# FPI SYSTEM

The FPI systems provided by CHiNDT meet all international standards and industrial/corporate specifications, e.g. ISO 3452, ASTM E1417, ASTM E165, NADCAP, etc.

Depending on the mechanical structure and level of automation, CHiNDT classifies typical FPI systems used in the industries into 7 CATEGORIES.

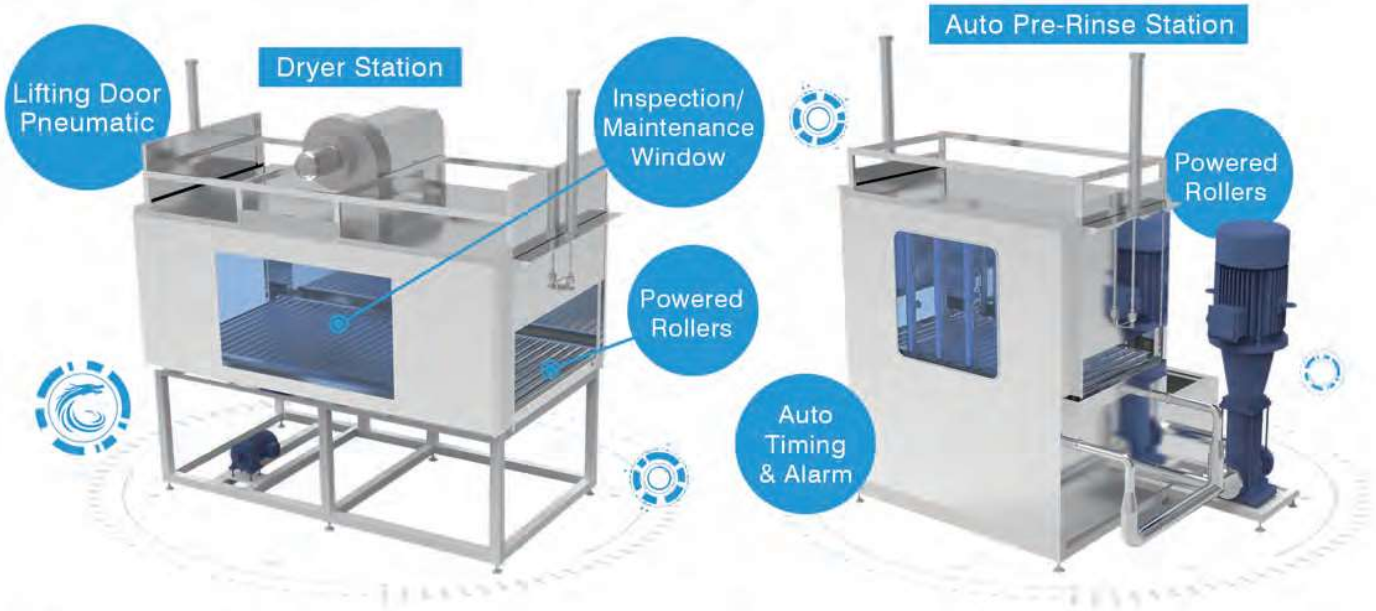
# 1 Tank Type Manual FPI Lines with Hoist

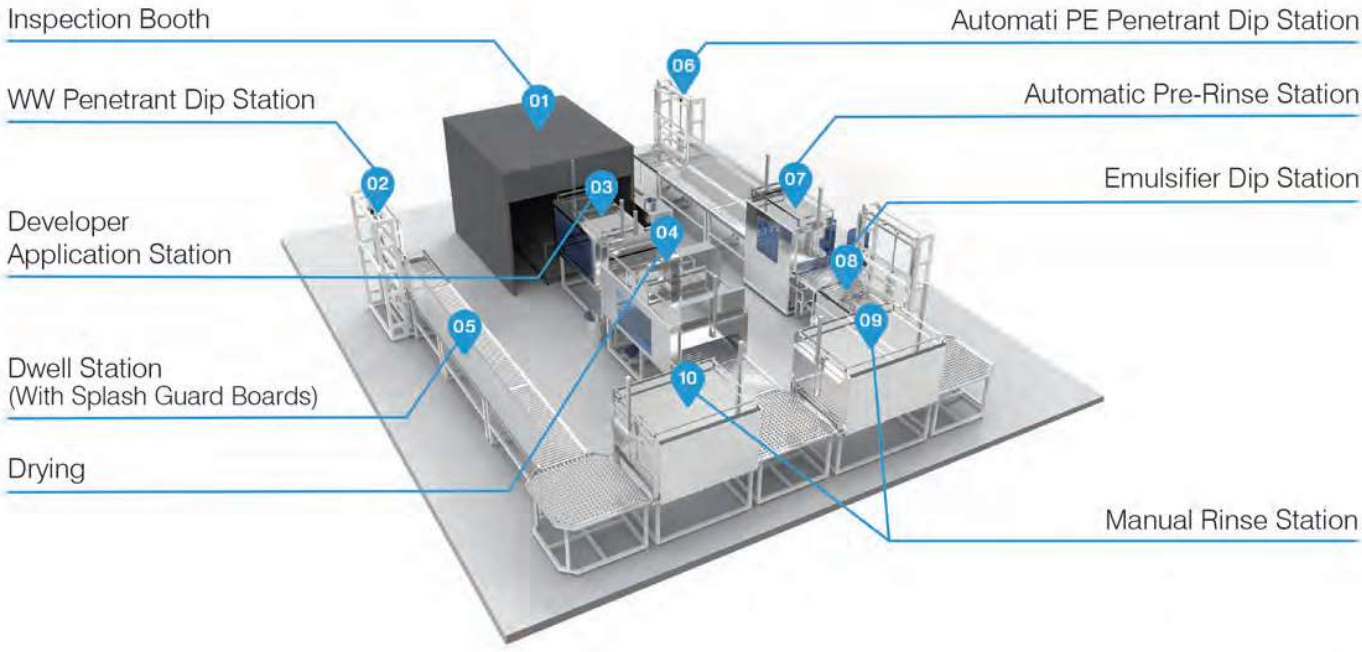
Features: a set of tanks of different functions with manual hoists/cranes for parts/basket transferring between stations. Mostly used in aerospace industry with multiple types of parts.

| | |
|---|---|
| Typical Application | Aerospace, Defense, Automotive, Medical, etc. |
| Cycle Time | 2-15 Minutes per Batch |
| Typical Process | Customized per request, generally include:<br>Pre-cleaning (Ultrasonic, Alkaline) - DI Water Rinsing - pre-drying<br>Penetrant dip/spray - Dwell- Rinsing - Emulsification - Manual Touch-up<br>Drying - Developing - Post Cleaning - Inspection Booth. |
| Dimension | Tank dimension from 0.3m(1') to 8m(27').<br>Customized per request |

# 2 Tank Type Manual FPI Lines with Rollers

Features: a set of tanks of different functions used with manual/automatic rollers for parts/basket transferring. Mostly used in aerospace industry and low production automotive industry.



# 3 Tank Type Automatic FPI Lines with Gantry/Transporters

Features: a set of tanks of different functions with automatic gantries/transporters for parts/basket transferring with process parameter traceability. Mostly used in high production aerospace and automotive industries.


Automatic gantries/transporters

## FPI & ETCHING IN-LINE SYSTEM PRE-CLEANING STATION

| | |
|---|---|
| Typical Application | Aerospace, defense, automotive companies with a daily production of 2,000 pieces and above. |
| Cycle Time | 2-10 Minutes per Batch |
| Typical Process | Customized per request, generally include:<br>Pre-cleaning (Ultrasonic, Alkaline) - DI Water Rinsing - Pre-drying<br>Penetrant Dip/Spray - Dwell- Rinsing - Emulsification - Manual Touch-up<br>Drying - Developing - Post Cleaning - Inspection Booth. |
| Dimension | Tank dimension from 0.3m(1') to 8m(27').<br>Customized per request |

# AUTOMATED FPI LINE WITH GANTRY

CHiNDT®

Clean Environment | 6S Design | NADCAP compliant automatic FPI system for aerospace industry

Work Safety | Traceability | NADCAP Compliant

Close-Loop Automated FPI Line

Close-Loop Automated FPI Line

Enhanced Work Safety with Overall Enclosure

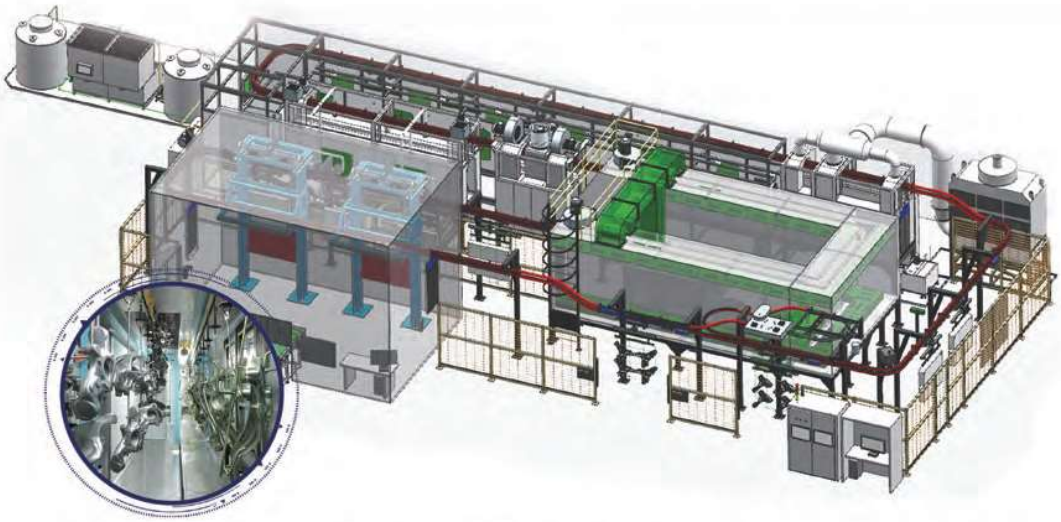
# 4

# Automated Monorail Type FPI Lines

Features: Parts are hung on monorail chains to go through station by station.

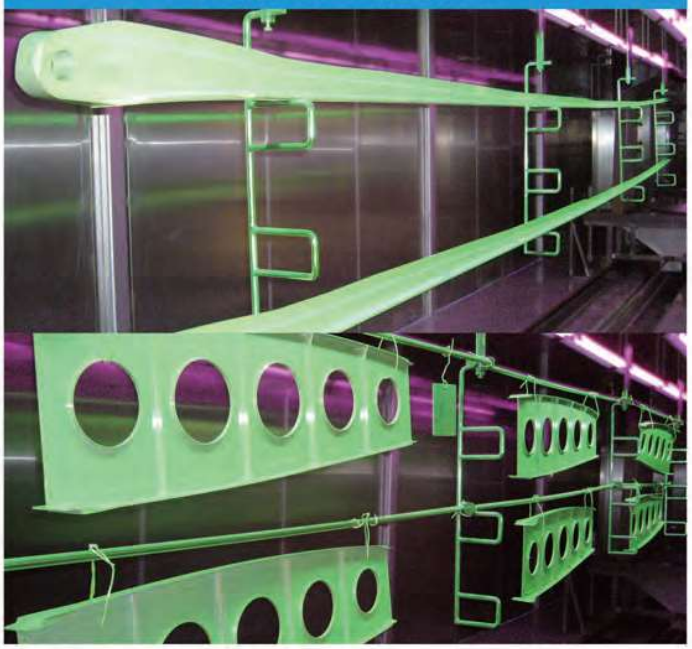
Applications

- Very high production automotive plants with typical production of 10,000+ parts/day.
- High production aerospace industry with parts of various dimension.



MONORAIL SYSTEM FOR
AUTOMOTIVE INDUSTRY

MONORAIL SYSTEM FOR
AEROSPACE INDUSTRY

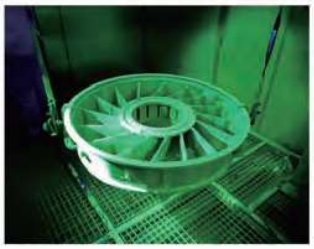


# 5 Electrostatic Spray Booth

Features: a set of booths generally with cart or manual hoist for parts' transferring.

## Applications

- Very big, hollow or complex parts, which are not suitable for FPI by immersion applications.
- Companies with the demand to save penetrant and water consumption.



| | |
|---|---|
| Typical Application | Large and complex parts, e.g. engine subframe, landing gear, etc. |
| Cycle Time | 5-20 minutes per batch |
| Typical Process | Pre-cleaning - Electrostatic Penetrant Spray - Pre-rinsing - Emulsification - Emulsifier Stop - Drying - Electrostatic Developer Spray - Inspection - Post-cleaning |

# 6 Conveyor Type FPI Line

Features: parts are placed on conveyors and go through stations. Mostly used in medium production automotive industry.

# 7 Single Station PT Platform

Features: Single penetrant station for penetrant spray, removal, manual drying and developing. Mostly used in NDT labs or very small production sites.