

# ZDGT1015

## INDUSTRIAL ROBOT

Robot model		ZDGT1015
Freedom		6
Position		Ground installation and suspended ceiling installation
Maximum operating speed	J1 Axis	165° /sec
	J2 Axis	155° /sec
	J3 Axis	200° /sec
	J4 Axis	290° /sec
	J5 Axis	310° /sec
	J6 Axis	310° /sec
Maximum operating range	J1 Axis	± 180°
	J2 Axis	-145° ~+90°
	J3 Axis	-75° ~+180°
	J4 Axis	± 170°
	J5 Axis	± 115°
	J6 Axis	± 360°
Maximum activity radius		1499mm
Maximum end load		10KG
Body weight		About 125kg
Allowable torque	J4	26N • m
	J5	26N • m
	J6	11N • m
Allowable moment of inertia	J4	0.9kg-m <sup>2</sup>
	J5	0.9kg-m <sup>2</sup>
	J6	0.3kg-m <sup>2</sup>
Repeatability		± 0.08mm
Robot base size		290x300mm
Ambient temperature		0~45℃
Relative humidity		20~80%RH
Atmospheric pressure		89KPa~106KPa(Altitude below 1000m)
Vibration, impact, collision		≤0.5G
Protection grade		IP54( Wrist IP65)

● Inertia tensor of the connecting rod relative to the center of mass

Object	Base	Rotating seat components	Boom components	Small arm fixed seat components	Small arm components	Wrist
Consult	Coordinate system 0	Coordinate system 1	Coordinate system 2	Coordinate system 3	Coordinate system 4	Coordinate system 5
$I_{xx}(\text{Kgmm}^2)$	/	$1.8 \times 10^6$	$2.3 \times 10^5$	$8.3 \times 10^5$	$2.1 \times 10^4$	$1.3 \times 10^4$
$I_{yy}(\text{Kgmm}^2)$	/	$2.0 \times 10^6$	$2.2 \times 10^6$	$7.9 \times 10^5$	$1.1 \times 10^6$	$1.1 \times 10^4$
$I_{zz}(\text{Kgmm}^2)$	/	$7.7 \times 10^5$	$6.5 \times 10^3$	$6.4 \times 10^5$	$1.1 \times 10^6$	$4.0 \times 10^3$

● Joint coupling

Joint	J1-J2	J2-J3	J3-J4	J4-J5	J4-J6	J5-J6
Coupling relationship equation (Coupling coefficient)	/	/	/	/	/	81

● Reducer parameters

Model	50C	42D	25D	32Harmonic	20Harmonic	20Harmonic
Reducer reduction ratio	32.54	105	126	50	80	80
Comprehensive reduction ratio	97.62	104	125	102	104.52	104.52
Rated output speed(r/min)	15	15	15	25	25	25
Rated torque(N · m)	490	412	245	76	25	25
Permissible torque for starting and stopping(N · m)	1225	1029	612	216	56	56
Instantaneous maximum torque(N · m)	2450	2058	1225	382	98	98
Moment rigidity(N · m)	1764	1660	784	/	/	/
Instantaneous maximum torque(N · m)	3528	3320	1568	/	/	/

● Motor parameters

Joint	J1	J2	J3	J4	J5	J6
Motor model	130	130	80	60	60	60
Rated power(kW)	1.5	1.5	0.75	0.4	0.2	0.2
Rated voltage(V)	220					
Rated current(A)	7	7	5	2.6	1.4	1.4
Rated torque(N · m)	4.77	4.77	2.38	1.27	0.63	0.63
Rated speed(r/min)	3000	3000	3000	3000	3000	3000
Maximum speed(r/min)	3200	3200	4100	4500	4000	4000
Rotor inertia(*10e-4kgm <sup>2</sup> )	9	9	1.2	0.4	0.216	0.216
Line back electromotive force coefficient(V/Krpm)	48	48	36.2	33	49.2	49.2
Number of pole pairs	5					
Encoder	17 bit multi turn insulation value Tamagawa agreement					