# U.I. ENGINEERING CO., LTD.

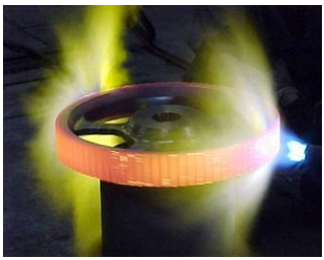


*Wishes to **UPGRADE** your **PRODUCTS**!*

Heat Treatments

- TD Process (VC Coating)
- Vacuum Process
- Tufftride *QP, QPQ*
- Liquid Carburize
- Salt Bath Heat Treatments, Austempering
- Induction Harden
- Flame Harden
- Solution, Normalize, Anneal, Stress Relief & etc.





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# U.I. ENGINEERING CO., LTD.

## COMPANY PROFILE : U.I. ENGINEERING CO., LTD.

| | |
|---|---|
| Company Name | U.I. ENGINEERING CO., LTD. |
| Address | 54/6 Moo 7, Bangna-Trad Road<br>Bangsaothong, Samutprakarn 10540, Thailand |
| Tel | 66 (0) 2708 3670-6 |
| Fax | 66 (0) 2708 3678 |
| E-mail | uien2000@cscoms.com |
| Website | http://www.uiengineering.com |
| Year Established | 1986 |
| Paid Up Capital | BAHT 10 MILLION |
| Staff Strength | 90 |
| Key Personnel | President Sayam Phoolthanang<br>Director Sutthiwong Choladda<br>Director Wisuth Peuchmongkol |
| Nature of Business | Heat-Treatment Services<br>Give service for heat-treatment of molds and dies, tools and various machine parts and auto-parts which made from steels and non-ferrous metals.<br>Operated with higher technology and the latest model of vacuum furnace from ALD Vacuum Technology, and every steps have been controlled by computer system.<br>-Nitriding furnace (Tufftride, QP, QPQ process) for hardening. Induction unit and Carburizing.<br>-TD Process<br>-Made by our client |

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## Vacuum Process

*wishes to UPGRADE your PRODUCTS !*

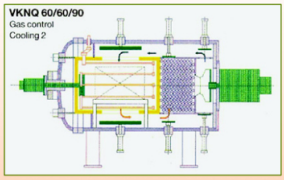
### VACUUM PROCESS

Advantages

- Bright surface
- No decarburization
- No oxidation
- Minimum distortion
- Reproducibility
- Vacuum high temperature brazing
- Economical

## TECHNICAL DATA VKNQ

- Working Space 600x650x900 mm
- Charge Weight 650 Kgs max
- Rated Temp. 1,300 °C max
- Temp. Uniformity < + - 5 °K
- Quenching $N_2$ Gas 6~10 bars
- Vacuum $10^{-2}$ ~$10^{-5}$ mbars




**Manufactured by ALD (Germany)**

## Induction Hardening

# INDUCTION HARDENING

- Surface layer of work-piece only can be heated by electro-magnetic induction.
- High surface hardness, wear resistance and high fatigue limit can be obtained.
- Compressive residual stress generated by induction hardening brings superior fatigue limit.
- Process following heat-treatment can be omitted because of little decarburization or scaling of work piece.
- Quick and economical for small lot production is available.

Hardening steering motor shaft

## Carburizing

# Carburizing

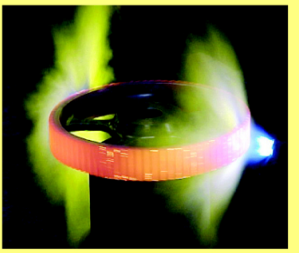
- Carburizing is a remarkable method of enhancing the surface properties of shafts, gears and other highly stressed machine parts.
- Low carbon steel of finished shape is converted by carburizing into a composite consisting of a high-carbon steel case and low carbon steel core.
- When this composite is quenched to martensite and tempered, the high hardness and strength of the case microstructure, combined with the favorable case compressive residual stress developed by interaction between the case and core during quenching, produce very high resistance to wear, bending fatigue, and rolling-contact fatigue.

## Flame Hardening

# Flame Hardening

Flame hardening is one of the surface hardening process of iron and steel. The area needed to be harden is heated rapidly to Austenitizing condition by high temperature flame of mix gas of propane and oxygen, then quickly be quenched to get high hardness.

**The flame hardening process has advantages to improve abrasion resistance and fatigue limit by not only high hardness but also by compressive residual stress created by this process.**



The process has no limit of part size and/or weight, and is suitable and economical for small scale production. The cost for making induction coil can be neglected.

For more Product & Service Information, please contact us