

### Introduction:

Top loading arms are designed to load (or unload) tanks by the top. These tanks can be either small containers (barrels), rail- / road tankers or ISO containers.

Standard top loading arms are provided with four swivel joints per product line and a balance system (counterweight or multi-coil spring cylinder).

Double top loading arms are designed especially to suit semi-closed loading of liquids. The construction of a double top loading arm provides two arms in parallel (one for vapour, one for liquid), ending with a manhole cone at the tank side.

Our loading arms are for the most part custom built to meet the customer's requirements.

### Three different systems for top loading can be distinguished:

#### Open Loading

Single top loading arms are designed especially to suit open loading or unloading of liquids that are not dangerous to health or environment.

#### Semi-closed loading

When loading liquids that are dangerous to health or environment, a top loading arm can be equipped with a manhole cone and vapour return line for semi-closed loading. The cone will cover the manhole during the loading sequence and the vapour in the tank will be led through the vapour line.

#### Fully closed loading

When loading or unloading liquids that are dangerous, pressurised or are not allowed air contact, the top loading arms can be equipped with a flange or coupler for closed loading. The arm will be connected to a fixed tank flange or coupler.

### Basic characteristics:

- Diameter : 1" (DN25), 2" (DN50), 3" (DN80), 4" (DN100) and 6" (DN150)
- Materials (piping) : carbon steel, stainless steel, low temperature steel, PTFE-lined steel, other materials on request.
- Seal faces : Stainless steel, duplex, Hastelloy, or other on request
- Seals : PTFE-C, PTFE-virgin, FPM, NBR, UHMW-PE, or others on request
- Balancing : counterweight or spring cylinder
- Temperature range : -200°C up to +300°C
- Pressure range : maximum 120 bar

# Top Loading Arms

## General description Bulletin 2/2

### Design data may include:

- Type of fluid, viscosity, temperature and pressure
- Capacity in cubic meters per hour (m<sup>3</sup>) or tonnes per hour
- Multi-product loading
- Number of different fluids at one loading station
- Number of loading arms filling simultaneously at one tanker
- PED 97/23/EC classification
- Required level of operators safety / area classification
- Environmental requirements
- Pigging requirements
- Integration with metering or weighbridge facilities, control and/or shutt-off valves
- Dimensional information of (existing) loading station and tankers

### Accessories:

- Mounting column or mounting plate.
- Cone on the drop pipe.
- Vapour-return hose alongside the loading arm.
- Different types of deflectors at the end of the droppipe such as plate, 45° edge or T-type.
- Heating systems (electric, steam/hot oil), with or without insulation.
- Telescopic drop pipe manually or pneumatically operated.
- Pneumatic press down system
- Pneumatic up/down system to move the drop pipe of the arm up or down.
- Two stage start and stop system.
- Vacuum Breaker
- Drip catcher for stored position
- Breakaway coupling in droppipe in case of a flanged connection at truck side.
- Nitrogen purge hose alongside the loading arm to pressurise the tank truck or rail road.
- Locking device for stored position.
- An extra swivel joint in case of a flanged connection at truck side.
- A vertical balance system together with the extra swivel joint.
- Top level control for open or close manhole (electrically or pneumatically ).
- Manually or pneumatically operated valve in arm.
- Mechanical lockdown device.

# Top Loading Arms

Counterweight & Spring Balanced  
1", 2", 3", 4", 6"  
**Bulletin TLA Models**

	COUNTERWEIGHT	SPRING BALANCED	
TLA 330			TLA 340
TLA 331			TLA 341
TLA 332			TLA 342
TLA 333			TLA 343
TLA 334			TLA 344
TLA 336			TLA 346
TLA 337			TLA 347
TLA 338			TLA 348

**STANDARD DIMENSIONS:** Are for A=1500 B=1700 C=1500, but can be changed to suit customers requirements  
**STANDARD MATERIALS:** Carbon steel; Stainless steel 304, 316; PTFE Lining is also possible  
**STANDARD SEALS:** Teflon (PTFE-C); Viton (FPM); BUNA (NBR), UHMW-PE

