EN

Robotics

Index

Comau Robotics

Comau Robotics is a leading supplier of industrial robots, robotized processes and integrated robotic solutions.

Comau offers a wide range of innovative articulated and scara robots, covering a large number of models that are perfect for handling, spot welding, arc welding, press-shop automation, palletizing, assembling, sealing, machine tending and many other applications.

Technologically advanced, reliable, flexible, and specifically tailored to our customers' needs, Comau Robotics guarantees optimal performance across the entire robot range, robotized cells and process-integrated solutions.

We also ensure prompt and flexible after-sales services. Our highly qualified and skilled team guides and assists customers for training, immediate intervention or scheduled maintenance.

Meet the Comau robot team

Our Ro

The Robot team available for our clients is wide, well known and appreciated

We provide scara and articulated industrial robots suitable for any application and special robots for spot and arc welding, palletizing or press to press automation.

bot Family

All our robots are characterized by high performance in terms of speed, repeatability, accuracy and flexibility.

Product range extends from small payload robots to the massive capacity of 650 kg.

Each robot model is designed with a reduced footprint, large work envelope, highly precise movements and positioning, great reliability and low maintenance costs.

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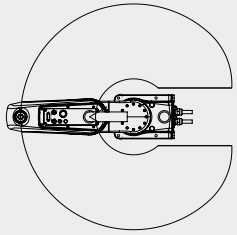
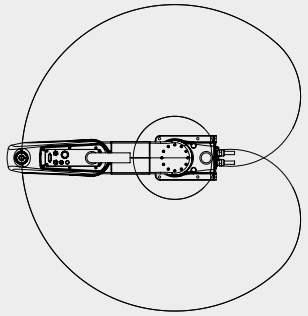
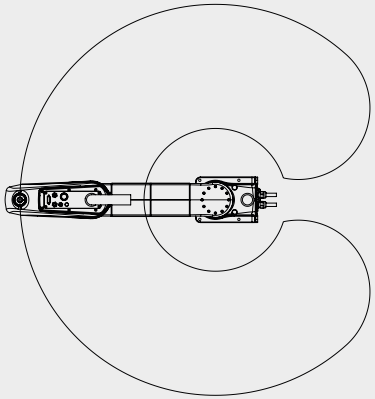
REBEL-S SCARA FAMILY

MODEL	Rebel-S6-0.45	Rebel-S6-0.60	Rebel-S6-0.75
AXES	4	4	4
LOAD (kg)	6	6	6
REPEATABILITY (mm)	0.02	0.02	0.03
REACH (mm)	450	600	750
WEIGHT (kg)	20	20	20
MOUNTING POSITION	Base / Wall	Base / Wall	Base / Wall
PROTECTION DEGREE	IP10 (IP54 Option)	IP10 (IP54 Option)	IP10 (IP54 Option)







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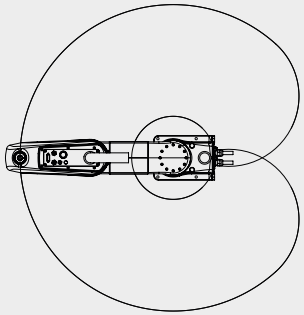
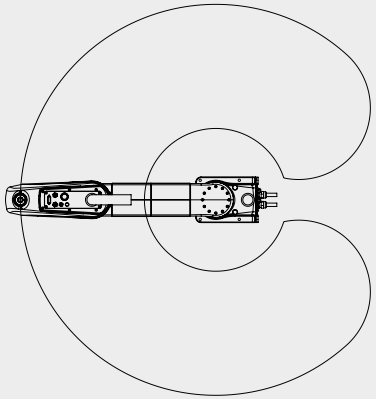
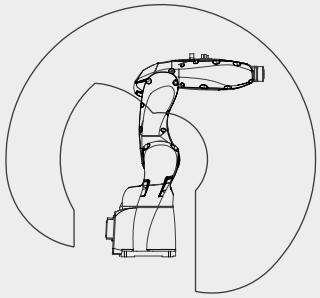
Rebel-S6-0.60c	Rebel-S6-0.75c
4	4
6	6
0.02	0.03
600	750
20	20
Ceiling / Wall	Ceiling / Wall
IP10 (IP54 Option)	IP10 (IP54 Option)

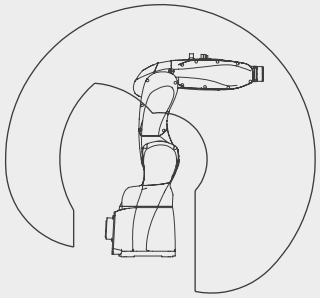


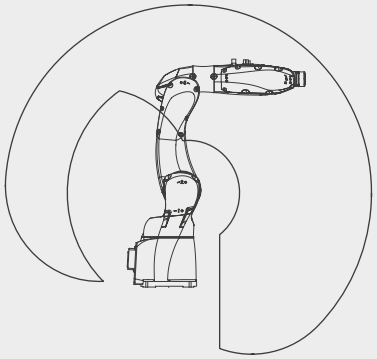


RACER ROBOT FAMILY

MODEL	Racer3	Racer5-0.63	Racer5-0.80
AXES	6	6	6
LOAD (kg)	3	5*	5*
REPEATABILITY (mm)	0.02	0.03	0.03
REACH (mm)	630	630	809
WEIGHT (kg)	30	30	32
MOUNTING POSITION	Floor / Ceiling / Wall	Floor / Ceiling / Wall**	Floor / Ceiling / Wall**
PROTECTION DEGREE	IP54	IP54 (IP65 Option)	IP54 (IP65 Option)







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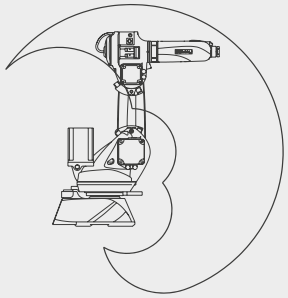
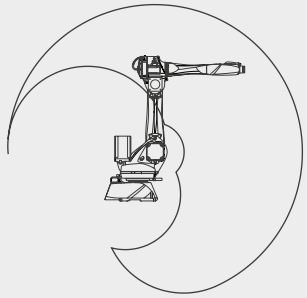
*For Pick&Place 6 kg with a limited stroke of the 5th axis

** Allawable with payload limitations

Racer7-0.99
6
7
0.05
999
173
Floor / Ceiling / Sloping / Wall
IP65

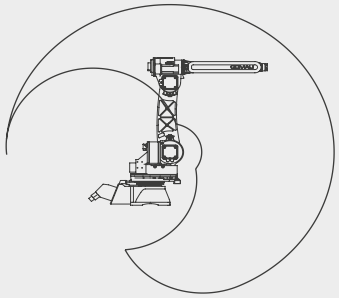


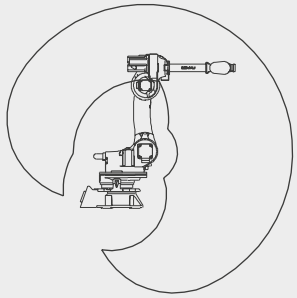
Racer7-1.40
6
7
0.05
1436
180
Floor / Ceiling / Sloping / Wall
IP65

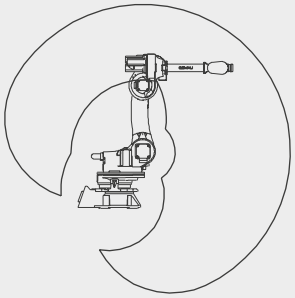


STANDARD ROBOTS

MODEL	SIX	NS 12 - 1.85	NS 16 - 1.65
AXES	6	6	6
LOAD (kg)	6	12	16
REPEATABILITY (mm)	0.05	0.05	0.05
REACH (mm)	1400	1850	1650
WEIGHT (kg)	160	335	335
MOUNTING POSITION	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)
PROTECTION DEGREE	IP65	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version







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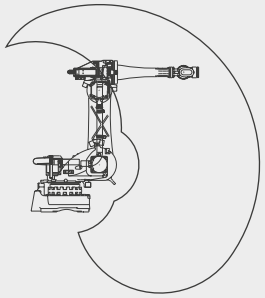
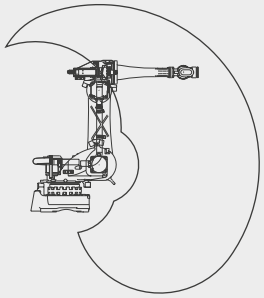
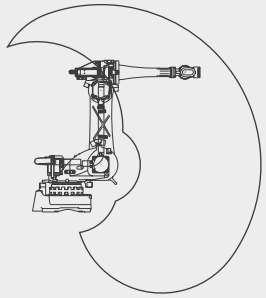
NJ 16 - 3.1	NJ 40 - 2.5	NJ 60 - 2.2
6	6	6
16	40	60
0.10	0.06	0.06
3108	2503	2258
680	655	645
Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)
IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version

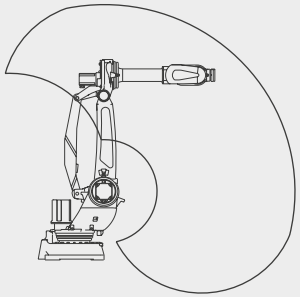


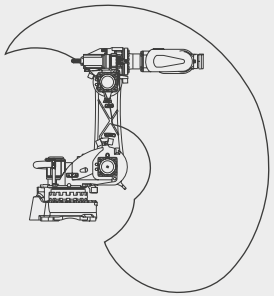


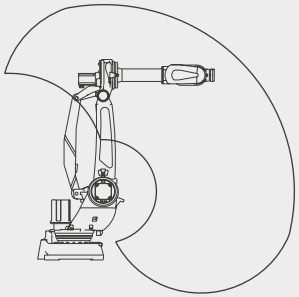


STANDARD ROBOTS

MODEL	NJ 110 - 3.0	NJ 130 - 2.0	NJ 130 - 2.6
AXES	6	6	6
LOAD (kg)	110	130	130
REPEATABILITY (mm)	0.07	0.07	0.07
REACH (mm)	2980	2050	2616
WEIGHT (kg)	1070	740	1050
MOUNTING POSITION	Floor / Ceiling	Floor / Ceiling	Floor / Ceiling
PROTECTION DEGREE	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version







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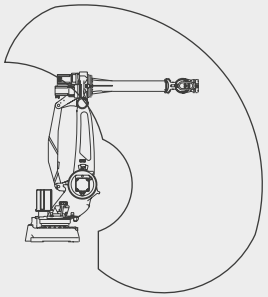
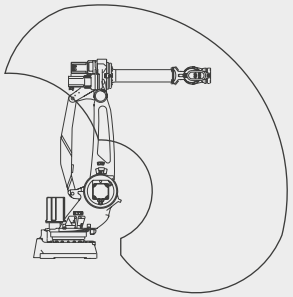
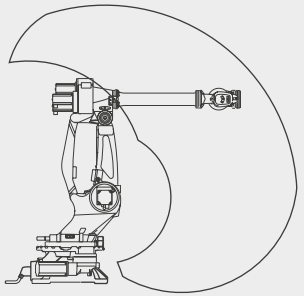
NJ 165 - 3.0
6
165
0.09
3000
1240
Floor / Ceiling
IP65 / IP67 Foundry Version



NJ 220 - 2.7
6
220
0.08
2701
1220
Floor / Ceiling
IP65 / IP67 Foundry Version

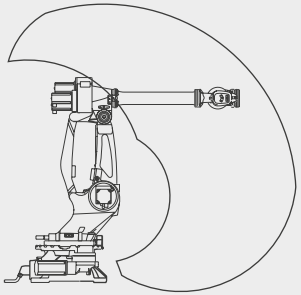


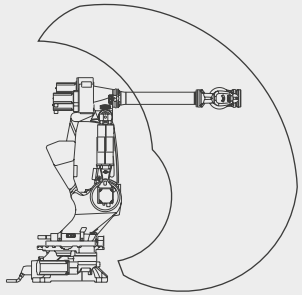
NJ 290 - 3.0
6
290
0.15
2997
2150
Floor
IP65 / IP67 Foundry Version

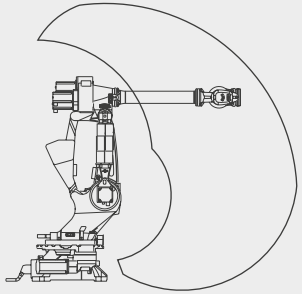


STANDARD ROBOTS

MODEL	NJ 370 - 2.7	NJ 370 - 3.0	NJ 420 - 3.0
AXES	6	6	6
LOAD (kg)	370	370	420
REPEATABILITY (mm)	0.15	0.15	0.15
REACH (mm)	2703	2997	2997
WEIGHT (kg)	2100	2450	2450
MOUNTING POSITION	Floor	Floor	Floor
PROTECTION DEGREE	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version	IP65 / IP67 Foundry Version







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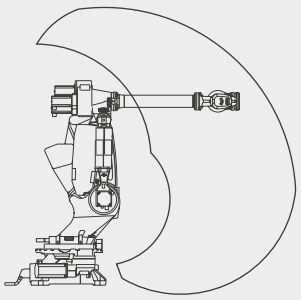
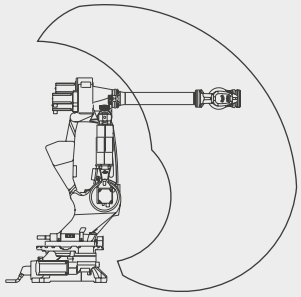
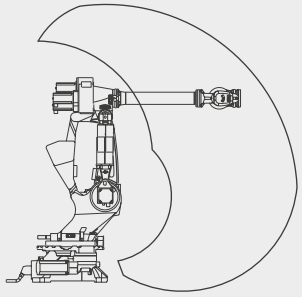
NJ 450 - 2.7
6
450
0.15
2703
2400
Floor
IP65 / IP67 Foundry Version



NJ 500 - 2.7
6
500
0.15
2703
2400
Floor
IP65 / IP67 Foundry Version

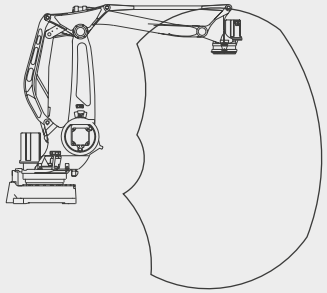


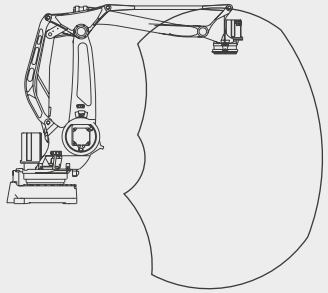
NJ 650 - 2.7
6
650
0.15
2703
2450
Floor
IP44 / IP65 Wrist

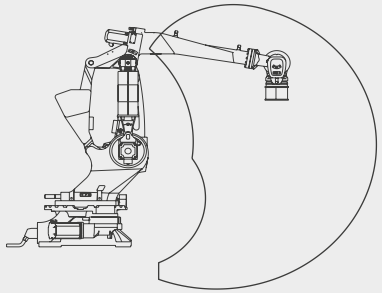


SPECIAL ROBOTS

MODEL	PAL 180 - 3.1	PAL 260 - 3.1	PAL 470 - 3.1
AXES	4	4	5
LOAD (kg)	180	260	470
REPEATABILITY (mm)	0.10	0.10	0.15
REACH (mm)	3100	3100	3100
WEIGHT (kg)	1250	1250	2250
MOUNTING POSITION	Floor	Floor	Floor
PROTECTION DEGREE	IP65	IP65	IP65







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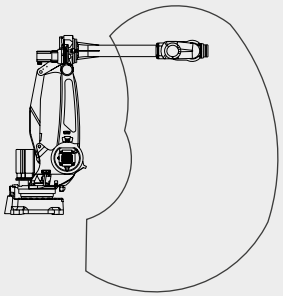
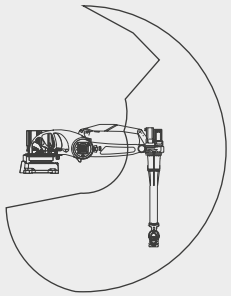
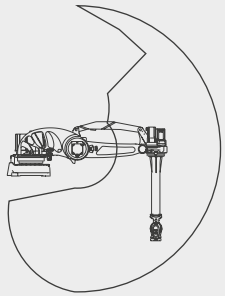
NJ 100 - 3.2 PRESS
6
100
0.17
3209
1250
Floor
IP44 / IP65 Wrist



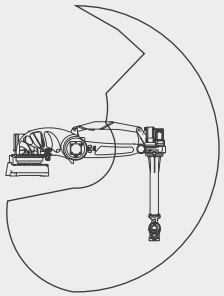
NJ 130 - 3.7 SH PRESS
6
130
0.20
3700
1515
Shelf
IP44 / IP65 Wrist



NJ 165 - 3.4 SH
6
165
0.10
3450
1430
Shelf
IP65 / IP67 Foundry Version

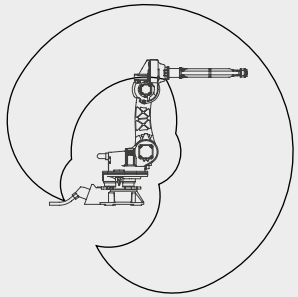


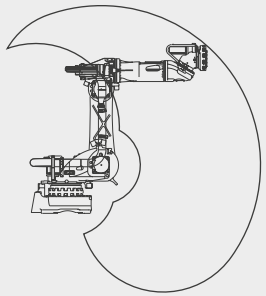
NJ 210 - 3.1 SH
6
210
0.10
3188
1470
Shelf
IP65 / IP67 Foundry Version

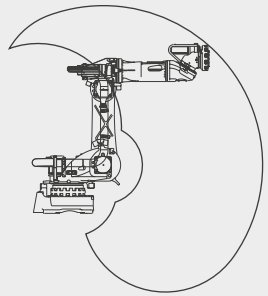


HOLLOW WRIST

MODEL	Arc 4	NJ4 90 - 2.2	NJ4 110 - 2.2
AXES	6	6	6
LOAD (kg)	5	90	110
REPEATABILITY (mm)	0.05	0.07	0.07
REACH (mm)	1951	2210	2210
WEIGHT (kg)	375	685	685
MOUNTING POSITION	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling	Floor / Ceiling
PROTECTION DEGREE	IP65	IP65	IP65







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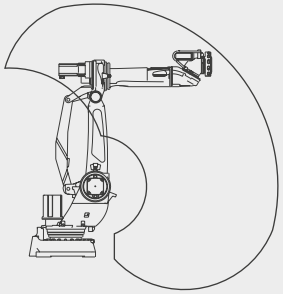
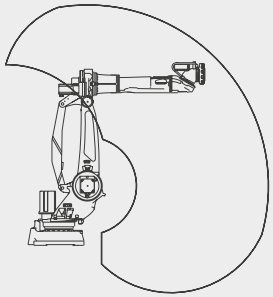
NJ4 170 - 2.5
6
170
0.10
2500
1100
Floor / Ceiling
IP65

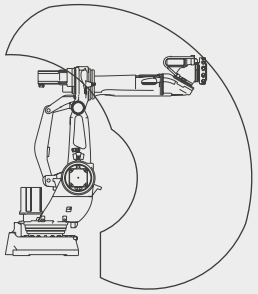
NJ4 170 - 2.9
6
170
0.10
2918
1240
Floor / Ceiling
IP65

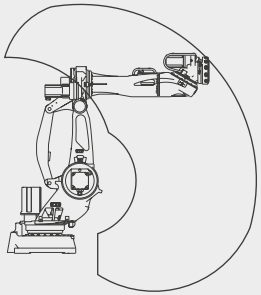
NJ4 175 - 2.2
6
175
0.10
2204
1080
Floor / Ceiling
IP65

NJ4 220 - 2.4
6
220
0.15
2417
1260
Floor / Ceiling
IP65



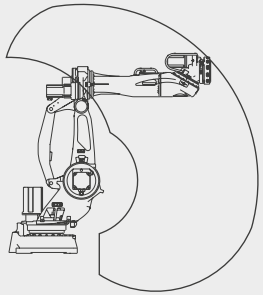


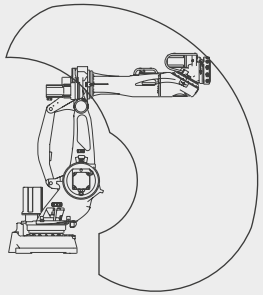


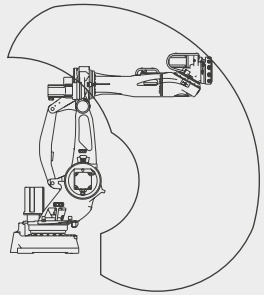


HOLLOW WRIST

MODEL	NJ4 220 - 2.7	NJ4 220 - 3.0	NJ4 270 - 2.7
AXES	6	6	6
LOAD (kg)	220	220	270
REPEATABILITY (mm)	0.15	0.15	0.15
REACH (mm)	2738	3002	2703
WEIGHT (kg)	1290	2005	1975
MOUNTING POSITION	Floor / Ceiling	Floor	Floor
PROTECTION DEGREE	IP65	IP65	IP65

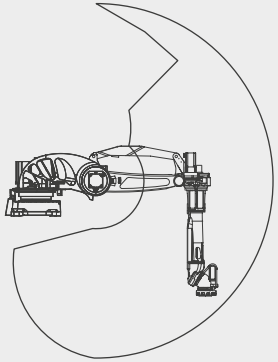


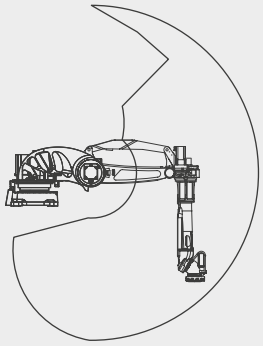




robotics.comau.com

NJ4 165 - 3.4 SH	NJ4 210 - 3.1 SH
6	6
165	210
0.10	0.10
3450	3151
1430	1415
Shelf	Shelf
IP65	IP65





Rebel S

Innovative modular & scalable SCARA

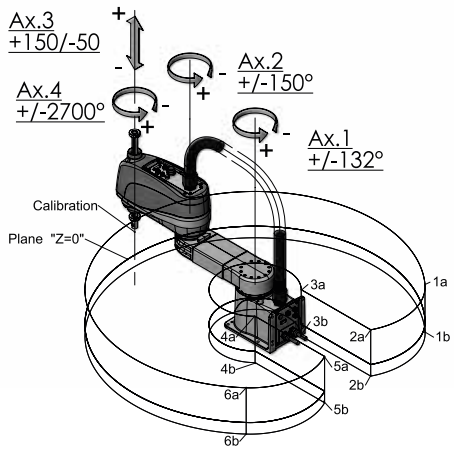
Rebel-S6-0.45
Rebel-S6-0.60
Rebel-S6-0.75

Model		Rebel-S6-0.45	Rebel-S6-0.60	Rebel-S6-0.75
Robot Type		SCARA	SCARA	SCARA
Payload		6 kg	6 kg	6 kg
Horizontal Reach (Radius)		450 mm	600 mm	750 mm
Vertical Reach (Z-Stroke)		200 mm	200 mm	200 mm
Repeatability (X-Y)		0.02 mm	0.02 mm	0.03 mm
Mounting Position		Base / Wall	Base / Wall	Base / Wall
Internal User Wiring / Tumbing	Electrical	25 pin-to-pin	25 pin-to-pin	25 pin-to-pin
	Pneumatical	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm
Available Protection Classes	IP Class	IP10 (IP54 Option)	IP10 (IP54 Option)	IP10 (IP54 Option)
	ISO Class	ISO	ISO	ISO
Outer Diameter of Ball-Screw-Spline		20 mm	20 mm	20 mm
Inner Diameter of Ball-Screw-Spline		14 mm	14 mm	14 mm
Z Axis Down Force (long-time)		160 N	160 N	160 N
Robot Weight		20 Kg	20 Kg	20 Kg
Environmental Conditions	Temperature	+5° - +45° C	+5° - +45° C	+5° - +45° C
	Relative humidity	5 - 95%*	5 - 95%*	5 - 95%*
Applicable Controller		R1C-4	R1C-4	R1C-4

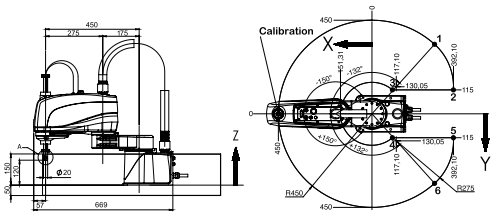
*without condensation

Suggested applications

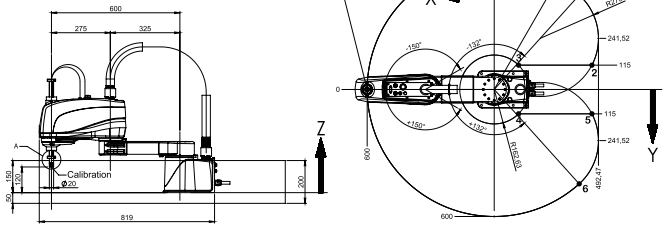
- **Assembly**
- **Handling**
- **Machine Tending**



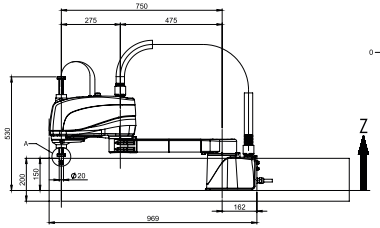
Rebel-S6-0.45

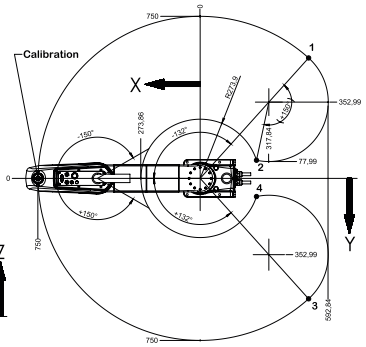


Rebel-S6-0.60



Rebel-S6-0.75





iRebel S

Innovative modular & scalable SCARA

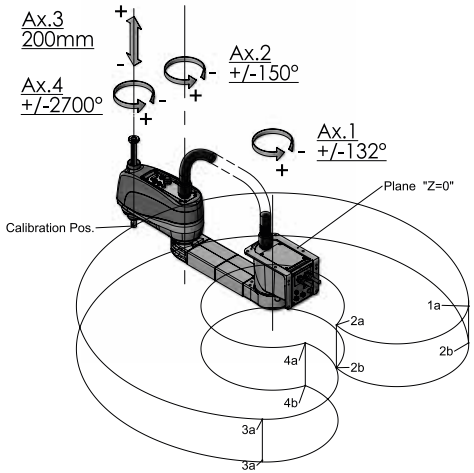
Rebel-S6-0.60c
Rebel-S6-0.75c

Model		Rebel-S6-0.60c	Rebel-S6-0.75c
Robot Type		SCARA	SCARA
Payload		6 kg	6 kg
Horizontal Reach (Radius)		600 mm	750 mm
Vertical Reach (Z-Stroke)		200 mm	200 mm
Repeatability (X-Y)		0.02 mm	0.03 mm
Mounting Position		Ceiling / Wall	Ceiling / Wall
Internal User Wiring / Tumbing	Electrical	25 pin-to-pin	25 pin-to-pin
	Pneumatical	1 x 4 mm & 2 x 6 mm	1 x 4 mm & 2 x 6 mm
Available Protection Classes	IP Class	IP10 (IP54 Option)	IP10 (IP54 Option)
	ISO Class	ISO	ISO
Outer Diameter of Ball-Screw-Spline		20 mm	20 mm
Inner Diameter of Ball-Screw-Spline		14 mm	14 mm
Z Axis Down Force (long-time)		160 N	160 N
Robot Weight		20 Kg	20 Kg
Environmental Conditions	Temperature	+5° - +45° C	+5° - +45° C
	Relative humidity	5 - 95%*	5 - 95%*
Applicable Controller		R1C-4	R1C-4

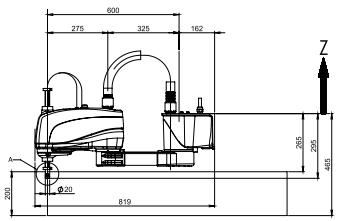
*without condensation

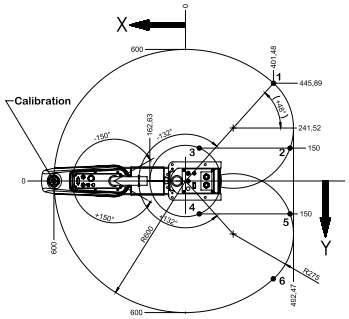
Suggested applications

- **Assembly**
- **Handling**
- **Machine Tending**

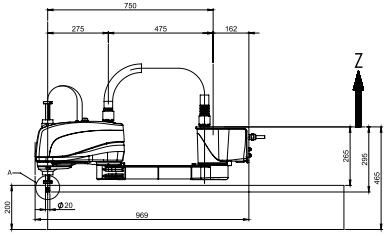


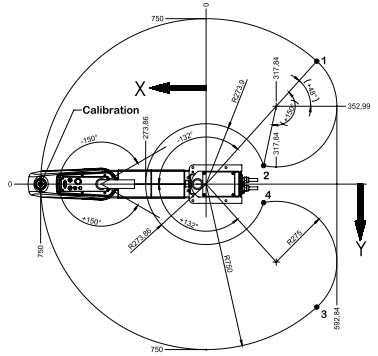
Rebel-S6-0.60c





Rebel-S6-0.75c





Racer

Precision and speed
meet beauty and passion

Racer3
Racer5-0.63
Racer5-0.80

TECHNICAL SPECIFICATIONS

Model		Racer3		Racer5-0.63		Racer5-0.80	
Number of axes		6		6		6	
Maximum wrist payload		3 kg		5 kg*		5 kg	
Additional load on forearm		-		-		-	
Maximum horizontal reach		630 mm		630 mm		809 mm	
Torque on axis 4		7.36 Nm		8.83 Nm		8.83 Nm	
Torque on axis 5		7.36 Nm		8.83 Nm		8.83 Nm	
Torque on axis 6		4.41 Nm		4.91 Nm		4.91 Nm	
Stroke (Speed)	Axis 1	+/- 170°	(430 °/s)	+/- 170°	(400°/s)	+/- 170°	(360°/s)
	Axis 2	-95°/ +135°	(450 °/s)	-95°/ +135°	(360°/s)	-95°/ +135°	(300°/s)
	Axis 3	-155° / +90°	(500 °/s)	-155° / +90°	(400°/s)	-155° / +90°	(330°/s)
	Axis 4	+/- 200°	(600 °/s)	+/- 200°	(500°/s)	+/- 210°	(500°/s)
	Axis 5	+/- 125°	(600 °/s)	+/- 125°	(500°/s)	+/- 125°	(500°/s)
	Axis 6	+/- 2700°	(900 °/s)	+/- 2700°	(800°/s)	+/- 2700°	(800°/s)
Repeatability		0.02 mm		0.03 mm		0.03 mm	
Tool coupling flange		ISO 9409 - 1 - A 25		ISO 9409 - 1 - A 25		ISO 9409 - 1 - A 25	
Robot weight		30 kg		30 kg		32 kg	
Protection class		IP54		IP54 (IP65 Option)		IP54 (IP65 Option)	
Mounting position		Floor / Ceiling / Wall		Floor / Ceiling / Wall**		Floor / Ceiling / Wall**	
Operating Areas	A	1081 mm		1081 mm		1124 mm	
	B	630 mm		630 mm		809 mm	
	C	37 mm		37 mm		8 mm	
	D	530 mm		530 mm		708 mm	
	E	136 mm		136 mm		286 mm	

*For Pick&Place 6 kg with a limited stroke of the 5th axis

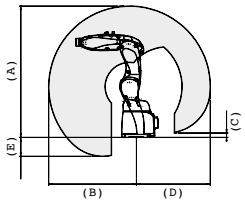
** Allawable with payload limitations

Suggested applications

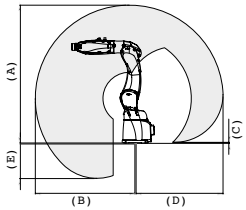
- **Assembly**
- **Cosmetic Sealing**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Polishing / Deburring**

Racer3

Racer5-0.63



Racer5-0.80



Racer

Precision and speed
meet beauty and passion

Racer7-0.99
Racer7-1.40

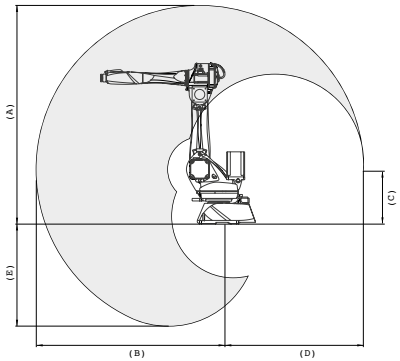
Model		Racer7-0.99		Racer7-1.40	
Number of axes		6		6	
Maximum wrist payload		7 kg*		7 kg	
Additional load on forearm		10 kg		10 kg	
Maximum horizontal reach		999 mm		1436 mm	
Torque on axis 4		13 Nm		13 Nm	
Torque on axis 5		13 Nm		13 Nm	
Torque on axis 6		7.5 Nm		7.5 Nm	
Stroke (Speed)	Axis 1	+/- 165°	(250°/s)	+/- 165°	(220°/s)
	Axis 2	-65° / +150°	(250°/s)	-85° / +155°	(250°/s)
	Axis 3	-165° / -37°	(300°/s)	0° / -168°	(300°/s)
	Axis 4	+/- 210°	(550°/s)	+/- 210°	(550°/s)
	Axis 5	+/- 137°	(550°/s)	+/- 135°	(550°/s)
	Axis 6	+/- 2700°	(600°/s)	+/- 2700°	(600°/s)
Repeatability		0.05 mm		0.05 mm	
Tool coupling flange		ISO 9409 - 1 - A 40		ISO 9409 - 1 - A 40	
Robot weight		173 kg		180 kg	
Protection class		IP65		IP65	
Mounting position		Floor / Ceiling / Sloping / Wall		Floor / Ceiling / Sloping (45° max)	
Operating Areas	A	1279 mm		1716 mm	
	B	999 mm		1436 mm	
	C	904 mm		412 mm	
	D	554 mm		1130 mm	
	E	385 mm		801 mm	

*For Pick&Place 10 kg with a limited stroke of the 5th axis

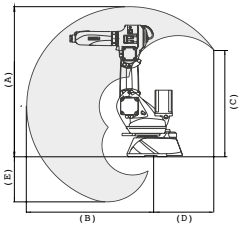
Suggested applications

- Assembly
- Cosmetic Sealing
- Handling / Packaging
- Machine Tending
- Measuring / Testing
- Polishing / Deburring

Racer7-1.40

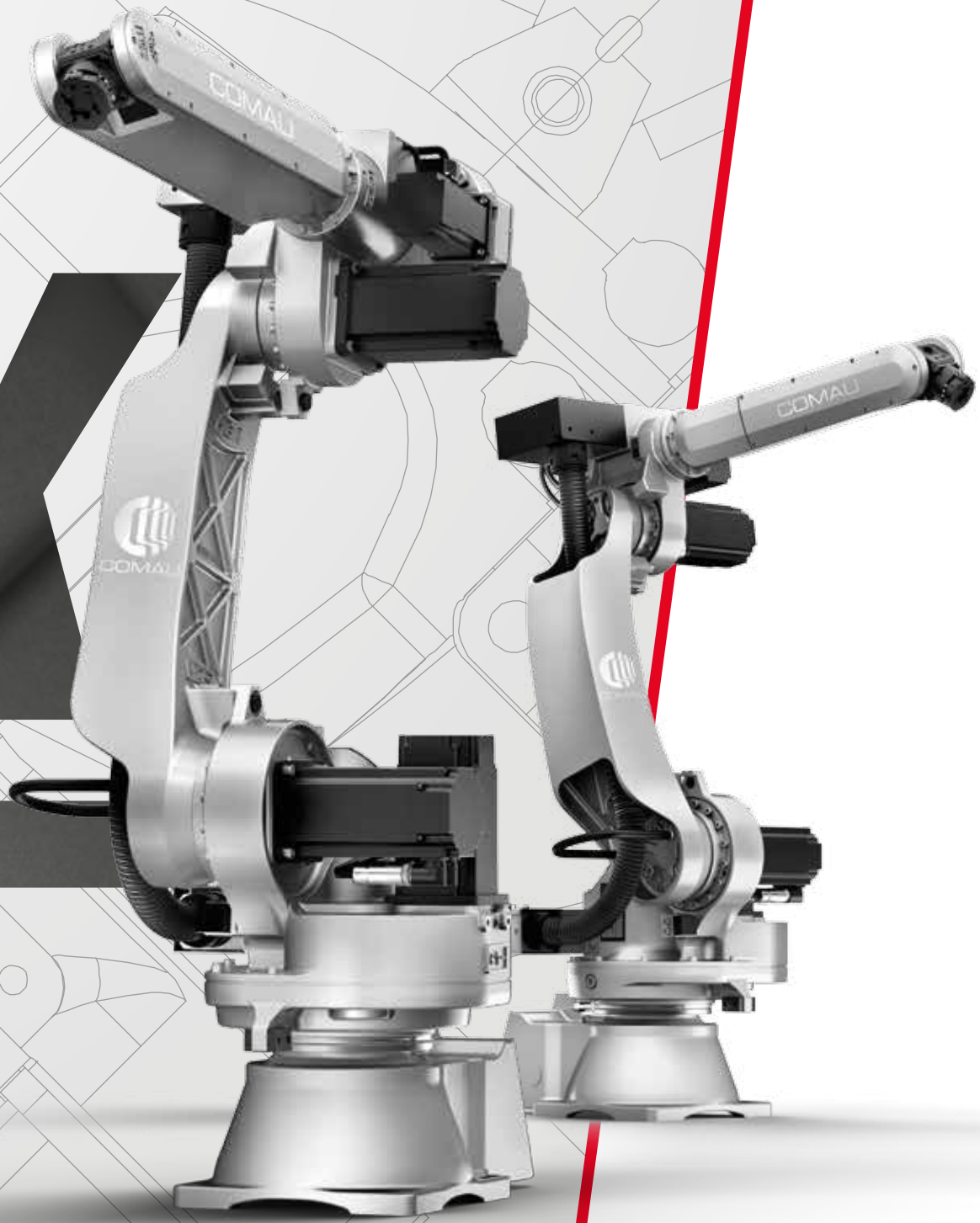


Racer7-0.99



SIX

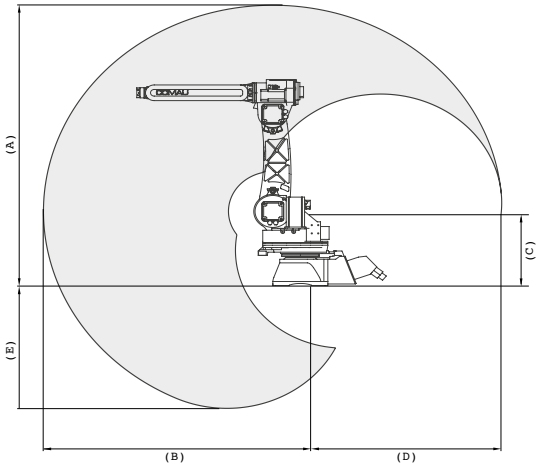
Precision and reliability



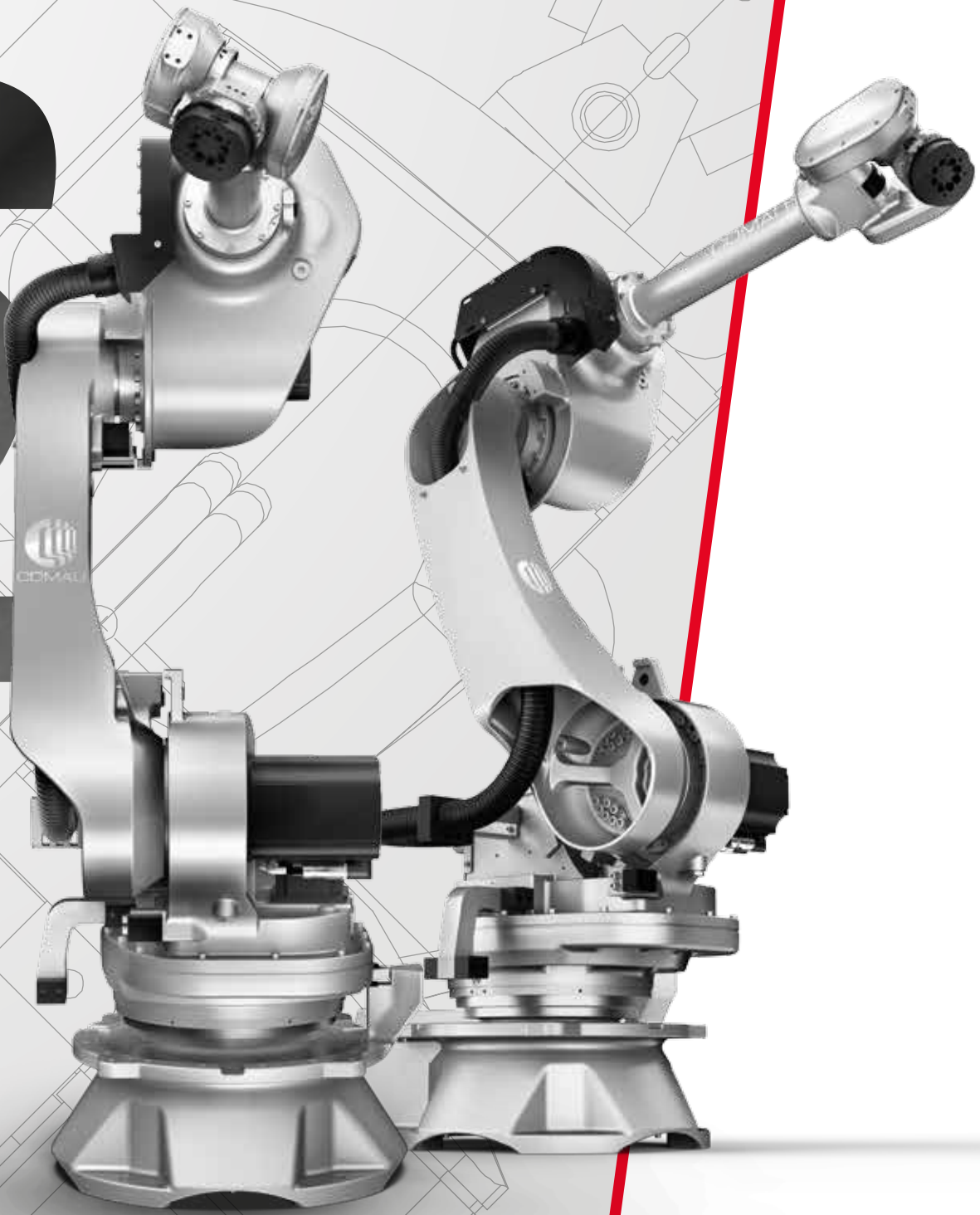
Model		SIX 6 - 1.4	
Number of axes		6	
Maximum wrist payload		6 kg	
Additional load on forearm		10 kg	
Maximum horizontal reach		1400 mm	
Torque on axis 4		11.7 Nm	
Torque on axis 5		11.7 Nm	
Torque on axis 6		5.8 Nm	
Stroke (Speed)	Axis 1	+/- 170°	(140°/s)
	Axis 2	+155° / -85°	(160°/s)
	Axis 3	0° / -170°	(170°/s)
	Axis 4	+/- 210°	(450°/s)
	Axis 5	+/- 130°	(375°/s)
	Axis 6	+/- 2700°	(550°/s)
Repeatability		0.05 mm	
Tool coupling flange		ISO 9409 - 1 - 40 - 4 - M6	
Robot weight		160 kg	
Protection class		IP65	
Mounting position		Floor / Ceiling / Sloping (45° max)	
Operating Areas	A	1700 mm	
	B	1400 mm	
	C	428 mm	
	D	1095 mm	
	E	745 mm	

Suggested applications

- Arc Welding
- Assembly
- Cosmetic Sealing
- Dispensing
- Handling / Packaging
- Machine Tending
- Measuring / Testing
- Polishing / Deburring



NS



Robust and versatile small payload robots

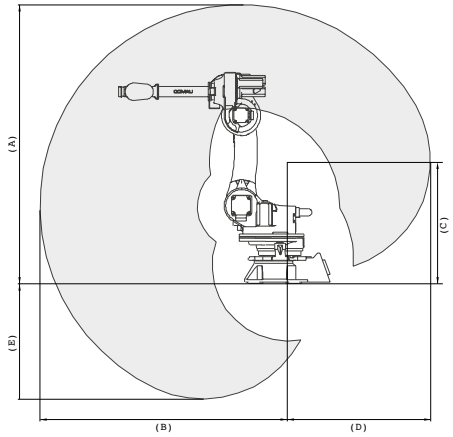
NS 12 - 1.85
NS 16 - 1.65

TECHNICAL SPECIFICATIONS

Model		NS 12 - 1.85		NS 16 - 1.65	
Number of axes		6		6	
Maximum wrist payload		12 kg		16 kg	
Additional load on forearm		10 kg		10 kg	
Maximum horizontal reach		1850 mm		1650 mm	
Torque on axis 4		39 Nm		41 Nm	
Torque on axis 5		39 Nm		41 Nm	
Torque on axis 6		20 Nm		23 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(155°/s)	+/- 180°	(155°/s)
	Axis 2	-60° / +155°	(155°/s)	-60° / +155°	(155°/s)
	Axis 3	-170° / + 110°	(170°/s)	-170° / +110°	(170°/s)
	Axis 4	+/- 2700°	(360°/s)	+/- 2700°	(360°/s)
	Axis 5	+/- 120°	(350°/s)	+/- 120°	(350°/s)
	Axis 6	+/- 2700°	(550°/s)	+/- 2700°	(550°/s)
Repeatability		0.05 mm		0.05 mm	
Tool coupling flange		ISO 9409 - 1 - A63		ISO 9409 - 1 - A63	
Robot weight		335 kg		335 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor / Ceiling / Sloping (45° max)		Floor / Ceiling / Sloping (45° max)	
Operating Areas	A	2150 mm		1951 mm	
	B	1850 mm		1651 mm	
	C	950 mm		950 mm	
	D	1157 mm		957 mm	
	E	885 mm		685 mm	

Suggested applications

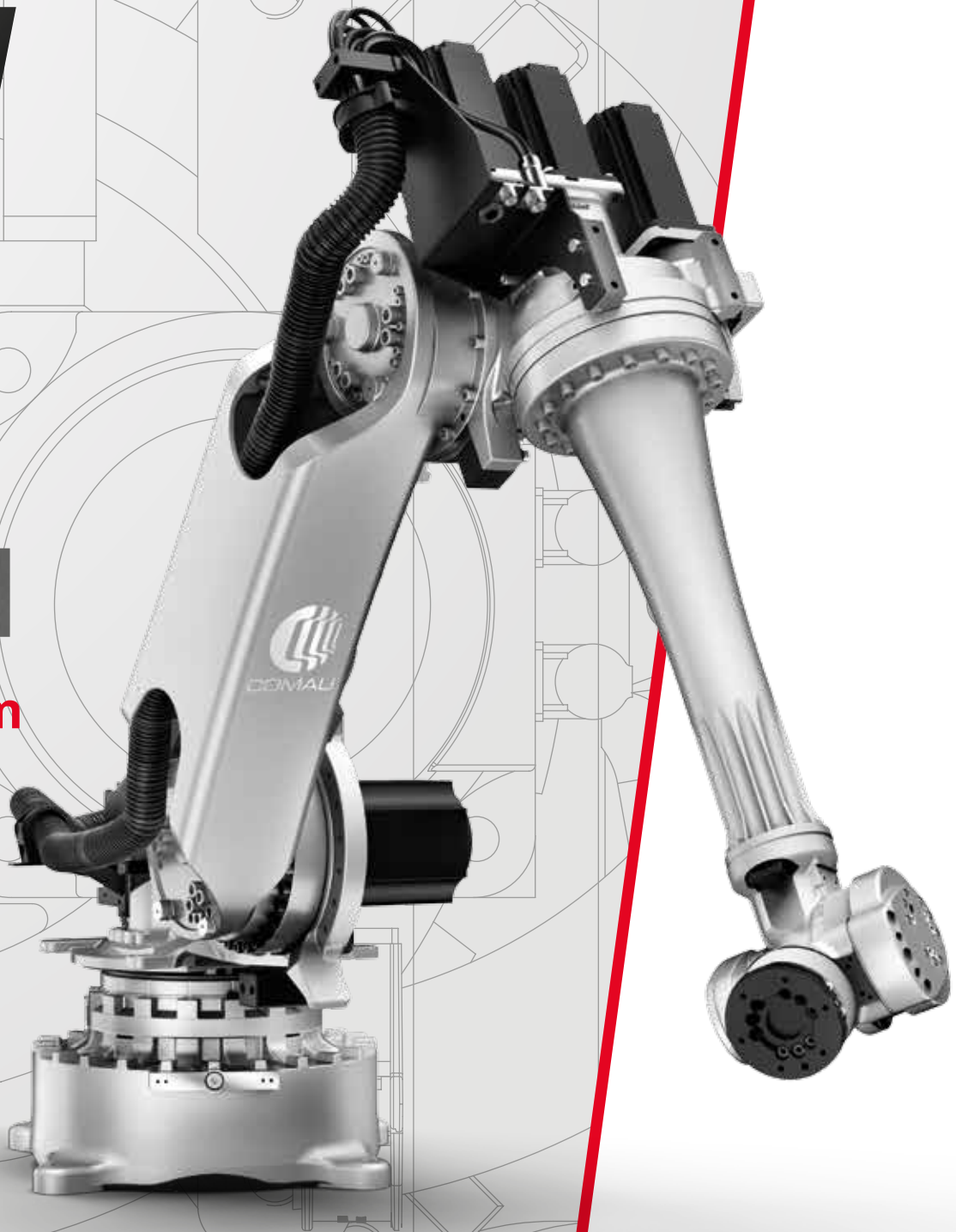
- Arc Welding
- Assembly
- Cosmetic Sealing
- Dispensing
- Foundry
- Handling / Packaging
- Laser Welding / Cutting
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Process Machining
- Wood / Glass Machining



NJ

A perfect solution for medium payload applications

NJ 16 - 3.1
NJ 40 - 2.5
NJ 60 - 2.2

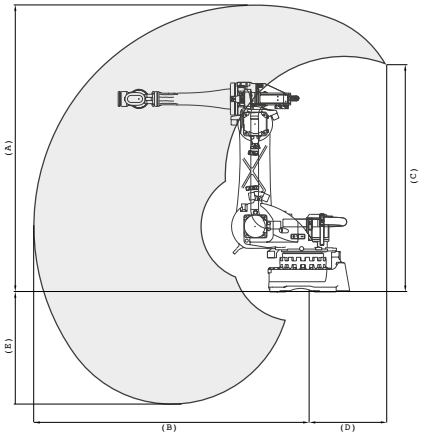


TECHNICAL SPECIFICATIONS

Model		NJ 16 - 3.1		NJ 40 - 2.5		NJ 60 - 2.2	
Number of axes		6		6		6	
Maximum wrist payload		16 kg		40 kg		60 kg	
Additional load on forearm		12 kg		35 kg		20 kg	
Maximum horizontal reach		3108 mm		2503 mm		2258 mm	
Torque on axis 4		43 Nm		167 Nm		221 Nm	
Torque on axis 5		43 Nm		167 Nm		221 Nm	
Torque on axis 6		23 Nm		98 Nm		118 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(170°/s)	+/- 180°	(170°/s)	+/- 180°	(170°/s)
	Axis 2	-60° / +125°	(150°/s)	-60° / +125°	(150°/s)	-60° / +125°	(150°/s)
	Axis 3	0° / -170°	(165°/s)	0° / -165°	(165°/s)	0° / -165°	(165°/s)
	Axis 4	+/- 2700°	(265°/s)	+/- 2700°	(265°/s)	+/- 2700°	(265°/s)
	Axis 5	+/- 120°	(250°/s)	+/- 123°	(250°/s)	+/- 123°	(250°/s)
	Axis 6	+/- 2700°	(340°/s)	+/- 2700°	(340°/s)	+/- 2700°	(340°/s)
Repeatability		0.10 mm		0.06 mm		0.06 mm	
Tool coupling flange		ISO 9409 - 1 - A63		ISO 9409 - 1 - A100		ISO 9409 - 1 - A100	
Robot weight		680 kg		655 kg		645 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor / Ceiling / Sloping (max 45°)		Floor / Ceiling / Sloping (max 45°)		Floor / Ceiling / Sloping (max 45°)	
Operating Areas	A	3258 mm		2653 mm		2408 mm	
	B	3108 mm		2503 mm		2258 mm	
	C	2576 mm		2165 mm		1918 mm	
	D	1088 mm		720 mm		686 mm	
	E	1625 mm		1187 mm		941 mm	

Suggested applications

- Arc Welding
- Assembly
- Cosmetic Sealing
- Dispensing
- Handling / Packaging
- Laser Welding / Cutting
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Press to Press
- Process Machining
- Wood / Glass Machining



NJ

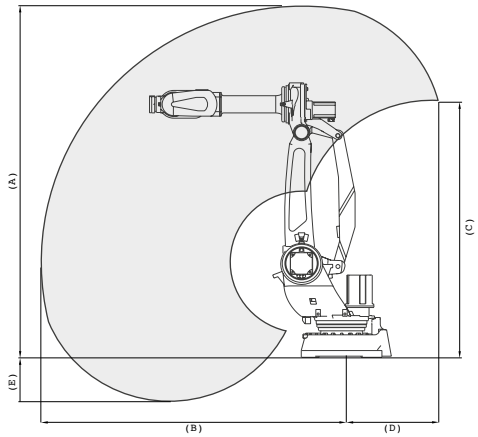
A light kinematic structure for better performance

NJ 110 - 3.0
NJ 130 - 2.0
NJ 130 - 2.6

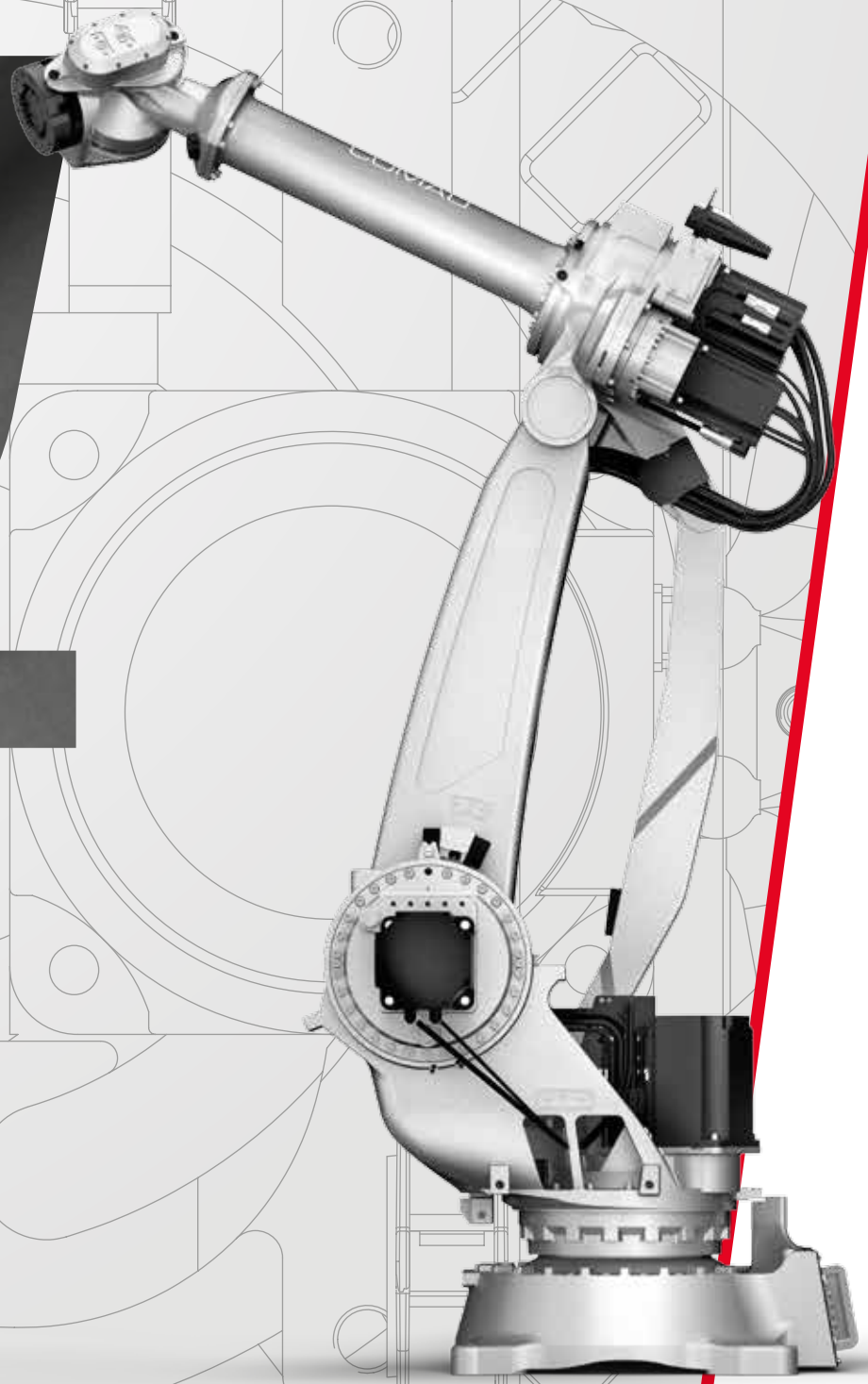
Model		NJ 110 - 3.0		NJ 130 - 2.0		NJ 130 - 2.6	
Number of axes		6		6		6	
Maximum wrist payload		110 kg		130 kg		130 kg	
Additional load on forearm		50 kg		50 kg		50 kg	
Maximum horizontal reach		2980 mm		2050 mm		2616 mm	
Torque on axis 4		638 Nm		638 Nm		638 Nm	
Torque on axis 5		638 Nm		638 Nm		638 Nm	
Torque on axis 6		314 Nm		314 Nm		314 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(110°/s)	+/- 180°	(155°/s)	+/- 180°	(110°/s)
	Axis 2	+95° / -75°	(110°/s)	-60° / +125°	(105°/s)	-75° / +95°	(110°/s)
	Axis 3	-10° / -256°	(110°/s)	0° / -165°	(150°/s)	-10° / -256°	(110°/s)
	Axis 4	+/- 280°	(190°/s)	+/- 280°	(200°/s)	+/- 280°	(190°/s)
	Axis 5	+/- 120°	(190°/s)	+/- 120°	(190°/s)	+/- 120°	(190°/s)
	Axis 6	+/- 2700°	(230°/s)	+/- 2700°	(230°/s)	+/- 2700°	(230°/s)
Repeatability		0.07 mm		0.07 mm		0.07 mm	
Tool coupling flange		ISO 9409 - 1 - A 125		ISO 9409 - 1 - A 125		ISO 9409 - 1 - A 125	
Robot weight		1070 kg		740 kg		1050 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor / Ceiling		Floor / Ceiling / Sloping		Floor / Ceiling	
Operating Areas	A	3460 mm		2200 mm		3097 mm	
	B	2980 mm		2050 mm		2616 mm	
	C	2642 mm		1690 mm		2261 mm	
	D	757 mm		720 mm		824 mm	
	E	783 mm		733 mm		404 mm	

Suggested applications

- Assembly
- Cosmetic Sealing
- Dispensing
- Handling / Packaging
- Laser Welding Cutting
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Press to Press
- Process / Machining
- Spot Welding
- Wood / Glass Machining



NJ



Compact design for a wide range of applications

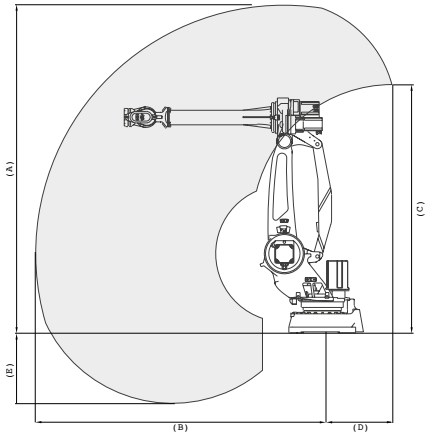
NJ 165 - 3.0
NJ 220 - 2.7

TECHNICAL SPECIFICATIONS

Model		NJ 165 - 3.0		NJ 220 - 2.7	
Number of axes		6		6	
Maximum wrist payload		165 kg		220 kg	
Additional load on forearm		50 kg		50 kg	
Maximum horizontal reach		3000 mm		2701 mm	
Torque on axis 4		1230 Nm		1230 Nm	
Torque on axis 5		1230 Nm		1230 Nm	
Torque on axis 6		712 Nm		712 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(100°/s)	+/- 180°	(100°/s)
	Axis 2	-95° / +180°	(90°/s)	-95° / +75°	(90°/s)
	Axis 3	-10° / -256°	(110°/s)	-10° / -256°	(110°/s)
	Axis 4	+/- 2700°	(130°/s)	+/- 2700°	(130°/s)
	Axis 5	+/- 125°	(130°/s)	+/- 125°	(130°/s)
	Axis 6	+/- 2700°	(195°/s)	+/- 2700°	(195°/s)
Repeatability		0.09 mm		0.08 mm	
Tool coupling flange		ISO 9409 - 1 - A 160		ISO 9409 - 1 - A 160	
Robot weight		1240 kg		1220 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor / Ceiling		Floor / Ceiling	
Operating Areas	A	3430 mm		3131 mm	
	B	3000 mm		2701 mm	
	C	2600 mm		2286 mm	
	D	730 mm		786 mm	
	E	738 mm		425 mm	

Suggested applications

- Assembly
- Cosmetic Sealing
- Dispensing
- Handling / Packaging
- Laser Welding Cutting
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Press to Press
- Process Machining
- Spot Welding
- Wood / Glass Machining



NJ

Robust mechanics and the best-in-class payload / reach ratio

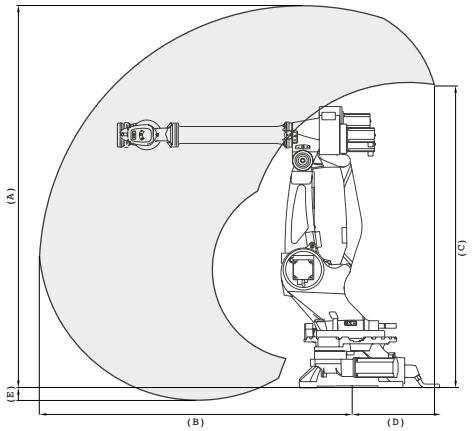
NJ 290 - 3.0
NJ 370 - 2.7
NJ 370 - 3.0

TECHNICAL SPECIFICATIONS

Model		NJ 290 - 3.0		NJ 370 - 2.7		NJ 370 - 3.0	
Number of axes		6		6		6	
Maximum wrist payload		290 kg		370 kg		370 kg	
Additional load on forearm		50 kg		50 kg		50 kg	
Maximum horizontal reach		2997 mm		2703 mm		2997 mm	
Torque on axis 4		1668 Nm		2109 Nm		2109 Nm	
Torque on axis 5		1668 Nm		2109 Nm		2109 Nm	
Torque on axis 6		1177 Nm		1177 Nm		1569 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(90°/s)	+/- 180°	(85°/s)	+/- 180°	(85°/s)
	Axis 2	+/- 75°	(90°/s)	+75° / - 60°	(85°/s)	+75° / - 60°	(85°/s)
	Axis 3	0° / -220°	(90°/s)	-10° / - 231°	(85°/s)	-10° / - 231°	(85°/s)
	Axis 4	+/- 2700°	(105°/s)	+/- 2700°	(90°/s)	+/- 2700°	(90°/s)
	Axis 5	+/- 125°	(105°/s)	+/- 125°	(90°/s)	+/- 125°	(90°/s)
	Axis 6	+/- 2700°	(160°/s)	+/- 2700°	(120°/s)	+/- 2700°	(120°/s)
Repeatability		0.15 mm		0.15 mm		0.15 mm	
Tool coupling flange		ISO 9409 - 1 - 200 - 6 - M12		ISO 9409 - 1 - 200 - 6 - M12		ISO 9409 - 1 - 200 - 6 - M12	
Robot weight		2150 kg		2100 kg		2450 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor		Floor		Floor	
Operating Areas	A	3680 mm		3680 mm		3680 mm	
	B	2997 mm		2997 mm		2997 mm	
	C	3195 mm		3195 mm		3195 mm	
	D	433 mm		433 mm		433 mm	
	E	-118 mm		-118 mm		-118 mm	

Suggested applications

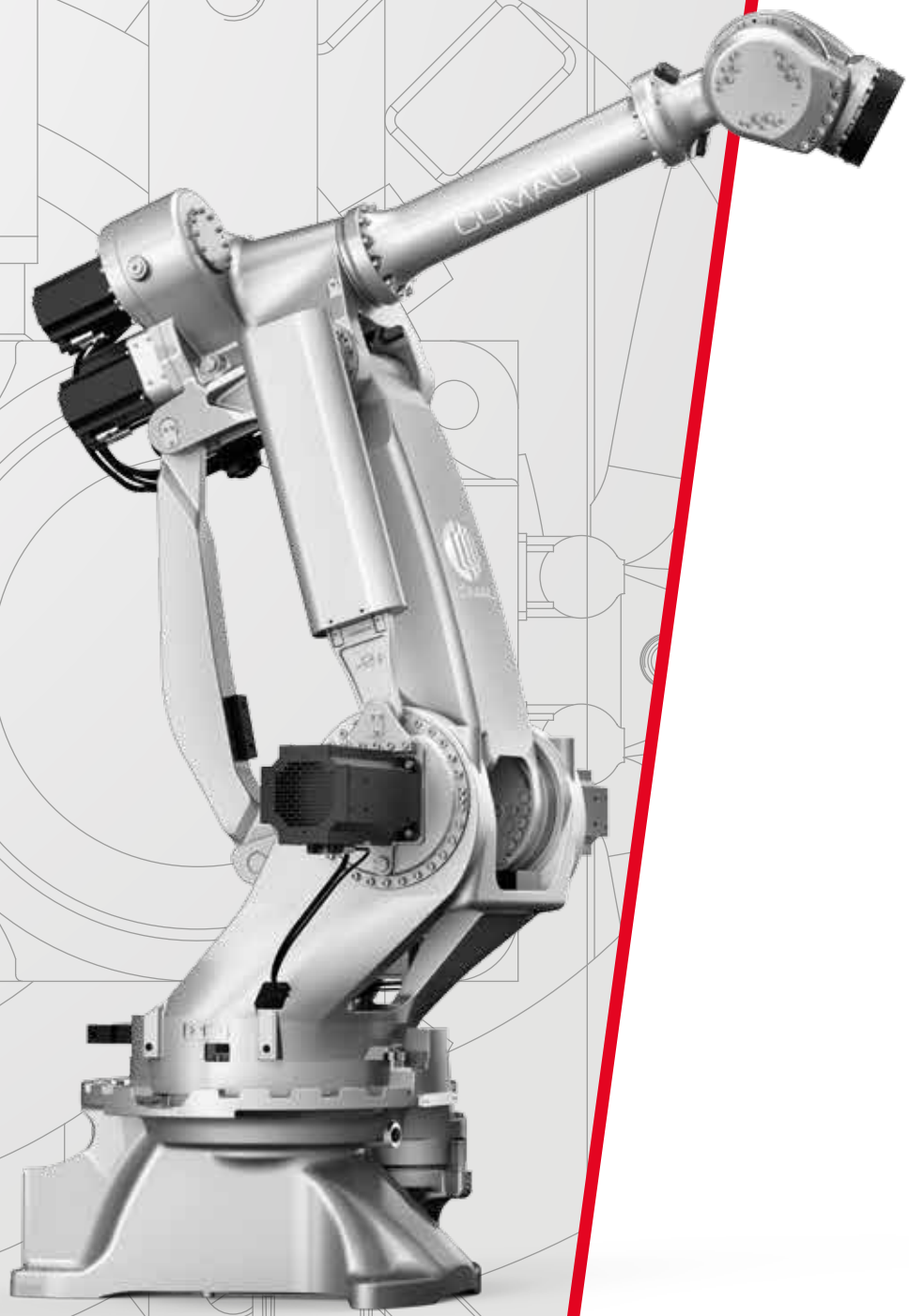
- Assembly
- Foundry
- Handling / Packaging
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Process Machining
- Spot Welding
- Wood / Glass Machining



NJ

High payload models for the most demanding applications

NJ 420 - 3.0
NJ 450 - 2.7

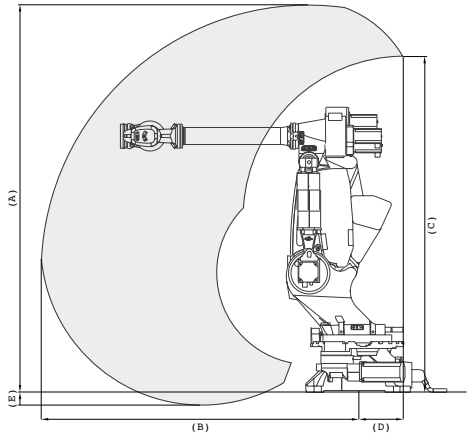


TECHNICAL SPECIFICATIONS

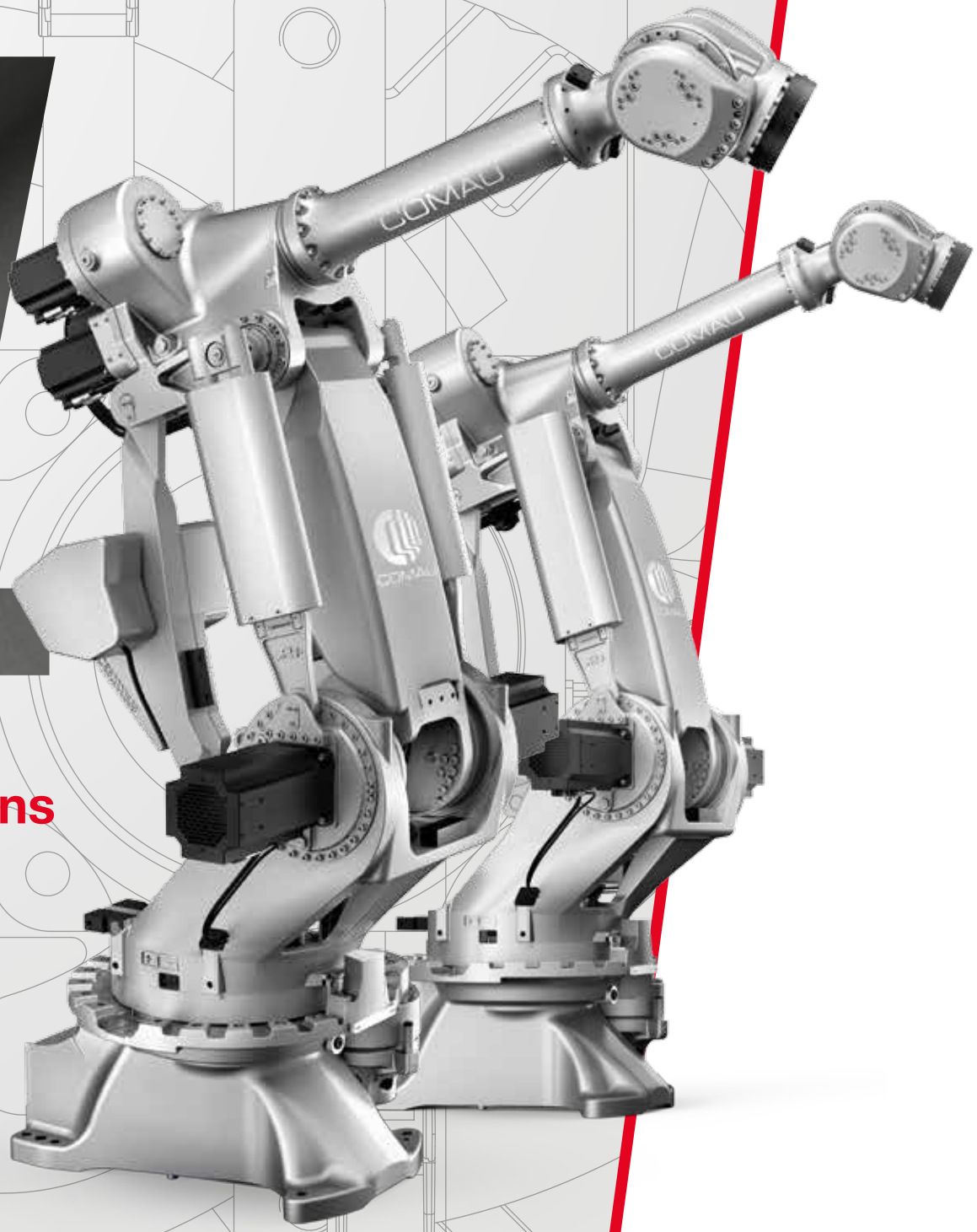
Model		NJ 420 - 3.0		NJ 450 - 2.7	
Number of axes		6		6	
Maximum wrist payload		420 kg		450 kg	
Additional load on forearm		50 kg		50 kg	
Maximum horizontal reach		2997 mm		2703 mm	
Torque on axis 4		2550 Nm		2550 Nm	
Torque on axis 5		2550 Nm		2550 Nm	
Torque on axis 6		1569 Nm		1569 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(85°/s)	+/- 180°	(85°/s)
	Axis 2	+75° / -60°	(85°/s)	+75° / -60°	(85°/s)
	Axis 3	-10° / -231°	(85°/s)	-10° / -231°	(85°/s)
	Axis 4	+/- 2700°	(90°/s)	+/- 2700°	(90°/s)
	Axis 5	+/- 125°	(90°/s)	+/- 125°	(90°/s)
	Axis 6	+/- 2700°	(120°/s)	+/- 2700°	(120°/s)
Repeatability		0.15 mm		0.15 mm	
Tool coupling flange		ISO 9409 - 1 - 200 - 6 - M12		ISO 9409 - 1 - 200 - 6 - M12	
Robot weight		2450 kg		2400 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Floor		Floor	
Operating Areas	A	3680 mm		3292 mm	
	B	2997 mm		2703 mm	
	C	3195 mm		2895 mm	
	D	433 mm		486 mm	
	E	-118 mm		181 mm	

Suggested applications

- Assembly
- Foundry
- Handling / Packaging
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Process Machining
- Spot Welding
- Wood / Glass Machining



NJ



Strongest models for the most demanding applications

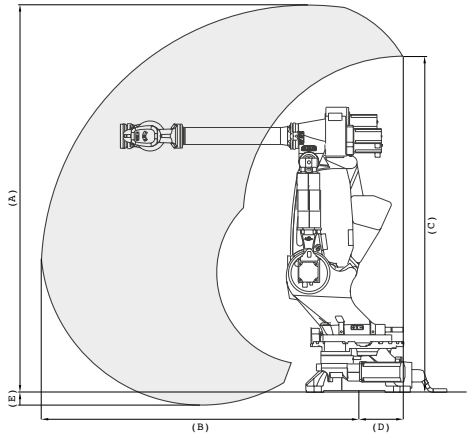
NJ 500 - 2.7
NJ 650 - 2.7

TECHNICAL SPECIFICATIONS

Model		NJ 500 - 2.7		NJ 650 - 2.7	
Number of axes		6		6	
Maximum wrist payload		500 kg		650 kg	
Additional load on forearm		50 kg		50 kg	
Maximum horizontal reach		2703 mm		2703 mm	
Torque on axis 4		2550 Nm		3060 Nm	
Torque on axis 5		2550 Nm		3060 Nm	
Torque on axis 6		1569 Nm		1766 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(85°/s)	+/- 180°	(75°/s)
	Axis 2	+75° / -60°	(85°/s)	-60° / +75°	(75 °/s)
	Axis 3	-10° / -231°	(85°/s)	-231° / -10°	(75 °/s)
	Axis 4	+/- 2700°	(90°/s)	+/- 2700°	(90 °/s)
	Axis 5	+/- 125°	(90°/s)	+/- 125°	(90°/s)
	Axis 6	+/- 2700°	(120°/s)	+/- 2700°	(120°/s)
Repeatability		0.15 mm		0.15 mm	
Tool coupling flange		ISO 9409 - 1 - 200 - 6 - M12		ISO 9409 - 1 - 200 - 6 - M12	
Robot weight		2400 kg		2450 kg	
Protection class		IP65 / IP67 Foundry Version		IP44 / IP65 Wrist	
Mounting position		Floor		Floor	
Operating Areas	A	3392 mm		3392 mm	
	B	2703 mm		2703 mm	
	C	2895 mm		2895 mm	
	D	486 mm		486 mm	
	E	181 mm		181 mm	

Suggested applications

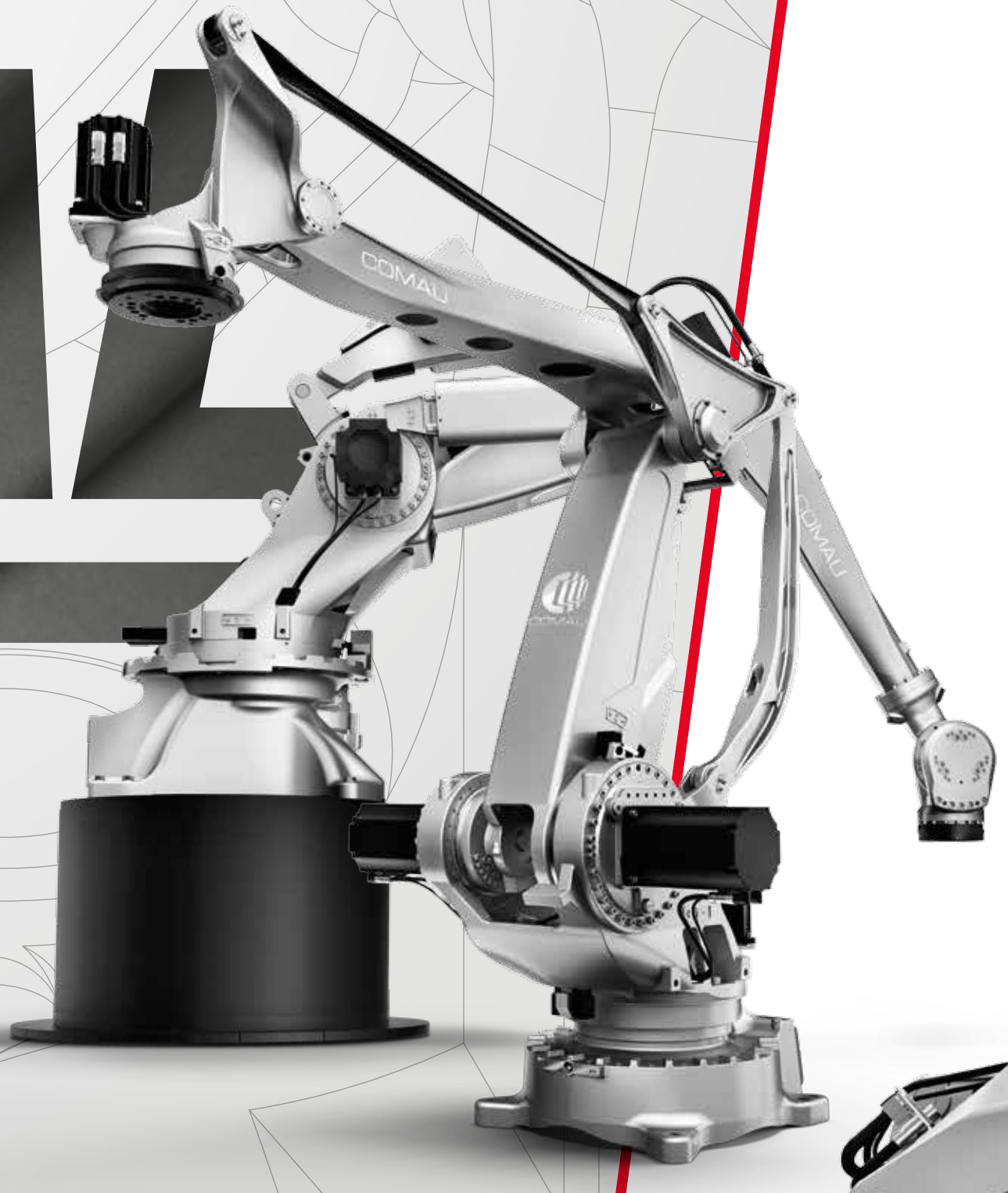
- Assembly
- Foundry
- Handling / Packaging
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Process Machining
- Spot Welding
- Wood / Glass Machining



PAL

Fast and robust palletizing robots

PAL 180 - 3.1
PAL 260 - 3.1
PAL 470 - 3.1

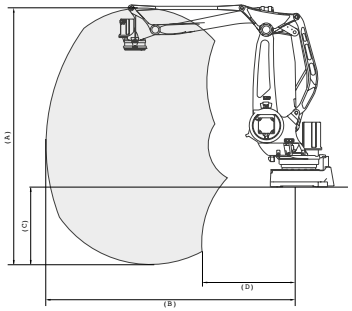


Model		PAL 180 - 3.1	PAL 260 - 3.1	PAL 470 - 3.1
Number of axes		4	4	5
Maximum wrist payload		180 kg	260 kg	470 kg
Additional load on forearm		25 kg	50 kg	25 kg
Maximum horizontal reach		3100 mm	3100 mm	3100 mm
Stroke (Speed)	Axis 1	+/- 180° (120°/s)	+/- 180° (120°/s)	+/- 180° (85°/s)
	Axis 2	-49° / + 95° (100°/s)	-49° / + 95° (90°/s)	-60° / + 75° (85°/s)
	Axis 3	-68° / - 208° (110°/s)	-68° / - 208° (110°/s)	-45° / - 205° (85°/s)
	Axis 5	-	-	Axis bound to balance
	Axis 6	+/- 2700° (280°/s)	+/- 2700° (260°/s)	+/- 2700° (180°/s)
Repeatability		0.10 mm	0.10 mm	0.15 mm
Tool coupling flange		ISO 9409 - 2 - 200 - 6 - M12	ISO 9409 - 2 - 200 - 6 - M12	ISO 9409 - 1 - A 200
Robot weight		1213 kg	1213 kg	2310 kg
Protection class		IP65	IP65	IP65
Mounting position		Floor / Shelf	Floor / Shelf	Floor / Shelf
Operating Areas	A	3147 mm	3147 mm	3522 mm
	B	3099 mm	3099 mm	3050 mm
	C	952 mm	952 mm	480 mm
	D	1182 mm	1182 mm	793 mm

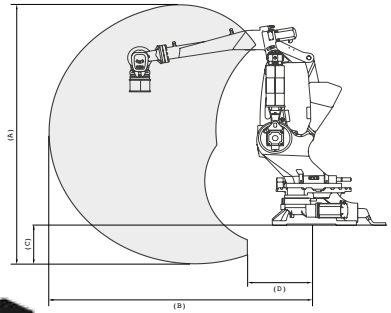
Suggested applications

- **Pallettizing**
- **Handling**

PAL 180 / 260



PAL 470



PRESS

Dedicated press-shop automation machines

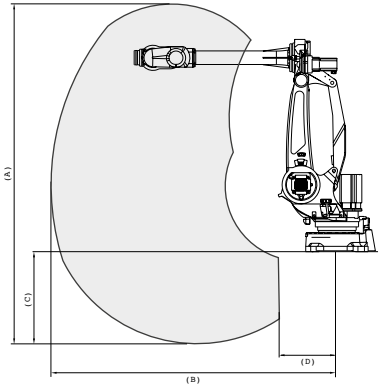
NJ 100 - 3.2
NJ 130 - 3.7 SH

Model		NJ 100 - 3.2 PRESS		NJ 130 - 3.7 SH PRESS	
Number of axes		6		6	
Maximum wrist payload		100 kg		130 kg	
Additional load on forearm		50 kg		15 kg	
Maximum horizontal reach		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)
	Axis 2	-49° / +95°	(108°/s)	-60° / +170°	(95°/s)
	Axis 3	-222° / -68°	(120°/s)	-292° / -21°	(112°/s)
	Axis 4	+/- 200°	(190°/s)	+/- 2700°	(180°/s)
	Axis 5	+/- 120°	(190°/s)	+/- 125°	(175°/s)
	Axis 6	+/- 200°	(250°/275°/s)	+/- 2700°	(250°/s)
Repeatability		0.17 mm		0.20 mm	
Tool coupling flange		ISO 9409 - 1 - A 125		ISO 9409 - 1 - A 160	
Robot weight		1250 kg		1520 kg	
Protection class		IP44 / IP65 Wrist		IP44 / IP65 Wrist	
Mounting position		Floor		Shelf	
Operating Areas	A	2780 mm		3391 mm	
	B	3209 mm		3741 mm	
	C	2376 mm		712 mm	
	D	962 mm		2386 mm	
	E	1035 mm		850 mm	

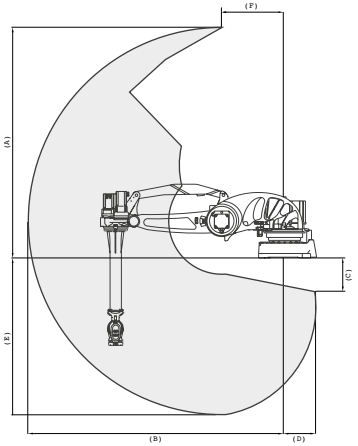
Suggested applications

- **Handling / Packaging**
- **Press to Press**

NJ 100 - 3.2



NJ 130 - 3.7 SH



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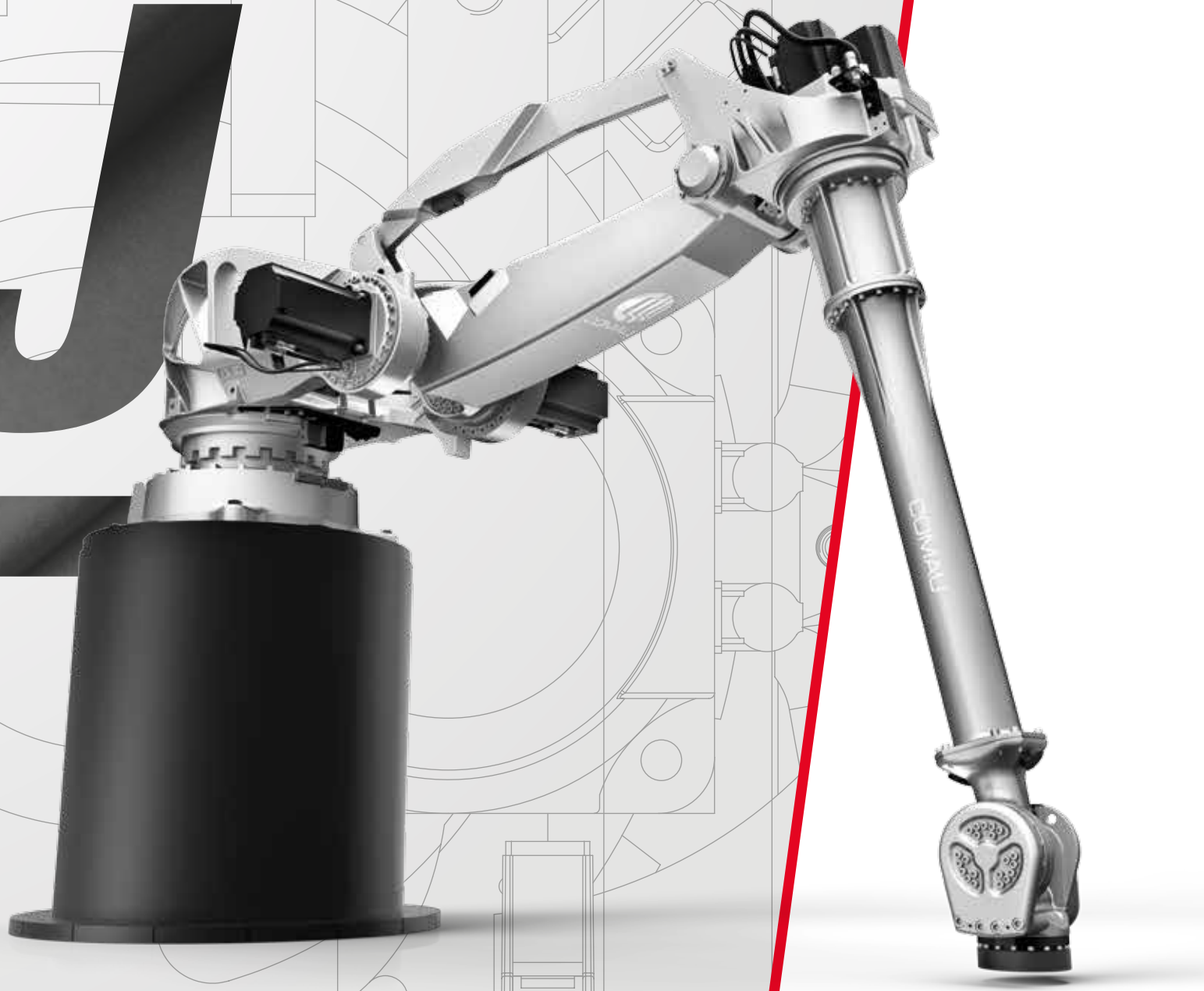


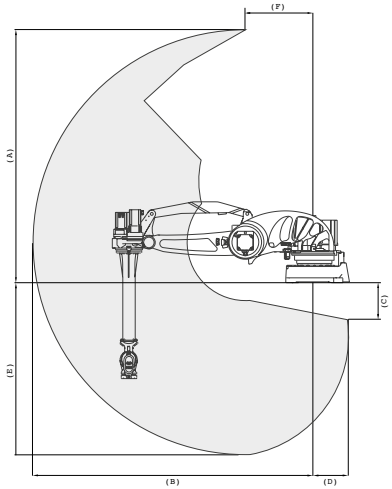
Shelf robots for wider operation areas

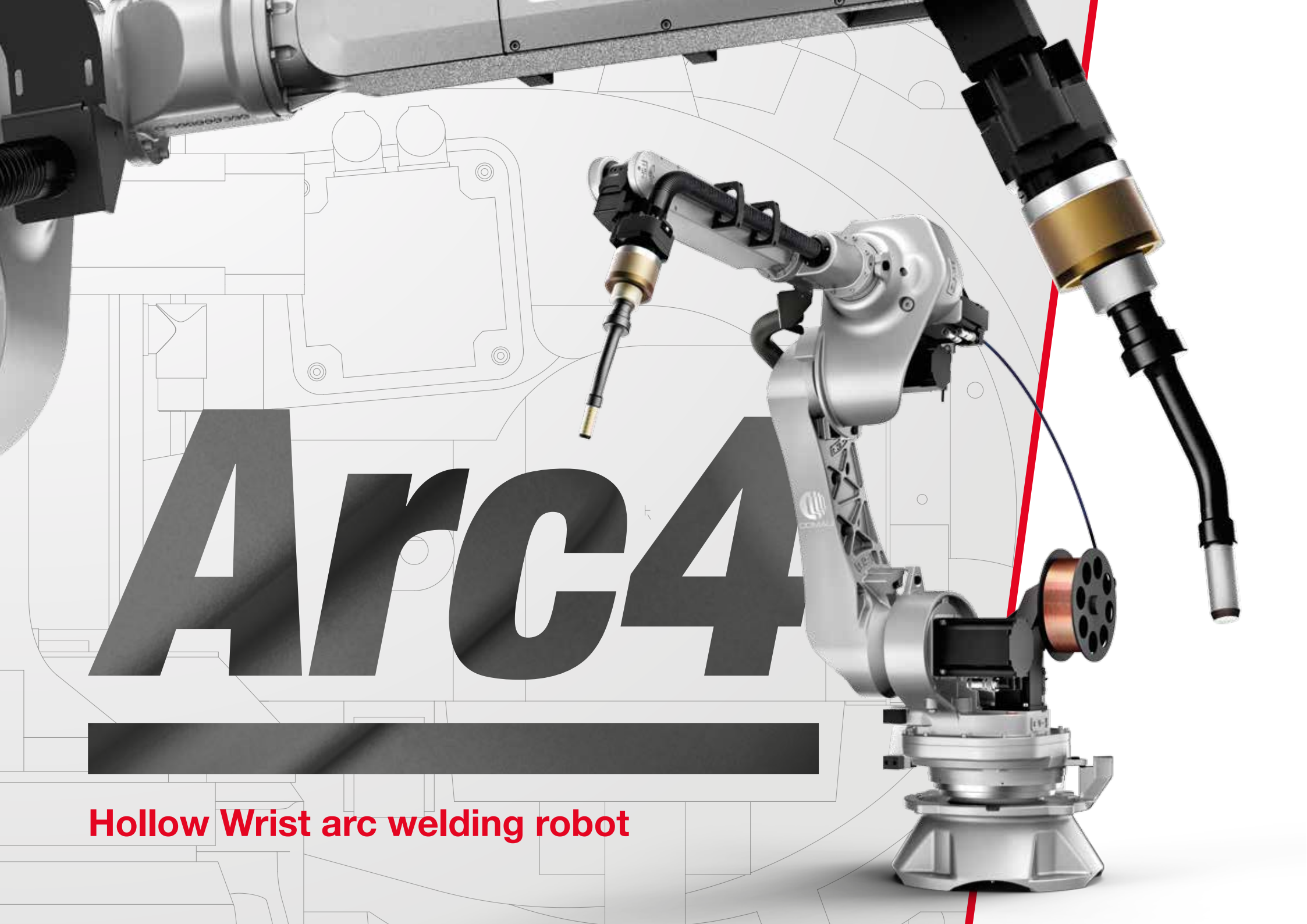
NJ 165 - 3.4 SH
NJ 210 - 3.1 SH

Model		NJ 165 - 3.4 SH		NJ 210 - 3.1 SH	
Number of axes		6		6	
Maximum wrist payload		165 kg		210 kg	
Additional load on forearm		25 kg		25 kg	
Maximum horizontal reach		3450 mm		3151 mm	
Torque on axis 4		1089 Nm		1177 Nm	
Torque on axis 5		804 Nm		1177 Nm	
Torque on axis 6		411 Nm		677 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(85°/s)	+/- 180°	(110°/s)
	Axis 2	-50° / +170°	(90°/s)	-50° / +170°	(90°/s)
	Axis 3	-18,8° / -288°	(110°/s)	-21,3°/ -288°	(110°/s)
	Axis 4	+/- 2700°	(130°/s)	+/- 2700°	(130°/s)
	Axis 5	+/- 125°	(130°/s)	+/- 125°	(130°/s)
	Axis 6	+/- 2700°	(195°/s)	+/- 2700°	(195°/s)
Repeatability		0.10 mm		0.10 mm	
Tool coupling flange		ISO 9409 - 1 - A 160 / 200		ISO 9409 - 1 - A 160	
Robot weight		1430 kg		1415 kg	
Protection class		IP65 / IP67 Foundry Version		IP65 / IP67 Foundry Version	
Mounting position		Shelf		Shelf	
Operating Areas	A	3100 mm		2801 mm	
	B	3450 mm		3151 mm	
	C	449 mm		547 mm	
	D	397 mm		93 mm	
	E	2100 mm		1800 mm	
	F	850 mm		850 mm	

Suggested applications

- Assembly
- Cosmetic Sealing
- Dispensing
- Handling / Packaging
- Laser Welding / Cutting
- Machine Tending
- Measuring / Testing
- Plasma Cutting / Water Jet
- Polishing / Deburring
- Press Brake Bending
- Press to Press
- Process Machining
- Spot Welding
- Wood / Glass Machining





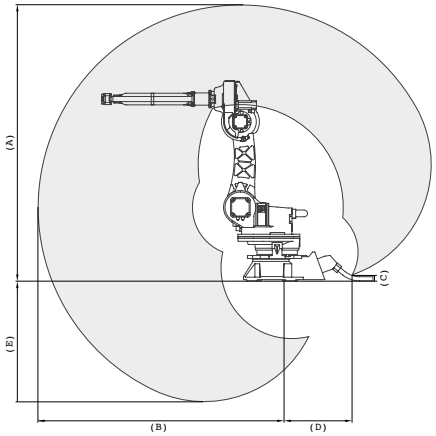
Arc4

Hollow Wrist arc welding robot

Model		Arc 4	
Number of axes		6	
Maximum wrist payload		5 kg	
Additional load on forearm		10 kg	
Maximum horizontal reach		1951 mm	
Torque on axis 4		14 Nm	
Torque on axis 5		14 Nm	
Torque on axis 6		4.9 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(170°/s)
	Axis 2	-60° / +155°	(175°/s)
	Axis 3	-170° / +110°	(185°/s)
	Axis 4	+/- 185°	(360°/s)
	Axis 5	+/- 123°	(375°/s)
	Axis 6	+/- 270°	(550°/s)
Repeatability		0.05 mm	
Tool coupling flange		ISO 9409 - 1 - 63 - 4 - M6	
Robot weight		375 kg	
Protection class		IP65	
Mounting position		Floor / Ceiling / Sloped (45° max)	
Operating Areas	A	2251 mm	
	B	1951 mm	
	C	49 mm	
	D	1257 mm	
	E	986 mm	

Suggested applications

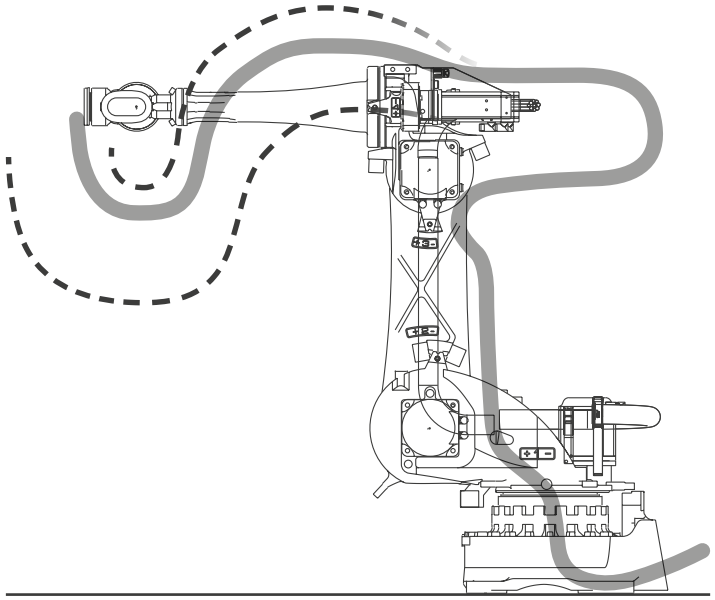
- **Arc Welding**



NJ4

Best Hollow Wrist in the market

- **100% INTEGRATED DRESSING**
- **COMPACT DIMENSIONS:** no need for external cables
- **LOW MAINTENANCE COSTS:** integrated dressing means the reduction of cable failures
- **HIGHER PERFORMANCE:** agile and light structure allows higher performance and efficiency



TRADITIONAL SOLUTION WITH EXTERNAL DRESSING

Unpredictable product life

- Unknown torsion, bending & stretching
- Friction, wear

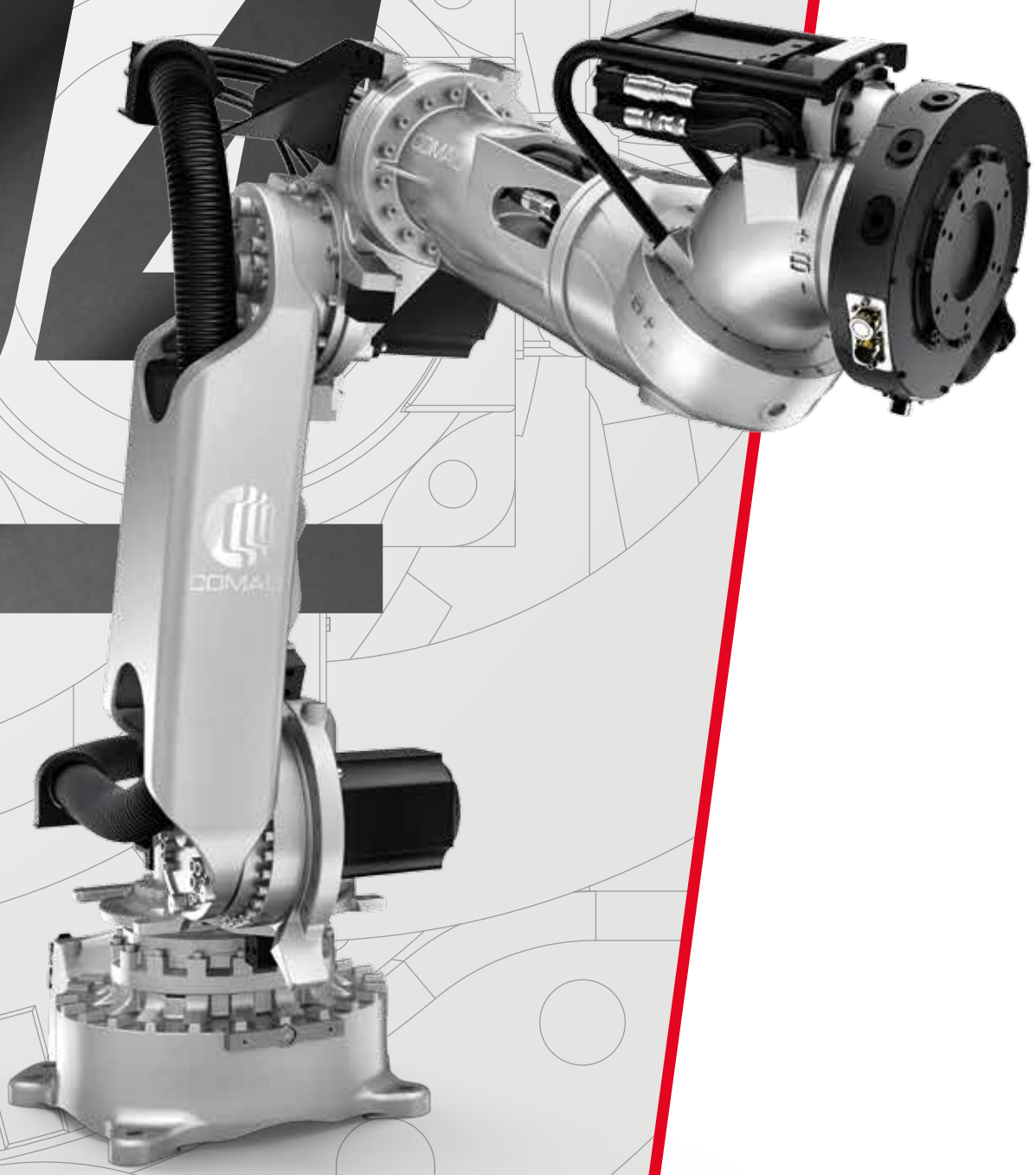
HIGH RISK OF PRODUCTION STOPS

FULLY INTEGRATED DRESSING

Comau Hollow Wrist advantages:

- Lean and compact solution
- No offset flange - gun
- Easier access through tooling and framing gates
- No risk of snagging
- Simplified tooling design
- Best results from off-line programming
- Outstanding dressing-MTBF

NJ4



The most compact Hollow Wrist robots

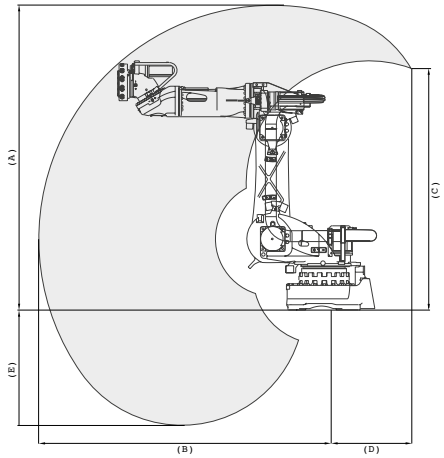
NJ4 90 - 2.2
NJ4 110 - 2.2

TECHNICAL SPECIFICATIONS

Model		NJ4 90 - 2.2		NJ4 110 - 2.2	
Number of axes		6		6	
Maximum wrist payload		90 kg		110 kg	
Additional load on forearm		10 kg		10 kg	
Maximum horizontal reach		2210 mm		2210 mm	
Torque on axis 4		577 Nm		796 Nm	
Torque on axis 5		432 Nm		609 Nm	
Torque on axis 6		206 Nm		284 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(170°/s)	+/- 180°	(170°/s)
	Axis 2	-60° / +125°	(125°/s)	-60°/+125°	(125°/s)
	Axis 3	0° / -165°	(165°/s)	0° / -165°	(165°/s)
	Axis 4	+/- 200	(200°/s)	+/- 200°	(200°/s)
	Axis 5	+/- 200°	(200°/s)	+/- 200°	(165°/s)
	Axis 6	+/- 200°	(265°/s)	+/- 200°	(265°/s)
Repeatability		0.07 mm		0.07 mm	
Tool coupling flange		ISO 9409 - 1 - 125 - 6 - M10 ISO 9409 - 1 - 160 - 6 - M10		ISO 9409 - 1 - 125 - 6 - M10 ISO 9409 - 1 - 160 - 6 - M10	
Robot weight		685 kg		685 kg	
Protection class		IP65		IP65	
Mounting position		Floor / Ceiling		Floor / Ceiling	
Operating Areas	A	2360 mm		2360 mm	
	B	2210 mm		2210 mm	
	C	1856 mm		1856 mm	
	D	712 mm		712 mm	
	E	893 mm		893 mm	

Suggested applications

- **Assembly**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Spot Welding**



NJ4

Best-in-class Hollow Wrist
for high payload applications

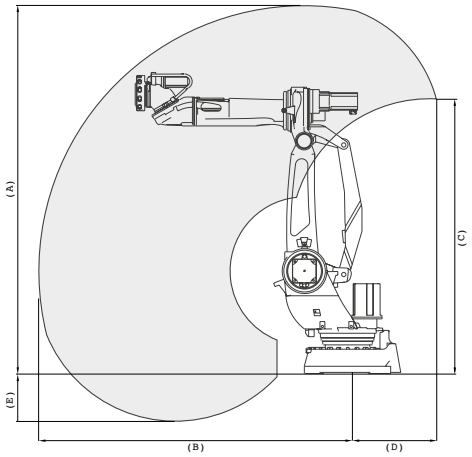
NJ4 170 - 2.5
NJ4 170 - 2.9
NJ4 175 - 2.2

TECHNICAL SPECIFICATIONS

Model		NJ4 170 - 2.5		NJ4 170 - 2.9		NJ4 175 - 2.2	
Number of axes		6		6		6	
Maximum wrist payload		170 kg		170 kg		175 kg	
Additional load on forearm		50 kg		25 kg		50 kg	
Maximum horizontal reach		2500 mm		2918 mm		2204 mm	
Torque on axis 4		1010 Nm		1010 Nm		1010 Nm	
Torque on axis 5		804 Nm		804 Nm		804 Nm	
Torque on axis 6		412 Nm		412 Nm		412 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(110°/s)	+/- 180°	(100°/s)	+/- 180°	(110°/s)
	Axis 2	-75° / +95°	(110°/s)	-75° / +95°	(90°/s)	-75° / +95°	(110°/s)
	Axis 3	-10° / -230°	(110°/s)	-10° / -230°	(110°/s)	-10° / -230°	(110°/s)
	Axis 4	+/- 200°	(180°/s)	+/- 200°	(130°/s)	+/- 200°	(180°/s)
	Axis 5	+/- 200°	(140°/s)	+/- 200°	(125°/s)	+/- 200°	(140°/s)
	Axis 6	+/- 200°	(190°/s)	+/- 200°	(170°/s)	+/- 200°	(190°/s)
Repeatability		0.10 mm		0.10 mm		0.10 mm	
Tool coupling flange		ISO 9409 - 1 - A 125 ISO 9409 - 1 - A 160		ISO 9409 - 1 - A 125 ISO 9409 - 1 - A 160		ISO 9409 - 1 - A 125 ISO 9409 - 1 - A 160	
Robot weight		1100 kg		1240 kg		1080 kg	
Protection class		IP65		IP65		IP65	
Mounting position		Floor / Ceiling		Floor / Ceiling		Floor / Ceiling	
Operating Areas	A	2981 mm		3357 mm		2685 mm	
	B	2501 mm		2927 mm		2204 mm	
	C	2226 mm		2524 mm		2080 mm	
	D	720 mm		744 mm		959 mm	
	E	387 mm		436 mm		360 mm	

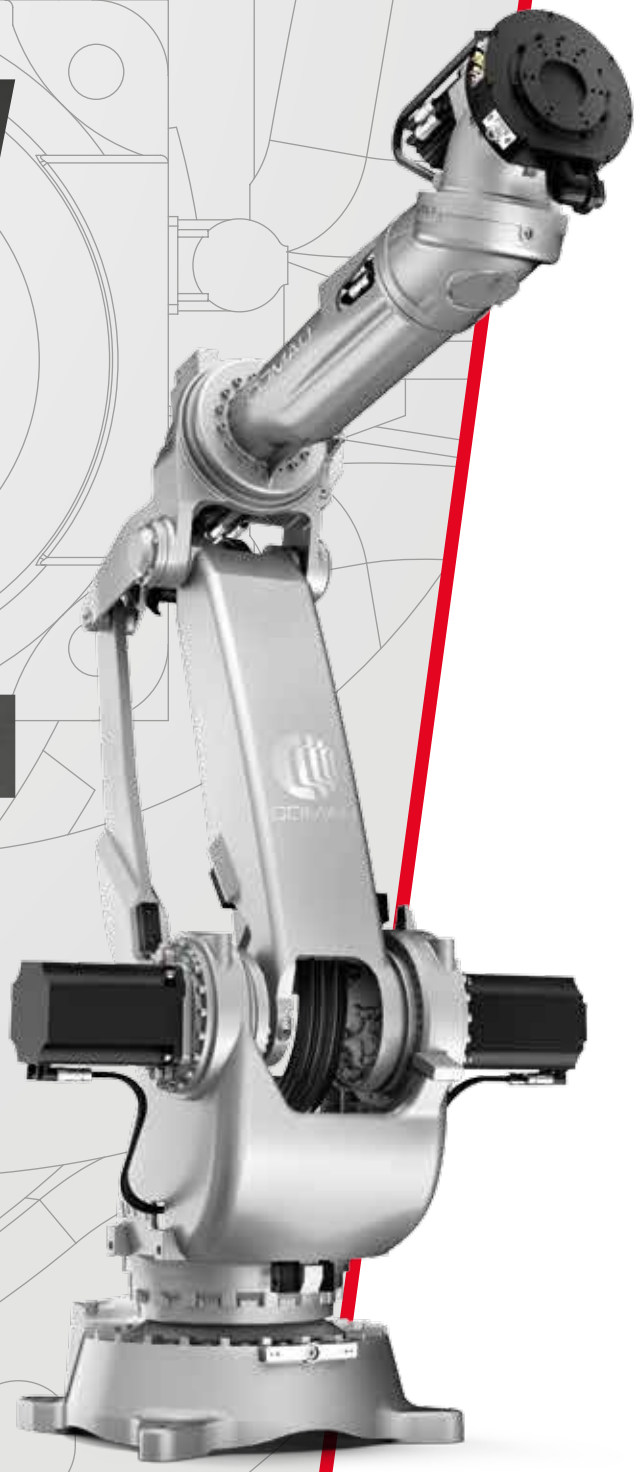
Suggested applications

- **Assembly**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Spot Welding**



NJ4

A proven innovative solution for spot welding applications



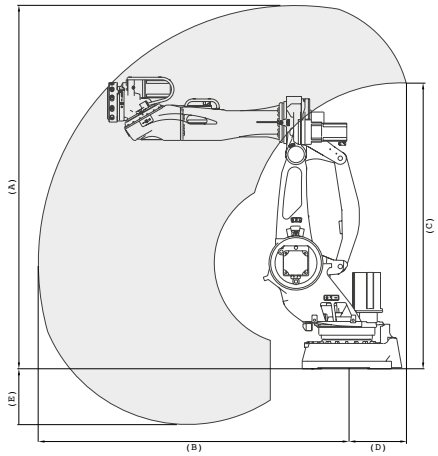
NJ4 220 - 2.4
NJ4 220 - 2.7

TECHNICAL SPECIFICATIONS

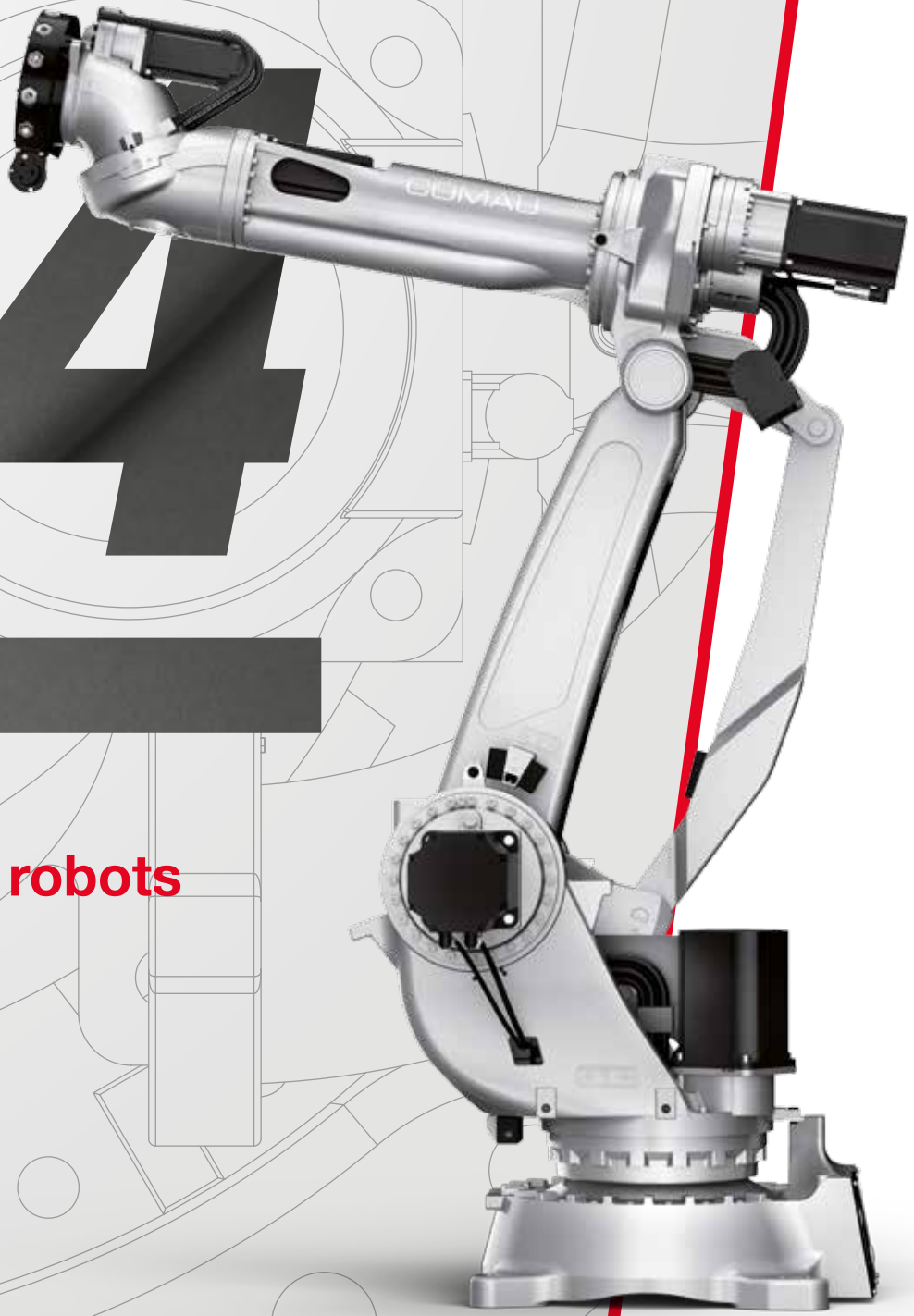
Model		NJ4 220 - 2.4		NJ4 220 - 2.7	
Number of axes		6		6	
Maximum wrist payload		220 kg		220 kg	
Additional load on forearm		25 kg		25 kg	
Maximum horizontal reach		2417 mm		2738 mm	
Torque on axis 4		1320 Nm		1320 Nm	
Torque on axis 5		950 Nm		950 Nm	
Torque on axis 6		690 Nm		690 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(100°/s)	+/- 180°	(100°/s)
	Axis 2	-75° / +95°	(90°/s)	-75° / +95°	(90°/s)
	Axis 3	-10° / -256°	(110°/s)	-10° / -256°	(110°/s)
	Axis 4	+/- 200°	(130°/s)	+/- 200°	(130°/s)
	Axis 5	+/- 200°	(125°/s)	+/- 200°	(125°/s)
	Axis 6	+/- 200°	(170°/s)	+/- 200°	(170°/s)
Repeatability		0.15 mm		0.15 mm	
Tool coupling flange		ISO 9409 - 1 - A 125 ISO 9409 - 1 - A 160		ISO 9409 - 1 - A 125 ISO 9409 - 1 - A 160	
Robot weight		1260 kg		1290 kg	
Protection class		IP65		IP65	
Mounting position		Floor / Ceiling		Floor / Ceiling	
Operating Areas	A	2847 mm		3168 mm	
	B	2417 mm		2738 mm	
	C	2241 mm		2324 mm	
	D	465 mm		779 mm	
	E	436 mm		464 mm	

Suggested applications

- **Assembly**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Spot Welding**



NJ4



Strong mechanical structure for Hollow Wrist high payload robots

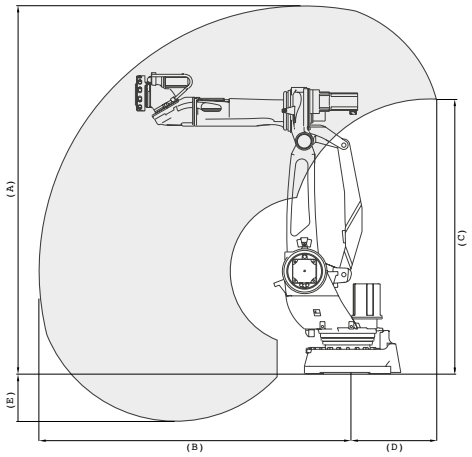
NJ4 220 - 3.0
NJ4 270 - 2.7

TECHNICAL SPECIFICATIONS

Model		NJ4 220 - 3.0		NJ4 270 - 2.7	
Number of axes		6		6	
Maximum wrist payload		220 kg		270 kg	
Additional load on forearm		25 kg		25 kg	
Maximum horizontal reach		3002 mm		2703 mm	
Torque on axis 4		1320 Nm		1960 Nm	
Torque on axis 5		950 Nm		1457 Nm	
Torque on axis 6		690 Nm		834 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(90°/s)	+/- 180°	(90°/s)
	Axis 2	-75° / +75°	(90°/s)	-75° / +75°	(90°/s)
	Axis 3	-231° / 0°	(90°/s)	-231° / 0°	(90°/s)
	Axis 4	+/- 200°	(115°/s)	+/- 200°	(115°/s)
	Axis 5	+/- 200°	(125°/s)	+/- 200°	(125°/s)
	Axis 6	+/- 200°	(170°/s)	+/- 200°	(170°/s)
Repeatability		0.15 mm		0.15 mm	
Tool coupling flange		ISO 9409 - 1 - A 160 ISO 9409 - 1 - A 200		ISO 9409 - 1 - A 160 ISO 9409 - 1 - A 200	
Robot weight		2005 kg		1975 kg	
Protection class		IP65		IP65	
Mounting position		Floor		Floor	
Operating Areas	A	3685 mm		3392 mm	
	B	3002 mm		2703 mm	
	C	2927 mm		2617 mm	
	D	804 mm		804 mm	
	E	123 mm		-181 mm(*)	

Suggested applications

- **Assembly**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Spot Welding**



(*) This dimension is negative because the wrist center can not reach positions below the floor level.

NJ4

The Hollow Wrist shelf version

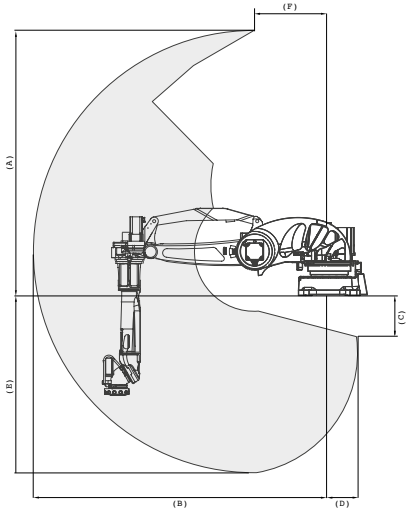
NJ4 165 - 3.4 SH
NJ4 210 - 3.1 SH

TECHNICAL SPECIFICATIONS

Model		NJ4 165 - 3.4 SH		NJ4 210 - 3.1 SH	
Number of axes		6		6	
Maximum wrist payload		165 kg		210 kg	
Additional load on forearm		50 kg		25 kg	
Maximum horizontal reach		3377 mm		3188 mm	
Torque on axis 4		1089 Nm		1315 Nm	
Torque on axis 5		804 Nm		952 Nm	
Torque on axis 6		411 Nm		687 Nm	
Stroke (Speed)	Axis 1	+/- 180°	(85°/s)	+/- 180°	(85°/s)
	Axis 2	-50° / +170°	(90°/s)	+95° / -75°	(110°/s)
	Axis 3	-19,4° / -288°	(110°/s)	-21° / -288°	(110°/s)
	Axis 4	+/- 200°	(130°/s)	+/- 200°	(130°/s)
	Axis 5	+/- 200°	(140°/s)	+/- 200°	(125°/s)
	Axis 6	+/- 200°	(170°/s)	+/- 200°	(190°/s)
Repeatability		0.10 mm		0.10 mm	
Tool coupling flange		ISO 9409 - 1 - A 160 ISO 9409 - 1 - A 200		ISO 9409 - 1 - A 160 ISO 9409 - 1 - A 200	
Robot weight		1430 kg		1460 kg	
Protection class		IP65		IP65	
Mounting position		Shelf		Shelf	
Operating Areas	A	3027 mm		2837 mm	
	B	3377 mm		3187 mm	
	C	472 mm		535 mm	
	D	323 mm		131 mm	
	E	2027 mm		1837 mm	
	F	850 mm		850 mm	

Suggested applications

- **Assembly**
- **Handling / Packaging**
- **Machine Tending**
- **Measuring / Testing**
- **Spot Welding**



AUXILIARY EQUIPMENT

Enabling equipment for increased functionality

Slides

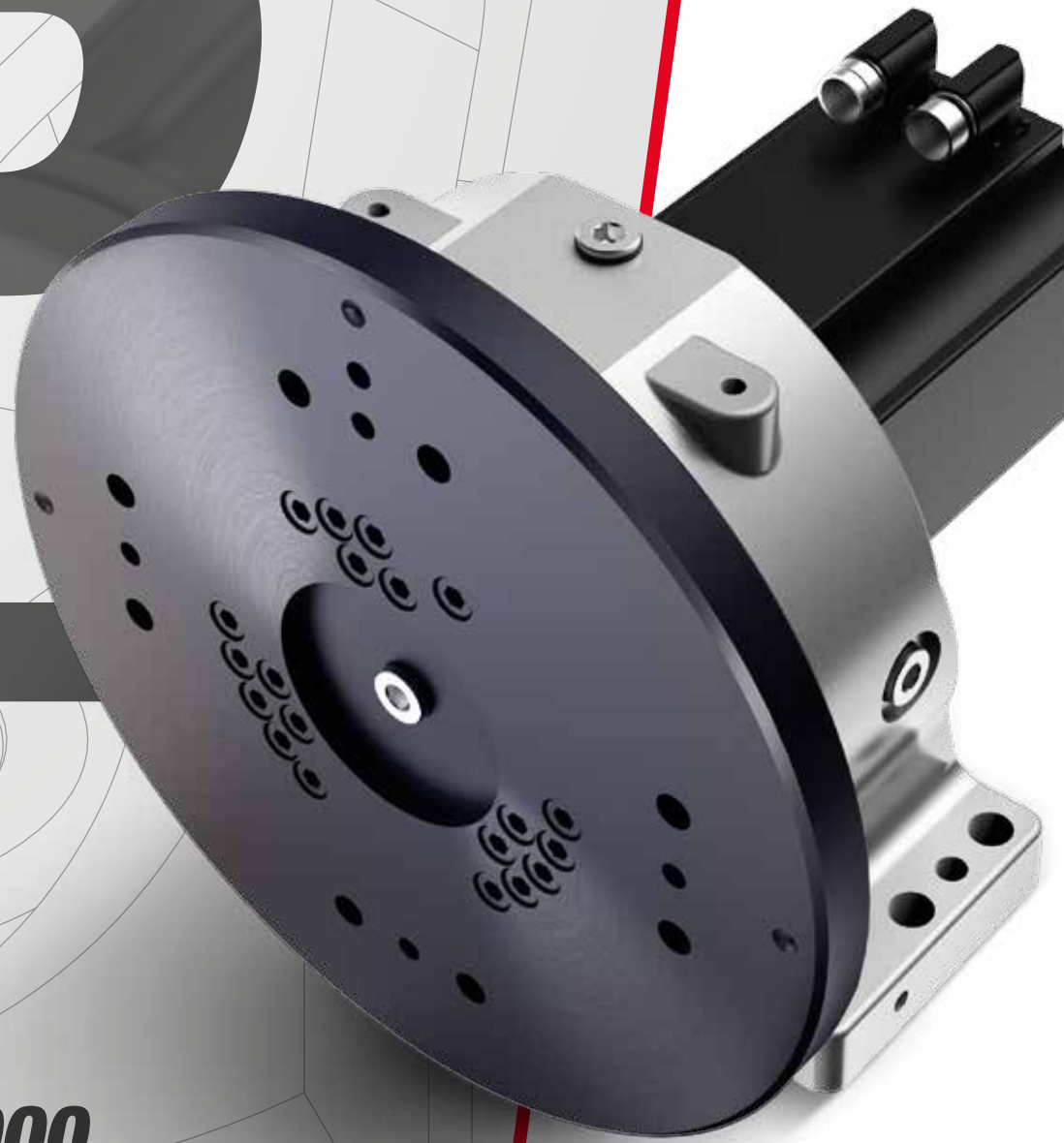
Fast and precise slides, perfectly managed with the C5G controller, ensure maximum flexibility by widening the operating area of the robot

External Axis

A wide range of external axes, with motors from 0.75 Nm to 33 Nm that are seamlessly integrated with the C5G controller, allowing you to fully manage your automation needs

MP

Positioner modules



MP 500 - MP 1000
MP 1250 - MP 2500 - MP 5000

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 kgm²	400 kgm²	400 kgm²	1100 kgm²	2500 kgm²
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				
Weight	53 kg	90 kg	90 kg	290 kg	2000 kg
Flange Diameter - D	190 mm	370 mm	370 mm	600 mm	900 mm

Suggested applications

- **Positioning**

Diagram: Payload – P (kg) / Distance Y (mm) from center of gravity related to rotation axis.

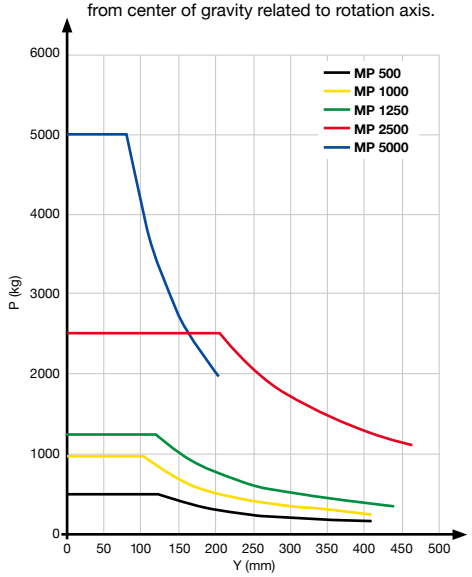
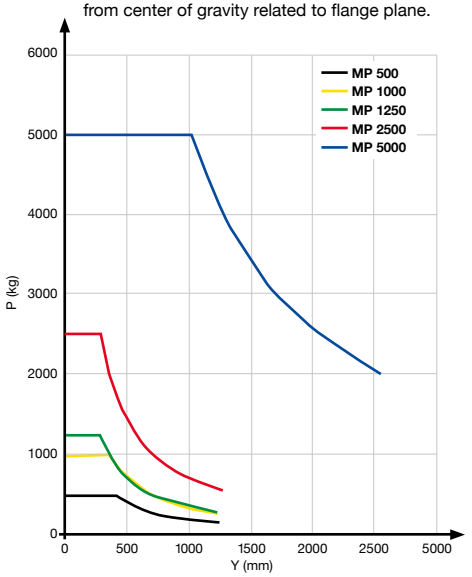
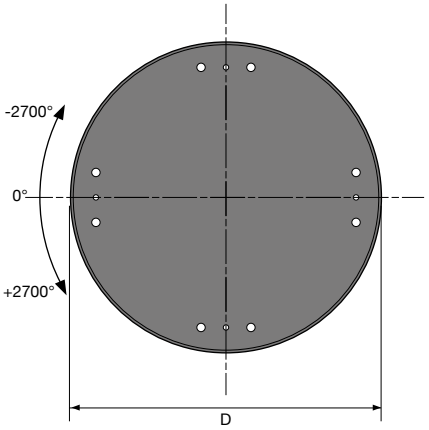
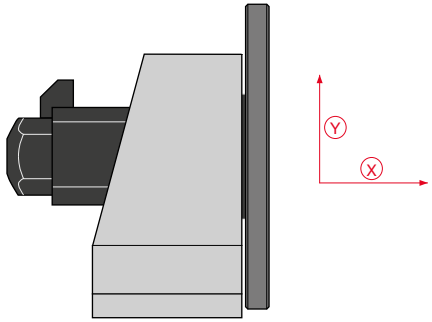


Diagram: Payload – P (kg) / Distance X (mm) from center of gravity related to flange plane.







PTDO

Double action horizontal positioners

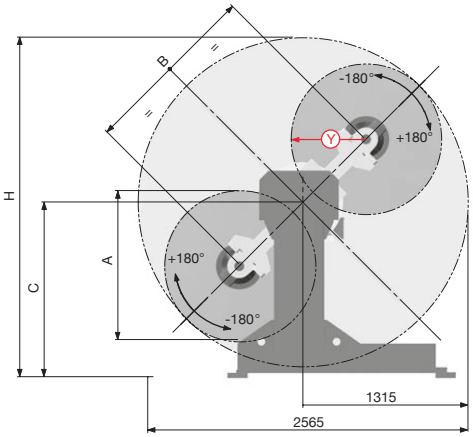
PTDO 500 - 1.2

TECHNICAL SPECIFICATIONS

Model	PTDO 500 - 1.2				
	2.0	2.5	3.0	3.5	4.0
Payload	2x500 kg				
Static torque on main axis	600 Nm				
Approx. time for 180° changeover	3.9 s				
Max load difference between stations	140 kg				
Max inertia	150 kgm²				
Main axis rotation angle	from -90° to +90°				
Secondary axis rotation angle	from -180° to +180°				
Repeatability at 500 mm	0.15 mm				
A	1200 mm				
B	1430 mm				
C	1405 mm				
H	2720 mm				
L	2000 mm	2500 mm	3000 mm	3500 mm	4000 mm
L1	4086 mm	4586 mm	5086 mm	5586 mm	6086 mm

Suggested applications

- **Positioning**



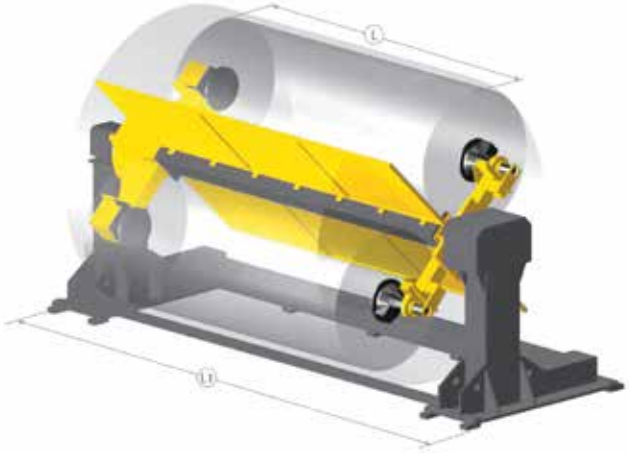
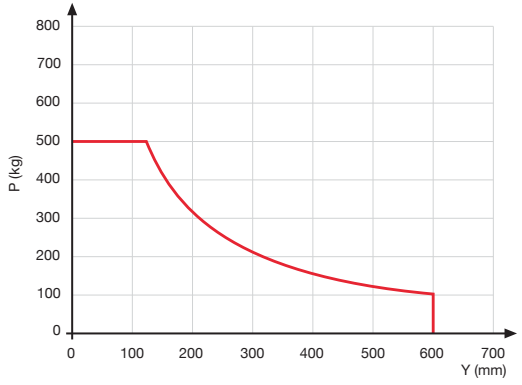


Diagram: Payload - P (kg) / Distance Y (mm) from center of gravity related to rotation axis.



PTDO

Double action horizontal positioners

PTDO 750 - 1.2

Model	PTDO 750 - 1.2						
	2.0	2.5	3.1	3.5	4.0	4.5	5.0
Payload	2x750 kg						
Static torque on main axis	1000 Nm						
Approx. time for 180° changeover	3.7 s						
Max load difference between stations	350 kg						
Max inertia	270 kgm²						
Main axis rotation angle	from -90° to+90°						
Secondary axis rotation angle	from -180° to +180°						
Repeatability at 500 mm	0.15 mm						
A	1200 mm						
B	1430 mm						
C	1405 mm						
H	2720 mm						
L	2000 mm	2500 mm	3100 mm	3500 mm	4000 mm	4500 mm	5000 mm
L1	4086 mm	4586 mm	5186 mm	5586 mm	6086 mm	6586 mm	7086 mm

Suggested applications

- **Positioning**

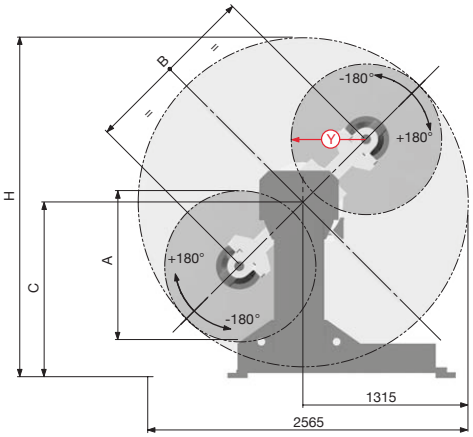
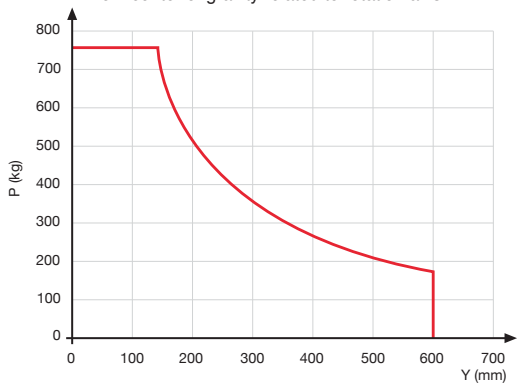


Diagram: Payload - P (kg) / Distance Y (mm) from center of gravity related to rotation axis.



PTDV

Double action vertical positioners

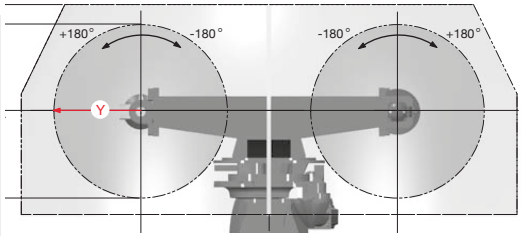
PTDV 250 - 500 - 750 - 850

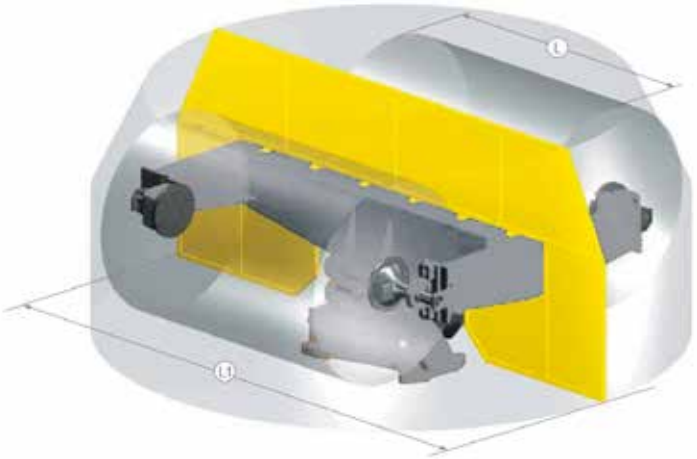
TECHNICAL SPECIFICATIONS

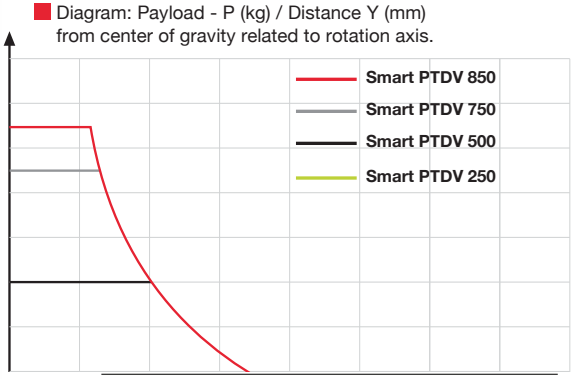
Model	PTDV 250	PTDV 500		PTDV 750	PTDV 850
	1.1 - 1.6	1.2 - 2.0	1.2 - 2.5	1.2 - 2.0	1.2 - 2.5
Payload	2x250 kg	2x500 kg	2x500 kg	2x750 kg	2x800 kg
Static torque on main axis	600 Nm	1000 Nm	1000 Nm	1000 Nm	1000 Nm
Approx. time for 180° changeover	5.3 s	4.9 s	5.3 s	4.7 s	4.8 s
Max load difference between stations	250 kg	500 kg	500 kg	750 kg	850 kg
Max inertia	60 kgm^2	200 kgm^2	200 kgm^2	350 kgm^2	350 kgm^2
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	795/677 mm	795/677 mm	795/677 mm	795/677 mm
H	1969 mm	2003 mm	2003 mm	2003 mm	2003 mm
L	1600 mm	2056 mm	2056 mm	2056 mm	2056 mm
L1	3300 mm	3956 mm	4400 mm	3956 mm	4400 mm

Suggested applications

- **Positioning**

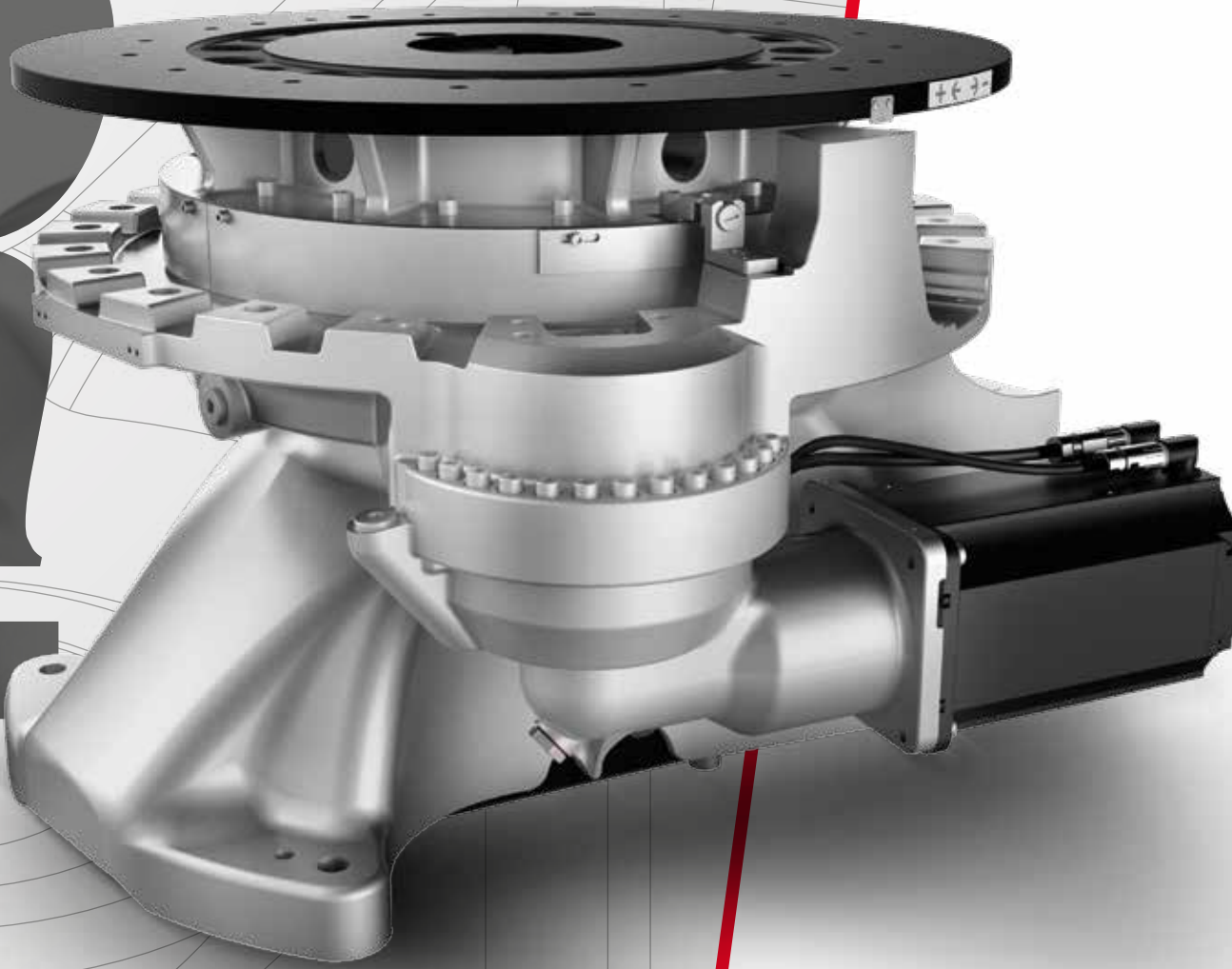






TR

Rotary tables

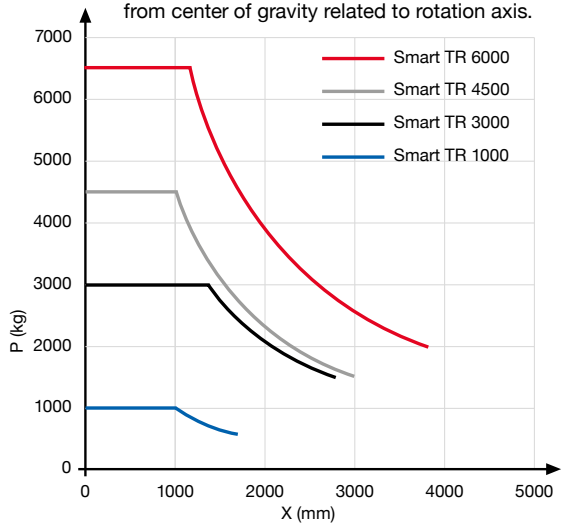


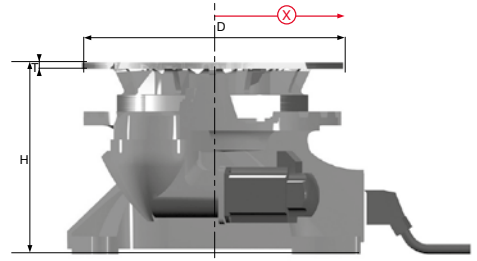
TR 1000 - TR 3000 - TR 4500 - TR 6000

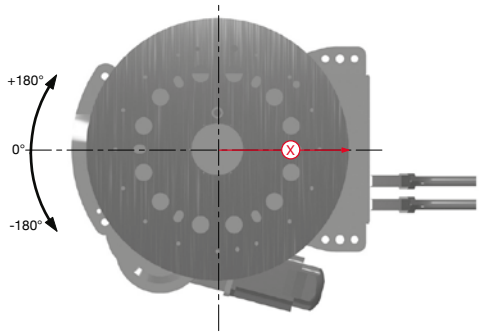
TECHNICAL SPECIFICATIONS

Model	TR 1000	TR 3000	TR 4500	TR 6000	Suggested applications
Payload	1000 kg	3000 kg	4500 kg	6000 kg	• Positioning
Max inertia	1400 kgm²	3500 kgm²	7000 kgm²	15000 kgm²	
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	no	
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	

Diagram: Payload – P (kg) / Distance X (mm) from center of gravity related to rotation axis.







TP5

As simple as a touch

Enhanced ergonomics, wrist fatigue reduction, ease of use, reduced overall weight, increased manageability. The power is in your hands.

Style and design

- **Intensive design study and attention.** to detail to guarantee **enhanced ergonomics**
- Enabling keys on the back **reduce wrist fatigue** and ensure easier use of the central keyboard area
- It can be handled in **multiple** ways to reduce operator fatigue at work
- **Lightweight** and high manoeuvrability
- The practical upper handle enables the TP to be hung and used even when far from the controller
- The **ease of use** allows quick learning by the operator via a “natural evolution”

Hardware and software architecture

- **Improved graphics** for more **intuitive use**
- **Faster USB** port

Display and keyboard

- **7” touch screen** provides simplified and **faster** interaction
- **Optimized operations**, even when using only the keyboard, for enhanced use in hard production environments
- **Simplified keyboard** designed to locate keys more easily during the programming phase thanks to special tactile marks on the membrane
- Improved **keyboard feedback** when buttons are pressed

CONTROL UNIT

All your needs are under control

Fast processing, modular system for drive units, I/O and fieldbus, free and ergonomic space for application functions integration, compact dimensions. All you need is under control.

C5G - C5Compact - R1C

High processing power

The C5G uses the latest generation of industrial PC APC820 with Core2 Duo technology CPU which is capable of obtaining high performance with low energetic consumption

Energy saving

- Lowest consumption in stand-by, low consumption during operations
- Cooling system is proportional to control unit's operations
- Energy network recover system with a high dynamic content program

Flexibility and reliability

The new generation of field bus based on Hilscher technology and integrated by B&R in their remote I/O X20 family, guarantees a flexible and reliable interface in every customer application. Modular interfaces are available, such as digital I/O, analog I/O as well as the position transducer encoder, resolver, etc.

RobotSAFE

Safe robot controller models allow a safety-rated management of the robot motion (joint or cartesian mode) and speed, offering advantages in terms of smaller layouts and absence of physical fences. Using sensors we provide the safety of your automatic cell without affecting your productivity

Modular / expandible

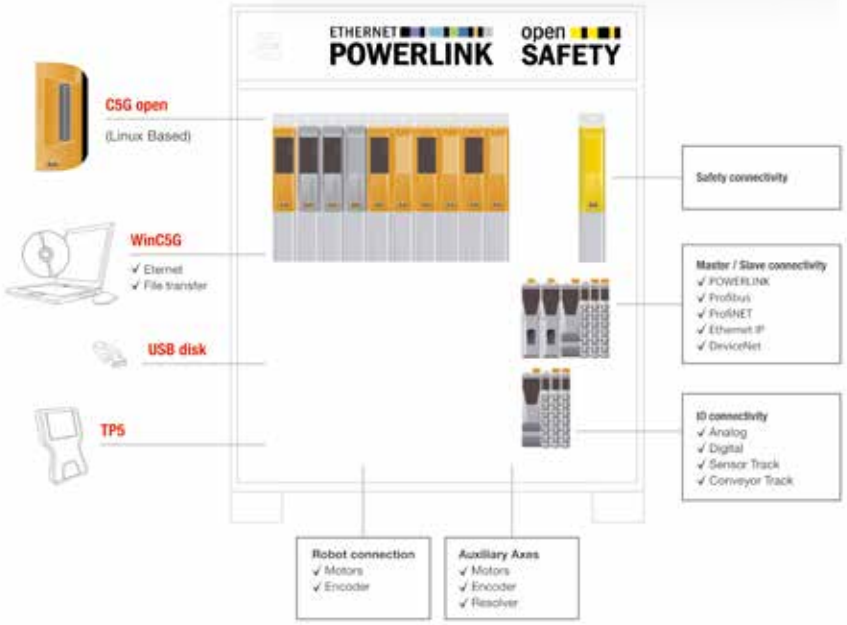
Modular system for drives up to 13 axes in the base cabinet(*)

Simultaneous management of several robots

Hardware architecture designed to manage up to 16 axes(*) in "multi-arm" configuration with application box

*Depending on the robot model

Functional diagram



3D off-line programming

with Robosim Pro

Multi applications management

Possibility to manage many applications at the same time

C5G open controller: becomes the real driver of the robot's motion

It allows the development of customized motion algorithms and special applications with the use of sensors

C5G

- **Fast processing with dual core architecture**
- **Modular system for drives unit and i/o and fieldbus**
- **Free and ergonomic space for application functions integration**
- **Energy saving system**
- **Also available in safe version**
- **Also available in open controller version**
- **Runs up to 16 axes with application box**

Main technical data

- Dimensions: 800x500x1100 mm
- Weight: 125 kg
- Working temperature: 5 to 45°C (5 to 55°C with cooler)
- Humidity: 90% max, no condensation
- Extended line power range: 400 to 500V

C5Compact

- **65% smaller than the standard version, lighter and easier to integrate**
- **Power saving, 50% less installed power than the standard version**
- **Runs up to 8 axes depending on the robot model**
- **Also available in safe version**
- **Also available in open controller version**

Main technical data

- Dimensions: 550x500x550 mm
- Weight: 100 kg
- Working temperature: 5 to 45°C
- Humidity: 90% max, no condensation
- Extended line power range: 400 to 500V

ETHERNET POWERLINK compatible

R1C

- **Controls up to 6 axes, equipped with brushless synchronous motors and high resolution Encoder**
- **Interfaces with the most common Field Bus and communication protocols**
- **Can become an Ethernet network node to facilitate remote updates and diagnostics**
- **Programmable via software and by Comau Teach Pendant**

Main technical data

- Dimensions: 266x427x498 mm
- Weight: 23 kg
- Working temperature: 5 to 45°C
- Humidity: 95% max, no condensation
- Extended line power range: 230V ±10%

SOFTWARE

Digital tools to enhance processes

Software functionalities

Automatic Payload Identification: Automatic identification of the payload optimizes the robot movements

Collision Detection: Emergency stop of the robot in case of a collision protects the mechanic and the equipment

Cooperative and Synchronized Motion: Coordinated and simultaneous management of multiple robots and auxiliary axes (linear track, servo gun, positioners and other application equipment)

Conveyor and Sensor Tracking: Track parts on linear and circular conveyors. Precise usage path tracking of different types of external sensors

Joint Soft Servo Technology: Enable individual robot joints to yield external forces as required by each specific application

Interference Regions: Limit the robot working space by dynamically defining regions of various shapes

Robot Absolute Accuracy: An algorithm that enables the adaptation of the actual kinematics to the theoretical model that has been programmed off-line

Application software

Our application software packages are able to manage the most commonly used technological processes and include an easy-to-use GUI for imputing process parameters, customizing process behaviors and monitoring statuses

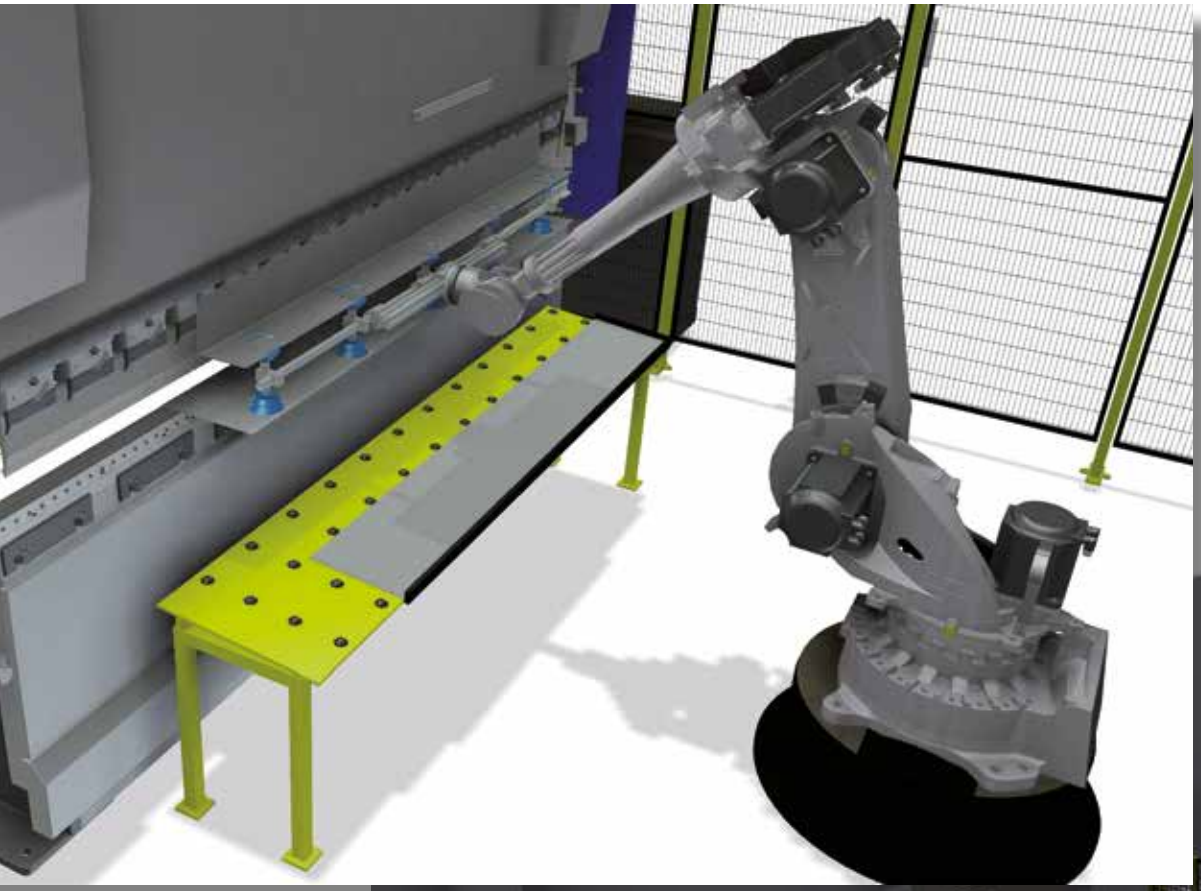
SmartRivet: The SmartRivet software library supplies a set of ready-to-use technical instructions to manage your rivet system processes, with no need for process integration or code programming

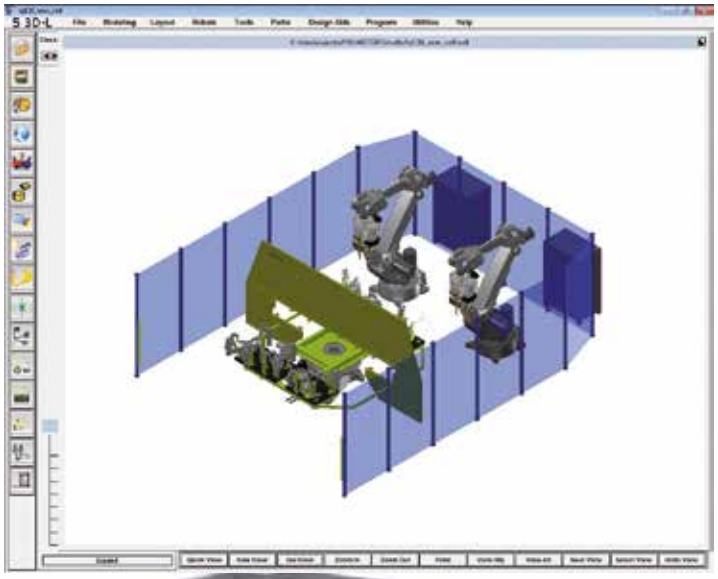
SmartIP Interpress: SmartIP software handles the complete interpress process and in particular, features a smart, user-friendly interface for managing process cycles including:

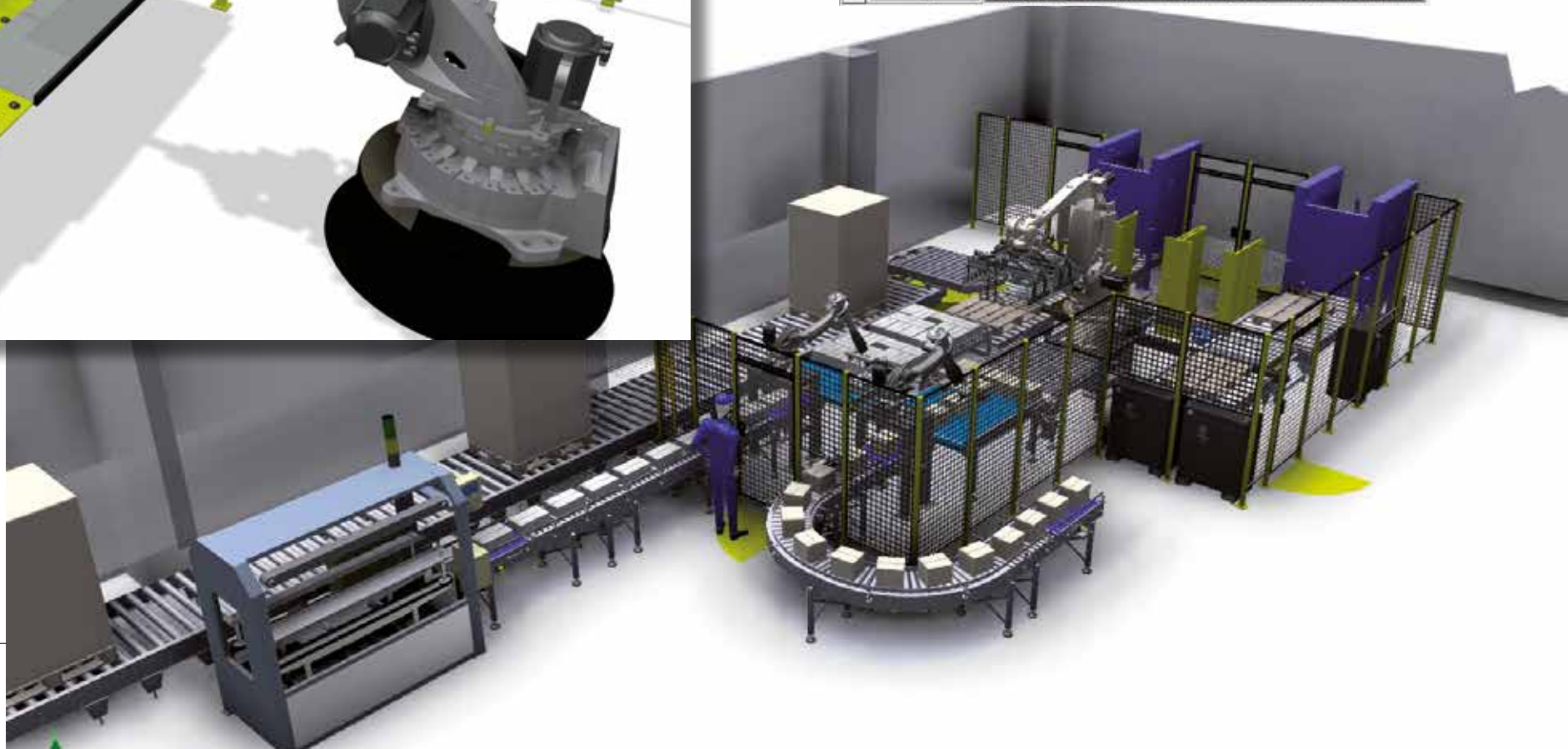
- Interpress transfer cycles
- Line loading cycles from the centering table
- Line unloading cycles from table or mat
- Hand-over cycles with part overturning
- Cycles with part transfer onto intermediate table
- Double pick-up and double deposit cycles

Simulation software

Robosim Pro: 3D off-line programming







Application software

SmartTool Change: This software allows you to easily manage your Tool Change systems. Simply select the devices to manage and the software application does the rest with no need for integration or additional programming code

SmartStud: The SmartStud software application features a set of ready-to-use technical instructions to manage your stud welding systems and the most common types of fieldbuses, with no need for process integration or additional programming code

SmartArc: SmartArc incorporates a dedicated application software that allows the operator to set welding parameters and manage the complete system from the teach pendant, by means of a dedicated user interface

SmartGlue: The SmartGlue application package provides full support for material delivering, gluing and sealing processes

SmartHand: This application package provides full management for tools such as grippers that are used for material handling and attach to the end of the robot arm

SmartSpot: The SmartSpot application package provides a full support and management of resistance welding technological process

Palletizing Motion: This optional feature allows any anthropomorphic or parallelogram robot with a 6 axes, spherical wrist to be used as a palletizer.
The robot will always keep the flange parallel, in a downward position, to the floor; axis 4 is not used

Axes Pursuit: The Axes pursuit functionality makes it possible to move one or more axes belonging to one arm while allowing one or more axes of a different Arm to pursue it, and works in both Automatic and Programming mode

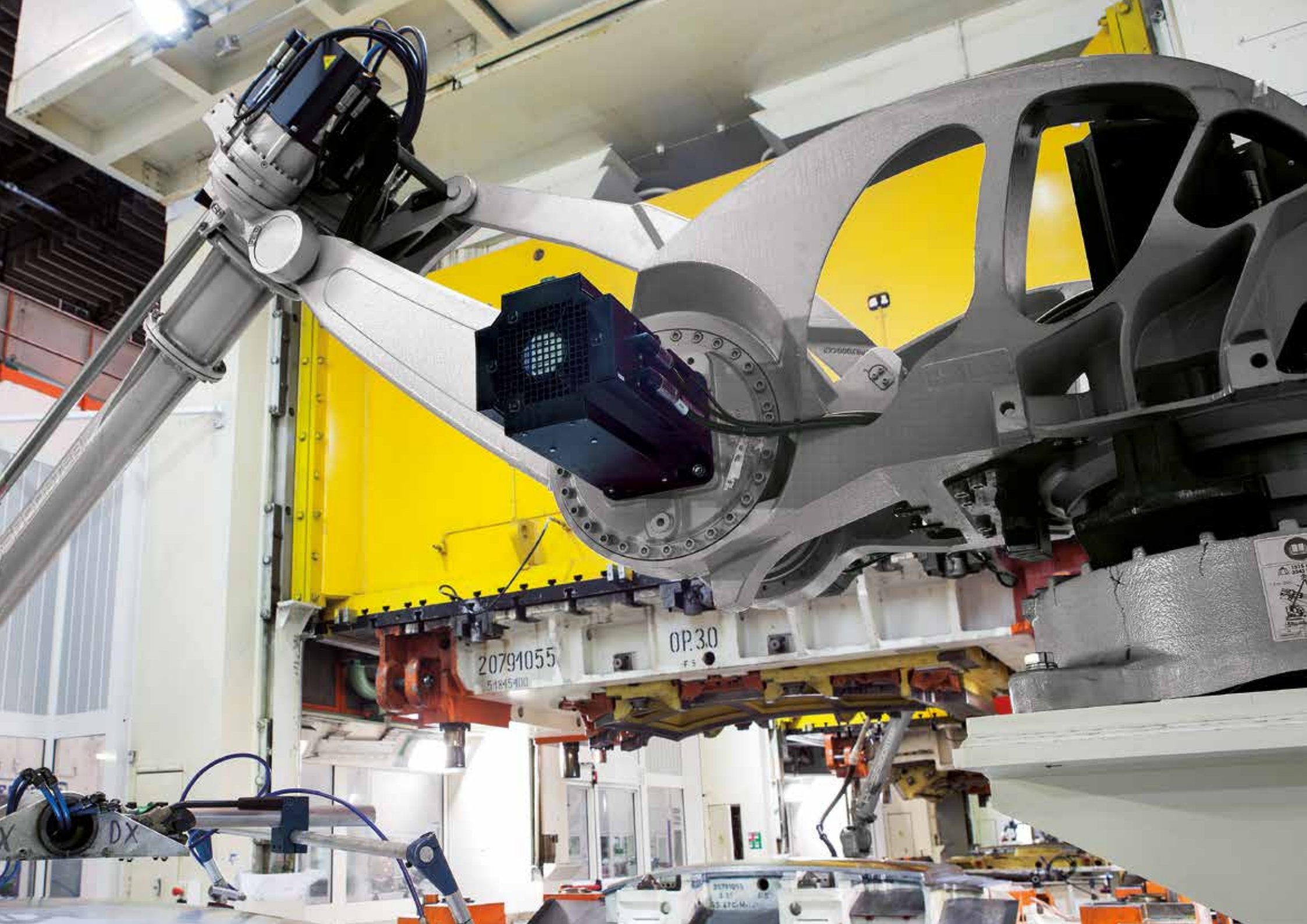
Interference Regions: This algorithm constantly monitors the robot in any system state and automatically slows down and halts the robot speed when the TCP (Tool Center Point) meets the boundary of user-defined “Forbidden Regions” and speeds it up in “Allowed Regions”

Wrist Singularity Management: An optional function for spherical wrist SMART family robots that helps programming in cases where there could be motion through the wrist singularity, by enabling the trajectory planner to evaluate whether or not to automatically modify the “W” attitude flag and evolution modality

Weaving Motion: Weaving is an oscillating motion superimposed on a Cartesian trajectory used to distribute material in gaps with large cross sections relative to the material bead, for arc-welding applications and some gluing and sealing applications

PRESS automation

Complete turn-key solutions for Press Lines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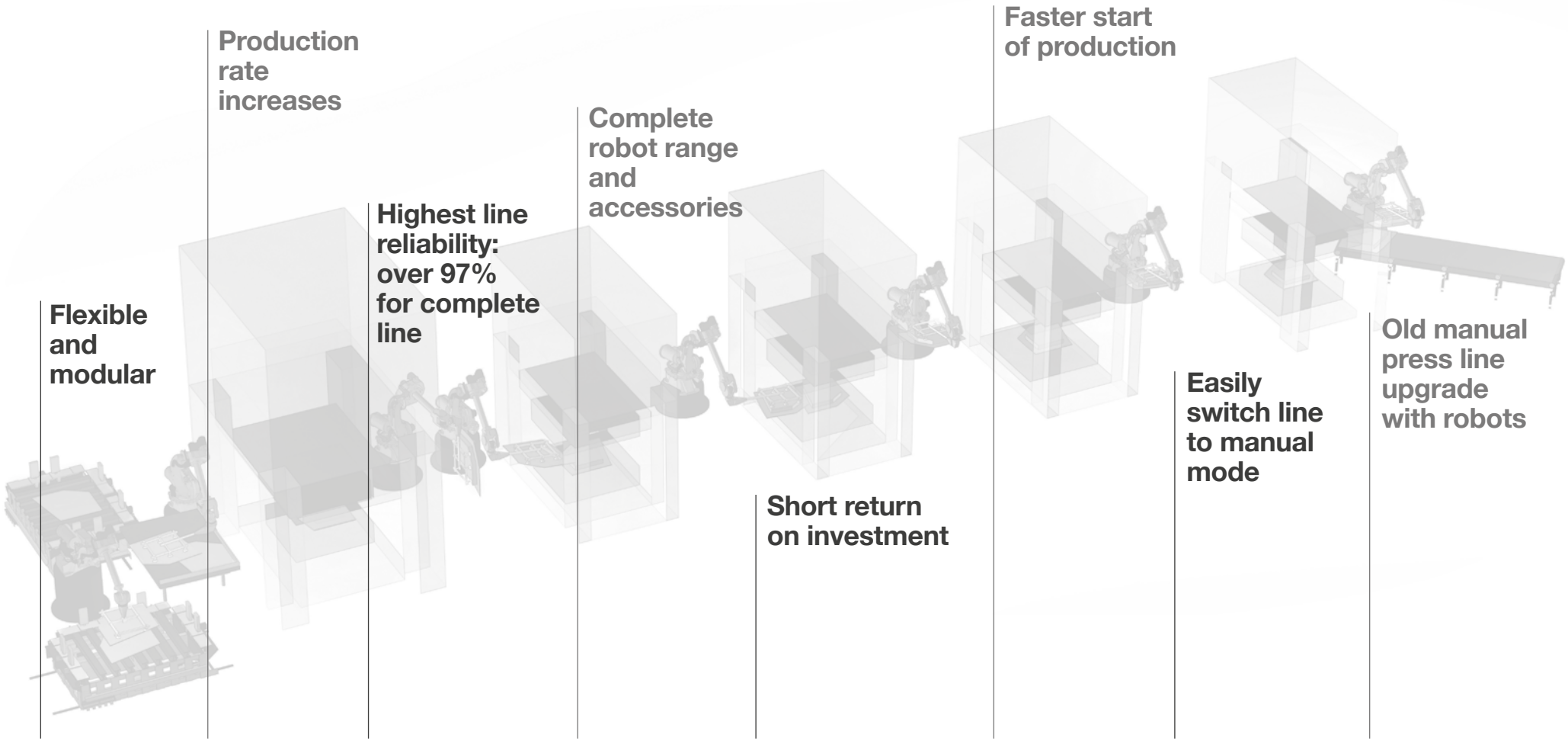
The PRESS Excellence Center

The know-how of Comau Robotics results from a long and well-established experience gained in the automation of the press lines in traditional cold stamping and modern hot forming methods.
Since 1984, Comau has been developing highly efficient solutions with its dedicated PRESSbooster robot family and **SMART_IP software**. During these years, Comau has improved its skills and gained experience in automatic press lines, making Comau a global leader in its sector.
With different levels of automation and customized products, Comau's turnkey solutions grant high production flexibility and a quick return on investment.

Experience
Knowledge Solutions
Automation
Project
Future
Management
Performance
Competence
Innovation

PRESS automation benefits

OVER 200
LINES INSTALLED
WORLDWIDE



Flexible and modular

Production rate increases

Highest line reliability: over 97% for complete line

Complete robot range and accessories

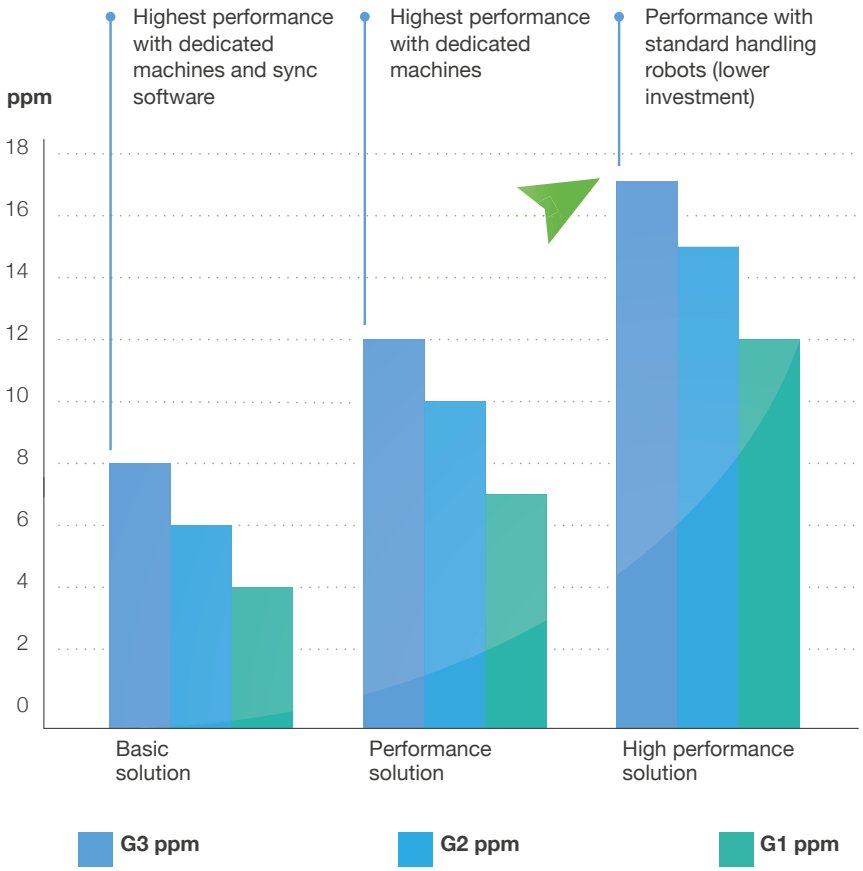
Short return on investment

Faster start of production

Easily switch line to manual mode

Old manual press line upgrade with robots

Comau Robotics provides different levels of automation, performance and investment, from a portion of the line to the automation of the entire press line, according to instantaneous press speed, automation production rate increases, depending on the robot type and management software.



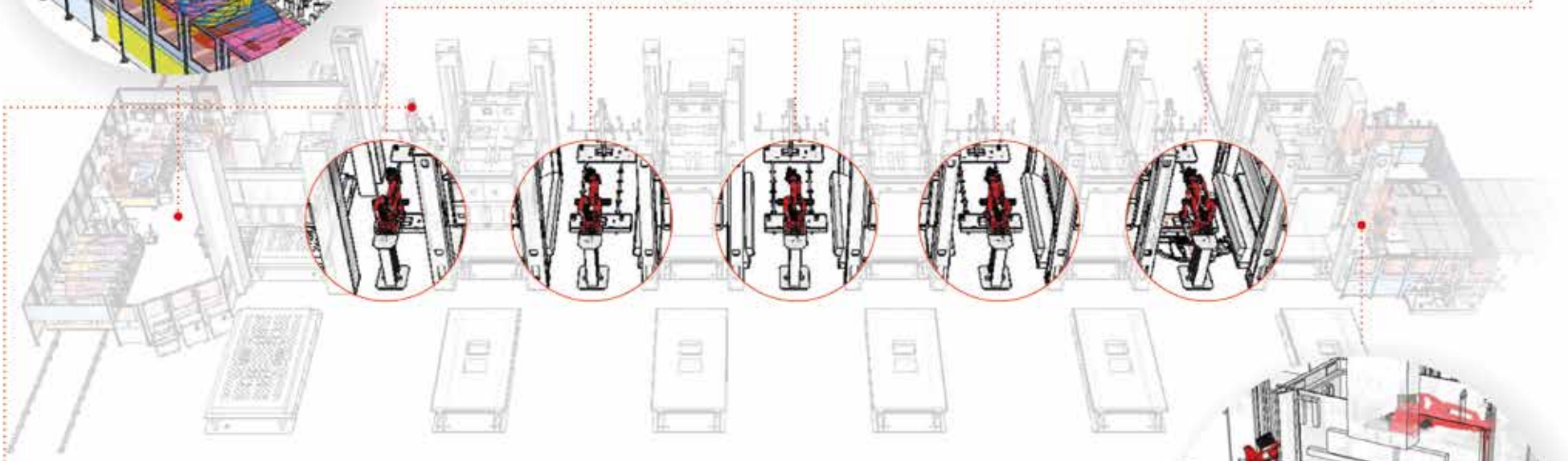
Tandem press lines classification

1° PRESS SIZE (Ton)	PRESSES DISTANCE (m)	COMAU ROBOT TYPE
G1: 2000 T XL and XXL size blanks	7.0 to 9.0	NJ130-3.7 P NJ140-3.7 F
G2+: 1600 T L size blanks	6.0 to 8.0	NJ130-3.7 P NJ140-3.7 F NJ100-3.2 P
G2: 1000 T M and L size blanks	5.0 to 7.0	NJ100-3.2 P
G3: 600 T S and M size blanks	4.0 to 6.0	NJ100-3.2 P

Destacking station – Front of Line (FOL)
Robots handle blanks from pallet to leading press. Station can be equipped with optional cleaning system.
Comau can provide a destacking station that is fully integrated in existing lines.

Press-to-press handling stations with:
- Part TURNOVER option with 2 robots
- INTERPRESS with 1 robot

Fitting to single or double action press.

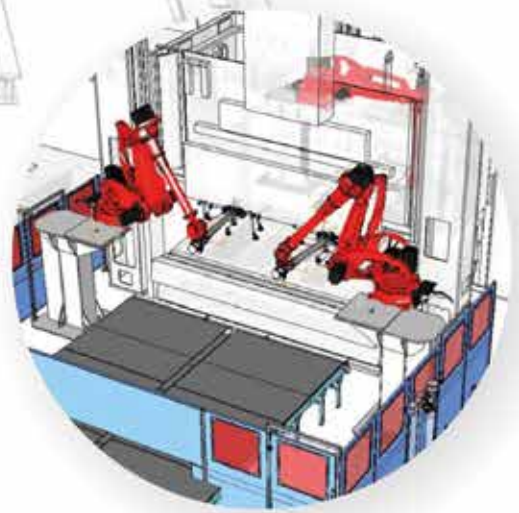


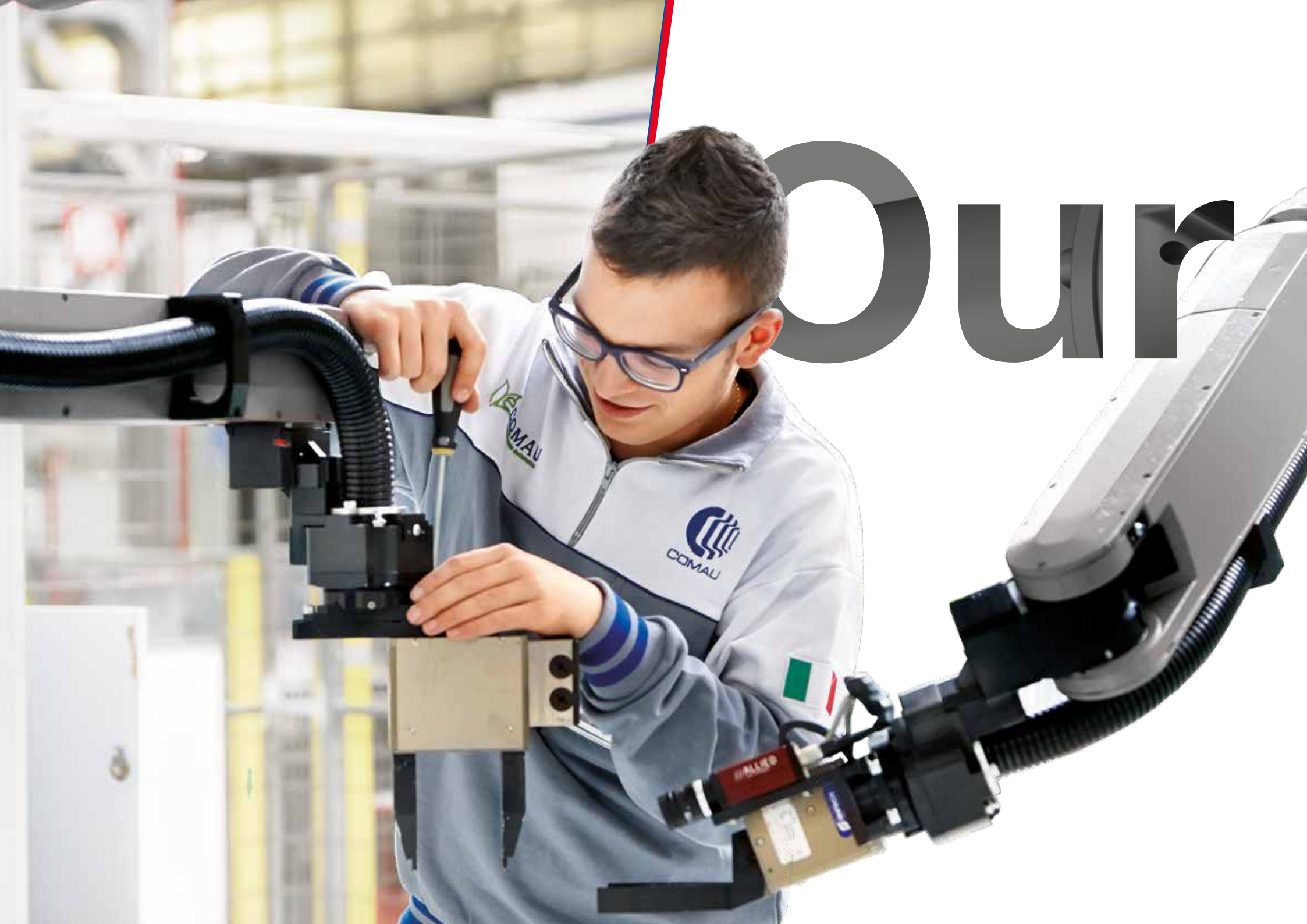
Automatic Tool Changer (ATC)
Sliding carts, rotating tables, stationary tables.

For high speed die change and ergonomics.

EOL station with manual or automatic racking station
Station behind last press with 1 or 2 robots handling parts from die to conveyor. Parts can be handled into containers:
- Manually by operators
- Automatically by additional racking robots

Comau also offers automatic racking stations as a modular upgrade to existing lines.





Our

Services

Our business is to take care of your business

The satisfaction of our customers is always at the top of Comau Robotics strategy.
Prompt and flexible after-sales service close to customers throughout the life cycle of their equipment. A complete range of services allows the customer to maximize the performance of the Comau solution.

- Training at either the Comau Training Center or customer's sites with multi-language sessions
- On-line support through remote diagnostics and remote aids enabled by the connection capacity of the new robot control C5G
- Activities developed by experienced technicians at the customer's site, delivery of spare parts, repairs and re-conditioning services, worldwide maintenance plans

Training & Education

We offer extensive and complete training courses for programmers, maintenance experts and robot operators with multi-language sessions held at Comau's Training Center or at the customer's site by qualified skilled instructors with field experience. Complete and detailed documentation concerning course and a "certificate of attendance" is issued upon completion of training courses.

- Training courses held by field skilled teachers
- Training area with robotized cells and dedicated rooms
- Training in the customer's language at our site or customer's site
- Tailored courses based on customer needs
- Courses from basic maintenance to advanced programming and diagnostics
- On-the-job training

Service

- Help Desk
- Commissioning
- Robot & PLC Programming
- Service
- Maintenance & Refurbishment
- Support to Production
- Field Modification & Retrofit
- Hardware & Software upgrade
- Service Contract Management
- Spare Parts
- Supply of spares/repairs for at least 10 years after the end of production for a product

TRAINING

Personalized solutions for efficient results

Our courses mix in a coherent way:

- Challenging practical activities
- Tools
- Theoretical content

We adopt an innovative learning methodology, combining classroom training, business experience and multimedia tools

Solution 1: e-learning + in-person training

E-learning - *to explore processes and behaviours, practice, reflect and receive feedback*

- Theoretical content (videos, animations, texts)
- Practical content (exercises and simulations)
- In-depth analysis
- Test + feedback

In-person training - *to share knowledge and practice on robotic systems*

- Hands-on activities and real exercises in Comau offices
- Reflection and sharing with Comau experts

Solution 2: in-person training with multimedia

During the classroom training, teacher and participants can share content, exercises and tests through multimedia tools (smart whiteboard, tablet and PC). This solution increases the involvement of participants, who are active subjects and share knowledge and experience.

Multimedia classroom - *content shared with multimedia tools*

- Theoretical content (videos, animations, texts)
- Practical content (exercises and simulations)
- In-depth analysis
- Test + feedback

In-person training - *to share knowledge and practice on robotic systems*

- Hands-on activities and real exercises in Comau offices
- Reflection and sharing with Comau experts

Comau Web Academy

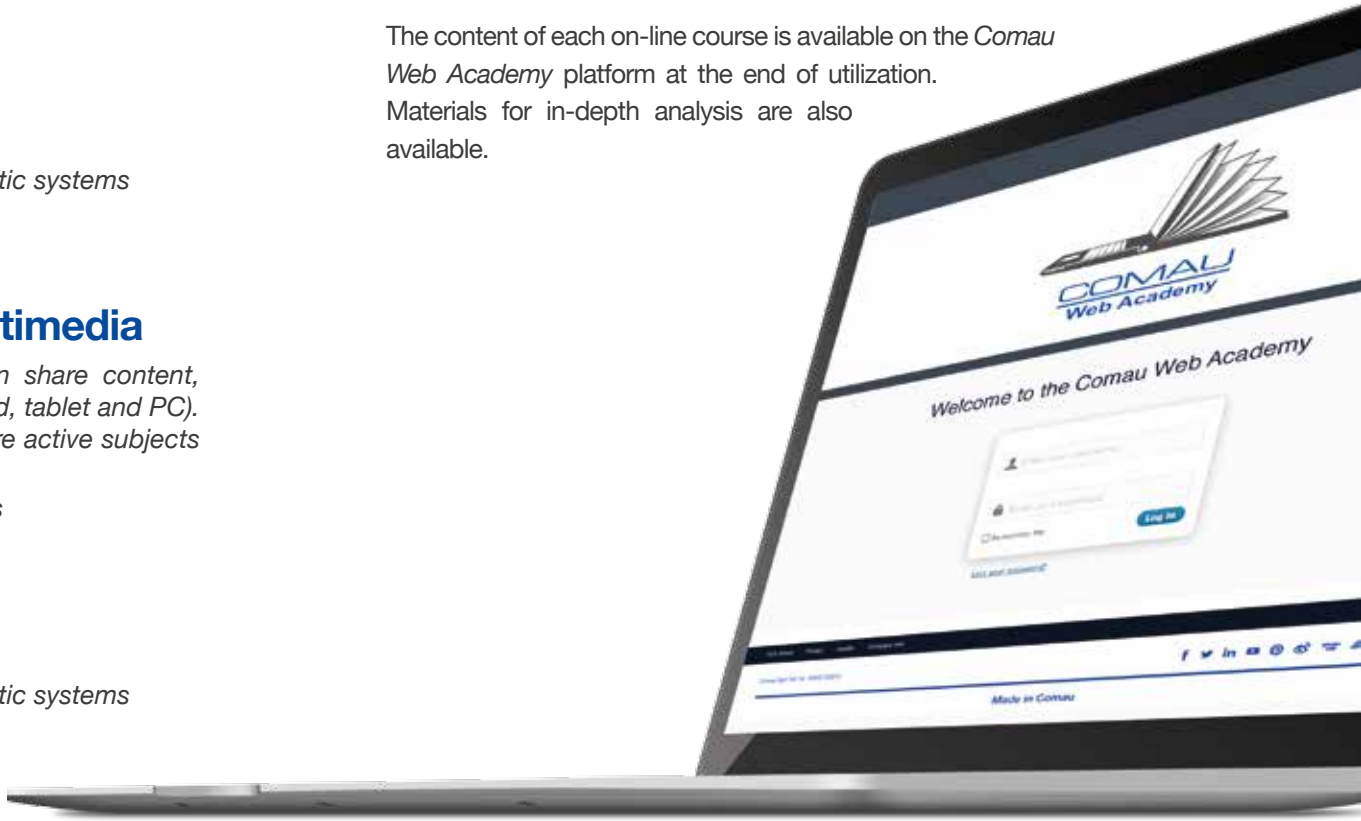
The *Comau Web Academy* gathers the Comau on-line training offer. The courses are accessible from PC and tablet.

The participants can access the courses they are registered to, whenever they wish and can interrupt and resume the use of content, according to their needs.

Each course consists of a training part and an evaluation part (test) useful to verify the progressive learning of the content.

At the end of on-line course a final test is scheduled and a certificate of attendance will be issued.

The content of each on-line course is available on the *Comau Web Academy* platform at the end of utilization. Materials for in-depth analysis are also available.



Mobile Training Cell

You can't come to us?
The Mobile Training Cell will come to you!

The perfect solution for teaching the basics of robotics and industrial automation, wherever you want

Comau has developed a **mobile cell for training, easily transportable and compactible with retractable robot**

This helps minimize its size from 1140x940x1700 to 1140x940x970 optimizing the transporting

It can travel inside a small van so as to **reach easily the location of the courses**

The Mobile Training Cell allows to carry out **basic and advanced programming exercises, and processes management applications**

Racer3, 6 axes robot, the smallest of the Comau family, is optimal and comprehensive for **learning the robotics basics** from both a theoretical and practical point of view

It is equipped with a camera mounted on the structure to permit the screening of the work area on the external monitor

This enables the teacher to manage the **training for groups of very numerous learners also**, ensuring for all a homogeneous learning

The perforated work surface allows to assemble various options developed by Comau, thanks to an anchoring system with quick release pins, available on the market

Therefore, the user will also be able to develop specific equipment (tools) depending on his own needs, that can easily be installed in the Comau Mobile Training Cell

An excellent tool for schools, universities, training and research centers

Features

- Transportable on euro pallet ISO2 size 1200x1000 mm
- Height of the cell transport box 1110 mm
- Compactible with retractable robot
- Equipped with small size Racer3 robot
- Height of the open Cell in working position 1700 mm
- Height of the collapsed Cell 970 mm
- Forkliftable
- Easy movement due to the wheels
- The work surface can be fitted with accessories where to do programming exercises
- Transportable on commercial vehicles small van
- Cell and robot power supply 230 Vac ± 10% 50-60 Hz (±2 Hz) 3 kW main switch rated current 16 A @ 250 Vac

AFTER SALES

AFTER SALES

Comau After Sales is committed to support customers during the entire product life cycle of a robot by providing:

- Installation, commissioning and programming support
- Preventive maintenance, auditing and consultancy services to extend the Mean Time Between Failure (MTBF)
- Training packages to develop customer competencies in the use, maintenance and programming of robots through on-line courses or in-class tailored solutions
- Help Desk support, Remote Monitoring and Response Time services to reduce downtime (MTTR)
- Innovative upgrades and refurbishment solutions to improve performance during the product life cycle.

A complete Service Agreement Portfolio to meet the specific requirements of each single customer

A global team to serve local needs

Comau services

Spare parts and logistics

Professional consultancy and flexible solutions for your spare parts logistics and stock

Support and management of parts, exchange units and repairs with a reliable response time in order to assure continue production

Regional Logistic Centers in Italy, Brazil, US and China

Training

Education and training with learning paths ranging from «*basic*» to «*advanced*» levels supplied at our Training Center, at the customer premises and with our new web-base interactive platform

A complete training catalogue including basic use and programming, advanced programming, diagnostics and maintenance, application packages, and more

Field service and agreements

Local teams to support customers, provide process reliability, improve product performances and maintain investment value

Help Desk support, remote diagnostics and fault analysis by highly skilled engineers to support troubleshooting and address critical emergency situations

A range of service agreement solutions to cover any specific need

Advanced services

Analysis of customer needs and process improvement packages that combine experience and knowledge with new technologies to enhance system performance or reconfigure existing applications

Industrial engineering support, upgrades, new software versions, hardware renewal and reconditioning

Maintenance

Preventive maintenance

The purpose of **preventive maintenance** is to maintain the efficiency of the robot over time, by retaining its original integrity

This helps to eliminate production stops caused by the failure to execute controls and calibrations that together form the basis for efficient operation

To achieve this objective, Comau offers a range of services designed for all the robots in its range

These services include the careful control of mechanics and electronics

The object of **preventive maintenance** is to highlight malfunctions and identify parts to replace which could compromise the reliability of the machine if not treated with a **planned**, **scheduled maintenance**

Typical maintenance

ROBOT ARM

Annual controls and activities

- Check calibration position
- Check backlash
- Visual check of lubricant leaks
- Check wiring harness
- Clean calibration references
- Clean robot
- Reset recovery position
- Fill out the maintenance card with relevant observations

Controls and activities (every 3 years)

- Replace gearbox lubricants
- Replace fifth wheel lubricant
- Grease bearings

ROBOT CONTROLLER

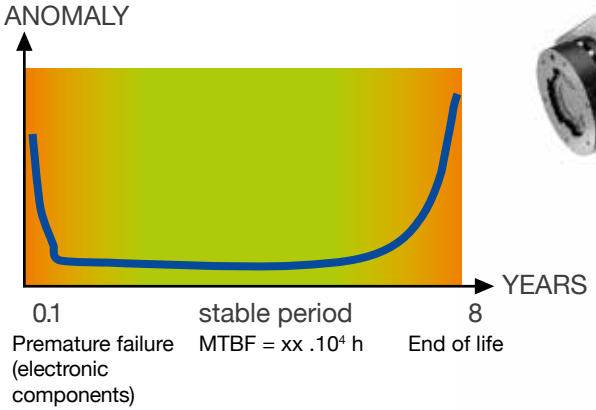
Annual controls and activities

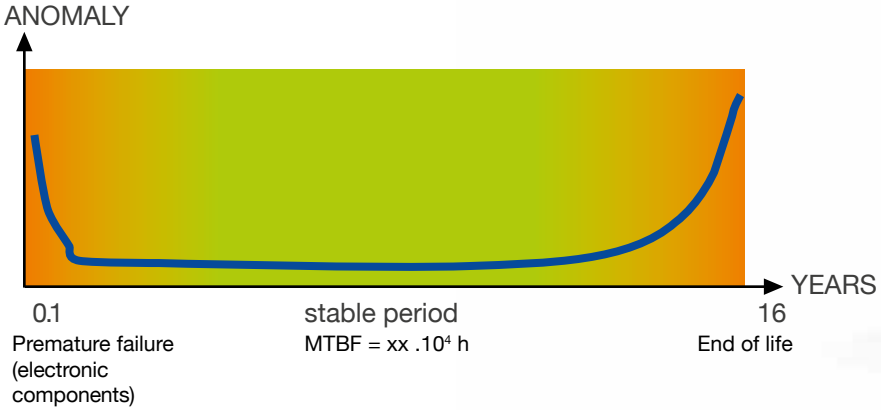
- Save user programs on USB
- Check fans and clean cooling system
- Control emergency button on the ITP
- UPS battery check
- APC battery check
- Check grounding strips
- Control connections, clamping connectors and screws
- Control mains voltage (380/500 V +/- 15%)
- Control SDM voltage
- Control filters
- Check dial functionality of the ITP
- Check selector functionality on TP
- Check general integrity of the C5G system
- Fill out the maintenance card with relevant observations

Used robots and refurbishment Services

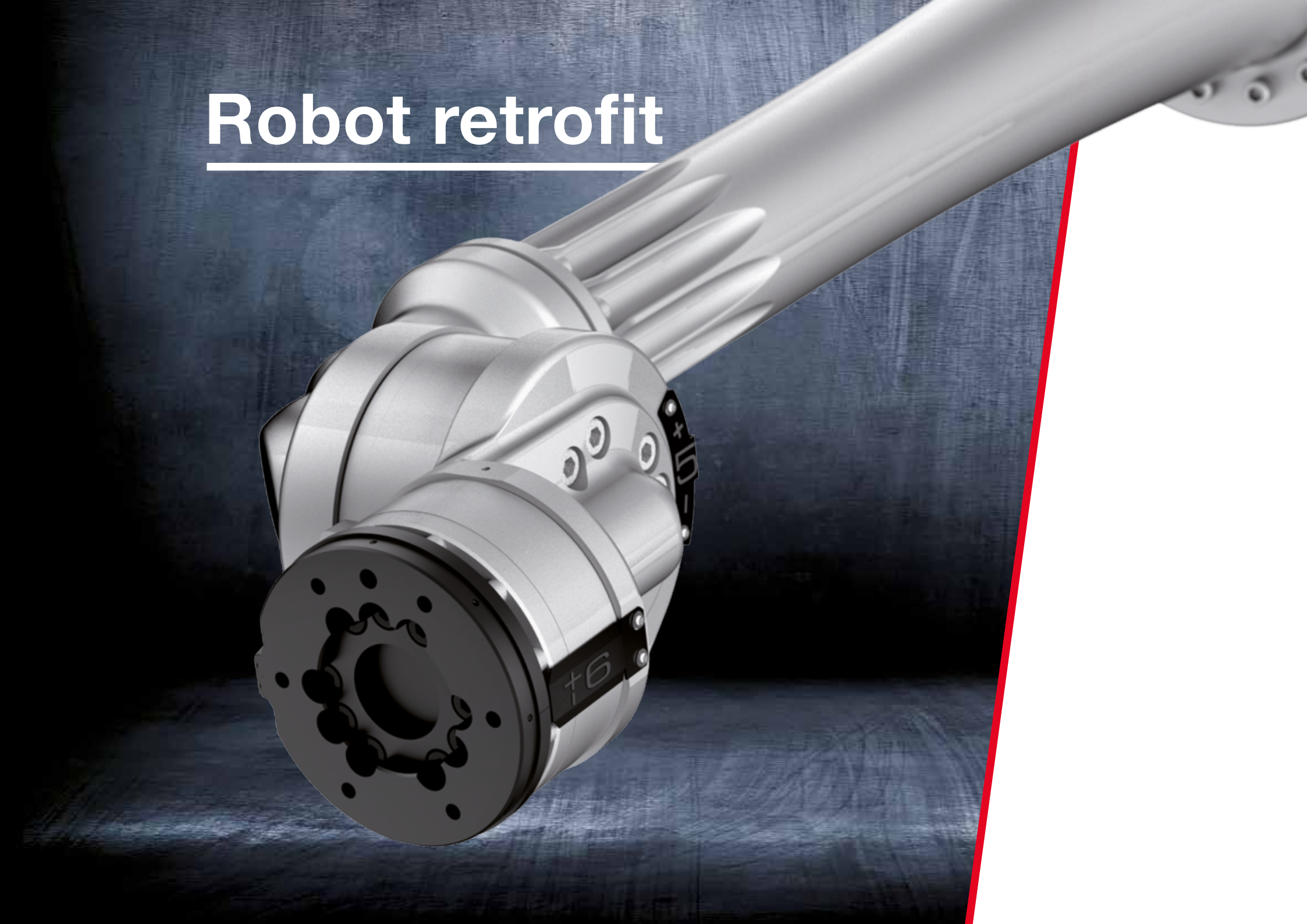
Used robots and refurbishment services

A refurbished robot is a used robot that has undergone an overhaul to return it to its original condition.
This procedure prolongs its operational lifespan.
After careful inspection, each robot is load tested for twenty-four hours.
Comau guarantees its refurbished robots for a period of 12 months from the date of shipment.





Robot retrofit



Components subject to retrofit

Always

As necessary

Lubrication & backlash check

Visual inspection of all parts

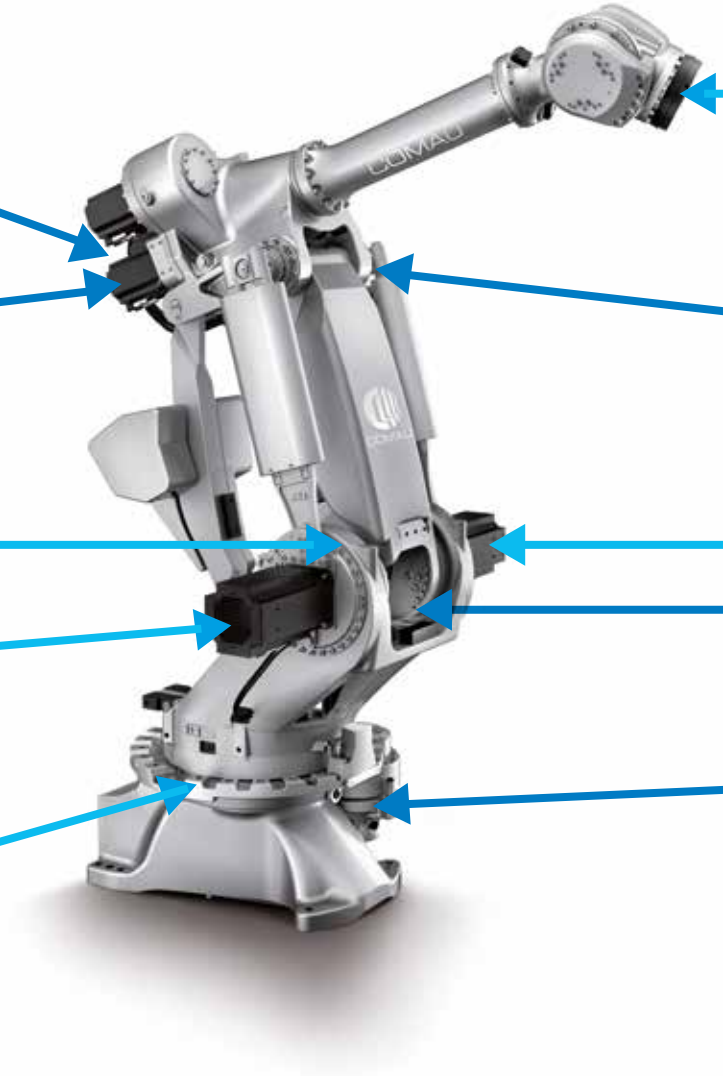
Replace the application loom and the wiring harness

Replace the gearboxes for axes 4-5-6

Replace the axis 3 gearbox

Revise the axis 3 motor

Replace the axis 1 fifth wheel



Revise the wrist

Replace the spring bearings

Revise the axis 2 motor

Replace the axis 2 gearbox

Revise the axis 1 gearbox


Ready for

the future

Edition - 06/16 - Turin

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