Gasco Pty Ltd has established a reputation as one of Australia’s leading combustion and process engineering companies.

Gasco was formed in 1991 and is an independent, 100 per cent Australian owned company. Its board and management is mainly comprised of professional engineers acknowledged for their experience and expertise.

Gasco offers a comprehensive range of engineering, consulting and design, fabrication, installation, commissioning, project management, audit, maintenance and service.

The purpose built equipment and systems provided by Gasco include thermal oxidizer, fired heaters, thermal oil heaters, flares, water bath heaters, burners, ovens and heat treatment furnaces, heat recovery systems, heat exchangers and burner management systems.

Gasco, with its staff of over 45 personnel, including professional design engineers, its manufacturing facility together with on-site installation and commissioning, is able to offer a comprehensive range of equipment and services.

Gasco has a wide range of clients across various industries including oil and gas both onshore and offshore, environmental, mining, mineral, chemical processing, refining and petrochemical, food, automotive, water and waste treatment, biogas and power generation.

Gasco clients include Shell, Mobil, Exxon Mobil, BP, Chevron, Conoco Phillips, Toyota, Ford, Boeing, Australian Defence Department, ORICA, ICI, Dulux, PPG, BHP Billiton, Bechtel, Fluor Daniel, Toyo Engineering, KBR, Worley Parsons, Clough, Shedden Udhe, Aker Kvaerner and many others.

Gasco has supplied Fired Heaters and Thermal Oxidizers to Pakistan, Smelter Burners to China and India, Crude Oil Heaters to Russia, Hot Oil Heaters to Indonesia, South Africa, Tanzania and the Philippines, Convective Condensate Heaters to Thailand, Flares to Vietnam, Gas Skid to Bahrain, and Flare Heat Shield to Malaysia.

Quality Assurance is a key aspect to all our projects with the majority being managed to meet requirements of ISO 9001.
THERMAL OXIDIZERS

Thermal Oxidizers are a class of pollution control devices that use the combustion process to destroy volatile organic compounds (VOC) and Hydrogen Sulphide, hence they are sometimes called afterburners, fume incinerators or tail gas incinerators.

Gasco Thermal Oxidizers include:

- Straight Thermal Oxidizers with or without heat recovery
- Recuperative
- Catalytic
- Regenerative

Gasco Thermal Oxidizers can handle a wide range of process parameters including variable waste flow rates, calorific values, temperature and oxygen content.

Features of our Thermal Oxidizers are their robust performance, ability to operate at high thermal efficiency and achieve >99.99 per cent destruction efficiency.

Gasco Thermal Oxidizers scope may include turnkey projects, designed to comply with our clients specifications and environmental authority regulations.

We have supplied Thermal Oxidizers to the oil and gas, chemical, automotive, medical, food, minerals and metals industries.

Heat from the exhaust of a Thermal Oxidizer can be recovered in a Waste Heat Recovery Unit, energy can be utilized in the form of heat transfer fluids – oil, water, air and to raise steam.

Top: Thermal Oxidizer and Hot Oil Heat Recovery, BHP Billiton/KBR Minerva Gas Plant.
Centre: Recuperative Thermal Oxidizer at an Australian LNG plant.
Bottom: Thermal Oxidizer and Hot Oil Heat Recovery OMV/Clough Sawan, Pakistan.
A typical Fired Heater would consist of:
- Radiant Section
- Convective Section
- Stack
- Burners
- Fuel Skid
- Control System

Gasco being both a combustion and heat transfer company is uniquely placed to achieve the best possible outcomes with respect to high thermal efficiencies, low emission, reliable operation and state-of-the-art Burner Management Systems (BMS) to NFPA, IEC and other codes.

Gasco can supply cylindrical or box cabin type direct fired heaters, equipped with low NOx natural draft or forced draft burners.

To increase efficiency, preheating of combustion air can be achieved by adding a variety of air preheater exchangers.

With the demand for ever increasing safety and reliability levels Gasco can design and supply BMS to IEC 61508 Programmable Electronic Safety Systems. We can also provide a basic hard wired system up to SIL 3.

Gasco convective heaters rely on forced convection heating only, are compact and can achieve thermal efficiency of 90 per cent using convective heat transfer.

Gasco supplies Fired Heaters to API 560 and ISO 13705 and proprietary Gasco forced draft convective designs.

Top: Convective off-shore Condensate Heater – Chevron, Thailand.
Bottom: Erection of a 43MW Pre-Insulated and Tubed Radiant Section, Thermal Fluid Heater – Origin Energy, Australia.
The majority of Gasco Flares are designed to meet the requirements of API 530, which calculates the height of the flare to achieve a predetermined radiation level.

Gasco can provide the following:-

**Flare type**
- Utility (Pipe)
- Steam Assist
- Air Assist
- Gas Assist
- High Pressure Staged
- Enclosed Ground
- Pit/Ground

**Flame support structures**
- Self Supporting
- Guyed
- Derrick

**Purge seals**
- Dynamic
- Molecular
- Non Pulsating Liquid Vessel

**Ancillaries**
- Knock Out Drums
- Staging control
- Control systems: hazardous non hazardous area rated
- Snuffing
- Remote Flame Monitoring
- Flame and Detonation Arrestors
- Radiation Shields for Offshore Platforms
- Consulting

**Flare Alternatives**
Environmental concerns with global warming are leading to increased attention being paid to Vapour Recovery and Zero Flaring.

Gasco with our many years experience in the combustion and process field can engineer a zero flaring system to suit your requirements.
Water Bath Heaters can also be used for heating:

- Crude Oil
- Vaporizing and superheating LPG & LNG
- Regeneration Gas Heating
- Heat Transfer Fluids
- Heat sensitive gas and fluids
- Molten Salt Heaters
- Direct Fired Reboilers
- Amine Reboilers
- TEG Reboilers

The main application for Indirect Fired Water Bath Heaters is to heat high pressure gas prior to pressure reduction, this prevents hydrate formation that can occur because of the temperature drop due to the Joule Thomson effect. The natural gas can also be post heated to suit the operation of gas turbines.

A typical water bath heater consists of an insulated shell, removable process coil, removable fire tube, stack burner, gas train and control system.

Gasco options include:

- Natural Draft Burners
- Forced Draft Burners
- Pneumatic Gas Control
- Electric (Electronic) Control
- Remote Monitoring

Gasco can also supply complete gas conditioning skids consisting of Water Bath Heater, Pressure Reduction, Filter Coalescer and Metering.
The gas fired heaters consist of two concentric helical coils which has the advantage of:

- Compactness
- High Efficiency
- Low Thermal Mass

The dual helical coil design allows maximized heat transfer, minimizes thermal stresses and prevents overheating. The coil design has the advantage that ensures high fluid velocities, low film temperatures and no accumulation of gases.

The burner can be selected to suit the application, type of fuel – gas, oil, heavy oil, timber and turndown. The flame shape is carefully matched to the coil configuration. Typical efficiency with air preheating can range up to 88 per cent depending on thermal fluid outlet temperature, fuel, and atmospheric conditions.

Each heater has a pre wired control panel that ensures safe and efficient operation of the heater.

As well as supplying heaters, we can provide skid mounted units that incorporate primary and secondary pumps, expansion tanks, stack and drain/fill tanks.

There are a myriad of applications that are suitable for hot oil heating:

- Tank Heating – Bitumen, Wax, Emulsions
- Reactor Heating – Chemical Industry, BioTech
- Platen Presses – Timber Industry, Moulding
- Hollow Flight Screws – Mineral Processing
- Pipe Tracing – Heavy Fuel Oil, Bitumen, Wax
- Ovens – Printing, Automotive
- Extruders – Plastic
- Fryers – Food
- Calendar Rolls – Plastic, Film
- Autoclaves – Aerospace, Rubber, Brick
- Dryers – Timber, Food
- Kilns – Timber

Gasco can supply a stand-alone heater or a total engineered package to suit any or all of the above applications. Turnkey bitumen heating is a speciality.

Top: 1,000KW Gas Fired Hot Oil Heater for a Grease Plant – Brisbane, Queensland, Australia.
Centre: 500KW Oil Fired Hot Oil Heater and Elutriation Heating Skid – Gold Industry, Tanzania, Africa.
PROCESS SKIDS

Gasco designs, fabricates, installs, commissions and services an extensive range of Process Skids for Gas Conditioning and Oil Treatment.

Gasco supplies pressure reduction, metering, separators, filter coalescers, hot oil primary and secondary skids, burner skids and waterbath heaters.

Gasco skids are engineered to meet the client’s specifications and International Piping Codes ANSI B 31.3 etc.

Equipment and pipes are sized using inhouse computer programs; pipe layouts are computer pipe stressed. Instrumentation and PLC controls, pre-piped and wired, are supplied as a complete unit saving valuable time and costs on site.

Gasco can supply a variety of Gas / Liquid Separators, Vertical or Horizontal.

WASTE HEAT RECOVERY

Gasco and our associated companies have supplied waste heat recovery systems for:

- Gas Turbines – Thermal Oil, Hot Water, Glycol
- Thermal Oxidizers – Thermal Oil, Glycol
- Air Preheat / Recuperators
- Furnaces

For gas turbine heat recovery systems Gasco, offers a complete turnkey plant comprising:

- Inlet duct
- Divertor valve
- Divertor stack
- Supplementary burner and controls
- Waste Heat Recovery Unit
- Exhaust Stack

Top: Gas Conditioning Skid – ALBA/Bechtal, Bahrain.
Bottom: Thermal Oil Heat Recovery from a Thermal Oxidizer– BHP Billiton/KBR, Minerva, Victoria, Australia.
SITE WORKS

Gasco has a dedicated piping and site installation team.

As well as installing Gasco supplied equipment and installing new plants, our site crew has also relocated or demolished process plants and undertaken complete factory and equipment relocations.

We also contract for complete piping systems which includes installing pipe work, pumps, reactors, valves, instrumentation, pipe bridges, tanks and skids.

We have supplied services to the aerospace, chemical, petrochemical, gas, automotive, paper, paint, plastic, water and waste water treatment and manufacturing, food and laundry industries.

CONSULTING

Gasco has supplied consulting and troubleshooting services to a number of major corporations. We have eight qualified combustion engineers on our staff. We have provided assistance to major Oil and Gas companies, EPC Contractors and mineral processing companies.

- Compliance Audits
- Design of Bitumen and Bitumen Emulsion plants
- Thermal Oil (Hot Oil) Heating Systems
- Combustion & Burner Systems
- BMS Upgrades to IEC 61508 PES Systems
- Furnace Design and Efficiency Upgrades
- Oven Upgrades
- Flare System Troubleshooting
- Flare Radiation and Dispersion
- Thermal Oxidizer Applications
- Fired Heater and Waste Heat Recovery
- Upgrades and Commissioning
- Energy Audits

Top: Installation of tanks, vessels, pumps, process equipment and piping – Orica, Yarraville, Victoria, Australia.
Bottom: Low NOx Recirculated Combustion Gas Burner System.
**OVENS AND FURNACES**

Gasco has supplied numerous custom designed ovens and furnaces for many applications.

**Ovens**
Gasco has supplied Toyota and Ford with major paint line ovens, air houses and material handling equipment.

As well as car companies, Gasco has designed, supplied and installed complete paint lines for automotive brake manufacturer, comprising cleaning, powdercoat application, curing and cooling.

Gasco has also supplied bogie hearth and continuous ovens for the glass, fibreglass curing, automotive components and paint and chemical drum heating applications.

**Furnaces**
Gasco has designed and supplied stress relieving furnaces, salt curing baths, heat treatment, and cremators.

**BURNERS AND COMBUSTION**

Gasco prides itself as a combustion company on its ability to creatively solve your combustion problems.

Gasco can supply a solution to your combustion requirements. We design and manufacture specialized burners and systems such as 40 GJ/h smelter start-up burners. We also incorporate other leading proprietary brands of burners in combustion packages to provide our clients with the most cost effective solution. Specifically, we can offer:

- Combustion System Design
- Burners
- Gas Trains
- Skid Mounting
- Burner Management Systems (BMS)
- Instrumentation and Control Systems
- Hardwired, PLC, PES to IEC 61508
- Safety PLC with SIL analysis
- Scada Systems
If you have a combustion or high temperature heat transfer problem or need an upgrade, Gasco has supplied:

- Ladle Pre-Heaters
- Stub Heater for Aluminium Smelters
- Propellant Destruction Furnaces
- Fired Heaters for Simulating Gas Turbine Operating Conditions
- Fired Heaters for R&D in the Mineral Industry
- Robots for Automotive Industry
- Conversion of Carbon Bake Burners from Oil to Gas
- Spray Booths R&D Paint Industry
- Hydrogen Fired Hot Oil Heaters
- Hot Oil Heaters for Casino/Hotel Laundries

This is only a partial list of special products. See Gasco Products by Industry listing – back page.

Over the years, Gasco has tackled many different and unique problems that are not easily categorised.

We can offer 24 hour, 7 days-per-week coverage.

As well as covering Victoria, we can also supply Australia wide as well as international coverage.

We have commissioned and serviced combustion equipment in Papua New Guinea, Indonesia, Phillipines, China, India, Russia, Tanzania and Thailand.

We regularly service a range of combustion equipment not of Gasco’s manufacture.

Service maintenance contracts with Gasco provides convenience and peace of mind for many of our clients.
ALUMINIUM Custom designed heaters or dryers for the following: ladles, crucibles, siphon tubes, cathode collector bars, aluminium scrap, moulds, launders, anode stubs, anode blocks. Tar waste melt out and collection. Tar Hot Oil Heaters, Air Heaters, Thermal Oxidizers, Gas Conditioning Skids, Carbon Bake Furnace Conversions.


GENERAL INDUSTRIAL Driers, Ovens, Kilns, Furnaces, Hot Oil Systems, Heaters, Thermal Oxidizers.


OIL, GAS Fired Heaters, Thermal Oxidizers, Flares, Waste Heat Recovery.

PETROCHEMICAL Hot Oil Heaters, Filter Coalescers, Acid Gas/Tail Gas Incineration, Water Bath Heaters, Crude Oil Preheaters, Condensate Heaters, Pressure Reduction Skids, Heater TREATERS, Radiation Shields, Metering Skids.

PHARMACEUTICAL Air Heaters, Driers, Thermal Oxidizers, Flares, Heating and Combustion, Hot Oil Systems.

PIPELINE & TERMINAL City Gate Heaters, Gas Conditioning, Water Bath Heaters, Let Down Skids, Filter/Coalescers, Metering Skids, Flares.
