

**HLQ**

INDUCTION HEATING EQUIPMENT

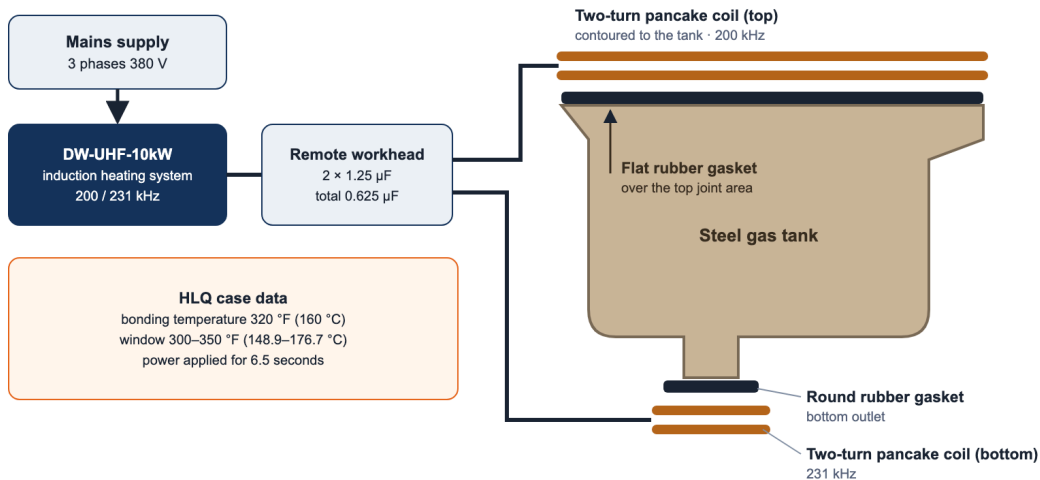
Induction Bonding Rubber to Steel

Flat and round rubber gaskets bonded to the top and bottom of a steel gas tank: two contoured two-turn pancake coils heat the gasket areas evenly, reaching the 320 °F (160 °C) bonding temperature in 6.5 seconds with a DW-UHF-10kW.

Induction Bonding Rubber to Steel – Working Principle

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Contoured pancake coils heat the steel gas tank at the gasket areas; the rubber gaskets bond at 320 °F (160 °C).



Result: repeatable, rapid and accurate heating cycles; reduced process time; even distribution of heat.

Schematic after the original HLQ drawing; not to scale. Data from the HLQ induction bonding rubber to steel case.

320 °F

(160 °C) bonding

6.5 s

heating time

200 / 231 kHz

flat / round gasket

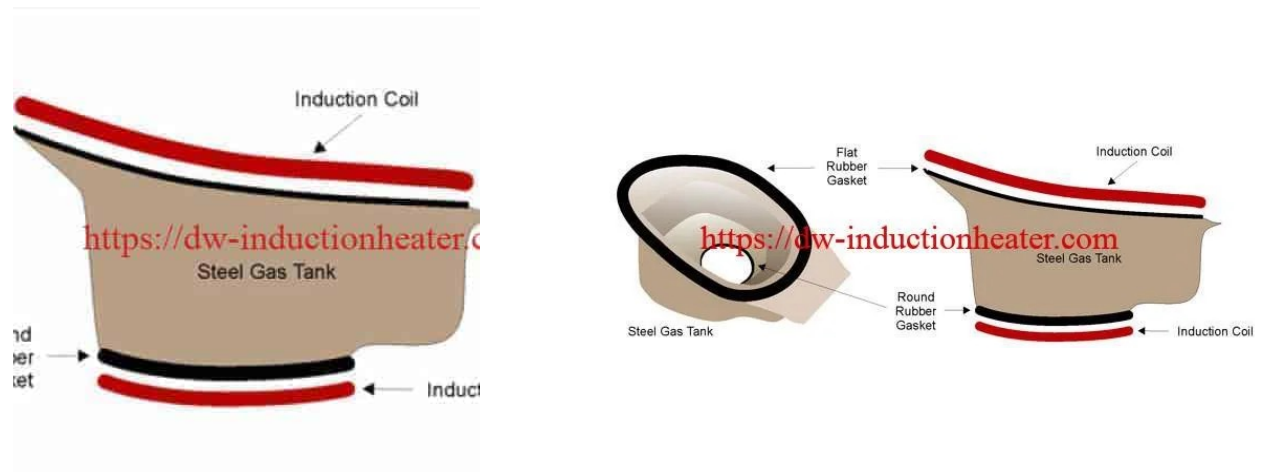
DW-UHF-10kW

2 x 1.25 µF

01 The HLQ rubber-to-steel bonding case

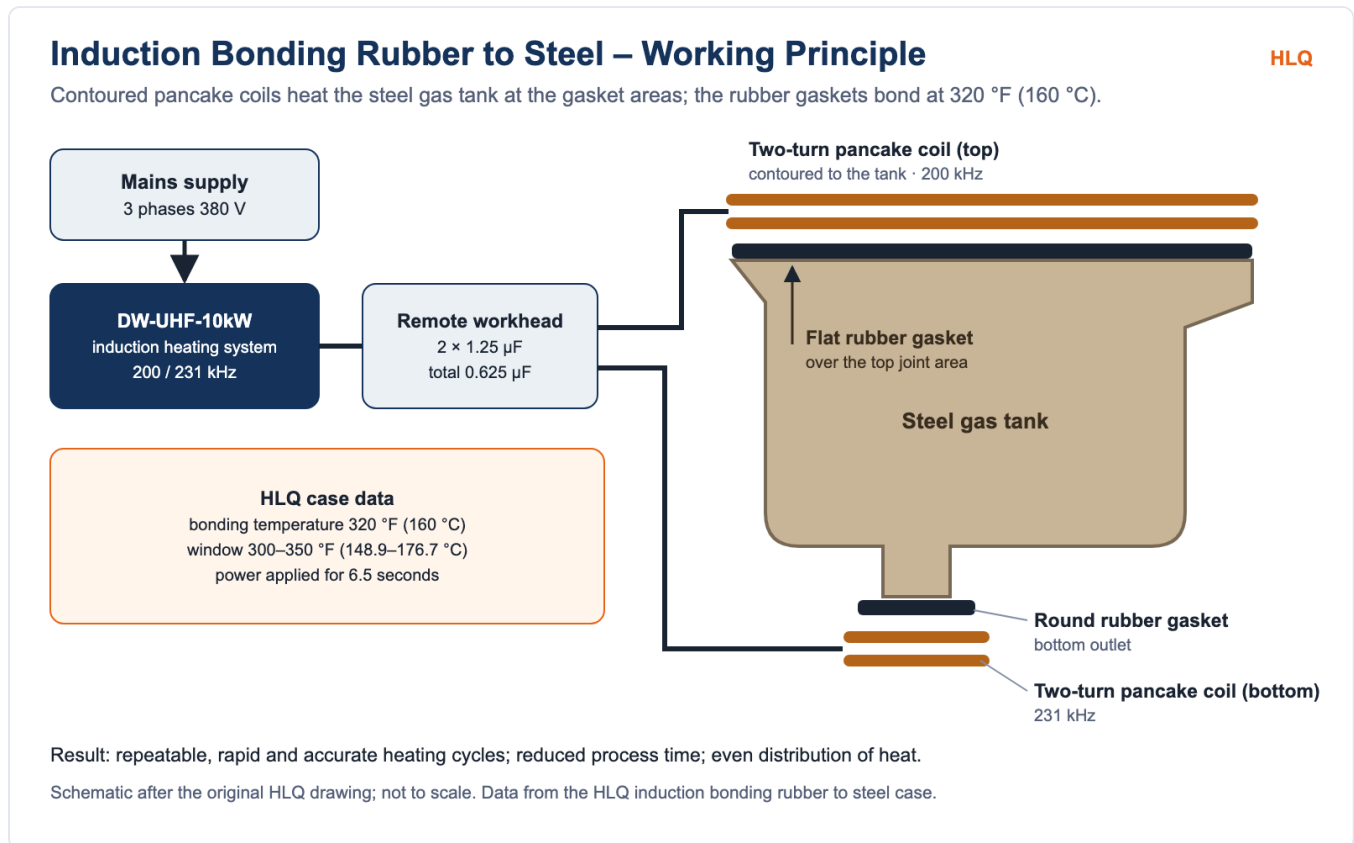
Objective: bond rubber gaskets to the top and bottom of a steel gas tank assembly.

Item	Case data
Material	Flat and round rubber gaskets; steel gas tank assembly
Temperature	300 to 350 °F (148.9–176.7 °C); bonding temperature 320 °F (160 °C)
Frequency	200 kHz for the flat gasket; 231 kHz for the round gasket
Equipment	DW-UHF-10kW induction heating system; remote workhead with two 1.25 µF capacitors (total 0.625 µF)
Coil	Two two-turn pancake coils, contoured to the shape of the steel assembly
Process	Gaskets positioned over the joint areas; power applied for 6.5 seconds to reach 320 °F (160 °C)
Results	Repeatable, rapid and accurate heating cycles; reduced process time; even distribution of heat



Steel gas tank with flat and round rubber gaskets and the two induction coils (original HLQ drawings).

02 How it works



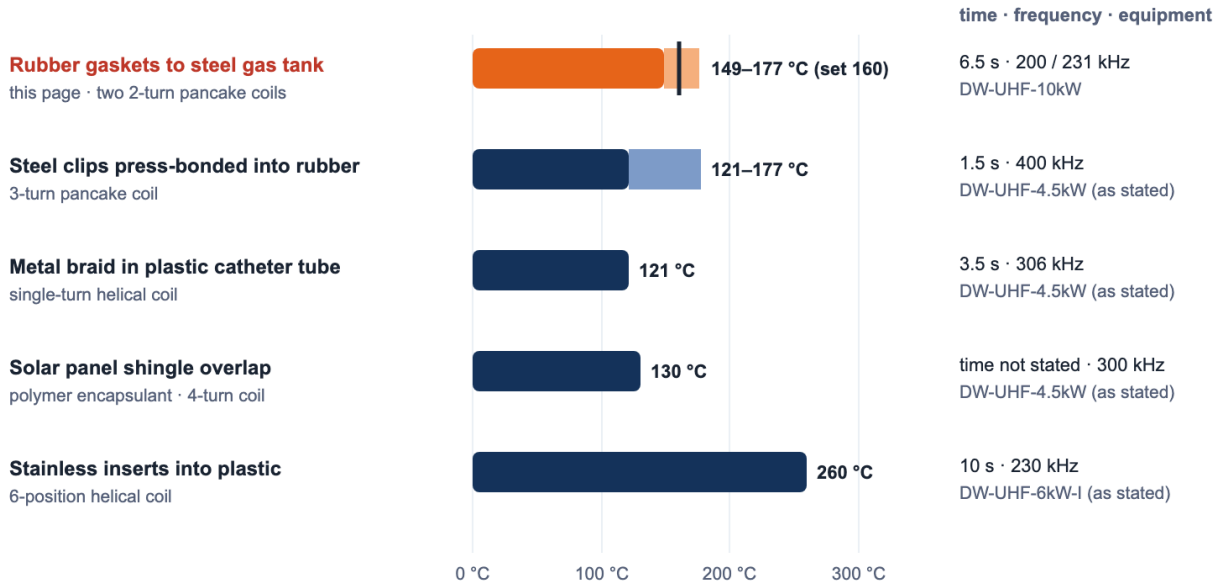
The pancake coils are contoured to the steel tank, so the induced heat is produced uniformly in the gasket areas. The steel heats the rubber gaskets positioned over the joints to the 320 °F (160 °C) bonding temperature.

03 HLQ rubber and polymer bonding cases

HLQ Rubber and Polymer Bonding Cases

HLQ

Published HLQ data: bonding temperature, heating time, frequency and equipment.



Highlighted: this page (300–350 °F window, 320 °F bonding temperature). °C from the °F values where given.

Sources: HLQ rubber-to-steel, steel-into-rubber, catheter tube, solar panel and stainless insertion cases.

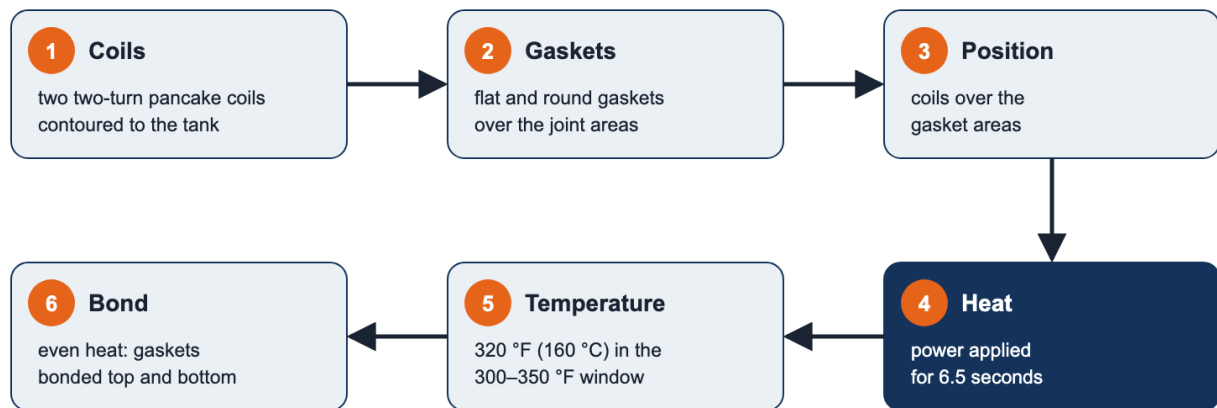
Case	Temperature	Time	Equipment
Rubber gaskets to steel gas tank (this case)	320 °F (160 °C)	6.5 s	DW-UHF-10kW, 200 / 231 kHz
Steel clips into rubber	250–350 °F (121–177 °C)	1.5 s	DW-UHF-4.5kW, 400 kHz (as stated)
Plastic catheter tube braid	250 °F (121 °C)	3.5 s	DW-UHF-4.5kW, 306 kHz (as stated)
Solar panel shingle	130 °C	–	DW-UHF-4.5kW, 300 kHz (as stated)
Stainless inserts into plastic	500 °F (260 °C)	10 s	DW-UHF-6kW-I, 230 kHz (as stated)

04 Process workflow and station layout

Rubber Gasket Induction Bonding – Process Workflow

HLQ

Sequence from the HLQ case: rubber gaskets bonded to a steel gas tank with a DW-UHF-10kW.



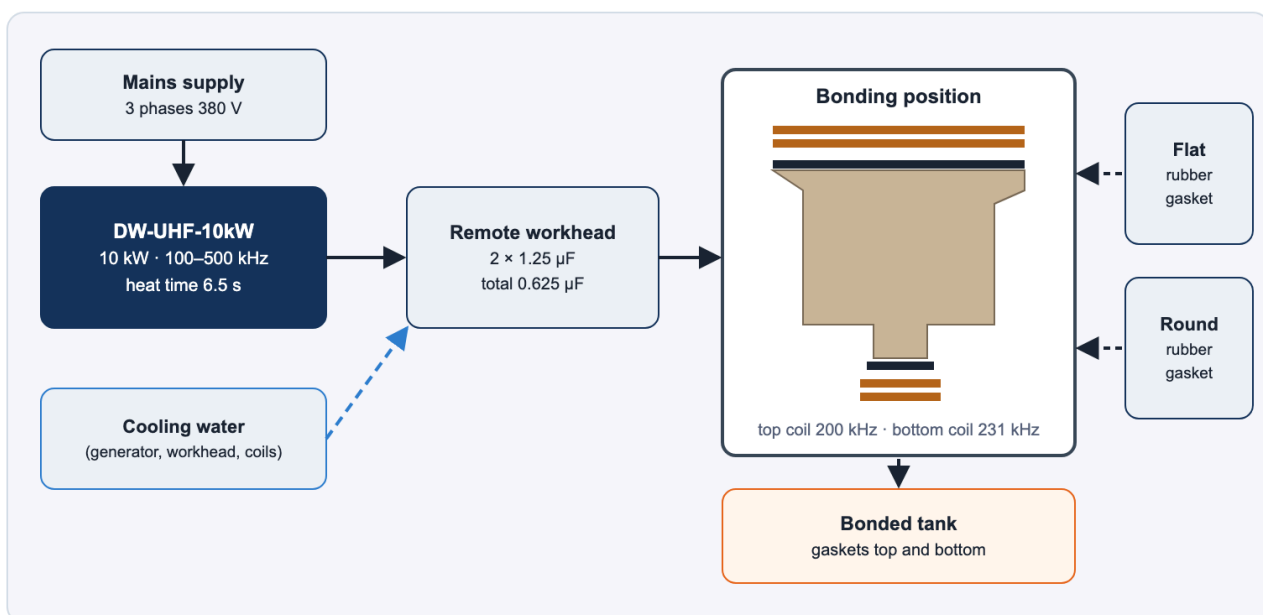
Case data and results

- DW-UHF-10kW; remote workhead with two 1.25 μF capacitors (total 0.625 μF)
- Frequency: 200 kHz for the flat gasket; 231 kHz for the round gasket
- Repeatable, rapid and accurate heating cycles; reduced process time; even heat distribution

Rubber-to-Steel Bonding Station – Typical Layout

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Schematic, not to scale. DW-UHF-10kW, remote workhead, top and bottom pancake coils on the tank, cooling water.



DW-UHF-10kW (HLQ model table): 10 kW, max. input current 15 A, 100–500 kHz, 3-phase 380 V, 100% duty cycle.

— power / handling - - - cooling water

05 DW-UHF series for rubber bonding

Model	Power	Max. input current	Frequency	Supply
DW-UHF-4.5KW	4.5 kW	20 A	1.1–2.0 MHz	1-ph 220 V
DW-UHF-6.0KW	6.0 kW	28 A	300–1100 kHz	1-ph 220 V
DW-UHF-10KW	10 kW	15 A	100–500 kHz	3-ph 380 V
DW-UHF-20KW	20 kW	30 A	50–250 kHz	3-ph 380 V

HLQ model table, 100% duty cycle. This case: DW-UHF-10kW at 200 / 231 kHz, inside the listed range.

Rubber and polymer bonding jobs (HLQ cases)

Job	Power supply	Frequency	Time
Rubber gaskets to steel tank	DW-UHF-10kW	200 / 231 kHz	6.5 s
Steel clips into rubber	DW-UHF-4.5kW	400 kHz (as stated)	1.5 s
Catheter tube braid	DW-UHF-4.5kW	306 kHz (as stated)	3.5 s

06 Frequently asked questions

What was bonded?

Flat and round rubber gaskets to the top and bottom of a steel gas tank assembly.

What temperature?

A 300–350 °F (148.9–176.7 °C) window; bonding temperature 320 °F (160 °C).

How long?

Power is applied for 6.5 seconds.

Which frequency?

200 kHz for the flat gasket and 231 kHz for the round gasket.

Which equipment?

A DW-UHF-10kW with a remote workhead (two 1.25 µF capacitors, total 0.625 µF).

Which coils?

Two two-turn pancake coils contoured to the shape of the steel assembly.

What do I send for a quote?

Assembly drawing, gasket material and bonding temperature, cycle time and output.

Why choose HLQ

6.5 s cycle

Rapid bonding.

Repeatable

Accurate heating cycles.

Even heat

Uniform gasket areas.

Contoured coils

Shaped to the part.

Rubber and plastic

Gaskets, seals, inserts.

DW-UHF range

4.5–20 kW.

Request a rubber bonding test

Send us the steel assembly, the gaskets and the bonding temperature. We will propose the coils, fixture and power supply.

Email

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Tel / WhatsApp / Telegram

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Website

dw-inductionheater.com

Factory address

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Dongguan City, Guangdong Province, China
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Please include in your inquiry

- Steel part drawing
- Rubber gasket type and size
- Bonding temperature window
- Cycle time and parts per hour
- Available supply and cooling water