



## INTRODUCTION

Tengri Fasteners Group is a Fastener Manufacturing, Plating/Finishing and Industrial Company. Over 30 years of manufacturing stainless steel fasteners, industry experience and construction of state-of-the-art facility. We can offer the most common stainless steel fasteners or specially designed fasteners to exceed our customer's expectations, as our vendors are the best name brands in the industry. Tengri fasteners group employs more than 1550 employees and consists of one lab and software center, 2 wholly owned subsidiary of companies and 3 manufacturers in China, as well as 5 warehouse stocking locations. Our extensive product line and our fast and friendly sales representatives are able to satisfy our customer demands.

As a veritable "one-stop shop", Tengri Fasteners offers same day delivery of in-stock items and a wide variety of supply chain solutions tailored to the needs of our customers. Our custom inventory control programs provide extensive cost savings to our customers.

**PRODUCTS:** All Type of (Cold & Hot Forged and SS&Copper&Ti Alloy fasteners) Bolt, Nut, Washer, Screw, Stud, Rivet, Threaded Rods as per China GB & International Standards ISO, DIN, JIS, IS, BS, ASTM, Pipe, Plate, Tube Customers drawing & specifications.

**PRODUCT RANGE:** Dia M2.5 to M80 & Length up to 900mm / Inches dia 1/8" to 4" & Length up to 40"

**MATERIAL GRADE:** Mild Steel & High Tensile 4.6, 4.8, 5.6, 5.8, 6.8, 8.8, 10.9, 12.9, B7/2H, B7M/2HM, SS410, SS316, SS316L

**PLATING:** Auto Black, White, Yellow, Green Zinc, Hot Dip Galvanized, Dichromate, Xylan coating Teflon

**SUPPLY TO:** Local China & International (Australia, APAC, EMEA, America) Markets.

**SUPPLYING IN:** Transmission line, Gen. & Heavy Engineering Sectors, Automobile Sectors, Railways, Electrical & Electronics, Telecommunication Industries, PEB, Infra, Fabricators Sectors & Traders etc.

**OUT SOURCING:** Our outsourcing agreement of Hot Forging above dia M20 & 1", Heat- Treatment & Plating.

**BRAND :** "TR, TX, TC"

### EQP Types:

· Bar Sawing	· Broaching	· Drilling	· E-Discharge Machining
· Swaging (Cold Working)	· Forging & Metal Forming	· Tooling Equipment	· Precision Straightening
· Heat Treatment	· Bar Grinding	· Rifling	· Reaming
· Deburring	· CNC Turning	· Honing	· Non-destructive Testing
· Turning	· CNC Milling	· Meth Lab Equipment	· Marking Equipment
· Milling	· Thread Cutting & Rolling	· Packing Dept. Tool & Die	· LAB & Quality

### Specialties

Fastener Distribution, Metal Plating, Metal Stamping, Industrial Services, Global Fastener Importers, Metal Finishing, MRO & Safety Supplies, Fastener sales, Metal Fabrication

## PROCESS

DACROMET is applied by a three-stage process :

### 1. SURFACE PREPARATION

As with every surface treatment, DACROTIZING requires a perfect surface cleaning. A mechanical preparation is generally proffered but chemical cleaning can also be approved for many types of components.

### 2. COATING

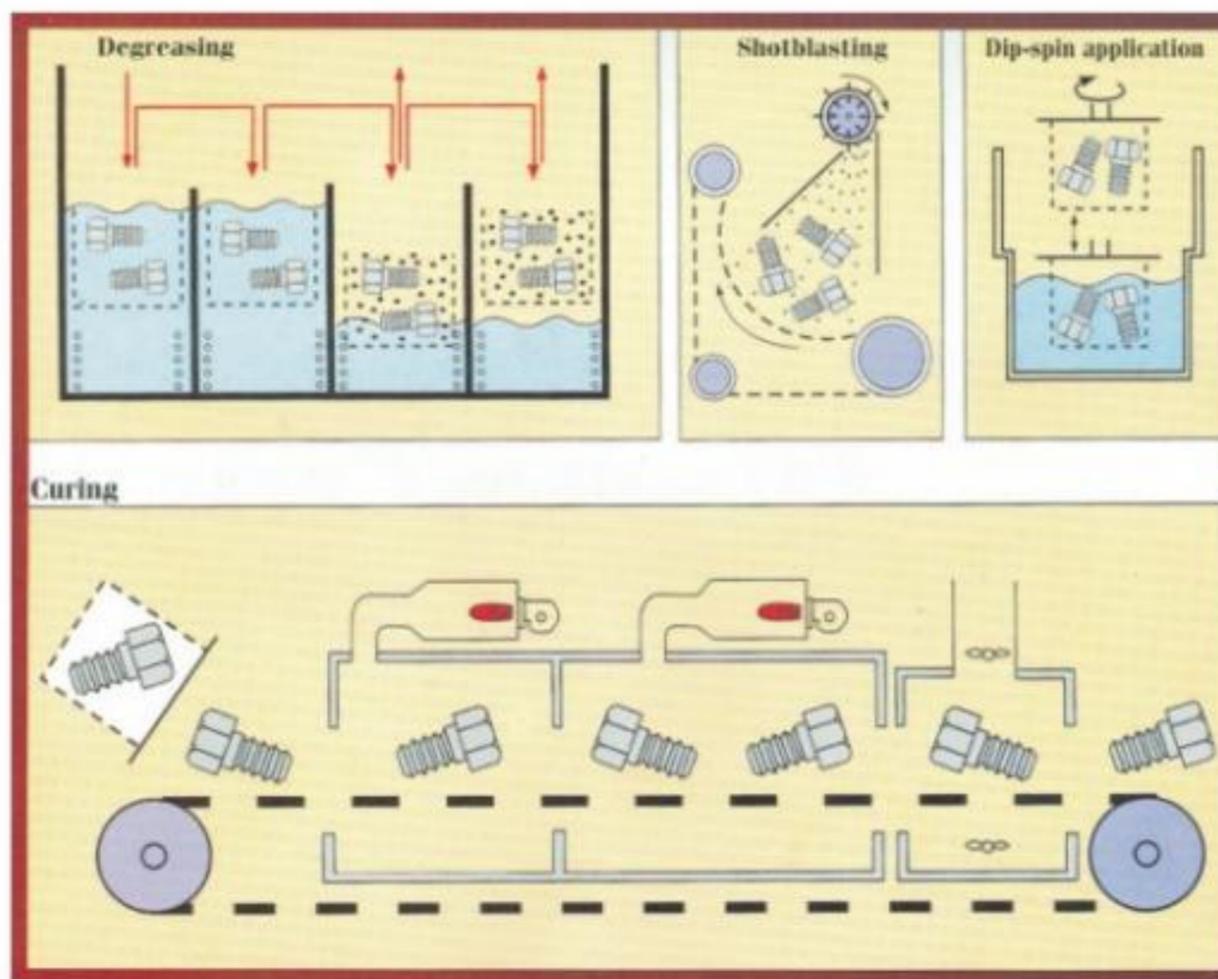
Parts to be treated in bulk or on racks are covered with a wet film by immersing in a cold aqueous dispersion, without any electrolyte action. The use of a pneumatic electrostatic spray gun is an alternative method of applying the coating.

### 3. CURING

The final structure of the coating is achieved by curing at about 300°C. This advantage develops the properties of adhesion and corrosion, resistance for the film.

Two coats are a minimum for bulk dip-spin treatment. Parts treated by other coating methods can have either a single or multiple layers.

## PROCESS



## ADVANTAGES OF DACROTIZING

### NO HYDROGEN EMBRITTLEMENT

Mechanical surface preparation (degreasing + abrasive cleaning) prevents any risk of hydrogen embrittlement during the entire process.

When chemical surface cleaning is used, the curing at 300°C. and the non crystalline structure of the coating ensure the absence of embrittlement.

### OVERALL COVERAGE

During the dipping processes also the internal surface of parts are protected, e.g. spring pins, small assemblies, clips, etc.

### PROTECTION OF THE ENVIRONMENT

DACROTIZING is almost a pollution free process.

No air pollution (only aqueous products), water pollution is limited only to the surface cleaning stage and the periodic cleaning of coating equipment (e.g. baskets).

## PROPERTIES OF DACROTIZED PARTS

### WEATHERABILITY

Under normal atmospheric conditions, the DACROTIZED coating provides very long life which is proportioned to the thickness of the coatings itself.

### CORROSION RESISTANCE

At equivalent coating weights, DACROMET has a corrosion resistance superior to many other systems. This resistance is due to the barrier effect created by the overall coverage of zinc and aluminium flakes and to the sacrificial protection of zinc controlled by the aluminium in the coating and by the chromate passivation throughout the film.

Indeed, compared to other zinc coatings, the internal passivation of DACROMET considerable reduces the formation of white rust (zinc corrosion products).

As with all sacrificial coatings, corrosion protection by DACROMET is proportional to the quantity of coating applied.

In practice, two grades have been standardized :

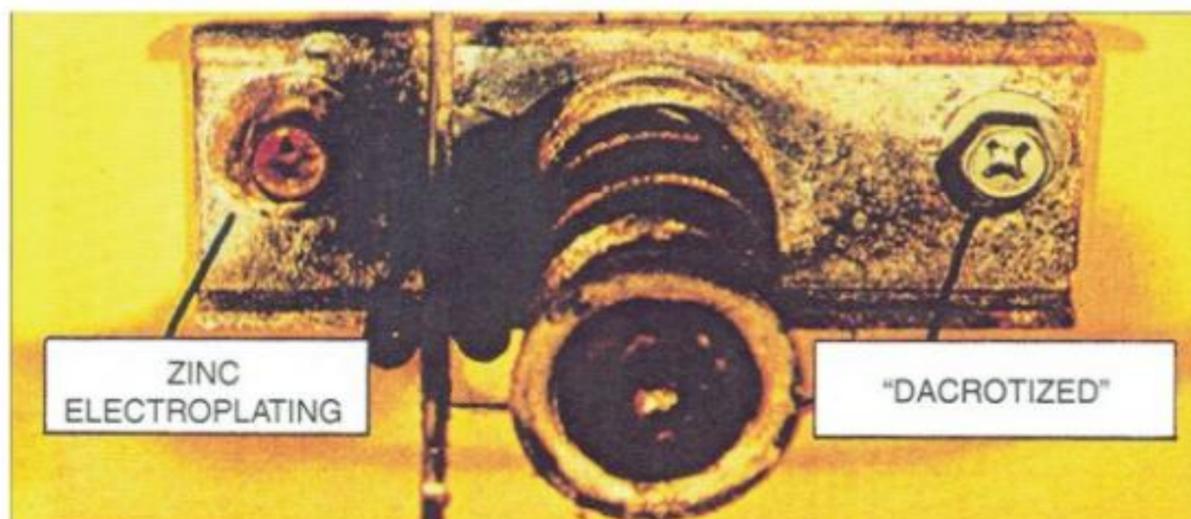
In practice, two grades have been standardized :

Grade A : min 24g/m<sup>2</sup> = (approx. 5  $\mu$ )

Grade B : min 36g/m<sup>2</sup> = (approx. 8  $\mu$ )

N.B : Up to 25  $\mu$  can be applied if required.

## WEATHERABILITY



### RESISTANCE TO 5% NEUTRAL SALT SPRAY TEST (ASTM B 117, BS 7479, DIN 50021)

DACROMET performances considerably exceed the requirements specified by the automobile industry :

Grade A :       Min. 250 hrs. without white rust  
                  Min. 500 hrs. without red rust

Grade B :       Min. 250 hrs. without white rust  
                  Min 1000 hrs. without red rust

These performances remain unchanged after a heat treatment of 8 hrs. at 260°C.

### RESISTANCE TO CYCLIC TESTS

DACROMET conforms to the different cyclic tests used by the automobile industry (3C Renault, P-VW 1210 VW / Audi, APGE, CCTI2, etc.

### RESISTANCE TO KESTERNICH TEST (DIN 50018-SFW 2.0 S)

This test is an acidic attack on the coating. Therefore, the resistance is directly proportional to the coating weight. Depending on the parts, coating thickness of 8 to 10  $\mu$  provides a resistance superior of 3 cycles or more.

### RESISTANCE TO BIMETALLIC CORROSION

Excellent performances in contact with aluminium, chromium, zinc and tin; but less corrosion resistance with stainless steel, copper, nickel and lead.

### HEAT RESISTANCE

Properties of DACROTIZED parts are maintained up to about 280°C. DACROMET is therefore perfectly suitable for parts in the engine compartments of vehicles.

## RESISTANCE TO ORGANIC PRODUCTS

Excellent resistance to solvents, fuel and hydraulic fluids. DACROMET is an electrically conductive coating. The DACROMET film can be covered by a paint film which has direct metal adhesion (e.g. DACROKOTE).



## USE OF THE DACROTIZING PROCESS

### DACROTIZING WILL PROTECT

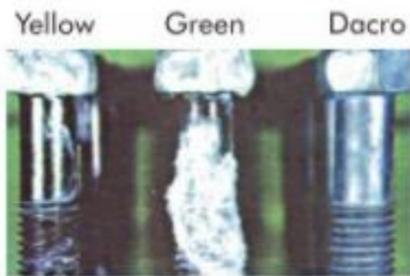
- Steel, particularly high strength steels normally sensitive to hydrogen embrittlement.
- Cast iron.
- Some sintered metals.
- Aluminium and some of its alloys.

It is used for protection of small parts (screws, clips, nails, springs, etc.), but also for important parts such as (brake discs, chains, containers, pallets, etc.)

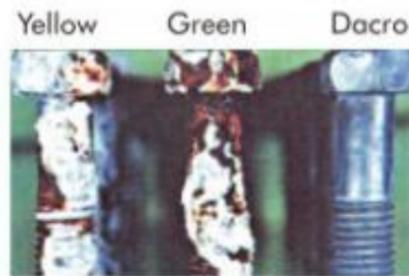
It has been developed principally within the automobile industry but is being extended to other industries such as house-building and appliance industries, etc.

## LIMITS OF USE

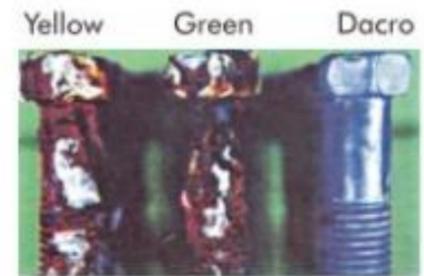
- Some visible contact marks may occur on flat surfaces treated in bulk by dip-spin method.
- Parts have to accept curing at approx. 300°C.
- Limited ductility restricts further plastic deformation (crimping-bending) but is entirely adequate for the protection of parts which deform elastically, i.e. springs and clips.



240 hours of salt spray test



480 hours of salt spray test



1000 hours of salt spray test