



# An Introduction to TR

## Edition 6



# Introduction

## Enabling innovation today for a better tomorrow

TR Fastenings (TR) is part of Trifast plc and is a leading international specialist in the design, engineering, manufacture, and distribution of high-quality industrial fastenings and Category 'C' components principally to major global assembly industries.

The Group supplies to customers in c.75 countries across a wide range of industries, including light vehicle, heavy vehicle, health & home, energy, tech, & infrastructure (ET&I), general industrial and distributors. As a full service provider to multinational OEMs 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.

As an international business we are able to provide 24/7 customer support from across key regions in the UK, Asia, Europe and North America. In addition to our service locations we operate a number of manufacturing facilities focused on high volume cold forged fasteners and special parts. We have also established Technical & Innovation Centres to support R&D and customer collaboration across the world.

## UK

**Trifast plc & Group Services head office** – Uckfield

Belfast  
Birmingham  
East Grinstead  
East Kilbride  
Lancaster  
Manchester  
Newton Aycliffe

## Europe

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

## North America

Charlotte  
Greenville  
Houston  
Louisville

## Asia

**TR Asia headquarters** – Singapore

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



Global locations



18 countries



7 manufacturing sites



3 technical & innovation centres



c. 70 countries supplied



c. 1,400 colleagues

# 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

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**Light vehicle**



**Heavy vehicle**



**Health & Home**



**Energy, Tech & Infrastructure**

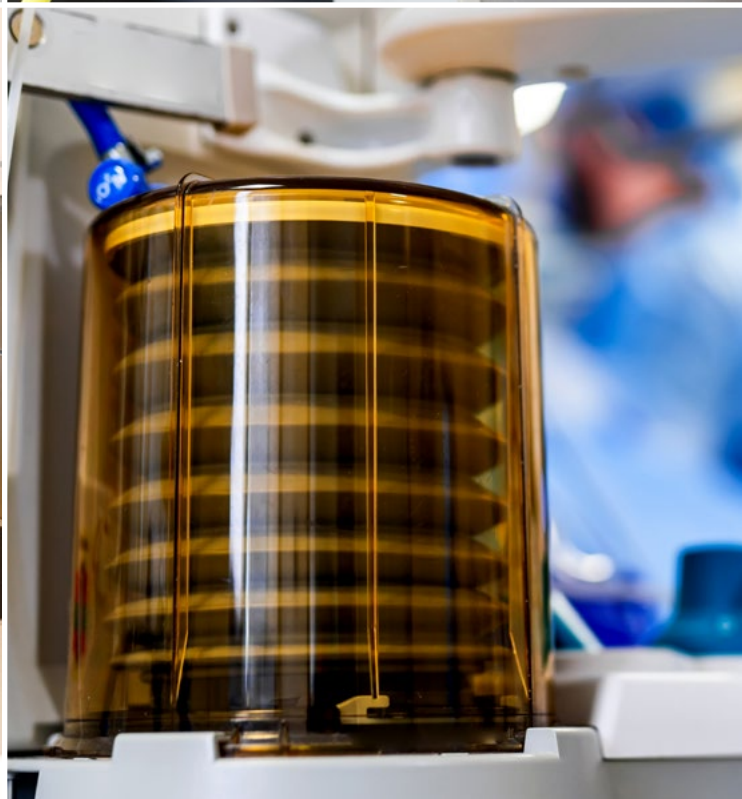


**General industrial**



**Distributors**





# 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 c. **75** countries

## Initial setup



Service level agreement (SLA)

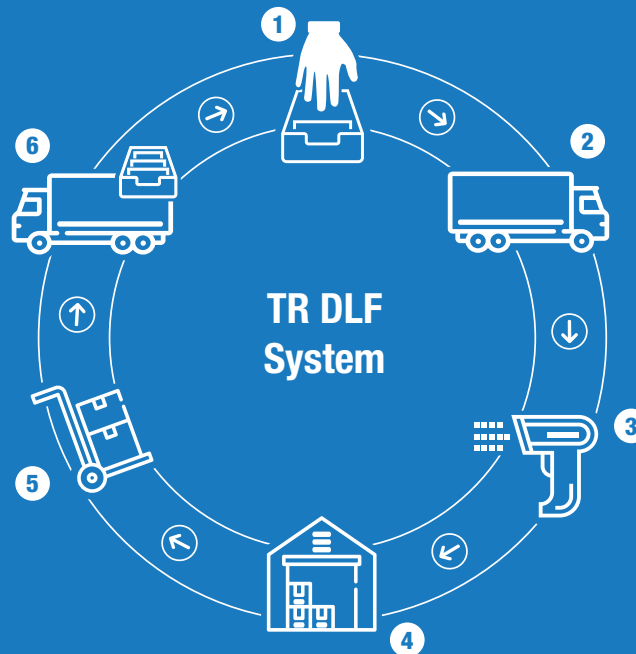


TR installs racks and bins directly into production area



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

A Typical TR DLF System



## 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.

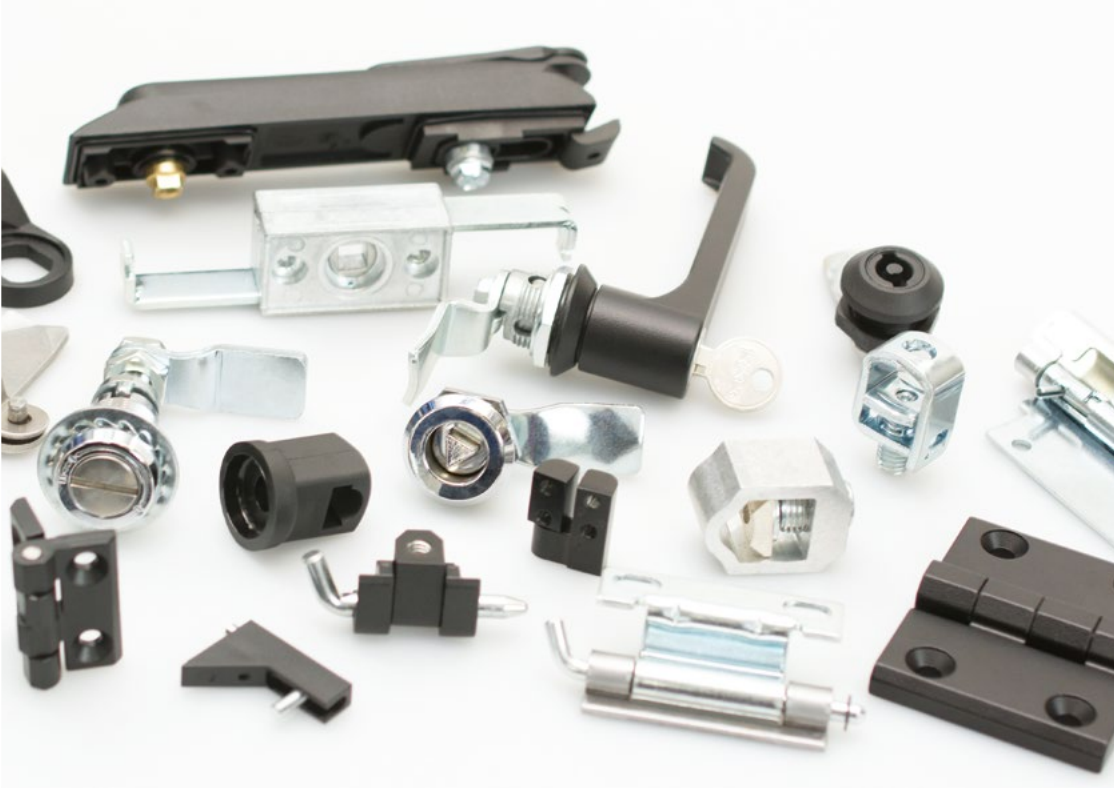
Production is allowed to focus on its core function as parts are always available at the point of use.











# 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.

**VA/VE** 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**

**EN 9120** *(UK only)*

Environmental Standards

**ISO 14001**

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