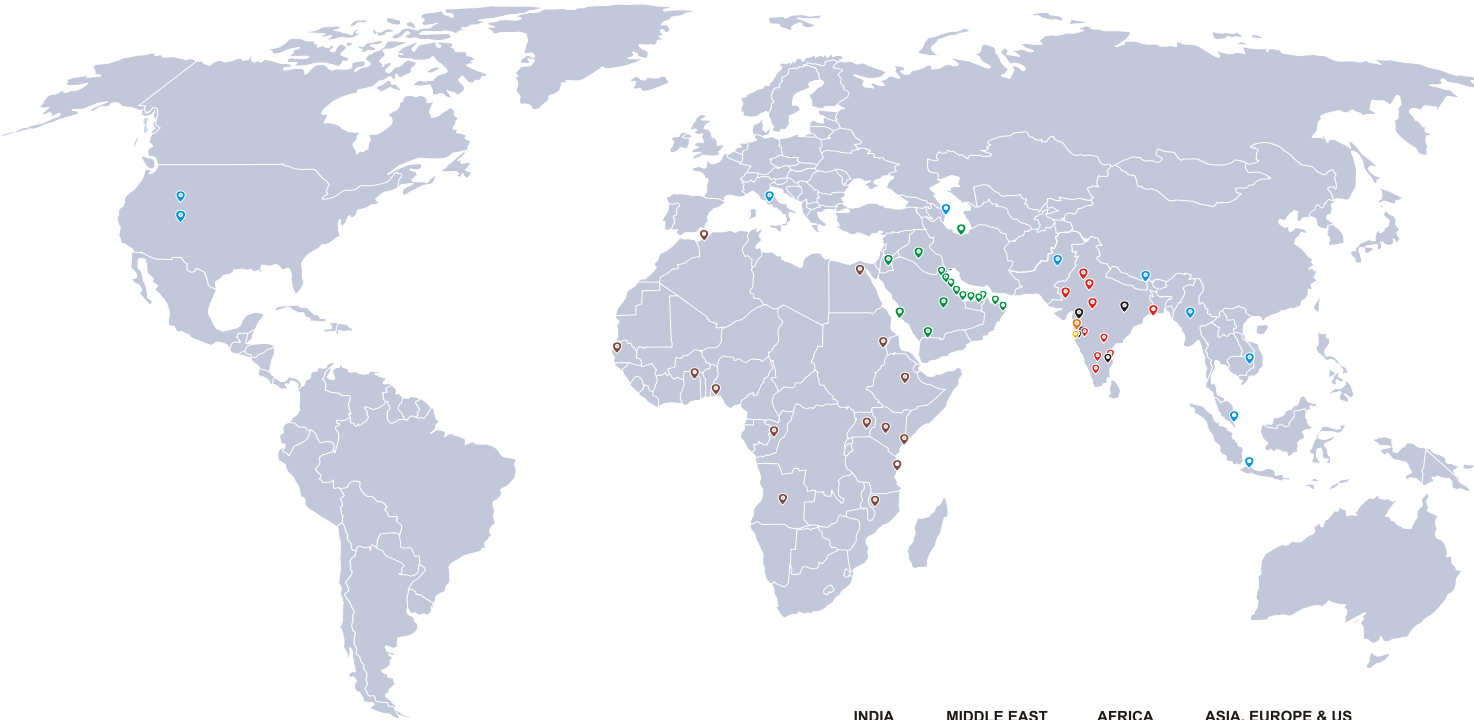


Our Global Footprints



-  Regd. & Corporate Office
-  Manufacturing Facilities
-  Central Marketing Office

Disclaimer: This map is not to the scale. It is only geographical representation. Company does not take any responsibility of the accuracy of the same.

| INDIA | MIDDLE EAST | AFRICA | ASIA, EUROPE & US |
|--|---|--|---|
| <ul style="list-style-type: none"> • Delhi • Jaipur • Ahmedabad • Indore • Silvassa • Mumbai • Pune • Bengaluru • Coimbatore • Chennai • Hyderabad • Raipur • Kolkata | <ul style="list-style-type: none"> • Dubai • Sharjah • Abu Dhabi • Muscat • Sohar • Doha • Kuwait • Tehran • Jordan • Iraq • Jubail • Dammam • Manama • Riyadh • Sanaa • Jeddah | <ul style="list-style-type: none"> • Nairobi • Kampala • Dar E salaam • Blantyre • Khartoum • Algiers • Senegal • Ghana • Lagos • Cairo • Addis Ababa • Mombasa • Congo • Angola | <ul style="list-style-type: none"> • Kathmandu • Myanmar • Vietnam • Singapore • Jakarta • Lahore • Baku Azerbaijan • Italy • Salt Lake City • Utah |

WELDERS TO THE NATION SINCE 1951



(Formerly Advani-Oerlikon Ltd.)



ADOR WELDING LIMITED

Corporate Marketing Office: Survey No. 147 / 2B / 3, Near Khandoba Mandir, Akurdi Chowk, Chinchwad, Pune - 411019, Maharashtra, India | Tel.: +91 20 4070 6000 | Fax: +91 20 4070 6001 | Email: cmo@adorians.com

Regd. & Corp. Office: Ador House, 6, K. Dubash Marg, Fort, Mumbai - 400 001-16, Maharashtra, India. CIN: L70100MH1951PLC008647 | Tel.: +91 22 6623 9300 / 2284 2525 | Fax: +91 22 2287 3083

Sharjah Airport International Free Zone (SAIF Zone) Q3 - 216, P.O. Box No.: 120025 Sharjah - U.A.E. Tel.: 00971 6 5578601 | Fax: 00971 6 5578602 | E-mail: awloverseas@adorians.com



Scan QR Code with your smart phone to find us on the Web.



www.adorwelding.com

www.kashvcommunications.com

Project Engineering Business

Specialised Flare Systems | Process Packages | EPC

The Multi-Disciplinary Platform

Project Engineering Business of Ador Welding Limited. The business leverages on the group's more than 6 decades of industrial experience to provide customized solutions for multi-disciplinary projects and contracts.

ADOR Project Engineering Business has a dedicated pool of experts drawn from Chemical/ Mechanical / Electrical / Instrumentation and Structural Engineering. They use their cross-fertilized experience to provide total engineering solutions; the current case book spans Refineries, Oil and Gas, Petrochemicals, Fertilizers, Steel Plants, Pharma and other chemical complexes and process industries.

A flare is a piece of equipment used to safely burn waste gases. Flare gases (waste gases to be burned) are excess or waste gases generated in the plant.

AWL has executed various prestigious projects and called as masterpiece in combustion, thermal and environmental engineering products such as Flares, Burners, furnaces, Incinerators and allied automation and controls. Ador Welding have been supplied more than 250 flare packages to various industries in India and Abroad.

We invite you to take a discerning walk through the ADOR Project Engineering Business portfolio and let our performance speak for itself.



Process Packages & EPC Product Group

Ador Welding Limited (formerly known as Advani-Oerlikon Limited) is ISO 9001, EMS 14001 & OHSAS 18001 certified company, a Flagship Company of Ador Group of Industries established in 1951 having more than six decades of dedicated service to engineering industries in Welding and Welding solutions. Ador Welding Limited is in the business of Engineering & Construction of Process Plants, Infrastructure Projects, Chemical, Fertilizer, Oil & Gas, Petrochemicals, Power Projects with a mission to Achieve Recognition and Growth through Customer Satisfaction, Employee Motivation and Innovative Approach.

Ador had executed all such packages of various capacities including site assistance providing customized solutions in projects and contracts related to Refineries / Oil & Gas / Petrochemicals / Fertilizers / Steel Plants/Distillation Plants as well for on shore and off shore in India and Overseas.

Ador is approved by all major renowned PMC and EPC contractors in India and overseas related to oil and gas, refinery, petrochemicals,

chemicals, tank farm, terminals, steel plants, power, food, pharma and process industries segments with strong Project Engineering & Management expertise.

Over the last six decades Ador has developed a significant level of knowhow, providing multi-disciplinary engineering, procurement and construction services for projects in India and abroad.

Project Engineering Business Division delivered, equipment supply, engineering, procurement and construction services for major market segments such as:

- Oil & Gas
- Refinery
- Petrochemical Plants
- Gas Processing Plants
- Fertilizers
- Steel Plants



Experienced Team

The management team is constituted by a highly experienced leadership team.



Effective procurement

Procurement strategy driven by a deep understanding of vendors / contractors network in India and abroad.



Engineering Excellence

Focus on value based engineering, design and planning. Well Trained and highly experienced professional from all disciplines to meet the Design consideration.



Pan-India Presence

Projects have been executed in various states in India that has contributed to a deep understanding of local challenges and resolution measures.



Quality Focus

Well-defined and stringent quality standards for supplier selection and product quality.



Demonstrated capability in systems integration

An in-depth knowledge of plant design and optimization techniques.



Factors for Designing Flare

A flare designer needs to consider the following major factors to arrive at a suitable design.

- Characteristics of flare gas, i.e. quantity, composition and pressure level
- Location of the flare considering other equipment and population around the nit
- Availability of space
- Cost i.e. initial investment as well as operating cost
- Effect on environment / local pollution regulations

Our In house highly qualified and experienced design team is designing customized flare system for our customers from over two decades. We have latest software for ensuring the accuracy of design of the system.

Components of Flare Systems

- | | |
|----------------------------------|-------------------|
| • Flare Tip | • Water seal Drum |
| • Riser stack | • Knock out Drum |
| • Fluidic type flare seal (DPCS) | • Ignition System |
| • Molecular seal | • FFG / HE Panel |

A. Utility Flares/Non Assisted Flares

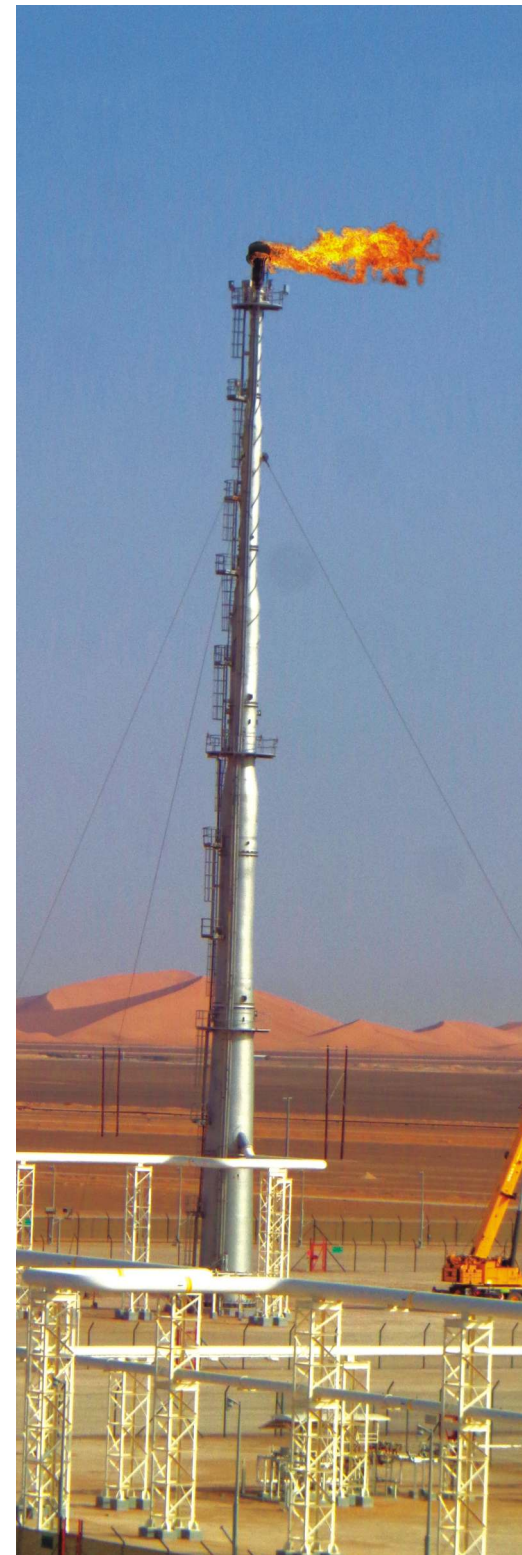
Utility flares are one of the most common and basic flare designs. Utility flares are employed in applications which do not require smokeless burning or in applications where smokeless flaring can be achieved without the use of an additional assist medium. Utility flares therefore, do not require auxiliary gas streams such as steam or air; two fluids normally used to improve smokeless capacity. These flares are typically accompanied by a Dynamic Seal in the base of the tip to reduce purge gas costs and prevent flashback.

Utility Flares/ Non Assisted Flares

- High alloy material construction in the heat affected zone
- Extremely stable, fuel efficient pilots
- Flame retention ring to stabilize combustion
- Dynamic / Velocity seal to reduce purge gas expense & prevent flashback
- Molecular seal to prevent flash back for higher tip diameter

Advantages

- Cost effective (capital as well as operating costs)
- Low maintenance costs due to simplicity of design
- Stable, reliable combustion



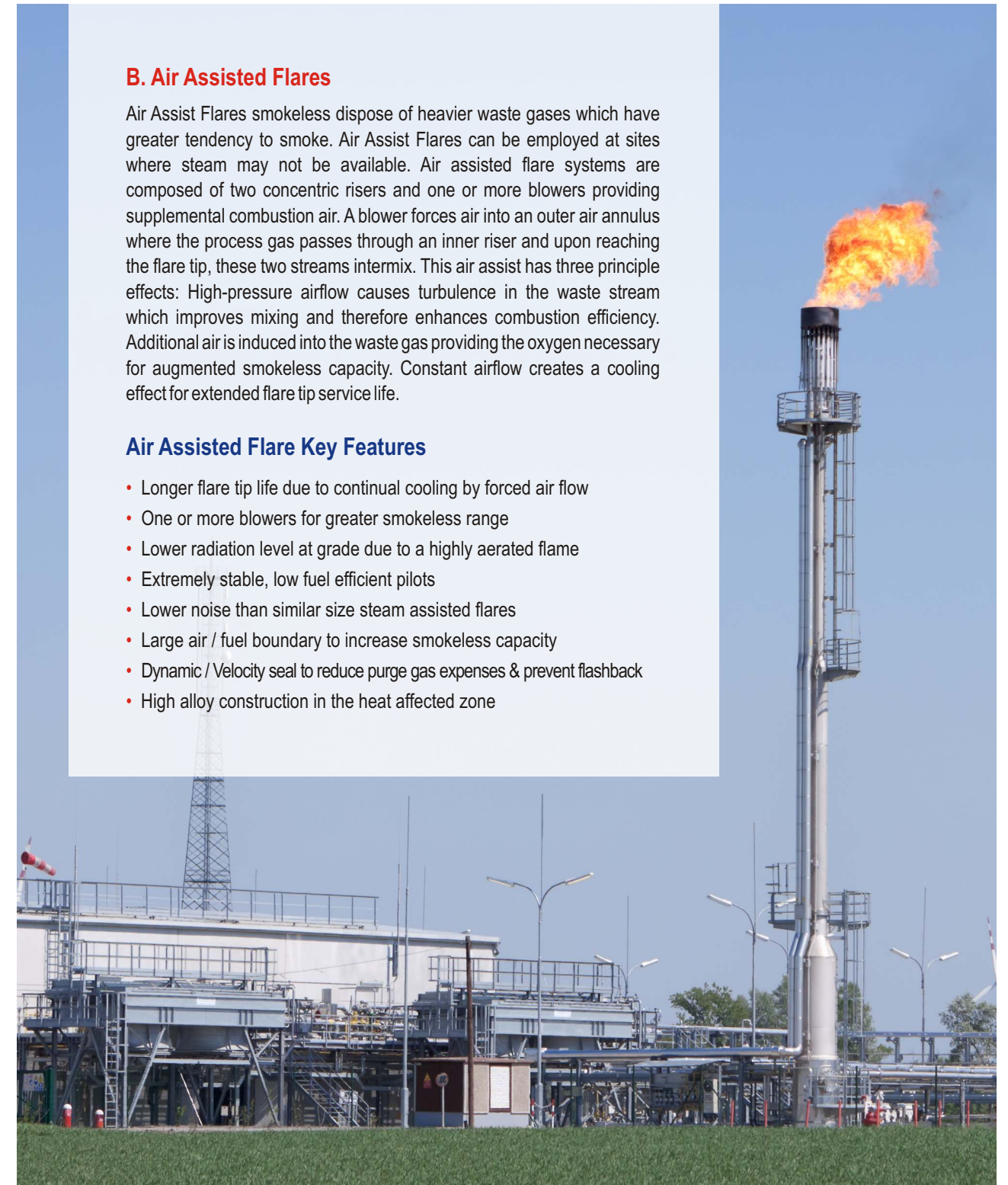
Elevated Flares

B. Air Assisted Flares

Air Assist Flares smokeless dispose of heavier waste gases which have greater tendency to smoke. Air Assist Flares can be employed at sites where steam may not be available. Air assisted flare systems are composed of two concentric risers and one or more blowers providing supplemental combustion air. A blower forces air into an outer air annulus where the process gas passes through an inner riser and upon reaching the flare tip, these two streams intermix. This air assist has three principle effects: High-pressure airflow causes turbulence in the waste stream which improves mixing and therefore enhances combustion efficiency. Additional air is induced into the waste gas providing the oxygen necessary for augmented smokeless capacity. Constant airflow creates a cooling effect for extended flare tip service life.

Air Assisted Flare Key Features

- Longer flare tip life due to continual cooling by forced air flow
- One or more blowers for greater smokeless range
- Lower radiation level at grade due to a highly aerated flame
- Extremely stable, low fuel efficient pilots
- Lower noise than similar size steam assisted flares
- Large air / fuel boundary to increase smokeless capacity
- Dynamic / Velocity seal to reduce purge gas expenses & prevent flashback
- High alloy construction in the heat affected zone



Elevated Flares

Advantages of Air Assisted Flares

- Very low operating cost for smokeless operation
- High stability, low fuel consumption pilots are standard with flare tips
- 98.5% or higher hydrocarbon destruction efficiency
- Superior materials and construction
- Lower blower horsepower requirements than competing designs
- High smokeless rates due to superior mixing
- Capable of burning heavier hydrocarbons smokeless
- Extended service life
- Lower operating costs at a given smokeless rate
- Lower radiant heat at a given capacity Stable, reliable combustion
- Wide range of flow capacities



C. Steam Assisted

Steam assisted flares are designed to dispose of heavier waste gases which have a greater tendency to smoke. In order to prevent incomplete combustion, steam is injected into the waste stream using peripheral steam rings (Primary steam) at top of tip and at center of flare tip (Secondary steam). High-pressure steam flow causes turbulence in the waste stream which improves mixing and therefore improves combustion efficiency. Additional air is induced into the waste gas providing the oxygen necessary for augmented smokeless capacity. Steam flares are typically used in applications where the customer has high-pressure steam available on site.

Elevated Flares

Steam Assisted Flare Key Features

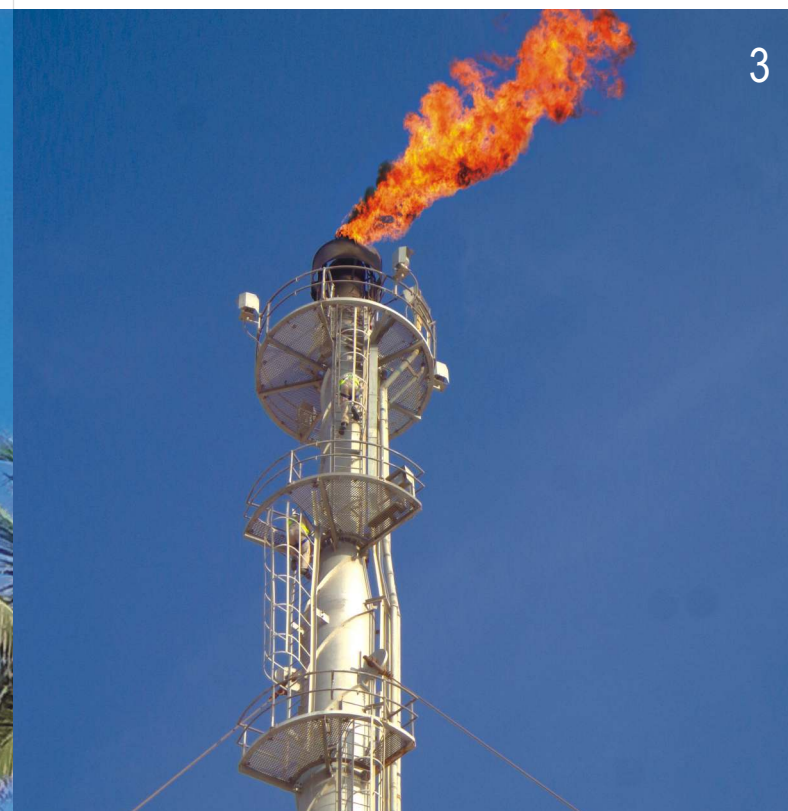
- Low noise steam ring
- Extremely stable, low fuel efficient pilots
- Most economical steam assisted flare
- Superior manifold connection
- Smokeless burner with lower noise
- Mechanically superior design
- High stability flame retention ring
- Lower pressure drop or higher flow at a given pressure

Advantages

- Low maintenance costs
- High smokeless capacity due to steam injection
- Stable, reliable combustion due to flame retention ring
- High smokeless flow rate
- Longer tip life due to steam cooling effect



Types of Elevated Flares



1

Guy Rope Supported

Guy rope supported flare system is used when toxic gases are burned at medium height. (Approximately 150 meters)

2

Derrick Supported

Derrick supported flare system is optimum installation for higher heights where high radiation is exerted.

3

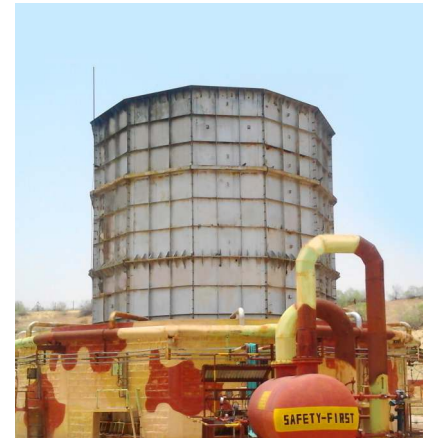
Self Supported

Self supported flare system is used for lower heights when radiation exerted is low. It uses less space for installation.



Enclosed Ground Flare

Enclosed Ground flares (EGF) conform to the general requirement that flaring and disposal may take place at low level. In populated areas, in close proximity to other processing equipment ground flares are now used to burn gas without smoke and with no visible flame. The EGF system consists of a refractory lined cylindrical flare structure designed to have combustion take place within the cylinder. This type of enclosed flare system was originally designed to eliminate the light and noise from the flaring of waste gases. This flare has been used extensively in the combustion of waste gases from chemical plants, hydrocarbon loading terminals, FPSO floating production vessels, refineries and any other application where low emission, efficient combustion is required. EGF can be designed for unlimited air control or for specific air and temperature control to combust very clean gases at minimum required temperatures. The refractory lining is designed to protect the carbon steel support shell of the unit. The flare system has burners that fire at the bottom of the cylinder where premix pilots fire continuously to ensure ignition of the waste gases.



Enclosed Ground Flare Key Features

- Safe design with low maintenance and long service life
- Fuel efficient pilot burners
- Sole source systems including installation
- Smokeless combustion
- Very low noise levels
- Proven designs
- No radiation outside the combustion chamber
- Quick and simple installation

Advantages

- Reduced flame visibility due to enclosed burner shroud
- Minimal noise
- Minimal heat radiation due to ceramic insulation
- Ease of emissions sampling and testing
- Extremely high destruction efficiencies
- Smokeless combustion
- Simplified control system
- Reduced stack visibility

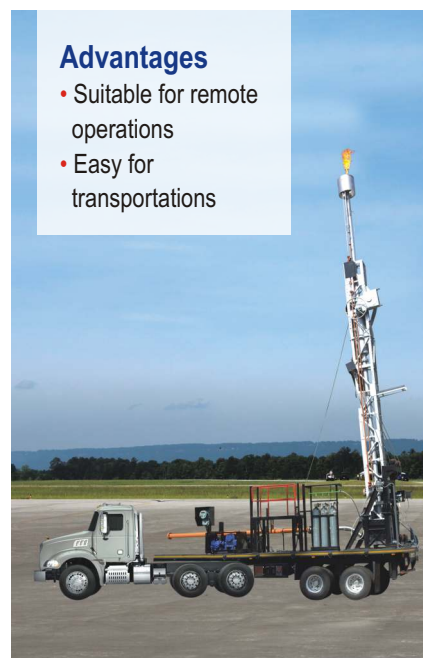
Mobile Flares

Mobile flare systems are often a viable alternative when temporary applications require a flare system for a short duration. Plant shutdowns, emergency repair work, one time flaring needs and tip replacements are just some of the possible motives for employing a mobile flare.

Mobile flare systems are used for multiple purposes and for multiple applications. If a section of a pipeline needs to be repaired or inspected, mobile flare system can be used to dispose of the contents of the pipeline. Mobile flare mounted on a trailer or skids and can be easily move from one place to other. Mobile flares can be Utility, Air Assist and Steam Assist flares.

Mobile Flare Key Feature

- Skid or trailer mounted for ease of movement around site
- A range of optional instrumentation including flow rate & gas concentration measurement
- Power back up for the ignition panel
- Safe design with low maintenance and long service life
- Fuel efficient pilot burners
- Gas manifold for cylinders for pilot burners
- Can be operated though Central PLC Panel on site
- Safe design ensuring noise and radiation levels



Advantages

- Suitable for remote operations
- Easy for transportations

Burn Pit Flares

The main use of a burn pit is to dispose of liquid or mixed liquid/vapour reliefs generally as emergency flows or an intermittent basis when blowing down pipelines or vessels. Pit is made up of concrete material & is partially constructed in ground. The system shall be provided with circular type manifold for fuel gas & liquid condensate which is to burnt. Two ring type manifolds for pilot gas & liquid condensate are mounted at the center of pit. Pit consists of refractory lining on two vertical faces.



Burn Pit Flare Key Features

- Safe design with low maintenance and long service life
- Fuel efficient pilot burners
- Very low noise levels
- Proven designs
- Quick and simple installation

Advantages

- Minimal noise
- Minimal heat radiation due to ceramic insulation
- Suitable where liquid contents are more in a flare gas
- Ease of emissions sampling and testing
- Extremely high destruction efficiency



Off shore Flare

Ador designs the flare system for the offshore applications. Offshore flares consist of HP and LP Flare System.

Key Features

- Safe design with low maintenance and long service life
- Very low noise levels
- Proven designs
- Quick and simple installation



Process Packages & EPC Product Group | Services

Quality Management System

Ador Welding Limited has maintained ISO 9001 accreditation since 2001. Quality management is practiced company wide and comprises of two distinct yet closely related initiatives of Quality Assurance and Quality Improvement, through which the company strives to fully understand and successfully meet the customers agreed requirements. Both are fundamental to building long term relationships.

Ador assigns a quality manager to each construction project, regardless of whether it is a self-perform or construction management approach.

Ador also develops a Quality Control Manual for each project that details the quality activities of all Ador personnel and subcontractor personnel, if applicable.

Safety, Health & Environment Policy

Ador construction team focuses on a robust HSE program on every project. Ador's construction organization has a commitment to the health and safety of every employee, subcontractor, and Client staff member in the field and to safeguarding the environment in which they work.

- Provide work place free of hazards to our Employees, Customers & other interested parties.
- Comply with Statutory Regulations related to Safety, Health & Environment at work place.
- Provide Training & Resources to our Employees for implementation of 'SHE' Programme.
- Periodic Review of 'SHE' Programme and improve it's performance wherever required



Engineering, Procurement & Construction

Ador Welding Limited provides a wide range of engineering, procurement and construction services offering feasible solutions to its customers. Our EPC team is able to value-add, given their extensive exposure in design, construction, fabrication and field engineering, with optimum use of technology and engineering to meet customer's needs.

The range of services under engineering & construction includes the following:

- Feasibility study & conceptual design
- Design engineering
- Detailed engineering
- Procurement
- Construction
- Project management
- Workshop, equipment and fabrication support
- Pre-commissioning, commissioning & start up
- Alliancing / Consortium contract execution

Ador Welding Limited is fully equipped with in-house man power and software's to perform :

- Design Concepts using PV Elite
- Thermal Design. Using HTRI
- Mechanical Design. Using PV Elite
- Instrumentation Design.
- Structural Design using STAADPRO
- Code Calculations Using PV Elite
- Piping and related activities using Caesar

Procurement Services

Ador Welding Limited has skilled procurement and contract specialists in its India office. Ador India's procurement specialist's work with Ador's various business lines around the globe to maximize project profitability for the Client.

The team's capabilities include:

- Facilities Procurement
- Material Planning and Control
- Purchasing
- Shop and Office Expediting

- Subcontracting
- Supplier Capability and Capacity Assessments
- Supplier Performance Measurement
- Traffic and Logistics Support
- Warehousing

Ador Welding Limited has developed a regional supplier and contractor base for capital project sourcing requirements on local and global projects. Ador Welding Limited can provide safe, reliable, and cost effective solutions for goods and services.

Construction Services



Ador has comprehensive construction execution capabilities across a broad spectrum of industries. Ador can self-perform construction or act as the construction manager on both large and small sized projects. Ador's global reach allows the company to deploy construction resources around the world and often in remote locations to meet the construction requirements of its Clients.

When Ador builds a project using a self-perform approach, construction resources are directly employed by the company. Self-perform construction gives Ador maximum control of critical-path and fast-track construction schedules, also providing cost, performance, and quality benefits to our Clients.

Ador provides construction management services on diverse projects and services include construction planning, subcontractor qualification and evaluation, subcontractor management, construction equipment planning and management and construction engineering support.

Ador construction staff in India supports field construction with field material management and warehousing, field QA/QC management, turnover and commissioning, training and management, and meeting regulatory compliance planning and implementation.



Process Packages & EPC Product Group | Services

Process Equipment Manufacturing

To meet our EPC and process packages we have state of the art Manufacturing facility at Pune, Maharashtra to fabricate Oil & Gas, Refinery, Petrochemical and Power Plant components. Fabrication shop is well equipped to provide an end to end solution with product warrantee as well as process guarantee, ensuring one stop solution.

Our workshops are equipped with stamps (ASME "U", "R" and "NB Stamp", EIL, IBR) for pressure vessel fabrication and repair; equipment's to serve our customers.

The fabrication activities offered by these yards encompass the design, fabrication and supply of the following:

- Process equipment skids
- Pressure vessels
- Heat exchangers
- Storage tanks
- Reactors
- Silos
- Separators
- Re boilers
- Deaerators
- Process columns
- Customized process equipments

Our Expertise in EPC

- Process Plants / Process Packages like Bio diesel distillation plant, Methanol Distillation plant, HDRD Plant, Palm oil Fractionation plants, Oleo chemical Plants etc to meet the process requirement
- Mounded Storage Facilities
- Tankages & Tank Farm Systems
- Terminal Automation & POL Depot
- Flare Systems and packages
- Inplant piping and associated work including electrical, instrumentation, Underground piping etc

Infrastructure

We have 3 separate shops for CS, SS & Exotic MOC with required cranes, hydra, rolling machine etc.

TESTING FACILITY (NDT)

- Dye Penetrate
- Radiography
- Hydro-testing
- Ultrasonic Test
- Magnetic Particle Test
- Sand Blasting and Painting (From Extended Workshop)



ACCREDITATIONS & CERTIFICATES

- ISO 14001:2004
- ISO 9001:2008
- OHSAS 18001:2007
- EMS
- ASME "U", "NB" and "R" STAMP
- Engineers India Limited
- Indian Boiler Regulation (IBR)
- Nuclear Power Corporation



Our Projects

EPC Contracts

| | | |
|--------------------|--|-------------------|
| IOCL | Providing Sand Pad Foundation, Design, Fabrication, Erection, Welding, Testing, Calibrating, Painting and Commissioning of Mild Steel Vertical Water Storage Tank(22 M Dia. X15 M Height-1 (One) No.), including supplying of Steel Plates, CS Gate Valves, Pipeline & Fittings and Allied Works | Mugalsarai, India |
| United Fuel Supply | 20 GPM Methenol distillation plant on turnkey basis | USA |
| United Fuel Supply | 80 GPM Biodiesel distillation plant on turnkey basis | USA |
| Kuwait oil company | Design Supply erection and commissioning for 42" lean gas pipeline with associate work | Kuwait |
| ONGC | Construction of elevated Flare systems at Mori GCS and Gopavaram GGS of Rajahmundry assest | Rajamundry, India |

Process Equipments

| | | |
|--------------------------|--------------------------|-----------|
| BPCL-EIL | Pressure Vessels | Kochi |
| BPCL | Pressure Vessels | Mahul |
| Endress + Hauser | Well head metering skids | Australia |
| UPL | Storage Tanks | Gujarat |
| SGL Carbon India Pvt Ltd | Procees Equipments | Pune |
| Essar Projects | Heat Exchanger | Hazira |
| GACL | Chlorine Liquifier | Vadodara |
| Henkel Adhesives | Reactors with Agitators | Pune |





We
operate in
all segments

WELDERS TO THE NATION SINCE 1951



(Formerly Advani-Oerlikon Ltd.)

Complete Welding & Cutting Solutions Provider

For over 65 years, Ador Welding Limited has maintained its status as a leading Welding & Cutting Products Manufacturing Company by providing the widest portfolio of quality products.

Ador Welding Limited has helped to provide critical welding expertise and customized solutions for Automobile, Shipping, Railways, Steel, Sugar, Mines, Oil & Natural Gas, Chemicals & Fertilizers to Food Processing, Pipelines, Cement, Construction, Power Plants, Atomic Reactors and many other Industries & Customers.



Welding Consumables

- Electrodes
- Wires & Fluxes
- Customized Consumables

Welding & Cutting Equipment

- Welding & Cutting Equipments
- Welding & Cutting Accessories
- Welding & Cutting Spares
- Gas Cutting Products & Accessories

Welding Automation

- Columns & Booms
- Welding Positioners
- Welding Rotators
- CNC Cutting Equipments

Project Engineering

- EPC Contracts
- Flares and Flare Tips / Burners
- Incinerators (for Industrial Applications)
- Distillation Plants
- Pressure Vessels, Heat Exchangers

Ador Welding Academy: • Training - Welders / Engineers • Consultancy

ADOR WELDING LIMITED

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CIN: L70100MH1951PLC008647 | Tel.: +91 22 2284 2525 / 6623 9300 | Fax: +91 22 2287 3083



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www.adorwelding.com