

**January - December 2009 Results**  
**Production and Shipments of Manipulators and Robots by Application Areas (based on Value)**  
**(JARA Members and Non-members)**

(Unit: million yen)

Production	January - December 2008	January - December 2009	Change from 2008
	621,958	288,849	-53.6%

Shipments	January - December 2008			January - December 2009			Change from 2008			January - December 2008 (percentage distribution)			January - December 2009 (percentage distribution)		
	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total
<b>Application area</b>															
<b>Plastic moulding</b>	<b>13,305</b>	<b>12,958</b>	<b>26,263</b>	<b>6,938</b>	<b>7,648</b>	<b>14,586</b>	<b>-47.9%</b>	<b>-41.0%</b>	<b>-44.5%</b>	<b>5.4%</b>	<b>3.2%</b>	<b>4.0%</b>	<b>5.6%</b>	<b>4.4%</b>	<b>4.9%</b>
Arc welding	(32,999)	(25,386)	(58,386)	(12,865)	(11,432)	(24,297)	<b>-61.0%</b>	<b>-55.0%</b>	<b>-58.4%</b>	<b>13.4%</b>	<b>6.3%</b>	<b>9.0%</b>	<b>10.4%</b>	<b>6.5%</b>	<b>8.1%</b>
Spot welding	(21,861)	(31,737)	(53,598)	(6,731)	(12,173)	(18,904)	<b>-69.2%</b>	<b>-61.6%</b>	<b>-64.7%</b>	<b>8.8%</b>	<b>7.9%</b>	<b>8.2%</b>	<b>5.4%</b>	<b>6.9%</b>	<b>6.3%</b>
Gas welding															
Laser welding	(621)	(13)	(634)	(161)		(161)									
Others	(61)	(24)	(85)	(125)	(17)	(142)									
<b>Welding</b>	<b>55,542</b>	<b>57,160</b>	<b>112,702</b>	<b>19,882</b>	<b>23,623</b>	<b>43,504</b>	<b>-64.2%</b>	<b>-58.7%</b>	<b>-61.4%</b>	<b>22.5%</b>	<b>14.2%</b>	<b>17.3%</b>	<b>16.0%</b>	<b>13.4%</b>	<b>14.5%</b>
<b>Painting</b>	<b>11,656</b>	<b>10,685</b>	<b>22,341</b>	<b>8,406</b>	<b>4,449</b>	<b>12,855</b>	<b>-27.9%</b>	<b>-58.4%</b>	<b>-42.5%</b>	<b>4.7%</b>	<b>2.7%</b>	<b>3.4%</b>	<b>6.8%</b>	<b>2.5%</b>	<b>4.3%</b>
Loading/unloading	(10,212)	(7,981)	(18,193)	(4,144)	(2,181)	(6,324)									
Mechanical cutting	(670)	(124)	(794)												
Grinding/deburring	(1,548)	(256)	(1,804)	(272)	(58)	(330)									
Others	(169)	(19)	(188)	(136)	(4)	(140)									
<b>Machining</b>	<b>12,600</b>	<b>8,380</b>	<b>20,980</b>	<b>4,552</b>	<b>2,243</b>	<b>6,794</b>	<b>-63.9%</b>	<b>-73.2%</b>	<b>-67.6%</b>	<b>5.1%</b>	<b>2.1%</b>	<b>3.2%</b>	<b>3.7%</b>	<b>1.3%</b>	<b>2.3%</b>
General Assembly	22,105	10,122	32,227	8,937	5,372	14,309	-59.6%	-46.9%	-55.6%	8.9%	2.5%	5.0%	7.2%	3.1%	4.8%
Surface Mount Technology	47,825	171,109	218,933	16,650	66,598	83,248	-65.2%	-61.1%	-62.0%	19.3%	42.5%	33.7%	13.4%	37.9%	27.7%
Other Assembly	22,345	23,082	45,428	13,570	19,009	32,579	-39.3%	-17.6%	-28.3%	9.0%	5.7%	7.0%	10.9%	10.8%	10.9%
(Bonding)	(14,580)	(21,871)	(36,451)	(10,602)	(18,388)	(28,990)									
(Soldering)	(1,241)	(310)	(1,551)	(505)	(319)	(824)									
(Sealing/glueing)	(643)	(780)	(1,423)	(320)	(206)	(526)									
(Screwing)	(35)	(97)	(132)	(8)	(34)	(42)									
(Others)	(5,846)	(25)	(5,871)	(2,135)	(62)	(2,197)									
<b>Assembly</b>	<b>92,275</b>	<b>204,313</b>	<b>296,588</b>	<b>39,157</b>	<b>90,979</b>	<b>130,136</b>	<b>-57.6%</b>	<b>-55.5%</b>	<b>-56.1%</b>	<b>37.3%</b>	<b>50.7%</b>	<b>45.6%</b>	<b>31.5%</b>	<b>51.8%</b>	<b>43.4%</b>
<b>Palletizing/depalletizing</b>	<b>6,574</b>	<b>6,719</b>	<b>13,293</b>	<b>6,477</b>	<b>3,210</b>	<b>9,687</b>	<b>-1.5%</b>	<b>-52.2%</b>	<b>-27.1%</b>	<b>2.7%</b>	<b>1.7%</b>	<b>2.0%</b>	<b>5.2%</b>	<b>1.8%</b>	<b>3.2%</b>
<b>Material handling</b>	<b>18,116</b>	<b>27,345</b>	<b>45,461</b>	<b>8,562</b>	<b>11,050</b>	<b>19,611</b>	<b>-52.7%</b>	<b>-59.6%</b>	<b>-56.9%</b>	<b>7.3%</b>	<b>6.8%</b>	<b>7.0%</b>	<b>6.9%</b>	<b>6.3%</b>	<b>6.5%</b>
(FPD)	(12,926)	(62,888)	(75,813)	(18,790)	(27,147)	(45,937)	45.4%	-56.8%	-39.4%	5.2%	15.6%	11.7%	15.1%	15.4%	15.3%
(Semiconductor)	(11,489)	(6,840)	(18,330)	(5,556)	(3,355)	(8,911)	-51.6%	-51.0%	-51.4%	4.6%	1.7%	2.8%	4.5%	1.9%	3.0%
(Others)				(96)	(3)	(98)									
<b>Cleanroom</b>	<b>24,415</b>	<b>69,728</b>	<b>94,143</b>	<b>24,441</b>	<b>30,504</b>	<b>54,946</b>	<b>0.1%</b>	<b>-56.3%</b>	<b>-41.6%</b>	<b>9.9%</b>	<b>17.3%</b>	<b>14.5%</b>	<b>19.7%</b>	<b>17.4%</b>	<b>18.3%</b>
<b>Other applications</b>	<b>12,675</b>	<b>5,366</b>	<b>18,040</b>	<b>5,856</b>	<b>2,099</b>	<b>7,955</b>	<b>-53.8%</b>	<b>-60.9%</b>	<b>-55.9%</b>	<b>5.1%</b>	<b>1.3%</b>	<b>2.8%</b>	<b>4.7%</b>	<b>1.2%</b>	<b>2.7%</b>
<b>Total</b>	<b>247,157</b>	<b>402,654</b>	<b>649,810</b>	<b>124,271</b>	<b>175,805</b>	<b>300,075</b>	<b>-49.7%</b>	<b>-56.3%</b>	<b>-53.8%</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)

These statistics include dedicated type (Surface Mount Technology / Bonding).

These statistics are 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 2009 Results**  
**Shipments of Manipulators and Robots by Industrial Branches (based on Value)**  
**(JARA Members & Non-members)**

Industrial branches	2008	2009	Change from 2008	Percentage distribution	
	million yen	million yen		2008	2009
<b>Metal products</b>	<b>7,466</b>	<b>4,661</b>	<b>-37.6%</b>	<b>3.0%</b>	<b>3.8%</b>
Construction Machinery	(3,134)	(1,182)	-62.3%	1.3%	1.0%
Metalworking machinery	(1,535)	(487)	-68.3%	0.6%	0.4%
Other machinery and equipment	(5,183)	(1,477)	-71.5%	2.1%	1.2%
<b>Machinery and equipment</b>	<b>9,852</b>	<b>3,147</b>	<b>-68.1%</b>	<b>4.0%</b>	<b>2.5%</b>
Computers	(3,489)	(761)	-78.2%	1.4%	0.6%
Consumer electrical machinery	(1,983)	(1,202)	-39.4%	0.8%	1.0%
Industrial electrical machinery	(9,823)	(2,704)	-72.5%	4.0%	2.2%
Info-communications equipment	(23,954)	(12,512)	-47.8%	9.7%	10.1%
VTR	(567)	(173)	-69.5%	0.2%	0.1%
Electronic components/devices	(40,822)	(31,665)	-22.4%	16.5%	25.5%
Other electrical machinery	(13,892)	(11,450)	-17.6%	5.6%	9.2%
<b>Electrical machinery</b>	<b>94,531</b>	<b>60,467</b>	<b>-36.0%</b>	<b>38.2%</b>	<b>48.7%</b>
<b>Precision and optical instruments</b>	<b>3,390</b>	<b>905</b>	<b>-73.3%</b>	<b>1.4%</b>	<b>0.7%</b>
Motor vehicles	(35,922)	(15,436)	-57.0%	14.5%	12.4%
Auto parts	(59,042)	(17,339)	-70.6%	23.9%	14.0%
<b>Motor vehicles and auto parts</b>	<b>94,964</b>	<b>32,775</b>	<b>-65.5%</b>	<b>38.4%</b>	<b>26.4%</b>
<b>Food products, beverages, and tobacco products</b>	<b>4,172</b>	<b>3,853</b>	<b>-7.7%</b>	<b>1.7%</b>	<b>3.1%</b>
<b>Plastic products</b>	<b>12,639</b>	<b>6,677</b>	<b>-47.2%</b>	<b>5.1%</b>	<b>5.4%</b>
<b>EMS companies (Subconstructors)</b>	<b>346</b>	<b>169</b>	<b>-51.2%</b>	<b>0.1%</b>	<b>0.1%</b>
<b>Non-manufacturing</b>	<b>2,635</b>	<b>2,057</b>	<b>-21.9%</b>	<b>1.1%</b>	<b>1.7%</b>
<b>Other industries</b>	<b>17,162</b>	<b>9,561</b>	<b>-44.3%</b>	<b>6.9%</b>	<b>7.7%</b>
<b>Total domestic shipments</b>	<b>247,157</b>	<b>124,271</b>	<b>-49.7%</b>	<b>100.0%</b>	<b>100.0%</b>
				<b>(38.0%)</b>	<b>(41.4%)</b>
<b>Export</b>	<b>402,654</b>	<b>175,805</b>	<b>-56.3%</b>	<b>(62.0%)</b>	<b>(58.6%)</b>
<b>Grand total</b>	<b>649,810</b>	<b>300,075</b>	<b>-53.8%</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

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