



- Compact
- Functional
- Flexible

# Multi-axis system connectors HMV...-DL/DA

Key features

FESTO

## At a glance

The multi-axis modular system includes different adapter kits for the assembly of multi-axis systems using the following axes:

- Pneumatic axes DGPL
- Axes with toothed belt drive DGE-ZR-KF
- Axes with spindle drive DGE-SP-KF
- Boom axes DGEA

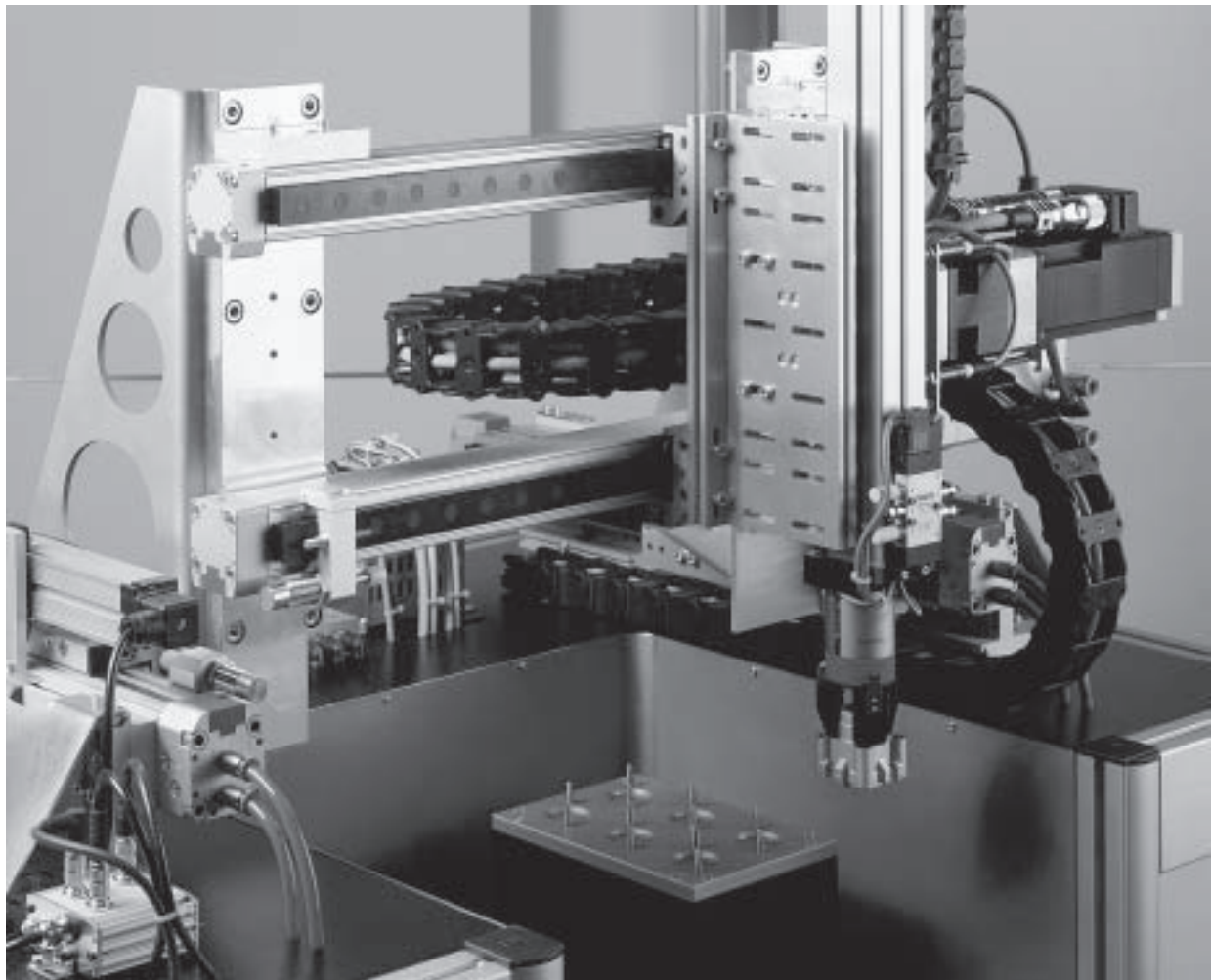
With these adapter kits for sizes 18 to 63, the following can be easily assembled.

- X/Y axis tables
- cantilever-type handling gantries
- linear gantries and
- planar surface gantries

Modular components include wrought aluminium alloy plates, extruded profiles and sheet metal parts. The axes are connected by means of slot nuts mounted in their profile slots. The use of centring sleeves considerably simplifies alignment of the axes to the connecting component.

The connecting components are adjustable to allow for stress free axis alignment.

The technical data for the drive components does not change when they are used in a multi-axis modular system.

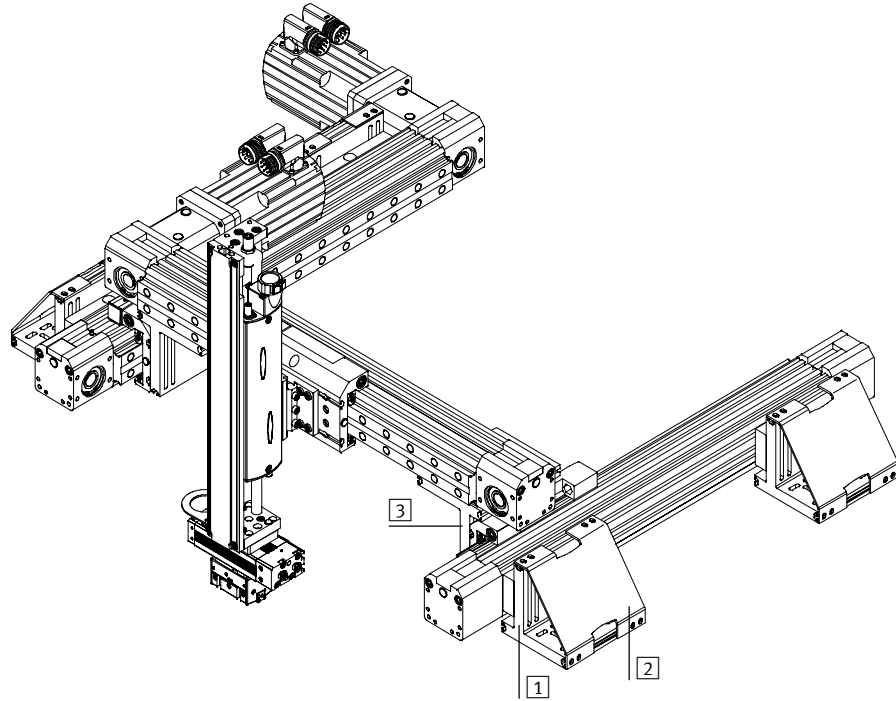


# Multi-axis system connectors HMV...-DL/DA

Key features

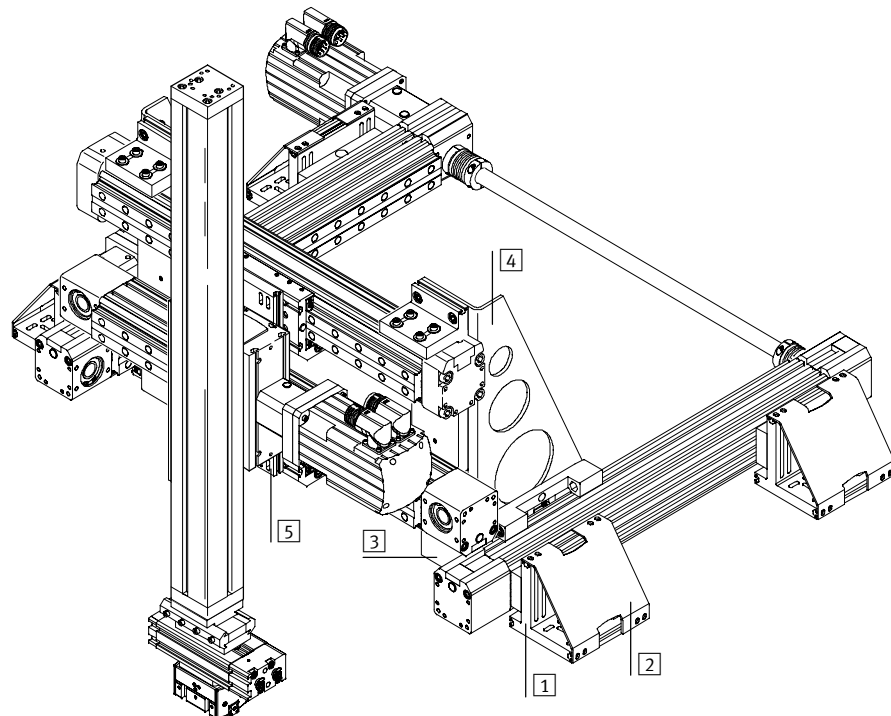
## Planar surface gantry

- 1 Components for combining basic axes (axis connecting kit)
- 2 Components for reinforcing the axis connecting kit (reinforcing kit)
- 3 Components for mounting a lateral axis for gantry applications (axis connecting kit)



## Twin axis planar surface gantry

- 1 Components for combining basic axes (axis connecting kit)
- 2 Components for reinforcing the axis connecting kit (reinforcing kit)
- 3 Components for mounting axes parallel to each other (twin axis connecting kit)
- 4 Components for setting up a twin axis gantry (twin axis support kit)
- 5 Components for lateral mounting of an axis, e.g. in cantilever operation (twin axis cantilever kit)



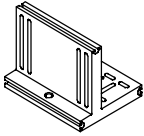
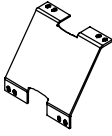
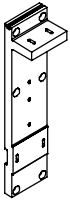
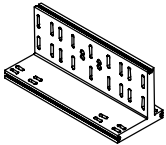
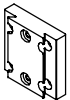
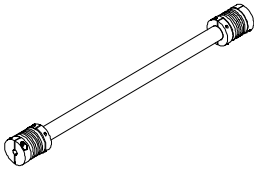
# Multi-axis system connectors HMV...-DL/DA

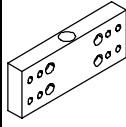
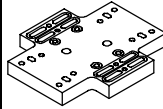
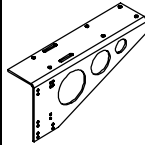
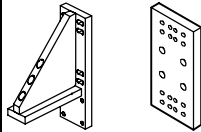
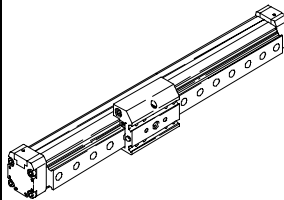
Product range overview



System components  
Multi-axis components

3.4

Version	Brief description	→ Page
<b>Axis connecting kit HMVG-DL</b>		
	Basic component for mounting an axis to a base, or for mounting a lateral axis for (X-Y) gantry applications.	5 / 3.4-6
<b>Reinforcing kit HMVV-DL</b>		
	Component for reinforcing the axis connecting kit	5 / 3.4-10
<b>Twin axis connecting kit HMVT-DL</b>		
	Component for parallel attachment and adjustment of twin DGP.../DGE... axes	5 / 3.4-14
<b>Twin axis cantilever kit HMVD-DL</b>		
	Component for lateral attachment of a DGP.../DGE.../DGEA... axis to the slides of a twin axis system	5 / 3.4-18
<b>Actuator adapter kit HMVA-DL</b>		
	Component for interfacing with HAT components	5 / 3.4-24
<b>Connecting shaft KSK</b>		
	Component for connecting the drives of two parallel DGE-25/40/63-...-ZR axes	5 / 2.3-8

Version	Brief description	→ Page
<b>Adjusting kit HMVJ-DL/DA</b>		
	Component for adjusting axes in combination with the axis connecting kit	5 / 3.4-8
<b>Cross connecting kit HMVK-DL</b>		
	Component for combining twin axes via the slide, as well as on the profile.	5 / 3.4-12
<b>Twin axis support kit HMVS-DL</b>		
	Component for construction of a twin axis gantry	5 / 3.4-16
<b>Cantilever mounting kit HMVC-DL</b>		
	Component for mounting a vertically arranged axis (DGEA-/DGP.../DGE...) on a horizontally arranged axis (DGEA-/DGP.../DGE...) in cantilever operation	5 / 3.4-20
<b>Passive guide axis FDG</b>		
	Driveless linear guide unit that is installed parallel to a drive axis (DGP.../DGE... axis).	5 / 3.4-42

# Multi-axis system connectors HMV...-DL/DA

Type codes

		HMV	-	G	-	DL	-	25	-	DL	-	40
<b>Series</b>												
HMV	Basic version											
<b>Key features</b>												
G	Basic component											
J	Adjusting component											
V	Reinforcement											
K	Cross connector											
T	Twin axis component											
S	Twin axis support											
D	Twin axis cantilever											
C	Cantilever mounting											
A	Actuator adapter											
<b>Drive/axis 1</b>												
DL	Corresponds to: DGE-KF Electrical axes DGPL Pneumatic drives DGPIL Pneumatic drives with displacement encoder FDG Passive guide axis											
DA	DGEA Cantilever axes											
<b>Size [mm]</b>												
<b>Drive/axis 2</b>												
DL	Corresponds to: DGE-KF Electrical axes DGPL Pneumatic drives DGPIL Pneumatic drives with displacement encoder FDG Passive guide axis											
DA	DGEA Cantilever axes											
DLA	Corresponds to: DL or DA											
<b>Size [mm]</b>												

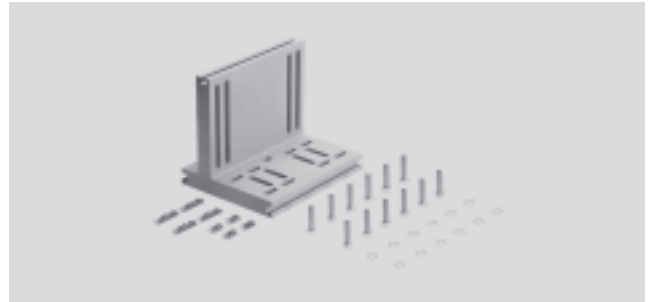
# Multi-axis system connectors HMVG

Technical data



## Axis connecting kit HMVG

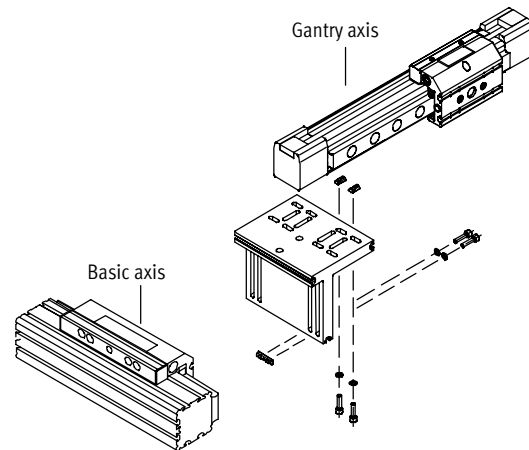
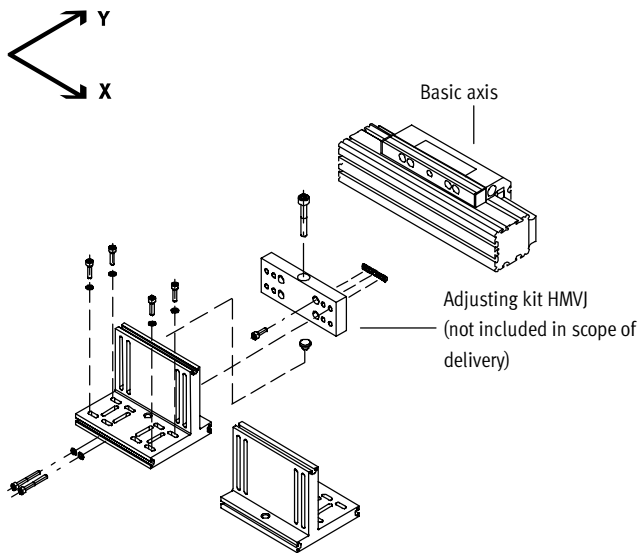
This axis connecting kit is the basic component for axis mounting. It is suitable for mounting the axis to a base (base mounting), or for mounting an axis for gantry applications.



### Mounting example

Basic mounting (mounting the axis to a base)

Gantry application



### Selection matrix

The following axis mountings and axis combinations have been tested and approved using this kit:

Basic mounting

Gantry application

X		X	
<sup>1</sup>	<sup>1</sup>	<sup>1</sup>	<sup>1</sup>

	Y		
X			

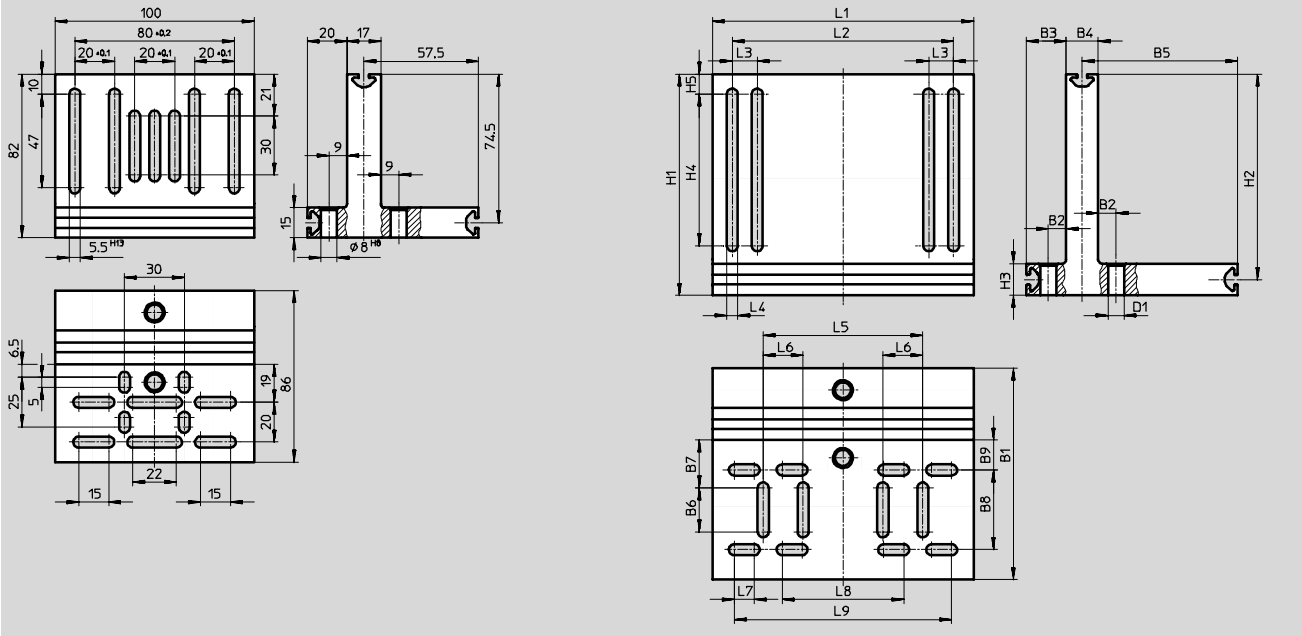
<sup>1</sup> Only in conjunction with adjusting kit → 5 / 3.4-8

# Multi-axis system connectors HMVG

Technical data



**Dimensions** Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)  
 HMVG-DL18/25 HMVG-DL32/40  
 HMVG-DL18/25-DL18/25 HMVG-DL50/63  
 HMVG-DL25-DL40



Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	H1	H2	H3
		±0.2	±0.1	H13								
HMVG-DL32/40	131	111	12.5	5.5	80	20	10	61	109	111	103	16
HMVG-DL50/63	230	206	26	9	184	60	15	94	194	159	147.5	23

Type	H4	H5	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1
												∅ H8
HMVG-DL32/40	76	10	106	9	20	16	78	22	24	40	15	8
HMVG-DL50/63	106	11.5	140	9	20	23	108.5	31	36.5	60	22	8

Ordering data								
Basic axis	Gantry axis	Material	Temperature range [°C]	Weight [g]	Part No.	Type		
For basic mounting								
DL-18	-	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	500	196 772	HMVG-DL18/25		
DL-25	-					970	196 775	HMVG-DL32/40
DL-32	-					3 470	196 776	HMVG-DL50/63
DL-40	-							
DL-50	-							
DL-63	-							
For gantry application								
DL-18	DL-18	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	500	196 773	HMVG-DL18/25-DL18/25		
DL-25	DL-25					196 774	HMVG-DL25-DL40	
DL-25	DL-40					970	196 775	HMVG-DL32/40
DL-40	DL-40					3 470	196 776	HMVG-DL50/63
DL-63	DL-63							

# Multi-axis system connectors HMVJ

Technical data

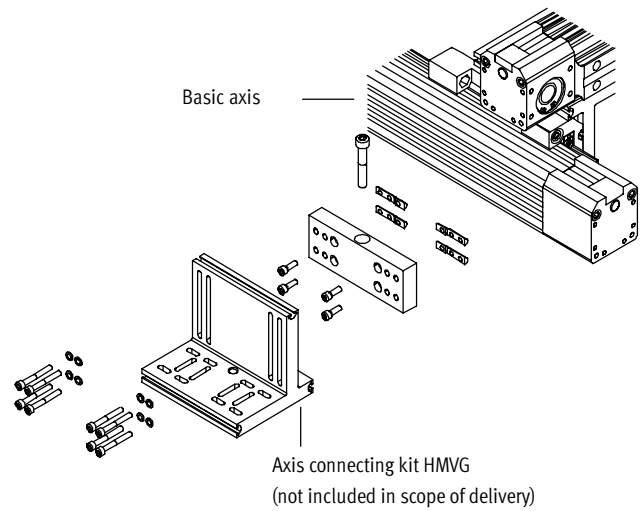
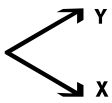


## Adjusting kit HMVJ

This adjusting kit is used to adjust the basic axes in combination with the axis connecting kit HMVG. The axes can thus be aligned such that they are parallel to the base, as well as to one another.



### Mounting example



System components  
Multi-axis components

3.4

### Selection matrix

The following combinations have been tested and approved using this kit:

X \ Y					



# Multi-axis system connectors HMVJ

Technical data

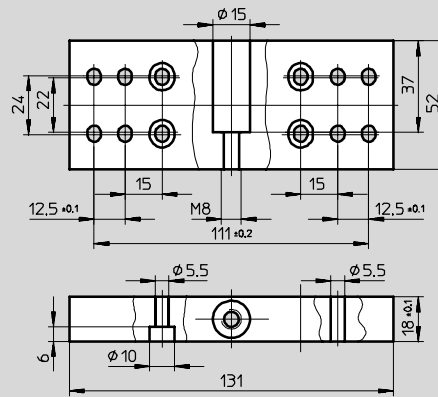
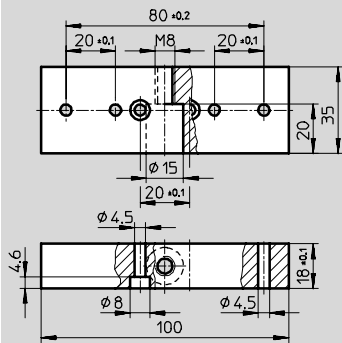


## Dimensions

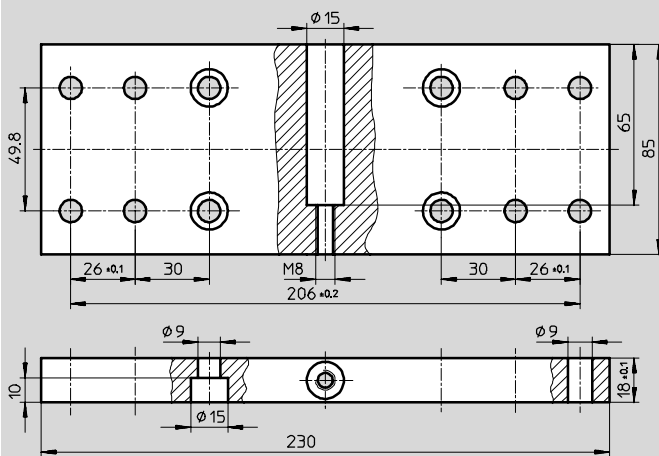
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

HMVJ-DL18/25

HMVJ-DL32/40



HMVJ-DL63



## Ordering data

Basic axis	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DL-18	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	150	196 791	HMVJ-DL18/25
DL-25					
DL-32			300	196 792	HMVJ-DL32/40
DL-40					
DL-63					

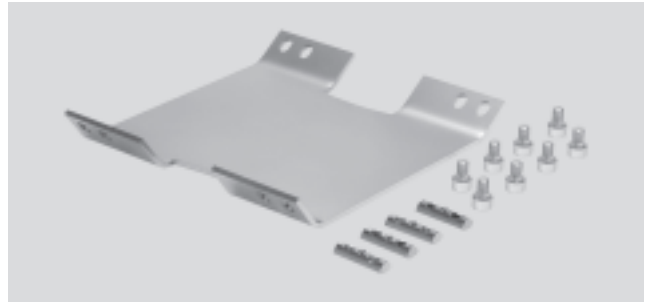
# Multi-axis system connectors HMVV

Technical data

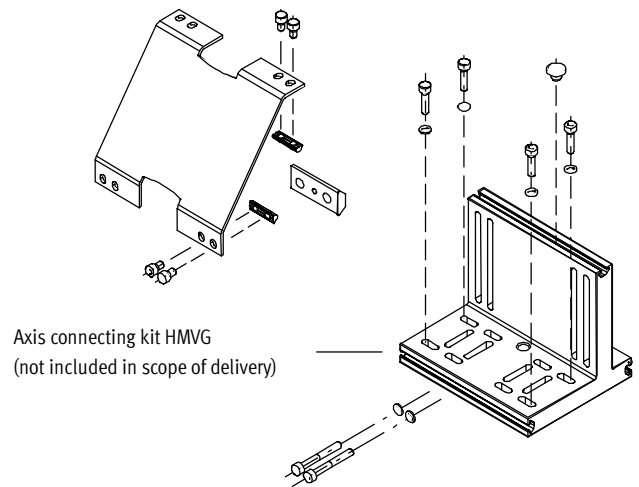
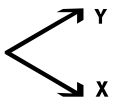


## Reinforcing kit HMVV

This kit is used to reinforce the axis connecting kit HMVG.  
The load capacity of the entire system is increased significantly as a result.



### Mounting example



System components  
Multi-axis components

3.4

### Selection matrix

The following reinforcements have been tested and approved using this reinforcing kit and the axis connecting kit:

Y X	*

\* X basic mounting only

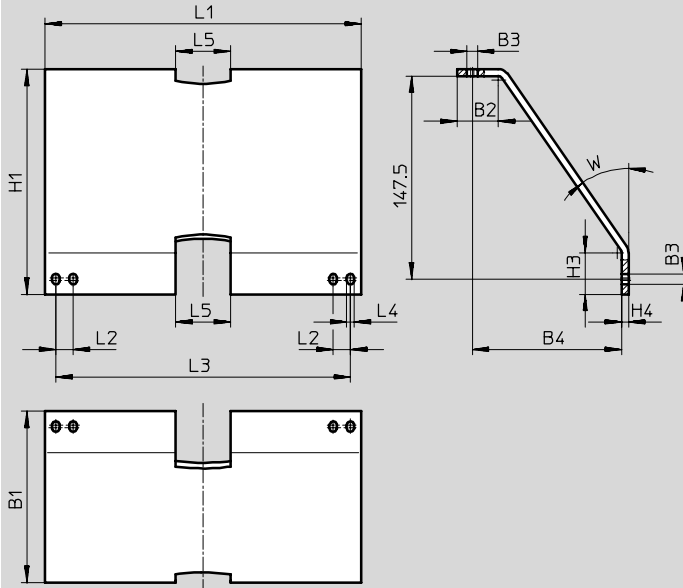
# Multi-axis system connectors HMVV

Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Type	B1	B2	B3	B4	H1	H2	H3	H4	L1	L2	L3	L4	L5	W
						±0.5		±0.5					±0.5	
HMVV-DL18/25	66.5	20	7.5	57.5	83.5	74.5	20	2.5	100	12.5	84	5.5	40	33.35°
HMVV-DL32/40	87.5	20	7.5	78	112.5	103	20	2.5	131	12.5	115	5.5	40	35.54°
HMVV-DL50/63	124.5	30	7.5	108.5	163.5	147.5	30	5	230	12.5	214	5.5	40	34.6°

## Ordering data

Axis connecting kit	Material	Temperature range	Weight	Part No.	Type
		[°C]	[g]		
HMVG-DL18/25	Steel	-10 ... +60	180	196 590	HMVV-DL18/25
HMVG-DL32/40	Free of copper and PTFE		340	196 591	HMVV-DL32/40
HMVG-DL50/63			1 840	196 592	HMVV-DL50/63

System components  
Multi-axis components

3.4

# Multi-axis system connectors HMVK

Technical data



## Cross connecting kit HMVK-DL

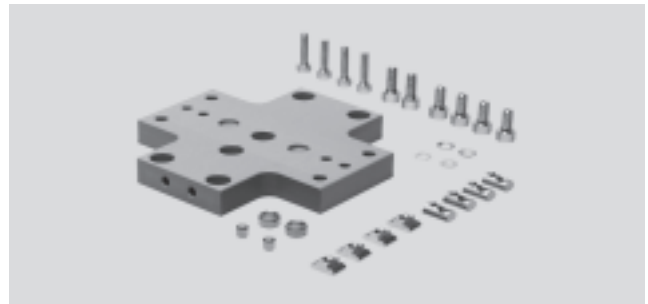
The cross connecting kit is used to set up two axes perpendicular to one another.

■ X/Y axis table

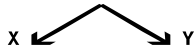
Slide of lower axis with profile of upper axis

■ Cantilever axis

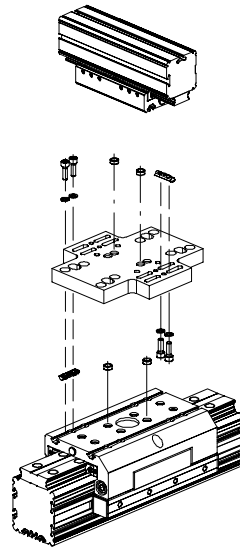
Slide of lower axis with slide of upper axis



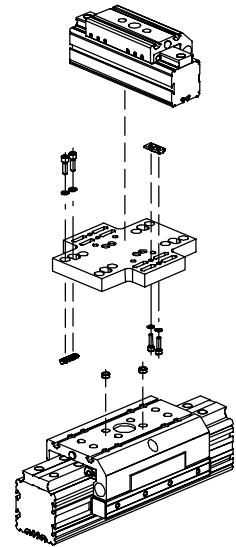
### Mounting example



Slide/slide mounting  
(Cantilever axis)



Slide/profile mounting  
(X/Y axis table)



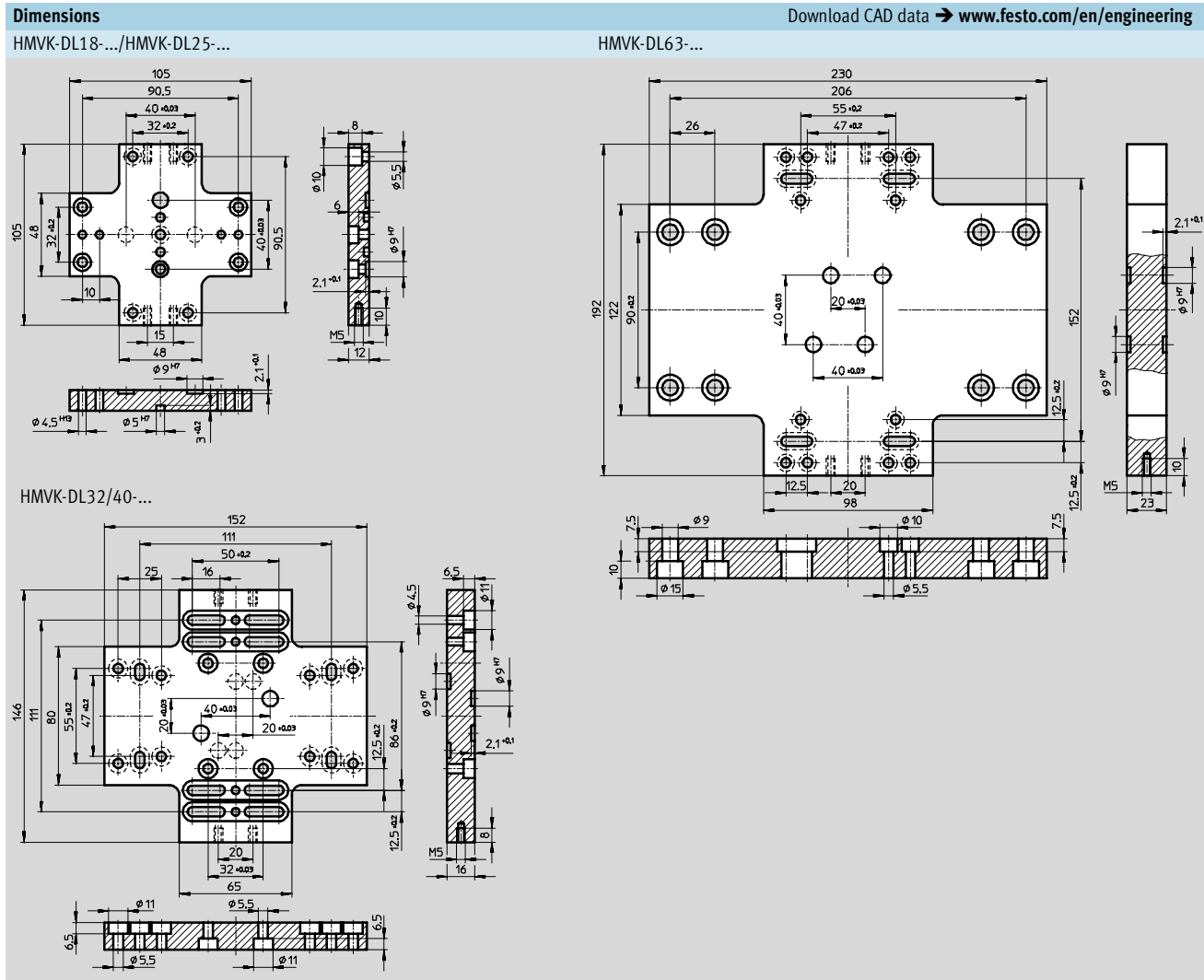
### Selection matrix

The following slide/slide and slide/profile connections have been tested and approved using this kit:

Y X				
	/		/	

# Multi-axis system connectors HMVK

Technical data



Ordering data		Material	Temperature range [°C]	Weight [g]	Part No.	Type
Mounting						
Slide	Slide	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	230	196 779	HMVK-DL25-DL18/25
DL-25	DL-18					
DL-25	DL-25					
DL-32	DL-25			600	196 781	HMVK-DL32/40-DLA18-32
DL-40	DA-18					
DL-40	DL-25					
DL-40	DA-25					
DL-63	DA-25			2 080	196 783	HMVK-DL63-DLA25/40
DL-63	DL-40					
DL-63	DA-40					
Slide	Profile	Wrought aluminium alloy	-10 ... +60	230	196 780	HMVK-DL18/25-DL-18/25
DL-18	DL-18					
DL-25	DL-25			600	196 782	HMVK-DL32/40-DL18-32
DL-32	DL-25					
DL-40	DL-25			600	196 781	HMVK-DL-32/40-DLA18-32
DL-40	DL-32					
DL-40	DL-40					

System components  
Multi-axis components  
**3.4**

# Multi-axis system connectors HMVT

Technical data

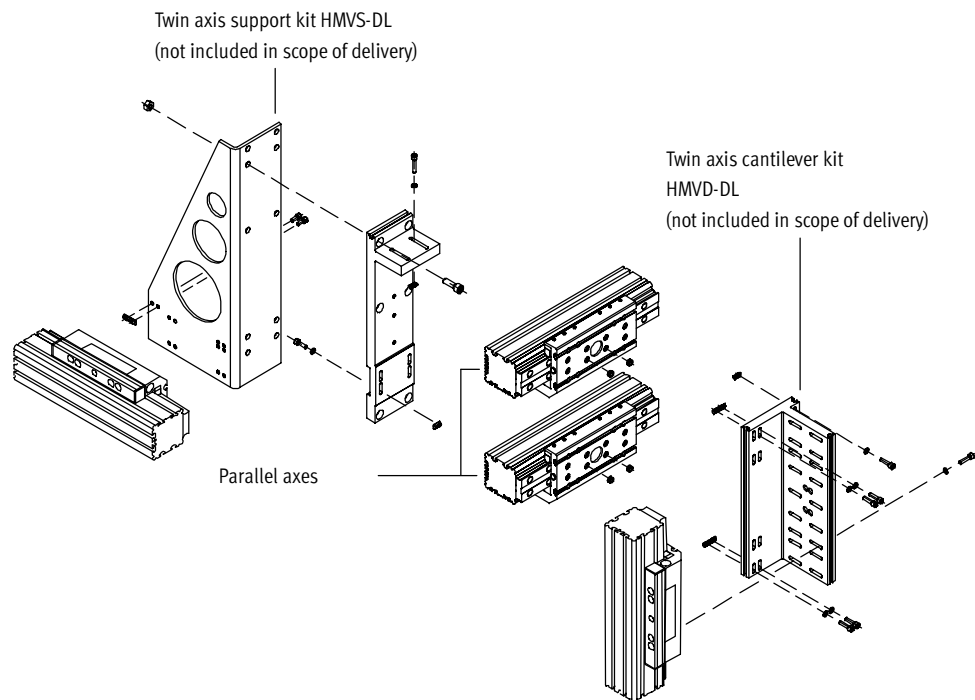
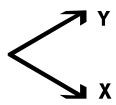


## Twin axis connecting kit HMVT-DL

The twin axis connecting kit is used to parallel connect and adjust two DGP.../DGE... axes.



### Mounting example



### Selection matrix

The following twin axis gantry assemblies and axis combinations have been tested and approved using this kit:

	Y		
X			

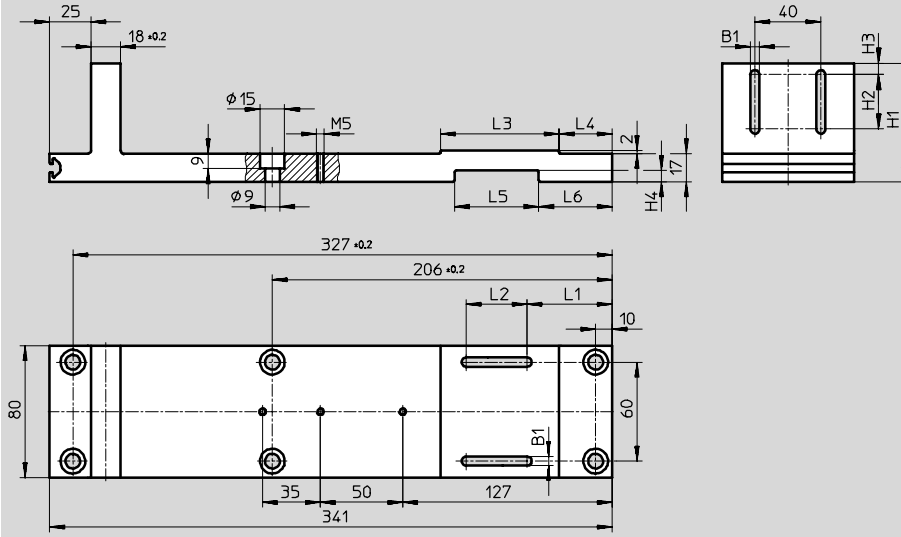
# Multi-axis system connectors HMVT

Technical data



## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Type	L1	L2	L3	L4	L5	L6	H1	H2	H3	H4	B1
HMVT-DL25	70.5	10	55	48	30	60.5	62	10	15.5	5.5	4.5
HMVT-DL32/40	51.5	37	72	32	51	44.5	72	33	7	7	5.5

## Ordering data

Parallel axes	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DL-25	Wrought aluminium alloy	-10 ... +60	1 360	196 777	HMVT-DL25
DL-32	Free of copper and PTFE			196 778	HMVT-DL32/40
DL-40					

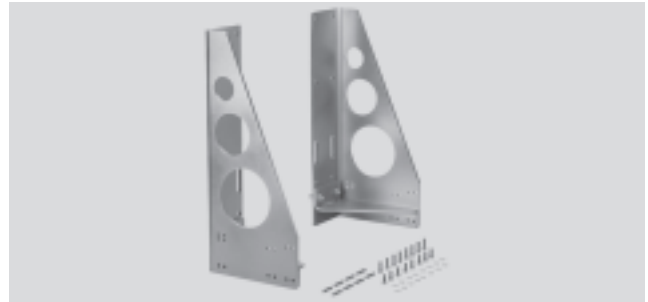
# Multi-axis system connectors HMVS

Technical data

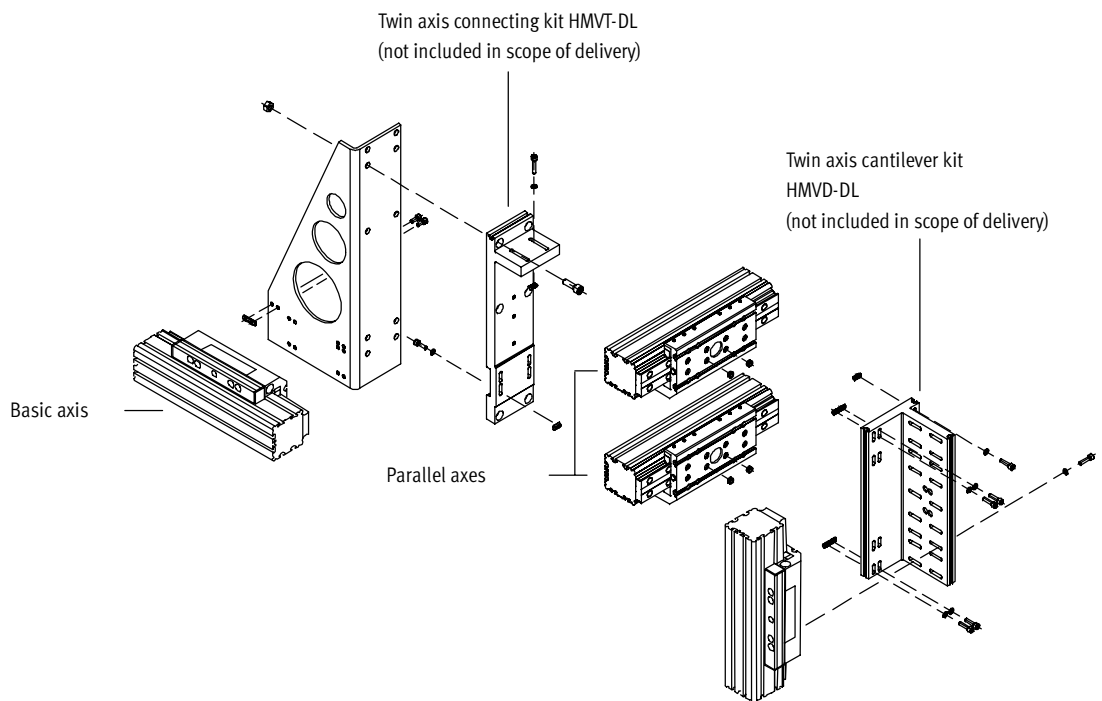
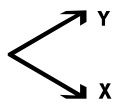


## Twin axis support kit HMVS

This kit is used to set up two parallel axes in combination with the twin axis connecting kit. The complete setup is mounted on the basic axes of the planar surface gantry.



### Mounting example



### Selection matrix

The following twin axis setups have been tested and approved using this kit:

	Y	
X		



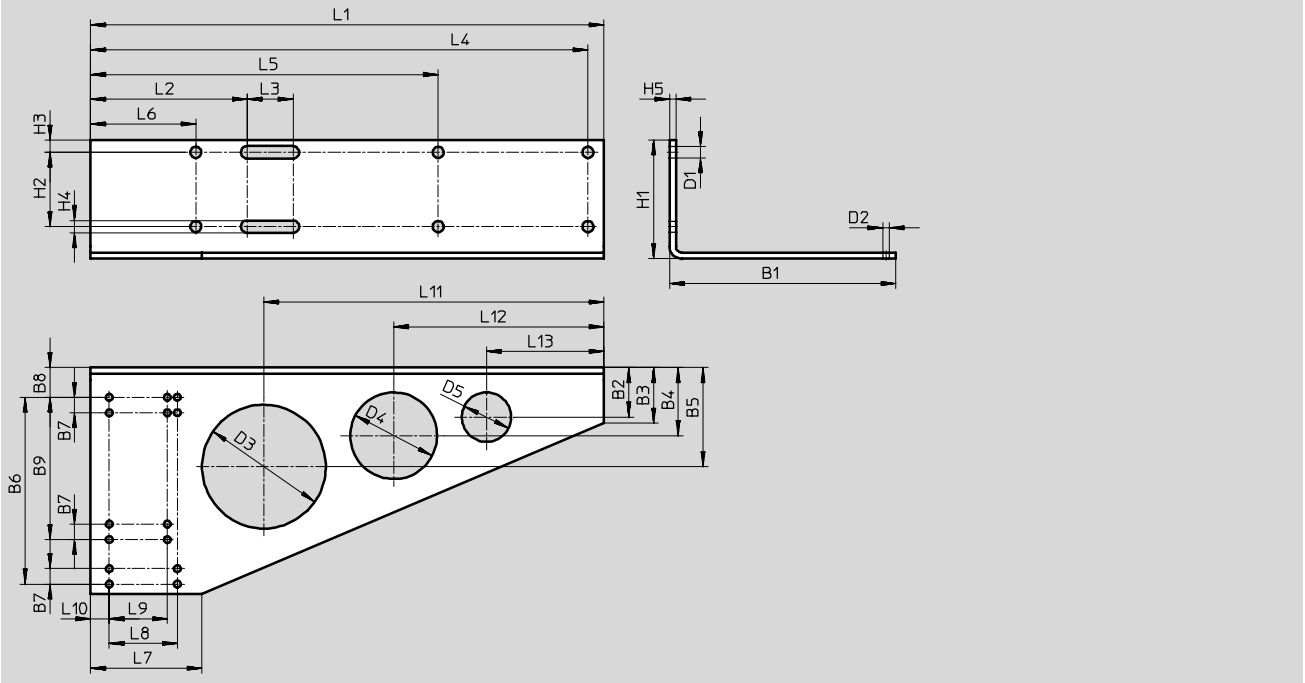
# Multi-axis system connectors HMVS

Technical data



## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	H1	H2	H3
				±0.2	±0.2	±0.2		±0.2	±0.2						±0.2	
HMVS-DL32/40-DL25-40	415	126.5	37	402	281	85	90	55	47	15	275	170	95	96	60	10
HMVS-DL63-DL40	468	179.5	37	455	334	138	128	90	-	19	272	167	92	96	60	10

Type	H4	H5	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4	D5
												∅	∅	∅	∅	∅
HMVS-DL32/40-DL25-40	10	5	183	40	45	55	80	151	12.5	24	115	9	5.5	100	70	40
HMVS-DL63-DL40	10	8	246	60	70	75	100	206	26	28	-	9	9	100	70	40

## Ordering data

Basic axis	Parallel axis	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DL-32	DL-25	Steel Free of copper and PTFE	-10 ... +60	3 650	196 786	HMVS-DL32/40-DL25-40
DL-40	DL-25					
DL-40	DL-32					
DL-40	DL-40					
DL-63	DL-40			6 390	196 787	HMVS-DL63-DL40

System components  
Multi-axis components

3.4

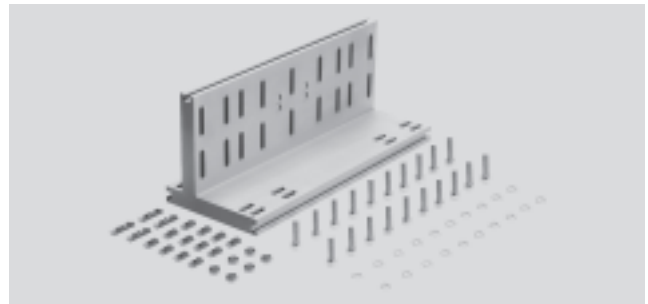
# Multi-axis system connectors HMVD

Technical data

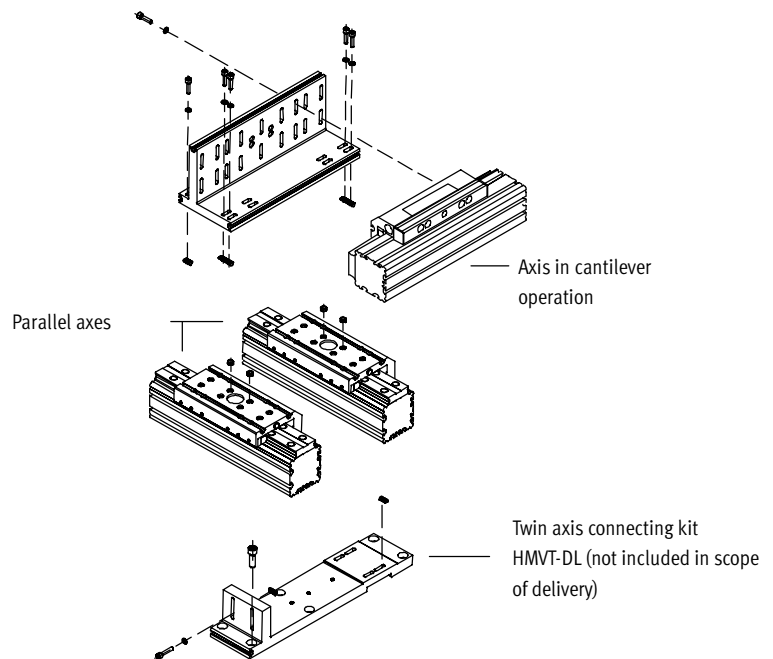
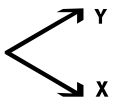


## Twin axis cantilever kit HMVD

The twin axis cantilever kit is used for the lateral attachment of a DGP.../ DGE... axis to the side of the parallel axes (double axis).



### Mounting example



### Selection matrix

The following axis combinations have been tested and approved as twin cantilever axes using this kit:

Y X				
	/		/	
	/		/	

# Multi-axis system connectors HMVD

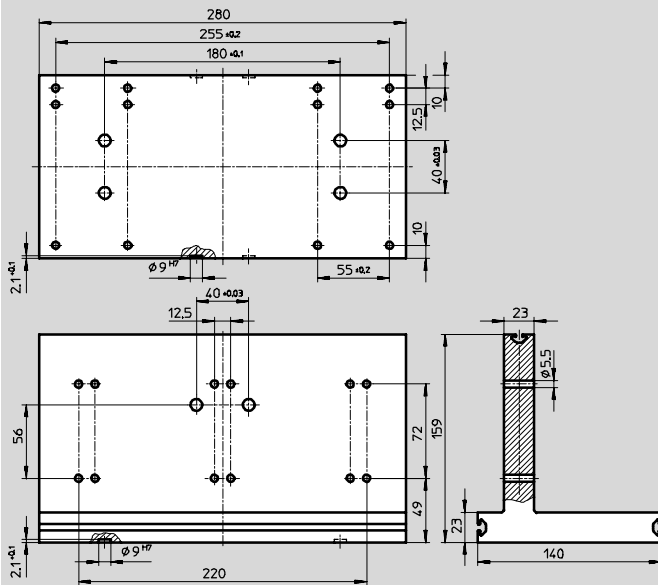
Technical data



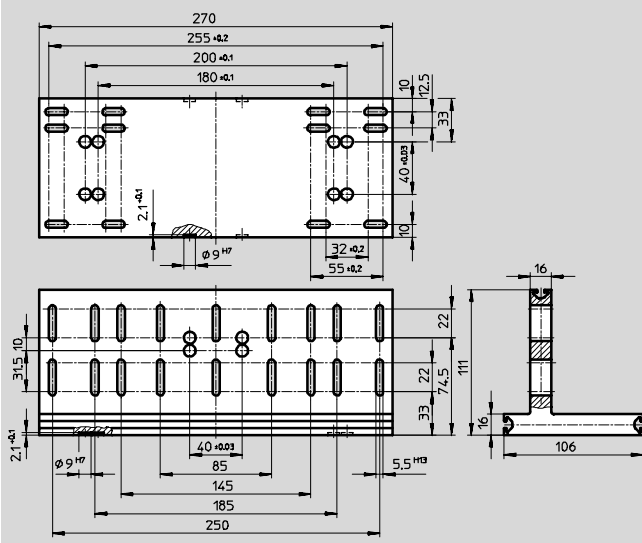
## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

### HMVD-DL40-DA40



### HMVD-DL25-40-DLA18-40



## Ordering data

Parallel axes	Axis in cantilever operation	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DL-25	DA-18	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	2 100	196 784	HMVD-DL25-40-DLA18-40
	DL-25					
	DL-32					
	DL-40					
DL-32	DL-25					
	DL-32					
	DL-40					
DL-40	DA-25			4 730	196 785	HMVD-DL40-DA40
	DL-40					
	DA-40					

# Multi-axis system connectors HMVC

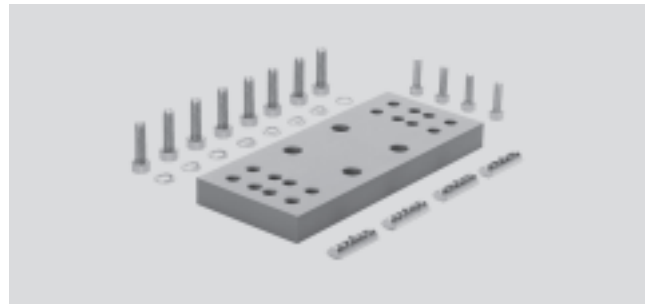
Technical data



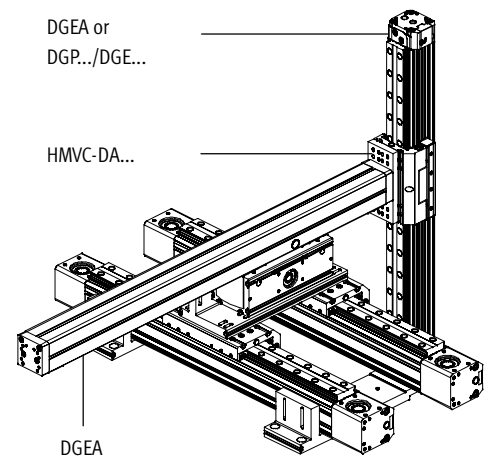
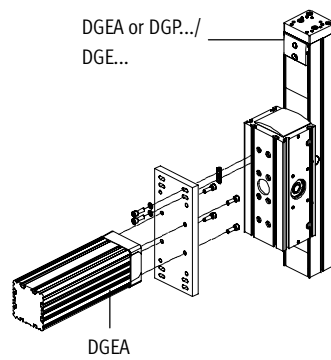
## Cantilever mounting kit HMVC

This kit is used to mount vertically arranged axes on the front side of horizontally arranged cantilever axes DGEA.

For DGP.../DGE... → 5 / 3.4-22



### Mounting example



System components  
Multi-axis components

3.4

### Selection matrix

The following axis mountings and axis combinations have been tested and approved using this kit:

In the case of hybrid combinations, the approved axis mountings and combinations correspond to the illustrated mounting positions.

Z Y			

# Multi-axis system connectors HMVC

Technical data

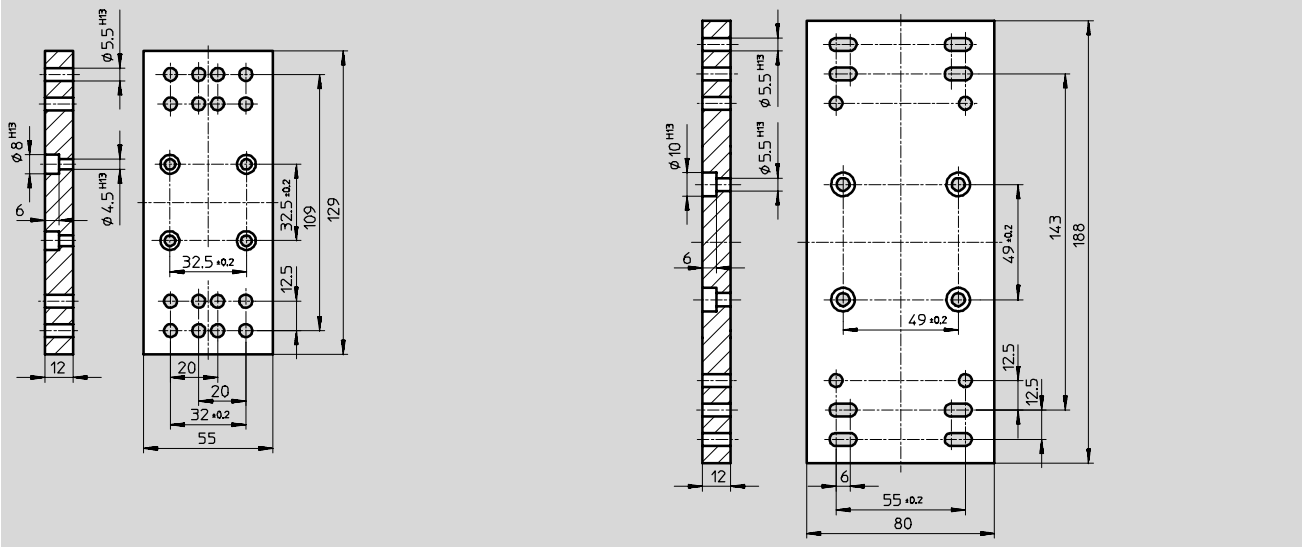


## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

HMVC-DA25-DA18

HMVC-DA40-DA25



## Ordering data

Horizontal axis	Vertical axis	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DA-25	DA-18	Wrought aluminium alloy	-10 ... +60	220	525 945	HMVC-DA25-DA18
DA-40	DA-25			470	525 948	HMVC-DA40-DLA25/40
DA-40	DL-40					

System components  
Multi-axis components

3.4

# Multi-axis system connectors HMVC

Technical data

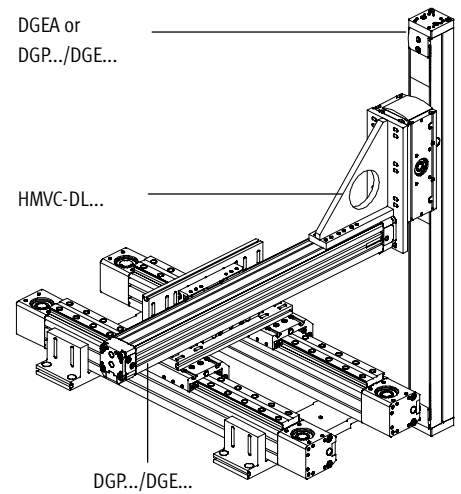
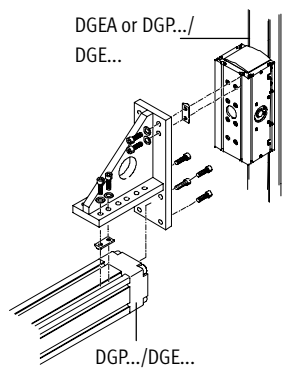


## Cantilever mounting kit HMVC

This kit is used to mount vertically arranged axes on the front side of horizontally arranged axes  
DGP.../DGE.....



### Mounting example



System components  
Multi-axis components

3.4

### Selection matrix

The following axis mountings and axis combinations have been tested and approved using this kit:  
In the case of hybrid combinations, the approved axis mountings and combinations correspond to the illustrated mounting positions.

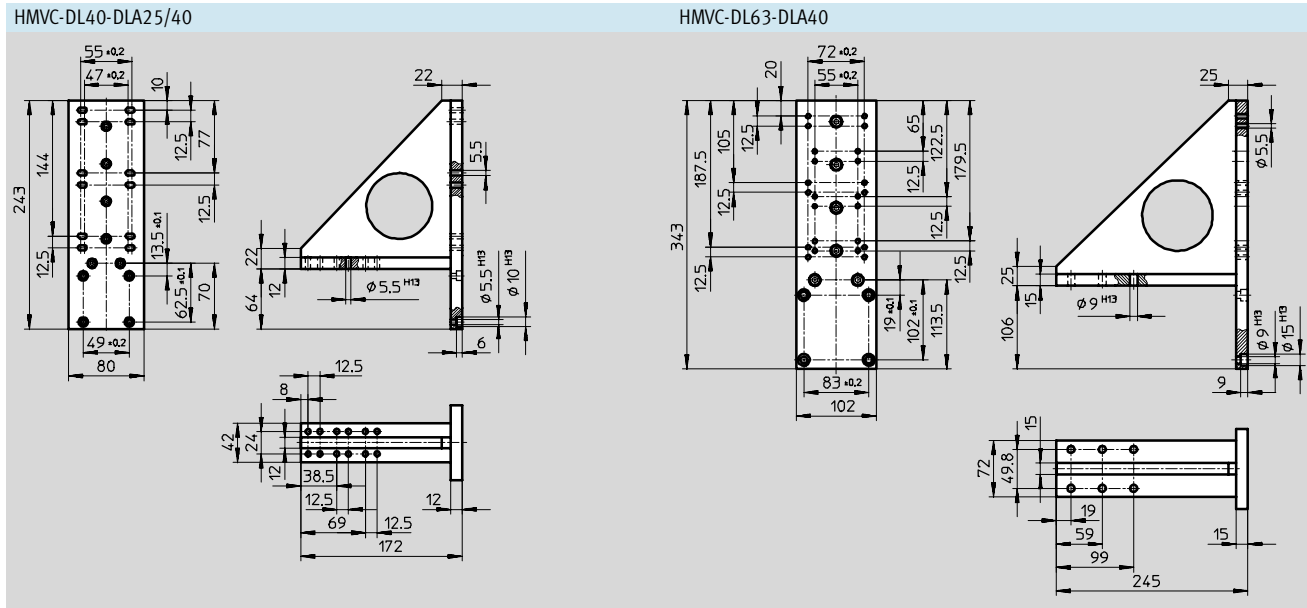
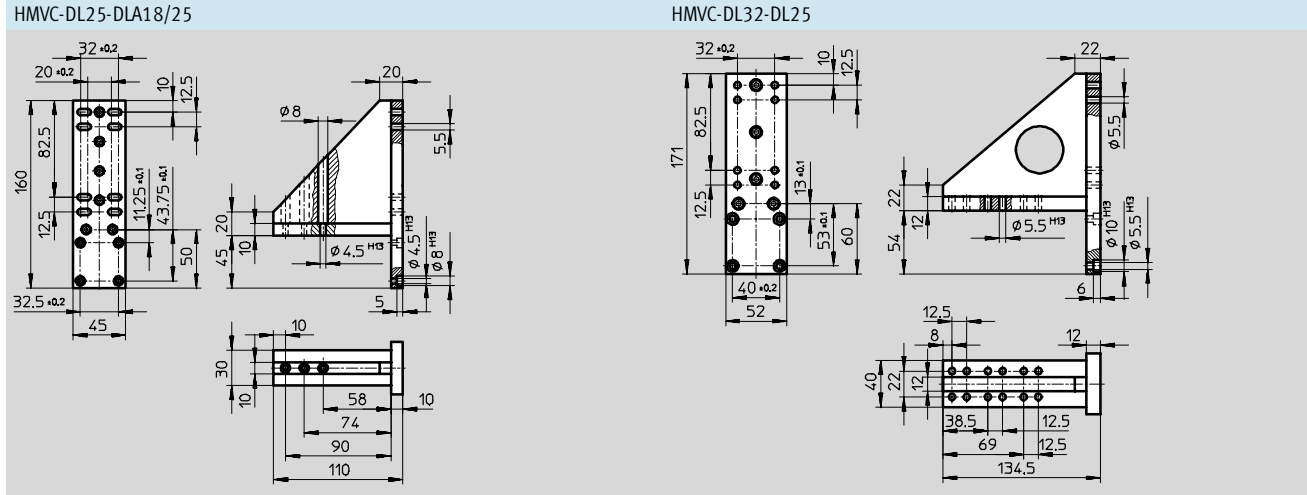
Z \ Y	

# Multi-axis system connectors HMVC

Technical data



Dimensions Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Ordering data						
Horizontal axis	Vertical axis	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DL-25	DA-18	Wrought aluminium alloy	-10 ... +60	410	525 944	HMVC-DL25-DLA18-25
DL-25	DL-25					525 946
DL-32	DL-25			1 170	525 947	HMVC-DL40-DLA25-40
DL-40	DA-25					
DL-40	DL-32					
DL-40	DL-40					
DL-63	DL-40			2 870	525 949	HMVC-DL-63-DLA40
DL-63	DA-40					

System components  
Multi-axis components  
3.4

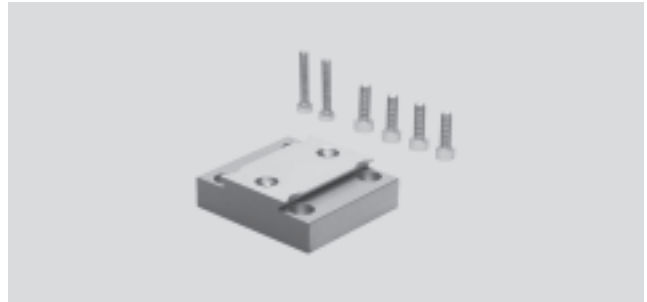
# Multi-axis system connectors HMVA

Technical data

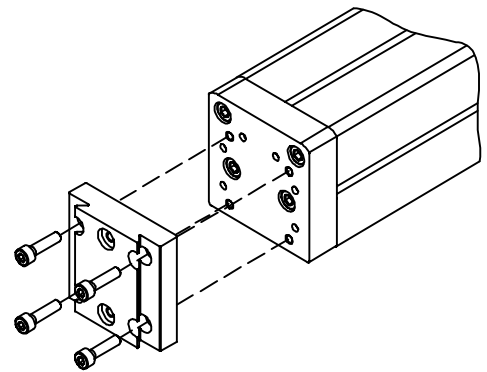
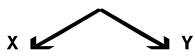


## Actuator adapter kit HMVA

The actuator adapter kit serves as an interface to HMT components. The kit facilitates the attachment of grippers, adjusting units, rotary drives and small axes from the handling range to the front of the cantilever axes.



### Mounting example



### Selection matrix

The following combinations have been tested and approved using this kit:

	Y			
X				

- 1 with semi-rotary drive DRQD
- 2 with gripper



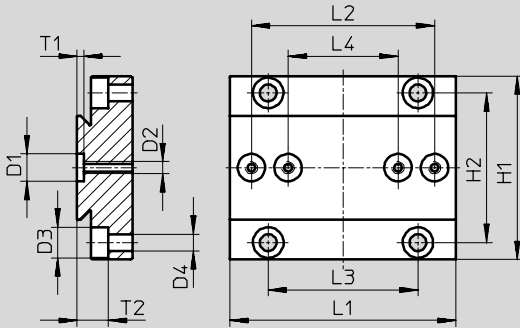
# Multi-axis system connectors HMVA

Technical data



## Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Type	D1 ∅ H7	D2	D3 ∅	D4 ∅	H1	H2 ±0.2	L1	L2	L3 ±0.2	T1	T2
HMVA-DL18/25	9	M4	8	4.5	50	32.5	50	36	32.5	2.1	9.1
HMVA-DL32	9	M4	10	5.5	60	40	54	36	40	2.1	10.2
HMVA-DLA40	9	M4	10	5.5	60	49	74	60	49	2.1	10.2

## Ordering data

Axis in cantilever operation	Material	Temperature range [°C]	Weight [g]	Part No.	Type
DA-18	Wrought aluminium alloy Free of copper and PTFE	-10 ... +60	75	196 788	HMVA-DLA18/25
DL-25					
DA-25					
DL-32			130	196 789	HMVA-DL32
DL-40			180	196 790	HMVA-DLA40
DA-40					