

# **Ceramic Valve Measurement with MarForm MMQ 400**



# Ceramic valve measurement with MarForm MMQ 400

Industry	Environmental	Application	Big Ceramic Valve
Workpiece	Ceramic valve	Product	MarForm MMQ 400
Country	China	Usability	Internal
Department*	Laboratory	Contact Mahr	Shen Hua

\* Production, laboratory or others

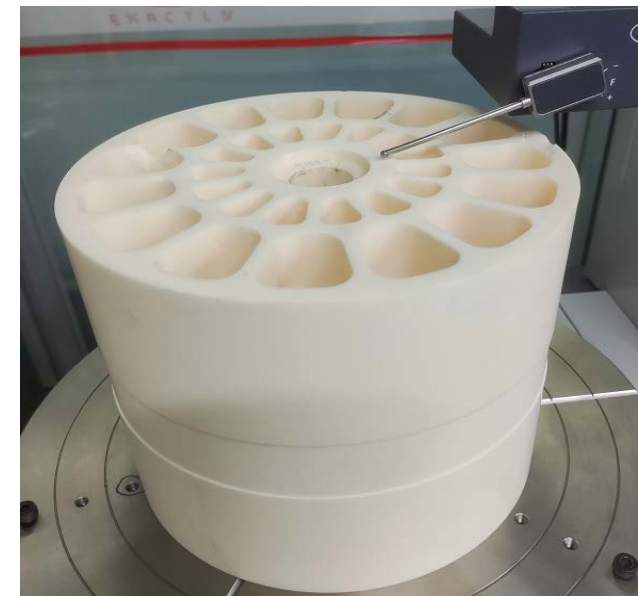
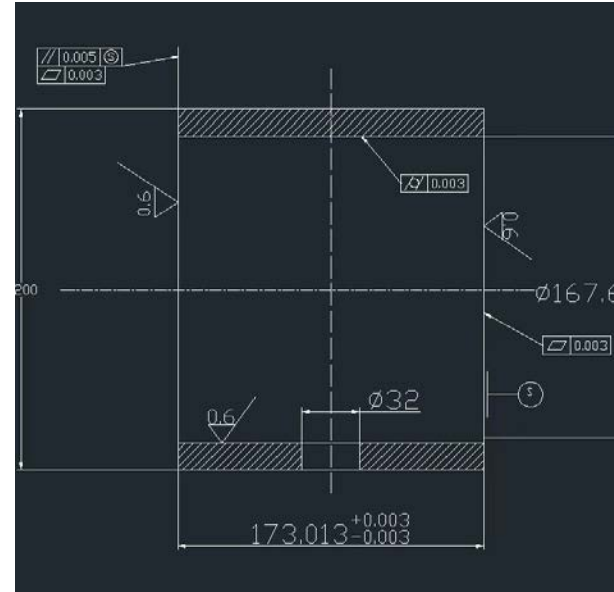
## 3 major reasons why Mahr was selected

1. Automatic T7W probe arm with two probe tips
2. High precision: Roundness deviation ( $0.02 + 0.0005 \mu\text{m} + \mu\text{m}/\text{mm}$  meas. height)
3. CNC measuring table with automatic adjustment



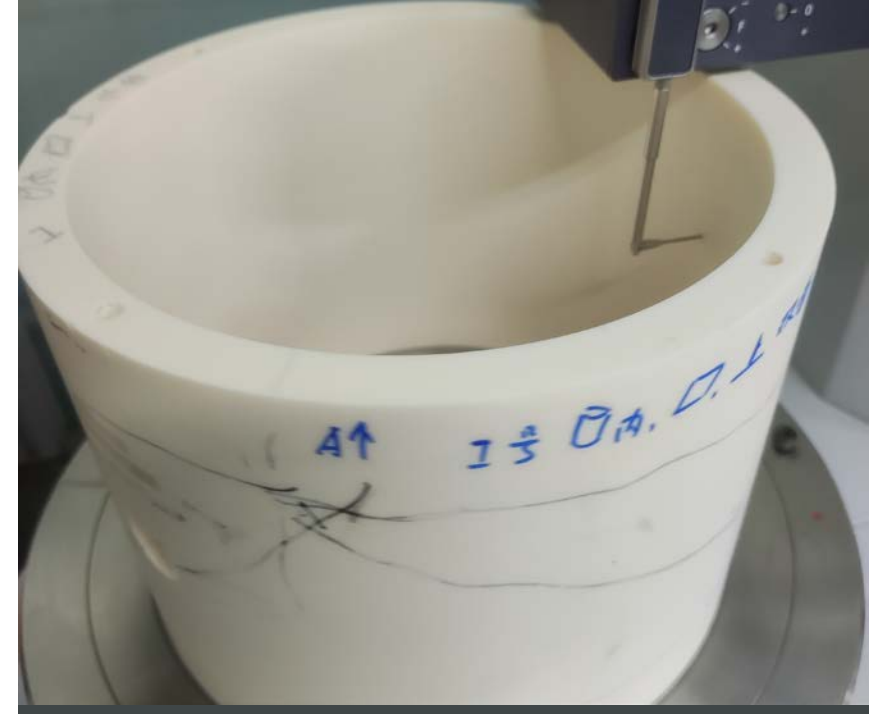
# Metrology Task / Challenge of the customer

- The customer's workpiece is a ceramic big valve for chemical industry.
- The workpiece surface is fragile and can't be clamped with fixtures.
- Customer has to use fully automatic measuring solution because the big amount and different type of workpieces.
- Measuring time is also a major issue by this customer.



## Solution from Mahr

- MMQ 400 -2 CNC (Z= 500, X = 280 )
- Standard MarWin **AdvancedForm Version14**
- T7W probe arm with 1 mm diameter probe tip
- Standard three-jaw chuck, dia. 100 mm for calibration

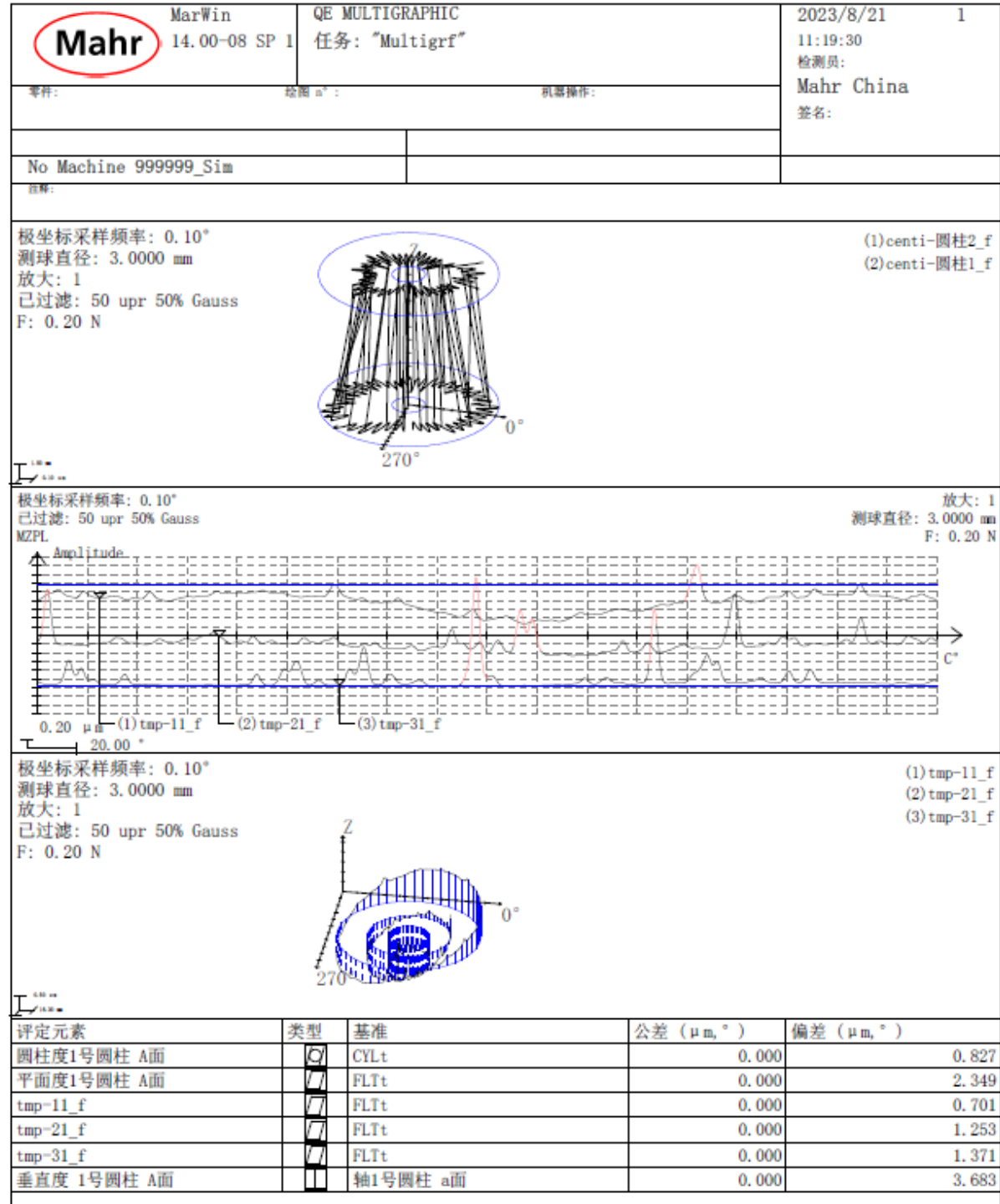


### Key features seen by the customer:

- High accuracy and automatic T7W probe system
- CNC measuring table to save the manpower for workpiece adjustment
- High measuring speed (5 mins for one workpiece) is good enough for customer.

# Accuracy, Cost Saving, Time Savings

- MarWin AdvancedForm with QE .  
=> automatic measuring program to save manpower .  
=> easy learning for operator (short training time) .
- Fully CNC measuring table with automatic adjustment and high position speed (up to 100 mm/s).  
=> saving adjustment and measuring time.
- T7W probe system, high resolution (0.8 nm) probe system with magnetic probe arm.  
=> easy to change probe arm; 360° measuring direction saved the position time.



# F.A.B MarForm Products

Mahr MMQ Series		
Features	Advantages	Benefits
Mechanical bearing No air supply necessary	Mobility (usable in shop floor)	Reduce workpiece transport time Compressed air cost saving (2000 Euro/ Year/ Unit)
Mechanical bearings High stiffness factor (0.014 um)	70 x better than air bearing	Save antivibration system cost (1200 Euro pre unit)
Mechanical bearings Long working life	Few maintenance	Save repair cost (650 Euro pre day)
Space for ergonomic layout (Machine body)	Small space required	Save cost of space (500 Euro pre year)
200 mm/s position speed (Z- Axis)	Short the position time for long workpiece	Save time ( 20 s for one positing )
360° motorized bi-directional T7W probe	Contact angle and direction , probe element selection automatically	Short the measuring time ( 30 s for one measurement )
190° manual probe T20W	Simple manual probe system for easy operation	save operator training cost (650 Euro per day)
MMQ 400 Z 900 mm with Tailstock	No centering needed	Save centering time (3 -5 Mins for part)
MarWin software platform	Ready for update of evaluation	Save investment of new machine (30 k - 50 k Euro for machine)



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