

Robotics



2015



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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 robots, covering a large number of models that are perfect for handling, spot welding, arc welding, press-shop automation, palletizing, sealing, machine tending and many other applications.

Technologically advanced, reliable, flexible, and specifically tailored to our customers’ needs, Comau Robotics guarantees optimal performances 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.

Payloads from 3 to 650 kg
Horizontal reach from less than 1m up to more than 3m

Meet the Comau robot team.



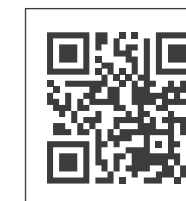
Our Robot Family



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

Our product range extends from small payload robots to the massive capacity of 650 kg. The Robot team available for our clients is wide, well known and appreciated. We provide articulated industrial robots suitable for any application and special robots for spot and arc welding, palletizing or press to press automation.

Each of our robots is designed with a reduced footprint, large work envelope, highly precise movements and positioning, greater reliability and low maintenance costs.



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STANDARD ROBOTS



MODEL	SIX	Racer 3	Racer 999
AXES	6	6	6
LOAD (kg)	6	3	7
REPEATABILITY (mm)	0.05	0.02	0.05
REACH (mm)	1400	630	999
WEIGHT (kg)	160	30	173
ASSEMBLY POSITION	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping / Wall	Floor / Ceiling / Sloping / Wall
PROTECTION DEGREE	IP65	IP54	IP65



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Racer 1.4	NS 12 - 1.85	NS 16 - 1.65	NJ 16 - 3.1
6	6	6	6
7	16	16	16
0.05	0.05	0.05	0.10
1436	1850	1650	3108
180	335	335	680
Floor / Ceiling / Sloping / Wall	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)	Floor / Ceiling / Sloping (max 45°)
IP65	IP65 / IP67 Wrist	IP65 / IP67 Wrist	IP65

STANDARD ROBOTS



MODEL

NJ 40 - 2.5

NJ 60 - 2.2

NJ 110 - 3.0

NJ 130 - 2.0

NJ 130 - 2.6

NJ 165 - 3.0

NJ 220 - 2.7

AXES

6

6

6

6

6

6

6

LOAD (kg)

40

60

110

130

130

165

220

REPEATABILITY (mm)

0.06

0.06

0.07

0.07

0.07

0.09

0.08

REACH (mm)

2503

2258

2980

2050

2616

3000

2701

WEIGHT (kg)

655

645

1070

740

1050

1240

1220

ASSEMBLY POSITION

Floor / Ceiling / Sloping (max 45°)

Floor / Ceiling / Sloping (max 45°)

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

PROTECTION DEGREE

IP65 / IP 67

IP65 / IP67 Wrist

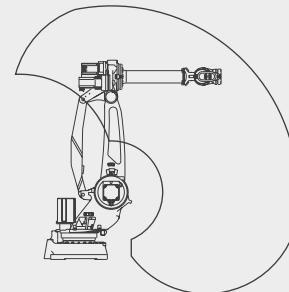
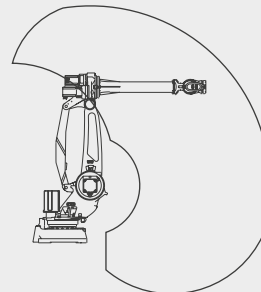
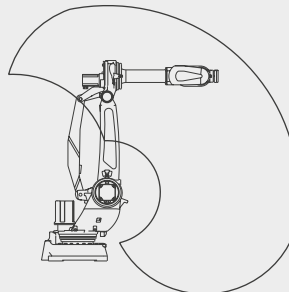
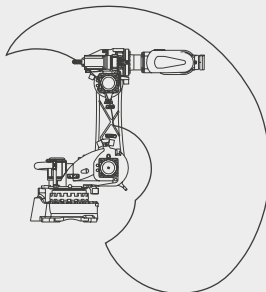
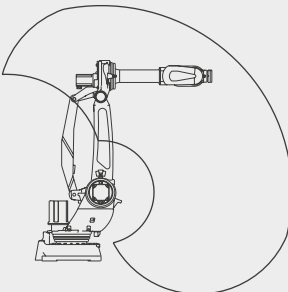
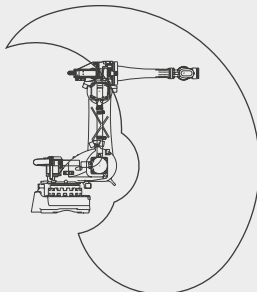
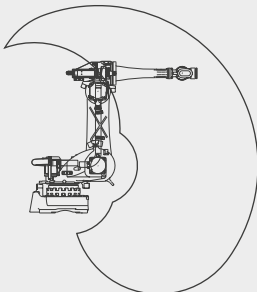
IP65 / IP67 Wrist

IP65 / IP67

IP65 / IP67

IP65 / IP67

IP65 / IP67 Wrist



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STANDARD ROBOTS



MODEL

NJ 290 - 3.0

NJ 370 - 2.7

NJ 370 - 3.0

NJ 420 - 3.0

NJ 450 - 2.7

NJ 500 - 2.7

NJ 650 - 2.7

AXES

6

6

6

6

6

6

6

LOAD (kg)

290

370

370

420

450

500

650

REPEATABILITY (mm)

0.15

0.15

0.15

0.15

0.15

0.15

0.15

REACH (mm)

2997

2703

2997

2997

2703

2703

2703

WEIGHT (kg)

2150

2100

2450

2450

2400

2400

2450

ASSEMBLY POSITION

Floor

Floor

Floor

Floor

Floor

Floor

Floor

PROTECTION DEGREE

IP65 / IP67 Wrist

IP65 / IP67 Wrist

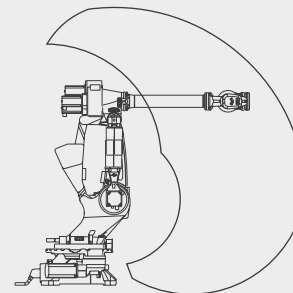
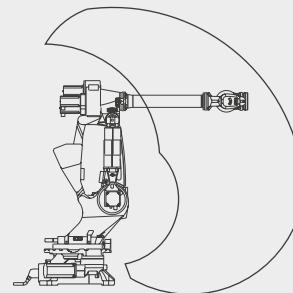
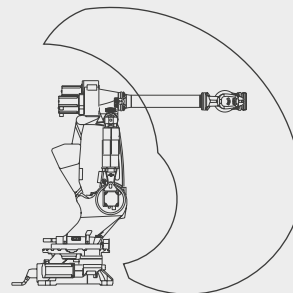
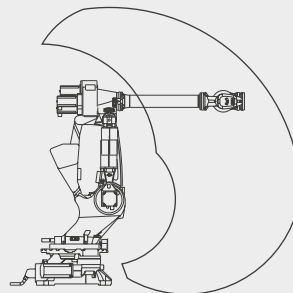
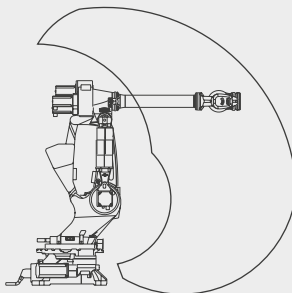
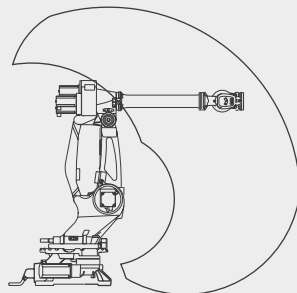
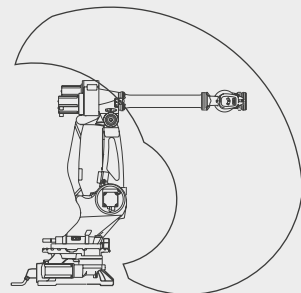
IP65 / IP67 Wrist

IP65 / IP67 Wrist

IP65 / IP67 Wrist

IP65 / IP67 Wrist

IP44 / IP65 Wrist



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SPECIAL ROBOTS



MODEL

PAL 180 - 3.1

PAL 260 - 3.1

PAL 470 - 3.1

NJ 100 - 3.2 PRESS

NJ 130 - 3.7 SH PRESS

NJ 165 - 3.4 SH

NJ 210 - 3.1 SH

AXES

4

4

4

6

6

6

6

LOAD (kg)

180

260

470

100

130

165

210

REPEATABILITY (mm)

0.15

0.15

0.20

0.07

0.20

0.10

0.10

REACH (mm)

3100

3100

3100

3209

3700

3450

3188

WEIGHT (kg)

1250

1250

2250

1250

1515

1430

1470

ASSEMBLY POSITION

Floor

Floor

Floor

Floor

Shelf

Shelf

Shelf

PROTECTION DEGREE

IP65

IP65

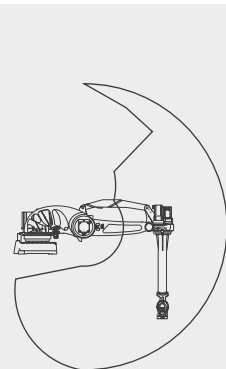
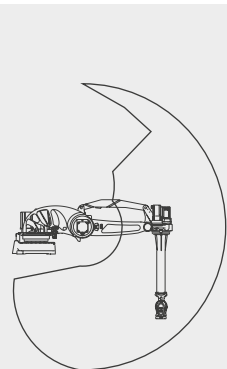
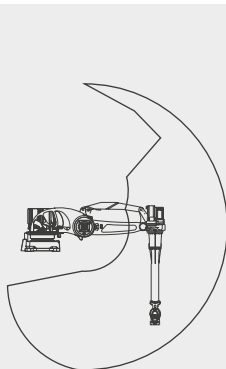
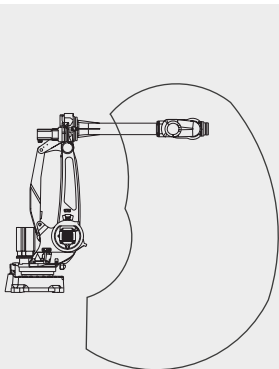
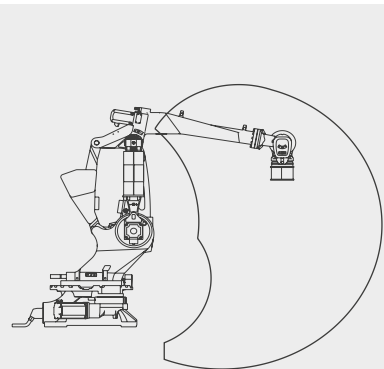
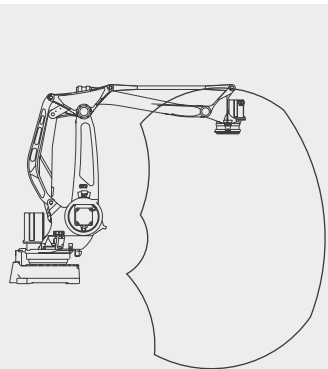
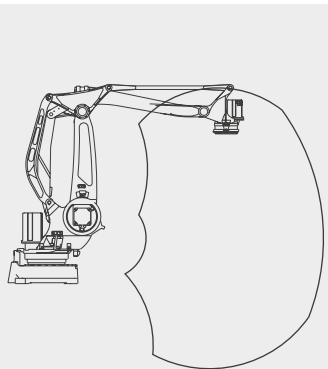
IP65

IP44 / IP65 Wrist

IP65

IP65 / IP67 Wrist

IP65



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HOLLOW WRIST



MODEL

Arc 4

NJ4 90-2.2

NJ4 110 - 2.2

NJ4 170 - 2.5

NJ4 170 - 2.9

NJ4 175 - 2.2

NJ4 220 - 2.4

AXES

6

6

6

6

6

6

6

LOAD (kg)

5

90

110

170

170

175

220

REPEATABILITY (mm)

0.05

0.07

0.07

0.10

0.10

0.10

0.15

REACH (mm)

1951

2210

2210

2500

2918

2204

2417

WEIGHT (kg)

375

685

685

1100

1240

1080

1260

ASSEMBLY POSITION

Floor / Ceiling / Sloping (max 45°)

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

Floor / Ceiling

PROTECTION DEGREE

IP65

IP65

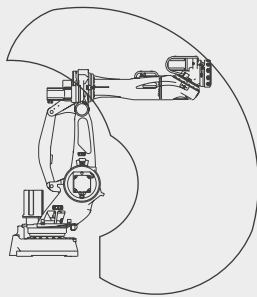
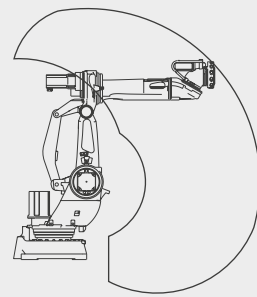
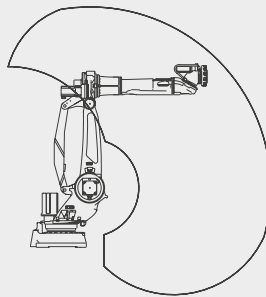
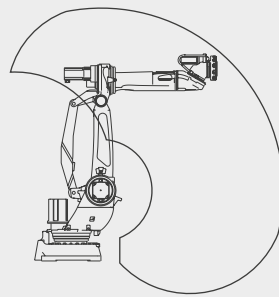
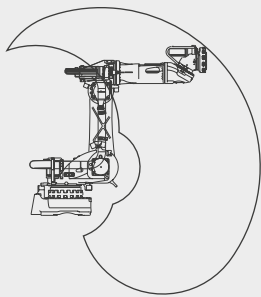
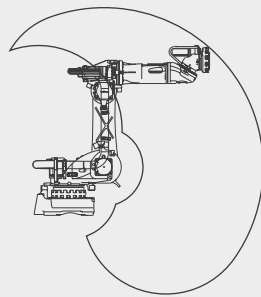
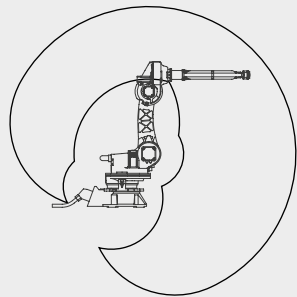
IP65

IP65

IP65

IP65

IP65



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MODEL
AXES
LOAD (kg)
REPEATABILITY (mm)
REACH (mm)
WEIGHT (kg)
ASSEMBLY POSITION
PROTECTION DEGREE

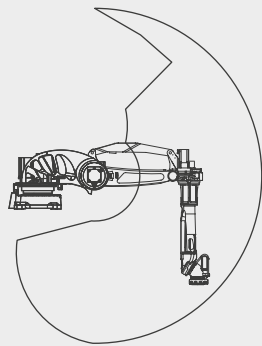
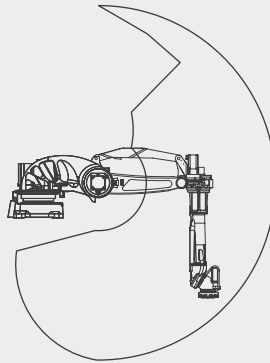
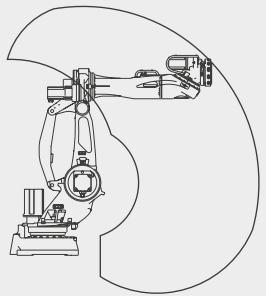
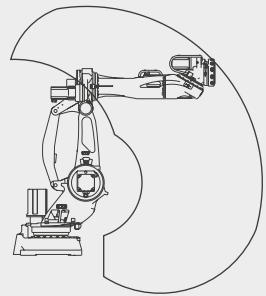
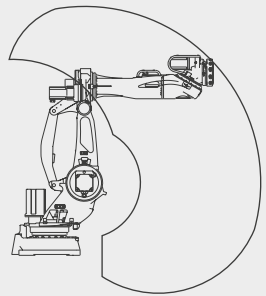
NJ4 220 - 2.7
6
220
0.15
2738
1290
Floor / Ceiling
IP65

NJ4 220 - 3.0
6
220
0.15
3002
2005
Floor
IP65

NJ4 270 - 2.7
6
270
0.15
2703
1975
Floor
IP65

NJ4 165 - 3.4 SH
6
165
0.10
3450
1430
Shelf
IP65

NJ4 210 - 3.1 SH
6
210
0.10
3151
1415
Shelf
IP65



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TECHNICAL SPECIFICATIONS



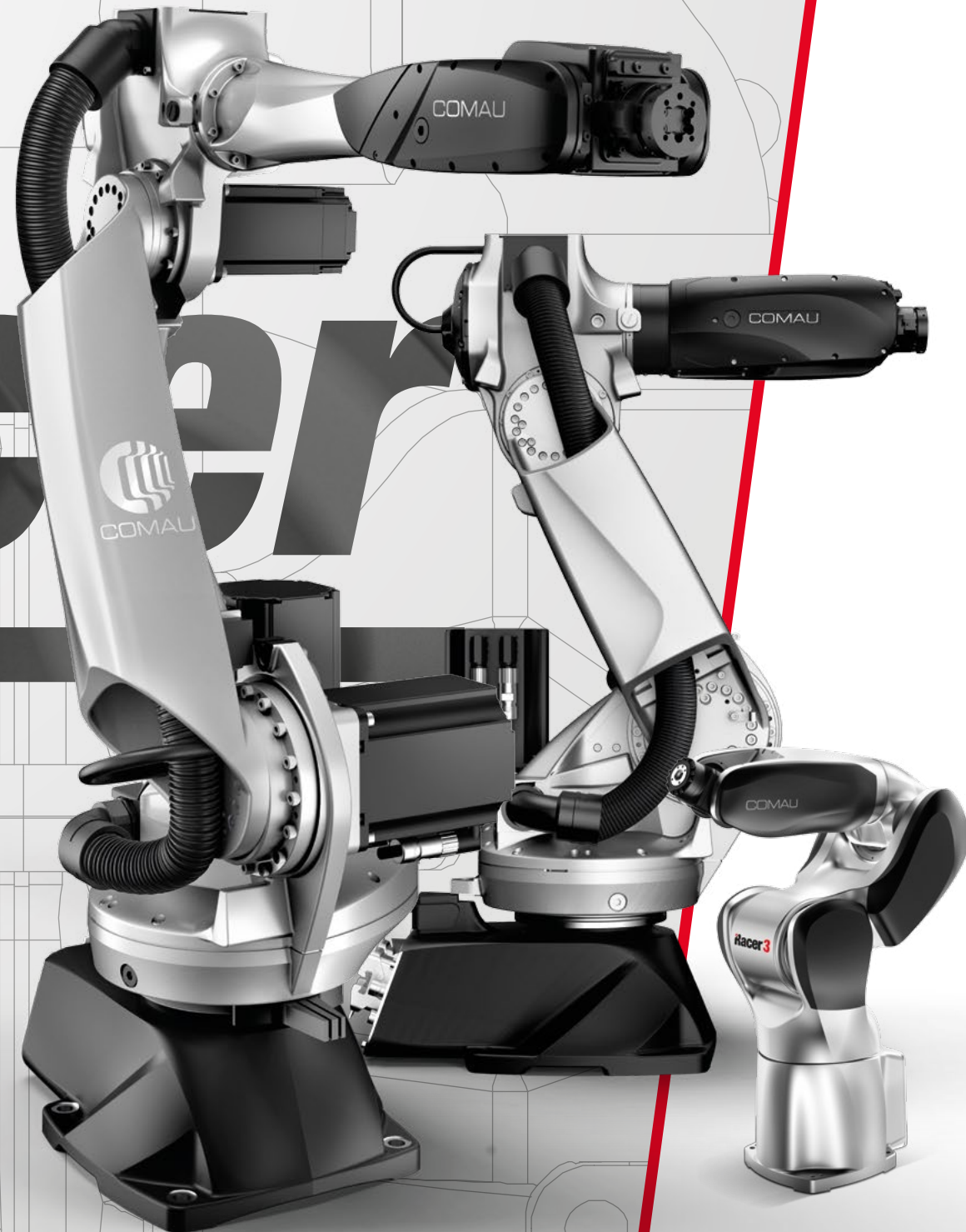
Precision and reliability

Model		SIX 6 - 1.4		Suggested applications	
Number of axes		6		• Arc Welding • Assembly • Cosmetic Sealing • Dispensing • Handling / Packaging • Machine Tending • Measuring / Testing • Polishing / Deburring	
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			

Racer

Precision and speed
meet beauty and passion

Racer3
Racer 999
Racer 1.4



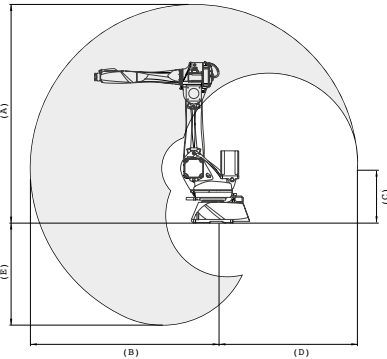
TECHNICAL SPECIFICATIONS

Model		Racer 3		Racer 999		Racer 1.4	
Number of axes		6		6		6	
Maximum wrist payload		3 kg		7 kg*		7 kg	
Additional load on forearm		2 kg		10 kg		10 kg	
Maximum horizontal reach		630 mm		999 mm		1436 mm	
Torque on axis 4		7.36 Nm		13 Nm		13 Nm	
Torque on axis 5		7.36 Nm		13 Nm		13 Nm	
Torque on axis 6		4.41 Nm		7.5 Nm		7.5 Nm	
Stroke (Speed)	Axis 1	+/- 170°	(430 °/s)	+/- 165°	(250°/s)	+/- 165°	(220°/s)
	Axis 2	-95°/ +135°	(450 °/s)	-65° / +150°	(250°/s)	-85° / +155°	(250°/s)
	Axis 3	-155° / +90°	(500 °/s)	-165° / -37°	(300°/s)	0° / -168°	(300°/s)
	Axis 4	+/- 200°	(600 °/s)	+/- 210°	(550°/s)	+/- 210°	(550°/s)
	Axis 5	+/- 125°	(600 °/s)	+/- 137°	(550°/s)	+/- 135°	(550°/s)
	Axis 6	+/- 2700°	(900 °/s)	+/- 2700°	(600°/s)	+/- 2700°	(600°/s)
Repeatability		0.02 mm		0.05 mm		0.05 mm	
Tool coupling flange		ISO 9409 - 1 - A 40		ISO 9409 - 1 - A 40		ISO 9409 - 1 - A 40	
Robot weight		30 kg		173 kg		180 kg	
Protection class		IP54		IP65		IP65	
Mounting position		Floor / Ceiling / Sloping / Wall		Floor / Ceiling / Sloping / Wall		Floor / Ceiling / Sloping (45° max)	
Operating Areas	A	1081 mm		1279 mm		1716 mm	
	B	630 mm		999 mm		1436 mm	
	C	37 mm		904 mm		412 mm	
	D	530 mm		554 mm		1130 mm	
	E	136 mm		385 mm		801 mm	

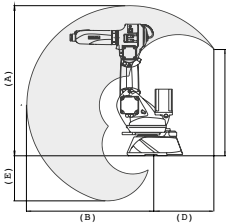
Suggested applications

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

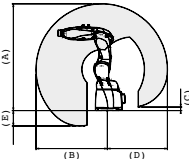
Racer 1.4



Racer 999



Racer 3



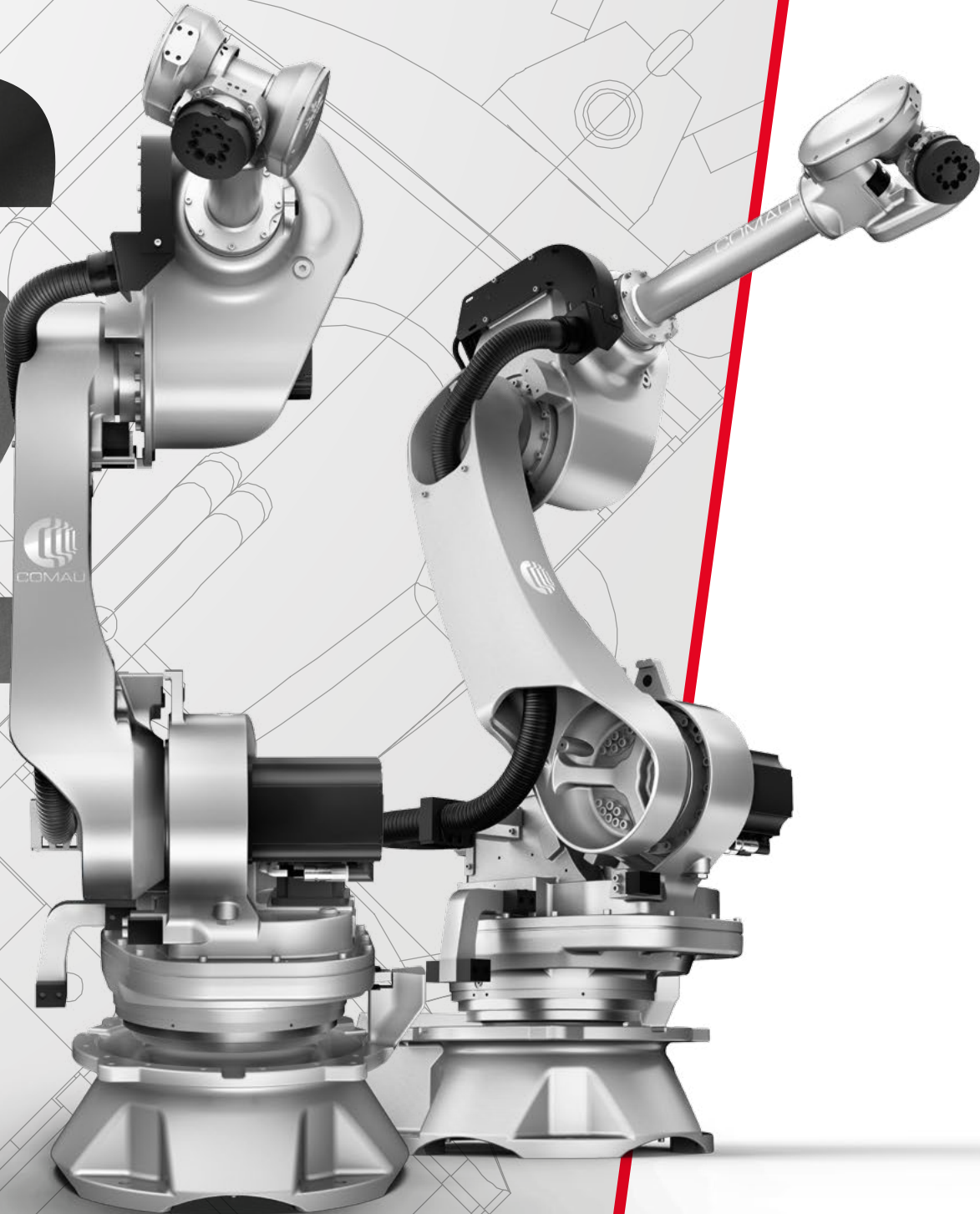
*For Pick&Place 10 kg with a limited stroke of the 5 axis

TECHNICAL SPECIFICATIONS

MS

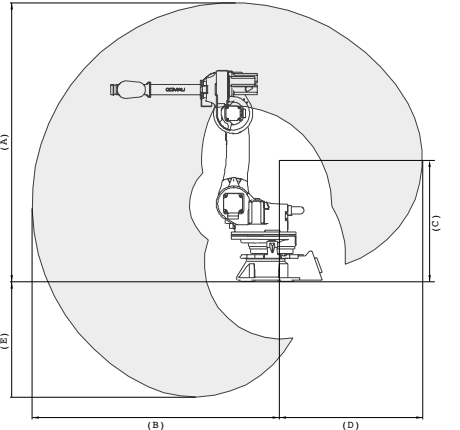
Robust and versatile
small payload robots

NS 12 - 1.85
NS 16 - 1.65



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	IP65 / IP67
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
 - Processing Machining
 - Wood-Glass Machining



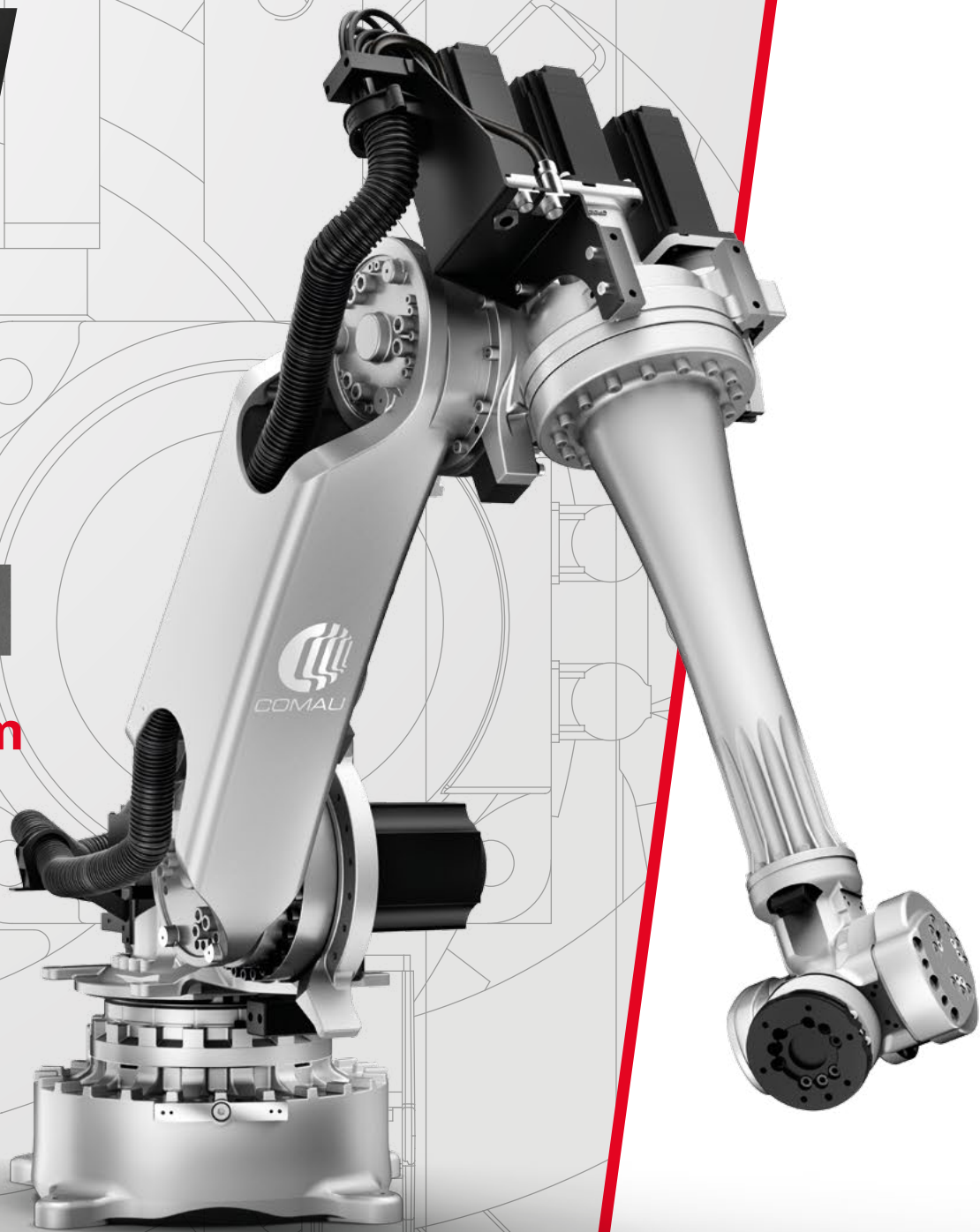
TECHNICAL SPECIFICATIONS

NJ



A perfect solution for medium
payload applications

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



Model		NJ 16 - 3.1	NJ 40 - 2.5	NJ 60 - 2.2	Suggested applications
Number of axes		6	6	6	• 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 • Processing Machining • Wood-Glass Machining
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	IP65 / IP67	IP65 / IP67	
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	

TECHNICAL SPECIFICATIONS

NJ

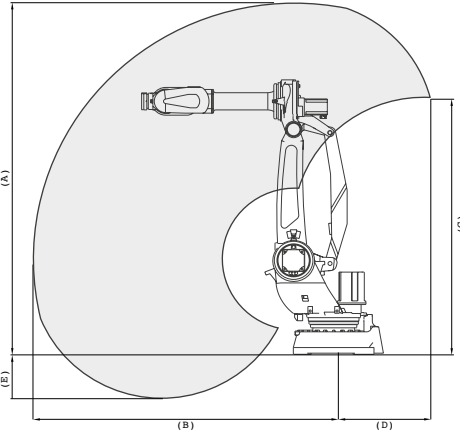
A light kinematic structure
for better performances

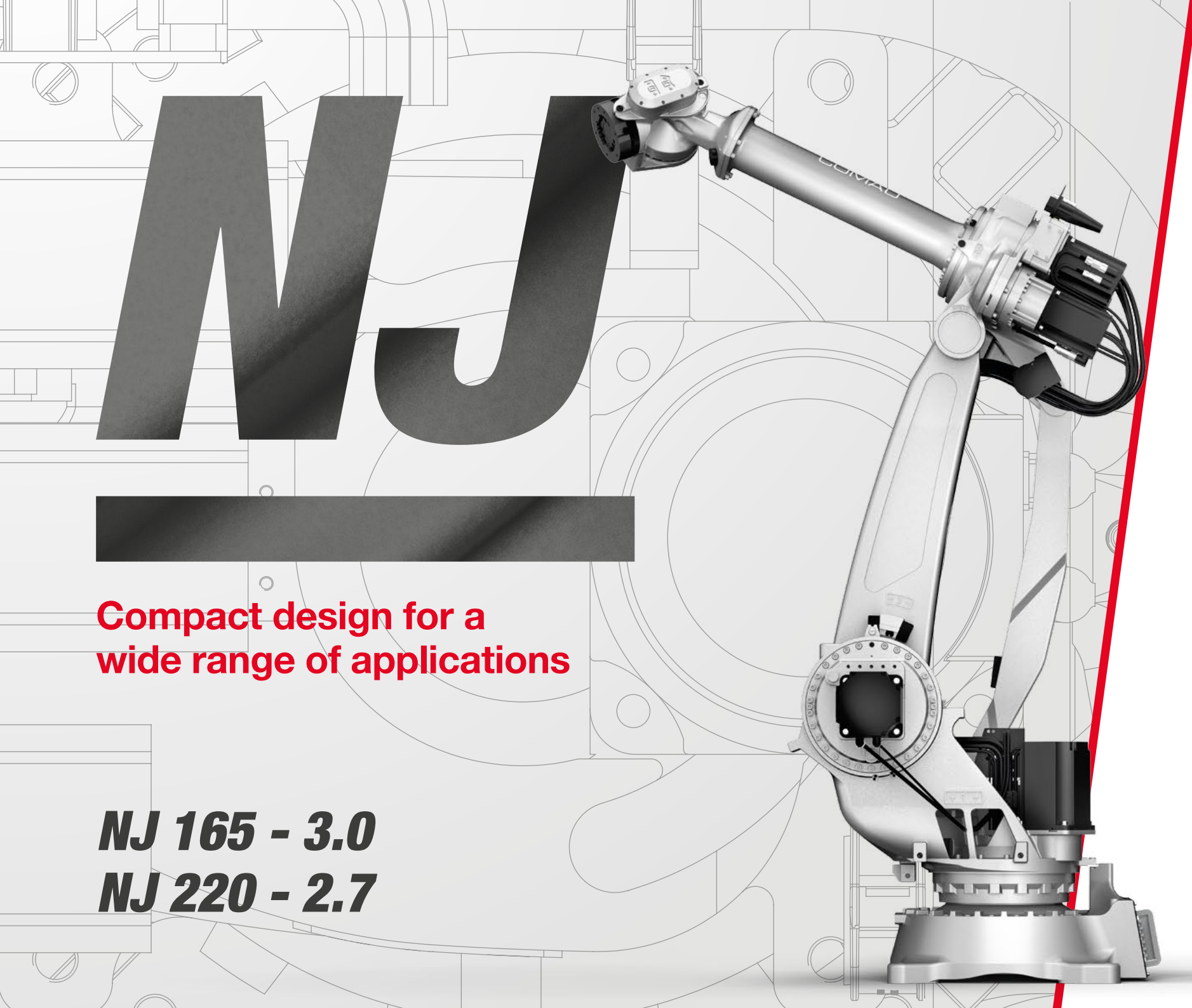
NJ 110 - 3.0
NJ 130 - 2.0
NJ 130 - 2.6



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		IP65 / IP67		IP65 / IP67	
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
 - Processing 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

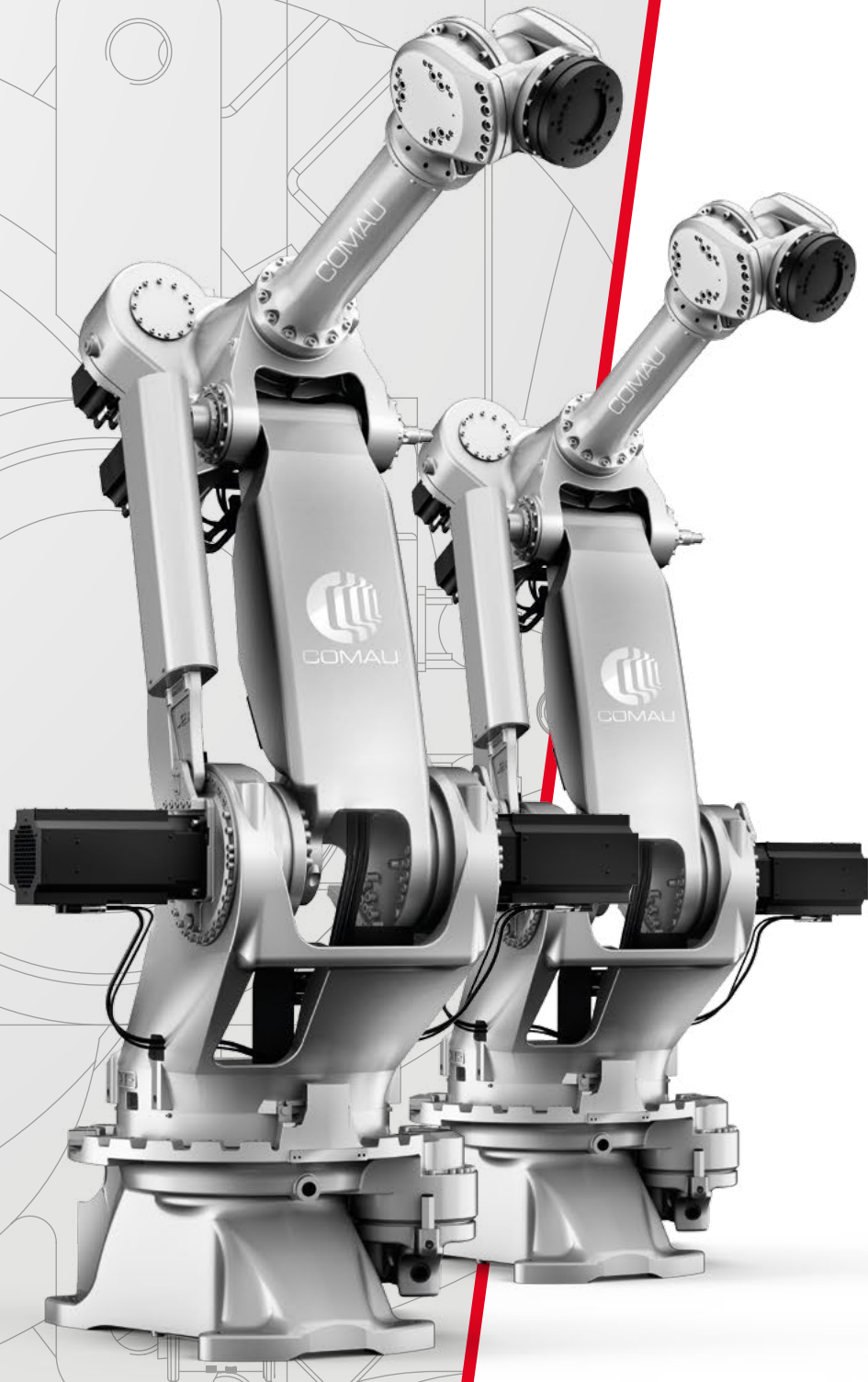
Model		NJ 165 - 3.0	NJ 220 - 2.7	Suggested applications
Number of axes		6	6	• Assembly • Cosmetic Sealing • Dispensing • Handling / Packaging • Laser Welding Cutting • Machine Tending • Measuring Testing • Plasma Cutting Water Jet • Polishing Deburring • Press Brake Bending • Press to Press • Processing Machining • Spot Welding • Wood-Glass Machining
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	IP65 / IP67	
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	

TECHNICAL SPECIFICATIONS

NJ

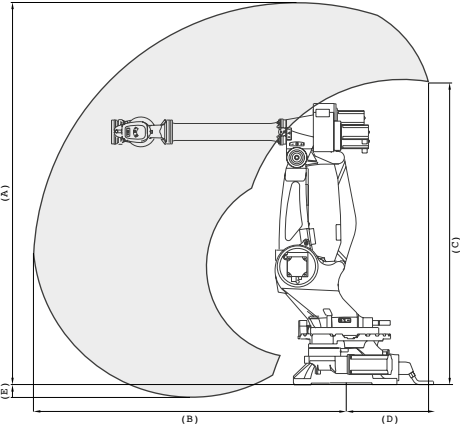
Robust mechanics and the
best-in-class payload / reach ratio

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



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)	+/- 180° (85°/s)	+/- 180° (85°/s)
	Axis 2	+/- 75° (90°/s)	+75° / - 60° (85°/s)	+75° / - 60° (85°/s)	+75° / - 60° (85°/s)	+75° / - 60° (85°/s)
	Axis 3	0° / -220° (90°/s)	-10° / - 231° (85°/s)	-10° / - 231° (85°/s)	-10° / - 231° (85°/s)	-10° / - 231° (85°/s)
	Axis 4	+/- 2700° (105°/s)	+/- 2700° (90°/s)	+/- 2700° (90°/s)	+/- 2700° (90°/s)	+/- 2700° (90°/s)
	Axis 5	+/- 125° (105°/s)	+/- 125° (90°/s)	+/- 125° (90°/s)	+/- 125° (90°/s)	+/- 125° (90°/s)
	Axis 6	+/- 2700° (160°/s)	+/- 2700° (120°/s)	+/- 2700° (120°/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		IP65 / IP67		IP65 / IP67	
Mounting position	Floor		Floor		Floor	
Operating Areas	A	3680 mm	3680 mm	3680 mm	3680 mm	3680 mm
	B	2997 mm	2997 mm	2997 mm	2997 mm	2997 mm
	C	3195 mm	3195 mm	3195 mm	3195 mm	3195 mm
	D	433 mm	433 mm	433 mm	433 mm	433 mm
	E	-118 mm	-118 mm	-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
 - Processing Machining
 - Spot Welding
 - Wood-Glass Machining

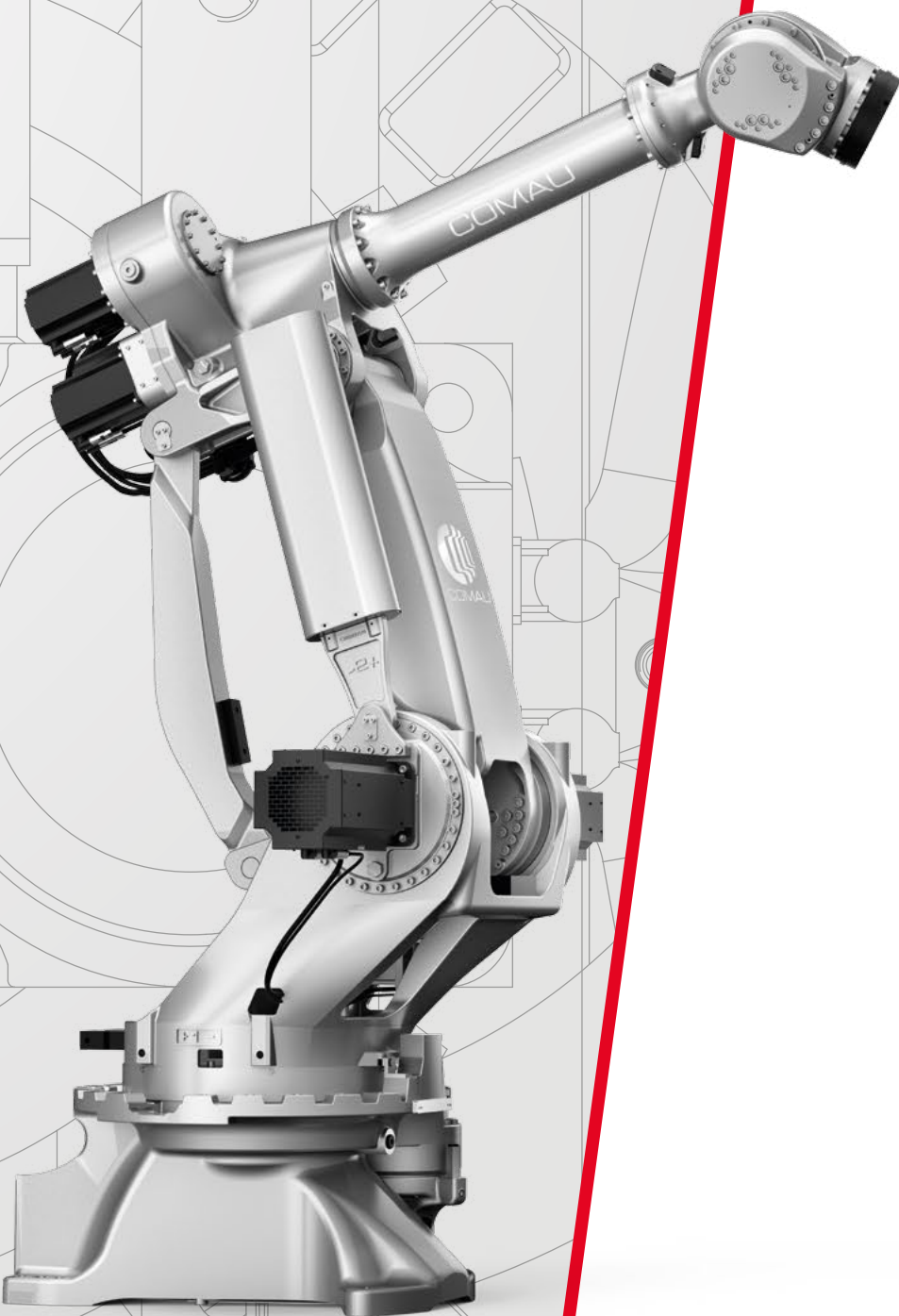


TECHNICAL SPECIFICATIONS

NJ

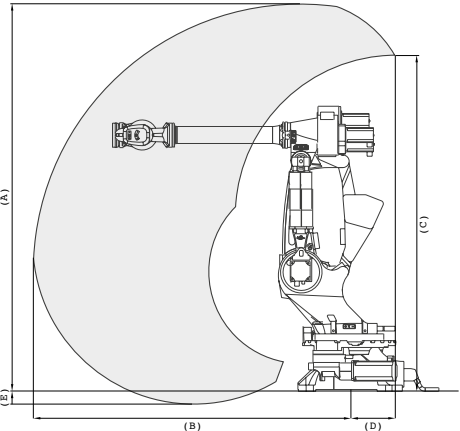
High payload models for the most demanding applications

NJ 420 - 3.0
NJ 450 - 2.7



Model	NJ 420 - 3.0		NJ 450 - 2.7	
Number of axes	6		6	
Maximum wrist payload	370 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		IP65 / IP67	
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	

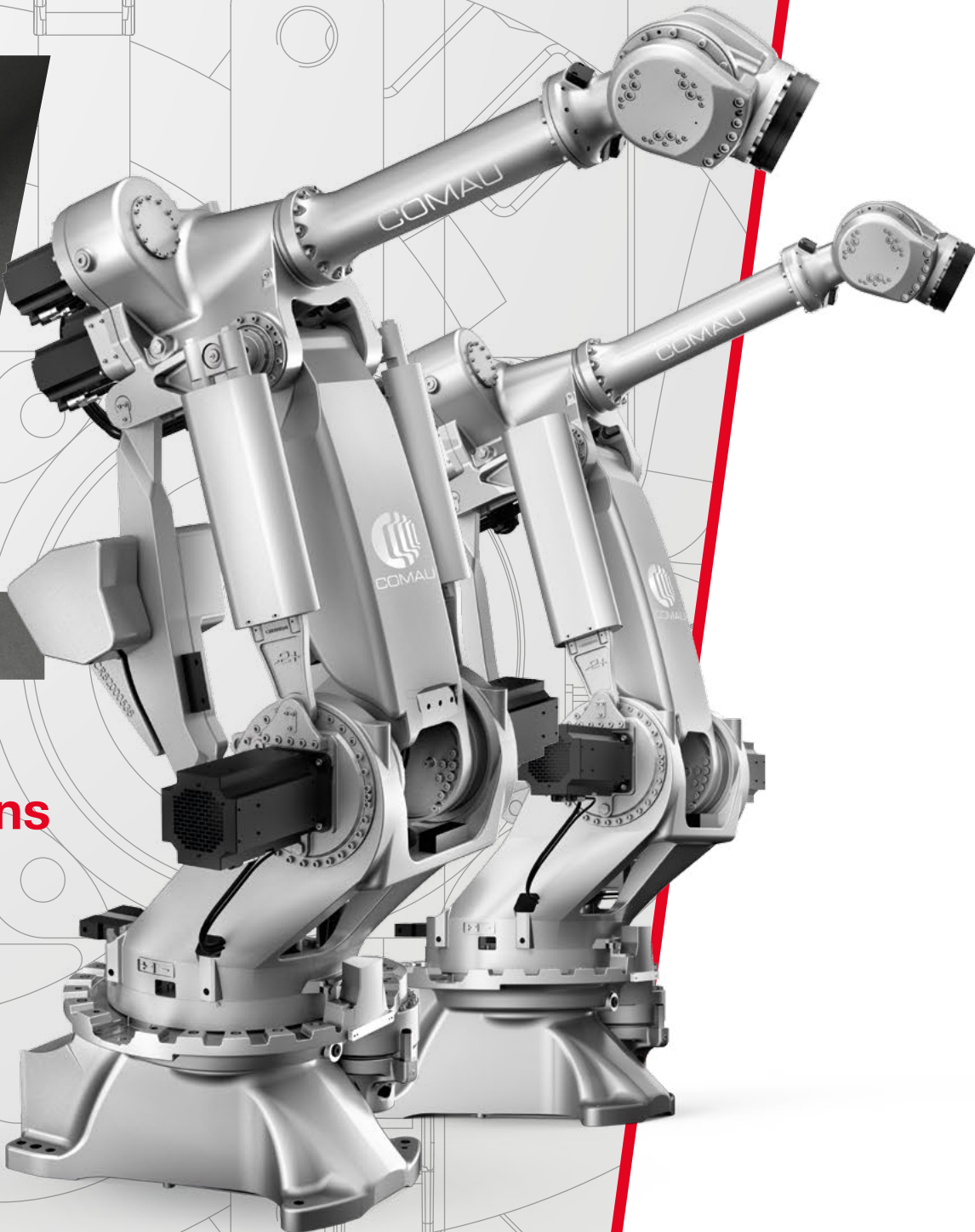
- Suggested applications**
- Assembly
 - Foundry
 - Handling / Packaging
 - Machine Tending
 - Measuring Testing
 - Plasma Cutting Water Jet
 - Polishing Deburring
 - Press Brake Bending
 - Processing Machining
 - Spot Welding
 - Wood-Glass Machining



NJ

Strongest models for the most demanding applications

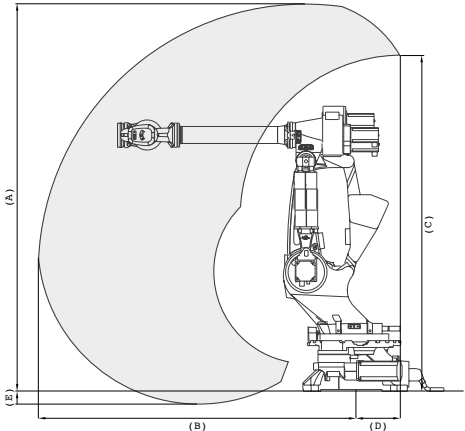
NJ 500 - 2.7
NJ 650 - 2.7



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		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
 - Processing Machining
 - Spot Welding
 - Wood-Glass Machining



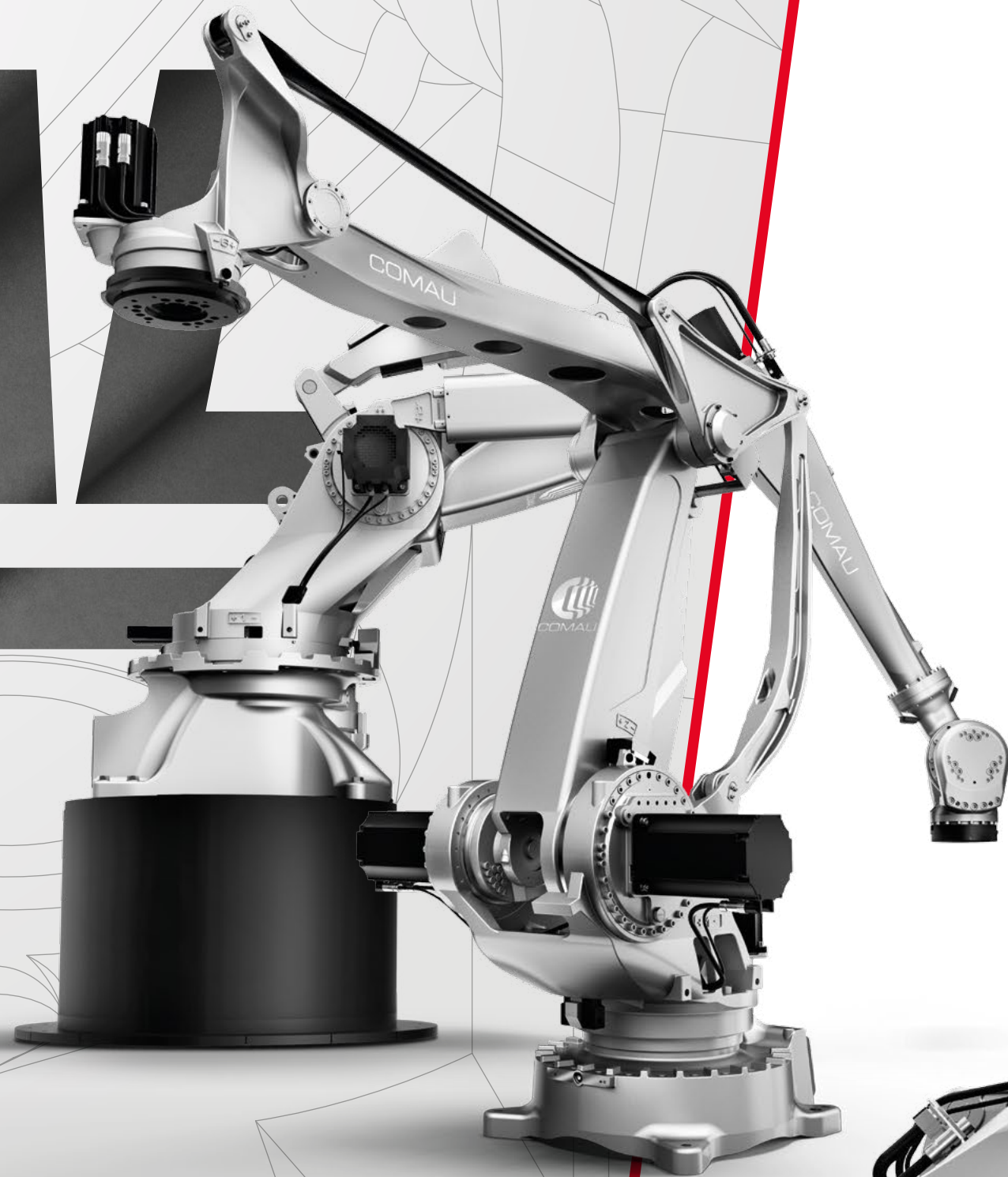
PAL

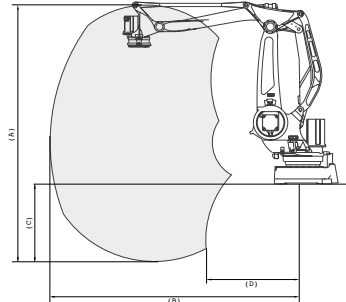
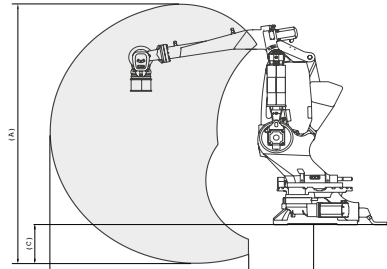
Fast and robust
palletizing robots

PAL 180 - 3.1

PAL 260 - 3.1

PAL 470 - 3.1



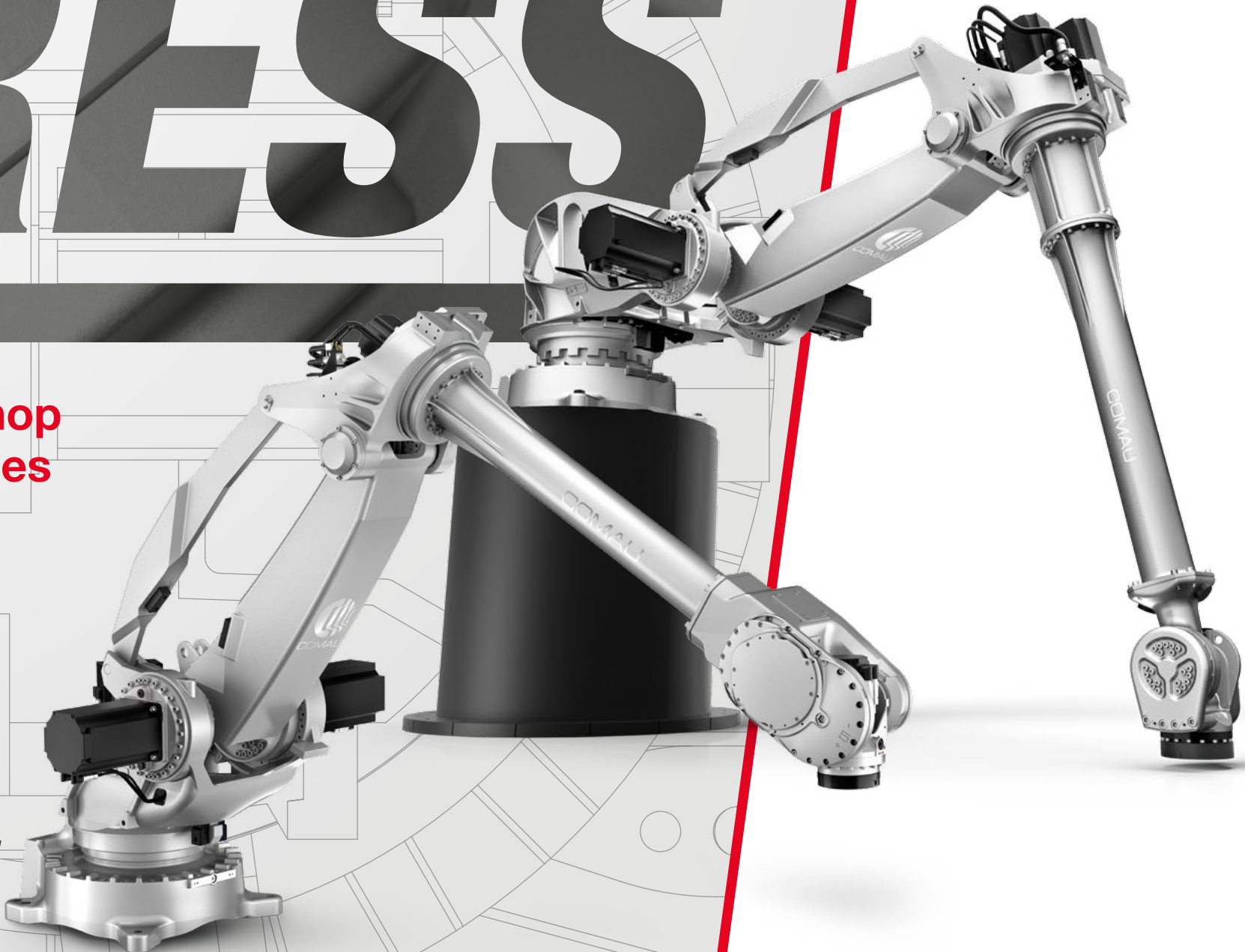
Model		PAL 180 - 3.1		PAL 260 - 3.1		PAL 470 - 3.1		Suggested applications	
Number of axes		4		4		5		• Pallettizing • Handling	
Maximum wrist payload		180 kg		260 kg		470 kg			
Additional load on forearm		25 kg		50 kg		25 kg		PAL 180 / 260	
Maximum horizontal reach		3100 mm		3100 mm		3100 mm			
Stroke (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°	(115°/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		PAL 470	
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			

TECHNICAL SPECIFICATIONS

PRESS

Dedicated press-shop
automation machines

NJ 100 - 3.2
NJ 130 - 3.7 SH

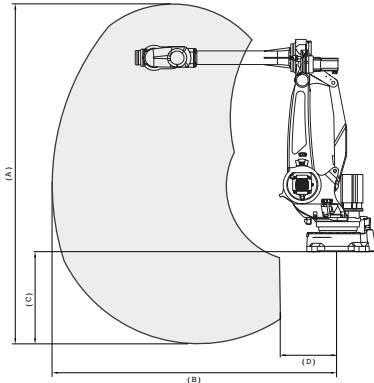


Model	NJ 100 - 3.2		NJ 130 - 3.7 SH	
Number of axes	6		6	
Maximum wrist payload	100 kg		130 kg	
Additional load on forearm	50 kg		15 kg	
Maximum horizontal reach	3209 mm		3741 mm	
Torque on axis 4	638 Nm		1225 Nm	
Torque on axis 5	638 Nm		1225 Nm	
Torque on axis 6	280 Nm		648 Nm	
Stroke (Speed)	Axis 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		0.2 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	

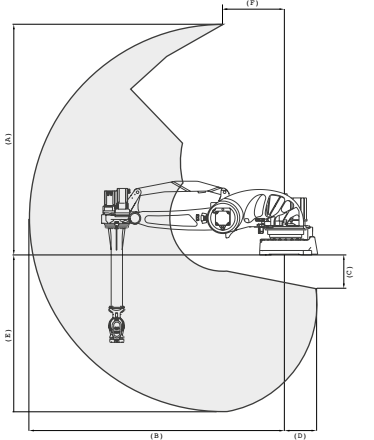
Suggested applications

- Handling / Packaging
- Press to Press

NJ 100 - 3.2



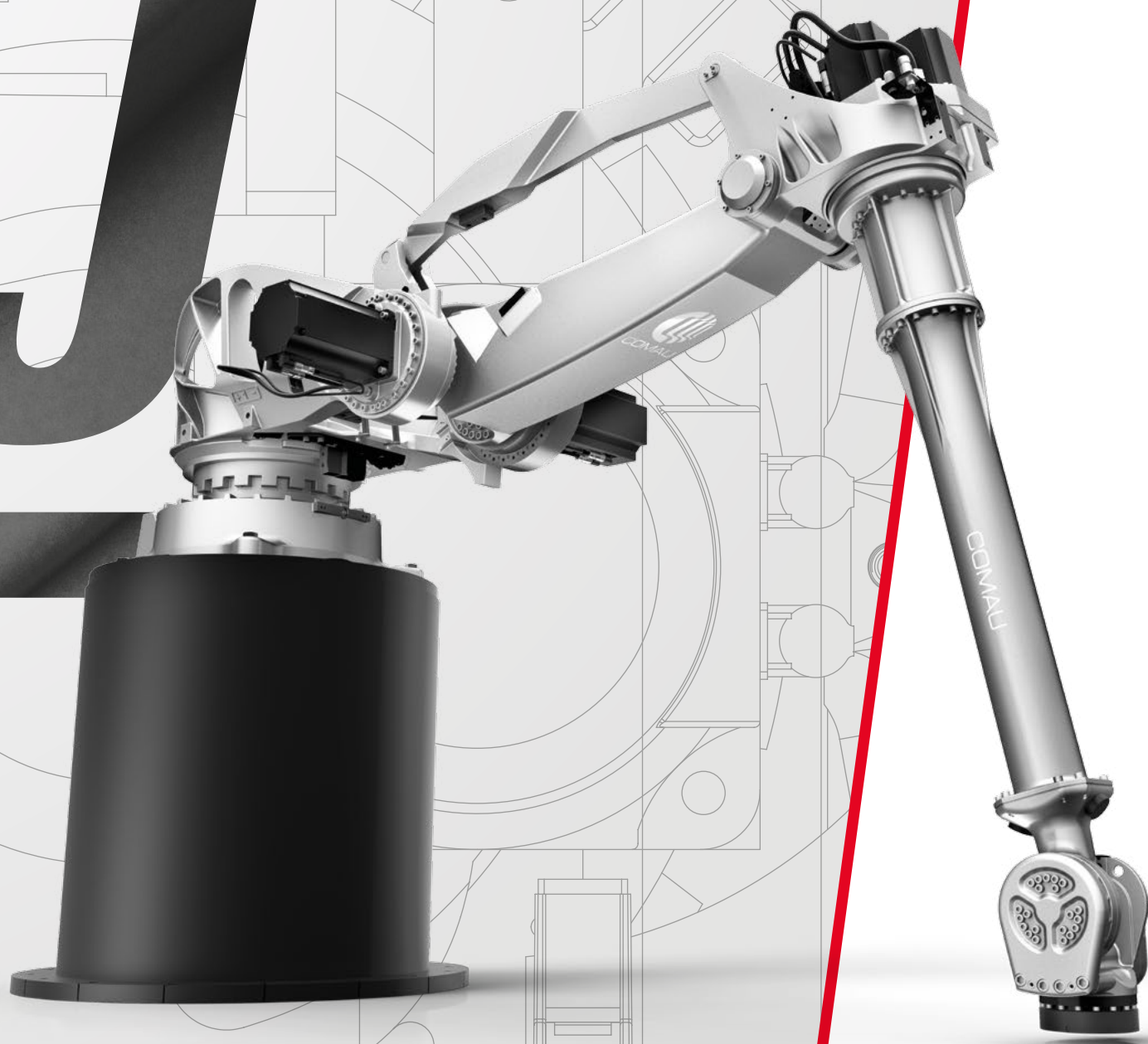
NJ 130 - 3.7 SH



NJ

Shelf robots
for wider
operation areas

NJ 165 - 3.4 SH
NJ 210 - 3.1 SH



TECHNICAL SPECIFICATIONS

Model

NJ 165 - 3.4 SH

NJ 210 - 3.1 SH

Suggested applications

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

IP65 / IP67 Wrist

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

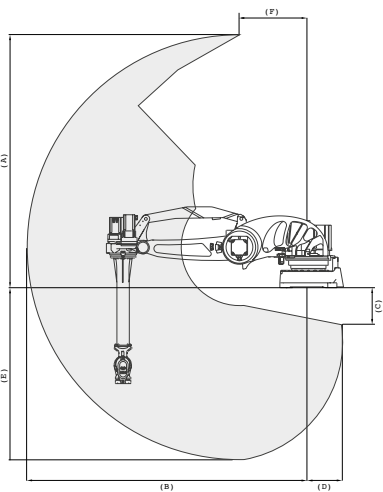
2100 mm

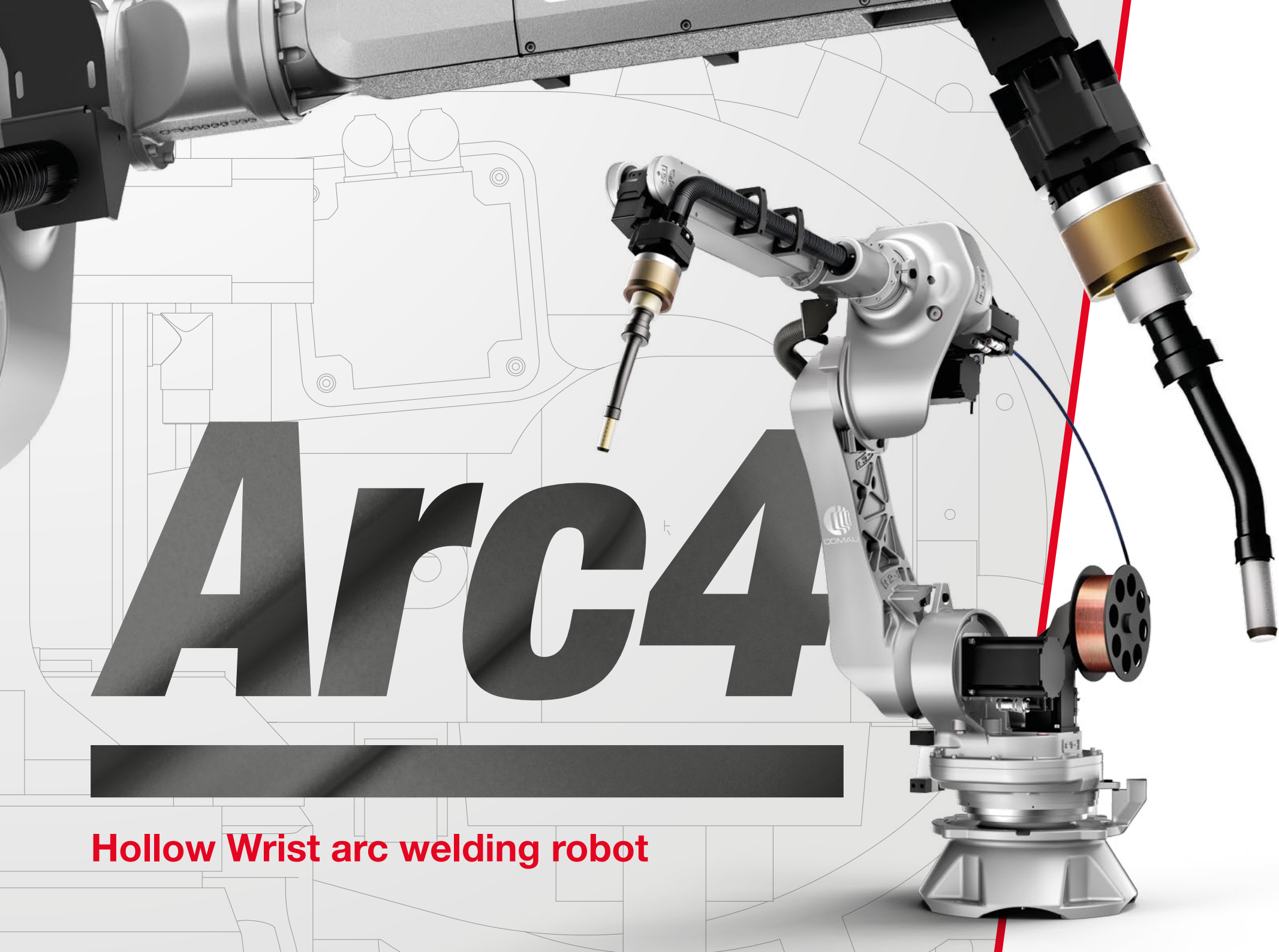
1800 mm

F

850 mm

850 mm





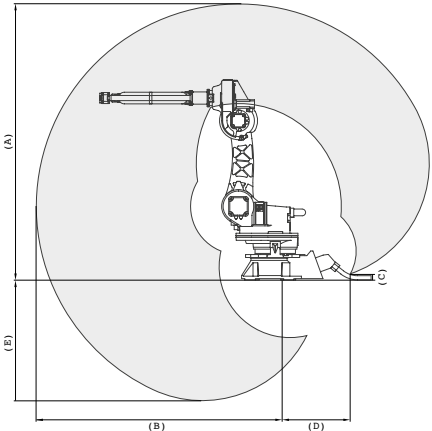
Arc 4

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

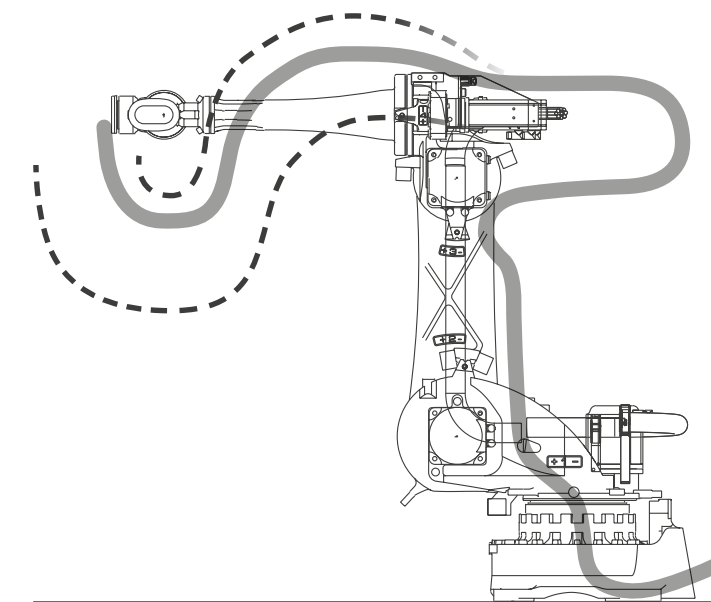
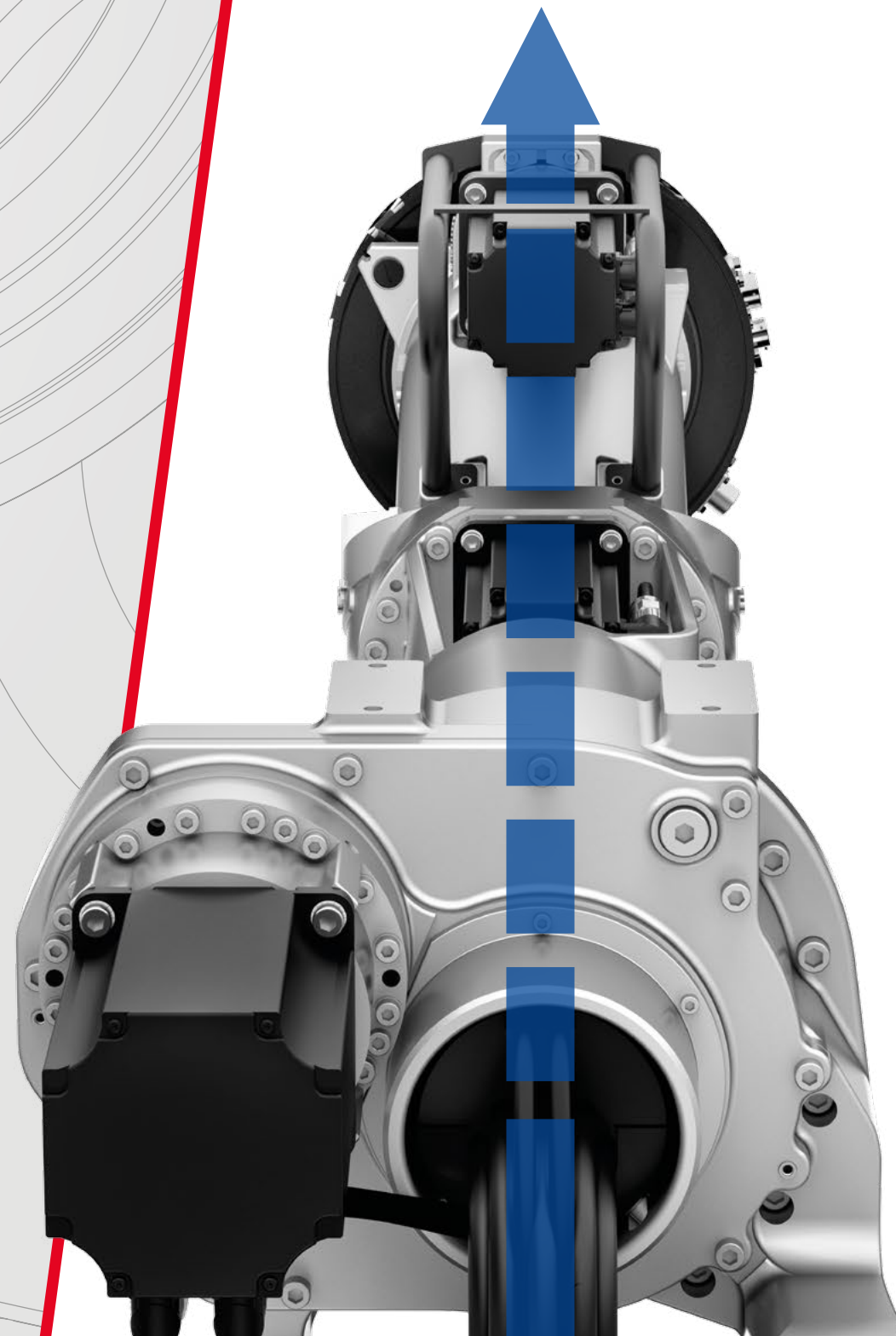
- Arc Welding



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 PERFORMANCES:** agile and light structure allows higher performance and efficiency



TRADITIONAL SOLUTION WITH EXTERNAL DRESSING

Unpredictable product life

- Unknown torsion, bending & stretching
- Frictions, wear

HIGH RISK OF PRODUCTION STOP

NJ4 ADVANTAGES



FULL INTEGRATED DRESSING

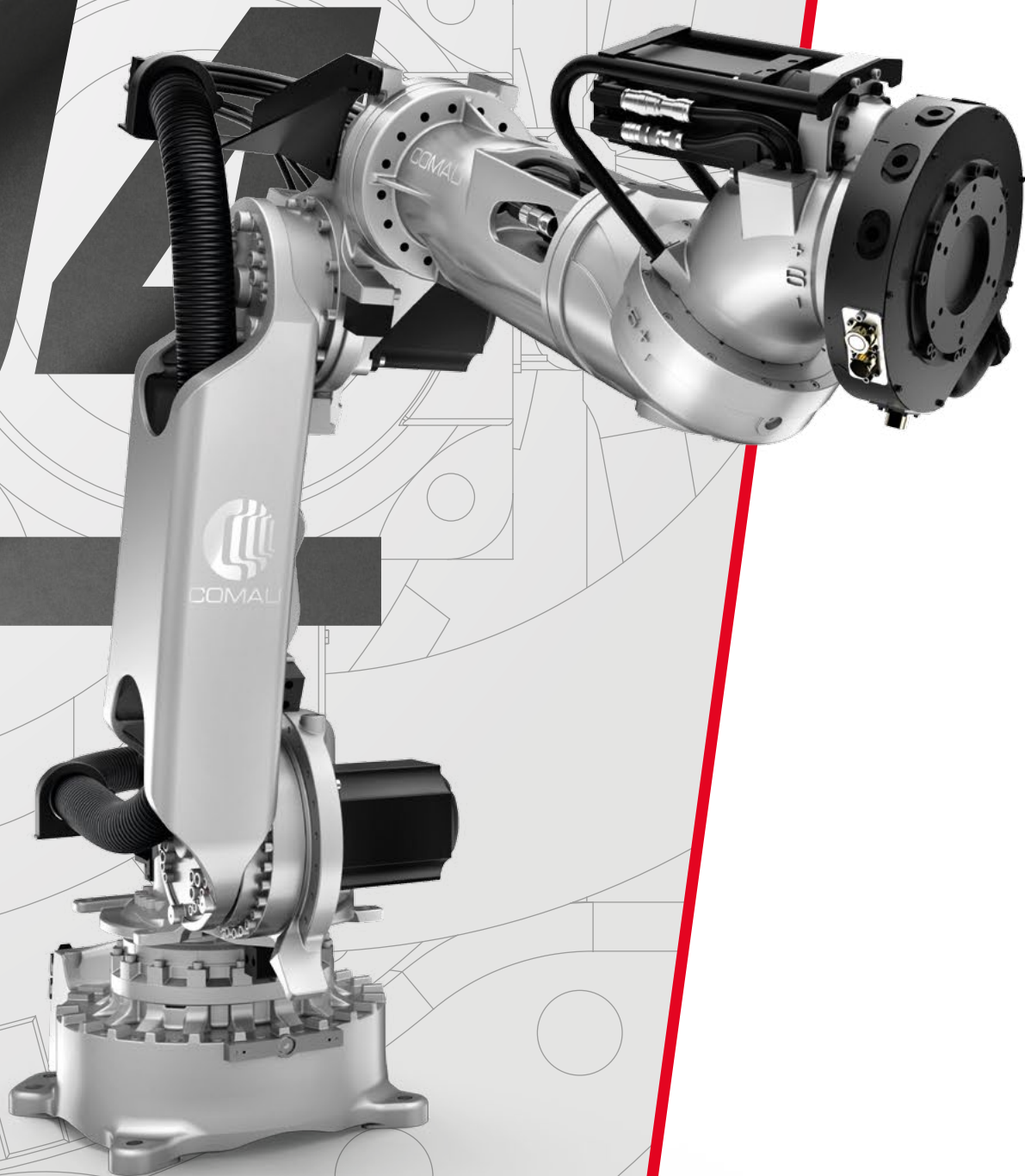
Comau Hollow Wrist advantages:

- 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

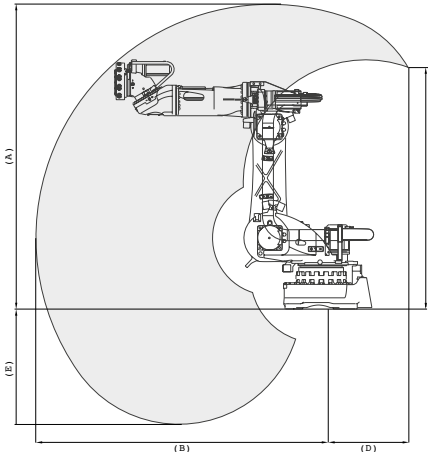
NJ4 90 - 2.2
NJ4 110 - 2.2



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

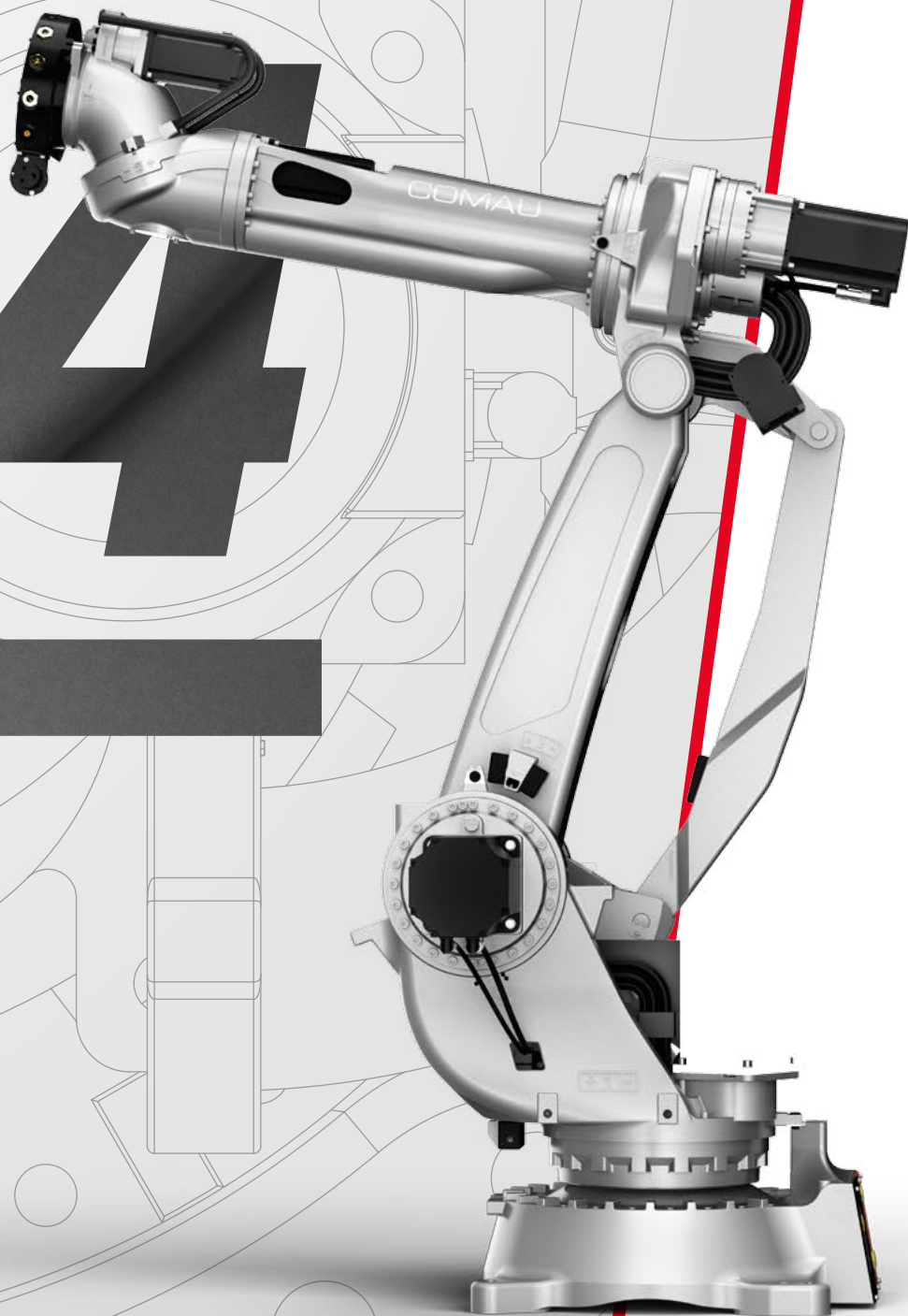
- Suggested applications
- Assembly
 - Handling / Packaging
 - Machine Tending
 - Measuring Testing
 - Spot Welding



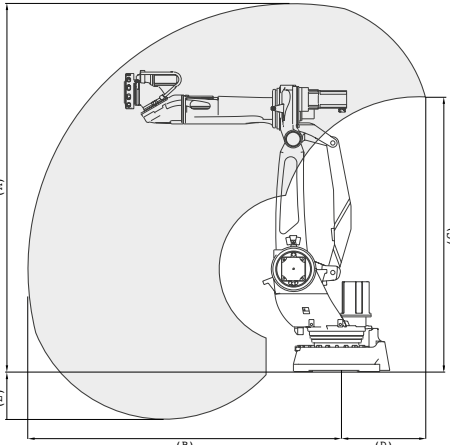
NJ4

Best-in-class Hollow Wrist
for high payload applications

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



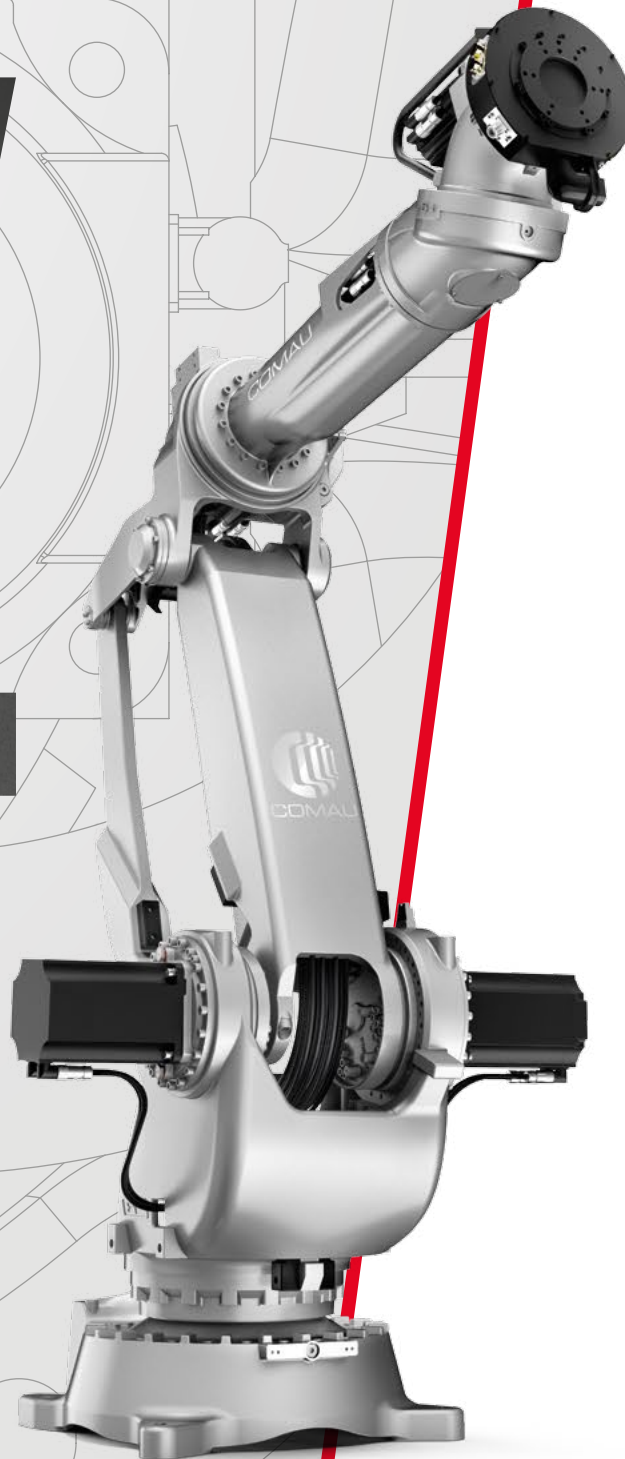
TECHNICAL SPECIFICATIONS

Model		NJ4 170 - 2.5	NJ4 170 - 2.9	NJ4 175 - 2.2	Suggested applications
Number of axes		6	6	6	• Assembly • Handling / Packaging • Machine Tending • Measuring Testing • Spot Welding
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	

NJ4

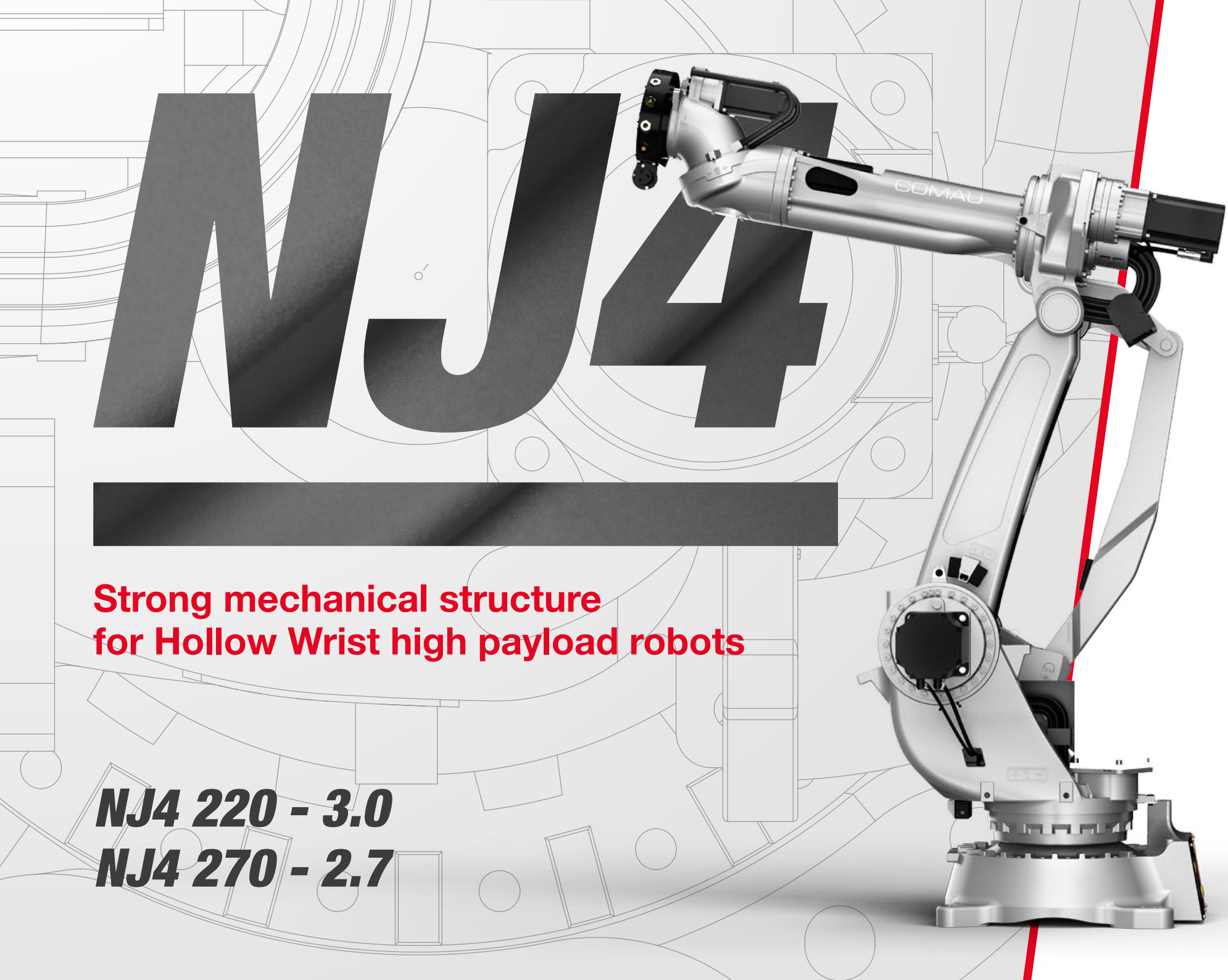
A proven innovative solution
for spot welding applications

NJ4 220 - 2.4
NJ4 220 - 2.7



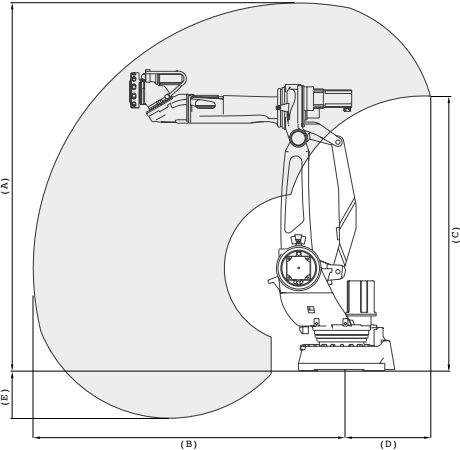
TECHNICAL SPECIFICATIONS

Model		NJ4 220 - 2.4	NJ4 220 - 2.7	Suggested applications
Number of axes		6	6	• Assembly • Handling / Packaging • Machine Tending • Measuring Testing • Spot Welding
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	



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

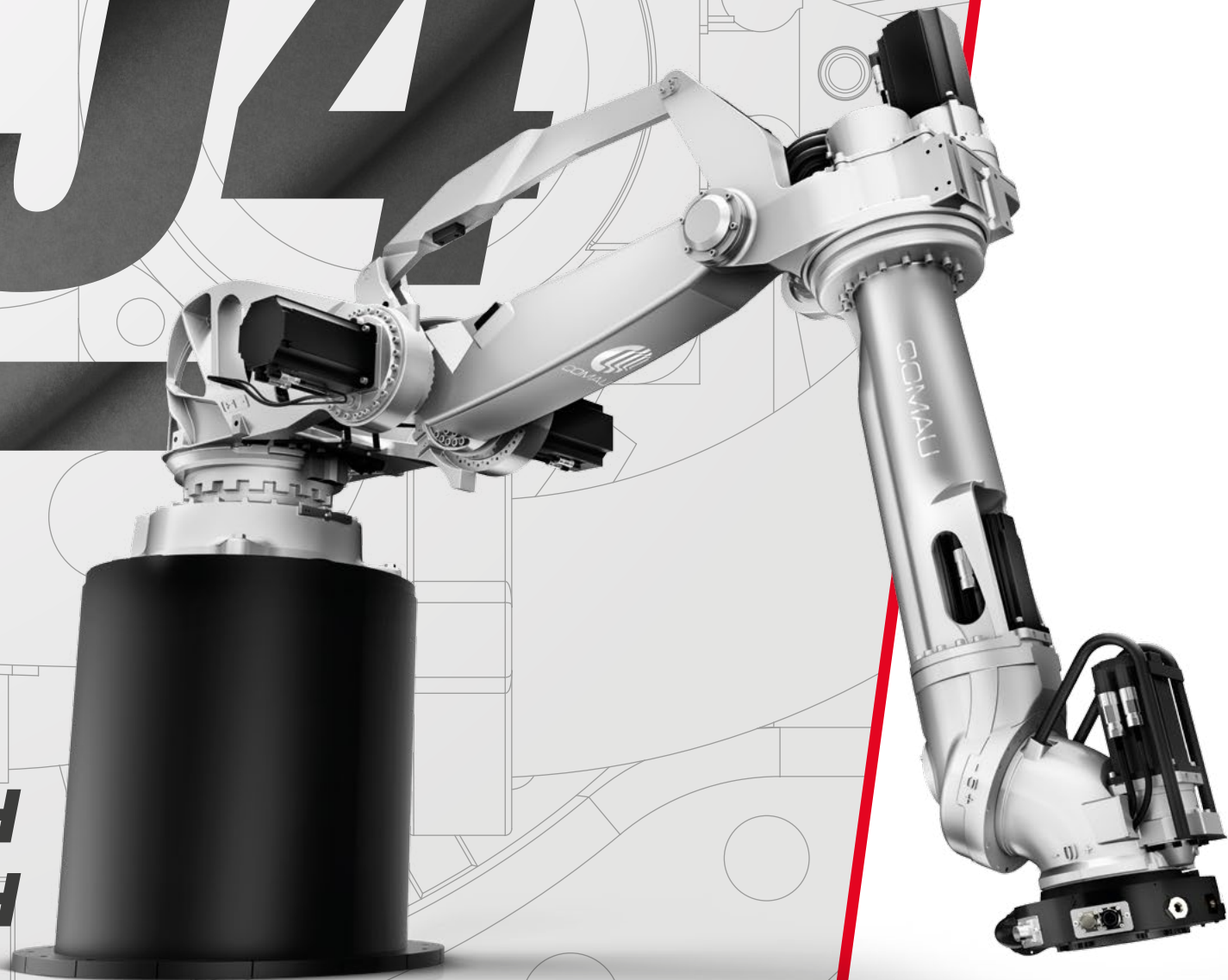


(*) This dimension is negative because the wrist center can not reach positions below the floor level.

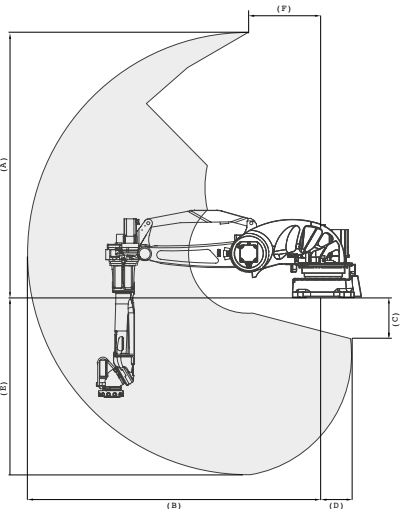
NJ4

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	Suggested applications
Number of axes		6	6	• Assembly • Handling / Packaging • Machine Tending • Measuring Testing • Spot Welding
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	



TP5

As simple as a touch

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

Case and cable

- Intensive design and attention to detail to guarantee **enhanced ergonomics**
- Enabling keys on the back **reduces wrist fatigue** and ensures easier use of the central keyboard area
- It can be handled **more easily** and in multiple ways to reduce operator fatigue at work
- **Light weight** and greater maneuverability
- The practical upper handle delivers **increased moveability** and enables the TP to be hung even when far from the controller

Family feeling

- The **ease of use** allows quick learning by the operator via a “natural evolution” in respect to previous versions
- **Full compatibility** with existing applications that have been developed by customers for the C5G platform



Hardware and software architecture

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

Display and keyboard

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

C5G

All your needs 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 under control.



High processing power

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

Energy saving

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

Flexibility and reliability

The new generation of field busses based on Hilscher technology, 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 and for many kinds of position transducer encoder, resolver, etc.

Safety

Integrated in the SDM module, TUV certified (dual channel emergency stop, enabling device, logic drive enable) unbrake function on the robot arm and interlock function for human- robot cooperation

Modularity / expandability

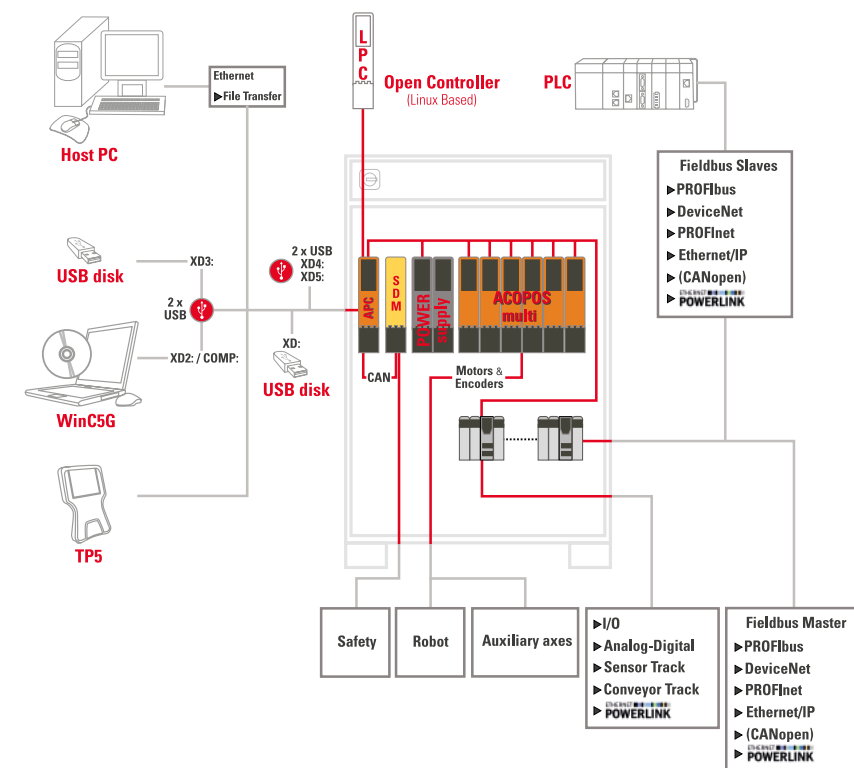
Modular system for drives up to 13 axes in the base cabinet function of the power, and the robot model

Simultaneous management of several robots

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



Functional diagram



3D off-line programming

with Robosim Pro

Multi applications management

Possibility to manage many applications at the same time

C5G open controller: to become the real drivers of the robot's motion

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

Main software functionalities available

- **Automatic Payload Identification:** automatic identification of the payload to optimize the robot movement
- **Collision Detection:** emergency stop of the robot in case of a collision to protect the mechanic and the equipment
- **Cooperative and Synchronized Motion:** coordinated and simultaneous management of several robots and auxiliary axes (linear track, servo gun, positioners and other application equipment)
- **Conveyor and Sensor Tracking:** tracking of parts in motion on linear and circular conveyors. Precision in following the path by use of different types of external sensors
- **Joint Soft Servo Technology:** the capacity of the individual robot joints to yield to external forces that are required by the specific application
- **Interference Regions:** regions of various shapes can be dynamically defined for limiting the robot working space
- **Robot Absolute Accuracy:** algorithm for the adaptation of the actual kinematics to the theoretical model programmed off-line



C5

Case and cable

- 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
- Compact dimensions
- Also available in safe version
- Also available in open controller version

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

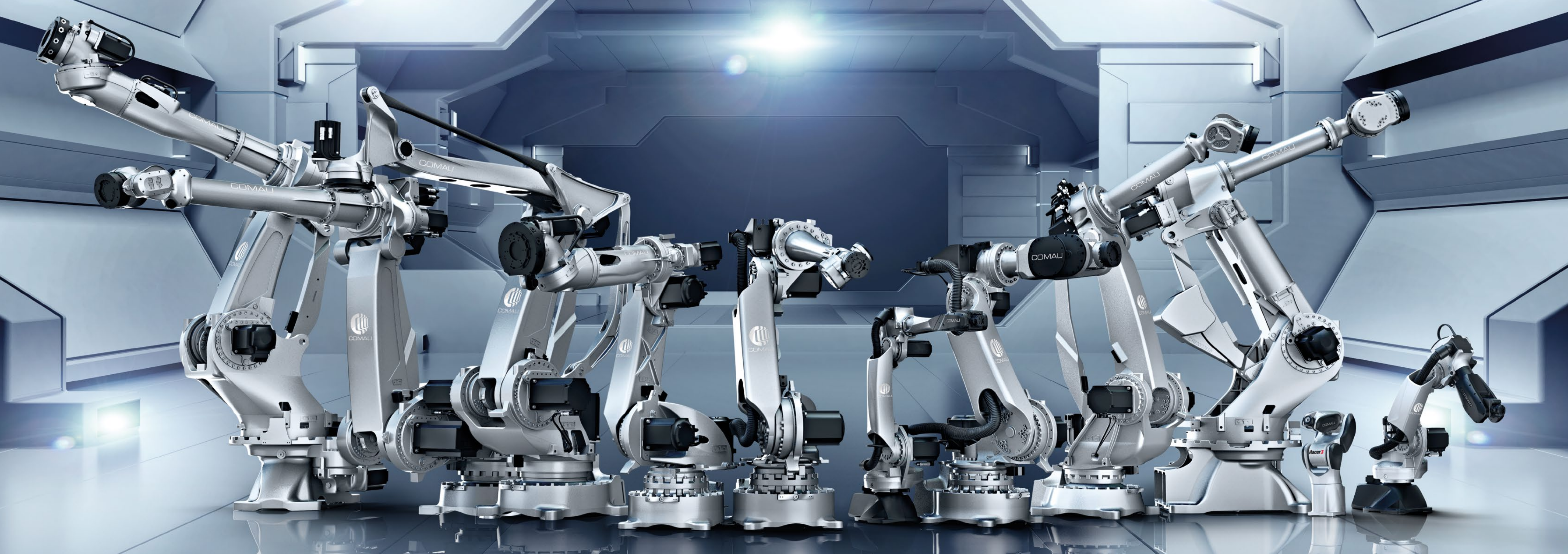
Main technical data

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



Main technical data

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





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