



## ULTRA HIGH-SPEED DELTA ROBOTS

The pick & place Y-Series Robots are parallel type robots with the quality and reliability that has become synonymous with Kawasaki. The shaftless design is easy to maintain, simple to program and features industry leading payload capacity, reach and speed.



## YF03N

<b>Payload</b>	3 kg
<b>Horizontal Stroke</b>	1,300 mm / 900 mm
<b>Vertical Stroke</b>	300 mm / 500 mm
<b>Repeatability</b>	±0.1 mm
<b>Maximum Linear Speed</b>	10,000 mm/s

### Applications

- Assembly
- Material Handling
- Packing
- Pick & Place

### WIDE MOTION RANGE

The YF03N robot's large work envelope (1,300 mm diameter and 500 mm Z-stroke) is ideal for a wide range of high-speed handling applications.

### HIGH PAYLOAD CAPACITY

With a 3 kg payload capacity, the YF03N robot can pick & place a wide array of workpieces at very high speeds.

### HIGH ACCURACY

High repeatability ensures accurate pick & place and high productivity - positional repeatability of ± 0.1 mm and angular repeatability of ± 0.1 degree.

### INTEGRATED VISION

An integrated 2D high-speed vision feedback system can be added for material handling and pick & place applications. The K-VFinder vision software can recognize objects of different colors and shapes to quickly locate their exact position or perform inspection of the objects. Such recognition can also be done synchronously, while objects are moving on a conveyor.

### ULTRA HIGH-SPEED

Cycle times as short as 0.27 seconds (or 222 cycles per minute) for a 1 kg operation can be achieved for maximum throughput and productivity.

### EASY MAINTENANCE

Kawasaki engineers developed an arm design that eliminates the center shaft, which was determined to be the leading cause of failure with delta robots. The shaftless design prevents mechanical trouble and contributes to the robot's overall minimal maintenance requirements.

### WASHDOWN PROTECTION

The arm is designed for washdown with acid or alkaline cleaner, making it ideal for food applications that require a hygienic environment.

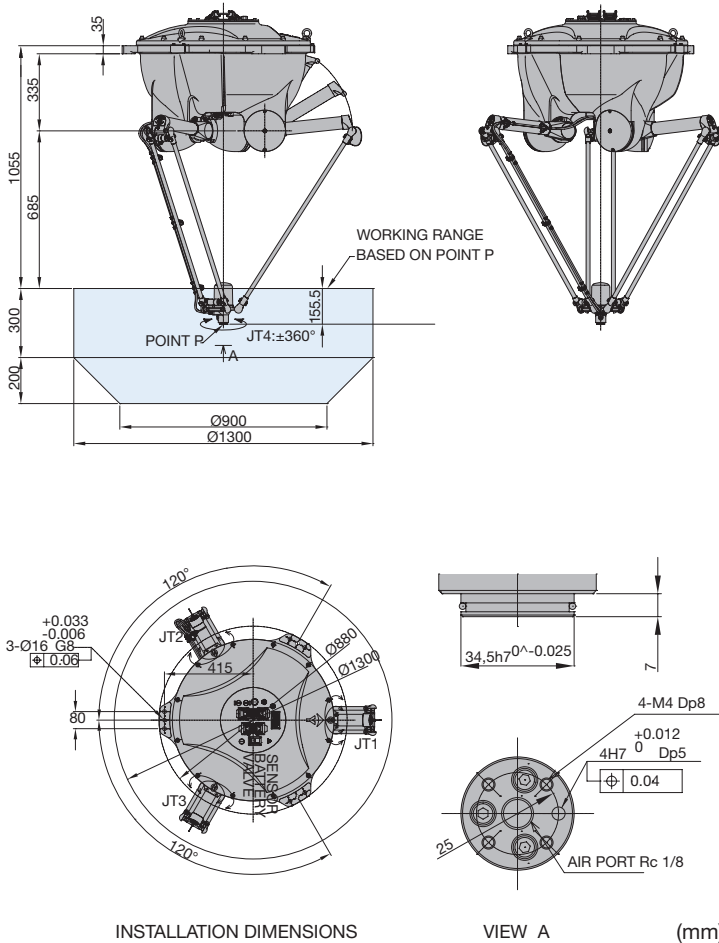
### FOOD-GRADE LUBRICATION

Food-grade lubricants are used with the YF03N robot to conform to industry standards.

### OPTIONAL FIFTH AXIS

A fifth axis can be added to further reduce cycle times and broaden application range.

## MOTION RANGE & DIMENSIONS



**Note:** Detailed drawings are available upon request.

YF03N SPECIFICATIONS			
Type	Delta parallel robot		
Degrees of Freedom	4 axes		
Payload	3 kg		
Horizontal Stroke	1,300 mm / 900 mm (diameter)		
Vertical Stroke	300 mm / 500 mm		
Repeatability *	±0.1 mm		
Angular Repeatability	±0.1°		
Maximum Linear Speed	10,000 mm/s		
Work Envelope (degrees) & Maximum Speed (degrees/s)	Axis	Motion Range	Maximum Speed
	JT1	+95° ~ -54°	1,090.9°/s
	JT2	+95° ~ -54°	1,090.9°/s
	JT3	+95° ~ -54°	1,090.9°/s
Wrist Load Capacity	Load	Maximum Torque	Moment of Inertia
	1 kg	0.25 N-m	1.15 N-m
	2 kg	0.37 N-m	1.57 N-m
Maximum Cycle Time	3 kg	0.50 N-m	2.06 N-m
	0.27 seconds per pick at 1 kg payload 0.45 seconds per pick at 3 kg payload Based on a vertical stroke of 25 mm and horizontal stroke of 305 mm.		
Motor(s)	Brushless AC Servomotor		
Brakes	All axes		
Mass	145 kg (excluding Options)		
Body Color	Kawasaki Standard		
Installation	Ceiling		
Environmental Conditions	Temperature	0 ~ 45° C	
	Humidity	35 ~ 85 % (no dew, nor frost allowed)	
Protection Classification	IP65 * Equivalent		
Built-in Utilities	Pneumatic piping (ø10 x 1 line)		
Options	IP67 5th axis (brakeless) Signal harness (up to 12 inputs and 8 outputs) Double/single solenoid valves (4 units max.) Jig set for zeroing Arm spreader Integrated 2D high-speed vision with KV-Finder		
Controller	E30 (See E Controller data sheet for specifications)		

\* conforms to ISO9283

Simple friendly

Assembly • Cutting • Dispensing • Grinding • Handling • Inspection • Packaging • Painting • Palletizing • Polishing • Tending • Welding

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