

January - December 2004 Results
Production and Shipments of Manipulators and Robots by Application Areas (based on Value)
(JARA Member Companies)

(Unit: million yen)

Production	January - December 2003	January - December 2004	Change from 2003
	410,225	466,783	13.8%

Shipments	January - December 2003			January - December 2004			Change from 2003			January - December 2003 (percentage distribution)			January - December 2004 (percentage distribution)		
	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total
Application area															
Plastic moulding	10,591	17,985	28,575	11,178	11,851	23,029	5.5%	-34.1%	-19.4%	6.5%	7.8%	7.3%	6.7%	4.3%	5.2%
Arc welding	17,575	16,240	33,815	18,486	18,561	37,046	5.2%	14.3%	9.6%	10.8%	7.0%	8.6%	11.1%	6.7%	8.3%
Spot welding	19,046	24,360	43,405	19,673	25,035	44,708	3.3%	2.8%	3.0%	11.7%	10.5%	11.0%	11.8%	9.0%	10.0%
Gas welding	407		407	3		3									
Laser welding	72		72	105	8	113									
Others	21	29	50	47	13	60									
Welding	37,120	40,629	77,749	38,314	43,617	81,930	3.2%	7.4%	5.4%	22.9%	17.6%	19.8%	22.9%	15.6%	18.4%
Loading/unloading	7,124	4,611	11,735	6,888	5,724	12,612									
Mechanical cutting	6		6	152		152									
Grinding/deburring	1,060	32	1,091	457	91	548									
Others	1,440	26	1,466	606	34	640									
Machining	9,630	4,668	14,298	8,102	5,849	13,951	-15.9%	25.3%	-2.4%	5.9%	2.0%	3.6%	4.9%	2.1%	3.1%
General Assembly	9,715	4,332	14,047	11,089	5,261	16,350	14.1%	21.5%	16.4%	6.0%	1.9%	3.6%	6.6%	1.9%	3.7%
Surface Mount Technology	44,324	113,716	158,040	45,079	138,377	183,456	1.7%	21.7%	16.1%	27.3%	49.2%	40.2%	27.0%	49.6%	41.1%
Other Assembly	2,397	3,106	5,504	3,010	6,066	9,076	25.6%	95.3%	64.9%	1.5%	1.3%	1.4%	1.8%	2.2%	2.0%
(Bonding)	(1,696)	(2,338)	(4,034)	(1,447)	(5,464)	(6,911)									
(Soldering)	(128)	(89)	(217)	(105)	(72)	(177)									
(Sealing/glueing)	(410)	(657)	(1,067)	(1,278)	(526)	(1,805)									
(Screwing)	(73)	(4)	(77)	(91)		(91)									
(Others)	(90)	(19)	(109)	(89)	(4)	(92)									
Assembly	56,437	121,153	177,590	59,178	149,704	208,882	4.9%	23.6%	17.6%	34.8%	52.4%	45.2%	35.4%	53.7%	46.9%
Material handling	9,837	11,794	21,631	11,632	13,868	25,500	18.2%	17.6%	17.9%	6.1%	5.1%	5.5%	7.0%	5.0%	5.7%
Painting	5,231	4,035	9,266	6,376	5,330	11,706	21.9%	32.1%	26.3%	3.2%	1.7%	2.4%	3.8%	1.9%	2.6%
Clean room	16,662	21,408	38,070	15,882	38,313	54,195	-4.7%	79.0%	42.4%	10.3%	9.3%	9.7%	9.5%	13.7%	12.2%
(FPD)	12,286	18,815	31,101	10,328	32,933	43,261	-15.9%	75.0%	39.1%	7.6%	8.1%	7.9%	6.2%	11.8%	9.7%
(Semiconductor)	4,298	2,584	6,882	5,460	5,362	10,822	27.1%	107.5%	57.3%	2.6%	1.1%	1.7%	3.3%	1.9%	2.4%
(Others)	78	9	87	94	18	112									
Other applications	16,721	9,347	26,068	16,364	10,273	26,637	-2.1%	9.9%	2.2%	10.3%	4.0%	6.6%	9.8%	3.7%	6.0%
Total	162,228	231,018	393,246	167,025	278,805	445,830	3.0%	20.7%	13.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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 2004 Results
Shipments of Manipulators and Robots by Industrial Branches (based on Value)
(JARA Member Companies)

Industrial branches	2003	2004	Change from 2003	Percentage distribution	
	million yen	million yen		2003	2004
Metal products	4,995	4,982	-0.3%	3.1%	3.0%
Metalworking machinery	299	405	35.4%	-	0.2%
Semiconductor/LCD manufacturing equipment	-	9,525	-	-	5.7%
Other machinery and equipment	11,514	5,611	-	-	3.4%
Machinery and equipment	11,813	15,541	31.6%	7.3%	9.3%
Computers	-	12,272	-	-	7.3%
Consumer electrical machinery	-	949	-	-	0.6%
Industrial electrical machinery	-	9,951	-	-	6.0%
Info-communications equipment	-	9,273	-	-	5.6%
VTR	-	1,809	-	-	1.1%
Electronic components/devices	-	4,415	-	-	2.6%
Other electrical machinery	-	18,467	-	-	11.1%
Electrical machinery	61,057	57,135	-6.4%	37.6%	34.2%
Precision and optical instruments	2,443	1,903	-22.1%	1.5%	1.1%
Motor vehicles	23,260	24,849	6.8%	14.3%	14.9%
Auto parts	33,513	35,600	6.2%	20.7%	21.3%
Motor vehicles and auto parts	56,773	60,450	6.5%	35.0%	36.2%
Food products, beverages, and tobacco products	2,764	2,395	-13.4%	1.7%	1.4%
Plastic products	9,819	10,446	6.4%	6.1%	6.3%
EMS companies (Subconstructors)	-	941	-	-	0.6%
Non-manufacturing	1,483	1,232	-16.9%	0.9%	0.7%
Other industries	11,081	12,002	8.3%	6.8%	7.2%
Total domestic shipments	162,228	167,025	3.0%	100.0%	100.0%
				(41.3%)	(37.5%)
Export	231,018	278,805	20.7%	(58.7%)	(62.5%)
Grand total	393,246	445,830	13.4%	(100.0%)	(100.0%)

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.