

## Linear Gages

### LG200 SERIES 542 — Environment-Resistant and Slim Type

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- Slimmer body with approx. 1/5 cross section compared with **542-190 (LG100)**.
- High-accuracy gage head suitable for in-line and in-laboratory use.
- Assures the expected repeatability ( $2\sigma$ ) in the full measurement range and the narrow-range precision.
- Protection grade IP67G with sliding durability of 100 million times and more\*<sup>1</sup> and adoption of highly oil-resistant materials.
- \*<sup>1</sup> Actual value from in-house tests.
- It can be connected to a compact counter (**EJ** counter) suitable for in-line use or building into a device or a multifunctional counter (**EH** counter)\*<sup>2</sup> suitable for use in measurement rooms.
- \*<sup>2</sup> A conversion plug is required.



542-186/542-187/542-188

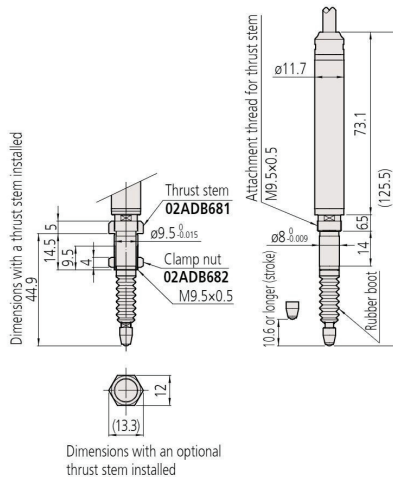
## SPECIFICATIONS

Order No.	542-186	542-187	542-188
Measuring range		10 mm	
Resolution	1 μm	0.5 μm	0.1 μm
Measuring accuracy (20 °C)	(1.5 + L/50) μm L=arbitrary measuring length (mm)		(0.8 + L/50) μm L=arbitrary measuring length (mm)
Small range accuracy	0.5 μm (Arbitrary 20 μm range)		
Repeatability: 2σ (20 °C)	0.3 μm		
Measuring force	Contact point downwards	0.8 N or less	
	Contact point horizontal	0.75 N or less	
	Contact point upwards	0.7 N or less	
Position detection method	Optical transmission-type Linear encoder		
Maximum response speed	1500 mm/s		400 mm/s
Output signal	90° phase difference, differential square wave (RS-422A equivalent)		
Minimum edge intervals	500 ns (2 MHz)	250 ns (4 MHz)	
Output signal pitch	4 μm	2 μm	0.4 μm
Mass	Approx. 210 g		
Contact point	ø3 mm carbide tipped (fixing screw: M2.5 (P=0.45) x5), standard contact point: <b>901312</b>		
Stem	ø8 mm		
Bearing	Linear ball type		
Output cable length	Approx. 2.5 m (directly from casing)		
Connector	Plug: HR10A-10P-10P (HIROSE), Compatible receptacle: HR10A-10R-10S (HIROSE), Compatible connector: HR10A-10J-10S (HIROSE)		
Operating temperature (humidity) ranges	0 to 50 °C (RH 20 to 80%, non-condensing)		
Storage temperature (humidity) ranges	-10 to 60 °C (RH 20 to 80%, non-condensing)		
Standard Accessories	Wrench for contact point: <b>538610</b>		

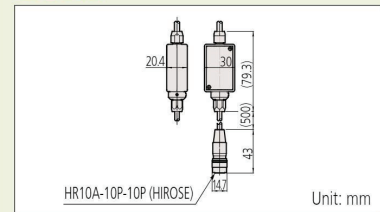
## DIMENSIONS

Unit: mm

542-186 / 542-187 / 542-188

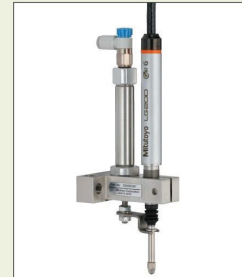


## Connector



## Optional Accessories

- Air lifter: **02ADE230**
- Note 1: Required air pressure: 0.2 to 0.4 MPa (With a 0.1 μm resolution type: 0.2 MPa)
- Note 2: Spindle extends when air is supplied.



- Rubber boot: **21HAA331** (spare)
- Thrust stem set: **02ADB680** (Thrust stem: **02ADB681**, Clamp nut: **02ADB682**) This is a combination of thrust stem and a clamp nut.
- Spanner wrench: **02ADB683**
- If required spanner wrench is required for tightening. If using multiple gages, a thrust stem set is required for each gage and one spanner wrench.

## Thrust stem set/ Spanner Wrench



- Extension cable
- 5 m: **21HZA197**
- 10 m: **21HZA198**
- 20 m: **21HZA199**
- Note 1: Connectable up to 3 pieces, 20 m at maximum.
- Conversion plug
- Connection to EH-101P/102P: **21HZA195**
- Connection to EH-102Z: **21HZA196**
- Note 2: Connectable to EH-102Z but the function of reference point detection is disabled.

## Custom order example

- Measuring force change
- Cable length change (less than 2 m)
- Connector change

Mitutoyo

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