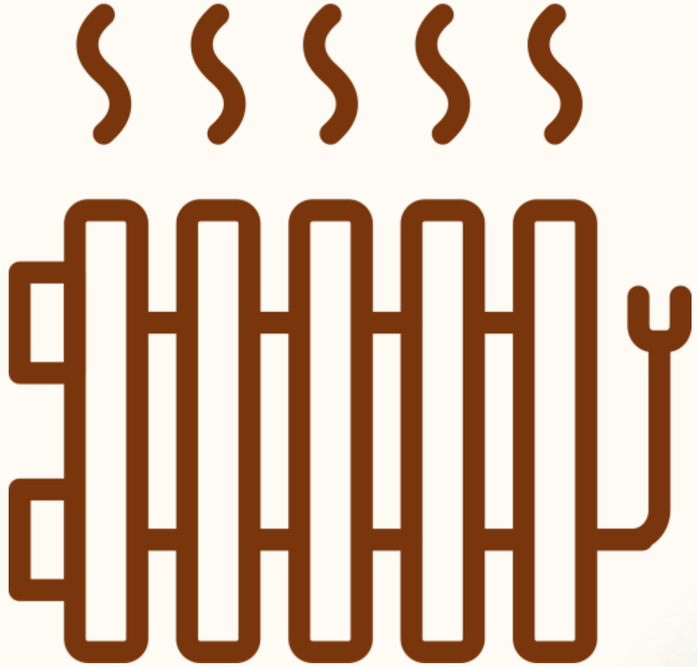
PRESENTED BY : HARISH J
REG.NO: 312323114050



THERMIC FLUID HEATERS IN INDUSTERIS

DEPARTMENT OF MECHANICAL ENGINEERING

WHAT?

WHY?

TFH

HOW?

WHERE?

What is TFH's ?

Thermic Fluid Heaters (TFHs) are widely used in industries where precise and consistent heating is required.They are non-pressurized systems that use heat transfer oil (thermic fluid) instead of steam or water.Especially used in industries like plywood, laminates, textiles, and plastics where machines like hot presses require constant high heat.

For Example

NAME : STM-1815

MAXIMUM WORKING TEMPERATURE: 350'C/662'F

SOLIENOID VALVE: JANATICS 24KW/HALF INCH

Real time Machine Link:

Why it is used in Industries ?

- ***Precise temperature control*** *– The machines like hot presses need exact heat levels.*
- ***Safety*** *– No high-pressure steam, so less risk of explosion.*
- ***Less maintenance*** *– No water scaling or corrosion.*
- ***Better efficiency*** *– Almost all the heat from the fuel is used. No steam loss.*

Why use Thermic Fluid Heater instead of Boiler?

- ***Boilers need high-pressure equipment, safety valves, and licenses.***
- ***Steam can leak or explode if not handled properly.***
- ***Thermic fluid heaters are compact, easier to install, and don’t need water treatment.***
- ***They save energy, reduce operational cost, and give consistent heat.***

In hot press machines, we don’t need steam, we just need heat.

So, using a thermic fluid heater is a smart, safe, and energy-saving choice.

THERMIC FLUID HEATER Vs BOILERS

Feature	Thermic Fluid Heater	Boiler
Fluid	Oil	Water/Steam
Pressure	Low	High
Temperature	High	Medium
Safety	Safe	Risky
Efficiency	Better	Moderate
Startup Time	Fast	Slow
Maintenance	Easy	Frequent
Scaling/Corrosion	No	Yes
Cost	Lower	Higher
Application	Heating	Steam-based

Where Thermic Fluid Heaters Are Used

- Plywood & Laminate – Hot press heating
- Textile – Dryers, stenters
- Plastic & Rubber – Mould & roller heating
- Chemical – Reactors, dryers
- Food Processing – Fryers, oil heaters
- Bitumen Plants – Tank & pipeline heating

In short: Used where high, safe, and steady heat is needed without steam.

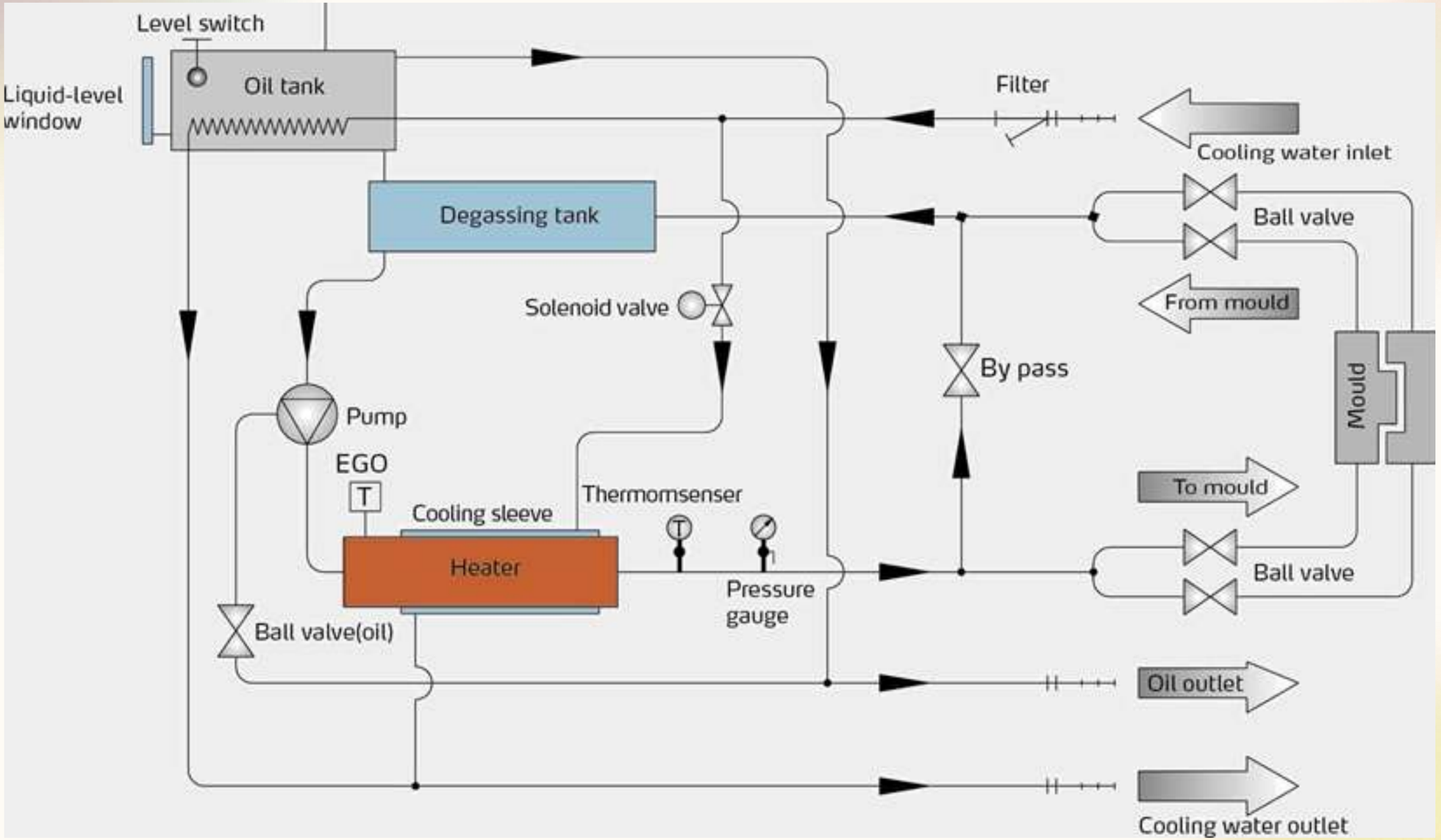
For Example :

The Shine STM 1815 is paired with a 650-ton hot press and is mainly used for manufacturing rubber grinding wheels. The red mould seen here is used to shape the grinding wheels during the pressing process. This setup uses a four-column press structure, which provides better pressure distribution and stability. The mould is connected to Shine's temperature-controlled system to ensure even heating, which is crucial for maintaining the quality and consistency of the final product. This machine plays a key role in producing industrial-grade rubber grinding wheels.

How it is used in industries ?

- ***Fuel Combustion*** *– A burner heats up coils using diesel, gas, or coal.*
- ***Heat Transfer*** *– Thermic fluid inside the coil absorbs the heat.*
- ***Circulation*** *– A pump circulates this hot oil to the end-use machine.*
- ***Heat Exchange*** *– The machine (like hot press) uses the heat for its operation.*
- ***Return Cycle*** *– The cooled oil returns back to the heater for reheating.*
- *This process repeats continuously like a closed heat loop.*

This is the Work flow Diagram for Shine TFH



Conclusion

Thermic Fluid Heaters are the backbone of indirect heat supply in industries. For machines like hot presses, they offer a clean, efficient, and safe way to transfer high heat. Compared to boilers, TFHs are simpler, smarter, and safer. That's why they are replacing traditional boiler systems in many industries.

Thank you