

# MSME

सूक्ष्म लघु एवं मध्यम उद्यम

MICRO SMALL & MEDIUM ENTERPRISE

## MSME - TOOL ROOM AHMEDABAD



### INDO GERMAN TOOL ROOM

AN ISO 9001 : 2000 CERTIFIED INSTITUTE

## ECO Friendly Plasma Nitriding Process

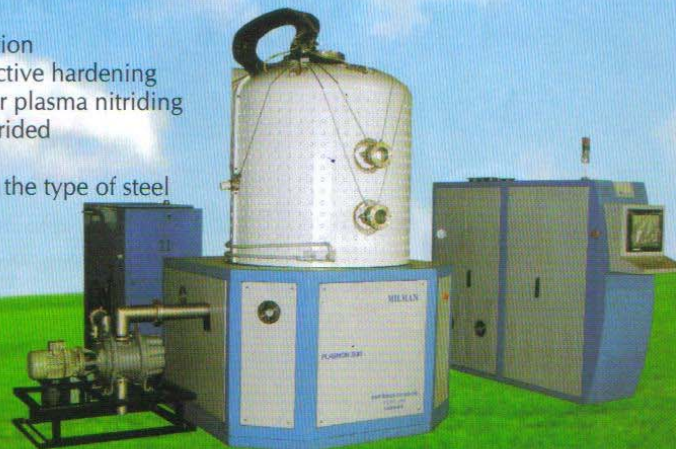
Conventional nitriding is potentially very hazardous to environment due to use of poisonous chemicals like cyanides and ammonia whereas Plasma nitriding process uses non-toxic & precisely controlled gas mixtures. Plasma nitriding process is hence recommended as an alternative, environmentally benign surface treatment process. A Plasma nitriding system developed by FCIPT, a division of IPR with support of DST & GUJCOST is installed at IGTR Ahmedabad. The Facility is available for use of industries at Indo German Tool Room, Vatva, Ahmedabad.

#### BENEFITS

- Environment friendly Process.
- Distortion free
- Shortest heat up and treatment times
- Processing is reproducible
- Precise controllable layer production
- Mechanical masking permits selective hardening
- No post machining operation after plasma nitriding
- Almost all ferrous steel can be nitrided
- High surface hardness
- Case depth 0.6mm depending on the type of steel
- Technical support of FCIPT / IPR

#### PLASMA NITRIDING SYSTEM

Vacuum Chamber Size : 1 Meter Dia x1 Meter Height  
Loading Capacity : 500 Kgs. (Subjected to size & shape of jobs)  
Operations : Fully Automatic PLC/PC based Control with SCADA Package  
Power Supply : Pulsed DC 1000 V  
(Plasma Reactor) Frequency 2-30 KHZ  
Gases Used For Plasma : Nitrogen, Hydrogen, Argon





### Facilitation Centre for Industrial Plasma Technologies (FCIPT)

FCIPT, a division of Institute for Plasma Research has developed the plasma nitriding process. FCIPT will provide IGTR with all technical assistance for promoting this technology to the industries.



Department of Science & Technology  
Ministry of Science & Technology

### Department of Science and Technology (DST), GOI

Plays pivotal role in promotion of science and technology in the country. DST has provided funds for installation of plasma nitriding system in IGTR for promoting this technology to the industries in and around Gujarat.



### Gujarat Council of Science and Technology (GUJCOST) Department of Science & Technology GOG.

Primarily acts as a focal forum to inculcate scientific temper for attaining new heights in research and development. GUJCOST will undertake to arrange seminar and other modes of popularizing plasma nitriding technology.



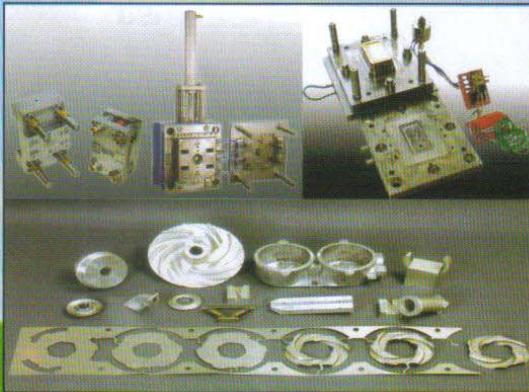
### MSME TOOL ROOM AHMEDABAD INDO GERMAN TOOL ROOM

An autonomous body under ministry of MSME Govt. of India provides technological help to MSME's in tool & die making and training. Now the plasma nitriding services are also available at IGTR.



### Applications of Plasma nitriding process

- Automobile Industry - crankshafts, gears, pistons, cylinders, valves, valve springs, synchromesh rings.
- Metal Casting & Moulding Industries - moulds for non-ferrous metals and alloys.
- Forging Industry - all kinds of dies for hammering and pressing (cold forging, impression forging, open die forging)
- Aluminum Industry - dies for casting and extruding
- Plastic Industry - extruder screws, cylinders, moulds for injection moulding
- Machine Building - shafts, spindles, slide-rails, instruments for cold & hot rolling, dies and punches for deep drawing, pump cylinders, milling and drilling tools (milling cutters, rams, drills, taps, broaches, etc)
- Powder Metallurgy - gears, brushes, synchromesh rings
- Power Engineering - turbines, shafts, spindles, gears



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