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# ASAS ALJOOD CONTRACTING

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## ASAS ALJOOD CONTRACTING

### 1. INTRODUCTION

We, ASASALJOOD CONTRACTING, are integrated solutions provider for Oil & Gas, Petrochemical, Fertilizer, off sites and Utilities, Power Industries, Water Industries and general industries. With our exclusive collaboration with I.S.G. S.p.A. Italy who are in the industry since 1951 and other principals, we are able to provide range of product and services for the industry.

#### Our activities:

##### Integrated Solutions:

- ◆ Adsorption
- ◆ Refrigeration
- ◆ Absorption
- ◆ Membrane
- ◆ Refinery Experience
- ◆ Gas Conditioning
- ◆ Compressed Air Systems
- ◆ Revamping
- ◆ Debottlenecking
- ◆ Process & Technology Consulting

#### Turnaround Services:

- ◆ Static Equipment
- ◆ Rotating Equipment

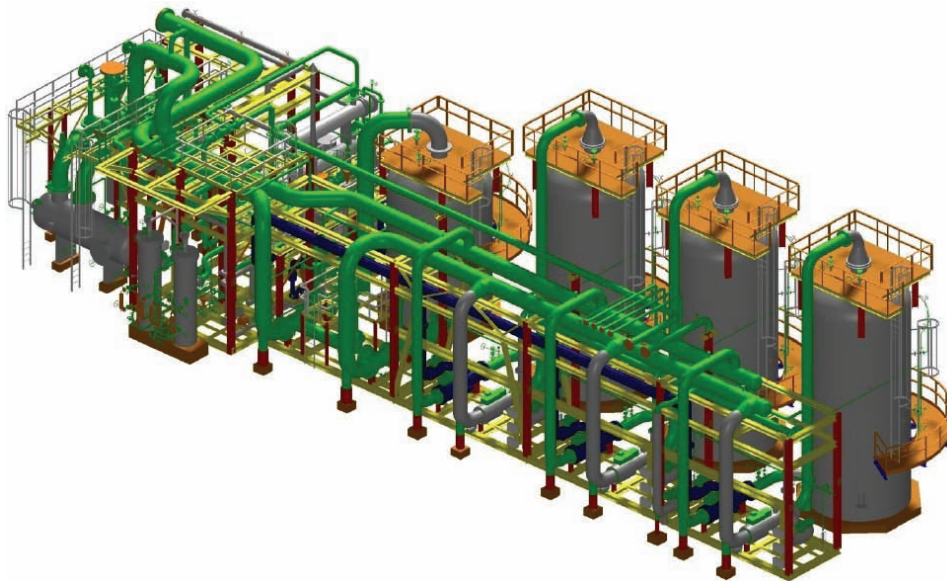




# ASAS ALJOOD CONTRACTING

## 1.1 Mission

Our mission is to collaborate with our customers as a premier provider of innovative and well-engineered products like supplying of PROCESS UNIT (PACKAGE, MINI PLANT), SYSTEMS, solutions and timely services, thus to be a leading integrated solutions provider in the Oil & Gas as well as Industrial sector of Saudi Arabia.



## 1.2 Vision

- ◆ We strive to differentiate our business in terms of the quality of our product, services and the competence of our operating and service personnel.
- ◆ Provide our customers, with “value through technology” product and service solutions, that will timely improve their operational value and enhance their image.
- ◆ To be one stop solution provider from concept to commissioning and operational phase of the project by collaborating with our principals.





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## 2. COMPANY GENERAL INFORMATION

Legal Name	ASAS ALJOOD CONTRACTING Est.
Telephone	+ 966 13 828 3367/68
Fax	+ 966 13 828 3369
Email	info@asasaljood.com
Website	<a href="http://www.asasaljood.com">http://www.asasaljood.com</a>
P.O.Box	77046
Office Address	P.O. Box 77046 Al-Khobar 31952 King Faisal St, Dammam Kingdom of Saudi Arabia
Our Activities	<p><b>Integrated Solutions:</b></p> <ul style="list-style-type: none"> <li>◆ Adsorption</li> <li>◆ Refrigeration</li> <li>◆ Absorption</li> <li>◆ Membrane</li> <li>◆ Refinery Experience</li> <li>◆ Gas Conditioning</li> <li>◆ Compressed Air Systems</li> <li>◆ Revamping</li> <li>◆ Debottlenecking</li> <li>◆ Process &amp; Technology Consulting</li> </ul>
	<p><b>Turnaround Services:</b></p> <ul style="list-style-type: none"> <li>◆ Static Equipment</li> <li>◆ Rotating Equipment</li> </ul>

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### 3. DESCRIPTION OF SERVICES

#### 3.1 Integrated Solutions – We provide Lump Sum Turn Key(LSTK) integrated solutions for the following

- Refrigeration Unit - Refrigeration Unit is utilized when cooling medium is required.
- Hydrocarbon Recovery – Dew Point Control
  - Complete Refrigeration System
  - Low Temperature Separation
  - Silica Gel
- Dehydration Unit
  - Adsorption - Using solid desiccants (Molecular Sieves, Activated Alumina, Silica Gel)
  - Absorption - Using glycol as absorption medium
- Sweetening Unit
  - Absorption - For removal of CO<sub>2</sub> or CO<sub>2</sub> and H<sub>2</sub>S
  - Membrane - For the removal of CO<sub>2</sub>
  - Adsorption - For the removal of sulphur compound from low to very low level
- Condensate Stabilization
  - Trayed or Packed Column
  - Reboiler Condenser
  - Feed Effluent Exchanger
  - Pumps
- Polishing Unit - Adsorbent & Catalyst are utilized for Polishing Unit that treat Gas and Liquid Hydrocarbons to remove contaminants from low to very low level.



- Hydrogen Recovery – Purification
  - Pressure Swing Adsorption(PSA)
  - Membrane
- Vapour Recovery Unit (VRU) – To remove Volatile Organic Compounds(V.O.C.)  
Technology is based on :
  - Adsorption – Absorption
  - Adsorption – Condensation
  - Condensation - Adsorption
- Other Packages – Like Compressor package, Fuel Gas Conditioning, Nitrogen Generator
- CONSULTANCY – PROCESS & TECHNOLOGY
  - Feasibility & Conceptual Studies
  - Linear Programming Studies & Master Plans
  - Screening of Configurations & Detailed Feasibility Studies
  - Process Optimizations
  - Energy Saving & Pinch Technology Studies
  - Hydraulic Studies
  - Process Simulation (Steady State & Dynamic)
  - Process Package
  - Basic Design
  - Front End Engineering Design
  - Detail Engineering
  - Evaluation of Licensors & Technology Selection
  - Process Consultancy
- Compressed Air Systems

### 3.2 Turnaround Services – We provide turnaround services for the following

- Rotating Equipment
- Static Equipment





## 4. OUR PARTNERS

### 4.1 Integrated Solutions



**(i) I.S.G. S.p.A.** - Impianti Sistema Gel (I.S.G) S.P.A. is an Italian company, was established in 1951. ISG moved from simple air dryers to the design and supply of customized packages for Refineries and Petrochemical process applications (gas and liquid hydrocarbons).



**(ii) SINERGIA** - Sinergia of Italy was established 1996 and specializes in planning, design realization and start-up of turn key and customized devices and packages for production, treatment, drying and filtration of compressed air and technical gases.



**(iii) ASAS ALJOOD – ASAS ALJOOD** (earlier known as OASCO) is a leading provider of equipments, process support and services, maintenance services to customers in conventional power generation, energy, oil and gas, water, marine and general industries. Our reputation is based on excellent engineering and sourcing facilities from leading global vendors.

We deliver both products and services complimented by innovative solutions that enhance the functioning and operational efficiency of industries in their respective domains.

### 4.2 Turnaround Services



**SAAD** - With our unique internal process and mechanical engineering expertise, SAAD is equipped with the capabilities to handle and overhaul, from conception to completion, rotating equipment, static equipment and fabrication projects.

SAAD's main aim is to approach its projects with an intelligent engineering advancement so as to increase maximum project profits with minimum risks.



## 5. DETAILS OF INTEGRATED SOLUTIONS

### 5.1 In collaboration with ISG we are able to provide wide range of products that are commonly required in Process Plant.



Each unit we supply is designed according to specific project, in terms of:

- Capacity
- Engineering standard
- Fabrication



Starting from the beginning of the project, we develop all activities, (engineering, procurement and fabrication) that reflect the client requirements and expectations.

Each unit will be supplied and finally tested at site by our engineers that provide to handover the unit to the operator.

### Product Range:

- Refrigeration Unit
- Hydrocarbon Recovery – Dew Point Control
- Dehydration Unit
- Sweetening Unit
- Condensate Stabilization
- Polishing Unit
- Hydrogen Recovery – Purification
- Vapour Recovery Unit (VRU)
- Other Packages – Like Compressor package, Fuel Gas Conditioning, Nitrogen Generator
- Consultancy Revamping Debottlenecking



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### 5.1.1 Refrigeration Unit

Refrigeration Unit is utilized when cooling medium is required. Refrigeration units are designed according to client specifications and typically includes:

- Refrigerant Compressor (screw oil flooded or dry or centrifugal) no. 1 x 100 % or No. 2 x 50 %
- Evaporator (S&T)
- Oil Separator (in case of flooded oil compressor)
- Condenser (air cooler or water cooler)
- Receiver
- Economizer
- Suction KO Drum
- Lube Oil System with pumps filters and cooler / oil recovery system

Refrigeration medium is selected time by time depending by application and client requirements. I.S.G. S.p.A. is able to design the refrigeration unit considering fluids such as:

- Propane
- Propylene
- Butene
- Freon
- Ammonia
- etc ...



### 5.1.2 Hydrocarbon Recovery-Dew Point Control

Recovery of natural gas liquids (NGL) from natural gas is quite common in the natural gas processing and can assume a great economic importance.





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There are reasons to select liquid-recovery process:

- To produce transportable gas
- To meet sales-gas specifications
- To maximize liquid recovery

It is important to avoid condensation in the transportable gas. Condensation has two drawbacks:

- Two phase flow requires larger pipe diameter than single phase flow for the same pressure drop
- When two phase flow arrive at destination a slug catchers may be required to protect the downstream equipments

Natural Gas Liquids(NGL) is recovered in order to obtain:

- Sales gas with acceptable specification (gross heating value GHV) and HC dew point requirement
- If the heavier hydrocarbons are more valuable as liquids, complete liquefaction of propane and heavier hydrocarbons and partial ethane recovery is desirable.
- The liquid recovery process are :
  - Refrigeration
  - Joule Thomson Expansion (LTS)
  - Silica Gel

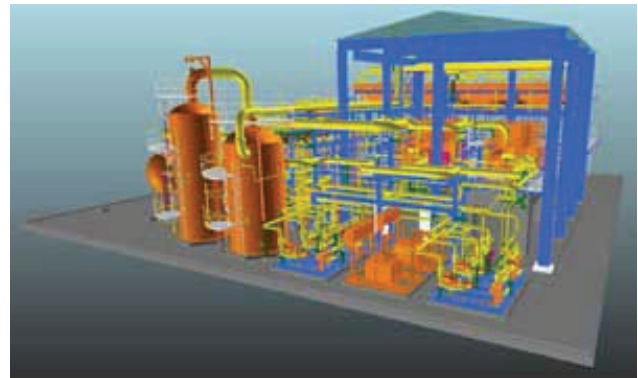
## Refrigeration

A Refrigeration Unit (screw or centrifugal compressor) utilizing a refrigeration medium (propane, propylene, Freon, Ammonia etc.) provide the required cooling duty to the chiller. I.S.G. S.p.A. supply complete refrigeration system including compressor, condenser, receiver, economizer, suction drum, lube oil system etc.



### Low Temperature Separation (LTS)

Low temperature separation can also be reached by depressurizing the natural gas through a control valve (Joule Thomson Valve). The package is complete with all equipment like JTV, separator, feed effluent heat exchanger, chemical injection.



### Silica Gel

If the natural gas is relatively light except for a small heavy hydrocarbon tail then an adsorbent based system is attractive as it selectively removes the highest molecular weight hydrocarbons. In order to make this technology competitive, the tail to be removed must normally be < 1%. The process also automatically includes water dewpoint control.



### 5.1.3 Dehydration Unit

Two systems can be considered for gas dehydration:

- ◆ ADSORPTION using solid desiccants (Molecular Sieves, Activated Alumina, Silica Gel)
- ◆ ABSORPTION using glycol as absorption medium



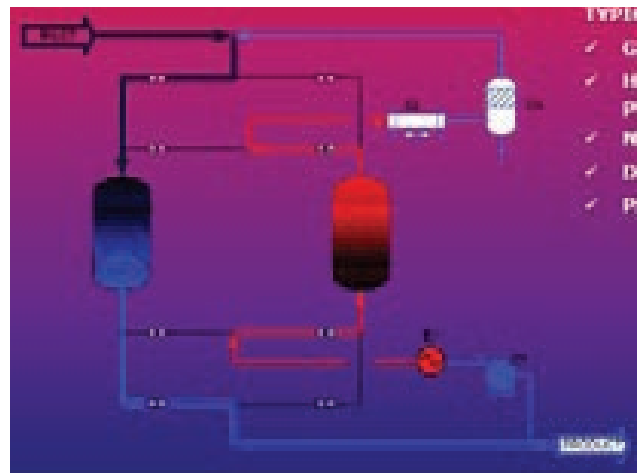


### 5.1.3.a Adsorption

Fixed Bed System that utilizes different type of adsorbent like Molecular Sieves, Activated Alumina and Silica Gel to dry various Gas and Liquid Hydrocarbons. Application for Gas Plant, Refineries and Petrochemical complex. With this technology is possible to reach very low dew point (<0.1 ppmv H<sub>2</sub>O).



Adsorption dryers may be equipped with one (batch operation) but typically two, three four beds that operates in adsorption and regeneration mode.



Each adsorber vessel is equipped with switching valves for the cycle operation. The adsorbent need to be regenerated and this can be performed in two mode:

- ◆ TSA (Temperature Swing Adsorption)
- ◆ PSA (Pressure Swing Adsorption)

I.S.G.S.p.A. supply complete regeneration system that for TSA case includes heat exchangers (heater and cooler), water separator, recycle compressor (if required), filter and associated instruments and equipment.





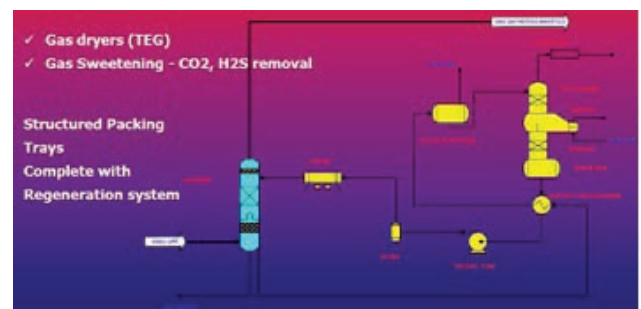
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### 5.1.3.b Absorption

TEG (Triethylene Glycol) is the standard choice for gas dehydration to guarantee pipeline dew point. TEG unit are complete with Contactor and Regeneration System. Absorber typically contains trays or packing to promote contact between the gas and liquid. In the absorber, gas is contacted with the lean glycol entering at the top, and most of the water is removed from the gas into the glycol. The dry gas exits the top of the absorber. The rich glycol is letdown under pressure to a flash tank to remove light hydrocarbons and then sent to the regenerator that includes different type of equipment for the distillation and stripping and water from the glycol.



TEG Regeneration Unit



### 5.1.4 Sweetening Unit

Natural Gas typically contains H<sub>2</sub>S and CO<sub>2</sub> that are high corrosive and harmful or even lethal to breathe. The common technology to sweet Natural Gas are

- ◆ ABSORPTION for removal of CO<sub>2</sub> or CO<sub>2</sub> and H<sub>2</sub>S
- ◆ MEMBRANE for the removal of CO<sub>2</sub>
- ◆ ADSORPTION for the removal of sulphur compound from low to very low level



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### Absorption

Amine treating is a proven technology that removes  $H_2S$  and  $CO_2$  through absorption and chemical reaction. The solvent selection depends on process parameters and each of the alkanolamines offers distinct advantages for specific treating problems: MEA, DEA, MDEA, DGA, Special solvent.



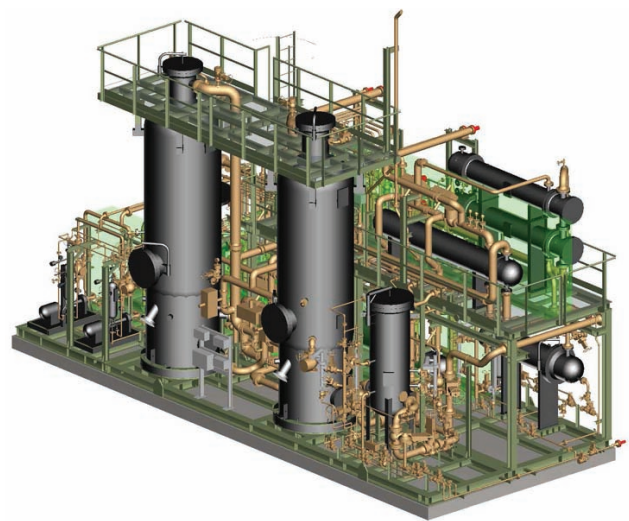
*Amine Unit*

### Membrane

Membranes are an easy and safe solution for the removal of  $CO_2$ . The number of membrane modules is selected according to the gas flow rate and concentration. Membranes separate the  $CO_2$  from the gas by permeation.

### Adsorption

For the removal of mercaptans,  $H_2S$ ,  $COS$ ,  $CS_2$ , complete conversion of sulphur compounds to  $H_2S$  and subsequent removal of  $H_2S$  molecular sieves or catalyst may be considered. Different adsorbents and catalysts are selected and loaded in different adsorbers and reactors where purification takes place.



*LPG Sweetening Unit*





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### 5.1.5 Condensate Stabilization

All recovered condensates are treated by Stabilization Column where light hydrocarbons are recovered ( $C_3/C_4$ ) and heavier are stabilized.

The Unit is complete with:

- ◆ Trayed or packed column
- ◆ Reboiler condenser
- ◆ Feed effluent exchanger
- ◆ Pumps



Condensate Stabilization

### 5.1.6 Polishing Unit

Adsorbent and Catalyst are utilized for Polishing Unit that treat Gas and Liquid Hydrocarbons to remove contaminants from low to very low level. Typical application are:

- ◆ MRU Mercury Removal from Natural Gas
- ◆ Propylene Purification Unit ( $CO$ ,  $COS$ ,  $RSH$ ,  $H_2O$  etc.)
- ◆ Ethylene Purification Unit ( $CO$ ,  $COS$ , Oxygenates,  $CO_2$ ,  $H_2O$  etc.)
- ◆ LPG Purification Unit ( $CO$ ,  $COS$ ,  $RSH$ ,  $H_2O$  etc.)



Mercury Removal Unit

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The unit are designed considering different type of Adsorbent (selective adsorbent) and / or catalyst. Different adsorbent and catalyst are selected and loaded in different adsorbers and reactors where purification take place. The adsorbers and catalyst need to be regenerated either considering TSA or reduction / oxidation. I.S.G. S.p.A. supply complete system with all equipment to guarantee continuous and smooth operation.

#### 5.1.7 Hydrogen recovery - Purification

The common technologies to recovery / purify hydrogen are:

- ◆ PSA (Pressure Swing Adsorption)
- ◆ MEMBRANE

##### 5.1.7.a PSA(Pressure Swing Adsorption)

Typically four to twelve adsorbers are considered for the purification of hydrogen stream. Adsorbers are loaded with different selected adsorbent. The Adsorbers switch according to specific sequence timing from adsorption, equalization, provide purge, depressurization, purge, repressurization.



PSA package is equipped with purge drum and waste gas drum.

With PSA technology is possible to reach over 99% purity with a typical recovery of 85%.

##### 5.1.7.b Membrane

Membrane are also utilized for the purification of hydrogen stream. Membrane are housed into vessels typically operates in series. Number of membrane required for each



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application depends by the feed conditions and product specification Membrane modules are complete with ancillary equipments such as feed separator, heater, cooler. The hydrogen permeate through membrane where pure gas is recovered and waste gas is sent to fuel gas network



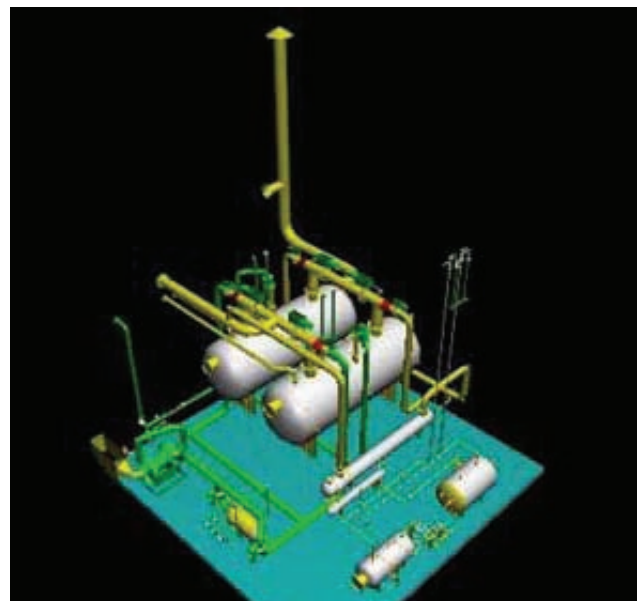
**5.1.8 Vapour Recovery Unit (VRU)**

To respect the emission law limitation, I.S.G. S.p.A. is able to supply VRU to remove the V.O.C.

Technology is based on:

- ◆ Adsorption – Absorption
- ◆ Adsorption – Condensation
- ◆ Condensation - Adsorption

The VRU are equipped with adsorbers that contain activated carbons; the regeneration of the activated carbons could be TSA, VSA or PSA.



- ◆ TSA (Temperature Swing Adsorption) either by steam or hot streams
- ◆ VSA (Vacuum Swing Adsorption) by vacuum pumps, liquid ring compressors, ejectors
- ◆ PSA (Pressure Swing Adsorption) by cycles of changing pressure



### 5.1.9 Consultancy Revamping Debottlenecking

The Projects can be developed for Open-art Plants as well as for various Licensed Process, either I.S.G. S.p.A. patented or through agreements with various Process Licensor / Catalyst Vendors.

The main Technologies available in I.S.G. S.p.A. basket are:

- ◆ Atmospheric & Vacuum Distillation of Crude Oil
- ◆ Gas Plants & Light Ends Recovery (i.e. Separation of Light Hydrocarbons)
- ◆ Gas Compression, Refrigeration & Liquefaction
- ◆ Gas & LPG Sweetening / Washing
- ◆ Gas Dehydration
- ◆ Gas Purification (by Membrane, PSA, etc...)
- ◆ Hydrotreating, Hydrocracking, Catalytic Dewaxing
- ◆ Hydrogen Generation & Purification
- ◆ Isomerization, Catalytic Reforming, Alkylation
- ◆ Visbreaking, Thermal Cracking & Delayed Coking
- ◆ Amine Washing & Regeneration, Sour Water Stripping
- ◆ Sulphur Recovery
- ◆ Utility Generation & Distribution Systems
- ◆ Off-sites Systems

### 5.1.10 Other Packages

#### 5.1.10.a Compressor Package

Compressor Package are required for boosting gas for VRU (Vapour Recovery Unit), Reinjection, Fuel gas etc.





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The type of compressor and special requirements are defined case by case depending on the fluid to be handled and suction/delivery conditions.

Typically compressor packages are provided with:  
inlet and outlet K.O. drum and fluid cooler (both S&T or air cooler heat exchangers).



### 5.1.10.b Fuel Gas Conditioning

Fuel Gas Conditioning Systems typically include:

- ◆ Particle filters
- ◆ Pressure reduction valves
- ◆ Separators
- ◆ Heating equipment

According to the case requirements, fuel gas can be also dehydrated and processed for further specific uses or in order to meet burners specifications.



### 5.1.10.c. Nitrogen Generator

One of the common way to produce Nitrogen is to use membrane technology to separate nitrogen from air by selective permeation. The ISG membrane package uses this supply of raw material to produce pure nitrogen. We are able to supply complete NITROGEN GENERATOR UNIT including following Equipment:

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- ◆ Air Compressor
- ◆ Filters
- ◆ Separator
- ◆ Heater
- ◆ Membrane Module

### Application

For each area of the Oil & Gas, Refinery, Petrochemical and Power Industry market we serve, it is easy to identify an application for which we are able to supply a process unit with the proper technology. For some specific application we have developed special and unique products that have been designed and improved according to the clients specifications and requests.



### 5.1.11 Typical list of unit we can supply are:

- ◆ Floating Production Storage Offloading (FPSO)
- ◆ Gas Processing
- ◆ Refinery
- ◆ Petrochemical
- ◆ Liquefaction
- ◆ LNG Carrier
- ◆ Regasification
- ◆ Storage
- ◆ Power Plant





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### 5.1.12 Codes & Standards:

ISG design according to different codes and clients standards.

ASME, ASTM	DIN	AGIP	SHELL
TEMA	SQL	AMOCO	STATOIL
NEMA	GOST	CHEVRON PHILLIPS	SUMITOMO
API	CE-PED	EXXON	TOTAL
UL	TUV	QAFCO	UHDE
U-STAMP	ATEX	SAUDIARAMCO	Etc.

### Quality HSE:

Quality system includes DESIGN,  
ENVIRONMENT and SAFETY

### ISO 9001 Certificate





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### DNV BUSINESS ASSURANCE MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. **80324-2010-AE-ITA-SINCERT**

Si attesta che / This is to certify that

**I.S.G. S.p.A.**

Via dei Givi, 18 - 20021 Baranzate (MI) - Italy

è conforme ai requisiti della norma per i sistemi di gestione:  
has been found to conform to the management system standard:

**UNI EN ISO 14001:2004 (ISO 14001:2004)**

Valutato secondo le prescrizioni del Regolamento Tecnico RT-09  
Evaluated according to the requirements of Technical Regulations RT-09

Questa Certificazione è valida per il seguente campo applicativo:  
This Certificate is valid for the following product or service ranges:

**Progettazione, gestione della commessa e della fabbricazione, avviamento di Impianti di Processo per settore Petrolio, Gas, Petrochimico e Centrali Elettriche (Settore EA : 34 - 18)**

Design, project and fabrication management, start-up of Process Units for Oil & Gas, Petrochemical and Power Station (Sector EA : 34 - 18)

Data Prima Emissione/Initial Certification Date:

**2010-07-01**

Il Certificato è valido fino al:  
This Certificate is valid until:

**2016-07-01**

L'audit è stato eseguito sotto la supervisione di:  
The audit has been performed under the supervision of

**Isabella D'Anna**  
Lead Auditor

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione.  
Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

DNV Norske Veritas AS, Solnessveien 14, 0687 Sandnessjøen, NO-6400 Sandnessjøen, Norway. Tel. +47 7359 4000. www.dnv.com



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SISTEMI SALUTE E BENESSERE  
SISTEMI SOSTENIBILITÀ

Largo e data/Place and Date:

**Agrate Brianza (MB), 2013-06-05**

Per l'Organismo di Certificazione:  
For the Accredited Unit:

*Zeno Beltrami*

**Zeno Beltrami**  
Management Representative



### DNV BUSINESS ASSURANCE MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. **80454-2010-AHSO-ITA-SINCERT**

Si attesta che / This is to certify that

**I.S.G. S.p.A.**

Via dei Givi, 18 - 20021 Baranzate (MI) - Italy

è conforme ai requisiti della norma per i sistemi di gestione:  
has been found to conform to the management system standard:

**BS OHSAS (Occupational Health and Safety Assessment Series) 18001:2007**

Valutato secondo le prescrizioni del Regolamento Tecnico RT-12  
Evaluated according to the requirements of Technical Regulations RT-12

Questa Certificazione è valida per il seguente campo applicativo:  
This Certificate is valid for the following product or service ranges:

**Progettazione, gestione della commessa e della fabbricazione, avviamento di impianti di processo per settore petrolio, gas, petrochimico e centrali elettriche (Settore EA : 34 - 18)**

Design, project and fabrication management, start-up of process units for oil & gas, petrochemical and power station (Sector EA : 34 - 18)

Data Prima Emissione/Initial Certification Date:

**2010-06-30**

Il Certificato è valido fino al:  
This Certificate is valid until:

**2016-06-30**

L'audit è stato eseguito sotto la supervisione di:  
The audit has been performed under the supervision of

**Massimiliano Cagnoli**  
Lead Auditor

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione.  
Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

DNV Norske Veritas AS, Solnessveien 14, 0687 Sandnessjøen, NO-6400 Sandnessjøen, Norway. Tel. +47 7359 4000. www.dnv.com



ACCREDIA  
SISTEMI DI GESTIONE  
SISTEMI QUALITÀ  
SISTEMI AMBIENTALI  
SISTEMI SICUREZZA  
SISTEMI SALUTE E BENESSERE  
SISTEMI SOSTENIBILITÀ

Largo e Data/Place and Date:

**Agrate Brianza (MB), 2013-06-11**

Per l'Organismo di Certificazione:  
For the Accredited Unit:

*Zeno Beltrami*

**Zeno Beltrami**  
Management Representative

## ISO 14001 Certificate

## ISO 18001 Certificate





# ASAS ALJOOD CONTRACTING

## 5.1.13 Major Clients

### Middle East:

AL JUBAIL PETR.	FANAVARAN	NIOC	PETROBAGH	SAUDI ARAMCO
ARABIAN IND. FIBER	IBN RUSHD	NIOEC	PIDEC	SAUDI CHEVRON
ARADET R.	IBN ZHAR	NISOC	PIDMCO	TAKREER
ARAK P.	IPCC	NPC	QAPCO	TARH O PALAYESH
ARAK R.	KHOUZESTAN P.	ODCC	QATOFIN	TASNEE
BIPC	KOC	OMAN LLC	Q-CHEM	TOLEDO
ENOC	LAVAN OIL R.	PETROKEMIA	SABIC	

### Saudi Projects

### Europe:

ABB	ENI	KELLOGG	SHELL	TAMOIL
AGIP	ENICHEM	LINDE	SIAD	TECHNICAS REUNIDAS
BASELL	ERG	MOTOR OIL HELLAS	SNAM	TECNIMONT
BOREALIS	FINA	NESTE OY	SNAMPROGETTI	TECHINT
BP	FOSTER W.	PGNG	SOFREGAZ	TECHNIP
BUTACHEMIE	HELPE	POLIMERI EUROPA	SOFRESID	TOTAL
C.C.C.	INITEC	REPSOL	SOL	TUPRAS
CEPSA	IRASCO	RHONE POLUENC	SOLVAY	TVK
DOW CHEMICAL	J & P	SAIPEM	STATOIL	
ENEL	KTI	SARAS	STFA	



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### 5.1.14 Refinery Experience

- ◆ Atmospheric Distillation
- ◆ Vacuum Distillation
- ◆ Gas Plant & Light Ends Recovery
- ◆ Gas & LPG Sweetening / Washing
- ◆ Naphta Hydrotreating
- ◆ Isomerization
- ◆ Catalytic Reforming
- ◆ Alkyltion
- ◆ Kero & Gasoil Hydrotreating
- ◆ Hydrocracking & Catalytic Dewaxing
- ◆ Visbreaking & Thermal Cracking
- ◆ Delayed Coking
- ◆ Hydrogen Generation
- ◆ Hydrogen Purification
- ◆ Amine Washing & Regeneration
- ◆ Sour Water Stripping
- ◆ Sulphur Recovery
- ◆ Utility and Off-Sites System







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## 5.2 Details of Integrated Solutions by SINERGIA

In Collaboration with our principal Sinergia of Italy which was established 1996 and specializes in planning, realisation and start-up of customized devices and packages. We can provide custom solutions for



- ◆ Air Plant Solutions
- ◆ Specs Designed Components:

### 5.2.1 Dryers

- ◆ **Membrane Dryer** - A membrane dryer is a compressed air dryer that consists of a semi-permeable membrane through which water vapor, and possibly some of the air, can permeate.
- ◆ **Refrigerated Dryer** – A refrigeration dryer is a compressed-air dryer that extracts water vapor by the application of cooling and subsequent condensation.



*Refrigerated Dryer*

- ◆ **Heat of Compression Dryer** – Adsorption dryers with heat regeneration in closed circuit versions are based on physical process operating when air is being compressed.

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- ◆ **Heat and Blower Regeneration Dryer**

- Hot regenerated dryers with external blowers are normally used for large air flows and employ external heaters (electric or steam type) to perform the adsorbing material's regeneration without any dried air consumption.



*Heat And Blower Regeneration Dryer*

- ◆ **Heat Regeneration Dryer**

- The regenerated dryers are a hybrid solution between heatless and hot regenerated dryers with external blower. The average dried air consumption in this case is approximately 7%. The operating times are generally halved compared to the hot regenerated dryers thanks to an exclusive system with a double air injection that optimizes the regeneration process.



*Heat Regeneration Dryer*

- ◆ **Heatless Dryers**

- The heatless dryers are the most commonly used devices for small and medium flows considering their simplicity and reasonable investment costs. Even though they are very essential devices, they are able to reach extreme dew points by means of a correct regulation of the regeneration time's length and of the air quantity necessary at this stage.



*Heatless Dryer*



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### 5.2.2. Gas Generation

- ◆ **Cryogenic Plant Air Separation** - The air separation can be performed by means of cryogenic technology that liquefies the high quality compressed air stream and separates its elements through the distillation process. This system manages to supply gaseous nitrogen and oxygen and, if requested, small quantities of liquefied gases.



- ◆ **Oxygen Generator VPSA** - PSA technology can be used for Oxygen production too, by selecting a different molecular sieve. The process is exactly the same already described for nitrogen. VPSA technology is used in massive production of gaseous oxygen. High quality air stream is blown at low pressure into molecular sieves placed inside two high capacity vessels. Regeneration of sieves is realized by means of vacuum generated by a pump. Alternative cycles of adsorption and regeneration assures continuous massive oxygen production at low pressure with high energy efficiency, caused by use of a blower instead of a compressor. If high pressure oxygen is needed, a booster integrate the process.



- ◆ **PSA(Pressure Swing Adsorption)** is an alternative technology for air separation, able to produce a continuous stream of nitrogen by means of air filtration. High quality compressed



air passing through carbon molecular sieves, placed inside two vessels, separates thanks to carbon porosity. Oxygen is adsorbed into molecular hollow, while nitrogen passes through and is collected as product of the process. Alternative cycles of adsorption and regeneration of carbons give continuity to production. Air pressure and timing of cycle's control leads up with to requested purity.



### ◆ **Membrane Nitrogen Generator** -

High quality compressed air can be separated by means of membranes composed of synthetic hollow fibres. Their permeating walls let pass through water vapour, CO<sub>2</sub>, and oxygen, while residual gas, mainly nitrogen, goes along the fibers and is collected as product of the process. Thanks to air stream's pressure and temperature control is assured maximum membranes performance in any ambience conditions. This leads up to requested purity with better energy efficiency.



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### 5.2.3. Heat Exchangers / Noise Reduction System / Vessels

- ◆ **Plate Heat Exchanger** - The experience we have gained in the water treatment and cooling for industrial systems allows us to produce skids for critical installations where the cooling liquid is problematic (corrosive, loaded with

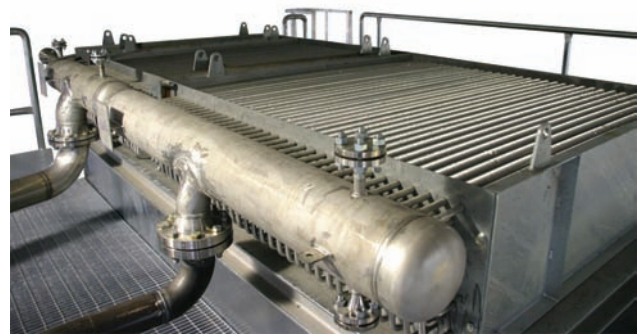




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impurities or in cases of seawater). Our flexibility allows us to customize any product to specification and to provide pre-assembled skids carried out with the most suitable materials for the installation location and quality of the water to be treated (galvanized carbon steel, stainless steel, hastelloy, titanium or PVC). Production is carried out in accordance with API 662 standards.

- ◆ **Air Fin Cooler** - This type of device does not have any hygienic and sanitary impact as the traditional cooling towers might have, because the secondary fluid (air or water) is in a completely sealed circuit and does not come into contact with the cooling air. The experience that sets us apart in the water treatment



and air cooling field allows us to produce cooling skids for the widest possible range of needs, particularly for systems installed in high temperature environments.

- ◆ **Shell and Tube Heat Exchangers** - In most cases, the service water used for cooling is not very clean and has a high hardness level. In the long run, this water type's use causes a deposit of limescale and dirt on the tube bundle that reduces the thermic exchange's efficiency. In these cases, a tube bundle's mechanical cleaning is not always enough and a chemical washing may become necessary. To avoid damages



caused by the corrosion subsequent to frequent washings, our exchangers' tubes, tubes' plates and diaphragms are made out of TP316 stainless steel. Production is carried out in accordance with API 660 standards.

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- ◆ **Noise Reduction Canopy** - Deadening casings are designed to reduce the noise made by operating machines, to reclaim working environments and to limit the noise's spreading to the outside. Our canopies are designed with doors, windows, auxiliary installations (ventilation, illumination and conditioning systems), fire and gas detection and extinguishing system according to the customers' requests.
- ◆ **Noise Reduction Silencer** - In order to reduce this noise within acceptable limits, Sinergia has realized a series of silencers that reduce the noise generated by the installations or by the gas exhaust. Industrial silencers are made out of external metallic cases containing labyrinths and resonant cavities. Each silencer category has standard models that can be personalized after the customer's requests.
- ◆ **Cooling Water System** - If the industrial systems use cooling water supplied by evaporative towers, chillers or air fin cooling systems, a pre-assembled skid equipped with water circulation pumps which is easily transported and customized with a chemical dosing







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system necessary for water treatment is advantageous in support of the end user. The experience we have gained over time in the field allows us to offer customized, high quality solutions which are specific for each type of need at competitive prices. Production is carried out in accordance with API 610 and ISO 13709 standards.

- ◆ **Vessels** - Our vessels are different from the standard ones on the market as they are made solely to meet special conditions and particular project's specifications. There are various types of special requests, for example regarding the size in cases the vessel needs to fit in an existing plant with limitations or special connections and the settings' complete customization (instruments and connections).



### 5.2.4. Filtration

- ◆ **Liquid Filter Cartridge** - Cartridges characterized by high capacity to retain contaminants, made of polypropylene and with high porosity. They are particularly suitable for the filtration of liquids such as water, paint and various chemicals.
- ◆ **Single and Duplex Water Filter** - A good filtering and condensate removal reduce considerably the costs of the devices' maintenance and missed production and allow to maintain an invariable final product's quality. The value of duplex filters is the possibility to carry out maintenance without interrupting the work process: while one cartridge is





working, the other doesn't filter, allowing manual operator intervention. The filters we design and produce are suitable for installations on pressured lines and are able to work with operating temperatures up to 120°C. On demand we supply filters for temperatures higher than 200°C.

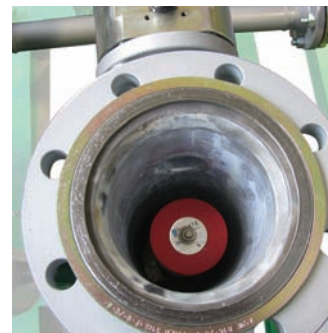
- ◆ **Single Duplex Oil Filters**



- ◆ **Air and Gas Condensate** - Tools simple and rapid installation, steam traps purify the air from the oil particles. The timer and solenoid valve are designed to automatically remove the condensate from compressed air systems.



- ◆ **Air and Gas Filter Cartridge** - The compressed air system's reliability and efficiency are always influenced by the presence of different solid particles and condensate suspended in the distribution net's air. The filters we design and produce are suitable for installations on pressured lines and are able to work with operating



temperatures up to 120°C (200°C for particular conditions). Our filters are suitable for high range of application and compatible with various casings.





- ◆ **Air and Gas Condensate Separator** - These products are realized to separate oil from condensate. Through various separation stages the air becomes pure, losing the biggest quantity of oil and other impurities. The condensate separator components are designed to combine various type of adsorption technologies, with the aim to reduce the contaminants at low possible level.



- ◆ **Gas Filter/Air Filter** - A good filtering and condensate removal reduce considerably the costs of the devices' maintenance and missed production and allow to maintain an invariable final product's quality. The filtering at the compressor's inlet does not always guarantee a good quality of the air to use, especially if the pipings or tanks are not made out of stainless material.



### 5.2.5. SINERGIA also manufactures the following compressors

- ◆ **Reciprocating Compressor**
- ◆ **Centrifugal Compressor**

These compressors we design and manufacture package for air and process gas. All units are fully packaged ready





to be hooked-up and are customizable in terms of heavy duty supplies severe, dangerous or explosive environmental conditions, ATEX, CE, ASME, API618, API610 compliance. They can be diesel, steam turbine or electric motor driven.

- ◆ **Oil Free Screw Compressor**
- ◆ **Oil Flooded Screw Compressor**

These Screw Compressors are commonly used in a variety of air, process gas, process refrigeration and natural gas applications, including individual wellhead boosters, low pressure gathering systems, low stage boosters to existing reciprocating machines, solution gas and flare gas compression. Sinergia designs and manufactures high quality and innovative oil-injected air and gas solutions for a wide applications' spectrum. It offers a complete range of rotary screw air compressors that can meet any compressed gas requirements.







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### 5.3 Details of Products by ASAS ALJOOD



ASAS ALJOOD TRADING EST. is a leading provider of Rotating, Electrical and Instrumentation equipment, packages and after sales services of world-class manufacturers in Saudi Arabia.

#### Supply Of New Equipment:

ASAS ALJOOD TRADING EST. provide engineered products which are sourced from renowned manufacturers and manufactured as per customer requirements.

#### 5.3.1. Ingersoll Rand (Formerly known as Cameron Compression Systems)



- ◆ Integrally Geared Centrifugal Compressors (API and non API) – Air and Gas application – It is a leading provider of flow equipment products, systems and services to worldwide oil, gas and process industries.

Leveraging its global manufacturing, engineering and sales and service network, CAMERON/IR works with drilling contractors, oil & gas producers, pipeline operators, refiners and other process owners to control, direct, adjust, process, measure and compress pressures and flows.

For more than 175 years, CAMERON/IR Compression Systems group has manufactured top-quality, engineered products that have become legendary in the industries. We are the agent of CAMERON Centrifugal compressor and offer supply, commissioning, maintenance and repair services in Saudi Arabia



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5.3.2. HITACHI

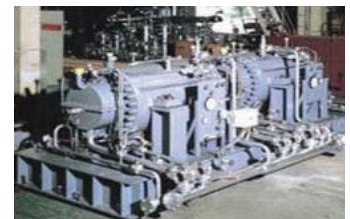


5.3.2.a. Hitachi Compressors

It is a worldwide company, have a very wide range of products and services.

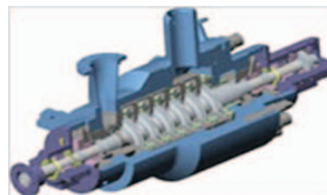
We are the agent of Hitachi Centrifugal Gas Compressors, Pumps, Motors and VFDs in Saudi Arabia.

HITACHI has manufactured more than 3,000 compressor sets of various types including 700 sets of centrifugal type over the past 85 years for complete range of industrial facilities, including refineries, chemical and petrochemical plants, natural gas processing and transmission plants iron and steel mills.



5.3.2.b - Hitachi Pumps

Hitachi, Ltd. has more than 90 years experience in manufacturing pumps which are sold and used around the world. Hitachi Pumps are manufactured in modern production facilities with state-of-the-art technology, and are exported globally





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### 5.3.2.c - Hitachi Motor

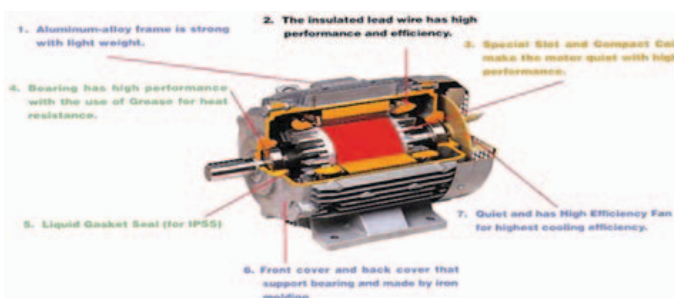
Hitachi was the first to manufacture electric motors in Japan in 1914. Today, Hitachi manufactures state-of-the-art motors and motor products ranging from the smallest micro motors to the largest motor and generator sets available anywhere in the world.

Hitachi Manufacturing following Motor:

- ◆ Submersible Motor
- ◆ Gear Motor
- ◆ Three-Phase Motor
- ◆ Eco heart Motor

### 5.3.2.d - Hitachi VFD

Variable Speed Drives save energy by reducing power consumed by motors driving centrifugal pumps, fans and other rotating equipment. By controlling the speed of a motor, the amount of energy used by the machinery is optimized. Reduced energy use translates to reduced carbon (CO<sub>2</sub>) emissions.





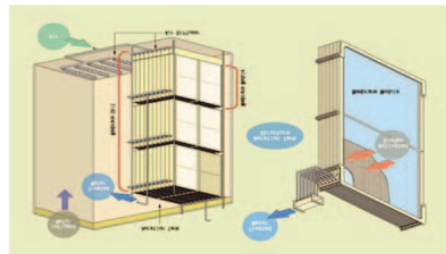
### 5.3.2.e - Environmental Systems (Water Treatment)

Hitachi provides total solutions – EPC, operation and maintenance – for the environmental business filed such as drinking water and sewage treatment equipment, industrial waste water treatment equipment and soil and groundwater purification equipment.



We deal with following Products:

- ◆ Membrane Bioreactor (MBR)
- ◆ Reverse Osmosis (RO)
- ◆ Oil-Water Separation Units



### 5.3.3. Gardner Denver



- ◆ Liquid Ring Compressors (API and non API) - Garo SpA is an Italian company established in 1947. Garo core business is focused since beginning on design & manufacturing of Liquid Ring Compressors. Garo has long experience in chemical, petrochemical and oil & gas applications and prides itself for supplying more than 1000 units world over.



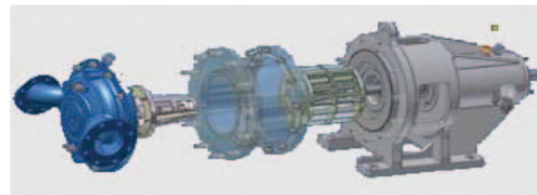


## ASAS ALJOOD CONTRACTING

We are the agent of **Garo, NASH, ELMO RIETSCHLE, HOFFMAN and LAMSON** in Saudi Arabia.

Liquid ring compressors are the most suitable equipment for handling Process & waste gases, such as:

- WET GASES without dehydrating plant
- GASES WITH FRACTIONS of solid elements (Powder and particles)
- Condensable toxic corrosive & explosive gases



### 5.3.4. DMW Corporation



It is Japanese Company Established in September 1910. The Company commenced its business with the object of manufacturing water turbines, pumps etc.

We offer the following DMW Products in Saudi Arabia:

- ◆ **Pumps:** The Company holds a record of having manufactured pumps, such as 2,500m in pump head, 7,000ps. in driving power, over 3,600 mm in bore diameter. The Company is well equipped to produce pumps for every needs for factories, hydro and thermal power stations, water and sewage systems, agricultural, chemical, mining industries and for other civil engineering requirements. Various Models of the pump are listed below:

- Vertical Mixed Flow Pump** - DMW's vertical mixed flow pumps, Model "VPF" are utilized in Irrigation, Drainage, Sewage, Power Plant(CWP), Sea water vaporizer at LNG Receiving Terminal, Sea Water Intake at various plants, etc.



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- ii. **Axial Split Casing Horizontal Double Suction Centrifugal Pump** - The users are Power Plant, Oil and Gas Industry, Off-site Utility, Steel Plant, Sewage, Irrigation, Drainage, etc.

Our "DF" is designed as per information gained from the said ample supply experience.



- iii. (a) **Model "DMF": Axially Split Casing Multi-Stage Centrifugal Pump**  
(b) **Model "BMT": Radially Split & Barrel Type Double Casing Multi-Stage Turbine Pump** – The DMF & BMT of multi-stage process pump series has a low maintenance, high quality, and a high cost performance.
- iv. **Horizontal Overhung Centrifugal Process Pump** - The SMKP pump is horizontally mounted, radial split case, single stage, single suction and overhung centrifugal process pump (API 610 Type OH2).
- ◆ **Fans & Blowers:** The Company is also well equipped to manufacture various types of fans, blowers and turbo compressors for gas, mining, chemical industries and other civil engineering purposes. Turbo - blowers of up to 3,500 kW have been built by the Company.

- 5.3.5. Various Skid mounted Process Packages, Refrigeration Units, fixed bed dryers, gas generators etc.
- 5.3.6. Air Cooled Heat Exchangers
- 5.3.7. Air dryers, receivers, sound enclosures
- 5.3.8. Gas Conditioning and Metering Skids, Regulating Valves and related instrumentation product.
- 5.3.9. Flow and Level measurement products





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## 6. DETAILS OF TURNAROUND SERVICES

In Collaboration with SAAD Technical Services India, we provide Turnaround Services to the industries we service.



We have expertise in Turnaround Jobs, plant maintenance of Refineries, Petrochemicals, Oil & Gas, Fertilizers and Chemical Plants.



We are able to provide Machinery services, Rotating equipment services, static equipment services for the Turnaround. Expert and technically skilled manpower is provided to us by SAAD Technical for carrying out such works.

ASAS ALJOOD has a unique market value coupled with a renowned brand presence for its successful project execution services. From relatively small projects to large, multiple-EPC and MAC implementations, we apply consistent rigor, management and engineering to protect your investment and deliver results with reduced risk.



### ◆ TURNAROUND JOBS

- Shutdown Maintenance of Rotary Equipments
- Shutdown Maintenance of Static Equipments
- Fabrication Services
- Specialize Onsite Jobs



# ASAS ALJOOD CONTRACTING

We undertake shutdown maintenance services for our esteemed clients that include:

- Power Plant
- Industrial Plant
- Petrochemical Plant
- Fertilizers & Chemical Plant



### 6.1 Shutdown Maintenance of Rotary Equipments:



- ◆ Overhauling and Repair of Single Stage and Multistage Pump
- ◆ Overhauling and Repairs of Reciprocating Compressors
- ◆ Overhauling and Repairs of Centrifugal Compressors
- ◆ Overhauling and Repairs of Gear Boxes
- ◆ Overhauling and Repairs of Agitators
- ◆ Overhauling and Repairs of Turbines
- ◆ Overhauling and Repairs of Blowers

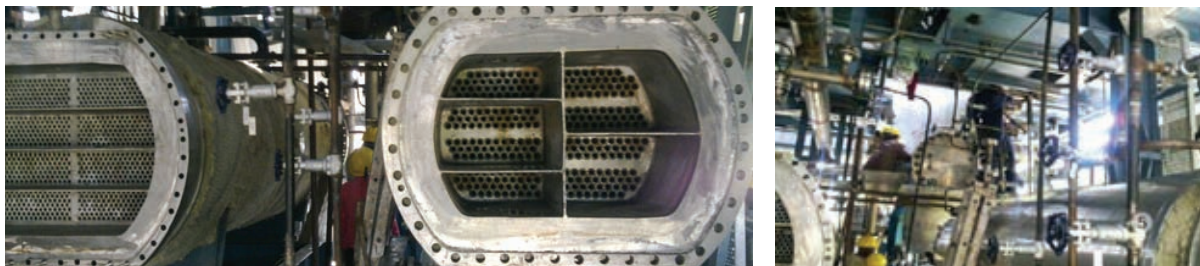




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**6.2 Shutdown Maintenance of Static Equipments:**

- ◆ Overhauling of Heat Exchangers
- ◆ Overhauling of Columns, Tanks, Vessels and Drums
- ◆ Overhauling of Reactors & Furnace
- ◆ Overhauling of Valves re-conditioning



**6.3 Fabrication Services:**

- ◆ Fabrication and Erection of Structures and Tank.

We use our engineering background to help erect and fabricate various architectural structures.

- ◆ Fabrication, Erection, Testing and Commissioning of pipelines.

Using its unique expertise in the field, SAAD provides all round services for urban and domestic pipelines. This further elaborates its commitment to a successful project execution service.





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#### 6.4 Component Fabrication Services:

We provide a wide array of components with strict regulations aimed at reliability, optimum performance and cost-effectiveness.

##### Steel Structure

We are engaged in offering perfect structural fabrication services. The mentioned services are rendered by experienced engineers using finest components coupled with international manufacturing standards.



#### 6.5 White Metal / Babbit Lining of Bearings:

- ◆ Turbine Journal Bearings
- ◆ Tilting Pad Bearings
- ◆ Thrust Bearings
- ◆ Connecting Rod/Main Journal Bearings
- ◆ Hydro-electric Turbine Bearings
- ◆ Guide Bearings and Thrust Shoes







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## 6.6 SAAD Projects Details:

### Kingdom of Saudi Arabia (KSA) Clients:

- ◆ SAUDI KAYAN : Annual Turnaround (2016)
- ◆ PETROCHEMICAL CONVERSION COMPANY(PCC) : Plant Commissioning Projects (2015)
- ◆ TASNEE Petrochemical HDPE : Plant Turnaround - Rotating Equipment Overhauling (2014)
- ◆ YANSAB : Technical Services (2015)
- ◆ SAUDI CHEVRON PHILLIPS : Technical Services (2014)
- ◆ AL-BAYRONI : Maintenance of Rotating Equipment (2016)
- ◆ SIPCHEM : Overhauling of Fin Fan (2015)
- ◆ YANPET : Technical Services (2014)
- ◆ PETRORABIGH : Technical Services (2014)
- ◆ SAUDI ARAMCO(Jeddah Refinery) : Shutdown Maintenance of Rotating Equipment (2013)
- ◆ SADAF : Technical Services for Turnaround of Rotary Equipment and Valves (2015)
- ◆ IBN ZAHR : Technical Services (2014)

### Other Region Clients:

- ◆ INDO JORDON CHEMICAL INDUSTRIES COMPANY(IJC), JORDAN : Bearings Inspection of TG & TB during Annual Turnaround – LSTK (2014 & 2015)
- ◆ JORDAN INDIA FERTILIZER COMPANY L.L.C (JIFCO) : Maintenance of Rotating Equipment (2015)
- ◆ GULF PETROCHEMICAL INDUSTRIES COMPANY, BAHRAIN: Major Shutdown - Maintenance Contract Of Rotating Equipment & Instrumentation (2015)



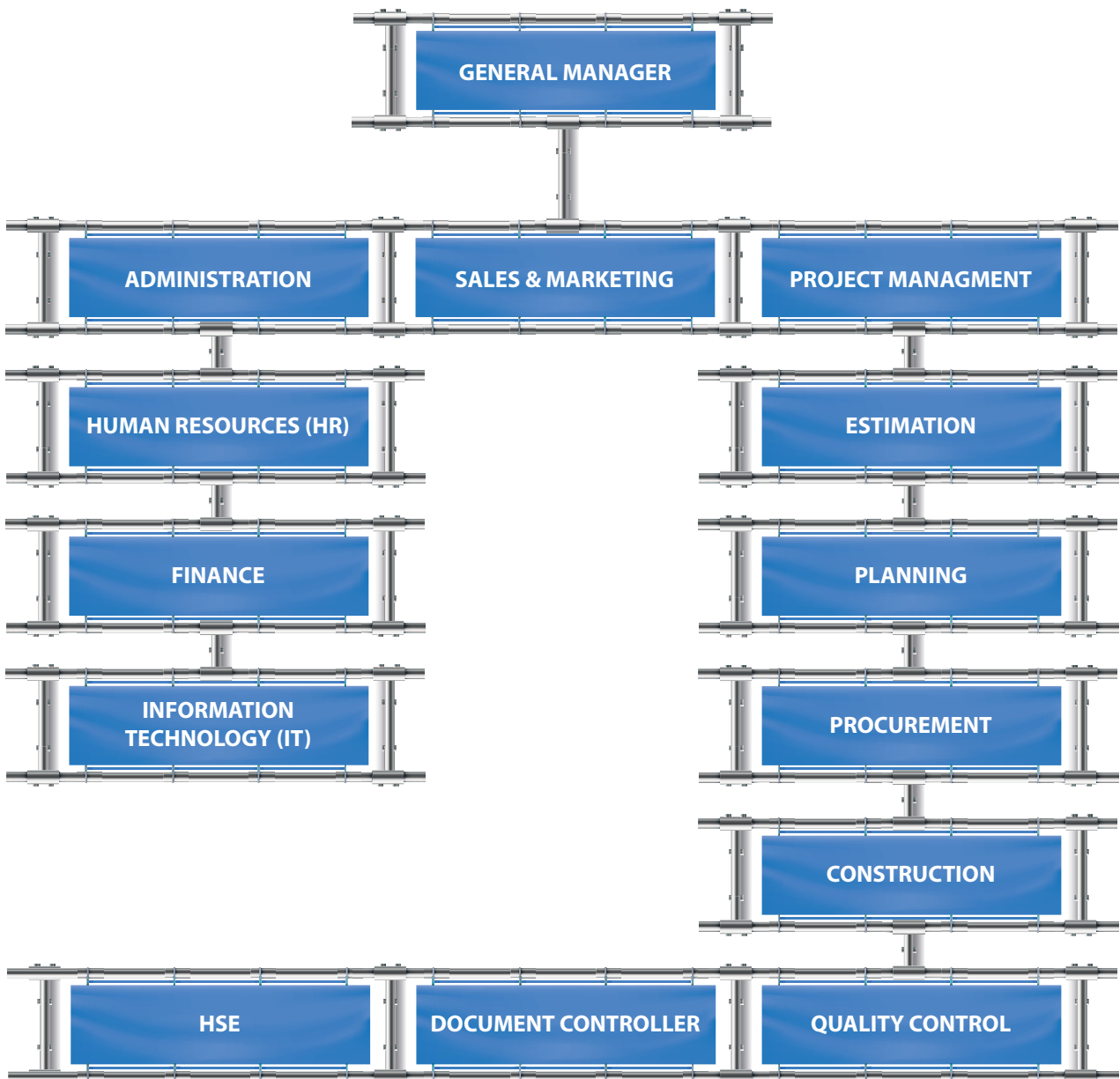
### ASAS ALJOOD CONTRACTING

- ◆ PETROCHEMICAL INDUSTRIES CORPORATION(PIC), KUWAIT: Rotating Equipment Maintenance Contract (2014)
- ◆ KUWAIT NATIONAL Petroleum Company(KNPC), KUWAIT: Technical Services and Commissioning Support (2014)
- ◆ EQUATE, KUWAIT : Technical Services for Turnaround Job (2014)
- ◆ KUWAIT OIL COMPANY(KOC), DUBAI : Technical Services (2014)
- ◆ INDORAMA ELEME FERTILIZER & CHEMICALS, NIGERIA : Supervision of Instrumentation for DM Water Plant Erection & Commissioning (2015)
- ◆ INDIAN FARMERS FERTILIZER CORPORATION LIMITED (IFFCO), INDIA : Major Shutdown Maintenance of Rotating Equipment in Ammonia Plant (2016)
- ◆ DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED, INDIA :
  - Overhauling of Centrifugal Compressor (2016)
  - Shutdown Maintenance of Rotating Equipment's in Ammonia Plant (2015)
- ◆ INGERSOLL - RAND CLIMATE SOLUTIONS PVT LTD, INDIA : Repair of Journal Bearing on Motor Rotor (2015)
- ◆ BHARAT PETROLEUM CORPORATION LIMITED(BPCL), INDIA : Shutdown Maintenance (2014)
- ◆ POLYGENTA TECHNOLOGIES LIMITED, INDIA :
  - Piping Fabrication & Erection Work (2013)
  - Shutdown Work in UPR 3 Section (2012)



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7. ASAS ALJOOD ORGANIZATION CHART





### 8. QUALITY POLICY

We ASAS ALJOOD as a contracting company in all aspects of engineering has adopted a quality policy to ensure the effective implementation of international standards across the board.

It is the company's policy to ensure that all projects are executed in accordance with contract specifications and drawings, within the contractual time frame, and in compliance with all legal requirements thus producing good value and satisfaction to our client.

The company management is committed to continuously improve the effectiveness of the quality management system to satisfy the following:

- ◆ Safe, economic and efficient methods for working
- ◆ Compliance with applicable statutory regulations and recognized codes of practice
- ◆ Compliance with contractual obligations, customers specifications and professional industry standards
- ◆ Monitoring customers satisfaction and adjusting its quality targets accordingly
- ◆ Adherence to programme and budget
- ◆ Maintenance of a high level performance and professionalism by regular reviews of its policies, resources and training requirements
- ◆ Continual improvement of company practices and operations

We shall establish strategic relationships with all our suppliers and sub contractors. These relationships shall emphasize continuous improvement in their organization and thus completing the projects on time to the specifications.

This quality policy shall be continually reviewed and amended in line with our business goals and strategies.





## ASAS ALJOOD CONTRACTING

### 9. HSE POLICY

We, ASAS ALJOOD adhere strictly to international quality and safety policy and the same is communicated to all levels of the organization and management will ensures that this policy is pursued and maintained.

We want to achieve a high level of occupational health and safety performance through safe working practices and compliance to legal safety requirements.

ASAS ALJOOD will provide information, instruction, training and supervision as is necessary to promote the Health and Safety and Reduce the environmental impact of its employees.

The requirements of the standards are integrated into business processes in order to:

- ◆ Reduce the probability of incidents which have the potential to cause injury, disablement and fatality of its stakeholders whilst engaged in company business or in attendance at the company premises.
- ◆ Ensure ongoing compliances with increasingly stringent legal requirements.
- ◆ Implement work procedures and define Roles, Responsibilities and Accountabilities.
- ◆ Control / Mitigate work-related hazards and environmental aspects by increasing awareness on health safety environment matters to all its employees.
- ◆ Improve employee morale and enhance stakeholder satisfaction
- ◆ Continually improve HSE management performance of the company by regular review of objectives and work place hazards and environmental impacts.

The HSE policy is important to our business success because it allow us to systematically minimize all losses and adds value for all our stakeholders.



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## 10. REGISTERED WITH CUSTOMERS

- ◆ SAUDI ARAMCO - REGISTRATION ID – 10053118
- ◆ SABIC – REGISTRATION ID – 507843
- ◆ SAMREF - REGISTRATION ID – 20764
- ◆ PETRORABIGH - REGISTRATION ID – 101446
- ◆ SAUDI ELECTRICITY COMPANY - REGISTRATION ID – 5011823
- ◆ MARAFIQ
- ◆ NOMAC
- ◆ CRYSTAL







# ASAS ALJOOD CONTRACTING

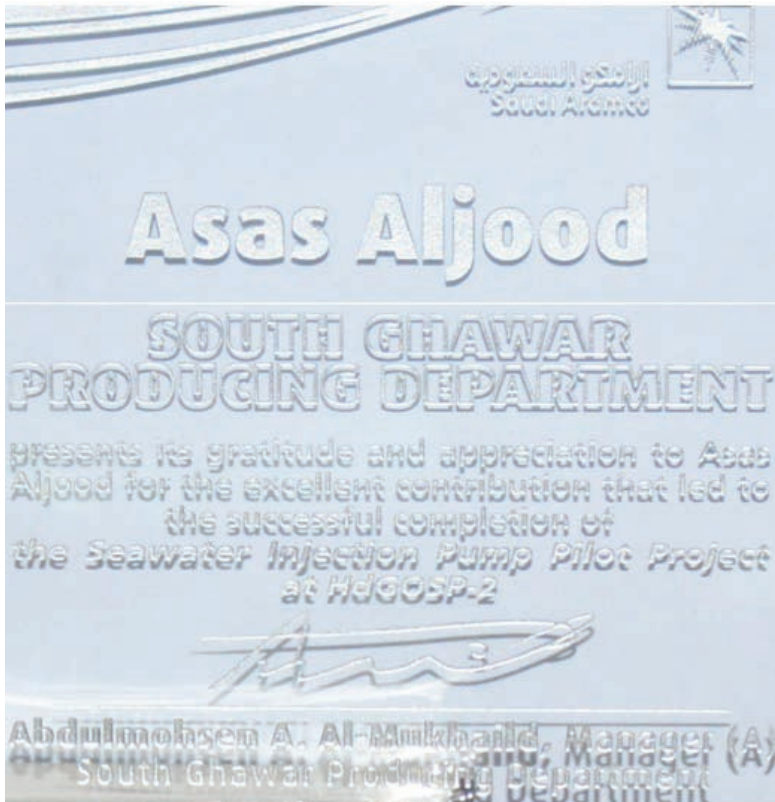
## 11. CERTIFICATE OF APPRECIATION

FROM SAUDI KAYAN PETROCHEMICAL COMPANY – For the completion of Turnaround Job - 2013





FROM SAUDI ARAMCO – For the successful completion of the Seawater Injection Pump Pilot Project at HdGOSP-2







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## 12. PROJECTS COMPLETED

Saudi Kayan – TA2015 HDA Compressor Overhaul  
Hadeed - Enhancement of Compressor in Utility for SPLP-1  
Saudi Kayan – TA2016 Instrument Air Compressor Overhaul  
Ibn Al-Bayatar – Modification of Air Filter Assembly  
Saudi Kayan – TA2013

Details of **Enhancement of Compressor in Utility for SPLP-1 Project in Hadeed.**

Design, Supply, Installation of:

- ◆ Cameron Compressors (10,200 Nm<sup>3</sup>/hr @8 bar) – 2 Nos
- ◆ Siemens Motors (1450 Kw) – 2 Nos
- ◆ Dollinger Air Intake Filters (6000 CFM) – 2 Nos
- ◆ ABB MV Soft Starters – 2 Nos
- ◆ Air Dryer, heatless Desiccant type (15000 Nm<sup>3</sup>/hr) – 1 No
- ◆ Siemens MV Switchgears – 3 Nos
- ◆ ABB DCS Modifications
- ◆ Detailed Design Package, Civil, Structural, Mechanical, Piping, Electrical, Instrumentation and Automation work

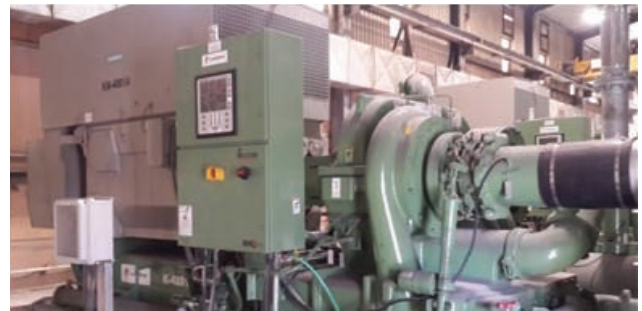


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Integrally Geared Centrifugal Compressor (View-1)



Integrally Geared Centrifugal Compressor (View-2)



Integrally Geared Centrifugal Compressor (View-3)



Air Dryer



Inlet Air Filter



Blow Off Silencer









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*ASAAS ALJOOD is offering Integrated Solutions with Design, Engineering, Supply, Installation, Start-up and Turnaround Services to the following Sectors:*

*Petrochemical*

*Oil & Gas*

*Desalination Process*

*Power*

*General Ind. & Utilities*

*Heavy Industrial Plants*

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 فاكس: ٨٢٨٣٣٦٩ +٩٦٦ ١٣  
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