

INDUCTION SHRINK FITTING



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Induction Shrink Fitting:

Refers to the use of induction heater technology to pre-heat metal components between 150°C (302°F) and 300°C (572°F) thereby causing them to expand and allow for the insertion or removal of another component. Typically the lower temperature range is used on metals such as aluminium and higher temperatures are used on metals such as low/medium carbon steels. The process avoids the changing of mechanical properties whilst allowing components to be worked. Metals typically expand in response to heating and contract on cooling; this dimensional response to temperature change is expressed as a coefficient of thermal expansion.

In this case thermal expansion is used in a mechanical application to fit parts over one another, e.g. a bushing can be fitted over a shaft by making its inner diameter slightly smaller than the diameter of the shaft, then heating it until it fits over the shaft, and allowing it to cool after it has been pushed over the shaft, thus achieving a 'shrink fit'. By placing a conductive material into a strong alternating magnetic field, electrical current can be made to flow in the metal thereby creating heat due to the I²R losses in the material. The current generated flows predominantly in the surface layer. The depth of this layer being dictated by the frequency of the alternating field and the permeability of the material.

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Advantages of Induction Heater over oven:

- No delay
- Cost effective
- Uniform heating
- Consistent quality
- Energy efficiency - Due to the heat being generated within the component energy transfer is extremely efficient. The induction heater heats only the part not the atmosphere around it.

Advantages:

- Quick and total solution of coil design & fixture based on years of experience.
- Manual, semi-automatic, automatic & CNC controlled fixtures available depending on the requirement of sophistication in production line.
- Rugged and reliable equipment
- Excellent after sales service.
- Inbuilt safety circuits for machine & operator
- Customized fixture available

Equipment supplied for Shrink Fitting

Model No.	Power	Frequency	Job Example
IH - 5	5kW	450KHz	Progressive Techno
IH - 10	10kW	450KHz	Godrej Ge Appliances, Voltas, Carrier, GE Motors
EDI-10	10Kw	50-80KHz	Tecumseh
EDI-15	15Kw	50-80KHz	Tecumseh, Videocon
EDI-20	20Kw	50-80KHz	Aplicom
EDI-25	25Kw	50-80KHz	Pressmatics

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