

# RECP Best Practices Catalogue

*Installation of a separation system of  
the oil/iron mixture by centrifugation*

*Developed within the framework of MED TEST II*



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is  
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# Best Practice - Installation of a separation system of the oil/iron mixture by centrifugation

<b>SECTOR:</b>	<b>Metal, electrical and motor vehicle parts</b>
<b>Branch:</b>	Manufacture of parts and accessories for motor vehicles
<b>CATEGORY</b>	Process control or modification
<b>APPLICABILITY</b>	Process

<b>COMPANY SIZE</b>	500
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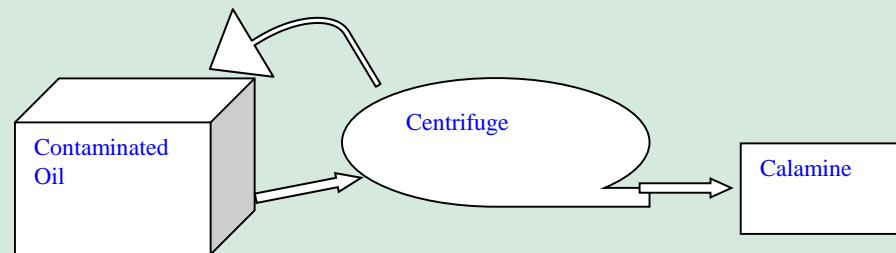
## Description of the Problem (Base Scenario):

After the heat treatment comes the quenching operation, which consists in immersing the strips in an oil bath. This operation generates iron oxide in the bath (about 300 kg in 15 days). In order to separate the oil and calamine, the oil and iron mixture accumulated each time is put in a drilled can for drainage. This being the case, the iron recovered after drainage is contaminated by oil and is hazardous waste (6,000 kg/year). It also results in overconsumption of oil, soil pollution and labour implication for cleaning

## Description of the Solution

the installation of a centrifugation-based iron/oil separator (a continuous load) offers a number of benefits:

- Reducing hazardous waste (oil-contaminated iron)
- Savings in terms of labour and cleaning time
- Giving value to recovered iron (selling the iron as scrap)
- Oil savings



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## Economic Gains

€ 11,370

- Reduction of hazardous waste (oil-contaminated iron) 6,000 kg/year (x € 0.1/kg) = € 600/year
- Labour savings (cleaning): 120 h/year
- Sale of recovered iron as scrap: 6,000 kg/year x € 0.045/kg = € 270/year
- Oil savings: 3,500 L/year x € 3/kg = € 10,500

## Environmental Gains

- Savings of 3,500 L of oil, which amounts to 100% of the oil consumed
- Reduction of 6 tons of hazardous waste, or 3.24% of hazardous waste

## Health and Safety Impact

Improvement of work conditions



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**Capital Investments & Financial Indicators**      € 12,500  
Time for Return on Investment: 1.1 year

**Supplier Information**      Imported

**Other Aspects**      Productivity enhancement

**Implementation**      Under implementation



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