

An Introduction to TR Fastenings

“Holding the World together”



Leading global specialists in the design, engineering, manufacture and distribution of high quality industrial and Cat C fastenings principally to major global assembly industries

www.trfastenings.com

Edition 3

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 eight 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 HQ - Uckfield

TR Fastenings - Uckfield

TR Fastenings - Belfast

TR Fastenings - Birmingham

TR Fastenings - Blantyre

TR Fastenings - Manchester

TR Fastenings - Newton Aycliffe

TR Fastenings - Poole

Lancaster Fastener Co - Lancaster

Precision Technology Supplies Ltd - East Grinstead



Europe

TR Fastenings - Holland
 TR Fastenings - Hungary
 TR Fastenings - Ireland
 TR Fastenings - Norway
 TR Fastenings - Poland (Representative)
 TR Fastenings - Slovakia (Representative)
 TR Fastenings - Sweden (Nacka & Tidaholm)
 TR Fastenings España - Spain
 TR VIC (Viterie Italia Centrale) - Italy
 TR Kuhlmann - Germany

USA

TR Fastenings - Houston

Asia

TR Formac Asia Headquarters - Singapore
 TR Formac - Singapore
 TR SFE (Special Fasteners Engineering Co) - Taiwan
 TR PSEP (Power Steel & Electro-Plating Works) - Malaysia
 TR Formac - Malaysia (Penang & Kuala Lumpur)
 TR Formac - China (Shanghai & Beijing)
 TR Formac - India (Bangalore, Pune & Chennai)
 TR Formac - Thailand
 TR Formac - Philippines (Representative Office)
 TR Formac - Japan (Representative)

Technical & Innovation Centres

TR Fastenings - Gothenburg, Sweden
 TR Fastenings - Birmingham, UK
 TR Fastenings - CUICAR - South Carolina, USA

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.

- 8 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 Formac

(Malaysia)



TR Hank

(UK)







Industry

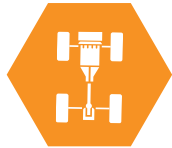
We supply components to over 5000 companies globally across a wide range of industries.

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.

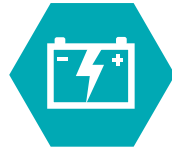
In addition to an extensive range of standard and branded fasteners, a large part of what we supply are to customer drawings, special parts and Cat C components.

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



Aerospace & Defence

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



Sheet Metal

Self Clinch | Rivet Bushes | Cage Nuts | K Series Nuts |
Weld Products | Blind Rivets & Rivet Nuts



Other

Medical | Leisure | Distributor |
Offshore | Marine | Rail



Full Service Provider

Our global footprint.

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

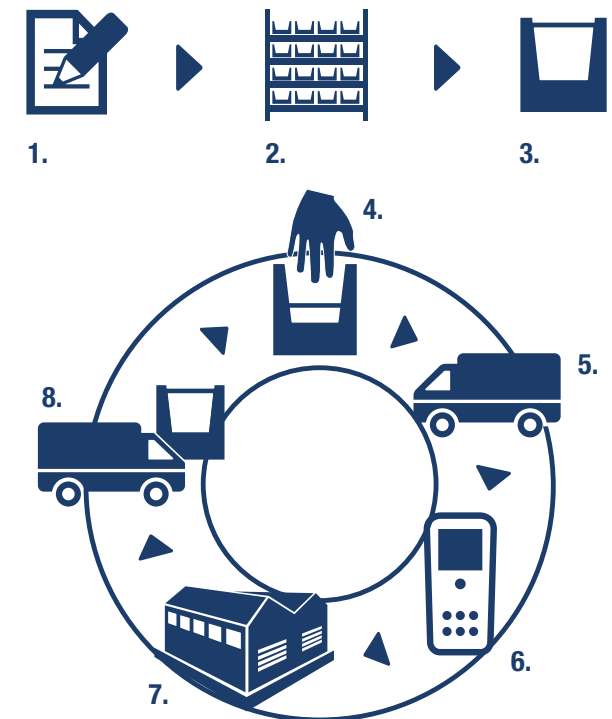
Supply into **c.75** countries

A typical **TR DLF** (Direct Line Feed) system.

This diagram depicts how the average DLF system works, although all TR DLF systems are tailored to individual customer requirements. The first 3 points show the initial set up procedure, after that the system operates in a cyclical manner.

Vendor Managed Inventory 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



How it works:

1

Service Level Agreement (SLA)

2

TR installs racks and bins directly into production area

3

Initial stock supplied

4

Production takes stock from bins

5

On agreed day TR DLF operator visits customer

6

TR DLF operator scans all bins that need replenishing

7

TR DLF operator downloads information to TR location

8

TR DLF operator delivers stock and replenishes bins







Design, Engineering & Quality

Design and engineering

Our research and engineering capabilities encompass specific engineering disciplines, supporting both our own network and customer application solutions. Our fastener testing capabilities can be summarised into four categories:

- Mechanical
- Dimensional
- Installation
- Plating and finishes

Desktop engineering in 2D and 3D industry standard CAD software:

- CAD system
- 3D mechanical design solutions
- 3D modelling
- Analysis tools
- Data management solutions
- Drawing and specification, creation and control

Quality

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.

TR Quality

Quality Management System

ISO 9001

IATF 16949

Environmental Standards

ISO 14001



Research & Development
(Including patents)



CAD Design & Development
(Including 3D modelling)



Prototype & Testing
(Including 3D printing)



Innovative Manufacturing Processes



Innovation & Technical Centres





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