



杭州重力脚轮科技有限公司
HANGZHOU GRAVITY CASTER TECHNOLOGY CO.,LTD

智能行走 领跑机器人

Intelligent Locomotion Leading Robotics



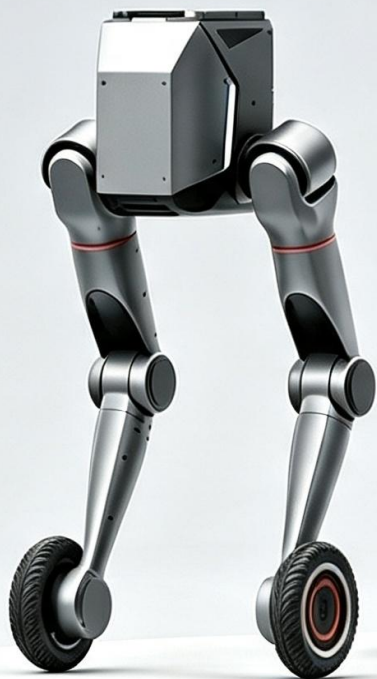
智能移动系统 | 机器人脚轮方案 | 自动化承载应用

Intelligent Mobility System | Robot Caster Solutions | Automated Load-bearing Applications

重力脚轮 助力机器人



Gravity Caster for
Power-Assist Robots

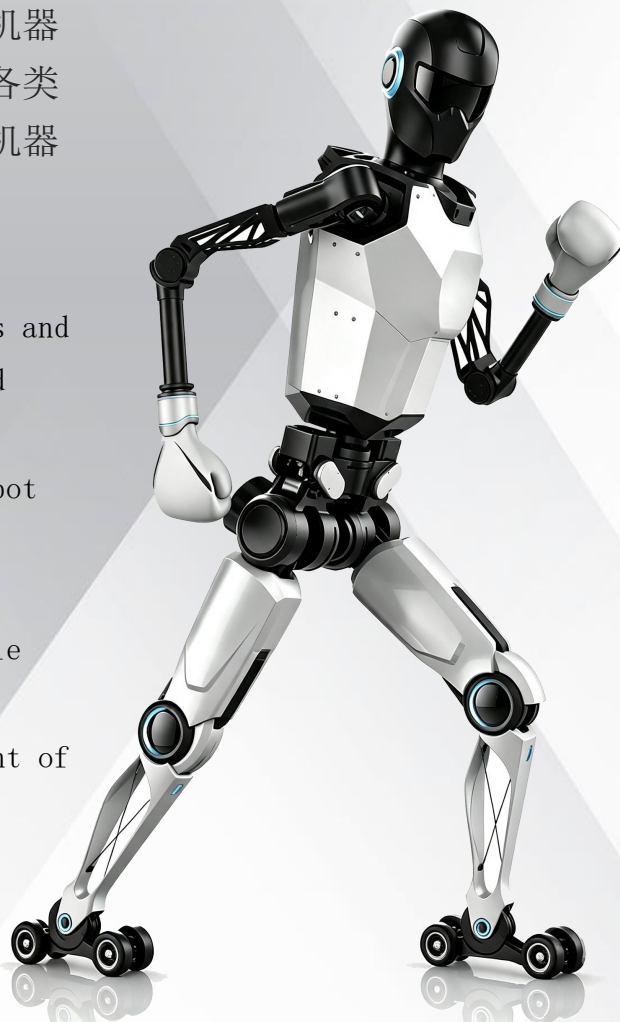


轮式行走——赋能移动机器人产业

Wheeled Mobility — Empowering the Mobile Robot Industry

轮式行走结构是移动机器人核心基础部件，覆盖重载搬运、商用配送等多元场景。轮子凭借高承载力、路面适应性与高效移动能力，保障机器人安全作业。结合防静电、抗冲击、高耐磨等优异性能，有效规避各类工况作业风险，持续助力机器人拓展应用场景、迭代技术形态，为机器人产业规模化、多元化发展夯实基础、保驾护航。

Wheeled locomotion systems are core basic components of mobile robots and are widely used in applications such as heavy-load transportation and commercial delivery. Their high load capacity, excellent terrain adaptability and efficient mobility help ensure safe and reliable robot operation. With properties such as antistatic performance, impact resistance and high wear resistance, these wheel systems reduce operational risks under demanding working conditions. They also enable robots to expand into new applications and adopt more advanced configurations, supporting the large-scale and diversified development of the robotics industry.



防爆人形机器人 Explosion-proof Humanoid Robot

轮子配置特点 Wheel Configuration Features

01 避免在易燃易爆高危场景中产生火花、静电或高温风险

Avoid generating sparks, static electricity or high temperatures in high-risk flammable and explosive environments.

02 高强度、高负载能力，能够支撑机器人整机重量及作业负载

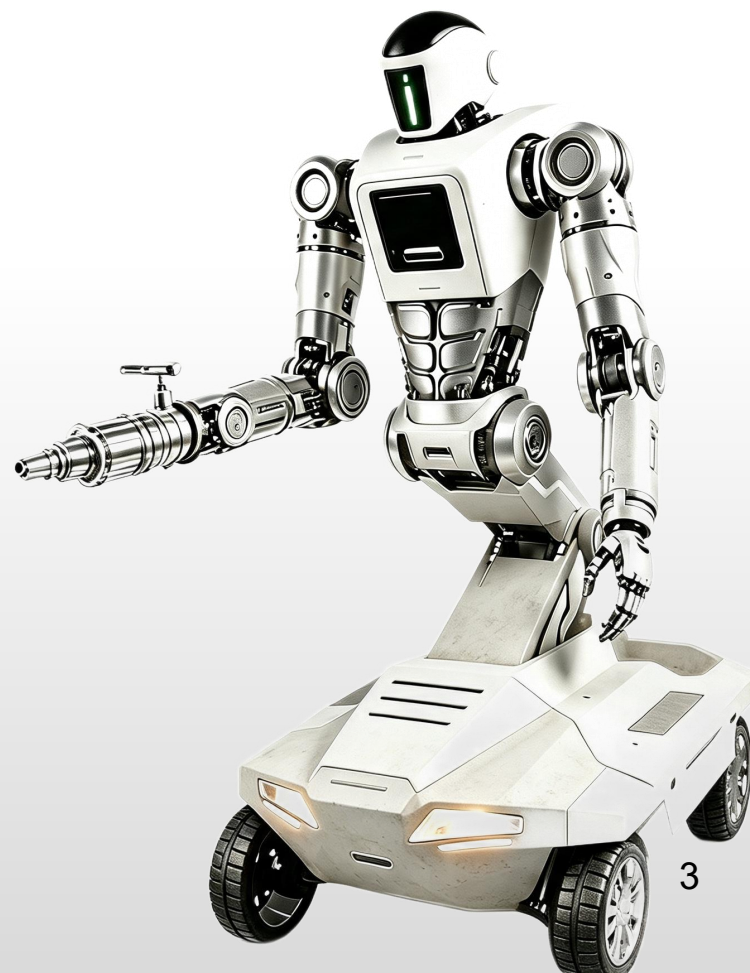
High strength and high load capacity, capable of supporting the robot's total weight and operational load.

03 耐磨、抗老化、耐候性强，能够适应长期工业环境作业

Excellent wear resistance, resistance to aging and weathering resistance, making the wheels suitable for long-term use in industrial environments.

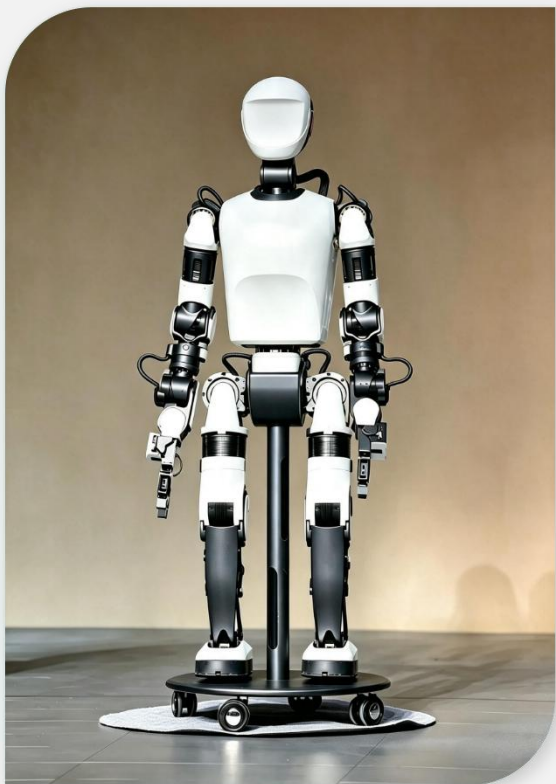
04 适用于室内外工业路面，包括水泥地、沥青路面及轻度不平整地面

Suitable for indoor and outdoor industrial surfaces, including concrete, asphalt and slightly uneven terrain.



立式转向支架 · 多从动万向轮

vertical steering bracket·multiple driven caster wheels



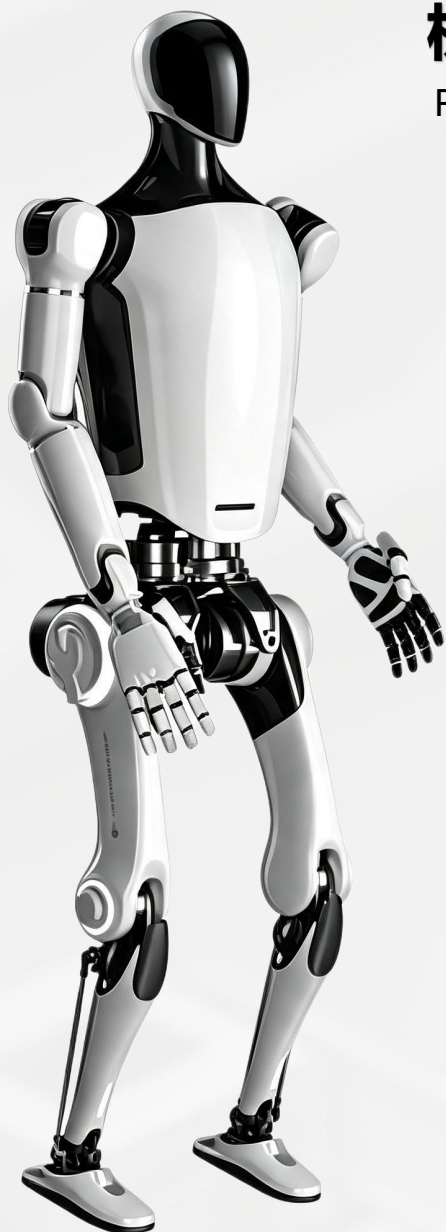
轮子四点均匀安装形成稳定支撑，大幅降低侧翻风险。

The wheels are evenly installed at four points to form a stable support, significantly reducing the risk of overturning.



万向轮可 360° 自由摆向，移动时不会卡滞转向。

The swivel casters rotate freely through 360° , ensuring smooth movement without binding or excessive steering resistance.



机器人聚氨酯鞋底

Polyurethane Soles for Humanoid Robots



01

耐磨抗耗
excellent wear resistance

02

优异缓冲减震
excellent cushioning and shock absorption

03

防滑抓地稳定
high grip and stable traction

04

耐油耐化学腐蚀
oil and chemical resistance

05

轻量化低密度
lightweight, low-density construction

06

强度与韧性平衡
balanced strength and toughness

机器人聚氨酯鞋底技术要求

Technical Requirements for Robotized Polyurethane Shoe Outsoles

01

来图定制尺寸

Dimensions customized according to drawings

02

锐角倒钝去毛刺飞边，加工后喷砂处理

Break sharp edges; remove burrs and flash;
sandblast after machining

03

直角撕裂强度 $>70\text{kN/m}$

Right-angle tear strength $>70\text{kN/m}$

04

硬度 $85\pm5\text{A}$

Hardness 85 ± 5 Shore A

05

DIN 磨耗 $<50\text{mm}^3$

DIN abrasion loss $<50\text{mm}^3$

06

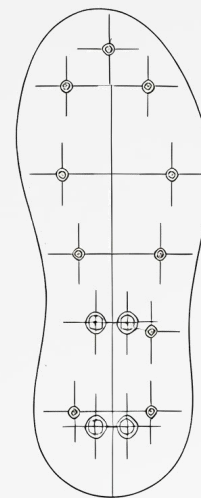
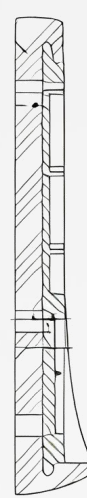
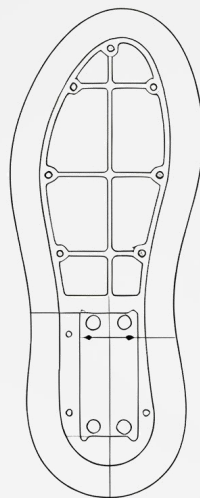
表面电阻 $\leq 4\times 10^8\Omega$

Surface resistivity $\leq 4\times 10^8\Omega$

07

包胶剥离强度 $>30\text{N/mm}$

Bonding peel strength $>30\text{N/mm}$



机器人智能轮组应用

Application of Intelligent Robot Wheel Assemblies



AGV智能搬运机器人 AGV Handling Robot



可变轮足机器人

Variable Wheel-Legged Robot



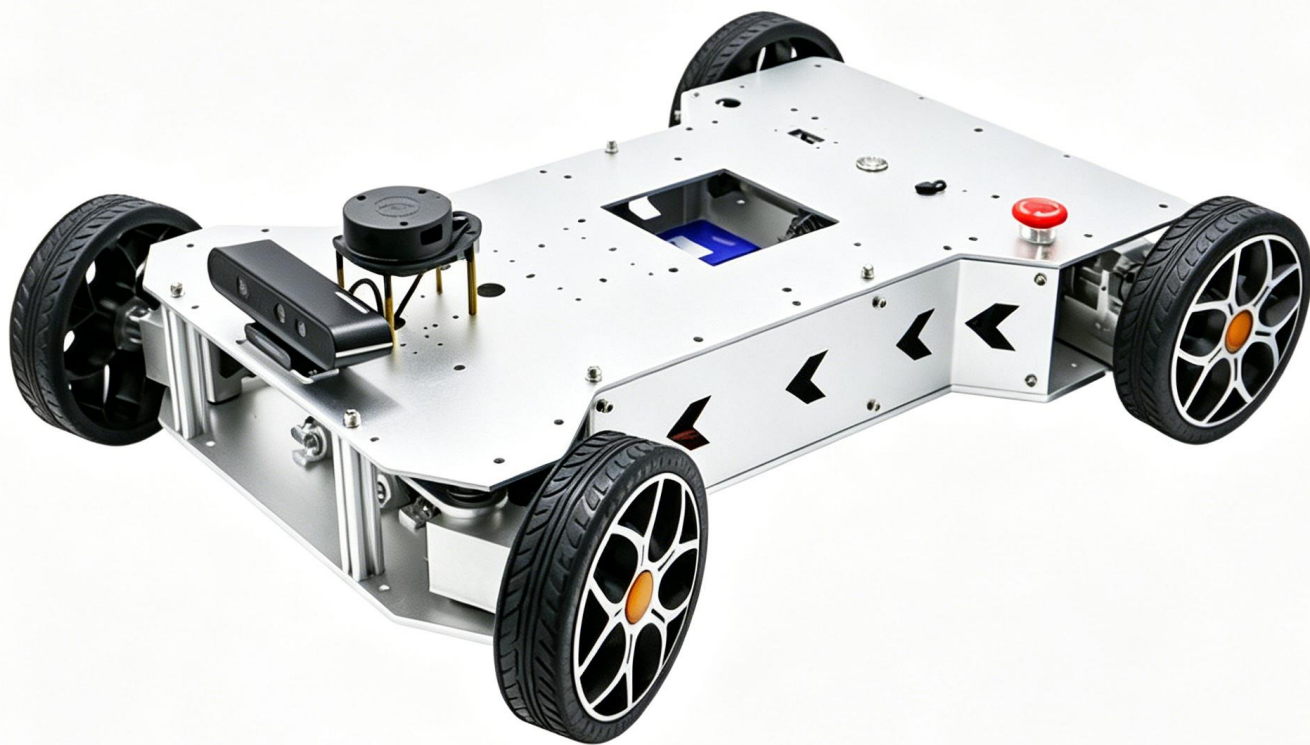
轮腿式多足机器人

Wheel-Legged Multi-Legged Robot



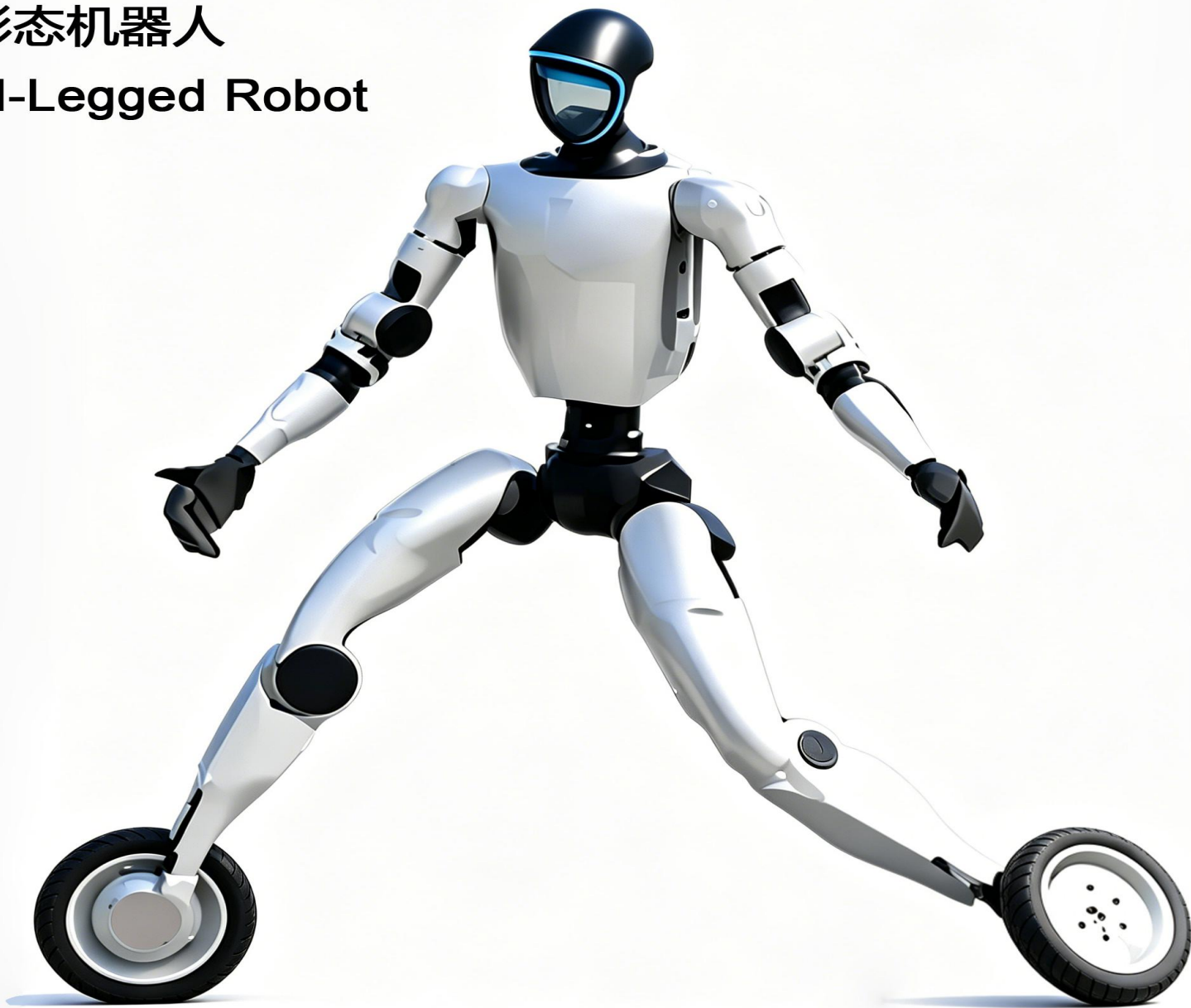
机器人底座

Robot Base



轮子形态机器人

Wheel-Legged Robot



潜伏式AGV

Under-ride AGV



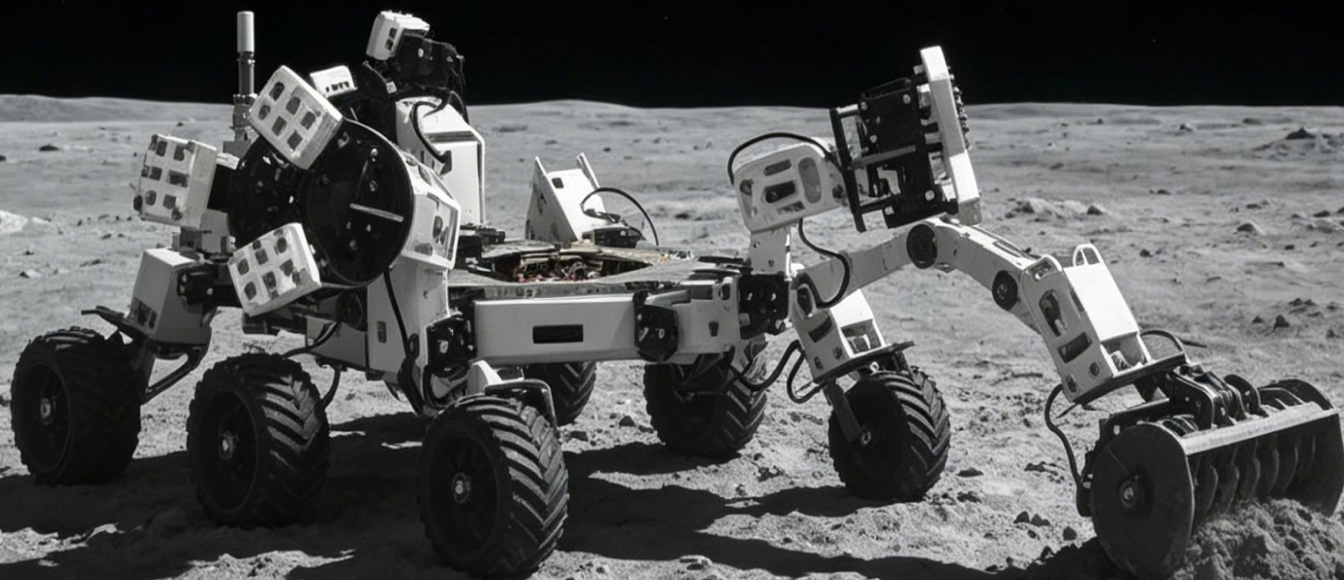
双轮足机器人

Dual Wheel-Legged Robot



太空采矿机器人

Space Mining Robot



无人自动配送车

Autonomous Unmanned Delivery Vehicle



四轮复合移动机器人

Four-Wheel Composite Mobile Robot



智能巡检机器人

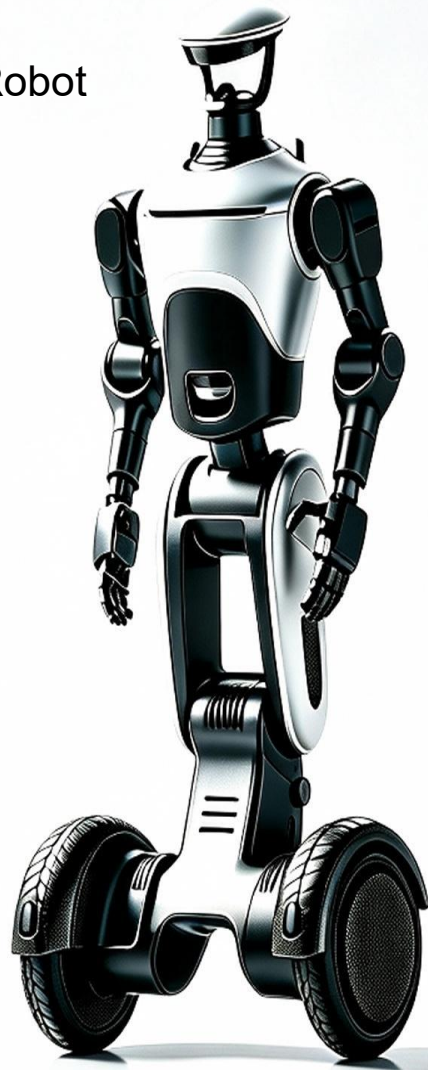


Intelligent Inspection Robot



双轮平衡移动底盘机器人

Two-wheel Balanced Mobile Chassis Robot



机器人轮子规格选型

Robot Wheel Specification Selection

胎面：橡胶

轮芯：钢

硬度：75±5A

直径范围：100-300mm

负载能力：160-1400kgs

Tread: Rubber

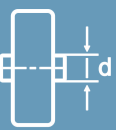
Centre: Steel

Hardness: 75±5 shore A

Diameter range: 100-300mm

Load capacity: 160-1400kgs



			
100	30	12	160
125	45	18	330
127	40	32	300
134	40	23	320
150	60	23	500
175	50	19	500
180	45	18	500
200	50	20	600
225	50	20	680
300	80	23	1400

胎面: Elaxthane

轮芯: 钢

硬度: $92 \pm 3A$

直径范围: 110-300mm

负载能力: 350-2500kgs

Tread: Elaxthane

Centre: Steel

Hardness: 92 ± 3 shore A

Diameter range: 110-300mm

Load capacity: 350-2500kgs



AGV 驱动轮

AGV Drive Wheel

			
110	40	80	350
130	40	82	450
160	40	120	500
170	65	115	850
180	47.5	149	650
210	80	160	1200
250	80	192	1800
300	90	236	2500

胎面: Elaxthane

轮芯: 钢

硬度: 92±3A

直径范围: 70-250mm

负载能力: 350-5000kgs

Tread: Elaxthane

Centre: Steel

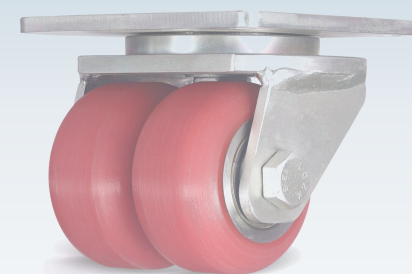
Hardness: 92±3 shore A

Diameter range: 70-250mm

Load capacity: 350-5000kgs

AGV 双排脚轮

AGV Dual-Wheel Caster



			
70	45	82.5	350
80	35	110.5	400
150	50	223	1000
200	75	280	2500
250	100	342	5000