

## Benefits of dP equipment



Accurate



User-Friendly



Simple & Fast



Consistent



Reliable



## CATALYST HANDLING SPECIALIST

Your one-stop-shop for **SAFE** and **EFFICIENT** reactor turnarounds.  
We have made it our goal to create a name for ourselves that is synonymous with Quality, Safety, Customer Care, and Innovation!



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# WORLD LEADER IN CATALYST HANDLING

UNIPAC® Catalyst Loading  
Technology for Steam  
Methane Reformer



## UNIPAC®

UNIPAC® is a simple and fast loading technology for loading reformer tubes with catalyst, applicable to tube sizes from 3" to 10" internal diameter. UNIPAC® requires no pre-socking of catalyst and no vibration of the reformer tubes. UNIPAC® combines being a high quality and fast loading technology. Reloading of tubes is normally avoided, and less catalyst is wasted.

UNIPAC® principle: Catalyst is loaded into the tube and the loading rope is gradually pulled out of the tube as the catalyst layer builds up. The brushes with flexible springs reduce the speed of the catalyst particles so that breakage is avoided. The catalyst particles are loaded without bridges and unnecessary voids, hence there is no need for vibration.

By applying the UNIPAC® technology the loading time of the primary reformer can be substantially reduced whilst maintaining high quality loading.

UNIPAC® technology ensures even gas flow in the tubes, and the pressure drop variation is kept to a minimum. The density will normally be higher than with the "sock" method, resulting in slightly increased, but more even pressure drop, due to better packing. Since there are no extra voids, further settling of the catalyst, and thus pressure drop increase, will be minimal. UNIPAC® gives high uniform density along the full length of the tube, decreasing the risk of hot spots and

## dP Equipment

HPA provides an accurate and reliable equipment for reputable accuracy of pressure drop measurement. The dP equipment comes complete with a variety of inflatable bladder to cater the clients reformer tube internal diameter size correctly, restriction orifice to achieve critical air-flow during dP measurement test.

The HPA dP Equipment is very userfriendly with its light weight design and digital reading up to three (3) decimal points. This increases the accuracy of the measurement and reduces the time consumed without compromising the quality if the data obtained.

UNIPAC® technology is used for loading of all common catalyst types and sizes. Reformer tube designs with varying internal diameter, narrow or wide top section, have successively been loaded.

## Benefits of UNIPAC®

- 01** Fast reformer loading
- 02** No presocking of catalyst
- 03** No vibration of the tubes
- 04** Uniform pressure drop
- 05** Less waste of catalyst
- 06** No bridging or extra voids:
  - Minimises hot spots
  - Reduces catalyst settling
- 07** High uniform density:
  - Lower tube wall temp
  - Prolonged tube life
  - Increase reforming capacity

