

MarGear GMX 275 C. Universal Gear Measuring Center

Fully automatic precision testing of gears and gear cutting tools up to an outer diameter of 275 mm.

The ideal solution for both universal and specialist gear manufacturing.

System solutions provide the ultimate in flexibility and availability within a modern gear wheel component production facility. MarGear GMX, a networked variant for use close to the production area, offers fast and efficient analysis of possible gear deviations.

This allows for a direct assessment of the deviation and an automatically generated machine error correction.

Gear and form measurements carried out on a single measuring instrument.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency..

Control unit:

4 axis Power PC Control unit:

Options:

- Tailstock up to clamping length 700 mm
- Active damping system



Technical Data

Measuring path (mm), X axis	180
Measuring path (mm), Y axis	150
Measuring path (mm), Z axis	320
Diameter max.* [mm]	275
Length	1560
Width	600
Height	1787
Mass [kg]	700
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation ($\mu\text{m} + \mu\text{m}/\text{mm}$ measuring radius)	0.11 μm + 0.0008 $\mu\text{m}/\text{mm}$
Radial runout deviation (μm in table height)	$\leq 0.11 \mu\text{m}$

* max. diameter of cylindrical gears

Accessories

- Probe arm changer (5 boxes)
- Active vibration damping system
- Revolving counter tip

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Spiral and hypoid bevel gears
- Crown gears
- Cylindrical worms
- Conical and asymmetrical cylindrical gears
- Segment gears
- Shaving cutters
- Hobs
- Cutting wheels
- Synchronous gears
- Beveloid gears
- 3D geometries, form and position measurements, diameters, distances
- Special gear cutting tools on request

For more information, please visit our website: www.mahr.com

MarGear GMX 400 C. Universal Gear Measuring Center



Precision, fully automatic testing of gears and gear cutting tools up to an outer diameter of 400 mm.

The ideal solution for both universal and specialist gear manufacturing.

System solutions provide the ultimate in flexibility and availability within a modern gear wheel component production facility. MarGear GMX, a networked variant for use close to the production area, offers fast and efficient analysis of possible gear deviations.

This allows for a direct assessment of the deviation and an automatically generated machine error correction.

Gear and form measurements carried out on a single measuring instrument.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency.

Control unit:
4 axis Power PC Control unit:

Options:

- Tailstock up to clamping length 700 mm
- Active damping system

Technical Data

Measuring path (mm), X axis	200
Measuring path (mm), Y axis	200
Measuring path (mm), Z axis	320
Diameter max.* [mm]	400
Length	1560
Width	600
Height	1787
Mass [kg]	700
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation (µm+µm/mm measuring radius)	0.11 µm + 0.0008 µm/mm
Radial runout deviation (µm in table height)	≤ 0.11 µm

* max. diameter of cylindrical gears

Accessories

- Probe arm changer (5 boxes)
- Active vibration damping system
- Revolving counter tip

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Spiral and hypoid bevel gears
- Crown gears
- Cylindrical worms
- Conical and asymmetrical cylindrical gears
- Segment gears
- Shaving cutters
- Hobs
- Cutting wheels
- Synchronous gears
- Beveloid gears
- 3D geometries, form and position measurements, diameters, distances
- Special gear cutting tools on request

For more information, please visit our website: www.mahr.com

MarGear GMX 400 ZL. Universal Gear Measuring Center

Precision, fully automatic testing of gears and gear cutting tools up to an outer diameter of 400 mm.

The ideal solution for both universal and specialist gear manufacturing.

System solutions provide the ultimate in flexibility and availability within a modern gear wheel component production facility. MarGear GMX, a networked variant for use close to the production area, offers fast and efficient analysis of possible gear deviations.

This allows for a direct assessment of the deviation and an automatically generated machine error correction.

Gear and form measurements carried out on a single measuring instrument.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency.

Control unit:

4 axis Power PC Control unit:

Extended Z measuring range for measuring long drive shafts up to 650 mm.

Options:

- Tailstock up to clamping length 700 mm
- Active damping system



Technical Data

Measuring path (mm), X axis	200
Measuring path (mm), Y axis	200
Measuring path (mm), Z axis	650
Diameter max.* [mm]	400
Length	1560
Width	600
Height	2147
Mass [kg]	750
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation ($\mu\text{m} + \mu\text{m}/\text{mm}$ measuring radius)	0.11 μm + 0.0008 $\mu\text{m}/\text{mm}$
Radial runout deviation (μm in table height)	≤ 0.11 μm

* max. diameter of cylindrical gears

Accessories

- Probe arm changer (5 boxes)
- Active vibration damping system
- Revolving counter tip

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Spiral and hypoid bevel gears
- Crown gears
- Cylindrical worms
- Conical and asymmetrical cylindrical gears
- Segment gears
- Shaving cutters
- Hobs
- Cutting wheels
- Synchronous gears
- Beveloid gears
- 3D geometries, form and position measurements, diameters, distances
- Special gear cutting tools on request

For more information, please visit our website: www.mahr.com

MarGear GMX 600. Universal Measuring Center for Gear, Form and Dimension Testing



The successful combination of gear and form measurement in one clamping saves additional investment, maintenance costs and time.

Full functionality as a form tester up to an outer diameter of 600 mm.

The **MarGear GMX 600**, as a complete solution, can also be used for measuring crankshafts, camshafts and pistons.

High precision, fully automatic testing of gears and gear cutting tools. Also serves as an integrated formtester system solution.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency.

Control unit:
5 axis Power PC Control unit: with fully automatic swivelling probe head.

Options:

- Active damping system
- Centering and tilting table (CNC)
- Centering and tilting table (CNC-XXL)

Technical Data

Measuring path (mm), X axis	300
Measuring path (mm), Y axis	600
Measuring path (mm), Z axis	700
Diameter max.* [mm]	600
Length	2314
Width	1671
Height	1865
Mass [kg]	2250
Max. workpiece weight [kg]	300 (with fixed support plate and tip) 100 (with automatic centering and tilting table)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation (µm+µm/mm measuring radius)	0.07 µm + 0.0008 µm/mm
Radial runout deviation (µm in table height)	≤ 0.1 µm

* max. diameter of cylindrical gears

Accessories

- Probe arm changer (4 boxes)
- Active vibration damping system

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Spiral and hypoid bevel gears
- Crown gears
- Cylindrical worms
- Conical and asymmetrical cylindrical gears
- Segment gears
- Shaving cutters
- Hobs
- Cutting wheels
- Synchronous gears
- Beveloid gears
- 3D geometries, form and position measurements, diameters, distances
- Form measurement with centering and tilting table
- Optional: Camshafts, crankshafts and pistons
- Special gear cutting tools on request

For more information, please visit our website: www.mahr.com

MarGear GMX 275 W. Universal Gear Measuring Center



Precision, fully automatic testing of gears and gear cutting tools up to an outer diameter of 275 mm.

The ideal solution for both universal and specialist gear manufacturing.

System solutions provide the ultimate in flexibility and availability within a modern gear wheel component production facility. MarGear GMX, a networked variant for use close to the production area, offers fast and efficient analysis of possible gear deviations.

This allows for a direct assessment of the deviation and an automatically generated machine error correction.

Gear and form measurements carried out on a single measuring instrument.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency.

Control unit:
4 axis Power PC Control unit:

Technical Data

GMX 275 W	
Measuring path (mm), X axis	180
Measuring path (mm), Y axis	150
Measuring path (mm), Z axis	320
Diameter max.* [mm]	275
Length	1560
Width	600
Height	1787
Mass [kg]	700
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation (µm+µm/mm measuring radius)	0.11 µm + 0.0008 µm/mm
Radial runout deviation (µm in table height)	≤ 0.11 µm

* max. diameter of cylindrical gears

Accessories

- Active vibration damping system
- Revolving counter tip
- Data matrix scanner
- Chuck 70 mm
- Chuck 200 mm
- Drive pin set
- Tailstock 450 mm or 700 mm

Applications

- Basic measuring station with AdvancedForm software
- Suitable for use as a gear measuring station with QE Cylindrical Gear

For more information, please visit our website: www.mahr.com

MarGear GMX 400 W. Universal Gear Measuring Center

Precision, fully automatic testing of gears and gear cutting tools up to an outer diameter of 400 mm.

Combining gear measuring tasks with various form and position features has never been easier.

With over 6000 units sold, the MarWin environment is a clear and simple way of creating complete programs in Teach-In mode. This improves programming efficiency and reduces the possibility of incorrect use.

Proven GMX realtime machine error correction is also used for positioning movements with the new MarEcon Control unit; guarantees maximum speed and precision throughout the entire measuring and movement sequence.

Gear, form and dimension measurements are performed on one measuring instrument.

High precision 3D scanning sensor combined with directly driven C-axis for accuracy and speed

Control unit:
4 axis Control unit:



Technical Data

GMX 400 W	
Measuring path (mm), X axis	200
Measuring path (mm), Y axis	200
Measuring path (mm), Z axis	320
Diameter max.* [mm]	400
Length	1560
Width	600
Height	1787
Mass [kg]	700
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation ($\mu\text{m} + \mu\text{m}/\text{mm}$ measuring radius)	0.11 μm + 0.0008 $\mu\text{m}/\text{mm}$
Radial runout deviation (μm in table height)	$\leq 0.11 \mu\text{m}$

* max. diameter of cylindrical gears

Accessories

- Probe arm changer (5 boxes)
- Active vibration damping system
- Revolving counter tip

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Conical and asymmetrical cylindrical gears
- Segment gears
- 3D surfaces, diameters, distances, cone angles
- Form and position measurements
- GDE
- Data export

For more information, please visit our website: www.mahr.com

MarGear GMX 400 ZLW. Universal Gear Measuring Center



Precision, fully automatic testing of gears and gear cutting tools up to an outer diameter of 400 mm.

The ideal solution for both universal and specialist gear manufacturing.

System solutions provide the ultimate in flexibility and availability within a modern gear wheel component production facility. MarGear GMX, a networked variant for use close to the production area, offers fast and efficient analysis of possible gear deviations.

This allows for a direct assessment of the deviation and an automatically generated machine error correction.

Gear and form measurements carried out on a single measuring instrument.

High precision 3D scanning sensor combined with directly driven C axis for accuracy and efficiency.

Control unit:
4 axis Power PC Control unit:

Extended Z measuring range for measuring long drive shafts up to 650 mm.

Technical Data

GMX 400 ZLW	
Measuring path (mm), X axis	200
Measuring path (mm), Y axis	200
Measuring path (mm), Z axis	650
Diameter max.* [mm]	400
Length	1560
Width	600
Height	2147
Mass [kg]	750
Max. workpiece weight [kg]	60 (80 on request)
Accuracy	Accuracy class I for gear measurements in accordance with VDI/VDE 2612/2613 Group 1 at 20°C ± 2°C
Axial runout deviation (µm+µm/mm measuring radius)	0.11 µm + 0.0008 µm/mm
Radial runout deviation (µm in table height)	≤ 0.11 µm

* max. diameter of cylindrical gears

Accessories

- Active vibration damping system
- Revolving counter tip
- Data matrix scanner
- Chuck 70 mm
- Chuck 200 mm
- Drive pin set

Applications

Fully automatic testing of:

- Straight and helical toothed cylindrical gears
- Spiral and hypoid bevel gears
- Crown gears
- Cylindrical worms
- Conical and asymmetrical cylindrical gears
- Segment gears
- Shaving cutters
- Hobs
- Cutting wheels
- Synchronous gears
- Beveloid gears
- 3D geometries, form and position measurements, diameters, distances
- Special gear cutting tools on request

For more information, please visit our website: www.mahr.com