

HOT CATALYST HANDLING



Advantages

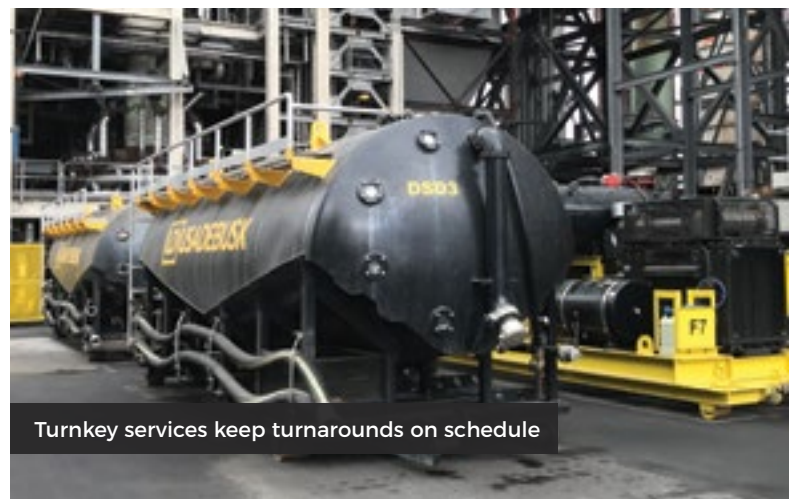
- Fast removal and change-out
- Enhanced safety
- Savings on equilibrium catalyst expenses
- Reduced spent catalyst disposal costs
- Bulk transportation
- Transloading
- Environmental services and recycling
- Spent hopper dust control
- Catalyst storage, management and distribution

USA DeBusk provides complete catalyst support services for FCCU turnarounds—including confined space entry—from the time the blowdown process begins through final removal and storage of material.

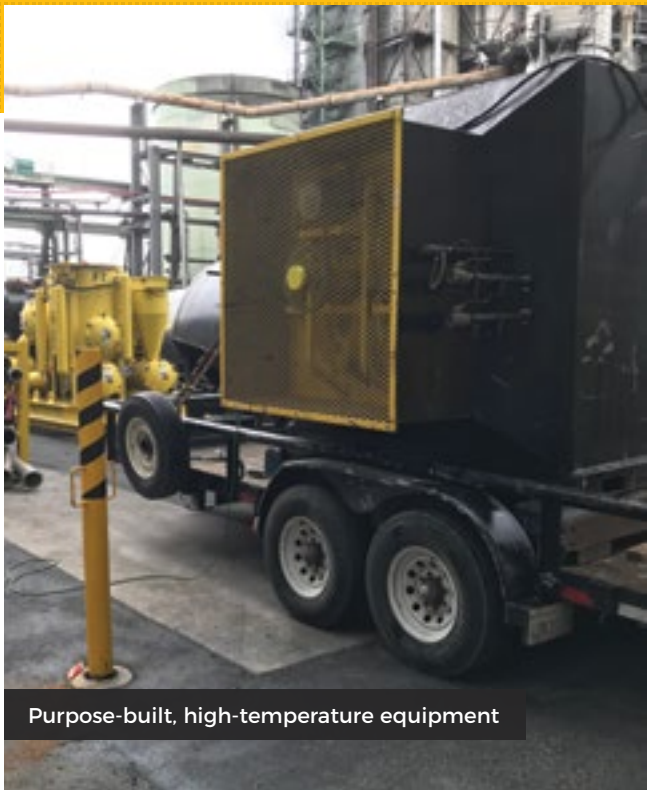
Our proprietary techniques and equipment allow removal of catalyst during unit shutdown, eliminating wait time for cooling and expediting unit turnover to maintenance.

USA DeBusk has performed hot catalyst removal for every major refiner in North America. Our teams consist of highly trained and experienced specialists dedicated to catalyst turnarounds.

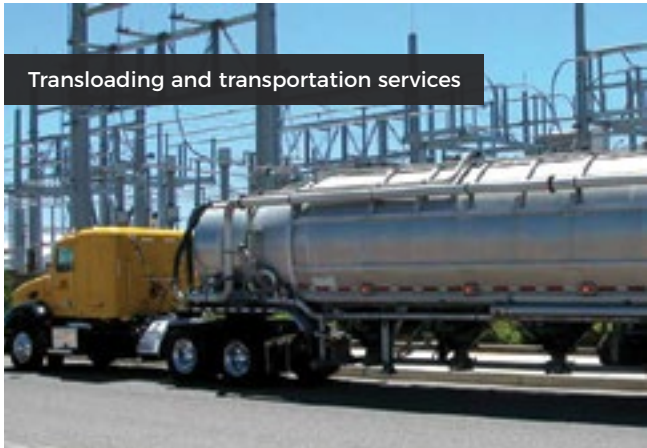
As part of a turnkey package of services, USA DeBusk also offers bulk transportation, transloading, environmental services and spent catalyst recycling, and secure storage for fresh or equilibrium catalyst.



See our video at:
www.usadebusk.com/hot-catalyst



Purpose-built, high-temperature equipment



Transloading and transportation services

HOT CATALYST HANDLING
SAVES ENTIRE DAYS
FROM TURNAROUND
SCHEDULES WHILE
RECOVERING CATALYST
FOR RE-USE

FASTER, SAFER, MORE EFFECTIVE

USA DeBusk's proprietary technology includes vacuum equipment capable of handling catalyst up to 1,250°F (677°C), cutting entire days from the shutdown schedule. Our team begins vacuuming catalyst immediately after the main air blower shuts down, while operations personnel are performing LOTO and blinding. Vacuuming from multiple draw points and using a robotic system for enhanced access, we remove most of the residual catalyst before entry is made. These procedures minimize manned entry time and total time on site, improving safety and mitigating risks.

Our systems and equipment are purpose-built for safety and productivity and include:

- High-temperature valves
- Stainless steel hoses for abrasive, hot materials
- High-strength hose clamps
- Purpose-built screen boxes and heat exchangers
- Spent hopper dust control
- Specially designed vacuum trailers

VENTING SUPPORT

USA DeBusk can supply venting support during the operations blow-over, which offers a number of benefits:

- Saves time—an average of nine hours versus traditional operations unit de-inventory
- Enables emissions-free catalyst unloading
- Eliminates dusting from the vacuum inductor
- Eliminates plugging, increases catalyst velocity and fluidization
- Allows positive determination of de-inventory

DE-INVENTORY SUPPORT

USA DeBusk provides de-inventory support for hoppers undergoing hot storage inspections. Advantages include:

- Capable of removing all material required for entry
- Fully closed-loop process—material is never exposed to the environment
- Material can be removed while hot, saving time
- Full control over flow and volume removed
- Re-inventory material after inspections and repairs are completed