



2-Circle Goniometer 413

The system 413 is a combination of two 1-Circle Goniometers 409.

Both circular motions are independent of each other.

The upper circle is equipped with a 2-Theta arm with a prism guide and carriage.

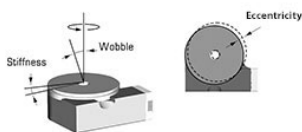
A further prism guide with carriage is mounted on the side of the housing of the upper circle.

- four precision configurations
- two load configurations

Application specific versions:

- vacuum suitable
- antimagnetic
- radiation resistant
- in black

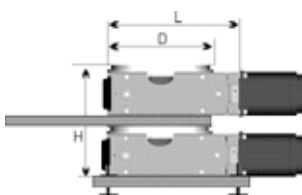
Precision configurations:



	X1	X2	X3	XE
Accuracy ["]:	<=45	30	15	on request
Repeatability (unidir.) ["]:	<=4	2	2	on request
Reversal error ["]:	<=20	15	9	on request
Eccentricity [μm]:	<=5	3	2	2
Wobble ["]:	<=8	4	3	2

** step motor, 1000 steps/revolution

Dimensions [mm]:



D:	L:	H:
110	130	168

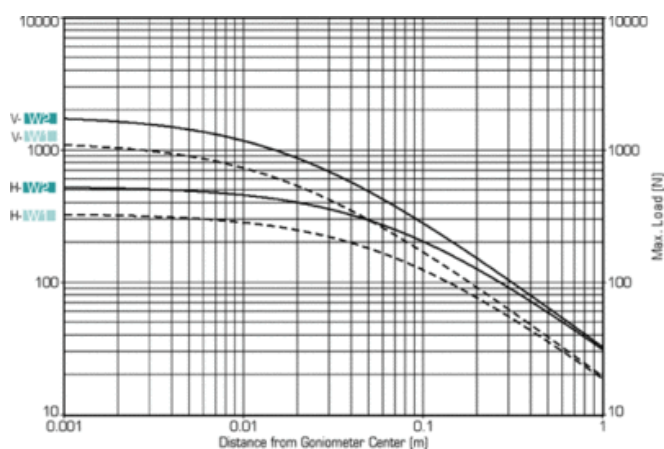
Accessories:

Motors:	2-/3-/5-Ph. Servo/DC
Hand wheels:	0042
Gear boxes:	2042.05 2042.10 2042.20
Limit switches:	included
Zero-point control:	9100
Encoder XE :	incremental absolute
Control system:	9300
Goniometer head mounting:	1412, 1413
Arms:	analyser, counter weight
Counter weight:	optional
Base plate:	423.12 included

Maximum load Theta circle (vertical goniometer axis):

Max. load [N] W1 :	1100
Max. load [N] W2 :	1800

Maximum load 2-Theta circle:

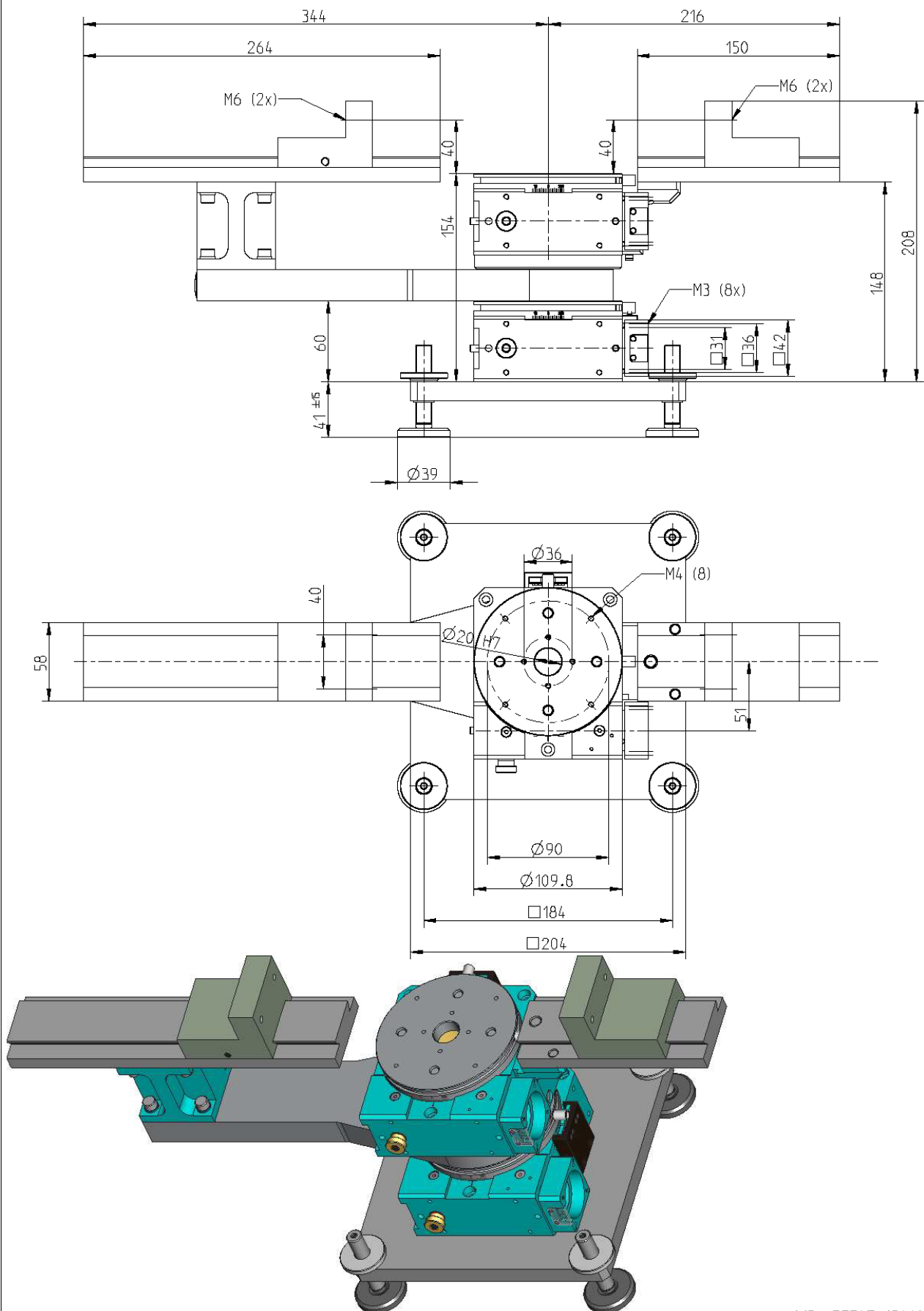


- vertical goniometer axis (V- **W1** , V- **W2**)
- horizontal goniometer axis (H- **W1** , H- **W2**)
- The maximum load on the 2-Theta arm is depending on the

distance (momentum).

Specifications:

Travel range [°]:	360
Material (housing/worm gear):	Aluminium/Bronze
Gear ratio:	180:1
Resolution [°]:	0.002*
Min. drive torque [Nm]:	0.12
Weight [kg]:	10
Flange size [mm]:	42



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