



**Your Solution Partner In Engine Reconditioning And Machining Since 1991** 

# **About Us**

tafa technology Co. Is a Long Track of Marine Engineering History and Academic Certified Mechanical Studies in the World of (Marine Engineering Technical Services).

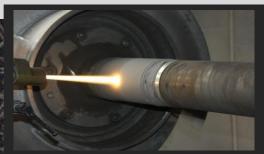
Which Relies on Strong Foundations of Technical Research Heritage and Extensive Studies From all Over the World.

Tafa technology Represents the Academic Engineering Experience Passed on From One Generation to the One After, Inheriting the Old School Work Ethics and Following on the Steps of Eng. Mahmoud El Ghamrawy (the Late Founder of Redsea Organization).

#### Consequently,

Eng. Hazem El Ghamrawy and his Sibling Eng. Ahmed El Ghamrawy Took the Lead and Continued the Developing of the Organization on an Academic Level by Studying Abroad and Applying Advanced New Technological Evolution and Mechanism to the Egyptian Market.

They Also Began Expanding the Business by Incubating New Advanced Machinery (Arc Spray , PTA welding , HVOF, CNC machining), Devices and Equipment Which Supports and Covers the Complete Overhaul of Marine Diesel Engines and the Full Scope of Repair and Maintenance Services.



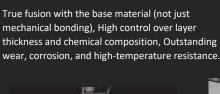
High-Velocity Oxygen Fuel (HVOF)

Produces very dense and low-porosity coatings, Excellent adhesion to the base metal, High wear and corrosion resistance, Lower heat input → less thermal distortion of the base material.



Plasma Transferred Arc (PTA) Welding

(PTA of new satellite layer of marine engine exhaust valve and valve





Arc spray

Lower cost compared to HVOF and PTA, Fast coverage for large areas, Simpler equipment setup, Good corrosion protection, but coatings are less dense than HVOF





#### **CNC** machining

It used for applications with High Precision and Accuracy, Capable of producing even the most complex parts, Less Dependability on Human Labor and Fewer Human Errors.

# **SOLUTIONS**

## Reconditioning of 2-stroke engine parts

- -Piston crowns
- -Piston skirts
- -Piston rods
- -Cylinder heads
- -Exhaust valve spindle and seats
- -Cylinder liners
- -Water jackets

## Reconditioning of 4-stroke engine parts

- -Cylinder heads
- -Pistons
- -Connecting rods
- -Cylinder linres
- -Water jackets
- -Crankshafts
- -Engine blocks













# On-site machining & alignment services

- On-site heat treatment (annealing service)
- 2&4-stroke main journal machining services
- 2&4-stroke main bearing bore in-line boring
- 2&4-stroke engine block surface machining and milling
- 2&4-stroke liner honing
- On-site liner diameter measurement
- Stern tube bore machining
- Propeller shaft's coupling bolt hole machining







- Hatch cover hinge pin hole machining
- Flange facing
- On-site drilling
- Engine main bearing bore alignment measurement
- Stern tube way bore alignment measurement
- Surface area flatness measurement
- Shaft alignment measurement
- On-site alignment measurement

# **SOLUTIONS**

## White metal bearing repairs

With its 20 years of experience in white metal (babbitt) bearing repairs,

Tafa Technology repairs most of bearings of all Egypt market including vessels / shipyards and power plants.

Tafa Technology offers a variety of white metal alloys used for application on heavy duty or high-speed bearing to achieve high bonding strength according to the needs of the client or maker.

Tafa Technology offers the fastest Stern tube repairs and manufacturing.

- Stern tube bearing
- Intermediate shaft bearing
- Alternator shaft bearing
- Main engine crankshaft journal bearings
- Crosshead bearings













## Workshop machining activities









# **Services**

# **4- stroke Engines**

### Cylinder head

- Inspection and reporting
- Chemical cleaning
- Pressure testing
- Inlet & exhaust valve grinding
- Valve seat removal and assembly
- Machining of seat pocket to oversize
- Injector sleeve removal and assembly
- Surface grinding
- Cast iron welding or metal spray on cylinder head
- Valve seat fabrication
- Reconditioning of rocker arms

### **Connecting Rod**

- Connecting rod inspection, crack test, straightness check
- Big end bore reconditioning
- CNC machining of serration faces
- Small end bush replacement

#### **Piston**

- Inspection and reporting
- Reconditioning of ring grooves by PTA welding
- Machining of piston crown and skirt contact surfaces
- Polishing of piston and piston pin

### Bedplate or engine block

- Engine block inspection
- Bore alignment measurement
- In-line boring of main bearing hores
- Castiron welding or thermal spray
- Grinding of line landing surface
- In-line boring of camshaft housing
- Broken stud removal by machining

#### Crankshaft

- Inspection (OD measurement, MPI crack test, hardness check, run-out measurement
- Grinding in workshop
- Grinding in-situ (main journal)
- Polishing and super finishing
- Crankshaft straightening
- Annealing (heat treatment) of overhardened journals

#### Cylinder liner

- Inspection, crack test and reporting
- Liner honing
- Machining of liner bottom landing surface
- Local repairs by metal spray

### Water jacket

- Inspection and reporting
- Reconditioning of water jackets by thermal spray

# 2- stroke Engines

#### **Piston crown**

- Ring groove reconditioning by PTA welding
- Top surface reconditioning by inconel 625

#### Piston rod

 Piston rod reconditioning by thermal spray

#### **Piston skirt**

 Piston skirt rubbing bandage replacement

#### Cylinder linear

- Cylinder liner honing
- LDM measurement in-situ

## Cylinder head

- Water jacket O-ring groove area reconditioning
- Liner landing surface reconditioning
- Exhaust seat landing area reconditioning
- Injector hole crack repair by Inconel

### **Exhaust valve spindle &seat**

- Exhaust valve spindle Inconel reconditioning
- Exhaust valve spindle stem reconditioning by thermal spraying and grinding
- Exhaust valve seat reconditioning



# **Our Clients**

















































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