

# CASE STUDY 30

## (REPLACEMENT OF NEAT OIL TO WATER-DILUTABLE CUTTING COOLANT FOR MAGNESIUM MACHINING)



### CUSTOMER DETAILS :

A leading defense organization manufacturing spare barrels, spares for artillery & tank guns & other defense equipments.



### OBJECTIVES FOR CONDUCTING THE TRIAL

1. To achieve the required finish & dimensional accuracy.
2. To eliminate fire risk & reduce heat generated during machining.
3. To increase productivity because they have to stop the machine due to overheating of job.
4. To increase tool life.
5. Customer is looking for cost viable solution.



### OPERATING / APPLICATION DETAILS:

1. Machine : HMT make CNC machine
2. Tank Capacity : 200 Ltrs
3. Part : SABOT (Component used in Missile)
4. Material : Magnesium
5. Application : Turning, Boring, threading, knurling
6. Cycle time : 15 to 20 minutes
7. Tool – Multiple tools
8. Filtration : Conventional mesh type filter to remove chips

9. Chiller unit : Not Available

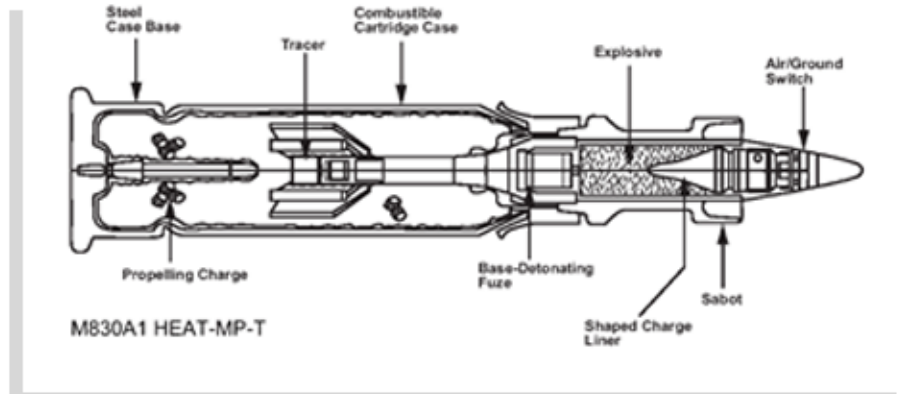
10. Existing product : Competitor neat oil.

11. Our Product : Water-dilutable coolant at 10% concentration

12. Trial period - 1 Week



### PICTURE SHOWING SABOT IN FINAL ASSEMBLY



**PRODUCT RECOMMENDED: EMULCUT 2850 MG**

## TRIAL RESULTS



Achieved required dimensional accuracy.



Problem of overheating was resolved.



Productivity increased as no stoppage of machine



Customer has benefited with huge saving (approx. 30%) in comparison to neat oil of Competitor.