

Remanufacturing - Sustainability for the 21st Century



SUSTAINABLE DEVELOPMENT

OUR FOCUS & COMMITMENT

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Discussion Topics



- ① What is Remanufacturing?
- ② What are the benefits of remanufactured products?
- ③ What concerns are being voiced about trade in reman goods?
- ④ What modernization of trade laws are we seeking?



Reduce

Reuse

Recycle

Caterpillar is Making Progress Possible



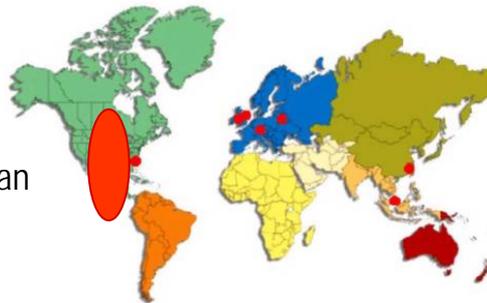
Leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The company also is a leading services provider.



Caterpillar Total Sales and Revenues 2011: \$60.138 billion
Caterpillar Total Employees 2011: 125099 full-time

Cat Reman:

- 17 facilities worldwide
- 2.5M ft² of manufacturing (230k m²)
- +4.100 employees dedicated to reman
- Leverage Cat R&D spend

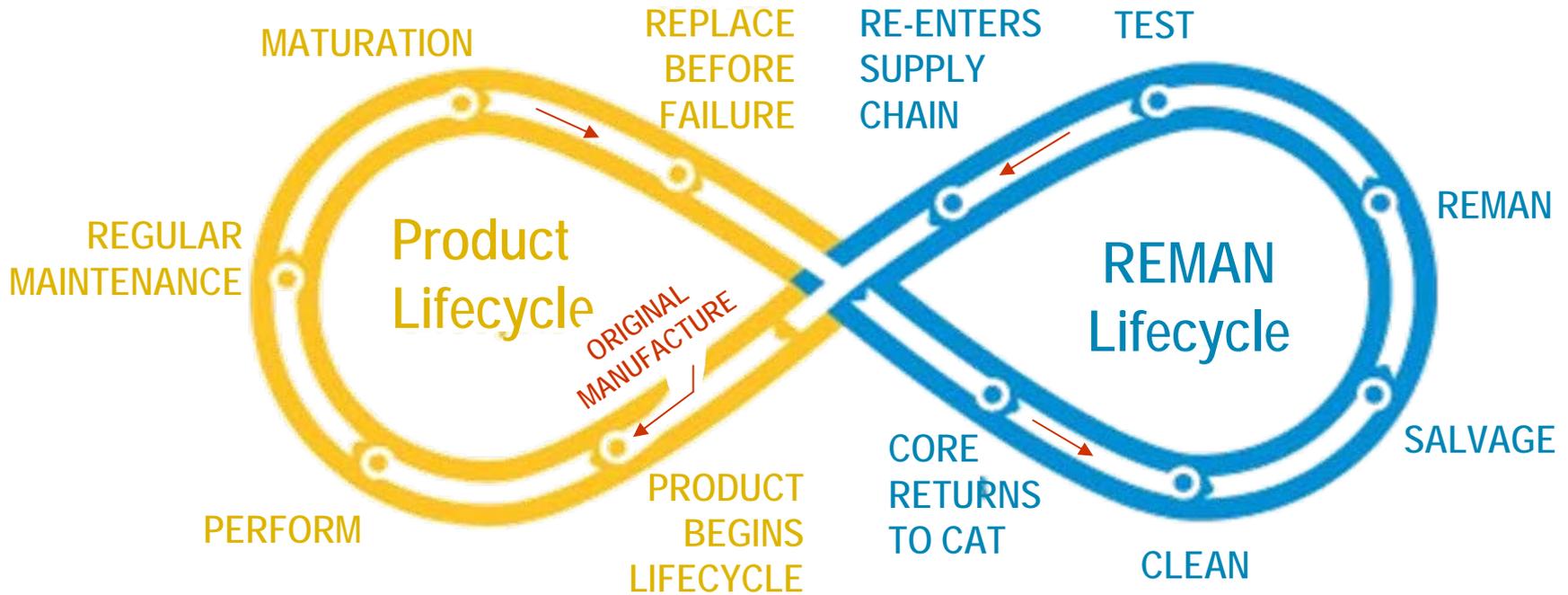


Remanufactured Products

- 2.2M units (161M lbs/73M kg) recovered in '11
- 6000+ different products
- Full line servicing Cat engines & machines
- Remanufacturing services for 3rd party OEMs
 - Auto, truck, rail, military



What is Reman?



Remanufacturing: The process of returning an end-of-life, broken or blemished product to “same-as-new” condition in a manufacturing environment.

Help customers lower owning & operating costs
and realize their machine/ engine value

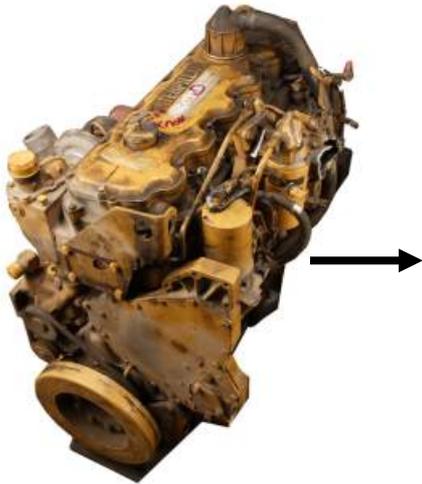


Reduce Reuse Recycle

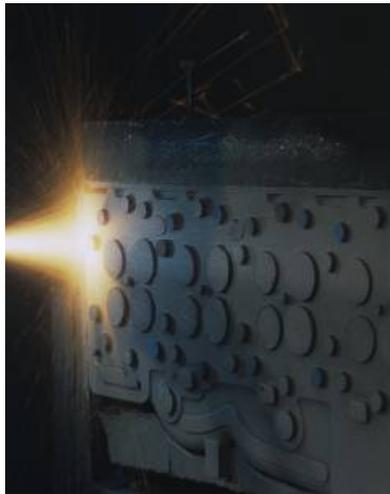


The Reman Business Model...

End-of-life
Material



Advanced Recycling
Technology



New Material



Assembly & Test



1. *Remanufactured Products are brought back to original condition*
2. *Remanufactured Products have “Same-as-New” quality & reliability*
3. *Remanufactured Products are not “Used Goods”*
4. *This is an exchange business*

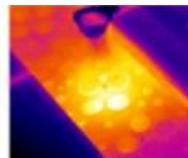
Reduce Reuse Recycle



Remanufacturing... sustainability benefits

Cylinder Head* Reman vs. New

GreenHouse Gas	61% less
Water use	93% less
Energy use	86% less
Safety	82% advantage
Material use	> 99% less
Landfill space	> 99% less

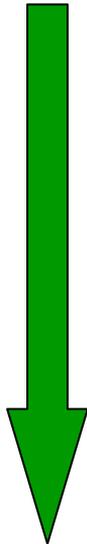


This is an Exchange Business

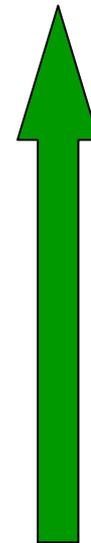
Remanufacturing Benefits



Less



Green House Gases
Raw Material Use
Landfill Waste
Energy Use
Water Use
Cost to Customer



Value to Customer
Recycling
Jobs
Sustainable Industry Profitability
Affordable Development
Controlled Industrial Processes

More

Reman – Trade Concerns



Existing laws for new parts apply to remanufactured parts

- | | | |
|---|-----------------------|--|
| ① | Consumer safety | <i>Existing consumer protection laws apply</i> |
| ② | Dumping of used goods | <i>Reman core recovery (1-for-1 exchange)</i> |
| ③ | Intellectual Property | <i>All existing Intellectual Property laws apply</i> |
| ④ | Labeling | <i>Truth-in-labeling laws apply
Unique Reman part numbers & labeling</i> |
| ⑤ | Product quality | <i>Same-as-New warranty
Recognised by ISO, IMO,
multiple Free Trade Agreements</i> |

No Multilateral common reference for remanufactured parts

- ① Available freely to customers in most countries
- ② Too many countries still impose tariff and non-tariff barriers on remanufactured goods
 - Classified as « used » goods
 - Import prohibited
 - Core export prohibited
 - Heavy bureaucratic processes

What are we seeking?



Trade law modernization...

**Multilateral common reference to be used
for remanufactured goods,
as discussed within the Doha Round**



- ❶ **Removal of Non-Tariff Barriers on remanufactured products in India, China, Turkey, Brazil,**
- ❷ **Recognition of remanufacturing as environmentally friendly**
- ❸ **Equal treatment for both new & remanufactured goods**
- ❹ **Free flow of returned cores to facilitate entire process**

**Best achieved through a WTO multilateral approach
APEC Pathfinder Agreement**

Remanufacturing...

Good for Customers

Good for Business

Good for the Environment



For more information about
our company, visit
www.caterpillar.com

