

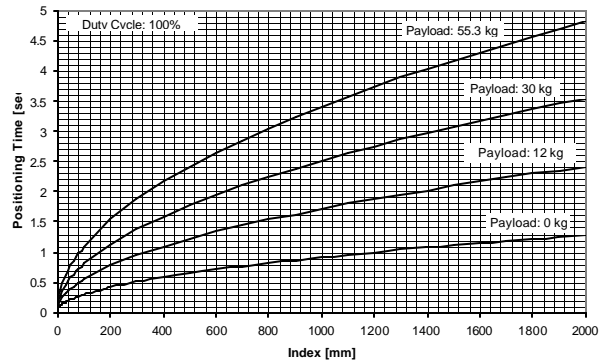
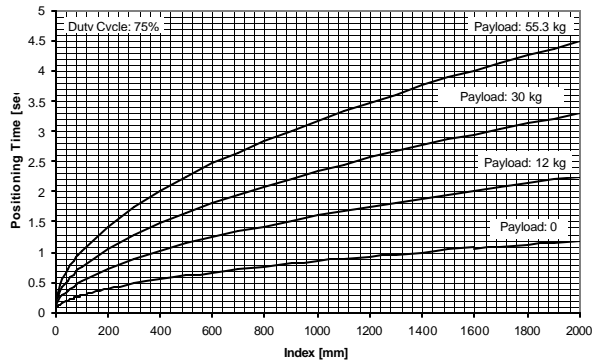
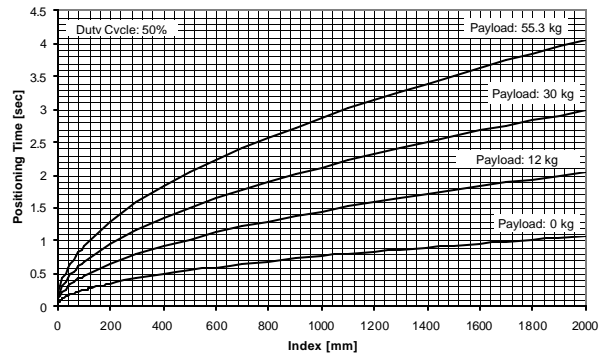
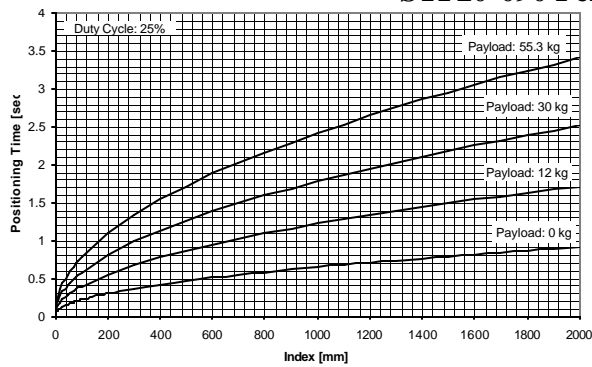
Sigma Track – Linear Slides – Selection Guideline

This guide is a step-by-step approach to selecting the linear slide itself along with the appropriate system components, options accessories and cables. The first step in the selection process is the determination of the required coil / slide size based on either the performance requirements (Step 1a), or the desired peak force and continuous force (Step 1b).

Step 1a

Select the most suitable Sigma Track linear slide from the performance charts below. The performance charts show the positioning time as a function of index distance with payload as a parameter. There are 4 charts of each linear slide, showing performance based on 25%, 50%, 75% and 100% duty cycle. The performance graphs assume that the slide will be mounted horizontal. Consult factory, if you require vertical mounting or mounting on an incline.

STF20-090 Performance Charts

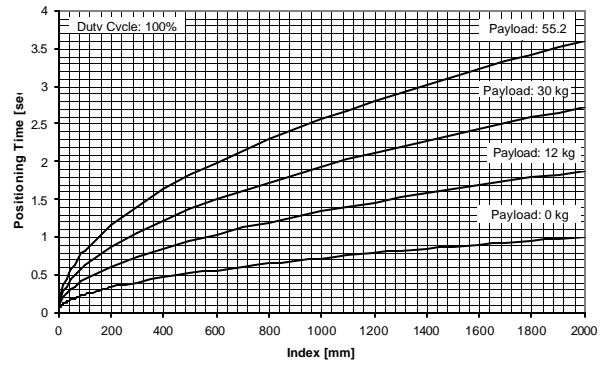
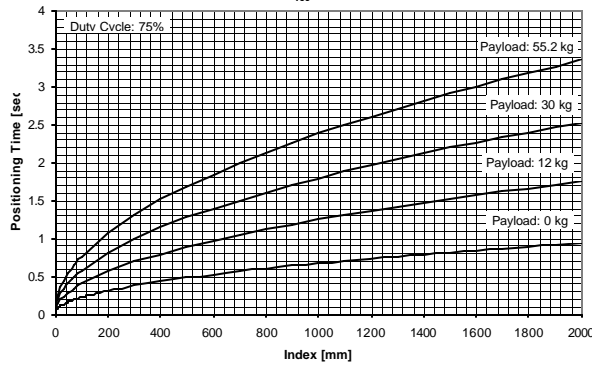
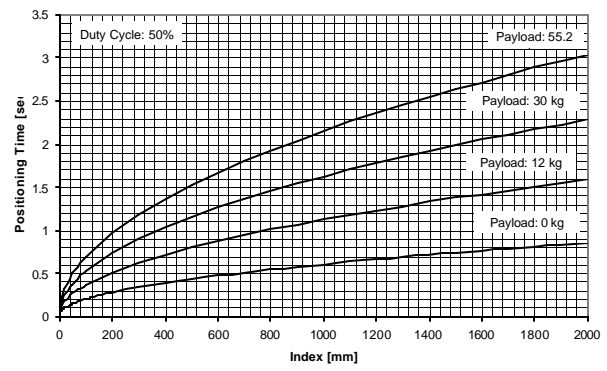
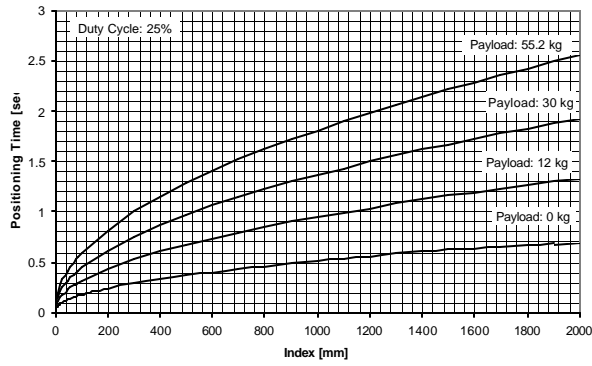


Maximum Speed: 5 m/sec

Maximum Payload: 55.5 kg

Continuous Force: 25 N

STF20-120 Performance Charts

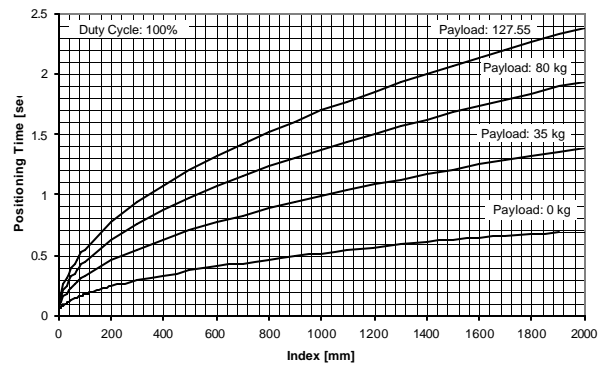
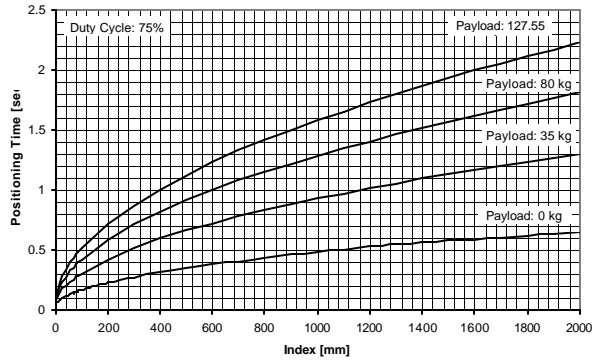
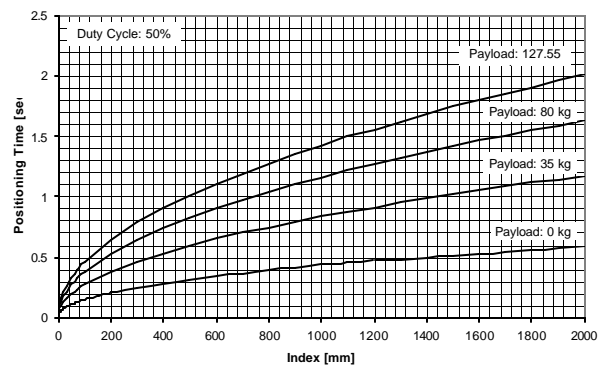
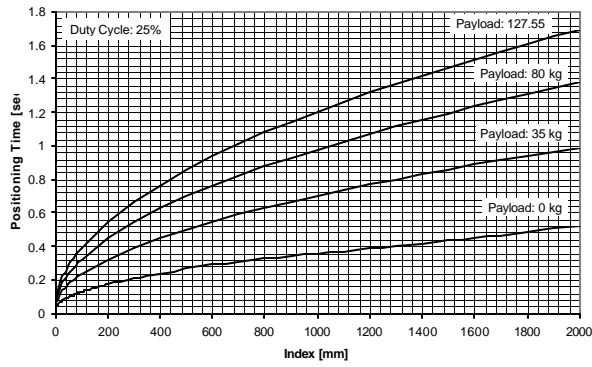


Maximum Speed: 5 m/sec

Maximum Payload: 54 kg

Continuous Force: 40 N

STF50-200 Performance Charts

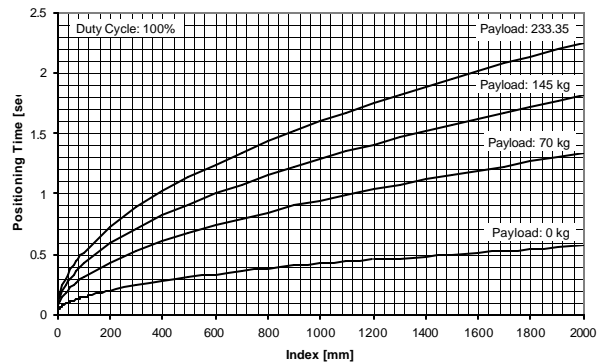
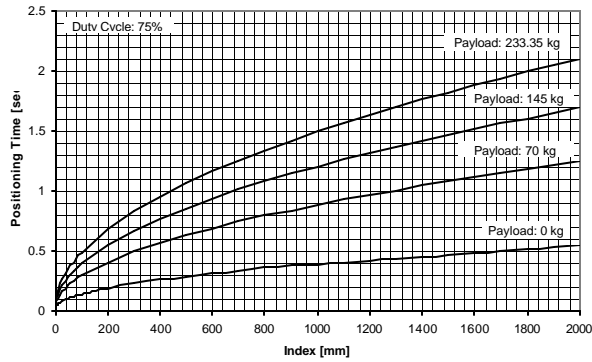
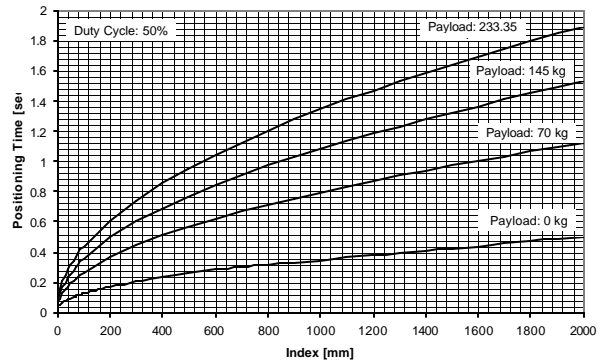
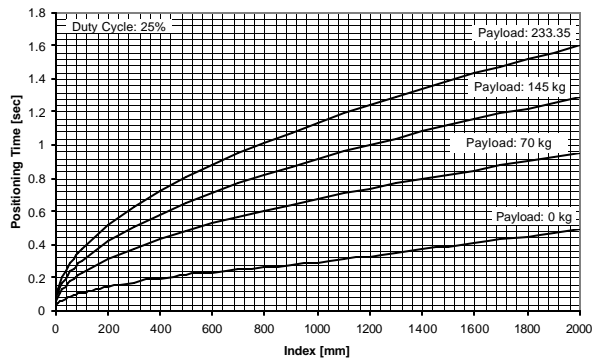


Maximum Speed: 5 m/sec

Maximum Payload: 132 kg

Continuous Force: 200 N

STF50-380 Performance Charts



Maximum Speed: 5 m/sec

Maximum Payload: 235 kg

Continuous Force: 400 N

Example

Payload: 65kg

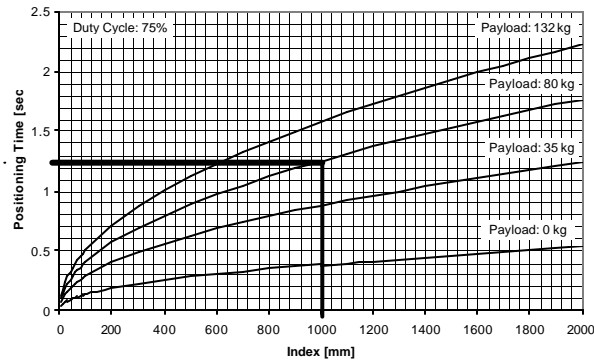
Duty Cycle: 70%

Index: 1,000 mm

Positioning Time: 1.25 sec

Result: STF50-200...

Note: Use the chart showing the performance of the STF50-200 slide at 75% duty cycle as follows:



Step 1b

Select the coil / slide size based on desired payload, continuous force and peak force. The required peak force and continuous force have to be determined, either through sizing calculations or through empirical means.

Please note that the maximum useful application speed is 5 m/s. Consult Yaskawa's linear motor brochure KAE-S800-39-10 Page 35 for the sizing procedure. The selection of the coil automatically determines the required Yaskawa amplifier model. Use Table 1 to determine the required coil size / slide base model number and the appropriate amplifier size.

Category	Slide 1	Slide 2	Slide 3	Slide 4
Payload	Below 55.3 kg	Below 55.2 kg	Below 127.5 kg	Below 233.3 kg
Continuous Force	Below 25 N	Below 40 N	Below 200 N	Below 400 N
Peak Force	Below 86 N	Below 125 N	Below 600 N	Below 1200 N
Model Number	STF20-090...	STF20-120...	STF50-200...	STF50-380...
Sigma II Amp.	SDGH-02AE	SGDH-02AE	SGDH-08AE	SGDH-15AE
Legend Amp.	SGDG-04GT	SGDH-04GT	SGDH-10GT	SGDH-15GT

Table 1

Example

Payload: 50 kg (requires Slide 1 or higher)
 Continuous Force: 35 N (requires Slide 2 or higher)
 Peak Force: 220 N (requires Slide 3)
Result: **STF50-200...**

Step 1c

Bearing Life

It is assumed that the linear motor slide is mounted horizontally with zero inclination.

It is also assumed that the center of mass of the payload is located in the absolute center of the carriage.

Based upon some assumptions, the estimated bearing service life of the Sigma Trac is approximately 40,000 km. This is a function of the center of mass, acceleration, environment, and other factors that will increase or decrease the bearing life.

Step 2

The stroke length is reflected by in the position 8 of the slide part number STF20-090_... Pick the applicable part number based on the desired stroke length or overall length of the linear slide from Table 2.

Stroke / Total Length [mm]			Order Code
STF20-090/200	STF50-200	STF50-380	
110 / 370	130 / 485	190 / 725	A
350 / 610	370 / 725	310 / 845	B
470 / 730	490 / 845	490 / 1025	C
650 / 910	670 / 1025	610 / 1145	D
770 / 1030	790 / 1145	730 / 1265	E
890 / 1150	910 / 1265	850 / 1385	F
1070 / 1330	1030 / 1385	1030 / 1565	G
1190 / 1450	1210 / 1565	1150 / 1685	H
1430 / 1690	1330 / 1685	1390 / 1925	I
1550 / 1810	1570 / 1925	1570 / 2105	K
1730 / 1990	1750 / 2105	1690 / 2225	L
1850 / 2110	1870 / 2225	1810 / 2345	M
1970 / 2230	1990 / 2345	1930 / 2465	N
2150 / 2410	2110 / 2465	2110 / 2645	O

Table 2 Consult factory for other stroke lengths.

Example

Base Model: STF50-200...
 Desired Stroke: 1100 mm (between 1030 mm and 1210 mm) – **H**
Result: STF50-200H...

Step 3

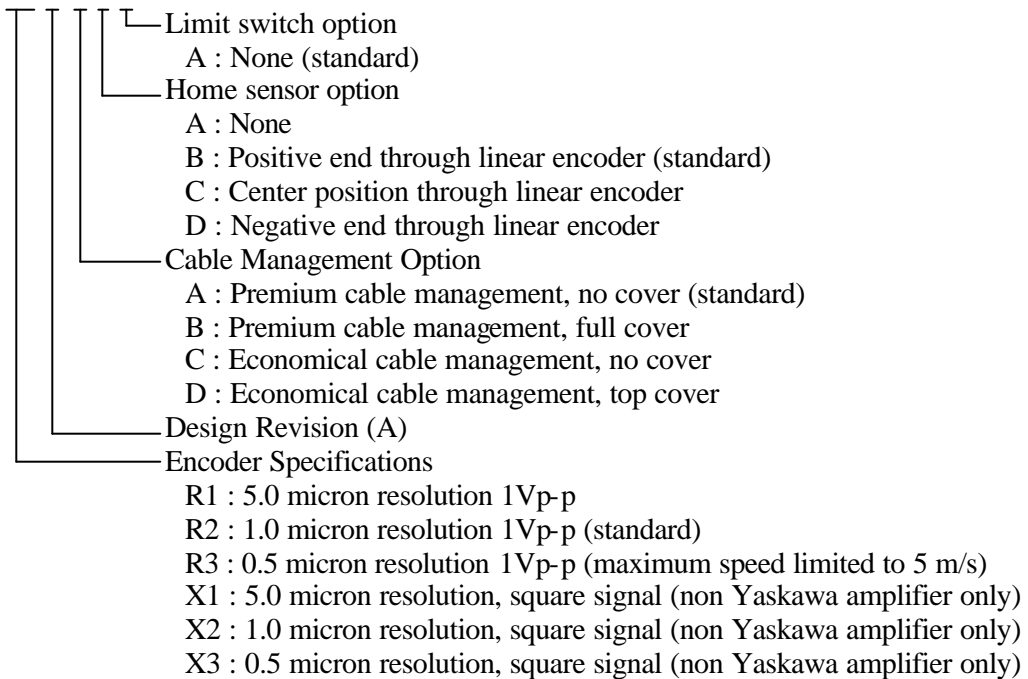
Table 1 shows applicable amplifier options for the Sigma Track linear slides. The ultimate choice of amplifier (Sigma Vs. Legend) depends on the application requirements and the desired motion-control option. Consult Yaskawa's Motion Control Products CD # YEA-CD-MTN-1 for a thorough discussion of this subject. For details on amplifier options refer to the Sigma II Servo System Product Catalog supplement # G-MI#99001G-SigmaII, the Legend Digital Torque Amplifier SGD Product Catalog Supplement YEA-KAA-LGD-1 or the Motion Control Products CD # YEA-CD-MTN-1. It is also possible to order Sigma Track linear slides for use with other (than Yaskawa) amplifiers. This is reflected in the part number as follows:

STF50-200H-A... Sigma II 200V or Legend (standard)
STF50-200H-X... Non Yaskawa Amplifier

Step 4

Select slide options and accessories from figure 1.

STF50-200H-AR2A-ABA



Example

Selected slide: STF50-200H...

Desired Options: Yaskawa Legend amplifier, center-position home sensor, premium cable management with full cover, 1.0 micron resolution
Top and side covers

Result: STF50-200H-AR2A-BCA