TOP LOADING ARMS

Top loading arms is still the most widely used method of filling mobile tankers around the world.
Some instances exist where liquids, mainly fuels, have been transferred to bottom loading, but this is largely through legislation and global agreements.

Top loading arm fixed range

Top loading arm variable range

Top loading arm long range

Top loading arm vapor recovery

There remain areas of the world where fuels are still top loaded. Generally these are small depots with low throughput, exploration facilities and countries where mass road tanker conversions have yet to take place.

Traditional top loading systems for petroleum/fuel comprise of a variable reach loading arm with a slow closure shut-off valve. These are mounted on standposts at gantry floor level and can service 2-3 manhole openings on a correctly positioned tanker.

Other industries are not so fortunate. The diversity, complexity and hazards encountered when transferring many liquids into general purpose tankers means that it is easier and quicker to retain top loading. Along with our fall prevention systems, we can make top loading very safe.

Top loading assumes the transport vessel is a simple barrel on wheels with a manhole in the top and a valve at the bottom. In almost all cases the tanker has no built-in high level detection or vapour return facilities. The advantage of top loading is that all the sophistication required can be fitted to the loading arm.

This can include:

- High (and high-high) level probe
- Vapour collection
- Vapour pressure monitoring
- Anti-drip valve
- Telescopic drop pipe (Anti-splash/static generation)
- Full wireless remote control of the arm movements

The arm is most suited for the loading of road or rail tankers using the manhole. The loading arm has a long reach and is suitable for applications where the manhole cannot be accurately positioned or loading is required to cover more manholes.

Because of the robust and high quality design of the swivel joints and the precise loading arm balancing, handling of the loading arm is very easy.

The “base” style of arm used primarily in the chemical industry is generally called the boom arm. The design utilises four swivel joints for articulation and has a supported boom, which means the part of the arm that moves vertically has a fixed length. This allows the spring cylinder to counter-balance a fixed load.
Because of this, items can be added to the arm during the design phase and have smooth and easy counterbalance. It also means that the arm has a wider range of articulation.

The boom loading arm is also used where displaced vapours need to be collected at the top loading connection and transferred back to the platform for safe disposal.

It is fitted with a cone to seal the manhole and a flexible hose which is piggybacked along the arm to a connection flange point.

BOTTOM LOADING ARMS

This type of loading arm is especially designed to transfer liquids and gases where vapour return is necessary. It is suitable for the bottom loading/unloading of road or rail tankers with flange connections or via a coupling. The bottom loading arms have a long reach and is suitable for applications where the tanker connection flange cannot be accurately positioned.

Because of the robust and high quality design of the swivel joints and the precise loading arm balancing, handling of the loading arm is very easy. Recent developments have allowed for six swivels to be used in each arm.
This gives true three axis movement at the tanker connection and makes handling the arm valves or accessories effortless.
The arms can be designed to connect to side and/or rear of the tanker and also cross over to suit the configuration of the tanker connections.

LPG LOADING / UNLOADING ARMS

LP series is designed to transfer LPG and other fluids under pressure from stocking depots to road or railway tankers and vice versa. It can be installed as single arm for liquid phase (LP300), or as loading/unloading station with both liquid and vapor phases (LP400). Different solutions are available, from the classic bottom design, to the top rail-tank loading/unloading system (Russian type).

- Standards and Regulation
  - 94/9/EC Directive (ATEX)
  - 2006/42/EC Directive (Machinery)
  - 97/23/EC Directive (PED)
  - API – ASTM – ANSI – TTMA Standards
- Swivels technical features
  - Single or double ball races (Series SJ400 or SJ200)

- Hardened and rectified ball races
- Double seal

- Technical specifications
  - Design temperature: -20 / +65°C
  - Design pressure: 40 bar
  - Test pressure: 60 bar
  - Flow rate @ 6 m/s:
  - 2” > 45 m3/h
  - 3” > 80 m3/h

METERING SKID

Matec can meet the needs of any bulk plant or major terminal seeking safe, clean and cost effective tanker charging and discharging facilities.

The growth in turnkey system solutions for pumping, metering and tanker loading has increased over the last few years. The expansion of chemicals distribution in remote parts of the world means that customers need to buy a system that is reliable.

Reducing site time and eliminating the variable quality of locally fabricated goods means that operators can buy plug-and-play systems to meet their exact and future needs.

Our skids are built from high quality fluid transfer products and their outstanding quality and robust reputation is proven around the world.