

Finishing News

NEWS BULLETIN ON DEBURRING, FINISHING, WASHING & CLEANING



January 2017 | Volume 25

No.1 Surface Engineering Solution Provider with over 4000 Installations

www.galagroup.com



Deburring | Finishing | Washing | Cleaning

Customized Cleaning Systems



Indexing Rotary Spray



Single Piece Flow Ultrasonic Cleaning



High Pressure Spray Wash

Parts Cleaning – How Clean is 'Clean' ?

This is a simple question but the answer is more often very complex. Cleaning is the process of removing dirt and other types of soil (contamination) from the parts surface.

In today's high precision manufacturing environments, supplying of ultra-clean components is often paramount to performance and reliability of finished goods.

The automotive and aircraft OEMs (Original Equipment Manufacturers), continue to develop component cleanliness standards based around industry standard techniques and technologies that put the onus on the supplier to meet or exceed critical surface cleanliness requirements. What is "standard", however, are typically the assessment methodologies and techniques employed in which assess the surface cleanliness levels.

We can break down the parts cleanliness assessment into three generic descriptions of their function. These descriptions are defined as :

Surface residues isolation

Surface residues measurement

Surface residues characterization

The primary reference specifications which address the cleanliness descriptions described above are:

- ISO-4405 – Determination of particulate contamination by the gravimetric method
- ISO-4406 – Method for coding the level of contamination by solid particles
- ISO-4407 – Determination of particulate contamination by the counting method using an optical microscope

Please visit us at



HALL No - 2A
STALL No - B114

26th January - 01st February 2017
BIEC, Bangalore

Finishing News

NEWS BULLETIN ON DEBURRING, FINISHING, WASHING & CLEANING



January 2017 | Volume 25

No.1 Surface Engineering Solution Provider with over 4000 Installations

www.galagroup.com

CASE STUDIES

1

Multistage Conveyorized Wash

Objective	: Removal of Pressing Oil, Loose Burr and Dust
Component	: Geyser dome
Input contamination	: Oil, loose burr, dust particle
Present Method	: Manual cleaning
Expected cleaning Requirement	: Surface free from oil, dust, burr. No manual work

Solution provided by GALA

Machine used	: Conveyorized horizontal high pressure spray washing
Cleaning Media	: Alkaline chemical
First Stage	: High pressure spray wash
Second Stage	: Rinsing with rust inhibitor
Third Stage	: Hot air drying
Advantages	: 1) Improved productivity 2) Better consistency



Before



After

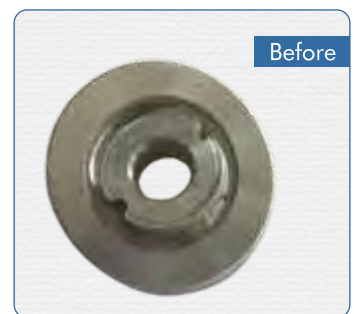
2

Customized Single Piece flow Ultrasonic Cleaning

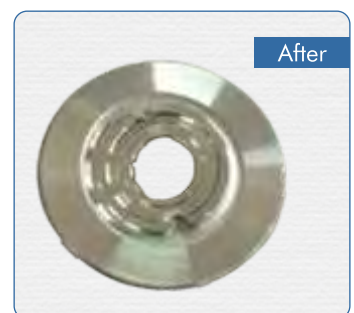
Objective	: To remove water based coolant, loose chips
Component	: Swash Plate
Cleaning Requirement	: Surface free from coolant, chips, loose burr
Input Contamination	: Coolant, loose chips
Present Method	: Manual wash

Solution provided by GALA

Machine used	: Single Piece Flow Ultrasonic Cleaning System
Cleaning media	: Alkaline degreasing compound
First Stage	: Ultrasonic cleaning
Second stage	: Rinsing
Third stage	: Hot air drying
Advantages	: 1) No manual intervention 2) Uniform cleaning 3) 70% reduction in labour cost



Before



After

Finishing News

NEWS BULLETIN ON DEBURRING, FINISHING, WASHING & CLEANING



January 2017 | Volume 25

No.1 Surface Engineering Solution Provider with over 4000 Installations

www.galagroup.com

3

Indexing Type Rotary Spray Wash

Objective	: Removal of dust, oil & Auto rust preventive
Components	: Liners
Input Contamination	: Dust, oil
Input Millipore	: 15 mg
Expected Millipore	: <10 mg
Present Method	: Manual spraywash
Problems Faced	: Improper cleaning, Labour involvement, High cleaning cost

Solution provided by GALA

Machine used :	: Indexing Type Rotary Spray Wash System
Cleaning media	: MTO
First Stage	: High pressure MTO spray
Second stage	: Compressed air drying
Third stage	: Rust Preventive spray
Fourth stage	: Air blow
Advantages	: 1) Uniform cleaning 2) No manual work 3) Reduction in labour cost by 80% 4) Improved productivity



Before



After

4

Multi - Chamber Multi- Process Ultrasonic Cleaning

Objective	: Degreasing & removal of rust
Component	: Machined Casting
Input contamination	: Rust, oil, dirt
Present Method	: Manual cleaning
Expected cleaning Requirement	: Complete removal of Rust, oil and dirt

Solution provided by GALA

Machine used	: Multi-chamber, Multi-process Ultrasonic cleaning
Cleaning Media	: Alkaline base aqueous chemical & rust inhibitor
First Stage	: Ultrasonic Cleaning
Second Stage	: Immersed flood rinsing
Third Stage	: Hot air drying
Advantages	: 1) 100% rust removal 2) Productivity improvement by 40%



Before



After

Finishing News

NEWS BULLETIN ON DEBURRING, FINISHING, WASHING & CLEANING



January 2017 | Volume 25

No.1 Surface Engineering Solution Provider with over 4000 Installations

www.galagroup.com

Phosphating Plants



Phosphating is a chemical process for treating the surface of steel whereby metal-phosphate layers that are hardly soluble are formed on the base material.

Phosphate coating is employed for the purpose of pre-treatment prior to coating or painting, increasing corrosion protection and improving friction properties of sliding components

Phosphate conversion coatings can also be used on aluminium, zinc, cadmium, silver and tin. The main types of phosphate coatings are manganese, iron and zinc. Manganese phosphates are used both for corrosion resistance and lubricity and are applied only by immersion.

Types of phosphating

1 Manganese phosphating

Manganese phosphate coatings are the hardest, providing unbeatable corrosion and abrasion protection. These coatings are applied only by immersion. Manganese phosphate is usually oiled rather than painted, often engine and machine parts

will be manganese phosphated for a measure of dry lubricity during the break-in period before oil can lubricate them.

Use of manganese phosphate is especially useful in projects that require sliding of parts, such as automotive engines and transmission systems.

Application: Bearings, bushings, fasteners and other common industrial products. Use of manganese phosphate is especially useful in projects that require sliding of parts, such as automotive engines and transmission systems.

2 Zinc Phosphating

Zinc phosphate is a lighter alternative to manganese phosphate. They can be immersion type or spray type. They are lighter alternative to manganese phosphating. Zinc phosphating is more expensive and thicker, requiring separate cleaning and phosphatizing steps, but resulting in a heavier and better paint base, sometimes called the 7-step process. It is also applicable to galvanized parts, and can be used on aluminum parts.

Application: Rust proofing of ferrous parts. Aerospace industries, automotive industries.

3 Iron Phosphating

Iron phosphating is simpler and cheaper, usually only requiring a one-step cleaning-plus-phosphating step and two rinse, it is sometimes called the 3-step process. it's only applicable to steel parts.



Gala Precision Engineering Private Limited

A-59, Road No.10, Wagle Industrial Estate, Thane - 400 604, INDIA.

Tel.: 0091-22-4141 0470, 2582 1232, 2580 0252

Fax: 0091-22-2582 0771, E-mail: massfinishing@galagroup.com