

Chugai Ro

77th

April 1, 2018 — March 31, 2019

Annual Report



Energy



Information/
Communications



Environment

CHUGAI RO CO., LTD.

Once again, as with every year, we thank you for your unstinting support. On 31 March 2019, the Chugai Ro Group completed the 77th fiscal period (the year up to March 2019) – 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 continued its gradual recovery during the first half thanks to increasing investment in plants and equipment and robust corporate earnings. However, during the second half, the impacts of trade friction between the US and China started to manifest, such as concerns over a slowdown in the Chinese economy. In addition to worsening business confidence among companies, future prospects have become uncertain due to apparent weaknesses in some sections of the exports and production sectors.

In terms of the markets our group is involved in, market conditions in the steel industry are stable due to a high demand for steel. Given this, investments are being made in plants and equipment to improve manufacturing infrastructures and facilitate high strength material production. The nonferrous metal industry, too, saw healthy investment in plants and equipment for automobiles and electronics, including the utilization of IoT and AI as well as the push for vehicle electrification. In the automobile industry, production volumes in Japan and overseas rose steadily, and investment in plants and equipment was bullish in order to cope with increased automobile component manufacture. Meanwhile, in the display industry, while organic light-emitting diodes (OLED) are being increasingly adopted for use in top-end smartphones, factors including sluggish sales and trade friction between the US and China have led to caution over making investments, mainly in China, resulting in continuing delays in investment periods.

■ Market Conditions

Within this economic environment, our group has actively sought to secure orders to ensure favorable business results. As a result, we received orders amounting to ¥41,489 million, an increase of 105.8% from the previous year, coming from concluded large orders for such things as reheating furnaces from clients in Japan, and flexible display related precision coater systems from clients in China.

In terms of turnover, in addition to delivering orders of copper strip continuous annealing lines and flexible display related precision coater systems to China, construction work has been proceeding smoothly, and net sales reached ¥37,090 million, an increase of 120.3% from the previous year.

However, we experienced a drop in profitability due to such factors as rising construction costs and raw material costs, coupled with the occurrence of additional costs in some of our overseas projects. As such, despite having achieved an increase in turnover, operating profit was ¥987 million, down to 83.6% of the previous year, ordinary income was ¥1,157 million, down to 89.9% of the previous year, and current net income pertaining to shareholders of the parent company was ¥754 million, down to 87.3% of the previous year.

In addition, 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

The outlook for the future provides hope for a gentle recovery set against a backdrop of improving employment and earning environments. And yet, a great deal of uncertainty remains concerning future prospects for the economy, given concerns over the slowing down of the Chinese economy resulting from prolonged trade friction between the U.S. and China, as well as labor shortages in Japan.

In this business environment, we at the Chugai Ro Group are actively working to improve our technological and development capabilities, as well as put in place more robust human resource training. By doing so, we aim to play a part in achieving a sustainable society for all, such as through facilities relating to energy saving, reducing CO₂ emissions and sustainable energy.

We are taking steps to bring about evolution in thermal technology, a vital aspect of the manufacturing industry, by meeting the needs of society for environmentally friendly, low carbon facilities and products that help reduce manpower, the utilization of AI / IoT, and the switch to electric cars and lighter vehicles. To this end, in addition to making steady progress in the implementation and management of overseas projects, we have been taking steps to expand our maintenance systems to enable support according to the lifecycle of delivered equipment, and to reorganize our revenue base.

To this end, we look forward to the ongoing support and understanding of our shareholders.

June 2019



President

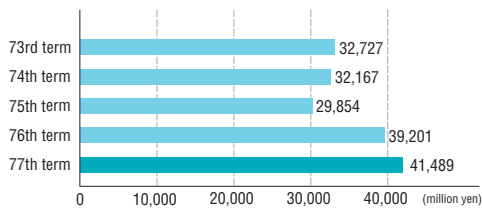
Yuji Nishimoto

Shifts in Consolidated Business Operation Performance

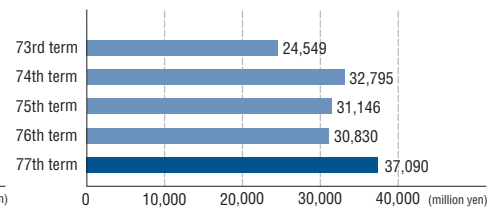
(Unit : million yen)

	73rd term March 2015	74th term March 2016	75th term March 2017	76th term March 2018	77th term March 2019
Orders received	32,727	32,167	29,854	39,201	41,489
Net sales	24,549	32,795	31,146	30,830	37,090
Ordinary income (loss)	351	792	919	1,287	1,157
Profit (loss) attributable to owners of parent	303	545	978	864	754

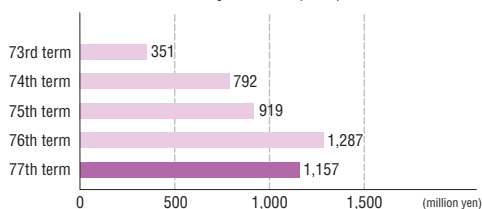
Orders received



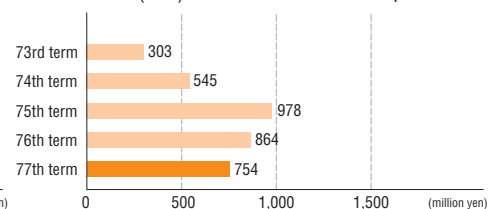
Net sales



Ordinary income (loss)



Profit (loss) attributable to owners of parent



77th term sales by field category

Field of Environment

4,291 million yen (10.9%)

Others

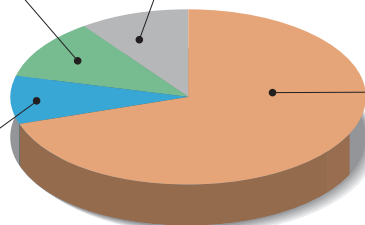
3,964 million yen (10.1%)

Field of Information and Communications

3,516 million yen (8.9%)

Field of Energy

27,639 million yen (70.1%)



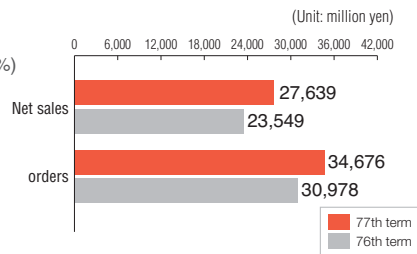
NB: Net sales figures by segment are prior to eliminating offset associated with inter-segment trading.

Field of Energy

Net Sales 27,639 million yen (Compared with 76th term 117.4%)

In terms of order intake, in addition to reheating furnaces for special steel and common steel and copper strip continuous annealing lines, we concluded contracts for such things as wire coil continuous annealing lines and heat treatment furnaces for functional materials related to semiconductors, and we further expanded sales in our maintenance business, with received orders amounting to ¥34,676 million, an increase of 111.9% from the previous year.

In terms of turnover, in addition to delivering such things as copper strip continuous annealing lines, copper billet reheating furnaces and mass-production type vacuum carburizing systems for automobile components, we progressed with construction work on heat treatment furnaces for machinery components and wire coil continuous annealing lines, with turnover reaching ¥27,639 million, an increase of 117.4% from the previous year.

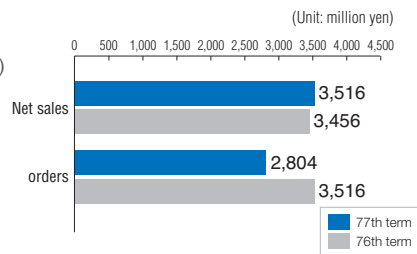


Field of Information and Communications

Net Sales 3,516 million yen (Compared with 76th term 101.8%)

In terms of order intake, in addition to flexible display related precision coater systems for China, we concluded contracts for such things as flexible display related ovens for Japan, with received orders amounting to ¥2,804 million, down to 79.8% of the previous year.

In terms of turnover, in addition to delivering such things as flexible display related precision coater systems for China and polyimide coater systems for organic light-emitting diode (OLED) evaporation masks, we progressed with construction work on flexible display related ovens for Japan, with turnover reaching ¥3,516 million, an increase of 101.8% from the previous year.

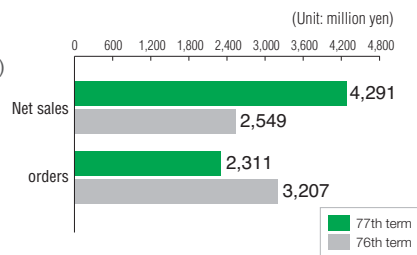


Field of Environment

Net Sales 4,291 million yen (Compared with 76th term 168.3%)

In terms of order intake, in addition to regenerative thermal oxidizers (RTO), we concluded contracts for such things as rotary kilns for activated carbon, with received orders amounting to ¥2,311 million, down to 72.1% of the previous year.

In terms of turnover, we delivered such things as bamboo biomass co-generation systems, regenerative thermal oxidizers (RTO) and waste heat boilers, with turnover reaching ¥4,291 million, a major increase of 168.3% from the previous year.



Other

Net Sales 3,964 million yen (Compared with 76th term 119.7%)

In terms of order intake, at our overseas subsidiaries, in addition to motor core annealing furnaces for China, we concluded contracts for such things as heat treatment furnaces for automobile parts, with received orders amounting to ¥3,625 million, down to 90.7% of the previous year. In terms of turnover, we delivered such things as heat treatment furnaces for automobile parts for China and regenerative thermal oxidizers (RTO), with turnover reaching ¥3,964 million, an increase of 119.7% from the previous year.

Effective use of energy

Delivery of the first COMPACTFALCON™ small-lot type vacuum carburizing furnace

In recent years, we have focused on expanding sales of vacuum carburizing systems, of which our current lineup is as follows: batch type for the processing of various products, mass production type HIFALCON™ for mass-production, and small-lot type COMPACTFALCON™ for in-line operations. In the case of COMPACTFALCON™ in particular, which enables in-line operations which meet a diverse range of recent client needs, we provide both an oil cooling type and a gas cooling type. Our newly developed gas cooling type is currently undergoing a variety of client tests in our furnace for validating small-lot vacuum carburizing, located at our Sakai Works.

In March 2019, we delivered the first COMPACTFALCON™, an oil cooling type vacuum carburizing system equipped with 6 small vacuum carburizing chambers, to one of our clients, an automobile-related manufacturer in Japan. An explanatory panel we installed at the site reads as follows: “This facility is the first ever COMPACTFALCON™, a small-lot type vacuum carburizing furnace developed by the Chugai Ro Group. This furnace, which makes assiduous use of new technologies for the benefit of future generations, should serve as a milestone, marking a new chapter in the history of both companies in their push to bring about reforms in the global automobile industry.” With the full understanding of this moment’s significance, we will continue endeavoring to make further improvements to the functions of our vacuum carburizing systems, and seek to expand sales of such systems among clients.

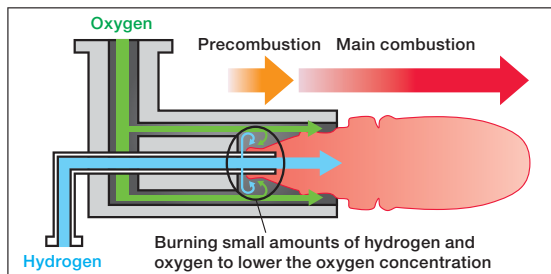
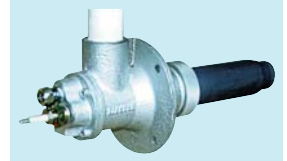


COMPACTFALCON™ small-lot type vacuum carburizing furnace

Cooperation with Toyota Motor Corporation in the development of a zero CO₂ emissions hydrogen burner

In November 2018, Toyota Motor Corporation introduced an HSGB type burner developed in cooperation with the Chugai Ro Group to the forging line at its head factory in Toyota City, Aichi Prefecture, the world's first ever general purpose burner for industrial use to be fueled by hydrogen. This newly developed burner is equipped with a novel mechanism that lowers the flame temperature of the hydrogen, resulting in zero carbon dioxide (CO₂) emissions and drastically cutting harmful nitrogen oxide (NOx) emissions during burning, and achieving a high level of environmental performance.

Toyota has been introducing innovative technologies and making daily improvements as part of its efforts to achieve the Plant Zero CO₂ Emissions Challenge as set out in Toyota Environmental Challenge 2050. In addition to this, it plans to replace the energy it uses at its factories with renewable energy sources and hydrogen. As a leading company in the field of combustion technologies, we are playing an active part in environmental conservation through industrial furnaces of all kinds, developing combustion equipment fueled by hydrogen that meets the needs of clients.



Mechanism behind the H₂-HSGB type hydrogen burner

Introduction of NOx reduction technologies at a gathering of experts from Japan and China on the latest technologies for environmental conservation and energy saving in the iron and steel industry



On October 30, 2018, the Japan Iron and Steel Federation and China Iron and Steel Association (CISA) held the 10th Steel Federation Advanced Technology Exchange Meeting for Environmental Protection and Energy-saving Co-sponsored by the China Iron and Steel Association and the Japan Iron and Steel Federation. Around 80 experts in environmental and energy saving technologies from the iron and steel industries in Japan and China participated in this event, which served as a venue for frank exchanges of opinions on the latest trends in technologies.

On the day, there were five speakers from Japan and six from China, who introduced the latest developments in environmental conservation and energy saving technologies. One of the presentations from the Japanese side was delivered courtesy of our company executive officer, Mr. Sakamoto of the Thermo Systems Department, Plant Division, who talked about NOx reduction technologies for iron and steel facilities. We will continue to work towards bringing about further evolution in combustion technologies in iron and steel industries around the world with the goal of contributing to global environmental conservation efforts.



Effective use of energy

A series of orders for energy saving modifications to steel reheating furnaces in Japan, along with new construction projects and hydrogen atmosphere bell type annealing furnaces

While the domestic demand for iron and steel in FY 2018 increased for industrial machinery against a backdrop of a robust demand for investments in plants and equipment, in the case of automobiles demand leveled off with a small increase, and crude steel production for FY 2018 was at a level on par with that of the previous fiscal year. In terms of the demand for iron and steel in FY 2019, the outlook suggests a decrease compared with the previous fiscal year, partly due to the cycling back of investments and the imminent increase in consumption tax in Japan. Having said this, the global demand for iron and steel is forecast to rise slightly compared with the previous fiscal year. As iron and steel exports from Japan are expected to increase during FY 2019, crude steel production is expected to exceed somewhat the level of the previous fiscal year.

It was under these circumstances that in November 2018, we received an order from a major Japanese steel company for modification works in the form of regenerative burners designed to drastically improve the energy efficiency of existing hot rolling reheating furnaces. This was followed in January 2019 with an order for the new construction of walking beam type reheating furnaces for a major special steel manufacturer, and in March of the same year for the construction of additional hydrogen atmosphere bell type annealing furnaces for a major Japanese steel company. We were able to successfully conclude these orders by proposing designs which matched the requirements of clients right from the initial estimate stage based on our excellent track record with plants for iron and steel, including steps to drastically improve the energy efficiency of facilities, improvements to production capabilities, and measures to upgrade obsolete facilities. The Chugai Ro Group will continue devoting itself to researching and refining technologies relating to cutting CO₂ emissions in industrial furnaces in a bid to make wide-ranging contributions to the development of the iron and steel industries.



Hydrogen atmosphere bell type annealing furnace (H₂-BAF)



Walking beam type reheating furnace

Advanced functionalization of information and communications

Orders for a polyimide coater system for developing flexible organic light-emitting diode (OLED) substrates and clean ovens for mass production

OLED are expected to be used in foldable smartphones, which are anticipated to become widespread in the future, and major display panel manufacturers in Japan and overseas are currently putting in place mass production systems to meet the needs of this growth market.

Since 2006, we have delivered numerous precision coater systems for flexible OLED substrates (polyimide resin). Since then, we have used performance data from machines we have delivered to clients to date along with experimental equipment for precision coater systems and clean ovens installed at our Sakai Works in 2017 to speed up the pace of product improvement and development. As a result, the first smartphones equipped with a flexible OLED panel produced in Japan have gone on sale, and from this year, cutting-edge mass production equipment that we delivered to China's largest panel manufacturer has come into full operation.

In addition, in October 2018, we received an order for polyimide ovens for mass production from a major Japanese panel manufacturer, and in March 2019, received an order for a polyimide coater system for research and development purposes from an overseas materials manufacturer thanks to a recommendation from several panel manufacturers. In the future, we will continue to make steady efforts in this growing field for investment, both in Japan and overseas.



Precision coater system for flexible organic light-emitting diode (OLED) substrates

Consolidated Financial Statements

Consolidated balance sheet

(Unit: million yen)

Item	By fiscal period	Prior fiscal period (As of March 31, 2018)	Current fiscal period (As of March 31, 2019)
Assets			
Current assets		30,430	32,082
Cash and deposits		6,758	5,169
Notes and accounts receivable - trade		21,988	25,147
Securities		100	—
Cash disbursed for work in progress, etc.		1,444	1,600
Other		146	172
Allowance for doubtful accounts		(7)	(7)
Non-current assets		10,937	10,648
Property, plant and equipment		4,778	4,721
Buildings and structures		1,944	1,837
Machinery, equipment and vehicles		396	354
Land		2,090	2,090
Construction in progress		48	151
Other		298	288
Intangible assets		122	156
Investments and other assets		6,036	5,770
Investment securities		5,567	5,310
Net defined benefit asset		214	215
Deferred tax assets		2	3
Other		294	283
Allowance for doubtful accounts		(41)	(41)
Total assets		41,368	42,731

Item	By fiscal period	Prior fiscal period (As of March 31, 2018)	Current fiscal period (As of March 31, 2019)
Liabilities			
Current liabilities		17,806	19,600
Electronically recorded obligations - operating		1,954	1,855
Accounts payable - trade		9,274	11,166
Short-term loans payable		2,822	3,807
Income taxes payable		283	372
Advance received for work in progress		1,742	650
Provision for bonuses		272	291
Provision for loss on construction contracts		0	0
Other		1,455	1,455
Non-current liabilities		2,325	2,175
Long-term loans payable		1,188	1,188
Deferred tax liabilities		855	690
Net defined benefit liability		156	171
Other		126	125
Total liabilities		20,131	21,775
Net assets			
Shareholders' equity		19,030	19,118
Capital stock		6,176	6,176
Capital surplus		1,544	1,544
Retained earnings		11,361	11,649
Treasury shares		(52)	(251)
Accumulated other comprehensive income		2,107	1,756
Valuation difference on available-for-sale securities		2,066	1,732
Deferred gains or losses on hedges		(1)	2
Foreign currency translation adjustment		52	28
Remeasurements of defined benefit plans		(9)	(7)
Non-controlling interests		98	80
Total net assets		21,236	20,955
Total liabilities and net assets		41,368	42,731

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, 2017 – March 31, 2018)	Current fiscal period (April 1, 2018 – March 31, 2019)
Net sales		30,830	37,090
Cost of sales		25,600	31,898
Selling, general and administrative expenses		4,048	4,204
Operating income		1,181	987
Non-operating income		183	222
Interest and dividend income		127	158
Other		56	63
Non-operating expenses		77	52
Interest expenses		36	31
Other		40	20
Ordinary income		1,287	1,157
Extraordinary income		24	19
Gain on sales of investment securities		6	19
Gain on sales of non-current assets		17	—
Extraordinary losses		17	—
Loss on valuation of investment securities		17	—
Profit before income taxes		1,294	1,177
Total income taxes		389	395
Profit attributable to non-controlling interests		40	26
Profit attributable to owners of parent		864	754

Consolidated Cash Flow Summary (Unit: million yen)

Item	By fiscal period	Prior fiscal period (April 1, 2017 – March 31, 2018)	Current fiscal period (April 1, 2018 – March 31, 2019)
Cash flows from operating activities		377	(1,348)
Cash flows from investing activities		(837)	(478)
Cash flows from financing activities		(468)	279
Effect of exchange rate change on cash and cash equivalents		18	(39)
Net increase (decrease) in cash and cash equivalents		(910)	(1,587)
Cash and cash equivalents at beginning of period		7,634	6,724
Cash and cash equivalents at end of period		6,724	5,137

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

Balance Sheet (Summary) (Unit: million yen)

Item	By fiscal period	Prior fiscal period (As of March 31, 2018)	Current fiscal period (As of March 31, 2019)
Assets			
Current assets		27,854	29,599
Non-current assets		11,052	10,783
Total assets		38,907	40,383
Liabilities			
Current liabilities		15,981	17,952
Non-current liabilities		2,392	2,248
Total liabilities		18,373	20,201
Net assets			
Shareholders' equity		18,469	18,446
Capital stock		6,176	6,176
Capital surplus		1,544	1,544
Retained earnings		10,800	10,977
Treasury shares		(52)	(251)
Valuation and translation adjustments		2,064	1,735
Valuation difference on available-for-sale securities		2,066	1,732
Deferred gains or losses on hedges		(1)	2
Total net assets		20,533	20,181
Total liabilities and net assets		38,907	40,383

Statement of income (Summary) (Unit: million yen)

Item	By fiscal period	Prior fiscal period (April 1, 2017 – March 31, 2018)	Current fiscal period (April 1, 2018 – March 31, 2019)
Net sales		27,562	32,822
Cost of sales		23,394	28,823
Selling, general and administrative expenses		3,303	3,432
Operating income		863	566
Non-operating income		286	388
Non-operating expenses		46	19
Ordinary loss		1,103	935
Extraordinary income		24	19
Extraordinary losses		17	—
Profit before income taxes		1,110	954
Total income taxes		287	310
Profit		823	643

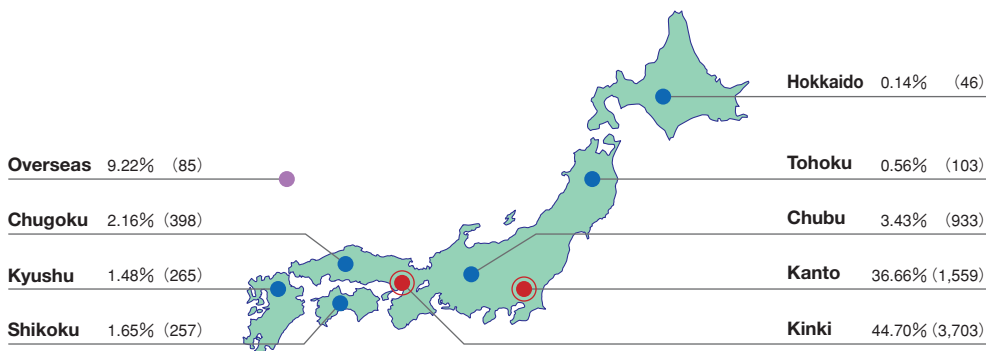
- Total number of shares that can be issued: 25,000,000
- Total number of shares already issued: 7,800,000 (Includes 121,287 shares of treasury stock)
- Number of shareholders: 7,349
- Major shareholders (ten largest) (Units below a thousand shares have been truncated)

Major shareholder	Number of shares held	Investment ratio
The Dai-ichi Life Insurance Company, Limited.	464 thousand	6.04 %
Resona Bank, Ltd.	385	5.02
The Master Trust Bank of Japan, Ltd. (trust account)	245	3.20
Chugai Ro Affiliate Company Holdings	239	3.13
STATE STREET LONDON CARE OF STATE STREET BANK AND TRUST. BOSTON SSBTC A/C UK LONDON BRANCH CLIENTS. UNITED KINGDOM	215	2.80
Japan Trustee Services Bank, Ltd. (trust account)	204	2.67
Mizuho Bank, Ltd.	189	2.47
Mitsubishi Corporation	179	2.34
The Zenitaka Corporation	175	2.28
Nippon Life Insurance Company	149	1.95

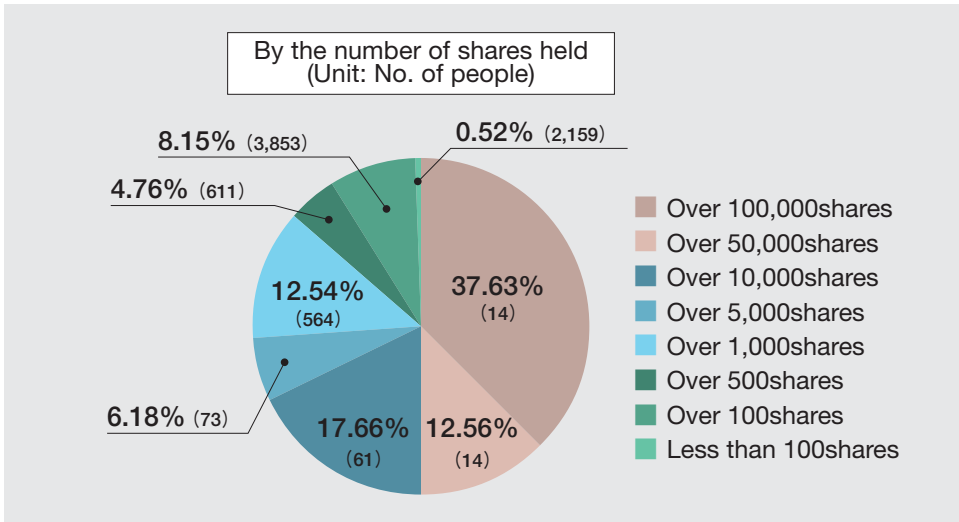
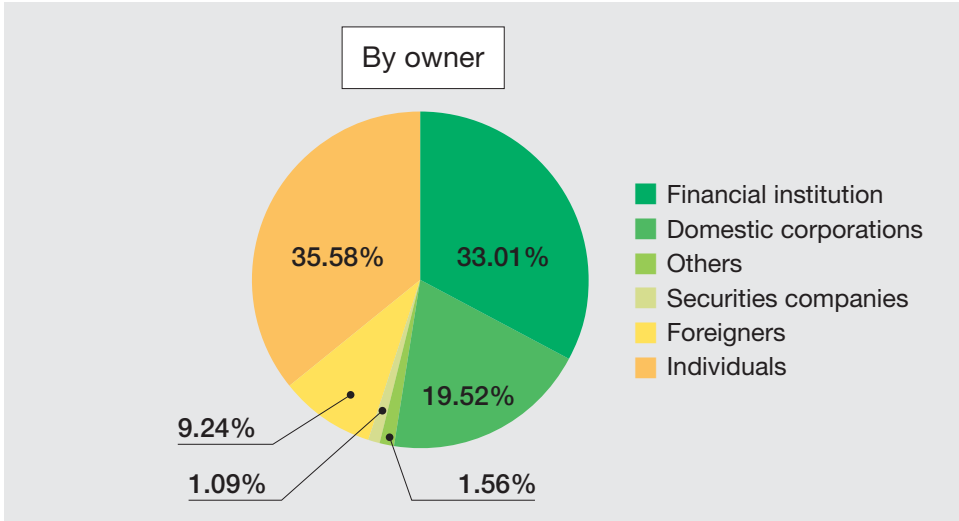
NB: The investment ratio has been calculated with the common stock for treasury omitted.

Regional distribution

(Unit: No. of people)



Share distribution



Outline of The Company (as of March 31, 2019)

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 25, 2019)

President	Yuji Nishimoto
Managing Director	Kenichiro Nanba
Director & Senior Executive Officer	Kazuhisa Fujita
Director & Senior Executive Officer	Shigeki Negoro
Director & Senior Executive Officer	Akira Ozaki
Director & Executive Officer	Masanori Niiya
Director & Executive Officer	Mamoru Sakata
Director	Masaaki Nomura
Director	Ryo Sato
Full-time Auditor	Ikuya Ikeyama
Auditor	Syozo Seki
Auditor	Paul Ch'en
Senior Executive Officer	Mitsuru Nagahama
Executive Officer	Isamu Ikeda
Executive Officer	Tsunehiko Magara
Executive Officer	Yoshifumi Sakamoto
Executive Officer	Yuji Sakurai
Executive Officer	Terunori Shirotsuki
Executive Officer	Masashi Imajo
Executive Officer	Yasuyuki Kimoto

■ Employee's conditions

(as of March 31, 2019)

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

Number of Employees	473
Compared with the previous period	+6
Average age	43.0
Average length of employment	17.1 years

