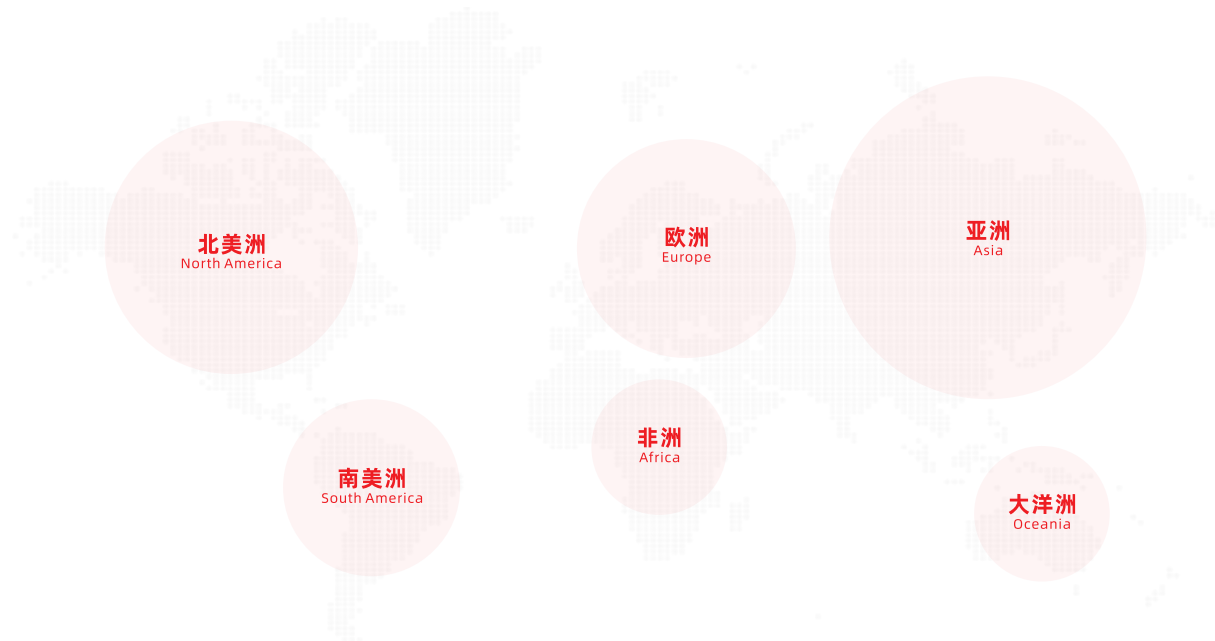


全球市场布局 GLOBAL MARKETING

TLIBOT
天链机器人
川机器人/Stock Code:835015



四川天链机器人股份有限公司
SICHUAN TLIBOT Co.,Ltd



诚招全球代理商
Recruiting Global Agents

VERSION: 260720



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公众号
Official Account



B站
Bilibili



抖音号
TikTok

四川天链机器人股份有限公司
SICHUAN TLIBOT Co.,Ltd

公司简介

Company Profile

四川天链机器人股份有限公司(川机器人, 835015), 成立于2012年, 并于2015年在新三板挂牌上市。是绵阳首家以**自主研制机器人**作为主营业务的国家高新技术企业、四川省“专精特新”中小企业、绵阳市企业技术中心, 公司总专利数近200项。

公司主要从事人形机器人、协作机器人、谐波减速机等机器人核心零部件的研发、生产、销售, 并提供机器人技术服务和行业化解决方案。

SICHUAN TLIBOT Co., Ltd. (Stock Code, 835015) was established in 2012 and listed on the New OTC in 2015. It is the first national high-tech enterprise in Mianyang that **focuses on independently developed robots**, a SMEs in Specialized New Sectors in Sichuan Province, and an enterprise technology center in Mianyang. The company has possesses a total of nearly 200 patents.

The company is mainly engaged in the R&D, production and sales of humanoid robots, collaborative robots, and robot core component such as harmonic reducers, and provides robot technology ser-vices and industry solutions.

全产业链自研自产 Self research and production throughout the entire industry chain



公司荣誉

Company Honors



公司荣誉
Intellectual Property



知识产权
Intellectual Property



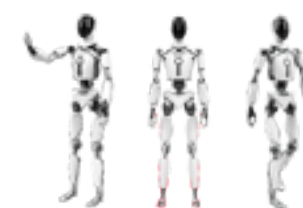
认证资质
Intellectual Property



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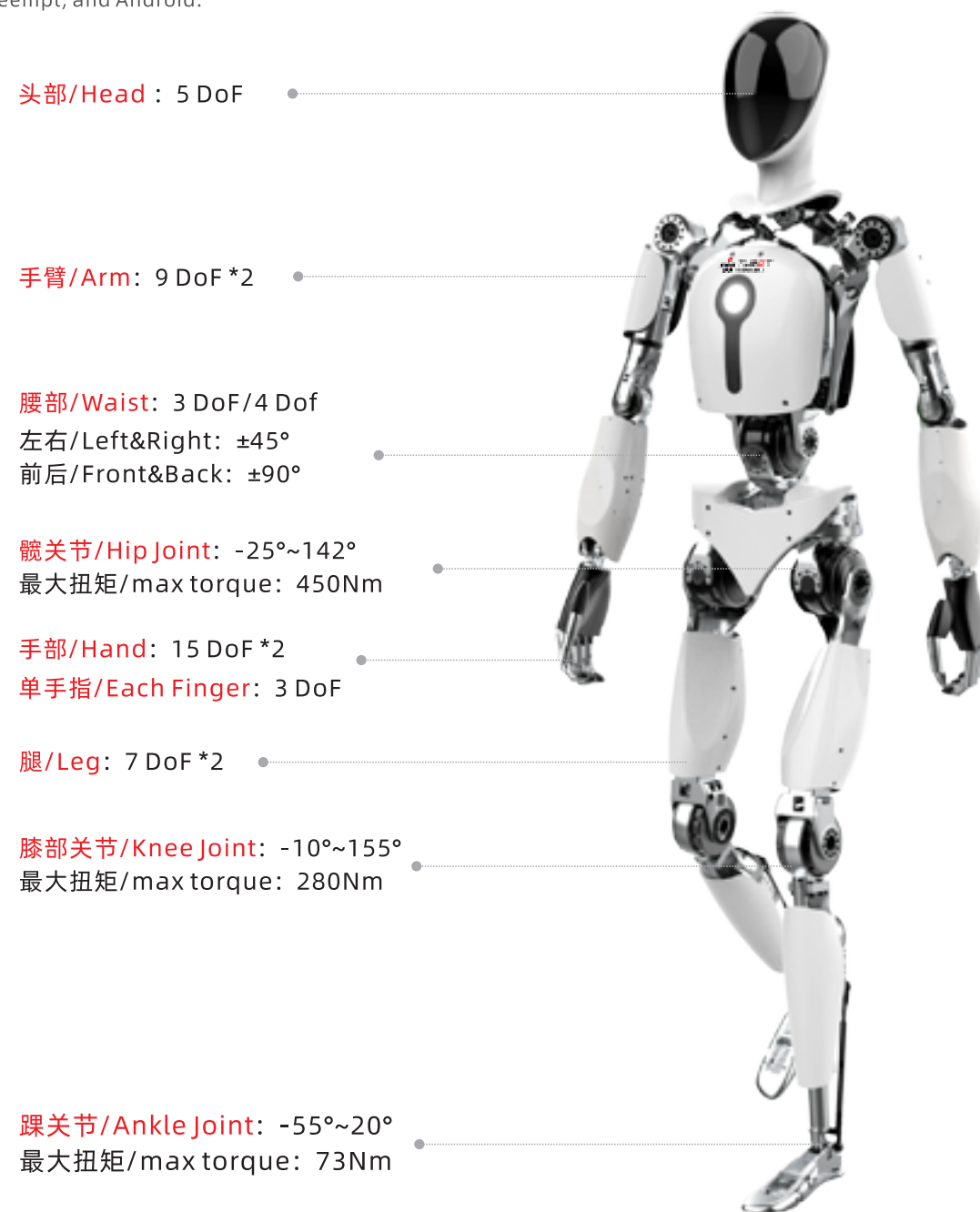
P12 产品应用场景
Product Application

人形机器人-天链T1Pro

Humanoid Robot-TLIBOT T1 Pro

天链机器人自主研发的人形机器人T1Pro，身高约1.60m，全身自由度71个，重量43kg，关节最大扭矩达到450Nm，手臂单臂负载8kg，最大负载16kg，负重深蹲突破145kg。机器人最大行走速度8km/h。通过激光Slam导航和视觉组合的导航方式，可精准定位及导航，电源采用44.4V/25Ah的锂电池，充电2.5h，使用（综合工况）4h。通讯方式为RS422通讯，操作系统为Ubuntu+LinuxRT Preempt+Android.

TLIBOT independently developed humanoid robot, the T1Pro, stands approximately 1.60 meters tall, has 71 DoF, weighs 43 kg, and boasts a maximum joint torque of 450 Nm. Its arms can carry an 8 kg payload, a maximum payload of 16 kg, and can squat over 145 kg. The robot boasts a maximum walking speed of 8 km/h. It utilizes a combination of laser slam navigation and vision technology for precise positioning and navigation. It is powered by a 44.4V/25Ah Li battery, which charges in 2.5 hours and lasts for 4 hours under comprehensive operating conditions. It communicates via RS422 and runs on Ubuntu, LinuxRT Preempt, and Android.

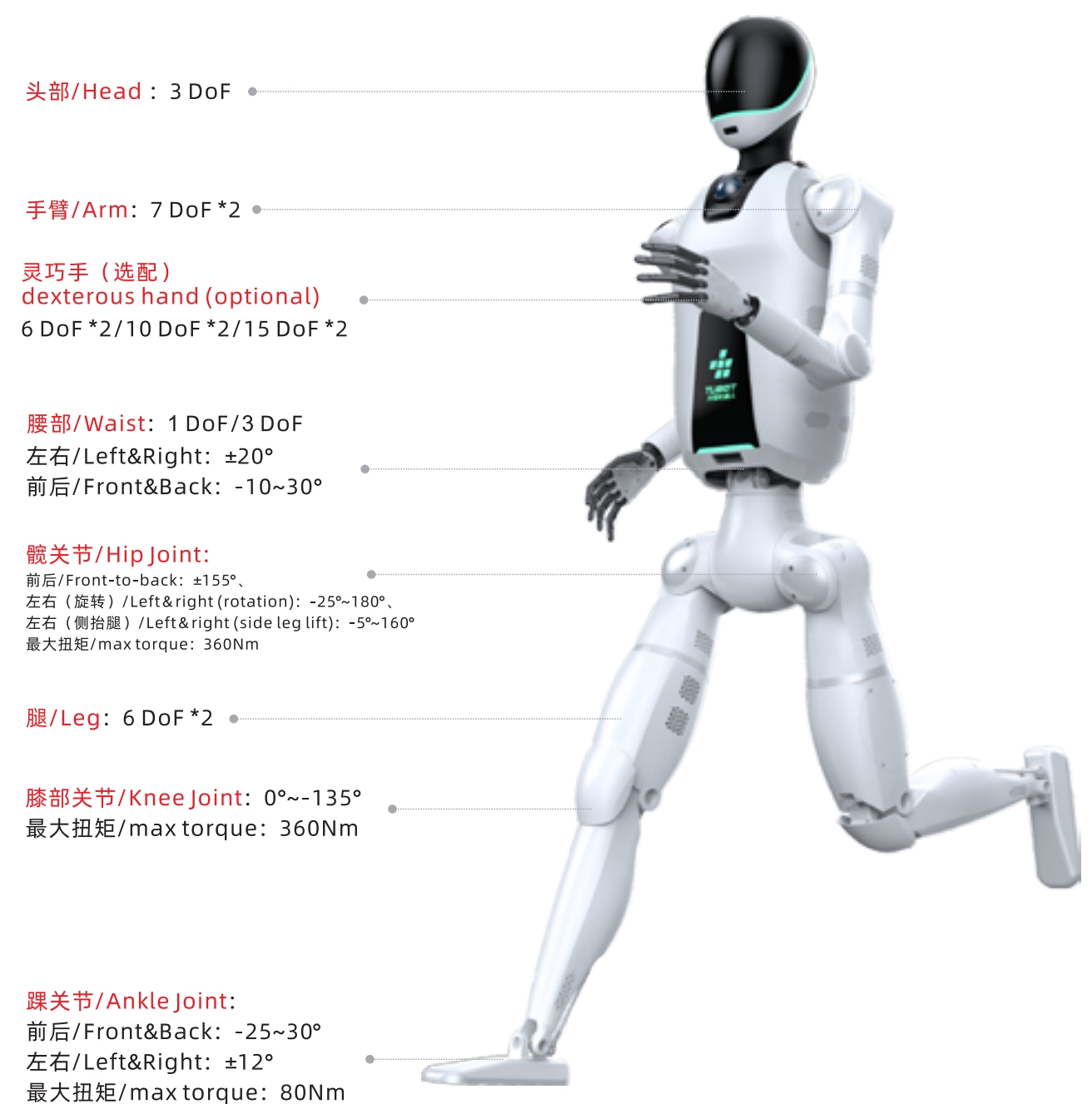


人形机器人-天盾系列D1

Humanoid Robot-TianDun series D1

天链机器人自主研发的人形机器人天盾系列D1，是一款为工业而生的机器人。身高约1.67m，全身自由度32个+选配灵巧手，重量58kg(含电池，不含外壳)，关节最大扭矩达到360Nm，手臂单臂最大负载20kg。机器人最大行走速度2m/s,通过激光导航和视觉组合的导航方式，可精准定位及导航。电源采用64.8V/30Ah的锂电池，通讯方式为RS422通讯，操作系统为Ubuntu22.04.

TLIBOT independently developed humanoid robot, the T1 Ultra, is designed for industrial use. It stands approximately 1.67 meters tall, has 32 DOF and optional dexterous hands, and weighs 58 kg (including battery, excluding housing). Its joints have a maximum torque of 360 Nm, and its arms can carry a maximum load of 20 kg. The robot has a maximum speed of 2 m/s and uses a combination of laser and vision navigation for precise positioning and navigation. It is powered by a 64.8V/30Ah Li battery, communicates via RS422, and runs Ubuntu 22.04.



天艺系列-Y1
TianYi series-Y1



型号 Model	Y1	跨越间隙 Crossing the gap	20mm
外形尺寸(收拢状态) Overall dimensions(folded state)	L684*W670*H1210mm	转弯半径 Turning radius	原地旋转 Spot turn
重量 Weight	≤120kg	升降范围 Lifting range	540mm
触达高度 Reach altitude	2050mm	工作时长 Working hours	4h
单机械臂额定负载 Payload of each cobot	5kg	充电时长 Charging time	2.5h
机械臂重复定位精度 Robot arm repeat positioning accuracy	±0.05mm	导航方式 Navigation	激光雷达自主导航 Lidar autonomous navigation
总自由度 Total degree of freedom	22	避障方式 Obstacle avoidance method	激光+视觉 Laser + Vision
底盘定位精度 Chassis positioning accuracy	±50mm/±3°	通信方式 Communication mode	WIFI
底盘运动速度 Chassis movement speed	≤1.2m/s	扩展接口 Extended interface	网口、USB3.0、HDMI Net gape,USB3.0,HDMI
爬坡角度 Climing speed	≤5°	二次开发 Secondary development	ROS2、API
跨越斜坡障碍 Crossing slope obstacles	20mm	默认主控 Default main controller included	jetson AGX orin64G +1TSSD

天艺系列-Y2
TianYi series-Y2



型号 Model	Y2	跨越间隙 Crossing the gap	20mm
外形尺寸(收拢状态) Overall dimensions(folded state)	L665*W660*H1410mm	转弯半径 Turning radius	原地旋转 Spot turn
重量 Weight	≤95kg	升降范围 Lifting range	700mm
触达高度 Reach altitude	2050mm	工作时长 Working hours	3-4h
单机械臂额定负载 Payload of each cobot	5kg	充电时长 Charging time	3h
机械臂重复定位精度 Robot arm repeat positioning accuracy	±0.05mm	导航方式 Navigation	激光雷达自主导航 Lidar autonomous navigation
总自由度 Total degree of freedom	20	避障方式 Obstacle avoidance method	激光+视觉 Laser + Vision
底盘定位精度 Chassis positioning accuracy	±50mm/±3°	通信方式 Communication mode	WIFI
底盘运动速度 Chassis movement speed	≤1.5m/s	扩展接口 Extended interface	网口、USB3.0、HDMI Net gape,USB3.0,HDMI
爬坡角度 Climing speed	≤5°	二次开发 Secondary development	ROS2、API
跨越斜坡障碍 Crossing slope obstacles	20mm	腰部俯身范围(选配) Waist bending range (Optional)	45°
默认主控 Default main controller included	jetson orin NX16G+512G SSD		

天艺系列-Y3
TianYi series-Y3



型号 Model	Y3	跨越间隙 Crossing the gap	20mm
外形尺寸(收拢状态) Overall dimensions(folded state)	L612*W530*H1600mm	转弯半径 Turning radius	原地旋转 Spot turn
重量 Weight	≤90kg	升降范围 Lifting range	900mm
触达高度 Reach altitude	2200mm	工作时长 Working hours	3-4h
单机械臂额定负载 Payload of each cobot	5kg	充电时长 Charging time	3h
机械臂重复定位精度 Robot arm repeat positioning accuracy	±0.05mm	导航方式 Navigation	激光雷达自主导航 Lidar autonomous navigation
总自由度 Total degree of freedom	10	避障方式 Obstacle avoidance method	激光+视觉 Laser + Vision
底盘定位精度 Chassis positioning accuracy	±50mm/±3°	通信方式 Communication mode	WIFI
底盘运动速度 Chassis movement speed	≤1.5m/s	扩展接口 Extended interface	网口、USB3.0、HDMI Net gape,USB3.0,HDMI
爬坡角度 Climing speed	≤5°	二次开发 Secondary development	ROS2、API
跨越斜坡障碍 Crossing slope obstacles	20mm	默认主控 Default main controller included	jetson orin NX16G+512G SSD

天艺系列-Y4
TianYi series-Y4



型号 Model	Y4
外形尺寸(收拢状态) Overall dimensions(folded state)	L594*W600*H1445mm
重量 Weight	≤55kg
操作台面高度 Work surface height	800mm
单机械臂额定负载 Payload of each cobot	5kg
机械臂重复定位精度 Robot arm repeat positioning accuracy	±0.05mm
总自由度 Total degree of freedom	14
通信方式 Communication mode	WIFI
扩展接口 Extended interface	网口、USB3.0、HDMI Net gape,USB3.0,HDMI
二次开发 Secondary development	ROS2、API
默认不带主控 Default configuration without main controller	客户自备PC,推荐配置: X86架构, 芯片intel i5-1340P 内存16G以上 Customer-supplied PC, recommended specifications: x86 architecture, Intel Core i5-1340P processor, 16GB+ RAM

超轻量协作机器人
Ultra-light Collaborative Robot

极限负载，超自重2倍
Extreme load, 2 times of its own weight



本体构成
Component



发明专利号
Invention Patent
ZL201610769248.3
ZL201611016761.1



产品特点
Product Features

专用示教器/平板
Special teaching pendant / tablet

全隐藏线束
Fully hidden wiring harness

拖拽示教
Drag and drop teaching

力反馈
Force feedback

末端360°连续旋转
360°Continues rotation of the end

超高功率密度
Ultra high power density

IP54防护等级
IP54 Protection level

脚本编程
Script Programming

高速内置用户通讯总线
High-speed built-in user communication bus

本体铝合金材质
Body aluminum alloy material

额定抓重比超1:1
Rated grab weight ratio exceeds 1:1

产品参数

项目/Item		TCB605/V	TCB705/V	TCB605L	TCB705L	TCB610/V	TCB710/V
自由度 DoF		6	7	6	7	6	7
本体重量 Weight		7/7.2kg	7.5/7.7kg	12.2kg	13kg	10.1/10.3kg	11/11.2kg
额定负载 Rated Load		5kg	5kg	5kg	5kg	10kg	10kg
最大负载 Maximum Load		8kg	8kg	7kg	7kg	14kg	14kg
最大工作半径 Maximum Working Radius		653mm	653mm	1161.5mm	1161.5mm	761.5mm	761.5mm
重复定位精度 Repeated Positioning Accuracy		±0.03mm	±0.03mm	±0.03mm	±0.03mm	±0.03mm	±0.03mm
供电电压 Supply Voltage		DC48V	DC48V	DC48V	DC48V	DC48V	DC48V
平均功率 Average Power		220W	250W	430W	450W	430W	450W
编码器 Encoder		双/Dual	双/Dual	双/Dual	双/Dual	双/Dual	双/Dual
运动范围 Activity Range	关节J1 /Joint J1	±179.5°	±179.5°	±179.5°	±179.5°	±179.5°	±179.5°
	关节J2 /Joint J2	±138°	±138°	±136°	±136°	±136°	±136°
	关节J3 /Joint J3	±143°	±179.5°	±147°	±179.5°	±147°	±179.5°
	关节J4 /Joint J4	±179.5°	±143°	±179.5°	±147°	±179.5°	±147°
	关节J5 /Joint J5	±133°	±179.5°	±130°	±179.5°	±130°	±179.5°
	关节J6 /Joint J6	±179.5°	±133°	±179.5°	±130°	±179.5°	±130°
	关节J7 /Joint J7	/	±179.5°	/	±179.5°	/	±179.5°
最大速度 Maximum Speed		180°/s					

项目/Item		TCB605F/VF	TCB705F/VF	TCB605LV	TCB705LV	TCB610F/VF	TCB710F/VF
自由度 DoF		6	7	6	7	6	7
本体重量 Weight		7.2/7.4kg	7.7/7.9kg	12.4kg	13.2kg	10.3/10.5kg	11.2/11.4kg
额定负载 Rated Load		5kg	5kg	5kg	5kg	10kg	10kg
最大负载 Maximum Load		8kg	8kg	7kg	7kg	14kg	14kg
最大工作半径 Maximum Working Radius		685.5mm	685.5mm	1161.5mm	1161.5mm	795mm	795mm
重复定位精度 Repeated Positioning Accuracy		±0.03mm	±0.03mm	±0.03mm	±0.03mm	±0.03mm	±0.03mm
供电电压 Supply Voltage		DC48V	DC48V	DC48V	DC48V	DC48V	DC48V
平均功率 Average Power		220W	250W	430W	450W	430W	450W
编码器 Encoder		双/Dual	双/Dual	双/Dual	双/Dual	双/Dual	双/Dual
运动范围 Activity Range	关节J1 /Joint J1	±179.5°	±179.5°	±179.5°	±179.5°	±179.5°	±179.5°
	关节J2 /Joint J2	±138°	±138°	±136°	±136°	±136°	±136°
	关节J3 /Joint J3	±143°	±179.5°	±147°	±179.5°	±147°	±179.5°
	关节J4 /Joint J4	±179.5°	±143°	±179.5°	±147°	±179.5°	±147°
	关节J5 /Joint J5	±133°	±179.5°	±130°	±179.5°	±130°	±179.5°
	关节J6 /Joint J6	±179.5°	±133°	±179.5°	±130°	±179.5°	±130°
	关节J7 /Joint J7	/	±179.5°	/	±179.5°	/	±179.5°
最大速度 Maximum Speed		180°/s					

超轻量一体化关节

Ultra Lightweight Integrated Joint



天链机器人股份有限公司（股票代码835015）始终专注于机器人及其核心零部件的研发、生产与销售。经过多年潜心攻关，公司重磅推出超轻量一体化关节产品——该产品创新性实现伺服电机与特制谐波减速机的高度集成，已斩获多项专利技术。在极小的体积与重量下，产品集成了高精度编码器、制动器、驱控单元、温度传感器等核心功能模块，最终达到极高的扭矩体积比与扭矩重量比。

SICHUAN TLIBOT Co., Ltd. (Stock Code: 835015) has been dedicated to the research, production and sales of robots and core components. After years of focused development, TLIBOT proudly launches its ultra lightweight integrated joint — an innovative product that achieves highly compact integration of servo motors and specially designed harmonic reducers, already secured with multiple patents. Within an exceptionally small and lightweight structure, the product incorporates key functional modules including high-precision encoders, brakes, drive-control units, and temperature sensors, delivering outstanding volume ratio and torque-to-weight ratio.

技术参数

/Technical Parameter

型号/Model	TSJA14			TSJA17				TSJA20				TSJA25				
谐波减速比 Harmonic reduction ratio	50	80	100	50	80	100	120	50	80	100	120	50	80	100	120	160
额定扭矩(Nm) Rated torque(Nm)	6.8	9.8	9.8	20	28	31	31	33	43	52	52	51	82	86	86	86
允许启停峰值扭矩(Nm) Peak torque for start and stop is allowed(Nm)	24	30	35	44	56	70	70	73	96	107	113	127	178	204	217	229
平均负载转矩容许最大值(Nm) The maximum allowable average load torque(Nm)	9	14	14	34	35	51	51	44	61	63	63	72	113	137	137	137
瞬间容许最大转矩(Nm) Instantaneous allowable maximum torque(Nm)	46	61	70	91	113	143	112	127	165	189	189	242	232	369	395	408
输出端最大转速(RPM) Maximum rotational speed at the output end(RPM)	60	37.5	30	60	37.5	30	25	60	37.5	30	25	60	37.5	30	25	18.75
重复定位精度 Repeat positioning accuracy	13"			13"				13"				13"				
电机额定转速(RPM) Rated speed of the motor(RPM)	3000			3000				3000				3000				
电机瞬时最高转速(RPM) Max instantaneous motor speed(RPM)	4500			4500				3500				3500				
电机额定功率(W) Motor rated power(W)	60			80				160				290				
额定电压(V) Rated voltage(V)	48			48				48				48				
重量(kg) Weight(kg)	0.4			0.65(F型)/0.69(S型)				0.95（F型）/1.00(S型)				1.55（F型）/1.61(S型)				
输出端编码器分辨率 Output encoder resolution	19bit单圈绝对值/19bit single-turn absolute encoder															
输入端编码器分辨率 Input encoder resolution	19bit单圈绝对值/19bit single-turn absolute encoder															
通信类型 Communication type	EtherCAT/CAN															
内置制动器 Integrated brake	齿啮合式电磁制动/Gear-type electromagnetic brake															

参数对比表

Parameter comparer

友商数据来源于官网
Business partners data from their official website

分类 Item	与市面上的同类型关节对比（谐波减速比100） Benchmarking Against Comparable Joints(Harmonic Reducer 100:1Ratio)							
	14机型 Model 14		17机型 Model 17		20机型 Model 20		25机型 Model 25	
	天链关节 TLIBOT	常规关节 Regular joint	天链关节 TLIBOT	常规关节 Regular joint	天链关节 TLIBOT	常规关节 Regular joint	天链关节 TLIBOT	常规关节 Regular joint
外径（mm） Outer diameter (mm)	55	70	66	80	78	90	92	110
重量（kg） Weight (kg)	0.4	0.82	0.65	1.03	0.95	1.51	1.55	2.57
额定扭矩（Nm） Rated torque (Nm)	9.8	10	31	31	52	52	86	87
额定扭矩密度（Nm/kg） Rated torque density (Nm/kg)	24.50	12.19	47.69	30.10	54.74	34.43	55.48	33.85
最大扭矩密度（Nm/kg） Max torque density (Nm/kg)	87.50	43.90	107.69	67.96	112.63	70.86	131.61	79.38
额定功率密度（W/kg） Rated Power Density（W/kg）	150.00	121.95	123.08	122.33	168.42	207.95	187.10	281.32

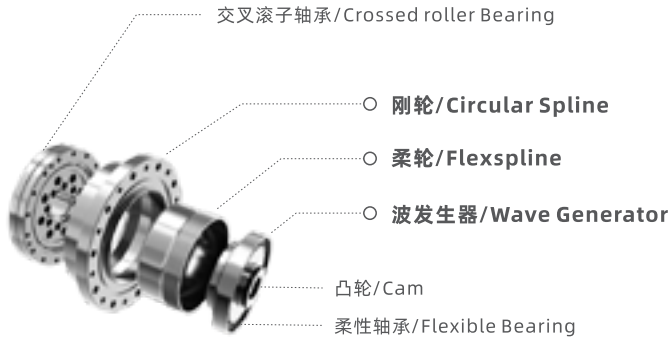
表中选用天链超轻量一体化关节（法兰端）
The TLIBOT ultra lightweight integrated joint (Flange end cap) be choosed in table

谐波减速机
Harmonic Reducer

谐波传动装置的构成
Composition of a harmonic reducer

谐波传动装置主要由三个基本零部件构成，即波发生器、柔轮、刚轮。

The harmonic reducer is mainly composed of three basic components, namely the wave generator, the flexspline and the circular spline.

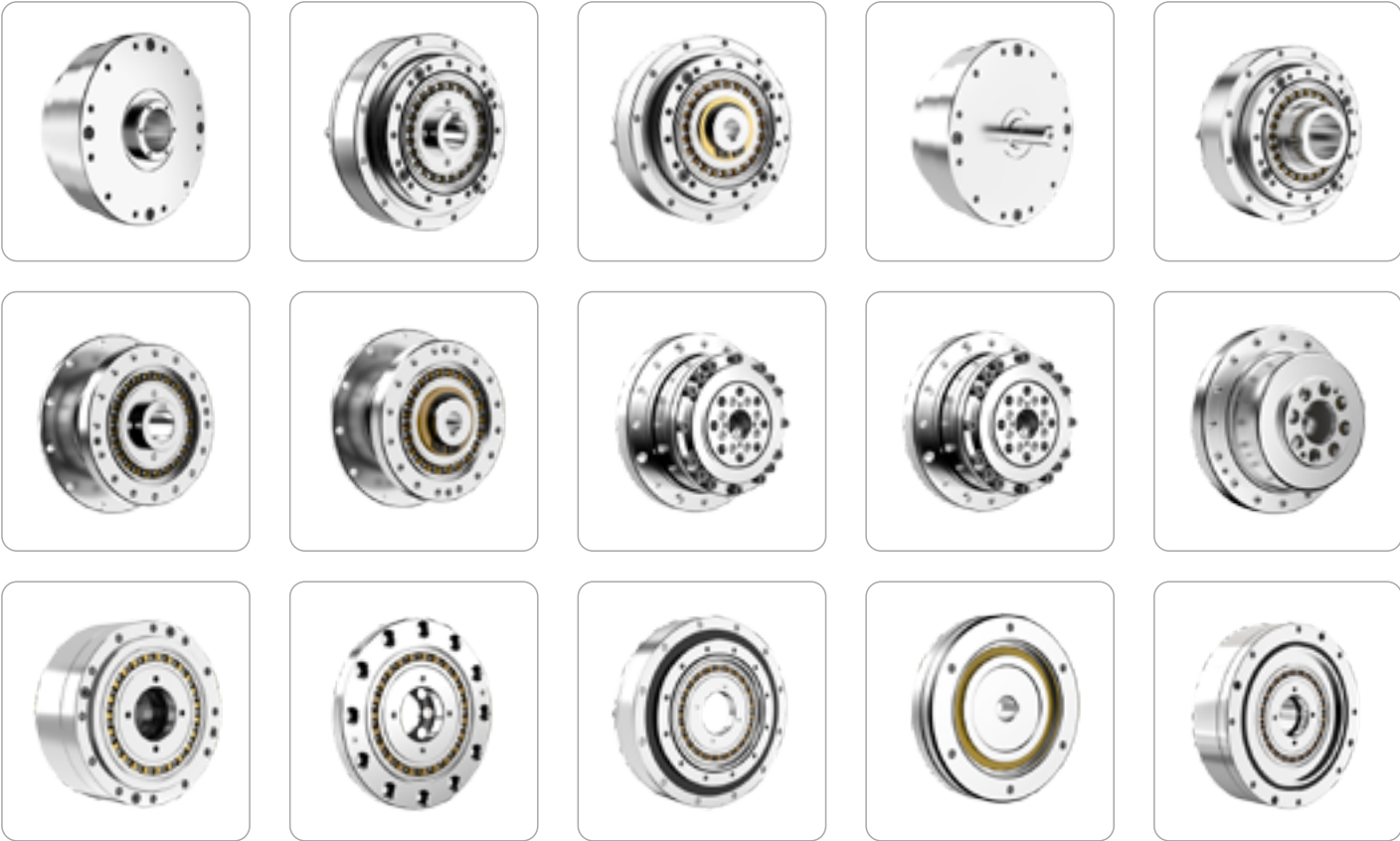


谐波减速机额定扭矩
Rated Torque for Harmonic Reducers

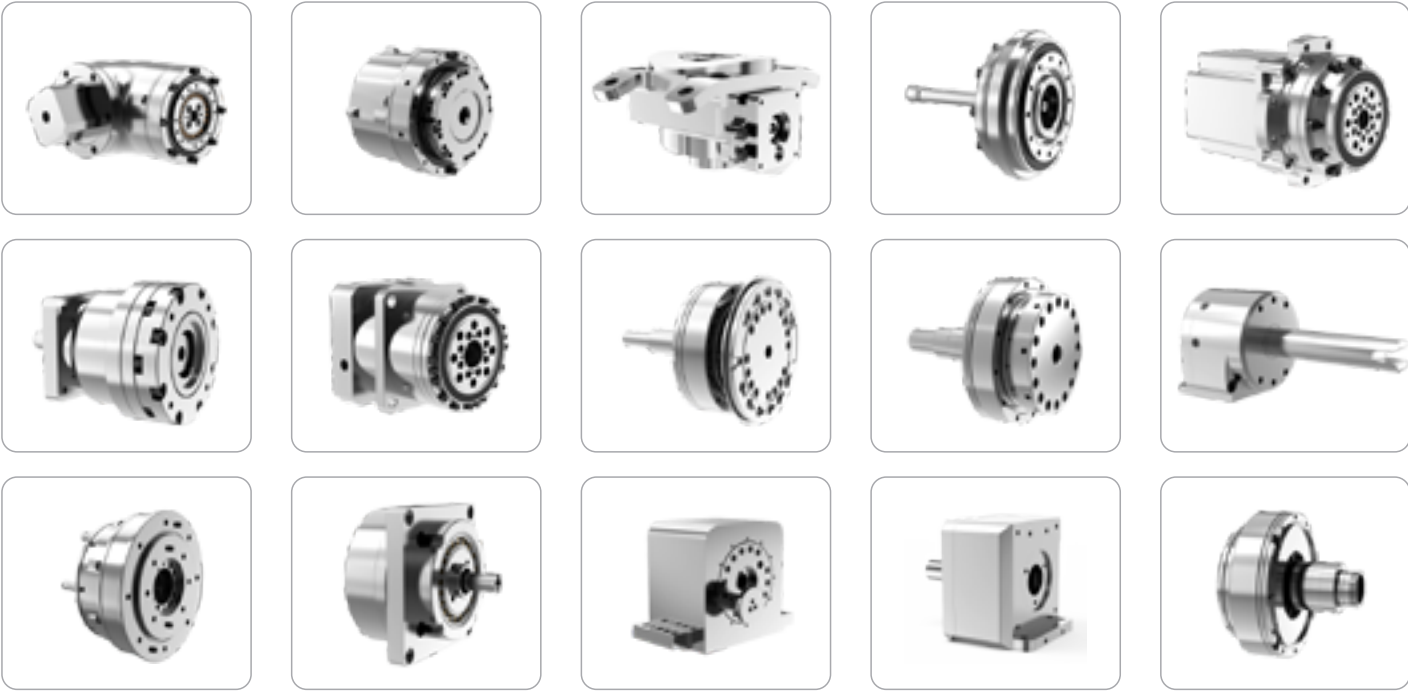
-: 无 -: Don't have

结构类型 Structure Type	型号大小 Model Size	标准扭矩机型减速比 Standard Torque Ratio						高扭矩机型减速比 High Torque Ratio				
		30	50	80	100	120	160	50	80	100	120	160
标准机型 Standard Model	3	0.06	0.11	0.13	0.15	-	-	-	-	-	-	-
	5	0.3	0.4	0.5	0.6	-	-	-	-	-	-	-
	8	0.9	1.8	2.4	2.4	-	-	-	-	-	-	-
	11	2.2	3.5	5	5	-	-	-	-	-	-	-
	14	4	5.7	8.2	8.2	-	-	6.8	9.8	9.8	-	-
	17	8.8	17	23	25	25	-	20	28	31	31	-
	20	15	26	36	42	42	42	33	43	52	52	52
	25	27	41	66	70	70	70	51	82	86	86	86
	32	54	80	122	138	138	138	99	153	176	176	176
	40	-	138	208	268	297	297	176	268	343	381	381
	45	-	178	316	357	406	406	229	407	457	524	524
	50	-	245	376	475	534	534	-	484	612	692	692
	58	-	353	554	703	752	752	-	714	905	971	971
	65	-	490	752	961	961	961	-	971	1238	1238	1238
超薄机型 Ultra-thin Model	80	-	872	1320	1700	1900	1900	-	-	-	-	-
	90	-	1180	1550	2270	2570	2700	-	-	-	-	-
	100	-	1580	2380	2940	3180	3550	-	-	-	-	-
	14	-	3.6	5.2	5.2	-	-	-	-	-	-	-
	17	-	11	15	16	16	-	-	-	-	-	-
	20	-	17	24	27	27	27	-	-	-	-	-
	25	-	26	43	45	47	47	-	-	-	-	-

标准减速机
Standard harmonic reducer



定制减速机
Customization of a harmonic reducer



轴承耐磨涂层

Bearing wear-resistant

产品优势

Advantages

在PVD传统膜技术的基础上，自主研发材料，采用低温工艺，使零件生成纳米级的强化镀层，该技术可抗金属粘着烧结，损耗减少，生产成本降低，效益提升，技术实施之后轴承磨损显著降低。

Based on the traditional PVD film technology, we independently develop materials and use low-temperature processes to generate nano-level reinforced coatings on parts. This technology can resist metal adhesion and sintering. Reduce losses, lower production costs, and improve efficiency. After the implementation of the technology, bearing wear is significantly reduced.

产品特点

Product feature



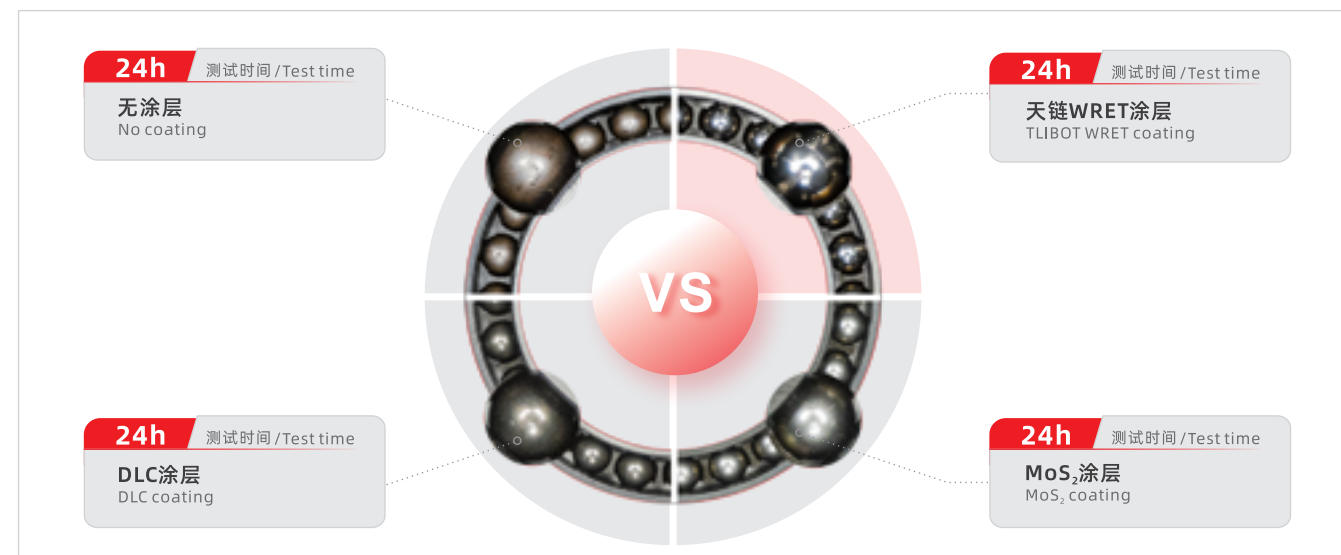
适用的产品范围

Applicable Product Range



测试工况对比

Comparison of test conditions

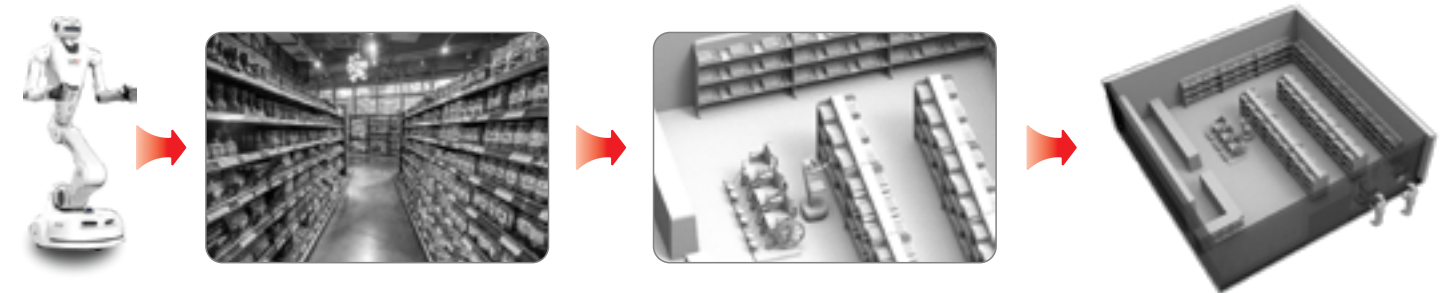


“无人零售”应用

Unmanned Retail" Application

无人零售结合人机配合运营模式，使用复合机器人进行夜间取货服务，延长售卖时间，即实现夜间无人化售卖。

Unmanned retail combines human-machine cooperation operation mode, uses composite robots for nighttime pickup service, and extends the sales time, realizes unmanned sales at night.



优点/Advantages

- | | |
|--------------------------------|--|
| 1. 店面无需变更整体布局，改造成本低 | 1. The store does not need to change the overall layout, and the transformation cost is low |
| 2. 对已有24小时店面而言可节约成本 | 2. It can save costs for existing 24-hour stores |
| 3. 对非24小时店面而言可延长售卖时间，分摊房租，增加收入 | 3. For non-24-hour stores, it can extend the sales time, share the rent, and increase income |
| 4. 机器人物尽其用，提升店面形象 | 4. Make full use of robots to improve the store image |

产品应用场景

Product Application

