

ChugaiRo

76th

April 1, 2017 — March 31, 2018

Annual Report



Energy



*Information/
Communications*



Environment

CHUGAI RO CO., LTD.

To Our Shareholders

Once again, as with every year, we thank you for your unstinting support. On 31 March 2018, the Chugai Ro Group completed the 76th fiscal period (the year up to March 2018) – thus, we would like to provide you with an outline of the business report for that period.

■ Business Environment

In this accounting period of consolidation, the Japanese economy has shifted into a gradual recovery thanks to issues such as improvement to business profit, investment in plant and equipment and recovery in exports underpinned by the recovery seen in the global economy.

As to the markets that our group are involved in, demand for steel is running high due to improved business confidence in the steel industry, leading to some renewal of old facilities to bolster manufacturing platforms. Indeed, set to a backdrop that includes activity in IoT and AI as well as the push for vehicle electrification, the nonferrous metal industry saw healthy investment in plant and equipment for automobiles and electronics.

In the automobile industry, amidst the trend toward high-level production in China and Japan, investment in plant and equipment was bullish in order to cope with increased automobile component manufacture. Whereas, in the display industry, organic light-emitting diode (OLED) has been adopted for use in top-end smartphones, which led to expansion of investment in the OLED field.

■ Market Conditions

Within this economic environment, to secure orders and turnover, we in the Chugai Ro Group swung into aggressive order-winning mode. As a result, orders received amounted to ¥39,201 million, up greatly to 131.3% from the previous year, coming from concluded orders for automobile component heat treatment furnace obtained on the international front from clients in Taiwan, in addition to orders for copper strip continuous annealing line, improvement work on reheating furnaces and heat treatment furnace for machinery components, etc., in Japan.

On the turnover front, apart from reheating furnace upgrading work for Taiwan and highly efficient hydrogen annealing furnace, we delivered heat treatment furnaces for automobile components, net sales reached ¥30,830 million, down to 99.0% of previous year.

On the profitability front, while there was a reduction in income, thanks to an improvement in cost rate, operating profit reached ¥1,181 million, up to 152.6% from the previous year, and ordinary income reached ¥1,287 million, up to 140.0% from the previous year. And, as deferred tax asset posting made for a special reason in the previous year is no longer applicable, the tax burden has increased, enabling us to post a current net income pertaining to shareholders of the parent company of ¥864 million, down to 88.3% from previous year.

And, regarding the dividend for the current period, overall consideration of the current profit performance has led to the decision to set the dividend as ¥60 per share.

■ Future Perspectives and Our Company Themes

Set against the backdrop of improving business income as well as improving employment and earning environments, the future perspective provides hope for a gentle recovery – yet, trade friction caused by U.S. protectionism and the fear of fluctuating exchange rate on top of manpower shortages in Japan, the way ahead remains unclear.

Under such business circumstances, we at the Chugai Ro Group are working to advance “thermal technology” that is essential to manufacturing processes in order to meet the needs of society. Likewise, in the energy field, we will accurately respond to moves to reduce greenhouse gases prescribed in COP21 (Paris Agreement) and to the switch to electric cars while also thoroughly preparing for investment demand that will be stimulated by moves to lighten cars as well as renewing and improving energy saving in aging of facilities that encompasses the likes of automobile-related products and steel; we will also extend business in the information and communications field through the use of innovative verification testing equipment on products, such as the flexible display market cored around OLED for compact panels used in mobile devices, and, moreover, popularize biomass boilers in the environmental conservation field, to boost order placements.

Furthermore, we will work to distinguish our products from others and improve producibility, in the areas of AI and IoT, as well as strengthen maintenance business, accelerate manpower development, and build a firm business platform that will enable us to secure stable profit. Therefore, we look forward to the ongoing support and understanding of our shareholders.

June 2018



President
Yuji Nishimoto

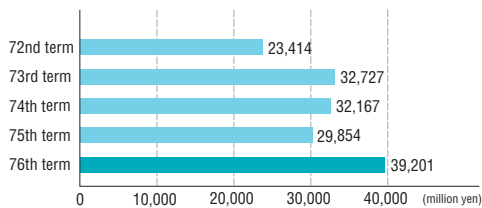
Summary of Achievements

Shifts in Consolidated Business Operation Performance

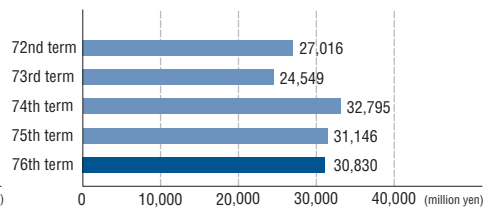
(Unit : million yen)

	72nd term March 2014	73rd term March 2015	74th term March 2016	75th term March 2017	76th term March 2018
Orders received	23,414	32,727	32,167	29,854	39,201
Net sales	27,016	24,549	32,795	31,146	30,830
Ordinary income (loss)	-494	351	792	919	1,287
Profit (loss) attributable to owners of parent	-133	303	545	978	864

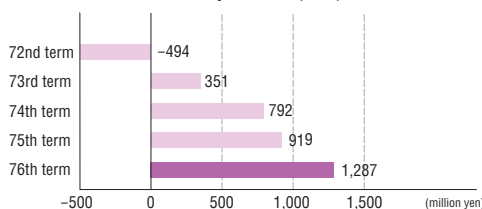
Orders received



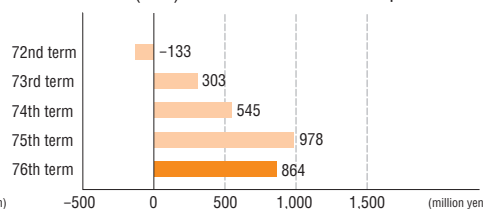
Net sales



Ordinary income (loss)



Profit (loss) attributable to owners of parent



76th term sales by field category

Field of Environment

2,549 million yen (7.8%)

Others

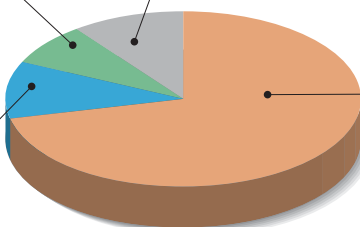
3,312 million yen (10.1%)

Field of Information and Communications

3,456 million yen (10.5%)

Field of Energy

23,549 million yen (71.6%)



NB: Net sales figures by segment are prior to eliminating offset associated with inter-segment trading.

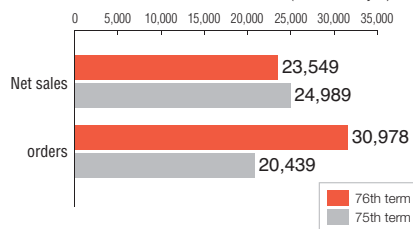
Field of Energy

Net Sales 23,549 million yen (Compared with 75th term 94.2%)

On the order intake front, set against a backdrop of surging growth in vehicle electrification, IoT and AI, we have signed off on contracts for equipment such as high-class special metal strip continuous annealing lines and a copper billet reheating furnace, as well as in-flame treatment furnaces for Korea and China. Meanwhile, with the automobile market becoming bullish globally, we have gotten an order for a mass-production type vacuum carburizing system for automobile components and heat treatment furnaces for machinery components, added to the results of efforts made to expand sales of maintenance business, the order figure has greatly increased to ¥30,978 million, up 151.6% on the previous year. On the turnover front, in addition to fulfilling an order for a continuous galvanizing/coating line to Thailand and remodeling work on stainless steel strip continuous annealing line, we are making headway on work involving an aluminum continuous coating line to Thailand and wire coil continuous annealing line to a domestic client, with turnover reaching ¥23,549 million, down to 94.2% on previous year.



(Unit: million yen)



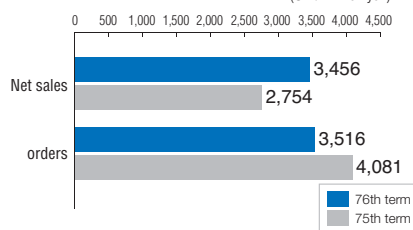
Field of Information and Communications

Net Sales 3,456 million yen (Compared with 75th term 125.5%)

On the order intake front, amidst a push into mass production of flexible OLED displays by various Chinese companies, we won an order for flexible display related precision coaters from a big Chinese panel maker, while also winning orders for OLED material related precision coaters and remodeling work on liquid crystal film display production lines in Japan. Indeed, orders from clients are extending into the following year, and the order figure has reached ¥3,516 million, down to 86.2% on the previous year. On the turnover front, apart from fulfilling orders for organic solar battery related precision coaters and liquid crystal display related precision coaters to China, we have fulfilled orders of equipment such as organic semiconductor related precision coaters to Europe, with turnover increasing to ¥3,456 million, up to 125.5% on the previous year.



(Unit: million yen)



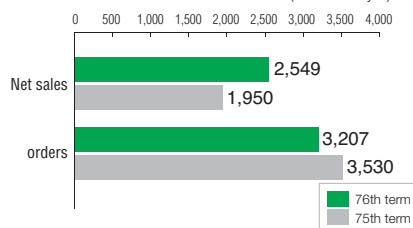
Field of Environment

Net Sales 2,549 million yen (Compared with 75th term 130.7%)

On the order intake front, we have won orders for regenerative thermal oxidizers (RTO), wood biomass air-heating furnace and a wood biomass semi-carbonized fuel validation facility, with orders reaching ¥3,207 million, down to 90.8% on the previous year. Whereas, on the turnover front, on top of the RTO and waste-gas boiler system delivered, we also moved ahead on work for a bamboo biomass co-generation system, with turnover increasing to ¥2,549 million, up to 130.7% on the previous year.



(Unit: million yen)



Other

Net Sales 3,312 million yen (Compared with 75th term 102.7%)

On the order intake front, in the area of overseas subsidiaries, orders included automobile component heat treatment furnace and regenerative thermal oxidizers (RTO) for China, with orders increasing to ¥3,995 million, up to 111.5% from the previous year. On the turnover front, deliveries of equipment included motor core annealing furnaces and RTO for China, with proceeds of ¥3,312 million, up to 102.7% from the previous year.

Effective use of energy

Orders also won for Mass-production Type Vacuum Carburizing Systems and Other Furnaces that handle Small Lot Production of Various Products

Amidst the growing global automobile market, production of automobiles, including conventional gasoline engine cars, plug-in hybrids (PHV) and hybrids (HV), is expected to keep increasing until 2030. And, in tandem with this increase, the demand for heat treatment (carburizing and quenching) of mechanical components, such as drive and bearing components, is expanding, which, in turn, has led to positive investment in plants and equipment in the automobile industry.

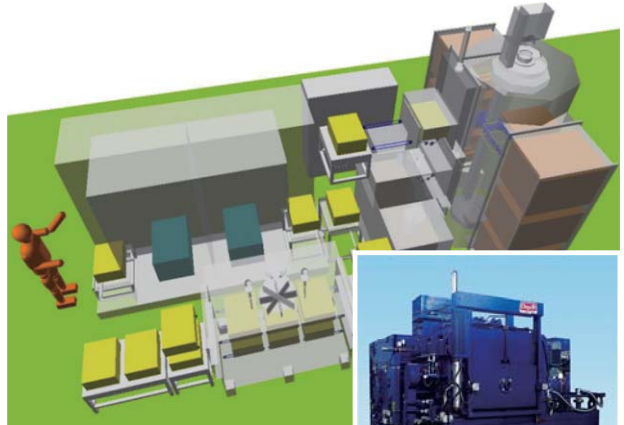
In this fiscal period, our domestic and international clients placed many orders with us for our well-established batch heat treating furnace “HI-SHIFTER™” and continuous gas carburizing furnaces. In addition to these, we have won orders for a batch type vacuum carburizing system to accommodate a client’s need for small lot production of various products as well as the second “HIFALCON™” mass-production vacuum carburizing systems that have been delivered to Subaru, an automaker striving to improve production and improve the environment. Moreover, we have developed a small-lot vacuum carburizing system that makes high-precision carburizing of small lots feasible in a clean environment, to meet client demand for compactness, in-line operation and environmental improvements. From here on, we at Chugai Ro will continue to diversify our technical development work and put forward ideas for innovative facilities, to maintain our driving gravitas in thermal technology for the automobile world.



Mass-production type vacuum carburizing system “HIFALCON™”



Batch type vacuum carburizing furnace



Furnace for validating small-lot vacuum carburizing

Orders for High-class Special Metal Strip Continuous Annealing Lines for Electronics Industry



Metal strip continuous annealing line

In recent years, in tandem with global vehicle electrification, the push for advanced safety technology and the popularization of smartphones, the demand for electronic materials, such as lead frame materials for assembling semiconductors and display panel materials, is increasing. At Chugai Ro, we have used our track record in supplying many continuous heat treatment lines for various materials, including common steel, special steel, stainless steel, aluminum and copper, as a platform to put forward a continuous annealing line with even greater energy saving features, which enabled us to win orders in the second half of the fiscal year. Indeed, with material manufacturers in Japan planning to increase investment in plants and equipment in order to produce even higher quality materials that will give them a competitive edge in the international arena, we at Chugai Ro are diligently striving to develop technologies that can be applied to a broad range of uses.

Aluminum Melting Furnace Dedicated Regenerative Burner Awarded Japan Aluminum Association Prize

In March 2018, the regenerative burner we developed for dedicated use in aluminum melting furnaces was awarded the 2017 Development Prize by the Japan Aluminum Association. The burner in question loads into heat accumulators to recover exhaust heat from waste gas, achieving approximately a 40-to-50% saving in energy. We worked to incorporate client needs into the instruments specifically used in the aluminum melting furnace, employing our own unique diffusing combustor nozzle (patented) and also improving maintenance features by installing an automatic washer in the ceramic bowl (thermal-storage medium). We have already received 60 orders for this innovative setup, with many clients in the aluminum industry acclaiming the product.

Please note that the award ceremony for this prize was held on 25 May 2018.



Aluminum melting furnace dedicated regenerative burner



Chugai Ro employee receiving the prize

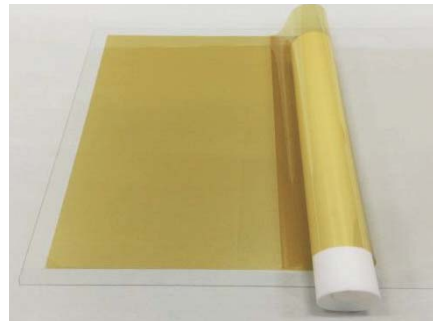
Advanced functionalization of information and communications

Order for Mass-production Precision Coater System for OLED Substrates Produced by Biggest Panel Maker in China

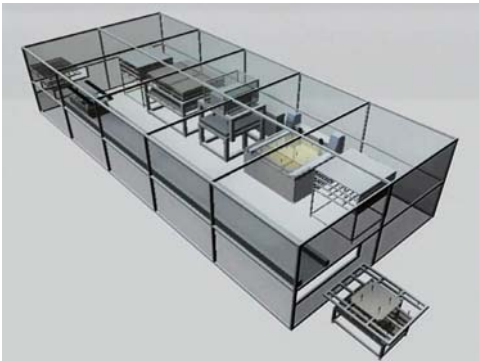
In December 2017, we won an order for a precision coater system tasked with the job of mass-producing light, thin, bendable film substrates at a new OLED display built by the biggest display panel manufacturer in China. The client is planning mass production of some 50,000 panels (6th generation OLED display, 1850 × 1500mm) a month, and we at Chugai Ro will be delivering the system this year.

The ordered system will be tasked with the deposition process for the polyimide resin that will become the OLED substrates – specifically, the system will coat polyimide resin onto glass plates, with OLED layers formed over the top of those coatings in a later process. Then, in the final process, the formed film is peeled away from the glass substrates to become the flexible OLED display.

At Chugai Ro, we latched on to the superb heat resistance of polyimide resin, using our own unique high-viscosity, thin-film coating technology in devices for mass producing plasma display panels in 2006, and then taking that technology and using it in R&D work on the first coater that we delivered to a client. Since then, we have repeatedly refined and improved the coater to meet the needs of panel makers in Japan, Korea, Taiwan and China. Carrying on from this order, we will work diligently to earn more orders because the client in question plans to invest in another new plant.



Separated polyimide film



Precision coating/drying/baking validation testing system



Preservation of the earth's environment

Orders for Wood Biomass Air-heating Furnace for Showa Chemical Industry

Following on from an order for wood biomass co-generation system for Nankan-machi, Kumamoto in February 2017, we received an order in September 2017 from Iwatani Corporation for a biomass air-heating furnace to be installed in the Okayama plant of Showa Chemical Industry Co., Ltd. The aim of this order is to use a wood biomass resource as an alternative energy source to partially replace the gas used to fire the drying process for diatomite in order to stabilize manufacturing costs and reduce CO₂ emissions while revitalizing the local economy of Hiruzen in Maniwa, Okayama, where there is a plentiful supply of wood.

Further, in December 2017, taking the initiative from the drive to expand biomass boiler sales up to now, we concluded a deal with the Austrian company Kohlbach Energieanlagen GmbH to become the sole agent marketing Kohlbach's biomass boilers (only for hot water/saturation steam below 4 megawatts) in Japan. At Chugai Ro, we have built up our own know how over a dozen or so years in uniquely Japanese wood biomass thermal conversion, while Kohlbach has an extensive track record in producing biomass boilers in Europe, so by adding our unique technology to Kohlbach's boilers, we have achieved highly efficient systems for sale in Japan.

Having already made environmentally friendly products and services a main axis of our business, we worked to implement best practices to further develop the partnership system into a more universal one that contributes to environmental measures and can be used by any business sector. Indeed, right now, we are receiving many inquiries about the system, so we are energetically pursuing orders to contribute to society through environmental conservation.



Image of wood biomass air-heating furnace in client's plant

Consolidated Financial Statements

Consolidated balance sheet

(Unit: million yen)

item	by fiscal period	prior fiscal period (As of March 31, 2017)	current fiscal period (As of March 31, 2018)
Assets			
Current assets		28,728	30,559
Cash and deposits		7,634	6,758
Notes and accounts receivable - trade		19,630	21,988
Securities		199	100
Cash disbursed for work in progress, etc.		925	1,444
Deferred tax assets		178	128
Other		165	146
Allowance for doubtful accounts		(5)	(7)
Non-current assets		9,774	10,935
Property, plant and equipment		4,621	4,778
Buildings and structures		2,035	1,944
Machinery, equipment and vehicles		312	396
Land		2,090	2,090
Construction in progress		5	48
Other		176	298
Intangible assets		126	122
Investments and other assets		5,026	6,034
Investment securities		4,576	5,567
Net defined benefit asset		226	214
Other		265	294
Allowance for doubtful accounts		(41)	(41)
Total assets		38,502	41,494

item	by fiscal period	prior fiscal period (As of March 31, 2017)	current fiscal period (As of March 31, 2018)
Liabilities			
Current liabilities		15,843	17,806
Electronically recorded obligations - operating		2,250	1,954
Accounts payable - trade		8,421	9,274
Short-term loans payable		2,800	2,822
Income taxes payable		175	283
Advance received for work in progress		707	1,742
Provision for bonuses		259	272
Provision for loss on construction contracts		14	0
Other		1,213	1,455
Non-current liabilities		2,289	2,452
Long-term loans payable		1,188	1,188
Deferred tax liabilities		813	981
Net defined benefit liability		147	156
Other		140	126
Total liabilities		18,132	20,258
Net assets			
Shareholders' equity		18,637	19,030
Capital stock		6,176	6,176
Capital surplus		1,544	1,544
Retained earnings		10,963	11,361
Treasury shares		(47)	(52)
Accumulated other comprehensive income		1,657	2,107
Valuation difference on available-for-sale securities		1,679	2,066
Deferred gains or losses on hedges		(37)	(1)
Foreign currency translation adjustment		37	52
Remeasurements of defined benefit plans		(22)	(9)
Non-controlling interests		74	98
Total net assets		20,369	21,236
Total liabilities and net assets		38,502	41,494

NB: Figures are rounded down to the nearest million yen.

Consolidated statement of income

(Unit: million yen)

item	by fiscal period	
	prior fiscal period (April 1, 2016 – March 31, 2017)	current fiscal period (April 1, 2017 – March 31, 2018)
Net sales	31,146	30,830
Cost of sales	26,394	25,600
Selling, general and administrative expenses	3,978	4,048
Operating income	774	1,181
Non-operating income	192	183
Interest and dividend income	106	127
Other	86	56
Non-operating expenses	47	77
Interest expenses	39	36
Other	7	40
Ordinary income	919	1,287
Extraordinary income	47	24
Gain on sales of non-current assets	—	17
Gain on sales of investment securities	42	6
Gain on redemption of securities	4	—
Extraordinary losses	—	17
Loss on valuation of investment securities	—	17
Profit before income taxes	967	1,294
Total income taxes	(33)	389
Profit attributable to non-controlling interests	21	40
Profit attributable to owners of parent	978	864

Consolidated Cash Flow Summary

(Unit: million yen)

item	by fiscal period	
	prior fiscal period (April 1, 2016 – March 31, 2017)	current fiscal period (April 1, 2017 – March 31, 2018)
Cash flows from operating activities	1,033	377
Cash flows from investing activities	402	(837)
Cash flows from financing activities	(484)	(468)
Effect of exchange rate change on cash and cash equivalents	(31)	18
Net increase (decrease) in cash and cash equivalents	920	(910)
Cash and cash equivalents at beginning of period	6,714	7,634
Cash and cash equivalents at end of period	7,634	6,724

Consolidated statement of changes in equity (from April 1, 2017 to March 31, 2018)

(Unit: million yen)

	Shareholders' equity					Accumulated other comprehensive income					Non-controlling interests	Total net assets
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income		
Balance at beginning of current period	6,176	1,544	10,963	(47)	18,637	1,679	(37)	37	(22)	1,657	74	20,369
Changes of items during period												
Dividends of surplus			(466)		(466)							(466)
Profit attributable to owners of parent			864		864							864
Purchase of treasury shares				(5)	(5)							(5)
Net changes of items other than shareholders' equity						386	35	14	13	450	23	474
Total changes of items during period	—	—	397	(5)	392	386	35	14	13	450	23	866
Balance at end of current period	6,176	1,544	11,361	(52)	19,030	2,066	(1)	52	(9)	2,107	98	21,236

NB: Figures are rounded down to the nearest million yen.

Parent-alone Financial Statements

Balance Sheet (Summary)

(Unit: million yen)

item	by fiscal period	
	prior fiscal period (As of March 31, 2017)	current fiscal period (As of March 31, 2018)
Assets		
Current assets	26,816	27,972
Non-current assets	9,920	11,052
Total assets	36,737	39,024
Liabilities		
Current liabilities	14,592	15,981
Non-current liabilities	2,384	2,509
Total liabilities	16,977	18,491
Net assets		
Shareholders' equity	18,118	18,469
Capital stock	6,176	6,176
Capital surplus	1,544	1,544
Retained earnings	10,444	10,800
Treasury shares	(47)	(52)
Valuation and translation adjustments	1,641	2,064
Valuation difference on available-for-sale securities	1,679	2,066
Deferred gains or losses on hedges	(37)	(1)
Total net assets	19,760	20,533
Total liabilities and net assets	36,737	39,024

Statement of income (Summary)

(Unit: million yen)

item	by fiscal period	
	prior fiscal period (April 1, 2016 – March 31, 2017)	current fiscal period (April 1, 2017 – March 31, 2018)
Net sales	27,794	27,562
Cost of sales	23,814	23,394
Selling, general and administrative expenses	3,210	3,303
Operating income	769	863
Non-operating income	338	286
Non-operating expenses	86	46
Ordinary loss	1,021	1,103
Extraordinary income	47	24
Extraordinary losses	24	17
Profit before income taxes	1,044	1,110
Total income taxes	(90)	287
Profit	1,134	823

Statement of changes in equity (Summary) (from April 1, 2017 to March 31, 2018)

(Unit: million yen)

	Shareholders' equity					Valuation and translation adjustments			Total net assets
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Total valuation and translation adjustments	
Balance at beginning of current period	6,176	1,544	10,444	(47)	18,118	1,679	(37)	1,641	19,760
Changes of items during period									
Dividends of surplus			(466)		(466)				(466)
Profit			823		823				823
Purchase of treasury shares				(5)	(5)				(5)
Net changes of items other than shareholders' equity						386	35	422	422
Total changes of items during period	—	—	356	(5)	351	386	35	422	773
Balance at end of current period	6,176	1,544	10,800	(52)	18,469	2,066	(1)	2,064	20,533

NB: Figures are rounded down to the nearest million yen.

Stock Condition (as of March 31, 2018)

- Total number of shares that can be issued: 250,000,000
- Total number of shares already issued: 78,000,000 (Includes 19,940 shares of treasury stock)
- Number of shareholders: 7,211
- Major shareholders (ten largest)

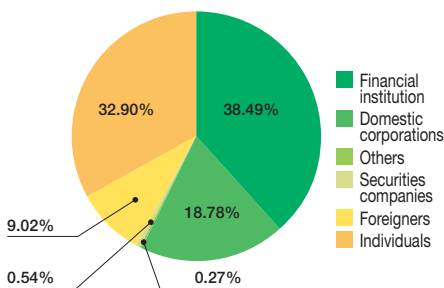
(Units below a thousand shares have been truncated)

Major shareholder	Number of shares held	Investment ratio
The Dai-ichi Life Insurance Company, Limited.	464 thousand	5.97 %
The Master Trust Bank of Japan, Ltd. (trust account)	411	5.29
Resona Bank, Ltd.	385	4.96
Japan Trustee Services Bank, Ltd. (trust account)	346	4.45
Mizuho Bank, Ltd.	264	3.40
Chugai Ro Affiliate Company Holdings	243	3.13
STATE STREET LONDON CARE OF STATE STREET BANK AND TRUST. BOSTON SSBTC A/C UK LONDON BRANCH CLIENTS. UNITED KINGDOM	215	2.76
Mitsubishi Corporation	179	2.31
The Zenitaka Corporation	175	2.25
Nippon Life Insurance Company	149	1.92

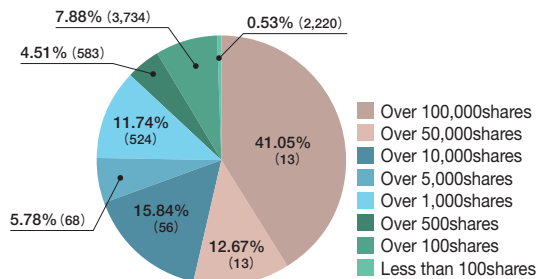
NB: The investment ratio has been calculated with the common stock for treasury omitted.

Share distribution

By owner

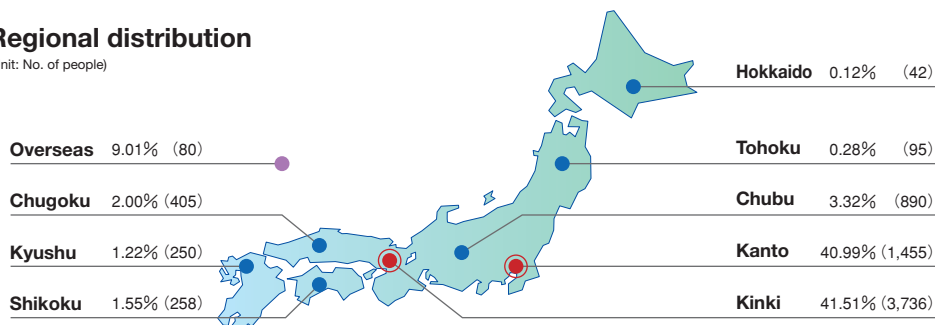


By the number of shares held
(Unit: No. of people)



Regional distribution

(Unit: No. of people)



Outline of The Company (as of March 31, 2018)

Name	Chugai Ro Co., Ltd.
Incorporated	April, 1945
Capital	¥6,176,720,000
Head Office	3-6-1, Hiranomachi, Chuo-ku, Osaka 541-0046, Japan Phone: +81-6-6221-1251 Facsimile: +81-6-6221-1411
Sakai Works	2-4, Chikko-Shinmachi, Nishi-ku, Sakai, Osaka 592-8331, Japan Phone: +81-72-247-2501 Facsimile: +81-72-247-2508
Sakai Center	94-7, Ishizu-Nishimachi, Nishi-ku, Sakai, Osaka 592-8332, Japan
Tokyo Branch	2-5-7, Konan, Minato-ku, Tokyo 108-0075, Japan Phone: +81-3-5783-3360 Facsimile: +81-3-5783-3368
Nagoya Sales Office	1-21-19, Meieki-Minami, Nakamura-ku, Nagoya 450-0003, Japan Phone: +81-52-561-3561 Facsimile: +81-52-561-3566
Combustion Laboratory	1000-6, Enmyo-cho, Kashiwara, Osaka 582-0027, Japan Phone: +81-72-977-8503 Facsimile: +81-72-978-6981
Kokura Factory	2-2-1, Higashi-Minato, Kokura-kita-ku, Kitakyushu 803-0802, Japan Phone: +81-93-571-5788 Facsimile: +81-93-571-6268
Foreign Subsidiaries	Taiwan:Kaohsiung China:Shanghai Thailand:Bangkok Indonesia:Jakarta Mexico:Aguascalientes

■ Board of Directors (as of June 22, 2018)

President	Yuji Nishimoto
Managing Director	Kenichiro Nanba
Director & Senior Corporate Adviser	Tadashi Tanigawa
Directors	Kazuhisa Fujita Shigeki Negoro Masanori Niiya Akira Ozaki Mamoru Sakata Masaaki Nomura

■ Supervisory Board (as of June 22, 2018)

Full-time Auditor	Ikuya Ikeyama
Auditors	Syozo Seki Paul Ch'en

■ Employee's conditions (as of March 31, 2018)

706 employees within the group. The number of employees is as follows.

Number of Employees	Compared with the previous period	Average age	Average length of employment
467	+15	43.3	17.5 years

■ Executive Officers (as of June 22, 2018)

Senior Executive Officers	Kazuhisa Fujita * Mitsuru Nagahama Shigeki Negoro *
Executive Officers	Masanori Niiya * Akira Ozaki * Mamoru Sakata * Isamu Ikeda Tsunehiko Magara Yoshifumi Sakamoto Yuji Sakurai Terunori Shirotzuki Masashi Imajo

Note: An asterisk (*) denotes a director with more than one post.

