

January - December 2016 Results
Production and Shipments of Manipulators and Robots by Applications
[JARA Member Companies]

Number of units, (): million yen

Production	January - December 2015	January - December 2016	Change from 2015
		138,434 (532,132)	152,702 (546,624)

Shipments	January - December 2015			January - December 2016			Change from 2015			January - December 2015 (percentage distribution)			January - December 2016 (percentage distribution)		
	Applications	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports
Plastic moulding	2,949	4,924	7,873	3,072	4,370	7,442	+4.2%	-11.3%	-5.5%	9.1%	4.6%	5.6%	8.6%	3.7%	4.9%
Arc welding	3,550	16,154	19,704	3,681	14,430	18,111	+3.7%	-10.7%	-8.1%	10.9%	15.1%	14.1%	10.3%	12.4%	11.9%
Spot welding	2,809	18,843	21,652	4,746	17,259	22,005	+69.0%	-8.4%	+1.6%	8.6%	17.6%	15.5%	13.3%	14.8%	14.4%
Laser welding	24	1	25	31	110	141									
Others	49	10	59	36	11	47									
Welding Units	6,432	35,008	41,440	8,494	31,810	40,304	+32.1%	-9.1%	-2.7%	19.8%	32.8%	29.7%	23.7%	27.2%	26.4%
(million yen)	(33,005)	(92,523)	(125,528)	(41,887)	(82,005)	(123,892)	(+26.9%)	(-11.4%)	(-1.3%)	(21.7%)	(24.6%)	(23.8%)	(25.1%)	(21.1%)	(22.3%)
Painting	606	1,650	2,256	593	1,569	2,162	-2.1%	-4.9%	-4.2%	1.9%	1.5%	1.6%	1.7%	1.3%	1.4%
Loading/unloading	1,851	5,494	7,345	1,528	4,343	5,871	-17.5%	-21.0%	-20.1%	5.7%	5.1%	5.3%	4.3%	3.7%	3.8%
Mechanical cutting	8	5	13	6	1	7									
Grinding/deburring	213	111	324	246	284	530									
Others	53	4	57	70	8	78									
Machining Units	2,125	5,614	7,739	1,850	4,636	6,486	-12.9%	-17.4%	-16.2%	6.5%	5.3%	5.6%	5.2%	4.0%	4.3%
(million yen)	(5,457)	(9,699)	(15,155)	(5,316)	(7,625)	(12,941)	(-2.6%)	(-21.4%)	(-14.6%)	(3.6%)	(2.6%)	(2.9%)	(3.2%)	(2.0%)	(2.3%)
Surface Mount Technology	1,317	8,097	9,414	1,224	8,364	9,588	-7.1%	+3.3%	+1.8%	4.1%	7.6%	6.8%	3.4%	7.2%	6.3%
General Assembly	6,623	15,128	21,751	6,167	18,283	24,450	-6.9%	+20.9%	+12.4%	20.4%	14.2%	15.6%	17.2%	15.7%	16.0%
Other Assembly	77	436	513	166	499	665	+115.6%	+14.4%	+29.6%	0.2%	0.4%	0.4%	0.5%	0.4%	0.4%
Bonding	1		1	2		2									
Soldering	3		3	2		2									
Sealing/glueing	32	151	183	80	232	312									
Screwing	8	2	10	8	1	9									
Others	33	283	316	74	266	340									
Assembly Units	6,700	15,564	22,264	6,333	18,782	25,115	-5.5%	+20.7%	+12.8%	20.6%	14.6%	16.0%	17.7%	16.1%	16.5%
(million yen)	(13,123)	(20,847)	(33,971)	(12,191)	(22,527)	(34,718)	(-7.1%)	(+8.1%)	(+2.2%)	(8.6%)	(5.5%)	(6.4%)	(7.3%)	(5.8%)	(6.3%)
Palletizing/depalletizing	765	2,465	3,230	857	2,312	3,169	+12.0%	-6.2%	-1.9%	2.4%	2.3%	2.3%	2.4%	2.0%	2.1%
Material handling	6,126	24,060	30,186	6,891	34,362	41,253	+12.5%	+42.8%	+36.7%	18.9%	22.5%	21.7%	19.2%	29.4%	27.0%
FPD	208	514	722	321	847	1,168	+54.3%	+64.8%	+61.8%	0.6%	0.5%	0.5%	0.9%	0.7%	0.8%
Semiconductor	3,421	5,742	9,163	3,905	7,018	10,923	+14.1%	+22.2%	+19.2%	10.5%	5.4%	6.6%	10.9%	6.0%	7.2%
Others		1	1												
Cleanroom Units	3,629	6,257	9,886	4,226	7,865	12,091	+16.5%	+25.7%	+22.3%	11.2%	5.9%	7.1%	11.8%	6.7%	7.9%
(million yen)	(19,775)	(20,877)	(40,651)	(23,920)	(25,292)	(49,212)	(+21.0%)	(+21.2%)	(+21.1%)	(13.0%)	(5.5%)	(7.7%)	(14.4%)	(6.5%)	(8.9%)
Other applications	1,834	3,241	5,075	2,275	2,685	4,960	+24.0%	-17.2%	-2.3%	5.6%	3.0%	3.6%	6.4%	2.3%	3.3%
Total Units	32,483	106,880	139,363	35,815	116,755	152,570	+10.3%	+9.2%	+9.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(million yen)	(151,803)	(376,636)	(528,439)	(166,599)	(387,972)	(554,572)	(+9.7%)	(+3.0%)	(+4.9%)	(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 2016 Results
Shipments of Manipulators and Robots by Industries
[JARA Member Companies]

Number of units, (): million yen

Industries	2015 Jan.-Dec.	2016 Jan.-Dec.	Change from 2015	Percentage distribution	
				2015	2016
Metal products	1,951	1,846	-5.4%	6.0%	5.2%
Construction and mining machinery	124	126	+1.6%	0.4%	0.4%
Metalworking machinery	577	496	-14.0%	1.8%	1.4%
Other machinery and equipment	1,626	2,087	+28.4%	5.0%	5.8%
Machinery and equipment	2,327	2,709	+16.4%	7.2%	7.6%
Units (million yen)	(11,942)	(14,563)	(+21.9%)	(7.9%)	(8.7%)
Electronic computers	111	70	-36.9%	0.3%	0.2%
Consumer electrical machinery	1,675	1,771	+5.7%	5.2%	4.9%
Industrial electrical machinery	859	935	+8.8%	2.6%	2.6%
Communication equipment	710	699	-1.5%	2.2%	2.0%
Video and audio equipment	5	3		0.0%	0.0%
Electronic components/devices/circuits	3,182	3,155	-0.8%	9.8%	8.8%
Other electrical machinery	3,773	3,190	-15.5%	11.6%	8.9%
Electrical machinery	10,315	9,823	-4.8%	31.8%	27.4%
Units (million yen)	(50,051)	(48,483)	(-3.1%)	(33.0%)	(29.1%)
Precision instruments	485	459	-5.4%	1.5%	1.3%
Motor vehicles	3,732	5,661	+51.7%	11.5%	15.8%
Auto parts	6,999	7,836	+12.0%	21.5%	21.9%
Motor vehicles and auto parts	10,731	13,497	+25.8%	33.0%	37.7%
Units (million yen)	(47,724)	(56,916)	(+19.3%)	(31.4%)	(34.2%)
Other transport equipment	(238)	(239)	(+0.4%)	(0.7%)	(0.7%)
Food products, beverages, and tobacco products	516	683	+32.4%	1.6%	1.9%
Chemical products	272	404	+48.5%	0.8%	1.1%
Plastic products	1,134	1,217	+7.3%	3.5%	3.4%
Other industries	4,364	4,728	+8.3%	13.4%	13.2%
Non-manufacturing industry	150	210	+40.0%	0.5%	0.6%
Total domestic shipments	32,483	35,815	+10.3%	100.0%	100.0%
Units (million yen)	(151,803)	(166,599)	(+9.7%)	23.3% (100.0%) (28.7%)	23.5% (100.0%) (30.0%)
Export	106,880	116,755	+9.2%	76.7%	76.5%
Units (million yen)	(376,636)	(387,972)	(+3.0%)	(71.3%)	(70.0%)
Grand total	139,363	152,570	+9.5%	100.0%	100.0%
Units (million yen)	(528,439)	(554,572)	(+4.9%)	(100.0%)	(100.0%)

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

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