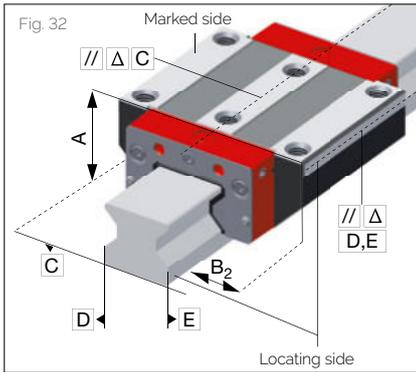


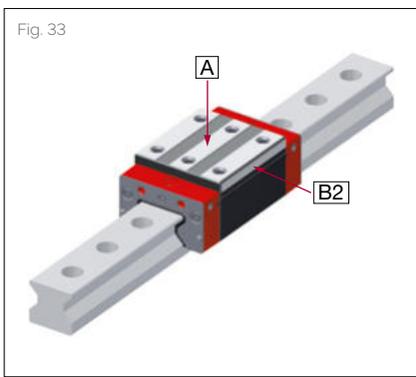
## 2.1 Features and options



### 2.1.1 Accuracy classes

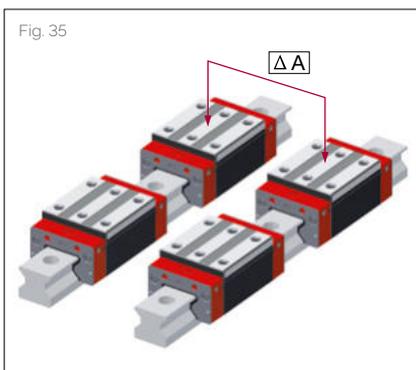
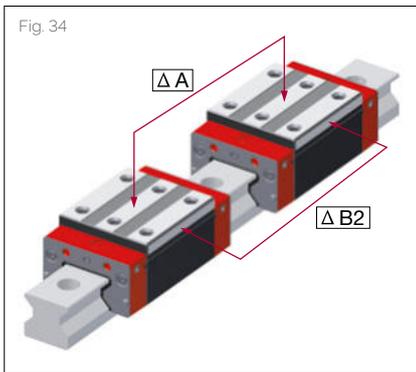
(Fig. 32) The four accuracy classes allow the user to select both the guidrails and the carriages in line with specific application and design requirements. Accuracy classes define the running accuracy of the rails and determine the dimensional tolerances of the carriages.

-  G0 Highly accurate
-  G1 Very accurate
-  G2 Accurate
-  G3 Standard



### 2.1.2 Dimensional tolerances

(Fig. 33) MONORAIL carriages and rails are manufactured independently of each other, both to very tight tolerances, and are therefore completely interchangeable. This means that any carriage can be used on any rail of the same size without any influence on the preload level because the preload is determined by the rolling elements of the carriage. For the dimensional differences between any carriages on any rail, the values from column one of the following table are applicable.



Accuracy classes	Tolerances between carriages and rails	Max. difference in measurement between the carriage on a rail when products are delivered as a system (rails with carriages)	Max. dimensional difference of the carriages between 2 or more rails, standard
	A/B2	ΔA/ΔB2	ΔA Standard
G0	± 5 μm	3 μm	10 μm
G1	± 10 μm	5 μm	20 μm
G2	± 20 μm	7 μm	40 μm
G3	± 30 μm	25 μm	60 μm
	Measured at the middle of the carriage and in any rail position  Values only valid up to 1 m rail length	Measured at the middle of the carriage and at the same rail position  The parameters are doubled for ball products and products delivered individually	Measured at the middle of the carriage and at the same rail position



## 2.1 Features and options

### 2.1.3 Matched carriages

All the carriages in a set are fitted one behind another on a production norm, and their top and side joint surfaces are ground smooth. Then the main dimensions A and B2 are measured on a test rail, and the carriages would then be paired up. There are two quality levels of carriage matching.

Matching carriages	Maximum dimensional differences between carriages in a pair
Version	$\Delta A/\Delta B2$
SLWGP0	3 $\mu\text{m}$
SLWGP1	5 $\mu\text{m}$

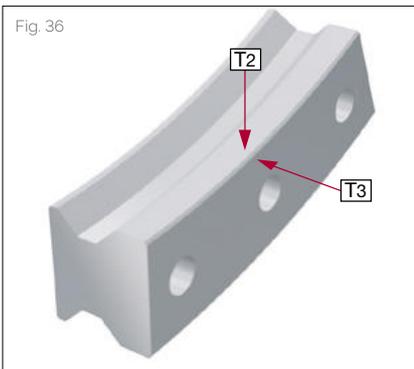
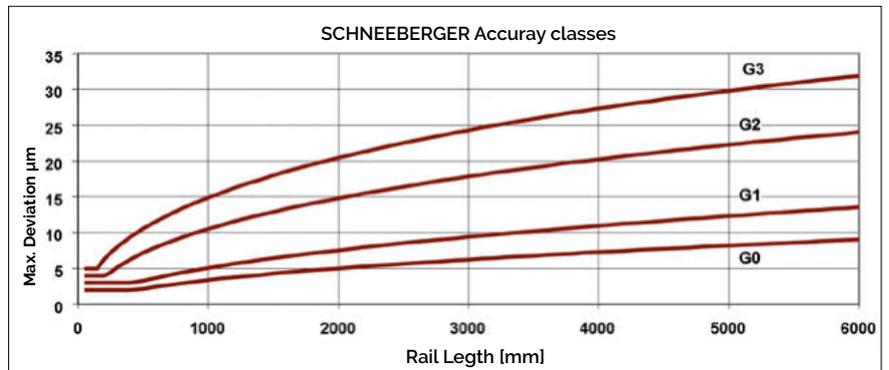
### 2.1.4 Matched rails

With "matched rails", we search the data to find suitable rails with similar characteristics. The criterion used for the selection process is the maximum difference in the run-off over the rail length, the so-called pairing tolerance. The range of all run-off reports for matched rails lies within this tolerance. Matched rails are available in four quality levels.

Matching rails	Mating tolerance
Version	
SLSGP0	5 $\mu\text{m}$
SLSGP1	10 $\mu\text{m}$
SLSGP2	15 $\mu\text{m}$
SLSGP3	20 $\mu\text{m}$

### 2.1.5 Running accuracy

The run-out accuracy of the carriages can be either linear or a wave-shaped within the tolerance limits. The maximum permissible deviation is defined by the accuracy class of a rail. The actual tolerance is determined from the above diagram as a function of rail length and accuracy class. Example: L 3 = 2000 mm with G2 accuracy gives a tolerance of 0.015 mm.



### 2.1.6 Straightness

(Fig. 36) To install profile guideway sections efficiently, it is essential to know the longitudinal degree of straightness and the curvature of a rail. As the rail section guideways are flexible components, they can deform longitudinally due to their own weight. Deformation can also be caused by the manufacturing process. In order to meet customers' installation requirements, rail straightness is optimised during manufacture. In addition to standard tolerances for rail deformation, SCHNEEBERGER offers special tolerances and / or inspection reports to a specific customer requirement.



## 2.1 Features and options

### 2.1.7 Preload classes

The roller guideways are preloaded to enable them to work free of play under different load conditions. Basically, while preloading increases the rigidity of the guideway, it also affects operational life and increases the push force. SCHNEEBERGER guideways are available in various preload classes to address specific application requirements. The preload classes are dependent on the dynamic loading capacity C.

Preload classes			
V0	V1	V2	V3
<b>Preload</b>			
0 - 0.02 x C <sub>100</sub>	0.03 x C <sub>100</sub>	0.08 x C <sub>100</sub>	0.13 x C <sub>100</sub>
<b>Operating conditions</b>			
Very low-friction guideways for uniform loads, minimum vibrations	Low-friction guideways for uniform loads, slight vibrations	For high rigidity, medium, changing loads and vibrations	For highest rigidity, high impact / shock loads and vibrations, strongly changing, high loads and torques
<b>Characteristics</b>			
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Rigidity         </div> <div style="text-align: center;">  Service lifetime         </div> <div style="text-align: center;">  Moving resistance         </div> </div>			

- V0 Very low
- V1 Low
- V2 Medium
- V3 High

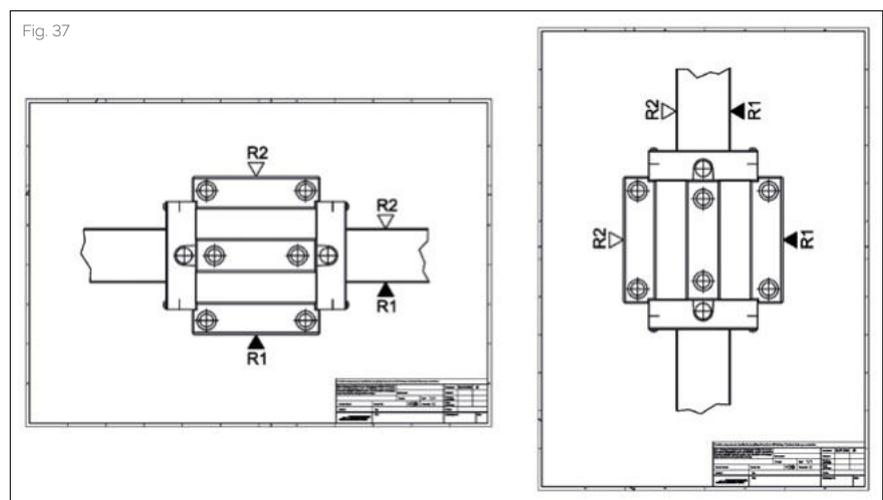


### 2.1.8 Reference sides

(Fig. 37) Dependent on installation conditions of the products, the reference sides (attachment side) of the carriages and the section rails must be stated when placing an order.

A drawing of the products is the basis for this. R1 means below or right, R2 means top or left.

- R1 Reference bottom
- R2 Reference top

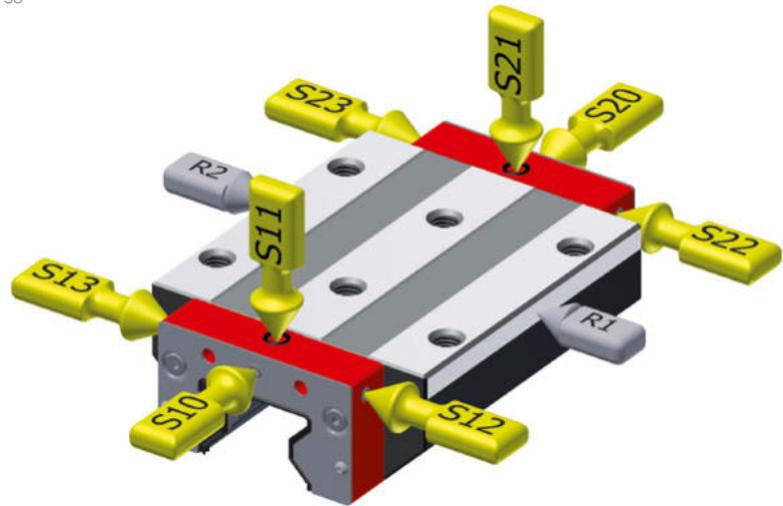


## 2.1 Features and options

### 2.1.9 Lubrication connections

(Fig. 38) Front plates and carriage bodies have a wide range of options for lubrication connection. It is therefore possible to optimise the lubrication supply to the carriage to meet structural design. Either a lubricating nipple or a central lubrication system can be screwed into each connection. As standard, all four tracks are lubricated through one connection.

Fig. 38

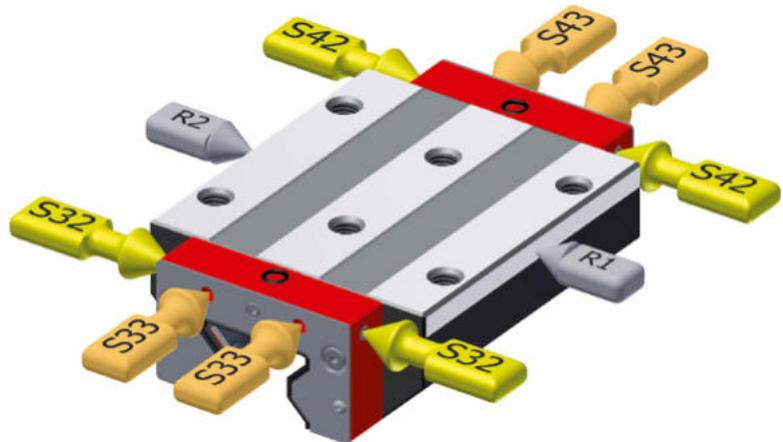


### 2.1.10 Separate carriage lube connections for specific mounting positions

(Fig. 39) As a special feature for certain installation positions, SCHNEEBERGER systems provide for the independent lubrication of both sides of a carriage (S32, S42). This enhances the lubrication of the guideway and thus the service life of the machine.

Position of lubrication connection is defined with line of sight to the location side R1 in accordance with the picture.

Fig. 39



-  S10 Left center
-  S20 Right center
-  S11 Top left
-  S21 Top right
-  S12 Lower left side
-  S22 Lower right side
-  S13 Upper left side
-  S23 Upper right side
-  S32 Left side
-  S42 Right side

-  S99 S10 + S12 + S13 + S20 + S22 + S23  
locked using threaded pins
-  S98 S32 + S33 + S42 + S43  
locked using threaded pins (only feasible for MR)
-  S49 For AMS with position of the housing P1:  
S10 + S12 + S13 locked using threaded pins
-  S49 For AMS with position of the housing P3:  
S20 + S22 + S23 locked using threaded pins

