Valves
General Catalogue

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vision

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Safety Valves

Control Valves

On/Off Valves and MOVs

Wellhead Services

Special Valves

Actuators

Accessories

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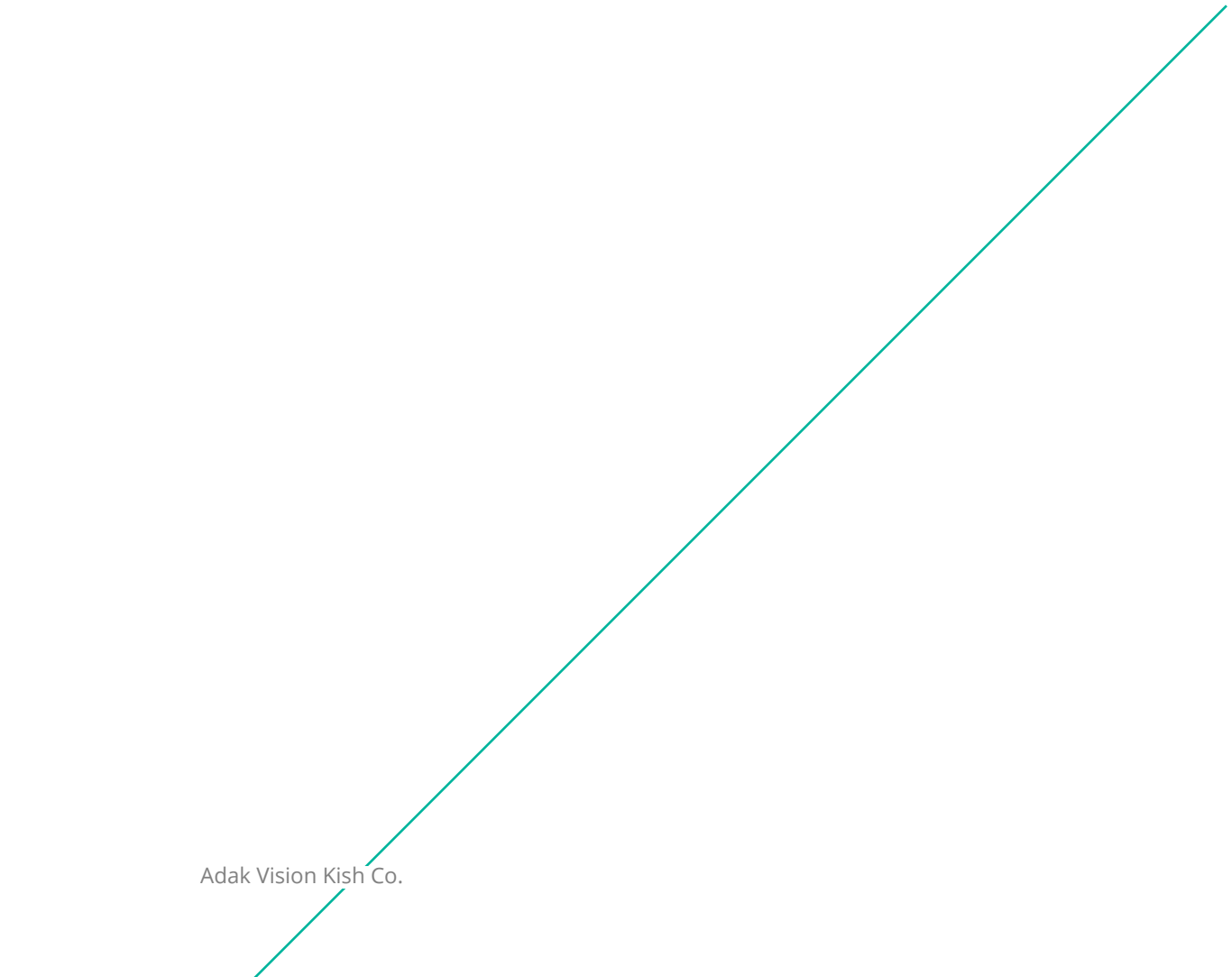
1. About Us

Adak is a privately owned stock and one of the leading EPC companies in the nation, active in engineering services, supply, and provision of extensive selection of industrial valve, automation, control and instrumentation equipment and supplementary accessories. Adak vision relies on its experience in presenting several projects including technical engineering services, designing, manufacturing, installation, testing and commissioning projects in the field of oil, gas and petrochemical industries, steel making plants, power plants, water and wastewater treatment, railway industries, cement industries etc.


GLOBAL MAP
Application Form

1.1. Our Mission, Vision, and Value

Adak's Mission is to provide valve solutions for various industries mentioned before and provide extensive engineering services, procurement, construction installation and commissioning for its clients, relying on more than 2 decades experience of its management and engineering team. The company has taken efficient steps in development of national economy and industry through the experience of its experts and applying the state-of-the-art technology. This is what we call our Vision! To become one of the main references in mentioned fields in the region as a knowledge-based company. Last but not least our Value is the precious human resource which is made of most expert individuals and also the trust of our clients which have shaped through these years that we won't exchange it with anything in this world.



2. Safety Valves

An unwanted pressure increase in a pressure vessel, boiler or any plant is dangerous for both plant and personnel and may take them under high risks. Therefore, it is mandatory to control this pressure increase and relief it in a safe way. While we are coping with a pressure vessel safety/relief valve should be manufactured in accordance with ASME SEC. VIII and when it comes to boilers ASME SEC. I is the reference. We have solutions for both applications.


1.4403 CF8M
GL1091148

2.1. ASME SEC. VIII

Threaded type

Flanged type

2.1.1. Compact series

- Safety and relief valve, angle type, conventional/ balanced bellows
- Direct spring loaded
- Full lift safety valve
- Stainless steel, DUPLEX (on request)
- Steam, gases, cryogenic fluids, vapors and liquids HTF Solar applications.
- Cleaned and degreased for oxygen service
- Threaded BSP / NPT or Flanges EN or ANSI/ Clamp
- PN 40 for threaded / PN16, PN 40, ANSI150 and ANSI300 for flanges/ PN 10 for clamp type (Clamp dimensions according to ISO 2852)
- Seat metal- metal, Viton, and PTFE
- Set pressure range 0,5 to 34,5 barg
- Tolerance Set pressure ± 3%
- Overpressure 10%
- European Pressure Equipment Directive PED 2014/68/EU
- CE 0056 Module B
- CE Production Quality Assurance (Module D) ES037955- 1035
- Material test certificate EN 10204 3.1

Clamp type

HPHydrogen

2.1.2. API 526 Series

▪ Safety and relief valve, angle type, conventional/ balanced bellows
▪ According ASME VIII and XIII
▪ Direct spring loaded
▪ Full lift safety valve
▪ A 216 WCB, WCC, Stainless steel A351 CF3M.
▪ A217 WC6, LCC, DUPLEX, SUPERDUPLEX (on request)
▪ Steam, gases, cryogenic fluids, H2, vapors and liquids
▪ Cleaned and degreased for oxygen service
▪ Flanged ASME/ANSI B16.5 ANSI150 / 300 / 600 / 900 / 1500 / 2500
▪ Seat metal- metal, Stellite, Viton and PTFE
▪ Set pressure range 0,2 (with bellows 2 barg) to 425 barg
▪ Tolerance Set pressure ± 3%
▪ Overpressure 10%
▪ European Pressure Equipment Directive PED 2014/68/EU
▪ CE 0056 Module B
▪ CE Production Quality Assurance (Module D) ES037955- 1035
▪ Material test certificate EN 10204 3.1

2.1.3. Pilot operated

- Inlet sizes: Up to 12”
- Orifice sizes: D to V inclusive
- Set pressure range: 0.2 to 520 bar g
- Temperature range: -180 to 320 °C
- Overpressure range: 1 to 5%
- Materials: Carbon or stainless Steel or special alloys
- Full nozzle design
- Fixed or adjustable blowdown (2% min.)
- Standard face to centre dimensions conforming to API std. 526.
- Accessories: internal or remote pressure pick-up, back-flow preventer, filter, field test arrangement, manual opening device, valve extension for extreme temperatures service.

2.1.4. Non-API Series

When client demands a safety valve which does not meet combinations of size and class with the designated orifices, or even selecting an orifice in between designated ones in API 526, it's time for Non-API 526 valves to be considered.

- Safety and relief valve, angle type, conventional/ balanced bellows
- Direct spring loaded
- Full lift safety valve
- Nodular Iron, Carbon steel, Stainless steel.
- WC6, LCC, DUPLEX, SUPERDUPLEX (on request)
- Steam, gases, cryogenic fluids, H2, vapors and liquids
- Cleaned and degreased for oxygen service
- Flanged EN 1092 PN-16 / 25 / 40 / 63 / 100
- Seat metal- metal, Stellite, Viton and PTFE
- Set pressure range 0,5 to 90 barg
- Tolerance Set pressure ± 3%
- Overpressure 10%
- European Pressure Equipment Directive PED 2014/68/EU
- CE 0056 Module B
- CE Production Quality Assurance (Module D) ES037955- 1035
- Material test certificate EN 10204 3.1

2.2. ASME SEC. I

Safety valves which are used for steam services of boilers, are manufactured in accordance with ASME SEC.I, Adak provides these valves at their highest their highest quality and meet all the required standards. These valves are open bonnet type and comes with various designs of bonnets.

Main features of low and mid pressure pilot operated safety valves:
- Inlet sizes: Up to 6”
- Orifice sizes: H to R1 inclusive
- Set pressure range: 1.5 to 80 bar g
- Max temperature: 543 °C
- Overpressure: 3%
- Blowdown: 4%
- Full nozzle design
- Adjustable blowdown
- Designed in accordance with ASME sec. I

Main features of low and mid pressure pilot operated safety valves:
- Sizes: Up to 6” x 10”
- Set pressure: up to 350 bar g
- Max temperature: 649 °C
- Overpressure: 3%
- Blowdown: 4%
- Accessories: pneumatic cylinder and limit switch
- Designed in accordance with ASME sec. I
- Inlet connections prepared for welding or flange ASME 600-2500 Outlet connections ASME 300

2.3. Breather Valves (Pressure Vacuum Valves)

These are special devices that function as an end-of-line valve to protect against pressure and vacuum. The valves may be designed as pipe away version which can be connected to a vent header to process vapors.
Pressure relief valves prevent vapor loss up to the adjusted set pressure and offer reliable protection against excess pressure while Vacuum relief valves prevent the unallowable entrance of air up to the adjusted set pressure and offer reliable protection against vacuum. Eventually, Pressure/vacuum relief valves perform all the mentioned tasks.

Main specifications of Adak Vision's breather valves are:
- Size: 1 ½" to 28"
- Pressure setting range: -100 to +500 mbar

Various applications are available

3. Control Valves

Controlling flow, pressure and temperature in a system is critical as a process variable should be maintained. This happens by positioning a disc or plug adjusted by an actuator.

3.1. Flow Control Valves

3.1.1. Globe valves

3.1.1.1. Single seated

Control Valve Model UT is a state of the art Single Seated, heavy Top Guided Control Valve engineered to handle a variety of Process application. Materials Construction provide long-term trouble-free operation. A wide range of materials offers a choice to suit the individual application. The smooth body flow path reduces turbulences, minimizing the effects of erosion and noise.

Design Features

- Compact, Single seated valve with streamlined globe type body with high flow capacity and low-pressure recovery.
- Screwed- in or Quick- change seat trims
- Trim Type: Contoured
- Inherently characterized trims available in Linear,

Equal percentage or quick opening

- Unbalanced Trim

Benefits

- Top- entry design with immediate access to plug and seat
- Reduced inspection and maintenance cost
- Compact and easy to install trims
- Excellent flow capacity and control range-ability
- Reduces potential erosion and noise problems

End Connection Sizes/Types:	1/2 in (15 mm) - 6 in (150 mm). Integral Flanges, Butt, or Socket Weld ends. (Other options: contact us)
Design Standard:	ASME B 16.34.
Valve Body Ratings:	ASME 150 - ASME 2500.
Body Configurations:	Globe
Bonnet Styles:	Bolted as standard. (Other options: contact us)
Standard Bonnet Packing:	Teflon/Chevrons.
Trim type:	Contoured.
Inherent Trim Characteristics:	Linear, Equal percentage or quick opening.
Plug Options:	Unbalanced.
Plug/Seat Leakage Class:	▪ Class IV ANSI/FCI 70.2 as standard options: ▪ Class V ▪ Class VI with soft seat insert

3.1.1.2. Cage guided

Green Control Valve Model UC is a specially designed cage guided Control Valve intended to handle variety of Process applications from medium to high pressure drops and wide range of temperatures. Heavy cage guiding and selection of hardened trim materials will eliminate vibration, erosion and dynamic instability associated with high pressure drop applications. A wide range of materials offers a choice to suit the individual application. The smooth body flow path reduces turbulences, minimizing the effects of erosion and noise.

Design Features

- Compact, cage guided valve with streamlined globe type body with high flow capacity and low-pressure recovery.
- screwed in or quick-change seat trims
- Trim Type: Cage
- Inherently characterized trims available in Linear, Equal percentage or quick opening
- Balanced Trim

Benefits

- Top- entry design with immediate access to plug and seat
- Reduced inspection and maintenance cost
- Compact and easy to install trims range- ability
- Low actuating force required with balanced trim style
- Reduces potential erosion and noise problems
- Excellent flow capacity and control

End Connection Sizes/Types:	2 in (50mm) - 24 in (600 mm). Integral Flanges, Butt Weld ends. (Other options: contact us)
Design Standard:	ASME B 16.34.
Valve Body Ratings:	ASME 150 - ASME 2500.
Body Configurations:	Globe
Bonnet Styles:	Bolted as standard. (Other options: contact us)
Standard Bonnet Packing:	Teflon/Chevrons.
Trim type:	Cage
Inherent Trim Characteristics:	Linear, Equal percentage or quick opening.
Plug Options:	Unbalanced.
Plug/Seat Leakage Class:	▪ Class IV ANSI/FCI 70.2 as standard options: ▪ Class V ▪ Class VI with soft seat insert

3.1.2. Ball valves

One of the most trusted ball valves in the petroleum and chemical process industries, combines the strength of its components with a dependable and compact design.
BV ball valves satisfy a wide range of ASME, ANSI and API standards. Available in cast steel and forged steel, with various trims, they may be specified in sizes from 1/4" to 60", and pressure classes of 150 through 2500. Engineered for heavy duty, maintenance-free performance, the BV ball valve is commonly selected for a number of demanding applications.

Benefits
- Wide selection seat/seal trims
- Metal to metal seated available
- Protected seats for long life
- Trunnion design for dependable low torqu operation
- Bidirectional sealing
- Automatic body pressure relief
- Double block and bleed
- Easy to maintain
- Positive stem retention
- Adjustable packing

3.1.3. Butterfly valves

Our butterfly control valves are double eccentric high performance ones with wafer and lugged type design.

Benefits

- Blow-out Proof Stem
- Bi-Directional Dead-End Service
- Adjustable Stem Packing
- Fire safe seat/ metal seat
- Extended neck design

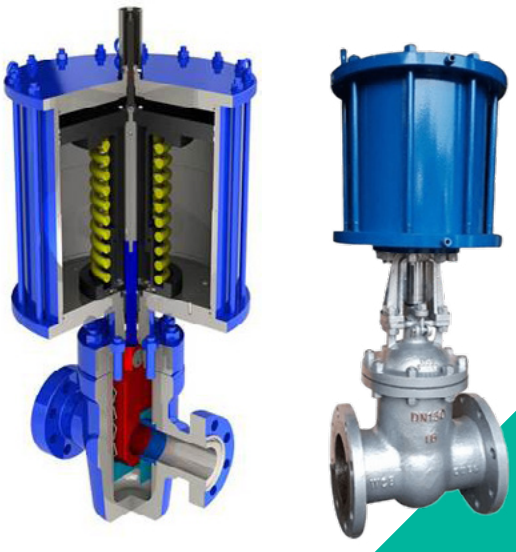
End Connection Sizes/Types:	2 in (50mm) - 36 in (900 mm). for ASME CLASS 150 2 in (50mm) - 24 in (600 mm). for ASME CLASS 300 Wafer/lugged
Design Standard:	ASME B 16.34.
Valve Body Ratings:	ASME 150 - ASME 300.
Body Configurations:	Butterfly
Styles:	Wafer/ Lugged
Standard Bonnet Packing:	Teflon/Chevrons.
Trim type:	Double eccentric

3.1.4. Gate valves

Our gate valve product is divided into 4 most commonly used trim types, wedge gate, double disc, parallel slide disc and Through Conduit. Wedge gate valves are commonly supplied with solid wedge up to 2" size and with flexible wedge for larger sizes. The latter design consists of two independent and flexible wedge valves, that allow a relative movement to accommodate changes in the body seat angles. The result is a valve with a high-pressure sealing performance, with optimum results at low differential pressures, meeting industrial valve requirements, moved toward larger sizes and higher pressures and temperatures.

End Connection Sizes/Types:	1/2 in - 72 in (900 mm). for ASME CLASS 150-4500
Design Standard:	ASME B 16.34.
Bonnet types:	Bolted, pressure seal, cryogenic
Trim types:	wedge gate, double disc, parallel slide disc and Through Conduit.

The so-called double disc valve incorporates a double disc, wedge and seat system which makes this design unique, being designed to assure a reliable operation under the most severe service conditions.
The two independent trunnion mounted discs which permit each disc to rotate a few degrees during closing. This rotating feature allows the discs to seat in a different position on each closing stroke which provides even wear and prevents small imperfections from growing into major leaks



3.1.5. V-notch ball valves

- Size range:1-20" (25-500mm) ASME class 150 and 1-12" (25-300mm) ASME class 300
- Temperature range: to 1000°f (540°c)
- Shell pressure rating: to 285-740 psi (1960-5100 KPa)
- Shutoff class: per ANSI/FCI 70-2
- Flexible metal: class iv
- Rigid metal: class iv
- Reinforced PTFE seat: class vi
- Clearance seat: 5% of max flow when closed.
- Body styles: flanged or flangeless
- Body material: carbon steel, 316 and 317 stainless steel, Hastelloy c

3.2. Pressure Regulator Valves

3.2.1. Pilot-operated pressure reducing/relief valve

These series of valves include pressure reducing self-actuated valve, pilot operated, to be used for general applications. These series of regulators are derived from UB and BPM series, and feature a pilot control line which is used to sense and amplify the regulated pressure through the loading pressure. The main goal is to increase regulator sensitivity, i.e. to regulate with lower offset (droop) or to deliver higher capacities with acceptable accuracy. Moreover, this solution allows to adjust shutoff thrust so to meet leakage class also in case of low set pressures.

Main features of these valves are:
- Function: reducing, relief
- Diameters: from ½" to 10"; over 10" upon feasibility check
- Connections: flanged (ANSI or PN)
- Seat: double (special), single (standard)
- Max rating: ANSI 1500
- Cv: from 0,6 to 850; over 850 upon feasibility check
- Body material: "exotic" materials, carbon steel, stainless steel
- Trim material: "exotic" materials, stainless steel (std)
- Diaphragms: EPDM, FKM, NBR, other, polychloroprene
- Max inlet pressure: 21 barg (std); over 21 barg upon feasibility check
- Min regulated pressure: 0,0012 barg
- Min temperature: -25°c
- Max temperature: 200°c

3.2.2. Pilot-operated tank blanketing pressure reducing/relief valve

These series are pressure reducing self-actuated valve, pilot operated, to be used for low pressure applications (e.g. blanketing). These series of regulators are derived from UB and BPM series and feature a pilot control line which is used to sense and amplify the regulated pressure through the loading pressure. The main goal is to increase regulator sensitivity, i.e., to regulate with lower offset (droop) or to deliver higher capacities with acceptable accuracy. Moreover, this solution permits to make shutoff forces adjustable to meet leakage class.

Main features of these valves are:
- Function: reducing, relief
- Diameters: from ½" to 10"; over 10" upon feasibility check
- Connections: flanged (ANSI or PN)
- Seat: double (special), single (standard)
- Max rating: ANSI 1500
- Cv: from 0,6 to 850; over 850 upon feasibility check
- Body material: "exotic" materials, carbon steel, stainless steel
- Trim material: "exotic" materials, stainless steel (std)
- Diaphragms: EPDM, FKM, NBR, other, polychloroprene
- Max inlet pressure: 21 barg (std); over 21 barg upon feasibility check
- Min regulated pressure: 0,0012 barg
- Min temperature: -25°c
- Max temperature: 200°c

3.3. Temperature Control Valves

3.3.1. Desuperheaters

Desuperheating, sometimes called attemperator or steam conditioning, is the reduction of gas temperature. Its most common application is the reduction of temperature in a steam line through the direct contact and evaporation of water. Most Desuperheaters incorporate the venturi design which uses the velocity of the steam to atomize the cooling water. In addition, Ejector Atomizing Desuperheaters, Attemperator Desuperheaters, Surface Absorption Desuperheaters, and Mechanical Atomizing Desuperheater designs are available. In most types, water pressure requirements are the same as the steam line pressure.

Main features of Adak Vision's steam condition valves are:

- Function: Temperature control of the superheated steam
- Diameters: water: 1" – 1½" – 2" – 3" / steam: 3" – 4"
- Connections: Flanged (ANSI)
- Max rating: ANSI 2500
- Cv: from 0,0055 up to 21,15
- Body material: Cr-Mo alloy steel
- Trim material: stainless steel
- Max temperature: 570°c (steam side)
- Nr. Of nozzles: 6 – 9
- Rangeability: up to 50:1
- Max liquid flow: 50m3/h
- Δp: 60 barg (open position) – 80 barg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4. On/off and MOVs

On/off valves are essential components in fluid control systems, allowing for the precise regulation of flow. These valves enable the opening and closing of fluid pathways, providing reliable shut-off capabilities to control the movement of liquids or gases in pipelines. Available in various types, including ball valves, gate valves, and butterfly valves, they offer versatility and functionality across different applications and industries. On/off has various application as follows:

- SDV: shut-down valve
- ESV/ESD/ESDV: emergency shut-down valve
- BDV: Blowdown valve
- MOV: Motor operated valve

4.1. On/off Valves

All the control valves mentioned in previous section could be used as an On/off valve, however most used valve type for On/off application is ball and butterfly. Adak vision's On/off valves comes with no limitation on material, size, class, trim, special accessories and applications.

Our On8/Off valves applications are as follows:

- **SDV (Shut-down Valve):** Essential for quickly closing off fluid flow to prevent accidents or system damage during emergencies or planned shutdowns.

- **ESV/ESD/ESDV (Emergency Shut-down Valve):** Provides rapid closure in critical situations to safeguard personnel, equipment, and the environment from potential hazards.

- **BDV (Blowdown Valve):** Used for releasing pressure from a system by rapidly opening to discharge fluid or gas, ensuring safe operation and preventing overpressure.

- **MOV (Motor Operated Valve):** Equipped with an electric or pneumatic motor for automated control, enabling remote operation and precise flow regulation in industrial processes.

End Connection Sizes/Types:	1/4 in (50mm) - 60 in (1500 mm). Special size and classes based on order.
Design Standard:	ASME B 16.34.
Valve Body Ratings:	ASME 150 - ASME 2500.
Body Configurations:	Ball/ Butterfly/ Globe/...
Style and Trim:	Trunnion mounted ball, floated ball, wafer/ lugged butterfly, double eccentric, triple eccentric...
Actuators:	Pneumatic/ hydraulic/ gas over oil/ scotch yoke/ rack and pinion/ double act/ single act/ rotary/ linear/...
Accessories:	Solenoid valve, speed controller, limit switch, blanket/ jacket, indictors, ...

4.2. MOVs

In this regard, motor operated valves are somehow different from other valves mentioned in section 3, as they have motorized actuators. These motorized actuators mount on various types of valves mentioned in section 3 and provide MOVs.

Main features and benefits of motorized actuators on MOVs are:

- Thanks to ABSOLUTE SENSORS, which constantly measure the position & torque of your valve gets precise and reliable information.
- **Phase monitoring** (Automatic phase correction device)
- **Protection of change in direction**
- **Signaling continuity** (option)
- **Fire protection (option):** a fire jacket or an intumescent coating allow the actuator to operate for 30 min. in fire temperature over 1000°C (tested to UL1709 criteria)
- **Motor thermal protection**
- **SIL 1/2/3 (option)**
- **Self-locking at all speeds**
- **Partial Stroking** to check the availability of the connected MOVs. Starting position as well as partial stroke amplitude are programmable.
- **Fieldbus lighting protection**
- **Fault monitoring relay**
- **Protection by password**
- **Alarms indication:** continuously monitors the actuator performances. Up to 17 different types of faults and alarm scan be reported.
- **Emergency shutdown (ESD):** Depending upon the valve operation, ESD can be configured as an Open, Close or Stop command.
- **Programmable Timer:** to increase in operating time of the actuator, to avoid water-hammer effect in a pipe.

5. Wellhead services

- HIPPS
- HPU
- Wellhead control panel (WHCP)
- Self-Contained Local Control System (SCCS)
- Local panel (LCP)

5.1. HIPPS

5.1.1. Electronic HIPPS

A SIL-3-Capable System used to protect downstream equipment against overpressure or upset conditions coming from the Upstream. Electronic HIPPS considerably reduces over-pressure process risks and environmental impacts for piping and vessels downstream the system, with lower weight and cost. No need to install relief devices nor a by-pass line. The complete system is fully internally engineered: it is composed of Gate Valves, actuator and control system and it is designed to be opened against full differential pressure. Stroking time for safe and fast action: less than 2 seconds

5.1.2. Mechanical HIPPS

A SIL-3-Capable Self-Contained System used to protect downstream equipment against overpressure or upset conditions coming from the Upstream. Mechanical HIPPS is a Self-Contained Equipment suitable for applications where no external power sources are available. No need to install a by-pass line. The complete system is fully internally engineered: it is composed of Gate Valves, actuator and control system and it is designed to be opened against full differential pressure. Stroking time for safe and fast action: less than 2 seconds.

5.2. Hydraulic Power Unit (HPU)

HPUs are hydraulic power systems which supply hydraulic fluid to the valve actuator and can be used to supply a single/multi valve system or project. HPUs are fully customized according to Customer's specifications, as a simple Power Supply Unit or completed with a Control System for integrated Valve Control. The construction style of each HPU is designed as required by Clients: skid mounted, free-standing or directly installed on actuator.

5.3. Wellhead Control Panel (WHCP)

A WHCP is a Hydraulic Control System that provides control over the topside Christmas Trees. Wellhead control panels automatically close the well safety valves in response to alarm conditions requiring shut-off. Valves can be closed either manually or automatically, from the panel or remotely. WHCPs are available with a wide selection of options for single or multi-well configurations. Our partners WHCPs are specifically designed using the most state-of-the-art design technologies and components and according to Customer's Specification.

5.4. Self-Contained Local Control System (SCCS)

The Self-Contained Control System is a rugged and reliable controller for emergency shutdown valves, it can be used in conjunction with hydraulic actuators to provide a fail-safe system to use with linear and quarter turn valves. Self-Contained Control System is designed specifically for safety applications in remote locations where no external power sources are available.

5.5. Local panel (LCP)

Local Panels are Pneumatic or Hydraulic Panels for the complete control of Valve Systems.
They can be used to supply a Single Valve or a Multi-Valve system.
Local Control Panels automatically stroke the Valves in response to alarm conditions requiring shut-off or blow-down. Valves can be closed either manually or automatically, from panel or remotely.
Local Panels are available with a wide selection of options. Single-Valve Control Panels are designed to operate one valve, while Multi-Valve Control Panels, designed with the same features of the Single-Valve Panels, are able to control simultaneously several valves.
We provide Local Control Panels for both Top-side and Subsea applications.

6. Special Valves

Adak Vision provides special valve solutions for special purposes and when it comes to a multi-purpose valve, we will offer the optimum solution like, flame arresters, special trim control valves like multi-stack valves, special type safety valves like high temperature shaft type open bonnet safety valves, special material isolation valves, and so on and so forth. In this chapter we present special purpose valves for special applications.

6.1. Drain and Sampling Valves

Many chemical and pharmaceutical processes need to be regularly tested during processing to ensure consistent product quality. Our sampling valves enable trouble free and safe content sampling of pipelines, reactors, tanks and storage vessels without product loss or cross contamination.

- Disc Bottom Outlet Valves
- Ram Bottom Outlet Valves
- Flush Bottom Outlet Valve Examples
- Sampling Valves

6.2. Isolation Valves

These valves are primarily used to isolate or switch media flow, but are particularly suitable for severe applications at high temperatures or with highly abrasive or clogging media.

- Lift Plug Valve
- High Pressure Angle Valve
- Blowdown Valves

6.3. Switching Valves

Diverter valves split, switch, combine or isolate process media into one or more streams. They can have multiple inlets or outlets or can be bi-directional.

- Diverter valves
- Switch Plug valves
- ManiFlow

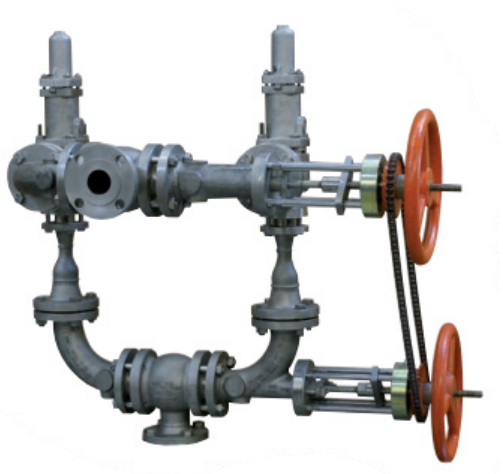
6.4. Spray Rinse & Injection Valves

Spray rinse valve was developed to wash residue from large tank or reactor walls without having to open or enter a vessel. This feature has two key benefits: safety of personnel for applications with toxic fluids and to reduce cleaning time in batch processes.

- Spray Rinse Valve
- Steam Injection Valves

6.5. Changeover Valves

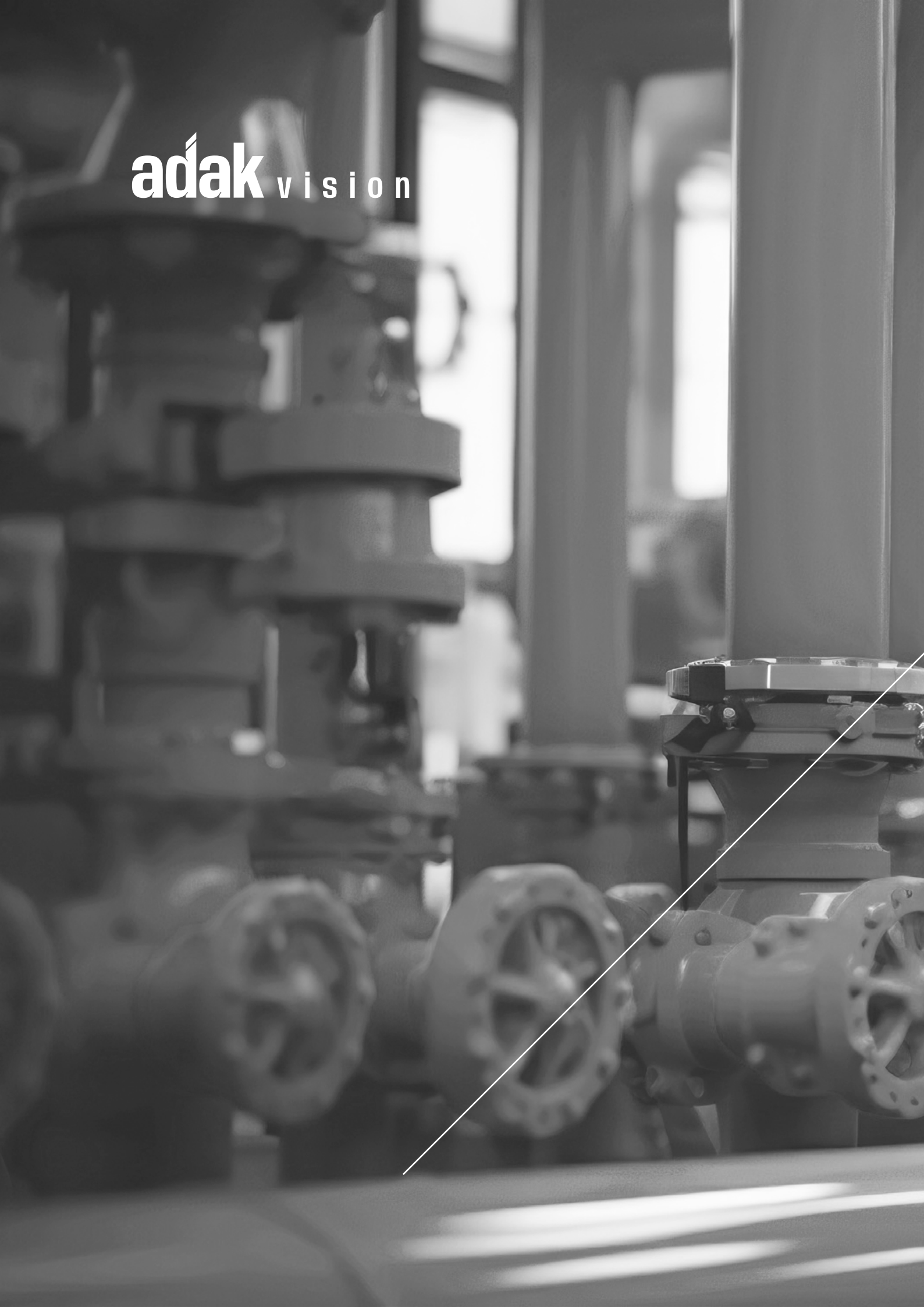
Changeover valves enable users to switch process flow from one line to a second line during continuous plant operation. They are primarily used as part of plant safety dual relief systems and are typically installed with pressure relief valves or rupture discs.



6.6. Turbine Control Systems

Whether as individual fittings or complete HP-IP-LP turbine control systems, we offer the highest quality through precise tuning. Our turbine control stations are:

- Designed for high-frequency, flexible power plant operation via KS-InductiveCoat
- Customised with process-specific / equal-percentage / linear control characteristics
- Superheated steam cooling possible to 5 ° C above saturated steam
- Use of modern pneumatic or hydraulic drive systems for fast vapor transfer (open / close) <1 sec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7. Actuators

A valve actuator is a mechanical device that uses a power source to operate a valve. This power source can be electric, pneumatic (compressed air), or hydraulic (the flow of oil). There are two main types of actuators, one for each of the two main types of valves that require them.

7.1. Diaphragm Actuators

Spring Diaphragm Actuator is a rugged pneumatically operated actuator combining excellent response and thrust capability. Molded elastomer diaphragm with fabric insert provides excellent strength and high sensitivity.

- Maximum travel up to 100 mm (std)
- Maximum bench range up to 2.1 bar (std)
- Maximum supply up to 3.5 bar (std)

7.2. Piston Type Actuators

Double Acting Piston Actuator has been designed to be used on control valves in the field of energy and oil and gas. It can be equipped with a long series of accessories like volume booster, positioner, solenoid valve and air filter regulator.

Features:

- Yoke and casing in cast and forged steel
- Stem material in 400 series Stainless steel
- Maximum allowable supply pressure = 15 bar
- Smooth sliding stroke.
- Reduced inspection and maintenance costs.
- Excellent axiality of the actuator stem
- Very low friction.
- Double acting.

7.3. Rack and Pinion Actuators

It comes in both single acting with fail safe position and in double acting configuration. Designed to cover a wide span of torques with high torque values. As well as being rugged and reliable for extended use, the actuator body comes in anodized aluminum material while the ends caps come in epoxy coated aluminum material. The bottom mounting is designed to suit ISO 5211 and DIN 3337 while the top mounting is designed to suit VDI/VDE 3845 NAMUR.

Features:

- Rigid anodized body material with epoxy coated end caps.
- Clear indicator with gradual scale to show the position of the valve connected to the actuator.
- Compatibility to international standards for the top and bottom flange drilling.
- Various designs and material compatibility to suit different temperature ranges.
- Various types of coating to suit most environment.
- Different adaptors can be provided to suit numerous types of valves.
- Tested for more than two million cycles.
- Direct fitting to WM Manual override.
- Option for Stainless steel body up to the size PD/PS210.

7.4. Scotch Yoke Actuators

It comes in single acting with fail safe position and double acting configuration. Designed to cover a wide span of torques with high torque values. As well as being rugged and reliable for extended use, the actuator body comes in epoxy coated carbon steel and ductile iron components. The bottom mounting is designed to suit ISO 5211 and DIN 3337 while the top mounting is designed to suit VDI/VDE 3845 NAMUR.

Features:

- Modular design providing the customer the ease of customization and modification at site,
- including changing the failure position; fail-safe position and addition of a manual override.
- The center body is pre-drilled from both sides for ease of mounting accessories.
- Rigid ductile iron and carbon steel body material combination with epoxy coating covering the complete actuator.
- IP67 rating.
- Compact design with extremely high torque outputs.
- Clear indicator with gradual scale to show the position of the valve connected to the actuator.
- Compatibility to international standards for the top and bottom flange drilling.
- Various designs and material compatibility to suit different temperature ranges.
- Various types of coating to suit most environment.
- Different adapters can be provided to suit numerous types of valves.
- Various types of manual override that suits the various models of the scotch yoke actuator.
- For the spring return module, a locking nut is added to provide additional safety feature.
- Self-lubrication bearings that provide no metal-to-metal contact between the guide rod and the drive mechanism.
- Integral travel stops with a range of 5 degrees adjustment.

8. Accessories

If a valve is equipped with proper accessories can become more useful for process control also provides smooth and efficient operation.


CTD2ED

8.1. Positioner

A positioner is a motion-control device designed to actively compare stem position against the control signal, adjusting pressure to the actuator diaphragm or piston until the correct stem position is reached, Adak provides various types of positioners with various power and control signals, communication protocols and power supplies.

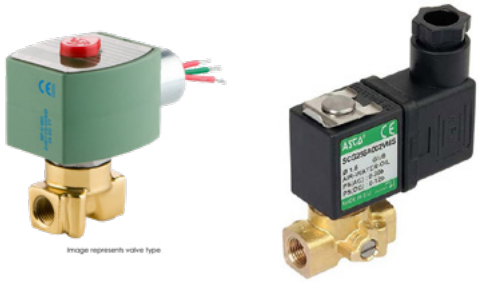
- Pneumatic Valve Positioner.
- Electro-Pneumatic (EP) Valve Positioner.
- Digital Valve Positioner.

8.2. Air Filter Regulator

Air filter regulator suitably reduce plant's main air supply pressure and supplies to valve positioner(s) or control device(s). in two main types with manual and automatic drain.

8.3. Solenoid Valve

A solenoid valve is an electrically controlled valve. The valve features a solenoid, which is an electric coil with a movable ferromagnetic core (plunger) in its center. In the rest position, the plunger closes off a small orifice. A magnetic field is generated when a current flows through a coil. It has various types on connections, inlet outlet ways and operations like direct and pilot operated.



8.4. Limit Switch Box

Limit switch box designed for safe and hazardous areas, provides a visual and electrical remote position feedback on automated valves.

8.5. Volume Booster

Volume booster relay, YT-300 is used in pneumatic control valve which receives positioner's output signal and supply air pressure actuator to reduce response and adjusting time.

9. Our Services

- Supply the valve and instrumentation solutions
- Propose the best solution by consulting the most expert companies all around the world to our client
- Providing repair and maintenance services as bridge to our partners
- Holding valve learning courses for valve experts with cooperation of our partners


25%

10. Our Main Projects

Pasargad Qeshm Heavy Oil Refinery

Kaveh Methanol Plant

Bandar Abbas Sulfuric Acid Containers

Persian Gulf Sadaf Petrochemical Co.

Farasakou Asaluyeh Containers

Badr-e-Shargh Petrochemical Complex

Tehran Oil Refinery

Nouri Petrochemical Company

Sarvak Azar Oil Field

Phase 17, 18 of Parse-e-Jonoubi

NGL 3100

Gas Pressure Regulating Stations of Bijar and Hamedan

Persian Gulf Water Transfer Pipeline

Isfahan Oil Refinery

11. Partners, Clients, AVL

11.1. Our Main Partners


QUAM


SEOJEON
VALMAC


BOMAFA
Special Valve Solutions


TOSACA
Safety relief valves


CARRARO
INDUSTRIAL VALVES SINCE 1924


thena


ASCO


ARI
ARMATUREN


PROTEGO


BABCOCK
VALVES


rotork


KITO

11.2. Our Major Clients


ABAD RAHAN PARS
INTERNATIONAL GROUP


BAM DEJ TARH
ENGINEERING & MANAGEMENT


OIEC
building trust


باختر
شرکت پتروشیمی (سهامی خاص)


آسفالت طوس


شرکت فراسکو عسلویه
FARASAKOU
ASSALUYEH CO.


PETRO TECH
شرکت بین المللی
پترو تک


شرکت بازرگانی ایران پایپینگ
تامین کننده برتر در صنعت نفت و گاز و پتروشیمی


Jondishapour Co.
شرکت جندی شاپور


Petro Haveh
Group


مجتمع پتروشیمی بدر شرق
Badr-e-Sharq
Petrochemical Complex
(BSPC)


SAZEH CONSULTANTS
Engineering and Construction


PJPC
یادجم


PGPIC
شرکت پتروشیمی صنف خلیج فارس


NARGAN


IDEA
ENERGY

11.3. Member of Approved Vendor List for:


SAZEH CONSULTANTS
Engineering and Construction


شرکت پالایش نفت تهران


OIEC
building trust


گروه مپنا
MAPNA GROUP


شرکت پتروشیمی آبادان


شرکت صنایع پتروشیمی خلیج فارس
Persian Gulf Petrochemical Industries Co.
PGPIC
شرکت سهامی پتروشیمی بوعلی سینا


شرکت نفت فلات قاره ایران


B.O.R.C
شرکت پالایش نفت بندرعباس
(سهامی عام)


R.P.C
شرکت پتروشیمی شازند


جمهوری اسلامی ایران
وزارت نفت


شرکت پالایش نفت اصفهان


شرکت ملی فولاد ایران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شرکت مجتمع گاز پارس جنوبی
SPGC


شرکت پتروشیمی خراسان
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