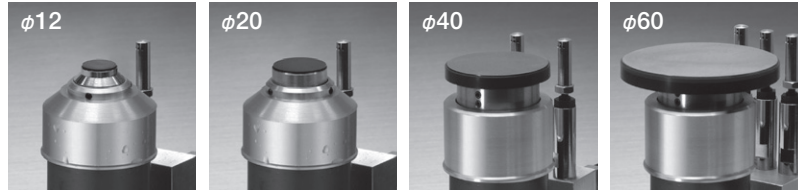




■ Tool setters for CNC machining centers are used for precise blade positioning, and detection of the wear and breakage.



### Standard specifications

unit:mm

Product name	<b>T24E</b>				
Contact diameter	$\phi 12$	$\phi 20$	$\phi 20$	$\phi 40$	$\phi 60$
Removable contact	Stationary type		Replaceable type		
Surface finishing	Grinding 4s		Lapping treatment 0.4s (TiCN hardening possible)		
Contact material	Tungsten carbide				
Contact structure	NC (Normally closed)				
Output mode	NC (Normally closed)				
Pretravel	Approx. 0.5				
Stroke	12				
Repeatability	0.001 (Recommended operating speed of 50 - 200mm/min)				
Contact life time	3 million				
Protective structure	IP67				
Contact force	2.5N (Installation position : Vertical)				
Contact rating	DC5V - DC24V 10mA (Max20mA) resistance load				
Cable	Oil resistant $\phi 5.5 / 6$ cores Tensile strength 30N, Minimum bending R7				
LED lamp	Default : LED ON / Operating : LED OFF				

### Precautions

· Although a protective cover is provided with the sensor, an extra cover is needed separately to prevent high pressure coolant or heavy cuttings from entering inside and accumulating in the body.

· Rubber materials used in products are applicable to water-soluble coolants and alkaline liquids. (Refer to P5-4)

- Precautions statement for Tool Setters ..... P2-3
- How to replace Air Blow Pipe ..... P2-4
- Precautions for sensor connecting ..... P5-1
- Cable options ..... P5-2
- Technical guide ..... P5-3


### Over travel signal (built-in microswitch)

Output mode	NC (Normally closed) "About 6mm from skip signal"
Contact rating	DC24V 100mA resistance load

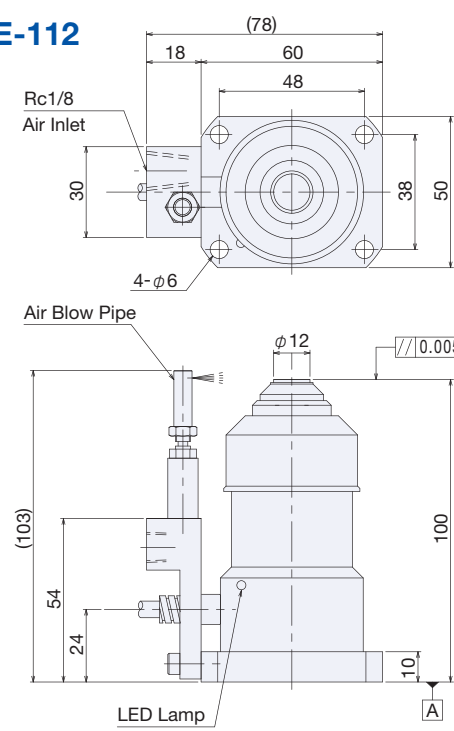
# φ12 Stationary Contact Type

## Tool Setter for CNC Vertical Machining Centers Cylindrical Type

### Outer dimensions



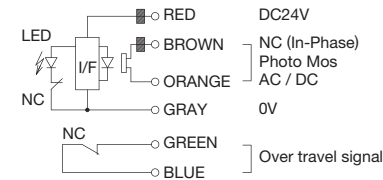
**T24E-112**



Technical drawing details:  
 Top view: Total width 78, main body width 60, mounting holes 4-φ6, Rc1/8 Air Inlet, height 50.  
 Side view: Total height 103, main body height 100, LED Lamp height 24, Air Blow Pipe height 54, diameter φ12, tolerance 0.005/12 A.

● **Circuit diagram**

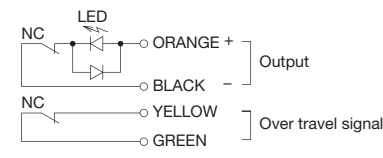
**Built-in I/F unit (Standard)**



LED: RED (DC24V), BROWN (NC (In-Phase) Photo Mos AC / DC), ORANGE (0V), GRAY (0V), GREEN (Over travel signal), BLUE (Over travel signal)

Power supply voltage : DC24V  
 Power consumption : 10mA  
 Output capacity : DC60V 100mA (Resistance load)  
 AC60V 100mA (Peak value)  
 500mW (Max)

**I/F Unit Not Required (Optional)**



LED: ORANGE + (Output), BLACK - (Output), YELLOW (Over travel signal), GREEN (Over travel signal)

Cable : φ5 / 4cores

### Specification sheet

Fax +81 42 528 1442  
 E-mail : [touchsensor@metrol.co.jp](mailto:touchsensor@metrol.co.jp)

▼Please send us your inquiry by fax/e-mail after copying this page, and filling in necessary information. Sample :

#### Optional specifications (Bold:Standard)

Date:(mm,dd,yy) \_\_\_\_\_

Contact structure	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
Output mode	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
I/F unit	<input type="checkbox"/> <b>Built-in</b>	<input type="checkbox"/> Not required (Contact structure = Output mode)
Protective boot cover	<input type="checkbox"/> <b>Required (with cover)</b>	<input type="checkbox"/> Not required
Air blow pipe	<input type="checkbox"/> <b>Air inlet : Rc1/8</b>	<input type="checkbox"/> Air inlet : Rc1/4 <input type="checkbox"/> Not required


#### Cable options (1m/unit)

Length / Protective cable	_____ m / <input type="checkbox"/> Unnecessary	<input type="checkbox"/> Protective tube _____ m (Upper limit :15m)
Connector (Refer to P5-2)	<input type="checkbox"/> Not required	<input type="checkbox"/> Direct output connector <input type="checkbox"/> Connector
Machine side cable option from connector (if desired)	Length _____ m	Protective cable <input type="checkbox"/> Not required <input type="checkbox"/> Protective tube _____ m (Upper limit :15m)

Company :
Dept. / Title :
Customer name :
Address :
Tel : _____ Fax : _____
E-mail :
Other (if any) :


### Ordering and Inquiries

**1.Customer**




Fill out the specification sheet and send to Metrol.

**2.Metrol**




Send the drawing(s) of specific model based on spec sheet received.

**3.Customer**



Select/confirm the specific model by the customer.

**4.Customer /Metrol**




Metrol sends the quote, and the customer places the order for the same.

E-mail to : [touchsensor@metrol.co.jp](mailto:touchsensor@metrol.co.jp)  
 Download PDF sheet : <http://toolsensor.com/builder.html>

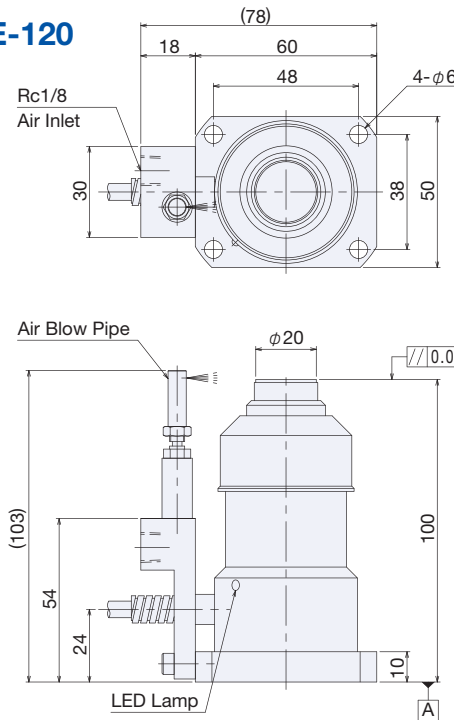
# φ20 Stationary Contact Type

## Tool Setter for CNC Vertical Machining Centers Cylindrical Type

### Outer dimensions

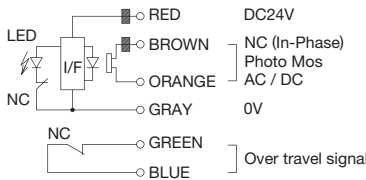


### T24E-120



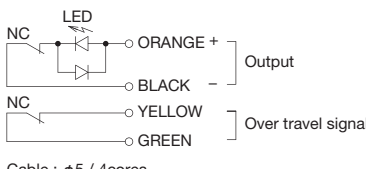
**● Circuit diagram**

#### Built-in I/F unit (Standard)



Power supply voltage : DC24V  
 Power consumption : 10mA  
 Output capacity : DC60V 100mA (Resistance load)  
 AC60V 100mA (Peak value)  
 500mW (Max)

#### I/F Unit Not Required (Optional)



Cable : φ5 / 4cores

### Specification sheet

Fax +81 42 528 1442  
 E-mail : touchsensor@metrol.co.jp

▼Please send us your inquiry by fax/e-mail after copying this page, and filling in necessary information. Sample :

#### Optional specifications (Bold:Standard)

Date:(mm,dd,yy) \_\_\_\_\_

Contact structure	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
Output mode	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
I/F unit	<input type="checkbox"/> <b>Built-in</b>	<input type="checkbox"/> Not required (Contact structure = Output mode)
Protective boot cover	<input type="checkbox"/> <b>Required (with cover)</b>	<input type="checkbox"/> Not required
Air blow pipe	<input type="checkbox"/> <b>Air inlet : Rc1/8</b>	<input type="checkbox"/> Air inlet : Rc1/4 <input type="checkbox"/> Not required

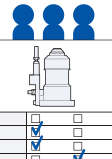
#### Cable options (1m/unit)

Length / Protective cable	_____ m / <input type="checkbox"/> Not required	<input type="checkbox"/> Protective tube _____ m (Upper limit :15m)
Connector (Refer to P5-2)	<input type="checkbox"/> Not required	<input type="checkbox"/> Direct output connector <input type="checkbox"/> Connector
Machine side cable option from connector (if desired)	Length _____ m	Protective cable <input type="checkbox"/> Not required <input type="checkbox"/> Protective tube _____ m (Upper limit :15m)

Company :
Dept. / Title :
Customer name :
Address :
Tel : _____ Fax : _____
E-mail :
Other (if any) :

### Ordering and Inquiries


**1.Customer**



Fax or E-mail

Fill out the specification sheet and send to Metrol.


**2.Metrol**



Fax or E-mail

Send the drawing(s) of specific model based on spec sheet received.


**3.Customer**



Fax or E-mail

Select/confirm the specific model by the customer.

**4.Customer /Metrol**



Fax or E-mail


Metrol sends the quote, and the customer places the order for the same.

E-mail to : [touchsensor@metrol.co.jp](mailto:touchsensor@metrol.co.jp)  
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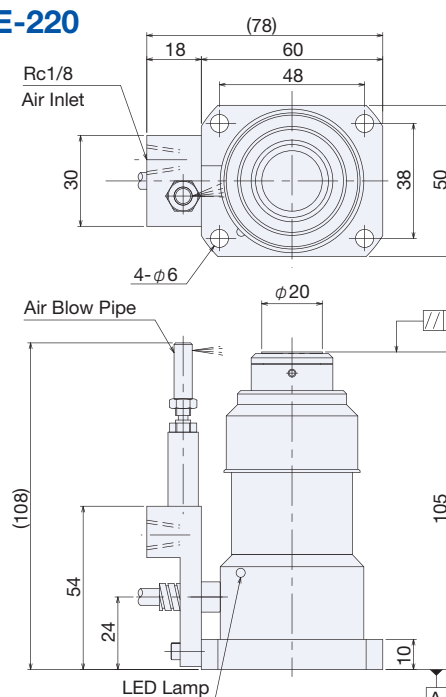
# φ20 Replaceable Contact Type

## Tool Setter for CNC Vertical Machining Centers Cylindrical Type

### Outer dimensions



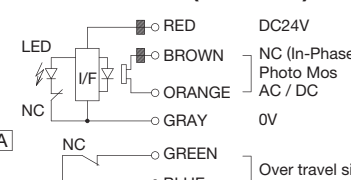
### T24E-220



**Dimensions:**  
 Total width: 78mm  
 Contact diameter: φ20mm  
 Total height: 105mm  
 Air inlet: Rc1/8  
 Air blow pipe: φ5mm  
 LED lamp: 10mm diameter

#### ● Circuit diagram

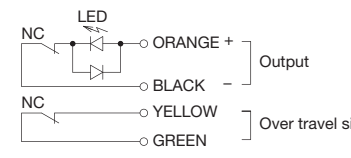
##### Built-in I/F unit (Standard)



LED: RED (DC24V), BROWN (NC (In-Phase) Photo Mos), ORANGE (AC / DC), GRAY (0V), GREEN (Over travel signal), BLUE (Over travel signal)

Power supply voltage : DC24V  
 Power consumption : 10mA  
 Output capacity : DC60V 100mA (Resistance load), AC60V 100mA (Peak value), 500mW (Max)

##### I/F Unit Not Required (Option)



Output: ORANGE (+), BLACK (-)  
 Over travel signal: YELLOW, GREEN

Cable : φ5 / 4cores

### Specification sheet

Fax +81 42 528 1442  
 E-mail : touchsensor@metrol.co.jp

▼Please send us your inquiry by fax/e-mail after copying this page, and filling in necessary information. Sample :

Optional specifications (Bold:Standard)

Date:(mm,dd,yy) \_\_\_\_\_

Contact structure	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
Output mode	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
I/F unit	<input type="checkbox"/> <b>Built-in</b>	<input type="checkbox"/> Not required (Contact structure = Output mode)
Contact surface finishing	<input type="checkbox"/> <b>Lapping treatment 0.4s</b>	<input type="checkbox"/> TiCN hardening
Protective boots cover	<input type="checkbox"/> <b>Required (with cover)</b>	<input type="checkbox"/> Not required
Air blow pipe	<input type="checkbox"/> <b>Air inlet : Rc1/8</b>	<input type="checkbox"/> Air inlet : Rc1/4 <input type="checkbox"/> Not required

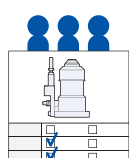
Cable options (1m/unit)

Length / Protective cable	_____ m / <input type="checkbox"/> Not required	<input type="checkbox"/> Protective tube _____ m (Upper limit :15m)
Connector (Refer to P5-2)	<input type="checkbox"/> Not required	<input type="checkbox"/> Direct output connector <input type="checkbox"/> Connector
Machine side cable option from connector (if desired)	Length _____ m	Protective cable <input type="checkbox"/> Not required <input type="checkbox"/> Protective tube _____ m (Upper limit :15m)

Company :
Dept. / Title :
Customer name :
Address :
Tel : _____ Fax : _____
E-mail :
Other (if any) :


### Ordering and Inquiries

**1.Customer**



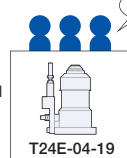
Fill out the specification sheet and send to Metrol.

**2.Metrol**




Send the drawing(s) of specific model based on spec sheet received.

**3.Customer**



Select/confirm the specific model by the customer.

**4.Customer /Metrol**




Metrol sends the quote, and the customer places the order for the same.

E-mail to : touchsensor@metrol.co.jp  
 Download PDF sheet : <http://toolsensor.com/builder.html>

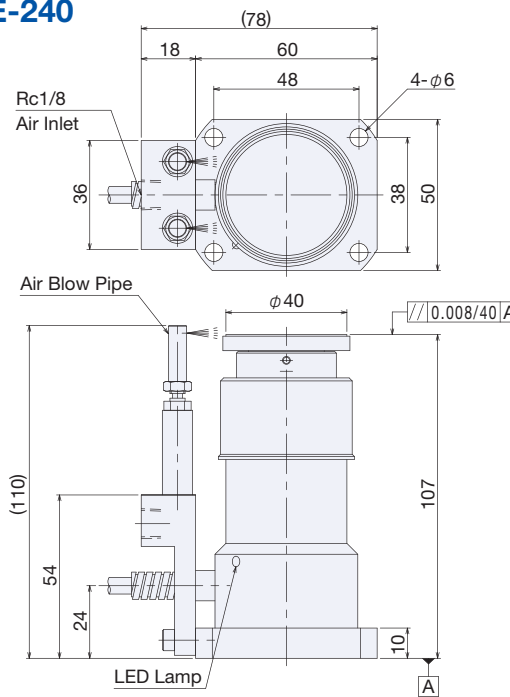
# φ40 Replaceable Contact Type

## Tool Setter for CNC Vertical Machining Centers Cylindrical Type

### Outer dimensions

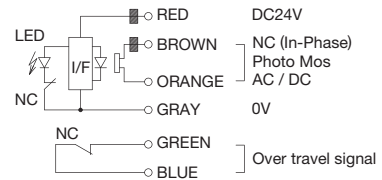


### T24E-240



#### ● Circuit diagram

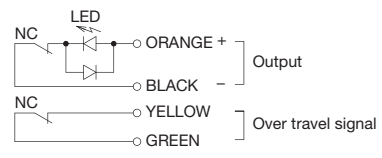
##### Built-in I/F unit (Standard)



LED ○ RED DC24V  
 I/F ○ BROWN NC (In-Phase)  
 Photo Mos  
 ○ ORANGE AC / DC  
 NC ○ GRAY 0V  
 ○ GREEN Over travel signal  
 ○ BLUE Over travel signal

Power supply voltage : DC24V  
 Power consumption : 10mA  
 Output capacity : DC60V 100mA (Resistance load)  
 AC60V 100mA (Peak value)  
 500mW (Max)

##### I/F Unit Not Required (Optional)



LED ○ ORANGE + Output  
 I/F ○ BLACK - Output  
 NC ○ YELLOW Over travel signal  
 ○ GREEN Over travel signal

Cable : φ5 / 4cores

### Specification sheet

Fax +81 42 528 1442  
E-mail : touchsensor@metrol.co.jp

▼ Please send us your inquiry by fax/e-mail after copying this page, and filling in necessary information. Sample :

Optional specifications (Bold:Standard)

Date:(mm,dd,yy) \_\_\_\_\_

Contact structure	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
Output mode	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
I/F unit	<input type="checkbox"/> <b>Built-in</b>	<input type="checkbox"/> Not required (Contact structure = Output mode)
Contact surface finishing	<input type="checkbox"/> <b>Lapping treatment 0.4s</b>	<input type="checkbox"/> TiCN hardening
Protective boots cover	<input type="checkbox"/> <b>Required (with cover)</b>	<input type="checkbox"/> Not required
Air blow pipe	<input type="checkbox"/> <b>Air inlet : Rc1/8</b>	<input type="checkbox"/> Air inlet : Rc1/4 <input type="checkbox"/> Not required


Cable options (1m/unit)

Length / Protective cable	_____ m / <input type="checkbox"/> Not required	<input type="checkbox"/> Protective tube _____ m (Upper limit :15m)
Connector (Refer to P5-2)	<input type="checkbox"/> Not required	<input type="checkbox"/> Direct output connector <input type="checkbox"/> Connector
Machine side cable option from connector (if desired)	Length _____ m	Protective cable <input type="checkbox"/> Not required <input type="checkbox"/> Protective tube _____ m (Upper limit :15m)

Company :
Dept. / Title :
Customer name :
Address :
Tel : _____ Fax : _____
E-mail :
Other (if any) :

### Ordering and Inquiries


**1.Customer**



Fax or E-mail

Fill out the specification sheet and send to Metrol.


**2.Metrol**



Fax or E-mail

Send the drawing(s) of specific model based on spec sheet received.


**3.Customer**



Fax or E-mail

Select/confirm the specific model by the customer.

**4.Customer /Metrol**



Fax or E-mail


Metrol sends the quote, and the customer places the order for the same.

E-mail to : [touchsensor@metrol.co.jp](mailto:touchsensor@metrol.co.jp)  
 Download PDF sheet : <http://toolsensor.com/builder.html>

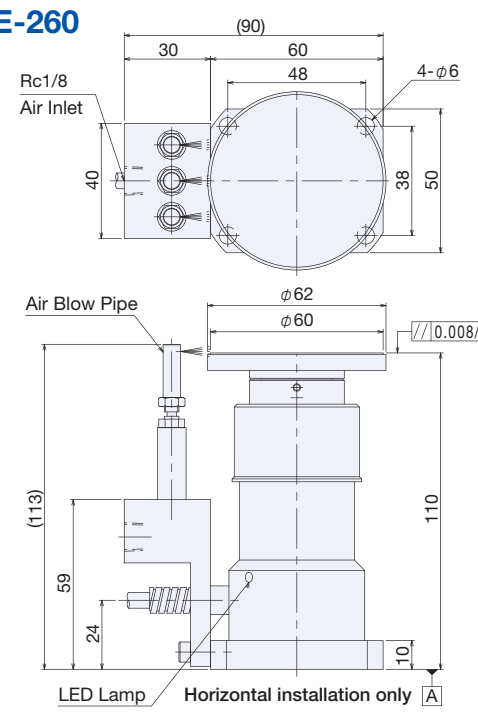
# φ60 Replaceable Contact Type

## Tool Setter for CNC Vertical Machining Centers Cylindrical Type

### Outer dimensions



**T24E-260**



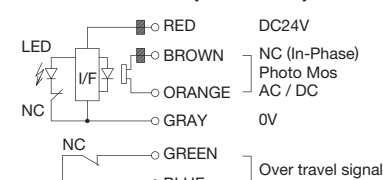
Top view dimensions: 90 (total width), 60 (width to center), 48 (width to contact), 30 (width to air inlet), 4-φ6 (four holes), 40 (height to air inlet), 38 (height to contact), 50 (total height).

Side view dimensions: 110 (total height), 59 (height to air inlet), 24 (height to LED lamp), 10 (height to base), φ62 (top diameter), φ60 (main diameter), 0.008/60 A (tolerance).

Labels: Rc1/8 Air Inlet, Air Blow Pipe, LED Lamp, Horizontal installation only.

**● Circuit diagram**

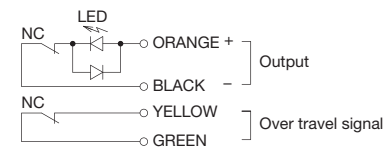
**Built-in I/F unit (Standard)**



LED: RED (DC24V), BROWN (NC (In-Phase) Photo Mos AC / DC), ORANGE (0V), GRAY (0V), GREEN (Over travel signal), BLUE (Over travel signal).

Power supply voltage : DC24V  
 Power consumption : 10mA  
 Output capacity : DC60V 100mA (Resistance load)  
 AC60V 100mA (Peak value)  
 500mW (Max)

**I/F Unit Not Required (Optional)**



LED: ORANGE + (Output), BLACK - (Output), YELLOW (Over travel signal), GREEN (Over travel signal).

Cable : φ5 / 4cores

### Specification sheet

Fax +81 42 528 1442  
 E-mail : touchsensor@metrol.co.jp

▼Please send us your inquiry by fax/e-mail after copying this page, and filling in necessary information. Sample :

Optional specifications (Bold:Standard)

Date:(mm,dd,y y) \_\_\_\_\_

Contact structure	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
Output mode	<input type="checkbox"/> <b>NC : Normally closed</b>	<input type="checkbox"/> NO : Normally open
I/F unit	<input type="checkbox"/> <b>Built-in</b>	<input type="checkbox"/> Not required (Contact structure = Output mode)
Contact surface finishing	<input type="checkbox"/> <b>Lapping treatment 0.4s</b>	<input type="checkbox"/> TiCN hardening
Protective boots cover	<input type="checkbox"/> <b>Required (with cover)</b>	<input type="checkbox"/> Not required
Air blow pipe	<input type="checkbox"/> <b>Air inlet : Rc1/8</b>	<input type="checkbox"/> Air inlet : Rc1/4 <input type="checkbox"/> Not required

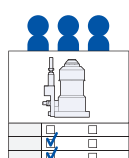
Cable options (1m/unit)

Length / Protective cable	_____ m / <input type="checkbox"/> Not required	<input type="checkbox"/> Protective tube _____ m (Upper limit :15m)
Connector (Refer to P5-2)	<input type="checkbox"/> Not required	<input type="checkbox"/> Direct output connector <input type="checkbox"/> Connector
Machine side cable option from connector (if desired)	Length _____ m	Protective cable <input type="checkbox"/> Not required <input type="checkbox"/> Protective tube _____ m (Upper limit :15m)

Company :
Dept. / Title :
Customer name :
Address :
Tel : _____ Fax : _____
E-mail :
Other (if any) :


### Ordering and Inquiries

**1.Customer**



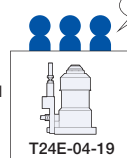
Fill out the specification sheet and send to Metrol.

**2.Metrol**



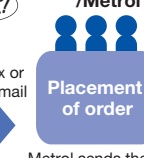
Send the drawing(s) of specific model based on spec sheet received.

**3.Customer**



Select/confirm the specific model by the customer.

**4.Customer /Metrol**



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