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On **August 9, 2019**, Harmonic Drive Systems Inc. (HDSI) announced earnings results for Q1 FY03/20.

Cumulative (JPYmn)	FY03/18				FY03/18				FY03/20	FY03/20	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	% of FY	FY Est.
Sales	12,512	25,014	39,622	54,340	16,439	34,474	52,275	67,809	11,652	27.7%	42,000
YoY	72.2%	71.9%	80.9%	80.7%	31.4%	37.8%	31.9%	24.8%	-29.1%		-38.1%
Gross profit	5,902	12,059	19,016	25,703	7,947	15,655	24,148	30,446	4,465		
YoY	67.8%	74.9%	85.8%	85.4%	34.6%	29.8%	27.0%	18.5%	-43.8%		
GPM	47.2%	48.2%	48.0%	47.3%	48.3%	45.4%	46.2%	44.9%	38.3%		
SG&A expenses	2,868	5,717	8,629	13,104	3,279	6,741	9,962	13,542	2,961		
YoY	93.7%	95.9%	98.4%	116.5%	14.3%	17.9%	15.4%	3.3%	-9.7%		
SG&A ratio	22.9%	22.9%	21.8%	24.1%	19.9%	19.6%	19.1%	20.0%	25.4%		
Operating profit	3,034	6,342	10,387	12,599	4,668	8,914	14,186	16,904	1,504	150.4%	1,000
YoY	48.9%	59.4%	76.6%	61.2%	53.8%	40.6%	36.6%	34.2%	-67.8%		-94.1%
OPM	24.3%	25.4%	26.2%	23.2%	28.4%	25.9%	27.1%	24.9%	12.9%		2.4%
Recurring profit	3,047	6,219	10,131	12,228	4,827	9,338	14,565	17,465	1,499	149.9%	1,000
YoY	46.3%	49.4%	70.8%	53.6%	58.4%	50.1%	43.8%	42.8%	-69.0%		-94.3%
RPM	24.4%	24.9%	25.6%	22.5%	29.4%	27.1%	27.9%	25.8%	12.9%		2.4%
Net income	1,785	3,704	6,018	8,060	3,063	5,908	9,168	11,602	383	765.5%	50
YoY	30.9%	34.6%	42.9%	-59.2%	71.6%	59.5%	52.3%	43.9%	-87.5%		-99.6%
Net margin	14.3%	14.8%	15.2%	14.8%	18.6%	17.1%	17.5%	17.1%	3.3%		0.1%

Quarterly (JPYmn)	FY03/18				FY03/18				FY03/20
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Sales	12,512	12,502	14,608	14,717	16,439	18,035	17,801	15,534	11,652
YoY	72.2%	71.6%	98.6%	80.3%	31.4%	44.3%	21.9%	5.6%	-29.1%
Gross profit	5,902	6,157	6,957	6,688	7,947	7,708	8,492	6,298	4,465
YoY	67.8%	82.2%	108.6%	84.0%	34.6%	25.2%	22.1%	-5.8%	-43.8%
GPM	47.2%	49.2%	47.6%	45.4%	48.3%	42.7%	47.7%	40.5%	38.3%
SG&A expenses	2,868	2,849	2,912	4,476	3,279	3,462	3,221	3,580	2,961
YoY	93.7%	98.2%	103.4%	162.7%	14.3%	21.5%	10.6%	-20.0%	-9.7%
SG&A ratio	22.9%	22.8%	19.9%	30.4%	19.9%	19.2%	18.1%	23.0%	25.4%
Operating profit	3,034	3,307	4,045	2,212	4,668	4,246	5,271	2,718	1,504
YoY	48.9%	70.4%	112.4%	14.6%	53.8%	28.4%	30.3%	22.9%	-67.8%
OPM	24.3%	26.5%	27.7%	15.0%	28.4%	23.5%	29.6%	17.5%	12.9%
Recurring profit	3,047	3,172	3,912	2,098	4,827	4,511	5,228	2,899	1,499
YoY	46.3%	52.4%	121.3%	3.5%	58.4%	42.2%	33.6%	38.2%	-69.0%
RPM	24.4%	25.4%	26.8%	14.3%	29.4%	25.0%	29.4%	18.7%	12.9%
Net income	1,785	1,919	2,314	2,042	3,063	2,845	3,260	2,434	383
YoY	30.9%	38.2%	58.7%	-86.8%	71.6%	48.3%	40.9%	19.2%	-87.5%
Net margin	14.3%	15.3%	15.8%	13.9%	18.6%	15.8%	18.3%	15.7%	3.3%

Source: Shared Research based on company data

By regional segment

By segment Quarterly (JPYmn)	FY03/18				FY03/18				FY03/20
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Sales	12,512	12,502	14,608	14,717	16,439	18,035	17,801	15,534	11,652
YoY	72.2%	71.6%	98.6%	80.3%	31.4%	44.3%	21.9%	5.6%	-29.1%
Japan	7,916	8,236	9,546	9,652	10,917	12,483	12,016	9,912	5,888
YoY	29.5%	34.2%	51.7%	38.9%	37.9%	51.6%	25.9%	2.7%	-46.1%
North America	1,301	1,214	1,454	1,512	1,544	1,662	1,783	1,826	1,825
YoY	12.8%	5.8%	36.9%	24.9%	18.6%	36.8%	22.6%	20.8%	18.2%
Europe	3,294	3,052	3,607	3,554	3,978	3,891	4,002	3,796	3,939
YoY	-	-	-	-	20.8%	27.5%	10.9%	6.8%	-1.0%
Recurring profit	3,047	3,172	3,912	2,098	4,827	4,511	5,228	2,899	1,499
YoY	46.3%	52.4%	121.3%	3.5%	58.4%	42.2%	33.6%	38.2%	-69.0%
RPM	24.4%	25.4%	26.8%	14.3%	29.4%	25.0%	29.4%	18.7%	12.9%
Japan	2,772	3,919	3,760	3,459	4,489	4,589	5,022	3,198	1,418
YoY	19.7%	94.6%	65.9%	51.6%	61.9%	17.1%	33.6%	-7.5%	-68.4%
RPM	35.0%	47.6%	39.4%	35.8%	41.1%	36.8%	41.8%	32.3%	24.1%
% of total RP	91.0%	123.5%	96.1%	164.9%	93.0%	101.7%	96.1%	110.3%	94.6%
North America	221	145	170	142	258	343	442	333	364
YoY	15.5%	-15.4%	-2.1%	-15.7%	16.5%	136.7%	159.5%	134.8%	41.5%
RPM	17.0%	11.9%	11.7%	9.4%	16.7%	20.7%	24.8%	18.2%	20.0%
% of total RP	7.3%	4.6%	4.4%	6.8%	5.3%	7.6%	8.5%	11.5%	24.3%
Europe	481	-108	491	-310	646	167	803	135	148
YoY	490.7%	-	-	-	34.2%	-	63.7%	-	-77.0%
RPM	14.6%	-3.5%	13.6%	-8.7%	16.2%	4.3%	20.1%	3.5%	3.8%
% of total RP	15.8%	-3.4%	12.5%	-14.8%	13.4%	3.7%	15.4%	4.6%	9.9%
Adjustments	-427	-784	-509	-1,193	-565	-588	-1,040	-766	-432

Source: Shared Research based on company data

Note: Figures may differ from company materials due to differences in rounding methods. Recurring profit from the European segment was equity in earnings of affiliates in FY03/17 and earlier, but recurring profit after amortization of goodwill and others from FY03/18.

Orders, production, and sales

Orders Quarterly (JPYmn)		FY03/18				FY03/18				FY03/20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Orders		19,966	20,498	22,055	21,207	16,088	12,785	9,458	6,514	7,676
YoY		164.2%	195.1%	173.2%	54.2%	-19.4%	-37.6%	-57.1%	-69.3%	-52.3%
Japan	Speed reducer	13,110	12,754	14,415	14,283	8,299	5,794	3,218	1,773	2,428
	YoY	150.7%	163.6%	151.9%	28.8%	-36.7%	-54.6%	-77.7%	-87.6%	-70.7%
	Mechatronics	1,412	1,184	1,301	1,362	1,227	656	683	604	753
	YoY	37.8%	21.5%	-1.1%	-2.5%	-13.1%	-44.6%	-47.5%	-55.7%	-38.6%
North America	Speed reducer	919	1,408	1,051	1,300	1,125	1,527	934	698	957
	YoY	8.0%	115.2%	64.1%	54.2%	22.4%	8.5%	-11.1%	-46.3%	-14.9%
	Mechatronics	789	669	844	706	743	719	628	410	521
	YoY	74.8%	39.7%	113.9%	65.7%	-5.8%	7.6%	-25.5%	-41.9%	-29.9%
Europe	Speed reducer	2,905	3,405	2,949	2,936	3,182	2,963	2,931	2,412	2,049
	YoY	-	-	-	-	9.5%	-13.0%	-0.6%	-17.8%	-35.6%
	Mechatronics	832	1,079	1,496	620	1,513	1,125	1,063	617	967
	YoY	-	-	-	-	81.9%	4.3%	-28.9%	-0.5%	-36.1%
Order backlog		21,560	29,997	37,536	44,225	42,369	36,490	26,474	16,492	12,707
YoY		279.1%	480.8%	541.0%	277.2%	96.5%	21.6%	-29.5%	-62.7%	-70.0%
Japan	Speed reducer	14,895	20,534	26,662	32,415	29,715	23,528	14,739	6,964	3,795
	YoY	318.5%	552.6%	622.0%	256.6%	99.5%	14.6%	-44.7%	-78.5%	-87.2%
	Mechatronics	1,456	1,644	1,795	2,103	2,064	1,463	843	533	494
	YoY	135.3%	151.3%	111.2%	100.5%	41.7%	-11.0%	-53.0%	-74.7%	-76.1%
North America	Speed reducer	1,183	1,796	1,987	2,408	2,500	3,091	2,913	2,361	2,184
	YoY	12.2%	94.0%	122.9%	121.1%	111.2%	72.1%	46.6%	-2.0%	-12.7%
	Mechatronics	737	976	1,245	1,318	1,295	1,399	1,437	1,149	966
	YoY	62.2%	122.8%	195.5%	166.6%	75.8%	43.2%	15.4%	-12.9%	-25.4%
Europe	Speed reducer	2,567	4,005	4,151	4,347	4,477	4,597	4,238	3,756	3,530
	YoY	-	-	-	-	74.4%	14.8%	2.1%	-13.6%	-21.2%
	Mechatronics	721	1,042	1,694	1,633	2,318	2,412	2,305	1,730	1,739
	YoY	-	-	-	-	221.5%	131.5%	36.0%	6.0%	-25.0%

Production Quarterly (JPYmn)		FY03/18				FY03/18				FY03/20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Orders		12,557	12,397	14,227	15,286	16,675	18,754	17,691	15,811	10,701
YoY		74.9%	71.7%	91.4%	87.3%	32.8%	51.3%	24.3%	3.4%	-35.8%
Japan	Speed reducer	7,544	7,635	8,988	9,266	11,121	12,513	11,388	9,890	4,980
	YoY	44.4%	42.8%	65.2%	53.9%	47.4%	63.9%	26.7%	6.7%	-55.2%
	Mechatronics	1,335	1,315	1,602	1,279	1,536	1,825	1,626	1,756	1,503
	YoY	14.7%	21.9%	24.8%	-7.9%	15.1%	38.8%	1.5%	37.2%	-2.2%
North America	Speed reducer	592	561	614	623	697	705	814	821	772
	YoY	15.5%	10.9%	38.0%	16.5%	17.7%	25.8%	32.6%	31.9%	10.7%
	Mechatronics	258	266	376	478	436	406	323	334	347
	YoY	-7.8%	-7.9%	41.7%	121.5%	69.1%	52.2%	-14.3%	-30.2%	-20.4%
Europe	Speed reducer	2,046	1,936	2,110	2,867	2,267	2,553	2,730	2,195	2,286
	YoY	-	-	-	-	10.8%	31.9%	29.3%	-23.5%	0.9%
	Mechatronics	782	685	536	772	618	752	810	816	813
	YoY	-	-	-	-	-20.9%	9.9%	51.2%	5.7%	31.5%

Sales Quarterly (JPYmn)		FY03/18				FY03/18				FY03/20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Total sales		12,512	12,502	14,608	14,717	16,439	18,035	17,801	15,534	11,652
YoY		72.2%	71.6%	98.6%	80.3%	31.4%	44.3%	21.9%	5.6%	-29.1%
Japan	Speed reducer	7,019	7,136	8,344	8,544	9,811	11,141	10,849	8,946	5,027
	YoY	37.8%	37.2%	61.2%	48.6%	39.8%	56.1%	30.0%	4.7%	-48.8%
	Mechatronics	961	996	1,151	1,056	1,083	1,160	1,116	893	787
	YoY	-5.6%	6.4%	2.9%	-12.1%	12.7%	16.5%	-3.0%	-15.4%	-27.3%
North America	Speed reducer	782	793	875	885	878	1,027	1,173	1,177	1,131
	YoY	12.9%	14.2%	32.9%	11.3%	12.1%	29.5%	34.0%	33.0%	28.8%
	Mechatronics	525	430	585	634	680	643	617	663	703
	YoY	14.0%	-5.3%	44.9%	52.0%	29.6%	49.6%	5.4%	4.5%	3.3%
Europe	Speed reducer	2,406	2,296	2,792	2,771	3,112	3,022	3,026	2,724	2,815
	YoY	-	-	-	-	29.4%	31.6%	8.4%	-1.7%	-9.6%
	Mechatronics	818	852	860	827	874	1,042	1,019	1,132	1,190
	YoY	-	-	-	-	6.8%	22.3%	18.5%	36.8%	36.1%

Sales by region (by destination)

Sales by region Quarterly (JPYmn)	FY03/18				FY03/18				FY03/20
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Orders	12,512	12,502	14,608	14,717	16,439	18,035	17,801	15,534	11,652
YoY	72.2%	71.6%	98.6%	80.3%	31.4%	44.3%	21.9%	5.6%	-29.1%
Japan	6,409	6,588	7,266	7,865	8,814	10,347	10,459	7,826	4,167
YoY	31.4%	40.5%	54.0%	50.5%	37.5%	57.1%	43.9%	-0.5%	-52.7%
% of total sales	51.2%	52.7%	49.7%	53.4%	53.6%	57.4%	58.8%	50.4%	35.8%
North America	1,301	1,214	1,454	1,512	1,544	1,662	1,783	1,869	1,825
YoY	12.8%	5.8%	36.9%	24.9%	18.6%	36.8%	22.6%	23.6%	18.2%
% of total sales	10.4%	9.7%	10.0%	10.3%	9.4%	9.2%	10.0%	12.0%	15.7%
Europe	3,294	3,065	3,594	3,554	3,978	3,891	4,002	4,081	3,939
YoY	559.4%	628.1%	757.4%	673.9%	20.8%	27.0%	11.3%	14.8%	-1.0%
% of total sales	26.3%	24.5%	24.6%	24.1%	24.2%	21.6%	22.5%	26.3%	33.8%
Other regions	1,507	1,635	2,293	1,787	2,103	2,135	1,557	1,759	1,721
YoY	105.0%	58.8%	98.1%	41.1%	39.5%	30.6%	-32.1%	-1.6%	-18.2%
% of total sales	12.0%	13.1%	15.7%	12.1%	12.8%	11.8%	8.7%	11.3%	14.8%

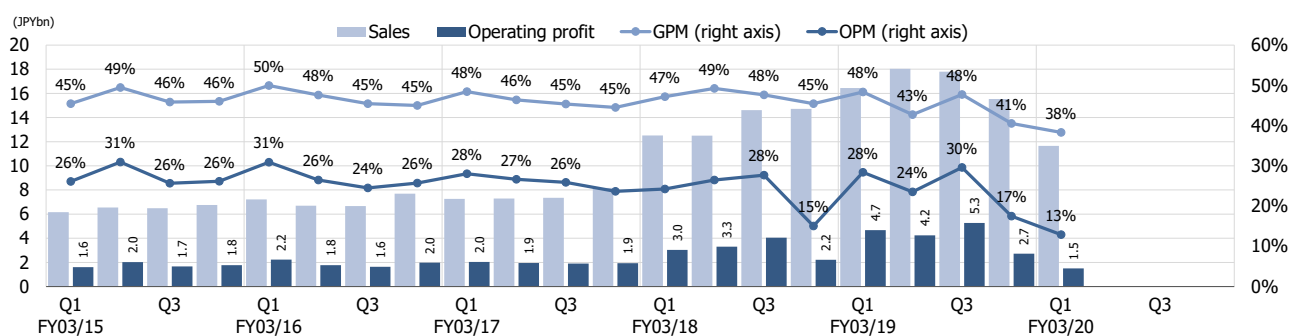
Source: Shared Research based on company data

Q1 FY03/20 results (out August 9, 2019)

Results summary

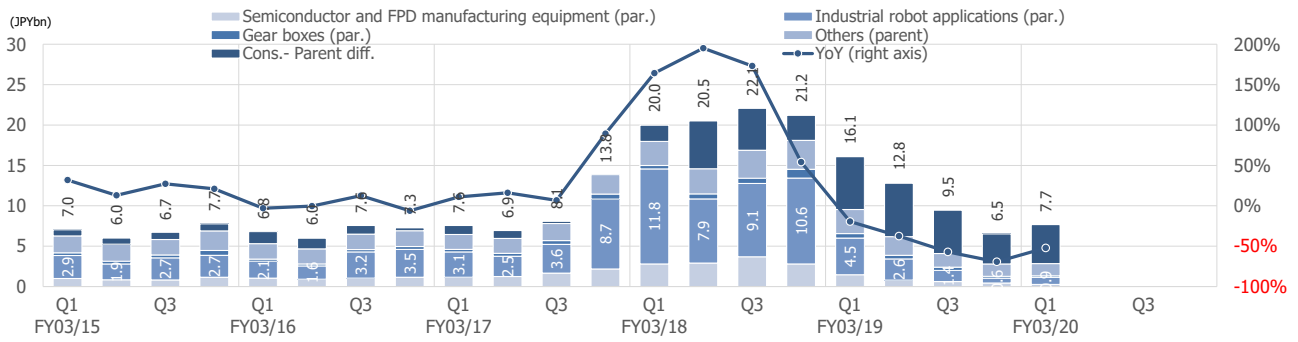
- ▷ Q1 FY03/20: Sales were JPY11.7bn (-29.1% YoY), operating profit was JPY1.5bn (-67.8% YoY), and net income attributable to owners of the parent was JPY383mn (-87.5% YoY). The company left its 1H FY03/20 forecasts (sales of JPY21.0bn and OP of JPY450mn) and full-year forecasts (sales of JPY42.0bn and OP of 1.0bn) unchanged. With no sign of orders bottoming out, the company continues to reduce its order backlog.
- ▷ Order trends: In Q1 FY03/20, consolidated orders were JPY7.7bn (-52.3% YoY), up 17.8% from JPY6.5bn in the previous quarter, but the company continues to reduce its order backlog as orders continue to undershoot sales. The order backlog was JPY12.7bn, down 70.0% YoY and down 22.9% QoQ, due in part to JPY575mn in cancellations. Parent-only sales, which have a major impact on earnings, came to JPY2.84bn (-70.3% YoY), though up 1.6% from JPY2.79bn in the previous quarter. Orders were up QoQ for applications for industrial robots, oil-drilling equipment, and FPD production equipment, slightly exceeding declines for semiconductor production equipment, metalworking machinery, and gearboxes for motor manufacturers.
- ▷ Worsened margins: Gross profit was JPY4.5bn (down 43.8% YoY). Although we think the company maintained its competitiveness and sales prices were unchanged, GPM turned down due to a lower operating rate associated with decreased production (JPY10.7bn, down 35.8% YoY). The company curtailed SG&A expenses (down 9.7% YoY to JPY3.0bn) by cutting overheads and rigorous expense management, but profit margins were hurt by lower sales.
- ▷ By regional segment: Sales were JPY5.9bn (-46.1% YoY) and recurring profit was JPY1.4bn (-68.4% YoY) in mainstay Japan. Sales were JPY1.8bn (+18.2% YoY) and recurring profit was JPY364mn (+41.5% YoY) in North America, while sales were JPY3.9bn (-1.0% YoY) and recurring profit was JPY148mn (-77.0% YoY) in Europe. Higher demand for medical equipment and machine tool applications led to sales and profit growth in North America.
- ▷ Orders fell below sales in Q1 FY03/20 and the order backlog continues to decline. The cost ratio tends to rise in Q2 because of fewer plant operating days. Many manufacturers appear uncertain in which region they should increase production because of the effects of the US-China trade frictions. It remains unclear whether the company's earnings will bottom out and begin to recover in Q2 FY03/20.

Earnings

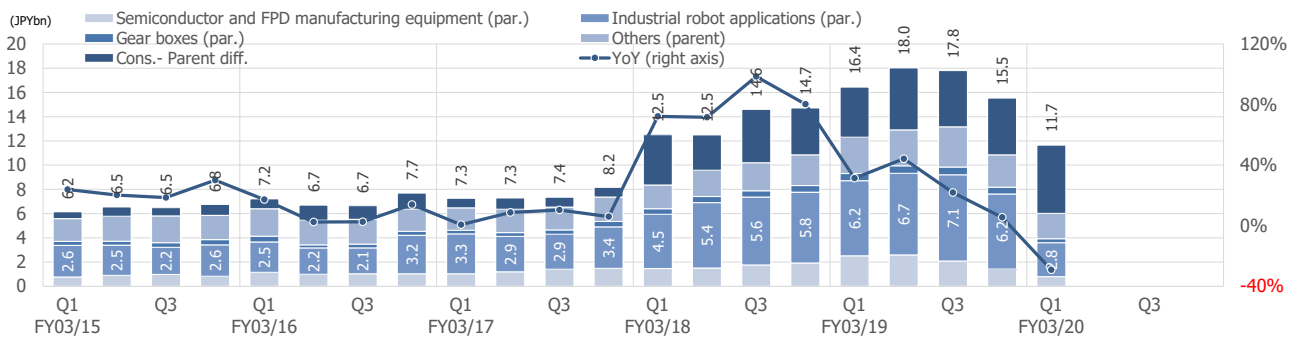


Source: Shared Research based on company data

Orders

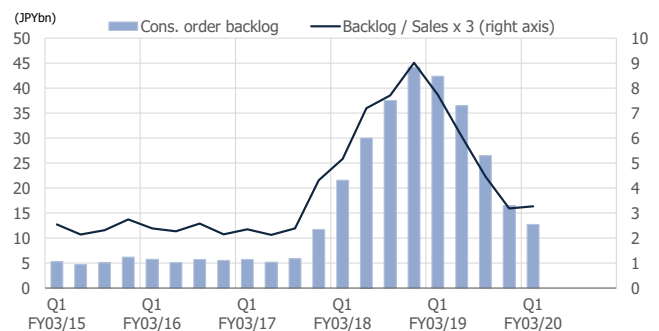
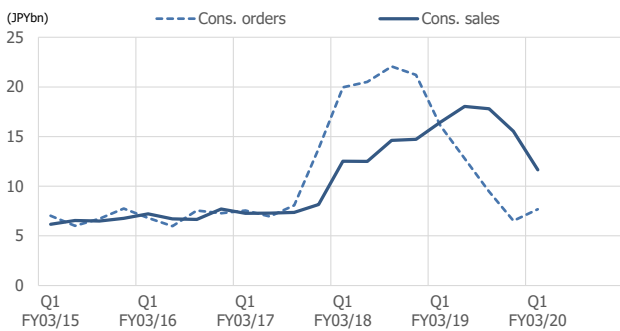


Sales

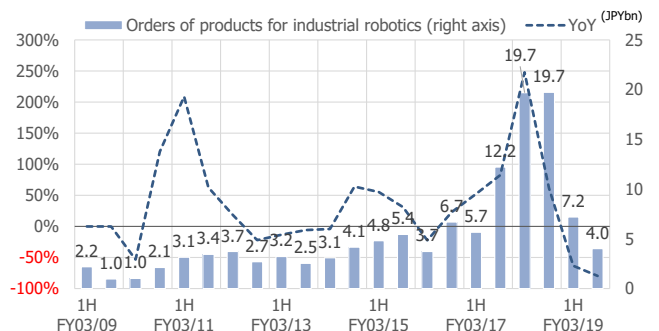
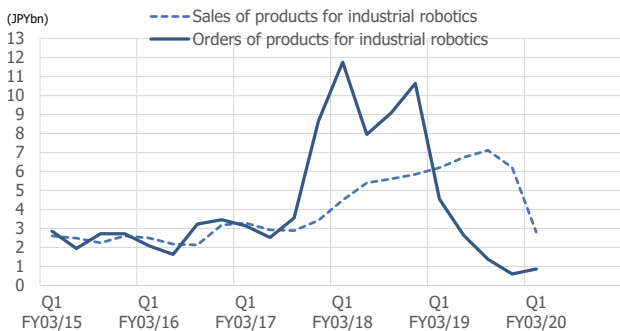


Source: Shared Research based on company data

Orders, sales, and order backlog

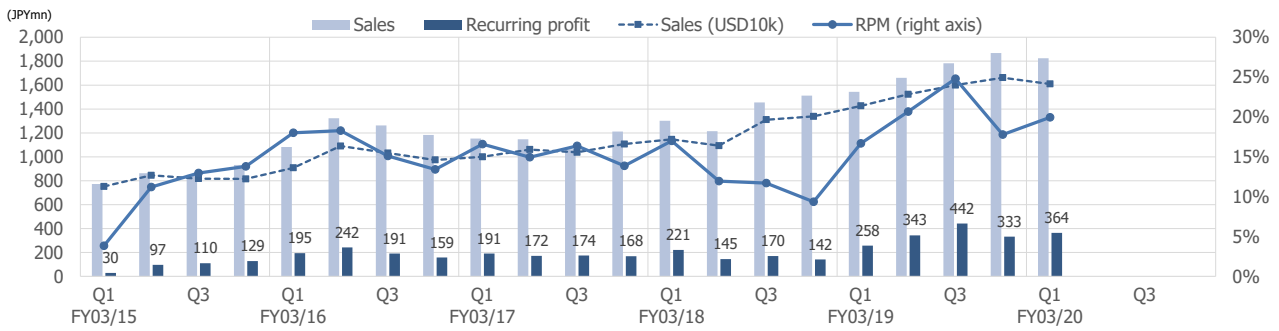


Products for industrial robotics (parent)

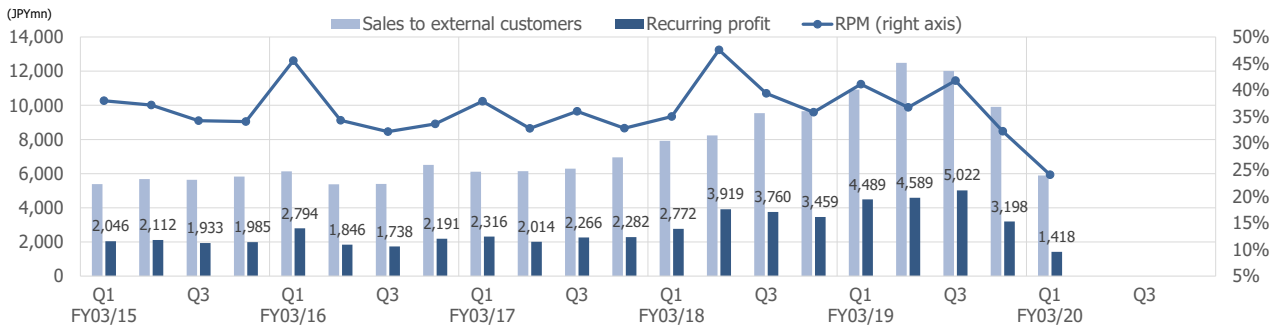


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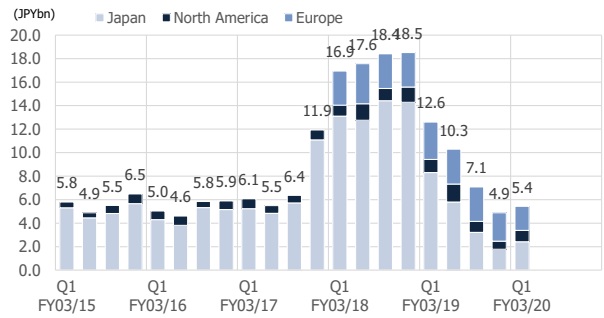
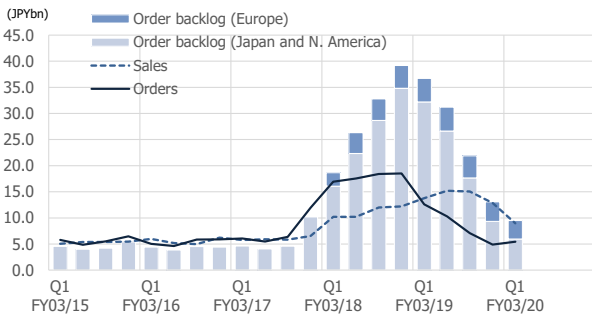
North America segment results



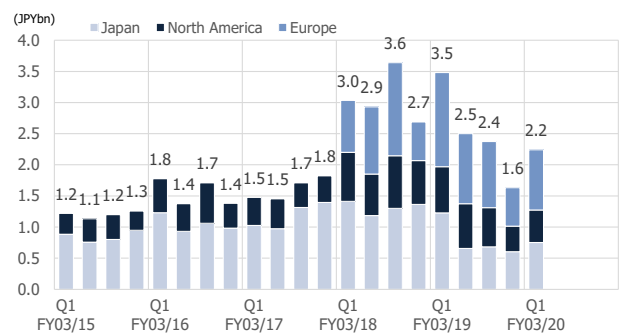
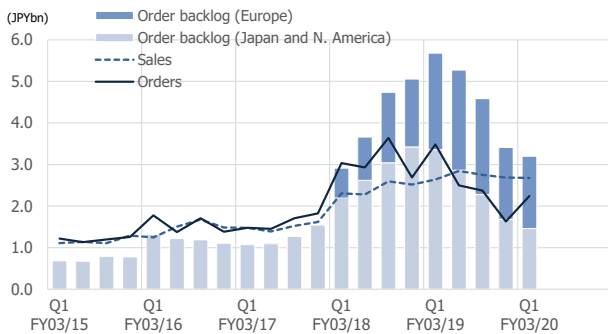
Japan segment results



Reducers (left: consolidated, right: orders by region)



Mechatronics (left: consolidated, right: orders by region)



Source: Shared Research based on company data

Gross profit, SG&A and operating profit



Source: Shared Research based on company data

This note is the most recent addition to the [full report](#).

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