



# Horizontal (Standard model)

**Metric** Wide variations of models conform to the required accuracy, range and surface of workpieces.



513-424-10

Contact point No. 137557



Graduation: 0.01mm  
Range: 0.5mm

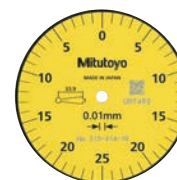
513-424-10E/513-424-10A/  
513-424-10T

- Standard
- Double scale spacing
- Carbide contact point (Anti-magnet)



513-414-10

Contact point No. 131324



Graduation: 0.01mm  
Range: 0.5mm

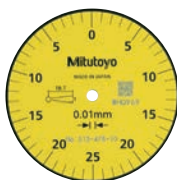
513-414-10E/513-414-10A/  
513-414-10T

- Long stylus
- Carbide contact point (Anti-magnet)
- Double scale spacing



513-478-10

Contact point No. 21CZA210



Graduation: 0.01mm  
Range: 0.5mm

513-478-10E

- Ruby contact point (non-magnet)
- Standard
- Double scale spacing



513-474-10

Contact point No. 21CZA201



Graduation: 0.01mm  
Range: 0.8mm

513-474-10E

- Ruby contact point (non-magnet)
- Standard



513-466-10

Contact point No. 137557



Graduation: 0.01mm  
Range: 0.5mm

513-466-10E

- Small face diameter
- Double scale spacing
- Compact
- Carbide contact point (Anti-magnet)



513-464-10

Contact point No. 103006



Graduation: 0.01mm  
Range: 0.8mm

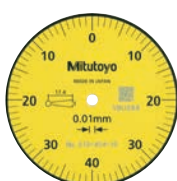
513-464-10E

- Small face diameter
- Compact
- Carbide contact point (Anti-magnet)



513-404-10

Contact point No. 103006



Graduation: 0.01mm  
Range: 0.8mm

513-404-10E/513-404-10A/  
513-404-10T/513-404-10C

- Standard
- Carbide contact point (Anti-magnet)



513-415-10

Contact point No. 136013



Graduation: 0.01mm  
Range: 1.0mm

513-415-10E/513-415-10A/  
513-415-10T

- Long stylus
- Carbide contact point (Anti-magnet)



# Horizontal (Standard model)

## SPECIFICATIONS

### Metric

| Order No.          |                    |                    | Graduation | Range    | Dial reading | Indication accuracy |                    |            |               | Mass         | Measuring force | High accuracy | With revolution counter | Long stylus | Standard | Double scale spacing | Compact | Carbide contact point (Anti-magnet) | Ruby contact point (non-magnet) |        |
|--------------------|--------------------|--------------------|------------|----------|--------------|---------------------|--------------------|------------|---------------|--------------|-----------------|---------------|-------------------------|-------------|----------|----------------------|---------|-------------------------------------|---------------------------------|--------|
| Basic set          | Plus set           | Full set           |            |          |              | Measuring range     | 10 scale divisions | Hysteresis | Repeatability |              |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-424-10E</b> | <b>513-424-10A</b> | <b>513-424-10T</b> | 0.01 mm    | 0.5 mm   | 0-25-0       | 6 μm                | 5 μm               | 4 μm       | 3 μm          | 45g          | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-478-10E</b> | -                  | -                  |            |          |              | 6 μm                |                    | 4 μm       |               |              |                 |               |                         |             |          |                      |         |                                     |                                 | 41g    |
| <b>513-466-10E</b> | -                  | -                  |            | 0.8 mm   | 0-40-0       | 9 μm                | 5 μm               | 5 μm       | 4 μm          | 45g          | 0.2N or less    |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-404-10E</b> | <b>513-404-10A</b> | <b>513-404-10T</b> |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-414-10E</b> | <b>513-414-10A</b> | <b>513-414-10T</b> |            | 1.0 mm   | 0-40-0       | 9 μm                | 5 μm               | 5 μm       | 4 μm          | 45g          | 0.2N or less    |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-474-10E</b> | -                  | -                  |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-464-10E</b> | -                  | -                  |            | 1.5 mm   | 0-50-0       | 10 μm               | 2 μm               | 2 μm       | 3 μm          | 45g          | 0.4N or less    |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-415-10E</b> | <b>513-415-10A</b> | <b>513-415-10T</b> |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-477-10E</b> | -                  | -                  |            | 0.002 mm | 0.2 mm       | 0-100-0             | 4 μm               | 2 μm       | 4 μm          | 45g          | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-426-10E</b> | <b>513-426-10A</b> | -                  |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>543-405-10E</b> | <b>543-405-10A</b> | <b>543-405-10T</b> | 0.001 mm   | 0.14 mm  | 0-70-0       | 7 μm                | 2 μm               | 4 μm       | 41g           | 0.3N or less |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-471-10E</b> | -                  | -                  | 0.002 mm   | 0.6 mm   | 0-100-0      |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 | 4 μm   |
| <b>513-475-10E</b> | -                  | -                  | 0.001 mm   | 0.14 mm  | 0-70-0       | 4 μm                | 2 μm               | 3 μm       | 45g           | 0.3N or less |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-425-10E</b> | <b>513-425-10A</b> | -                  |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 | 0.2 mm |
| <b>513-465-10E</b> | -                  | -                  | 0.001 mm   | 0.14 mm  | 0-70-0       | 4 μm                | 2 μm               | 3 μm       | 41g           | 0.3N or less |                 |               |                         |             |          |                      |         |                                     |                                 |        |
| <b>513-401-10E</b> | -                  | -                  |            |          |              |                     |                    |            |               |              |                 |               |                         |             |          |                      |         |                                     |                                 | 0.2 mm |

### Inch

| Order No.          |          |                    | Graduation   | Range    | Dial reading | Indication accuracy |            |               | Mass | Measuring force | High accuracy | With revolution counter | Long stylus | Standard | Double scale spacing | Compact | Carbide contact point (Anti-magnet) | Ruby contact point (non-magnet) |              |  |  |  |  |  |  |
|--------------------|----------|--------------------|--------------|----------|--------------|---------------------|------------|---------------|------|-----------------|---------------|-------------------------|-------------|----------|----------------------|---------|-------------------------------------|---------------------------------|--------------|--|--|--|--|--|--|
| Basic set          | Plus set | Full set           |              |          |              | One rev.            | Hysteresis | Repeatability |      |                 |               |                         |             |          |                      |         |                                     |                                 |              |  |  |  |  |  |  |
| <b>513-402-10E</b> | -        | <b>513-402-10T</b> | 0.0005 in    | 0.03 in  | 0-15-0       | ±0.0005 in          | 0.0002 in  | 0.0002 in     | 45g  | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |              |  |  |  |  |  |  |
| <b>513-472-10E</b> | -        | -                  |              |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 | 0.2N or less |  |  |  |  |  |  |
| <b>513-412-10E</b> | -        | <b>513-412-10T</b> |              |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 | 0.2N or less |  |  |  |  |  |  |
| <b>513-479-10E</b> | -        | -                  |              |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 | 0.2N or less |  |  |  |  |  |  |
| <b>513-462-10E</b> | -        | -                  | 0.0001 in    | 0.008 in | 0-4-0        | ±0.0001 in          | 0.0001 in  | 0.00004 in    | 45g  | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |              |  |  |  |  |  |  |
| <b>513-403-10E</b> | -        | <b>513-403-10T</b> |              |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 | 0.3N or less |  |  |  |  |  |  |
| <b>513-473-10E</b> | -        | -                  |              |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 | 0.3N or less |  |  |  |  |  |  |
| <b>513-463-10E</b> | -        | -                  | 0.3N or less |          |              |                     |            |               |      |                 |               |                         |             |          |                      |         |                                     |                                 |              |  |  |  |  |  |  |

### Metric/Inch

| Order No.          |          |                    | Graduation          | Range             | Dial reading    | Indication accuracy |                    |            |               | Mass | Measuring force | High accuracy | With revolution counter | Long stylus | Standard | Double scale spacing | Compact | Carbide contact point (Anti-magnet) | Ruby contact point (non-magnet) |
|--------------------|----------|--------------------|---------------------|-------------------|-----------------|---------------------|--------------------|------------|---------------|------|-----------------|---------------|-------------------------|-------------|----------|----------------------|---------|-------------------------------------|---------------------------------|
| Basic set          | Plus set | Full set           |                     |                   |                 | Measuring range     | 10 scale divisions | Hysteresis | Repeatability |      |                 |               |                         |             |          |                      |         |                                     |                                 |
| <b>513-409-10E</b> | -        | <b>513-409-10T</b> | 0.002mm / 0.0001 in | 0.2mm / 0.0076 in | 0-10-0 / 0-38-0 | 4μm                 | 2μm                | 3μm        | 1μm           | 45g  | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |

### Inch/Metric

| Order No.          |          |                    | Graduation         | Range           | Dial reading    | Indication accuracy |            |               | Mass | Measuring force | High accuracy | With revolution counter | Long stylus | Standard | Double scale spacing | Compact | Carbide contact point (Anti-magnet) | Ruby contact point (non-magnet) |
|--------------------|----------|--------------------|--------------------|-----------------|-----------------|---------------------|------------|---------------|------|-----------------|---------------|-------------------------|-------------|----------|----------------------|---------|-------------------------------------|---------------------------------|
| Basic set          | Plus set | Full set           |                    |                 |                 | Measuring range     | Hysteresis | Repeatability |      |                 |               |                         |             |          |                      |         |                                     |                                 |
| <b>513-406-10E</b> | -        | <b>513-406-10T</b> | 0.0005 in / 0.01mm | 0.03 in / 0.7mm | 0-15-0 / 0-35-0 | ±0.0005 in          | 0.0002 in  | 0.0002 in     | 45g  | 0.3N or less    |               |                         |             |          |                      |         |                                     |                                 |

\* Stem with ø6 dovetail groove is not included in the mass.

\* Be sure to perform calibration with reference gage, etc. after changing the contact point. The inside parts may be damaged when the contact point is changed due to the breakage. In the case the of the significant deterioration during the operation, repair is required.