

## Kawasaki Heavy Industries, Ltd

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#### Kawasaki Robotics website

<https://robotics.kawasaki.com/>



#### Kawasaki Robotics brand site XYZ

<https://robotics.kawasaki.com/ja1/xyz/en/>



#### Kawasaki Robostage (showroom)

<https://robotics.kawasaki.com/ja1/robostage/en.html>



# Kawasaki Robot

## Wafer Transfer Robots

Small-to-medium robots  
up to 80kg payload

Large robots  
up to 300kg payload

Extra large robots  
up to 1,500kg payload

Dual-arm Collaborative robots

Explosion-proof painting robots

Sealing robots

Arc welding robots

Palletizing robots

Medical & pharmaceutical robots

Picking robots

Wafer transfer robots

### Global Network

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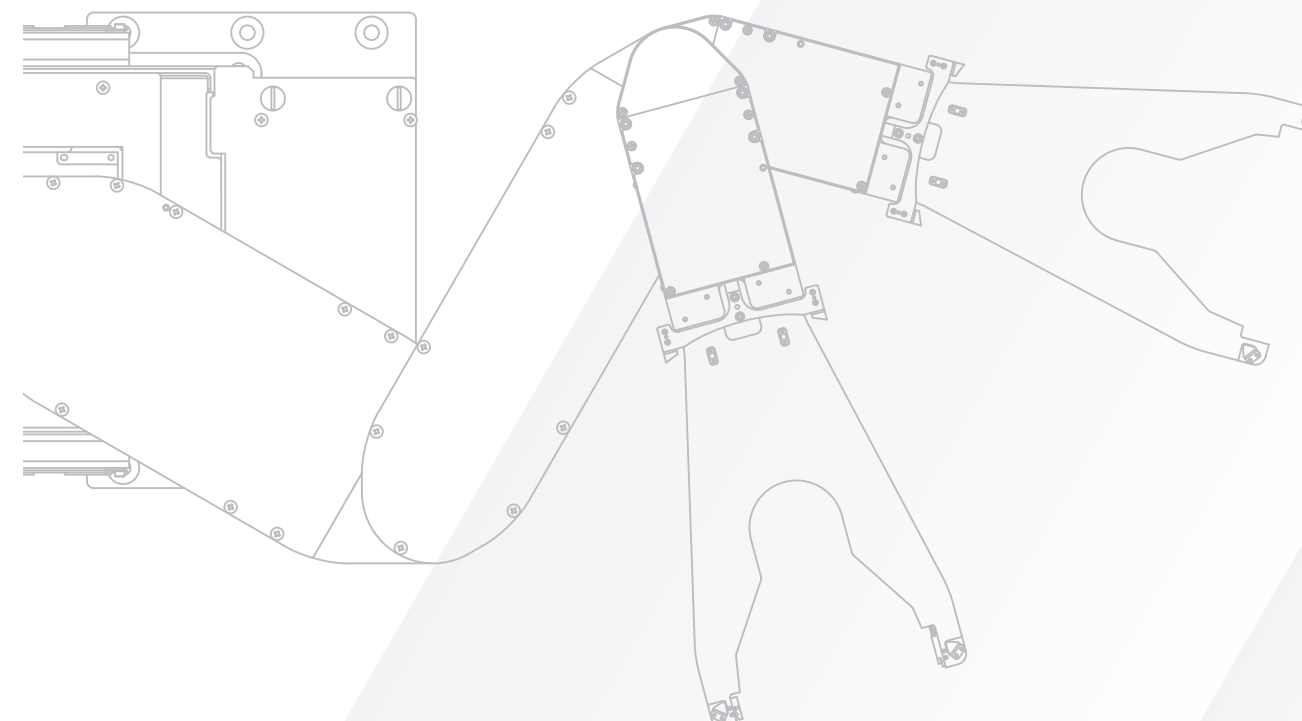


#### CAUTIONS TO BE TAKEN TO ENSURE SAFETY

- For those persons involved with the operation / service of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. They should carefully read the Manuals and other related safety documents.
- Products described in this catalogue are general industrial robots. Therefore, if a customer wishes to use the Robot for special purposes, which might endanger operators or if the Robot has any problems, please contact us. We will be pleased to help you.
- Be careful as Photographs illustrated in this catalogue are frequently taken after removing safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.



ISO certified in Akashi Works and Nishi-Kobe Works.



# Wafer Transfer Robots

Kawasaki has the No.1 market share in the wafer transfer clean robots.  
A single robot can access 2 and 3 FOUPs of EFEM without a track.  
The robots are compatible with SEMI-F47 and SEMI-S2 standards.

## NTS series

Smooth and accurate operations thanks to the specially designed drive system.



NTS20

[Applications]



Wafer transfer

### Features

- Accessible to 2 and 3 FOUP FEM.
- Smooth and accurate operations thanks to original driving mechanism.
- Compliant with SEMI-F47 and S-2 standards.

### NTS10/NTS20

#### Standard Specifications

Type	Horizontal articulated type	
Degree of freedom (axes)	4/5	
Max. reach (mm)	1,066	
Position repeatability*1 (mm)	±0.1 (Wafer Center)	
Motion range	θ1axis (rotation JT2) (°)	340
	Zaxis (up-down JT3) (mm)	470
	θ2axis (rotation JT4) (°)	340
	H1axis (rotation JT6) (°)	340
	H2axis (rotation JT7) (°)	— /340
Mounting	Floor	
Controller/Power requirements	D60/1.0kVA	

\*1: Conforms to ISO9283

### Features

- Unique telescopic mechanism to cover high and low positions.
- Compliant with SEMI-F47 and S-2 standards.

### TTS10/TTS20

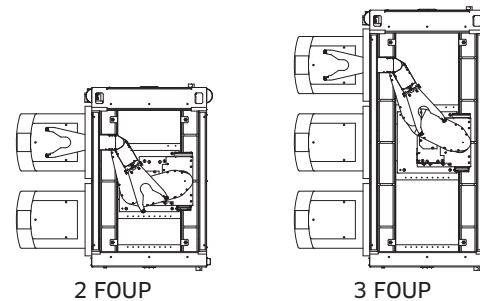
#### Standard Specifications

Type	Telescopic horizontal articulated type	
Degree of freedom (axes)	4/5	
Max. reach (mm)	1,066	
Position repeatability*1 (mm)	±0.1 (Wafer Center)	
Motion range	θ1axis (rotation JT2) (°)	340
	Zaxis (up-down JT3) (mm)	740
	θ2axis (rotation JT4) (°)	340
	H1axis (rotation JT6) (°)	340
	H2axis (rotation JT7) (°)	— /340
Mounting	Floor	
Controller/Power requirements	D60/1.0kVA	

\*1: Conforms to ISO9283

#### Layout Example

The NTS and TTS series can be used for 2 to 3 FOUPs of EFEM without a track. (The same arm can be used for 2 FOUPs and 3 FOUPs).



2 FOUP

3 FOUP

## TTS series

High-speed handling in high and low positions thank to a unique high-rigidity telescopic mechanism.



TTS20

[Applications]



Wafer transfer

## Controller

# D60/D61

### Standard Specifications

		D60	D61
Dimensions (mm)	NTS series	W320×D130×H300	W445×D130×H429
	TTS series	W395×D130×H300	W565×D130×H429
Number of controlled axes		Max. 7 axes	Max. 12 axes
Driving system		Full digital servo system	
Types of motion control	Teach mode	Joint (operating) mode / base coordinate system	
	Repeat mode	Joint interpolation, linear interpolation, offset linear interpolation	
Programming		Manual, semi-automatic, full-automatic teaching	
External signals		External emergency stop, safety fence, external stop	
Communications*1	Hardware	RS232C x 1	RS232C x 2
	Software	Ethernet K-Utility (Kawasaki's original communication command for clean robots)	
Power requirements	Voltage	Single phase, AC208 V ±10%, 50/60 Hz	
	Standard	SEMI F47	
Ambient temperature for operation (°C)		5 - 40*2	
Mass (kg)		14	20

\*1: Customized commands may be available. Contact Kawasaki.  
\*2: Contact Kawasaki for operations outside the specified range.

### D60



\*The D61 controller has a cabinet size of different dimensions.

### Features

- The D60 and D61 are compact controllers for wafer transfer robots. (D60 for single arm and D61 for two arms).
- The D60 and D61 can control up to 7 axes and up to 12 axes respectively.
- Both are compliant with SEMI standard and CE marking, and can be used anywhere in the world.

## software

### Standard software

Enables operations for wafer transfer, robot operations and monitoring of operating conditions.

#### KMTerm

By connecting with the robot controller, the KMTerm allows parameter setting, information display and data backup.

#### KSUtility Lite

The KSUtility Lite enables the robot to be operated from the host PC.

### Optional software

Optional software allows the users to perform layout studies and simulation for tact time on their own PC.

#### KRET

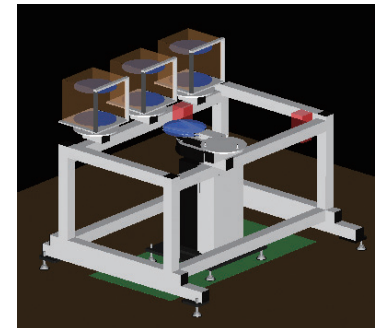
Designing of layout inside the equipment and operational paths can be done with ease.

#### KSUtility

This software enables the robot to be operated from the host PC.

#### KR3D

Robot operations can be performed off-line with ease.



## Aligner (Optional)

### Features

- High-speed alignment is possible (only 2.5 seconds for alignment).

