



**Fabbrica Italiana Ruote**

[www.fir.it](http://www.fir.it)

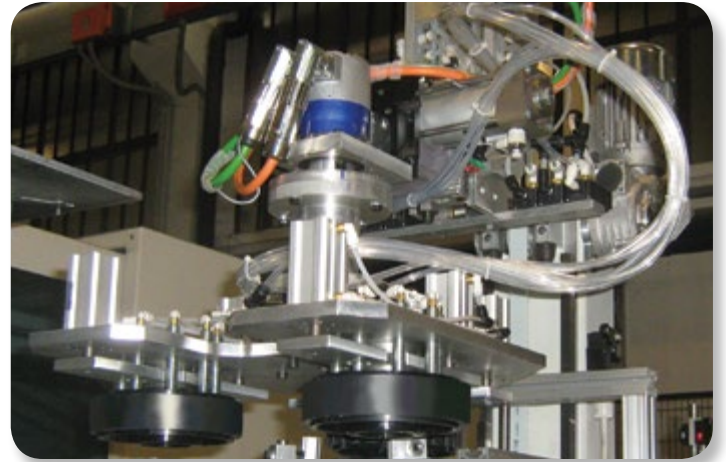
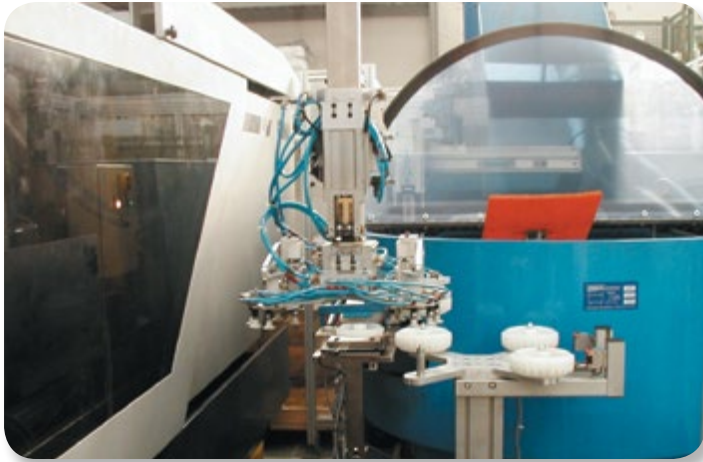
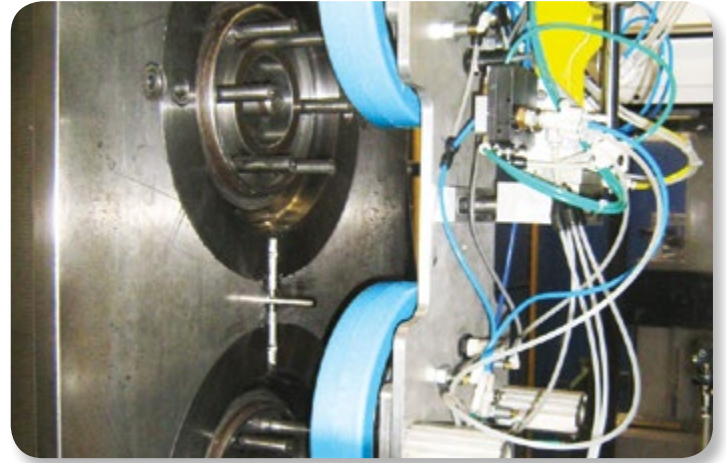


**WHEELS FOR PROFESSIONAL  
CLEANING EQUIPMENT**

*YOUR IDEAS IN MOTION*

# a world leader in the design and manufacture

2



F.I.R. was founded in Modena in 1985 by Enrico Rota, who pioneered the techniques and materials that have made the company very successful. Today, F.I.R. is a leading manufacturer of stainless steel casters and polyurethane wheels.

Through continuing attention to new markets and client requirements, F.I.R. has specialized in the design and development of wheels and casters "on demand". A large part of the research on new materials, design of new products and improvements of existing products has resulted from collaboration with F.I.R. customers. Indeed, our slogan is "your ideas in motion"!

This collaboration has helped F.I.R. to deepen its knowledge of the cleaning equipment industry and specialize on wheels and casters for professional

scrubber dryers, sweepers and vacuum cleaners.

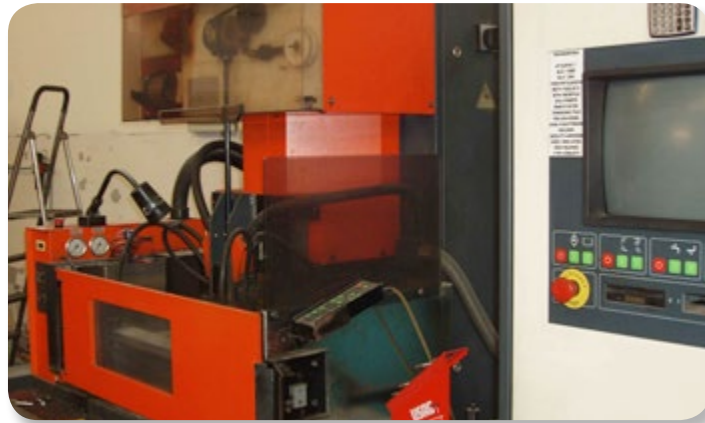
In recent years, F.I.R. has become a world leader in the design and production of wheels in polyamide and polyurethane for professional cleaning equipment. High performing materials, know-how, flexible production and made to measure solutions have made F.I.R. the most reliable partner for producers of professional cleaning machines. The acquisition of a tooling unit, in 2014, has allowed us to build and modify molds in-house. This has increased flexibility and has enhanced our ability to design and develop tailor-made products to meet clients' specific requirements.

We look forward to working together with you to design and produce the best wheels and casters for your requirements.



# of wheels for professional cleaning equipment

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Fabbrica Italiana Ruote

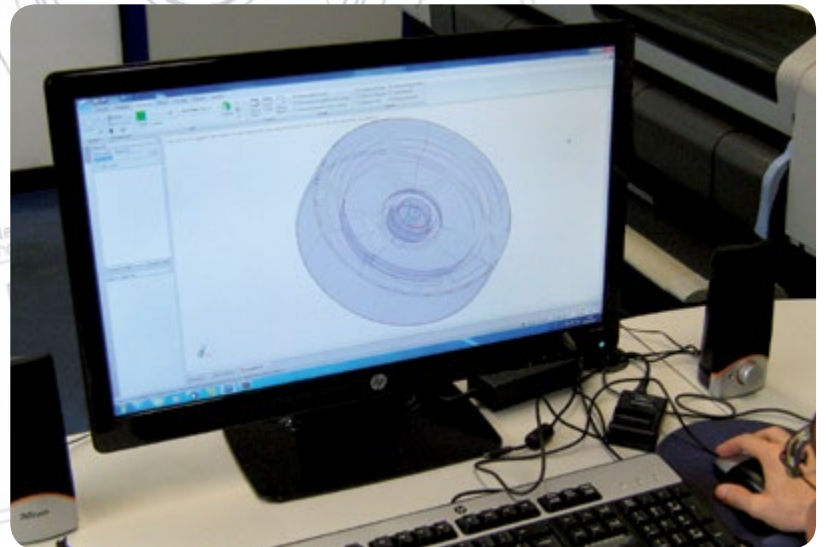
YOUR IDEAS IN MOTION



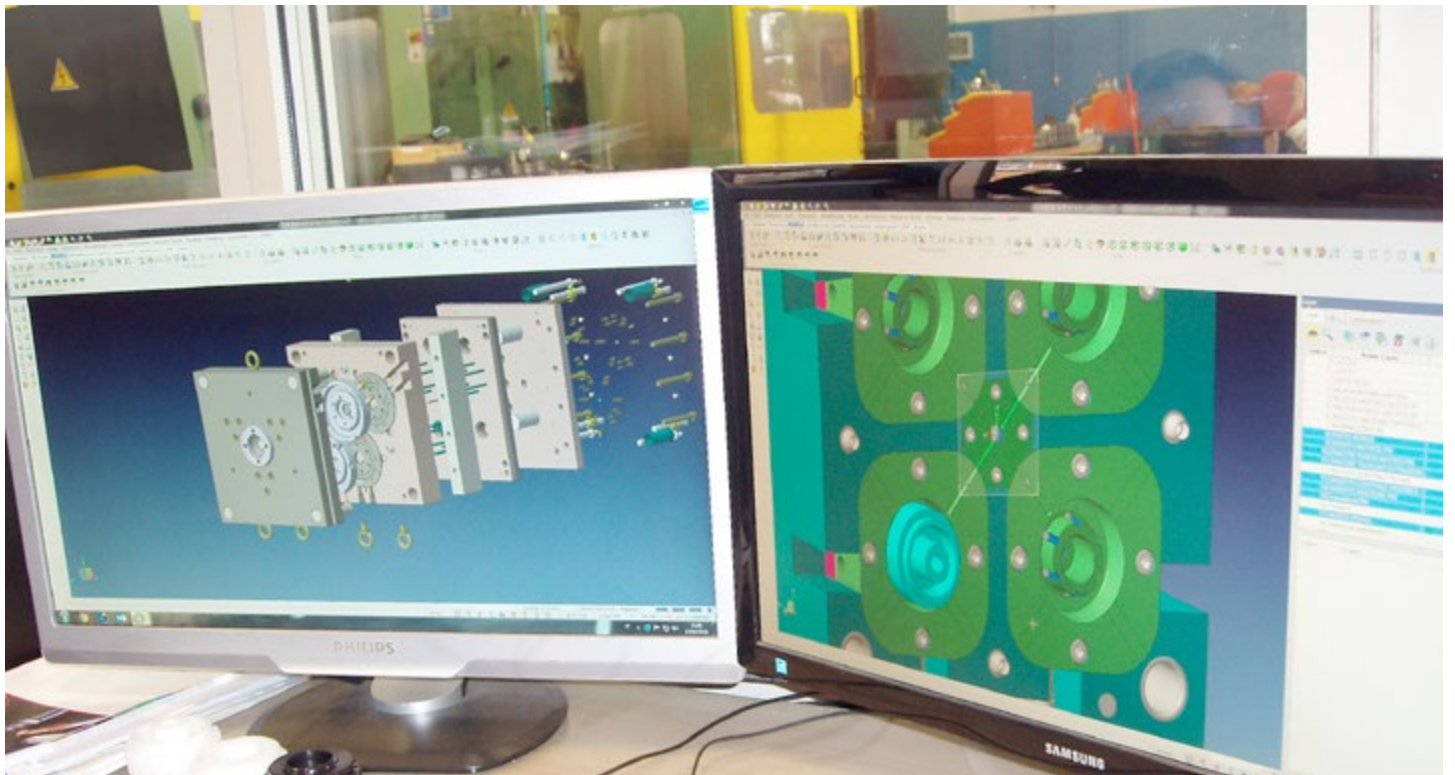


You choose the specifications to meet your requirements.  
We design, produce and deliver your wheels.

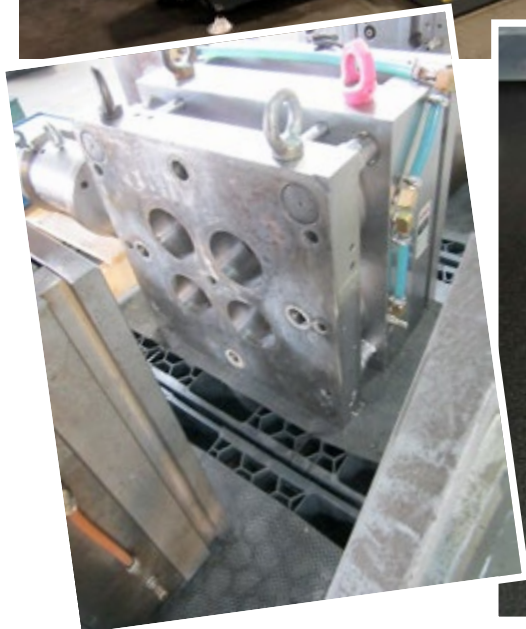
The F.I.R. Technical Department designs innovative products and creates personalized solutions to satisfy all customer needs.



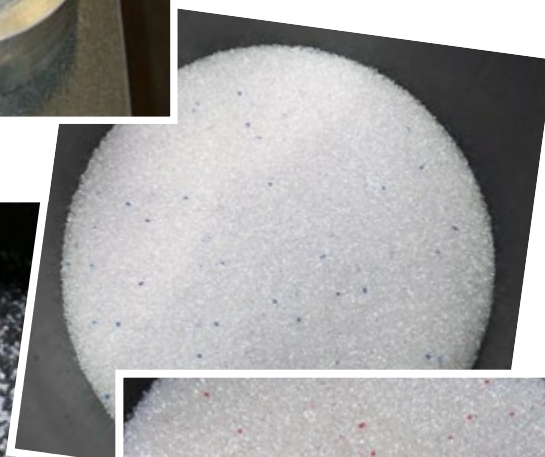
The newly integrated Tooling Division has increased flexibility and has enhanced our ability to design and develop customized products to meet your specific requirements.







We only choose top  
quality materials.



Fabbrica Italiana Ruote

YOUR IDEAS IN MOTION

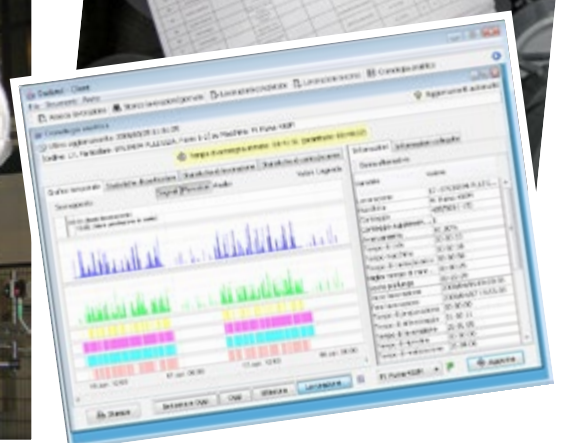
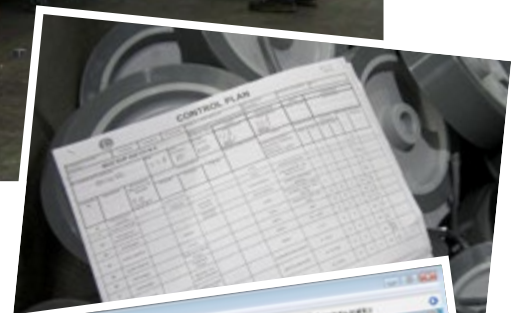
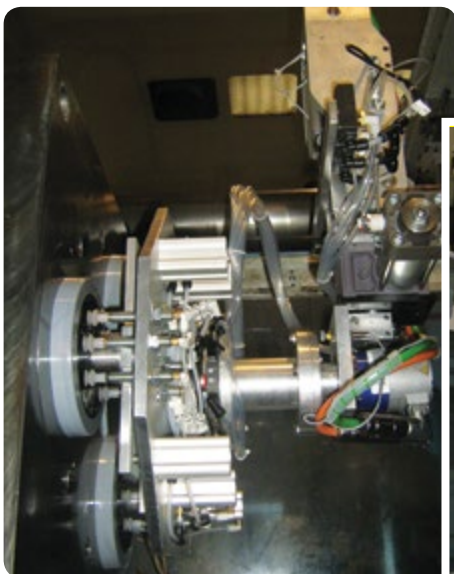


# Your Wheel

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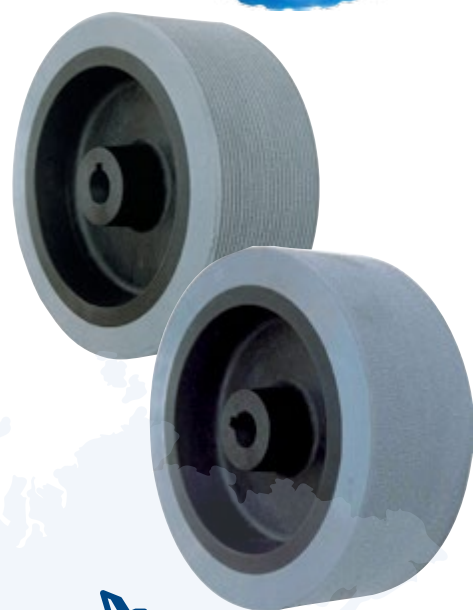
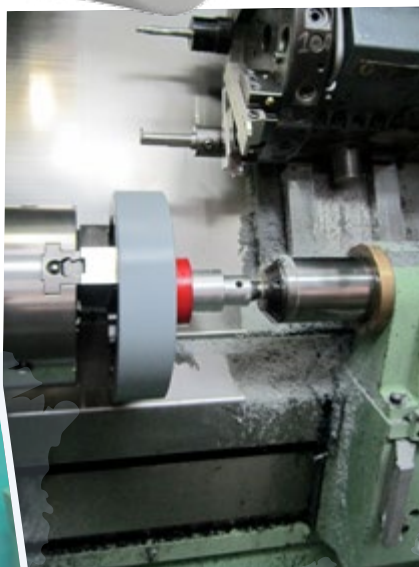


The robotized injection molding equipment is at the forefront of automated technology.





The machining unit finishes the wheel to your precise specification.



Fabbrica Italiana Ruote

YOUR IDEAS IN MOTION



**We produce and sell quality.**

F.I.R.'s commitment to innovation is ever-present. We have invested in automation and robotics to increase flexibility and quality. Product quality is monitored throughout the entire production process using modern equipment allowing us to test our products in-house in relation to international standards.

*F.I.R. wheels and casters are manufactured according to the following standards:*

- UNI 9223
- UNI EN 12527
- UNI EN 12532
- UNI EN ISO 9001
- UNI EN ISO 22768-1
- UNI EN ISO 22768-2
- ISO 22884
- REACH
- ROHS II

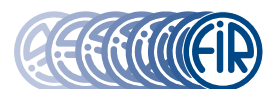






Quality is an important component of F.I.R.'s objectives. F.I.R. has built its reputation over the years by producing high quality wheels and casters. In collaboration with our customers and suppliers, F.I.R. has devoted increasing resources to the improvement of the quality of its products and service in conjunction with customers.

We put health, safety and environment at the heart of our business.



Fabbbrica Italiana Ruote

YOUR IDEAS IN MOTION



# Product Innovation

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F.I.R. is committed to continuous product and process innovation.

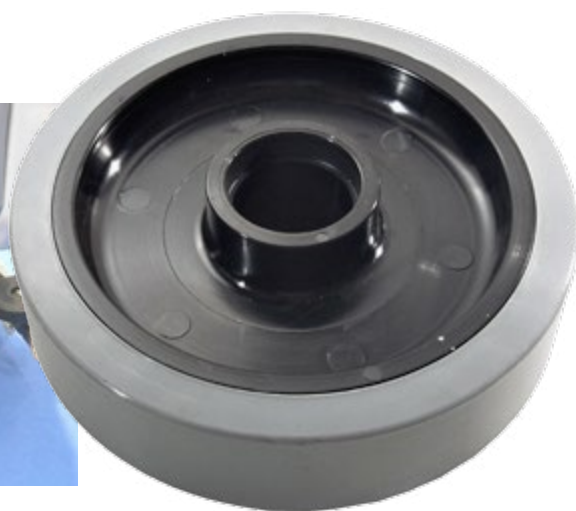


- In 2012, F.I.R. was granted the **European Patent**, Patent no. 2236317
- In 2014 F.I.R. was granted a **United States Patent**, Patent no. US 8,911,025 B2.
- In 2014, F.I.R. obtained 6 **Registered Community Designs** for wheels at OHIM, Office for Harmonization in the Internal Market, Trade Marks and Designs:

Registrations no.: 002460139-0001-002460139-0002-002460139-0003-002460139-0004-002460139-0005-002460139-0006







Fabbrica Italiana Ruote

YOUR IDEAS IN MOTION











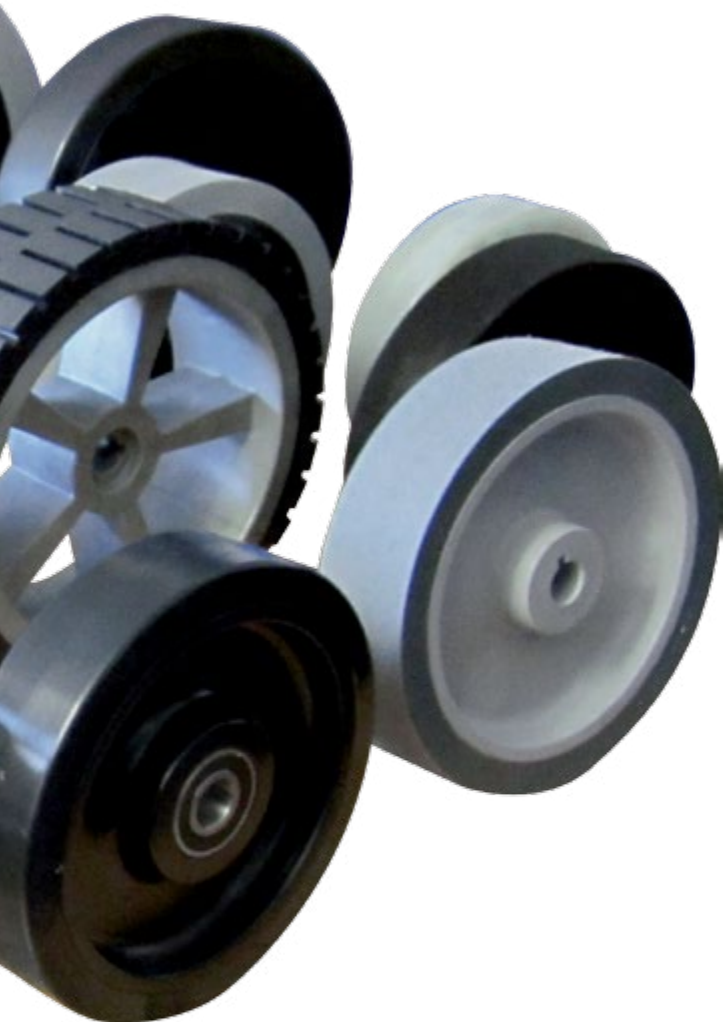
# Create your wheel: Series Alpha

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## **α** TPU+TPU, thermoplastic polyurethane injected onto a thermoplastic polyurethane center

F.I.R.'s top range, the Alpha series, features a combination of hub and tread both made from top quality TPU. These wheels have both mechanical and chemical interlocking systems making them exceptionally strong. They are ideal for high speed applications of up to 10 km/h or 6 mph. They are very durable and resistant to tearing. The elastic polyurethane, from 70 to 80 Shore A, allows excellent grip and the ability to overcome obstacles. The wheels are noiseless and do not vibrate; they are suited to most surfaces.





from 150 mm to 300 mm  
from 6" to 12"



from 160 kg to 300 kg  
from 350 lb to 660 lb



maximum speed 10 km/h  
maximum speed 6 mph



Hub can be reinforced with fiberglass



from 70 to 80 Shore A

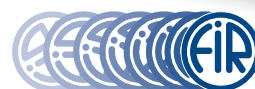


from -20°C to +60°C  
from -4°F to 140°F



Available in different colors, sizes and  
surface patterns

Available with double ball bearings, key  
seat or flanged hub



Fabbrica Italiana Ruote

YOUR IDEAS IN MOTION



# Create your wheel: Series Beta

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## **β** TPU+PA6, thermoplastic polyurethane injected onto a polyamide center

F.I.R.'s most popular range, the Beta series, features a combination of hub made in polyamide 6 and tread made from top quality TPU. These wheels have mechanical interlocking system. This series has the best price-quality ratio. The wheels are very strong, durable and resistant to tearing. They are ideal for applications that require a speed of up to 6 km/h or 4 mph. The elastic polyurethane, from 70 to 80 Shore A, allows excellent grip and the ability to overcome obstacles. The wheels are noiseless and do not vibrate. They are suited to most surfaces.





from 150 mm to 300 mm  
from 6" to 12"



from 160 kg to 300 kg  
from 350 lb to 660 lb



maximum speed 6 km/h  
maximum speed 4 mph



Also available in ESD (electrostatic discharge) polyamide and polyurethane



Hub can be reinforced with fiberglass



from 70 to 80 Shore A

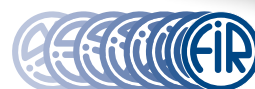


from -20°C to +60°C  
from -4°F to 140°F



Available in different colors, sizes and surface patterns.

Available with double ball bearings, key seat, flanged hub or splined hub.



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YOUR IDEAS IN MOTION



# Create your wheel: Series Gamma

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**TPE+PP, thermoplastic elastomer injected onto a polypropylene center**

F.I.R.'s budget range, the Gamma series, features a combination of hub made in polypropylene and tread made from thermoplastic elastomer. These wheels have both mechanical and chemical interlocking systems. This series is best suited for low loads (up to 180 kg or 395 lb) and they are ideal for applications that require a speed of up to 4 km/h or 2.5 mph. The elastic elastomer, from 60 to 80 Shore A, allows excellent grip. The wheels are noiseless and do not vibrate. They are suited to mostly smooth surfaces.





from 150 mm to 300 mm  
from 6" to 12"



from 80 kg to 180 kg  
from 175 lb to 395 lb



maximum speed 4 km/h  
maximum speed 2,5 mph



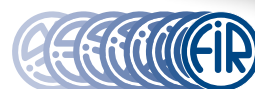
from 60 to 80 Shore A



from -20°C to +60°C  
from -4°F to 140°F



Available in different colors and size.  
Available with double ball bearings.

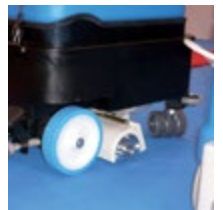
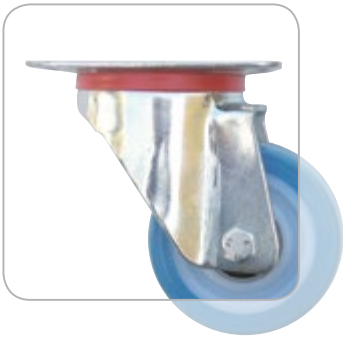


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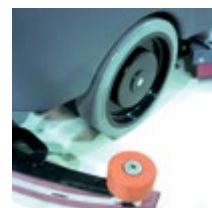
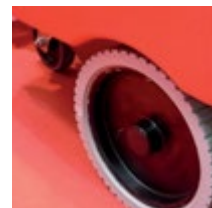
YOUR IDEAS IN MOTION



## casters



## bumpers





Wheel Diameter



Load capacity



Speed



Hardness



Temperature



Price



Plain bore



Ball bearings



Key hole



Flanged hub



Splined hub



Designed and made in Italy



Recyclable



Shock absorbing



Non-marking



Non-slip



Noise-free



Resistant to chemicals and detergents



Choice of colour



Custom-made







**Fabbrica Italiana Ruote**

[www.fir.it](http://www.fir.it)

*THE BEST ANSWER TO YOUR NEEDS*

*Why choose F.I.R.:*



**EXPERIENCE**

we have been producing wheels and casters for more than 30 years



**COLLABORATION**

we create and supply value by interacting with our customers. Our slogan "your ideas in motion" summarizes our mission



**TOTAL QUALITY**

F.I.R. Quality Management System is in compliance with UNI EN ISO 9001:2015 standard.



**LEAN MANUFACTURING**

we believe in continuous improvement and apply "lean manufacturing".



**INDUSTRY 4.0**

we believe in smart manufacturing and we are committed to create a continually smarter factory



**CUSTOMER SATISFACTION**

we provide prompt response, value for money and fast delivery to our customers



**INNOVATION**

we are at the forefront of polyurethane injection processes. We are committed to continuous process and product innovation



**FLEXIBILITY**

we meet special and individual requests by designing and developing custom-made products



**CONVENIENCE**

we provide a top class service by bringing together product quality and client convenience



**SUPPLY CHAIN**

we choose the most reliable suppliers and the best performing materials



**ENVIRONMENT**

we comply with European standards for the protection of the environment



**LOGISTICS**

we offer fast delivery from our factory in Modena, Italy and from USA logistics hub in Royersford, PA



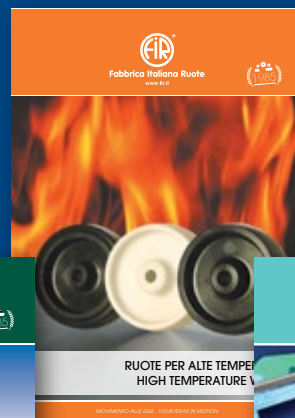
**MADE IN ITALY**

we produce and sell "made in Italy"





To see the complete range of F.I.R. wheels and casters visit [www.fir.it](http://www.fir.it)



MOVIMENTO ALLE IDEE · YOUR IDEAS IN MOTION

  
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[www.fir.it](http://www.fir.it)

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Azienda con  
sistema di gestione  
UNI EN ISO 9001:2015  
certificato

Quality  
management  
system ISO 9001:2015  
certified company