

Environmental Data

Environmental Data

Since we are committed to the reduction of environmental impacts, we are promoting energy saving, the prevention of global warming, waste reduction, and chemical substance reduction. The table below summarizes the energy and resource inputs and outputs associated with our FY2002 business activities by internal company and major affiliates. In pages 25 and 26, the major products and representative environmental impact data are listed by production base.

Internal Companies/Affiliates

Performance Items※1		Units	Rolling Stock, Construction Machinery & Crushing Plant Company	Aerospace Company	Gas Turbines & Machinery Company		
Environmental impact caused by input of material, energy, etc.	Material input : Metals (steel, aluminum, copper, etc.)	ton	49,795	5,451	23,073		
	Material recycle amount	ton	23,757	0	0		
	Total energy consumption	Electric power	TJ	483	846	516	
		Fuel	TJ	145	360	494	
	Total	TJ	628	1,206	1,010		
	Recycled energy consumption	TJ	0	0	0		
	Water consumption	m ³	589,755	3,662,000	625,815		
	Water recycle amount	m ³	11,294	161,119	0		
	Recycled resource and recycled parts input	ton	0	0	0		
Amount of harmful material handled	kg	1,197,127	166,643	16,000			
Environmental impact upstream of business area	Green purchasing	1 mil yen	50	122	102		
Environmental impact caused by output of unnecessary things	Air	Greenhouse gas emission	t-CO ₂	32,319	56,265	50,135	
		Ozone depleting substance emission	ODP ton	0	0	0	
		SO _x emission	kg	1,334	12,043	8,254	
		NO _x emission	kg	3,328	20,384	103,314	
		Dust emission	kg	620	1,633	1,464	
		VOCs emission	kg	124,801	113,523	17,168	
		PRTR substance emission	kg	111,219	110,993	12,879	
		Concentration of emission-controlled substances when emitted	SO _x	PPM	Compliant※2	Compliant※2	Compliant※2
			NO _x	PPM	Compliant※2	Compliant※2	Compliant※2
			Dust	g/m ³ N	Compliant※2	Compliant※2	Compliant※2
		Dioxins	ng/m ³ N	Not applicable※4	Not applicable※4	Not applicable※4	
		Concentration of emission-controlled substances when emitted	Benzene	mg/m ³ N	Not applicable※4	Not applicable※4	
		Noise and vibration generation	dB	Compliant※2	Compliant※2	Compliant※2	
		Odor generation	m ³ /min	Compliant※2	Compliant※2	Compliant※2	
	Water quality	Total discharge	m ³	325,073	1,481,424	156,414	
		PRTR substance discharge	kg	0.1	42	0	
		COD discharge/Nitrogen discharge/Phosphorus discharge	COD	kg	720	8,580	34
			Nitrogen	kg	1,006	22,776	30
			Phosphorus	kg	61	351	0
		Concentration of discharge-controlled substances when discharged	mg/L	Compliant※2	Compliant※2	Compliant※2	
	Soil quality	Total discharge of waste, etc.	ton	13,235	3,306	4,654	
		Reused resources	ton	0	0	5	
		Recycled resources	ton	11,832	1,630	3,273	
Resources subject to thermal energy recovery		ton	577	693	754		
Amount of waste		ton	80	148	500		
Final disposal waste		ton	752	474	82		
Specially controlled industrial waste		kg	84,930	203,050	41,712		
PRTR substance transfer		kg	79,113	41,769	3,120		
Environmental impact downstream of business area	Environmental impact caused by product characteristics		P13~14	P13~14	P13~14		
	Production and sale of environmental impact-reducing products		— ※3	— ※3	— ※3		
Environmental impact caused by transport	CO ₂ emission during transport	t-CO ₂	319	227	112		
	NO _x emission during transport	kg	2,108	1,118	269		
	Number of eco-vehicle introduced	unit	2	1	1		

- ※1. Performance items in the table above were taken from "State of Activities for Reduction of Environmental Burden" contained in the 2000 Environmental Reporting Guidelines of the Ministry of the Environment. Environmental data is given in the horizontal direction for internal companies as well as for a single group consisting of the head office, branch offices and technical institutes.
- ※2. The discharge concentration of regulated substances and the generation of noise, vibrations and odors are listed as "Compliant" or "Not Compliant".
- ※3. "—" is used when data was unavailable. "0" means the measured data was zero.
- ※4. "Not applicable" means there were no regulated facilities that create environmental impact.
- ※5. Data in [] is the percentage of increase/decrease from performance data of the previous year. Provided only where last year's data was available.

Plant & Infrastructure Engineering Company	Consumer Products & Machinery Company	Head Office, Branch Offices & Technical Institutes	Kawasaki Shipbuilding	Kawasaki Precision Machinery	Total	Comparison with Previous Year
50,297	167,230	106	171,051	19,371	486,374	[-4%]
51	1,699	0	1,900	0	27,407	
197	796	100	553	247	3,738	[-1%]
24	733	48	137	160	2,101	[+11%]
221	1,529	147	690	407	5,839	[+3%]
0	0	0	0	0	0	
163,407	976,700	80,892	717,240	176,876	6,992,685	[+2%]
31,923	30,407	0	26,327	32,926	293,996	[-37%]
20	0	25	0	0	45	
69,145	649,490	— *3	2,084,618	35,259	4,218,281	
205	233	11	7	1	731	
9,461	66,119	6,656	34,113	17,364	272,432	[-3%]
0	0	0	0	0	0	
0	479	— *3	465	13	22,588	[-41%]
160	21,970	— *3	984	10,431	160,571	[-10%]
0	750	— *3	76	149	4,692	[-10%]
50,725	238,574	— *3	579,899	28,145	1,152,835	
54,045	238,577	— *3	579,254	28,145	1,135,112	
Compliant**2	Compliant**2	Not applicable**4	Compliant**2	Compliant**2	Compliant**2	
Compliant**2	Compliant**2	Not applicable**4	Compliant**2	Compliant**2	Compliant**2	
Compliant**2	Compliant**2	Not applicable**4	Compliant**2	Compliant**2	Compliant**2	
Not applicable**4	Compliant**2	Not applicable**4	Not applicable**4	Not applicable**4	Compliant**2	
Not applicable**4	Not applicable**4	Not applicable**4	Not applicable**4	Not applicable**4	Not applicable**4	
Compliant**2	Compliant**2	Not applicable**4	Compliant**2	Compliant**2	Compliant**2	
Compliant**2	Compliant**2	Not applicable**4	Compliant**2	Compliant**2	Compliant**2	
83,753	558,231	27,925	448,273	58,778	3,139,871	[-24%]
0	3,252	— *3	0	0	3,295	
418	5,751	0	739	539	16,781	
255	13,337	— *3	— *3	364	37,768	
49	516	— *3	— *3	79	1,056	
Compliant**2	Compliant**2	Compliant**2	Compliant**2	Compliant**2	Compliant**2	
5,259	15,378	182	22,141	2,806	66,960	[-2%]
0	5,589	0	15	0	5,609	
4,920	3,551	79	19,122	2,689	47,096	[+1%]
220	1,233	100	252	112	3,941	
27	2,986	3	1,396	0	5,140	[-20%]
56	1,481	0	1,242	5	4,092	[-29%]
2	583,872	0	60,961	2,484	977,011	[+15%]
10,281	24,300	0	69,044	6,293	233,921	
P13~14	P13~14	P13~14	P13~14	P13~14	P13~14	
— *3	— *3	— *3	— *3	— *3	— *3	
330	14,280	2	0	91	15,360	
1,895	98,828	8	0	315	104,541	
0	8	0	0	0	12	

Environmental Data

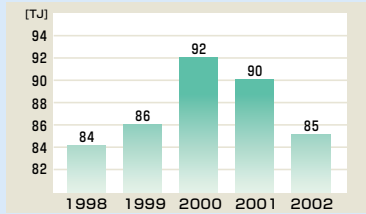
Production Base

Wastes: ■ Discharged amount ■ Recycled amount —●— Recycling rate

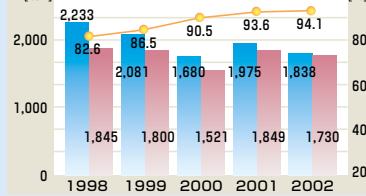
Noda Works

- Major products: General steel structures, airport facilities, steel pipe structures, bridges, and tanks
- Address: 118, Futatsuzuka, Noda, Chiba 278-8585 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	NA
NOx	NA
Dust	NA

[Amount released into public water (kg)]

COD	387
Nitrogen	121
Phosphorus	27

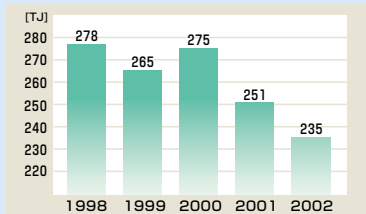


Noise-reduction hangar

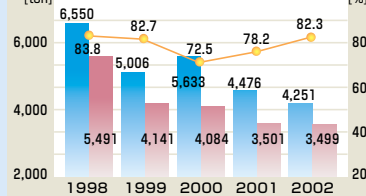
Yachiyo Works

- Major products: RPF production facilities, crushers, pulverizers, steel products, cast iron products
- Address: 1780, Kamikoya, Yachiyo, Chiba 276-0022 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	1,324
NOx	2,897
Dust	611

[Amount released into public water (kg)]

COD	254
Nitrogen	635
Phosphorus	44



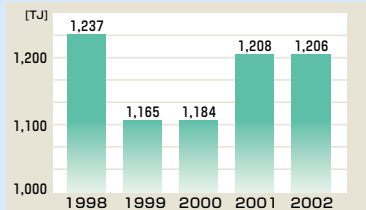
Bucket wheel excavator (BWE)

Gifu Works

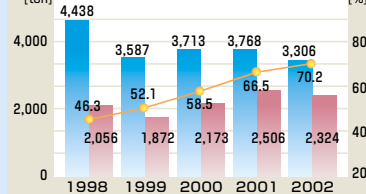
(including Nagoya Works 1 and Nagoya Works 2)

- Major products: Aircraft (including helicopters), spacecraft, aviation-related facilities and equipment
- Address: 1, Kawasaki-cho, Kakamigahara, Gifu 504-8710 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	12,043
NOx	20,384
Dust	1,633

[Amount released into public water (kg)]

COD	8,580
Nitrogen	22,776
Phosphorus	351



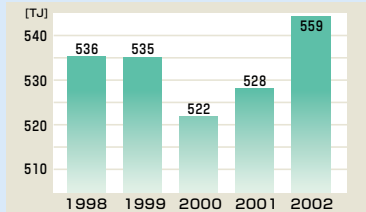
Medical emergency helicopter BK117

Kobe Works

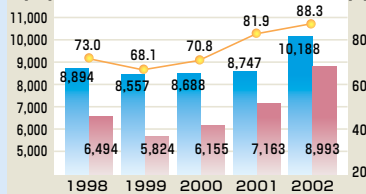
(including Kawasaki Shipbuilding)

- Major products: Marine vessels & equipment, submarines, land & marine turbines and diesel engines
- Address: 3-1-1, Higashikawasaki-cho, Chuo-ku, Kobe, Hyogo 650-8670 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	8,254
NOx	102,499
Dust	1,433

[Amount released into public water (kg)]

COD	33
Nitrogen	30
Phosphorus	0.07

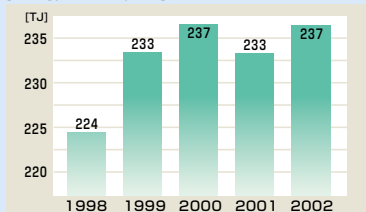


Marine steam turbine (UA-type)

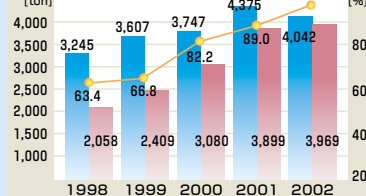
Hyogo Works

- Major products: Rolling stock, automated guideway transport, platform doors
- Address: 2-1-18, Wadayamadori, Hyogo-ku, Kobe, Hyogo 652-0884 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	10
NOx	431
Dust	9

[Amount released into public water (kg)]

COD	23
Nitrogen	21
Phosphorus	0.53

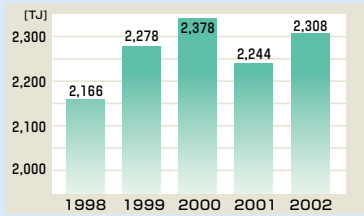


Rolling stock

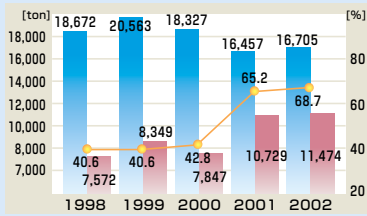
Akashi Works (including Seishin Works)

- Major products: Motorcycles, robots, jet engines, and general-purpose gas turbines
- Address: 1-1, Kawasaki-cho, Akashi, Hyogo 673-8666 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	479
NOx	22,785
Dust	781

[Amount released into public water (kg)]

COD	5,751
Nitrogen	13,337
Phosphorus	516

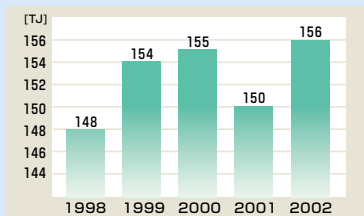


Super Sports Series

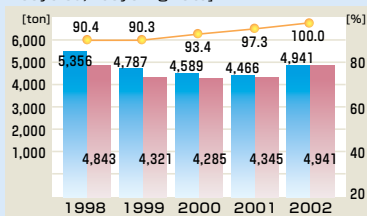
Banshu Works

- Major products: Civil engineering machinery, cargo handling machinery
- Address: 2680, Oka, Inami-cho, Kako, Hyogo 675-1113 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	NA
NOx	NA
Dust	NA

[Amount released into public water (kg)]

COD	443
Nitrogen	350
Phosphorus	16

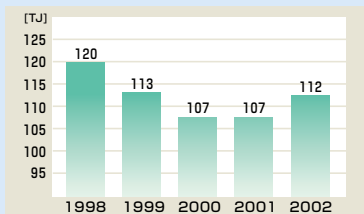


Wheel loader

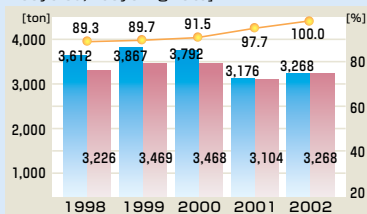
Harima Works

- Major products: Plants, environmental protection equipment, boilers, civil engineering/construction machinery, steel structures
- Address: 8, Nijima, Harima, Kako, Hyogo 675-0155 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	NA
NOx	160
Dust	NA

[Amount released into public water (kg)]

COD	31
Nitrogen	135
Phosphorus	22

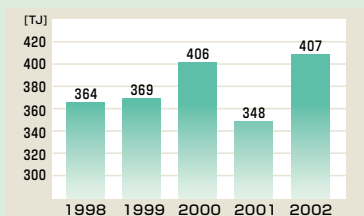


Large diameter shield machines

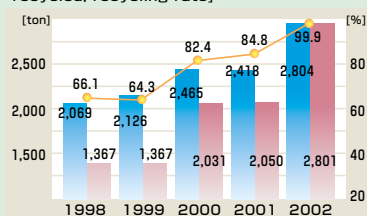
Nishi-Kobe Works (Kawasaki Precision Machinery)

- Major products: Industrial hydraulic devices, marine machinery, and precision equipment/devices
- Address: 234, Matsumoto, Hasetani-cho, Nishi-ku, Kobe, Hyogo 651-2239 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	13
NOx	10,431
Dust	149

[Amount released into public water (kg)]

COD	539
Nitrogen	364
Phosphorus	79

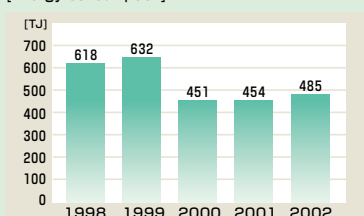


Hydraulic equipment

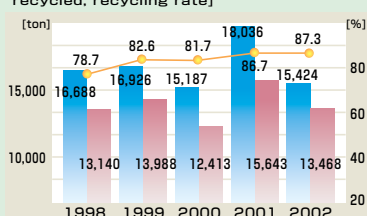
Sakaide Works (Kawasaki Shipbuilding)

- Major products: Marine vessels, marine equipment (LNG/LPG ships, container ships, oil drilling rigs, etc.)
- Address: 1, Kawasaki-cho, Sakaide, Kagawa 762-8507 Japan

[Energy consumption]



[Amount of waste discharged, amount recycled, recycling rate]



[Amount released into the atmosphere (kg)]

SOx	465
NOx	984
Dust	76

[Amount released into public water (kg)]

COD	739
Nitrogen	—
Phosphorus	—



LPG carrier