

Piping Skids Complete Customised Solutions



Introduction

With an experience of several decades in the field of process and steam control instrumentation, Forbes Marshall provides end-to-end solutions in the form of stand-alone piping skids for fluid transfer along with control system customised to client's requirement for various Industries. A strong knowledge base coupled with an application oriented approach and precise engineering has made us the preferred supplier for these skids for handling services like cooling water, steam, nitrogen, argon and complex fluids like oxygen, hydrogen, natural gas and even coal tar.

The concept of complete piping and valve stations with field instrumentation as well as control systems, provides an enhanced value to Industry in terms of accurate control over process parameters and ensures safety. Forbes Marshall has installed proven packages for metal industries like steel, zinc, lead, cement and glass industries, including test bed automation.

Vast experience in handling complex fluids like oxygen, hydrogen, natural gas and even coal tar

Need for Piping Skids

Any process, be it purging of gases into molten metal or mixing of gases to achieve the required temperature control, requires precise control of flow and pressure. Further, with safety norms becoming more stringent, the use of precise instrumentation for a specific application, at a specific location is the need of the hour. This warrants a complete flange-to-flange skid with a control system, which ensures peace of mind for the process control and maintenance team.

Process and Energy Efficiency | Environment

Features

Optimum selection of MOC considering service compatibility Precise engineering and calculations considering velocities, pressure drops and required output conditions Design in accordance with available space and ease of maintenance Generation of drawings to directly superimpose on the plant piping scheme Pressure testing (pneumatic as well as hydraulic) and report generation as per requirements Pipe colour coding based on international practices Compliance to special requirements like degreasing, weld inspection, NDT inspections Prefabricated with internal wiring and tubing Engineering and supply of supplementary items like injectors/ spargers, heating systems, pumps etc.

Benefits

End-to-end solution for precise process parameters Improves economics by reducing wastage of precious commodities Precise ratio control, flow control for mixing, pressure and flow control for purging applications Selection of appropriate instrumentation to help address safety parameters Trends and back up for all the process parameters in the control system Compatibility with existing control system Ease of maintenance Project documentation in the form of a dossier for referencing and support data Adherence to safety parameters by selection of exact instrumentation In-house support for most of the instruments ensuring back-up data

Applications

Steel Industry Coke oven plant, BOF, EAF, EOF, LF, VD, VOD, blast furnace, CCM, AOD, reheating furnace

Industrial Gases Main pressure control, safety tripping protection

Power Burner

Glass and Other Metals Cupola, smelting furnaces

Natural Gas

Forbes Marshall Solutions for Piping Skids

Oxygen Enrichment

Complete piping and instrument-based system to enhance oxygen percentage in cold blast line to improve operating efficiency of the blast furnace.

Cooling Water Control

Skid based system consisting of valves, flow meters and other instruments to control temperature in different sections like Lance cooling system etc in steel plants.

Inert Gas Purging

In steel plants, molten steel is transferred to ladles and various alloys are added. Metal is churned by inert gas purging system

Utility Monitoring and Control

A software-based system which helps collect plant-wide data from different instruments in the plant, which can be utilised for further analysis.

Gas Mixing Station

Oxygen and argon / nitrogen / Air Piping skid for AOD convertors (Argon-Carbon Decarburiser). Oxygen and any one inert gas is fed in a predefined ratio depending on the required steel chemistry to be produced.

Oxygen / Nitrogen / Argon High Pressure Control

Skid based system to control and monitor high inlet pressure to desired outlet pressure. The system is provided with the necessary safety interlocks.

Steam Humidification

A piping and instrument-based system to inject steam in the cold blast line of the blast furnace. This, along with the oxygen enrichment system, helps in RAFT control.

Oxy-Fuel System

In the reheating furnace, fuel is enriched by injecting oxygen to improve its operating efficiency.

Coal Moisture Control

To reduce dust content in the plant from coal hoppers, a specific level of water is sprayed.

Coal Tar Injection

A skid based system to regulate pressure and flow of coal tar as a fuel to the furnace.

H2 - N2 Furnace Control

In an annealing furnace, a controlled atmosphere is maintained by adding hydrogen and nitrogen in the desired ratio.

LTTP for Gas Storage Tanks

A low temperature trip system is provided to ensure that oxygen gas is supplied in a vapour form.

BF-COGas Mixing

In integrated steel plants, blast furnace gas is generated which is normally used as a fuel. Calorific value of this gas is enhanced by adding the required coke oven gas and natural gas. Specialised logic is developed to control the addition of coke oven gas in the blast furnace gas to achieve the required calorific value and flow rate.

Burner Start Up

Fuel firing skids using LDO / HFO as auxiliary fuel which is injected into the burner. Atomising of the fuel is done using steam or air.

Few Projects

Furnace Oil Control Stations

Furnace oil / LSHS control skids pressure and flow control with heat tracing system and pre-heater



BOF O2 Skid

EAF O₂ Blowing Skid



Oxy-fuel Skid-Reheating Furnace



AOD Skid





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