

**Technical Status, Market Trends and Future Development**

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**LUVATA**  
Partnerships based success


The Dubai 2009 Special Technology Seminar: Advanced Heat Exchangers for Locomotives and Heavy Equipment

**Contents**

- Technical status
- Market trends
- Future development

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**Several types of heat exchangers are in production**



- Radiators
- Charge air coolers (CAC)
- Oil coolers
- Heaters
- Inverter coolers (hybride veh.)

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**Examples of design targets with CuproBraz**

- Higher performance
- Lower pressure drop
- Smaller size →



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**CAC for Valtra tractor by Finnradiator** 



- Same or better performance in smaller size than Al
- Lower front of tractor – better visibility for driver

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### Why CuproBrazed?

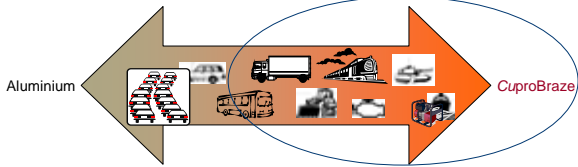


**Durability!**

Corrosion resistance    Repairability    Size



### Applications predominantly on heavy duty segment



**Aluminium**


**Volume segment (Light duty)**

- Cost
- Weight

**CuproBrazed**

**Premium segment (Heavy duty)**

- Durability
- Downtime cost
- Corrosion resistance
- Repairability
- High pressure
- High temperature



### Bombardier









### Young Touchstone




### Denso

### SHAAZ




URAL- IVECO



KAMAZ



LIAZ



UAZ



MAZ - MAN



**Najico** 



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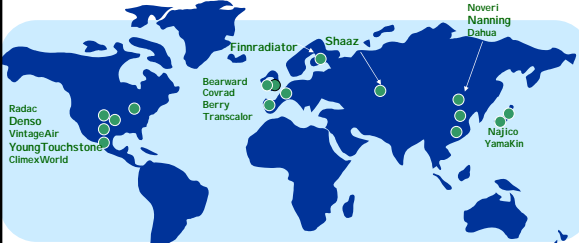
**Bearward** 



Radiator for genset

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**CuproBrazed technology is established**  
 in production or production capability



Production scale since year 2000.  
 About 30 h/e manufacturers at different evaluation stages

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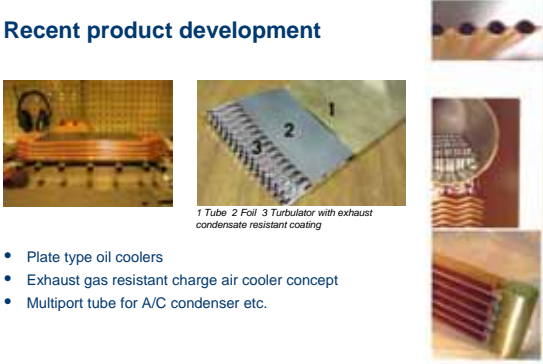
**Replace flat fins by square wave corrugated fins in HD applications!**

- Strong construction
- Low clogging tendency
- Washable
- Brazing friendly
- Saving in labour cost



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**Recent product development**



1 Tube 2 Foil 3 Turbulator with exhaust condensate resistant coating

- Plate type oil coolers
- Exhaust gas resistant charge air cooler concept
- Multiport tube for A/C condenser etc.

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**Support**

**CuproBraz® Alliance**  
An International Alliance for CuproBraz® Heat Exchanger Technology

www.cuprobraz.com

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**Summary**

- Already 10 years of experience on CuproBraz production and products
- There is new development potential for the next 30 years.
- The companies within CuproBraz Alliance can help customers from idea to production

More info:  
[www.cuprobraz.com](http://www.cuprobraz.com)  
[www.luvata.com](http://www.luvata.com)  
Luvata's CuproBraz Brazing Handbook  
[markku.ainali@luvata.com](mailto:markku.ainali@luvata.com)

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