

# Loading & Unloading Catalyst

Rojan Sanat Alborz Company is using the most up to dated equipment, and also experienced technical staff and administrative in loading and unloading of any type of reactors such as Fixed bed, Tubular, Radial flow, Down flow, Reformer and specific reactors which are used in petrochemicals and refineries.

In addition of catalyst loading with Sock Loading method, we are able to do with Dense Loading method as well, which is catalyst is not exposed to damage and volume of loading catalyst will be increased to 20 per cent.

As far as time plays an important role during overhaul in petrochemical and refineries, using of industrial vacuum unit lead to speed up the process, accuracy of unloading and reduce the risks that threaten the human resources.

## Technical specification of catalyst vacuum unit (RSA-HSG):

- Suitable for suction and unloading of dangerous / flammable materials
- Suitable for catalyst suction under Nitrogen closed cycle
- Air Pulse system for cleaning filters and increasing their efficiency
- Safety filter made of stainless steel
- Vacuum: 96% bar
- Engine power: 180-320kw
- 15 m<sup>3</sup>/h suction speed for unloading of catalyst with the density below 1 kg/m<sup>3</sup>
- Ability of unloading with flexible tubes (1-8 inch)
- Nitrogen cooling system
- Stationary and mobile equipment
- Suction air flow: 8000-9000 m<sup>3</sup>/h
- Temperature: 1400C
- Noise Level: 75 db in 70 % vacuum





Rojan Sanat Alborz Company is using the most up to dated equipment for loading of catalyst called DPC Unit which increases the transfer rate and loading speed inside the reactor and it leads to decrease overhead costs such as human resources, crane, truck and forklift.

#### References:

- Catalyst loading and unloading of olefin unit in Maroon hydrogenation petrochemical
- Catalyst loading and unloading of olefin unit in Maroon Arsenic Petrochemical
- Catalyst loading and unloading of olefin unit in Maroon Dryer Petrochemical
- Catalyst loading and unloading of EO/EG in Maroon petrochemical
- Unloading of dryers in Maroon petrochemical in 1389, 1390 and 1392
- Catalyst loading and unloading of RCD unit in Shazand Imam-Khomeini petrochemical
- Catalyst loading and unloading of EB/SM unit in Pars petrochemical
- Dryer unloading of D-2007 in Bandar Imam petrochemical
- Unloading of Phase 9 &10 in South Pars project

#### Equipment list of RSA:

- 3 vacuum unit with 9000 m<sup>3</sup>/hr suction power
- 3 vacuum unit with 5000 m<sup>3</sup>/hr suction power
- 4 vacuum unit with 8000 m<sup>3</sup>/hr suction power
- 3 container of tools and equipment for maintenance projects
- 4 cars
- 5 vans
- 2 industrial sweeper
- 2 trucks
- 9 semitrailer
- 10 truck tractors
- 5 equipped workshops in Tehran, Asalouyeh, Ahwaz, Neyshabor and Rafsanjan.

#### Pressure Vessels:

- Maximum diameter 1800 mm
- Content approx. 1 m<sup>3</sup> effective
- Working pressure 5 Bar
- Opening top side 300 mm
- Pressure sensors
- Capacity level sensors, signals full and empty
- Top butterfly valve 300 mm pneumatic controlled
- Top pressure 75 mm. Pneumatic controlled
- Material stainless steel 304
- Piping and flanges in stainless steel 304
- Vent valve 125 mm. Pneumatic controlled with filter and return flow.
- Bottom discharge with flange 150 mm. Pneumatic controlled Quetsch valve
- Top chute to load either Big-Bags or Flow-Bins
- Lifting supports and forklift pockets
- Plexiglas piping piece for optical flow assessment
- Conus angle 60°
- Test pressure 7,15 Bar