Reformer Tube Catalyst Loading System

UNIDENSE®

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

UNIDENSE® 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.

UNILOADER®

The UNILOADER® is a machine to automatically load reformer tubes with catalyst using the UNIDENSE® principle. UNIDENSE® is a leading and proven technology used within the SYNGAS market to load primary reformers with catalyst.

The UNILOADER® brings new benefits to the UNIDENSE® technology. The possibility for human error is eliminated as all tubes are loaded at exactly the same manner and speed, resulting in high uniformity and reducing the pressure drop variation to ±3% (For new reformers, ±2% is possible). This improved performance is achieved up to 20% faster loading. Attached vacuum cleaner and carefully designed air flow ensures dust-free loading.

BENEFITS UNIDENSE®

➢ Fast reformer loading,
➢ No pre-socking of catalyst
➢ No vibration of the tubes
➢ Uniform pressure drop
➢ Less waste of catalyst
➢ No bridging or extra voids
  - Minimizes hot spots
  - Reduces catalyst settling
➢ High uniform density
  - Lower tube wall temp.
  - Prolonged tube life
  - Increased reforming capacity