

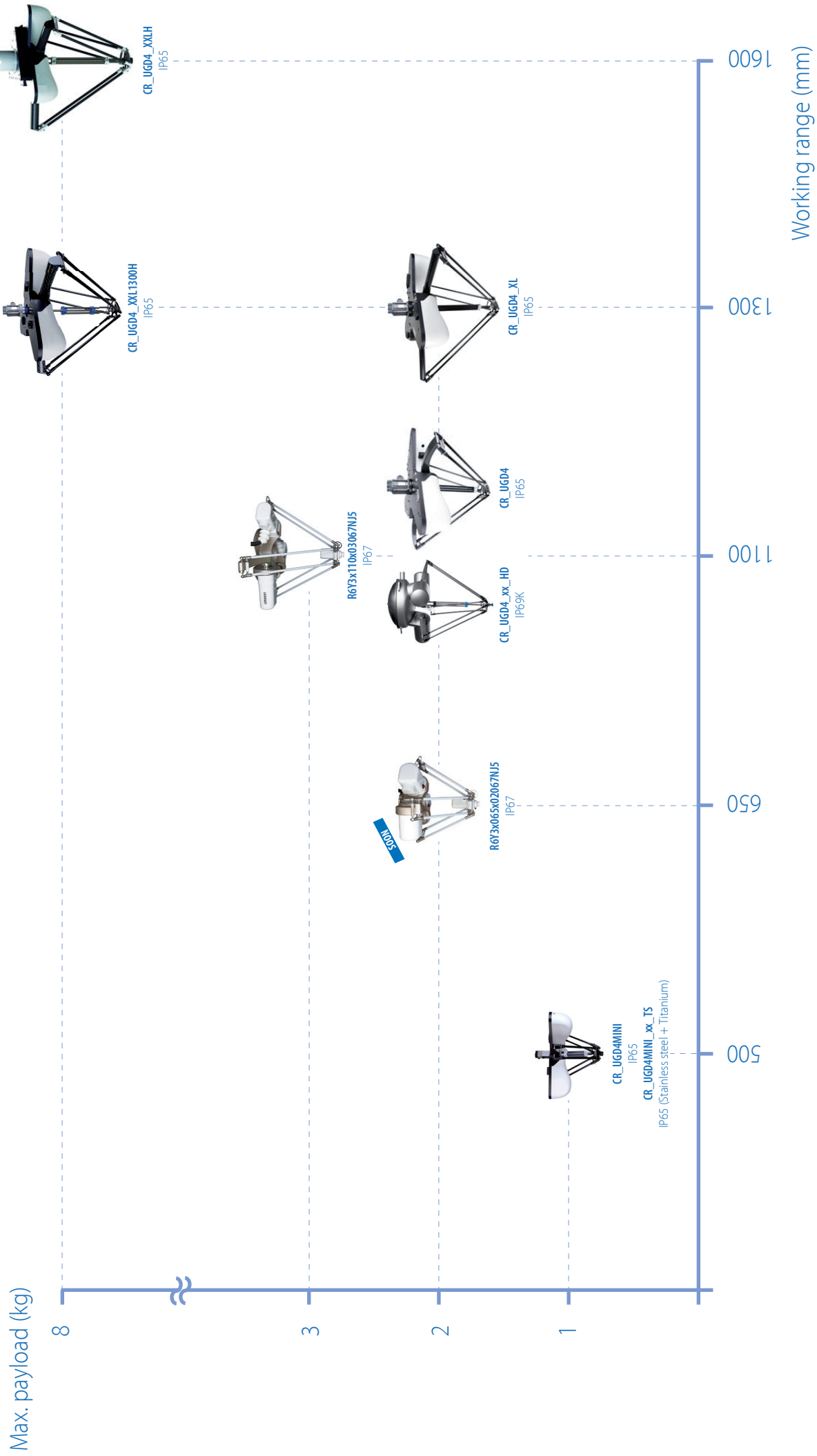
Robots

Delta Robot Sheets



- Degrees of freedom: 3 + 1 (rotational axis optional)
- Up to 200 cycle per minute
- Model range from 500 to 1,600 mm working range
- Payload range from 1 to 8 kg
- IP class range: IP69K, IP67, IP65

Delta robots selection table



WASHDOWN DELTA ROBOT IP69K



CR_UGD4_R_HD (3 + 1axes)

CR_UGD4_NR_HD (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: $\varnothing 1,100 \times 250$ mm (Max. 400)
- Max. Payload: 2 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 150 cycle/min
- Protection class: IP69K
- Gear box ratio (X, Y, Z axis): 1:31
- Gear box ratio (θ axis): 1:10
- Repeatability (X, Y, Z axis): ± 0.2 mm
- Repeatability (θ axis): ± 0.3 deg
- Weight: 100 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4_R_HDxx	CR_UGD4_NR_HDxx
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K1K030T-B52-V2	R88M-K1K030T-B52-V2
	θ axis	1	R88M-K75030T-B52	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC__NR-E	R88A-CRKC__NR-E
	θ axis	1	R88A-CRKA__CR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGB__BR-E	R88A-CAGB__BR-E
	θ axis	1	R88A-CAKA__SR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable
	θ axis	1	R88A-CAKA__BR-E	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4_R_HDxx	CR_UGD4_NR_HDxx
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN15H-ECT	R88D-KN15H-ECT
	θ axis	1	R88D-KN08H-ECT	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGDOR3C-B5 ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S__CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4_R_HDxx	CR_UGD4_NR_HDxx
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

Description	Functions	Specifications	CR_UGD4_R_HDxx	CR_UGD4_NR_HDxx
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	16 axes	NJ501-4300		
	32 axes	NJ501-4400		
	64 axes	NJ501-4500		
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

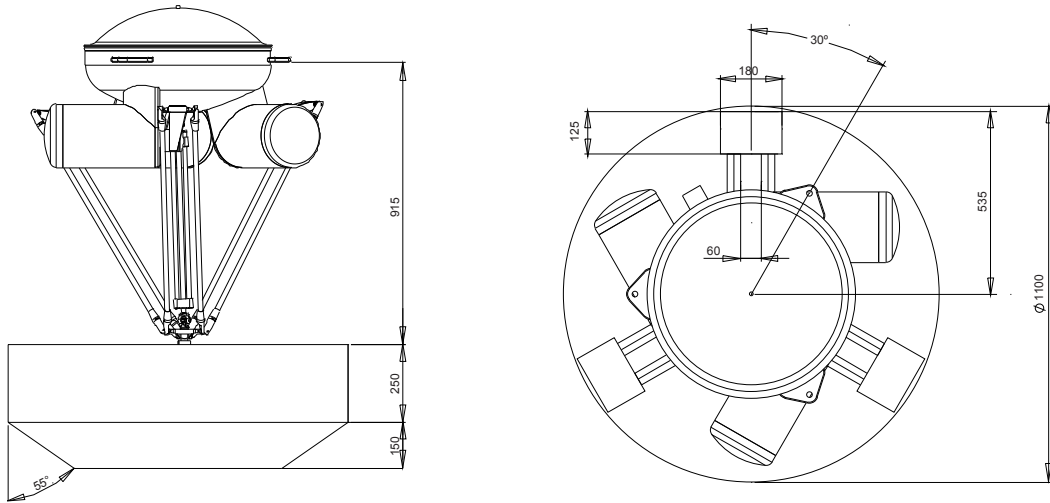
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

Cable length (the last numbers of the Delta robot model indicate the length of the cables)

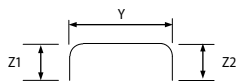
Model	Cable length (encoder, power and brake cables)
CR_UGD4_xx_HD3	3 m
CR_UGD4_xx_HD5	5 m
CR_UGD4_xx_HD10	10 m
CR_UGD4_xx_HD15	15 m
CR_UGD4_xx_HD20	20 m

WASHDOWN DELTA ROBOT IP69K

Dimensions

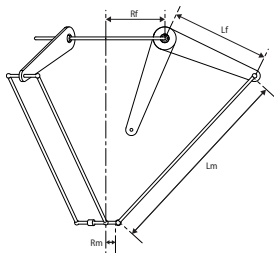


Cycle time (Z1 x Y x Z2)



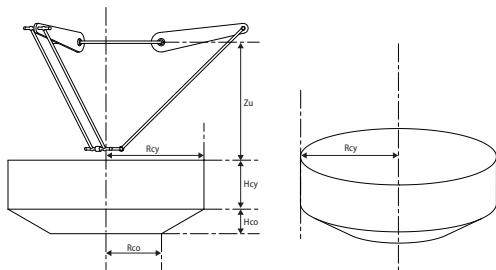
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.40 s
		0.5 kg	0.55 s
		1 kg	0.60 s

Kinematics



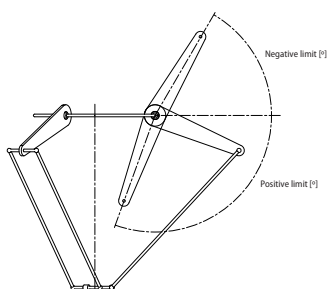
Parameter	Dimensions
Rf	200.0 mm
Lf	320.0 mm
Rm	50.0 mm
Lm	850.0 mm

Workspace



Parameter	Dimensions
Zu	-616.0 mm
Rcy	550.0 mm
Hcy	250.0 mm
Rco	336.0 mm
Hco	150.0 mm

Software limits (X, Y, Z axis)



Software limits	
Positive limit	99°
Negative limit	-47°

WASHDOWN DELTA ROBOT IP67



R6Y31110H03067NJ5 (3 + 1 axes - high inertia rot. axis) R6Y31110L03067NJ5 (3 + 1 axes - low inertia rot. axis) R6Y30110S03067NJ5 (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: \varnothing 1,100 x 300 mm (Max. 450)
- Max. Payload: 3 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 150 cycle/min
- Protection class: IP67
- Gear box ratio (X, Y, Z axis): 1:33
- Gear box ratio (θ axis): 1:21 (high inertia type) / 1:9 (low inertia type)
- Repeatability (X, Y, Z axis): \pm 0.2 mm
- Repeatability (θ axis): \pm 0.1 deg
- Weight: 75 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	R6Y31110H03067NJ5	R6Y31110L03067NJ5	R6Y30110S03067NJ5
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K1K030T-B52	R88M-K1K030T-B52	R88M-K1K030T-B52
	θ axis	1	R88M-K10030T-S2	R88M-K05030T-S2	-

Accessories

Description	Applicable axis	Quantity	R6Y31110H03067NJ5	R6Y31110L03067NJ5	R6Y30110S03067NJ5
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN15H-ECT	R88D-KN15H-ECT	R88D-KN15H-ECT
	θ axis	1	R88D-KN01H-ECT	R88D-KN01H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC___NR-E	R88A-CRKC___NR-E	R88A-CRKC___NR-E
	θ axis	1	R88A-CRKC___NR-E	R88A-CRKC___NR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGB___BR-E	R88A-CAGB___BR-E	R88A-CAGB___BR-E
	θ axis	1	R88A-CAGB___SR-E	R88A-CAGB___SR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable	Included with the power cable
	θ axis	1	Motor without brake	Motor without brake	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGD0R3C-B5 ^{*1}		
EtherCAT cables		1 x servo drive	X6SW-6LSZH8SS___CM-Y		

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	R6Y31110H03067NJ5	R6Y31110L03067NJ5	R6Y30110S03067NJ5
Anti-collision detection	1	R6YACAD01		
Safety cable	1 x servo drive	R88A-CSK0035-E		
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C		

Robot control

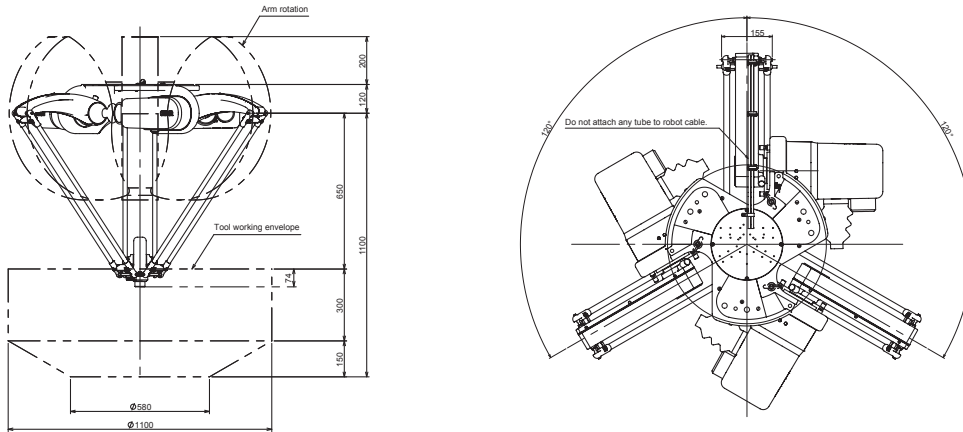
Description	Functions	Specifications	R6Y31110H03067NJ5	R6Y31110L03067NJ5	R6Y30110S03067NJ5
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320		
		16 axes	NJ501-4310 ^{*1}		
	16 axes	NJ501-4300			
	32 axes	NJ501-4400			
	64 axes	NJ501-4500			
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001		
Sysmac Studio software tool		1 license	SYSMAC-SE201L		
USB programming cable			CP1W-CN221		

*1 The NJ501-4310 CPU unit only supports one Delta robot.

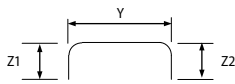
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

WASHDOWN DELTA ROBOT IP67

Dimensions

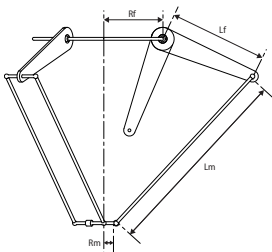


Cycle time (Z1 x Y x Z2)



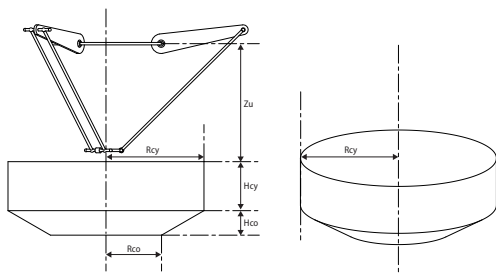
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.40 s

Kinematics



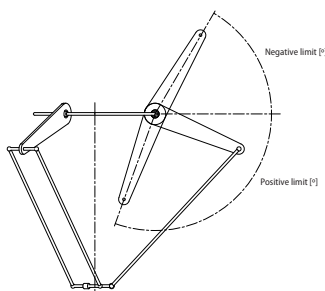
Parameter	Dimensions
Rf	225.0 mm
Lf	340.0 mm
Rm	62.5 mm
Lm	840.0 mm

Workspace



Parameter	Dimensions
Zu	-599.0 mm
Rcy	550.0 mm
Hcy	300.0 mm
Rco	290.0 mm
Hco	150.0 mm

Software limits (X, Y, Z axis)



Software limits	
Positive limit	110°
Negative limit	-60°

WASHDOWN MINI DELTA ROBOT IP67



R6Y31065H02067NJ5 (3 + 1 axes - high inertia rot. axis)

R6Y31065L02067NJ5 (3 + 1 axes - low inertia rot. axis)

R6Y30065S02067NJ5 (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: Ø 650 x 150 mm (Max. 250)
- Max. Payload: 2 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 200 cycle/min
- Protection class: IP67
- Gear box ratio (X, Y, Z axis): 1:21
- Gear box ratio (θ axis): 1:21 (high inertia type) / 1:9 (low inertia type)
- Repeatability (X, Y, Z axis): ±0.1 mm
- Repeatability (θ axis): ±0.1 deg
- Weight: 32 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	R6Y31065H02067NJ5	R6Y31065L02067NJ5	R6Y30065S02067NJ5
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K40030T-B52	R88M-K40030T-B52	R88M-K40030T-B52
	θ axis	1	R88M-K10030T-S2	R88M-K05030T-S2	-

Accessories

Description	Applicable axis	Quantity	R6Y31065H02067NJ5	R6Y31065L02067NJ5	R6Y30065S02067NJ5
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN04H-ECT	R88D-KN04H-ECT	R88D-KN04H-ECT
	θ axis	1	R88D-KN01H-ECT	R88D-KN01H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKA___CR-E	R88A-CRKA___CR-E	R88A-CRKA___CR-E
	θ axis	1	R88A-CRKA___CR-E	R88A-CRKA___CR-E	-
Power cable	X, Y, Z axis	3	R88A-CAKA___SR-E	R88A-CAKA___SR-E	R88A-CAKA___SR-E
	θ axis	1	R88A-CAGB___SR-E	R88A-CAGB___SR-E	-
Brake cable	X, Y, Z axis	3	R88A-CAKA___BR-E	R88A-CAKA___BR-E	R88A-CAKA___BR-E
	θ axis	1	Motor without brake	Motor without brake	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGD0R3C-BS*1		
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S___CM-Y		

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	R6Y31065H02067NJ5	R6Y31065L02067NJ5	R6Y30065S02067NJ5
Safety cable	1 x servo drive	R88A-CSK003S-E		
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C		

Robot control

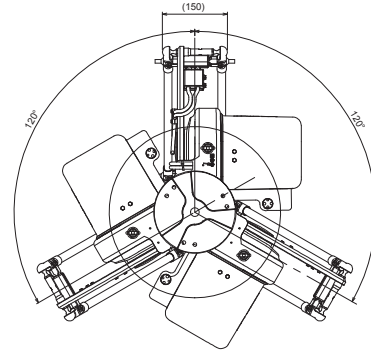
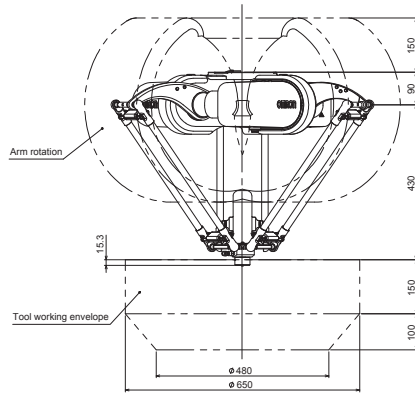
Description	Functions	Specifications	R6Y31065H02067NJ5	R6Y31065L02067NJ5	R6Y30065S02067NJ5
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320		
		16 axes	NJ501-4310*1		
	16 axes	NJ501-4300			
	32 axes	NJ501-4400			
	64 axes	NJ501-4500			
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001		
Sysmac Studio software tool		1 license	SYSMAC-SE201L		
USB programming cable			CP1W-CN221		

*1 The NJ501-4310 CPU unit only supports one Delta robot.

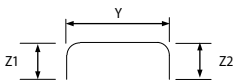
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

WASHDOWN MINI DELTA ROBOT IP67

Dimensions

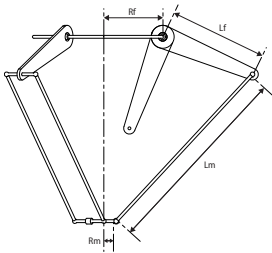


Cycle time (Z1 x Y x Z2)



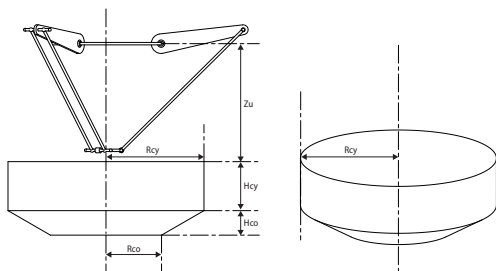
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.30 s

Kinematics



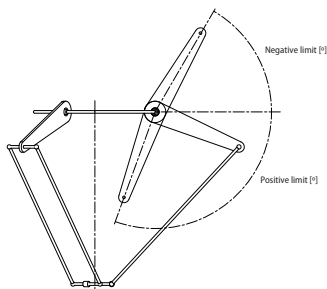
Parameter	Dimensions
Rf	150.0 mm
Lf	220.0 mm
Rm	62.5 mm
Lm	500.0 mm

Workspace



Parameter	Dimensions
Zu	-379.0 mm
Rcy	325.0 mm
Hcy	150.0 mm
Rco	240.0 mm
Hco	100.0 mm

Software limits (X, Y, Z axis)



Software limits	
Positive limit	110°
Negative limit	-60°

WASHDOWN MINI DELTA ROBOT IP65



CR_UGD4MINI_R_TS (3 + 1axes)

CR_UGD4MINI_NR_TS (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: $\varnothing 500 \times 155 \text{ mm}$ / $\varnothing 500 \times 130 \text{ mm}$ (with rotational axis)
- Max. Payload: 1 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 200 cycle/min
- Protection class: IP65 (Stainless steel + Titanium)
- Gear box ratio (X, Y, Z axis): 1:25
- Gear box ratio (θ axis): 1:1
- Repeatability (X, Y, Z axis): $\pm 0.2 \text{ mm}$
- Repeatability (θ axis): $\pm 0.3 \text{ deg}$
- Weight: 25 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K40030T-BS2	R88M-K40030T-BS2
	θ axis	1	R88M-K40030T-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN04H-ECT	R88D-KN04H-ECT
	θ axis	1	R88D-KN04H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKA__CR-E	R88A-CRKA__CR-E
	θ axis	1	R88A-CRKA__CR-E	-
Power cable	X, Y, Z axis	3	R88A-CAKA__SR-E	R88A-CAKA__SR-E
	θ axis	1	R88A-CAKA__SR-E	-
Brake cable	X, Y, Z axis	3	R88A-CAKA__BR-E	R88A-CAKA__BR-E
	θ axis	1	R88A-CAKA__BR-E	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGD0R3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S__CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

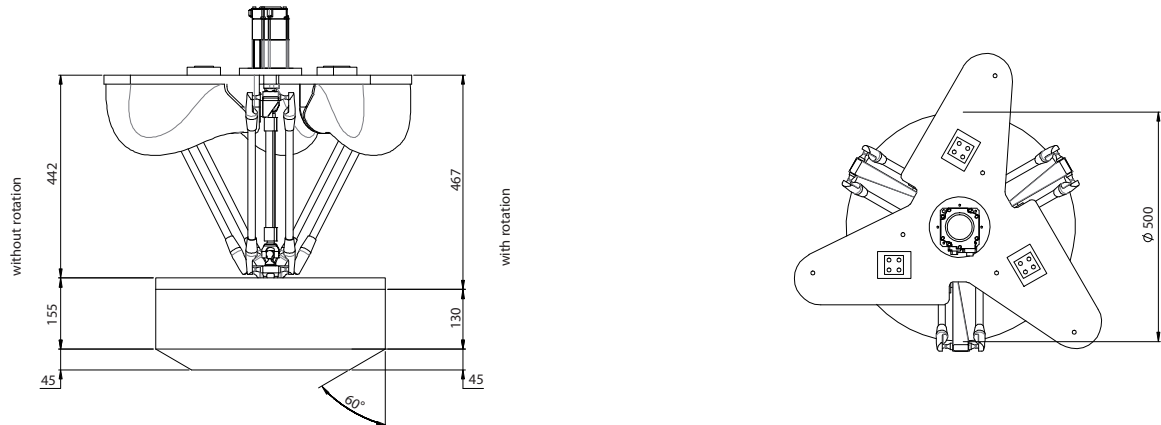
Description	Functions	Specifications	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	Logic sequence, motion and robotics	16 axes	NJ501-4300	
		32 axes	NJ501-4400	
		64 axes	NJ501-4500	
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

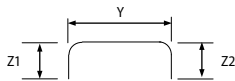
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

WASHDOWN MINI DELTA ROBOT IP65

Dimensions

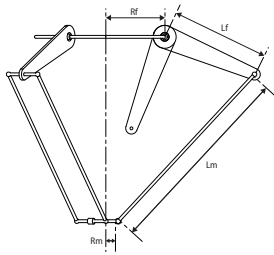


Cycle time (Z1 x Y x Z2)



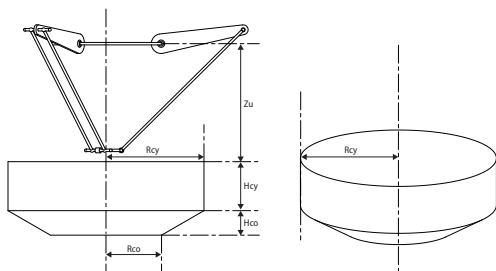
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.30 s
		0.5 kg	0.43 s
		1 kg	0.52 s

Kinematics



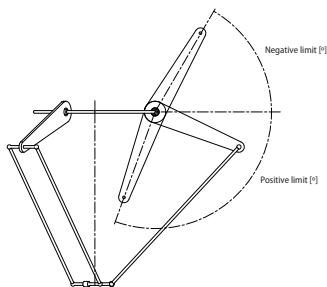
Parameter	Dimensions
Rf	112.0 mm
Lf	150.0 mm
Rm	40.0 mm
Lm	435.0 mm

Workspace



Parameter	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
Zu	-397.0 mm	-372.0 mm
Rcy	250.0 mm	250.0 mm
Hcy	130.0 mm	155.0 mm
Rco	172.0 mm	172.0 mm
Hco	45.0 mm	45.0 mm

Software limits (X, Y, Z axis)



Software limits	CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS
Positive limit	111°	111°
Negative limit	-33°	-45°

DELTA ROBOT XXL (1,600)



CR_UGD4_XXLH_R (3 + 1 axes)

CR_UGD4_XXLH_NR (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: \varnothing 1,600 x 350 mm (Max. 550)
- Max. Payload: 8 kg
- Cycle time 25/300/25 mm (8 kg): Up to 60 cycle/min
- Cycle time 200/1000/200 mm (8 kg): Up to 35 cycle/min
- Protection class: IP65
- Gear box ratio (X, Y, Z axis): 1:38,5
- Gear box ratio (θ axis): 1:20
- Repeatability (X, Y, Z axis): ± 1 mm
- Repeatability (θ axis): ± 0.3 deg
- Weight: 115 kg
- Servo drives voltage: 400 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4_XXLH_R	CR_UGD4_XXLH_NR
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K3K030C-BS2	R88M-K3K030C-BS2
	θ axis	1	R88M-K1K030C-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4_XXLH_R	CR_UGD4_XXLH_NR
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN30F-ECT	R88D-KN30F-ECT
	θ axis	1	R88D-KN15F-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC___NR-E	R88A-CRKC___NR-E
	θ axis	1	R88A-CRKC___NR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGD___BR-E	R88A-CAGD___BR-E
	θ axis	1	R88A-CAKF___BR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable
	θ axis	1	Included with the power cable	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGDOR3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S___CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4_XXLH_R	CR_UGD4_XXLH_NR
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

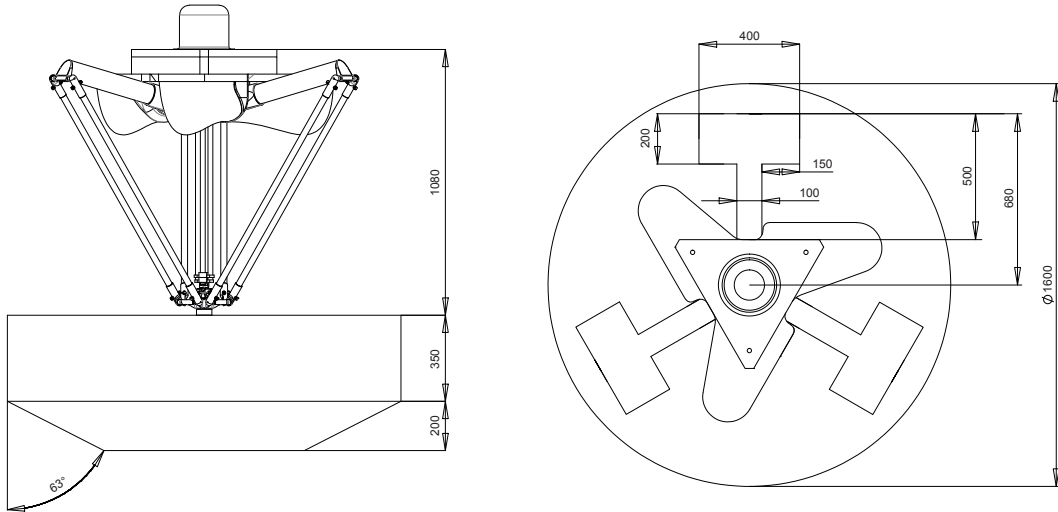
Description	Functions	Specifications	CR_UGD4_XXLH_R	CR_UGD4_XXLH_NR
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	16 axes	NJ501-4300		
	32 axes	NJ501-4400		
	64 axes	NJ501-4500		
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

DELTA ROBOT XXL (1,600)

Dimensions



Cycle time (Z1 x Y x Z2)

	P&P path	Payload	Cycle time
	25 x 300 x 25 mm	8 kg	1.00 s
	200 x 1000 x 200 mm		1.65 s

Kinematics

	Parameter	Dimensions
	Rf	147.5 mm
	Lf	525.0 mm
	Rm	70.0 mm
	Lm	1,085.0 mm

Workspace

	Parameter	Dimensions
	Zu	-811.0 mm
	Rcy	800.0 mm
	Hcy	350.0 mm
	Rco	407.0 mm
	Hco	200.0 mm

Software limits (X, Y, Z axis)

	Software limits	
	Positive limit	90°
	Negative limit	-31°

DELTA ROBOT XXL (1,300)



CR_UGD4_XXL1300H_R (3 + 1 axes)

CR_UGD4_XXL1300H_NR (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: \varnothing 1,300 x 300 mm (Max. 450)
- Max. Payload: 8 kg
- Cycle time 25/300/25 mm (8 kg): Up to 65 cycle/min
- Cycle time 200/1000/200 mm (8 kg): Up to 40 cycle/min
- Protection class: IP65
- Gear box ratio (X, Y, Z axis): 1:38,5
- Gear box ratio (θ axis): 1:20
- Repeatability (X, Y, Z axis): ± 1 mm
- Repeatability (θ axis): ± 0.3 deg
- Weight: 90 kg
- Servo drives voltage: 400 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4_XXL1300H_R	CR_UGD4_XXL1300H_NR
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K3K030C-BS2	R88M-K3K030C-BS2
	θ axis	1	R88M-K1K030C-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4_XXL1300H_R	CR_UGD4_XXL1300H_NR
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN30F-ECT	R88D-KN30F-ECT
	θ axis	1	R88D-KN15F-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC___NR-E	R88A-CRKC___NR-E
	θ axis	1	R88A-CRKC___NR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGD___BR-E	R88A-CAGD___BR-E
	θ axis	1	R88A-CAKF___BR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable
	θ axis	1	Included with the power cable	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGD0R3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S___CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4_XXL1300H_R	CR_UGD4_XXL1300H_NR
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

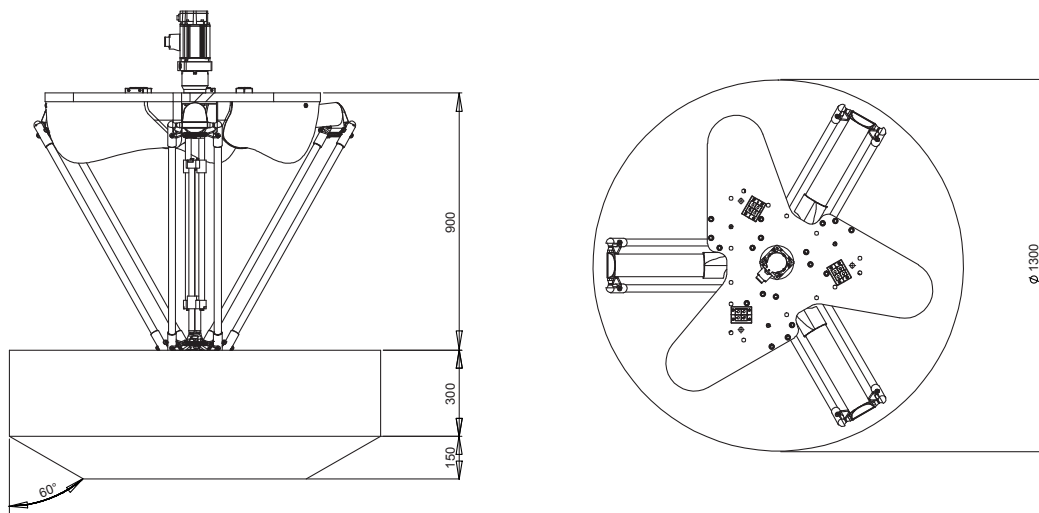
Description	Functions	Specifications	CR_UGD4_XXL1300H_R	CR_UGD4_XXL1300H_NR
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	Logic sequence, motion and robotics	16 axes	NJ501-4300	
		32 axes	NJ501-4400	
		64 axes	NJ501-4500	
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

DELTA ROBOT XXL (1,300)

Dimensions



Cycle time (Z1 x Y x Z2)

	P&P path	Payload	Cycle time
	25 x 300 x 25 mm	8 kg	0.90 s
	200 x 1000 x 200 mm		1.5 s

Kinematics

	Parameter	Dimensions
	Rf	147.5 mm
	Lf	440.0 mm
	Rm	70.0 mm
	Lm	950.0 mm

Workspace

	Parameter	Dimensions
	Zu	-731.0 mm
	Rcy	650.0 mm
	Hcy	300.0 mm
	Rco	390.0 mm
	Hco	150.0 mm

Software limits (X, Y, Z axis)

	Software limits	
	Positive limit	88°
	Negative limit	-30°



CR_UGD4_XL_R (3 + 1axes)

CR_UGD4_XL_NR (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: $\varnothing 1,300 \times 250$ mm (Max. 400)
- Max. Payload: 2 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 120 cycle/min
- Protection class: IP65
- Gear box ratio (X, Y, Z axis): 1:31
- Gear box ratio (θ axis): 1:1
- Repeatability (X, Y, Z axis): ± 0.2 mm
- Repeatability (θ axis): ± 0.3 deg
- Weight: 65 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4_XL_R	CR_UGD4_XL_NR
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K1K030T-BS2	R88M-K1K030T-BS2
	θ axis	1	R88M-K1K030T-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4_XL_R	CR_UGD4_XL_NR
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN15H-ECT	R88D-KN15H-ECT
	θ axis	1	R88D-KN15H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC ___NR-E	R88A-CRKC ___NR-E
	θ axis	1	R88A-CRKC ___NR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGB ___BR-E	R88A-CAGB ___BR-E
	θ axis	1	R88A-CAGB ___BR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable
	θ axis	1	Included with the power cable	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGDOR3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S ___CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4_XL_R	CR_UGD4_XL_NR
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

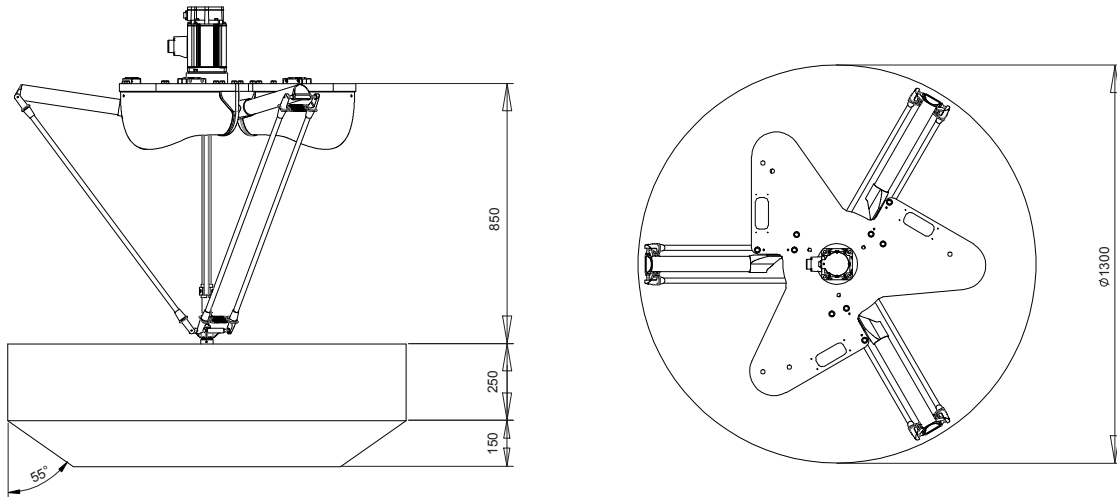
Description	Functions	Specifications	CR_UGD4_XL_R	CR_UGD4_XL_NR
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	Logic sequence, motion and robotics	16 axes	NJ501-4300	
		32 axes	NJ501-4400	
		64 axes	NJ501-4500	
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

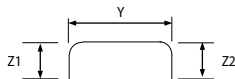
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

DELTA ROBOT XL

Dimensions

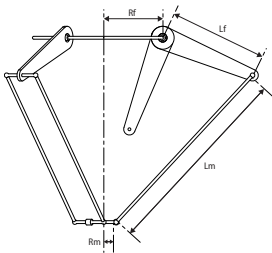


Cycle time (Z1 x Y x Z2)



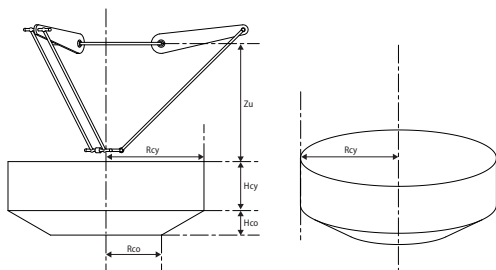
P&P path	Payload	Cycle time
25 x 305 x 25 mm	0.1 kg	0.44 s
	0.5 kg	0.52 s
	1 kg	0.66 s
	3 kg	0.67 s

Kinematics



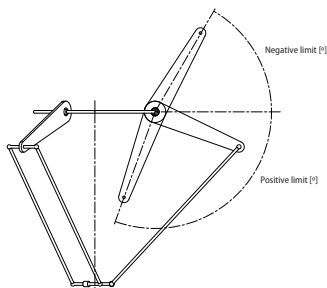
Parameter	Dimensions
Rf	200.0 mm
Lf	420.0 mm
Rm	50.0 mm
Lm	950.0 mm

Workspace



Parameter	Dimensions
Zu	-716.0 mm
Rcy	650.0 mm
Hcy	250.0 mm
Rco	436.0 mm
Hco	150.0 mm

Software limits (X, Y, Z axis)



Software limits	Software limits
Positive limit	93°
Negative limit	-34°



CR_UGD4_R (3 + 1 axes)

CR_UGD4_NR (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: $\varnothing 1,100 \times 250$ mm (Max. 400)
- Max. Payload: 2 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 150 cycle/min
- Protection class: IP65
- Gear box ratio (X, Y, Z axis): 1:31
- Gear box ratio (θ axis): 1:1
- Repeatability (X, Y, Z axis): ± 0.3 mm
- Repeatability (θ axis): ± 0.4 deg
- Weight: 65 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4_R	CR_UGD4_NR
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K1K030T-BS2	R88M-K1K030T-BS2
	θ axis	1	R88M-K1K030T-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4_R	CR_UGD4_NR
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN15H-ECT	R88D-KN15H-ECT
	θ axis	1	R88D-KN15H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKC ___NR-E	R88A-CRKC ___NR-E
	θ axis	1	R88A-CRKC ___NR-E	-
Power cable	X, Y, Z axis	3	R88A-CAGB ___BR-E	R88A-CAGB ___BR-E
	θ axis	1	R88A-CAGB ___BR-E	-
Brake cable	X, Y, Z axis	3	Included with the power cable	Included with the power cable
	θ axis	1	Included with the power cable	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGDOR3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S ___CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4_R	CR_UGD4_NR
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

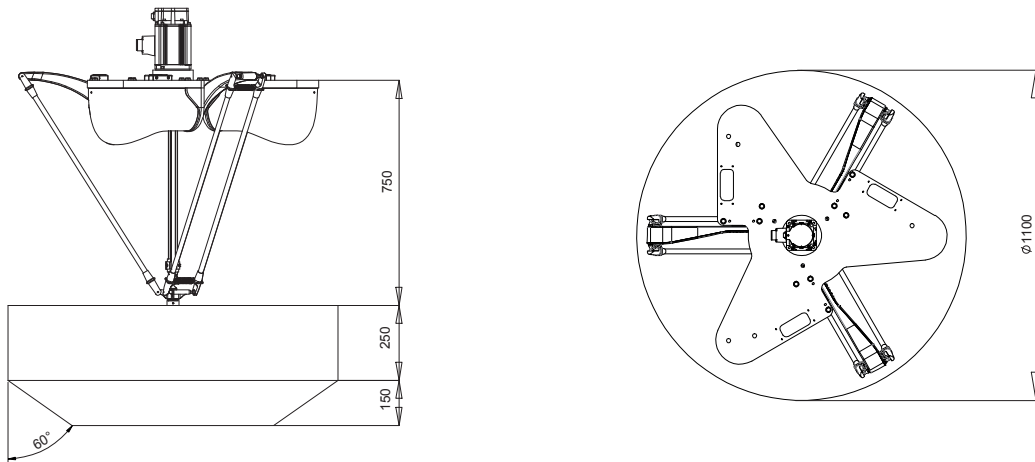
Description	Functions	Specifications	CR_UGD4_R	CR_UGD4_NR
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	16 axes	NJ501-4300		
	32 axes	NJ501-4400		
	64 axes	NJ501-4500		
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

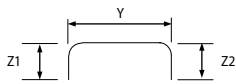
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

DELTA ROBOT

Dimensions

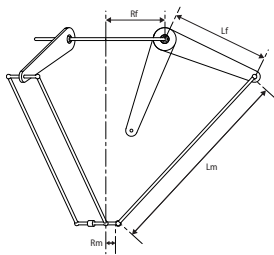


Cycle time (Z1 x Y x Z2)



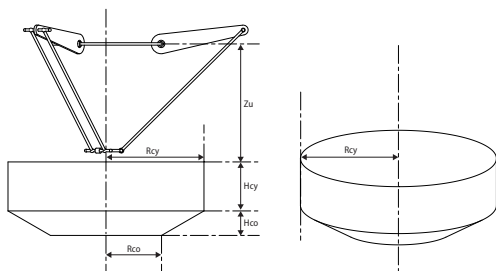
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.40 s
		0.5 kg	0.55 s
		1 kg	0.60 s

Kinematics



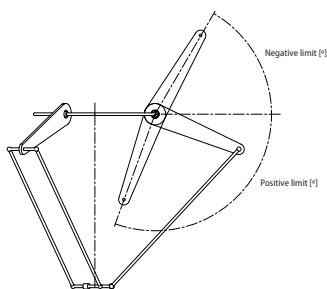
Parameter	Dimensions
Rf	200.0 mm
Lf	320.0 mm
Rm	50.0 mm
Lm	850.0 mm

Workspace



Parameter	Dimensions
Zu	-616.0 mm
Rcy	550.0 mm
Hcy	250.0 mm
Rco	336.0 mm
Hco	150.0 mm

Software limits (X, Y, Z axis)



Software limits	
Positive limit	99°
Negative limit	-47°

MINI DELTA ROBOT



CR_UGD4MINI_R (3 + 1axes)

CR_UGD4MINI_NR (3 axes)

- Degrees of freedom: 3 + 1 (rotational axis optional)
- Rated working range: $\varnothing 500 \times 155 \text{ mm}$ / $\varnothing 500 \times 130 \text{ mm}$ (with rotational axis)
- Max. Payload: 1 kg
- Cycle time 25/305/25 mm (0.1 kg): Up to 200 cycle/min
- Protection class: IP65
- Gear box ratio (X, Y, Z axis): 1:25
- Gear box ratio (θ axis): 1:1
- Repeatability (X, Y, Z axis): $\pm 0.2 \text{ mm}$
- Repeatability (θ axis): $\pm 0.3 \text{ deg}$
- Weight: 25 kg
- Servo drives voltage: 230 V

Included with the Delta robot

Description	Applicable axis	Quantity	CR_UGD4MINI_R	CR_UGD4MINI_NR
Accurax G5 rotary servo motor	X, Y, Z axis	3	R88M-K40030T-BS2	R88M-K40030T-BS2
	θ axis	1	R88M-K40030T-BS2	-

Accessories

Description	Applicable axis	Quantity	CR_UGD4MINI_R	CR_UGD4MINI_NR
Accurax G5 servo drive with EtherCAT communications	X, Y, Z axis	3	R88D-KN04H-ECT	R88D-KN04H-ECT
	θ axis	1	R88D-KN04H-ECT	-
Encoder cable	X, Y, Z axis	3	R88A-CRKA__CR-E	R88A-CRKA__CR-E
	θ axis	1	R88A-CRKA__CR-E	-
Power cable	X, Y, Z axis	3	R88A-CAKA__SR-E	R88A-CAKA__SR-E
	θ axis	1	R88A-CAKA__SR-E	-
Brake cable	X, Y, Z axis	3	R88A-CAKA__BR-E	R88A-CAKA__BR-E
	θ axis	1	R88A-CAKA__BR-E	-
Absolute encoder battery + cable		1 x servo drive	R88A-CRGDOR3C-BS ^{*1}	
EtherCAT cables		1 x servo drive	X6SW-6LSZH85S__CM-Y	

*1 R88A-BAT01G battery included with the absolute encoder battery cable.

Options

Description	Quantity	CR_UGD4MINI_R	CR_UGD4MINI_NR
Safety cable	1 x servo drive	R88A-CSK003S-E	
I/O connector kit (26 pins)	1 x servo drive	R88A-CNW01C	

Robot control

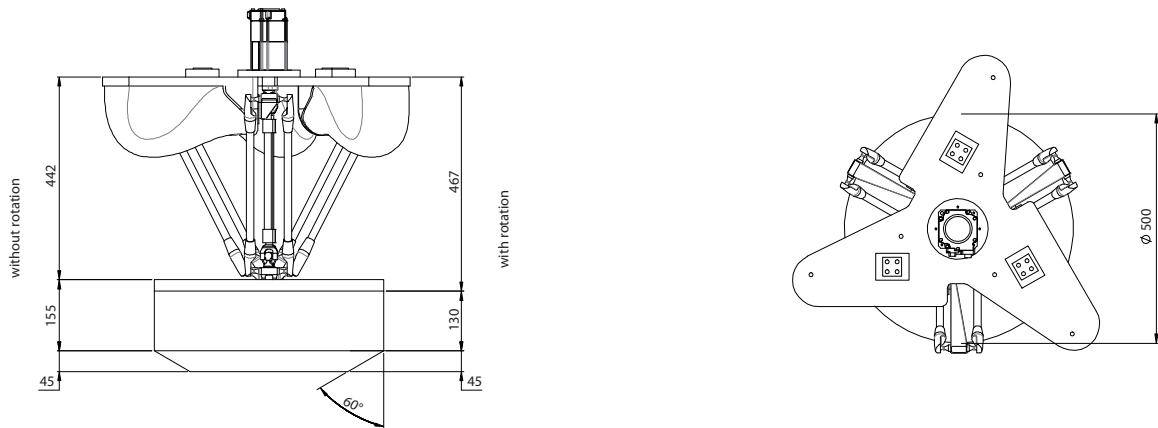
Description	Functions	Specifications	CR_UGD4MINI_R	CR_UGD4MINI_NR
NJ series CPU unit	Logic sequence, motion, robotics and database connection	16 axes	NJ501-4320	
		16 axes	NJ501-4310 ^{*1}	
	16 axes	NJ501-4300		
	32 axes	NJ501-4400		
	64 axes	NJ501-4500		
Power supply unit for NJ CPU		100 to 240 VAC	NJ-PA3001	
Sysmac Studio software tool		1 license	SYSMAC-SE201L	
USB programming cable			CP1W-CN221	

*1 The NJ501-4310 CPU unit only supports one Delta robot.

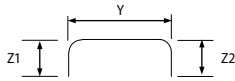
Note: The end cover unit CJ1W-TER01 is included with the CPU unit.

MINI DELTA ROBOT

Dimensions

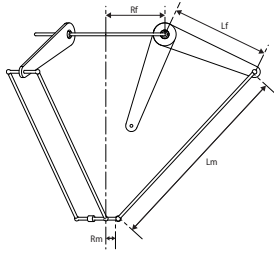


Cycle time (Z1 x Y x Z2)



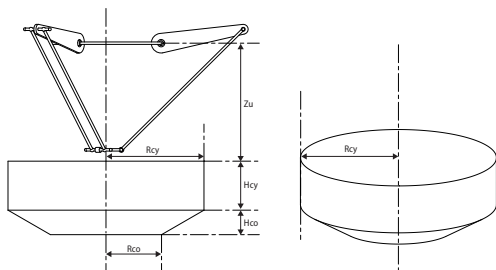
	P&P path	Payload	Cycle time
	25 x 305 x 25 mm	0.1 kg	0.30 s
		0.5 kg	0.43 s
		1 kg	0.52 s

Kinematics



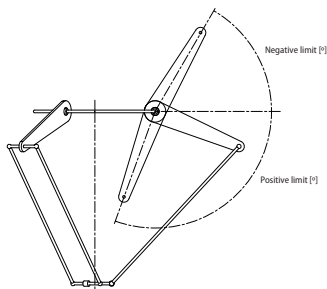
Parameter	Dimensions
Rf	112.0 mm
Lf	150.0 mm
Rm	40.0 mm
Lm	435.0 mm

Workspace



Parameter	CR_UGD4MINI_R	CR_UGD4MINI_NR
Zu	-397.0 mm	-372.0 mm
Rcy	250.0 mm	250.0 mm
Hcy	130.0 mm	155.0 mm
Rco	172.0 mm	172.0 mm
Hco	45.0 mm	45.0 mm

Software limits (X, Y, Z axis)



Software limits	CR_UGD4MINI_R	CR_UGD4MINI_NR
Positive limit	111°	111°
Negative limit	-33°	-45°

SYSTMAC
always in control