LP (Low Pressure) Flare

With over 40 years experience in flare systems, Unit Superheated Engineering and birwelco undertook the deesign and manufacture of Low Pressure (LP) and High Pressure (HP) flares for a client.

Project overview -

- Materials - Mainly Incoloy 800H, but also Incoloy DS, Duplex Stainless Steel and Stainless Steel
- NDT - DPI and Radiography
- Dimensions- Base - 30'' NB flange, 24'' NB x 6 thk main body, Windshield - 6thk profiles
- Total weight - 620kg
- Design code - ASME VIII Div. 1, ASME IX, ASME B31.3
- Processes used -Cold rolling, cold pressing and forming

Brief description

A relatively simple assembly, made of austenitic heat resistant alloys designed for high temperature delivered from Germany, consisting of a bespoke flange machined in Spain, a set of cold rolled reducers, 2 metres long shell with retention segments rivetted on top, proof load tested lifting lugs and partially welded, partially rivetted windshield made of tens of strips.

CONTACT

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HP (High Pressure) Flare

With over 40 years experience in flare systems, Unit Superheated Engineering and birwelco undertook the deesign and manufacture of Low Pressure (LP) and High Pressure (HP) flares for a client.

Project overview

- Materials - Mainly Incoloy 800H, but also Incoloy DS, Duplex Stainless Steel and Stainless Steel
- NDT - DPI and Radiography
- Dimensions- Base - 18'' NB Flange, 24'' NB x 12 thk lower part and x 6 thk upper part main body, 6 off 8'' NB branches c/w bespoke cast nozzles, windshield - 6thk profiles
- Total weight - 1840kg
- Design code - ASME VIII Div. 1, ASME IX, ASME B31.3
- Processes used -Cold rolling, cold pressing and forming

Brief description

A relatively complex assembly, made of austenitic heat resistant alloys designed for high temperature delivered from Germany, consisting of 18'' RFWN flange; 18'' to 24'' cold rolled reducer; 4 metres long lower pressure main shell with retention segments rivetted on top; 8'' NB higher pressure branches, with bespoke nozzles on top, designed to divert gases to allow for supersonic gas flow; a set of lugs, bracing plates, branch clamps and rings; removable partially welded, partially rivetted windshield made of tens of vertical and horizontal strips; 200mm trunnions designated to aid transport of the complete construction to the top of the rig.

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HP/LP Flare

With over 40 years experience in flare systems, Unit Superheated Engineering and birwelco undertook the deesign and manufacture of Low Pressure (LP) and High Pressure (HP) flares for a client.

Project overview Materials -

- Mainly Incoloy 800H, but also Incoloy DS, Duplex Stainless Steel and Stainless Steel
- NDT - DPI and Radiography
- Dimensions- Base - 24'', 14'', 1.5'' NB FRWN Flanges, 36'' NB x 12 thk lower body, 18'' NB x 6 thk upper body, 14'' NB x 6 thk low pressure pipe, 1.5'' NB pilot gas system pipework, 8 off 8''NB branches, Windshield - 6thk profiles.
- Total weight - 4450kg
- Design code - ASME VIII Div. 1, ASME IX, ASME B31.3
- Processes used -Cold rolling, cold pressing, cold bending and forming

Brief description

A complex assembly consisting of the high pressure main shell with 8 branches, low pressure separate pipewrok and small bore pilot gas pipework. All made of austenitic heat resistant alloys designed for high temperature delivered from Western European Suppliers. The main part consisting of 24''NB flange, set of reducers, 36''NB lower part with 8 off 10''NB branches with bespoke nozzles on top, designed to divert gases to allow for supersonic gas flow, 18''NB upper body with retention segments rivetted on top, set of lugs, bracing plates, branch clamps, rings and blocks. The low pressure single 14''NB part consisting of set of buttwelded pipes with retention segments on top, fixed to the main shell. The pilot gas system small bore pipework consisting of 3 sets of buttwelded pipes, RFWN flanges and bespoke castings. Removable partially welded, partially rivetted windshield made of tens of vertical and horizontal strips to disturb the air flow around the flare tip in order to minimise vortices causing undisered vibrations. The Scanvinavian customer, which required the flare tip replacement, reported a number of cracks in supporting plates' welds in the old flare tip, caused by excessive movements/vibrations. The 3D model undergone cycling loading simulations in Solidworks to aid in identifying necesarry changes. The design had been improved by addition of bracing plates and full penetration welds.

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