

GRIP MASTER® GRIP FORCE CHECKER

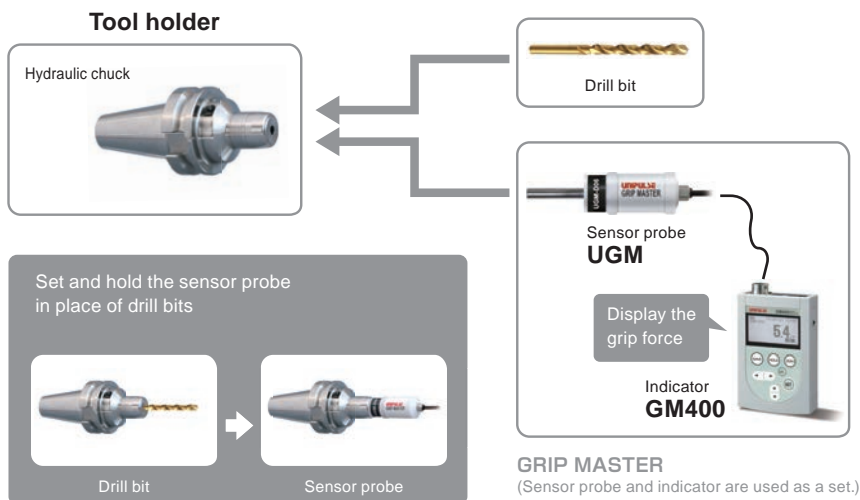


Quantifying of grip force in metalworking Daily management tool to support precision machining

GRIP MASTER is a tool to quantify grip force in metalworking, while measuring and managing a stabilized metalworking process. Grip force of drill bits or work can be properly managed, preventive maintenance of machine tools, improvement of machining quality are made possible. Huge line up of sensor probe from $\phi 4$ to $\phi 32$ are available, besides that various functions such as memory function ensures an easy management of grip force.

Safe and easy inspection with quantified grip force

Grip force of tool holders can be easily checked by simply inserting and gripping the sensor probe by a tool holder.



Did you know that tool holders also have lifespan?

It does not mean that the same grip force is applied always, even if tools are set in a usual way.

Gripping force of tool holders changes over time due to wear and over use. Especially, gripping force of a hydraulic chuck declines over time depending on usage.

Then, if not enough grip force is applied, it may lower machining accuracy and may cause damage on products, lowering productivity a lot.

By checking the grip force of tool holder, you can...

- 1) check if enough force is applied to hold bits
- 2) detect deterioration of tool holders in advance



Prevent damage and problems during metalworking process!

A variety of sensor probe product lines

$\phi 4$ to $\phi 32$ supported

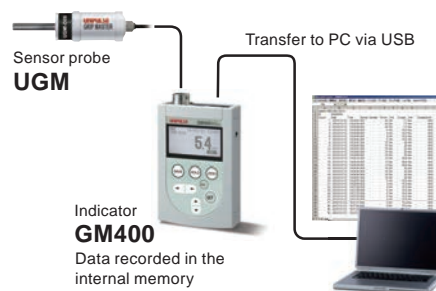


No calibration required

Information of the sensor is stored in the memory of sensor probe itself. There is no need to enter information for calibration each time when sensor probe is changed.

Easy data recording by pressing "SAVE" button

Measurement data will be recorded with date and time when "SAVE" button is pressed. Recorded data can be easily exported to PC via USB interface.



Carrying case

Carrying case included

Multi-storage carrying case (sold separately)

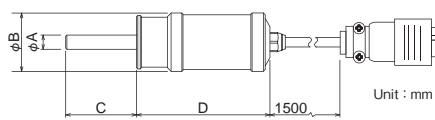


UGM : sensor probe

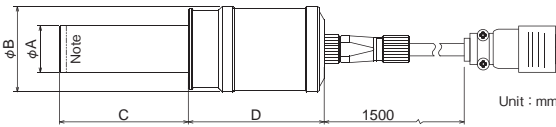
Specifications

Model	UGM-D04	UGM-D06	UGM-D08	UGM-D10	UGM-D12	UGM-D16	UGM-D20	UGM-D25	UGM-D32
Diameter	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm	32 mm
Rated capacity (R.C)	10 kN	20 kN	20 kN	40 kN	40 kN	60 kN	100 kN	150 kN	200 kN
Calculated holding torque at R.C	15.3 Nm	45.9 Nm	61.2 Nm	153.0 Nm	183.6 Nm	367.2 Nm	765 Nm	1430 Nm	2400 Nm
Maximum safe overload	120 % R.C.								
Safe temperature range	10 to 40°C								
Cable	φ3 shielded cable 1.5m connector included					φ5 shielded cable 1.5m connector included			
Material	Sensor probe: stainless Cover: polyacetal (it cannot be removed.)								
Weight (excluding cable)	Approx. 100g	Approx. 100g	Approx. 100g	Approx. 120g	Approx. 150g	Approx. 220g	Approx. 360g	Approx. 800g	Approx. 1000g

External dimensions (φ4, φ6, φ8, φ10, φ12, φ16)



External dimensions (φ20, φ25, φ32)



Note:
The tip (5mm from the end) of 25 and 32 probes is slightly tapered, and the diameter is smaller.

There is an immeasurable area of 5mm at the end of every sensor probe. Please do not apply load on this area.

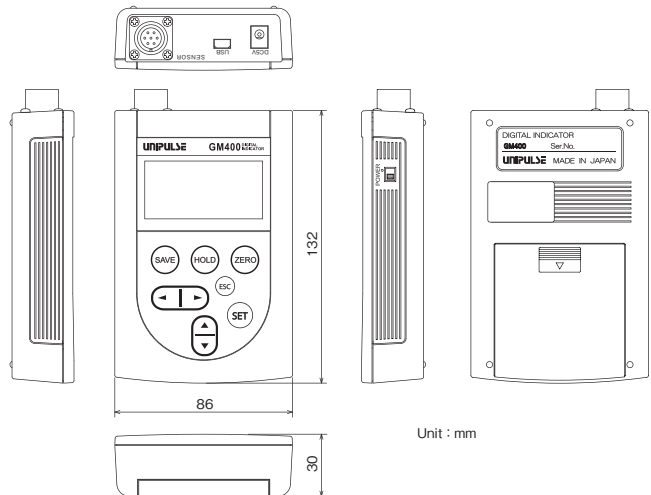
Model	φA	B	C	D
UGM-D04	φ4		27	56
UGM-D06	φ6		33	
UGM-D08	φ8	24.5	34	
UGM-D10	φ10		44	
UGM-D12	φ12		44	
UGM-D16	φ16	30.5	45	
UGM-D20	φ20	36.5	55	
UGM-D25	φ25	44.5	78.5	
UGM-D32	φ32	46.5	85.5	

GM400 : indicator

Specifications

Display	Display unit	128x64 dot black and white LCD	
	Recorder	Recording function	Record when [SAVE] is pressed
		Recording media	Internal memory
	Recording method	Texts in CSV format	
	Recorded data	ID, sensor number, date and time, indicated value/reading (torque and grip force), unit, and temperature	
Function	Memory for recorded data	12,000 data	
	Hold	Sample/ peak	
General specifications	Internal power supply	AA alkaline batteries or nickel metal hydride batteries (4 pcs.)	
	External power supply	AC adapter for 100 Vac (sold separately)	
	Max. continuous operating time	Approx. 30 hours (when backlight is off)	
	Operating conditions	Temperature: 10 to 40 °C Humidity: 80%RH or less (non-condensing)	
	External dimensions	86(W)x132(H)x30(D) mm (not including protrusions)	
	Weight	Approx. 290 g (including the 95g weight of battery)	

External dimensions



About calibration



By adding the load from three directions, the estimated load on entire surface can be calculated. Then, using the calibrated equipment (set of load cell and indicator), grip force can be calculated as well.

Please contact us if you need a calibration equipment.

Adapter

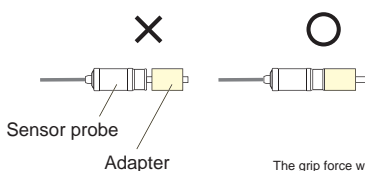
Recommended adapters

UGM diameter	Rated capacity	Length of sensor	Diameter of adapter							Length of adapter	
			φ6	φ8	φ10	φ12	φ16	φ20	φ25		φ32
φ4	10kN	27		○	◎	◎	○				22
φ6	20kN	33			○	◎	◎	○			28
φ8	20kN	34				○	◎	◎	○		29
φ10	40kN	44					○	◎	◎	○	39
φ12	40kN	44						○	◎	◎	39
φ16	60kN	45							○	◎	40
φ20	100kN	55								○	50
φ25	150kN	78.5									72
φ32	200kN	85.5									80



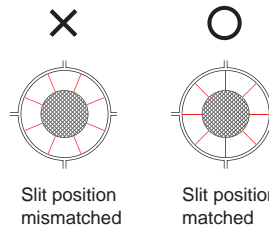
◎ : Recommended
○ : Please discuss with our sales representatives
* For blank spaces or unspecified diameters, please consult with our sales representatives.

Use adapter with caution



Please insert the sensor probe entirely into the adapter. (There is an immeasurable area at the end of sensor)

The grip force would be different when measurement is made without adapter and with adapter, however there's no difference in repeatability.



Please ensure that the slit position of chuck and adapter is matched before using.