



MOTOR SPECIFICATIONS

Motor type Brush DC Coreless

POSITION OF MOTORS

		Motor	Reduction Ratio
Head joints	HeadYaw	Type 3	Type A
	HeadPitch	Type 3	Type B
Arm joints	ShoulderPitch	Type 3	Type A
	ShoulderRoll	Type 3	Type B
	ElbowYaw	Type 3	Type A
	ElbowRoll	Type 3	Type B
	WristYaw	Type 2	Type C
	Hand	Type 2	Type D
Leg joints	HipYawPitch	Type 1	Type A
	HipRoll	Type 1	Type A
	HipPitch	Type 1	Type B
	KneePitch	Type 1	Type B
	AnklePitch	Type 1	Type B
	AnkleRoll	Type 1	Type A

DESCRIPTION OF THE MOTORS

	Motor type 1	Motor type 2	Motor type 3
Model	22NT82213P	17N88208E	16GT83210E
No load speed	8300rpm $\pm 10\%$	8400rpm $\pm 12\%$	10700rpm $\pm 10\%$
Stall torque	68mNm $\pm 8\%$	9.4mNm $\pm 8\%$	14.3mNm $\pm 8\%$
Continuous torque	16.1mNm max	4.9mNm max	6.2mNm max

Speed Reduction Ratio TYPE A

	Motor type 1	Motor type 3
Reduction ratio	201.3	150.27

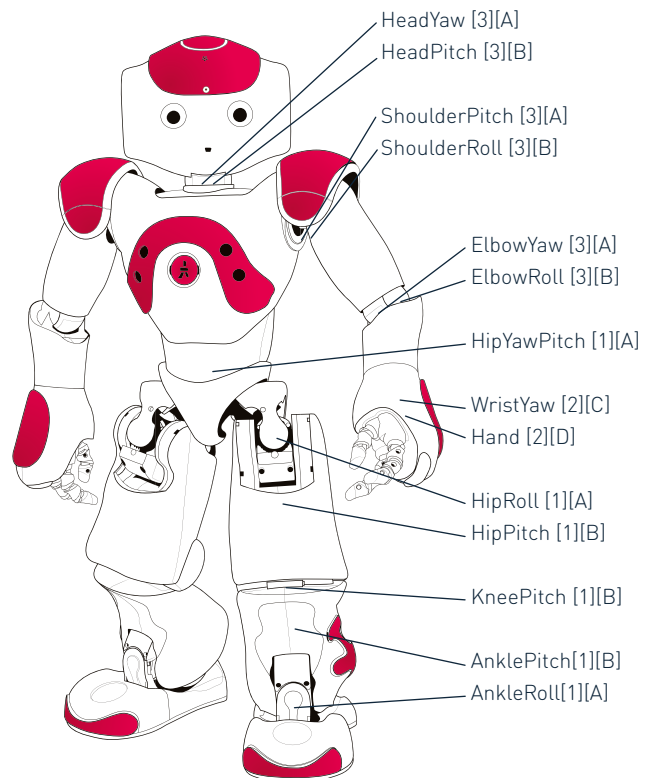
Speed Reduction Ratio TYPE C

	Motor type 2
Reduction ratio	50.61

CERTIFICATIONS & APPROVALS

Region	Classification
Europe	CE (Attestation of conformity)
USA	FCC

Electromagnetic compatibility	EN 301-1 / EN 301 489-17 / EN 300 328 EN 62311 : 2008 / FCC PART15, Class B
Safety	IEC 60950-1 : 2005 (2nd edition)



Legend:
Joint Name[Motor Type][Reductor Type]

Speed Reduction Ratio TYPE B

	Motor type 1	Motor type 3
Reduction ratio	130.85	173.22

Speed Reduction Ratio TYPE D

	Motor type 2
Reduction ratio	36.24