

# Collaborative Robots

## TM5

### Collaborative robot for assembly, packaging, inspection and logistics

- Built-in vision-based robot control enables visual servoing, inspection, and measurement.
- TMvision and landmark allows truly flexible and fast changeover.
- Easy-to-use graphical programming environment for quick startup.
- Plug & Play ecosystem makes it versatile for many manufacturing needs.
- Designed to promote a safer workplace with harmony between humans and machines.
- Integration with mobile robots provides fully autonomous logistics handling for a conveyor-less system.



TM5-700

TM5-900

### Specification

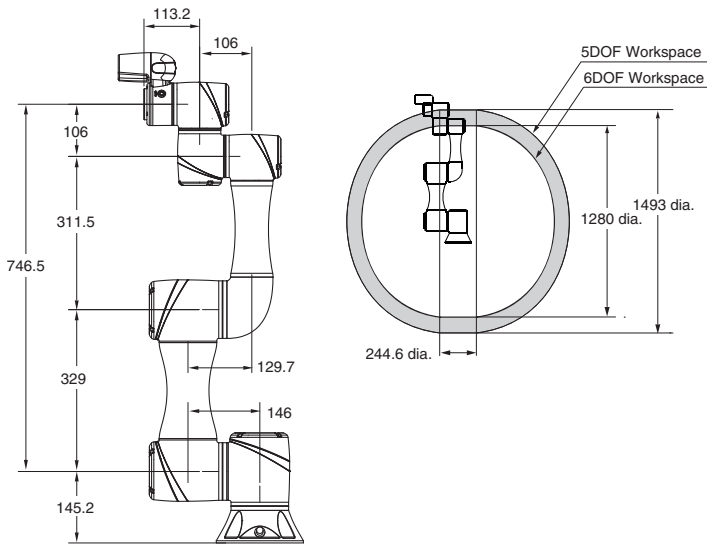
Product Name Model		TM5					
		TM5-700 RT6-0007000	TM5M-700 RT6-0107000	TM5M-700 SEMI RT6-0107010	TM5-900 RT6-0009000	TM5M-900 RT6-0109000	TM5M-900 SEMI RT6-0109010
Weight (kg)		22.1			22.6		
Max Payload (kg)		6			4		
Reach (mm)		700			900		
Typical Speed (m/s)		1.1			1.4		
Joint Range	Joint 1	±270°					
	Joint 2, 4, 5	±180°					
	Joint 3	±155°					
	Joint 6	±270°					
Joint Speeds	Joint 1, 2, 3	180°/s					
	Joint 4, 5, 6	225°/s					
Repeatability (mm)		±0.05					
IP		IP54 (robot arm), IP32 (control box)					
Operating Temperature (°C)		0 to 50					
Power Supply		100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC	100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC
I/O Ports	Control Box	Digital In: 16 Digital Out: 16 Analog In: 2 Analog Out: 1					
	Tool	Digital In: 4 Digital Out: 4 Analog In: 1 Analog Out: 0					
I/O Interface		3 X COM, 1 X HDMI, 3 X LAN, 4 X USB2.0, 2 X USB3.0					
Communication		RS232, Ethernet (master), Modbus TCP/RTU (master & slave)					
Integrated Camera		5M pixels, color (AOI tasks: 5M/1.2M; others:1.2M)					
I/O Power Supply		24V 1.5A (control box and tool)					
Programming Environment		TMflow, flowchart based					
SEMI S2 Certified		No	No	Yes	No	No	Yes

\*Manufactured by Techman Robot Inc.

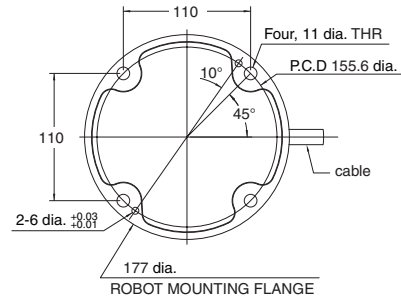
# Dimensions

(Unit: mm)

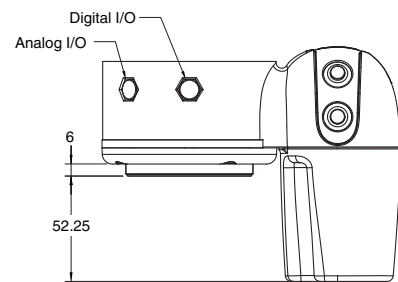
## TM5-700



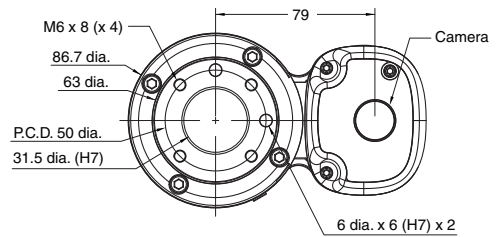
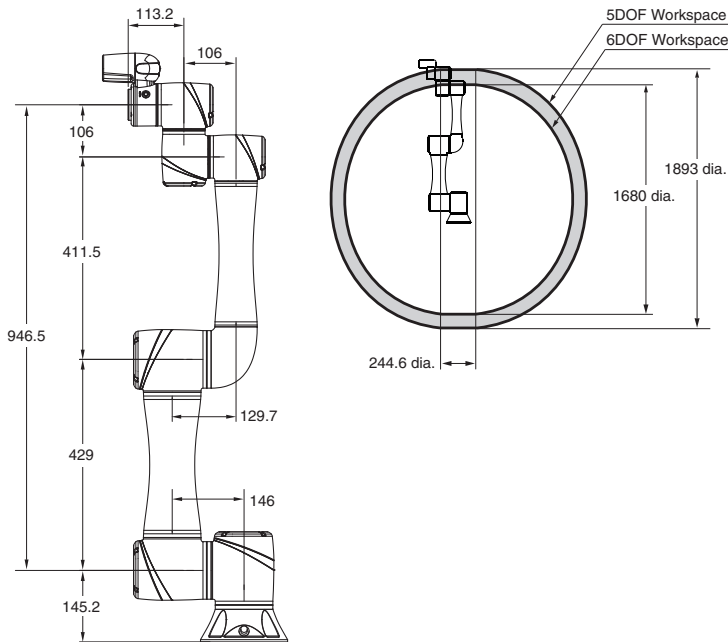
## Footprint



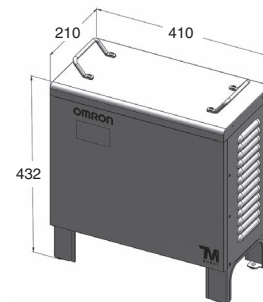
## Flange



## TM5-900



## Control Box



## Robot Parts Code and Bundled Accessories

Type	TM5-700			TM5-900		
Product Name	TM5-700	TM5M-700	TM5M-700 SEMI	TM5-900	TM5M-900	TM5M-900 SEMI
Model	RT6-0007000	RT6-0107000	RT6-0107010	RT6-0009000	RT6-0109000	RT6-0109010
Overview	Robot with built-in vision system and control box			Robot with built-in vision system and control box		
Purpose	Typical for use in programming environment			Typical for use in programming environment		
Bundled Accessories	<ul style="list-style-type: none"> <li>TM5-700 robot arm (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>			<ul style="list-style-type: none"> <li>TM5-900 robot arm (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>		

# Collaborative Robots TM12/14

## Collaborative robot for assembly, packaging, inspection and logistics

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- TMvision and landmark allows truly flexible, fast changeover.
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- Plug & Play ecosystem makes it versatile for many manufacturing needs.
- Designed to promote a safer workplace with harmony between humans and machines.
- Integration with mobile robots provides fully autonomous logistics handling for a conveyor-less system.



TM12

TM14

## Specifications

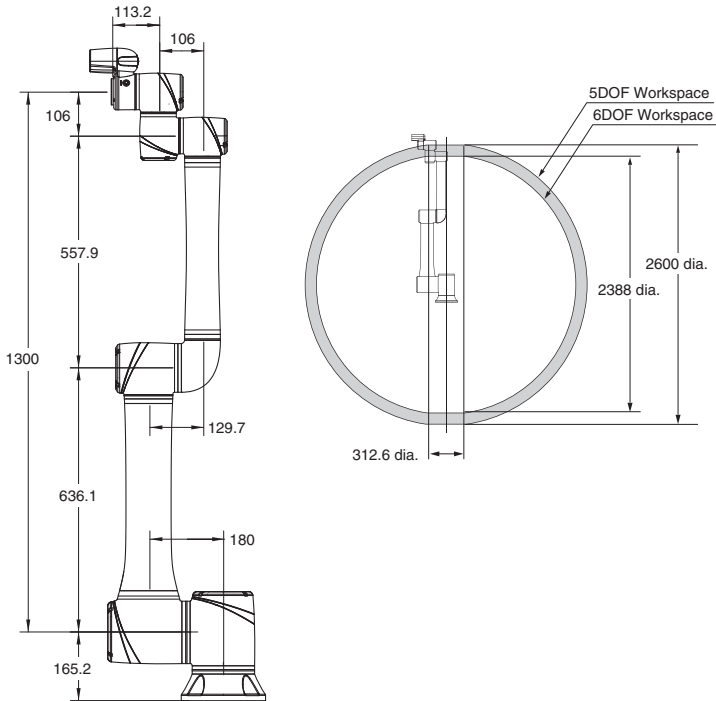
		TM12/14					
Product Name		TM12	TM12M	TM12M SEMI	TM14	TM14M	TM14M SEMI
Model		RT6-1001300	RT6-1101300	RT6-1101310	RT6-2001100	RT6-2101100	RT6-2101110
Weight (kg)		33.3			32.6		
Max Payload (kg)		12			14		
Reach (mm)		1300			1100		
Typical Speed (m/s)		1.3			1.1		
Joint Range	Joint 1	±270°					
	Joint 2, 4, 5	±180°					
	Joint 3	±166°			±163°		
	Joint 6	±270°					
Joint Speeds	Joint 1, 2	120°/s					
	Joint 3	180°/s					
	Joint 4, 5	180°/s			150°/s		
	Joint 6	180°/s					
Repeatability (mm)		±0.1					
IP		IP54 (robot arm), IP32 (control box)					
Operating Temperature (°C)		0 to 50					
Power Supply		100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC	100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC
I/O Ports	Control Box	Digital In: 16 Digital Out: 16 Analog In: 2 Analog Out: 1					
	Tool	Digital In: 4 Digital Out: 4 Analog In: 1 Analog Out: 0					
I/O Interface		3 X COM, 1 X HDMI, 3 X LAN, 4 X USB2.0, 2 X USB3.0					
Communication		RS232, Ethernet(master), Modbus TCP/RTU (master & slave)					
Integrated Camera		5M pixels, color (AOI tasks: 5M/1.2M; others:1.2M)					
I/O Power Supply		24V 1.5A (control box and tool)					
Programming Environment		TMflow, flowchart based					
SEMI S2 Certified		No	No	Yes	No	No	Yes

\*Manufactured by Techman Robot Inc.

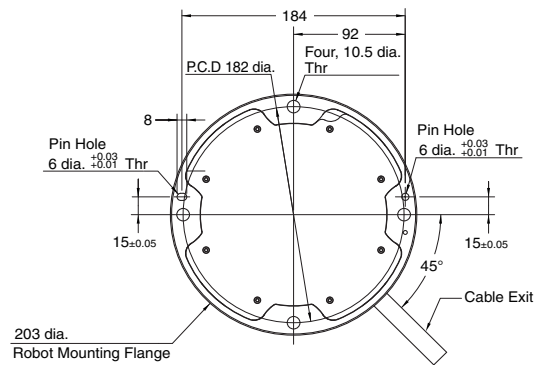
# Dimensions

(Unit: mm)

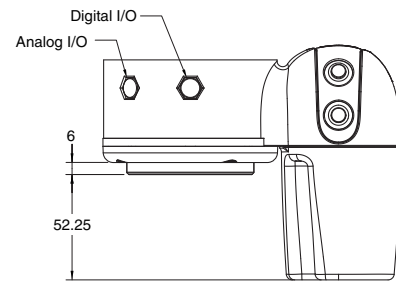
## TM12



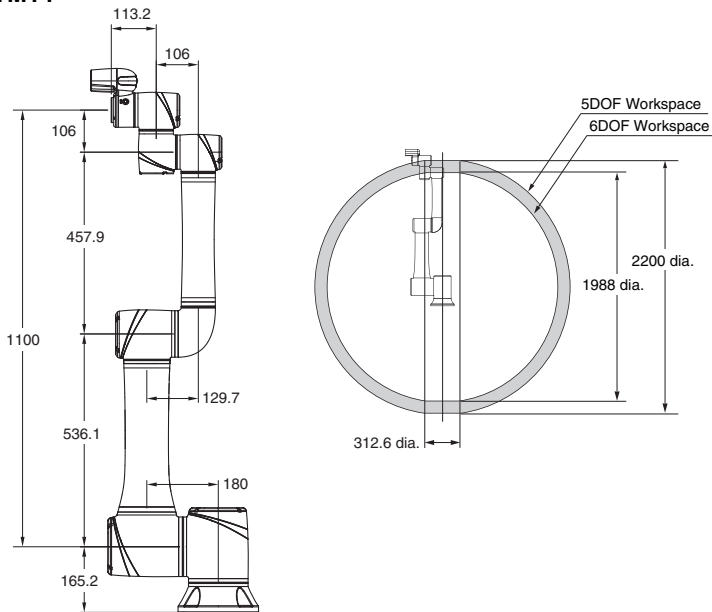
## Footprint



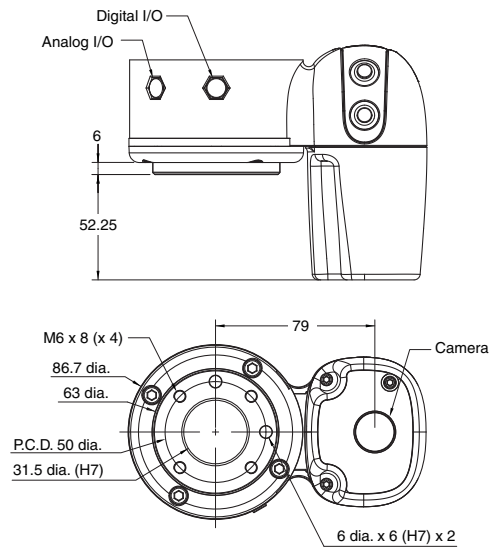
## Flange



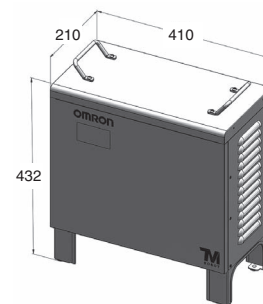
## TM14



## Flange



## Control Box










# Robot Parts Code and Bundled Accessories








Type	TM12			TM14		
Product Name	TM12	TM12M	TM12M SEMI	TM14	TM14M	TM14M SEMI
Model	RT6-1001300	RT6-1101300	RT6-1101310	RT6-2001100	RT6-2101100	RT6-2101110
Overview	Robot with built-in vision system and control box			Robot with built-in vision system and control box		
Purpose	Typical for use in programming environment			Typical for use in programming environment		
Bundled Accessories	<ul style="list-style-type: none"> <li>TM12 robot arm (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>			<ul style="list-style-type: none"> <li>TM14 robot arm (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>		

# Accessories & Software

## Accessories

Appearance	Product Name	Remarks	Model
	Landmark	After moved the robot, read the mark and play the program.	RT6-A000008
	Mobile Workstation (MWS)	Robot stand for OMRON TM5.	RT6-A000010
	Robot stand	Robot stand for OMRON TM5. Height adjustable.	RT6-A000009
	SSD with cable	128 GB. SATA cable. Required for external cameras image logging.	RT6-A000012
	Kit, calibration set with additional pin	Required for TCP and manual vision calibration.	RT6-A000002
	Robot stick stand	Stand for Robot stick.	RT6-A000000
	Pneumatic control box	Compatible with KILEWS screw driving solution kit.	RT6-A000015

## Recommended Plug & Play Hardware

Appearance	Category	Product Name	Recommended manufacturer	Model
	Grippers	Robotiq Adaptive Gripper 2-Finger 85 TM Kit Robotiq Adaptive Gripper 2-Finger 140 TM Kit	ROBOTIQ	85 kit: AGC-OMRON-KIT-85 140 kit: AGC-OMRON-KIT-140
		Robotiq Hand-E	ROBOTIQ	HND-OMRON-KIT
		Schunk Co-act EGP for OMRON TM robot	SCHUNK	Schunk Co-act EGP for OMRON TM robot (ID:1325501) *
	Screw Driving	KILEWS Screw Driving Solution	KILEWS	SKD-BN512LM
	Vision	Basler industrial camera	BASLER	acA2500-14gc acA2500-14gm
	Force Sensor	ATI Axia80	ATI	9105-TM-Axia80
		Robotiq FT-300	ROBOTIQ	FTS-300-OMRON-KIT

\* Grippers only.

**Note:** For recommended hardware, please contact the product dealer.

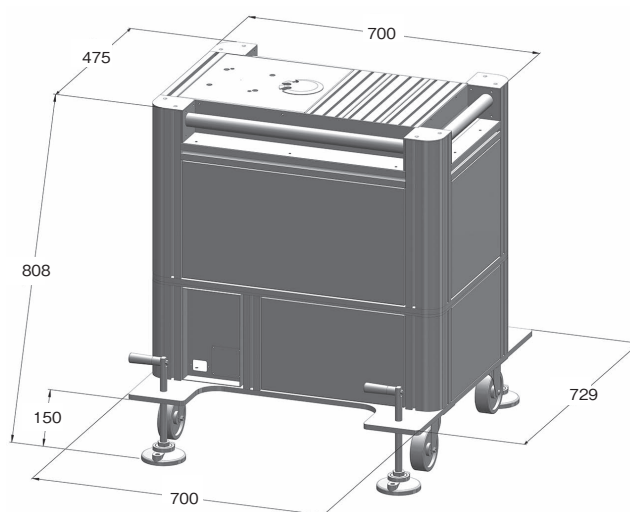
## Software

Model Number	Product Name	Add-On Model Numbers	Add-On Product Names	Remarks
RT6-A000004	USB Dongle	-		Required for all extra software licenses
-	TMflow	-		SoftWare for Robot proگرامing Free download
-		RT6-S100000	TM Identify & Measure	License, add-on to TMflow
-		RT6-S100002	TM External Vision	License, add-on to TMflow
-		RT6-S100003	TM OCR	License, add-on to TMflow
RT6-S200001	TMflow Editor License	-		
-		RT6-S100005	TMflow Editor - Offline AOI	License, add-on to TMflow Editor

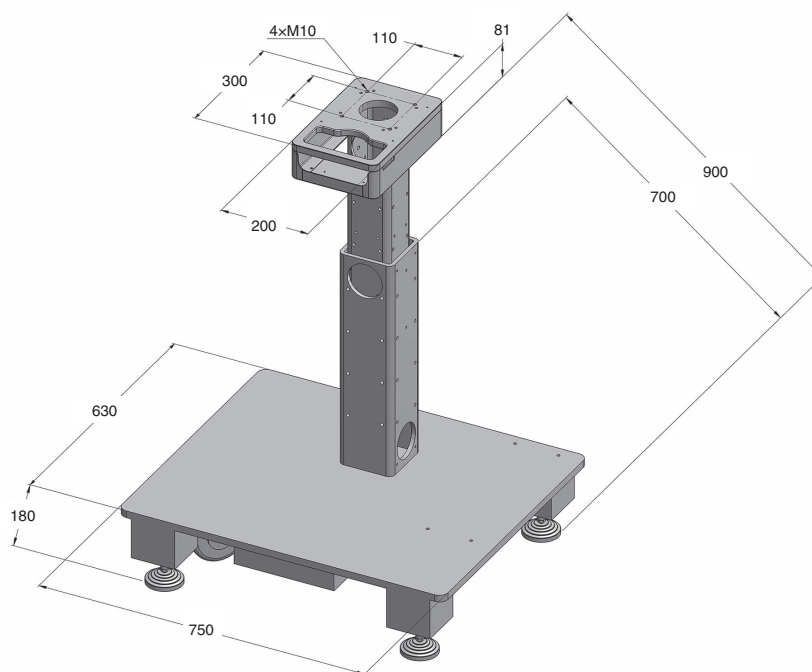
# Dimensions

(Unit: mm)

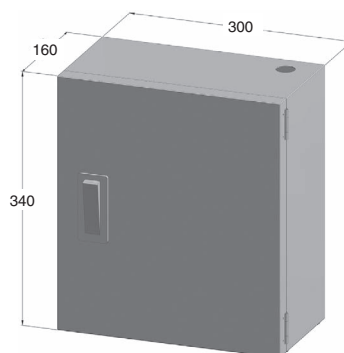
## Mobile Work Station (MWS)



## Robot Stand



## Pneumatic Control Box



# Model Number Structure

## Model Number Legend

**RT6 - 0 0 0 7 0 0 0**

(1) (2) (3) (4) (5) (6) (7) (8)

No.	Item	Symbol	Specifications
(1)	Collaborative Robots - Techman		
(2)	Model Type	0	TM5
		1	TM12
		2	TM14
(3)	Mount Type	0	Standard
		1	Mobile
(4)	Eye in Hand	0	Standard
(5)(6)	Arm Length	70	700 (TM5)
		90	900 (TM5)
		13	1300 (TM12)
		11	1100 (TM14)
(7)	Semi	0	Standard
		1	Semi
(8)	Options	0	Standard

**Note:** The purpose of this model number structure is to provide understanding of the meaning of specifications from the model number. Models are not available for all combinations of code numbers.

## Ordering Information

### Collaborative Robots

Type	Model
TM5-700	<b>RT6-0007000</b>
TM5-900	<b>RT6-0009000</b>
TM5M-700	<b>RT6-0107000</b>
TM5M-700 SEMI	<b>RT6-0107010</b>
TM5M-900	<b>RT6-0109000</b>
TM5M-900 SEMI	<b>RT6-0109010</b>
TM14	<b>RT6-2001100</b>
TM12	<b>RT6-1001300</b>
TM14M	<b>RT6-2101100</b>
TM14M SEMI	<b>RT6-2101110</b>
TM12M	<b>RT6-1101300</b>
TM12M SEMI	<b>RT6-1101310</b>

### Accessories

Type	Model
Landmark	<b>RT6-A000008</b>
Mobile Workstation (MWS)	<b>RT6-A000010</b>
Robot Stand	<b>RT6-A000009</b>
SSD with cable	<b>RT6-A000012</b>
Kit, calibration set with additional pin	<b>RT6-A000002</b>
Robot stick stand	<b>RT6-A000000</b>
Pneumatic control box	<b>RT6-A000015</b>

### Software

Type	Model
USB Dongle	<b>RT6-A000004</b>
TMflow Editor License	<b>RT6-S200001</b>
TM Identify & Measure License	<b>RT6-S100000</b>
TM External Vision License	<b>RT6-S100002</b>
TM OCR License	<b>RT6-S100003</b>
TMflowEditor - Offline AOI	<b>RT6-S100005</b>

## Related Manuals

Manual No.	English Title
<b>I623</b>	TM5 Regular Payload Series Hardware Installation Manual
<b>I624</b>	TM12 & TM14 Medium & Heavy Payload Series Hardware Installation Manual
<b>I625</b>	Safety Manual
<b>I626</b>	Software Manual TMflow
<b>I627</b>	Software Manual TMvision
<b>I628</b>	TM Mobile Work Station Manual
<b>I629</b>	TM Robot Stand Manual
<b>I630</b>	Pneumatic Control Box Manual



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