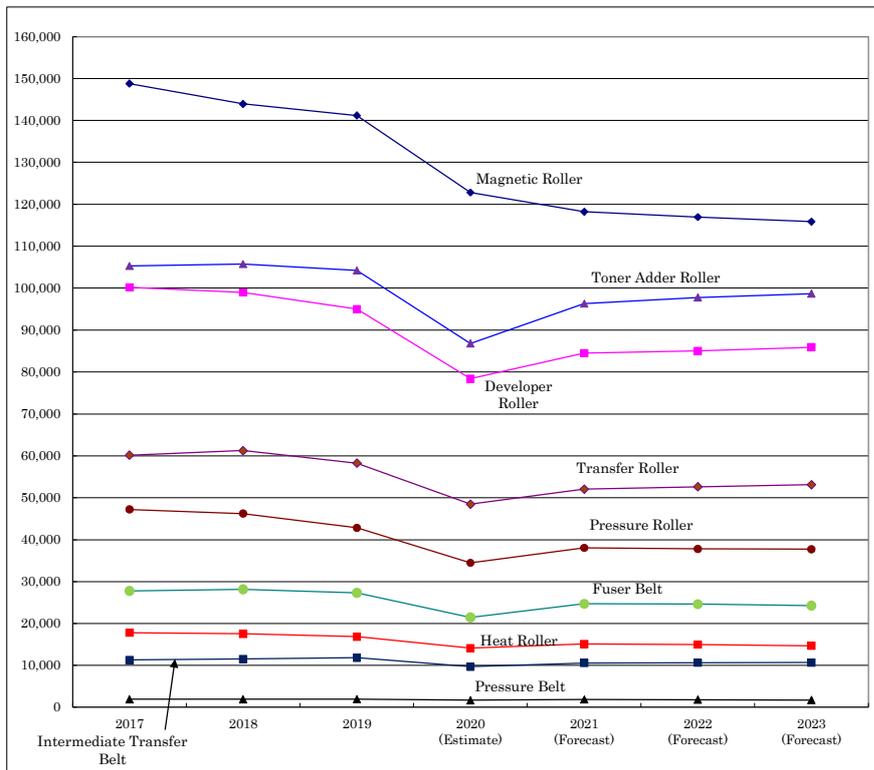


Research Proposal

[2021 version of Roller and Roller-related Market Forecast]

"The Future of the Roller-related Component Industry: Cost and Quality as the Lifeline"

=Into an Era of Choice for Survival =



(from the 2020 report)



<Overview>

I. Theme

"The Future of the Roller-related Component Industry: Cost and Quality as the Lifeline"

=Into an Era of Choice for Survival=

II. Abstract

The office equipment industry is finally starting to show signs of recovery after it was rocked by the 2020 coronavirus pandemic. Companies' hardware sales are on a recovery trend, and MFP's print volume is reportedly returning to 80-90% of the 2019 level. However, **the globally applied telework arrangements will structurally reduce the demand of office machines**, and there is no doubt that office equipment companies will have to compete fiercely to stay in business in the coming years.

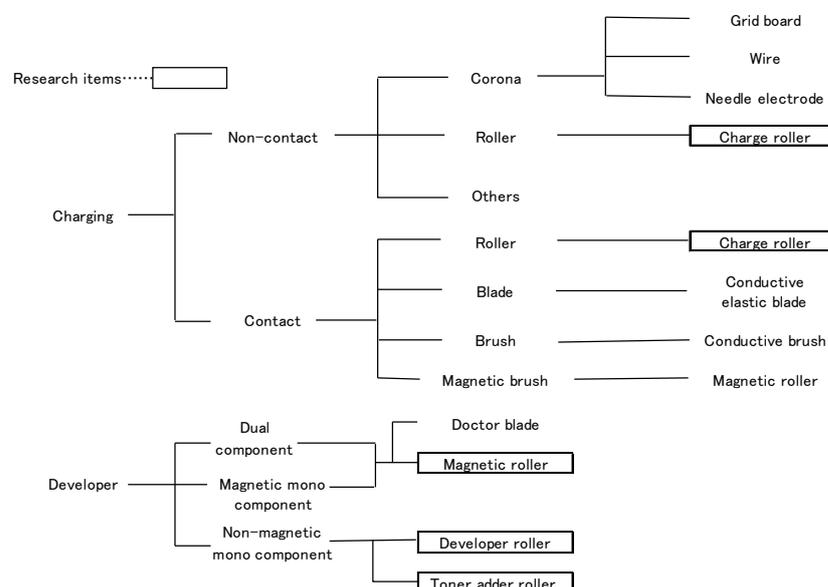
The next few years will also be a critical period for office equipment roller and belt makers. Profitability of their roller and belt business has become smaller due to a decline of overall demand and intensified price competition, while recently emerging cost-competitive Chinese component makers are causing the price to decline even further. In the severer office equipment industry, **major makers** that operate core businesses such as automobiles and semiconductors **may consider removing their non-core roller and belt business** (in fact, several companies have decided to end the business over the past few years).

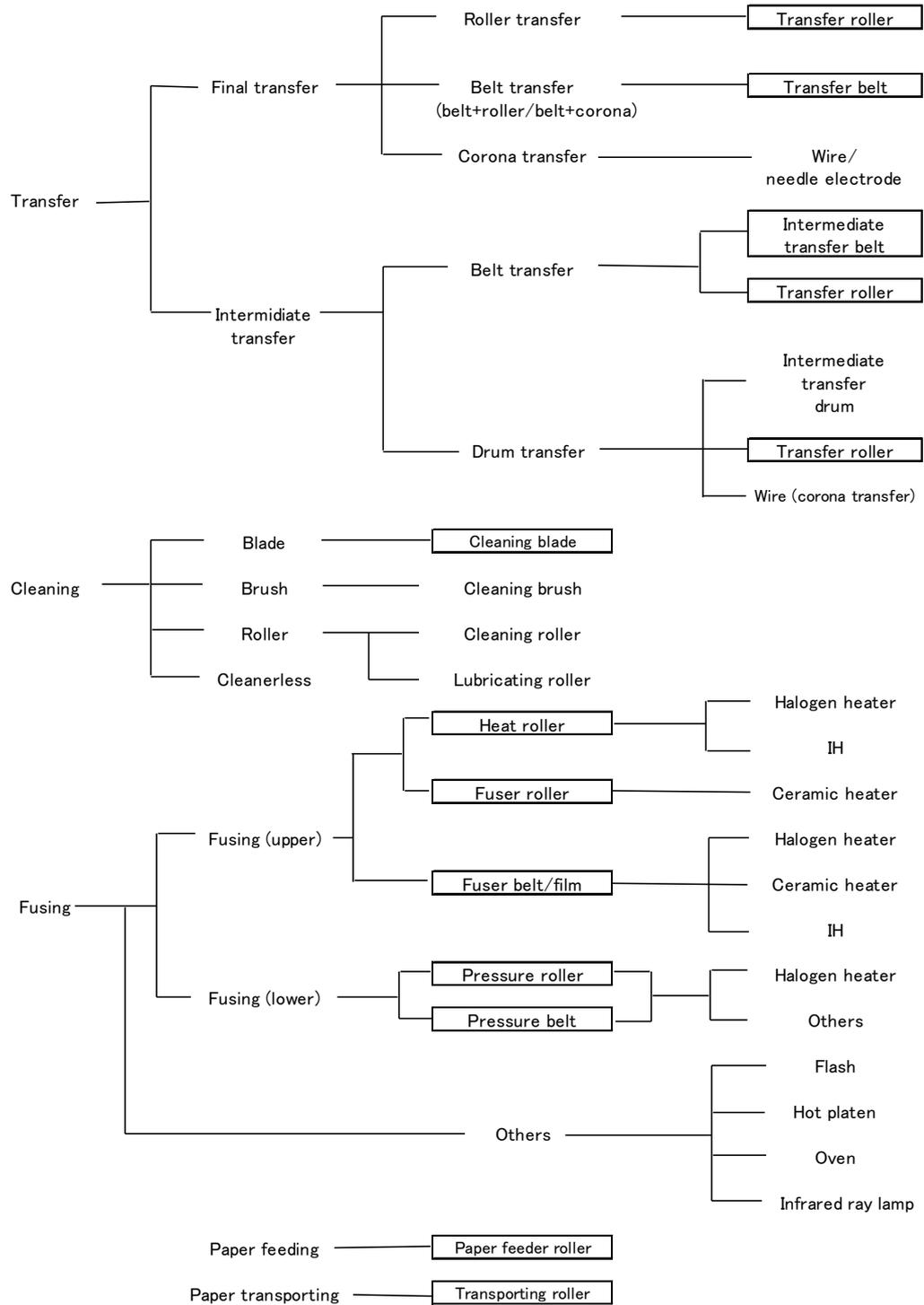
As the market matures faster, hardware makers will have to push forward with a cost-centered strategy to source components, but cost-advantageous makers with high skills and reliability will probably earn demand in the long run. It is each and every reliable component that underpins the complex interconnected technology, which controls the overall operation of copiers and printers. In this respect, **there is a strong possibility that Japanese roller and belt makers will stay in business as they have worked to achieve both cost and quality in the overall "monozukuri" (craftsmanship) aspects including design, manufacturing, and processing.**

Our report looks into and analyzes the current business landscape and future strategies of domestic and overseas specialized makers as well as in-house makers by classifying them into each processing component, such as charging, developing, transferring, fusing, cleaning, and paper feeding and transporting. This year marks the 16th publication of the Roller and Roller-related Market Forecast, which **provides a detailed analysis of the 2020 shipment trend reflecting a hard hit on companies, as well as shipment forecasts for 2021 and beyond.** We truly hope our Roller and Roller-related Market Forecast will be helpful to all industry stakeholders as they develop a future strategy.

III. Items and Makers

1. Items





2. Makers

2-1. Roller specialist makers

Japanese makers (32) / South Korean makers (10) / Chinese makers (54) / Hong-Kong maker (1) / Taiwanese makers (2) / others (6) / In-house makers (6) (111 makers in total)

2-2. Hardware machine makers (major 14 makers)

Copier makers / Printer makers

IV. Target Years and Research Methodology

1. Target years

From 2018 to 2024

2. Research methodology

- 1) On-site and in-person interviews with target makers (including on-line interviews)
- 2) Analysis and review of open literatures, materials, statistics, and other sources
- 3) Analysis of Data Supply's own proprietary database

V. Research Form, Research Period, and Others

1. Research form: Multi-client study

2. Research period: March and April 2021

3. Publication date: **The English version will be published upon request.**

(Japanese version was published on April 22, 2021)

4. Report format: A4 size (PDF format) (Reference: the 2020 version contains 651 pages)

5. Price: **\$5,000-**

6. Researchers

Mr. Yukio YAMAMOTO, Mr. Kosuke YOSHIDA, and Mr. Masafumi HARIU

Phone: +81-3-3831-9201

Fax: +81-3-3831-9204

E-mail: <yamamoto@datasupply.jp> <yoshida@datasupply.jp> <hariu@datasupply.jp>

Homepage: <http://www.datasupply.jp>

7. How to subscribe:

Please contact researchers above or Data Supply Inc. at <infods@datasupply.jp>

VI. Items to Be Covered

VI-1. Comprehensive Analysis

1. Market trend by component

1-1. **Shipment volume/shipment value by maker (specialist and in-house)** (2018-2024)

1-2. Market trend by application (monochrome PPC/printer and color PPC/printer) and by size (A3/A4) (2020/2024)

1-3. Market trend by material

Shipment volume/shipment value

1-4. Technological and material trend by component

1-5. Trend of component module production

1-6. Component suppliers for production printers and wide-format printers

1-7. Price trend/product life cycle

1-8. Supply destinations

1-9. Production bases by component and maker

1-10. **Sales classification of electrophotographic rollers and other rollers (inkjet/ATM, etc.)**

2. Rollers and roller-related component makers

3. The number of components used in a hardware machine

4. Makers' latest trend by process (monochrome machine/color machine)

Charging / exposure / developer / transfer / fuser / cleaning

5. Shipment volume of hardware machines by maker (2020)

1) Copiers (monochrome/color)

(1) Hardware machine with dual component developer

(2) Hardware machine with magnetic mono component developer

2) Laser/LED printers (monochrome/color)

(1) Hardware machine with dual component developer

(2) Hardware machine with non-magnetic mono component developer

(3) Hardware machine with magnetic mono component developer

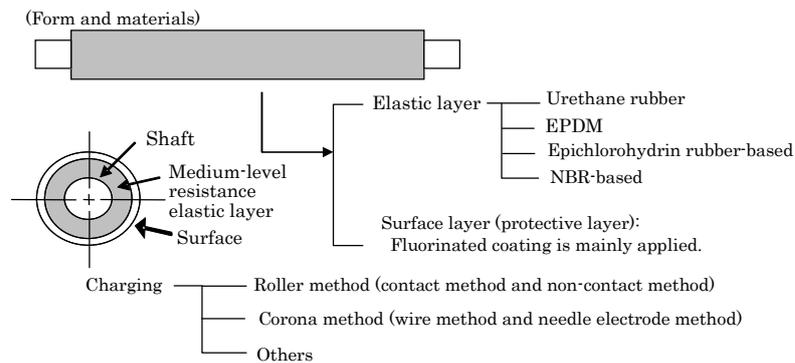
6. Hardware machine makers' and component makers' production bases in China and Southeast Asia (listed)

VI-2. Component Market

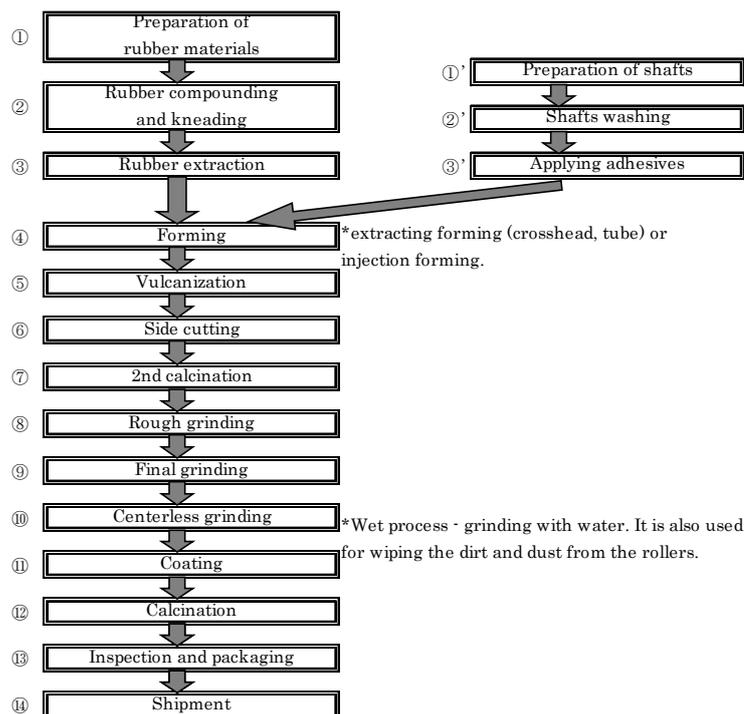
[1] Charge roller market (8 specialist makers, 3 in-house makers, and a dozen others)

- 2019 shipment volume was down 4.2% year on year.
- Materials are mostly epichlorohydrin rubber-based and EPDM-based with some urethane rubber-based.
- Maintaining of chargeability, release properties of the toner, and cost reduction are the key.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) Genuine component market 2) Third-party component market/ 4. **Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)**/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. **Changes in shipment volume and shipment value by material (2018-2024)** 1) EPDM 2) Epichlorohydrin rubber-based 3) Urethane rubber 4) NBR-based/ 7. **Trend of charge roller's technology and materials** 1) Layer structure 2) Control method of electric resistance 3) Future trend of materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of charge rollers/ 10. **Supply destinations of charge rollers (Japan and overseas)**/ 11. Trend of charge roller's production bases (Japan and overseas)



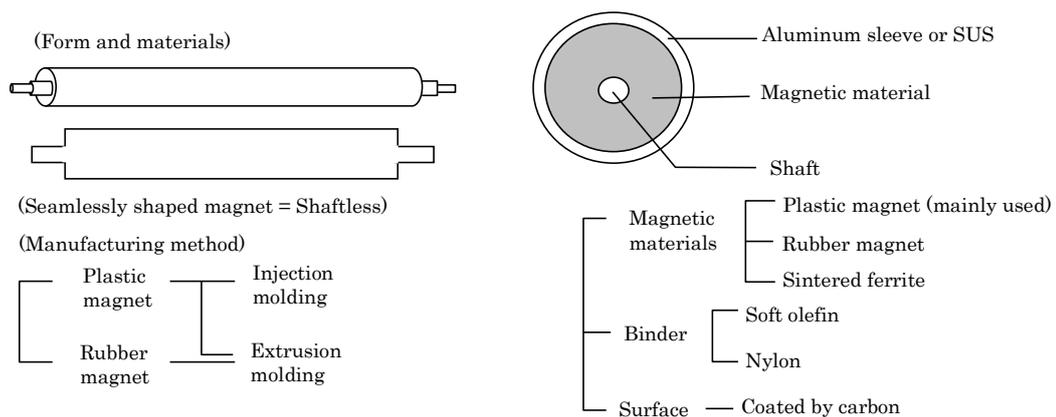
Manufacturing process of the charge roller



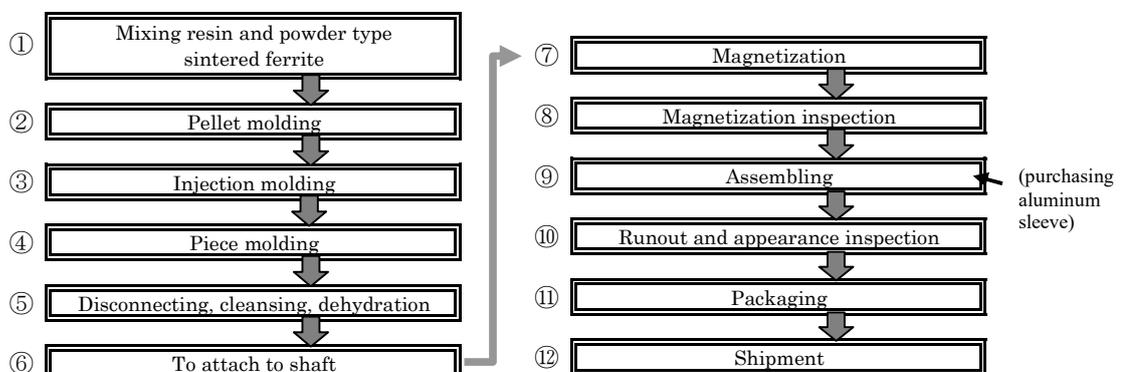
[2] Magnetic roller market (6 specialist makers, 3 in-house makers, and a dozen others)

- **2019 shipment volume was down 1.9% year on year.**
 - Major makers have withdrawn.
 - Plastic magnet and rubber magnet are mainly used. Plastic and rubber magnets are often used together. Some makers ship products with a sleeve attached, while others do so without a sleeve. Ferrite magnet is the main material, while neodymium magnet is partly used. Sleeves are made mainly from aluminum, whereas some are stainless steel.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) Genuine component market 2) **Third-party component market/** 4. Changes in shipment volume and shipment value (2018-2024) **by application (monochrome and color MFP/monochrome and color printer/fax)** and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) Plastic magnet 2) Rubber magnet 3) Sintered ferrite 4) Combined types/ 7. Trend of magnetic roller's technology and materials 1) Magnetic materials 2) Binder 3) Sleeves 4) Future trend of materials/ 8. Support for component module production/ 9. Price trend and manufacturing method of magnetic rollers/ 10. **Supply destinations of magnetic rollers (Japan and overseas)/** 11. Trend of magnetic roller's production bases (Japan and overseas)



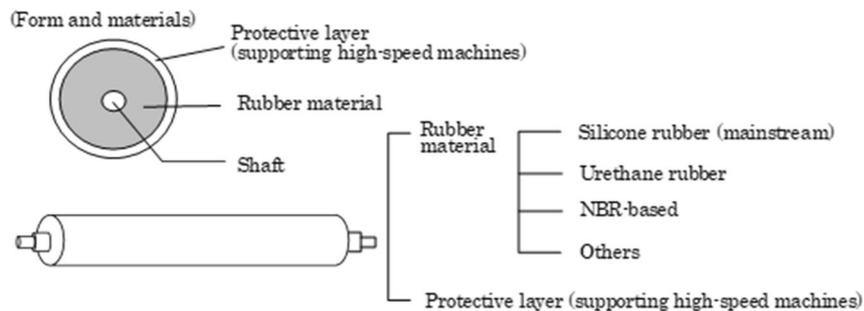
Manufacturing process of the magnetic developer roller (shaft attaching type)



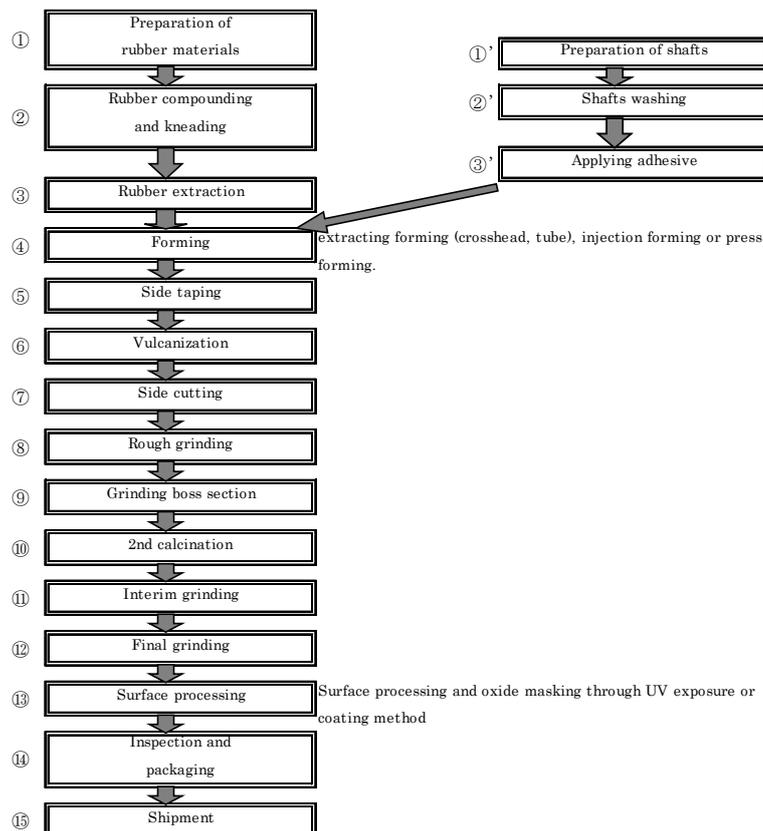
[3] Developer roller market (12 specialist makers, 1 in-house maker, and several others)

- 2019 shipment volume was down 4.0% year on year.
- It's mainly used for color printers.
- Surface material is mostly silicone rubber. Use of urethane rubber for high-speed machines is on the rise. NBR-based material is also used.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) **Genuine component market** 2) **Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) **Silicone rubber** 2) **Urethane rubber** 3) **NBR-based**/ 7. Trend of developer roller's technology and materials 1) Support for high-speed printing 2) Future trend of materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of developer rollers/ 10. **Supply destinations of developer rollers (Japan and overseas)**/ 11. Trend of developer roller's production bases (Japan and overseas)



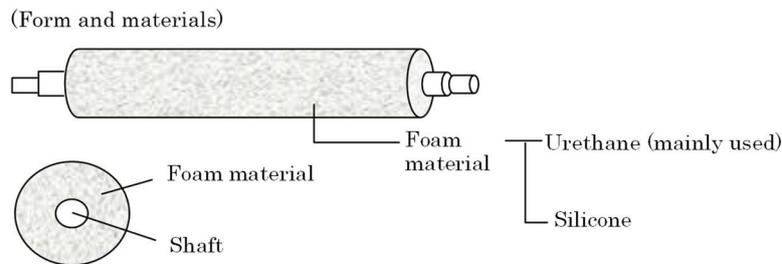
Manufacturing process of the developer roller



[4] Toner adder roller market (8 specialist makers, 1 in-house maker, and more than 10 others)

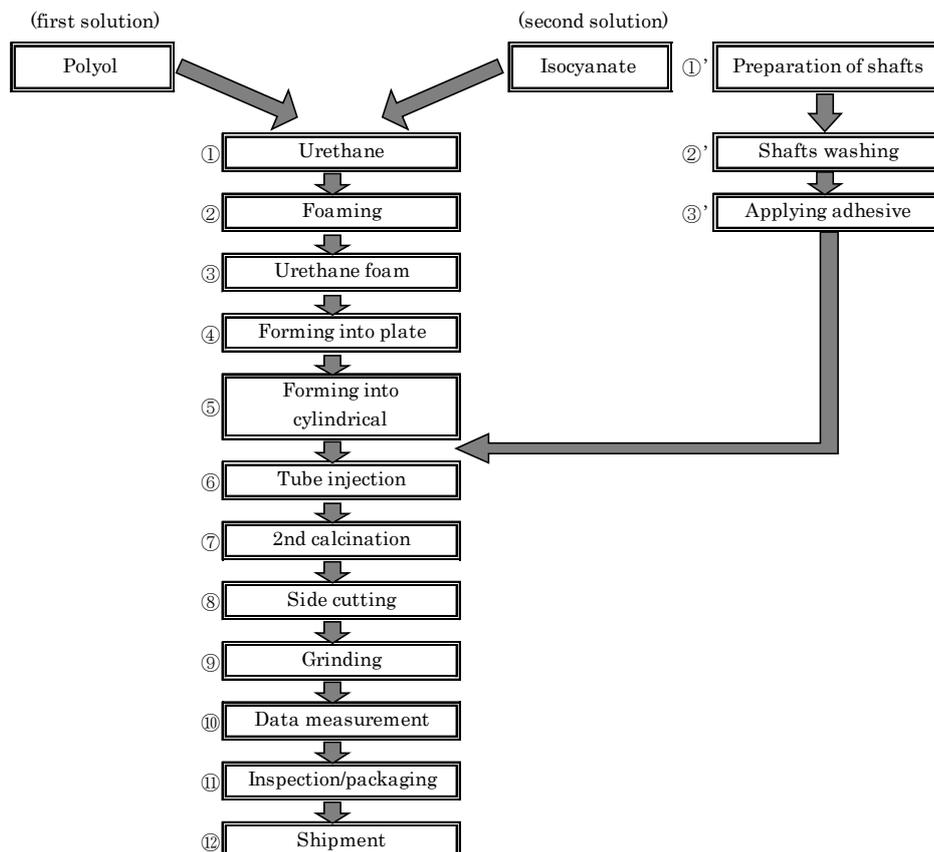
- 2019 shipment volume was down 1.4% year on year. It turned negative from a slight increase in the previous year.
- Urethane foam is mainly used.
- Both PFA tube and PFA coating are used for a surface layer.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) **Genuine component market** 2) **Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) Urethane form 2) Silicone form/ 7. Trend of toner adder roller's technology and materials 1) Support for high-speed printing 2) Future trend of materials/ 8. Support for component module production/ 9. Price trend and life cycle of toner adder rollers/ 10. **Supply destinations of toner adder rollers (Japan and overseas)**/ 11. Trend of toner adder roller's production bases (Japan and overseas)



*It is used for printers running a non-magnetic mono-component system.

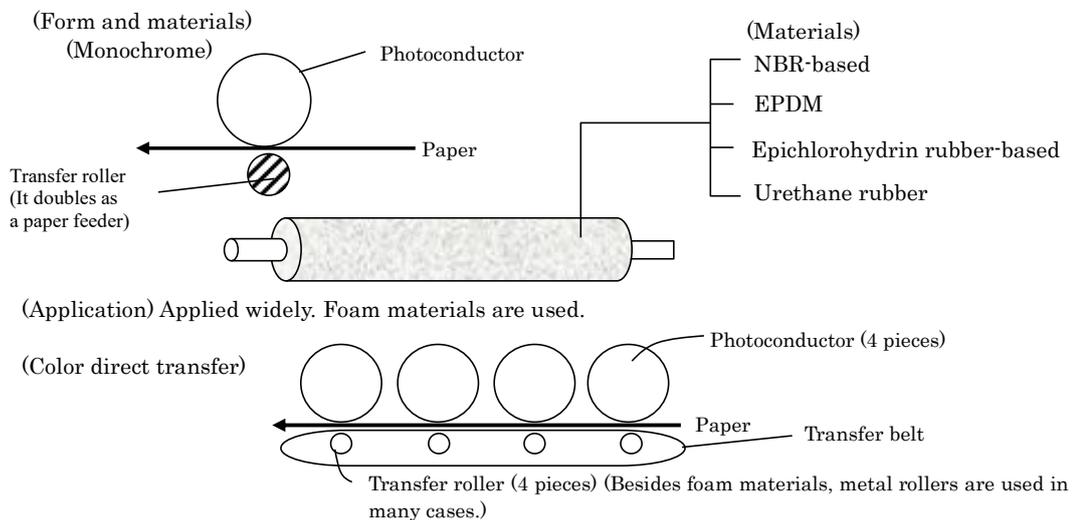
Manufacturing process of the toner adder roller (urethane foam)



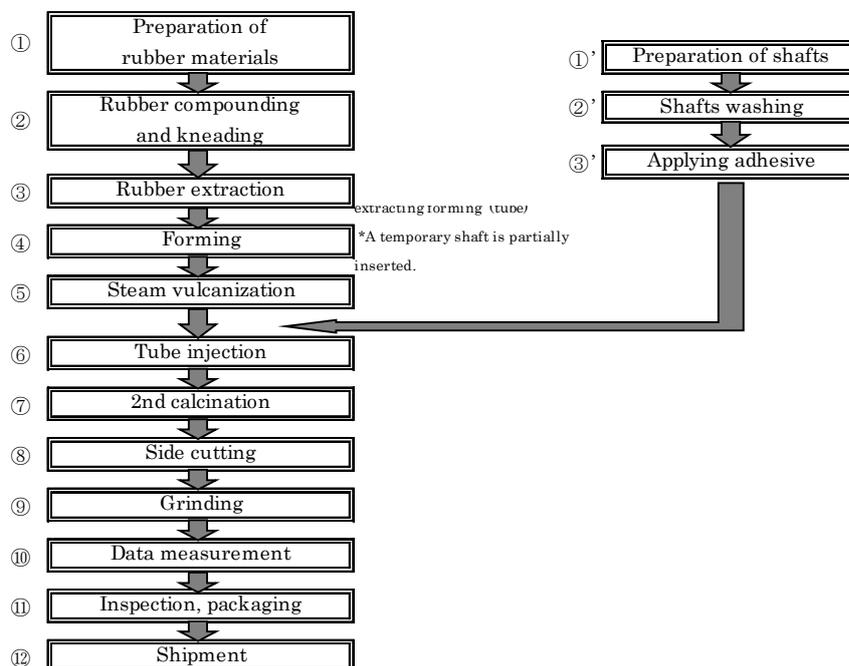
[5] Transfer roller market (12 specialist makers, 1 in-house maker, and a dozen others)
(including the first and second transfer)

- 2019 shipment volume was down 4.9% year on year. The previous year had marked a 1.8% increase.
- NBR-based material is mainly used, and epichlorohydrin rubber follows. Others include urethane rubber and EPDM.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. Changes in shipment volume and shipment value by maker (2018-2024) 1) Genuine component market 2) Third-party component market/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) NBR-based 2) Epichlorohydrin rubber-based 3) Urethane rubber 4) EPDM/ 7. Trend of transfer roller's technology and materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of transfer rollers (first transfer/second transfer)/ 10. Supply destinations of transfer rollers (Japan and overseas)/ 11. Trend of transfer roller's production bases (Japan and overseas)



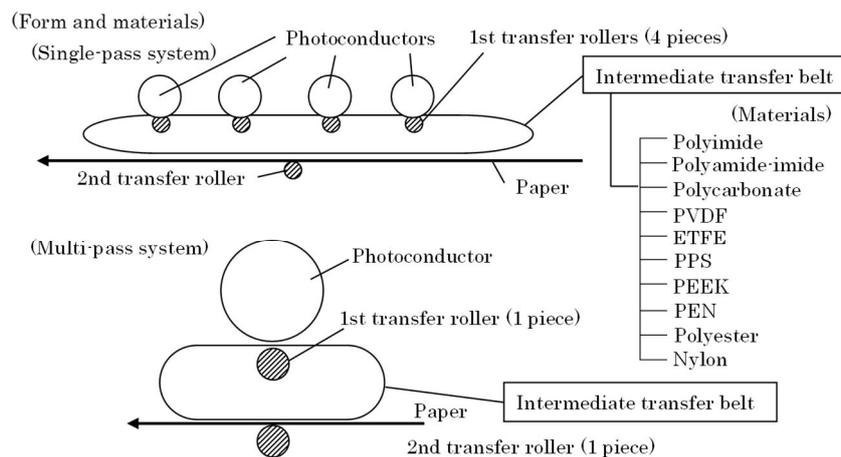
Manufacturing process of the transfer roller



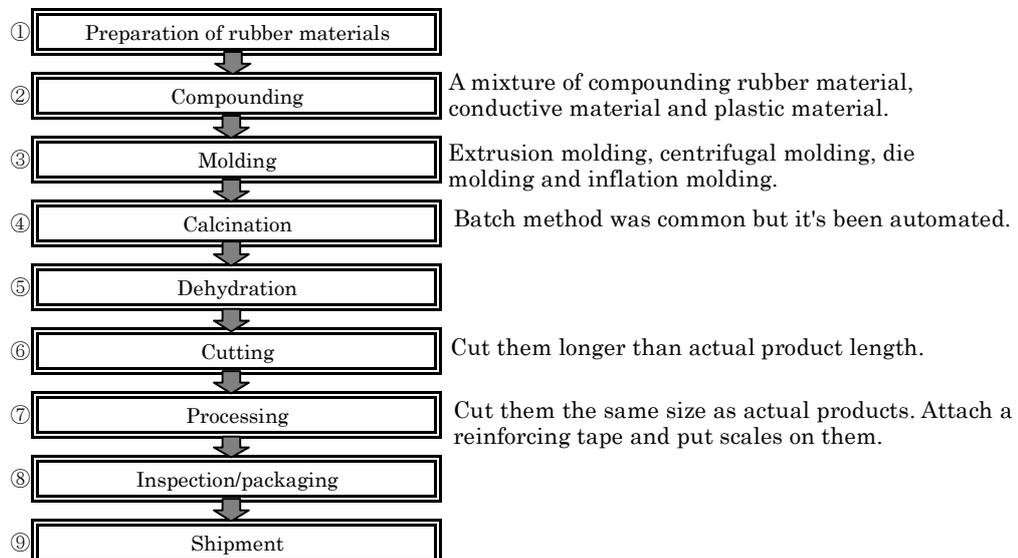
[6] Intermediate transfer belt market (8 specialist makers and 3 in-house makers)

- **2019 shipment volume was up 2.3% year on year. The upward trend continues.**
 - Expensive polyimide and polyamide-imide are mainly used for copiers and high-speed printers, whereas low-priced PVDF, PEEK, PPS, and polyester-based resin are used for low-speed machines.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ **3. Changes in shipment volume and shipment value by maker (2018-2024)** 1) Genuine component market 2) Third-party component market/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ **6. Changes in shipment volume and shipment value by material (2018-2024)** 1) Polyimide 2) Polyamide-imide 3) Polycarbonate 4) ETFE 5) PPS 6) PVDF 7) PEEK 8) Polyester 9) Others/ 7. Trend of intermediate transfer belt's technology and materials 1) Base materials 2) Surface materials 3) Future trend of materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of intermediate transfer belts/ **10. Supply destinations of intermediate transfer belts (Japan and overseas)**/ 11. Trend of intermediate transfer belt's production bases (Japan and overseas)



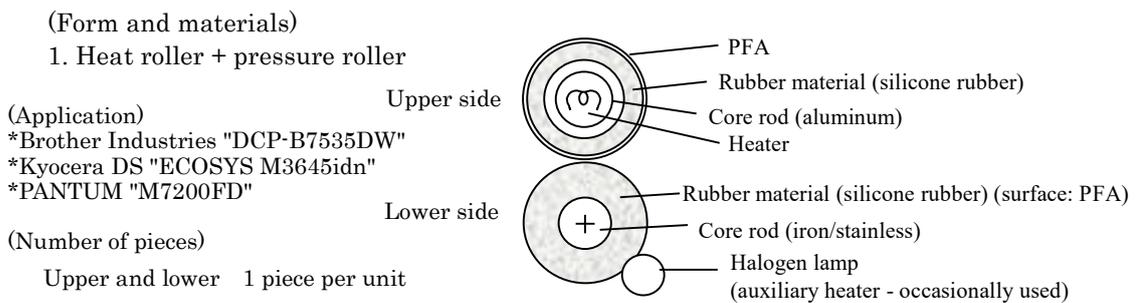
Manufacturing process of the intermediate transfer belt



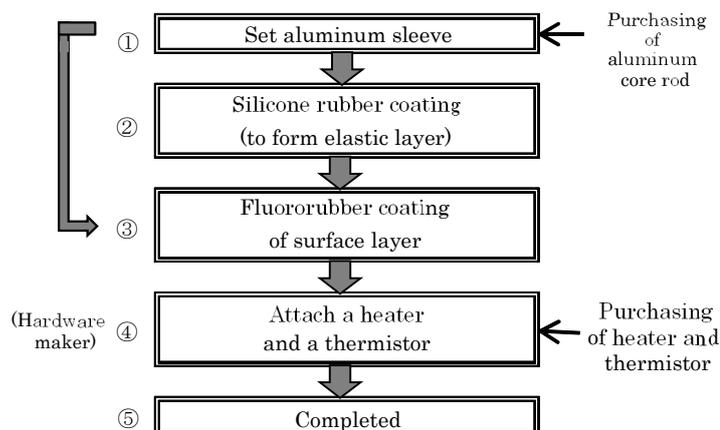
[7] Heat roller market (8 specialist makers, 2 in-house makers, and more than 20 others)

- **2019 shipment volume was down 4.0% year on year. The downward trend continues every year.**
 - Since there has been a shift from rollers to belts, shipment volume is decreasing.
 - There are two types of heat rollers: one is a soft roller using fluorinated silicon rubber, and the other is a hard roller using a silicone rubber layer on a core rod.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ **3. Changes in shipment volume and shipment value by maker (2018-2024) 1) Genuine component market 2) Third-party component market/** 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) **1) Hard rollers (PFA/PTFE) 2) Soft rollers (silicone rubber+PFA)/** 7. Trend of heat roller's technology and materials 1) Sleeves 2) Surface materials 3) Support for soft rollers used for color machines 4) Support for belt fusing 5) Future trend of materials/ 8. Support for component module production/ **9. Price trend and life cycle of heat rollers/ 10. Supply destinations of heat rollers (Japan and overseas)/** 11. Trend of heat roller's production bases (Japan and overseas)



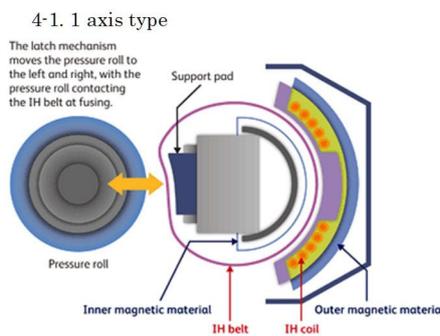
Manufacturing process of the heat roller



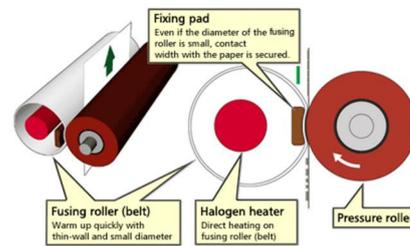
[8] Fuser belt (film) market (10 specialist makers, 3 in-house makers, and 10 others)

- 2019 shipment volume was down 3.0% year on year. The demand is stable.
 - Polyimide is the mostly used material, while others are nickel and SUS.

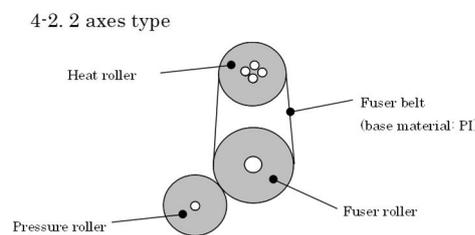
1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) **Genuine component market** 2) **Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. **Changes in shipment volume and shipment value by material (2018-2024)** 1) Polyimide 2) Nickel 3) SUS 4) Others/ 7. Trend of technology and materials 1) Base materials 2) Surface treatment 3) Support for color machines 4) Future trend of materials/ 8. Support for component module production/ 9. Price trend and life cycle of fuser belts/ 10. **Supply destinations of fuser belts (Japan and overseas)**/ 11. Trend of fuser belt's production bases (Japan and overseas)



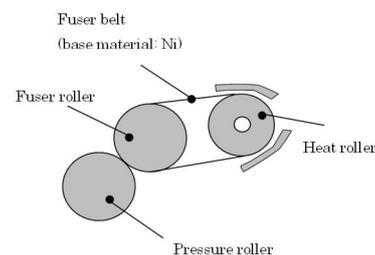
Fuji Xerox "ApeosPort-VII C3372"



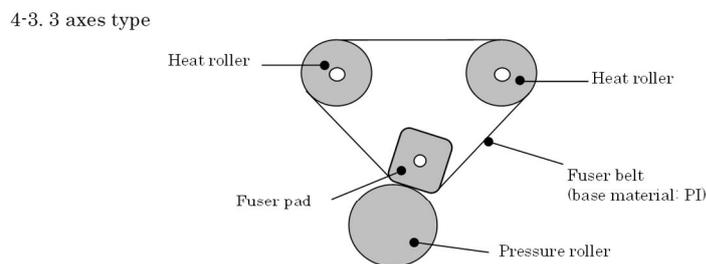
Ricoh "ROCOH IM C6000"



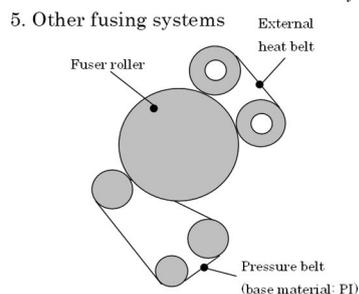
Konica Minolta "Accurio Press C3080"



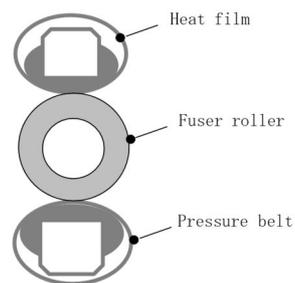
Ricoh "RICOH Pro C7210"



Fuji Xerox "Versant 3100"



Canon "imagePRESS C10000VP" (first fusing station)



Canon "LBP664Cx"

[9] Pressure roller/belt market (13 specialist makers, 3 in-house makers, and a dozen others)

- **2019 shipment volume of pressure rollers was down 7.4% year on year. The contraction is larger for printers.**
- Products are made of silicone rubber processed with PFA tube. There's a small number of products equipped with heaters.
- Products are mainly used for monochrome printers, but the ratio will be smaller gradually.
- **2019 shipment volume of pressure belts was up 3.2% year on year.**
- Polyimide is mainly used, while PEEK is also used. Surface is coated with fluorinated resin.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ **3. Changes in shipment volume and shipment value by maker (2018-2024) 1) Genuine component market 2) Third-party component market/** 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) **1) Silicone rubber+PFA/ Others (pressure rollers) 2) Polyimide (pressure belts)/** 7. Trend of technology and materials of pressure rollers 1) Layer structure 2) Support for heater-equipped machines 3) Future trend of materials/ 8. Trend of technology and materials of pressure belts 1) Base materials 2) Surface materials 3) Future trend of materials/ 9. Support for component module production/ 10. Price trend, life cycle, and manufacturing method of pressure rollers and belts/ **11. Supply destinations of pressure rollers and belts (Japan and overseas)/** 12. Trend of pressure roller and belt's production bases (Japan and overseas)

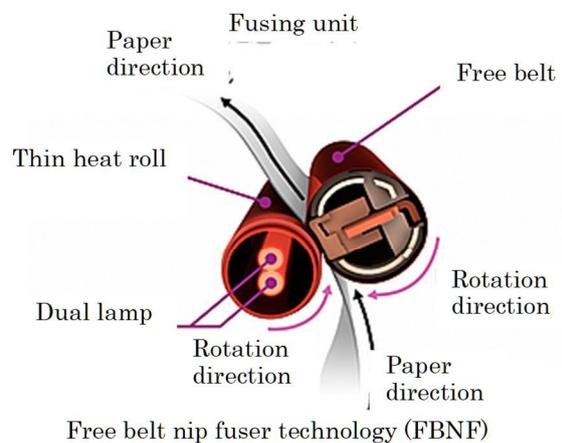
2. Heat roller + pressure belt

(Application)

- *Fuji Xerox "DocuPrint 4400d"
- *Oki Data "MC363 dnw"
- *Konica Minolta "bizhub C3851"

(Number of pieces)

Upper and lower 1 piece per unit



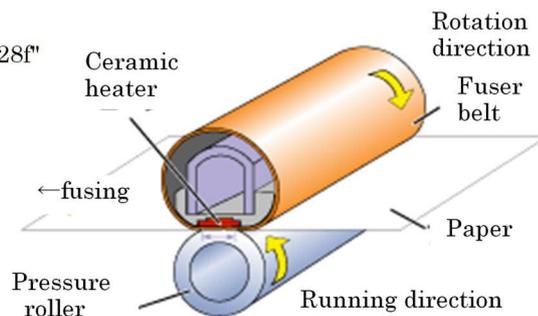
3. Fuser film + pressure roller

(Application)

- *HP "HP LaserJet Enterprise MFP M528f"
- *Canon "LBP664Cx"
- *Lexmark "B2650dw"

(Number of pieces)

Upper and lower 1 piece per unit



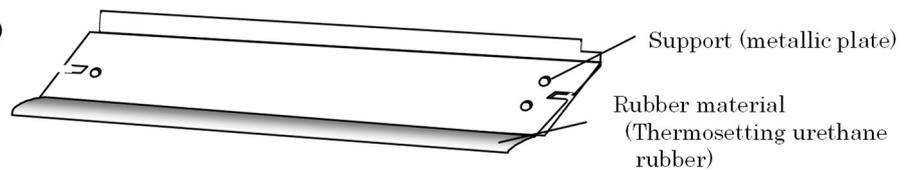
[10] Cleaning blade market (7 specialist makers, 1 in-house maker, and a dozen others)

- 2019 shipment volume was down 4.4% year on year. The third-party ratio is high in the market.
- The material used is polyurethane.
- Improvements in accuracy of the blade edge, blade angles, and materials are needed if they're used for low-temperature fusing toner.

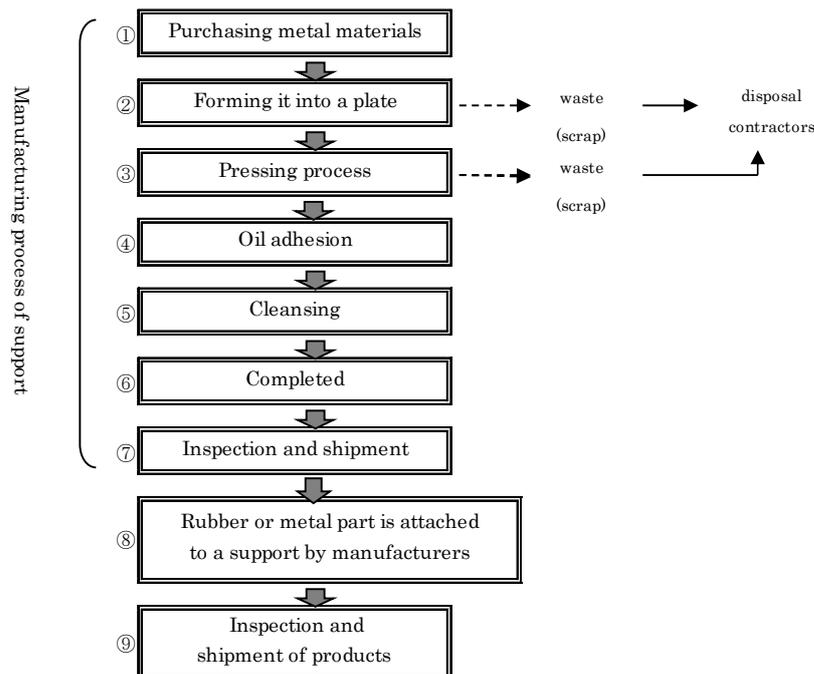
1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) Genuine component market 2) **Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) Polyurethane rubber/ 7. Trend of technology and materials of cleaning blades 1) Metallic plates 2) Blade edge materials 3) Support for chemically prepared toner 4) Future trend of materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of cleaning blades/ **10. Supply destinations of cleaning blades (Japan and overseas)**/ 11. Trend of cleaning blade's production bases (Japan and overseas)

It is an elastic blade used for cleaning in electrophotographic processes. Urethane rubber is often used due to its strength. A cleaning blade usually contacts a photoconductor rotating at a clockwise direction. There's a type that has a rubber molded blade attached to the edge of a metal support.

(Form and materials)



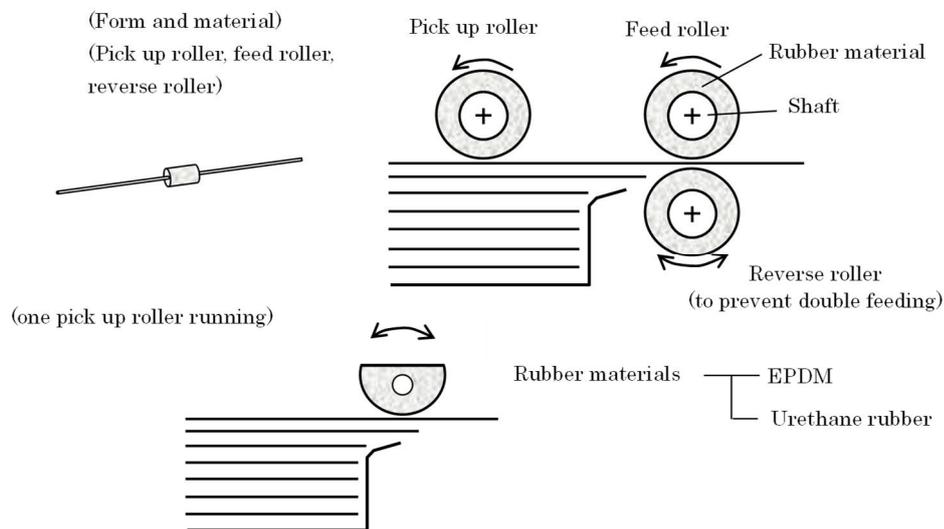
Manufacturing process of the cleaning blade



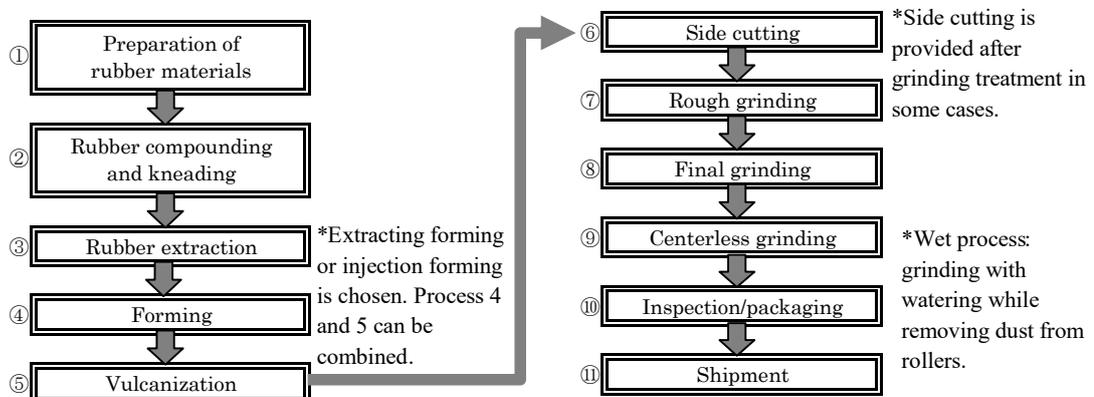
[11] Paper feeder roller market (9 specialist makers and 9 others)

- 2019 shipment volume was down 2.6% year on year.
 - The main material is EPDM. Urethane comes next.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024)** 1) **Genuine component market** 2) **Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) 1) **EPDM** 2) **Urethane rubber**/ 7. Trend of paper feeder roller's technology and materials 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of paper feeder rollers/ 10. **Supply destinations of paper feeder rollers (Japan and overseas)**/ 11. Trend of paper feeder roller's production bases (Japan and overseas)



Manufacturing process of the paper feeder roller

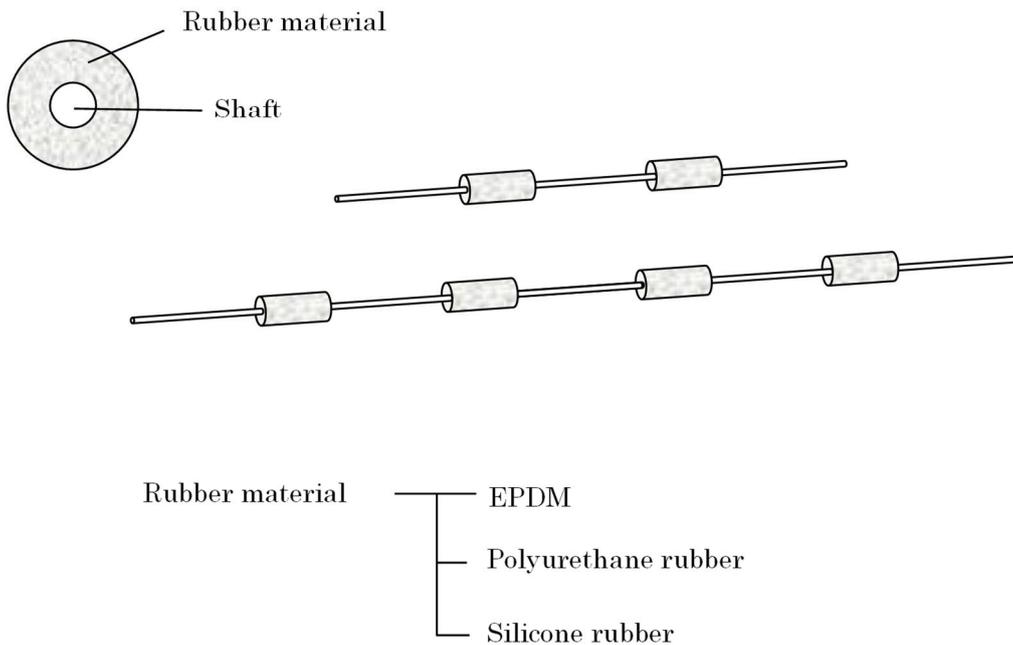


[12] Transporting roller market (11 specialist makers and many others)

- 2019 shipment volume was down 4.0% year on year.
- Low-priced products by Asian makers increased slightly.
- EPDM is dominant because of its cost advantages.

1. Component structure (illustration)/ 2. Manufacturing process (illustration)/ 3. **Changes in shipment volume and shipment value by maker (2018-2024) 1) Genuine component market 2) Third-party component market**/ 4. Changes in shipment volume and shipment value (2018-2024) by application (monochrome and color MFP/monochrome and color printer/fax) and by size (A4/A3)/ 5. Shipment trend of production printers (volume and value)/ Material trend/ 6. Changes in shipment volume and shipment value by material (2018-2024) **1) EPDM 2) Silicone rubber 3) Polyurethane rubber**/ 7. Trend of transporting roller's technology and materials 1) Support for high-speed printing 2) Future trend of materials/ 8. Support for component module production/ 9. Price trend, life cycle, and manufacturing method of transporting rollers/ **10. Supply destinations of transporting rollers (Japan and overseas)**/ 11. Trend of transporting roller's production bases (Japan and overseas)

(Form and material)



VI-3. Individual Makers (specialist makers/in-house makers)

Major makers

(Japanese specialist makers)

I.S.T / Arai Seisakusho / INOAC/NOK / Synztec / Kaneka / Kinjo Rubber / Kinyosha / Gunze / Showa Cable Systems / Shin-Etsu Polymer / Sumitomo Rubber Industries / Sumitomo Electric Industries / Sumitomo Riko / TDK / Toho Rubber / Nissei Electric / Nitta Chemical Industrial Products / Nitto Denko / NEOMAX Engineering / Bando Chemical Industries / Hitachi Metals / Fukoku / Bridgestone / Meiji Rubber & Chemical / Yamauchi / Others

(In-house makers)

Canon / Ricoh / Fuji Xerox / Konica Minolta / Toshiba TEC / Kyocera Document Solutions

(Overseas specialist makers)

Ah-Sung Chemical (South Korea) / Foshan Ascend Precision Accessories (China) / Galaxia Device (South Korea) / Jahwa Electronics (South Korea) / Sang-A Frontec (South Korea) / **Shenzhen Fancy Creation Industrial (China)** / **Shenzhen LEPUTAI Technology (China)** / Taejin Precision (South Korea)

1. Market trend by component (2018-2024)

(1) Shipment volume (genuine and third-party products) (2) Shipment value

①Charge roller ②Magnetic roller ③Developer roller ④Toner adder roller ⑤Transfer roller ⑥Intermediate transfer belt ⑦Fusing system (heat roller/fuser belt) ⑧Pressure system (pressure roller/pressure belt) ⑨Cleaning blade ⑩Paper feeder roller ⑪Transporting roller ⑫Others (PFA tube, cleaning web, fuser roller, etc.)

2. Market trend by application (2020/2024)

(1) Monochrome PPC (MFP) (2) Color PPC (MFP) (3) Monochrome printer (MFP) (4) Color printer (MFP)

3. Market trend by size (2020/2024)

(1) A4 (2) A3 (3) Others

①Charge roller ②Magnetic roller ③Developer roller ④Toner adder roller ⑤Transfer roller ⑥Intermediate transfer belt ⑦Fusing system (heat roller/fuser belt) ⑧Pressure system (pressure roller/pressure belt) ⑨Cleaning blade ⑩Paper feeder roller ⑪Transporting roller

4. Market trend by material (2020/2024)

①Charge roller ②Magnetic roller ③Developer roller ④Toner adder roller ⑤Transfer roller ⑥Intermediate transfer belt ⑦Fusing system (heat roller/fuser belt) ⑧Pressure system (pressure roller/pressure belt) ⑨Cleaning blade ⑩Paper feeder roller ⑪Transporting roller

5. Shipment trend of production printers (volume and value)/Material trend

6. Technology and material trend by component

7. Support for component module production

8. Price trend/Life cycle/Manufacturing method

9. Production bases by component

Japan / China / South Korea / Malaysia / Vietnam / Thailand / Philippines

10. Major supply destinations

Canon / Ricoh / Fuji Xerox / Xerox Corp. / Konica Minolta / Sharp / Kyocera Document Solutions / Toshiba TEC / HP (HP Printing Korea) / Brother Industries / OKI Data / Muratec / Lexmark / Others

11. Sales classification of electrophotographic rollers and other rollers (inkjet/ATM, etc.)

< SAMPLE PAGES >

*The actual report is filled with numbers and comments.

2. Shipment value (2017-2023)

Unit: Million Yen

Year \ Maker	2017		2018		2019		2020 (Estimate)		2021 (Forecast)		2022 (Forecast)		2023 (Forecast)	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Arai Seisakusho														
NOK/Synztec														
Kinyosha														
Showa Cable Systems														
Shin-Etsu Polymer														
Sumitomo Electric														
Toho Rubber														
Nissei Electric														
Fukoku														

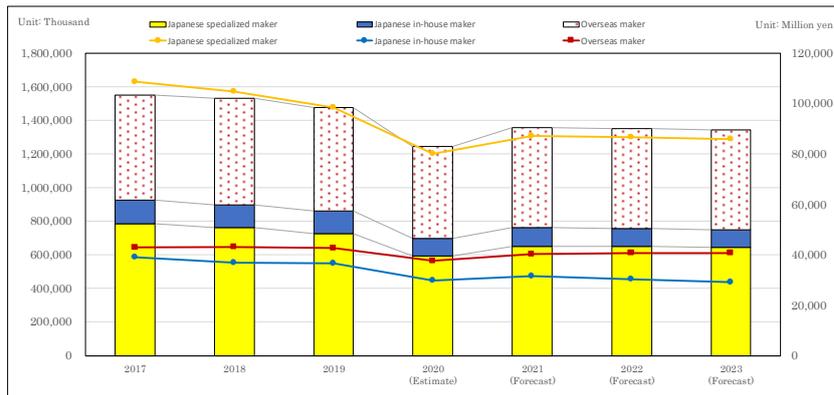
[3] Fuji Xerox

1) Monochrome (as of May 2020)

Monochrome PP	Charge Corona	Exposure	Developing	Transfer Belt(1st) + roller(2nd)	Fusing Heat roller + pressure roller	Cleaning
---------------	---------------	----------	------------	----------------------------------	--------------------------------------	----------

A. Comprehensive Analysis
 A-1. Overall market trend by functional component (13 key items)
 1. Shipment trend by Japanese and overseas maker (2017-2023)

Shipment value (Thousand)	Year	2017		2018		2019		2020 (Estimate)		2021 (Forecast)		2022 (Forecast)		2023 (Forecast)	
		Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Specialized maker	Value	783,451	50.6	763,668	49.9	728,533	49.4	591,587	47.5	649,871	47.9	649,115	48.1	644,204	48.0
	%	-	97.5	-	95.4	-	81.2	-	109.9	-	99.9	-	99.2	-	
	In-house maker	144,340	9.3	134,800	8.8	130,730	8.9	105,380	8.5	112,240	8.3	108,080	8.0	105,160	7.8
	%	-	93.4	-	97.0	-	80.6	-	106.5	-	96.3	-	97.3	-	
Total of Japanese makers	Value	927,791	59.9	898,468	58.7	859,263	58.2	696,967	55.9	762,111	56.2	757,195	56.1	749,364	55.9
	%	-	96.8	-	95.6	-	81.1	-	109.3	-	99.4	-	99.0	-	
	Total of overseas makers	620,930	40.1	632,875	41.3	616,845	41.8	549,189	44.1	593,789	43.8	592,872	43.9	592,320	44.1
	%	-	101.9	-	97.5	-	89.0	-	108.1	-	99.8	-	99.9	-	
Total	Value	1,548,721	100.0	1,531,343	100.0	1,476,108	100.0	1,246,156	100.0	1,355,900	100.0	1,350,067	100.0	1,341,684	100.0
	%	-	98.9	-	96.4	-	84.4	-	108.8	-	99.6	-	99.4	-	
	Specialized maker	108,477	57.0	104,751	56.7	98,373	55.3	80,005	54.3	86,983	54.7	86,601	54.9	85,955	55.2
	%	-	96.6	-	93.9	-	81.3	-	108.7	-	99.6	-	99.3	-	
In-house maker	Value	38,950	20.5	36,805	19.9	36,725	20.7	29,815	20.2	31,655	19.9	30,365	19.3	29,075	18.7
	%	-	94.5	-	99.8	-	81.2	-	106.2	-	95.9	-	95.8	-	
	Total of Japanese makers	147,427	77.5	141,556	76.6	135,098	76.0	109,820	74.5	118,638	74.6	116,966	74.2	115,030	73.8
	%	-	96.0	-	95.4	-	81.3	-	98.6	-	98.6	-	98.3	-	
Total of overseas makers	Value	42,858	22.5	43,247	23.4	42,652	24.0	37,620	25.5	40,307	25.4	40,646	25.8	40,744	26.2
	%	-	101.0	-	98.6	-	88.2	-	107.1	-	100.8	-	100.2	-	
	Total	190,265	100.0	184,803	100.0	177,750	100.0	147,440	100.0	158,945	100.0	157,612	100.0	155,774	100.0
	%	-	97.1	-	96.2	-	82.9	-	107.8	-	99.2	-	98.8	-	



Roller	Belt(1st) + roller(2nd)	Heat roller + pressure roller	Blade
		Heat roller + pressure belt	
		Heat roller + pressure roller	
Final transfer	Belt	Fuser belt + pressure roller	Blade
		Heat roller + pressure belt	
		(IH) Fuser belt + pressure roller	
Roller	Belt	Heat roller + pressure roller	Blade
		(IH) Fuser belt + pressure roller	
		Heat roller + pressure belt	

at the LED system is selected for the (belt) or IH fusing system.

*** Back numbers of Roller and Roller-related Market Forecast ***

Published Date	Title	Price	Total pages
2008.4	"Future Trend in Competitiveness of the Market"	\$4,400	679
2012.6	"Outlook of the industry"	\$5,000	655
2015.7	"The Future of the Roller and Roller-Related Component Industry that Requires Intelligence in Marketing Technologies"	\$4,000	683
2016.7	"The Reorganization of Hardware Machine Manufacturers Signals a New Phase for the Roller Component Industry"	\$4,000	687
2017.8	"The Roller-related Parts Industry Converts to Modular Production"	\$4,000	626
2018.8	"Restructuring or Withdrawal? Makers at a Crossroads in the Roller-related Component Industry"	\$4,000	653
2019.8	"The Roller-related Component Industry in Dire Need of Strategic Transformation Plan"	\$4,000	657
2020.11	"The Future of the Component Industry Depending on the Underlying Technology"	\$4,000	651