



Automotive Components

www.trfastenings.com



Introduction

Global Footprint, Local Support

TR is a 'full service provider' to the automotive industry. 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.

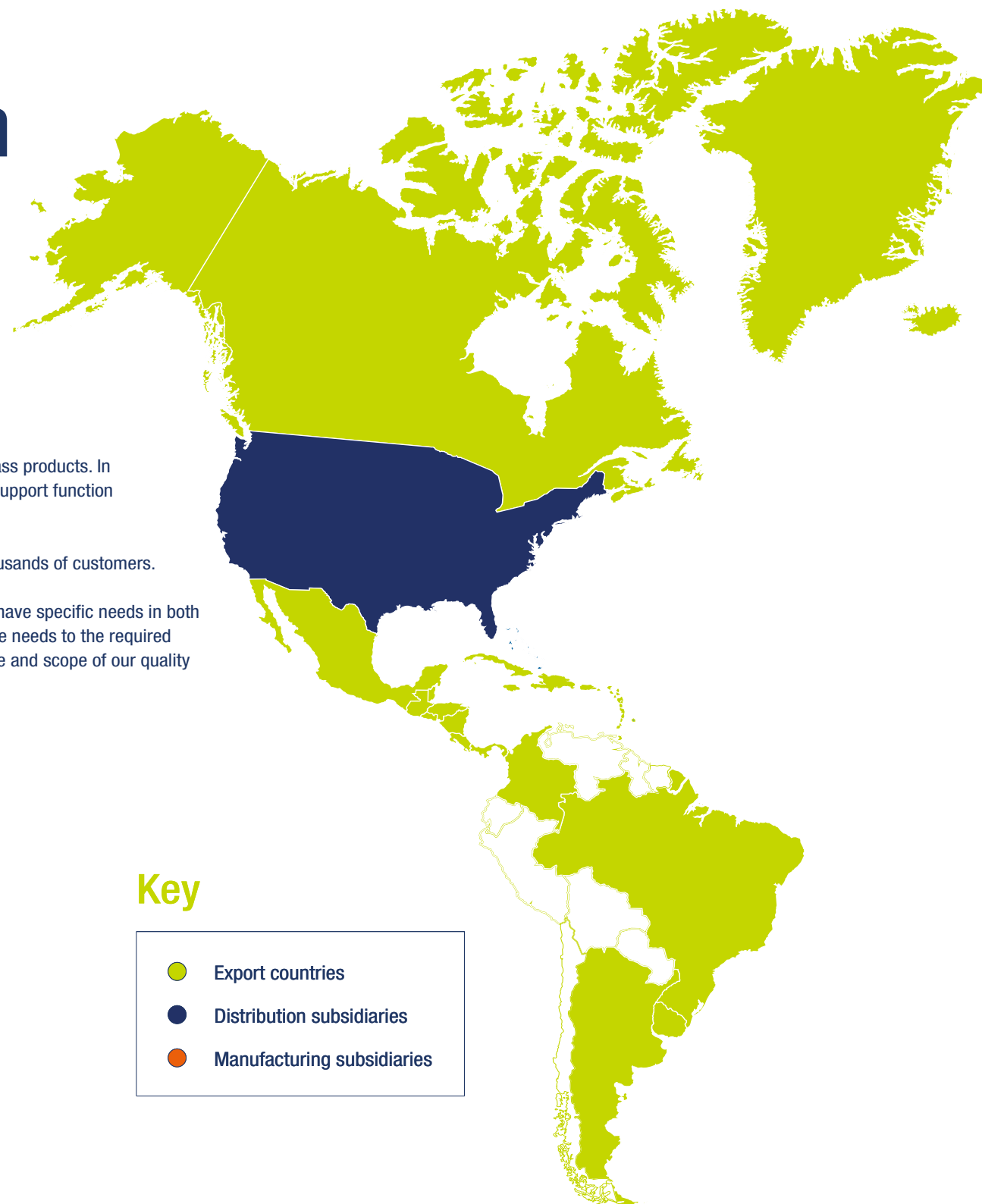
TR offers a wide range of high quality fasteners and C-class products. In addition, we have developed an application engineering support function and an advanced supply chain structure.

TR supplies over 50 billion components every year to thousands of customers.

We supply over 5000 companies globally. Many of these have specific needs in both product and quality requirements. Our job is to meet these needs to the required industry standard, through the extent of our product range and scope of our quality certification.

Key

- Export countries
- Distribution subsidiaries
- Manufacturing subsidiaries



UK

TR Fastenings Head Office - Uckfield

TR Fastenings - Belfast

TR Fastenings - Birmingham

TR Fastenings - East Kilbride

TR Fastenings - Manchester

TR Fastenings - Newton Aycliffe

TR Fastenings - Poole

Lancaster Fastener - Lancaster

Europe

TR Fastenings - Holland

TR Fastenings - Hungary

TR Southern Fasteners - Ireland

VIC - Italy

TR Fastenings - Norway

TR Fastenings - Poland

TR Fastenings - Sweden

TR Kuhlmann - Germany

USA

TR Fastenings - Houston

Asia

TR Formac Asia Headquarters - Singapore

TR Formac - China (Shanghai & Suzhou)

TR Formac - China (Beijing)

TR Formac - India (Bangalore)

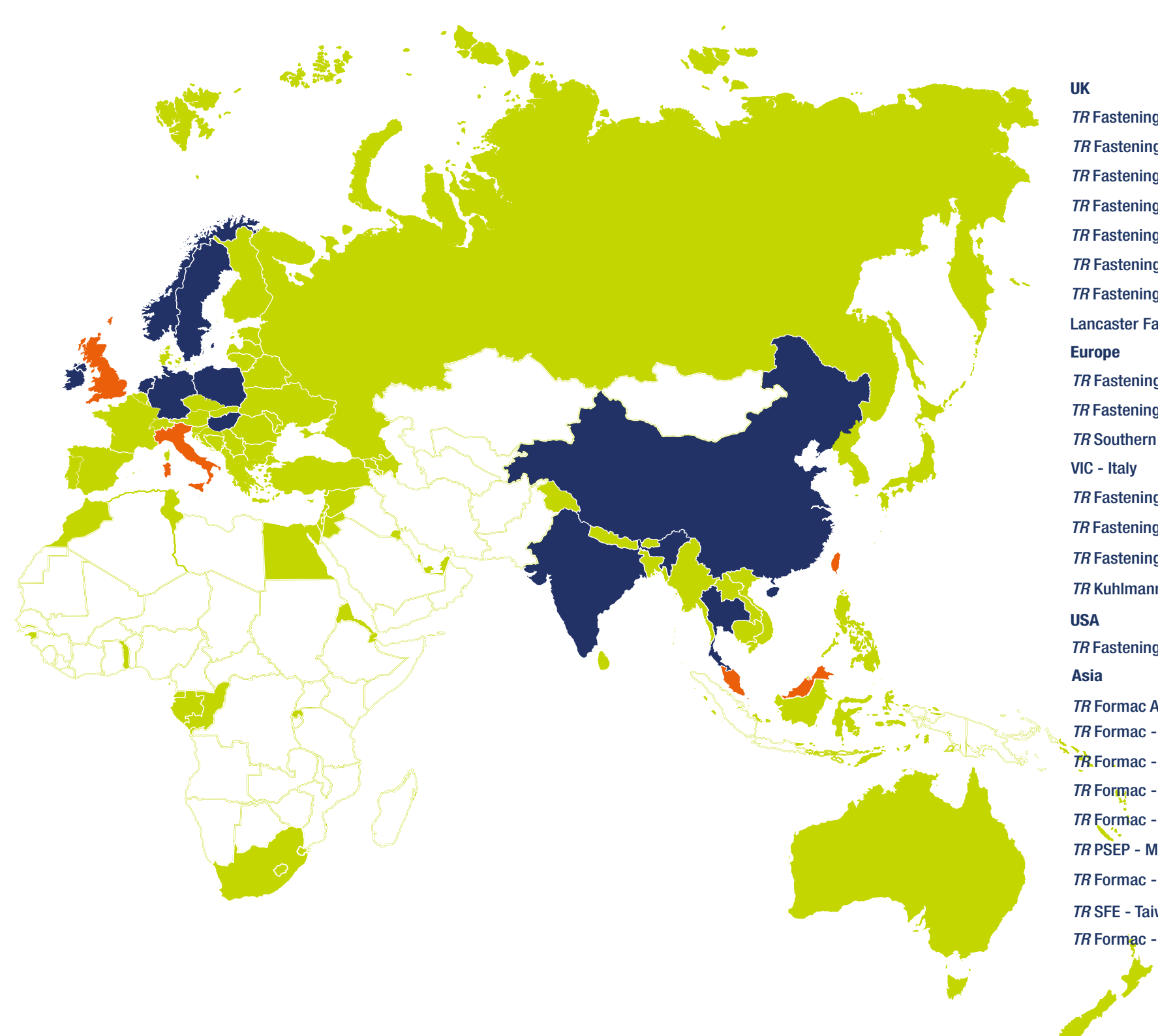
TR Formac - India (Chennai)

TR PSEP - Malaysia

TR Formac - Malaysia

TR SFE - Taiwan

TR Formac - Thailand



Manufacturing

TR Manufacturing

Our factories are dedicated to producing high volume parts specifically to customer drawings. In addition, our strategic partnerships with other major manufacturers allows us to offer a wide range of special parts, including:

- Cold headed products
- Turned & machined parts

Our manufacturing network spans two continents and produces 33% of all the components we sell.

As a manufacturer we appreciate the importance of quality, cost and consistency. We can ensure parts are made in the right part of the world to meet your cost and delivery needs.

- 8 factories
- In-house heat treatment facilities
- Automated optical sorting facilities to strive towards a zero defect policy
- Specialised packing capability

Annual output over **8 billion parts**

SFE Taiwan (two sites) produce **2.5 billion** parts per annum

TR Formac Singapore produce **2 billion** parts per annum

VIC Italy produce **1.1 billion** parts per annum

PSEP Malaysia produce **1 billion** parts per annum

TR Formac Suzhou produce **850 million** parts per annum

TR Formac Malaysia produce **720 million** parts per annum

TR UK produce **40 million** parts per annum

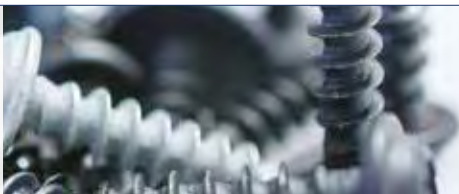




What We Supply

ST & PF Screws:

For IP, DP, panels & seats. ST screws for thin sheet metal, thread forming screws for plastic panels.



Metric Screws & Bolts:

Metric screws & trilobular screws for interior & exterior applications, seats, DP & IP.



Spring Steel Clips:

Spring steel fasteners for A,B and C-pillar, panels, IP, DP, TC, luggage compartment & roof.



Washers:

Washers for bolts & axles, interior applications, seats, headliners, IP & DP.



Rubber Bumpstop, Damper Grommets:

For interior applications, TC, glovebox & IP.



Bushings:

Bushings for airbag applications, door grab handles, IP & where high torque load requires a bushing.



Spring Staples & Hog Rings:

Spring staples & hog rings for IP, TC & seats.



Plastic Clips & Rivets:

Fasteners for mounting interior & exterior applications, ABC-pillar, panels, DP, IP & seats.



Plastic Parts:

Plastic fasteners for IP, seats, TC, cable management & edge protection.



Special Parts:

Fasteners for special applications, rear seat, airbag applications, belt restraints, gear box & more.



Where We Supply

Under Bonnet / Engine

Airbag Applications

Instrument Panel (IP)

Tunnel Console (TC)

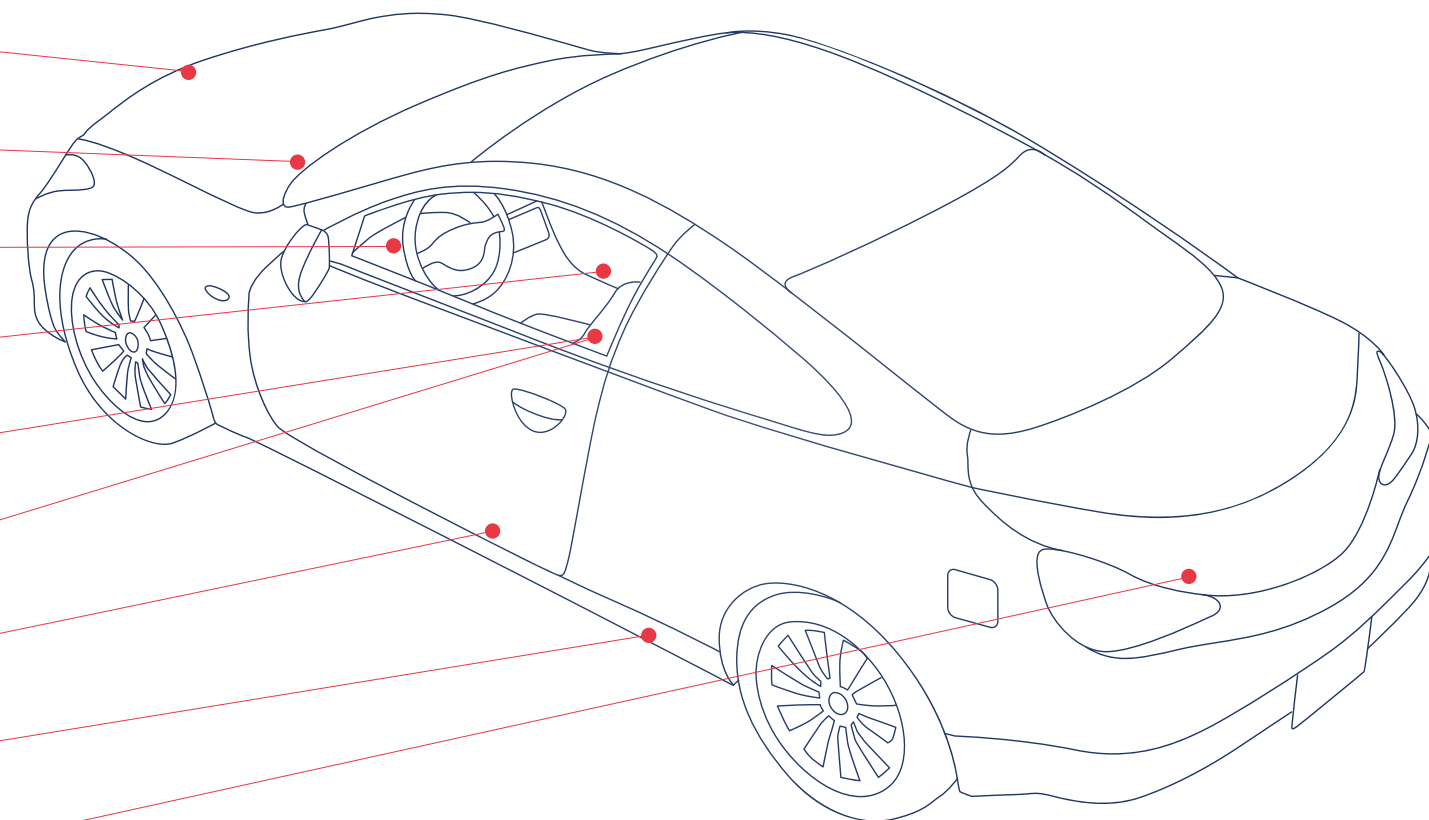
Seating

Seat Belt

Doors (DP)

Chassis

Luggage Compartment



Licences

TR has invested in a number of manufacturing licenses

MATHREAD®

A patented system to prevent cross threading - the unique first threads align with the bolts accurately ensuring optimum assembly time. This feature has been incorporated in the design of the engine sump plug for a newly developed model. The clear advantage is that at both original assembly and subsequent servicing thread damage is avoided. The principal usage is in the automotive industry.

MORTORQ® SUPER

A design that provides an enhanced drive capability and up to 25% material reduction to the head. This shallow head fastener has a good appearance and provides customers with the opportunity to reduce weight in vehicles. This drive is also available in a tamper resistant style.

STRUX®

A self clinching fastener used in automotive structures, often used in conjunction with Mathread®



End-2-End global support

The TR Group of companies work as a global network organised to provide supply solutions wherever our customers need us.

A unique combination of knowledge, communication and collective objectives enables proactivity on a global level.



TR Quality

TR adopt a process for our Automotive customers to ensure all quality requirements are met for the parts we supply:

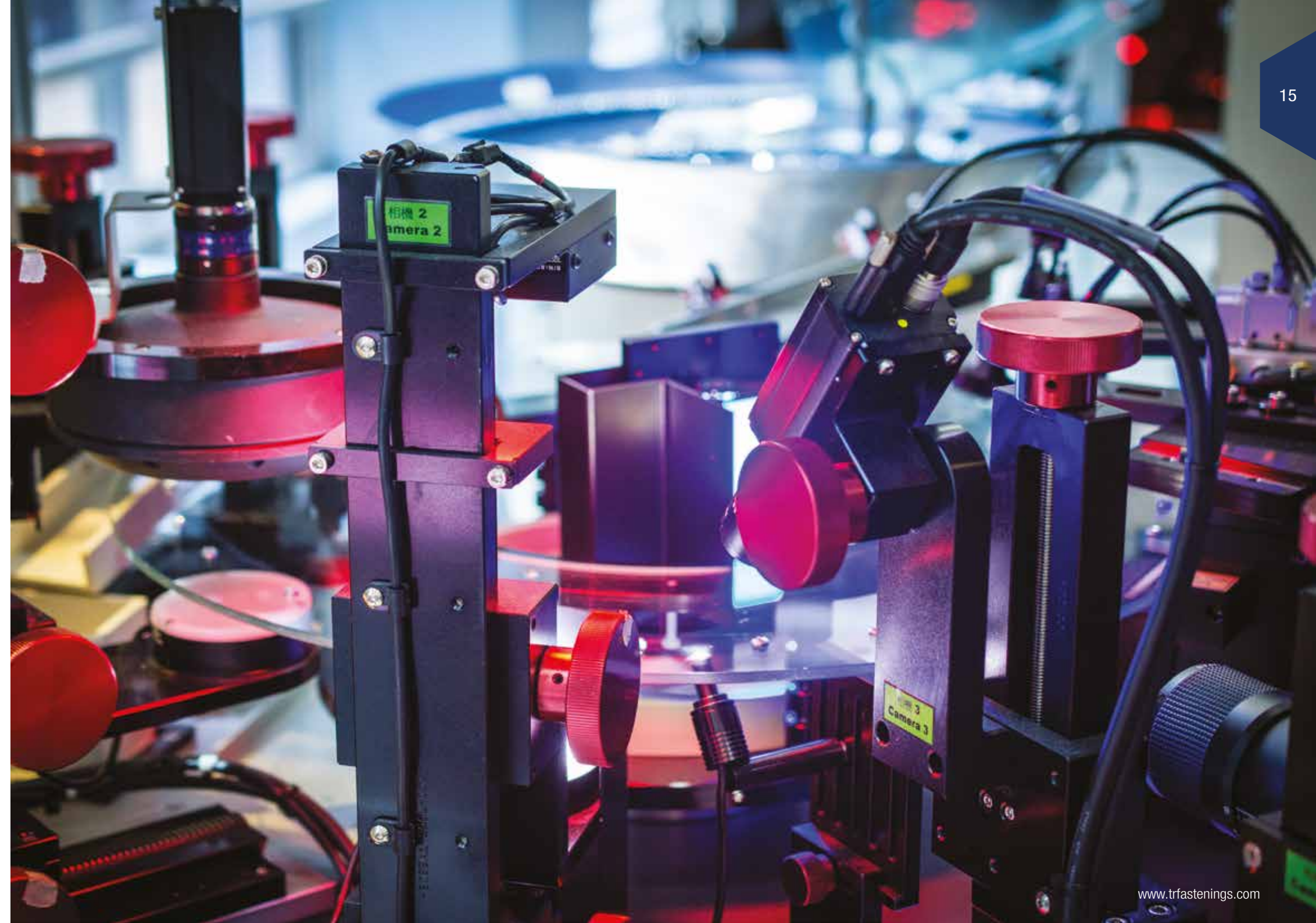
- **RFQ entered on to APQP Portal** - Whether new or carry over parts, all automotive enquiries are entered on the APQP Portal.
- **Feasibility review** - All drawings and standards are reviewed by TR Feasibility Engineers to ensure that the full extent of the customers requirements are understood.
- **Source product from Approved Vendor List** - The TR Automotive AVL is managed by a dedicated Commercial, Quality and Sourcing team. Suppliers are added or removed from the AVL based on business needs or supplier performance.
- **Review supplier quote** - It is the responsibility of the feasibility engineers to compare the supplier's capability of manufacturing against the customers requirements identifying any differences and ensuring that these are understood and approved.
- **Commercial review** - It is the responsibility of the P&L owner to complete a cost model to assess any additional costs pertaining to servicing the account e.g. stockholding, premises, labour costs and the movement of the product. This is then reviewed in line with turnover and working capital expectations and authorised accordingly.
- **Quote customer**
- **Receive order**
- **Contract review** - Customer and supplier understanding of the product engineering is only part of the contract review. The NPI team review internal operational requirements and logistics needs to ensure that not only do TR get correct product to the customer, but that the correct volumes are with the customer in their time scales for production.
- **PPAP and samples** - TR operates automotive product approval processes based on standardised PPAP documentation and has established group wide approval documents using AIAG templates.
- **Customer approval**
- **Bulk production**
- **Start of customer production** - TR Logistics and the customer will discuss the options for the implementation of a VMI (Vendor Managed Inventory) system compatible with the production needs of the Customer. Discussions regarding existing stock and order cover is considered to ensure that any supply chain liability is managed. Knowledge of customer supply chain requirements allows TR to implement the agreed VMI minimising any potential disruption to production.

TR Quality

Automotive standards
ISO/TS 16949
ISO 9001

Health & safety standards
OHSAS 18001

Environmental standards
ISO 14001





Application Engineering

TR understands that the development of applications can be a time consuming process which is why our team of specialists is on hand to support and guide you, from developing new products to adapting an existing range to suit your application.

TR follow a simple process that can be adapted for your individual application.

- **Function:** Confirm the performance requirements of the fastener and application, does the product need to screw, clinch, rivet, weld, glue or clip together?
- **Application Environment:** Our team will ascertain whether the product will require any specific design features for your application.
- **Assembly Method:** How the fastener is installed into the application is a key part of the process and will need to be considered in design or specification stage. Early involvement from our design engineers in your manufacturing planning process allows for systematic reductions in the cost of your assembly and production.
- **Manufacturing Process:** Once we have the product specifications clear we can then assess the best method of manufacturing.
- **Evaluation:** A prototype part is manufactured for you to test in application and any amendments to the specification can be assessed and applied to ensure the finished article is as required.

TR adopts a full service provider ethos, supporting your designers and engineers to ensure your finished part is as required for your application. TR's team of global specialists will work with you from design through to manufacturing and will be on hand to guide and advise where required.



Our global footprint

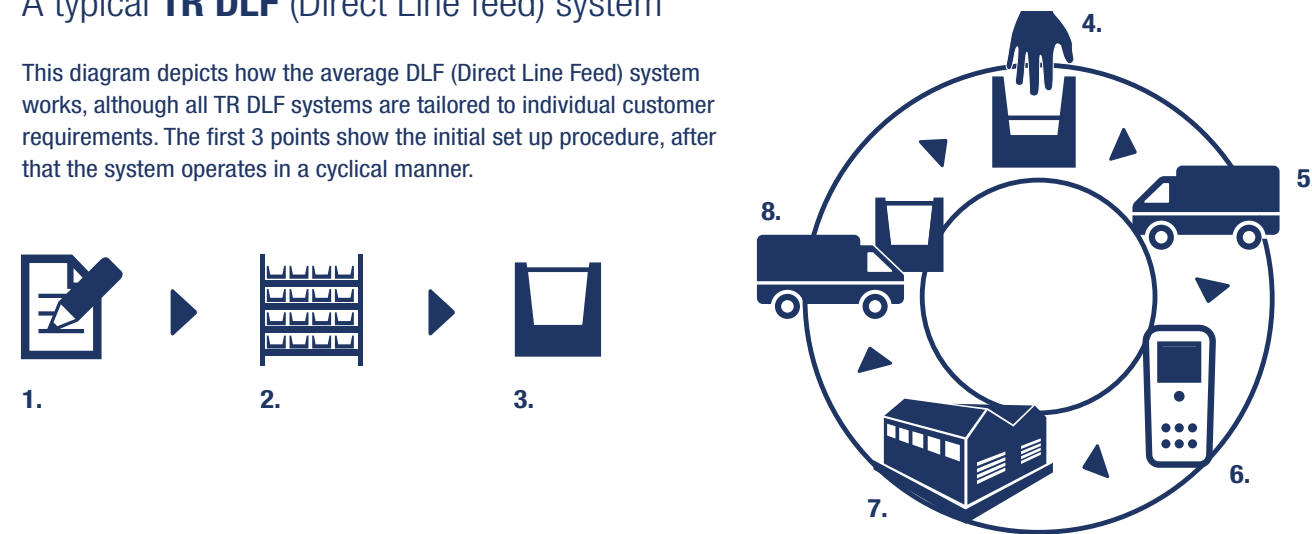
As a full service provider, TR needs to be able to give a quality service from design through to VA/VE initiatives. TR's application engineers regularly work side by side with product designers at the early stages of a design and then provide technical assistance.

TR are pioneers in effectively developing the global delivery model. Utilising a three-tier approach that includes local, national and international teams. TR understand 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, TR's global delivery operations provide our customers with both the quality and economic advantages that they require.

A typical **TR DLF** (Direct Line feed) system

This diagram depicts how the average DLF (Direct Line Feed) 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.



Locations in **17** countries

Supply into **61** countries

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.





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

Hungary
t: +36 (06)24 516 972 f: +36 (06)24 516 961
e-mail: hungary@trfastenings.com

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

VIC Italy
t: +39 (0)75 914 9015 f: +39 (0)75 9190165
e-mail: info@vic.it

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

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

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

Taiwan
t: +866 7 552 5577 f: +886 7 552 7033
e-mail: taiwan@trfastenings.com

Malaysia
t: +604 508 3931/2 f: +604 508 3942
e-mail: malaysia@trfastenings.com

India
t: +91 967707 1807 m: +65 9684 1763
e-mail: india@trfastenings.com

Thailand
t: +66 38491 430 f: +66 38491 430
e-mail: thailand@trfastenings.com

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

