This data sheet interacts with

GFX Catalogue

BECKHOFF

HepcoMotion®

ADVANCED LINEAR SOLUTIONS

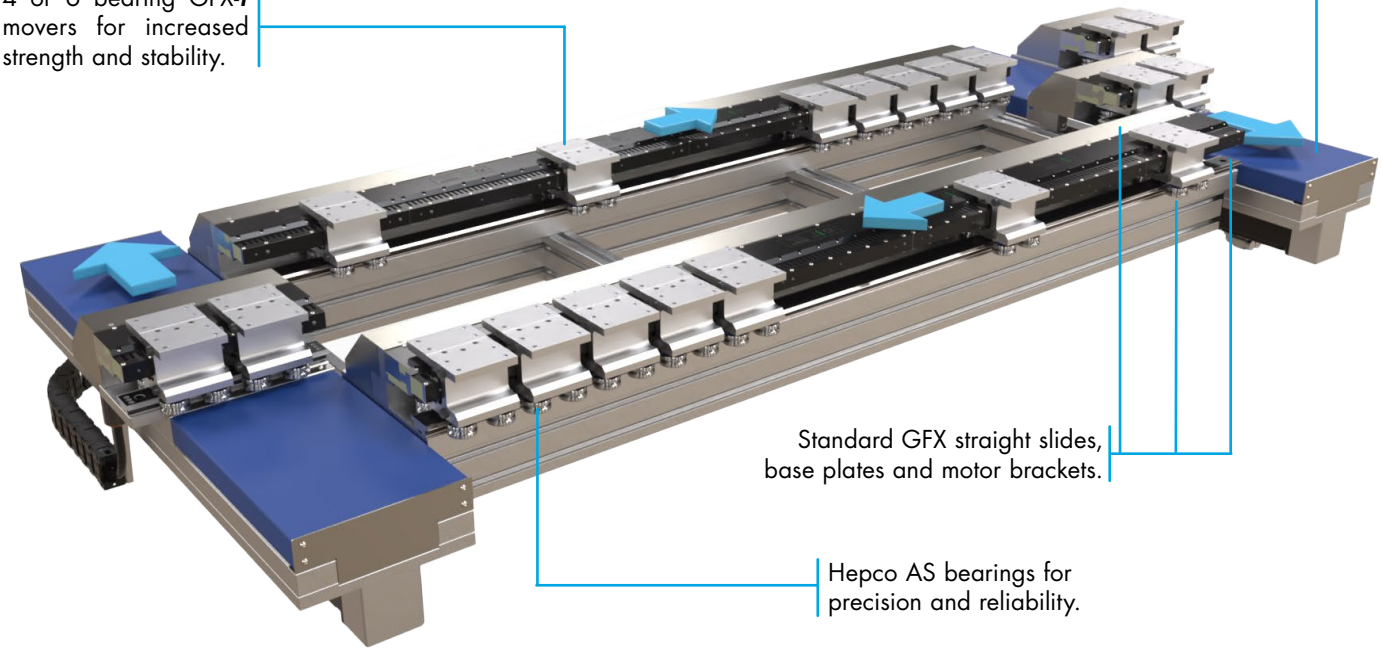
GFX-*r* Rectangular System

HepcoMotion is expanding its range of guidance solutions for Beckhoff Automation's XTS transport system. GFX-***r*** provides the hardware for machine movements in rectangular paths. It uses the existing parts and expertise that have made the Beckhoff XTS with HepcoMotion GFX the industry leading solution during our 10 year collaboration.

The absence of curved motor sections allows movers to be much stronger, more powerful and with a larger mounting platform, while maintaining accuracy, durability and agility. Mover speeds of 4m/s, payloads up to 100kg and unsupported process loads up to 3600N are possible. Movers with longer magnet arrays can also reduce heating losses by up to 60%.

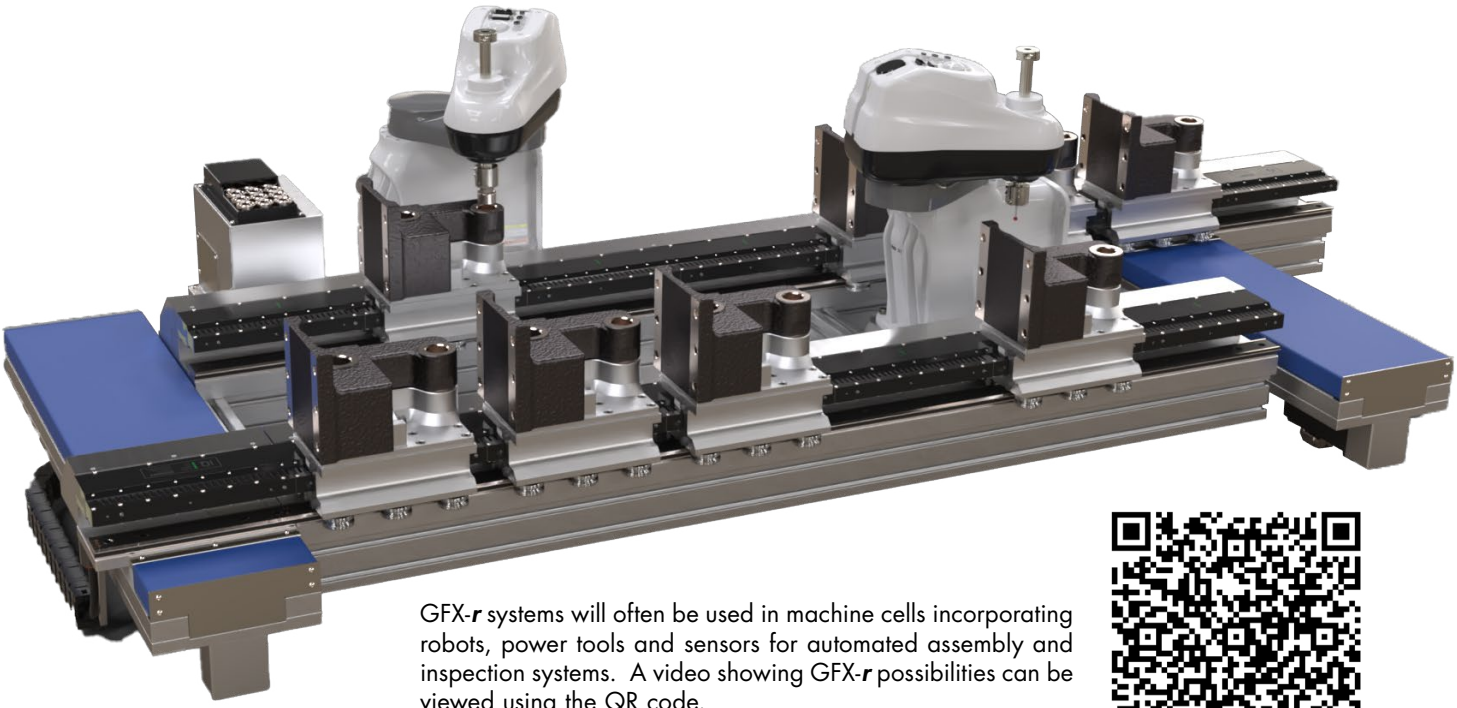
GFX-***r*** transport modules are available in 250 and 500mm widths. Positioning is via a Beckhoff servo motor and a precision linear encoder controlled by the Beckhoff TwinCAT system.

4 or 6 bearing GFX-***r*** movers for increased strength and stability.



Standard GFX straight slides, base plates and motor brackets.

Hepco AS bearings for precision and reliability.



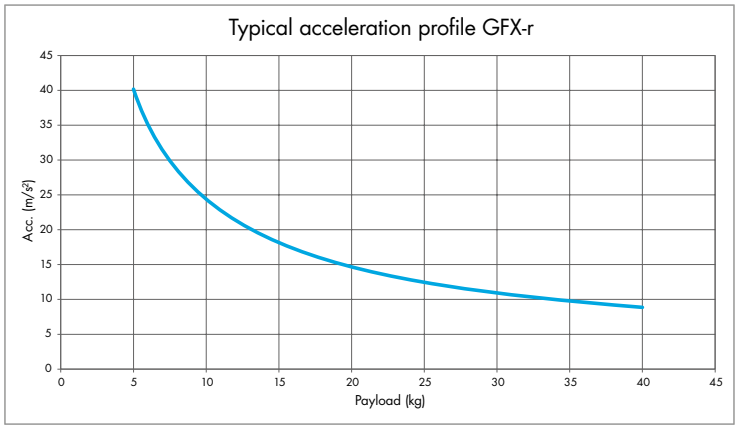
GFX-***r*** systems will often be used in machine cells incorporating robots, power tools and sensors for automated assembly and inspection systems. A video showing GFX-***r*** possibilities can be viewed using the QR code.

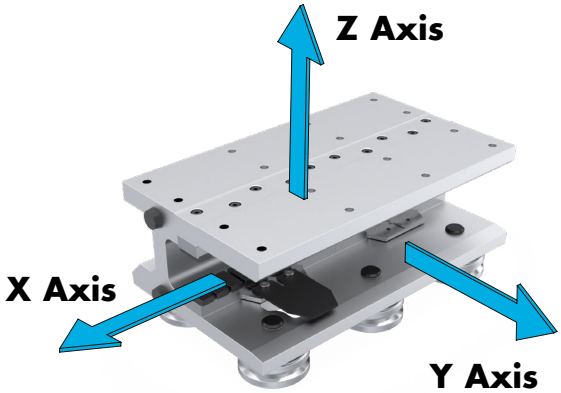
Mover Types

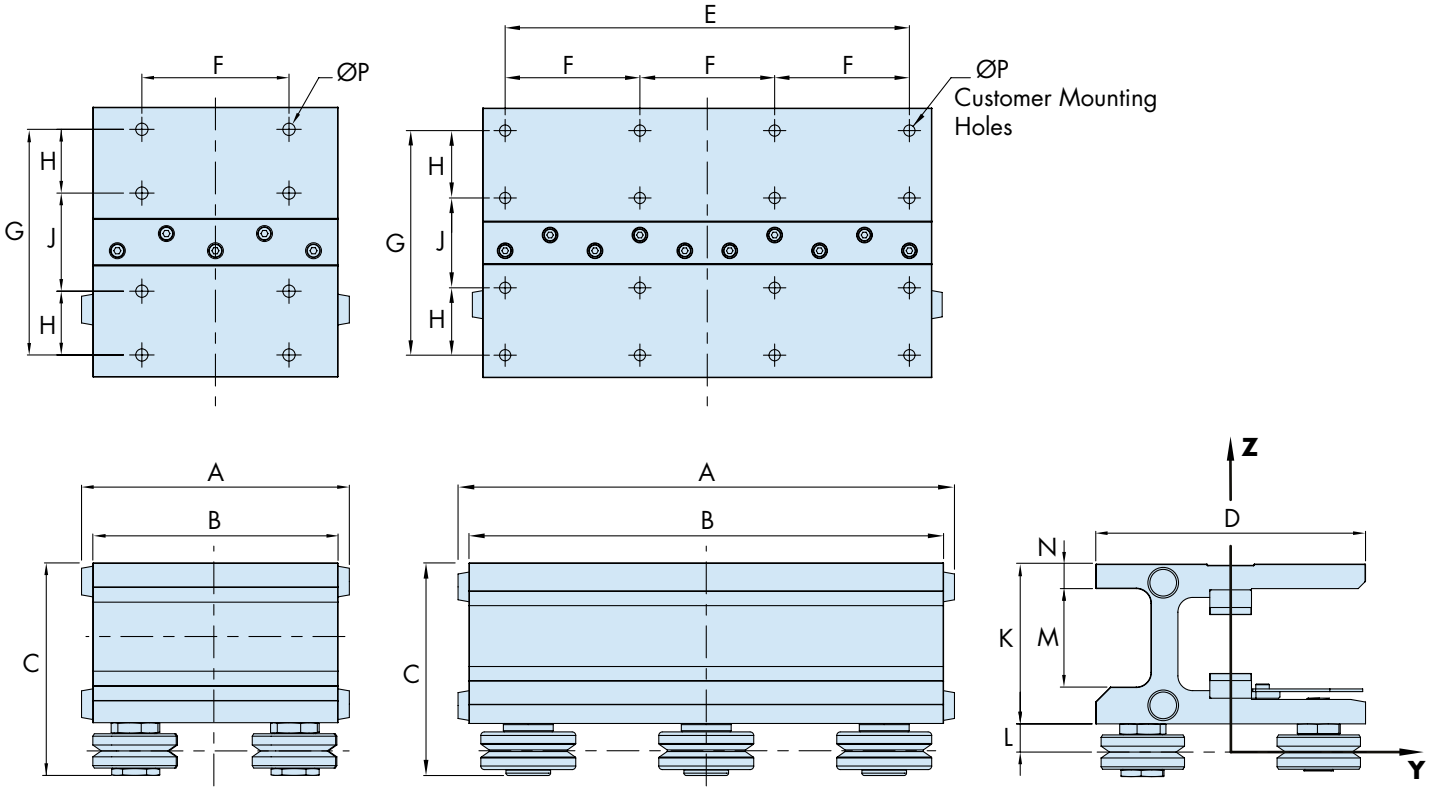
With our extensive experience and a close association with Beckhoff, we have been able to optimise the mover to address customer demands. We are able exploit as much of the performance as possible from our bearing and slide technologies, the XTS motors and TwinCAT control. By using an increased number of poles, thermal and subsequent consumption losses are reduced by up to 60%.

The smallest movers use either a single 7 pole or 10 pole magnet array and 4 "B34" bearings. Although of a similar package size to the standard GFX2-FCC movers, bearing positions are fully optimised for straight tracks.

Both of the long movers use 6 bearings and 2 sets of 10 pole magnets, having either B34 or B40 bearings, depending on the moment load requirements. The 6 bearing layout offers higher load capacity and stability of the mover when transitioning to the transport module when high loads are involved, minimising stress to the support structures below.





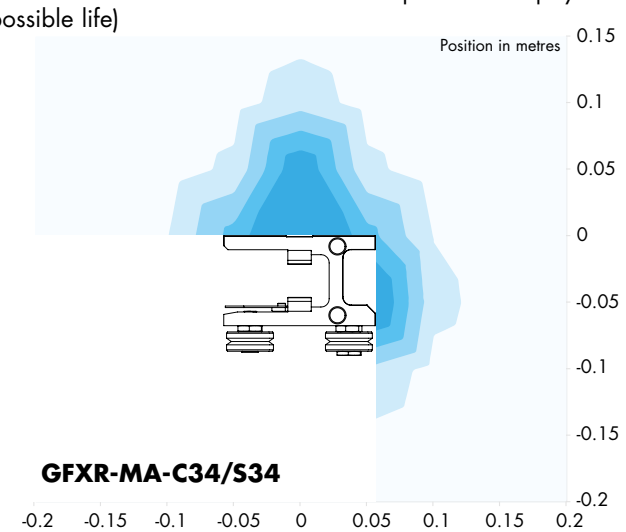


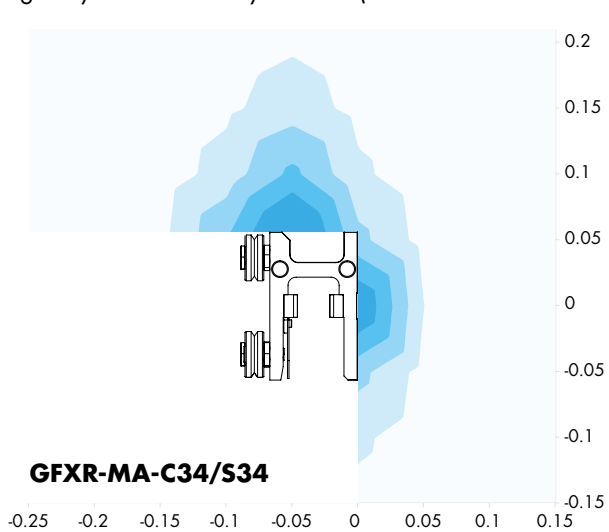
Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P
GFX-R-MA-C34-AS	89.2	80	88.7	120	-	60	100	30	40	65.2	11.5	33.2	10	M6
GFX-R-MA-S34-AS	109.2	100	88.7	120	-	60	100	30	40	65.2	11.5	33.2	10	M6
GFX-R-MA-L34-AS	209.2	200	88.7	120	180	60	100	30	40	65.2	11.5	33.2	10	M6
GFX-R-MA-L40-AS	209.2	200	88.15	120	180	60	100	30	40	65.2	11.5	33.2	10	M6

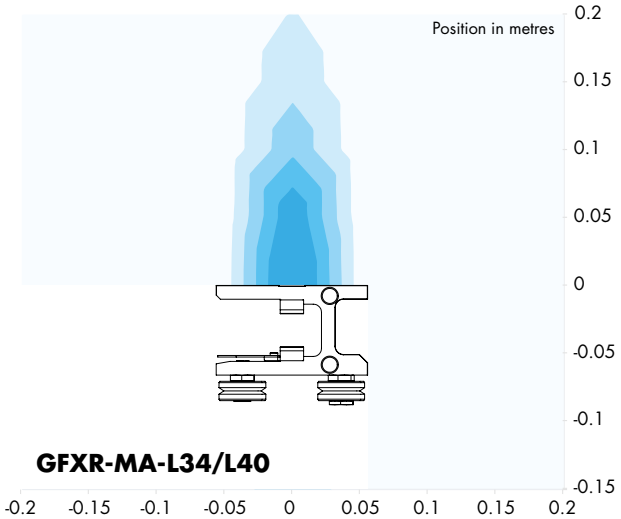
Technical Information

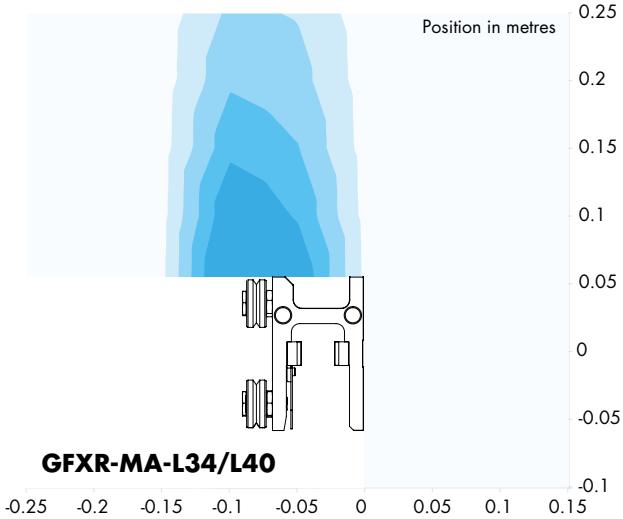
XTS/GFX-r Specification	
Drive Type	XTS Linear Servo Motor
Max Payload	7kg - 100kg (Dynamic) - up to 3600N (Static/unsupported process)
Max Velocity	up to 20kg, 4m/s (recommended 30kg, max 3.5m/s, 40kg, max 3.0m/s, 100kg, max 1.5m/s)
Max Acceleration by payload	5kg = 40m/s², 10kg = 25m/s², 20kg = 14m/s², 30kg = 11m/s², 100kg = 4.5m/s²
Repeatability	±10µm
Tolerance between GFX-***r*** movers	±150µm with standard setup - Precision setup ±30µm
Total system length	100m+
Maximum number GFX-***r*** movers	300+
Minimum spacing between movers	85mm - 210mm (4 & 6 Bearing mover options) (10mm pole-pole clearance)
Typical external size of single lane of track system, motor and mover assembly	W200 x 120mm (approximate package size including mover)
Lineral module length	N x 250mm up to 50m
GFX-***r*** Mover length	80mm - 200mm
Linear module mass	Approx 28 kg/m
Mover mass	1.0kg - 2.5kg (80mm - 200mm)
Operating Temperature	0°C to +40°C (Ambient)
Storage Temperature	-10°C to 65°C

The Illustrations below show where to position the payload centre-of-gravity to maximise system life (where 100% is maximum possible life)









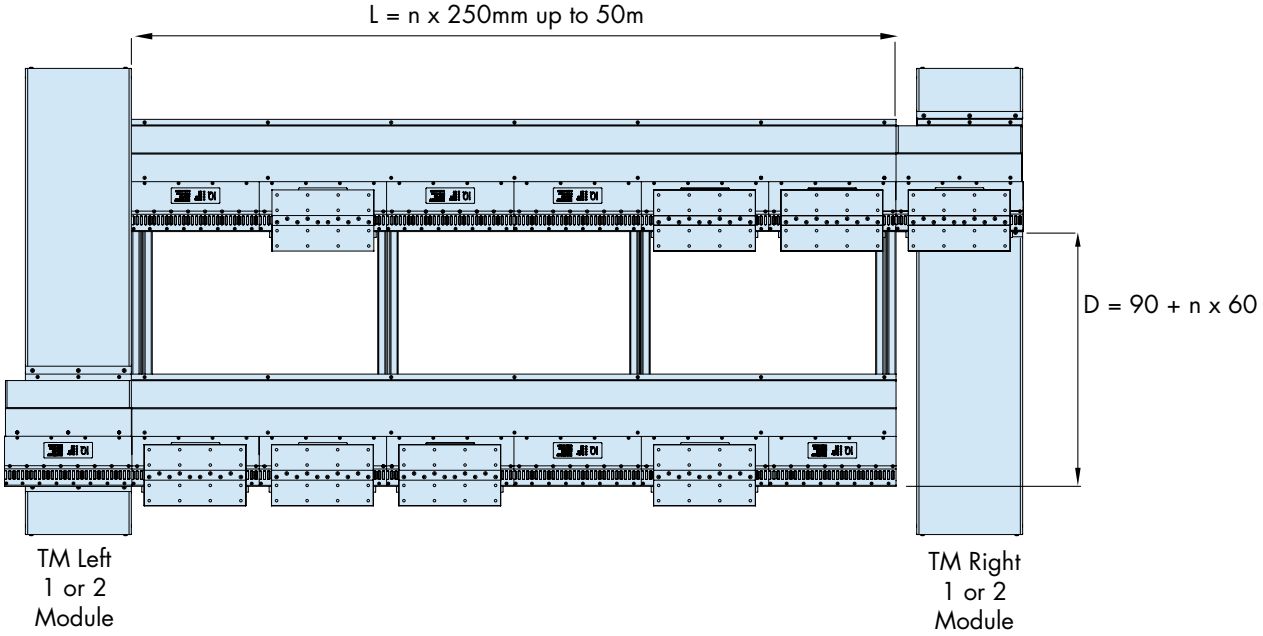
0%-20% 20%-40% 40%-60% 60%-80% 80%-100% 100%-120%

Ordering Information

GFX-**r** is available in lengths up to 4m in one piece or unlimited lengths using our joining kits.

GFX-**r** Transport modules are available in either 250mm or 500mm widths to suit the XTS motor modules. Systems can be configured with varying lengths and widths TM units if the application requires. Transport module positioning is taken care of with Renishaw Fortis encoders and servo motors from Beckhoff, providing a fully integrated control system within TwinCAT.

GFX-**r** standard ordering details are shown below but please contact Hepco's technical sales team to discuss a particular application.



Ordering Example - (GFXR-TM-1M-H-D510-L1500 + 6 x GFXR-MA-C34-AS)

Transport Module Part Number

GFXR - TM - 1M - H - D510 - L1500

Product
GFXR - Rectangle System

Transport Module
Assumed 2 symetrical TM units. Can be customised

1 or 2 motor module on the TM (ie. 250 or 500mm width)

System Orientation
V - vertical or **H** - horizontal

Stroke Length

System Length

Mover Part Number

GFXR - MA - C34 - AS

Product
GFXR - Rectangle System

Mover Assembly

Bearing size
C34, S34, L34 or L40

Axial Stiffness Bearings

Joining Kit Part Number - Joining kits only needed if system is over 4m.

GFXR - JK - H

Product
GFXR - Rectangle System

Joining Kit

Joining Kit Type
H- Horizontal, **V** - Vertical,
BSA - Intermediate Bracket and Base

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