

**HLQ**

INDUCTION HEATING EQUIPMENT

Induction Hot Forming Titanium Rod

1.25" (31.8 mm) titanium rods heated through for hot forming: a thirteen-turn helical coil brings both the surface and the centre to 1700 °F (926.7 °C) within 60 seconds, verified by two optical pyrometers.

**1700 °F**

(926.7 °C)

60 s

surface and centre

70 kHz

DW-HF-60kW

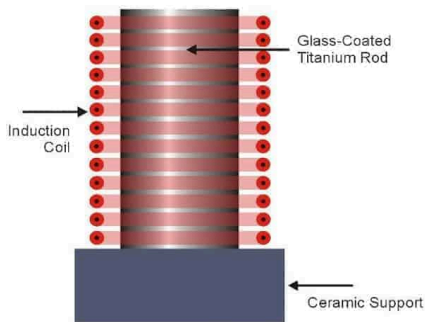
13 turns

helical coil

01 The HLQ titanium rod case

Objective: heat a titanium rod to 1700 °F (926.7 °C) within 60 seconds for hot forming.

Item	Case data
Material	Titanium rods, 1.25" (31.8 mm) diameter, 5" (127 mm) length (glass-coated rod on a ceramic support in the case drawing)
Temperature	1700 °F (926.7 °C)
Frequency	70 kHz
Equipment	DW-HF-60kW induction heating system with a remote workhead
Coil	Specially designed thirteen-turn helical coil
Measurement	Two optical pyrometers measure the surface and centre temperature
Result	Surface and centre both reach 1700 °F (926.7 °C) within 60 seconds
Benefits	Improved production rates with minimal defects; improved mechanical properties; even distribution of heating



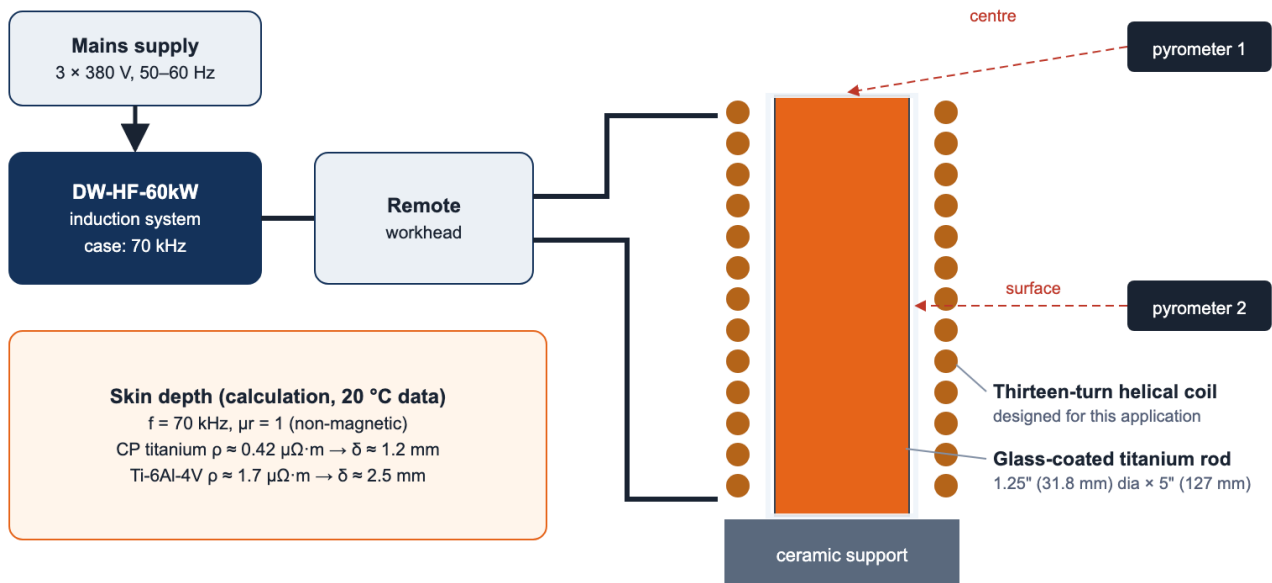
Case drawing (coil, glass-coated rod, ceramic support) and coated titanium rods (original HLQ images).

02 How it works

Induction Hot Forming Titanium Rod – Through Heating

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A thirteen-turn helical coil heats a Ø31.8 × 127 mm titanium rod so that surface and centre both reach 1700 °F (926.7 °C) within 60 s.

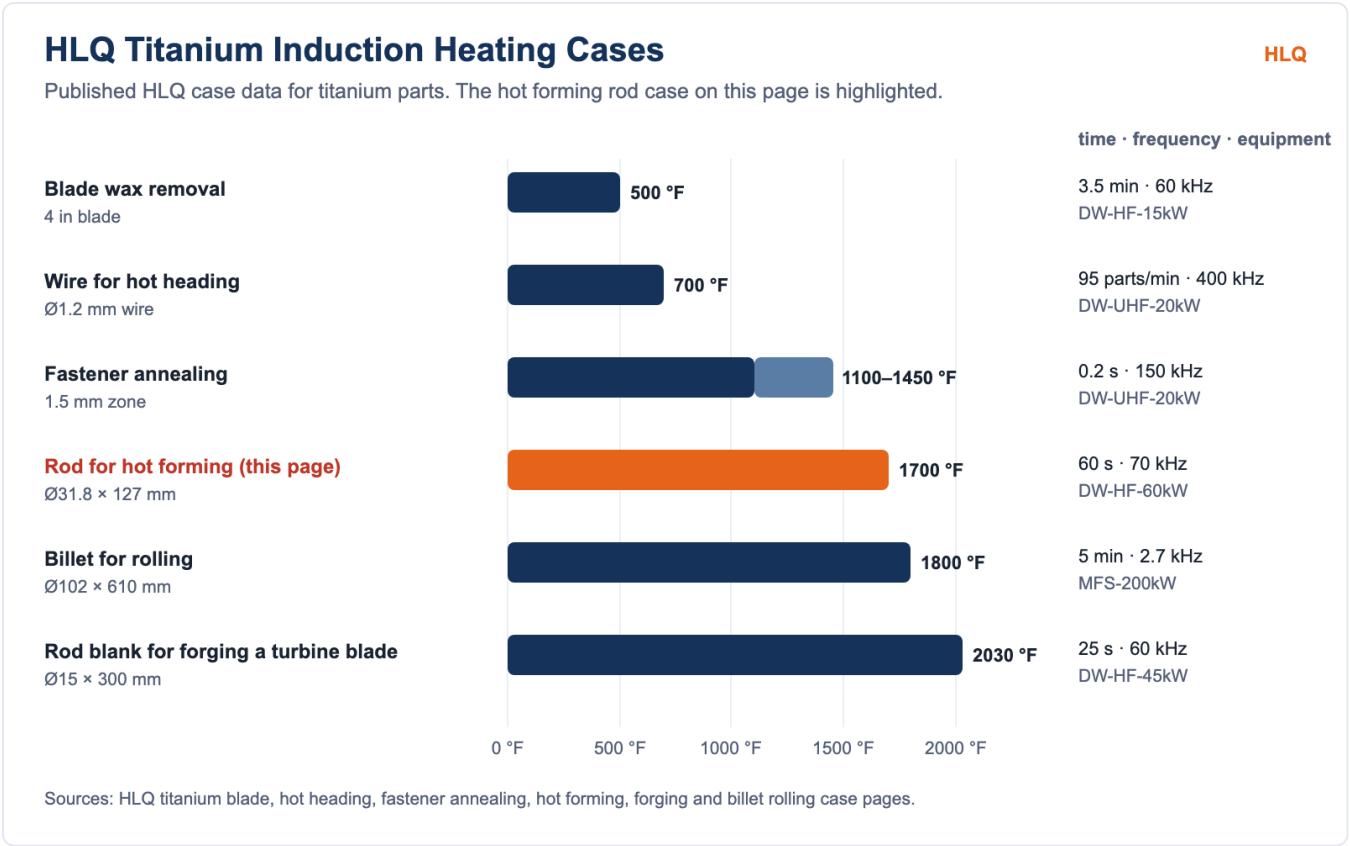


The centre is heated by conduction from the induced surface layer; both points reach 1700 °F within 60 s (case data).

Schematic section based on the HLQ case drawing; not to scale. Pyrometer positions are illustrative.

Titanium is non-magnetic ($\mu_r = 1$). At 70 kHz the calculated skin depth is about 1.2 mm for commercially pure titanium and 2.5 mm for Ti-6Al-4V (20 °C resistivity data), small compared with the 31.8 mm rod diameter. Heat is induced near the surface and conducts to the centre; in the case both points reached 1700 °F within 60 s.

03 HLQ titanium cases

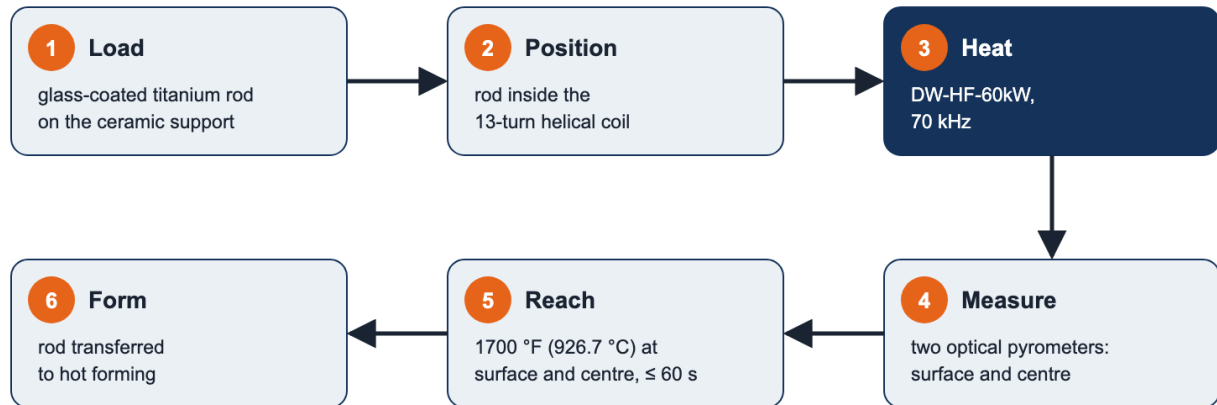


04 Process workflow and station layout

Titanium Rod Induction Hot Forming – Process Workflow

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Sequence from the HLQ titanium rod case (DW-HF-60kW, 70 kHz, thirteen-turn helical coil).



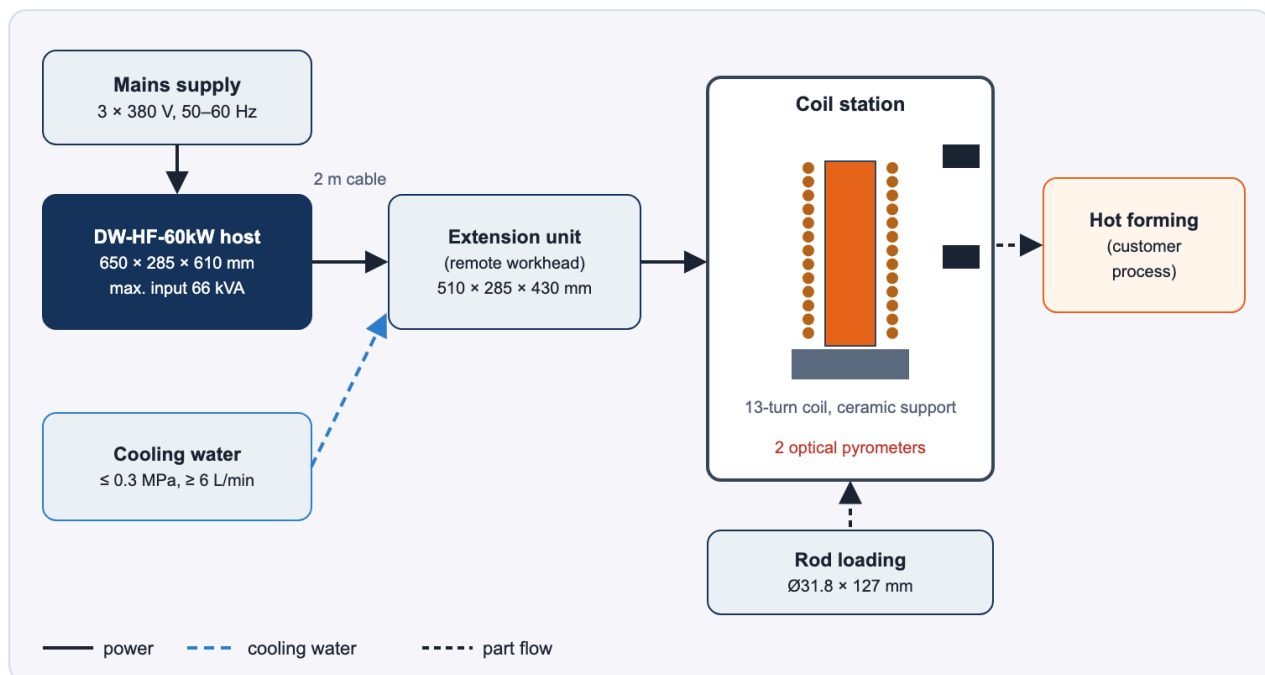
Control points

- Measure both surface and centre temperature – the rod must be heated through
- Same coil, position and 60 s cycle for every rod
- Coil designed and developed specifically for the rod size

Titanium Rod Hot Forming Heating Station – Typical Layout

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Schematic, not to scale. DW-HF-60kW host and extension unit, coil station with pyrometers, and transfer to hot forming.



05 DW-HF-60kW specifications

Parameter	DW-HF-60kW
Input power supply	3 × 380 V, 50–60 Hz
Oscillating power	Max. 60 kVA
Max. input power	66 kVA
Oscillating frequency	30–80 kHz
Oscillating current	20–120 A
Duty cycle	100% at 30 °C
Cooling water	≤ 0.3 MPa, ≥ 6 L/min
Host size / extension size	650 × 285 × 610 mm / 510 × 285 × 430 mm
Weight / cable length	90 kg / 2 m

Titanium jobs and power supplies (HLQ cases)

Titanium job	Power supply	Frequency
Ø31.8 mm rod for hot forming	DW-HF-60kW	70 kHz
Ø15 mm rod blanks for forging	DW-HF-45kW	60 kHz
Ø102 mm billet for rolling	MFS-200kW	2.7 kHz

06 Frequently asked questions

What was heated?

Titanium rods, 1.25" (31.8 mm) diameter and 5" (127 mm) long.

What temperature and time?

1700 °F (926.7 °C) at both surface and centre, within 60 seconds.

Which equipment and frequency?

A DW-HF-60kW with a remote workhead, at 70 kHz.

Which coil?

A specially designed thirteen-turn helical coil.

How was the temperature verified?

Two optical pyrometers measured the surface and the centre.

What were the benefits?

Improved production rates with minimal defects, improved mechanical properties and even heating.

What do I send for a quote?

Rod grade, diameter, length, target temperature, cycle time and output.

Why choose HLQ

Heated through

Surface and centre at 1700 °F.

60 s cycle

Improved production rates.

Minimal defects

Even distribution of heat.

Custom coils

13-turn helical design.

Titanium experience

Six published cases.

Full range

DW-HF, DW-UHF, MF series.

Request a titanium heating proposal

Send us the rod grade, size, target temperature and cycle time. We will propose the coil, power supply and temperature measurement.

Email

sales@dw-inductionheater.com

Tel / WhatsApp / Telegram

+86 131 5596 5571

Website

dw-inductionheater.com

Factory address

Jiangbei Village, Wusha Area, Chang'an Town,
Dongguan City, Guangdong Province, China
523859

Please include in your inquiry

- Titanium grade (CP, Ti-6Al-4V...)
- Rod diameter and length
- Target temperature and cycle time
- Parts per hour
- Available supply and cooling water