



# An introduction to TR

## Edition 5

# Introduction

## Holding the world together.

TR Fastenings Ltd (TR) is part of Trifast plc and is a global specialist in the design, engineering, manufacture and distribution of high quality industrial and Cat C fastenings principally to major global assembly industries.

The TR Group consists of 32 business locations within the UK, Asia, Europe and the USA including seven high volume, high-quality and cost-effective manufacturing sites. We supply components to over 5000 companies globally across a wide range of industries.

As a full service provider to multinational OEM's and Tier 1 companies spanning several sectors, we deliver comprehensive support to our customers across every requirement, from concept design through to technical engineering consultancy, manufacturing, supply management and global logistics.

### UK

Trifast plc & Group Services – Uckfield  
Belfast  
Birmingham  
East Grinstead  
East Kilbride  
Lancaster  
Manchester  
Newton Aycliffe  
Poole

### USA

Houston  
South Carolina

### Europe

Germany — Verl  
Holland — Oldenzaal  
Hungary — Szigetszentmiklos  
Ireland — Mallow  
Italy — Fossato di Vico  
Norway — Skytta  
Poland — Warsaw  
Spain — Barcelona  
Sweden — Nacka, Tidaholm & Gothenburg

### Asia

TR Asia headquarters – Singapore

China — Shanghai & Beijing  
India — Bangalore, Chennai & Pune  
Malaysia — Kuala Lumpur  
Philippines — Manila  
Taiwan — Kaohsiung  
Thailand — Bangkok



**18**  
Countries



**32**  
Global facilities



**7**  
Manufacturing sites



**3**  
Technical & innovation centres

-  Head office Trifast plc
-  TR Asia Headquarters
-  Manufacturing & distribution sites
-  Distribution sites
-  Technical & innovation centres



# Manufacturing

Dedicated to producing high volume parts specifically to customer drawings.

Our strategic partnerships with other major manufacturers allow us to offer a wide range of special parts, including:

- Cold headed products
- Complex multi stage forging
- Special parts to customer drawing
- Turned and machined parts

Our manufacturing network spans two continents and represents approximately a third of the Group's business.

We can ensure parts are made in the right part of the world to meet your quality, volumes, cost and delivery needs.

- 7 factories
- In-house heat treatment facilities
- Automated optical sorting facilities
- Specialised packing capability

Annual output approximately **8 billion parts**



**TR SFE**  
(Taiwan) x 2



**TR Formac**  
(Singapore)



**TR VIC**  
(Italy)



**TR PSEP**  
(Malaysia) x 2



**TR Hank**  
(UK)









# Industry

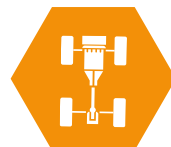
We supply components to over 5000 companies globally across a wide range of industries.

We are a major supplier to the automotive, electronics and domestic appliance sectors, and have a robust business model for large OEM's and SME's.

TR has the ability to meet customer requirements through the extent of our portfolio and scope of our quality certification.

In addition to an extensive range of standard and branded fasteners, a large part of what we supply are to customer drawings, special parts and Cat C components.

## Sectors we supply



### Automotive

Interior Trim | Seating | Braking & Steering Systems |  
Lighting Clusters | Chassis & Body in White (BIW) | Safety  
Systems | Powertrain



### Electric Vehicle

Battery Pack Modules (EVB) |  
Electric Vehicle Charging Units



### Electronics & Telecoms

Telecoms | Information Technology | Lighting | ATM &  
Retail Hardware | Consumer Electronics | Medical |  
Power & Energy Products | General Industrial



### Domestic Appliances

Hot | Wet | Cold | Small Appliances | Catering |  
Special Components



### General Industrial

Robotics | Elevator/Escalator Products | Conveyor  
Systems | Security & Fire Products | Sensors & Switches |  
Heat Pumps | Water Heaters | Energy Meters



### Medical

Ventilators | Medical Beds & Furniture | Ultrasound  
Machines | Medical Imaging Equipment | Defibrillators |  
Incubators | Medical Computer Stands | Volumetric  
Pumps & Infusion Devices | Vacuum Extractors



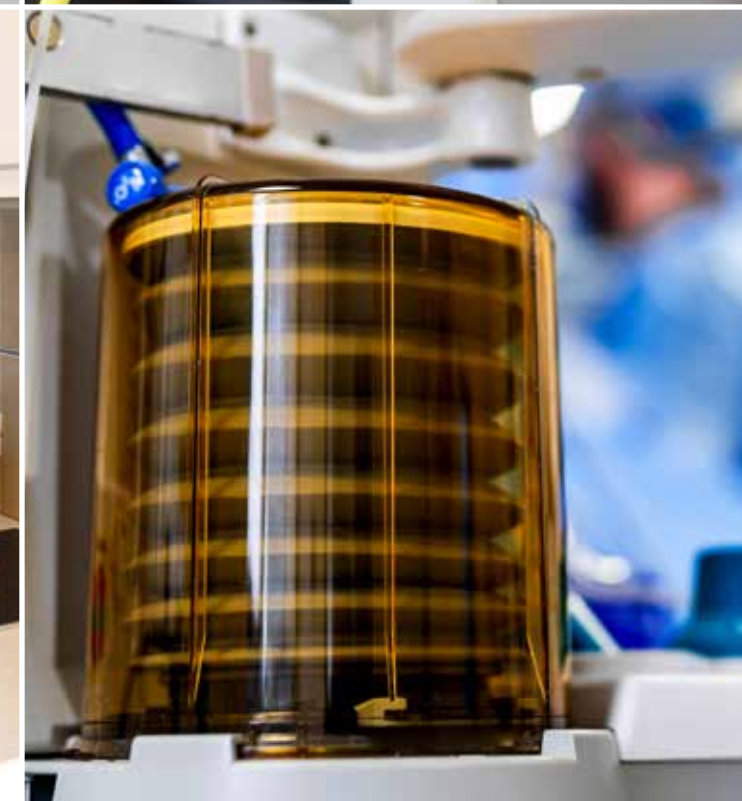
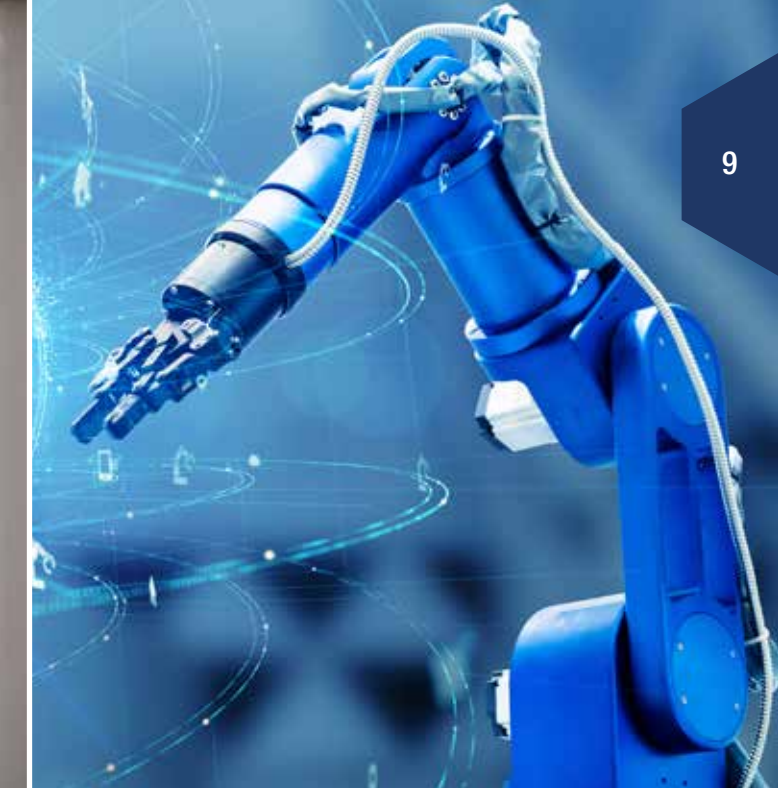
### Aerospace & Defence

NAS/MS/BSA/SP/AGS Parts | Screws | Nuts |  
Washers | Turned Parts



### Other

Medical | Leisure | Distributor |  
Offshore | Marine | Rail





# Full Service Provider

As a full service provider we are able to assist in reducing the total cost of ownership for companies by working with them from early engineering and design stage, right through to specification, manufacturing, quality and logistics.

We adopt a three-tier approach that includes local, national and international teams. TR understands that a global solution creates some challenges; including communication, culture and security.

TR's global delivery model has been designed from the ground up to address these challenges. Most importantly, our global delivery operations provide customers with both the quality and economic advantages that they require.

Locations in **18** countries

Supplying approx. **75** countries

## Initial setup



Service level agreement (SLA)

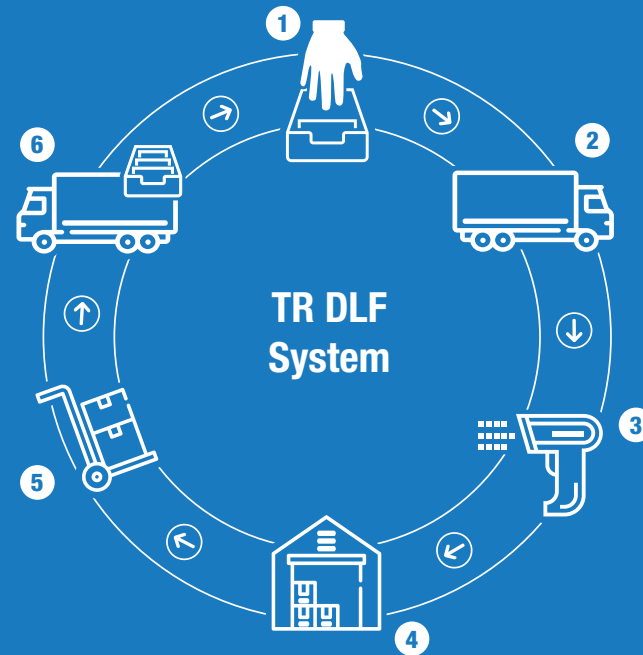


TR installs racks and bins directly into production area



Initial stock is supplied

## Ongoing



1.

Production takes stock from bins

2.

On agreed day, TR DLF operator visits customer

3.

TR DLF operator scans all bins that need replenishing

4.

TR DLF operator downloads information to TR location

5.

TR removes empty bins off site and returns to TR location

6.

TR DLF operator delivers stock and replenishes bins

## Benefits:

Dramatically reduced vendor base and associated administration costs.

TCO - Total Cost of Ownership visible.

Inspection costs reduced as quality approved parts can be shipped direct to the production line.

Reduced cost of stockholding and storage as only a few days' stock is held on the production line.

Production is allowed to focus on its core function as parts are always available at the point of use.









# Design, Engineering & Quality

## Design and Engineering

Our engineering research and development capabilities are integrated within the sales and manufacturing structure of TR, utilising a multitude of engineering disciplines and specialisms to either develop new products or optimise customer applications.

Early involvement in development with our customers results in the largest benefits for sustainable solutions, thereby considering not only the design, but also the manufacturing and potential recyclability of the products. We collaborate in various ways with our customers to optimise the design, performance, or assembly efficiency, taking into consideration the stage of the product lifecycle of the application.

**Tear down** exercises have proven a successful tool in optimising existing applications, thereby improving quality and considering installation and disassembly.

**VAVE** programmes normally consist of multiple events reviewing all aspects of the fasteners, application, and installation methods.

**Customer workshops** either on-site or at one of our Technical and Innovation Centres, facilitate stimulating interaction between TR and our customers engineers through workshop activities and training.

**Product development**, including new concept development and testing, expansion of existing ranges or customer specific products for manufacture in our own facilities or by one of our AVL suppliers.

**Reverse engineering** of products to improve manufacturability or production process, such as changing from part machining to cold forming.

**Simulation and prototyping** utilising 3D simulation software to shorten the development process, with prototyping allowing for in situ testing.

## Quality

Quality is an integral part of TR's processes. Our aim is to provide a level of product quality that prevents the production of non-conforming fasteners, with the objective of approaching zero defects for specified characteristics.

Customer specific quality standards can also be provided as required. The means of achieving these higher quality standards include electronic PPAP, supplier development, strategic sourcing as well as camera, laser and roller sorting.



**Research & Development**  
(Including patents)



**CAD Design & Development**  
(Including 3D modelling)



**Prototype & Testing**  
(Including 3D printing)



**Innovative Manufacturing Processes**



**Technical & Innovation Centres**

## Quality Certifications

Quality Management System  
**ISO 9001**  
**IATF 16949**  
**AS9120 (UK only)**

Environmental Standards  
**ISO 14001**



info@trfastenings.com  
sales@trfastenings.com  
www.trfastenings.com

**UK**  
t: +44 (0)8454 811 800 f: +44 (0)870 458 7851  
e-mail: uk@trfastenings.com

**Ireland**  
t: +353 (0)22 22301 f: +353 (0)22 22056  
e-mail: ireland@trfastenings.com

**Netherlands**  
t: +31 (0)541 511515 f: +31 (0)541 517134  
e-mail: netherlands@trfastenings.com

**Norway**  
t: +47 67 06 70 00 f: +47 67 06 70 10  
e-mail: norway@trfastenings.com

**Sweden**  
t: +46 (0)8 578 44 900 f: +46 (0)8 578 44 950  
e-mail: sweden@trfastenings.com

**Spain**  
t: +34 93 647 22 45  
e-mail: spain@trfastenings.com

**Hungary**  
t: +36 (06)24 516970 f: +36 (06)24 516961  
e-mail: hungary@trfastenings.com

**Poland - Representative**  
t: +48 (22)402 36 14 f: +48 (22)402 36 24  
e-mail: poland@trfastenings.com

**Italy**  
t: +39 (0)75 9149015 f: +39 (0)75 9190165  
e-mail: info@trvic.it

**Germany**  
t: +49 (0) 5246 . 50320 - 0 f: +49 (0) 5246 . 50320 - 70  
e-mail: info@trkuhlmann.com

**Slovakia - Representative**  
m: +421(0)911 012 016  
e-mail: slovakia@trfastenings.com

**USA**  
t: +1 800-280-2181 f: +1 281-807-0620  
e-mail: usa@trfastenings.com

**Singapore**  
t: +65 6759 6033 f: +65 6759 6022  
e-mail: singapore@trfastenings.com

#### Technical and Innovation Centres

**Birmingham - UK**  
t: +44 (0)121 521 0100 f: +44 (0)121 521 0101  
e-mail: wednesbury@trfastenings.com

**Gothenburg - Sweden**  
t: +46 (0)31 31 760 776 f: +46 (0)8 578 44 950  
e-mail: sweden@trfastenings.com

**Malaysia**  
t: +6 (03) 5519 1444 f: +6 (03) 5510 8505  
e-mail: psep@psep.com.my

**China**  
t: +86 21 5032 5696 f: +86 21 5032 5775  
e-mail: china@trfastenings.com

**Taiwan**  
t: +886 7 557 6366 f: +886 7 557 1977  
e-mail: taiwan@trfastenings.com

**Philippines - Representative Office**  
t: +63-25768476  
e-mail: philippines@trfastenings.com

**India**  
t: +91 (0)44 4280 3932  
e-mail: india@trfastenings.com

**Thailand**  
t: +66(0)2 130 6562 f: +66(0)2 130 7603  
e-mail: thailand@trfastenings.com

**Japan - Representative**  
t: +81(0)70 4467 1118  
e-mail: japan@trfastenings.com

**CUICAR - South Carolina USA**  
t: +1 800 280 2181 f: +1 281 807 0620  
e-mail: usa@trfastenings.com

