Humanoid Robot Insight

Capacity scales, scrutiny intensifies; Insights from the latest China and Europe C-suite surveys

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Prototype-to-production transition continues despite "robot brain" bottlenecks

We have recently observed a growing number of companies worldwide moving from prototype stage to scaled production deployment, though "brain" technologies remain a key constraint. Chinese capacity expansion is accelerating, with UBTECH's >10,000-unit Liuzhou factory entering production and XPeng launching an automated humanoid assembly line, while Leader Drive and Laifu (both reducer producers) aggressively plan to expand capacity. Overseas expansion is also gaining momentum, with OpenAI re-entering humanoids and Figure AI securing access to up to 100,000 NVIDIA GPUs. Following Hyundai Motor, another leading incumbent auto OEM Toyota has unveiled the wheeled humanoid ELEY; several media reports say the automaker plans to deploy 400,000 robots - including both humanoid and non-humanoid systems - across its global manufacturing network and affiliated supplier facilities from 2028. Our China channel checks indicate that Tesla Optimus suppliers are gradually ramping production.

More complex regulatory environment

In China, news of potentially tighter humanoid IPO scrutiny and debates over start-up revenue quality have weighed on sentiment. We see this as short-term pain but a long-term positive: higher standards should improve industry quality, accelerate consolidation, and support sustainable growth. **Overseas**, regulatory attention is also increasing. The US FCC announced on July 28 restrictions on certain foreign-made advanced robotic systems, including humanoids and quadrupeds, with exemptions only for firms demonstrating credible US localization and supply-chain compliance plans. This could hinder Chinese robot OEMs' access to US markets, while the near-term impact on component suppliers should be limited as the rules primarily target finished systems.

Europe/China C-suite surveys: positive read-through for humanoid adoption

UBS Evidence Lab's latest C-suite Business Surveys in China (June 2026) and Europe (May 2026) suggest: 1) European interest is robust but trails China in both adoption willingness (51% vs. 64%) and testing (38% vs. 45%). In China, production-line testing increasingly lags adoption interest, though willingness remains above 55% and both metrics remain above European levels, possibly reflecting changing expectations for technological progress and commercialization. China appears roughly one to two years ahead in commercialization and deployment. 2) Chinese companies show greater interest in sorting applications, supported by manufacturing scale and automation demand, while both regions expect expansion into assembly tasks, making dexterity and AI key bottlenecks. 3) Humanoid adoption intent by downstream industry is broadly consistent across regions, with technology and consumer goods manufacturing, including autos, ranking above average in both.

U/G global demand forecasts; weak sentiment continues and still be selective

In our recent APAC Focus report, we upgraded our 2026-30 global humanoid robot demand forecasts by more than 70% annually, reflecting faster adoption in preparatory and lower-complexity use-case applications. We also see AI as a key catalyst for broader robotics adoption and forecast 2025-30 China demand CAGRs of 10-60% across traditional robot categories. We still prefer upstream components that serve multiple robot OEM categories, particularly sensors, reducers and roller screws, given their attractive market sizes and high technological barriers. Our China top picks are OPT, Kedali and Hengli Hydraulic. We believe sentiment toward the sector is unlikely to improve meaningfully until there is greater clarity on Tesla Optimus V3 mass production, AI model generalisation and hardware advances.

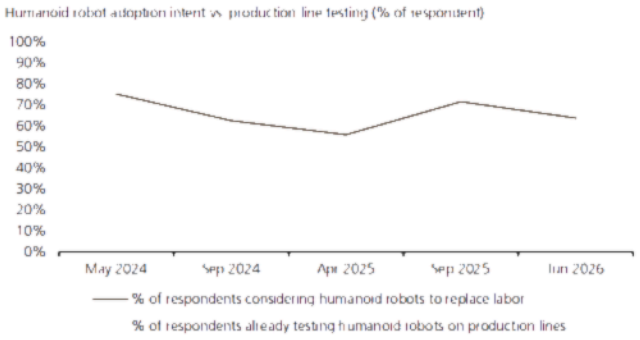
This report has been prepared by UBS Securities Asia Limited. **ANALYST CERTIFICATION AND REQUIRED DISCLOSURES, INCLUDING INFORMATION ON THE QUANTITATIVE RESEARCH REVIEW PUBLISHED BY UBS, BEGIN ON PAGE 14.**

China C-Suite Business Survey: near-term conversion may lag, but long-term demand remains robust

Humanoid robot-related questions were first introduced into UBS Evidence Lab's China C-Suite Business Survey (primarily covers manufacturing and commercial end-users rather than households) in May 2024. Across the five survey waves conducted since then, the data suggests that deployment has lagged initial interest and adoption intentions. The share of respondents already testing humanoid robots on production lines has not increased over the past two years (45% in June 2026 vs 57% in May 2024), and has generally moved in tandem with adoption intent (see Figure 1). Among companies not considering humanoids, cost remains a key barrier (Figure 3). With new production capacity running well ahead of current sales, we think repeat orders and capacity utilisation will be the key metrics to watch in the near term.

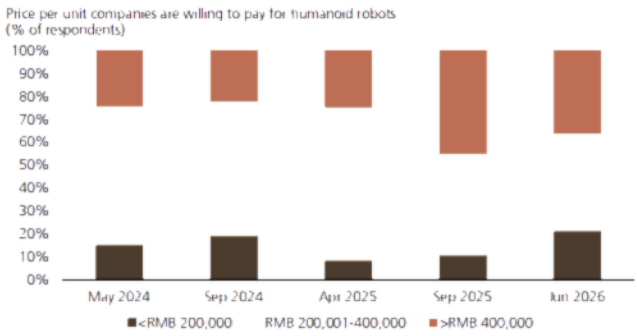
That said, we believe long-term demand signals remain intact. Adoption intent has stayed above 50% across all five survey waves (reaching 64% in June 2026), and 93% of respondents expect humanoid robots to be commercialised within five years (Figures 1 and 4). Willingness to pay has also increased: 36% of respondents indicated they would pay more than Rmb400k per unit, versus 24% in May 2024 (Figure 2), while safety concerns have eased among companies not considering humanoids (Figure 3). As capacity scales up and costs come down, we expect the gap between market pricing and customer willingness to pay to narrow, supporting broader adoption over time. Given the relatively small sample size in the June 2026 survey wave, we focus on multi-wave trends rather than wave-on-wave changes.

Figure 1: Adoption intent has stayed above 55%, but production-line testing has yet to broaden



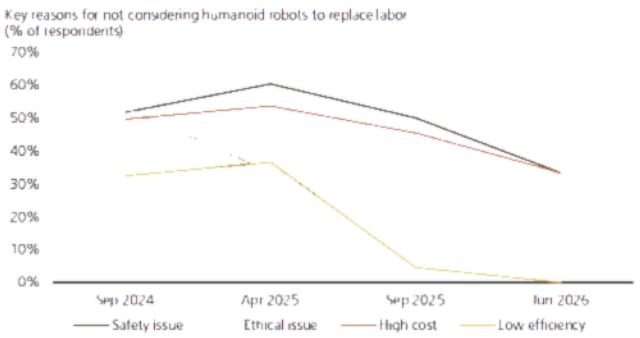
Source: UBS Evidence Lab (> Access Dataset)

Figure 2: Willingness to pay has moved up, with over one-third of respondents willing to pay more than Rmb400,000 per unit



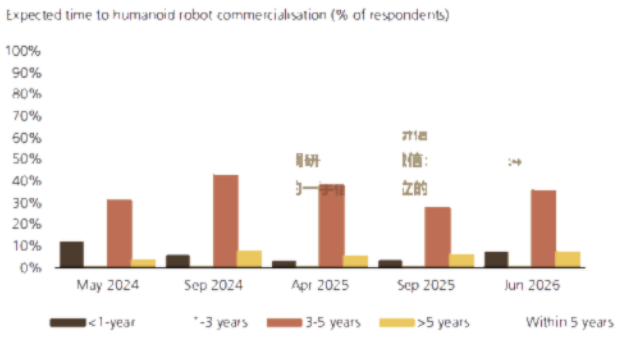
Source: UBS Evidence Lab (> Access Dataset)

Figure 3: Purchase barriers are declining across the board in China



Source: UBS Evidence Lab (> Access Dataset)

Figure 4: Over 90% of Chinese executives consistently expected humanoid commercialisation within 5 years



Source: UBS Evidence Lab (> Access Dataset)

Europe C-Suite Business Survey: interest trails China, intelligence is key

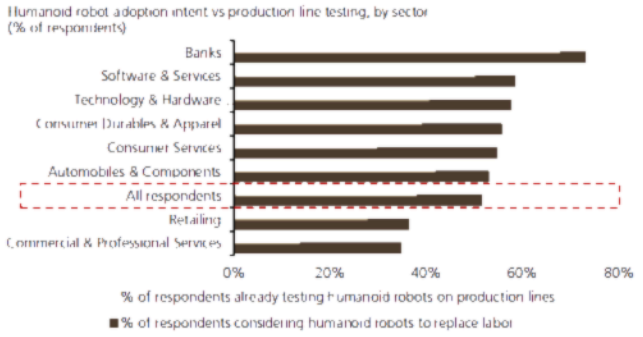
UBS Evidence Lab expanded its humanoid robot-related survey questions to Europe in May 2026, with subsequent waves conducted on a semi-annual basis.

Willingness: UBS Evidence Lab's latest survey of European companies (May 2026) suggests humanoid adoption in Europe trails China: 51% of respondents would consider using humanoid robots to replace labour and 38% are already testing them on production lines, versus 64% and 45% in the June 2026 China survey (Figures 1 and 2). The gap appears to mainly reflect willingness rather than execution, as testing is at about 70% of the intent level in both regions.

Downstreams: By sector, the ranking of adoption intent is broadly similar in the two regions: technology and consumer goods manufacturing sit above the all-respondents average in both (IT and consumer discretionary in China; software, technology hardware, autos and consumer durables in Europe), while industrials, construction and consumer staples in China, and commercial and professional services and retailing in Europe, sit below it. The difference lies in the overall level, with China's all-respondents readings higher than Europe's for both intent and testing.

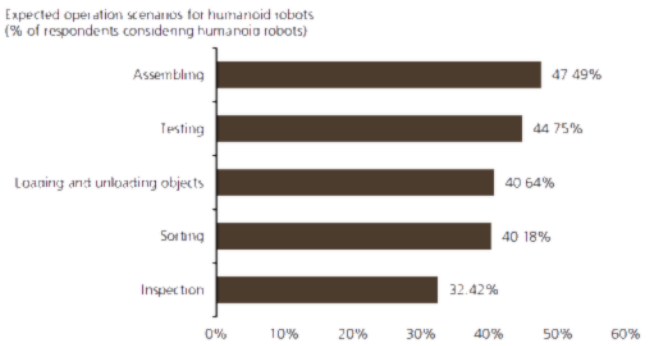
Use cases: European companies foresee a narrower range of applications, with all five surveyed use cases receiving lower response rates than in China. Chinese companies show greater interest in sorting applications, supported by manufacturing scale and automation demand. In both regions, however, assembly is cited at least as often as loading and unloading, suggesting companies expect humanoid robots to go beyond the simple material-handling tasks where most current pilots are concentrated. This puts the onus on progress in dexterity and AI, consistent with our view that intelligence remains the key constraint to broader adoption.

Figure 5: Europe: 51% of companies would consider humanoid robots, while 38% are testing them



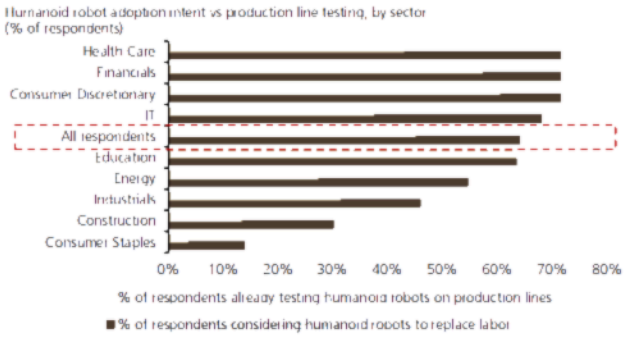
Source. UBS Evidence Lab (> Access Dataset). Note: base is all respondents (n=426)

Figure 6: Europe: assembly and testing are the most expected use cases



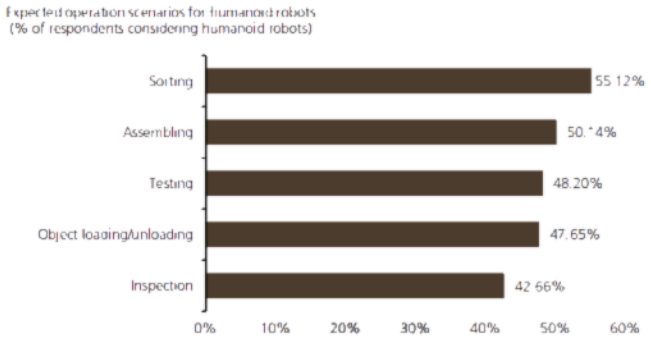
Source: UBS Evidence Lab (> Access Dataset). Note: base is respondents considering humanoid robots to replace labour (n=219)

Figure 7: China: 64% of companies would consider humanoid robots, while 45% are testing them



Source: UBS Evidence Lab (> Access Dataset). Note: base is all respondents (n=614)

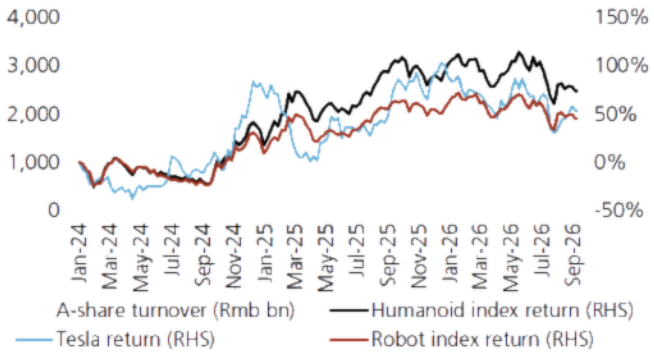
Figure 8: China: sorting and assembling are the most expected use cases



Source: UBS Evidence Lab (> Access Dataset). Note: base is respondents considering humanoid robots to replace labour (n=361)

Sector performance

Figure 9: Humanoid robot index has corrected in recent months



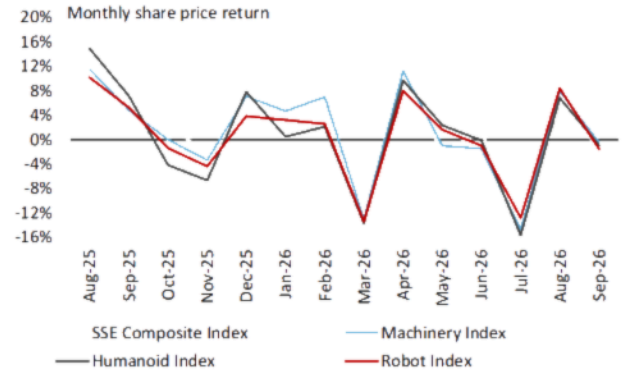
Source. WIND, UBS-S. Note. We use the WIND AI Robot Concept Index as a proxy for our humanoid robot index. Data as of 29 Sep 2026.

Figure 10: Key factors behind the performance of the humanoid robot theme



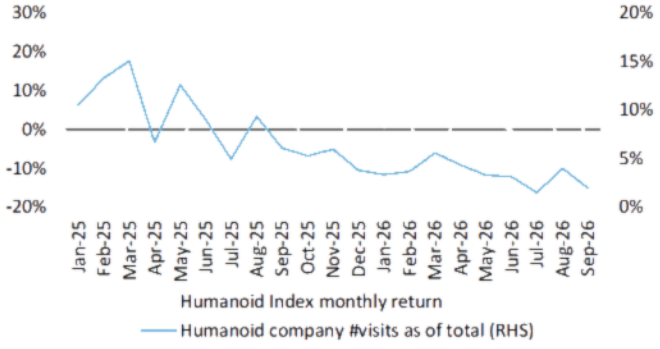
Source: UBS-S

Figure 11: Both the humanoid and machinery indexes remain under pressure in September



Source: WIND. Note: Data as of 29 Sep 2026.

Figure 12: Humanoid company visit interest appears to be in decline



Source: Wind, UBS Quant Research, UBS-S. Note: Data as of 29 Sep 2026.

Company performance

Figure 13: Monthly share price performance

Monthly share price return		YTD	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26
Chinese indices															
000001.SH	SSE Composite Index	0%	0.6%	1.9%	-1.7%	2.1%	3.8%	1.1%	-6.5%	5.7%	-1.1%	0.6%	-6.4%	4.0%	-0.9%
882131.WI	Machinery Index	-3%	4.8%	0.0%	-3.4%	7.1%	4.7%	7.0%	-13.0%	11.2%	-1.0%	-1.5%	-14.7%	7.9%	-0.4%
8841699.WI	Humanoid Index	-11%	7.2%	-4.1%	-6.6%	7.8%	0.5%	2.1%	-13.6%	9.7%	2.3%	-0.1%	-15.6%	6.8%	-0.9%
884126.WI	Robot Index	-7%	5.3%	-1.4%	-4.4%	3.9%	3.2%	2.6%	-13.4%	8.0%	1.6%	-1.0%	-12.8%	8.4%	-1.5%
	Humanoid vs. Machinery	Under-perform	Out-perform	Under-perform	Under-perform	Out-perform	Under-perform	Under-perform	Under-perform	Under-perform	Out-perform	Out-perform	Under-perform	Under-perform	Under-perform
Chinese companies															
OEM															
9880.HK	UBTECH*	-36%	61%	-11%	-18%	12%	11%	-13%	-30%	24%	-4%	1%	-21%	4%	-5%
2432.HK	Dobot*	-44%	21%	-22%	-20%	-5%	-4%	6%	-16%	-2%	-2%	-16%	-6%	-3%	-11%
2590.HK	Geek Plus*	-63%	35%	-7%	-9%	-12%	36%	-20%	-29%	3%	-15%	-19%	-19%	-1%	-14%
2715.HK	Estun*	16%							-13%	14%	31%	11%	-10%	2%	-13%
002747.SZ	Estun	26%	7%	-2%	-13%	8%	-1%	1%	-16%	9%	27%	35%	-20%	6%	-6%
Components															
300124.SZ	Inovance	-29%	12%	-8%	-8%	7%	-1%	-2%	-8%	2%	8%	-10%	-3%	-3%	-15%
601100.SH	Hengli Hydraulic	-15%	7%	0%	6%	8%	-1%	4%	-15%	9%	4%	-1%	1%	-5%	-9%
688017.SH	Leader Drive	50%	20%	-10%	-10%	31%	19%	1%	-19%	20%	37%	37%	-27%	-1%	-4%
688686.SH	OPT	14%	2%	-13%	-8%	7%	-3%	-3%	-23%	21%	37%	13%	-38%	45%	-6%
603915.SH	Guomao	-28%	1%	-3%	4%	8%	-7%	0%	-15%	7%	4%	-13%	-8%	10%	-9%
601689.SH	Tuopu	-40%	29%	-9%	-15%	22%	-6%	-6%	-16%	6%	4%	-10%	-17%	0%	-2%
002050.SZ	Sanhua-A	-34%	52%	3%	-14%	29%	-8%	1%	-17%	10%	-1%	-5%	-14%	-3%	0%
2050.HK	Sanhua-H	-34%	41%	-7%	-15%	11%	-8%	-4%	-17%	18%	-5%	-16%	0%	-4%	0%
002472.SZ	Shuanghuan	-20%	34%	-12%	-9%	19%	-12%	0%	-13%	9%	0%	6%	-7%	-8%	7%
002850.SZ	Kedali	12%	41%	-8%	-14%	2%	-2%	7%	8%	6%	-7%	9%	-4%	-3%	-1%
0425.HK	Minth	-23%	3%	2%	-1%	-7%	16%	19%	-26%	5%	11%	-30%	8%	-6%	-8%
600699.SH	Joyson	-33%	64%	-8%	-16%	17%	-11%	0%	-11%	15%	-8%	-17%	-5%	-7%	9%
HSAI.O	Hesai	-26%	9%	-16%	-19%	16%	7%	13%	-29%	19%	-17%	-4%	-7%	-5%	2%
2498.HK	Robosense	-54%	5%	-18%	-6%	12%	-7%	6%	-4%	-4%	-5%	-30%	7%	-24%	-6%
9660.HK	Horizon Robotics	-51%	0%	-8%	-10%	10%	-5%	0%	-19%	10%	-27%	-23%	27%	-9%	-10%
300433.SZ	Lens Technology	16%	8%	-12%	-7%	10%	20%	-3%	-20%	-8%	58%	32%	-41%	23%	-11%
Overseas companies															
OEM															
TSLA.O	Tesla	-19%	33%	3%	-6%	5%	-4%	-6%	-8%	3%	14%	-3%	-26%	18%	-1%
HYUNDAI.NS	Hyundai Motor	-6%	5%	-6%	-5%	-1%	-4%	-1%	-18%	2%	6%	-1%	14%	2%	-3%
0GRX.L	Hexagon	-13%	5%	4%	-5%	-1%	-5%	-2%	-11%	8%	-12%	-6%	17%	7%	-6%
Components															
012330.KS	Hyundai Mobis	1%	-6%	6%	-2%	21%	20%	15%	-26%	12%	81%	-35%	-5%	-4%	-18%
373220.KS	LG Energy Solution	-4%	-1%	36%	-14%	-10%	8%	7%	-8%	17%	-1%	-21%	-9%	15%	-7%
6324.T	Harmonic drive systems*	64%	3%	8%	8%	22%	-10%	34%	-24%	51%	49%	0%	-21%	-6%	7%
6268.T	Nabtesco	24%	7%	16%	-12%	11%	12%	22%	-24%	36%	6%	-6%	-9%	-2%	0%
6594.T	Nidec	34%	-18%	-28%	5%	8%	3%	12%	-20%	22%	16%	-5%	-2%	0%	11%
SHA0.DF	Schaeffler	-17%	-4%	24%	-5%	26%	19%	4%	-32%	15%	31%	-20%	-16%	4%	-6%

Source: Wind, UBS-S. Note: Data as of 29 Sep 2026. *Not covered by UBS or UBS-S

Figure 14: An overview of market participants in humanoid robot related sectors

Brain						Others		Robot OEM		Downstream testing / applications	
AI foundation Model		**Cloud**		**Semiconductor**		**Battery**		**Startup**		**Auto**	
Open AI	NA	Microsoft	MSFT.O	**SoC Processor**		Toyota	7203.T	Figure AI	Unitree	BYD	002594.SZ
Physical Intelligence	NA	Oracle	ORCL.N	NVIDIA	NVDA.O	BYD	002594.SZ	Agility robotics	AgiBot	NIO	NIO.N
Google	GOOG.O	Google	GOOG.O	Huawei	NA	Eve energy	300014.SZ	1X technologies	Leju	BAIC	1958.HK
Microsoft	MSFT.O	Amazon	AMZN.O	Horizon Robotics	9660.HK			Boston Dynamics	Fourier	Geely	0175.HK
Meta	META.O	Alibaba	9988.HK	**Connectivity**		**Body structure**		Apptronik		FAW-VW	NA
Baidu	9888.HK	Huawei	NA	Qualcomm	QCOM.O	LingyiTech	002600.SZ	**Auto**		FAW-Audi	NA
Huawei	NA	Tencent	0700.HK	Mediatek	2454.TW	Xusheng	603305.SH	Tesla	TSLA.O	Dongfeng liuqi	NA
Alibaba	9988.HK	Baidu	9888.HK	Broadcom	AVGO.O	**Wiring/connector**		Toyota	7203.T	Hongqi	NA
Tencent	0700.HK			**Storage**		Amphenol	APH.N	Xpeng	9868.HK	Li Auto	2015.HK
				Samsung	005930.KS	TE Connectivity	TEL.N	Xiaomi	1810.HK	Hyundai Motor	005380.KS
				SK Hynix	000660.KS	Sinbon Electronics	3023.TW	GAC	601238.SH	Kia Cor	000270.KS
				Micron	MU.O	Biz Link	3665.TW	Chery	NA	**Electronics**	
								BYD	002594.SZ	Foxconn	601138.SH
								NIO	NIO.N	Samsung	005930.KS
								Hyundai Motor	005380.KS	**Logistics**	
								Changan (planning)	000625.SZ	GXO Logistics	GXO.N
								Kia Cor	000270.KS	SF Express	002352.SZ
										Hyundai Glovis	086280.KS
								Industrials		**Consumer**	
								Kawasaki	3045.T	Haier	600690.SH
								Teradyne	TER.O	Midea	000333.SZ
								Rainbow Robotics	277810.KS	Easyhome	000785.SZ
								Techman (Quanta)	2382.TW	**Services**	
								Estun	002747.SZ	China Construction Bank	601939.SH
								Dobot	2432.HK	Yongda Automobiles	3669.HK
								UBTECH	9880.HK		
								Geekplus	2590.HK		
								Home appliance		**Research and education**	
								Midea	000333.SZ	**Household**	
								Dreame	NA	**Emergency rescue**	
								Internet		**Entertainment**	
								Naver labs	NA		

Body								Related investment & cooperation			
Actuator		**Encoder**		**Sensor**				**Shenzhen humanoid center**		**Zhejiang humanoid center**	
Sanhua	002050.SZ	Tamagawa	NA	**Torque sensors**		**Camera**		Zhaowei	003021.SZ	Supcon	688777.SH
Tuopu	601689.SH	Heidenhain	NA	ATI	NA	Sony	SONY.N	Fortior Technology	688279.SH	Wolong Electric	600580.SH
Inovance	300124.SZ	Renishaw	RSW.L	Honeywell	HON.O	Omnivision (Will Semi)	603501.SH	Orbbec	688322.SH	**Shanghai humanoid center**	
Jiecang	603583.SH	Inovance	300124.SZ	Kelu	603662.SH			**Anhui humanoid center**		Shanghai Electric	601727.SH
Hyundai Mobis	012330.KS			**Lidar**		Orbbec	688322.SH	NIO	NIO.N	**Beijing humanoid center**	
HL Mando	204320.KS			RoboSense	2498.HK	OPT	688686.SH	Iflytek	002230.SZ	Xiaomi	1810.HK
				Hesai	HSAI.O					UBTECH	9880.HK
Coreless motor		**Screw**		**Reducer**		**Bearing**					
Maxon	NA	Schaffler	SHA0.DE	Harmonic Drive	6324.T	Timken	TKR.N				
Moon's Electric	603728.SH	THK	6481.T	Nabtesco	6268.T	SKF	SKFb.ST				
Zhaowei	003021.SZ	Zhejiang Rongtai	603119.SH	Leader Drive	688017.SH	Schaffler	SHA0.DE				
Jiangsu Leli	300660.SZ	Hengli Hydraulic	601100.SH	Guomao	603915.SH	NSK	6471.T				
Frameless torque motor		Beite	603009.SH	Shuanghuan	002472.SZ	Changsheng	300718.SZ				
Kollmorgen	NA	Seenpin	NA	Zhejiang Sling	301550.SZ	Fujian Longxi	600592.SH				
Leadshine	002979.SZ	Zhenyu Technology	300953.SZ	Kedali	002850.SZ						
Veichi	688698.SH	Wuxi Best	300580.SZ								
Kinco	688160.SH										
Materials		**Machine tool**		**Semiconductor**							
CNRE	600111.SH	Tsugami China	1651.HK	**Analog/MCUs**		**Imaging**					
JI Mag	300748.SZ	Precise Precision	300809.SZ	Texas Instrument	TXN.O	Sony	SONY.N				
Zhongke Sanhuan	000970.SZ	Qinchuan	000837.SZ	ADI	ADI.O	Samsung	005930.KS				
Lynas	LYC.AX	Neway CNC	688697.SH	On Semi	ON.O	Will Semi	603501.SH				
		Cutting tool									
		Huaru Precision	688059.SH								

Source: UBS-S, UBS

Tesla's commentary on Optimus

Figure 15: Tesla's commentary on Optimus production during past earning calls

Event		Production
TSLA Tesla Inc **Q2 2023 Earnings Call** 19 Jul 23 • Event Transcript	▲	Tesla has approximately 5-10 Optimus robots currently, with the first production candidate featuring all Tesla-designed actuators expected around November, after which production will ramp up. The robots will first be tested in Tesla's own factories to prove utility, with useful tasks expected sometime in 2024.
TSLA Tesla Inc **Q3 2023 Earnings Call** 18 Oct 23 • Event Transcript	▬	Tesla is not ready to discuss details of the Optimus program at this time, but will provide periodic updates online.
TSLA Tesla Inc **Q4 2023 Earnings Call** 24 Jan 24 • Event Transcript	▲	Tesla expects to ship some number of Optimus units next year, with production starting in 2025, though the exact timeline and volume are uncertain due to the revolutionary nature of the product.
TSLA Tesla Inc **Q1 2024 Earnings Call** 23 Apr 24 • Event Transcript	▬	Tesla expects to have Optimus in limited production in the actual factory doing useful tasks before the end of 2024, and may be able to sell it externally by the end of 2025.
TSLA Tesla Inc **Annual General Meeting** 13 Jun 24 • Event Transcript	▼	Tesla plans to have over 1,000 Optimus robots working at Tesla next year, with limited production starting next year for use in factories, scaling up very rapidly thereafter. By 2026, Optimus will be able to perform a wide range of tasks. Tesla aims to produce humanoid robots at scale with a target cost of around $10,000-$20,000 per unit at high volume.
TSLA Tesla Inc **Q2 2024 Earnings Call** 23 Jul 24 • Event Transcript	▼	Tesla expects to have Optimus production Version 1 in limited production starting early next year for Tesla consumption, with several thousand Optimus robots produced and doing useful things by the end of next year in Tesla factories. Production Version 2 will ramp up significantly in 2026 and be provided to outside customers.
TSLA Tesla Inc **Q4 2024 Earnings Call** 29 Jan 25 • Event Transcript	▲	Tesla's normal internal plan calls for roughly 10,000 Optimus robots to be built in 2025, with several thousand expected to be completed. Production lines are being designed for 1,000 units/month initially, then 10,000 units/month, then 100,000 units/month. Version 2 production is expected to launch mid-2025, with external sales potentially beginning in the second half of 2025.
TSLA Tesla Inc **Q1 2025 Earnings Call** 22 Apr 25 • Event Transcript	▬	Tesla expects to make thousands of Optimus robots this year, with most production occurring at the end of the year. The company is confident in achieving 1 million Optimus units per year in less than five years, possibly by 2029 or 2030.
TSLA Tesla Inc **Q2 2025 Earnings Call** 23 Jul 25 • Event Transcript	▼	Tesla aims to scale Optimus production to 1 million units per year within five years, with prototypes expected in 2-3 months and production starting in early 2026. The company expects to reach approximately 100,000 units per month within 60 months.
TSLA Tesla Inc **Q3 2025 Earnings Call** 22 Oct 25 • Event Transcript	▼	Tesla plans to build a 1 million unit Optimus production line with production start towards the end of next year, followed by Optimus 4 at 10 million units and Optimus 5 at 50-100 million units.
TSLA Tesla Inc **Annual General Meeting** 06 Nov 25 • Event Transcript	▬	Tesla plans to launch Optimus with the fastest production ramp of any large complex manufactured product, starting with a million-unit production line in Fremont, followed by a 10-million-unit-per-year production line, and potentially reaching $100 million units annually. Optimus version 3 production starts next year, with versions 4 and 5 following in 2027 and 2028 respectively, with significant improvements and increases in production scale with each version.
TSLA Tesla Inc **Q4 2025 Earnings Call** 29 Jan 26 • Event Transcript	▬	Production is expected to begin by end of 2026, with Optimus 3 unveiling in a few months. Tesla plans to convert the Model S and X production space in Fremont into an Optimus factory with a long-term goal of 1 million units per year. Optimus has a completely new supply chain, and thus its manufacturing ramp will be longer than it is for products that have an existing supply chain.
TSLA Tesla Inc **Q1 2026 Earnings Call** 23 Apr 26 • Event Transcript	▬	Optimus production will start in late July/August 2026 at Fremont, with slow initial production. A second Optimus factory at Giga Texas will start production around summer 2027, with significant ramp-up expected towards the end of 2026 and into 2027. Currently, Optimus is in internal production for testing at Tesla. In the future, Optimus will be useful outside of Tesla, starting next year.
TSLA Tesla Inc **Q2 2026 Earnings Call** 23 Jul 26 • Event Transcript	▼	Tesla is installing first-generation Optimus lines at Fremont and expects to start production later this year, versus late July/August previously. Musk said Optimus will be the hardest product Tesla has ever had to scale in manufacturing, as everything on the robot is new, and the initial part of the production ramp will be quite flat and long. Initial builds will be used in Tesla's Optimus Academy for training data collection and further functionality development. Building construction at Gigafactory Texas, the planned site of the second-generation Optimus line, is now in full swing.

Source. AlphaSense, UBS-S. Note: Arrows indicate changes versus commentary from previous event

Catalyst calender

Figure 16: Upcoming humanoid industry events/catalysts

Date	Event
Sep 27- Oct 1, 2026	IROS 2026
October 12-16 2026	China International Industrial Fair in Shanghai
October 20-21, 2026	RoboBusiness 2026
October 20-22, 2026	NVIDIA GTC 2026 in Berlin
October 21 2026	Tesla Q326 earnings release (TBC)
October 2026	3Q26 results of A-share humanoid-related companies, incl. Unitree
November 7 2026	Tesla annual shareholders meeting
December 6-9, 2026	IEEE-RAS Humanoid 2026 in Santa Clara
End 2026	Tesla expects to start mass production of Optimus Gen3 by end 2026

Source: Company data, UBS-S

Figure 17: Humanoid industry events in September 2026

September 2026

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	1 Mech-Mind listed on HKEX	2 Unitree's share price halved from its first-day high, 11 trading days after listing	3 Figure AI signed partnership with Nscale for up to 100k NVIDIA GPUs	4 Agility Robotics filed S-4 for SPAC listing, with 2025 revenue of US$1.78mn	5	6
7	8 - XPeng's automated production line for IRON humanoid robots started operation - Tesla is said to have placed c.5,000 Optimus parts orders with suppliers - Noetix launched embodied AI brand Scalabot and its first world model	9 - The Information: CSRC is tightening IPO approvals for humanoid robot startups - Mech-Mind CEO questioned revenue quality at some embodied AI start-ups over related-party deals	10	11	12 UBTECH's Liuzhou humanoid robot factory started production, with planned annual capacity over 10,000 units	13
14	15 Agility Robotics unveiled Digit 5; citing over US$300mn in multi-year customer orders	16 UBTECH started deliveries of its U1 hyper-realistic humanoid, citing orders over 13,000 units	17 Figure AI released Helix 2.5, with 56% zero-shot success in 30 unseen homes	18 Toyota showed wheeled humanoid ELEY; sees c.400,000 robots (not all humanoid) in group and supplier plants from 2028	19	20 Robot maker GENISOM AI raised several hundred million Rmb in B-round financing
21	22	23	24 AgiBot's 20,000th robot, an A3 Ultra humanoid, was delivered to theme park operator Chimelong	25	26	27
28	29	30				

Source: Company data, The information, automotiveworld.com, UBS-S

Humanoid robot reports

Humanoid Robot Insight

Sep. 2025, "Multiple factors may catalyse near-term sentiment; Buy quality names"

Oct. 2025, "Slight delay in the launch of Tesla's Optimus Gen3"

Nov. 2025, "Sentiment still weak, but some positive colour on mass production in 2026"

Feb. 2026, "Global supply chain accelerates deployment; await improvement in robot intelligence"

Mar. 2026, "Still Awaiting: Tesla Optimus Gen3"

April 2026, "Development in China continues to heat up; potential Optimus production from summer"

June 2026: "Rising global investment momentum; China to set deployment target"

July 2026: "Key words in July: WAIC in Shanghai, China IPOs,..."

Industry reports

Q-Series: "Is the world ready for 1bn robots?" Phyllis Wang

China Industrials "2026 GCC: Takeaways from industrial companies and tour"

APAC Focus: UBS Global I/O Technology "Tech Implications for a World with ..."

China Industrials "Profiling five private humanoid robot companies in ..."

US Autos, Auto Parts and Auto-tech "US Humanoid Robotics Private Company..."

European Capital Goods "Humanoids are coming. Focus on European listed and private industrials"

Rare Earths: "The robots are coming"

APAC Focus: China Auto Parts Sector, "UBS Evidence Lab inside: LiDARs ..."

China Auto Supply Chain "Smart driving and humanoid robotics likely to..."

APAC Focus: China Robot Sector "Humanoids on the horizon, but AI-enabled..."

Company reports

China Industrials

Leader Harmonious Drive Systems, "Key beneficiary of embodied AI robots'..."

Yushu Technology, "Humanoid robot OEM pioneer with leadership in cerebellum..."

Inovance, "Solid core biz, sorting out humanoid & DEM strategy in new biz"

Hengli Hydraulic, "Demand recovery + market share gains + new ..."

OPT, "AI to empower vision solutions and new applications ..."

Guomao Reducer, "Moderate cycle recovery but new downstream to drive ..."

China Auto Parts

Tuopu, "Solid auto parts segment; push into robotics and liquid cooling"

Sanhua, "Profitability improved; forays into robotics and liquid cooling"

Rongtai, "Robotics business set to take off; initiate at Buy"

Shuanghuan, "Solid main business; robotics reducers opening up new market opportunities"

Minth, "A step forward in humanoid robotics business"

Kedali, PT implies >70% upside; add to UBS APAC Key Call list

RoboSense, "Paving the way for robotics growth; initiate at Buy" (Buy)

Hesai, "Solidifying leadership position; initiate at Buy" (Buy) Nora Min

Xingyu, "NDR takeaways: Significant progress in overseas business; tapping into robotics business"

China Technology

Horizon Robotics, "More positive outlook for mass HSD deployment; reiterate Buy"

Horizon Robotics, "Key beneficiary of accelerating adoption of AD and edge ..."

Foreign companies

Schaeffler, "Humanoid opportunity: already priced in? Downgrade to Sell" (Sell)

Yaskawa Electric, "Strategy shifts to focus on humanoid robots"

Hyundai Motor, Korea Autos "Hyundai Motor Group's AI Robotics Strategy at CES..."

***UBS Evidence Lab** is a sell-side team of experts that work across numerous specialized labs creating insight-ready datasets. The experts turn data into evidence by applying a combination of tools and techniques to harvest, cleanse, and connect billions of data items each month. Since 2014, UBS Research analysts have utilized the expertise of UBS Evidence Lab for insight-ready datasets on companies, sectors, and themes, resulting in the production of thousands of differentiated UBS Research reports. UBS Evidence Lab does not provide investment recommendations or advice but provides insight-ready datasets for further analysis by UBS Research and by clients. All published UBS Evidence Lab content is available via UBS Neo. The amount and type of content available may vary. Please contact your UBS sales representative if you wish to discuss access.*

China C-Suite Business Survey (>Access Dataset)

This report leverages the following UBS Evidence Lab asset: China C-Suite Business Survey. This survey of senior executives who are responsible for company investment provides a view on companies' spending intentions, and their perceptions of the macro environment in which they operate.

Europe C-Suite Business Survey (>Access Dataset)

This report leverages the following UBS Evidence Lab asset: Europe C-Suite Business Survey. This survey of senior executives across the UK, France, Germany, Italy &Spain provides a view on companies' industry outlooks, and their perceptions of the macro environment in which they operate.

Valuation Method and Risk Statement

Investment downsizing at the macroeconomic level remains a key risk for China's industrial sector. If China's economy remains weak, demand for industrial goods or import/export volume could shrink, resulting in slow growth. If preferential policies, such as tax incentives for high-tech companies, are cancelled, it could affect earnings. Intense competition with domestic or foreign enterprises could cause market share losses.

OPT Machine Vision:

We derive our price target using PE valuation.

Downside risks for OPT mainly include: 1) worse-than-expected downstream capacity expansion; 2) worse-than-expected gross profit margin due to slow improvement of in-house product ratio or sharp downstream mix downgrade; 3) higher SG&A rate due to new business development.

Shenzhen Kedali Industry:

Our price target is based on DCF.

We think the main company-specific risks facing Kedali are: 1) slower-than-expected capacity building and launch; 2) slower-than-expected capacity building at major customers; 3) significant loss of share at major customers; and 4) product quality issues. We think the main industry risks facing Kedali are: 1) a weaker-than-expected rise in EV penetration; 2) significant price pressure placed by battery firms on upstream structural parts businesses; 3) capacity launch by, and market share losses to, competitors; and 4) rising prices of main raw materials including copper and aluminum. We think the main macro and regional risks facing Kedali are: 1) declining passenger vehicle sales volume amid a macro downturn; and 2) adverse impact of trade friction on parts imports and exports.

Hengli Hydraulic:

Our price target for Jiangsu Hengli Hydraulic is based on SOTP.

Downside risks include: 1) weaker-than-expected domestic excavator sales; 2) the company's pumps/valves have weaker-than-expected demand and fail to enter the supply chain of overseas brands; 3) demand for the company's non-standard products misses expectations; 4) the company's overseas business development is hindered by trade frictions.

