

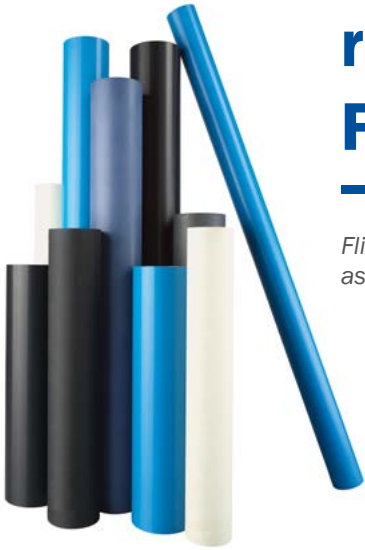
Rely on us.SM



Customized Solutions for Sleeves and Adapters

**rotec[®] sleeves and adapters for
flexographic printing**

FlintGroup



rotec® Sleeves & Adapters for Flexographic Printing

Flint Group manufactures rotec® sleeves and adapters customized for all flexo printing presses, as well as several specialty applications.

A Committed Team

Standing behind our quality products is also a strong team listening to our customers in order to provide innovative solutions and reliable service. Our commitment towards our customers to continuously improve our products and services drives our objective of making our products and services **better, faster and easier to use**.

Extensive Experience

rotec® sleeves and adapters have been in use around the world since 1990, with state-of-the-art, quality production facilities in the United States and Germany. Through innovations and a continuous improvement process of sleeve and adapter technology, cost efficiency, service and ecological responsibility, rotec® sleeves and adapters became the number one in terms of effectiveness, reliability and convenience in daily practice.

Customized Solutions

Every single printing sleeve and adapter is **tailor-made according to your needs**. You can choose between various rotec® sleeves, depending on your application needs. In addition, you can build your own customized adapter from the choice of base materials, air distribution systems, and air source, specific to your individual press operation. And, with a selection of quality upgrade options, you can further design the optimal sleeve or adapter for your individual requirements.



Technical Solution Provider

At Flint Group, we utilize our vast global market intelligence combined with technical expertise to provide **market-oriented and innovative solutions**. Whether customer service, sales, or production, empowered people are our greatest asset. This enables our customers to better position themselves to address present and future emerging market realities.

The rotec® product line is ever expanding in an effort to provide customers with the solutions they need. With **new product developments**, customers can significantly improve print performance, press productivity, as well as operator health and safety. A perfect example is the **innovative rotec® Eco Bridge** air distribution option for adapters. Instead of air holes, a breathable metal ring at the operator side creates an air pillow to allow easy and fast mounting of sleeves.



Flint Group listens to the customer in an effort to provide innovative solutions and optimized operations.

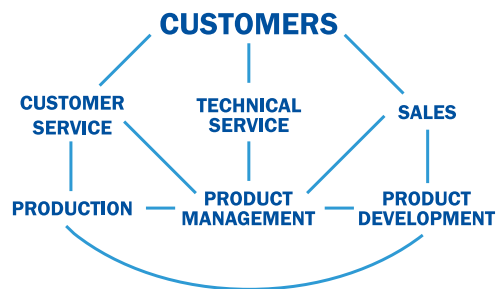
Dedicated Product Development

With diverse backgrounds in material science, physics, and mechanical engineering, the Flint Group sleeves and adapters product development team has a fresh perspective on the construction of sleeves and adapters. Based out of the Technology Center in Ahaus, Germany, their energy and enthusiasm for out-of-the-box thinking has contributed to the thriving stream of new products now available to the market.



At rotec®, we always strive for the best possible way to develop innovative and state-of-the-art products.

Our product development team is using the momentum of these products and continuing to intensively develop real solutions focused on what is important and relative to the flexo market.



At Flint Group, we listen to our customers and through several pathways of communication back to a strong technology development team, make the solutions for the flexographic press a reality.



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“Our Product Development Team is focused on developing products to help the customer work smarter, faster and easier. The rotec® High Performance Sleeve, for example, is an excellent solution for improved efficiency and easier handling at the printer.”

*- Uwe Müller, Flint Group,
Quality and Product Development Manager*



rotec® Sleeves

rotec® sleeves are high-quality sleeves to be used for conventional flexo plate-mounting, as well as other speciality applications. They allow plate-mounting outside the press and can be combined with various adapters.

- Easy and reliable handling with all plate types
- Tight tolerances with high-precision grinding (TIR < 0.001") and length ± 2 mm (+2 mm / -0 mm for automatic registration systems)
- Proven rotec® interior design of synthetic resin and glassfiber compound to ensure long-lasting and consistent mounting characteristics
- High durability and stability
- Special sizes for wall thickness and length options available upon request

	Wall thickness			
rotec® Blue Light Sleeve	0.080" - 4.000"	2 mm - 100 mm		Ω
rotec® Premium Sleeve	0.500" - 5.000"	13 mm - 125 mm	☂	Ω
rotec® Premium Lightweight Sleeve	0.750" - 4.000"	19 mm - 100 mm	☂ ✓	Ω
rotec® Smart Sleeve	0.470" - 4.000"	12 mm - 100 mm	✓ ⚙	Ω
rotec® High Performance Sleeve	0.470" - 4.000"	12 mm - 100 mm	☂ ✓ ⚙ ⚙	Ω
rotec® Compressible Sleeve	0.118" - 4.000"	3 mm - 100 mm		⬇ Ω
rotec® High Speed Sleeve	0.118" - 4.000"	3 mm - 100 mm		⚙ ⬇ Ω
rotec® TSX Sleeve	0.032" - 0.080"	0.8 mm - 2 mm	☂ ✓	
rotec® Base Sleeve	0.032" - 0.080"	0.8 mm - 2 mm	✓	Ω



Superior Dimensional Stability:

These products provide superior dimensional stability because the sleeve construction includes an additional glassfiber barrier layer to prevent any growth.



Lightweight:

These products are an advantage for the press operator by being easier to handle. This comes from reduced weight and easier mounting properties.



Easy-mount Technology:

New easy-mount technology was developed for these products using advanced materials and state-of-the-art sleeve construction to make mounting easier for the press operator.



High Speed:

These products are ideal for high-speed press applications because the construction and materials of these sleeves provide bounce reduction properties.



Compressible:

These products have a compressible outer surface for optimized printability.

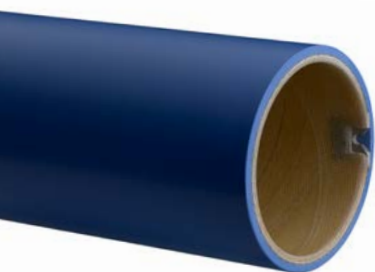


Conductive Option:

Available with rotec® Ω Technology that provides complete conductivity from the base sleeve through to the surface. See upgrade section for more information.

Choose Your Own rotec® Sleeve

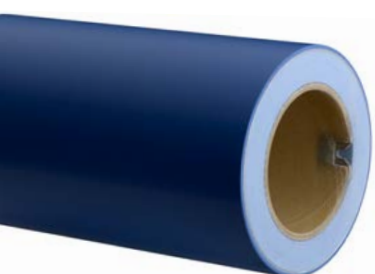
Every sleeve is tailor-made according to your needs. Nearly all lengths and diameters are available. In addition, you can choose several upgrade options.



rotec® Blue Light Sleeve

The benchmark in plate mounting

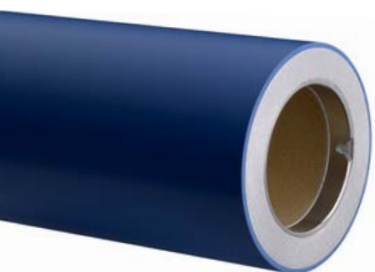
- Superior service life and outstanding durability
- Consistent and long-lasting mounting and clamping characteristics
- Easy and reliable handling



rotec® Premium Sleeve

Superior dimensional stability

- Constant outer diameter (TIR < 0.001") at fluctuating temperatures or humidity
- Perfect for high printing speeds and HD graphics
- Long-lasting with dependable register accuracy



rotec® Premium Lightweight Sleeve

All the benefits of the rotec® Premium Sleeve plus the following:

- Up to 50% weight reduction compared to rotec® Premium Sleeve
- Various notch options
- End plate sleeve edge sealing for long lasting protection



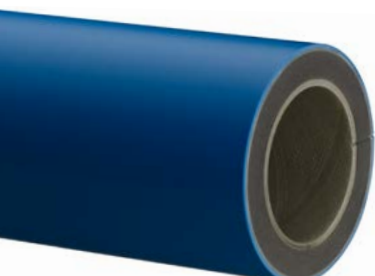
rotec® Smart Sleeve

New polyurethane technology

- Weight optimized with up to 30% reduced weight compared to rotec® Blue Light Sleeve
- Newly developed easy-mount technology
- Next generation rotec® Blue Light Sleeve



Picture represents a conductive sleeve option.



rotec® High Performance Sleeve

New polyurethane technology with superior dimensional stability similar to rotec® Premium Sleeve

- Weight optimized with up to 30% reduced weight
- Newly developed easy-mount technology
- Specialized sleeve construction for bounce reduction and faster press speeds



rotec® Compressible Sleeve

Unique compressibility

- Long-lasting compressibility, does not collapse with use
- Plate and tape savings, print consistency with long print runs
- Low dot gain, best solid ink density on irregular substrates



rotec® High Speed Sleeve

Top printing speeds

- Especially designed surface to attain high speed print results
- Higher print speeds achieved with bounce dampening characteristics
- Continuous printing for full tone and larger elements



rotec® TSX Sleeve

Efficient and cost effective thin sleeve

- Hard surface and superior solvent and ink resistance
- Low cost, quick availability
- Perfect for job storage



rotec® Base Sleeve

Extremely durable

- Optimal stability with low weight for bonding with coating materials
- Robust and durable over long time period
- Fiberglass for perfect bonding characteristics with different coating materials



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I believe the rotec® Eco Bridge will become the new standard of our industry.

*- Robert Adler,
Flint Group, Sales Director*



rotec® Adapters

rotec® adapters are high performing products to reduce the wall thickness in order to improve weight and handling of plate mounting sleeves. They are tailor-made according to the customer specifications. Choose a rotec® adapter for bridging diameter differences between air cylinder and sleeve.

- Quick set-up times, easy handling and cost savings
- Innovative air conduction system for easy mounting of sleeves
- Suitable for quick change cantilevered machines and conventional cylinder presses
- Tight tolerances with high-precision grinding (TIR < 0.001") and length according to DIN ISO2768 T1c
- Proven rotec® interior design of synthetic resin and glassfiber compound to ensure long-lasting and consistent mounting characteristics
- Special sizes for wall thickness and length options available upon request

	Wall thickness				
rotec® Bridge Adapter	0.189" - 4.000"	5 mm - 10 mm			
rotec® Unifit Adapter	0.400" - 3.000"	10 mm - 75 mm			
rotec® Airo Adapter	0.630" - 5.000"	16 mm - 125 mm			
rotec® Atlas CFX Bridge	0.626" - 4.920"	16 mm - 125 mm			
rotec® ULW Bridge	1.180" - 4.000"	30 mm - 100 mm			
rotec® H/C Bridge Adapter	0.210" - 0.410"	5 mm - 10 mm			
rotec® H/C Unifit Adapter	0.500" - 3.000"	13 mm - 75 mm			
rotec® H/C Airo Adapter	0.700" - 5.000"	18 mm - 125 mm			



Superior Dimensional Stability:

These products provide superior dimensional stability because the adapter construction includes an additional glassfiber barrier layer to prevent any growth.



Lightweight:

These products are an advantage for the press operator by being easier to handle. This comes from reduced weight and easier mounting properties.



High Speed:

These products are ideal for high-speed press applications because the construction and materials of these adapters provide bounce reduction properties.



Compressible:

These products have a compressible outer surface for optimized printability.



Conductive Option:

Available with rotec® Ω Technology that provides complete conductivity from the base sleeve through to the surface. See upgrade section for more information.



Eco Bridge Option

Available as Eco Bridge version, which uses patented air distribution system for significantly easier sleeve mounting. See adapter section for more information.

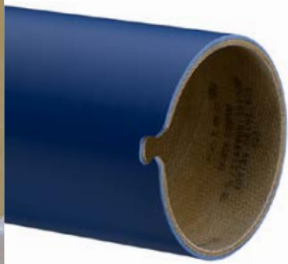
Build Your Own rotec® Adapter

Choose from the different base materials, then add your desired air distribution and air source. Nearly all lengths and diameters are available. In addition, you can choose several upgrade options.

Base Material



Functional base material used in the construction of the adapter to achieve the required characteristics needed for specific press applications

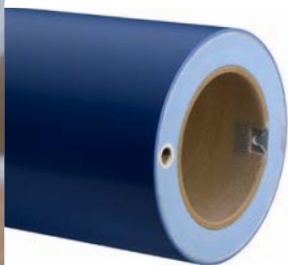


Polyurethane Adapter

rotec® Adapter

The perfect fit for every cylinder configuration

- Standard adapter for the flexographic industry
- High durability and stability
- Several air supply alternatives available to meet press-specific requirements



Lightweight Polyurethane Adapter

rotec® ULW Bridge

The ultra-lightweight option for adapters

- Up to 65% weight reduction compared to similar adapters
- Available as Unifit or Airo versions for customized air transfer system
- Application in press or plate-mounting equipment

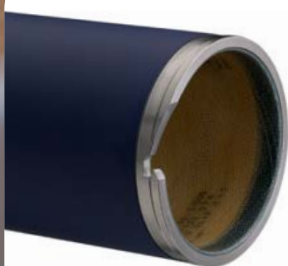


Carbon Fiber Adapter

rotec® Atlas CFX Bridge

High modulus carbon fiber adapter for maximum printing performance

- For high printing press speeds and outstanding printing results
- Vibration dampening characteristics due to **high-modulus** carbon fiber structure
- Significantly lighter than conventionally manufactured products – especially with larger wall thicknesses
- Available as Unifit or Airo versions for customized air transfer system



Compressible Adapter

rotec® H/C Adapter

Compressible adapters to mount In-The-Round sleeves

- Exclusive compressible anti-slip surface
- Consistent and long term printing performances especially for long print runs due to bounce-back properties of the compressible surface
- Available with customized air conduction system

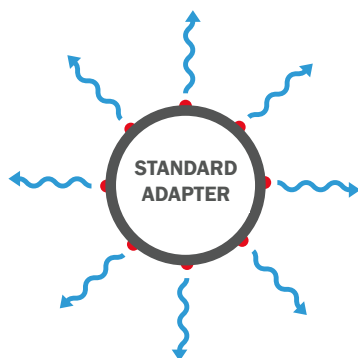


Air Distribution



How the air flows out of the adapter, in order to mount the sleeve

Standard Air Holes



4-8 air holes on operator side, additional holes along the length of the adapter

Eco Bridge – breathable metal ring



Breathable metal ring along the entire circumference of the adapter on the operator side. Eco Bridge can be used with an Airo or Unifit Air Source and no additional air holes are typically needed along the length of the adapter.

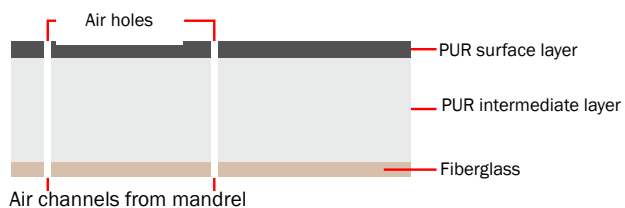
- Up to 90% less compressed air needed for easy sleeve mounting
- 99% reduction in noise
- Increased efficiency for cost savings and improved productivity

Air Source

How the air flows into the adapter

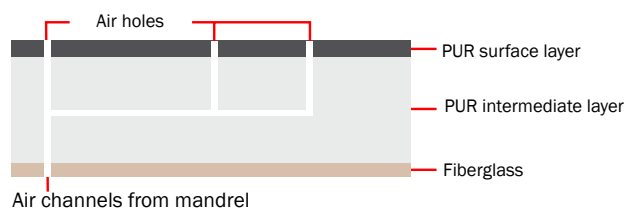
Bridge

For wall thicknesses below 0.4" (10 mm). Conducts air from the air cylinder to the surface via air holes.



Unifit

Customized air transfer system for most types of air cylinders. In the Eco Bridge version, the air holes are replaced by a breathable metal ring on the operator side.



Airo

Dedicated external air connection system. In the Eco Bridge version, the air holes are replaced by a breathable metal ring on the operator side.



Upgrade Your Own rotec® Sleeve or Adapter

Need something more than the standard rotec® products?

Let's upgrade you!

Flint Group has several high-quality upgrade options to customize your sleeves and adapters for your individual press and job specifications. If you can imagine it, we will do everything we can to make it happen. With years of experience, we are able to provide excellent solutions for most all needs and requirements. Each sleeve and adapter is configured new for each order, just for you!

Notch Options

- Material options: composite, cut-through
- Specialized notches available
- Standard and interlock shapes available in most all standard sizes
- Ensure safe and accurate positioning of the rotec® sleeves or adapters on the air cylinder



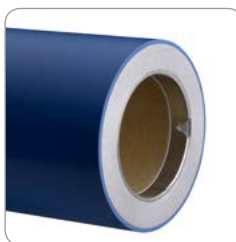
Composite Notch



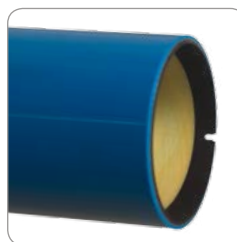
Cut-Through Notch

Ring Options

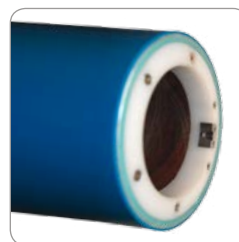
- Material options:
stainless steel, polyurethane and delrin



Inner Ring – Stainless Steel



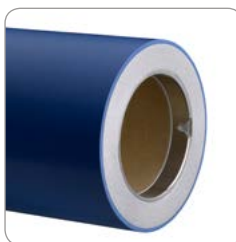
Inner Ring – PUR



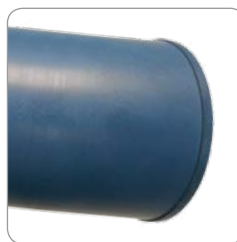
Inner Ring – Delrin

End Plates & End Stop

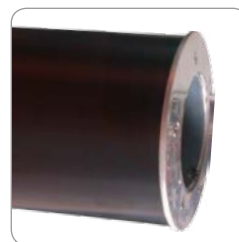
- Material options:
stainless steel, polyurethane
- Soft stop for rotec® H/C Adapters
- End plate with end stop – metal or polyurethane



End Plate



Soft Stop



End Plate with End Stop

Why is conductivity needed?

Grounding all parts of the printing press, including the sleeves and adapters, prevents fires and explosions. This is primarily a danger when using solvent-based inks with a flash point below 55 °C.

How is rotec® Ω Technology for conductivity better than alternatives?

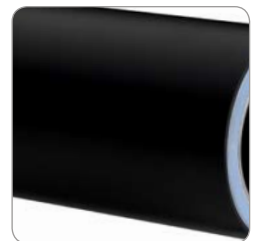
The rotec® Ω Technology provides conductivity from the base sleeve through to the surface. Alternative conductive sleeves and adapters often have only a spring-mounted ball bearing grounding only the conductive surface of the product to the press's air cylinder. If the spring breaks or the surface is compromised, this sleeve would no longer be conductive.

10-year warranty:

The rotec® Ω Technology offers a 10-year warranty for conductivity because there are no parts to wear out. The sleeve or adapter will maintain conductivity.

Conductivity: rotec® Ω Technology

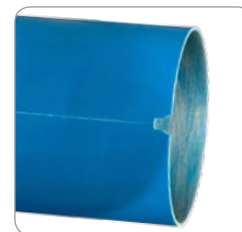
- 10-year warranty for conductivity
- Complete conductivity of the inner construction through to the surface makes it the safest product on the market
- Complies with the regulations of ATEX EU Directive No. 2014/34/EU (formerly ATEX 95) for electrostatic derivation ability



rotec® Ω Technology

Tools

- Scribe lines, register pin



Scribe Line



Register Pin

Labeling

- Production order label
- Engraved logo and sleeve specifications



Production Order Label



Laser Engraving

Flint Group Key Facts

Flint Group was built around the vision to be a **solution provider** to the printing and packaging industry. The execution of our vision resulted in an unmatched portfolio covering **all steps of the value chain for printing** in the packaging industry.

To illustrate that further, picture a Flint Group Factory, for example, for the label market. From imagers, flexographic and letterpress printing plates and equipment, mounting sleeves and adapters for printing presses to inks and digital printing solutions, Flint Group covers all the steps of the value chain for printing in this factory.

Flint Group in numbers

8,300

Flint Group Employees

1,630

Raw Material Suppliers

Revenue 2017

€2.20

billion

over

600

million kg

of ink products (1,340 million lb)

4 million m²

of plates and blankets
(43 million square feet)

180



sites

across **40** Countries on all continents



5,580

Raw Materials

over

150,000

Unique Customer Formulations

almost

20,000

Direct customers and many more through our extensive distributor network

Unmatched Portfolio for the Packaging Industry

Flint Group Image Transfer Solutions offers an unmatched product line for the packaging industry. Ranging from nyloflex[®] and nyloprint[®] printing plates and equipment, rotec[®] sleeves and adapters to offset blankets and adapters. From a market perspective all products and services are key elements of

transferring an image onto a substrate and enable us to create a portfolio of high performance, engineered materials used in pre-press and printing operations that provide consistent quality and technology to help our customers create value in their markets.

rotec[®]

Sleeves and Adapters



nyloflex[®]

Flexo Printing Plates for

- Flexible Packaging
- Tags and Labels
- Corrugated

Thermal and solvent
Flat Top Dot technology
Processing Equipment
Ready-to-image ITR Sleeves



dayGraphica[®]

Offset Blankets and Sleeves



ThermoFlexX

Digital Imaging
for Flexo and Letterpress



nyloprint[®]

Printing Plates for

- Letterpress
- Pad Printing
- Tubes, Cups and Cans Printing
- Special Applications

Processing Equipment



nylosolv[®]

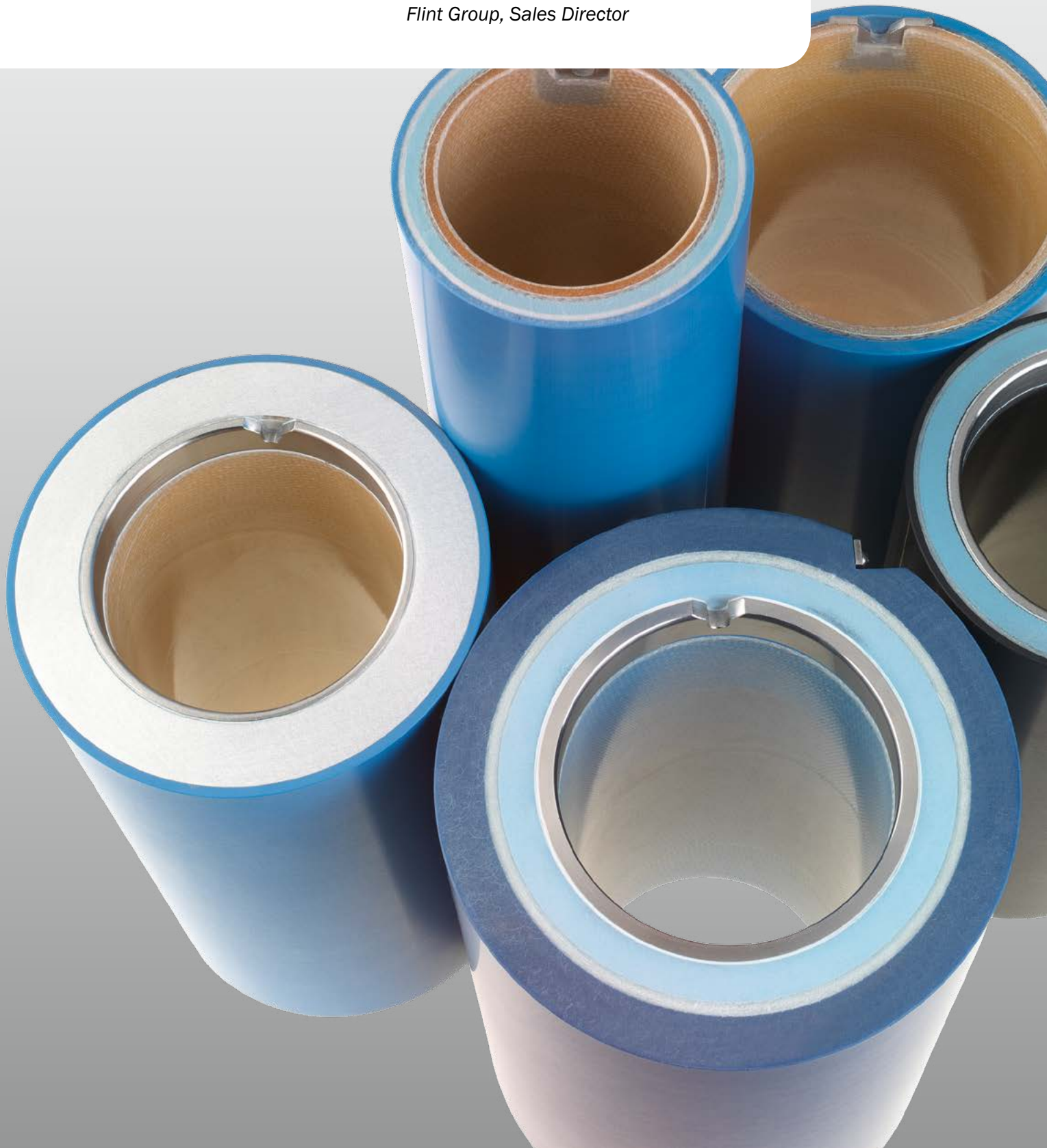
Washout Solvents





Global production of rotec® sleeves and adapters make the variety and possibilities for our customers virtually endless.

*- Patrick Lüdecke,
Flint Group, Sales Director*





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Please contact Customer Service for additional information.

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2019-02