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JPM Robotics & Factory Automation

Unitree initiation, Inovance/Estun/UBTech downgrades – Where are the opportunities?

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Raising global humanoid robot and China industrial robot unit shipment forecasts

Our global humanoid robot shipment forecasts

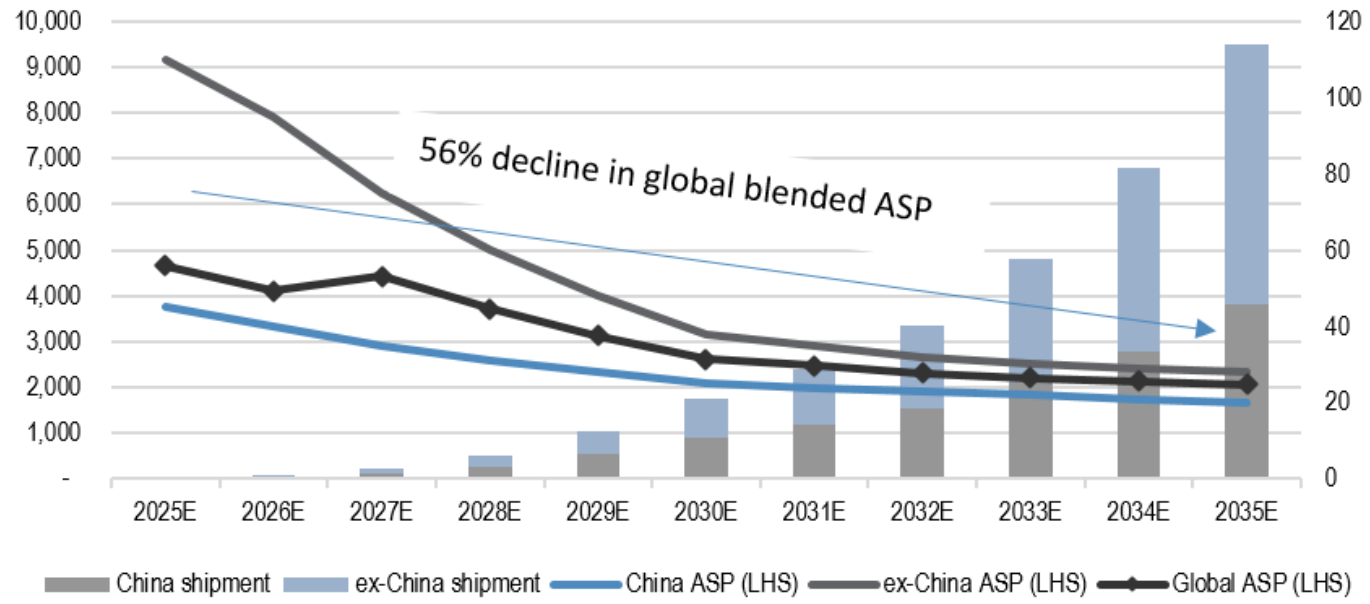
	2025E	2026E	2027E	2028E	2029E	2030E
China	15	50	120	280	550	900
ex-China	3	10	100	250	500	850
Global total humanoid robot shipment unit (in k units)	18	60	220	530	1,050	1,750
Y/Y Chg (RHS)		*233%*	*267%*	*141%*	*98%*	*67%*

China industrial robot shipment forecasts

	2017A	2018A	2019A	2020A	2021A	2022A	2023A	2024A	2025A	2026E	2027E	2028E
Unit sales	145,850	154,336	149,400	171,490	256,360	282,076	283,154	294,178	334,062	400,874	461,006	516,326
Y/Y Chg		6%	-3%	15%	49%	10%	0%	4%	14%	20%	15%	12%

Source: MIR databank, J.P. Morgan estimates.

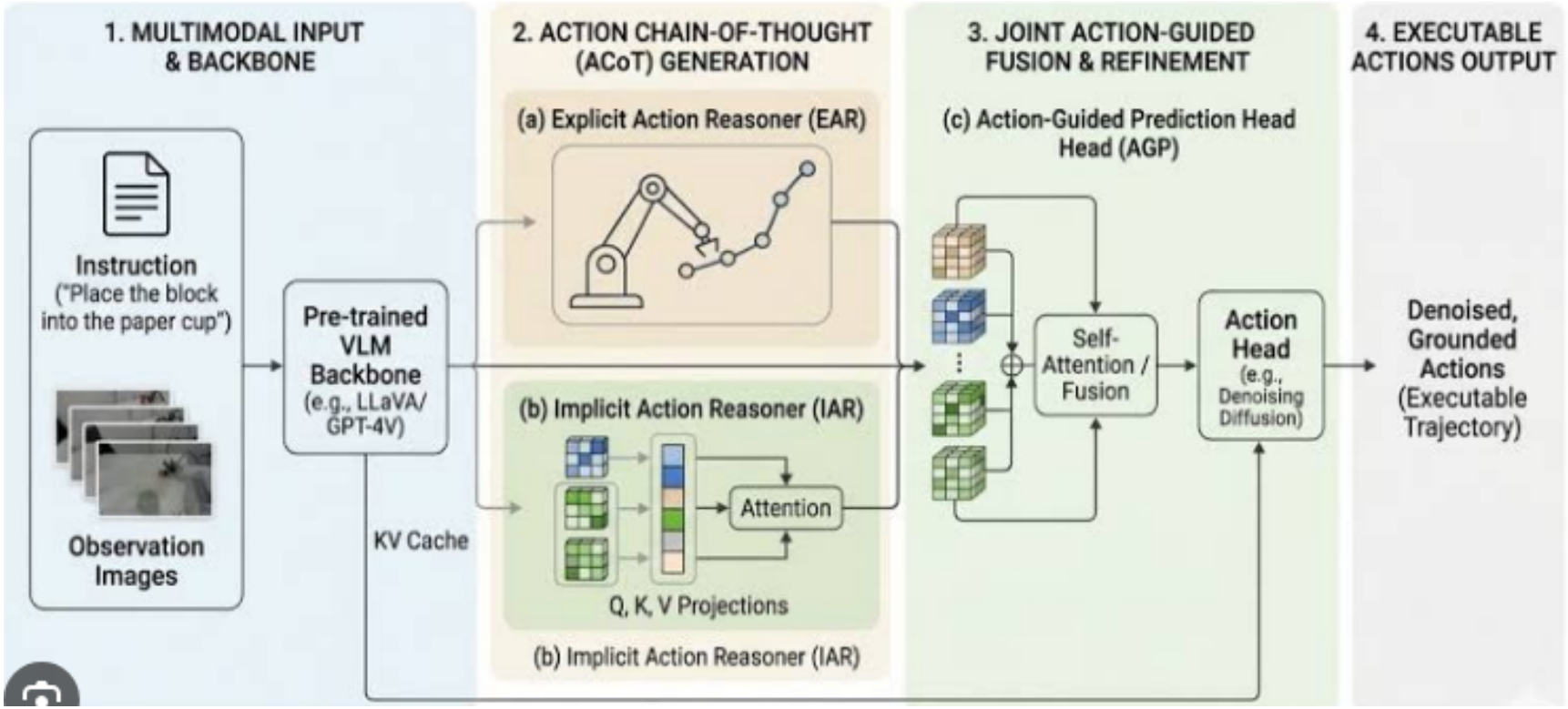
Humanoid robot pricing trend: We expect ASPs to decline 56% by 2035 to facilitate an 87% shipment CAGR



Source: J.P. Morgan estimates.

Humanoid robots: Physical AI as a focus in the year

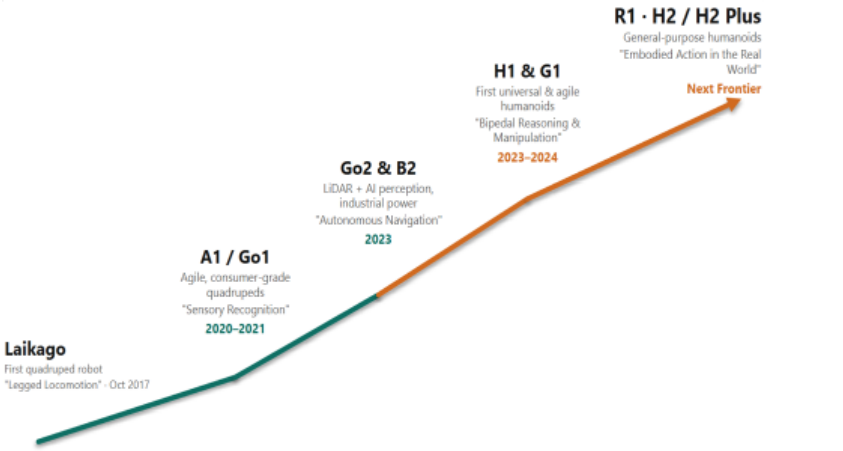
Foundational model: Agibot GO-2 as an example



Source: Agibot.

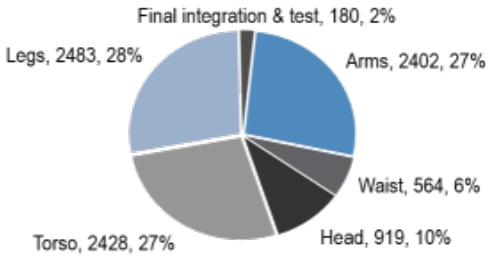
Unitree (688836 CH): Initiate at UW: A strong hardware platform, but what's next?

Unitree's product development roadmap



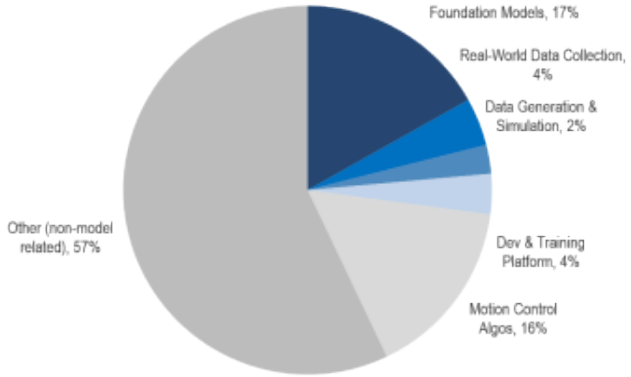
Source: Company data, J.P. Morgan.

BOM: Vertically integrated model a key strength offering good price-to-performance



Source: SemiAnalysis.

R&D budgeting: Unlikely a vanguard in physical AI foundation model



Source: Company data, J.P. Morgan.

Our key assumptions for revenue model

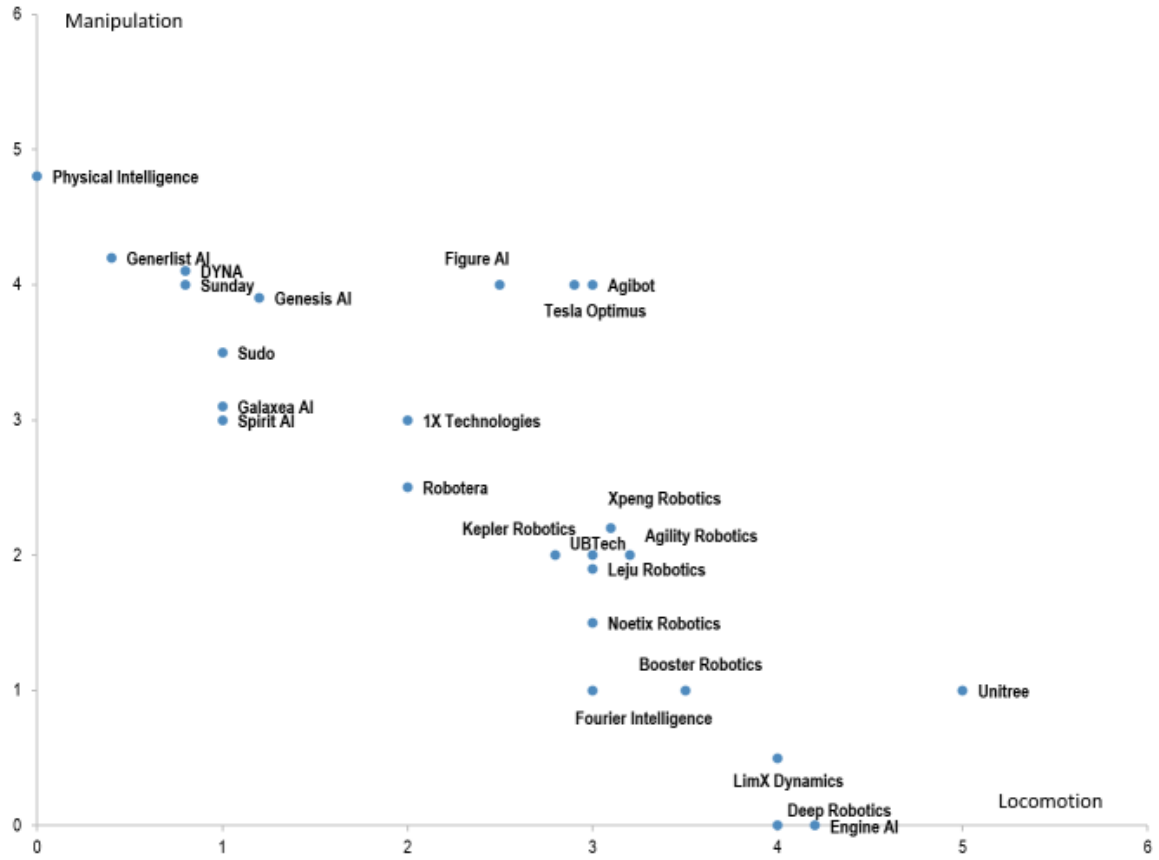
in Rmb MM	2022	2023	2024	2025	2026E	2027E	2028E
Total Revenue	123	159	393	1,699	2,819	4,038	5,269
Y/Y		29%	147%	333%	66%	43%	30%
Quadruped Robots Revenue	93	119	231	698	1,126	1,571	1,930
Y/Y		29%	93%	2			
Sales units	2,403	3,121	7,136	23			
Y/Y		30%	129%	2			
ASP in Rmb k	39	38	32				
Y/Y		-1%	-16%				
Humanoid Robot Revenue	-	3	107				
Y/Y			3516%	7			
Sales units	-	5	412	5			
Y/Y			8140%	11			
ASP in Rmb k	-	593	260				
Y/Y			-56%				

Source: J.P. Morgan estimates.



Humanoid robots: Physical AI as a focus in the year

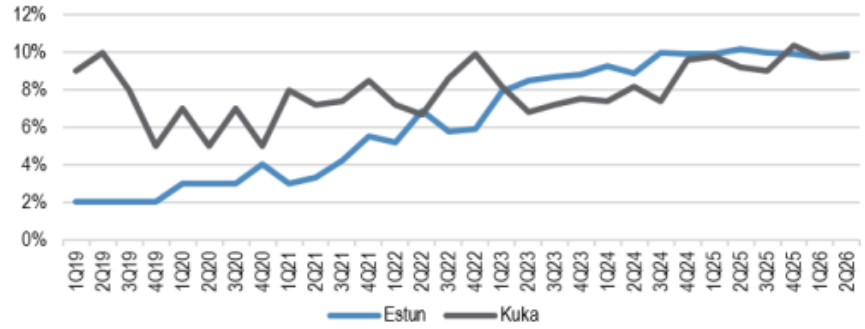
Physical AI robot OEM positioning: Manipulation vs. locomotion



Source: J.P. Morgan estimates.

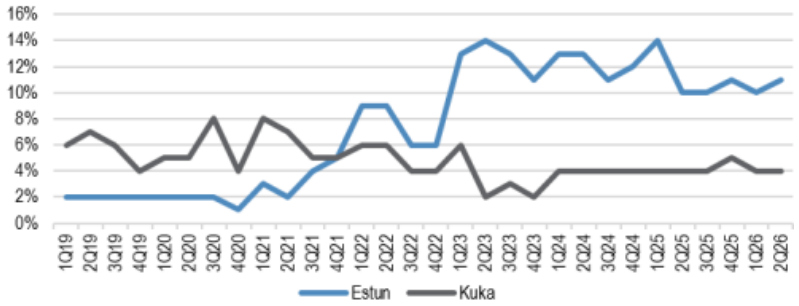
Estun (002747 CH): Competitive pressure from KUKA

Market share – Estun vs. KUKA: China industrial robot total market in unit terms



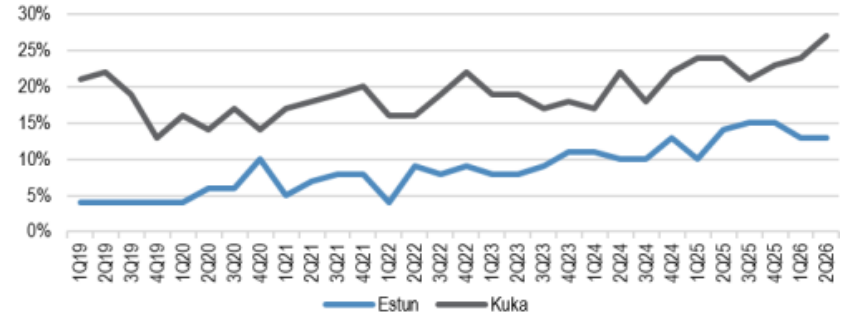
Source: MIR databank.

Market share – Estun vs. KUKA: China small-sized six-axis robot market



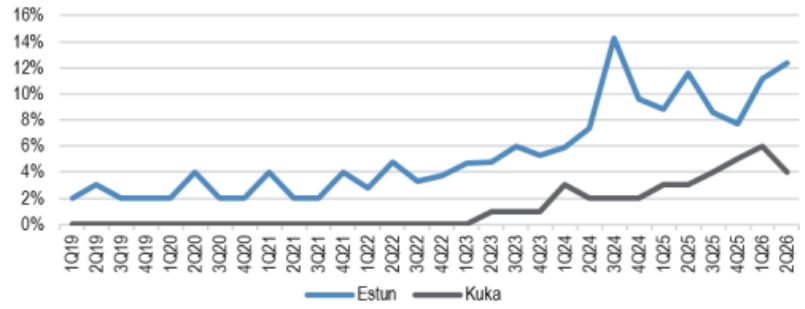
Source: MIR databank.

Market share – Estun vs. KUKA: China large-sized six-axis robot market



Source: MIR databank.

Market share – Estun vs. KUKA: China SCARA robot market



Source: MIR databank.

Regional valuations for humanoid robots

	BBG Ticker	JPM rating	Last Price LC	JPM PT LC	Upside/ Downside	Mkt Cap US$Mn	Daily turnover US$Mn	YTD stock perf.	P/E (x) FY26E	P/E (x) FY27E	EPS Growth FY26E	EPS Growth FY27E	ROE (%) FY26E	ROE (%) FY27E	P/S (x) FY26E	P/S (x) FY27E	Revenue growth Y/Y FY26E	Revenue growth Y/Y FY27E
China																		
Unitree	688836 CH	UW	450	300	-33%	27,164	460.2	NA	296.3	202.9	NA	46%	6.2	8.2	64.6	45.1	NA	43%
Leader Drive	688017 CH	OW	274	358	31%	7,483	467.0	41%	271.0	138.3	36%	96%	5.1	9.6	55.8	29.9	58%	87%
Estun	002747 CH	UW	28	21	-26%	3,839	342.8	19%	100.5	73.8	NM	36%	9.7	9.4	5.1	4.5	8%	7%
Sanhua Intelligent-A	002050 CH	OW	36	51	43%	21,336	357.5	-35%	31.6	27.0	17%	17%	12.8	14.6	4.3	3.8	9%	13%
Sanhua Intelligent-H	2050 HK	OW	24	38	57%	21,337	24.6	-37%	18.3	15.6	17%	17%	12.8	14.6	2.9	2.6	9%	13%
Ningbo Tuopu	601689 CH	UW	47	48	3%	12,055	205.5	-40%	29.1	25.4	-1%	14%	11.1	11.7	2.4	2.1	16%	13%
Minth	425 HK	OW	23	54	136%	3,416	14.3	-28%	7.6	6.4	7%	18%	12.3	13.2	0.8	0.7	9%	14%
Zhongda Leader	002896 CH	NC	60	NA	NA	1,747	106.2	-38%	104.6	87.7	23%	19%	8.7	9.7	9.0	7.2	25%	25%
Shuanhuan	002472 CH	NC	38	NA	NA	4,828	167.5	-20%	22.9	19.5	13%	18%	13.1	13.7	3.2	2.8	8%	14%
Ningbo Joyson	600699 CH	N	23	20	-15%	5,115	107.3	-25%	20.8	17.1	16%	21%	8.8	9.9	0.5	0.5	2%	4%
Hengli Hydrulic	601100 CH	OW	90	126	40%	18,056	109.8	-13%	38.3	28.9	8%	32%	17.3	20.2	8.9	7.3	26%	22%
Robosense	2498 HK	OW	16	45	183%	953	10.7	-57%	NM	26.1	28%	NM	-2.5	6.5	2.2	1.4	45%	57%
Johnson Electric	179 HK	N	18	21	20%	2,084	12.6	-41%	10.1	8.6	NA	18%	7.4	8.2	0.6	0.5	NA	4%
Wolong Electric	600580 CH	N	26	31	17%	6,147	211.9	-46%	50.8	32.2	-17%	58%	7.3	10.7	2.7	2.4	-4%	12%
Orbbec	688322 CH	OW	84	140	66%	5,196	168.8	-9%	148.5	67.4	104%	120%	7.5	13.1	29.6	15.9	48%	86%
Horizon Robotics	9660 HK	OW	4	9	124%	8,112	83.8	-54%	NM	NM	156%	44%	-38.9	-23.4	10.4	6.7	61%	55%
UBTech robotics	9880 HK	N	75	118	57%	4,863	62.4	-41%	NM	156.3	62%	151%	-5.7	3.0	8.1	5.1	99%	59%
Shenzhen Dobot	2432 HK	NC	21	NA	NA	1,064	8.2	-44%	NM	NM	-44%	56%	-4.0	-1.6	9.2	6.5	54%	41%
Zhaowei Machinery	003021 CH	NC	70	NA	NA	2,637	41.8	-43%	76.5	56.5	16%	35%	4.9	5.8	9.5	8.3	-1%	14%
Laifual Drive	3952 HK	NC	44	NA	NA	585	3.4	NA	NM	89.7	NA	156%	-29.0	3.2	9.6	5.5	NA	74%
Geekplus	2590 HK	NC	7	NA	NA	1,192	13.1	-67%	NM	30.2	-103%	NM	0.4	9.1	1.9	1.5	30%	31%
Mech Mind	9615 HK	NC	81	NA	NA	1,282	6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xpeng	9868 HK	N	36	45	24%	8,872	73.5	-54%	NM	NM	-10%	27%	-13.4	-10.9	0.7	0.6	11%	22%
Xpeng	XPEVUS	N	9	12	24%	8,874	81.2	-54%	NM	NM	-10%	27%	-13.4	-10.9	0.7	0.6	11%	22%
Average									66.5	50.4	12%	49%	1.5	6.3	8.1	5.3	26%	31%
Asia (ex-China)																		
Hiwin	2049 TT	UW	345.50	160	-54%	3,847	47.6	78%	63.3	53.8	37%	18%	5.2	6.0	4.6	4.3	9%	8%
Bizlink	3665 TT	OW	2485.00	3,100	25%	15,609	233.1	61%	36.6	20.7	46%	77%	25.4	33.8	4.7	3.1	48%	50%
Sinbon	3023 TT	N	322.50	235	-27%	2,437	12.3	68%	24.4	20.5	5%	19%	19.3	21.6	2.3	2.2	6%	9%
TM Robot	4585 TT	NC	291.00	NA	NA	958	2.6	-14%	63.8	38.6	NA	65%	NA	NA	14.1	10.7	NA	32%
HDS	6324 JP	NC	6660.00	NA	NA	4,064	55.5	78%	96.5	66.6	NM	45%	7.9	10.5	8.5	7.3	30%	16%
Nidec	6594 JP	UW	2180.00	1,800	-17%	16,471	104.0	2%	12.4	10.9	61%	14%	10.3	10.6	0.9	0.9	7%	6%
Yaskawa	6506 JP	NC	4931.00	NA	NA	8,332	176.1	4%	28.2	22.5	28%	25%	9.1	10.9	2.2	2.1	11%	8%
Fanuc	6954 JP	NC	6186.00	NA	NA	38,497	232.0	2%	28.0	26.1	28%	7%	10.8	11.4	6.3	5.9	15%	7%
Minebea Mitsumi	6479 JP	OW	3918.00	5,500	40%	10,602	69.7	25%	17.2	14.6	33%	17%	9.9	10.5	1.0	0.9	5%	5%
Hyundai Mobis	012330 ks	OW	383500.00	710,000	85%	25,649	154.3	3%	7.0	6.3	20%	11%	9.1	9.3	0.5	0.5	3%	3%
Robotis	108490 KS	OW	311000.00	430,000	38%	3,396	123.2	19%	172.3	84.6	NM	104%	8.1	14.7	34.7	19.4	106%	79%
HL Mando	204320 ks	N	47150.00	50,000	6%	1,649	15.9	-20%	11.7	10.4	13%	12%	6.5	6.9	0.2	0.2	5%	4%
Hyundai motor	005380 KS	OW	346500.00	540,000	56%	52,495	321.5	17%	9.6	8.4	8%	14%	7.9	8.5	0.4	0.3	5%	6%
Average									43.9	29.5	26%	33%	10.8	12.9	6.2	4.4	21%	18%
Ex-Asia																		
NVIDIA	NVDAUS	OW	233.95	320	37%	5,638,195	25,940.7	25%	50.0	25.3	60%	97%	104.2	99.8	26.4	13.8	66%	91%
Tesla	TSLAUS	N	370.59	415	12%	1,463,663	13,352.7	-18%	259.2	255.6	-11%	1%	5.9	5.6	13.5	11.8	14%	15%
Siemens	SIE GR	OW	272.75	345	26%	239,269	300.0	14%	22.4	19.1	6%	17%	13.8	15.2	2.6	2.4	5%	8%
Schaeffler	SHA0 GR	N	6.22	9	37%	6,593	7.2	-26%	11.5	10.0	2%	15%	17.1	18.1	0.3	0.3	-2%	0%
Average									85.8	77.5	14%	33%	35.2	34.7	10.7	7.1	21%	28%
Global humanoid average									**59.5**	**45.7**	**16%**	**42%**	**8.0**	**11.4**	**7.7**	**5.2**	**24%**	**27%**

Source: Bloomberg Finance L.P., J.P. Morgan estimates. Consensus estimates for Not Covered (NC) companies, J.P. Morgan estimates for all others. Daily turnover shows 3M

Regional valuations for Industrial Automation (IA)

	BBG Ticker	JPM rating	Last Price LC	JPM PT LC	Upside/ Downside	Mkt Cap US$Mn	Daily turnover US$Mn	YTD Stock perf.	P/E (x) FY26E	P/E (x) FY27E	EPS growth Y/Y FY26E	EPS growth Y/Y FY27E	PEG(x) FY26E	ROE (%) FY26E	ROE (%) FY27E	P/S (x) FY26E	P/S (x) FY27E	Revenue growth Y/Y FY26E	Revenue growth Y/Y FY27E
China/HK automation																			
Inovance	300124 CH	N	52	55	6%	20,971	248.1	-31%	25	20	10%	25%	2.6	14.8	16.5	3	2	18%	12%
Estun	002747 CH	UW	28	21	-26%	3,839	342.8	19%	105	81	440%	30%	0.2	9.7	9.4	5	5	13%	7%
OPT	688686 CH	NC	128	NA	NA	2,340	35.9	3%	64	44	32%	43%	2.0	7.9	10.1	10	8	33%	29%
Yiheda	301029 CH	N	24	24	0%	2,286	39.5	-9%	25	21	19%	21%	1.4	13.6	15.5	4	4	25%	17%
Hongfa	600885 CH	OW	34	46	37%	7,738	83.3	10%	23	18	19%	10%	1.2	16.0	17.7	2	2	32%	18%
Leader Drive	688017 CH	OW	274	358	31%	7,483	467.0	43%	272	139	46%	96%	5.9	9.6	12.9	56	30	58%	87%
Sanhua-A	002050 CH	OW	36	51	43%	21,336	357.5	-35%	35	28	-1%	25%	-36.1	12.8	14.6	4	4	5%	13%
Sanhua-H	2050 HK	OW	24	38	57%	21,337	24.6	-37%	20	16	-1%	25%	-20.9	12.8	14.6	NA	NA	5%	13%
Jiangsu Hengli	601100 CH	OW	90	126	40%	18,056	109.8	-18%	38	29	16%	32%	2.4	17.3	20.2	9	7	26%	22%
HCFA	688320 CH	NC	35	NA	NA	791	21.2	-6%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUPCON	688777 CH	NC	80	NA	NA	9,444	212.2	62%	98	67	46%	46%	2.1	6.4	8.6	7	6	6%	16%
Shuanghuan Driveline	002472 CH	NC	38	NA	NA	4,828	167.5	-20%	23	20	11%	18%	2.1	13.1	13.7	3	3	8%	14%
Zhongda Leader	002896 CH	NC	60	NA	NA	1,747	106.2	-33%	105	88	78%	19%	1.3	8.7	9.7	9	7	25%	25%
Guomao Reducer	603915 CH	NC	13	NA	NA	1,324	12.3	-28%	26	24	40%	12%	0.7	8.2	8.8	3	3	10%	11%
Average									**66**	**46**	**58%**	**31%**	**-2.7**	**11.6**	**13.3**	**9.6**	**6.7**	**20%**	**22%**
Asia (ex-China) automation																			
Delta	2308 TT	OW	2005	2500	25%	163,910	674.0	108%	47	30	86%	53%	0.5	37.4	44.6	6.5	4.7	44%	40%
Hiwin	2049 TT	UW	346	160	-54%	3,847	47.6	78%	63	54	27%	18%	2.4	5.2	6.0	4.6	4.3	9%	8%
Airtac	1590 TT	OW	1180	1350	14%	7,427	36.8	27%	24	22	17%	10%	1.4	18.1	18.4	6.0	5.5	16%	9%
Keyence	6861 JP	NC	81680	NA	NA	125,857	311.6	44%	35	31	27%	12%	1.3	15.5	15.7	17.4	13.7	8%	27%
FANUC	6954 JP	NC	6186	NA	NA	38,497	232.0	2%	28	26	24%	7%	1.2	10.8	11.4	7.2	6.3	7%	15%
NSK	6471 JP	NC	1126	NA	NA	3,567	16.7	15%	17	13	44%	27%	0.4	4.9	6.0	0.6	0.5	14%	14%
SMC	6273 JP	NC	75190	NA	NA	30,427	132.2	38%	22	21	30%	6%	0.7	10.1	10.1	5.8	4.5	6%	27%
Harmonic Drive System	6324 JP	NC	6660	NA	NA	4,064	55.5	76%	97	67	306%	45%	0.3	7.9	10.5	11.0	8.5	6%	30%
Yaskawa	6506 JP	NC	4931	NA	NA	8,332	176.1	4%	28	23	29%	25%	1.0	9.1	10.9	2.5	2.2	-1%	11%
THK	6481 JP	NC	6758	NA	NA	5,099	49.7	69%	17	16	NA	6%	NA	15.6	16.4	2.5	2.3	-11%	9%
MISUMI	9962 JP	NC	4093	NA	NA	7,398	34.2	67%	23	20	22%	13%	1.0	12.4	13.7	2.6	2.2	10%	19%
Nabtesco	6268 JP	NC	4979	NA	NA	3,724	31.8	33%	21	20	79%	7%	0.3	9.0	9.1	1.7	1.6	14%	7%
Sumitomo	8316 JP	OW	3374	4110	22%	162,506	532.0	34%	14	12	17%	17%	0.8	11.2	12.4	5.6	4.7	8%	17%
Average									**33**	**27**	**59%**	**19%**	**0.9**	**12.9**	**14.2**	**5.7**	**4.7**	**11%**	**18%**

Source: Bloomberg Finance L.P., J.P. Morgan estimates. Consensus estimates for Not Covered (NC) companies, J.P. Morgan estimates for all others. Daily turnover shows 3M average daily trading value in USD terms. All share prices are as of 5 October 2026 intra-day.