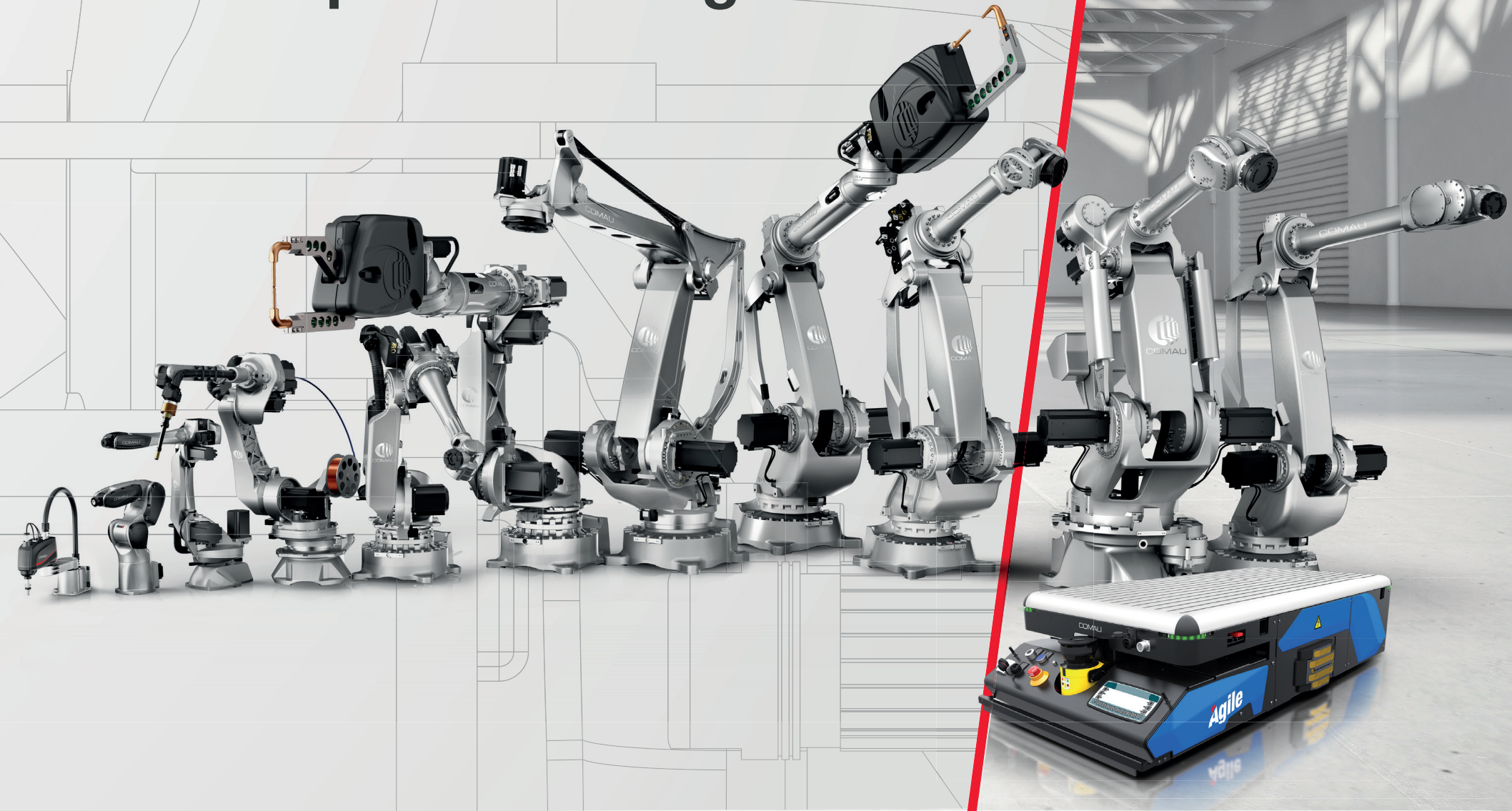


EN

# Robotics

## Compact Catalogue



# THE CULTURE OF AUTOMATION



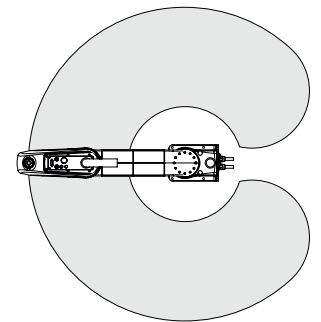
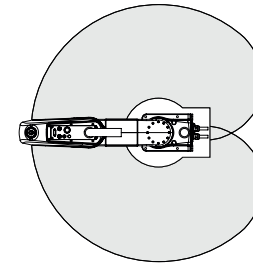
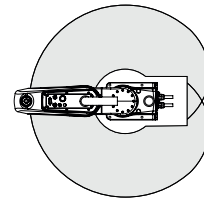
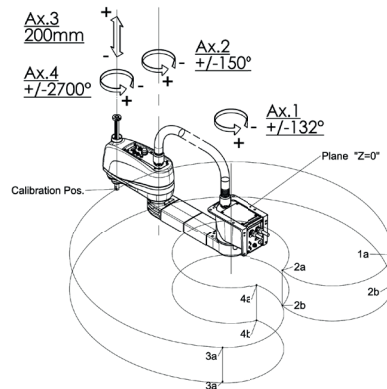
Designing advanced automation solutions means thinking about the industry in a new way, developing new scenarios, designing innovative products and creating ways to streamline production processes.

It requires more than technical competence; it requires a team of professionals whose vision is rooted in a culture of excellence. It also requires a combination of talent, passion and experience that unite to define new trends in automation.

**Here at Comau, our passion for our work reflects who we are.**

## SCARA robots

Model	REBEL-S6-0.45	REBEL-S6-0.60	REBEL-S6-0.60C	REBEL-S6-0.75	REBEL-S6-0.75C
<b>Robot type</b>	SCARA	SCARA	SCARA	SCARA	SCARA
<b>Payload</b>	6 kg	6 kg	6 kg	6 kg	6 kg
<b>Horizontal reach (radius)</b>	450 mm	600 mm	600 mm	750 mm	750 mm
<b>Vertical reach (Z-stroke)</b>	200 mm	200 mm	200 mm	200 mm	200 mm
<b>Repeatability (X-Y)</b>	0,02 mm	0,02 mm	0,02 mm	0,03 mm	0,03 mm
<b>Internal user wiring / piping</b>					
<b>Electrical</b>	25 pin-to-pin	25 pin-to-pin	25 pin-to-pin	25 pin-to-pin	25 pin-to-pin
<b>Pneumatical</b>	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm
<b>Available protection classes</b>					
<b>IP class</b>	IP10 (IP54 Option)	IP10 (IP54 Option)	IP10 (IP54 Option)	IP10 (IP54 Option)	IP10 (IP54 Option)
<b>Outer diameter of ball screw/spline</b>	20 mm	20 mm	20 mm	20 mm	20 mm
<b>Inner diameter of ball screw/spline</b>	14 mm	14 mm	14 mm	14 mm	14 mm
<b>Z axis down force (long-time)</b>	160 N	160 N	160 N	160 N	160 N
<b>Robot weight</b>	20 kg	20 kg	20 kg	20 kg	20 kg
<b>Environmental conditions</b>					
<b>Temperature</b>	+5° - +45° C	+5° - +45° C	+5° - +45° C	+5° - +45° C	+5° - +45° C
<b>Relative humidity</b>	5 - 95%*	5 - 95%*	5 - 95%*	5 - 95%*	5 - 95%*
<b>Applicable controller</b>	R1C-4	R1C-4	R1C-4	R1C-4	R1C-4
<b>Mounting position</b>					
<b>Floor</b>	Floor	Floor	-	Floor	-
<b>Wall</b>	Wall	Wall	Wall	Wall	Wall
<b>Ceiling</b>	-	-	Ceiling	-	Ceiling



\*without condensation



## Robots

	Small								Medium			
Model	RACER-3-0.63	RACER-5-0.63	RACER-5-0.80	RACER-7-1.0	RACER-7-1.4	ARC4-5-1.95	NS-12-1.85	NS-16-1.65	NJ-16-3.1	NJ-40-2.5	NJ-60-2.2	
Number of axes	6	6	6	6	6	6	6	6	6	6	6	
Maximum wrist payload	3 kg	5 kg*	5 kg	7 kg*	7 kg	5 kg	12 kg	16 kg	16 kg	40 kg	60 kg	
Additional load on forearm	2 kg	-	-	10 kg	10 kg	10 kg	10 kg	10 kg	12 kg	35 kg	20 kg	
Maximum horizontal reach	630 mm	630 mm	809 mm	999 mm	1436 mm	1951 mm	1850 mm	1650 mm	3108 mm	2503 mm	2258 mm	
Torque on axis 4	7.36 Nm	8.83 Nm	8.83 Nm	13 Nm	13 Nm	14 Nm	39 Nm	41 Nm	43 Nm	167 Nm	221 Nm	
Torque on axis 5	7.36 Nm	8.83 Nm	8.83 Nm	13 Nm	13 Nm	14 Nm	39 Nm	41 Nm	43 Nm	167 Nm	221 Nm	
Torque on axis 6	4.41 Nm	4.91 Nm	4.91 Nm	7.5 Nm	7.5 Nm	4.9 Nm	20 Nm	23 Nm	23 Nm	98 Nm	118 Nm	
Stroke (Speed)	Axis 1	+/- 170° (430 °/s)	+/- 170° (400 °/s)	+/- 170° (360 °/s)	+/- 165° (250 °/s)	+/- 165° (220 °/s)	+/- 180° (170 °/s)	+/- 180° (155 °/s)	+/- 180° (170 °/s)	+/-180° (170 °/s)	+/- 180° (170 °/s)	
	Axis 2	-95° / +135° (450 °/s)	-95° / +135° (360 °/s)	-95° / +135° (300 °/s)	-65° / +150° (250 °/s)	-85° / +155° (250 °/s)	-60° / +155° (175 °/s)	-60° / +155° (155 °/s)	-60° / +155° (155 °/s)	-60° / +125° (150 °/s)	-60° / +125° (150 °/s)	
	Axis 3	-155° / +90° (500 °/s)	-155° / +90° (400 °/s)	-155° / +90° (330 °/s)	-37° / -165° (300 °/s)	0° / -168° (300 °/s)	-170° / +110° (185 °/s)	-170° / +110° (170 °/s)	-170° / +110° (170 °/s)	0° / -165° (165 °/s)	0° / -165° (165 °/s)	
	Axis 4	+/- 200° (600 °/s)	+/- 200° (500 °/s)	+/- 210° (500 °/s)	+/- 210° (550 °/s)	+/- 210° (600 °/s)	+/- 185° (360 °/s)	+/- 2700° (360 °/s)	+/- 2700° (360 °/s)	+/- 2700° (265 °/s)	+/- 2700° (265 °/s)	
	Axis 5	+/- 125° (600 °/s)	+/- 125° (500 °/s)	+/- 125° (500 °/s)	+/- 137° (550 °/s)	+/- 135° (600 °/s)	+/- 123° (375 °/s)	+/- 120° (350 °/s)	+/- 120° (350 °/s)	+/- 120° (250 °/s)	+/- 123° (250 °/s)	
	Axis 6	+/- 2700° (900 °/s)	+/- 2700° (800 °/s)	+/- 2700° (800 °/s)	+/- 2700° (800 °/s)	+/- 2700° (600 °/s)	+/- 270° (550 °/s)	+/- 2700° (550 °/s)	+/- 2700° (550 °/s)	+/- 2700° (340 °/s)	+/- 2700° (550 °/s)	
Repeatability	0.02 mm	0.03 mm	0.03 mm	0.02 mm	0.03 mm	0.05 mm	0.05 mm	0.05 mm	0.10 mm	0.06 mm	0.06 mm	
Tool coupling flange ISO	9409 - 1 - A 25	9409 - 1 - A 25	9409 - 1 - A 25	9409 - 1 - A 40	9409 - 1 - A 40	9409-1-63-4-M6	9409 - 1 - A63	9409 - 1 - A63	9409 - 1 - A63	9409 - 1 - A100	9409 - 1 - A100	
Robot weight	30 kg	30 kg	32 kg	173 kg	180 kg	375 kg	335 kg	333 kg	680 kg	655 kg	645 kg	
Protection class	IP54	IP54	IP54	IP65	IP65	IP65	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	
Mounting position	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	
	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	
	Wall	Wall**	Wall**	Wall	-	-	-	-	-	-	-	
	-	-	-	Sloped	Sloped (45° max)	Sloped (45° max)	Sloped (45° max)	Sloped (45° max)	Sloped (45° max)	Sloped (45° max)	Sloped (45° max)	
	-	-	-	-	-	-	-	-	-	-	-	
Operating area type	Type 1	Type 1	Type 1	Type 2	Type 2	Type 2	Type 1	Type 1	Type 2	Type 2	Type 2	
Operating areas	A	1081 mm	1081 mm	1124 mm	1279 mm	1716 mm	2251 mm	2150 mm	1951 mm	3258 mm	2653 mm	2408 mm
	B	630 mm	630 mm	809 mm	999 mm	1436 mm	1951 mm	1850 mm	1651 mm	3108 mm	2503 mm	2258 mm
	C	37 mm	37 mm	8 mm	904 mm	412 mm	49 mm	950 mm	950 mm	2576 mm	2165 mm	1918 mm
	D	530 mm	530 mm	708 mm	554 mm	1130 mm	1257 mm	1157 mm	957 mm	1088 mm	720 mm	686 mm
	E	136 mm	136 mm	286 mm	385 mm	801 mm	986 mm	885 mm	685 mm	1625 mm	1187 mm	941 mm
	F	-	-	-	-	-	-	-	-	-	-	-

Base vertical cable output available

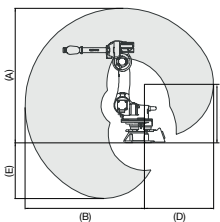
\*For Pick&Place 10 kg with a limited stroke of the 5<sup>th</sup> axis

ARC version available

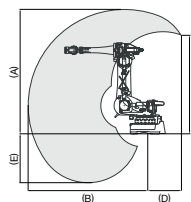
Off-set wrist version available

\*For Pick&Place 6 kg with a limited stroke of the 5<sup>th</sup> axis  
 \*\* Allowable with payload limitations

Operating area Type 1



Operating area Type 2

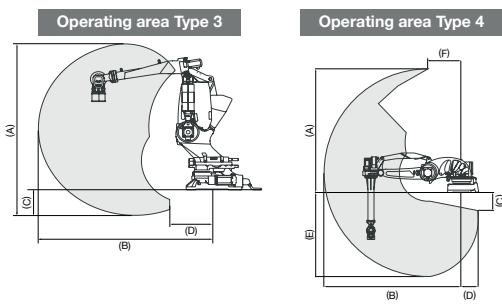




## Robots

### Special

Model	PAL-180-3.1	PAL-260-3.1	PAL-470-3.1	NJ-100-3.2 PRESS	NJ-130-3.7 SH PRESS	
Number of axes	4	4	5	6	6	
Maximum wrist payload	180 kg	260 kg	470 kg	100 kg	130 kg	
Additional load on forearm	25 kg	50 kg	25 kg	50 kg	15 kg	
Maximum horizontal reach	3100 mm	3100 mm	3100 mm	3209 mm	3741 mm	
Torque on axis 4	-	-	-	638 Nm	1225 Nm	
Torque on axis 5	-	-	-	638 Nm	1225 Nm	
Torque on axis 6	-	-	-	280 Nm	648 Nm	
Stroke (Speed)	Axis 1	+/- 180° (120 °/s)	+/- 180° (120 °/s)	+/- 180° (85 °/s)	+/- 180° (120 °/s)	+/- 180° (120 °/s)
	Axis 2	-49° / +95° (100 °/s)	-49° / +95° (85 °/s)	-60° / +75° (85 °/s)	-49° / +95° (108 °/s)	-60° / +170° (90 °/s)
	Axis 3	-68° / -208° (110 °/s)	-68° / -208° (110 °/s)	-45° / -205° (85 °/s)	-222° / -68° (120 °/s)	-292° / -21° (112 °/s)
	Axis 4	-	-	-	+/- 200° (190 °/s)	+/- 2700° (180 °/s)
	Axis 5	-	-	Axis bound to balance	+/- 120° (190 °/s)	+/- 125° (175 °/s)
	Axis 6	+/- 2700° (280 °/s)	+/- 2700° (260 °/s)	+/- 2700° (180 °/s)	+/- 200° (250-275 °/s)	+/- 2700° (250 °/s)
Repeatability	0.10 mm	0.10 mm	0.15 mm	0.17 mm	0.20 mm	
Tool coupling flange ISO	9409-2-200-6-M12	9409-2-200-6-M12	9409 - 1 - A 200	9409 - 1 - A 125	9409 - 1 - A 160	
Robot weight	1213 kg	1213 kg	2310 kg	1250 kg	1520 kg	
Protection class	IP65	IP65	IP65	IP44 / IP65 Wrist	IP44 / IP65 Wrist	
Mounting position	Floor	Floor	Floor	Floor	-	
	-	-	-	-	-	
	-	-	-	-	-	
	-	-	Shelf	-	Shelf	
Operating area type	Type 3	Type 3	Type 3	Type 3	Type 4	
Operating areas	A	3147 mm	3147 mm	3522 mm	2780 mm	3391 mm
	B	3099 mm	3099 mm	3050 mm	3209 mm	3741 mm
	C	952 mm	952 mm	480 mm	1035 mm	692 mm
	D	1182 mm	1182 mm	793 mm	642 mm	712 mm
	E	-	-	-	642 mm	2386 mm
	F	-	-	-	-	850 mm

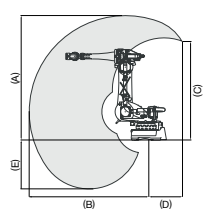




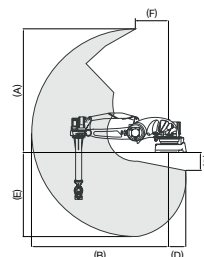
Robots

High payload															
Model	NJ-110-3.0	NJ-130-2.0	NJ-130-2.6	NJ-165-3.0	NJ-165-3.4 SH	NJ-210-3.1 SH	NJ-220-2.7	NJ-290-3.0	NJ-370-2.7	NJ-370-3.0	NJ-420-3.0	NJ-450-2.7	NJ-500-2.7	NJ-650-2.7	
Number of axes	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Maximum wrist payload	110 kg	130 kg	130 kg	165 kg	165 kg	210 kg	220 kg	290 kg	370 kg	370 kg	420 kg	450 kg	500 kg	650 kg	
Additional load on forearm	50 kg	50 kg	50 kg	50 kg	25 kg	25 kg	50 kg	50 kg	50 kg	50 kg	50 kg	50 kg	50 kg	50 kg	
Maximum horizontal reach	2980 mm	2050 mm	2616 mm	3000 mm	3450 mm	3151 mm	2701 mm	2997 mm	2703 mm	2997 mm	2997 mm	2703 mm	2703 mm	2703 mm	
Torque on axis 4	638 Nm	638 Nm	638 Nm	1230 Nm	1089 Nm	1177 Nm	1230 Nm	1668 Nm	2109 Nm	2109 Nm	2550 Nm	2550 Nm	2550 Nm	3060 Nm	
Torque on axis 5	638 Nm	638 Nm	638 Nm	1230 Nm	804 Nm	1177 Nm	1230 Nm	1668 Nm	2109 Nm	2109 Nm	2550 Nm	2550 Nm	2550 Nm	3060 Nm	
Torque on axis 6	291 Nm	314 Nm	314 Nm	712 Nm	411 Nm	677 Nm	712 Nm	1177 Nm	1177 Nm	1569 Nm	1569 Nm	1569 Nm	1569 Nm	1766 Nm	
Stroke (Speed)	Axis 1	+/- 180° (110 °/s)	+/- 180° (155 °/s)	+/- 180° (110 °/s)	+/- 180° (100 °/s)	+/- 180° (85 °/s)	+/- 180° (110°/s)	+/- 180° (90 °/s)	+/- 180° (85 °/s)	+/- 180° (85 °/s)	+/- 180° (85 °/s)	+/- 180° (85 °/s)	+/- 180° (85 °/s)	+/- 180° (75 °/s)	
	Axis 2	+95° / -75° (110 °/s)	-60° / +125° (105 °/s)	+95° / -75° (110 °/s)	-95° / +180° (90 °/s)	-50° / +170° (90 °/s)	-50° / +170° (90°/s)	-95° / +75° (90 °/s)	+/- 75° (90 °/s)	+75° / -60° (85 °/s)	+75° / -60° (85 °/s)	+75° / -60° (85 °/s)	+75° / -60° (85 °/s)	+75° / -60° (75 °/s)	
	Axis 3	-10° / -256° (110 °/s)	0° / -165° (150 °/s)	-10° / -256° (110 °/s)	-10° / -256° (110 °/s)	-18,8° / -288° (110 °/s)	-21,3° / -288° (110°/s)	-10° / -256° (110 °/s)	0° / -220° (90 °/s)	-10° / -231° (110 °/s)	-10° / -231° (85 °/s)	-10° / -231° (85 °/s)	-10° / -231° (85 °/s)	-10° / -231° (85 °/s)	-10° / -231° (75 °/s)
	Axis 4	+/- 280° (190 °/s)	+/- 200° (200 °/s)	+/- 280° (190 °/s)	+/- 2700° (130 °/s)	+/- 2700° (130 °/s)	+/- 2700° (130°/s)	+/- 2700° (130 °/s)	+/- 2700° (105 °/s)	+/- 2700° (90 °/s)	+/- 2700° (90 °/s)	+/- 2700° (90 °/s)	+/- 2700° (90 °/s)	+/- 2700° (90 °/s)	+/- 2700° (90 °/s)
	Axis 5	+/- 120° (190 °/s)	+/- 120° (190 °/s)	+/- 120° (190 °/s)	+/- 125° (130 °/s)	+/- 125° (130 °/s)	+/- 125° (130°/s)	+/- 125° (130 °/s)	+/- 125° (105 °/s)	+/- 125° (90 °/s)	+/- 125° (90 °/s)	+/- 125° (90 °/s)	+/- 125° (90 °/s)	+/- 125° (90 °/s)	+/- 125° (90 °/s)
	Axis 6	+/- 2700° (230 °/s)	+/- 2700° (230 °/s)	+/- 2700° (230 °/s)	+/- 2700° (195 °/s)	+/- 2700° (195 °/s)	+/- 2700° (195°/s)	+/- 2700° (195 °/s)	+/- 2700° (160 °/s)	+/- 2700° (120 °/s)	+/- 2700° (120 °/s)	+/- 2700° (120 °/s)	+/- 2700° (120 °/s)	+/- 2700° (120 °/s)	+/- 2700° (120 °/s)
Repeatability	0.07 mm	0.07 mm	0.07 mm	0.09 mm	0.10 mm	0.10 mm	0.08 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm	
Tool coupling flange ISO	9409 - 1 - A 125	9409 - 1 - A 125	9409 - 1 - A 125	9409 - 1 - A 160	9409-1-A 160/200	9409-1-A 160	9409 - 1 - A 160	9409-1-200-6-M12	9409-1-200-6-M12	9409-1-200-6-M12	9409-1-200-6-M12	9409-1-200-6-M12	9409-1-200-6-M12	9409-1-200-6-M12	
Robot weight	1070 kg	740 kg	1050 kg	1240 kg	1430 kg	1415 kg	1220 kg	2150 kg	2100 kg	2450 kg	2450 kg	2400 kg	2400 kg	2450 kg	
Protection class	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP65/67 (Foundry)	IP44 / IP65 Wrist	
Mounting position	Floor	Floor	Floor	Floor	-	-	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	
	Ceiling	Ceiling	Ceiling	Ceiling	-	-	Ceiling	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	Sloped	-	-	-	-	-	-	-	-	-	-	-	-	
Operating area type	Type 2	Type 2	Type 2	Type 2	Type 4	Type 4	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	
	A	3460 mm	2200 mm	3097 mm	3430 mm	3100 mm	2801 mm	3131 mm	3680 mm	3392 mm	3680 mm	3680 mm	3392 mm	3392 mm	3392 mm
	B	2980 mm	2050 mm	2616 mm	3000 mm	3450 mm	3151 mm	2701 mm	2997 mm	2997 mm	2997 mm	2997 mm	2703 mm	2703 mm	2703 mm
	C	2642 mm	1690 mm	2261 mm	2600 mm	449 mm	547 mm	2286 mm	2922 mm	2617 mm	3195 mm	3195 mm	2895 mm	2895 mm	2895 mm
	D	757 mm	720 mm	824 mm	730 mm	397 mm	93 mm	786 mm	804 mm	804 mm	433 mm	433 mm	486 mm	486 mm	486 mm
	E	783 mm	733 mm	404 mm	738 mm	2100 mm	1800 mm	425 mm	119 mm	-181 mm (****)	119 mm	119 mm	-181 mm (****)	-181 mm (****)	-181 mm (****)
	F	-	-	-	-	850 mm	850 mm	-	-	-	-	-	-	-	-

Operating area Type 2



Operating area Type 4



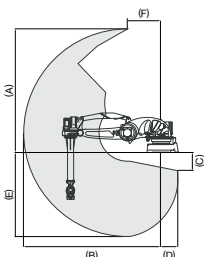


Robots

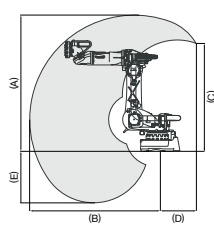
Hollow Wrist

Model	NJ4-90-2.2	NJ4-110-2.2	NJ4-170-2.5	NJ4-170-2.9	NJ4-175-2.2	NJ4-220-2.4	NJ4-220-2.7	NJ4-220-3.0	NJ4-270-2.7	NJ4-165-3.4 SH	NJ4-210-3.1 SH	
Number of axes	6	6	6	6	6	6	6	6	6	6	6	
Maximum wrist payload	90 kg	110 kg	170 kg	170 kg	175 kg	220 kg	220 kg	220 kg	270 kg	165 kg	210 kg	
Additional load on forearm	10 kg	10 kg	50 kg	25 kg	50 kg	25 kg	25 kg	25 kg	25 kg	50 kg	25 kg	
Maximum horizontal reach	2210 mm	2210 mm	2500 mm	2918 mm	2204 mm	2417 mm	2738 mm	3002 mm	2703 mm	3377 mm	3188 mm	
Torque on axis 4	577 Nm	796 Nm	1010 Nm	1010 Nm	1010 Nm	1320 Nm	1320 Nm	1320 Nm	1960 Nm	1089 Nm	1315 Nm	
Torque on axis 5	432 Nm	609 Nm	804 Nm	804 Nm	804 Nm	950 Nm	950 Nm	950 Nm	1457 Nm	804 Nm	952 Nm	
Torque on axis 6	206 Nm	284 Nm	412 Nm	412 Nm	412 Nm	690 Nm	690 Nm	690 Nm	834 Nm	411 Nm	687 Nm	
Stroke (Speed)	Axis 1	+/- 180° (170 °/s)	+/- 180° (170 °/s)	+/-180° (110 °/s)	+/-180° (100 °/s)	+/-180° (110 °/s)	+/-180° (100 °/s)	+/-180° (110 °/s)	+/-180° (90 °/s)	+/-180° (85 °/s)	+/-180° (85 °/s)	
	Axis 2	-60° / +125° (125 °/s)	-60° / +155° (125 °/s)	-75° / +95° (110 °/s)	-75° / +95° (90 °/s)	-75° / +95° (110 °/s)	-75° / +95° (90 °/s)	-75° / +95° (90 °/s)	-75° / +75° (90 °/s)	-50° / +170° (90 °/s)	+95° / - 75° (110 °/s)	
	Axis 3	0° / -165° (165 °/s)	0° / -165° (165 °/s)	-10° / -230° (110 °/s)	-10° / -230° (110 °/s)	-10° / -230° (110 °/s)	-10° / -256° (110 °/s)	-10° / -256° (110 °/s)	-231° / 0° (90 °/s)	-231° / 0° (90 °/s)	-19,4° / -288° (110 °/s)	
	Axis 4	+/- 200° (200 °/s)	+/- 200° (200 °/s)	+/- 200° (180 °/s)	+/- 200° (130 °/s)	+/- 200° (180 °/s)	+/- 200° (130 °/s)	+/- 200° (130 °/s)	+/- 200° (115 °/s)	+/- 200° (115 °/s)	+/- 200° (130 °/s)	
	Axis 5	+/- 200° (200 °/s)	+/- 200° (200 °/s)	+/- 200° (140 °/s)	+/- 200° (125 °/s)	+/- 200° (140 °/s)	+/- 200° (125 °/s)	+/- 200° (125 °/s)	+/- 200° (125 °/s)	+/- 200° (125 °/s)	+/- 200° (125 °/s)	
	Axis 6	+/- 200° (265 °/s)	+/- 200° (265 °/s)	+/- 200° (190 °/s)	+/- 200° (170 °/s)	+/- 200° (190 °/s)	+/- 200° (170 °/s)	+/- 200° (170 °/s)	+/- 200° (170 °/s)	+/- 200° (170 °/s)	+/- 200° (170 °/s)	
Repeatability	0.07 mm	0.07 mm	0.10 mm	0.10 mm	0.10 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm	0.10 mm	0.10 mm	
Tool coupling flange ISO	9409-1-125-6-M10 9409-1-160-6-M10	9409-1-125-6-M10 9409-1-160-6-M10	9409 - 1 - A 125 9409 - 1 - A 160	9409 - 1 - A 125 9409 - 1 - A 160	9409 - 1 - A 125 9409 - 1 - A 160	9409 - 1 - A 125 9409 - 1 - A 160	9409 - 1 - A 125 9409 - 1 - A 160	9409 - 1 - A 160 9409 - 1 - A 200	9409 - 1 - A 160 9409 - 1 - A 200	9409 - 1 - A 160 9409 - 1 - A 200	9409 - 1 - A 160 9409 - 1 - A 200	
Robot weight	685 kg	685 kg	1100 kg	1240 kg	1080 kg	1260 kg	1290 kg	2005 kg	1975 kg	1430 kg	1460 kg	
Protection class	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	
Mounting position	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	-	-	
	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	Shelf	Shelf	
Operating area type	Type 5	Type 5	Type 5	Type 5	Type 5	Type 5	Type 5	Type 5	Type 5	Type 4	Type 4	
Operating areas	A	2360 mm	2360 mm	2981 mm	3357 mm	2685 mm	2847 mm	3168 mm	3685 mm	3392 mm	3027 mm	2837 mm
	B	2210 mm	2210 mm	2501 mm	2927 mm	2204 mm	2417 mm	2738 mm	3002 mm	2703 mm	3377 mm	3187 mm
	C	1856 mm	1856 mm	2226 mm	2524 mm	2080 mm	2241 mm	2324 mm	2927 mm	2617 mm	472 mm	535 mm
	D	712 mm	712 mm	720 mm	744 mm	959 mm	465 mm	779 mm	804 mm	804 mm	323 mm	131 mm
	E	893 mm	893 mm	387 mm	436 mm	360 mm	436 mm	464 mm	123 mm	-181 mm (***)	2027 mm	1837 mm
	F	-	-	-	-	-	-	-	-	-	850 mm	850 mm

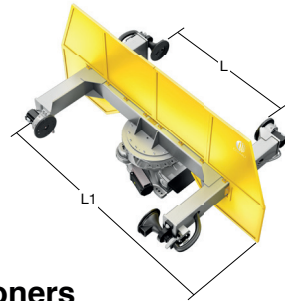
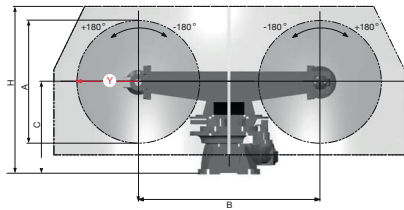
Operating area Type 4



Operating area Type 5

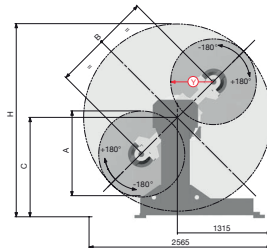
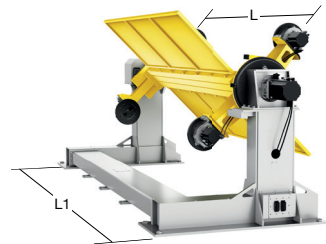


(\*\*) Negative quote means that working area is entirely above the floor level



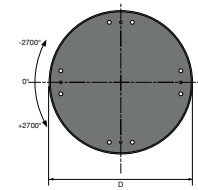
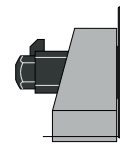
## Double action vertical positioners

Model	PTDV-250		PTDV-500		PTDV-750		PTDV-850	
	1.1 - 1.6	1.2 - 2.0	1.2 - 2.5	1.2 - 2.0	1.2 - 2.0	1.2 - 2.0	1.2 - 2.0	1.2 - 2.0
Payload	2x250 kg	2x500 kg	2x500 kg	2x750 kg	2x850 kg			
Static torque on main axis	600 Nm	1000 Nm	1000 Nm	1000 Nm	1000 Nm			
Approx. time for 180° changeover	5.3 s	4.9 s	5.3 s	4.7 s	4.8 s			
Max load difference between stations	250 kg	500 kg	500 kg	750 kg	850 kg			
Max inertia	60 kgm <sup>2</sup>	200 kgm <sup>2</sup>	200 kgm <sup>2</sup>	350 kgm <sup>2</sup>	350 kgm <sup>2</sup>			
Main axis rotation angle	from -90° to +90°							
Secondary axis rotation angle	from -180° to +180°							
Repeatability at 500 mm	0.15 mm	0.16 mm	0.20 mm	0.16 mm	0.20 mm			
A	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm			
B	1700 mm	2150 mm	2150 mm	2150 mm	2150 mm			
C	1100 mm	795/677mm	795/677mm	795/677mm	795/677mm			
H	1969 mm	2003 mm	2003 mm	2003 mm	2003 mm			
L	1600 mm	2056 mm	2556 mm	2056 mm	2556 mm			
L1	3300 mm	3956 mm	4400 mm	3956 mm	4400 mm			
Weight	1250 kg	1800 kg	1855 kg	1855 kg	1920 kg			



## Double action horizontal positioners

Model	PTDO-750-1.2			
	2.0	3.1	4.0	4.5
Payload	2x750 kg	2x750 kg	2x750 kg	2x750 kg
Static torque on main axis	1000 Nm	1000 Nm	1000 Nm	1000 Nm
Approx. time for 180° changeover	3.7 s	3.7 s	3.7 s	3.7 s
Max load difference between stations	350 kg	350 kg	350 kg	350 kg
Max inertia	270 kgm <sup>2</sup>	270 kgm <sup>2</sup>	270 kgm <sup>2</sup>	270 kgm <sup>2</sup>
Main axis rotation angle	from -90° to +90°			
Secondary axis rotation angle	from -180° to +180°			
Repeatability at 500 mm	0.15 mm	0.15 mm	0.15 mm	0.15 mm
A	1200 mm	1200 mm	1200 mm	1200 mm
B	1430 mm	1430 mm	1430 mm	1430 mm
C	1405 mm	1405 mm	1405 mm	1405 mm
H	2720 mm	2720 mm	2720 mm	2720 mm
L	2000 mm	3100 mm	4000 mm	4500 mm
L1	4086 mm	5186 mm	6086 mm	6586 mm
Weight	2280 kg	3060 kg	3255 kg	3400 kg

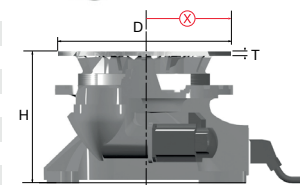
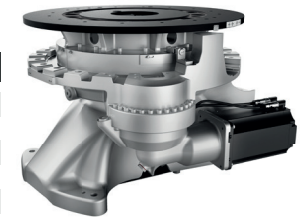


## Positioner modules

Model	MP-500	MP-1000	MP-1250	MP-2500	MP-5000
Payload	500 kg	1000 kg	1250 kg	2500 kg	5000 kg
Max inertia	250 kgm <sup>2</sup>	400 kgm <sup>2</sup>	400 kgm <sup>2</sup>	1100 kgm <sup>2</sup>	2500 kgm <sup>2</sup>
Static torque on main axis	600 Nm	1000 Nm	1500 Nm	5000 Nm	4000 Nm
Turnover moment (Max moment of flexure)	2000 Nm	3500 Nm	3500 Nm	7000 Nm	50000 Nm
Max axial thrust	1150 daN	1500 daN	1500 daN	2000 daN	3000 daN
Acceleration time	0.60 s	0.75 s	0.80 s	0.70 s	0.50 s
Output rotation speed	150 (°/s)	150 (°/s)	150 (°/s)	100 (°/s)	27 (°/s)
Repeatability at 500 mm	0.05 mm	0.06 mm	0.06 mm	0.09 mm	0.10 mm
Motors	AC brushless				
Protection class	IP67				
Flange diameter - D	190 mm	370 mm	370 mm	600 mm	900 mm
Idle Flange group	available in option				
Weight	53 kg	90 kg	90 kg	290 kg	2000 kg

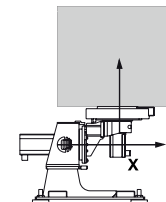
## Rotary tables

Model	TR-1000	TR-3000	TR-4500	TR-6000	
Payload	1000 kg	3000 kg	4500 kg	6000 kg	
Max inertia	1400 kgm <sup>2</sup>	3500 kgm <sup>2</sup>	7000 kgm <sup>2</sup>	15000 kgm <sup>2</sup>	
Static torque on main axis	850 Nm	4200 Nm	4250 Nm	5800 Nm	
Turnover moment (Max moment of flexure)	10000 Nm	41000 Nm	45000 Nm	75000 Nm	
Approx. time for 180° changeover	3.5 s	3.8 s	4.3 s	5.9 s	
Main axis rotation angle	69 (°/s)	50 (°/s)	55 (°/s)	33 (°/s)	
Repeatability at 500 mm	0.10 mm	0.10 mm	0.15 mm	0.20 mm	
Tilting angle up to 10°	yes	yes	yes	yes	
Availability in single-turn/multi-turn	ST	ST/MT	ST/MT	ST	MT
H	780 mm	660 mm	660 mm	800 mm	
T	17 mm	23 mm	23 mm	23 mm	
D	750 mm	900 mm	900 mm	1500 mm	
Weight	460 kg	790 kg	825 kg	2460 kg	2350 kg



## Orbital single lathe positioner

Model	PTS-ORB-1000
Payload	1000 kg
Max inertia	400 kgm <sup>2</sup>
Static torque on main axis	1000 Nm
Turnover moment (Max moment of flexure)	2060 Nm
Max axial thrust	1150 daN
Acceleration time	0.75 s
Output max rotation speed	150 (°/s)
Output max rotation speed 2	90 (°/s)
Repeatability at 500 mm	0.06 mm
Motors	AC brushless
Protection class	IP65
Flange diameter - D	288 mm
Weight	630 kg



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The illustration does not necessarily show the products in their standard version. **Edition - 05/19 - Turin**

## Automated Guided Vehicle (AGV)

Model	Agile1500 rel.1
<b>External dimensions (LxWxH)</b>	1564 x 713 x 330 mm
<b>Weight</b>	280 kg
<b>Maximum payload</b>	1500 kg
<b>Maximum speed</b>	1.7 m/s (natural navigation) - 1.2 m/s (magnetic navigation) 1.0 m/s (backward motion)
<b>Maximum towing force</b>	2100 N (*)
<b>Positioning repeatability</b>	+/-10 mm
<b>Maximum grade</b>	1%
<b>Operating environment</b>	Indoor
<b>Battery type</b>	Maintenance-free Lithium
<b>Battery characteristics</b>	25,6 V-138 Ah (**)

### Implements interfacing and communication

<b>Power supply</b>	24 Vdc Power, 24 Vdc Auxiliary
<b>Communication</b>	CANopen fieldbus

(\*) friction 0.5 / 350 kg on vehicle plate

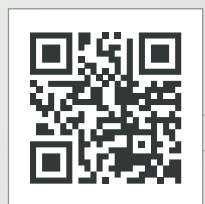
(\*\*) 110 Ah available for user



## Slides

Robot model	From NJ-110-3.0 to NJ4-220-2.7	From NJ-220-3.0 to NJ-650-2.7
<b>Rail type</b>	TMF3	TMF4
<b>Robot mounting position*</b>	0° - 90° - 180° - 270°	0° - 90° - 180° - 270°
<b>Robot spacer</b>	200 - 300 - 400 - 500 mm	200 - 300 - 400 - 500 mm
<b>Dressing type Spot (S) / Hand (H)</b>	S / H	S / H
<b>Min. net stroke / Step - Single carriage</b>	670 / 500 mm	670 / 500 mm
<b>Min. net stroke / Step - Double carriage</b>	370 / 500 mm	270 / 500 mm

(\*) for Robot mounting positioning 0° a Robot spacer is mandatory



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## Control units

Model	R1C / R1C-4
<b>Dimensions (WxDxH):</b>	427x498x266 mm
<b>Weight:</b>	23 kg
<b>Working temperature:</b>	5 to 45°C
<b>Humidity:</b>	from 5% to 95% without condensation
<b>Extended line power range:</b>	230V ±10%
<b>R1C available for:</b>	Racer-3, Racer-5
<b>R1C-4 available for:</b>	Rebel-S



Model	C5Compact
<b>Dimensions:</b>	550x500x550 mm
<b>Weight:</b>	100 kg
<b>Working temperature:</b>	5 to 45°C
<b>Humidity:</b>	from 5% to 95% without condensation
<b>Extended line power range:</b>	400 to 500V
<b>Available for:</b>	Racer-7, NS
<b>SAFE-cartesian version:</b>	available option



Model	C5G Plus
<b>Dimensions:</b>	800x1110x510 mm
<b>Weight:</b>	125 kg
<b>Working temperature:</b>	5 to 45°C (5 to 55°C with cooler)
<b>Humidity:</b>	from 5% to 95% without condensation
<b>Extended line power range:</b>	400 to 500V
<b>Available for:</b>	Racer-7, NS, NJ, NJ4 / PAL (all models)
<b>SAFE-cartesian version:</b>	available option

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