

**2020 Results**  
**Orders, Production and Shipments of Manipulators and Robots by Applications**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

CY	2019	2020	Change from 2019
Orders	201,659 (811,659)	210,365 (858,763)	4.3% (5.8%)
Production	192,820 (778,257)	192,974 (766,469)	0.1% (-1.5%)

Shipments Applications	2019			2020			Change from 2019			2019 (percentage distribution)			2020 (percentage distribution)		
	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total
<b>Plastic moulding</b>	<b>4,506</b>	<b>5,027</b>	<b>9,533</b>	<b>2,257</b>	<b>3,002</b>	<b>5,259</b>	<b>-49.9%</b>	<b>-40.3%</b>	<b>-44.8%</b>	<b>8.4%</b>	<b>3.5%</b>	<b>4.8%</b>	<b>5.4%</b>	<b>1.9%</b>	<b>2.7%</b>
Arc welding	4,465	14,320	18,785	3,126	14,812	17,938	-30.0%	3.4%	-4.5%	8.3%	10.0%	9.6%	7.5%	9.6%	9.1%
Spot welding	4,401	11,821	16,222	2,598	11,968	14,566	-41.0%	1.2%	-10.2%	8.2%	8.3%	8.3%	6.2%	7.7%	7.4%
Laser welding	8	182	190	29	145	174	262.5%	-20.3%	-8.4%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Others	112	75	187	51	75	126	-54.5%		-32.6%	0.2%	0.1%	0.1%	0.1%	0.0%	0.1%
<b>Welding</b> Units	<b>8,986</b>	<b>26,398</b>	<b>35,384</b>	<b>5,804</b>	<b>27,000</b>	<b>32,804</b>	<b>-35.4%</b>	<b>2.3%</b>	<b>-7.3%</b>	<b>16.8%</b>	<b>18.5%</b>	<b>18.0%</b>	<b>13.9%</b>	<b>17.4%</b>	<b>16.7%</b>
(million yen)	<b>(42,532)</b>	<b>(61,212)</b>	<b>(103,744)</b>	<b>(32,639)</b>	<b>(58,467)</b>	<b>(91,106)</b>	<b>(-23.3%)</b>	<b>(-4.5%)</b>	<b>(-12.2%)</b>	<b>(16.7%)</b>	<b>(11.1%)</b>	<b>(12.9%)</b>	<b>(15.7%)</b>	<b>(10.2%)</b>	<b>(11.7%)</b>
<b>Painting</b>	<b>635</b>	<b>1,506</b>	<b>2,141</b>	<b>525</b>	<b>1,232</b>	<b>1,757</b>	<b>-17.3%</b>	<b>-18.2%</b>	<b>-17.9%</b>	<b>1.2%</b>	<b>1.1%</b>	<b>1.1%</b>	<b>1.3%</b>	<b>0.8%</b>	<b>0.9%</b>
Loading/unloading	2,282	7,414	9,695	1,480	7,222	8,702	-35.1%	-2.6%	-10.2%	4.3%	5.2%	4.9%	3.6%	4.7%	4.4%
Mechanical cutting	13	47	60	27	22	49	107.7%	-53.2%	-18.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Grinding/deburring	236	156	392	142	453	595	-39.8%	190.4%	51.8%	0.4%	0.1%	0.2%	0.3%	0.3%	0.3%
Others	43	57	100	83	62	145	93.0%	8.8%	45.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.1%
<b>Machining</b> Units	<b>2,574</b>	<b>7,674</b>	<b>10,247</b>	<b>1,732</b>	<b>7,759</b>	<b>9,491</b>	<b>-32.7%</b>	<b>1.1%</b>	<b>-7.4%</b>	<b>4.8%</b>	<b>5.4%</b>	<b>5.2%</b>	<b>4.2%</b>	<b>5.0%</b>	<b>4.8%</b>
(million yen)	<b>(7,735)</b>	<b>(16,322)</b>	<b>(24,057)</b>	<b>(6,089)</b>	<b>(14,558)</b>	<b>(20,647)</b>	<b>(-21.3%)</b>	<b>(-10.8%)</b>	<b>(-14.2%)</b>	<b>(3.0%)</b>	<b>(3.0%)</b>	<b>(3.0%)</b>	<b>(2.9%)</b>	<b>(2.5%)</b>	<b>(2.6%)</b>
<b>Surface Mount Technology</b>	<b>1,296</b>	<b>11,493</b>	<b>12,789</b>	<b>880</b>	<b>14,468</b>	<b>15,348</b>	<b>-32.1%</b>	<b>25.9%</b>	<b>20.0%</b>	<b>2.4%</b>	<b>8.0%</b>	<b>6.5%</b>	<b>2.1%</b>	<b>9.3%</b>	<b>7.8%</b>
General Assembly	7,584	30,184	37,768	5,920	26,304	32,224	-21.9%	-12.9%	-14.7%	14.1%	21.1%	19.2%	14.2%	17.0%	16.4%
Other Assembly	2,026	4,464	6,490	1,705	3,742	5,447	-15.9%	-16.2%	-16.1%	3.8%	3.1%	3.3%	4.1%	2.4%	2.8%
Bonding	1,394	3,843	5,236	1,122	3,020	4,142	-19.5%	-21.4%	-20.9%	2.6%	2.7%	2.7%	2.7%	1.9%	2.1%
Soldering	8		8	2		2	-75.0%		-75.0%	0.0%		0.0%	0.0%		0.0%
Sealing/glueing	89	363	452	141	516	657	58.4%	42.1%	45.4%	0.2%	0.3%	0.2%	0.3%	0.3%	0.3%
Screwing	6	21	27	12	3	15	100.0%	-85.7%	-44.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Others	530	237	767	428	203	631	-19.2%	-14.3%	-17.7%	1.0%	0.2%	0.4%	1.0%	0.1%	0.3%
<b>Assembly</b> Units	<b>9,610</b>	<b>34,648</b>	<b>44,258</b>	<b>7,625</b>	<b>30,046</b>	<b>37,671</b>	<b>-20.7%</b>	<b>-13.3%</b>	<b>-14.9%</b>	<b>17.9%</b>	<b>24.2%</b>	<b>22.5%</b>	<b>18.3%</b>	<b>19.4%</b>	<b>19.2%</b>
(million yen)	<b>(34,325)</b>	<b>(65,183)</b>	<b>(99,508)</b>	<b>(28,352)</b>	<b>(52,188)</b>	<b>(80,540)</b>	<b>(-17.4%)</b>	<b>(-19.9%)</b>	<b>(-19.1%)</b>	<b>(13.5%)</b>	<b>(11.9%)</b>	<b>(12.4%)</b>	<b>(13.6%)</b>	<b>(9.1%)</b>	<b>(10.3%)</b>
<b>Palletizing/depalletizing</b>	<b>1,932</b>	<b>2,026</b>	<b>3,958</b>	<b>1,695</b>	<b>2,352</b>	<b>4,047</b>	<b>-12.3%</b>	<b>16.1%</b>	<b>2.2%</b>	<b>3.6%</b>	<b>1.4%</b>	<b>2.0%</b>	<b>4.1%</b>	<b>1.5%</b>	<b>2.1%</b>
<b>Material handling</b>	<b>10,259</b>	<b>30,524</b>	<b>40,783</b>	<b>7,272</b>	<b>38,510</b>	<b>45,782</b>	<b>-29.1%</b>	<b>26.2%</b>	<b>12.3%</b>	<b>19.1%</b>	<b>21.3%</b>	<b>20.7%</b>	<b>17.5%</b>	<b>24.9%</b>	<b>23.3%</b>
FPD	949	2,478	3,427	912	2,109	3,021	-3.9%	-14.9%	-11.8%	1.8%	1.7%	1.7%	2.2%	1.4%	1.5%
Semiconductor	9,279	9,260	18,539	9,714	14,517	24,231	4.7%	56.8%	30.7%	17.3%	6.5%	9.4%	23.3%	9.4%	12.3%
Others		123	123		382	382		210.6%	210.6%		0.1%	0.1%		0.2%	0.2%
<b>Cleanroom</b> Units	<b>10,228</b>	<b>11,861</b>	<b>22,089</b>	<b>10,626</b>	<b>17,008</b>	<b>27,634</b>	<b>3.9%</b>	<b>43.4%</b>	<b>25.1%</b>	<b>19.1%</b>	<b>8.3%</b>	<b>11.2%</b>	<b>25.5%</b>	<b>11.0%</b>	<b>14.1%</b>
(million yen)	<b>(44,406)</b>	<b>(70,193)</b>	<b>(114,599)</b>	<b>(44,412)</b>	<b>(79,250)</b>	<b>(123,662)</b>	<b>(0.0%)</b>	<b>(12.9%)</b>	<b>(7.9%)</b>	<b>(17.5%)</b>	<b>(12.8%)</b>	<b>(14.3%)</b>	<b>(21.3%)</b>	<b>(13.8%)</b>	<b>(15.8%)</b>
<b>Other applications</b>	<b>2,997</b>	<b>3,772</b>	<b>6,770</b>	<b>2,099</b>	<b>3,931</b>	<b>6,030</b>	<b>-30.0%</b>	<b>4.2%</b>	<b>-10.9%</b>	<b>5.6%</b>	<b>2.6%</b>	<b>3.4%</b>	<b>5.0%</b>	<b>2.5%</b>	<b>3.1%</b>
<b>Unspecified</b>	<b>588</b>	<b>8,082</b>	<b>8,670</b>	<b>1,140</b>	<b>9,638</b>	<b>10,778</b>	<b>93.9%</b>	<b>19.3%</b>	<b>24.3%</b>	<b>1.1%</b>	<b>5.7%</b>	<b>4.4%</b>	<b>2.7%</b>	<b>6.2%</b>	<b>5.5%</b>
<b>Total</b> Units	<b>53,612</b>	<b>143,011</b>	<b>196,622</b>	<b>41,655</b>	<b>154,946</b>	<b>196,601</b>	<b>-22.3%</b>	<b>8.3%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(254,445)</b>	<b>(549,288)</b>	<b>(803,733)</b>	<b>(208,493)</b>	<b>(572,844)</b>	<b>(781,336)</b>	<b>(-18.1%)</b>	<b>(4.3%)</b>	<b>(-2.8%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

Note)

Data includes dedicated type (Surface Mount Technology / Bonding).

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**2020 Results**  
**Shipments of Manipulators and Robots by Industries**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

Industries	2019	2020	Change from 2019	Percentage distribution	
				2019	2020
<b>Metal products</b>	<b>3,315</b>	<b>2,080</b>	<b>-37.3%</b>	<b>6.2%</b>	<b>5.0%</b>
Construction and mining machinery	155	129	-17.0%	0.3%	0.3%
Metalworking machinery	847	564	-33.4%	1.6%	1.4%
Other machinery and equipment	3,046	2,895	-5.0%	5.7%	6.9%
<b>Machinery and equipment</b> Units	<b>4,048</b>	<b>3,588</b>	<b>-11.4%</b>	<b>7.6%</b>	<b>8.6%</b>
(million yen)	<b>(19,876)</b>	<b>(19,735)</b>	<b>(-0.7%)</b>	<b>(7.8%)</b>	<b>(9.5%)</b>
Electronic computers	24	55	129.2%	0.0%	0.1%
Consumer electrical machinery	1,605	932	-41.9%	3.0%	2.2%
Industrial electrical machinery	686	633	-7.8%	1.3%	1.5%
Communication equipment	1,407	975	-30.7%	2.6%	2.3%
Video and audio equipment	51	18	-64.7%	0.1%	0.0%
Electronic components/devices/circuits	10,932	10,388	-5.0%	20.4%	24.9%
Other electrical machinery	3,633	2,465	-32.1%	6.8%	5.9%
<b>Electrical machinery</b> Units	<b>18,338</b>	<b>15,466</b>	<b>-15.7%</b>	<b>34.2%</b>	<b>37.1%</b>
(million yen)	<b>(92,476)</b>	<b>(74,144)</b>	<b>(-19.8%)</b>	<b>(36.3%)</b>	<b>(35.6%)</b>
<b>Precision instruments</b>	<b>506</b>	<b>313</b>	<b>-38.1%</b>	<b>0.9%</b>	<b>0.8%</b>
Motor vehicles	5,035	4,990	-0.9%	9.4%	12.0%
Auto parts	12,446	7,236	-41.9%	23.2%	17.4%
<b>Motor vehicles and auto parts</b> Units	<b>17,481</b>	<b>12,226</b>	<b>-30.1%</b>	<b>32.6%</b>	<b>29.4%</b>
(million yen)	<b>(75,046)</b>	<b>(59,742)</b>	<b>(-20.4%)</b>	<b>(29.5%)</b>	<b>(28.7%)</b>
<b>Other transport equipment</b>	<b>292</b>	<b>154</b>	<b>-47.3%</b>	<b>0.5%</b>	<b>0.4%</b>
<b>Food products, beverages, and tobacco products</b>	<b>1,017</b>	<b>931</b>	<b>-8.5%</b>	<b>1.9%</b>	<b>2.2%</b>
<b>Chemical products</b>	<b>415</b>	<b>376</b>	<b>-9.4%</b>	<b>0.8%</b>	<b>0.9%</b>
<b>Plastic products</b>	<b>1,295</b>	<b>1,066</b>	<b>-17.7%</b>	<b>2.4%</b>	<b>2.6%</b>
<b>Other industries</b>	<b>3,677</b>	<b>2,622</b>	<b>-28.7%</b>	<b>6.9%</b>	<b>6.3%</b>
<b>Non-manufacturing industry</b>	<b>426</b>	<b>388</b>	<b>-8.9%</b>	<b>0.8%</b>	<b>0.9%</b>
<b>Unspecified</b>	<b>2,800</b>	<b>2,445</b>	<b>-12.7%</b>	<b>5.2%</b>	<b>5.9%</b>
<b>Total domestic shipments</b> Units	<b>53,612</b>	<b>41,655</b>	<b>-22.3%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(254,445)</b>	<b>(208,493)</b>	<b>(-18.1%)</b>	<b>27.3%</b>	<b>21.2%</b>
				<b>(100.0%)</b>	<b>(100.0%)</b>
				<b>(31.7%)</b>	<b>(26.7%)</b>
<b>Export</b> Units	<b>143,011</b>	<b>154,946</b>	<b>8.3%</b>	<b>72.7%</b>	<b>78.8%</b>
(million yen)	<b>(549,288)</b>	<b>(572,844)</b>	<b>(4.3%)</b>	<b>(68.3%)</b>	<b>(73.3%)</b>
<b>Grand total</b> Units	<b>196,622</b>	<b>196,601</b>	<b>0.0%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(803,733)</b>	<b>(781,336)</b>	<b>(-2.8%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

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