

**January - December 2015 Results**  
**Production and Shipments of Manipulators and Robots by Applications**  
**[JARA Member Companies]**

Number of units, ( ): million yen

Production	January - December 2014	January - December 2015	Change from 2014
		127,305 (492,697)	138,434 (532,132)

Shipments Applications	January - December 2014			January - December 2015			Change from 2014			January - December 2014 (percentage distribution)			January - December 2015 (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>	2,684	4,623	7,307	2,949	4,924	7,873	+9.9%	+6.5%	+7.7%	9.4%	4.7%	5.7%	9.1%	4.6%	5.6%
Arc welding	3,431	17,824	21,255	3,550	16,154	19,704	+3.5%	-9.4%	-7.3%	12.0%	18.0%	16.7%	10.9%	15.1%	14.1%
Spot welding	3,449	17,229	20,678	2,809	18,843	21,652	-18.6%	+9.4%	+4.7%	12.1%	17.4%	16.2%	8.6%	17.6%	15.5%
Laser welding	33	126	159	24	1	25									
Others	21	19	40	49	10	59									
<b>Welding</b> Units	6,934	35,198	42,132	6,432	35,008	41,440	-7.2%	-0.5%	-1.6%	24.2%	35.6%	33.0%	19.8%	32.8%	29.7%
(million yen)	(31,273)	(88,294)	(119,567)	(33,005)	(92,523)	(125,528)	(+5.5%)	(+4.8%)	(+5.0%)	(24.9%)	(24.6%)	(24.6%)	(21.7%)	(24.6%)	(23.8%)
<b>Painting</b>	463	1,258	1,721	606	1,650	2,256	+30.9%	+31.2%	+31.1%	1.6%	1.3%	1.3%	1.9%	1.5%	1.6%
Loading/unloading	1,499	4,005	5,504	1,851	5,494	7,345	+23.5%	+37.2%	+33.4%	5.2%	4.1%	4.3%	5.7%	5.1%	5.3%
Mechanical cutting		26	26	8	5	13									
Grinding/deburring	156	41	197	213	111	324									
Others	43	12	55	53	4	57									
<b>Machining</b> Units	1,698	4,084	5,782	2,125	5,614	7,739	+25.1%	+37.5%	+33.8%	5.9%	4.1%	4.5%	6.5%	5.3%	5.6%
(million yen)	(3,971)	(6,422)	(10,394)	(5,457)	(9,699)	(15,155)	(+37.4%)	(+51.0%)	(+45.8%)	(3.2%)	(1.8%)	(2.1%)	(3.6%)	(2.6%)	(2.9%)
<b>Surface Mount Technology</b>	1,158	8,682	9,840	1,317	8,097	9,414	+13.7%	-6.7%	-4.3%	4.0%	8.8%	7.7%	4.1%	7.6%	6.8%
General Assembly	5,185	15,612	20,797	6,623	15,128	21,751	+27.7%	-3.1%	+4.6%	18.1%	15.8%	16.3%	20.4%	14.2%	15.6%
Other Assembly	74	183	257	77	436	513	+4.1%	+138.3%	+99.6%	0.3%	0.2%	0.2%	0.2%	0.4%	0.4%
Bonding	2		2	1		1									
Soldering	1		1	3		3									
Sealing/glueing	33	135	168	32	151	183									
Screwing	1		1	8	2	10									
Others	37	48	85	33	283	316									
<b>Assembly</b> Units	5,259	15,795	21,054	6,700	15,564	22,264	+27.4%	-1.5%	+5.7%	18.4%	16.0%	16.5%	20.6%	14.6%	16.0%
(million yen)	(29,510)	(158,768)	(188,278)	(39,067)	(152,956)	(192,023)	(+32.4%)	(-3.7%)	(+2.0%)	(23.5%)	(44.2%)	(38.8%)	(25.7%)	(40.6%)	(36.3%)
<b>Palletizing/depalletizing</b>	884	1,723	2,607	765	2,465	3,230	-13.5%	+43.1%	+23.9%	3.1%	1.7%	2.0%	2.4%	2.3%	2.3%
<b>Material handling</b>	5,054	20,688	25,742	6,126	24,060	30,186	+21.2%	+16.3%	+17.3%	17.7%	20.9%	20.2%	18.9%	22.5%	21.7%
FPD	167	564	731	208	514	722	+24.6%	-8.9%	-1.2%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%
Semiconductor	2,919	3,585	6,504	3,421	5,742	9,163	+17.2%	+60.2%	+40.9%	10.2%	3.6%	5.1%	10.5%	5.4%	6.6%
Others					1	1									
<b>Cleanroom</b> Units	3,086	4,149	7,235	3,629	6,257	9,886	+17.6%	+50.8%	+36.6%	10.8%	4.2%	5.7%	11.2%	5.9%	7.1%
(million yen)	(15,512)	(16,828)	(32,341)	(19,775)	(20,877)	(40,651)	(+27.5%)	(+24.1%)	(+25.7%)	(12.4%)	(4.7%)	(6.7%)	(13.0%)	(5.5%)	(7.7%)
<b>Other applications</b>	1,389	2,682	4,071	1,834	3,241	5,075	+32.0%	+20.8%	+24.7%	4.9%	2.7%	3.2%	5.6%	3.0%	3.6%
<b>Total</b> Units	28,609	98,882	127,491	32,483	106,880	139,363	+13.5%	+8.1%	+9.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(million yen)	(125,546)	(359,567)	(485,113)	(151,803)	(376,636)	(528,439)	(+20.9%)	(+4.7%)	(+8.9%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

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.

**January - December 2015 Results**  
**Shipments of Manipulators and Robots by Industries**  
**[JARA Member Companies]**

Number of units, ( ): million yen

Industries	2014 Jan.-Dec.	2015 Jan.-Dec.	Change from 2014	Percentage distribution	
				2014	2015
<b>Metal products</b>	<b>1,374</b>	<b>1,951</b>	<b>+42.0%</b>	<b>4.8%</b>	<b>6.0%</b>
Construction and mining machinery	140	124	-11.4%	0.5%	0.4%
Metalworking machinery	701	577	-17.7%	2.5%	1.8%
Other machinery and equipment	705	1,626	+130.6%	2.5%	5.0%
<b>Machinery and equipment</b>	<b>1,546</b>	<b>2,327</b>	<b>+50.5%</b>	<b>5.4%</b>	<b>7.2%</b>
Units					
(million yen)	<b>(5,158)</b>	<b>(11,942)</b>	<b>(+131.5%)</b>	<b>(4.1%)</b>	<b>(7.9%)</b>
Electronic computers	63	111	+76.2%	0.2%	0.3%
Consumer electrical machinery	601	1,675	+178.7%	2.1%	5.2%
Industrial electrical machinery	390	859	+120.3%	1.4%	2.6%
Communication equipment	1,018	710	-30.3%	3.6%	2.2%
Video and audio equipment	0	5		0.0%	0.0%
Electronic components/devices/circuits	3,167	3,182	+0.5%	11.1%	9.8%
Other electrical machinery	2,571	3,773	+46.8%	9.0%	11.6%
<b>Electrical machinery</b>	<b>7,810</b>	<b>10,315</b>	<b>+32.1%</b>	<b>27.3%</b>	<b>31.8%</b>
Units					
(million yen)	<b>(40,817)</b>	<b>(50,051)</b>	<b>(+22.6%)</b>	<b>(32.5%)</b>	<b>(33.0%)</b>
<b>Precision instruments</b>	<b>361</b>	<b>485</b>	<b>+34.3%</b>	<b>1.3%</b>	<b>1.5%</b>
Motor vehicles	3,529	3,732	+5.8%	12.3%	11.5%
Auto parts	6,508	6,999	+7.5%	22.7%	21.5%
<b>Motor vehicles and auto parts</b>	<b>10,037</b>	<b>10,731</b>	<b>+6.9%</b>	<b>35.1%</b>	<b>33.0%</b>
Units					
(million yen)	<b>(41,502)</b>	<b>(47,724)</b>	<b>(+15.0%)</b>	<b>(33.1%)</b>	<b>(31.4%)</b>
<b>Other transport equipment</b>	<b>(199)</b>	<b>(238)</b>	<b>(+19.6%)</b>	<b>(0.7%)</b>	<b>(0.7%)</b>
<b>Food products, beverages, and tobacco products</b>	<b>679</b>	<b>516</b>	<b>-24.0%</b>	<b>2.4%</b>	<b>1.6%</b>
<b>Chemical products</b>	<b>400</b>	<b>272</b>	<b>-32.0%</b>	<b>1.4%</b>	<b>0.8%</b>
<b>Plastic products</b>	<b>2,782</b>	<b>1,134</b>	<b>-59.2%</b>	<b>9.7%</b>	<b>3.5%</b>
<b>Other industries</b>	<b>3,421</b>	<b>4,364</b>	<b>+27.6%</b>	<b>12.0%</b>	<b>13.4%</b>
<b>Non-manufacturing industry</b>	<b>0</b>	<b>150</b>		<b>0.0%</b>	<b>0.5%</b>
<b>Total domestic shipments</b>	<b>28,609</b>	<b>32,483</b>	<b>+13.5%</b>	<b>100.0%</b>	<b>100.0%</b>
Units					
(million yen)	<b>(125,546)</b>	<b>(151,803)</b>	<b>(+20.9%)</b>	<b>22.4%</b>	<b>23.3%</b>
				<b>(100.0%)</b>	<b>(100.0%)</b>
				<b>(25.9%)</b>	<b>(28.7%)</b>
<b>Export</b>	<b>98,882</b>	<b>106,880</b>	<b>+8.1%</b>	<b>77.6%</b>	<b>76.7%</b>
Units					
(million yen)	<b>(359,567)</b>	<b>(376,636)</b>	<b>(+4.7%)</b>	<b>(74.1%)</b>	<b>(71.3%)</b>
<b>Grand total</b>	<b>127,491</b>	<b>139,363</b>	<b>+9.3%</b>	<b>100.0%</b>	<b>100.0%</b>
Units					
(million yen)	<b>(485,113)</b>	<b>(528,439)</b>	<b>(+8.9%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

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