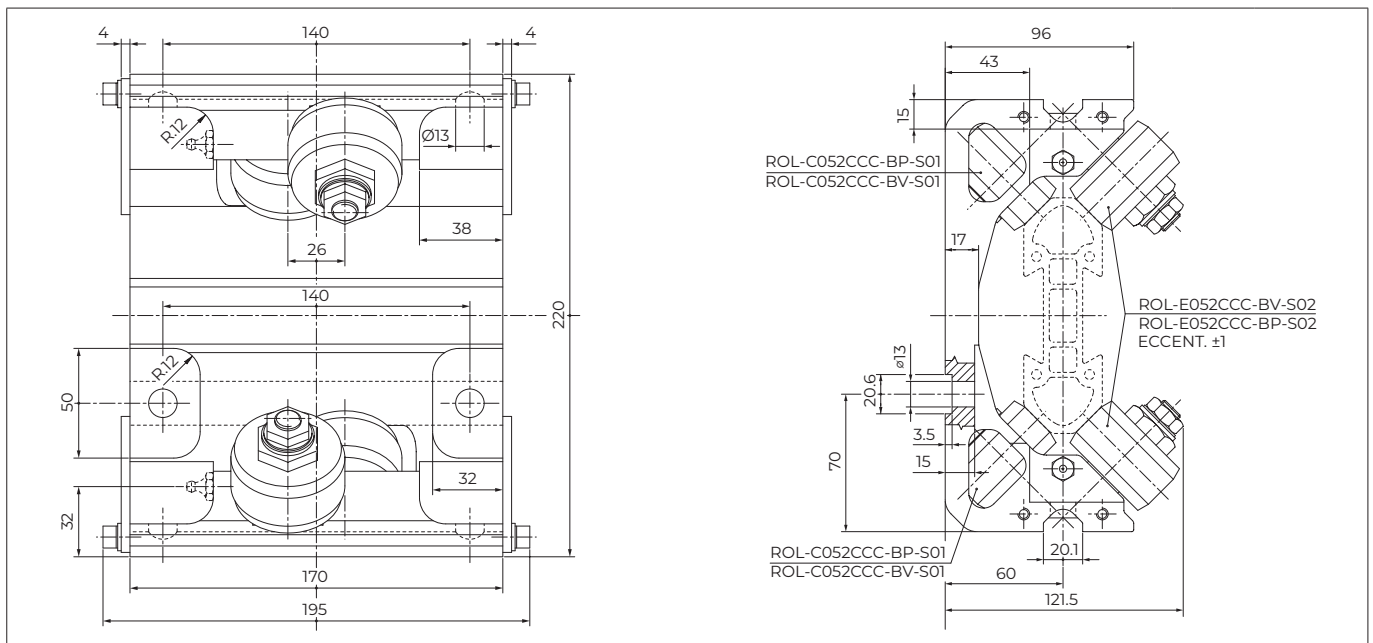


Fig.80

55.0411

Periodical lubrication

55.0711

Lifetime lubrication

8 Rollers blindo beam roller assembly

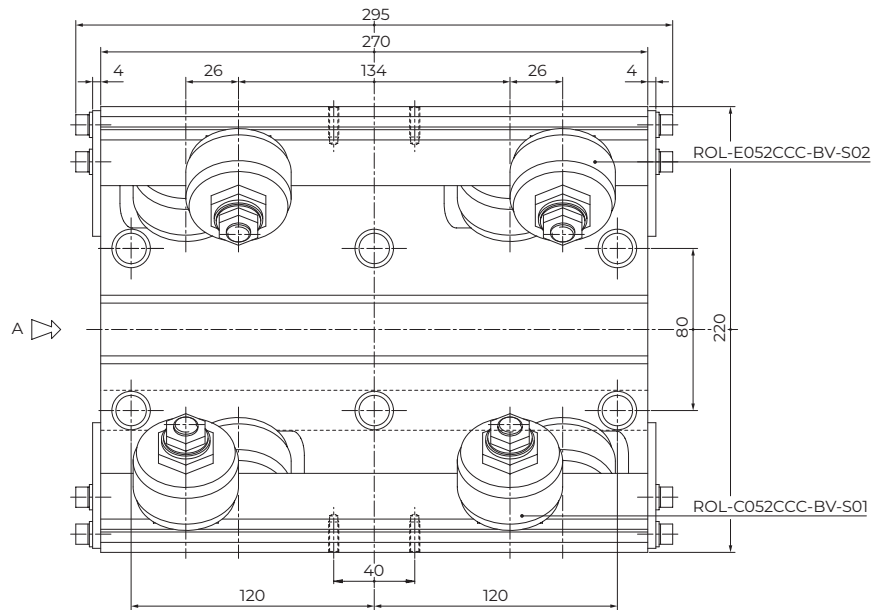


Fig.81

55.0222-FIL

Equipped with 6 threaded fixing inserts

Lifetime lubrication

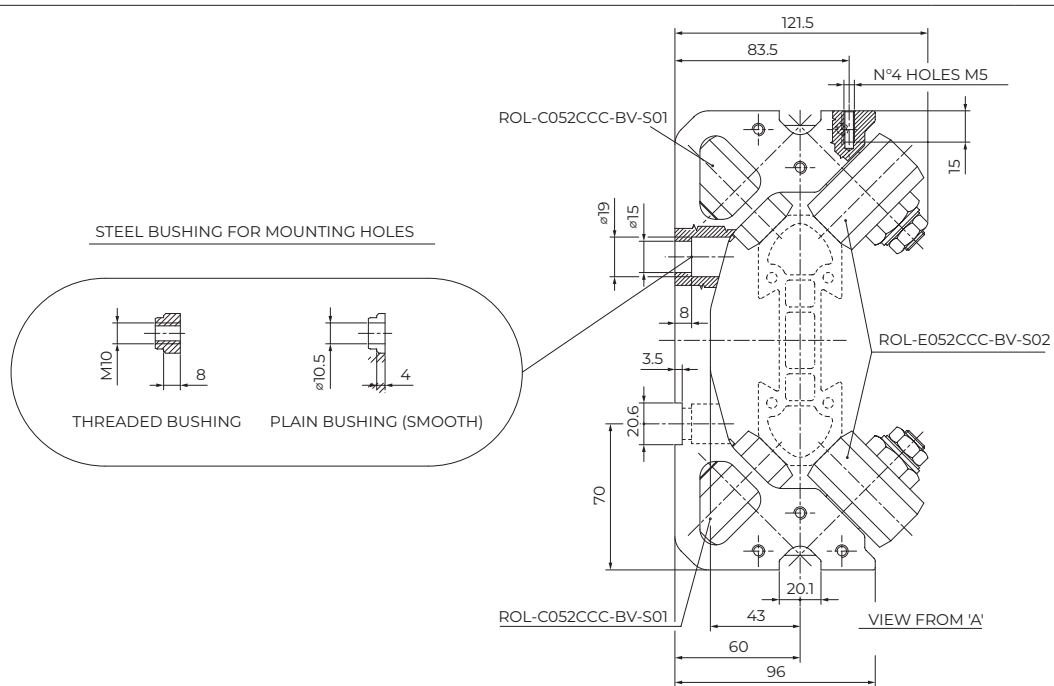
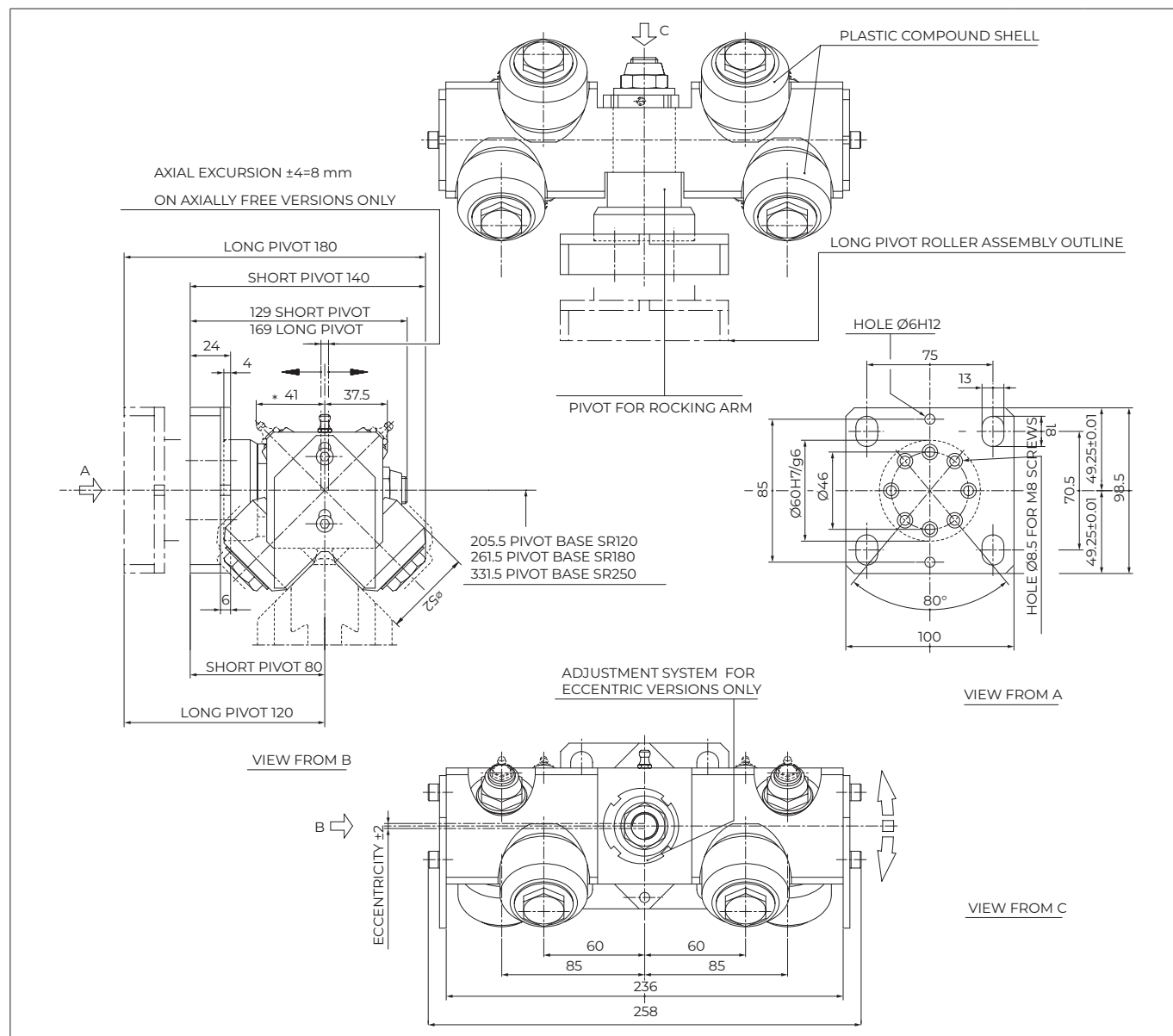


Fig.82

55.0222-PAS

Equipped with 6 through hole fixing inserts

Lifetime lubrication

Floating roller assembly with 4 rollers - short/long pivot


* Lubrication nipple mounted for periodic lubrication versions only

Fig.83

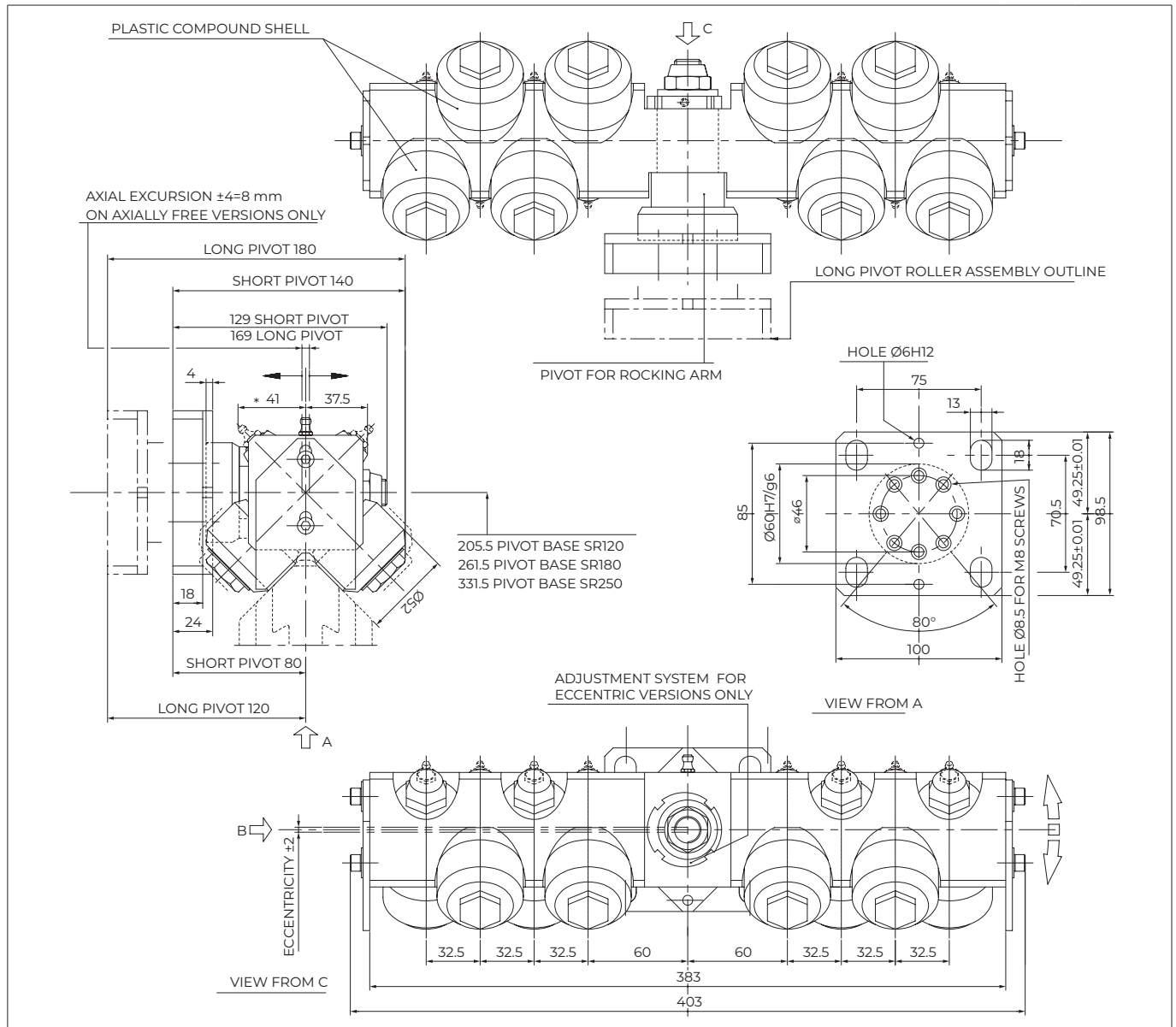
Notes:

The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1361/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1361	55.3361	ROL-C052CCL-BP
		CONC.	55.1364	55.3364	
	LIFETIME LUBRICATION	ECC.	55.1354	55.1358	ROL-C052CCL-BV
		CONC.	55.1355	55.1359	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1363	55.3363	ROL-C052CCL-BP
		CONC.	55.1365	55.3365	
	LIFETIME LUBRICATION	ECC.	55.1350	55.3350	ROL-C052CCL-BV
		CONC.	55.1351	55.3351	

Tab.9

Floating roller assembly with 8 rollers - short/long pivot


* Lubrication nipple mounted for periodic lubrication versions only

Fig.84

Notes:

The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1366/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1143	55.3143	ROL-C052CCL-BP
		CONC.	55.1144	55.3144	
	LIFETIME LUBRICATION	ECC.	55.1145	55.3145	ROL-C052CCL-BV
		CONC.	55.1146	55.3146	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1147	55.3147	ROL-C052CCL-BP
		CONC.	55.1148	55.3148	
	LIFETIME LUBRICATION	ECC.	55.1149	55.3149	ROL-C052CCL-BV
		CONC.	55.1150	55.3150	

Tab.10

■ SPEEDY RAIL 250

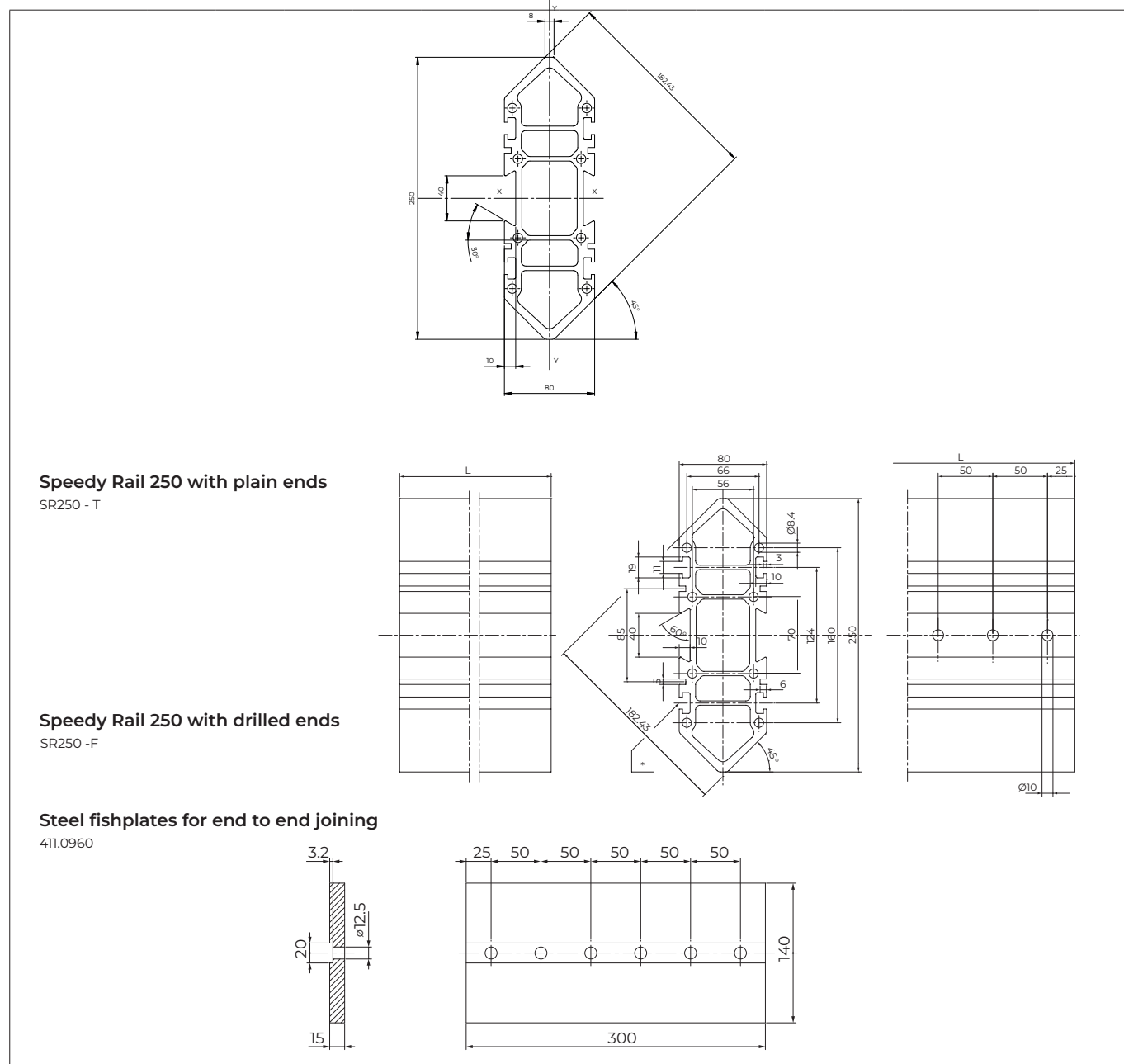


Fig.85

Drillings on the bar end are required as a safety measure whilst end-to-end joining in moving rails. Super wide body multi groove speedy rail guide (SR250) uses the same dovetails, plates, fishplates and joining components of speedy rail standard (sr 120m section) see pages 24, 25, 26. Special plates, 411.0960, are also available for end-to-end joining in heavy duty applications. * Particularly for side grooves the same inserts for SR180 (page 43) are used.

Max. manufacturing tolerances = ± 0.65 mm across opposite rolling surfaces.

Max. angular distortion = $\pm 30''/\text{m}$.

Max. linear distortion = ± 0.5 mm/m.

Standard lengths: 3000-3500-4000-4500-5000-5500-6000-6500-7000-7500 mm.

External surface: deep hard anodizing

Profile type and code N°	Surface quadratic moment I (X) mm4	Surface quadratic moment I (Y) mm4	Section modulus W (X) mm3:	Section modulus W (Y) mm3:	Section mm2	Distance d mm: (Roller contact axis)	Linear mass t kg/mt
SR Super Wide body (Speedy Rail 250) SR250 - T SR250 - F	27.345.460	4.120.150	218.760	103.000	5.609	113.95	15.2

Tab.11

■ Assemblies and components

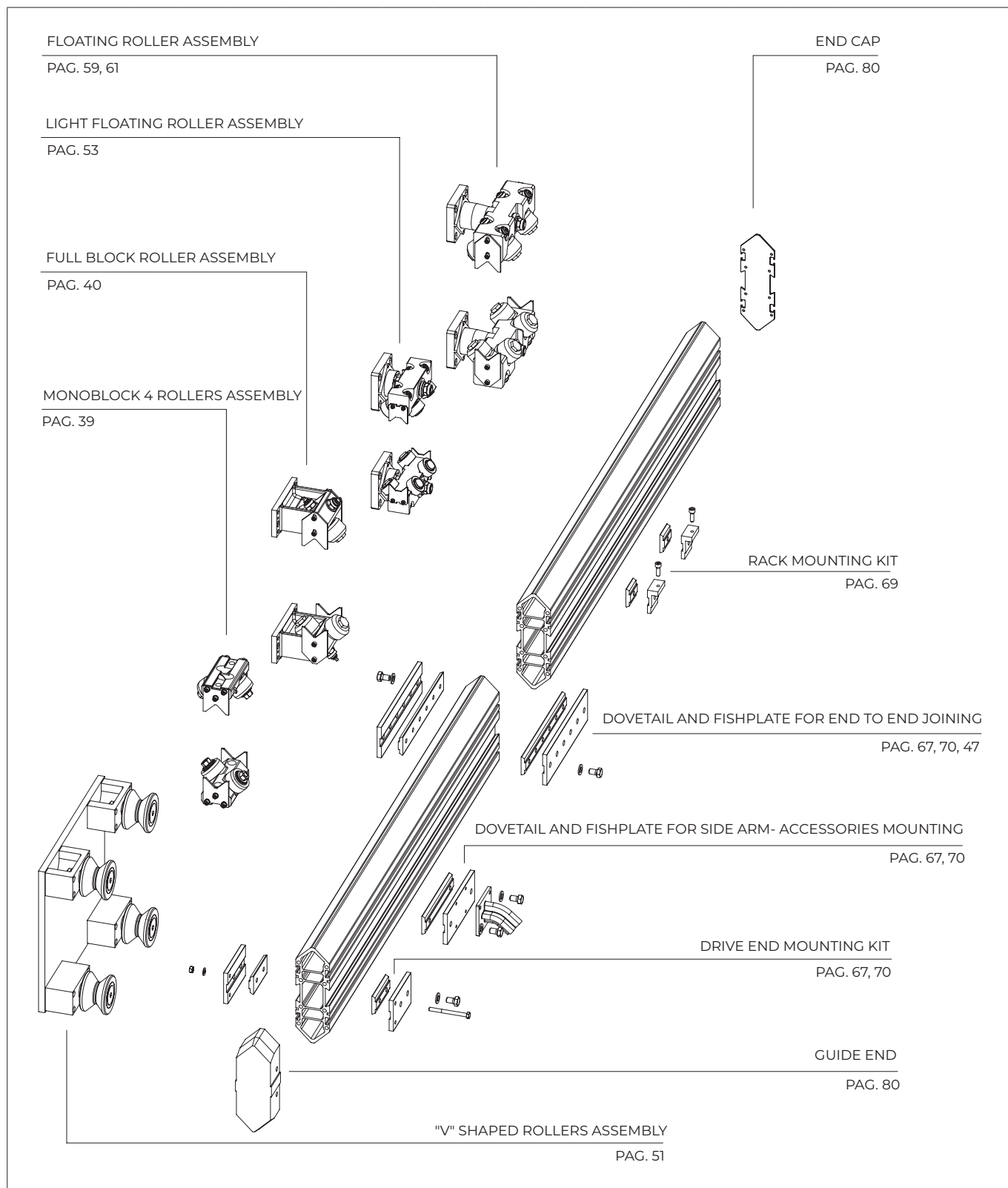
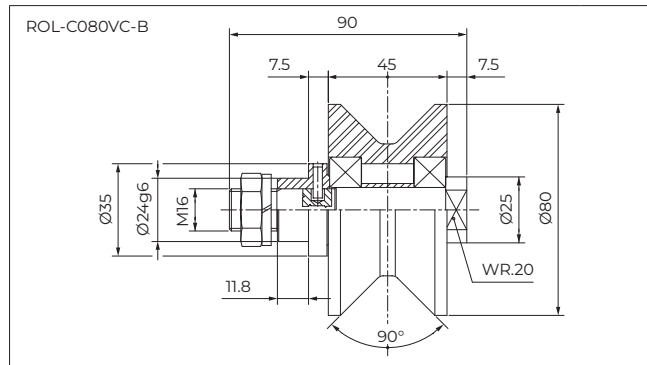


Fig.86

■ ROLLER AND ROLLER ASSEMBLIES Ø80

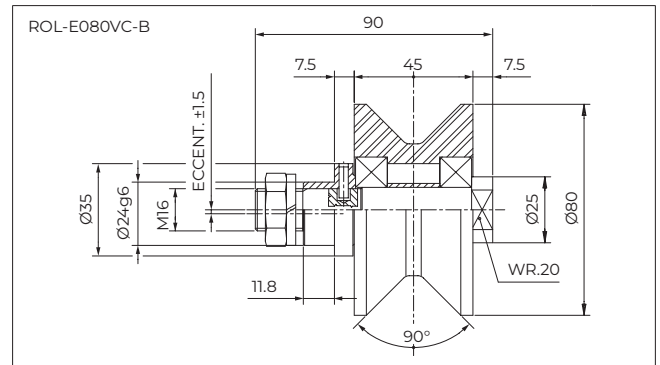
Concentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.87

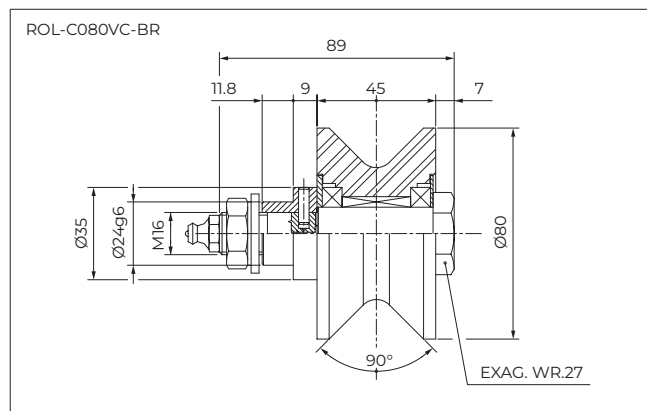
Eccentric roller



Radial load 700 N max., axial load 200 N max. - lifetime lubrication

Fig.88

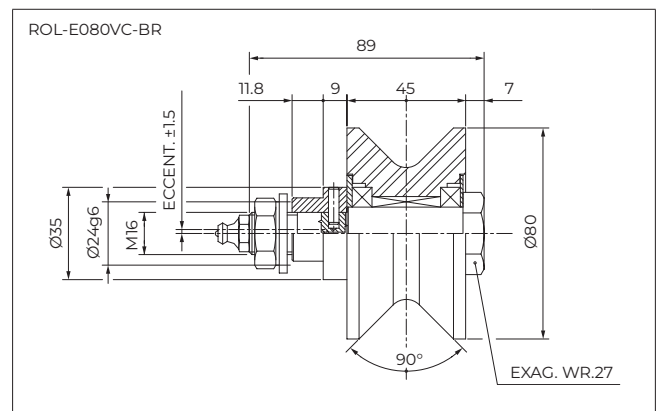
High stiffness concentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication

Fig.89

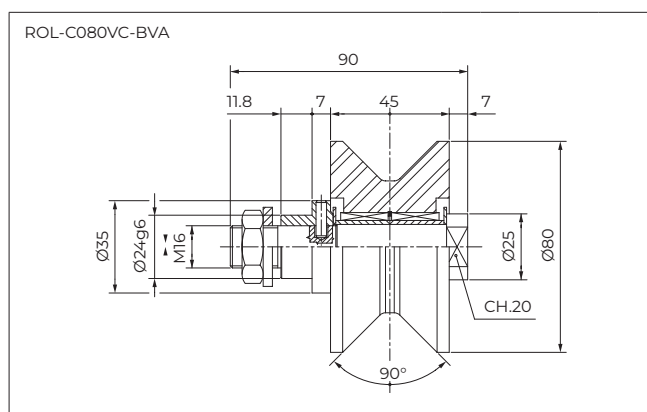
High stiffness eccentric roller



Radial load 1000 N max., axial load 400 N max. - Optional lifetime lubrication

Fig.90

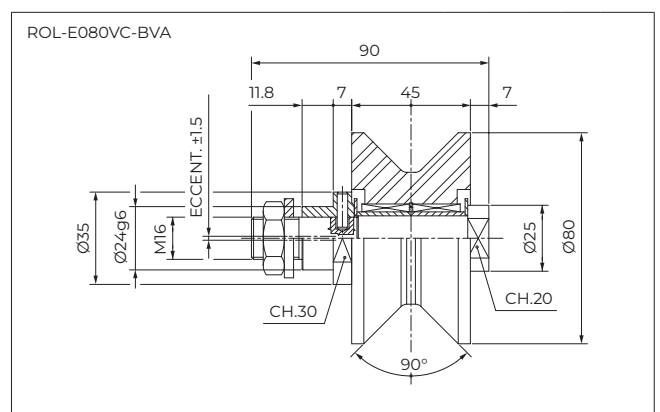
Axially free: ±1.9 mm concentric roller



Radial load: 1000 N max. - lifetime lubrication

Fig.91

Axially free: ±1.9 mm eccentric roller

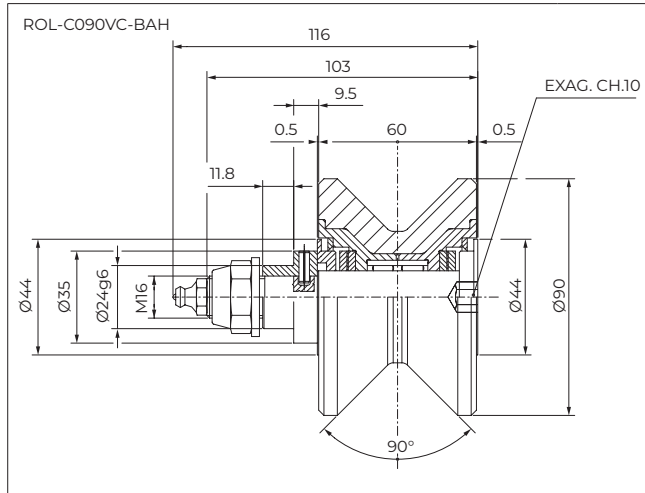


Radial load: 1000 N max. - lifetime lubrication

Fig.92

■ ROLLER AND ROLLER ASSEMBLIES Ø90

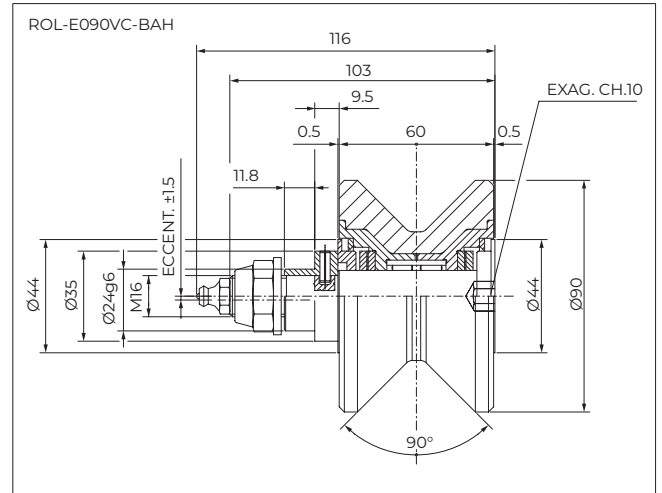
Axially free: ±1.5 mm heavy duty concentric 'V' roller



Radial load: 1150 N max. - Optional lifetime lubrication

Fig.93

Axially free: ±1.5 mm heavy duty eccentric 'V' roller



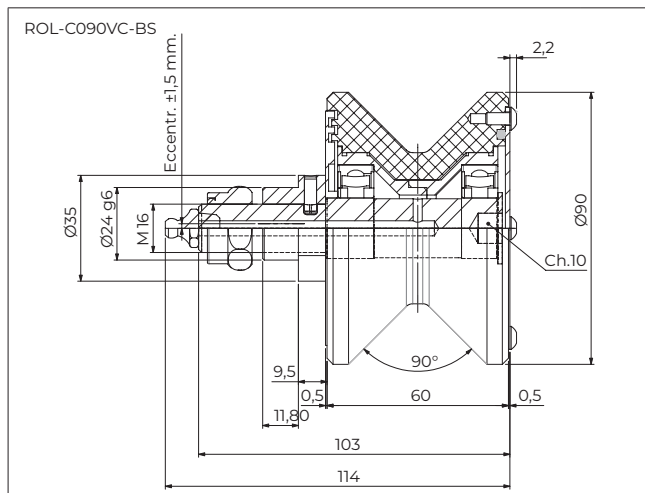
Radial load: 1150 N max. - Optional lifetime lubrication

Fig.94

Wheelbase for all 'V' shaped rollers on Speedy Rail:

Wheelbase between roller centers for SR250 = 302,2 mm

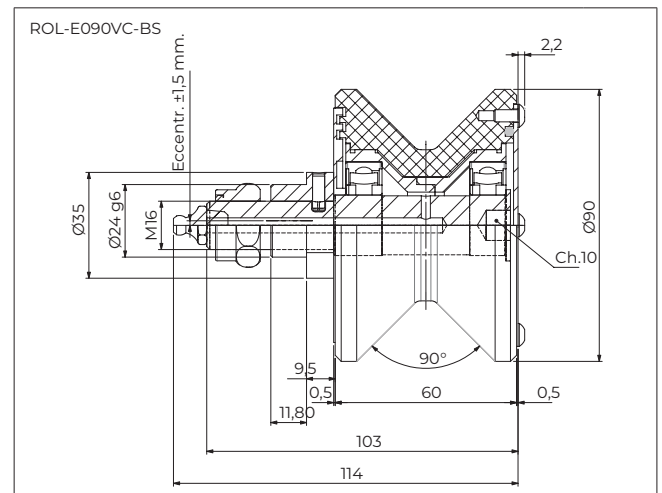
Protected concentric 'V' roller for heavy duties



Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.95

Protected eccentric 'V' roller for heavy duties



Max. load: radial 1150 N, axial 650 N - Optional lifetime lubrication

Fig.96

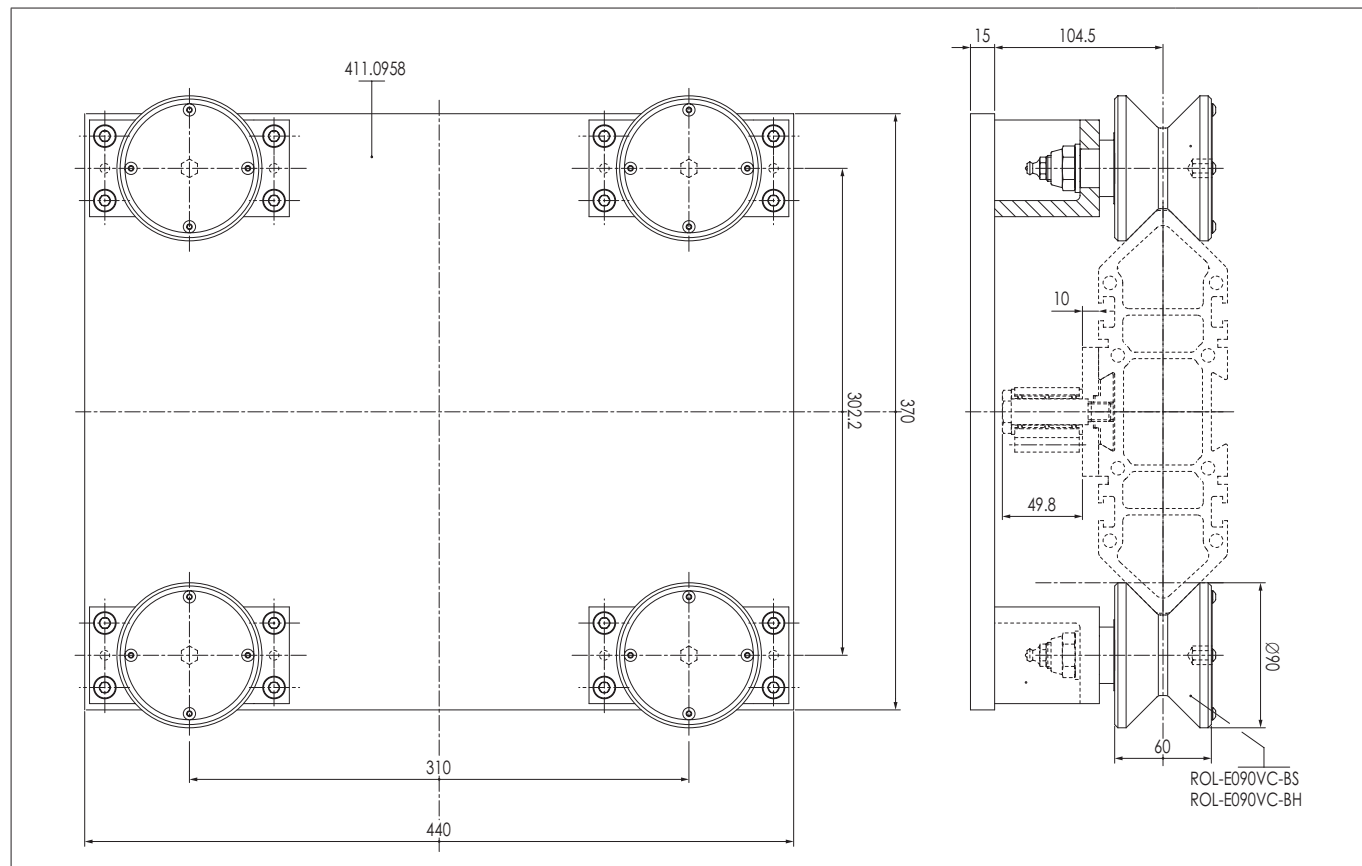
Roller assembly with "V" shaped rollers

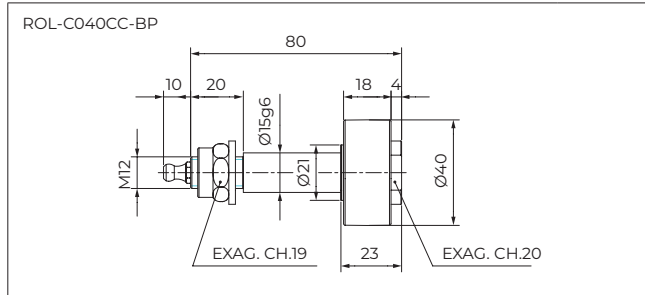
Fig.97

55.0808

Roller assembly with 4 rollers, two ROL-C090VC-BS and two ROL-E090VC-BS

■ ROLLER AND ROLLER ASSEMBLIES Ø40

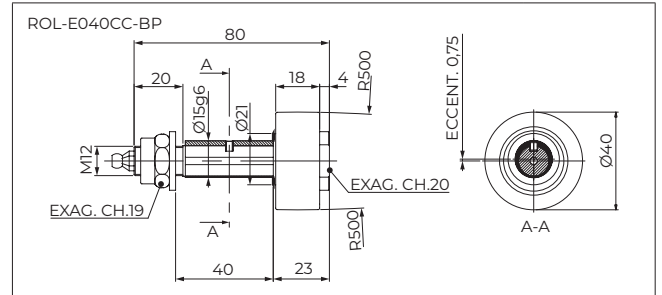
**Concentric roller radial load: 880 N max.
Periodical lubrication**



Lifetime lubrication cod. ROL-C040CC-BV

Fig.98

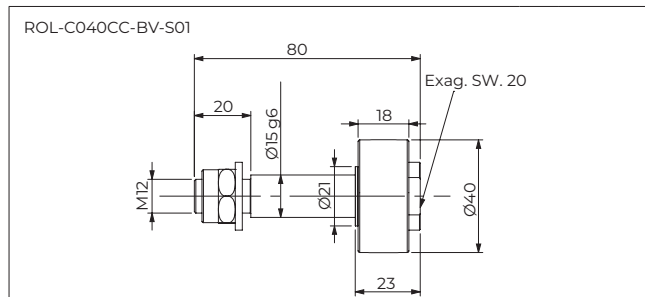
**Eccentric roller radial load: 880 N max.
Periodical lubrication**



Lifetime lubrication cod. ROL-E040CC-BV

Fig.99

**Concentric roller radial load: 880 N max.
Lifetime lubrication**



Lifetime lubrication cod. ROL-C040CC-BV

Fig.100

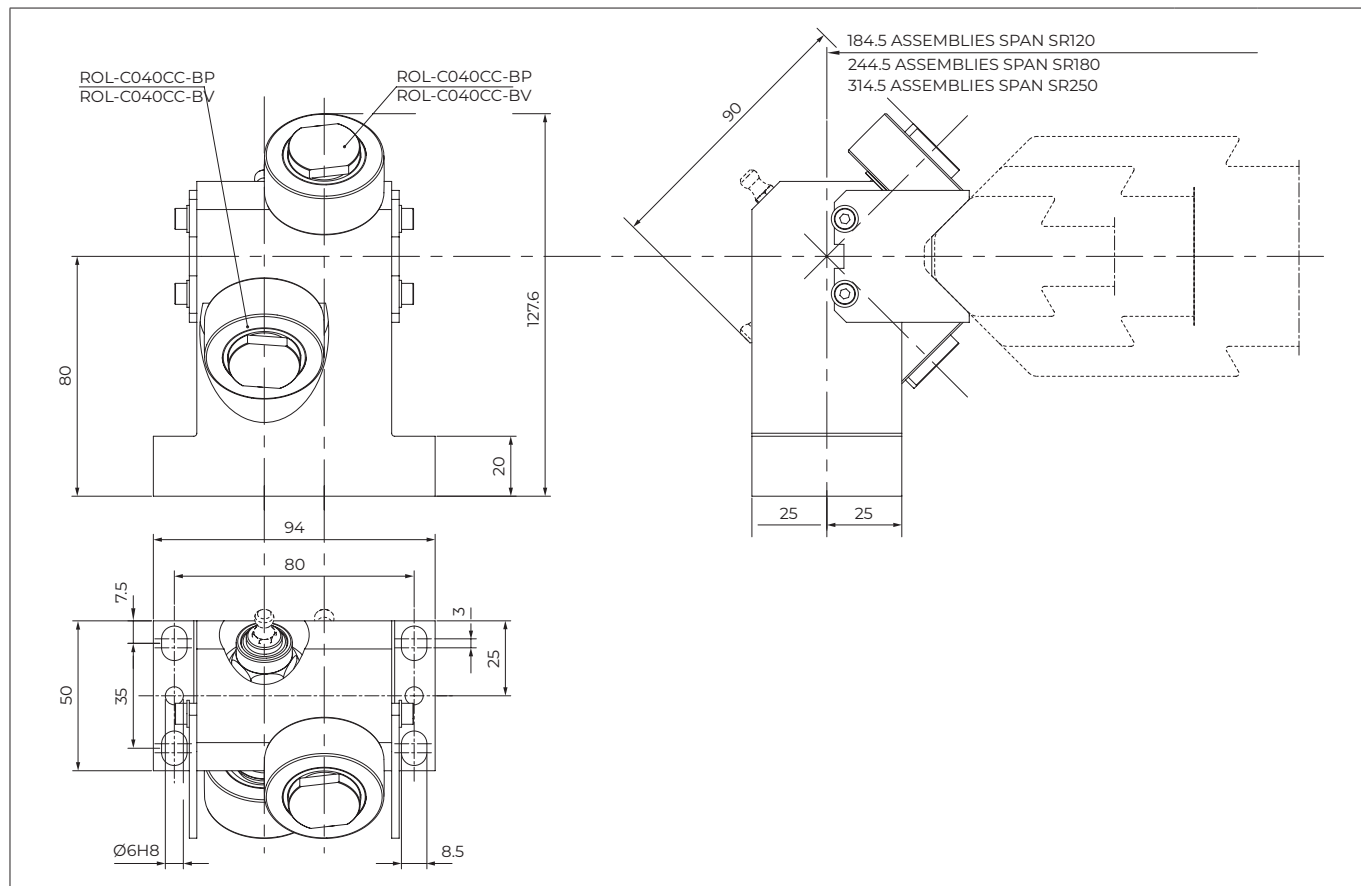
2 Rollers light full-block assembly


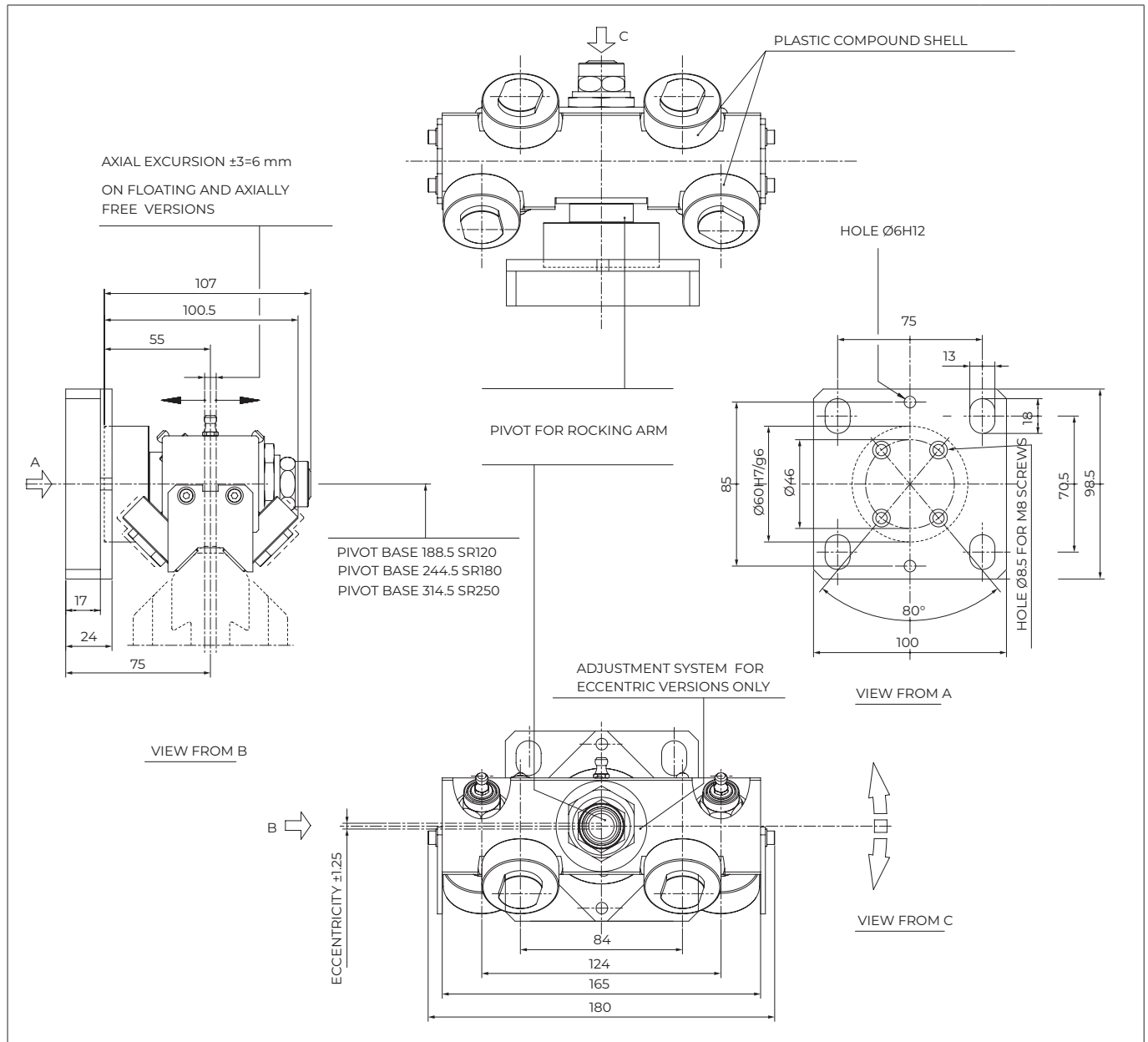
Fig.101

55.1550

Light alloy rollers assembly with 2 $\varnothing 40$ rollers. ROL-C040CC-BP
 Periodical lubrication.

55.1570

Light alloy rollers assembly with 2 $\varnothing 40$ rollers, ROL-C040CC-BV
 Lifetime lubricated.

Light 4 rollers floating assembly for Speedy Rail guides


* Lubrication nipple mounted for periodic lubrication versions only

Fig.102

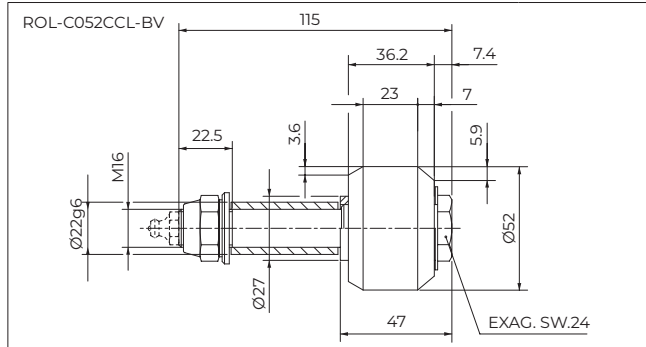
Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1565/SP)

Roller assemblies reference		Axially constrained	Axially free	Rollers code
PERIODICAL LUBRICATION	ECC.	55.1565	55.3563	ROL-C040CC-BP
	CONC.	55.1566	55.3564	
LIFETIME LUBRICATION	ECC.	55.1555	55.3553	ROL-C040CC-BV
	CONC.	55.1556	55.3554	

Tab.12

■ ROLLER AND ROLLER ASSEMBLIES Ø52

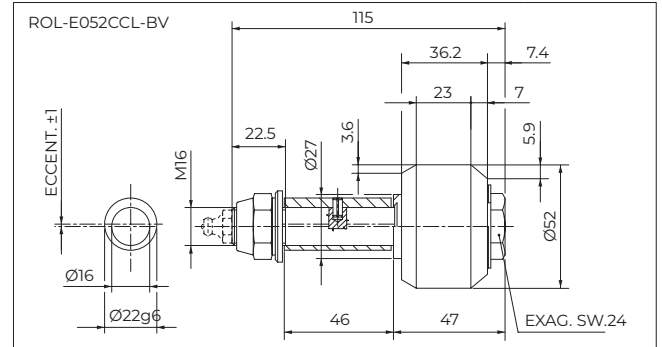
Concentric roller radial load: 1280 N max.
Lifetime lubrication



Periodical lubrication cod. ROL-C052CCL-BP

Fig.103

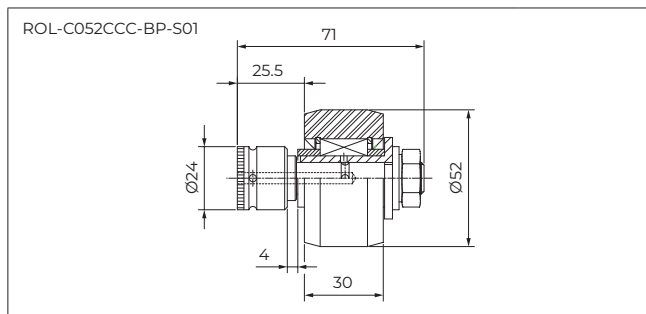
Eccentric roller radial load: 1280 N max.
Lifetime lubrication



Periodical lubrication cod. ROL-E052CCL-BP

Fig.104

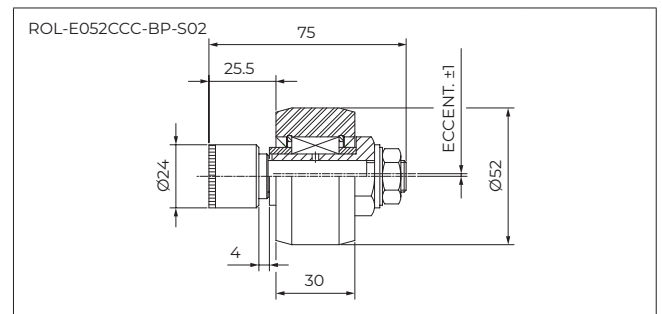
Concentric roller radial load: 1280 N max.
Periodical lubrication



Lifetime lubrication cod. ROL-C052CCC-BV-S01

Fig.105

Eccentric roller radial load: 1280 N max.
Periodical lubrication



Lifetime lubrication cod. ROL-E052CCC-BV-S02

Fig.106

Light alloy compact roller assembly periodical lubrication version

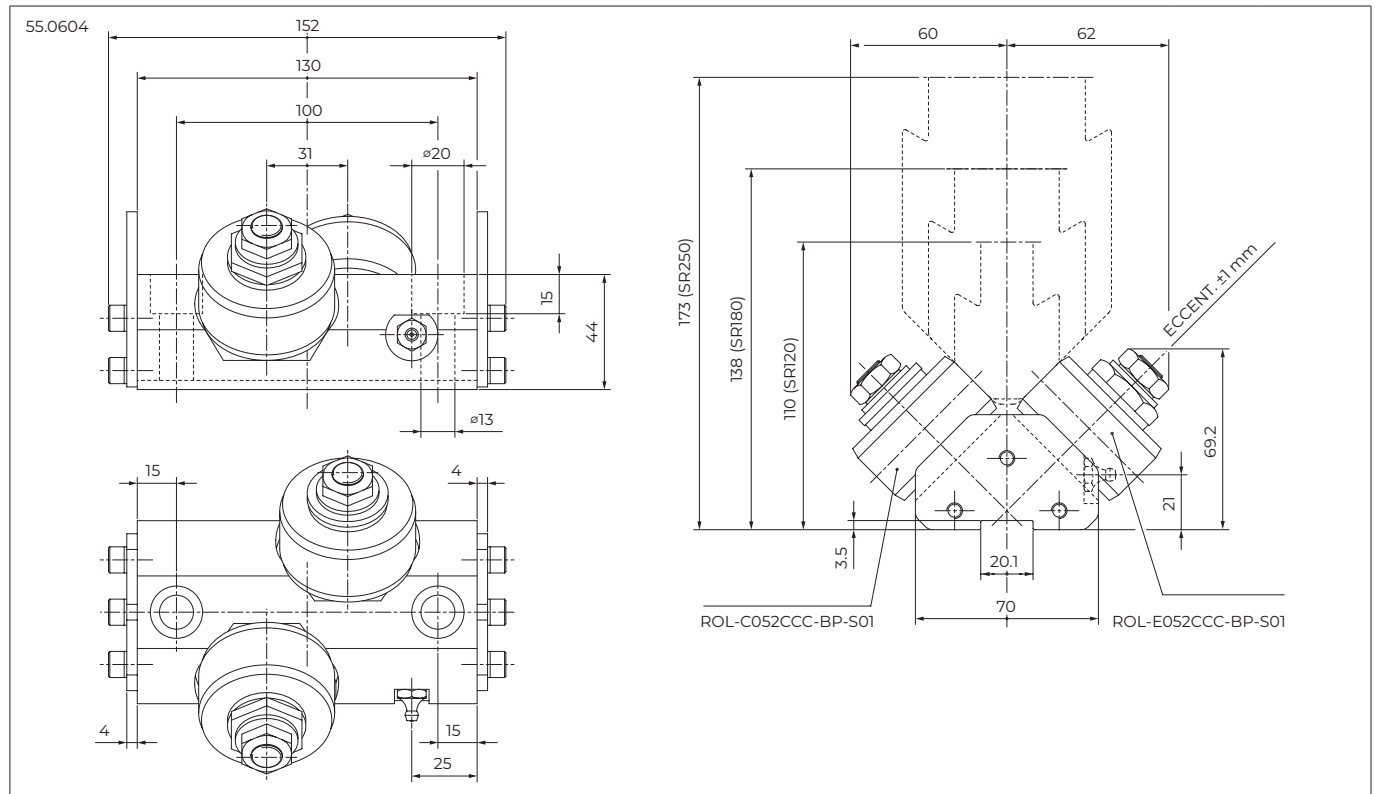


Fig.107

Light alloy compact roller assembly lifetime lubrication version

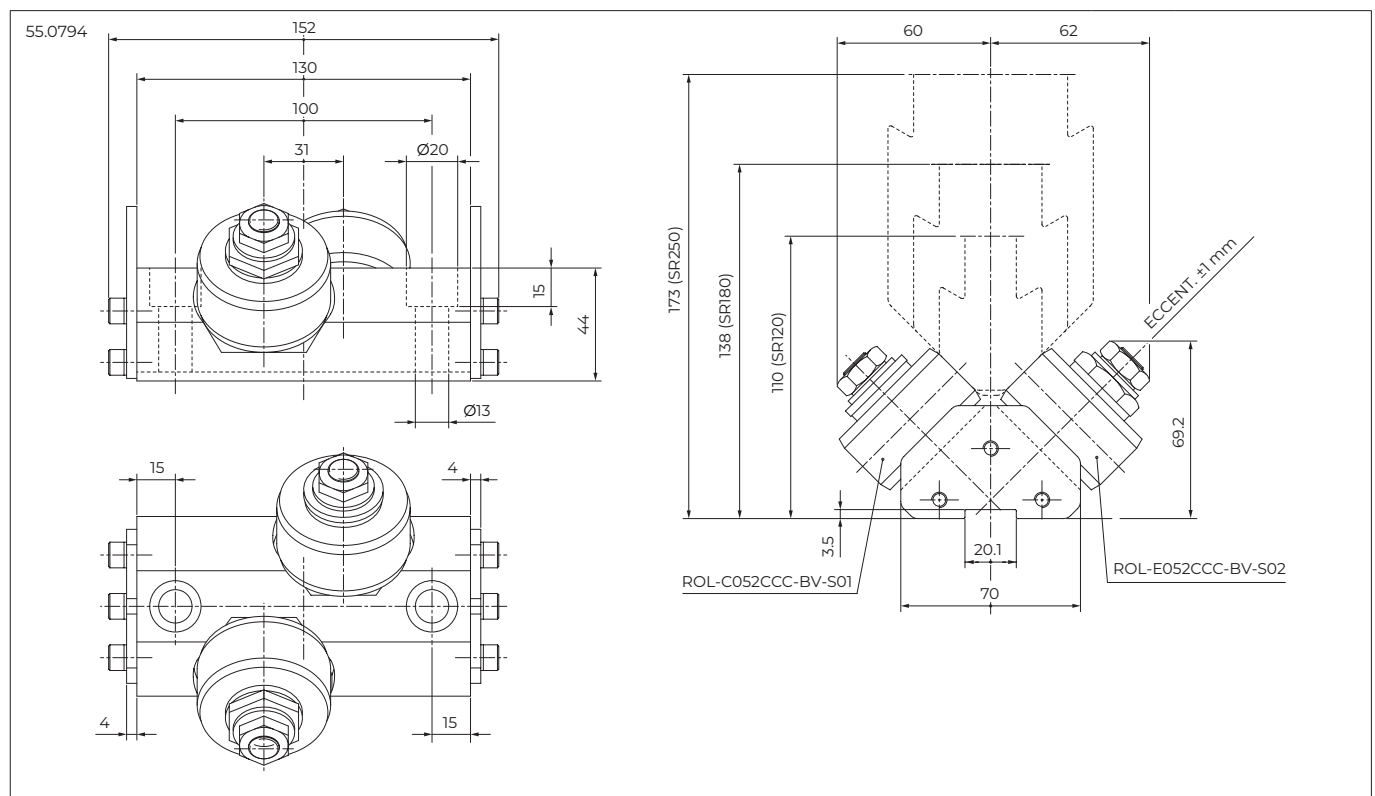


Fig.108

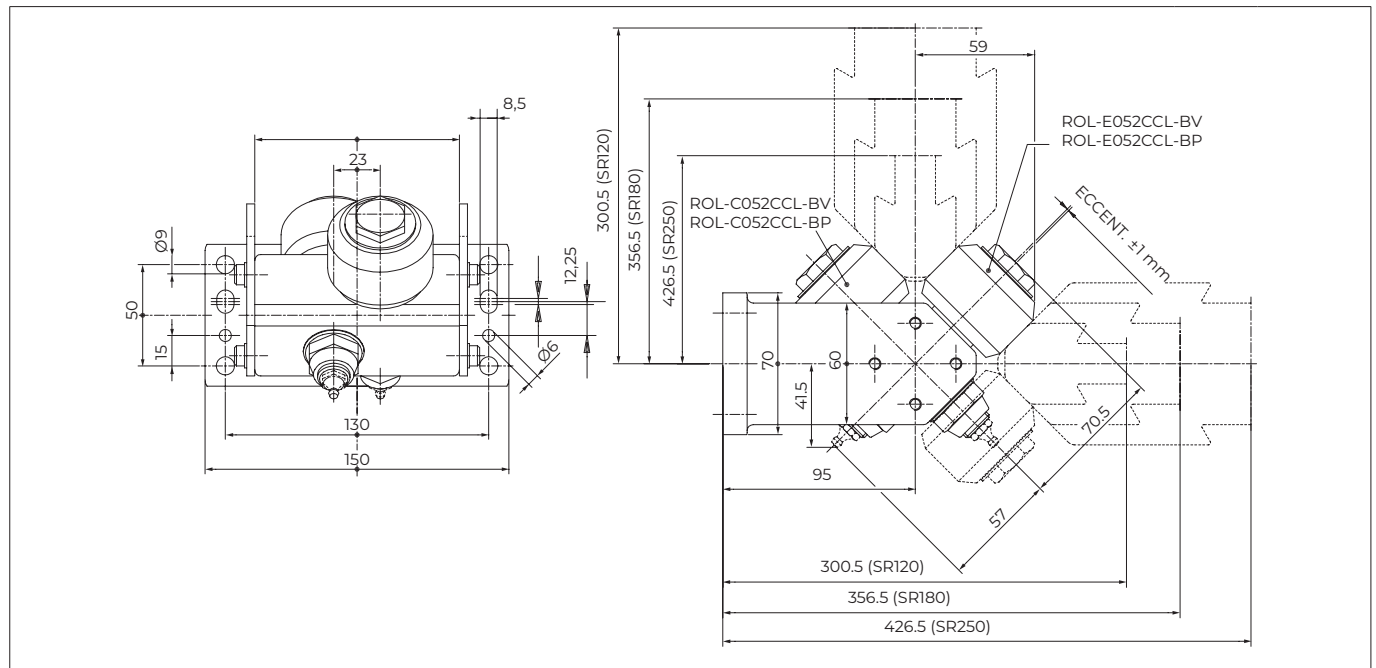
Full-block roller assembly


Fig.109

55.0325

Light alloy body roller assembly with mounting holes on short sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0725

Lifetime lubrication version rollers ROL-C052CCL-BV, ROL-E052CCL-BV

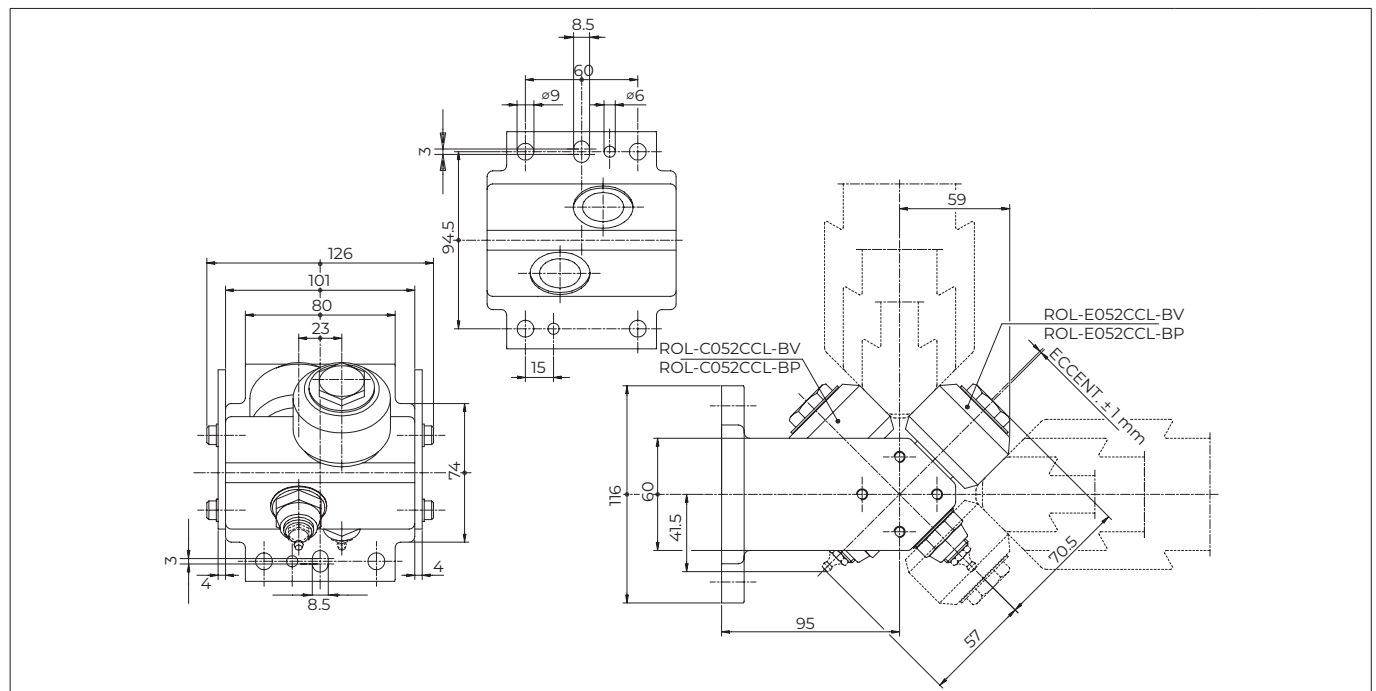


Fig.110

55.0433

Light alloy body roller assembly with mounting holes on long sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCLBP, ROL-E052CCL-BP

55.0733

Light alloy body roller assembly with mounting holes on long sides and plastic compound rollers, periodical lubrication version, rollers ROL-C052CCL-BV, ROL-E052CCL-BV

Narrow base roller assembly

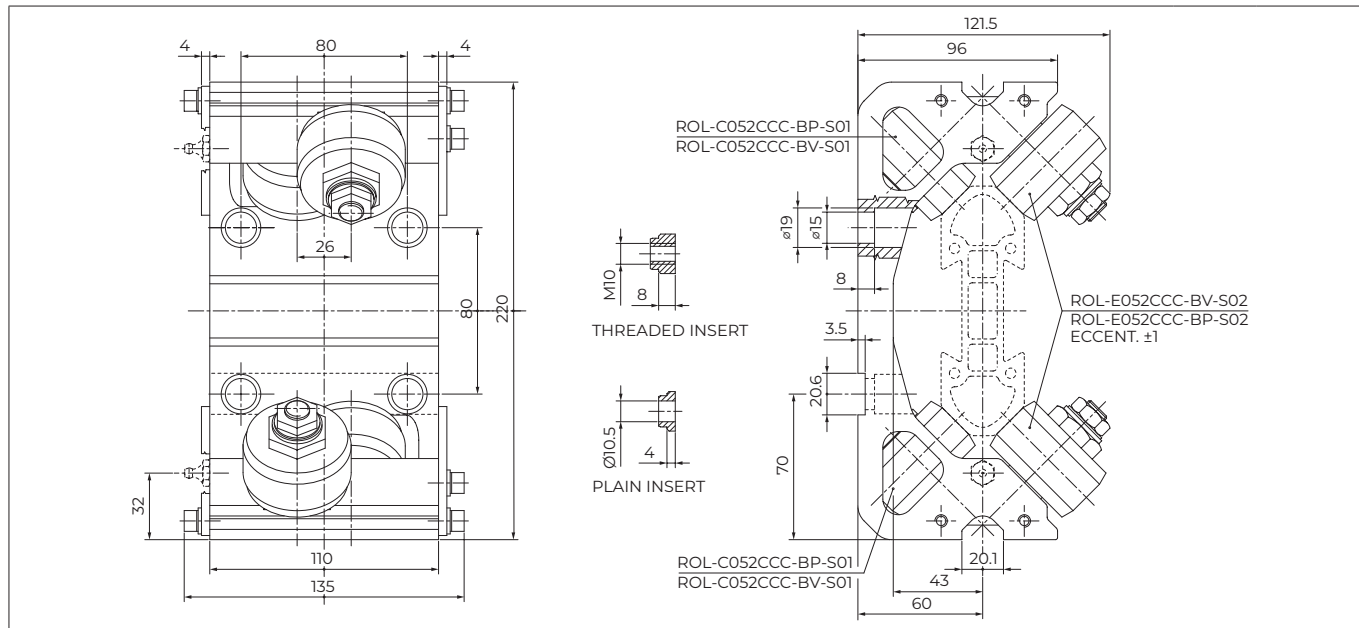


Fig.111

55.0472-FIL

Equipped with 4 threaded fixing inserts
 Periodical lubrication

55.0772-FIL

Equipped with 4 threaded fixing inserts
 Lifetime lubrication

55.0472-PAS

Equipped with 4 through hole fixing inserts
 Periodical lubrication

55.0772-PAS

Equipped with 4 through hole fixing inserts
 Lifetime lubrication

Wide base roller assembly

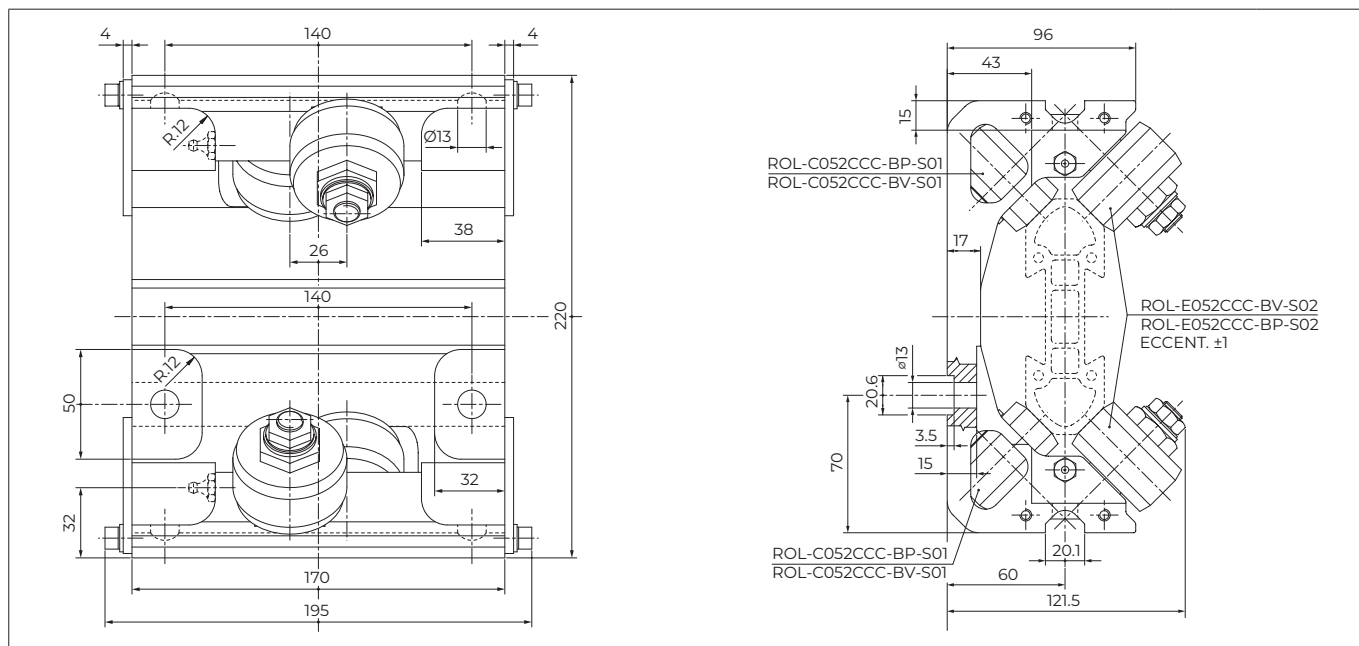


Fig.112

55.0411

Periodical lubrication

55.0711

Lifetime lubrication

8 Rollers blindo beam roller assembly

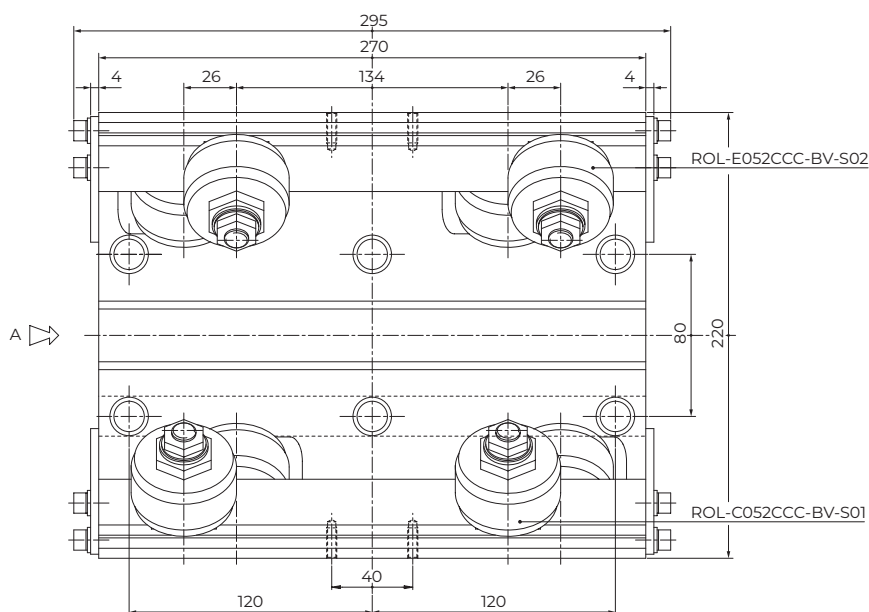


Fig.113

55.0222-FIL

Equipped with 6 threaded fixing inserts

Lifetime lubrication

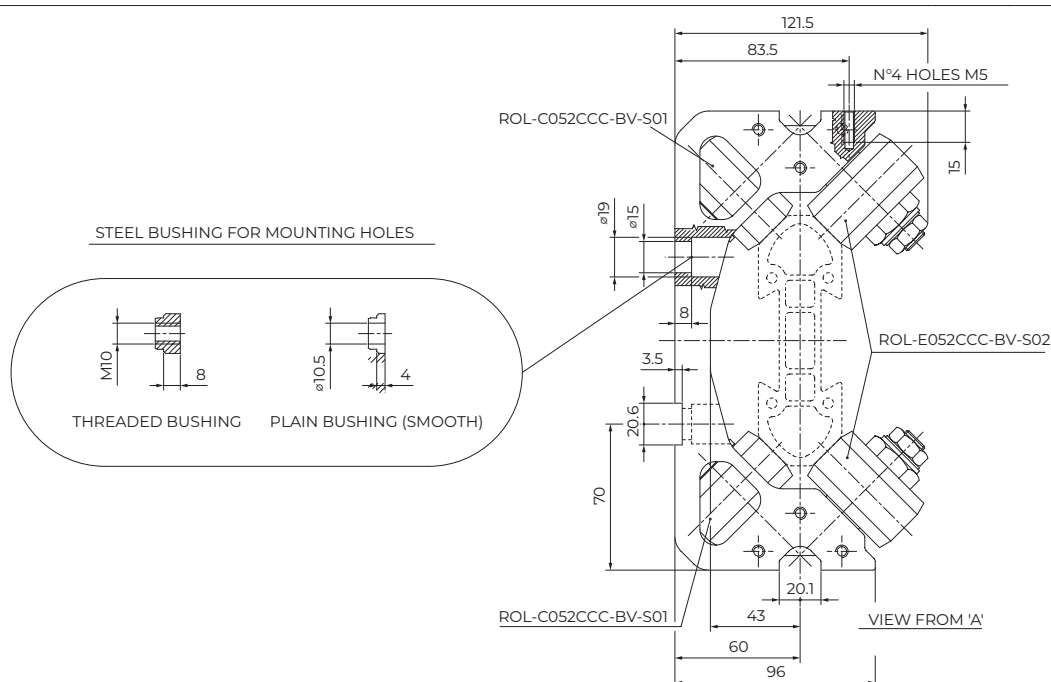
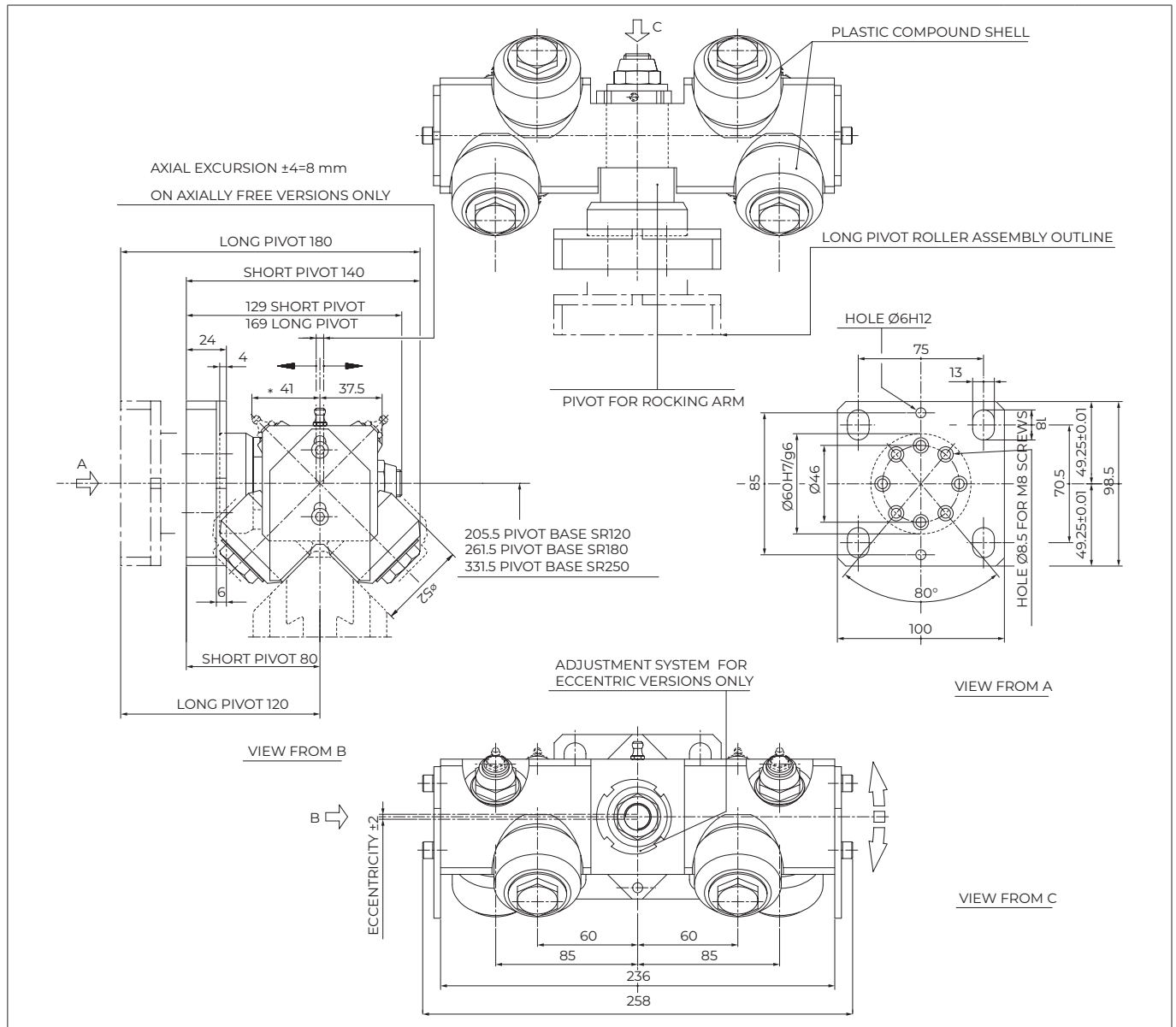


Fig.114

55.0222-PAS

Equipped with 6 through hole fixing inserts

Lifetime lubrication

Floating roller assembly with 4 rollers Ø 52 - short/long pivot


* Lubrication nipple mounted for periodic lubrication versions only

Fig.115

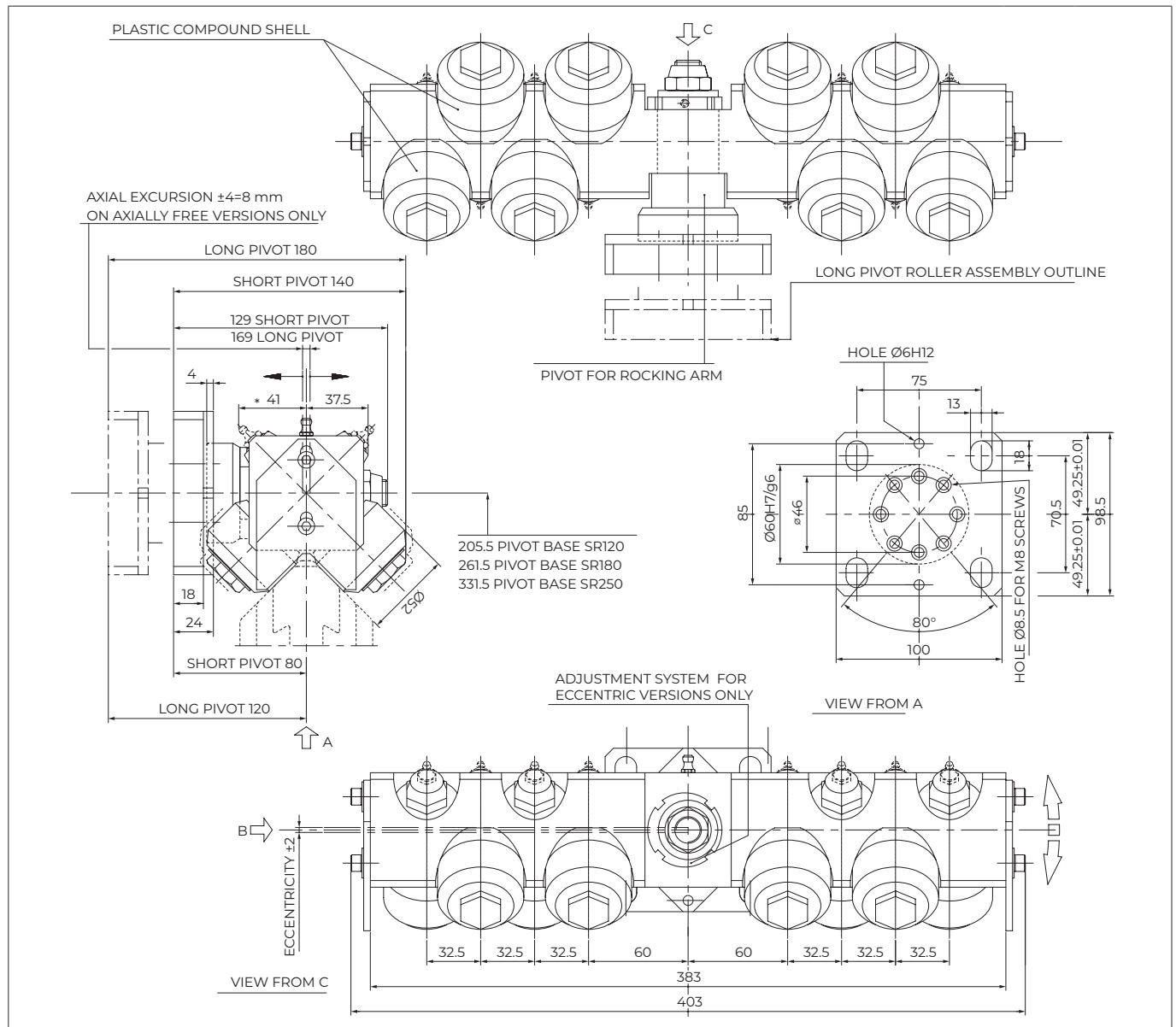
Notes:

The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1361/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1361	55.3361	ROL-C052CCL-BP
		CONC.	55.1364	55.3364	
	LIFETIME LUBRICATION	ECC.	55.1354	55.1358	ROL-C052CCL-BV
		CONC.	55.1355	55.1359	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1363	55.3363	ROL-C052CCL-BP
		CONC.	55.1365	55.3365	
	LIFETIME LUBRICATION	ECC.	55.1350	55.3350	ROL-C052CCL-BV
		CONC.	55.1351	55.3351	

Tab.13

Floating roller assembly with 8 rollers Ø 52 - short/long pivot


* Lubrication nipple mounted for periodic lubrication versions only

Fig.116

Notes:

The axially free version of the assemblies are normally mounted on trolleys running on parallel rails. Coupled with axially constrained assemblies provide a flexible structure able to withstand minor misalignments between runways.

Assemblies without baseplate have the same code followed by "SP" (i.e. 55.1366/SP).

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	PERIODICAL LUBRICATION	ECC.	55.1143	55.3143	ROL-C052CCL-BP
		CONC.	55.1144	55.3144	
	LIFETIME LUBRICATION	ECC.	55.1145	55.3145	ROL-C052CCL-BV
		CONC.	55.1146	55.3146	
Long pivot	PERIODICAL LUBRICATION	ECC.	55.1147	55.3147	ROL-C052CCL-BP
		CONC.	55.1148	55.3148	
	LIFETIME LUBRICATION	ECC.	55.1149	55.3149	ROL-C052CCL-BV
		CONC.	55.1150	55.3150	

Tab.14

■ ROLLER AND ROLLER ASSEMBLIES Ø72

Floating roller assembly with 8 rollers - short/long pivot

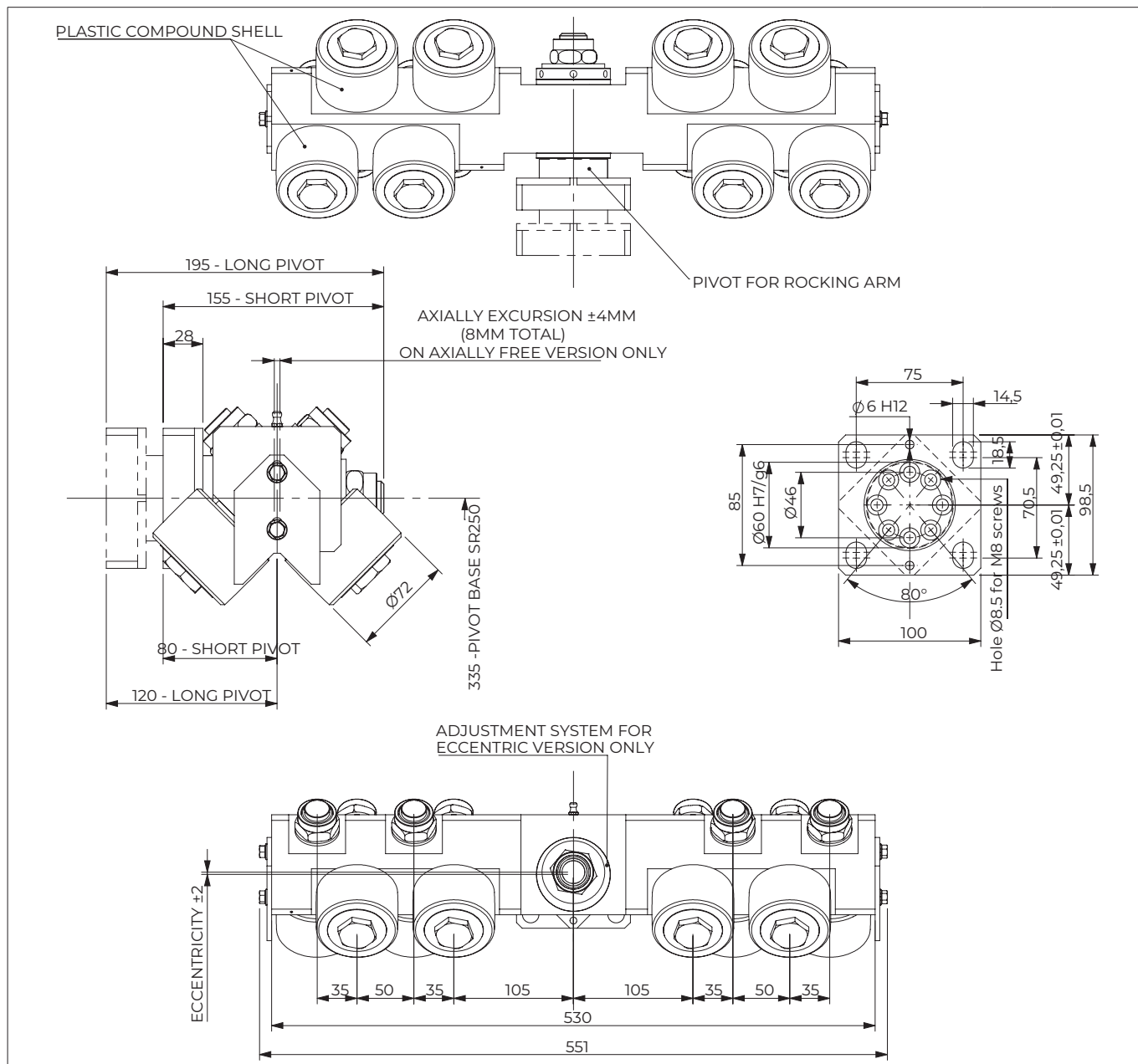


Fig.117

Roller assemblies reference			Axially constrained	Axially free	Rollers code
Short pivot	LIFETIME LUBRICATION	CONC.	55.2570	55.4570	ROL-C072CCL-BVHS
		ECC.	55.2571	55.4571	
Long pivot	LIFETIME LUBRICATION	CONC.	55.2572	55.4572	ROL-C072CCL-BVHS
		ECC.	55.2573	55.4573	

Tab.15

■ LOAD CAPACITIES FOR CYLINDRICAL ROLLERS ASSEMBLIES

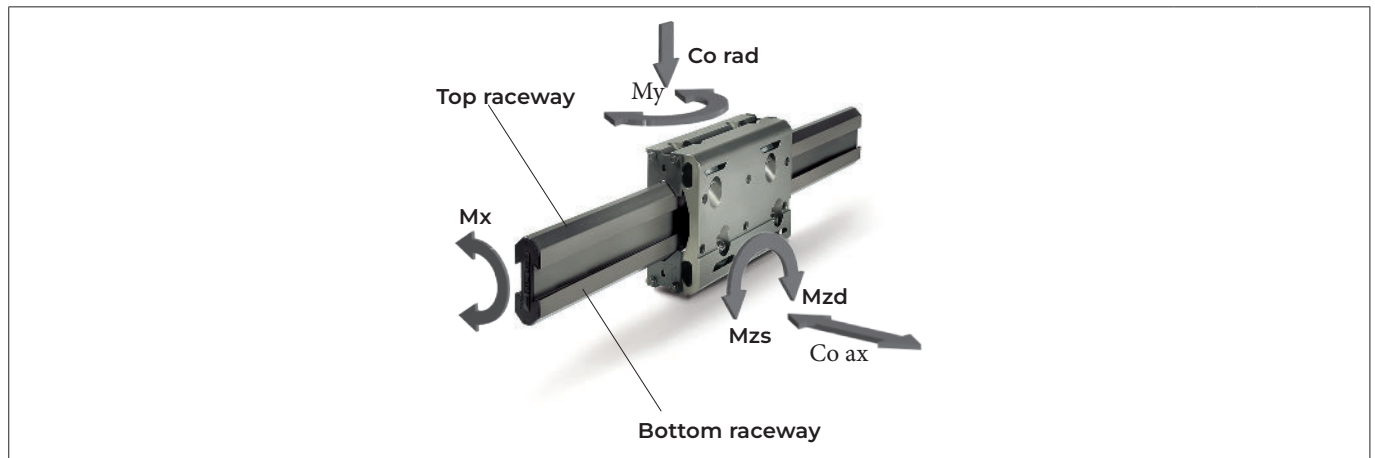


Fig.118

Axially constrained

Code	N° of rollers	Type of roller	Roller configuration*4	C _{rad} [N]	C _{oax} [N]	M _x *1 [Nm]			M _y *2 [Nm]	M _{zs} *3 [Nm]	M _{zd} *3 [Nm]
						SpeedyRail 120	SpeedyRail 180	SpeedyRail 250			
55.0222-FIL	8	ROL-C052CCC-BV ROL-E052CCC-BV	4+4	3620.4	3620.4	143.6	-	-	289.6	289.6	
55.0222-PAS	8	ROL-C052CCC-BV ROL-E052CCC-BV	4+4	3620.4	3620.4	143.6	-	-	289.6	289.6	
55.0325	2	ROL-C052CCL-BP ROL-E052CCL-BP	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0411	4	ROL-C052CCC-BP ROL-E052CCC-BP	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0433	2	ROL-C052CCL-BP ROL-E052CCL-BP	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0472-FIL	4	ROL-C052CCC-BP ROL-E052CCC-BP	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0472-PAS	4	ROL-C052CCC-BP ROL-E052CCC-BP	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0604	2	ROL-C052CCC-BP ROL-E052CCC-BP	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0711	4	ROL-C052CCC-BV ROL-E052CCC-BV	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0725	2	ROL-C052CCL-BV ROL-E052CCL-BV	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0733	2	ROL-C052CCL-BV ROL-E052CCL-BV	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0772-FIL	4	ROL-C052CCC-BV ROL-E052CCC-BV	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0772-PAS	4	ROL-C052CCC-BV ROL-E052CCC-BV	2+2	1810.2	1810.2	71.8	-	-	0.0	0.0	
55.0794	2	ROL-C052CCC-BV ROL-E052CCC-BV	1+1	1810.2	905.1	71.8	122.5	145.9	0.0	0.0	
55.0930	6	ROL-C052CCL-BP ROL-E052CCL-BP	3+3	5430.6	2715.3	215.4	367.5	437.6	597.4	644.4	
55.1135	5	ROL-C052CCL-BP ROL-E052CCL-BP	3+2	3620.4	1810.2	215.4	367.5	437.6	642.6	642.6	
55.1136	5	ROL-C052CCL-BV ROL-E052CCL-BV	3+2	3620.4	1810.2	215.4	367.5	437.6	642.6	642.6	
55.1143	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1144	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1145	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1146	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	

Tab.16

*1 For sliders with rollers only on one raceway, the M_x moment refers to two sliders mounted on both opposite raceways of the rail.

*2 The M_y moment can only be applied with two sliders mounted on both opposite raceways of the rail.

Therefore, for sliders with rollers only on one raceway, the values in the table refer to two sliders.

*3 For sliders with rollers only on one raceway, the M_z moment refers to two sliders mounted on both opposite raceways of the rail.

*4 For sliders with rollers only on one raceway, the codes show the roller type on each side of the assembly.

For sliders with rollers on on both raceways of the rail, the codes show the roller type on the top raceway and the bottom raceway.

Code	N° of rollers	Type of roller	Roller configuration*4	C _{orad} [N]	C _{oax} [N]	Mx*1 [Nm]			My*2 [Nm]	M _{zs} *3 [Nm]	M _{zd} *3 [Nm]
						SpeedyRail 120	SpeedyRail 180	SpeedyRail 250			
55.1147	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1148	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1149	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1150	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	3620.4	287.2	490.0	583.4	0.0	0.0	
55.1350	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1351	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1354	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1355	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1361	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1363	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1364	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1365	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	1810.2	143.6	245.0	291.7	0.0	0.0	
55.1550	2	ROL-C040CC-BP	1+1	1244.5	622.3	49.4	84.2	100.3	0.0	0.0	
55.1555	4	ROL-C040CC-BV	2+2	2489.0	1244.5	98.7	168.4	200.6	0.0	0.0	
55.1556	4	ROL-C040CC-BV	2+2	2489.0	1244.5	98.7	168.4	200.6	0.0	0.0	
55.1565	4	ROL-C040CC-BP	2+2	2489.0	1244.5	98.7	168.4	200.6	0.0	0.0	
55.1566	4	ROL-C040CC-BP	2+2	2489.0	1244.5	98.7	168.4	200.6	0.0	0.0	
55.1570	2	ROL-C040CC-BV	1+1	1244.5	622.3	49.4	84.2	100.3	0.0	0.0	
55.2570	8	ROL-C072CCL-BVHS	4+4	12671	6335	0.0	0.0	1020	0.0	0.0	
55.2571	8	ROL-C072CCL-BVHS	4+4	12671	6335	0.0	0.0	1020	0.0	0.0	
55.2572	8	ROL-C072CCL-BVHS	4+4	12671	6335	0.0	0.0	1020	0.0	0.0	
55.2573	8	ROL-C072CCL-BVHS	4+4	12671	6335	0.0	0.0	1020	0.0	0.0	

Tab.17

*1 For sliders with rollers only on one raceway, the Mx moment refers to two sliders mounted on both opposite raceways of the rail.

*2 The My moment can only be applied with two sliders mounted on both opposite raceways of the rail.

Therefore, for sliders with rollers only on one raceway, the values in the table refer to two sliders.

*3 For sliders with rollers only on one raceway, the Mz moment refers to two sliders mounted on both opposite raceways of the rail.

*4 For sliders with rollers only on one raceway, the codes show the roller type on each side of the assembly.

For sliders with rollers on on both raceways of the rail, the codes show the roller type on the top raceway and the bottom raceway.

Axially free

Code	N° of rollers	Type of roller	Roller configuration*4	C _{orad} [N]	C _{oax} [N]	Mx*1 [Nm]			My*2 [Nm]	M _{zs} *3 [Nm]	M _{zd} *3 [Nm]
						SpeedyRail 120	SpeedyRail 180	SpeedyRail 250			
55.3143	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3144	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3145	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3146	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3147	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3148	8	ROL-C052CCL-BP ROL-E052CCL-BP	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3149	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3150	8	ROL-C052CCL-BV ROL-E052CCL-BV	4+4	7240.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3350	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3351	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3361	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3363	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3364	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3365	4	ROL-C052CCL-BP ROL-E052CCL-BP	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3366	6	ROL-C052CCL-BP ROL-E052CCL-BP	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.1358	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.1359	4	ROL-C052CCL-BV ROL-E052CCL-BV	2+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3367	6	ROL-C052CCL-BV ROL-E052CCL-BV	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3368	6	ROL-C052CCL-BP ROL-E052CCL-BP	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3369	6	ROL-C052CCL-BV ROL-E052CCL-BV	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3370	6	ROL-C052CCL-BP ROL-E052CCL-BP	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3371	6	ROL-C052CCL-BV ROL-E052CCL-BV	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3372	6	ROL-C052CCL-BP ROL-E052CCL-BP	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3373	6	ROL-C052CCL-BV ROL-E052CCL-BV	4+2	3620.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3553	4	ROL-C040CC-BV	2+2	2489.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3554	4	ROL-C040CC-BV	2+2	2489.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3563	4	ROL-C040CC-BP	2+2	2489.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.3564	4	ROL-C040CC-BP	2+2	2489.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.4571	8	ROL-C072CCL-BVHS	4+4	12671	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.4572	8	ROL-C072CCL-BVHS	4+4	12671	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.4573	8	ROL-C072CCL-BVHS	4+4	12671	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Tab.18

*1 For sliders with rollers only on one raceway, the Mx moment refers to two sliders mounted on both opposite raceways of the rail.

*2 The My moment can only be applied with two sliders mounted on both opposite raceways of the rail.

Therefore, for sliders with rollers only on one raceway, the values in the table refer to two sliders.

*3 For sliders with rollers only on one raceway, the Mz moment refers to two sliders mounted on both opposite raceways of the rail.

*4 For sliders with rollers only on one raceway, the codes show the roller type on each side of the assembly.

For sliders with rollers on on both raceways of the rail, the codes show the roller type on the top raceway and the bottom raceway.

■ LOAD CAPACITIES FOR 'V' SHAPED ROLLERS ASSEMBLIES

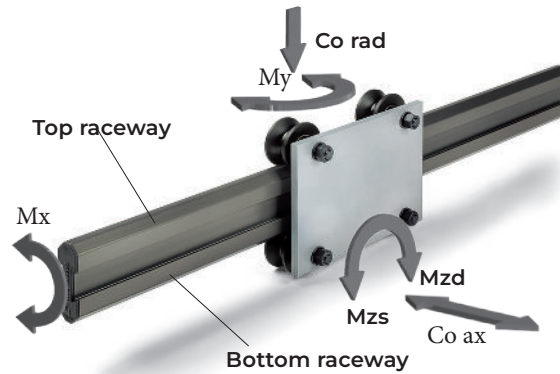


Fig.119

Code	N° of rollers	Type of roller	Roller configuration*4	C _{rad} [N]	C _{ax} [N]	Mx*1 [Nm]	My*2 [Nm]	M _{zs} *3 [Nm]	M _{zd} *3 [Nm]	Rail type
55.0375	4 rollers	ROL-C032VC-B ROL-E032VC-B	2+2	540.0	292.0	6.0	14.6	27.0		Speedy rail 60
55.0557	4 rollers	ROL-C080VC-B ROL-E080VC-B	2+2	1400.0	622.0	24.7	77.8	175.0		Speedy rail 120
55.0558	4 rollers	ROL-C080VC-BR ROL-E080VC-BR	2+2	2000.0	1143.0	45.3	142.9	250.0		Speedy rail 120
55.0605	3 rollers	ROL-C050VC-B ROL-E050VC-B	2+1	800.0	160.0	3.3	9.6	24.0		Speedy rail 60
55.0606	4 rollers	ROL-C050VC-B ROL-E050VC-B	2+2	800.0	320.0	6.6	19.2	48.0		Speedy rail 60
55.0636	4 rollers	ROL-C080VC-BVA ROL-E080VC-BVA	2+2	2000.0	0.0	0.0	0.0	250.0		Speedy rail 120
55.0665	3 rollers	ROL-C062VC-B ROL-E062VC-B	2+1	900.0	225.0	6.3	18.0	36.0		Speedy rail 90
55.0666	4 rollers	ROL-C062VC-B ROL-E062VC-B	2+2	900.0	450.0	12.6	36.0	72.0		Speedy rail 90
55.0808	4 rollers	ROL-C090VC-BS ROL-E090VC-BS	2+2	2300.0	1661.0	133.8	257.5	356.5		Speedy rail 250
55.1180	4 rollers	ROL-C090VC-BS ROL-E090VC-BS	2+2	2300.0	1661.0	112.4	249.2	345.0		Speedy rail 180

Tab.19

*1 For sliders with rollers only on one raceway, the Mx moment refers to two sliders mounted on both opposite raceways of the rail.

*2 The My moment can only be applied with two sliders mounted on both opposite raceways of the rail.

Therefore, for sliders with rollers only on one raceway, the values in the table refer to two sliders.

*3 For sliders with rollers only on one raceway, the Mz moment refers to two sliders mounted on both opposite raceways of the rail.

*4 Being a single bearing configuration axial load applies if more than one slider is assembled in the rail to avoid bearing movement.

► ACCESSORIES

■ MECHANICAL AND TECHNOLOGICAL COMPONENTS SPECIFICATIONS

Guides	Accessories	Material	Tensile strength
Speedy Rail Mini SR 60 Speedy Rail Middle SR 90 Speedy Rail Standard SR 120 Speedy Rail Wide Body multiple grooves SR 180 Speedy Rail Super Wide Body Multiple Grooves SR 250	Dovetails Fishplates	Aluminum Alloy	Tensile strength: $R = 245 \text{ N/mm}^2$ Yield stress: $S = 195 \text{ N/mm}^2$ Elongation: $10\% \div 13\%$ Modulus of elasticity: $E = 70000 \text{ N/mm}^2$ $G = 26000 \text{ N/mm}^2$ Mass density: $2,7 \text{ kg/dm}^3$ Coefficient of expansion: $K = 23 \times 10^{-6} \text{ mm/mm}^\circ\text{C}$

Tab.20

Scrapers

All the roller assemblies come with the scrapers. The purpose of this item is to keep foreign bodies out of the rollers. Scrapers shall never be set to slide on the rail. They are equipped with mounting and adjustment holes so that a 0.2 mm minimum clearance can be applied.

For application environments with an excessive pollution or dust use the mobile brush assembly.

Drive head

For Speedy Rail profiles. Machined from a hard polymer rubber molding - Shore A hardness 90÷95 - Normally mounted on the bar ends when the system has a rail that moves in and out the roller assemblies. This rubber end piece allows the rail to be easily guided into the roller assemblies.

■ ACCESSORIES FOR SPEEDY RAIL 60

Fishplate for drive head

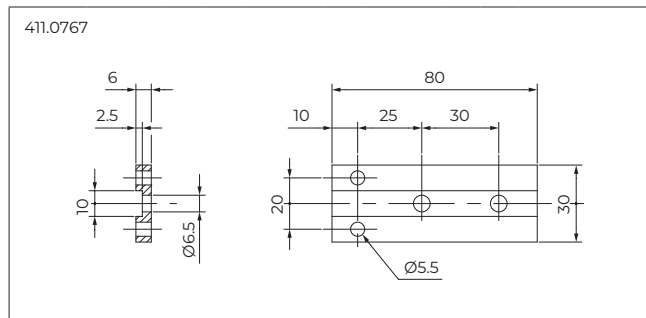


Fig.120

M6 allen round head screw

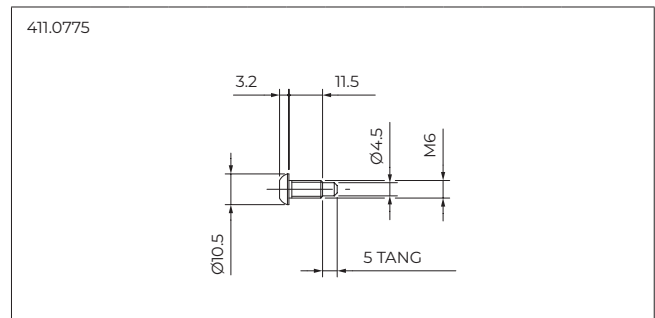


Fig.121

Drive head

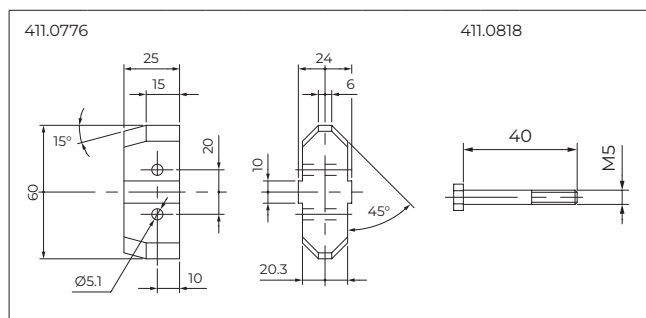


Fig.122

End cap

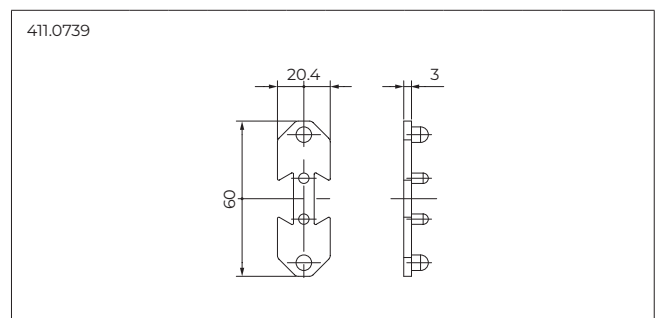


Fig.123

Dovetail clamps

Code N°	N° Holes	F	G	L	M	Material
411.1732	1	10	/	20	M4	Burnished steel
411.2732	1	10	/	20	M5	
411.2733	9	8	60	496	M5	
411.0732	1	10	/	20	M6	
411.0768	2	15	30	60	M6	
411.0754	3	10	30	80	M6	
411.0769	6	25	30	200	M6	
411.0771	2	25	100	150	M6	
411.0462	2	10	30	50	M6	
411.3532	1	10	/	20	M8	

Tab.21

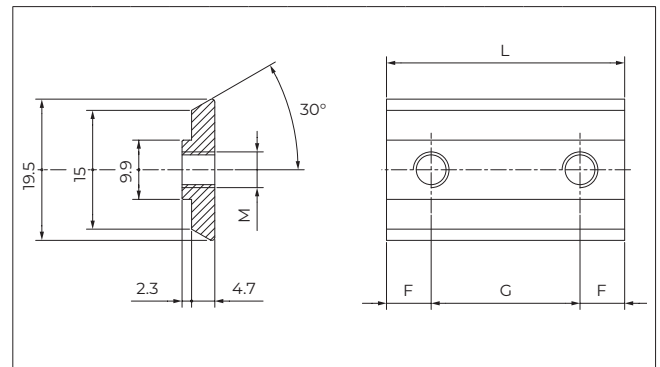
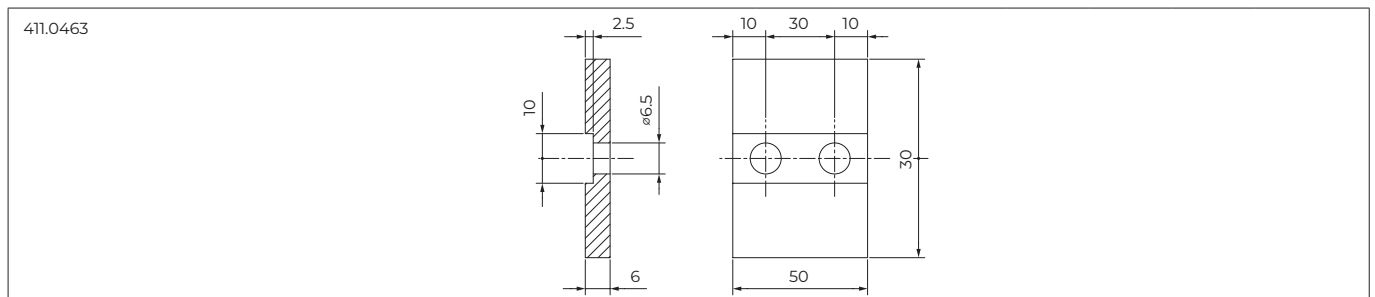


Fig.124

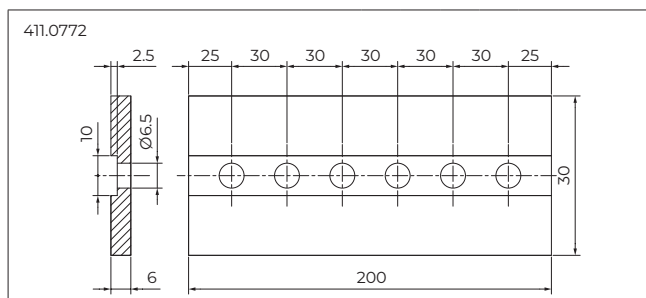
Fishplate



Material: hard anodized aluminium alloy

Fig.125

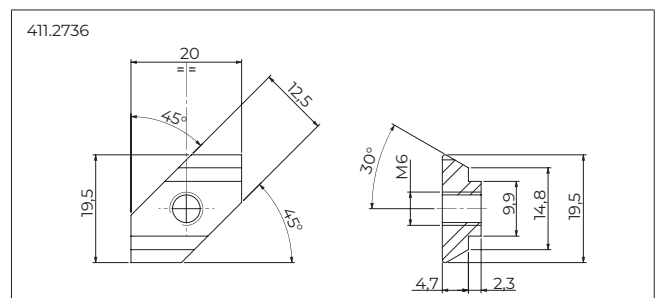
Fishplate for end to end joining



Material: hard anodized aluminium alloy

Fig.126

Dovetail quick front insertion



Material: hard anodized aluminium alloy

Fig.127

Fishplate for side-arm attachment

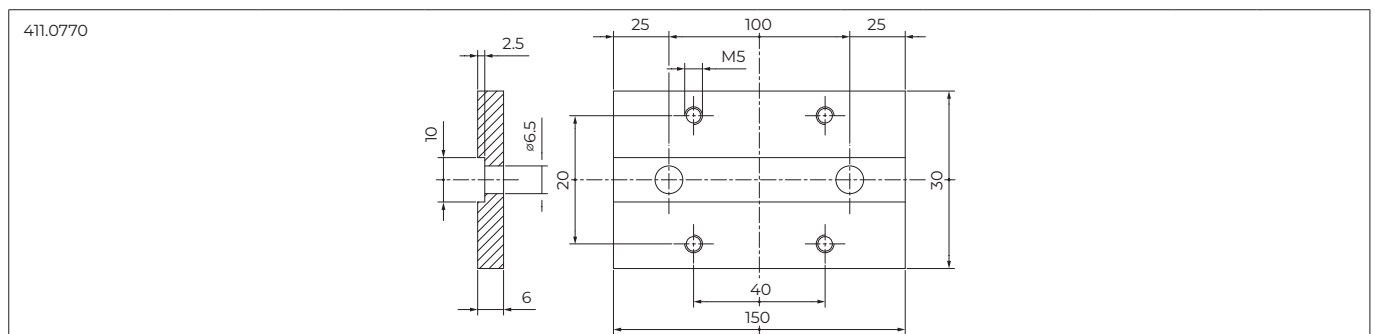


Fig.128

Kit spacer

Unit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Code
SR 60	50	40	30	25	M6	15	G002343

Tab.22

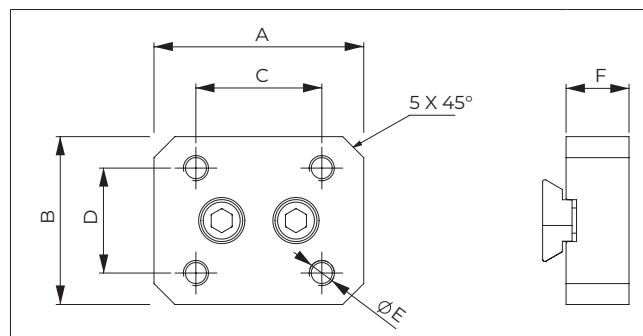


Fig.129

■ ACCESSORIES FOR SPEEDY RAIL 90

Fishplate for drive head

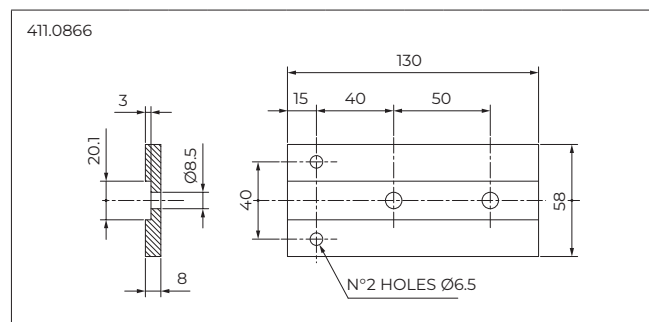


Fig.130

Drive head

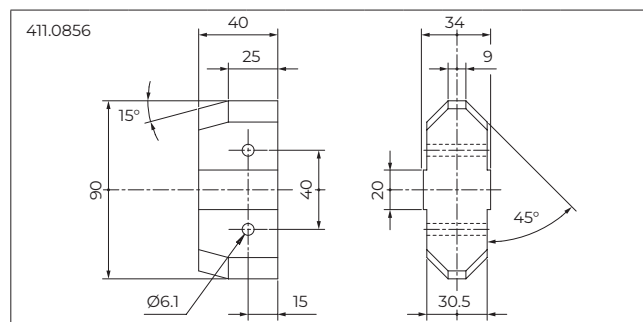


Fig.131

End cap

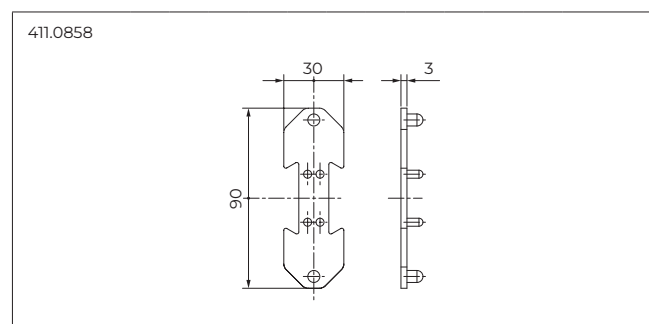


Fig.132

Bolt for drive head mount

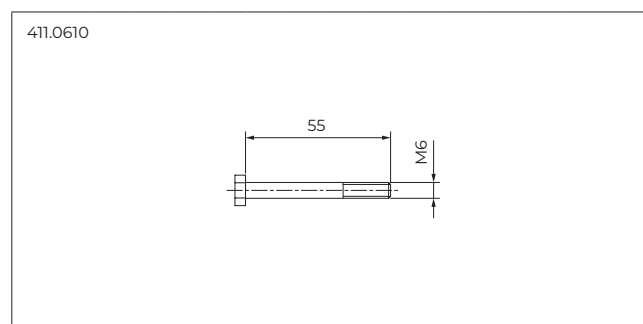


Fig.133

Dovetail clamps

Code N°	N° Holes	F	G	L	M	Material
411.1025	1	25	/	50	M4	Burnished steel
411.1047	1	25	/	50	M6	
411.1045	1	25	/	50	M8	
411.1069	2	25	50	100	M8	
411.1088	3	25	50	150	M8	
411.1072	4	25	50	200	M8	
411.1070	6	25	50	300	M8	

Tab.23

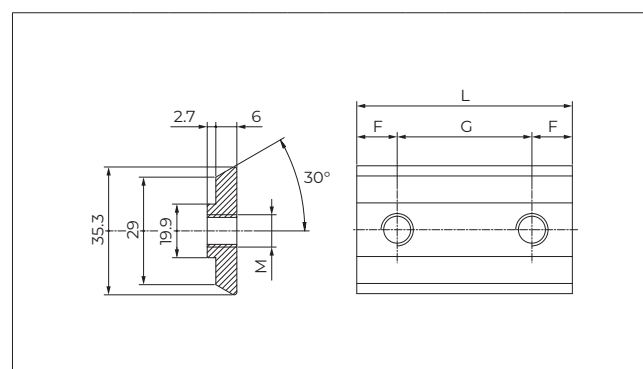


Fig.134

Dovetail-execution without step

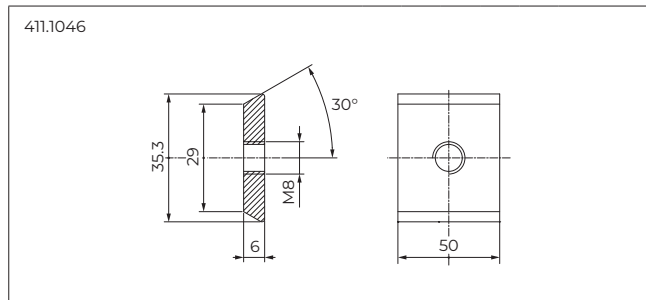


Fig.135

Dovetail-quick front insertion version

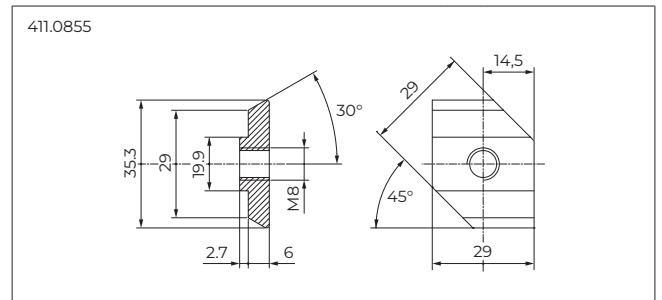
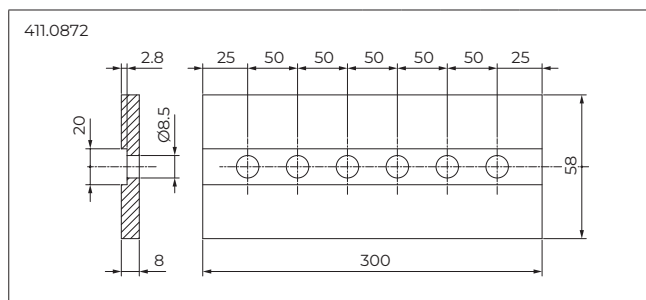


Fig.136

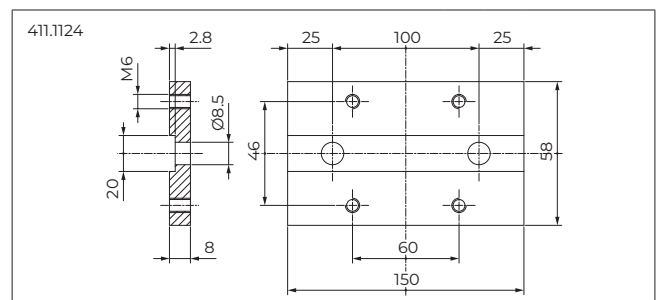
Fishplate for end to end joining



Material: hard anodized aluminium alloy

Fig.137

Fishplate for side-arm attachment



Material: hard anodized aluminium alloy

Fig.138

■ ACCESSORIES FOR SPEEDY RAIL 120

Drive head

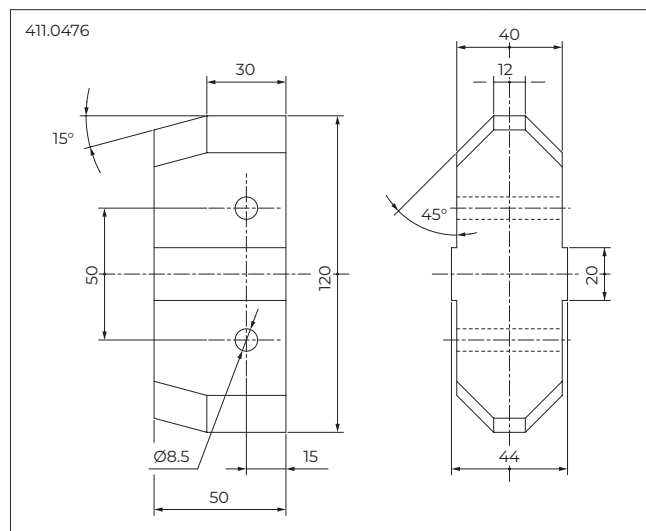


Fig.139

Bolt for drive head

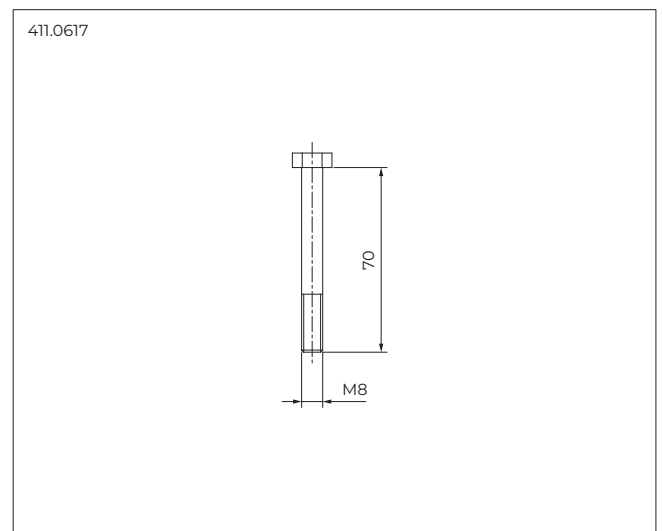
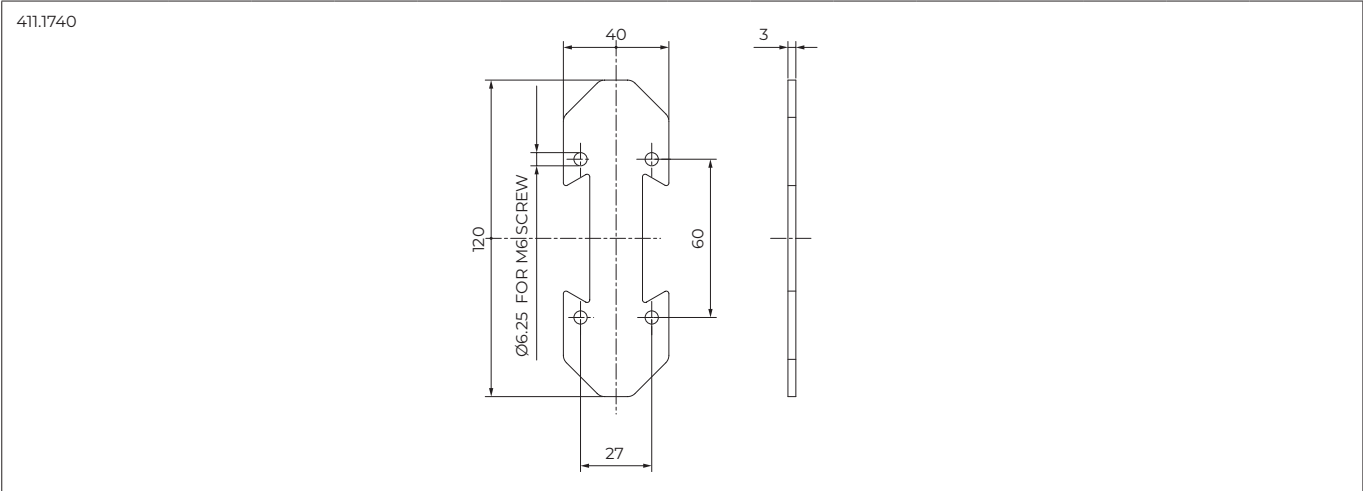


Fig.140

Alluminium alloy end cap



Standard dovetail clamps

Code N°	N° Holes	F	G	L	Material
411.0745	1	25	/	50	Burnished steel
411.0503	1	15	40	70	
411.0469	2	25	50	100	
411.0588	3	25	50	150	
411.0472	2	25	150	200	
411.0470	6	25	50	300	

Tab.24

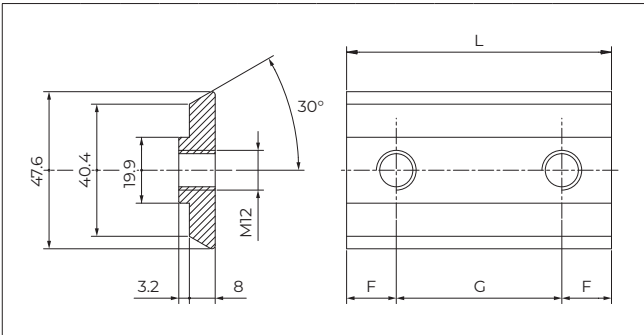


Fig.142

Middle Speedy Rail with drilled ends

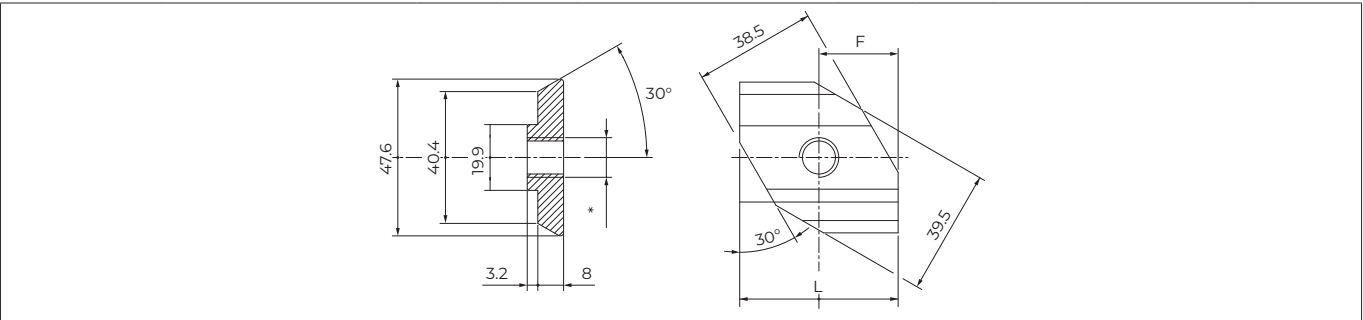


Fig.143

411.1178

* M10 dovetail-quick front-insertion version

411.0845

* M12 dovetail-quick front-insertion version

Dovetail clamps with M8 threaded holes

Code N°	N° Holes	F	G	L	Material
411.0675	2	15	20	50	Burnished steel
411.1111	1	25	/	50	
411.1112	2	25	50	100	
411.1113	3	25	50	150	
411.0970	6	25	50	300	

Tab.25

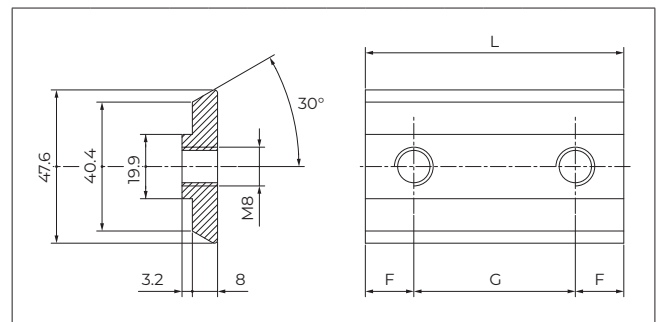


Fig.144

Dovetail clamps with M10 threaded holes

Code N°	N° Holes	F	G	L	Material
411.1117	1	25	/	50	Burnished steel
411.1119	2	25	50	100	
411.1120	3	25	50	150	

Tab.26

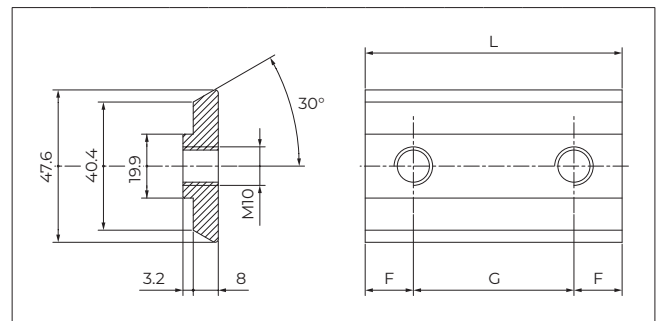


Fig.145

Steel dovetail without step

Code N°	N° Holes	F	G	L	M	Material
411.1675	2	15	20	50	M8	Burnished steel
411.1186	1	25	/	50	M10	
411.1185	1	25	/	50	M12	
411.0888	3	25	50	150	M12	

Tab.27

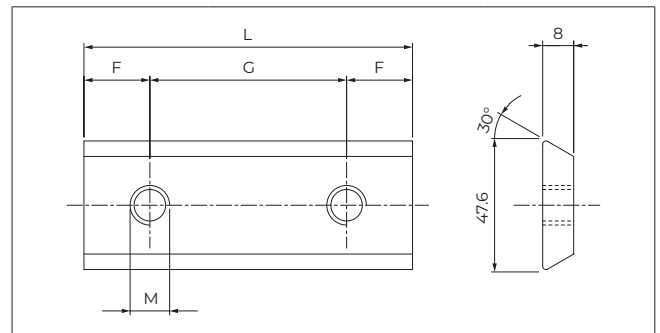


Fig.146

Steel dovetail quick front insertion without step

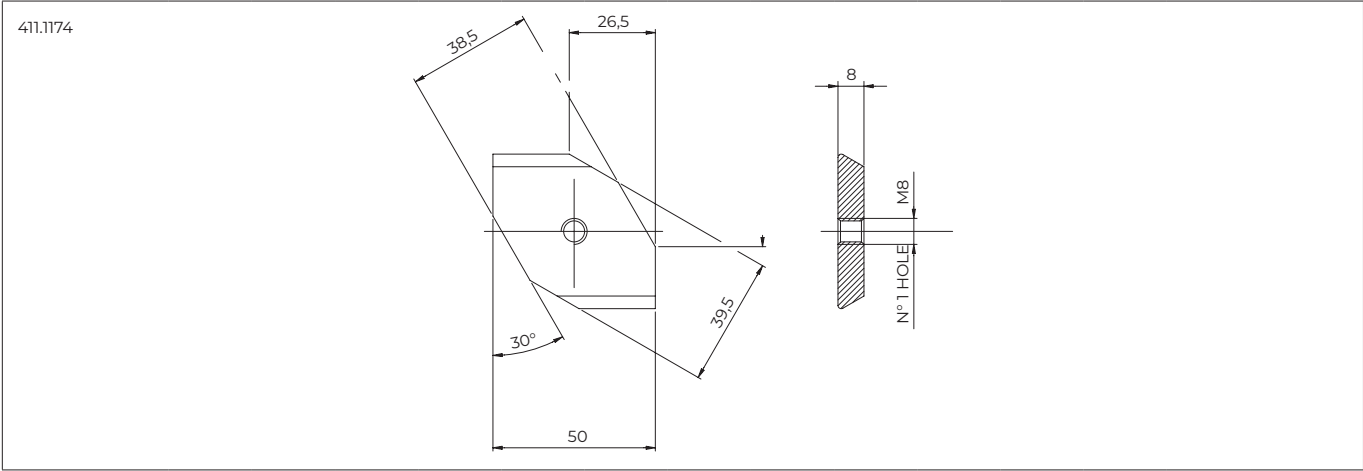


Fig.147

Racks components for rigid mounting

Fishplate for rack mounting on dovetail grooves

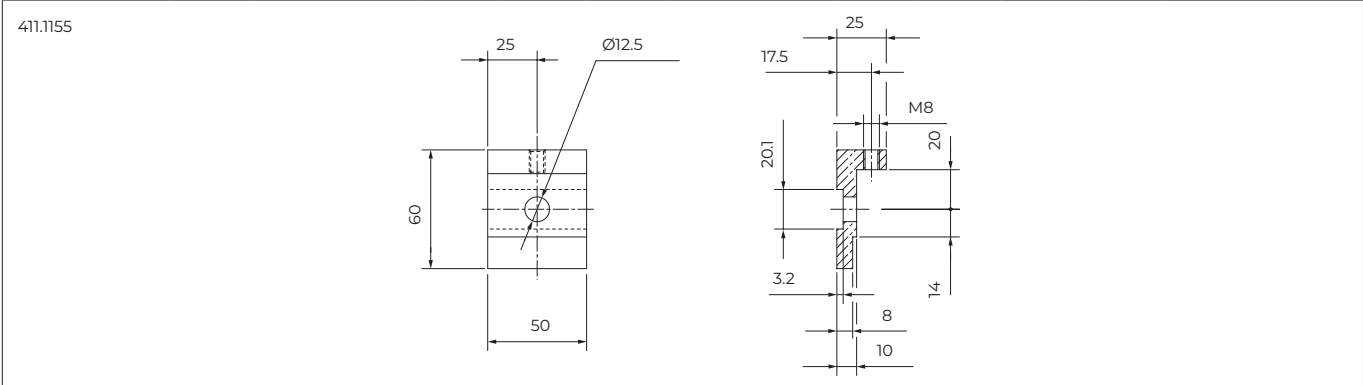


Fig.148

For dovetail see page 24, 25; For insert see page 43

Standard fixing fishplates

Side attachment fishplate suitable for:
speedy rail standard, wide body, super wide body

Code N°	E	F	G	H	L	Material
411.0570	70	25	150	60	200	Hard anodized aluminium alloy

Tab.28

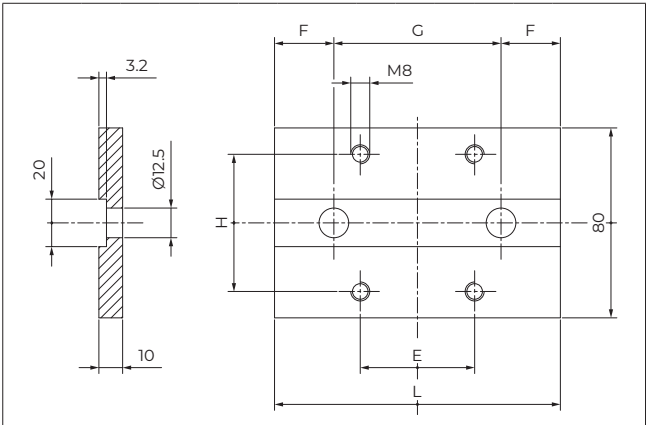


Fig.149

Fishplates for end to end joining suitable for speedy rail standard, wide body, super wide body

Code N°	N° Holes	L	F	G	Material
411.0572	6	300	25	50	Hard anodized aluminium alloy
411.0690	6	300	25	50	Burnished steel
411.0573	6	300	25	50	Steel/countersuk holes

Tab.29

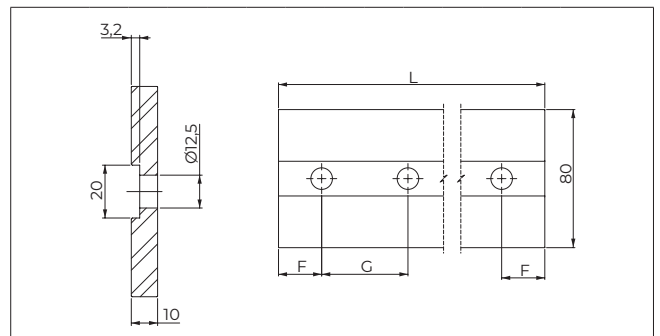


Fig.150

Fishplate for drive head

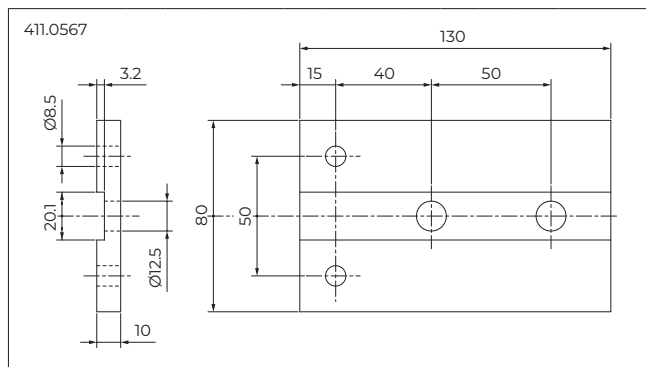


Fig.151

M12 exag. head screw

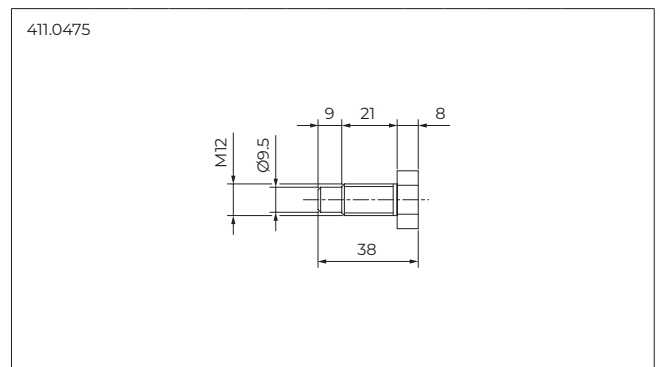


Fig.152

Scraper for floating and full-block assemblies

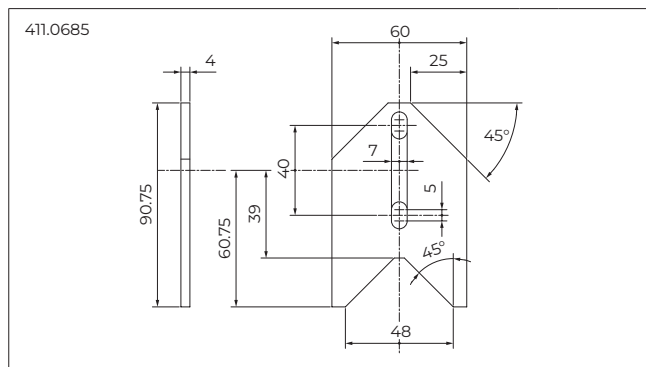


Fig.153

Scraper for compact

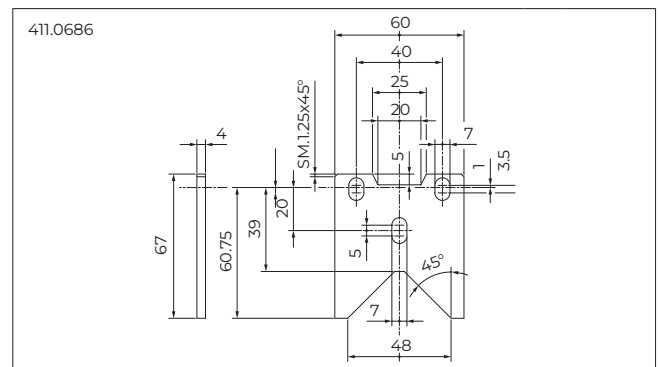


Fig.154

Sliding brush for speedy rail and steel rail.
Brushes are kept against tracks by springs.

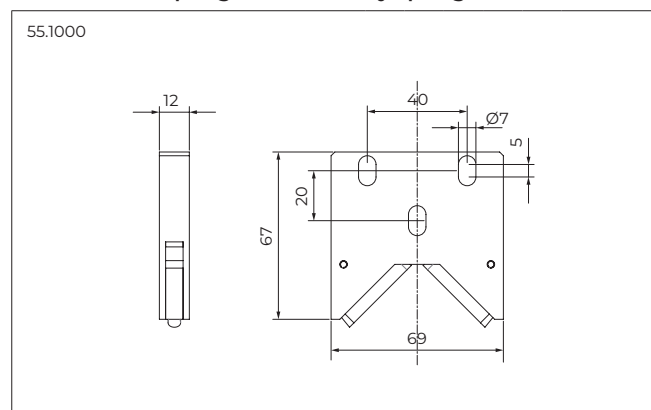


Fig.155

Scraper for light floating rollers assemblies

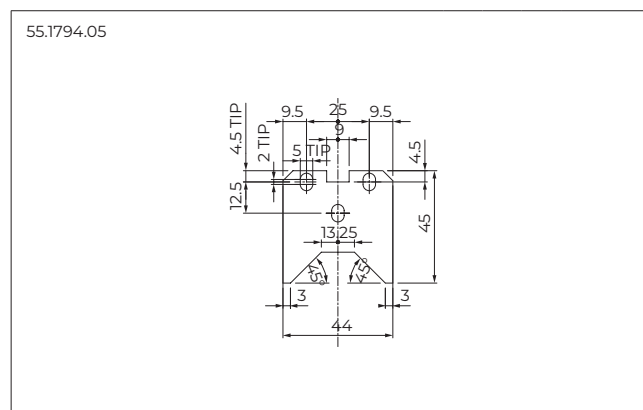


Fig.156

Scraper for blindo beam roller assemblies

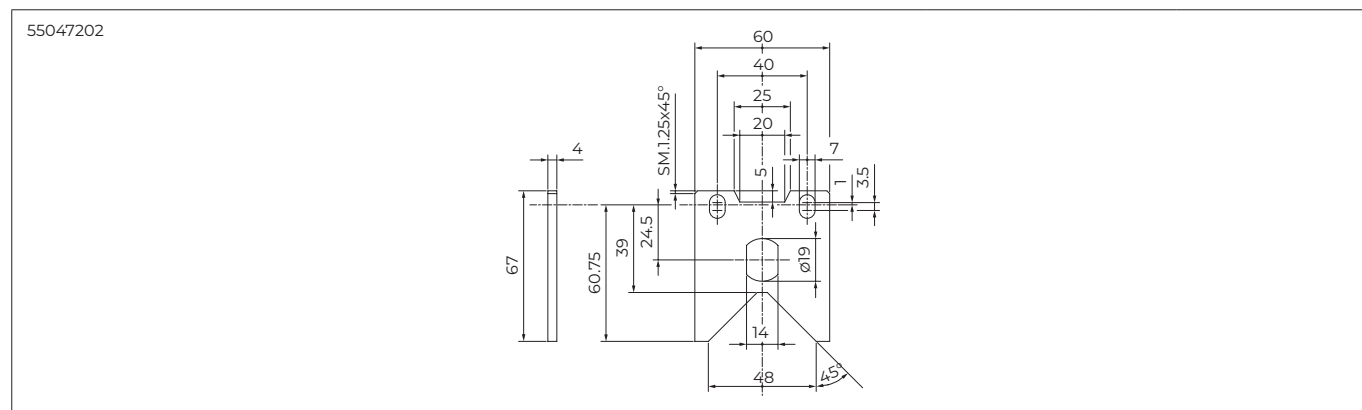


Fig.157

Notes:

All roller assemblies are equipped with the relate scrapers.

Kit spacer

Unit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Code
SR 120	100	80	50	55	M8	30	G002362

Tab.30

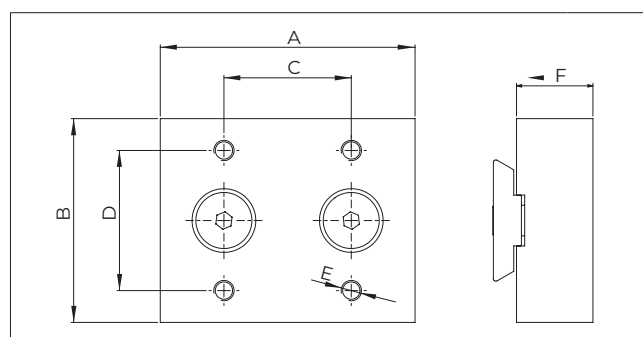


Fig.158

■ ACCESSORIES FOR SPEEDY RAIL 180

Insert

A	B	C	D	E	Material	N° Holes	Cod.
496	60	M4	8	16	Burnished steel	9	411.2534
496	60	M5	8	16		9	411.2533
496	80	M6	8	16		9	411.3633

Tab.31

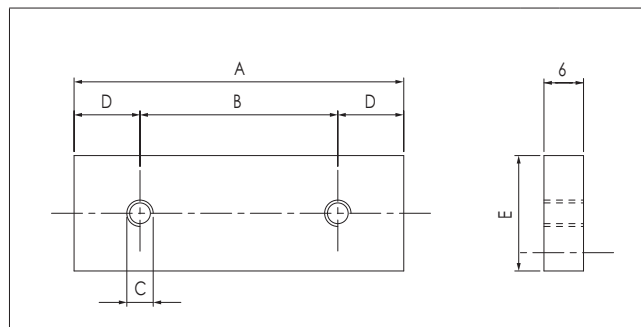


Fig.159

Insert

A	B	C	D	E	Material	N° Holes	Cod.
-	-	M4	-	-	Zinc plated steel	1	411.1349
-	-	M5	-	-		1	411.1351
-	-	M6	-	-		1	411.1352
-	-	M8	-	-		1	411.1353

Tab.32

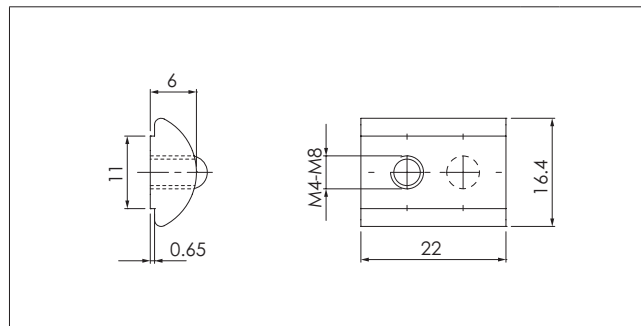


Fig.160

Wide body multi groove speedy rail guide (SR180) uses the same dovetails, plates, fishplates and joining components of speedy rail standard (SR120 section) see page 24, 25, 26.

Standard Speedy Rail with plain ends

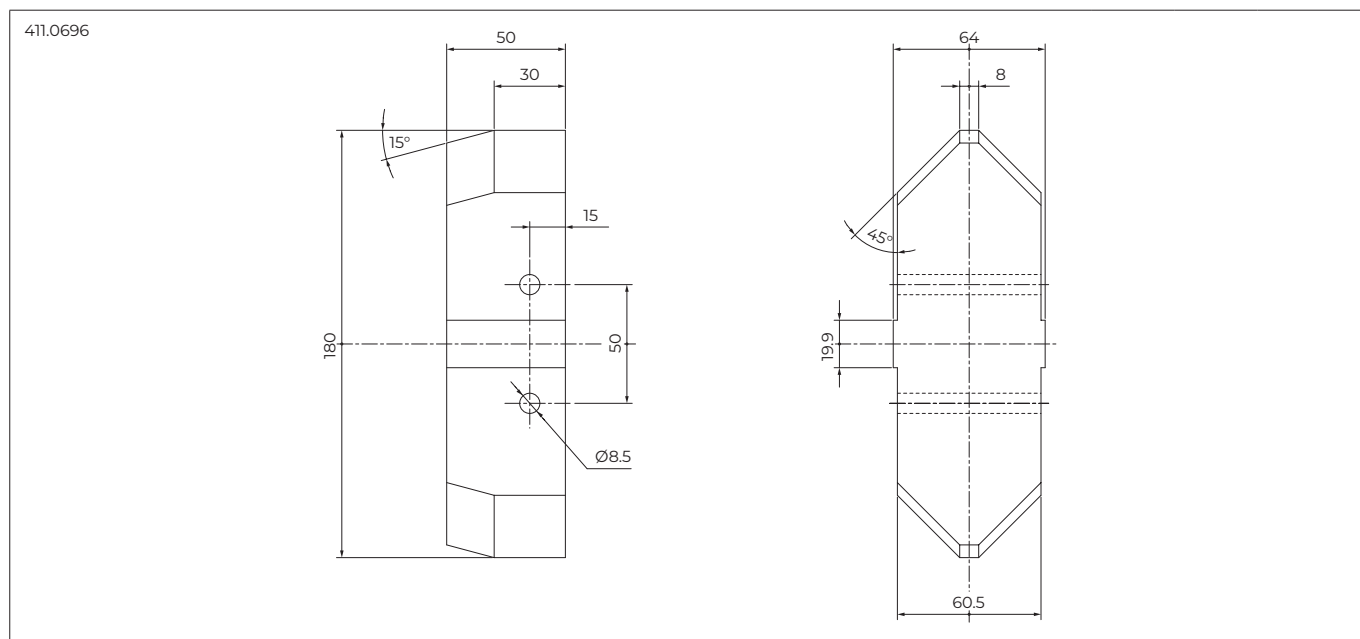


Fig.161

Bolt for drive head

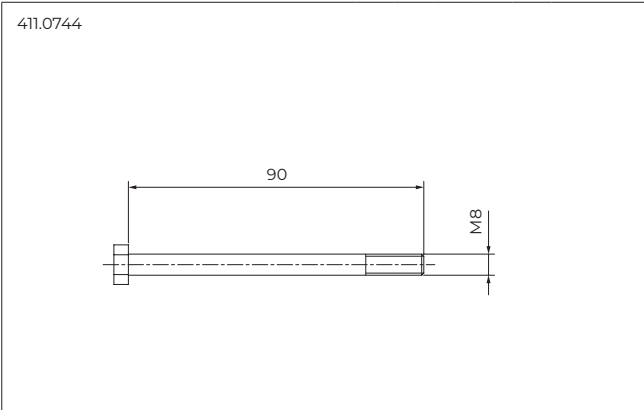


Fig.162

Aluminium alloy end cap

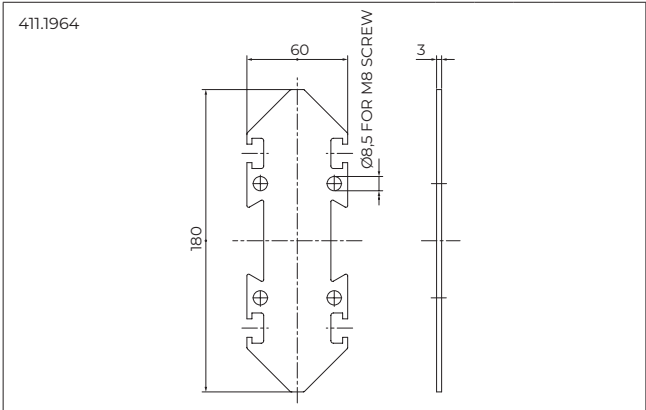


Fig.163

Fishplate for rack mounting on dovetail grooves

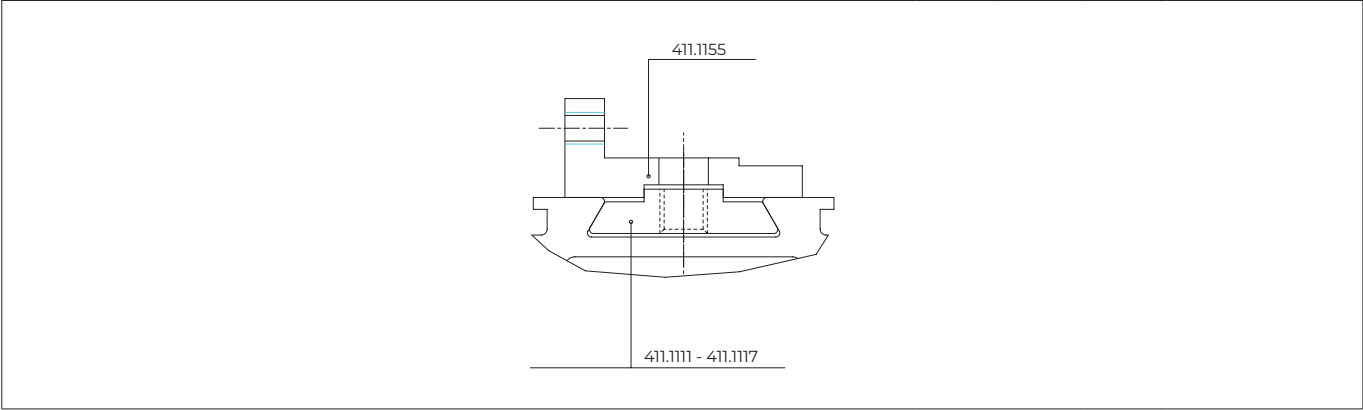


Fig.164

Standard dovetail clamps

Code N°	N° Holes	F	G	L	Material
411.0745	1	25	/	50	Burnished steel
411.0503	1	15	40	70	
411.0469	2	25	50	100	
411.0588	3	25	50	150	
411.0472	2	25	150	200	
411.0470	6	25	50	300	

Tab.33

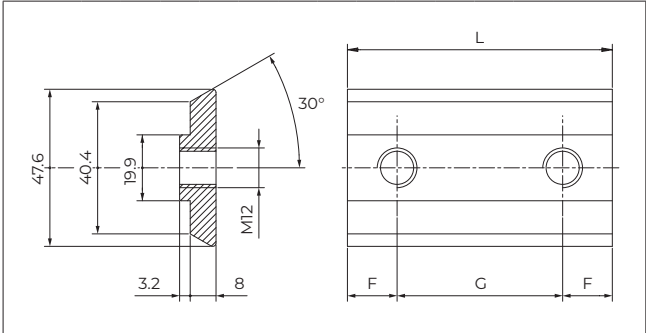


Fig.165

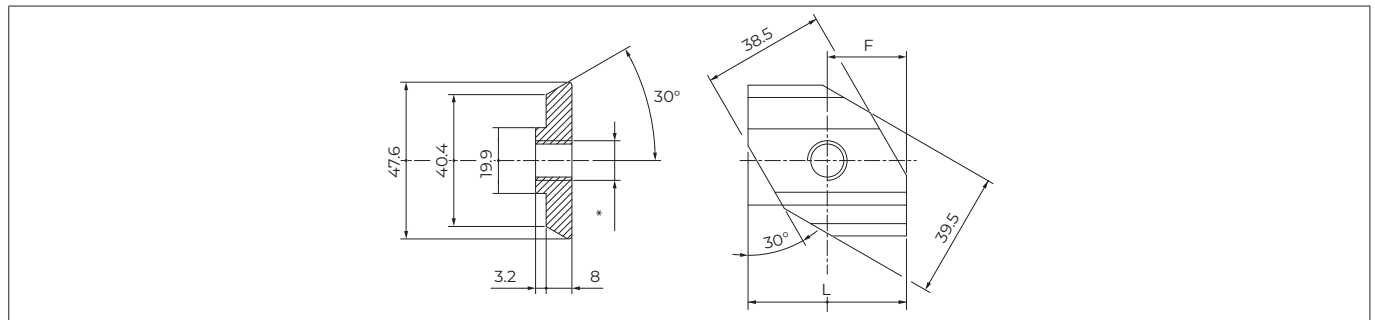
Middle Speedy Rail with drilled ends


Fig.166

411.1178

* M10 dovetail-quick front-insertion version

411.0845

* M12 dovetail-quick front-insertion version

Dovetail clamps with M8 threaded holes

Code N°	N° Holes	F	G	L	Material
411.0675	2	15	20	50	Burnished steel
411.1111	1	25	/	50	
411.1112	2	25	50	100	
411.1113	3	25	50	150	
411.0970	6	25	50	300	

Tab.34

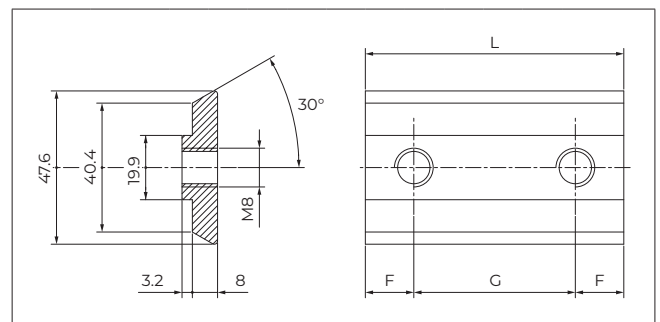


Fig.167

Dovetail clamps with M10 threaded holes

Code N°	N° Holes	F	G	L	Material
411.1117	1	25	/	50	Burnished steel
411.1119	2	25	50	100	
411.1120	3	25	50	150	

Tab.35

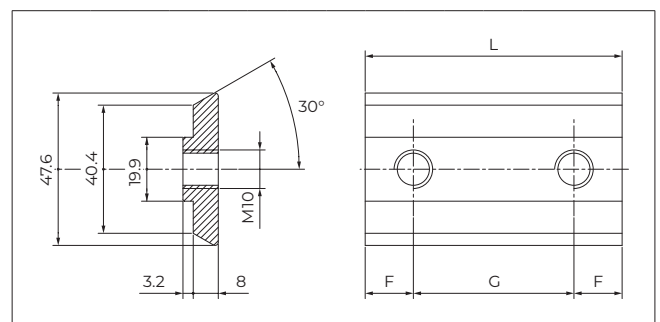


Fig.168

Steel dovetail without step

Code N°	N° Holes	F	G	L	M	Material
411.1675	2	15	20	50	M8	Burnished steel
411.1186	1	25	/	50	M10	
411.1185	1	25	/	50	M12	
411.0888	3	25	50	150	M12	

Tab.36

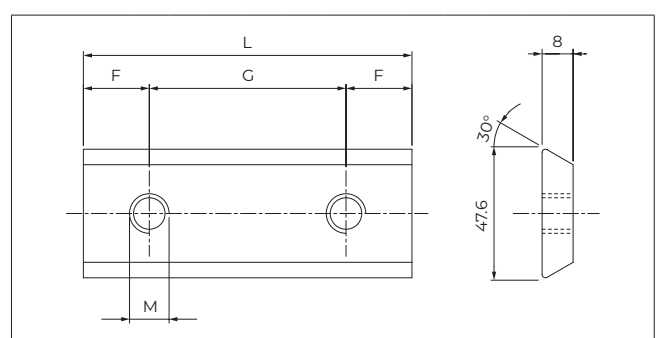
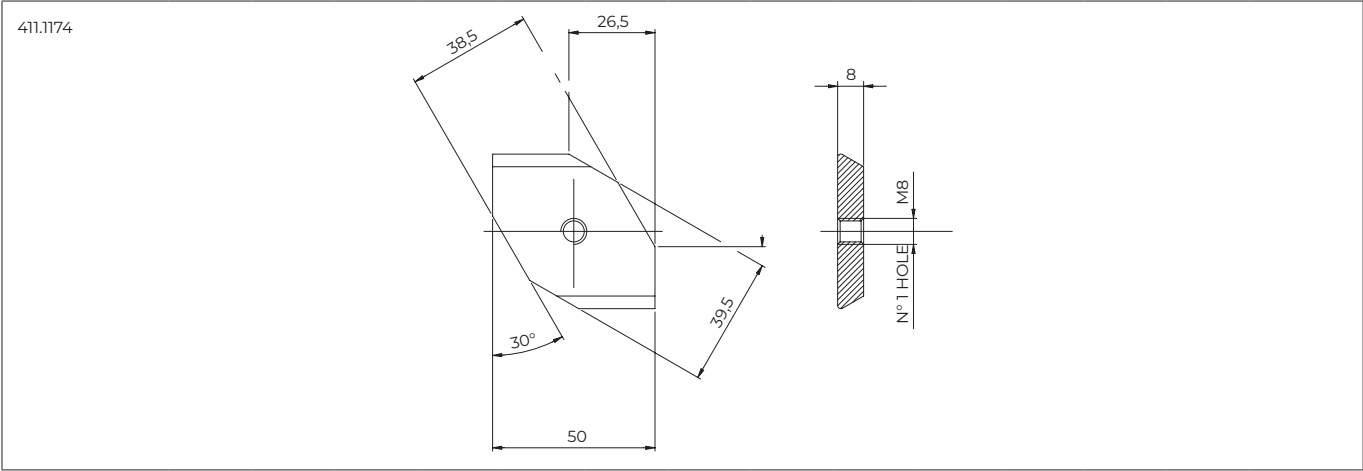
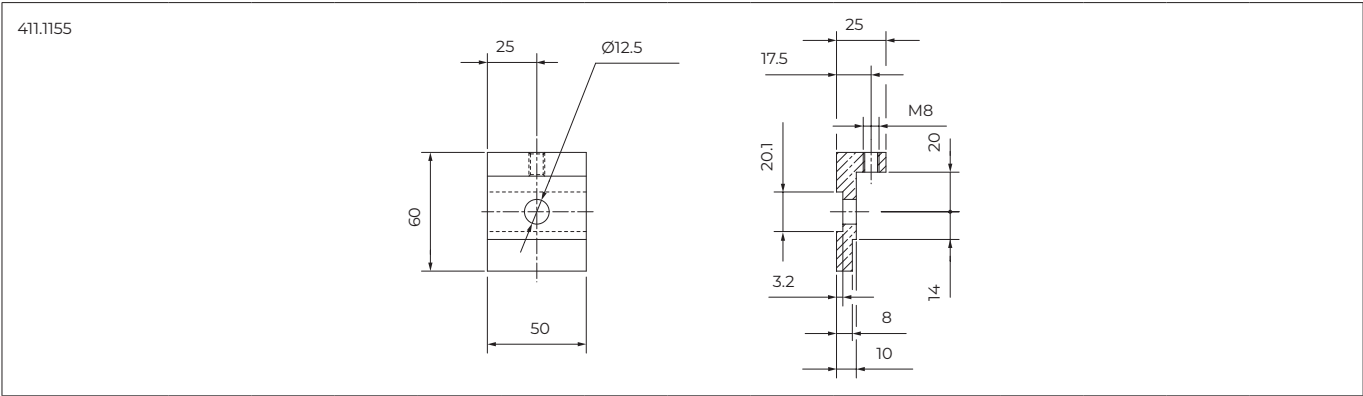


Fig.169

Steel dovetail quick front insertion without step



Fishplate for rack mounting on dovetail grooves

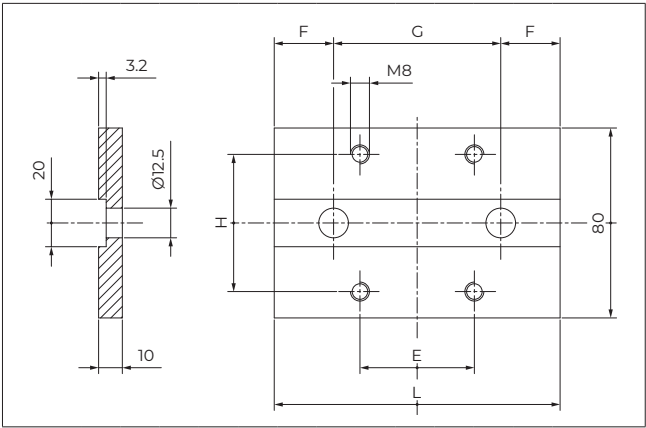


For dovetail see page 80; For insert see page 74

Side attachment fishplate suitable for:
speedy rail standard, wide body, super wide body

Code N°	E	F	G	H	L	Material
411.0570	70	25	150	60	200	Hard anodized aluminium alloy

Tab.37



Fishplates for end to end joining suitable for speedy rail standard, wide body, super wide body

Code N°	N° Holes	L	F	G	Material
411.0572	6	300	25	50	Hard anodized aluminium alloy
411.0690	6	300	25	50	Burnished steel
411.0573	6	300	25	50	Steel/countersunk holes

Tab.38

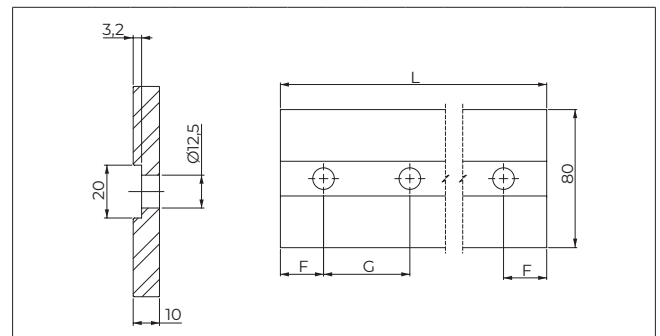


Fig.173

Fishplate for drive head

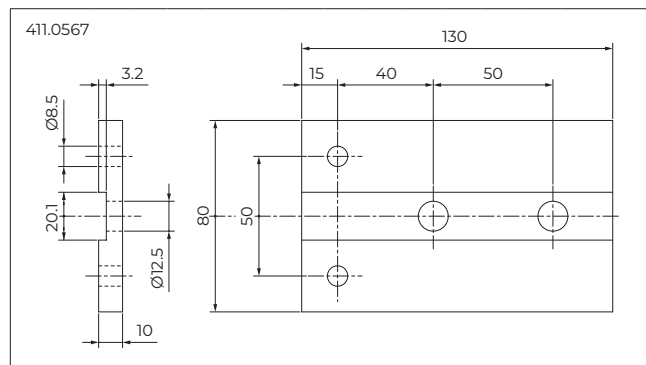


Fig.174

M12 exag. head screw

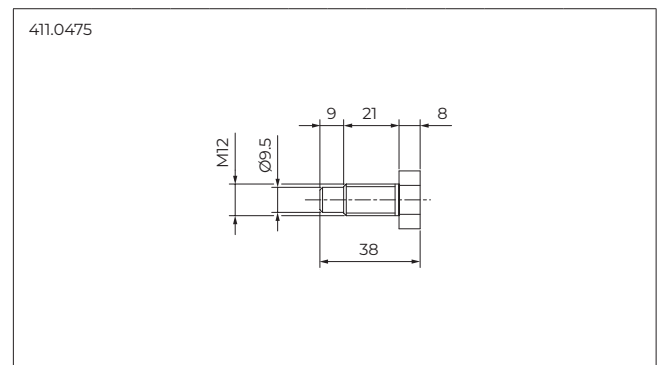


Fig.175

Kit spacer

Unit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Code
SR 180	100	125	50	70	M10	36	G002466

Tab.39

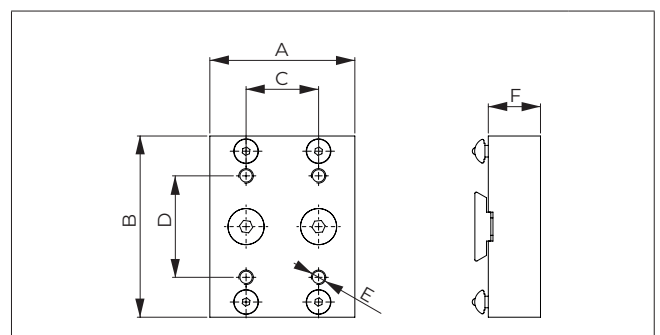


Fig.176

Standard dovetail clamps

Code N°	N° Holes	F	G	L	Material
411.0745	1	25	/	50	Burnished steel
411.0503	1	15	40	70	
411.0469	2	25	50	100	
411.0588	3	25	50	150	
411.0472	2	25	150	200	
411.0470	6	25	50	300	

Tab.40

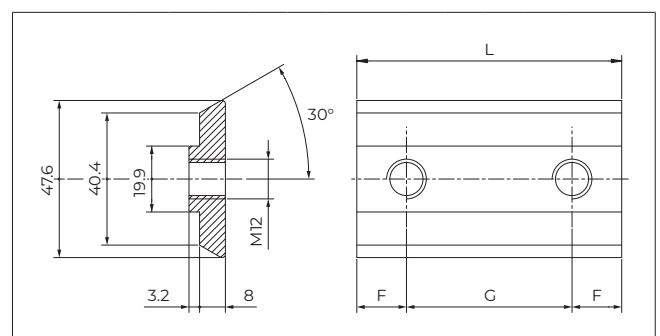


Fig.177

■ ACCESSORIES FOR SPEEDY RAIL 250

Middle Speedy Rail with drilled ends

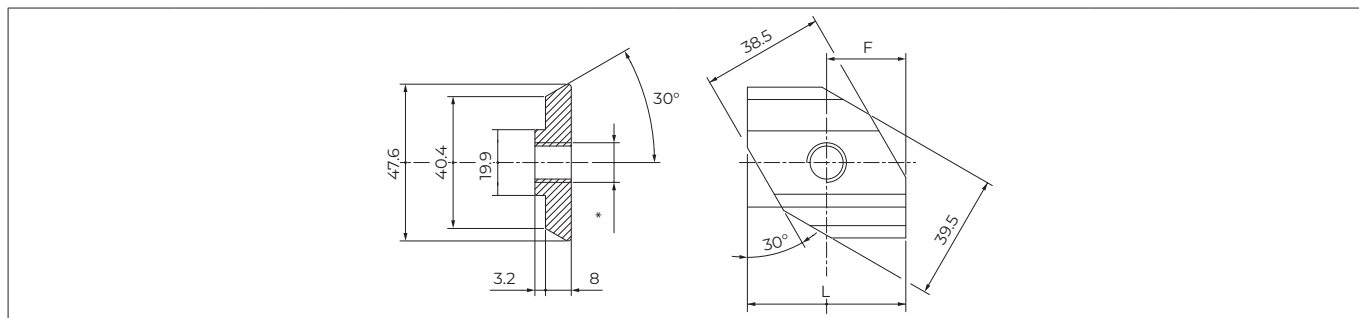


Fig.178

411.1178

* M10 dovetail-quick front-insertion version

411.0845

* M12 dovetail-quick front-insertion version

Dovetail clamps with M8 threaded holes

Code N°	N° Holes	F	G	L	Material
411.0675	2	15	20	50	Burnished steel
411.1111	1	25	/	50	
411.1112	2	25	50	100	
411.1113	3	25	50	150	
411.0970	6	25	50	300	

Tab.41

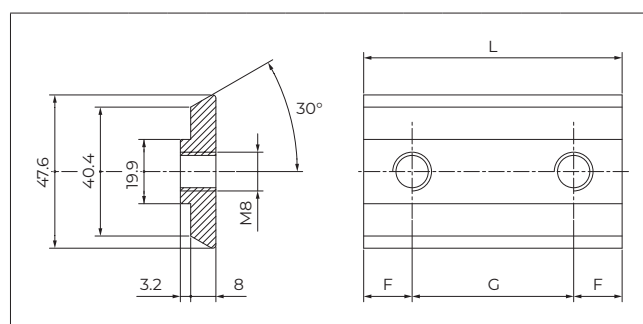


Fig.179

Dovetail clamps with M10 threaded holes

Code N°	N° Holes	F	G	L	Material
411.1117	1	25	/	50	Burnished steel
411.1119	2	25	50	100	
411.1120	3	25	50	150	

Tab.42

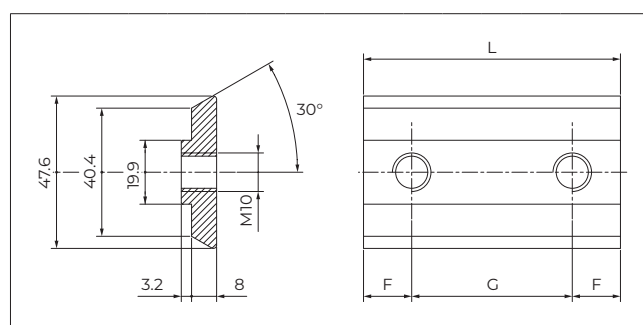


Fig.180

Steel dovetail without step

Code N°	N° Holes	F	G	L	M	Material
411.1675	2	15	20	50	M8	Burnished steel
411.1186	1	25	/	50	M10	
411.1185	1	25	/	50	M12	
411.0888	3	25	50	150	M12	

Tab.43

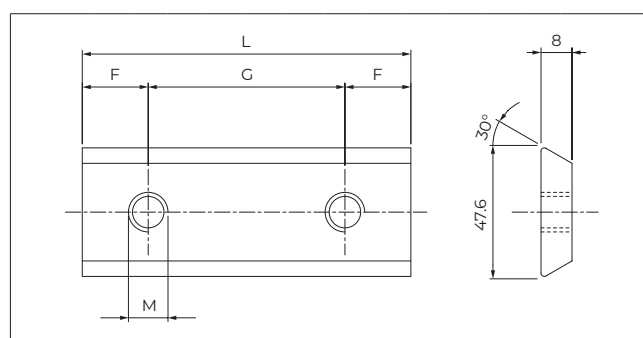


Fig.181

Steel dovetail quick front insertion without step

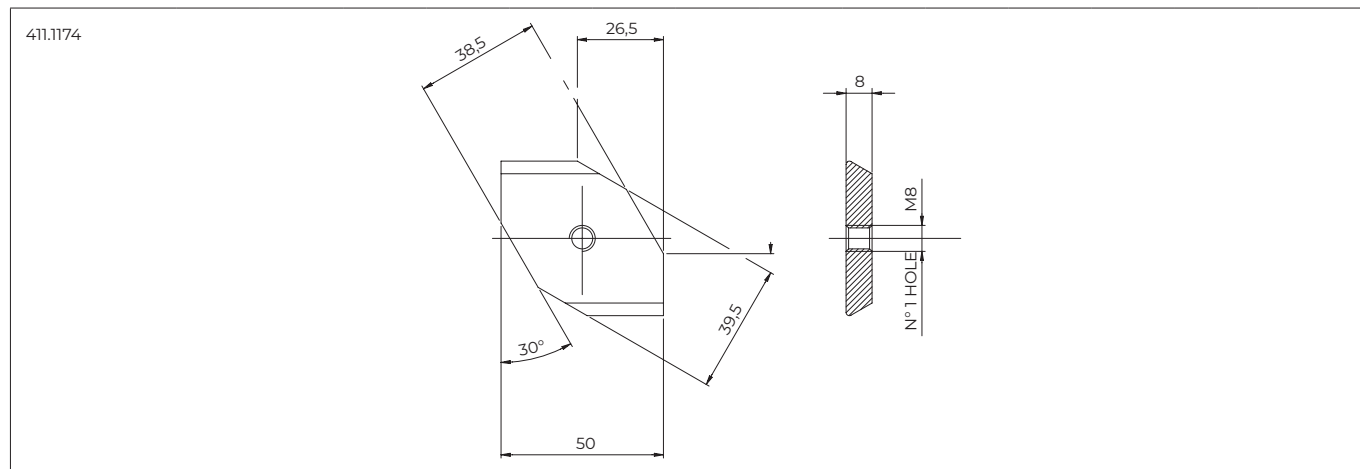


Fig.182

Fishplate for rack mounting on dovetail grooves

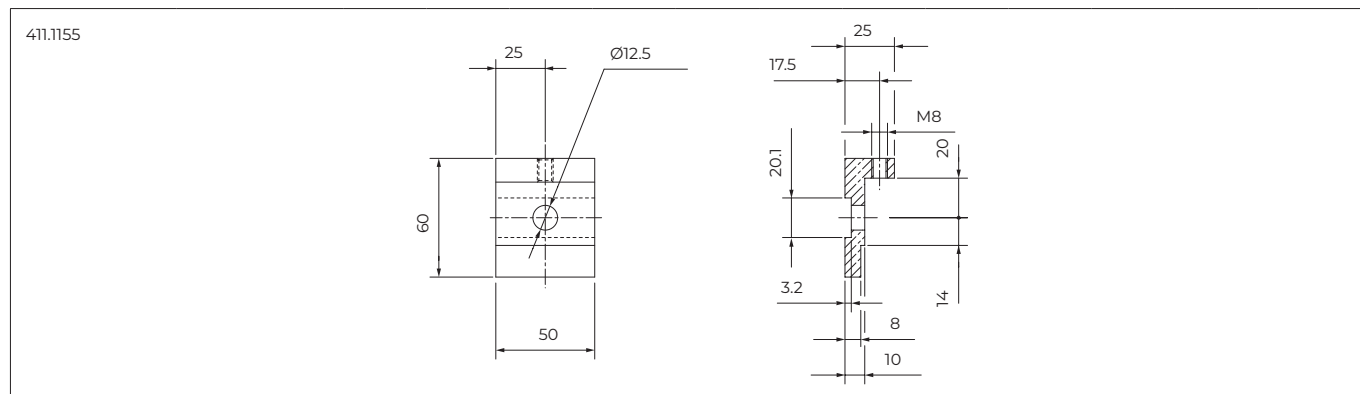


Fig.183

For dovetail see page 80; For insert see page 74

Side attachment fishplate suitable for: speedy rail standard, wide body, super wide body

Code N°	E	F	G	H	L	Material
411.0570	70	25	150	60	200	Hard anodized aluminium alloy

Tab.44

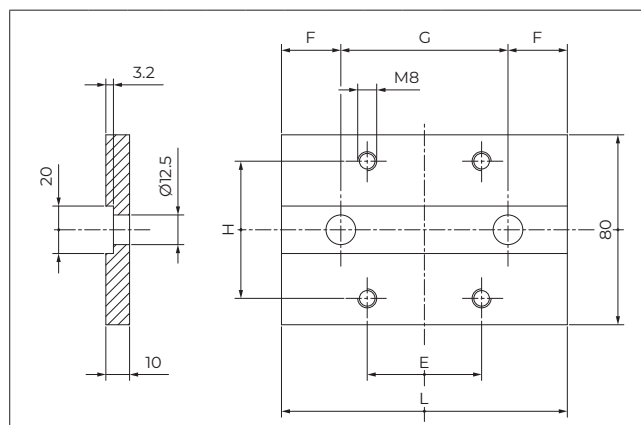


Fig.184

Fishplates for end to end joining suitable for speedy rail standard, wide body, super wide body

Code N°	N° Holes	L	F	G	Material
411.0572	6	300	25	50	Hard anodized aluminium alloy
411.0690	6	300	25	50	Burnished steel
411.0573	6	300	25	50	Steel/countersuk holes

Tab.45

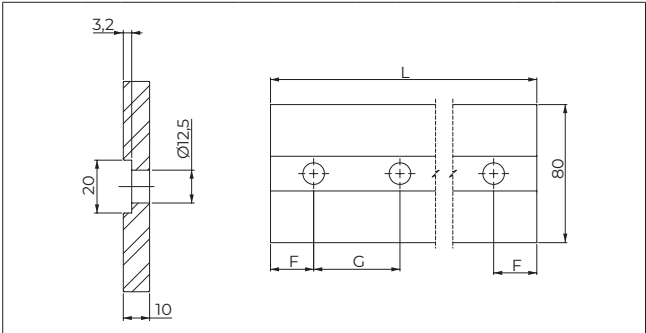


Fig.185

Fishplate for drive head

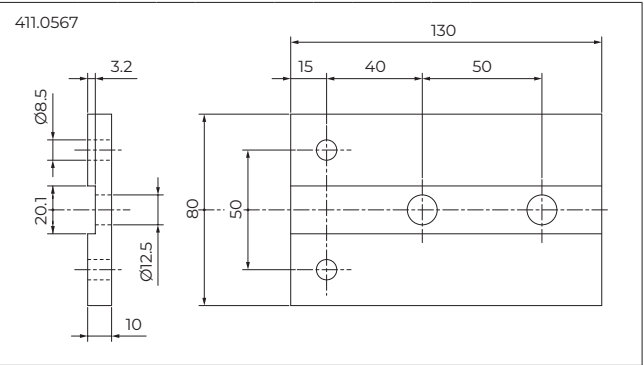


Fig.186

M12 exag. head screw

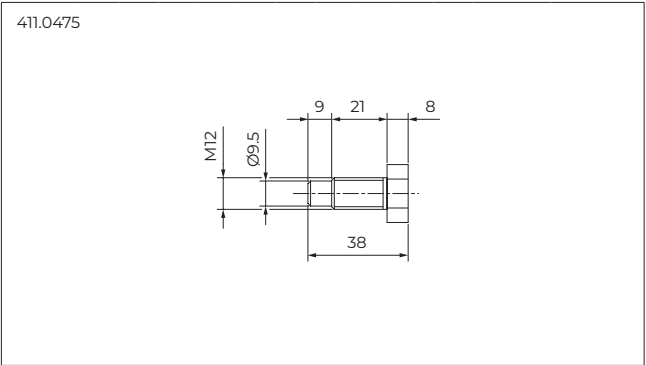


Fig.187

Kit spacer

Unit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Code
SR 250	100	125	50	80	M12	36	G002523

Tab.46

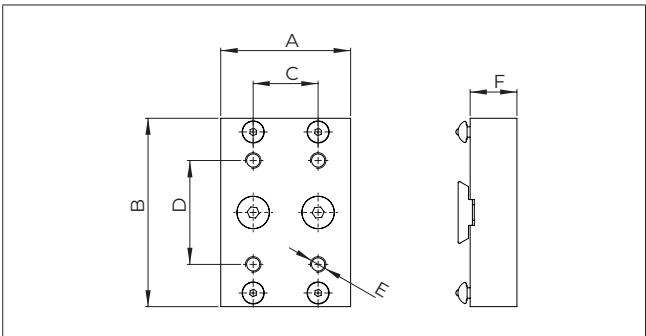


Fig.188

■ COMPONENTS FOR SUPER WIDE BODY SPEEDY RAIL GUIDE

Aluminium alloy end cap

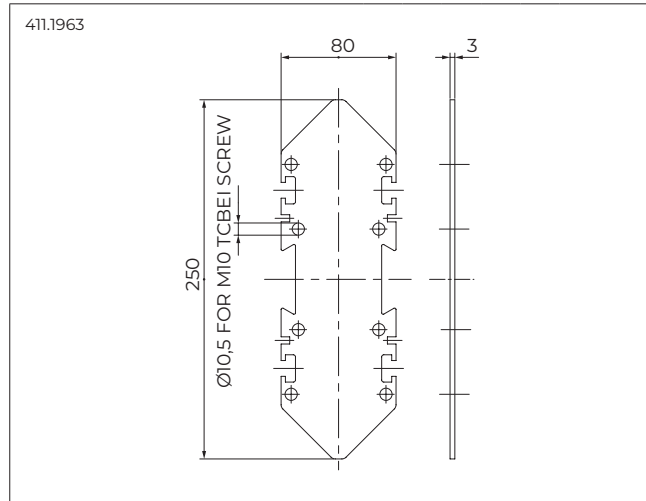


Fig.189

Elastomer drive head

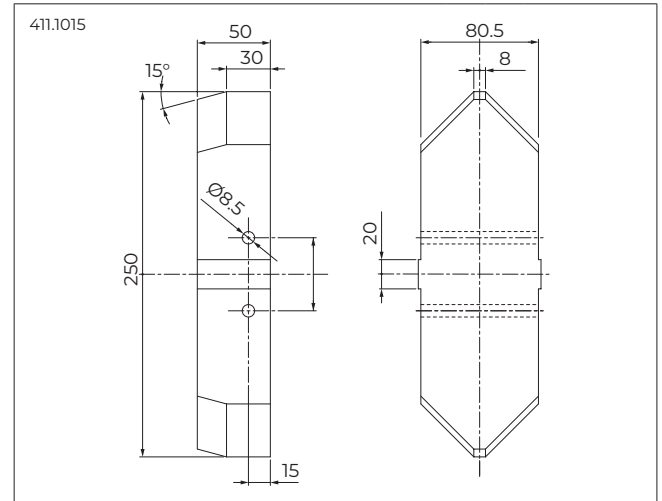


Fig.190

Fishplate for rack mounting on dovetail grooves

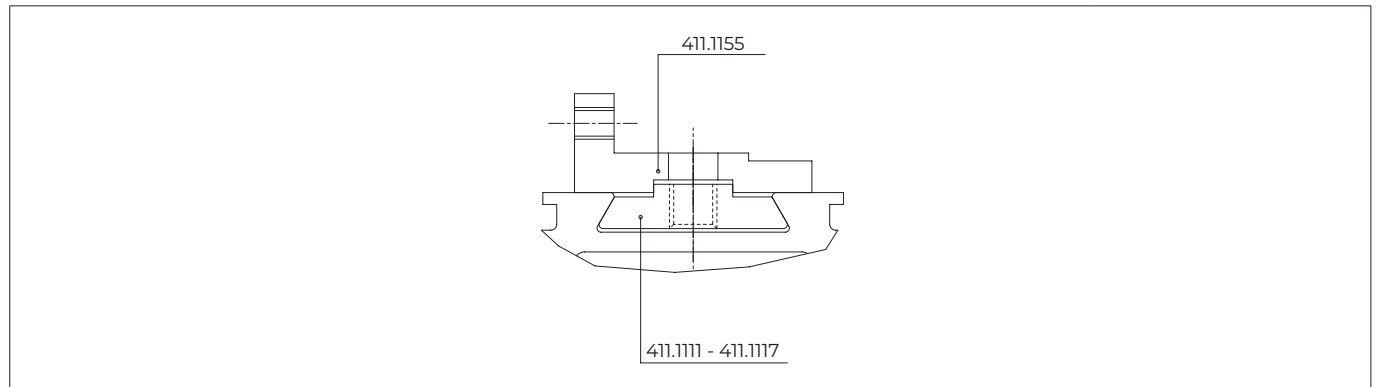


Fig.191

► USE AND MAINTENANCE

■ Roller assemblies

Roller assemblies with four (4) rollers have the two inner rollers mounted on a plain, concentric sleeve while the outer ones have an eccentric sleeve. This setup allows the proper adjustments to compensate dimensional tolerances on the rail. Two roller assemblies have one roller with an eccentric sleeve and the other with a concentric setup.

Floating roller assemblies: all the rollers on this type of support have a concentric sleeve. The adjustments are made possible by the pivot settings (hub), which comes either with an eccentric or concentric setup. Custom configuration for roller assemblies are available upon request.

■ Rollers adjustments

Adjusting the rollers on a single section rail requires the rollers in a position that allows them to touch the running surface with no play - slightly pre-loaded- A different and more accurate setting is required when the runway is assembled with multiple sections.

The rollers setting must leave $0.15 \div 0.20$ mm backlash (play) from the rail –Use a feeler gauge for best results– The setting requirement is determined by the dimensional tolerances on the rail sections.

■ Torque settings

Bolt torque:

M6 (fixing scrapers) 10 Nm

M8 (fixing assemblies) 25 Nm

M10 (fixing assemblies) 45 Nm

M12 (dovetails & fishplates) 55 Nm

M16 (fixing rollers) 75 Nm

Drillings of the end bars: this are made in order to create a security connection for two or more moving rails that have an end to end joining, through the shaft of the special screws that are used for fixing the fishplate and the dovetails. This additional connection is not a guarantee for the precision but has got the aim to avoid injuries in the case that the moving rails unhook.

■ Lubrication

There is no need to lubricate our Speedy Rail profiles. It provides continuous lubrication and keeps the rail clean.

Rollers: standard rollers with regular maintenance/greasing schedule have its own grease nipple. Please use grade 3 grease for working temperature of $10^{\circ}\text{C} \div 60^{\circ}\text{C}$.

Grade 2 grease is required when the working temperature drop below 10°C . Lubricate every 5-6 months.

For the “lifetime” lubrication version, the rollers are supplied with a high tech grease.

The grease nipples are removed from the assemblies since this configuration does not require any periodic lubrication.

► STATIC LOAD AND SERVICE LIFE

Speedy rail and system with plastic shell rollers

The max applicable load, stated in the description of each roller of the Speedy Rail systems, is determined depending on the characteristics of the plastic compound shell. The cylindrical rollers of Speedy Rail system can be used with translation speed up to 15 metres/second and with accelerations and decelerations up to 10 metres/sec². For Speedy Rail systems with "V" shaped plastic compound rollers, the max translation speed is of 8 metres/second while the max accelerations and decelerations are of 8 metres/sec². For higher dynamics please contact our technical department. For all roller types the working temperature limits are -30°C and +80°C.

The rollers with plastic compound shell do not damage themselves and do not damage the rails where the invert direction, even in presence of high accelerations and decelerations. With stresses on the rollers within the max values stated on the catalogue, the Speedy Rail systems enable a life time of more than 80.000 km for the cylindrical rollers and 50.000 km for the systems with "V" shaped rollers. The life can be lower due to excessive presence of dust or pollutants.

Loads on a 4 'V' rollers trolley

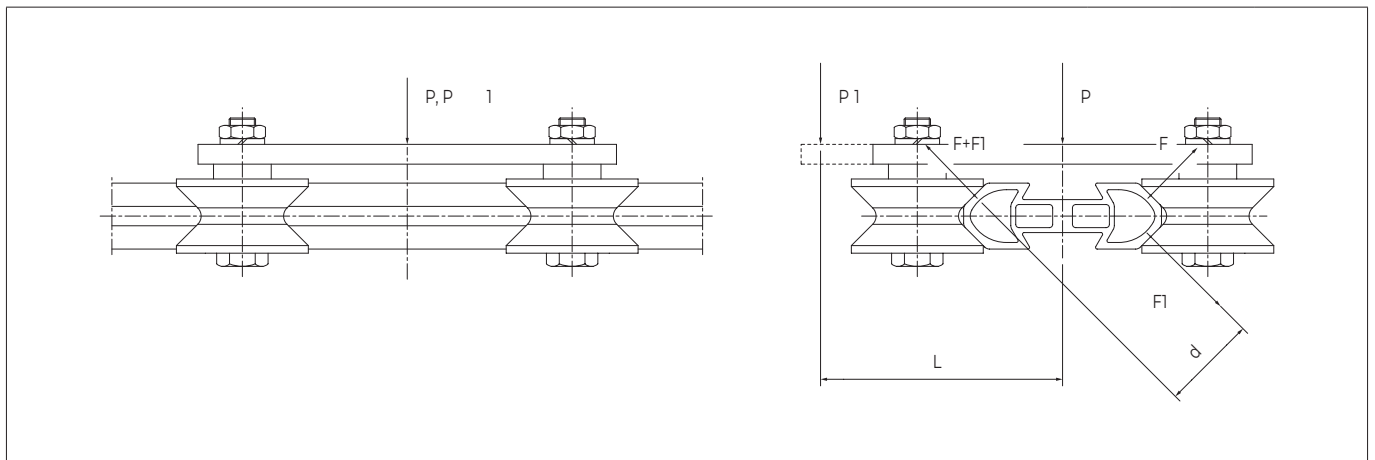


Fig.192

Rollers load with force 'P' applied on the rail axle

$$F = P \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_r = F_a = F \cdot \left(\frac{1}{\sqrt{2}} \right) (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)
 F_a = Axial load (N)

Rollers load with 'P₁' force applied at 'L' distance (mm) from rail centerline

$$F = P_1 \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = \frac{P_1 \cdot L}{2 \cdot d} (N) \quad F_r = F_a = \frac{F + F_1}{\sqrt{2}} (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)
 F_a = Axial load (N)

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

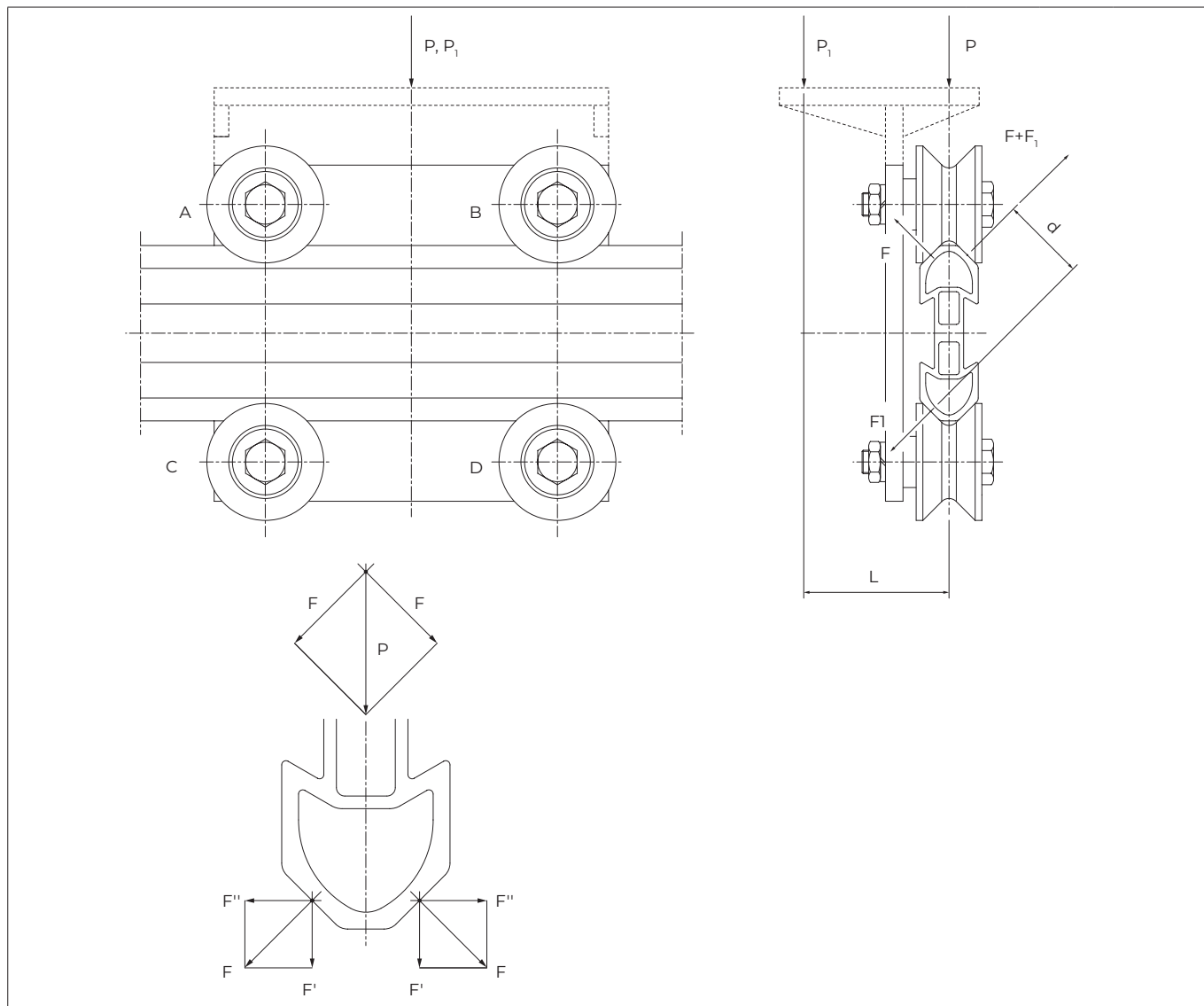


Fig.193

$$F' = F'' = \frac{F}{\sqrt{2}}$$

- A, B Concentric rollers
 C, D Eccentric rollers
 P, P_1 = Applied forces (N)
 F_r = Radial load (N)
 F_a = Axial load (N)

Rollers load with force 'P' applied on the rail axle

$$F_r = \frac{P}{2} (N) \quad F_a = 0 (N)$$

A, B	Concentric rollers
C, D	Eccentric rollers
P, P_1	= Applied forces (N)
F_r	= Radial load (N)
F_a	= Axial load (N)

Rollers load with 'P₁' force applied at 'L' Distance (mm) from rail centerline

$$F = P_1 \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = \frac{P_1 \cdot L}{2 \cdot d} (N) \quad F_r = \sqrt{2} F + \frac{F_1}{\sqrt{2}} (N) \quad F_a = \frac{F_1}{\sqrt{2}} (N)$$

A, B	Concentric rollers
C, D	Eccentric rollers
P, P_1	= Applied forces (N)
F_r	= Radial load (N)
F_a	= Axial load (N)

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

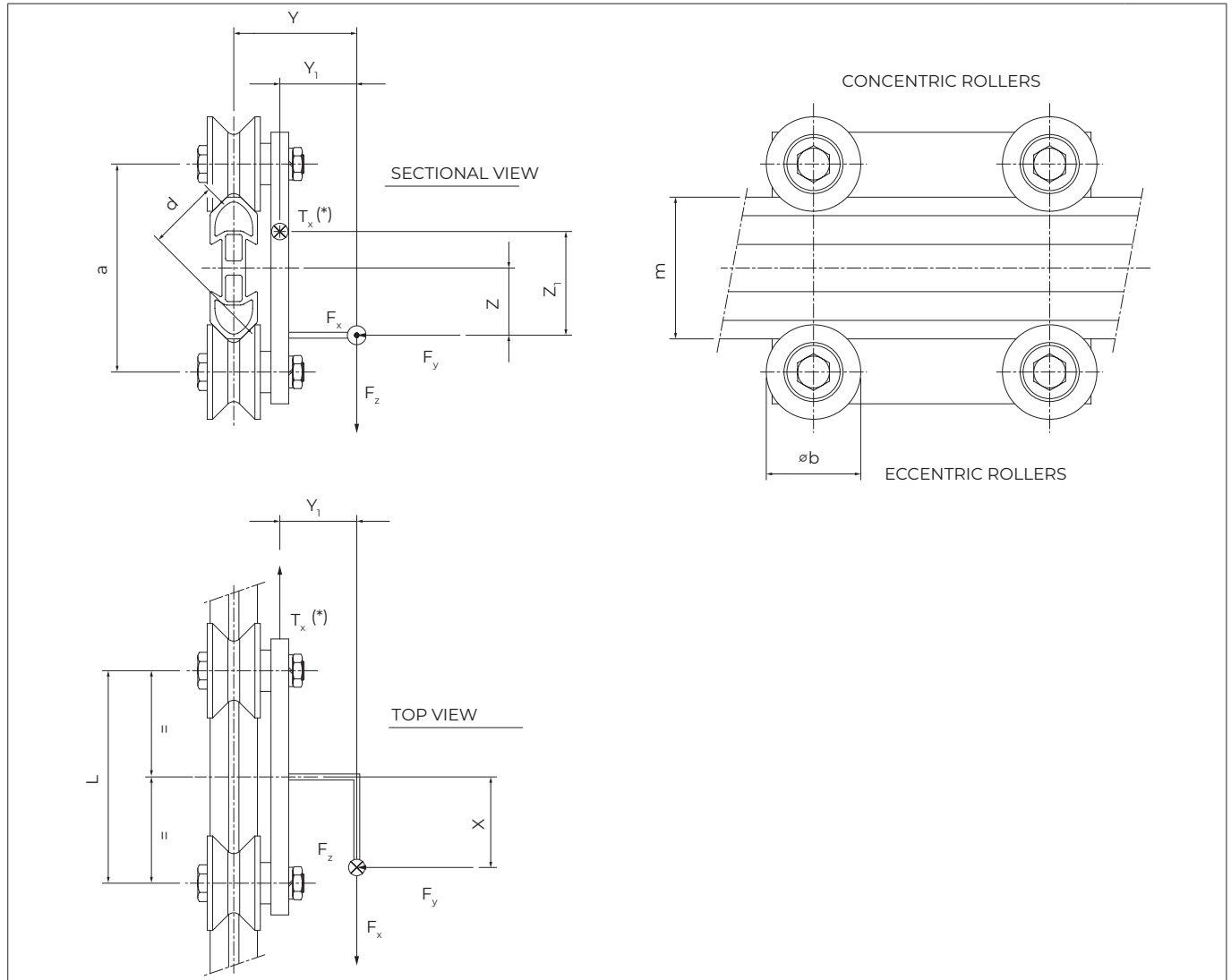
Trolley on single rail horizontal

 (*) Traction force (chain or belt) $T_x = F_x$

Fig.194

The rollers with concentric sleeve are mounted where there is the highest load and the ones with eccentric sleeve on the opposite end.

All 'F' values must include the dynamic component obtained by: Inertia force = mass (kg) x acceleration (mt/s^2).

Roller-guide load verification

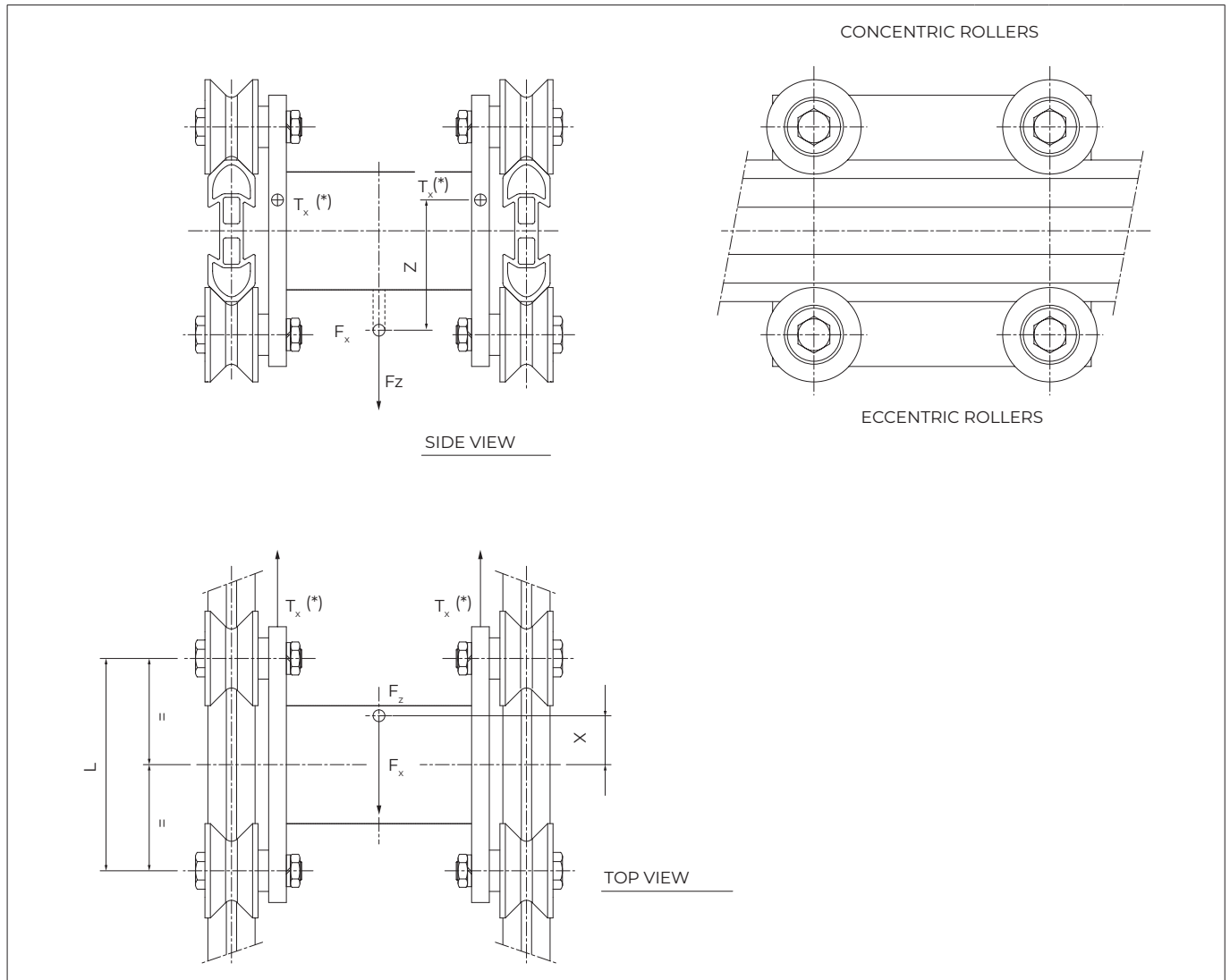
$$F_{Ass} \Rightarrow \frac{F_y}{4} + \frac{F_y \cdot X + F_x \cdot Y_1}{2 \cdot L} + \frac{F_z \cdot Y + F_y \cdot Z}{2 \cdot d \cdot 1.41}$$

$$F_{Rad} \Rightarrow \frac{F_z}{2} + \frac{F_y}{4} + \frac{F_z \cdot X + F_x \cdot Z_1}{L} + \frac{F_z \cdot Y + F_y \cdot Z}{2 \cdot d \cdot 1.41}$$

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

■ Loads on twin 4 'V' rollers trolleys

Trolley on double rail horizontal



(*) Traction force (chain or belt) $T_x = F_y/2$

Fig.195

When assembling lines with parallel rail and long strokes it would be wise to use axially-free roller assemblies on one of the rails in order to withstand minor misalignments due either to assembly or maintenance errors. All 'F' values must include the dynamic component obtained by: Inertia Force = mass (kg) x acceleration (mt/s²).

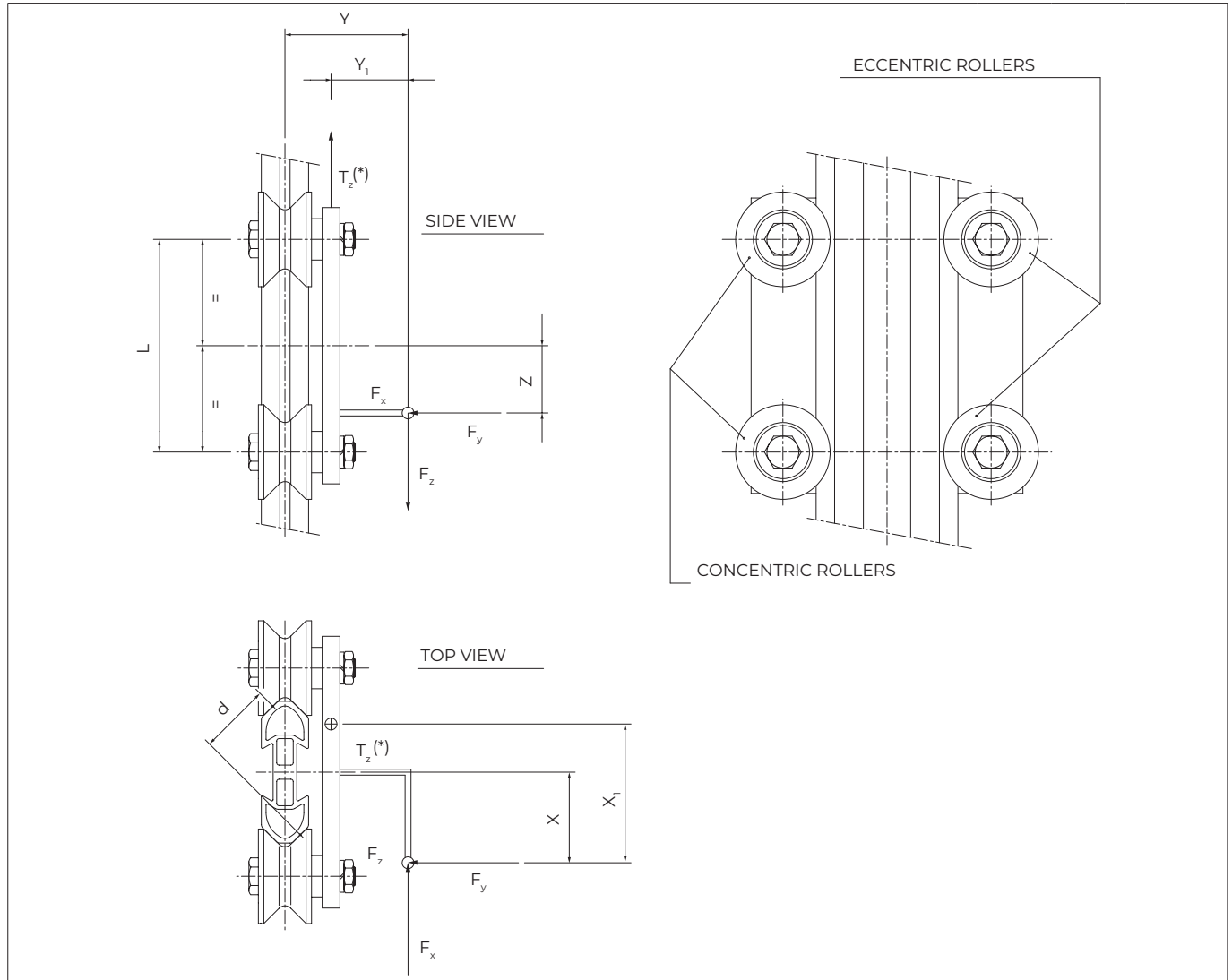
Roller-guide load verification

$$FRad \Rightarrow \frac{F_z}{4} + \frac{F_x \cdot Z + F_z \cdot X}{2 \cdot L}$$

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

■ Loads on a 4 'V' rollers vertical trolley

Trolley on single vertical rail



(*) Lifting force (chain or belt) Tz= Fz

Fig.196

The rollers with concentric sleeve are mounted where there is the highest load and the ones with eccentric sleeve on the opposite end.

All 'F' values must include the dynamic component obtained by: Inertia force = mass (kg) x acceleration (mt/s²).

Roller-guide load verification

$$F_{Ass} \Rightarrow \frac{F_y}{4} + \frac{F_y \cdot Z + F_z \cdot Y_1}{2 \cdot L} + \frac{F_y \cdot Y + F_x \cdot y}{2 \cdot d \cdot 1.41}$$

$$F_{Rad} \Rightarrow \frac{F_z \cdot X_1 + F_x \cdot Z}{L} + \frac{F_x \cdot Y + F_y \cdot X}{2 \cdot d \cdot 1.41} + \frac{F_y}{4} + \frac{F_z}{2}$$

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

■ Cylindrical roller loads

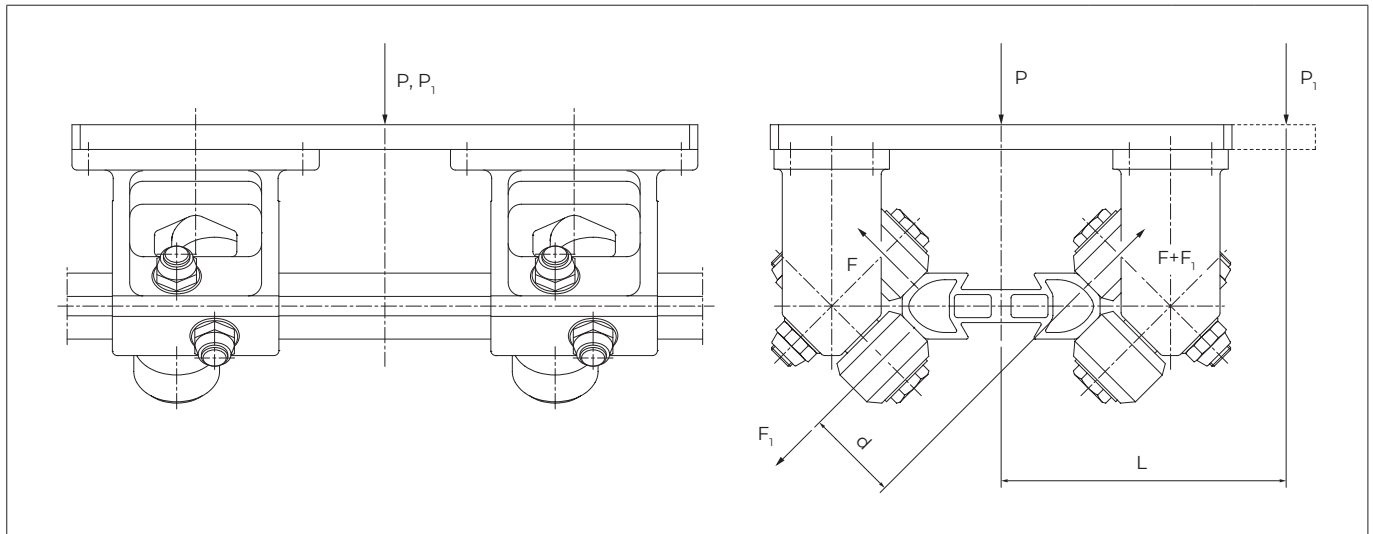


Fig.197

Rollers load with 'P' force applied on the rail axle

$$F = P \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = 0 (N) \quad F_r = F (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)

Rollers load with 'P₁' force applied at 'L' distance (mm) from rail centerline

$$F = P_1 \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = \frac{P_1 \cdot L}{2 \cdot d} (N) \quad F_r = F + F_1 (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

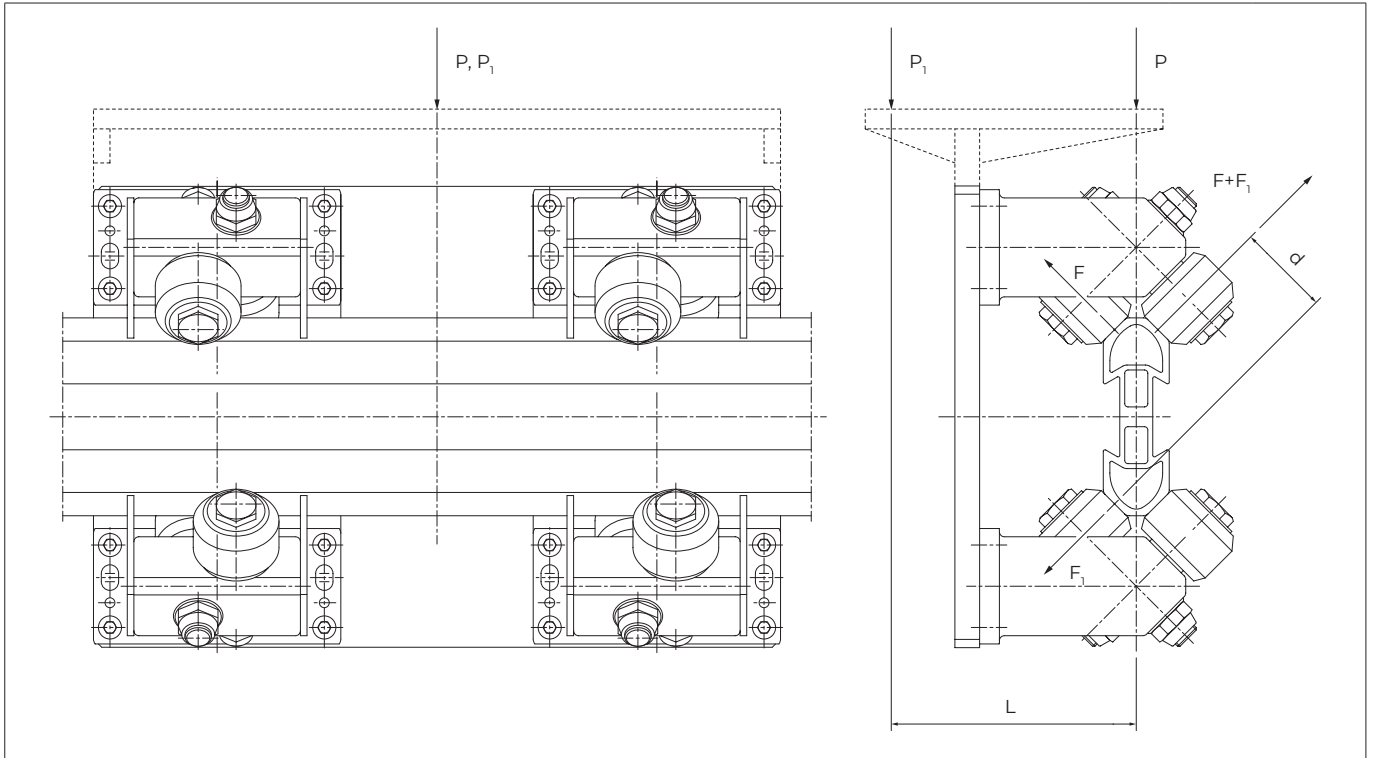


Fig.198

Rollers load with 'P' force applied on the rail axle

$$F = P \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = 0 (N) \quad F_r = F (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)

Rollers load with 'P' force applied at 'L' distance (mm) from rail centerline

$$F = P_1 \cdot \left(\frac{1}{2 \cdot \sqrt{2}} \right) (N) \quad F_1 = \frac{P_1 \cdot L}{2 \cdot d} (N) \quad F_r = F + F_1 (N)$$

P, P_1 = Applied forces (N)
 F_r = Radial load (N)

Important: the load on most loaded rollers must be, for each roller type, less or equal to the corresponding rated load on the catalogue.

Calculations data:

Important calculation factors to consider:

- 1) Maximum beam deflection under the load action
- 2) Maximum roller stress

1) Elastic deflection

Usually in a transfer system the deformations derived from elastic deflection are not a disturbing element.

2) Roller stress

Considering a roller assembly with two cylindric plastic compound rollers, the maximum load on the highest stressed roller should not exceed 128 daN. With the following formula it's possible to calculate the load on the most stressed roller.

$$F = \frac{P \cdot a}{d} + \frac{P}{\sqrt{2}}$$

If the value is more than 128 daN, it will be necessary to provide either more supports or only one self-aligning roller assembly with 8 - 10 or 12 rollers, so that the "F" value, divided by the number of rollers on the specified point of application will be equal or less than 128 daN.

Compared to steel beams and roller assemblies, the **Speedy Rail®** surface treatment and plastic compound shells on the rollers allows the utilization of Rollon components in high speed and high accelerations systems. These benefits remove typical damages due to wear normally present in metal to metal sliding situations. When building a system with one single segment of **Speedy Rail®** section, it is possible to slightly pre-load the rollers.

Do not pre-load rollers on a system with a rail composed of 2 or more segments.

Power required to drive a trolley or bar

The following calculations are true in a system without overloads generated either by misalignment or an incorrect assembly. The following sliding friction factors are approximate with excess.

Terminology and dimensional units

M [kg]	moving mass
n_r	number of moving rollers
$C_r = 100 \text{ Nmm}$	internal max resisting torque for each roller
a [m/s²]	moving mass acceleration
g [m/s²]	gravity acceleration
$f_{cc} = 0.05$	drive resisting coefficient of plastic compound rollers
$f_{vc} = 0.065$	drive resisting coefficient of 'V' shaped plastic compound rollers
F [N]	drive resisting force
V [m/s]	max traverse speed
N [W]	power
d [mm]	average roller diameter

Tab.47

Calculations

traverse

$$\text{resisting force} \quad F = Ma + Mgf + \frac{2 n_r C_r}{d} \quad \text{max power} \quad N = F V$$

vertical lift

$$\text{resisting force} \quad F = Ma + Mgf \left(1 + f \right) + \frac{2 n_r C_r}{d} \quad \text{max power} \quad N = F V$$

Thermal expansion of profiles, simple and compound. All profiles specifications are located on page 53.

Terminology and dimensional units

$K_1 = 23 \times 10^{-6} \text{ 1/}^\circ\text{C}$	light alloy linear thermal expansion coefficient
$D_t \text{ [}^\circ\text{C]}$	temperature variation in comparison with the assembling
$A_1 \text{ [mm}^2\text{]}$	light alloy profile section
$L \text{ [mm]}$	rail length
$D_1 \text{ [mm]}$	rail length variation

Tab.48

Calculations

light alloy rails

$$D_1 = K_1 + D_t \times L$$



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