SHAFEL TECH

SURFACE ENGINEERING & ADVANCE THERMAL COATING PARTNER

NEXT - GENERATION SURFACE ENGINEERING & THERMAL SPRAY COATINGS



ABOUT US

SHAFEL TECH

Empowering global **OEMS** with robotic **HVOF**, **D-Gun**, and flame spray solutions for extreme wear, erosion, and corrosion resistance...

➢ The company established in **2000** ensures commitment to quality and can be gauged by its high-end coating applications to establishments such as hindustan aeronautics ltd., bangalore for aviation turbine blades and other major multinational companies.

➢ It is an **ISO 9001:2015** certified company offering coatings of ceramic, carbide and metal spraying to reputed companies in india for their engineering components to enhance wear, erosion & corrosion resistance.

➢ **SHAFEL TECH** is managed and run by a committed technical team headed by an engineer with post graduation in material science from the **USA.**

➢ **SHAFEL TECH** in chennai, having the following coating technology are,

- **D GUN (DETONATION GUN)**
- **HVOF (HIGH VELOCITY OXY FUEL)**
- **METAL SPRAY (METALLIZING)**

CORE EXPERTISE: Robotic hvof & d-gun
KEY SECTOR: Aerospace, EV & Heavy industry
QUALITY METRIC: 10,000+ PSI Bond Strength



Certificate of Registration

This is to certify that

SHAFEL TECH

No. 1, SIDCO Industrial Estate, Thirumudivakkam, Chennai - 600044 (Tamil Nadu), India.

has been assessed by RICL and found to comply with the requirements of

ISO 9001 : 2015
Quality Management Systems

For the following activities:
Thermal Spray Coating work for Engineering Components.

This Certificate is Valid from 06/04/2026 Until 22/04/2027

Date of Initial Certification: 09/04/2022
Date of This Certification: 23/04/2025
Ist Surveillance Audit Successfully Conducted.
IInd Surveillance on or before: 22/03/2027
Certification Valid Until: 22/04/2028

Certificate No.: 25RN04FG

CB-MS-2606

Director
Royal Impact Certification Ltd.

UAF is member of International Accreditation Forum (IAF). Its membership status can be verified at www.iaf.nu. This Certificate remains the property of Royal Impact Certification Limited. Must be returned on request or if certificate is withdrawn. Validity of this certificate is subject to successful surveillance audits as per dates given above.

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Mechanically Bonded

Metallurgically Welded

Thin Coatings – 3 to 5 microns	Coatings – 25 to 75 microns	Coatings – 75 to 400 microns	Material Cladding – 500 microns to few mm
Chemical Vapor Deposition (CVD)	Electroplating Techniques – Hard Chrome plating	**Thermal Spray Coatings**	Coating material is called cladded material
Physical Vapour Deposition (PVD)	Diffusion Techniques – Nitriding, Carbonizing	**HVOF**	(Only metals can be welded)
Flash electro plating techniques	Electro Chemical Diffusion Techniques	**Plasma**	PTA (Plasma Transferred Arc)
	Powder Coatings	**D - Gun**	SAW (submerged arc welding)
	Ceramic paints (application & curing in heat)	**HVAF**	LASER
	Thermal Spray Aluminium (TSA)	**Metal Spraying – Wire Arc & Wire flame spray**	
	Thermal Spray Zn (primarily for corrosion resistance)	**Powder metal flame spray**	
		Cold Spray (without flame & heat)	

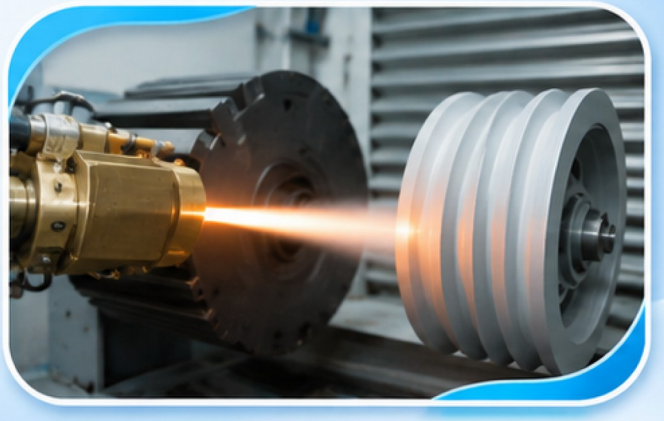
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THERMAL SPRAY COATING

- **Thermal spraying** is a process in which metals are melted and sprayed on a surface to form coating. A coating produced by this process in which molten or softened particles are applied by impact onto a substrate.
- **Different types** of thermal spraying includes flame spraying, metallizing, and hard facing. The metals sprayed are pure metals or alloys that are generally in the form of powders, wires, or rods.
- **A combustion source** or an electric arc provides the energy that is used to melt the metal. After the metal is melted, compressed air or another gas propels the droplets to the surface being coated.
- **In many cases**, thermal sprayed surfaces are machined / grounded, to provide the desired surface finish.







SURFACE PREPARATION (GRIT BLASTING PROCESS)

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Grit blasting is the most commonly used method of preparing surfaces for metal spraying. It removes rust, mill scale and other surface contaminants and produces a suitably roughened surface by projecting a highly concentrated stream of relatively small abrasive particles at high velocity against the surface to be cleaned.



BLASTING BOOTH

Size: Up to 200mm OD x 500mm length maximum



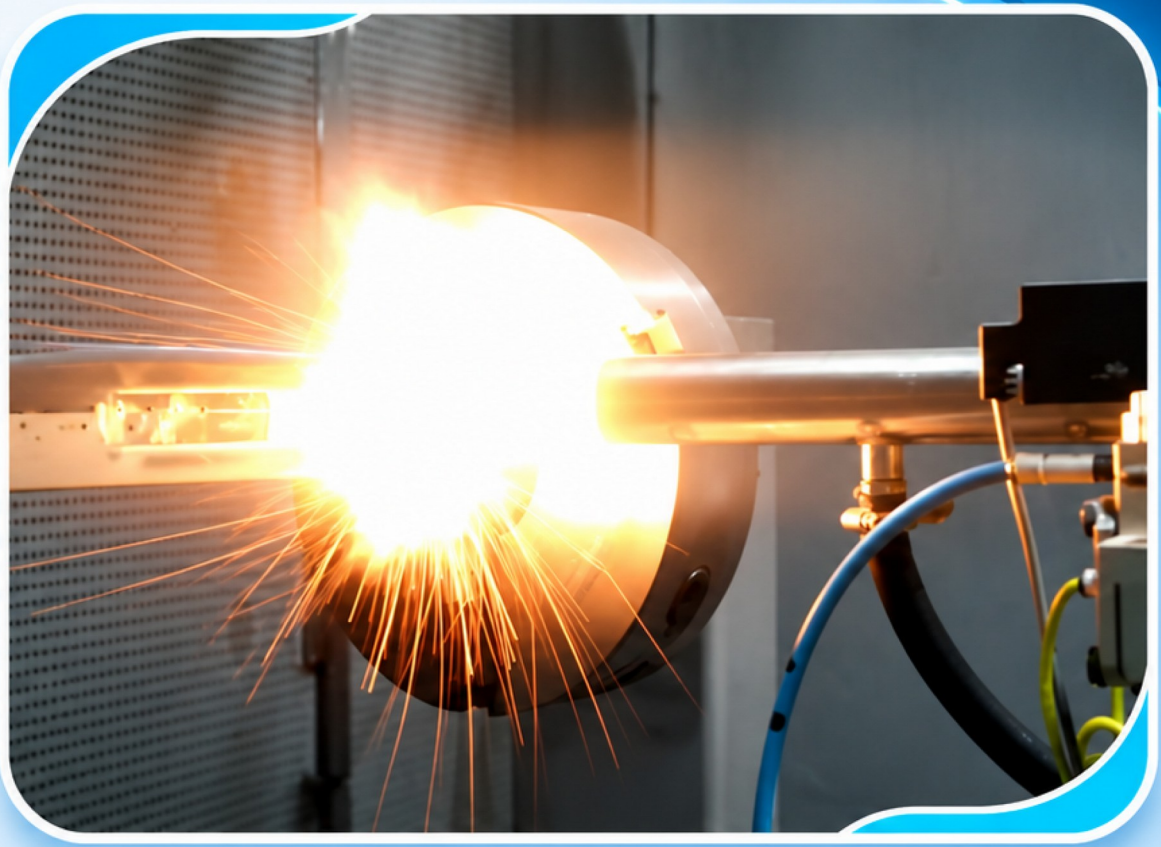
BLASTING BOOTH

Size: Up to 1000mm OD x 3000mm long maximum

DETONATION-GUN SPRAY COATING

SHAFEL TECH

- The **Detonation-Gun** uses measured quantities of oxygen, acetylene and particles of a coating material, detonated by a timed spark in the firing chamber.
- The resultant **high-speed gas stream** heats up the coating particles to a plastic state and throws them from the gun barrel at supersonic velocity (up to 1200m/s).
- This action joins the coating material to the surface of the workpiece with a **tenacious mechanical bond**.
- **Bond strengths** in excess of 10,000 psi are obtained. Coating hardness can go up to 1350 VHN.



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COMPONENTS COATED IN DETONATION SPRAY PROCESS

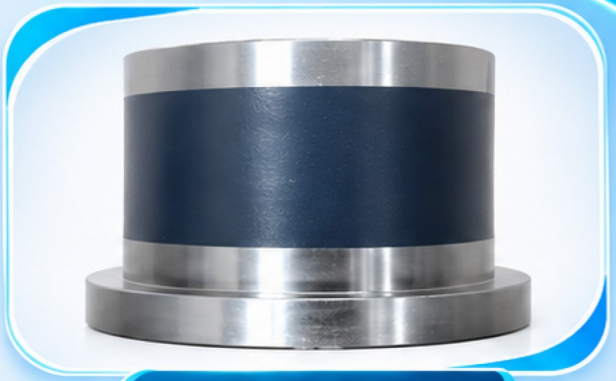
CERAMIC COATING



SLEEVES



SLEEVES



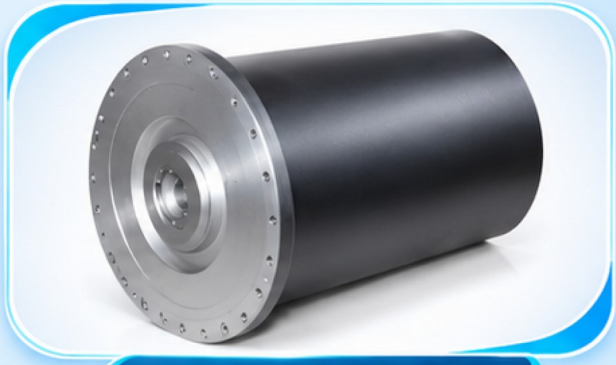
SLEEVES



SHAFT



MECHANICAL SEALS



GODET ROLLER

SHAFEL TECH

COMPONENTS COATED IN DETONATION SPRAY PROCESS

CERAMIC COATING



Tail Stock Housing Shaft – AL2O3 + TiO2
Black Ceramic



Aluminum Pulley With AL2O3 Coating
White Ceramic



MS Plate With AL2O3 Coating
White Ceramic

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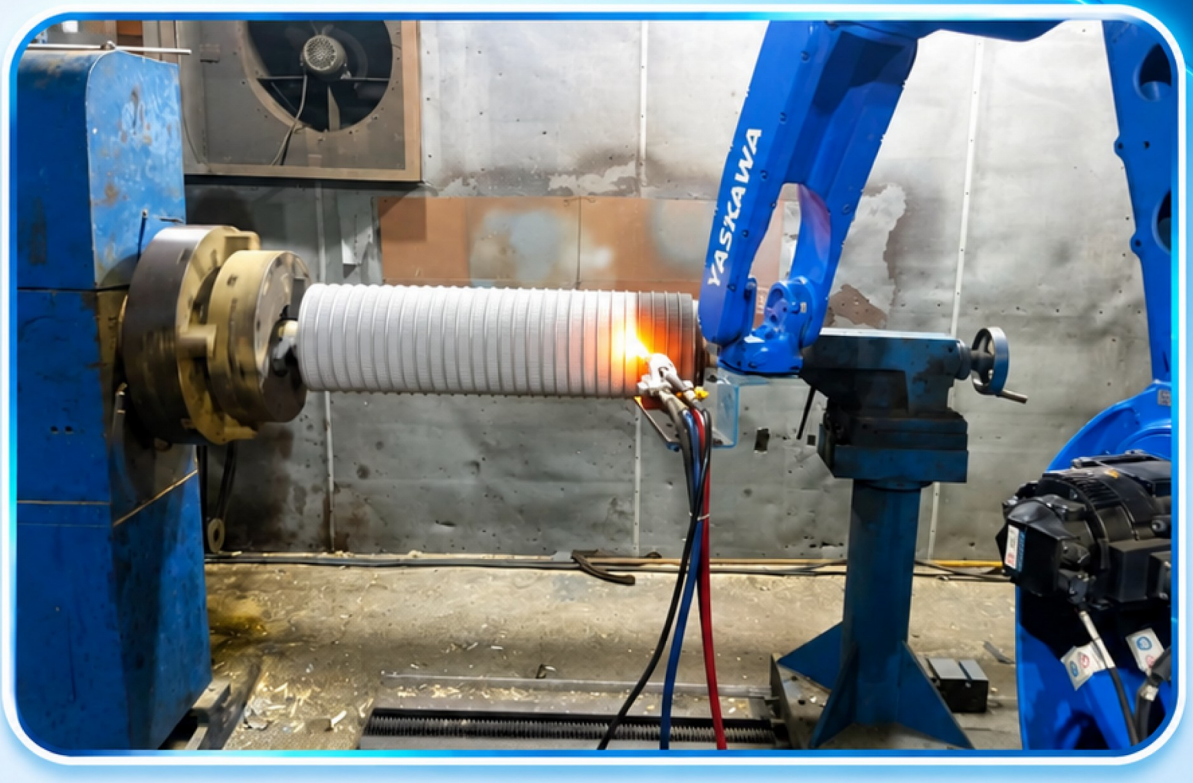
HIGH VELOCITY OXYGEN FUEL (HVOF)

HVOF coating ensures high bond strength coatings of carbides and Ni based alloys with dimensional accuracy.

HVOF coating system size allows the coating gun to be mounted on a **Robot.**

This ensures high accuracy and uniformity and consistency to complicated parts.

The production speed of **HVOF** is **3 times faster** than D-Gun coating system.



Components Coated In HVOF Spray Coating Process

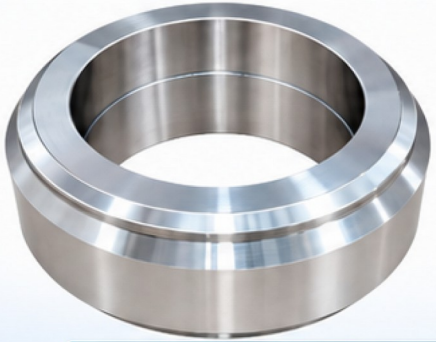
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Sleeve with Tungsten Carbide Coating



Step Cone with Tungsten Carbide Coating



Seat and Gate with Tungsten Carbide Coating



Sprocket with Tungsten Carbide Coating

Components Coated In HVOF Process – Tungsten Carbide Coating

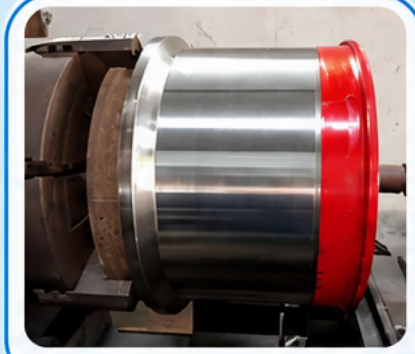
SHAFEL TECH



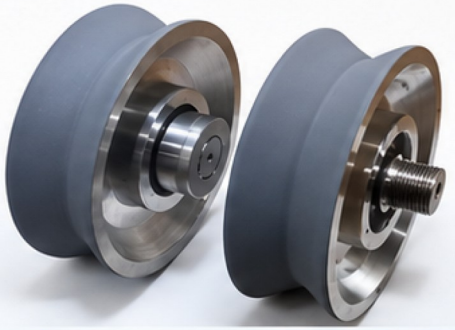
Dancer Pulleys



Step Cone



Wire Drawing Drums



Wire Drawing Pulleys



Load Wheel Drum



Agitators



Knife Gate Valves



Aluminum Sprocket – EV Vehicle

Components Coated In HVOF Process – Tungsten Carbide Coating

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Blades



HAL_ Nozzle



Gate & Seat Valve



JSW Steel Mill _Sink Roller



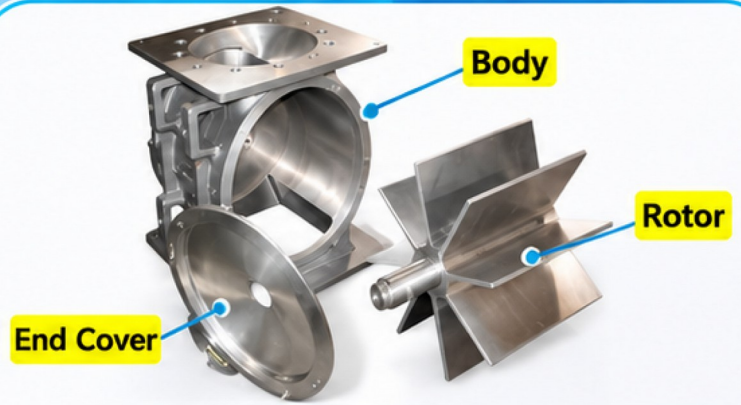
JSW Steel Mill _PLTC M Roller

Components Coated In HVOF Process – Tungsten Carbide Coating

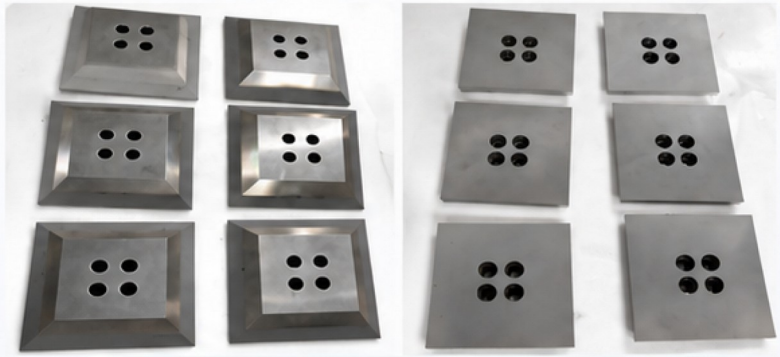
SHAFEL TECH



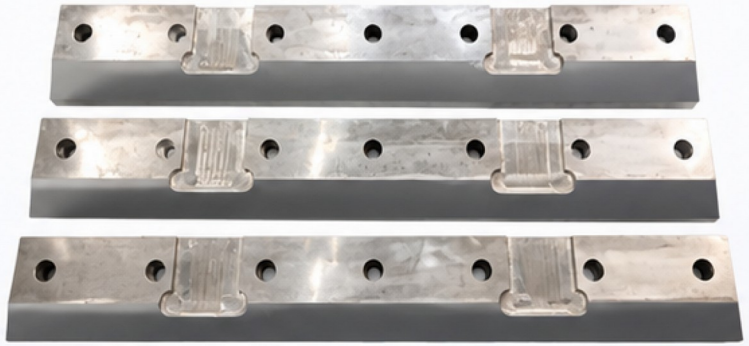
Tungsten Carbide Coating –
Wire Drawing Descaler Pulleys



Tungsten Carbide Coating of
Rotary Valve Parts



Tungsten Carbide Coating of
Plastic Recycle Grinding Blades



Tungsten Carbide Coating of
Leather Industries Blades

Components Coated In HVOF Process_ Tungsten Carbide Coating

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Tungsten Carbide Coating - Rotating Element



Before Coating



Before Coating

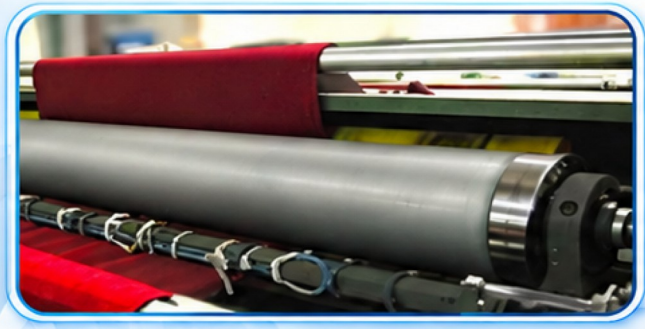


After Coating

Components Coated In HVOF Process

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Textile Industry



Very fine cutting wear is pronounced in the Textile Industry as kilometers of fibrous material pass though metallic components.
The components should have very low coefficient of friction to prevent easy flow of fibers and prevent breakages.
Compaction Rollers in Fabric (100% cotton knitted fabric) compaction and shrinkage / pressing of fabric in lengthwise direction. Open width and tubular compacting machines use coated rollers.

Components

- Compaction Rollers
- Godet & Draw Rolls
- Separate Rolls
- Finish Applicators
- Thread Guides
- Rotary
- Storage & Friction Disks





Components Coated In HVOF Process

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Corrugated Packaging Industry



Corrugated roller is the most important component of corrugated board production equipment. As the core component its wear resistance and service life are main technical indicators to measure the quality and cost. It has direct impact on the economic benefits of corrugated board manufacturers. To meet the requirement of increasing higher speed of corrugated cardboard production line, and improve the wear resistance and surface hardness of corrugated roller to improve service life, we use HVOF process to spray tungsten carbide coatings.

Why Tungsten Carbide ?

Higher Life Expectation

Because of higher hardness and excellent wear resistance it give better life 2 – 5 times when compared to normal rollers.

Better Quality

Due to good wear resistance tungsten carbide rollers are give better output in terms of maintaining uniform cardboard thickness and it gives the guaranteeing the continuity of quality.

Lower Cost

The performance of repaired and new ones are not very different, so that we can reduce downtime rate, glue consumption, and wear of pressure roller and glue roller. Hence the service life can be extended.



WIRE FLAME SPRAY COATING

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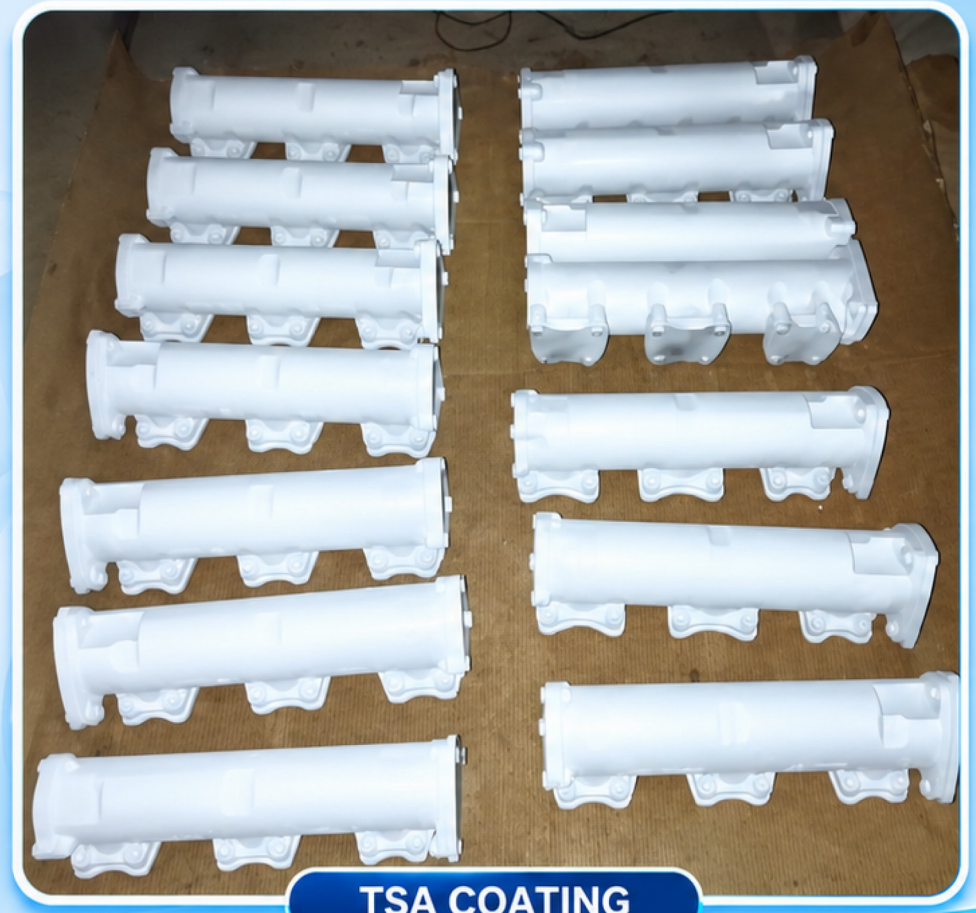
- Different metallic wires such as SS, Copper, Aluminium, Zinc are coated on metallic substrates through Oxygen – Acetylene flame torch.

- The bond strength is comparatively lower but act well for building up high thickness of metallic material to the engineering components and also for corrosion protection on large areas of atmosphere exposed components. Faster production rates.



Components Coated In Wire Flame Spray Process

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TSA COATING



COPPER COATING



ZINC COATING

Molybdenum Coating of Tractor Parts – Customer - TAFE

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Gear fork



Gear fork



Spacer Disc



Driving pin



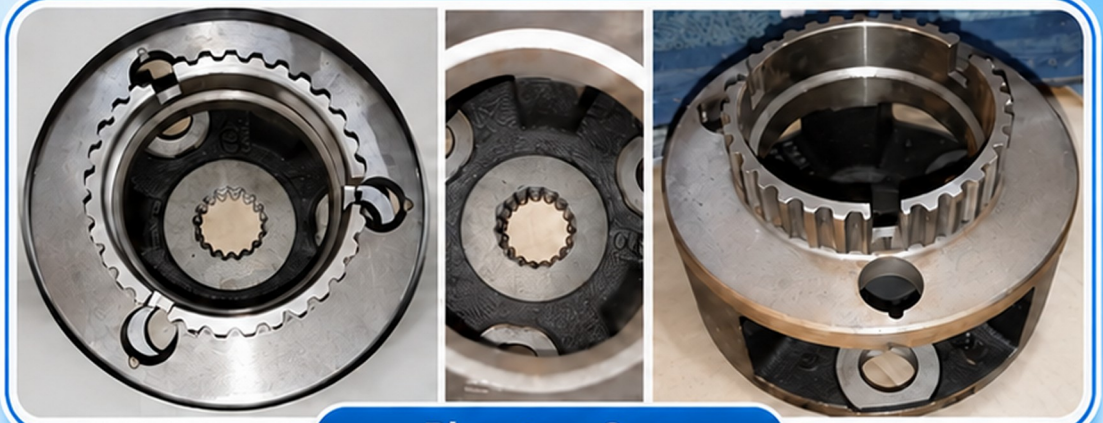
Brake Lever



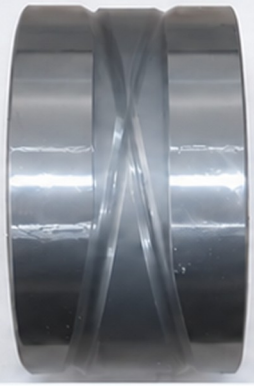
Pivot

Molybdenum Coating of Tractor Parts – Customer - SAME

SHAFEL TECH



Planetary Gear



Boccola Bushing



Differential Flange



Low Shaft

APPLICATION INDUSTRIES

SHAFEL TECH


Agriculture & Farming


Petrochemical & Pharma


Automotive Industry


Valve Industry


Textile Industry


Paper Industry


Aerospace Industry


Tyre Industry


Sheet Metal Industry


Oil & Gas Industry


Wire & Cable Industry


Pump Industry

Product Handling Facilities

SHAFEL TECH

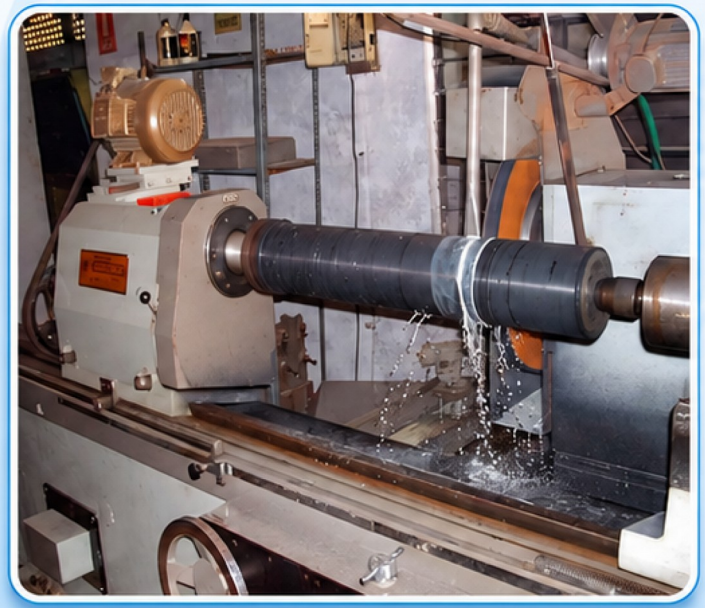
Shafel Tech is equipped with state-of-the-art facilities with excellent modern instruments to analyze the coated component quality & thickness. And has facility to handle heavy jobs with up to 1.5-meter diameter & 3-meter length. With state-of-the-art CNC manipulation for Detonation Gun coatings & Robotic manipulation for HVOF coatings, any complicated dimension product can be coated with high accuracy & consistent quality.

- ✓ **Coating Component size up to to 1.5 diameter & 3 Meter length**
- ✓ **Cylindrical Roller Grinding facility up to 700 mm diameter & 2.5-meter length**
- ✓ **Cylindrical Grinding – 250 mm diameter & 300 mm length**
- ✓ **Surface Grinding – 300 mm width & 900 mm length**
- ✓ **Lathe Machine – 700 mm diameter & up to 3.2 Meter**
- ✓ **Length Lathe Machine – 250 mm diameter & up to 2.5 Meter Length, C**
- ✓ **NC Manipulation for D-GUN system**
- ✓ **6 axis Robot 25kg payload and 3.5 Meter axis for HVOF system.**
- ✓ **6 axis Robot 12kg payload and 2.8 Meter axis for Wire Flame Spray system.**

Grinding Facilities

SHAFEL TECH

- Cylindrical Roller Grinding facility up to 700 mm diameter & 2.5 meter length.
- Cylindrical Grinding – 250 mm diameter & 300 mm length.
- Surface Grinding – 300 mm width & 900 mm length.



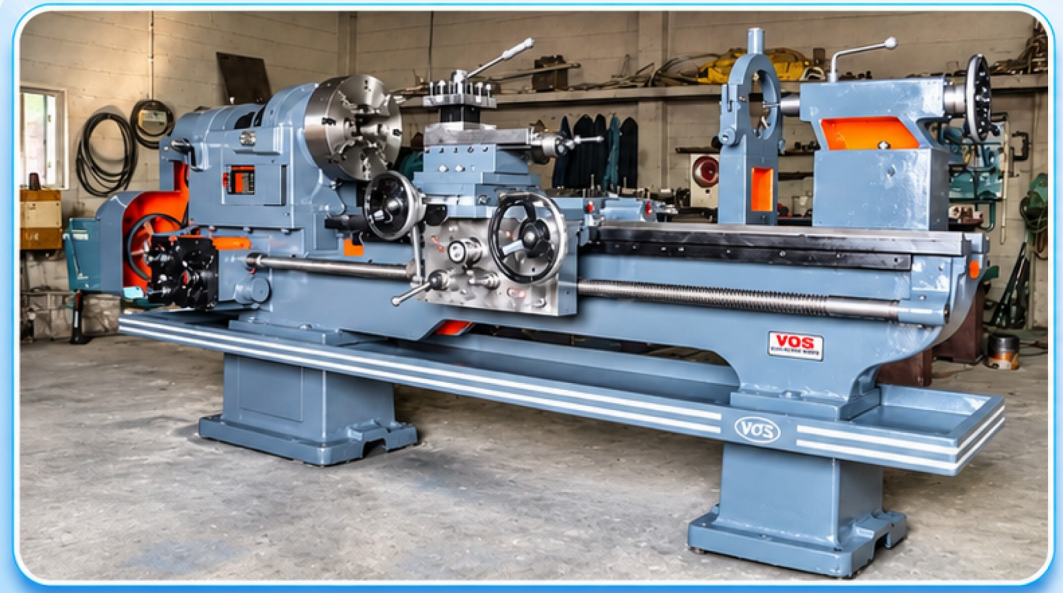




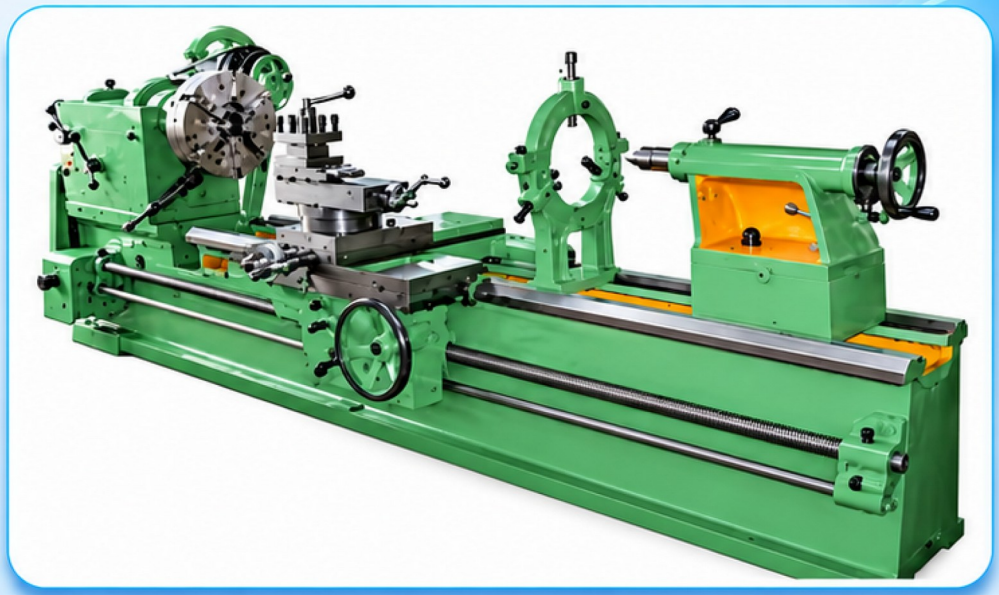
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Machining Facilities

Lathe Machine 700 mm diameter & up to 3.2 Meter



Length Lathe Machine
250 mm diameter & up to 2.5 Meter Length



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INHOUSE LAB FACILITY

Lab facility for Metallurgical study of samples on coatings is in-house. This is useful for coating development for various applications.

- ❑ Micro hardness
- ❑ Microscopic
- ❑ Porosity
- ❑ Compaction
- ❑ Coating thickness
- ❑ Metallography

SHAFEL TECH

Metallurgical Laboratory – Cutting & Polishing Machine







SHAFEL TECH

Metallurgical Laboratory – Hardness Tester & Moulding Machine









OUR VALUABLE CLIENTS

SHAFEL TECH









































OUR VALUABLE CLIENTS

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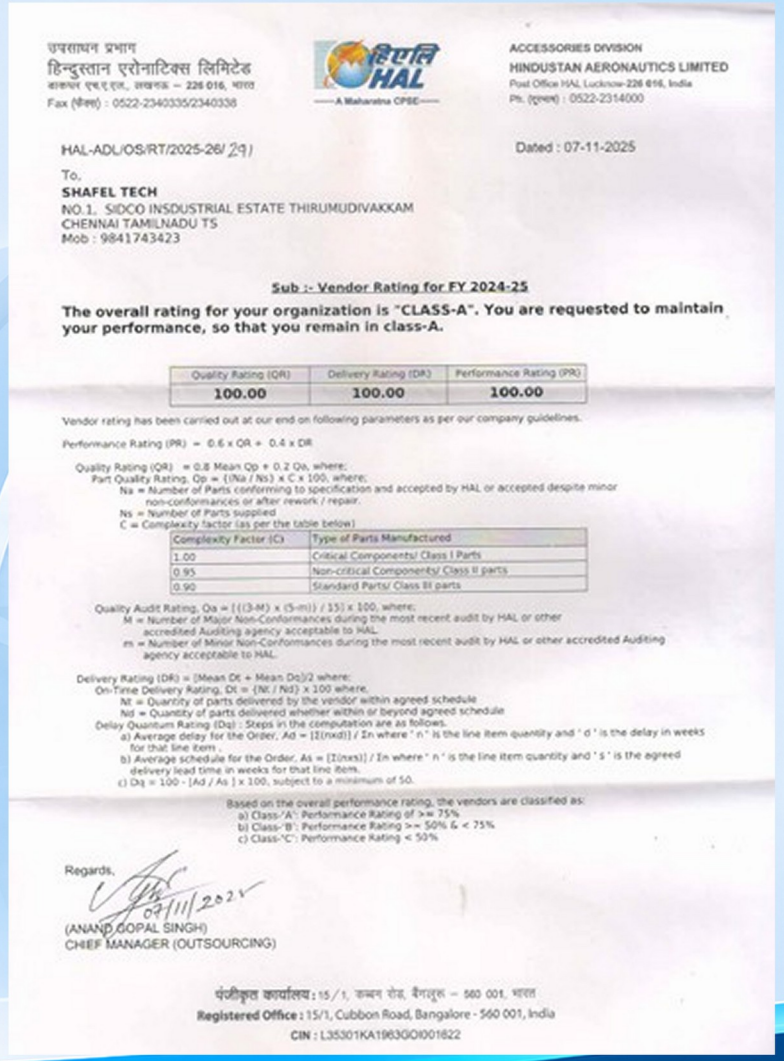






OUR Customer Ratings for the Year 2024 to 2025_HAL

SHAFEL TECH



उपसाधन प्रभाग
हिन्दुस्तान एरोनाटिक्स लिमिटेड
बाकारा एच.ए.एल., लखनऊ – 226 016, भारत
Fax (फैक्स) : 0522-2340335/2340338

—A Maharatna CPSE—

ACCESSORIES DIVISION
HINDUSTAN AERONAUTICS LIMITED
Post Office HAL Lucknow-226 016, India
Ph. (दूरभाष) : 0522-2314000

HAL-ADL/OS/RT/2025-26/ 29)

Dated : 07-11-2025

To,
SHAFEL TECH
NO.1, SIDCO INSDUSTRIAL ESTATE THIRUMUDIVAKKAM
CHENNAI TAMILNADU TS
Mob : 9841743423

Sub :- Vendor Rating for FY 2024-25

The overall rating for your organization is "CLASS-A". You are requested to maintain your performance, so that you remain in class-A.

Quality Rating (QR)	Delivery Rating (DR)	Performance Rating (PR)
100.00	**100.00**	**100.00**

Vendor rating has been carried out at our end on following parameters as per our company guidelines.

Performance Rating (PR) = 0.6 x QR + 0.4 x DR

Quality Rating (QR) = 0.8 Mean Qp + 0.2 Qa, where;
Part Quality Rating, Qp = {(Na / Ns) x C x 100, where;
Na = Number of Parts conforming to specification and accepted by HAL or accepted despite minor non-conformances or after rework / repair.
Ns = Number of Parts supplied
C = Complexity factor (as per the table below)

Complexity Factor (C)	Type of Parts Manufactured
1.00	Critical Components/ Class I Parts
0.95	Non-critical Components/ Class II parts
0.90	Standard Parts/ Class III parts

Quality Audit Rating, Qa = [{(3-M) x (5-m)} / 15] x 100, where;
M = Number of Major Non-Conformances during the most recent audit by HAL or other accredited Auditing agency acceptable to HAL.
m = Number of Minor Non-Conformances during the most recent audit by HAL or other accredited Auditing agency acceptable to HAL.

Delivery Rating (DR) = [Mean Dt + Mean Dq)/2 where;
On-Time Delivery Rating, Dt = {Nt / Nd} x 100 where,
Nt = Quantity of parts delivered by the vendor within agreed schedule
Nd = Quantity of parts delivered whether within or beyond agreed schedule
Delay Quantum Rating (Dq) : Steps in the computation are as follows.
a) Average delay for the Order, Ad = [Σ(nxd)] / In where ' n ' is the line item quantity and ' d ' is the delay in weeks for that line item .
b) Average schedule for the Order, As = [Σ(nxs)] / In where ' n ' is the line item quantity and ' s ' is the agreed delivery lead time in weeks for that line item.
c) Dq = 100 - [Ad / As] x 100, subject to a minimum of 50.

Based on the overall performance rating, the vendors are classified as:
a) Class-'A': Performance Rating of >= 75%
b) Class-'B': Performance Rating >= 50% & < 75%
c) Class-'C': Performance Rating < 50%

Regards,
07/11/2025
(ANAND GOPAL SINGH)
CHIEF MANAGER (OUTSOURCING)

पंजीकृत कार्यालय : 15 / 1, कब्बन रोड, बैंगलूरु – 560 001, भारत
Registered Office : 15/1, Cubbon Road, Bangalore - 560 001, India
CIN : L35301KA1963GOI001822

OUR Customer Ratings for the Year 2025 to 2026_LGB

SHAFEL TECH

LGB
VS PLANT

SUPPLIER PERFORMANCE MONITORING – (2025-2026)

Doc. No	PUR CO F 06
Rev. No	01
Rev. Date	06.12.2024

Supplier : M/S. SHAFELTECH — Operation : MOLY COATING

Month	Scheduled quantity (Qty)	Delivered quantity (Qty)	Accepted Quantity (Qty)	Defectives (Qty)	PPM	No of complaints	Quality rating (%)	Premium Freight	Production Line Stoppage	Customer Line Stoppage	Delivery rating (%)	Over all Rating (in % (i.e. X.XX)%)	Rating conclusion
Apr-25	300	300	300	0	0	0	100%	0	0	0	100%	100%	Excellent
May-25	950	950	950	0	0	0	100%	0	0	0	100%	100%	Excellent
Jun-25	1,665	1,655	1,655	0	0	0	100%	0	0	0	99%	100%	Excellent
Jul-25	3,825	3,825	3,825	0	0	0	100%	0	0	0	100%	100%	Excellent
Aug-25	No Schedule						No Schedule				No Schedule	No Schedule	
Sep-25	1,613	1,613	1,613	0	0	0	100%	0	0	0	100%	100%	Excellent
Oct-25	5,150	5,150	5,150	0	0	0	100%	0	0	0	100%	100%	Excellent
Nov-25	No Schedule						No Schedule				No Schedule	No Schedule	
Dec-25	3,203	3,203	3,203	0	0	0	100%	0	0	0	100%	100%	Excellent
Jan-26													
Feb-26													
Mar-26													
Overall	16714	16704	16704	0	0	0	100%	0%	0%	0%	99%	100%	Excellent

Rating Calculation :

Quality rating = PPM Rating X Customer complaint rating X Delivery rating

PPM rating :

- 100% for PPM < 100
- 90% for PPM >100 and < 1000
- 80% for PPM >1000 and < 2000
- 70% for PPM >2000 and < 3000
- 60% for PPM >3000 and < 5000
- 0% for PPM >5000

Complaint rating :

- 100% for 0 complaint
- 90% for 1 complaint
- 80% for 2 complaints
- 70% for 3 complaints
- 60% for 4 complaints
- 0% for >4 complaints

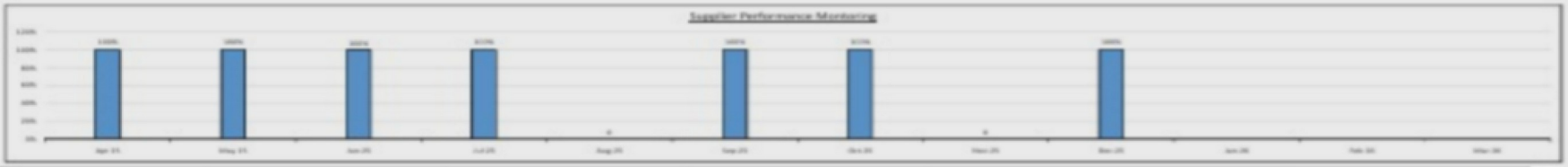
Delivery rating :

$$\frac{\text{Delivery quantity}}{\text{Schedule quantity}} \times 100$$

Rating Conclusion :	Remarks, if any :
"Excellent" for Overall Rating > 95%	Periodical Audits To sustain the supplier rating
"Good" for Overall Rating >91% to <=95%	Periodical Audits To Upgrade to Next Level
"Satisfactory" for Overall Rating >=86% to <=90%	Periodical Audits To Upgrade to Next Level
"Improvement" for overall Rating > 81 to 85 %	Take Corrective action at supplier end and periodical audit will be conducted along with Training & Supplier Development
"Poor" for Overall Rating <80%	Take Corrective action at supplier end and periodical audit will be conducted along with Training & Supplier Development

Note:
1. Customer Complaints / Notification on account of supply : "0" ,
2. Premium Freight occurance : "0" ,
3. Customer special status notification : Nil

Supplier Performance Monitoring



Rating conclusion	> 95 Excellent	91 to 95 Good	86 to 90 Satisfactory	81 to 85 Improvement	< 80 Poor

Prepared By : Mr. Srinivasan (Inspection Dy)

Reviewed by: M.Kumar -Vendor Development
Mr. Palaniyandy - Quality Head

Approved By : - Mr.Karthikeyan (Plant Head)

SHAFEL TECH

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Operation Head
+91 9384050341

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velu@shafeltech.com

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