

Demountable Flares

Elevated flares demountable from grade

Description

The flare system is composed of two or more flare stacks, supported by a common derrick structure. The flares are fully dismantlable: each flare riser, gas seal, flare tip and associated pilots are capable of being taken down and re-erected without taking other flares out of operation and without any personnel working above the riser.



The stacks are fully demountable from grade by means of hoisting/canting winches with motor drivers. The flare risers are supplied in flanged trunks whose length is minimum 18m. Each trunk is delivered to site in two sections having bevelled ready to be welded at site.

At the base of the stack a flanged hinge, linked to the relevant foundation by means of anchor bolts, allows the base trunk to rotate in a horizontal position.

Flare Stacks

Proper lifting lugs/tailing are provided on each trunk, to allow lifting of the trunks during erection/installation activities. Piping supports are welded to each riser trunk.

Each assembled trunk has also two guides, welded on the shell (upper and lower).

On each trunk, a small platform allows access to the bolts of the flanges, during demounting/mounting activities. The open side of this platform, i.e. the side without the handrails, matches the fix service platform installed on the Derrick Structure.

Selection of the material of each riser is in accordance to relevant specifications, while shell thickness is calculated from both process and structural point of view, and minimised to reduce to the max the size of the lifting system (winches/wire ropes etc.)

Derrick Structure

The Flare System is supported by means of a Derrick Structure, properly designed, in accordance to requested code.

The Derrick can be asymmetrical, with one flat side, and the risers are installed on this flat side, adjacent to relevant risers guides, or can be symmetrical with the stacks inside.

The Derrick has accessibility up to hoisting beam elevation by means of stairs or ladders, and up to tip flange elevation by means of ladders from hoisting beam elevation.



The Derrick Structure is provided with beams and reinforcements for support, guiding and locking the rigging mechanism.

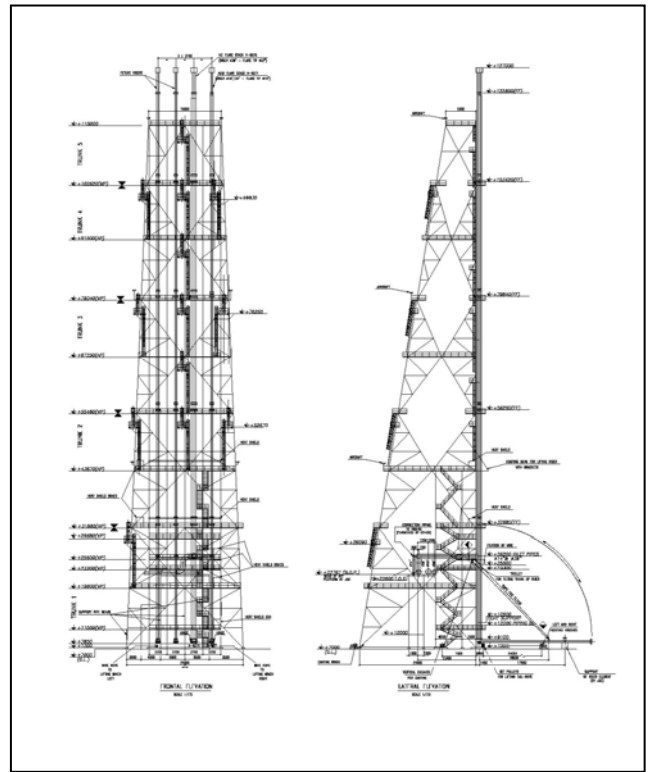
Riser Mounting /Demounting System

The whole Flare System is fully demountable from grade, in order to allow maintenance to a flare tip, even when the other flares are in operation.

Nevertheless the presence of the demounting system is recommended for the supply of access ladders/platforms up to the flare level, in order to allow access to the flare tip during pre-commissioning and commissioning, just in case any minor change shall be necessary.

Rigging Mechanism

- Hoisting Winch(es) c/w Motor mounted on skid fixed on foundation.
- Canting Winch c/w Motor mounted on skid fixed on foundation.
- Control Boxes.
- Limit switches for both High/Low position.
- Electronic Load Limit Switch.
- Single deflection pulleys, c/w support for ground fixing.
- Double deflection pulleys, c/w support for ground fixing.
- Upper coupled pulleys, c/w connection to hoisting beam, sharing the overall lifting load.
- Lower coupled pulleys, c/w support for ground fixing.
- Wire ropes.
- Lifting speed 1.2m/minute.
- Canting speed 0.9m/minute



References

- 2006 Shell Eastern -Singapore
- 1997 JGC/Shell (Malaysia)
- 1990 Snamprogetti (Italy)
- 1987 BP Sullom Voe (Scotland)

Related Hamworthy Products

- Smokeless Steam Assist Flare tips
- Smokeless Air Assist Flare Tips
- Smokeless Sonic Flare tips
- FFG Ignition Systems
- High energy Ignition systems
- Aircraft Warning Lights

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