

**2021 Results**  
**Orders, Production and Shipments of Manipulators and Robots by Applications**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

CY	2020	2021	Change from 2020
Orders	210,365 (858,763)	299,035 (1,078,624)	42.2% (25.6%)
Production	192,974 (766,469)	256,783 (939,082)	33.1% (22.5%)

Shipments Applications	2020			2021			Change from 2020			2020 (percentage distribution)			2021 (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>2,257</b>	<b>3,002</b>	<b>5,259</b>	<b>3,911</b>	<b>5,047</b>	<b>8,958</b>	<b>73.3%</b>	<b>68.1%</b>	<b>70.3%</b>	<b>5.4%</b>	<b>1.9%</b>	<b>2.7%</b>	<b>7.8%</b>	<b>2.4%</b>	<b>3.4%</b>
Arc welding	3,126	14,812	17,938	3,429	23,207	26,636	9.7%	56.7%	48.5%	7.5%	9.6%	9.1%	6.9%	11.0%	10.2%
Spot welding	2,598	11,968	14,566	2,951	16,171	19,122	13.6%	35.1%	31.3%	6.2%	7.7%	7.4%	5.9%	7.6%	7.3%
Laser welding	29	145	174	7	575	582	-75.9%	296.6%	234.5%	0.1%	0.1%	0.1%	0.0%	0.3%	0.2%
Others	51	75	126	62	102	164	21.6%	36.0%	30.2%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%
<b>Welding</b> Units	<b>5,804</b>	<b>27,000</b>	<b>32,804</b>	<b>6,449</b>	<b>40,055</b>	<b>46,504</b>	<b>11.1%</b>	<b>48.4%</b>	<b>41.8%</b>	<b>13.9%</b>	<b>17.4%</b>	<b>16.7%</b>	<b>12.9%</b>	<b>18.9%</b>	<b>17.8%</b>
(million yen)	<b>(32,639)</b>	<b>(58,467)</b>	<b>(91,106)</b>	<b>(34,712)</b>	<b>(82,664)</b>	<b>(117,377)</b>	<b>(6.4%)</b>	<b>(41.4%)</b>	<b>(28.8%)</b>	<b>(15.7%)</b>	<b>(10.2%)</b>	<b>(11.7%)</b>	<b>(15.6%)</b>	<b>(11.2%)</b>	<b>(12.2%)</b>
<b>Painting</b>	<b>525</b>	<b>1,232</b>	<b>1,757</b>	<b>651</b>	<b>1,937</b>	<b>2,588</b>	<b>24.0%</b>	<b>57.2%</b>	<b>47.3%</b>	<b>1.3%</b>	<b>0.8%</b>	<b>0.9%</b>	<b>1.3%</b>	<b>0.9%</b>	<b>1.0%</b>
Loading/unloading	1,480	7,222	8,702	1,965	5,881	7,846	32.8%	-18.6%	-9.8%	3.6%	4.7%	4.4%	3.9%	2.8%	3.0%
Mechanical cutting	27	22	49	15	15	15	-44.4%	-100.0%	-69.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Grinding/deburring	142	453	595	158	760	918	11.3%	67.8%	54.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Others	83	62	145	49	37	86	-41.0%	-40.3%	-40.7%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%
<b>Machining</b> Units	<b>1,732</b>	<b>7,759</b>	<b>9,491</b>	<b>2,187</b>	<b>6,678</b>	<b>8,865</b>	<b>26.3%</b>	<b>-13.9%</b>	<b>-6.6%</b>	<b>4.2%</b>	<b>5.0%</b>	<b>4.8%</b>	<b>4.4%</b>	<b>3.2%</b>	<b>3.4%</b>
(million yen)	<b>(6,089)</b>	<b>(14,558)</b>	<b>(20,647)</b>	<b>(6,514)</b>	<b>(10,280)</b>	<b>(16,795)</b>	<b>(7.0%)</b>	<b>(-29.4%)</b>	<b>(-18.7%)</b>	<b>(2.9%)</b>	<b>(2.5%)</b>	<b>(2.6%)</b>	<b>(2.9%)</b>	<b>(1.4%)</b>	<b>(1.7%)</b>
<b>Surface Mount Technology</b>	<b>880</b>	<b>14,468</b>	<b>15,348</b>	<b>926</b>	<b>18,760</b>	<b>19,686</b>	<b>5.2%</b>	<b>29.7%</b>	<b>28.3%</b>	<b>2.1%</b>	<b>9.3%</b>	<b>7.8%</b>	<b>1.9%</b>	<b>8.9%</b>	<b>7.5%</b>
General Assembly	5,920	26,304	32,224	7,192	33,269	40,461	21.5%	26.5%	25.6%	14.2%	17.0%	16.4%	14.4%	15.7%	15.5%
Other Assembly	1,705	3,742	5,447	2,594	5,698	8,292	52.1%	52.3%	52.2%	4.1%	2.4%	2.8%	5.2%	2.7%	3.2%
Bonding	1,122	3,020	4,142	1,605	4,749	6,354	43.0%	57.3%	53.4%	2.7%	1.9%	2.1%	3.2%	2.2%	2.4%
Soldering	2	2	2	102	232	334	5000.0%	16600.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.1%	0.1%
Sealing/glueing	141	516	657	421	657	1,078	198.6%	27.3%	64.1%	0.3%	0.3%	0.3%	0.8%	0.3%	0.4%
Screwing	12	3	15	12	1	13	-66.7%	-13.3%	-0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Others	428	203	631	454	59	513	6.1%	-70.9%	-18.7%	1.0%	0.1%	0.3%	0.9%	0.0%	0.2%
<b>Assembly</b> Units	<b>7,625</b>	<b>30,046</b>	<b>37,671</b>	<b>9,786</b>	<b>38,967</b>	<b>48,753</b>	<b>28.3%</b>	<b>29.7%</b>	<b>29.4%</b>	<b>18.3%</b>	<b>19.4%</b>	<b>19.2%</b>	<b>19.6%</b>	<b>18.4%</b>	<b>18.6%</b>
(million yen)	<b>(28,352)</b>	<b>(52,188)</b>	<b>(80,540)</b>	<b>(31,243)</b>	<b>(58,762)</b>	<b>(90,005)</b>	<b>(10.2%)</b>	<b>(12.6%)</b>	<b>(11.8%)</b>	<b>(13.6%)</b>	<b>(9.1%)</b>	<b>(10.3%)</b>	<b>(14.0%)</b>	<b>(7.9%)</b>	<b>(9.4%)</b>
<b>Palletizing/depalletizing</b>	<b>1,695</b>	<b>2,352</b>	<b>4,047</b>	<b>1,742</b>	<b>4,011</b>	<b>5,753</b>	<b>2.8%</b>	<b>70.5%</b>	<b>42.2%</b>	<b>4.1%</b>	<b>1.5%</b>	<b>2.1%</b>	<b>3.5%</b>	<b>1.9%</b>	<b>2.2%</b>
<b>Material handling</b>	<b>7,272</b>	<b>38,510</b>	<b>45,782</b>	<b>7,506</b>	<b>61,941</b>	<b>69,447</b>	<b>3.2%</b>	<b>60.8%</b>	<b>51.7%</b>	<b>17.5%</b>	<b>24.9%</b>	<b>23.3%</b>	<b>15.0%</b>	<b>29.3%</b>	<b>26.5%</b>
FPD	912	2,109	3,021	867	1,853	2,720	-4.9%	-12.1%	-10.0%	2.2%	1.4%	1.5%	1.7%	0.9%	1.0%
Semiconductor	9,714	14,517	24,231	11,674	18,563	30,237	20.2%	27.9%	24.8%	23.3%	9.4%	12.3%	23.4%	8.8%	11.6%
Others		382	382	3	496	499		29.8%	30.6%		0.2%	0.2%	0.0%	0.2%	0.2%
<b>Cleanroom</b> Units	<b>10,626</b>	<b>17,008</b>	<b>27,634</b>	<b>12,544</b>	<b>20,912</b>	<b>33,456</b>	<b>18.1%</b>	<b>23.0%</b>	<b>21.1%</b>	<b>25.5%</b>	<b>11.0%</b>	<b>14.1%</b>	<b>25.1%</b>	<b>9.9%</b>	<b>12.8%</b>
(million yen)	<b>(44,412)</b>	<b>(79,250)</b>	<b>(123,662)</b>	<b>(47,774)</b>	<b>(84,692)</b>	<b>(132,465)</b>	<b>(7.6%)</b>	<b>(6.9%)</b>	<b>(7.1%)</b>	<b>(21.3%)</b>	<b>(13.8%)</b>	<b>(15.8%)</b>	<b>(21.4%)</b>	<b>(11.5%)</b>	<b>(13.8%)</b>
<b>Other applications</b>	<b>2,099</b>	<b>3,931</b>	<b>6,030</b>	<b>1,942</b>	<b>4,128</b>	<b>6,070</b>	<b>-7.5%</b>	<b>5.0%</b>	<b>0.7%</b>	<b>5.0%</b>	<b>2.5%</b>	<b>3.1%</b>	<b>3.9%</b>	<b>2.0%</b>	<b>2.3%</b>
<b>Unspecified</b>	<b>1,140</b>	<b>9,638</b>	<b>10,778</b>	<b>2,306</b>	<b>9,250</b>	<b>11,556</b>	<b>102.3%</b>	<b>-4.0%</b>	<b>7.2%</b>	<b>2.7%</b>	<b>6.2%</b>	<b>5.5%</b>	<b>4.6%</b>	<b>4.4%</b>	<b>4.4%</b>
<b>Total</b> Units	<b>41,655</b>	<b>154,946</b>	<b>196,601</b>	<b>49,950</b>	<b>211,686</b>	<b>261,636</b>	<b>19.9%</b>	<b>36.6%</b>	<b>33.1%</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>(208,493)</b>	<b>(572,844)</b>	<b>(781,336)</b>	<b>(223,070)</b>	<b>(739,287)</b>	<b>(962,358)</b>	<b>(7.0%)</b>	<b>(29.1%)</b>	<b>(23.2%)</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).

Data is collected in unit of 10,000 yen. However, the results are shown in unit of million yen by rounding the figures of 100,000 yen.

**2021 Results**  
**Shipments of Manipulators and Robots by Industries**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

Industries	2020	2021	Change from 2020	Percentage distribution	
				2020	2021
<b>Metal products</b>	<b>2,080</b>	<b>2,376</b>	<b>14.2%</b>	<b>5.0%</b>	<b>4.8%</b>
Construction and mining machinery	129	173	34.1%	0.3%	0.3%
Metalworking machinery	564	647	14.7%	1.4%	1.3%
Other machinery and equipment	2,895	3,409	17.8%	6.9%	6.8%
<b>Machinery and equipment</b> Units	<b>3,588</b>	<b>4,229</b>	<b>17.9%</b>	<b>8.6%</b>	<b>8.5%</b>
(million yen)	<b>(19,735)</b>	<b>(19,269)</b>	<b>(-2.4%)</b>	<b>(9.5%)</b>	<b>(8.6%)</b>
Electronic computers	55	375	581.8%	0.1%	0.8%
Consumer electrical machinery	932	944	1.3%	2.2%	1.9%
Industrial electrical machinery	633	1,033	63.2%	1.5%	2.1%
Communication equipment	975	1,533	57.2%	2.3%	3.1%
Video and audio equipment	18	51	183.3%	0.0%	0.1%
Electronic components/devices/circuits	10,388	11,802	13.6%	24.9%	23.6%
Other electrical machinery	2,465	2,999	21.7%	5.9%	6.0%
<b>Electrical machinery</b> Units	<b>15,466</b>	<b>18,737</b>	<b>21.1%</b>	<b>37.1%</b>	<b>37.5%</b>
(million yen)	<b>(74,144)</b>	<b>(81,820)</b>	<b>(10.4%)</b>	<b>(35.6%)</b>	<b>(36.7%)</b>
<b>Precision instruments</b>	<b>313</b>	<b>320</b>	<b>2.2%</b>	<b>0.8%</b>	<b>0.6%</b>
Motor vehicles	4,990	4,517	-9.5%	12.0%	9.0%
Auto parts	7,236	8,998	24.4%	17.4%	18.0%
<b>Motor vehicles and auto parts</b> Units	<b>12,226</b>	<b>13,515</b>	<b>10.5%</b>	<b>29.4%</b>	<b>27.1%</b>
(million yen)	<b>(59,742)</b>	<b>(61,109)</b>	<b>(2.3%)</b>	<b>(28.7%)</b>	<b>(27.4%)</b>
<b>Other transport equipment</b>	<b>154</b>	<b>345</b>	<b>124.0%</b>	<b>0.4%</b>	<b>0.7%</b>
<b>Food products, beverages, and tobacco products</b>	<b>931</b>	<b>847</b>	<b>-9.0%</b>	<b>2.2%</b>	<b>1.7%</b>
<b>Chemical products</b>	<b>376</b>	<b>356</b>	<b>-5.3%</b>	<b>0.9%</b>	<b>0.7%</b>
<b>Plastic products</b>	<b>1,066</b>	<b>2,111</b>	<b>98.0%</b>	<b>2.6%</b>	<b>4.2%</b>
<b>Other industries</b>	<b>2,622</b>	<b>2,933</b>	<b>11.9%</b>	<b>6.3%</b>	<b>5.9%</b>
<b>Non-manufacturing industry</b>	<b>388</b>	<b>441</b>	<b>13.7%</b>	<b>0.9%</b>	<b>0.9%</b>
<b>Unspecified</b>	<b>2,445</b>	<b>3,740</b>	<b>53.0%</b>	<b>5.9%</b>	<b>7.5%</b>
<b>Total domestic shipments</b> Units	<b>41,655</b>	<b>49,950</b>	<b>19.9%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(208,493)</b>	<b>(223,070)</b>	<b>(7.0%)</b>	<b>21.2%</b>	<b>19.1%</b>
				<b>(100.0%)</b>	<b>(100.0%)</b>
				<b>(26.7%)</b>	<b>(23.2%)</b>
<b>Export</b> Units	<b>154,946</b>	<b>211,686</b>	<b>36.6%</b>	<b>78.8%</b>	<b>80.9%</b>
(million yen)	<b>(572,844)</b>	<b>(739,287)</b>	<b>(29.1%)</b>	<b>(73.3%)</b>	<b>(76.8%)</b>
<b>Grand total</b> Units	<b>196,601</b>	<b>261,636</b>	<b>33.1%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(781,336)</b>	<b>(962,358)</b>	<b>(23.2%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

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