OIL, GAS AND ENERGY

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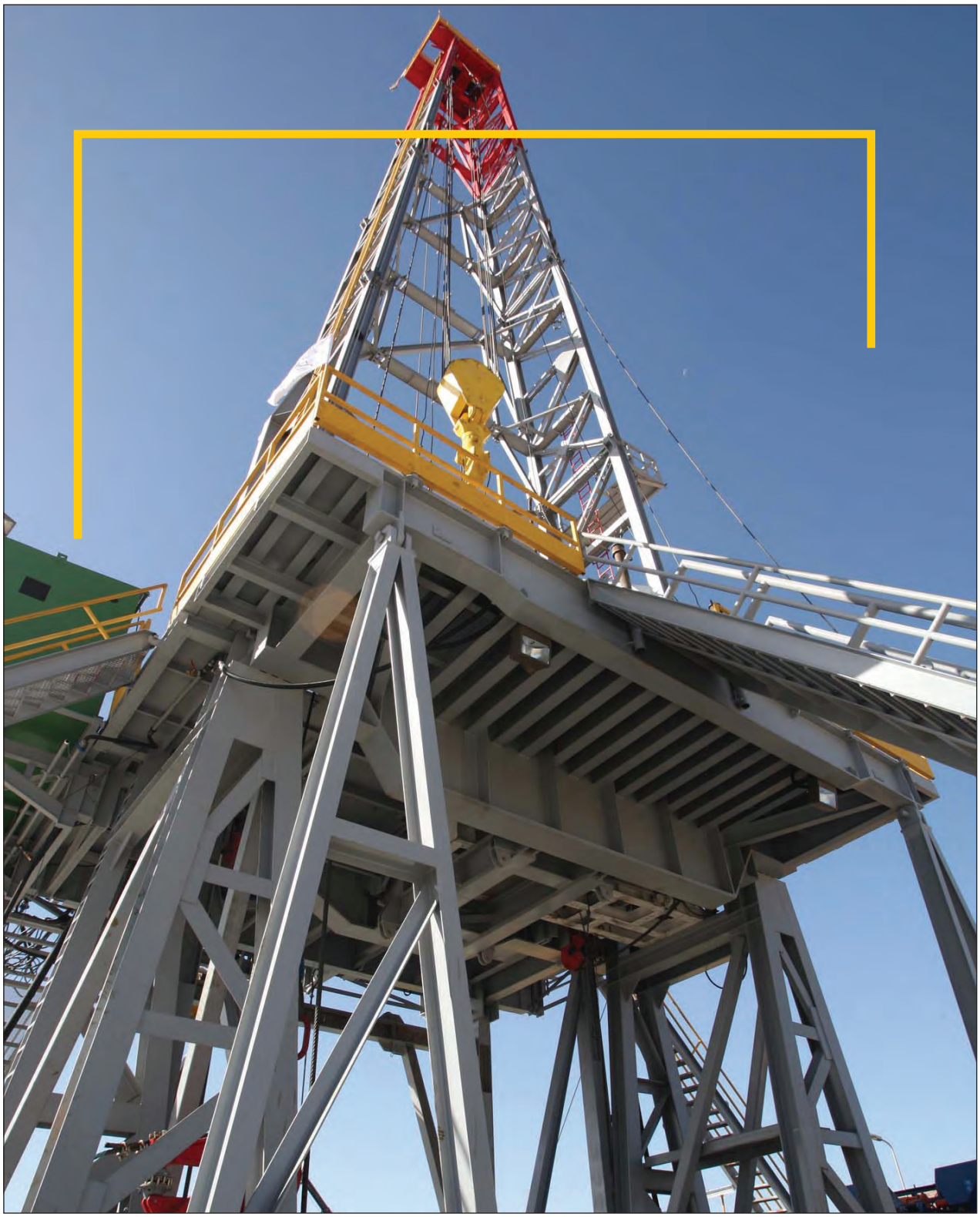


Perforation Facilities (ZHOOBIN shaped charge)

Description

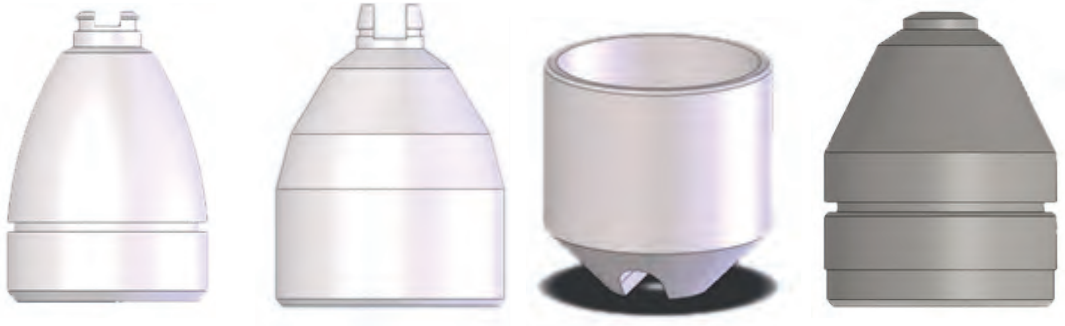
ZHOOBIN shaped charge is temperature resistant and deep penetrating for use in expandable hollow steel carrier gun systems for oilfield application.

Technical Features 1						
Charge Name	Part No.	Explosives Type	Explosives Weight (g)	Temperature Resistance(1h)	Depth of Penetration (in.)	Entrance Hole (in.)
6.5T ZHOOBIN shaped charge (HMX)	20320132	HMX	6.5	204°c / 400°F	16	0.25
16 T ZHOOBIN shaped charge (HMX)	20320129	HMX	16	204°c / 400°F	23	0.31
22.5 T ZHOOBIN shaped charge (HMX)	20320134	HMX	22.5	204°c / 400°F	33	0.41
38 T ZHOOBIN shaped charge (HMX)	20320130	HMX	38	204°c / 400°F	43.5	0.45

Technical features 2						
Charge Name	Package (PCS)	Package Type	Shaped Charge Weight (g)	Dimensions of Box (cm)	Net Weight per Box (kg)	Gross Weight per Box (kg)
6.5T	98	Carton + Vacuum bag	72.77	46×39×15	6.100	7.95
16 T	60	Carton + Vacuum bag	131.11	46×39×15	7.867	8.889
22.5 T	60	Carton + Vacuum bag	207.67	46×39×15	12.460	13.482
38 T	24	Carton + Vacuum bag	597	46×39×15	17.91	18

Shelf Life

Five year at storage condition + 5 °c to + 30 °c / +41 °f to +86 °f
Max. 65 % relative humidity
Good ventilation.



22.5T 16T 6.5T 38T

Perforation Facilities (BARSAM and Arsham shaped charge)

Description

This shaped charge is designed for hard target and formation. This charge is super deep penetration.

Technical Features 1						
Charge Name	Part No.	Explosives Type	Explosives Weight (gr)	Temperature Resistance(1h)	Depth of Penetration (in.)	Entrance Hole (in.)
15 T BARSAM shaped charge for 2 7/8" system	20320135	HMX	15	204°c / 400°F	27	0.31
22.7 T BARSAM shaped charge for 3 3/8" system	20970001	HMX	22.7	204°c / 400°F	39	0.41
22.7 T ARSHAM shaped charge for 3 3/8" system	20320128	HMX	22.7	204°c / 400°F	42	0.41

Packing Information					
Package (PCS)	Package Type	Shaped Charge Weight (gr)	Dimensions of Box (cm)	Net Weight per Box (kg)	Gross Weight per Box (kg)
60	Carton + Vacuum bag	-	44×36×14	-	-

Shelf life
Five years at storage condition + 5 °c to + 30 °c / +41 °f to +86 °f
Max. 65 % relative humidity
Good ventilation.

15 T BARSAM

22.7 T BARSAM

22.7 T ARSHAM

Perforation Facilities (Puncher Charge)

Description

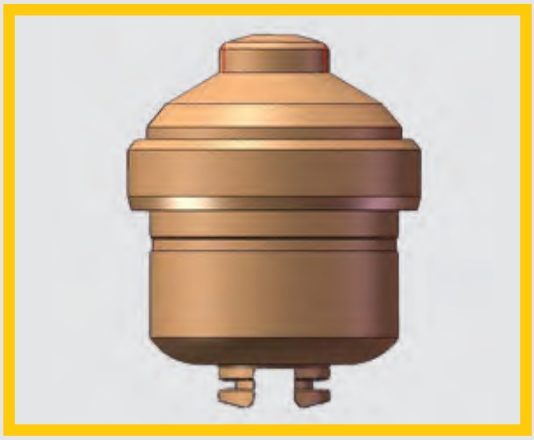
This charge is designed to punch tubing and casing for 1 11/16" and 2 i/8" strip carrier.
Shoot only by zero phased strip carrier.

Technical Features1						
Charge Name	Part No.	Explosives Type	Explosives Weight (g)	Pressure Rating (psi)	Temperature Resistance(1h)	Entrance Hole (in.)
Puncher charge 3 1/2"	27050073	RDX	3	165°c	14000	0.4
Puncher charge 5"	27050073	RDX	4	165°c	14000	0.4
Puncher charge 7"	27050073	RDX	4	165°c	14000	0.4
Puncher charge 2 1/8"	27050006	RDX	3	165°c	14000	0.4

Packing Information					
Package (PCS)	Package Type	Shaped Charge Weight (gr)	Dimensions of Box (cm)	Net Weight per Box (kg)	Gross Weight per Box (kg)
60	Carton + Vacuum bag	-	44×36×14	-	-

Shelf Life

Five years at storage condition + 5 °c to + 30 °c / +41 °f to +86 °f
Max. 65 % relative humidity
Good ventilation.



Perforation Facilities (SHAPED CHARGE 1 11/16” and 2 1/8” ENERJET)

Description

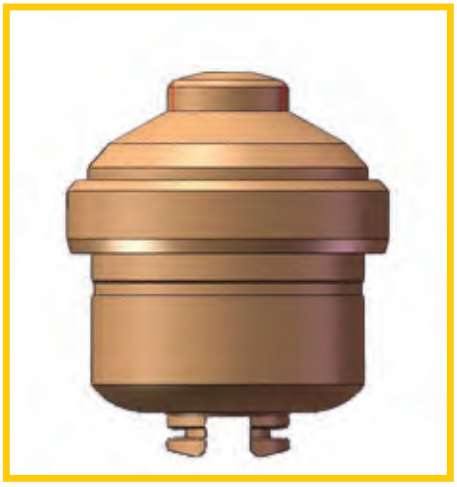
Perforating is a critical part of the good completion process.
We apply powder metal liner for deep penetrating shaped charges. Shaped charges individually sealed to protect against humidity migration.
A shaped charged consists of four components. 1- The outer case 2- main explosive charge 3- primer charge 4- metallic liner.

Packing Information					
Package (PCS)	Package Type	Shaped Charge Weight (gr)	Dimensions of Box (cm)	Net Weight per box (kg)	Gross weight per Box (kg)
60	Carton + Vacuum bag	201.9	46×39×15	12.5	13.5

Technical Features1							
Charge Name	Part No.	Explosives Type	Explosives Weight (g)	Pressure Rating (psi)	Temperature Resistance(1h)	Depth of Penetration (in.)	Entrance Hole (in.)
1 11/16" ZHOOBIN ENER-JET shaped charge	20320133	RDX	9	14000	165°c / 330°F	14.1	0.28
2 1/8" ZHOOBIN ENERJET shaped charge	20320022	RDX	14	14000	165°c / 330°F	24.1	0.31
2 1/8" ZHOOBIN ENERJET shaped charge	20320125	HMX	14	14000	204°c / 400°F	26.2	0.31

Shelf Life

Five years at storage condition + 5 °c to + 30 °c / +41 °f to +86 °f
Max. 65 % relative humidity
Good ventilation.



Perforation Facilities (Detonating cord 165 pt & 190 T)

Description

The detonating cord in close contact with the primer region of the shaped charge detonates the primer, which initiates the main explosive charge.

Technical Features1					
Item	Part No.	Explosive Core Load	Detonating Cord Color	Tensile Strength	Detonation Velocity
Detonating cord 165 pt	20250005	HMX 16-18 g/m 75-84 grains/ft	white	>1.500 N > 330 pounds	7.900 ± 200 m/s 25.920 ± 656 ft/s
Detonating cord 190 T	21440228	HMX 16-18 g/m 75-84 grains/ft	yellow	>1,000 N > 220 pounds	7,900 ± 200 m/s 25,920 ± 656 ft/s

Technical Features 2					
Function Tested In Laboratory	Temperature + Pressure Resistance	Function Tested In Laboratory	Outside Diameter	Lap Joint Sensitivity	Maximum Shrinkage
165° c / 1 h 338° f / 1 h	165° c/ 1000 bar / 1h 329° f / 14400 psi / 1h	165° c/ 1100 bar / 1h 338° f / 15950 psi / 1h	5.2 ± 0.2 mm 0.205 ± 0.008"	yes	-
190° c / 1 h 383° f / 1 h	150 °c /200 h 302 ° f /200 h 190 °c / 1h 374 °f /1 h	-	5.2 ± 0.2 mm 0.205 ± 0.008"	yes	2%

Technical features 3	
Temperature Resistance	Maximum Shrinkage
146 °c /209 h 295 ° f /209 h 165 °c / 1h 330 °f /1 h	2%

Packing Information				
Package (m)	Package Type	Dimensions of Box (cm)	Net ffieight per Box (kg)	Gross ffieight per Box (kg)
1 Roll = 150	carton	27×27×20	4.8	5.9

Shelf Life

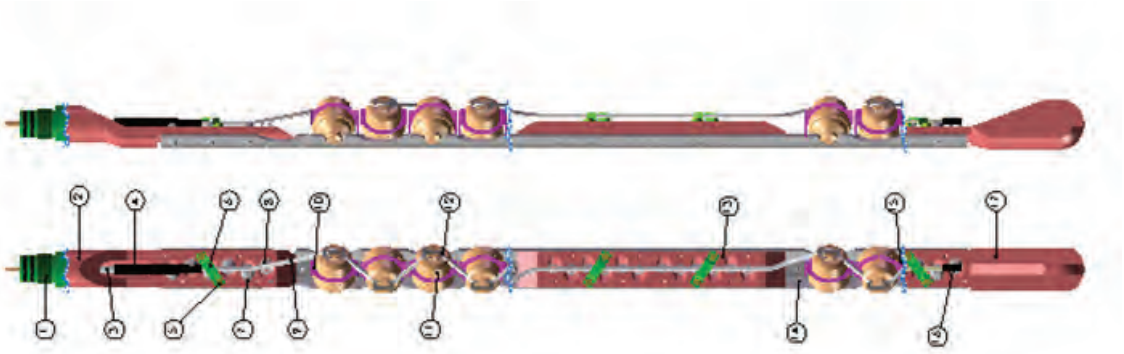
Five years at storage condition + 5 °c to + 30 °c / +41 °f to +86 °f
Max. 65 % relative humidity
Good ventilation.

Perforation Facilities (Gun systems)

Description

The guns are designed as systems, which including specific carriers, charges and detonating cords, to provide maximum perforator performance.

Gun specification			
No	Item	Part No.	Quantity
1	1 7/16" Double pin contact subassembly	20901657	1 for system
2	Firing head for the strip	20901531	1 for system
3	Electric detonator Z480	20180006	1 for system
4	Sealing boot for detonating cord	21410107	1 for system
5	Brass screw	21570224	6 for 2 strips
6	Detonating cord holder	21140133	3 for 2 strips
7	Spring washer	10021218	24 for 2 strips
8	Screw for phased strip	21570143	24 for 2 strips
9	Detonating cord 165 PT	20250005	1130 cm for 2 strips
10	Shaped charge holder	21140027	54 for1 strips
11	2 1/8" ZHOOBIN ENERJET shaped charge	20320022	54 for 1 strip
12	Clip	21670028	54 for 1 strip
13	Tandem strip adapter	20450086	1 for 2 strip
14	Phased strip carrier	11340022	-
15	Rivet	20901658	108 for 1 strip
16	Sealing boot for detonating cord end	21410107	1 for system
17	Bottom nose for strip	20901183	1 for system



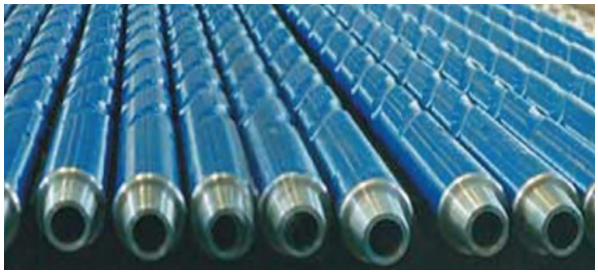
LAND DRILLING RIG

We are active in designing, procuring, constructing, improving and repairing land drilling rigs.

SPECIFICATION OF 2000HP LAND DRILLING RIG		
1	Rig Rated Depth	Up to 20000ft
2	Static Hook Load	1000000lb (4500KN)
3	Height of Mast	147′
4	Travelling System	6x7
5	The diameter of the Drill Line	1 1/2″
6	Height of Drill Floor	30′
7	Opening Diameter of Rotary Table	37 ½″
8	Steps of Rotary Table	2+2R, step-less change
9	The rated input power of draw works	2000HP
10	Steps of draw works	4, step-less change
11	Top drive	TDS
12	The capacity of the mud pump	1600HPx3
13	Power transfer type	AC-SCR-DC

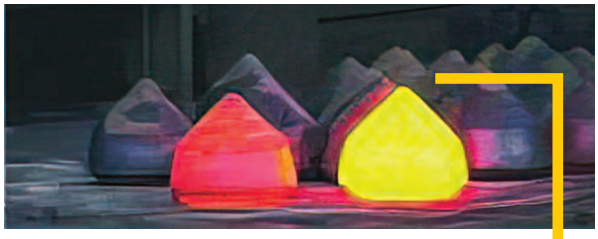
Drill Collar

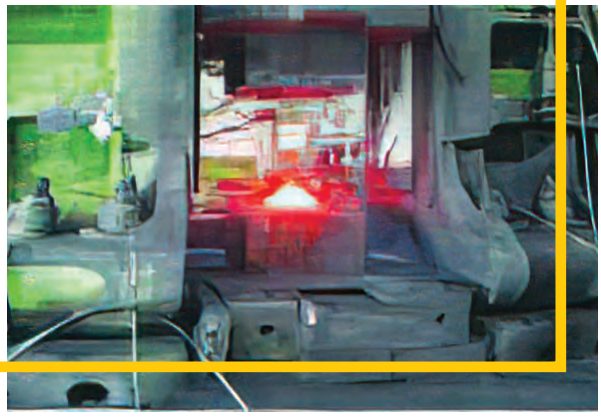
A drill collar is one of the essential parts of a drilling string assembly. It is mainly used to provide a force on the drilling bit and maximize its stability by minimizing vibration, wobbling, and jumping by providing the required hardness to BHA.



Drilling Bit Cones

We are manufacture drilling bit cones from high-quality materials (steel forging, carbide, and others). These cones are used to produce three-cone rock bits which are designed for a multitude of drilling applications

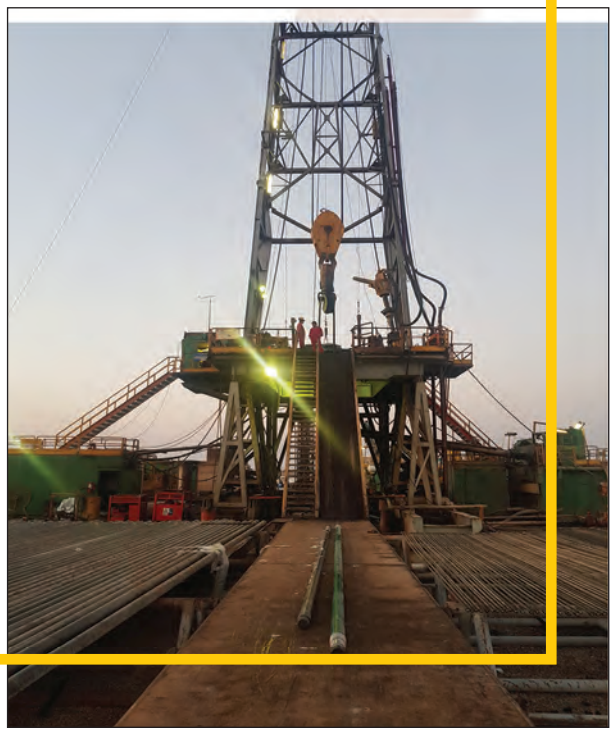




Pumping Unit

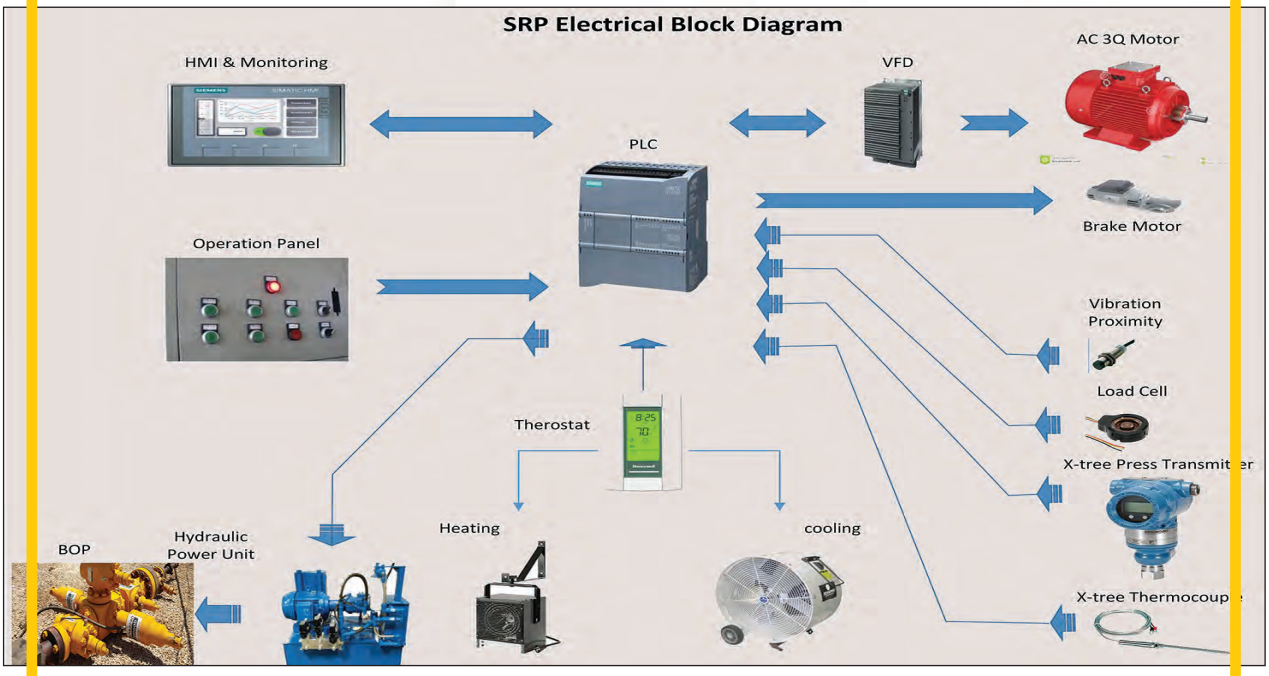
General specifications		
	Double Sprocket	Long Stroke
Stroke Length (m)	7	9.3
Belt Length (m)	11.5	11.8
Motor Capacity (kW/hp)	55/75	55/75
Pumping Speed (Stroke Per Minute)	0.2 ~ 4	0.2 ~ 3.75
Max. Load Capacity (kN)	14	22
Gearbox Torque (kN. m)	32	56
Counterweight (T)	7.5	17
Total Weight (T)	28	30
Shipping Size LxWxH (m)	12x2.1x2.8	15.1x2.6x3.1
Operating Temperature	-25°C-75°C	-25°C-75°C
Braking System	Auto / Manual	Auto / Manual
Base Dimensions (m)	8x2.25x0.35	7.3 x2.3x0.3
Sensor	Standard	Standard
VFDs Control	Optional	Optional
Control Room	Optional	Optional

Operation and Service Team



Control Unit

Design & Products



Downhole Completion String 10,000 psi

In support of its unwavering commitment to be the preeminent supplier of downhole tools, We are pleased to offer our customers a newly expanded offering of Intervention and Completion Tools (ICT), which now can be run in environments with 10,000 psi pressure.

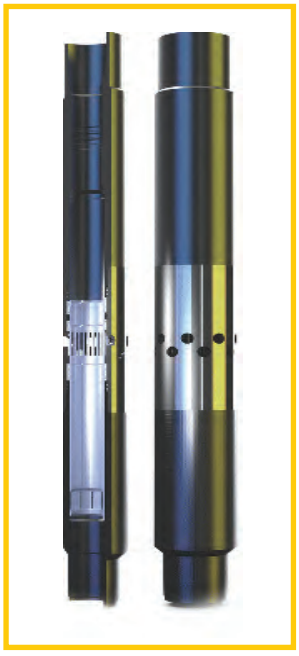
Technical Specifications of Wireline Retrievable Flapper Self Equalized Type	
Size	7" x 5.812"
Model	FXE
OD	5.697"
Max OD \Packing	5.812"
ID	3.246"
Length	66.764"
Max. Setting Depth	1500 ft
Min. Pressure	450PSI
Closing Pressure	2 and 7 stages
Rated Working Pressure	8500 PSI
Temp. Rating	280 °F
Material & Arrangement of Seal Elements	V-PACKING PTFEC 10/ORING FFKM 1
Material	API 5CT L80 - Type 13Cr
Material Spring	MP35

Sub Surface Safety Valve (3SV) & Lock Mandrel

Technical Specifications of LOCK MANDREL FOR ABOVE ITEM	
SIZE	5.812''
OD	5.875"
ID	3.264"
LENGTH	17.205"
RATED WORKING PRESSURE	8500 PSI
FISHING NECK SIZE	4.75"
FISHING NECK TYPE	5 1/16-8 SLB INTERNAL FISHING NECK
RATED WORKING PRESSURE	8500 PSI
MATERIAL & ARRANGEMENT OF SEAL ELEMENTS	V-PACKING PYFEC 4/V-PACKING PFEC 6/ O-RING FKM 1
MATERIAL	API 5CT L80 - Type 13Cr

Downhole completion string 10,000 psi

Technical Specifications of SLIDING SIDE DOOR	
SIZE	5 1/2" x 4.313" NON-ELASTOMERIC SYSTEM IS PREFERED
MODEL	RPD
THREAD CONNECTION	5.5" 23 PPF NEW VAM BOX UP * PIN DOWN
OD	8.3"
ID	3.246"
PROFILE SIZE	4.313"
PROFILE TYPE	RPT
OPENING DIRECTION	JAR DOWN TO OPEN MAXIMUM DIFFERENTIAL PRESSURE WITH
STOOD BY SLEEVE	15000PSI MAXIMUM FLOW AREA IN FULL OPEN POSITION OF SLEEVE:16.373 in2



Sliding Side Door (SSD)

Slide Pocket Mandrel

Technical Specifications of SIDE POCKET MANDREL	
SUITABLE TO RUN IN	9 5/8" 43.5-53.5 PPF CASING
SIZE AND THREAD	7" x 5.812"
MODEL	MMG
THREAD CONNECTION	5 1/2" 23 PPF NEW VAM BOX UP * PIN DOWN
MAX OD (PACKING)	5.812"
OD	8.161"
STANDARD ID	4.67"
STANDARD DRIFT DIA	4.545"
RATED WORKING PRESSURE	8500 PSI
TEMP RATING	280F
POCKET	SUITABLE FOR 1 1/2" OD INJECTION VALVE
MATERIAL	API 5CT -L80-TYPE 1

Downhole Completion String 10,000 psi

Technical Specifications of ANCHOR SEAL ASSEMBLY	
SIZE	5 1/2"
MODEL	RLP
TYPE	RATCH LATCH WITH LOCK SCREW
TOP CONN	5.5" 23 PPF NEW VAM BOX UP
BOTTOM CONN	HALF MULE SHOE END DOWN
OD	6.91"
MAX OD (PACKING)	6.508"
ID	4.67"
DRIFT ID	4.545"
SUITABLE FOR PACKER SEAL BORE	6.518"
LENGTH OF TOP SUB	39.37"
LENGTH OF EACH SEAL UNIT	4.838"
No. OF SEAL UNITS	2
TOTAL LENGTH OF SEAL UNITS	9.676"
RATED WORKING PRESSURE	10000 PSI
TEMP. RATING	280 F 280 F
MATERIAL & ARRANGEMENT OF SEAL ELEMENT	PEEK 8/PTFE 8/PEEK 8
MATERIAL	API 5CT L80 - Type13cr

Permanent Packer

Ratch Latch Seal Unit Assembly

Technical Specifications of HYDRO SET PERMANENT PACKER	
SUITABLE TO SET IN	9 5/8" 43.5-53.5PPF CASING
MODEL	MHR
SIZE	9 5/8" x 7"
TOP CONN	5.5" 23 PPF NEW VAM BOX UP
BOTTOM CONN	7" 35 PPF NEW VAM BOX
MAX OD	8.125"
MAX OD (PACKING)	6.508"
UPPER SEAL BORE	6.5"
LOWER SEAL BORE	5"
MATERIAL	API 5CT L80 - Type13cr
LOWER SEAL BORE	5"
RATED WORKING PRESSURE	8500 PSI
TEMP. RATING	280 F
INITIAL SETTING PRESSURE	2500PSI
MINIMUM SETTING PRESSURE	3500PSI
MAX SETTING PRESSURE	20000POUND
NO OF SHEAR PINS	6
FORCE TO SHEAR EACH PIN	20000POUND
SHEAR PIN MATERIAL	ASTM A29 4140
PISTON CROSS AREA	10.3 in (cross)
MATERIAL	API 5CT L80 - Type13cr
MATERIAL OF SEAL ELEMENTS	HNBR

Downhole Completion Staring

Some of Equipment & Facilities:

Different kinds of CNC lathe machines with a workpiece of different lengths from 1500mm to 4000mm and the diameters of 500mm to 700mm. Besides, there are common lathe machines in different lengths and diameters.

Milling and common CNC machines in different sizes and facilities for welding operations, sandblast machines, and also accurate tools and modern quality control systems.

The workshop is equipped with cranes in different tonnages.

Abilities:

Design and manufacture of oil industry equipment (down well and top well)

Design and manufacture of Downhole completion staring in different sizes & models. Design and manufacture of tools and wireline

Design and supply the equipment, manufacture, installation, and operation of oil, gas, and petrochemical projects.

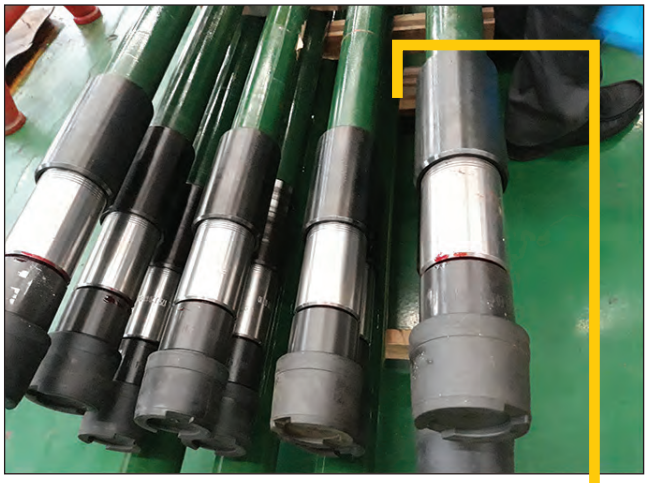
Feasibility study for Jack up manufacturing. Research and industrial project feasibilities.

Operational Management of MC projects.

EPC Projects Implementation.

DownHole

Tubing Pump	Nominal Dia: 32~95
Sucker Rod	Grade: C, K, D, KD, HL
	Size: $^{5}/_{8}$" , $^{3}/_{4}$" , $^{7}/_{8}$" , 1" , 1 $^{1}/_{8}$"
Polished Rod	Size: 1 $^{1}/_{8}$" , 1 $^{1}/_{4}$" , 1 $^{1}/_{2}$"
Gas Anchor	Centrifugal Type



ESP & SRP PUMP

We hare established an ESP workshop to manufacture, repair, and test all types of electrical submersible pumps in Iran. The staffs of the workshop are well-experienced Iranian and foreign experts.

Suker Road Pumps

Pump Section

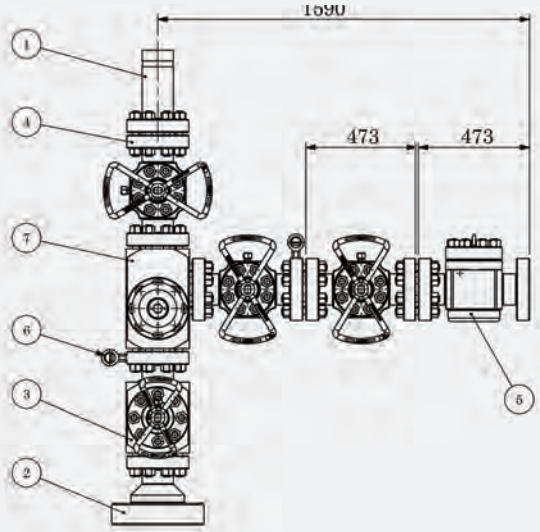
Gas Handling System

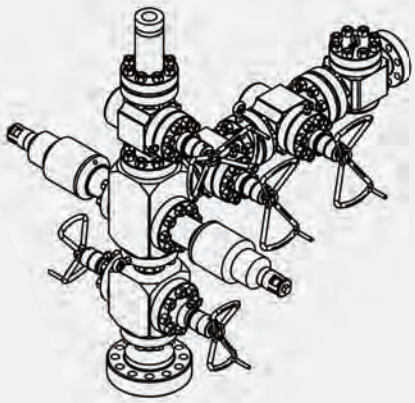
Protector Section

Electrical Motor

Wellhead

ITEM NO.	DESCRIPTION	
1	STUFFING BOX 1 1-4"-5000PSI	
2	ADAPTER FLANGE 3 1/8" X 7 1/16", 5000PSI	2
3	LOWER MANUAL BOP 3-1/8"-5000PSI	
4	GATE VALVE, 3-1/8"-5000PSI	4
5	CHECK VALVE, 3-1/8"-5000PSI	5
6	PRESS. TRANSMITTER (PT) 1000PSI	
8	UPPER AUTOMATIC BOP 3-1/8"-5000PSI (WITH MANIFOLD), WITHOUT POWER UNIT & PANEL 8 6 5	





Christmas Tree

A Christmas tree assembly is composed of gate valves, safety valves, composite valves, crosses, bends, etc. to control the follow rate of the well, operate well logging, etc.

P(H)-5K Christmas Tree
6 3/8" Full Bore, 5000 PSI

Offshore Wellhead and Christmas Tree
6-3/8" Full Bore, 6500 psi MWP

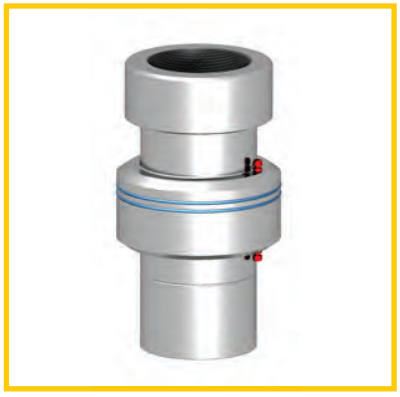
C(H)-5K Christmas Tree
6 3/8" Full Bore, 5000 PSI

TUBING Hanger

Tubing hangers are ranked by their utilization purpose. Tubing hanger and tubing spool annular sealing might be done either by elastomeric seals or metal to metal methods.
All tubing hangers could be prepared for the installation of the backpressure valve, DHSV ports, and control lines.

Tubing hanger, 13 5/8" x 7" vam top continuous DHSV, metal locking ring

Tubing hanger, 11" x 7" new vam,non continuous DHSV, locking with lockdown screw



Tubing hanger, 11" x 7" vam DHSV continuous DHSV, locking with lockdown screw

Composite Block Valve

Composite valves are manufactured as a combination of two or more valves in an assembly to save height and space.

Composite I-Block valve 6 3/8" full bore, BTM 11"-5K, top 7 1/16"-5K

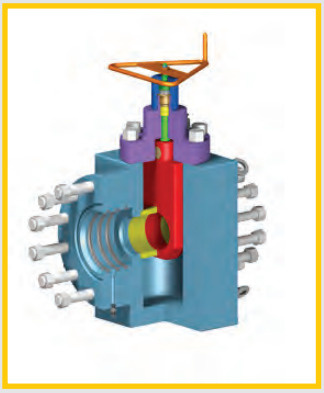
Solid block valve 6 3/8" full bore, BTM 11"-10K, top 7 1/16"-10K

Cross solid block valve
BTM & TOP 7 1/16"-5K, 5 1/8" bore

Solid block valve 6 3/8" full bore, BTM 11"-5K, TOP 7 1/16"-5K

Gate Valve

Design, manufacture, test, and installing valves in different classes require an outstanding amount of experience and scientific abilities. IRI Ministry of Defence relying on three decades of experience and skillful staff is working on the design and production of S.S.V and gate valves. All gate valves production operations here are based on API and NACE-MR0175 standards.

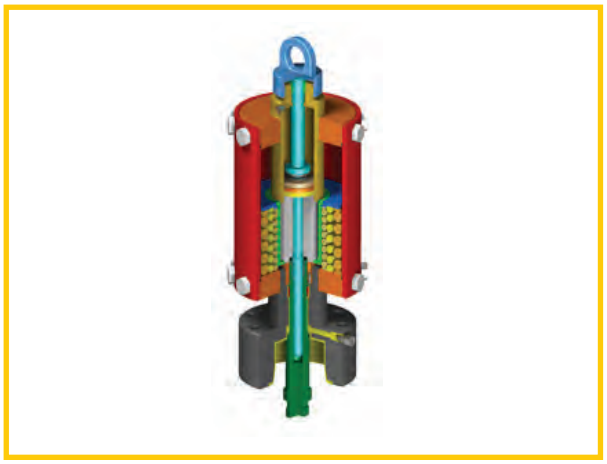


Lower master gate valve
BTM 11"-5K, top 9"-5K, 6-3/8" bore 5000 psi

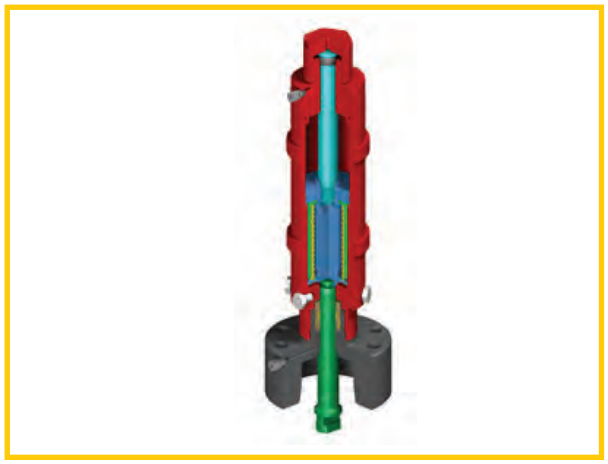
Gate valves 6-3/8" Full bore, 5000 MWP, 7-1/16"-5K ends FLG

Hydraulic Actuator

Hydraulic actuators are used in X-Mas tree assemblies to open gate valves by applying hydraulic pressure. As the spiral springs are pushed in actuators in the valve opening process, while the hydraulic pressure is removed from the actuator cylinder, the valve starts to close. The manufactured varieties are actuators with 5" and 7" pistons.



Hydraulic actuator, 5" piston, Halliburton type



Hydraulic actuator, 7" piston, type "E" BAKER

Cladding Process

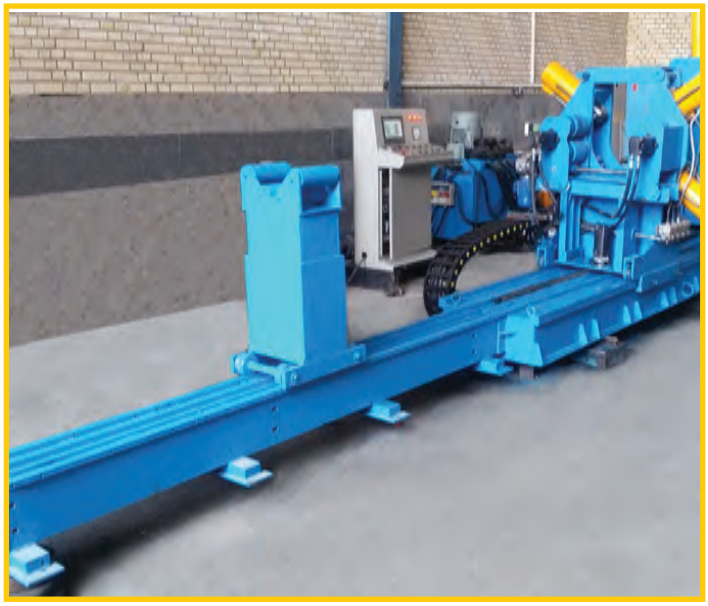
Cladding is one of the most recent methods and technologies to protect the metal surface in corrosive and acidic environments. Using this method, the main metal surface is covered with a layer of a corrosion-resistant superalloy by full automatic CNC machines. Applying this method leads to extended lifespan, reduced costs, and increased efficiency of the components. Enjoying the benefits of advanced equipment, high technical experience, and skills in manufacturing equipment, We apply this method to produce oil and gas assemblies, specifically HH class material wellheads.

Lapping Equipment

In metal to metal contact, the surface flatness influences directly on the control torque of manually operated valves and the hydraulic pressure in the valve actuator. Here, the lapping process is utilized.

VAM Threads Screw/ Unscrew Equipment

We designed and manufactured makeup and break out machines to screw/ unscrew threaded connections in drilling machinery, well complementary assemblies, and the other related equipment with as much as 200,000 lbf-ft. The machine has a fixed jaw with the ability to hold 3”-18” diameter pipes, and a moving jaw holding the same sized pipes. Both jaws have hydraulic actuators responsible for holding the pipe and performing very accurate torque operations. The assembly was designed to work with the lowest hydrostatic pressure and decrease the operation cost.



Hydrostatic Test Unit

Gas Test Unit

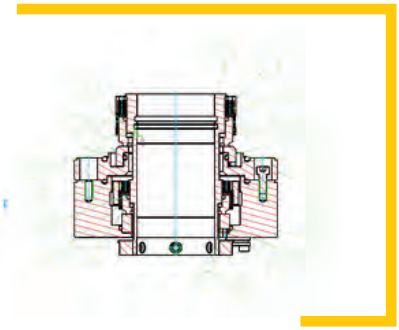
PR2 Test Unit

Mechanical Seals

Seals for Process Pumps

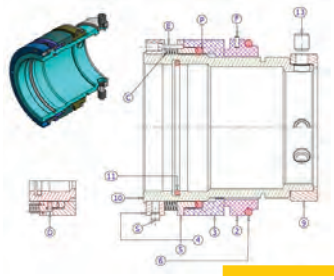
Cartridge mounted mechanically balanced seals are manufactured following API 682 standards. These seals are designed for heavy-duty applications and/or applications that are dangerous to both people and the surrounding atmosphere. They offer the best performance possible in terms of reliability and gaseous emission control, making them the ideal solution for petrochemical plants.
They are available as single or double-seal construction in various versions required by API Standards. The metallic bellows designs are particularly suited to high temperature and/or corrosive liquids.





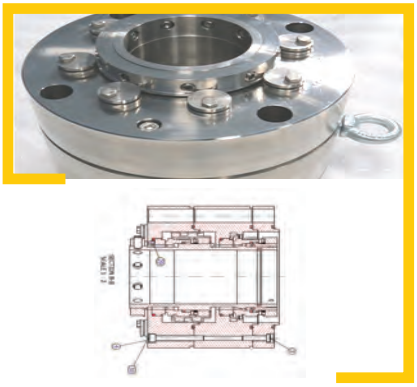
Cartridge Seals

Mechanical seals are available as single, double complete with pumping ring, single with bush for quench, single and double seals capable of dry running. All of these seals are suitable for DIN and ANSI type flanges, which have very limited radial and axial dimensions and are ideal for pumps, mixers, fans, and other equipment. The cartridge assembly minimizes installation problems to a minimum and is suitable for most applications. There is also a version available with a thicker shaft sleeve and larger internal clearances designed for fitting to equipment and steers that are submitted usually to substantial mechanical stresses, oscillation, and vibration and run-out.


Pusher Seals

Pusher seals incorporate secondary seals, called the dynamic gasket, that is pushed by springs axially along the shaft or sleeve to compensate for seal face wear or wobble due to misalignment. The pusher seals, except for high duty versions, are generally less expensive than bellow designs and come in more sizes.
The pusher seals are often chosen for light hydrocarbons, high pressures, and high-speed applications because of the inherently greater strength of the design and the axial damping action of the dynamic gasket.



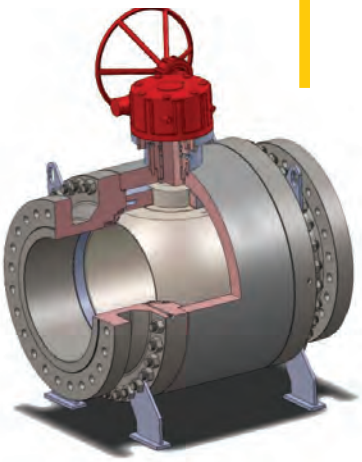
Centrifugal Compressors

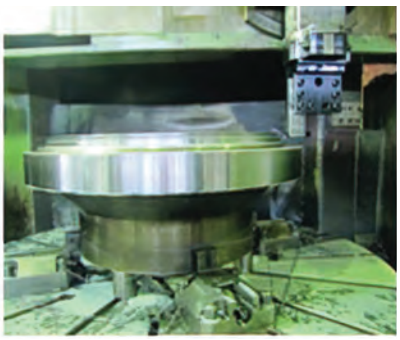
Production of various centrifugal compressors for gas pressure boost across the natural gas transmission pipelines and centrifugal electro-compressors for refinery and petrochemical processes.

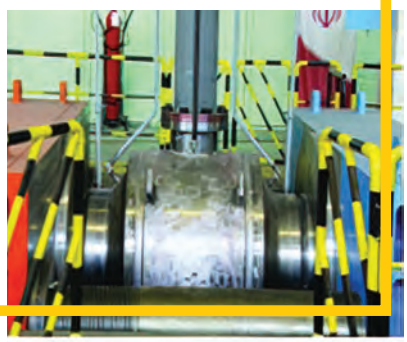
Technical and General Specifications	
Design model	MV
Standard of designing and manufacturing	API 617
Design temperature	150 C °
Design pressure	114 bar
Working temperature	100 C°
Hydrostatic test pressure	171 bar
Inlet pressure	57 bar
Outlet pressure	72/90 bar
Number of stages	2 and 7 stages
Designing company and foreign co-partner	Siemens - Germany
The extent of undertaking homemade	Casing cover, stator parts, balancing line pipes, bearing housing, base frame of compressor

Ball Valves

Design and production of fully welded or bolted three-piece ball valves of 16” to 56” size, Class #160 to #900 with oil-gas, electric or manual actuators for operation on oil, natural gas transmission pipelines or refineries, and petrochemical industries in compliance with the ministry of oil and international standards.







Applicable Standards		
American Petroleum Institute	API-6D	Specification for pipeline valve
	API-6FA	Fire test for valve
	API-598	Valve inspection and testing
	API-608	Metal ball valve – flanged, threaded and welding end

American Society of Mechanical Engineers	ASME- B 16.5	Pipe flanges and flanged fittings
	ASME- B 16.25	Butt welding ends
	ASME- B 16.10	Face–to–face and end–to–end dimension the valve
	ASME- B 16.34	Valve–flanged, threaded and welding end
	ASME- Section VIII, div.1	Rules for construction of pressure vessels
	ASME- Section VIII, div.2	Alternative rules for construction of pressure vessels
	ASME- Section V	Nondestructive Examination
British Standards Institution	BSI-BS 4504	Circular flanges for pipes, valve, and fittings
	BSI-BS 5146	Inspection and test of valves
	BSI-BS 5351	Specification for steel ball valves
	BSI-BS EN 558	Industrial valves
Iranian Gas Standards	IGS-M–PL–010–1	Ball valves, class 150
	IGS-M–PL–010–2	Ball valves, class 300
	IGS-M–PL–010–3	Ball valves, class 600
	IGS-M–PL–007	Valve actuator, gas–over–oil type
	IGS-M-PL-009	Handwheel Operated Gear Box For Ball, Plug and Butterfly Valves
Manufacturers Standardization Society	MSS-SP-6	Standard finishes for contact face of pipe flanges
	MSS-SP-55	Quality standard for steel casting for valves, flanges and fittings and other
National Association of Corrosion Engineers	NACE-MR 0175	Sulfide Stress Cracking Resistant Metallic Material for Oilfield Equipment
International Organization for Standardization	ISO-14313	Petroleum and natural gas industries-pipeline transportation systems-pipeline
	ISO-5208	Industrial valves-pressure testing of valves
	ISO-5211	Industrial valves-part turn actuator attachment
	ISO-7121	Flanged steel ball valve

Mud, fuel, water storage tanks

The complete set of EPC mud, fuel, water storage tanks with all the accessories have been fabricated for the closed system of mud circulation through oil and gas wells of the National Iranian Drilling Company. As an experienced project-based company capable of executing EPC projects utilizing up to date project management knowledge & financial capabilities.

Mud Tanks

Mud, fuel, water storage tanks

Engineering and forming of all kinds of the dished and flanged head in required dimension, according to ASTM /ASME, as well as other international standards and specification. Available in carbon steel, stainless steel.

The company is a leading manufacturer of all kind of multi-piece heads and cones with a thickness of 100 mm petals. Crowns and segments are dished and pressed in hot and cold conditions Such as

1. Tori spherical heads (According to ASME)
2. Semi- elliptical heads (According to ASME)
3. Hemispherical head

Forming Head

Spherical & Storage Tanks

A manufacturing company with modern facilities and unique equipment, such as 1600/2500 tons of hydraulic presses to produce required petals shape of spherical tanks. The range of diameter production is from 1 Meter to any diameter required by the client. A manufacturing company is capable of designing, procurement, and erection of all types of storage tanks such as Cone, Dome, and Floating roofs. To provide customers with the most optimum design suitable for their variable conditions PSI uses data software such as PV Elite, NOZZLE PRO, CATIA, AUTO CAD, FE PIPE, and ABAQUS

Spherical & Storage Tanks

Storage Tanks

Condensate Tanks

Pressure Vessels & Tower

Engineering, procurement, and erection of pressure vessels, tower, reactor processes column pressured piping, blast furnace, a heat exchanger (tube, plates), two phases separator, drums, and similar equipment in oil, gas, petrochemicals, mine and energy industries.
As a manufacturing company aiming for the country's self-sufficiency policy, we are manufacturers of pressure vessels, drums, towers, reactors, heat exchangers with different kinds of materials, according to international standards and specifications in oil, gas, refineries, petrochemicals, mine and energy industries.

Pressure Vessel

Heat Exchanger

Shell and tube heat exchanger consists of shell installed in, as well as a bundle of tubes.
It is designed for high temperature and high-pressure processing. Complying with the latest standards and quality requirements, shell and tube heat exchanger is tailor-made according to TEMA in all its configurations.

Heater

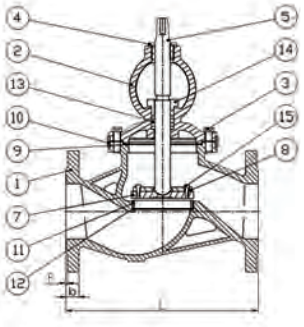
Globe Valve Pn 10/16

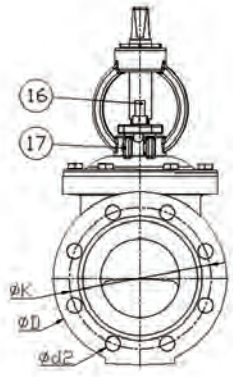
•The valve is used to control the fluid pressure in industrial and constructional installations.
•It could be used in all water line systems and all non-corrosive liquids with a maximum temperature of 250 °C
•Body and bonnet are made of ductile iron (GJS400) valves EN 1563 (DIN 1693) even in PN 10
•Water blocker disk is made of stainless steel 1.4021 (X20Cr13)
•Spindle from stainless steel 1.4021 (X20Cr13) and rolled thread
•Flange face to face dimension: according to EN 558 (DIN 3202-F1)
•Flange to EN 1092 and drilled to EN 1092-P2 (DIN 2501)
•The silicon silver coating on all internal and external surfaces is fully absorbing the temperature of 600°c
•Easy services and change of parts with no need to detach the valve from the system
•Long-life due to use of stainless steel for spindle and blocker ring
•Similar applications to needle valves with extraordinary low price

DN	D	b	k	d2	f	h1	h2	L
50	165	19	125	19	3	361	391	230
65	185	19	145	19	3	375	405	290
80	200	21	160	19	3	420	460	309
100	220	21	180	19	3	450	490	349
150	285	21	240	23	3	580	630	480
200	340	22	295	23	3	580	630	600
250	405	24	355	28	3	825	875	730
300	460	26	410	28	3	965	1015	850

Size (mm)		DN50-DN400
Pressure (bar)		10/16
Hydrostatic test ISO 5208	Body	24
	Wedge	18

Cast Steel Gate Valve		
PART No.	PART NAME	MATERIAL
01	Frame	GJS400
02	Bonnet	GJS400
03	Brass Bolt	MS58
04	Spindle	Stainless steel
05	Packing Cap	GJS 400
06	Blocker	P.T.F.E
07	Big Gasket	Fireproof cardboard
08	Belt	PE
09	Gate Grip	Stainless steel
10	Gate	Stainless steel
11	Set	Stainless steel
12	Small Gasket	Fireproof cardboard
13	Allen Steel Screws	DIN 912
14	Nut	DIN 934
15	Hexagon Screws	DIN 933
16	Allen Screws	DIN 912



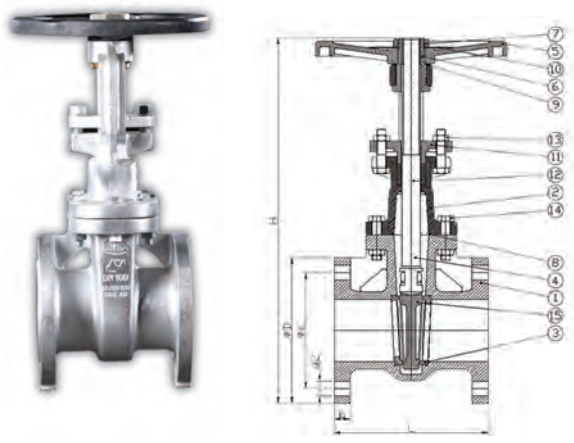


Metal Wedge Gate Valve Class 150

•The valve is used for fluid flow on/off purposes, on the industrial and heating maximum temperature of 250°c constructional installations.
•Body and Bonnet are made of ductile iron (GGG50) EN1563 (DIN 1693)
•Flange face to face dimension according to ASME B16.10
•Flange to ASME B16.5 and drilled to ASME B16.5
•Closing and opening with minimum force (and connection to the actuator possible.)
•Stainless steel solid spindle 1.4021 (X20Cr13) with rolled thread
•Stainless steel solid wedge 1.4021 (X20Cr13)
•Replaceable O-rings under pressure
•Inside and outside of the valve coated with paint with speed fiction maximum temperature of 600°c

DN	Class	L	D	K	d2	b	H
2 1/2″	150	191	178	139.7	107	19	423
3″		203	191	152.4	131.5	21	478
4″		229	229	190.5	159	24	478
6″		267	280	241.3	218.5	29	475.5

Size (mm)		2 1/2 - 6″
Pressure		150
Hydrostatic test ISO 5208	Body	30
	Wedge	22



PART No.	PART NAME	MATERIAL
01	Frame	GJS400
02	Bonnet	GJS400
03	Water Blockerset	1.4021
04	Spindle	1.4021
05	Belt Pulley	GJS400
06	Brass Brush	MS58
07	Bush Nut	ST
08	Cap Gasket	Fireproof Cardboard
09	Gasket(Washer)	MS58
10	Reagent Tag	AL
11	Packing Cap	GJS400
12	Packing	Fireproof Cardboard
13	Hexagon Screw	ST
14	Hexagon Screw	ST
15	Gate	1.4021

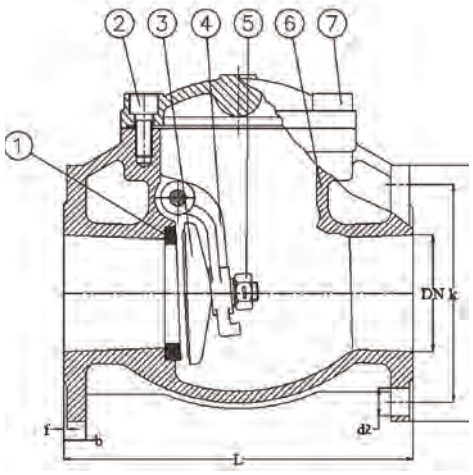
Non-Return Valve Pn 10/16

•The valve is used in water purifiers and pump stations to prevent backflow of the liquid
•For use in all heating, industrial and constructional installations and noncorrosive liquids with a maximum temperature of 250°c
•Body and cap are made of ductile iron (GJS400) EN 1563 (DIN 1693) even in PN 10 Stainless steel and disk 1.4020(X20Cr13)
•Flange face to face dimension according to EN 558 (DIN 3202-P1-F6)
•Flange drilled to EN 1092-P2 (DIN 2501)
•The silicon silver coating on all internal and external surfaces is fully absorbing the temperature of 600°c
•When installing the valve, one should pay great attention to the direction of the arrow on the body

Part No.	Name	Material
1	Seat	Stainless steel 1.4021
2	Allen Screws	Steel 8.8 DIN 912
3	Disk	Stainless steel 1.4021
4	Disk Lever arm	GJS400
5	Nut, Washer & Cotter Pin	Standard
6,7	Body & Cap	GJS400

DN	L	K	D	D2	B	F	Weight (kg)
80	260	160	200	19	22	3	19
100	300	180	220	19	24	3	30.5
125	350	210	250	19	26	3	45.5
150	400	240	285	23	26	3	54.5
200	500	295	340	23	30	3	103

Size	DN 80 - DN 200
Pressure	10/16
Hydrostatic test	ISO 5208



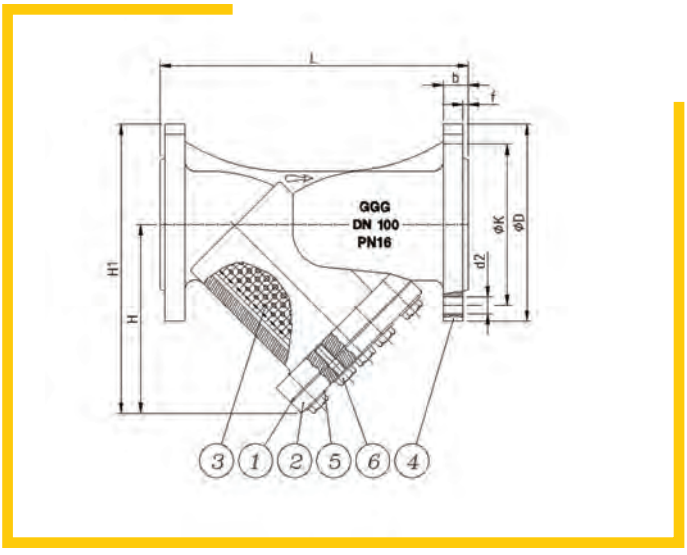
Strainer Y Type PN 10/16

•The Strainer is used to prevent particles and suspended objects entering the water net
•Designed to be utilized in all heating; industrial and constructional installation and all non-corrosive liquids with a maximum temperature of 250°c
•Body and cap made of ductile iron (GJS400) EN 1563 (DIN 1693) even in PN 10
•Flange face to face dimension according to EN558 (DIN 3202-P1-F6)
•Flange drilled to EN 1092-P2 (DIN2501) Stainless steel double– layer filter prevents particles bigger than 0.5 mm
•(DN 50 – DN 150) or 0.6 mm (DN 200 – DN 250)
•The silicon silver coating on all internal and external surfaces is fully absorbing the temperature of 600°c
• Using and installing methods: This strainer is suitable for liquid pipelines where impurities and particles are harmful to pumps, pressure reducing valves, etc. If water flow is downward it can be installed in a sloppy or vertical direction. Water flow direction must be like arrow direction on the strainer while its cover is downward.

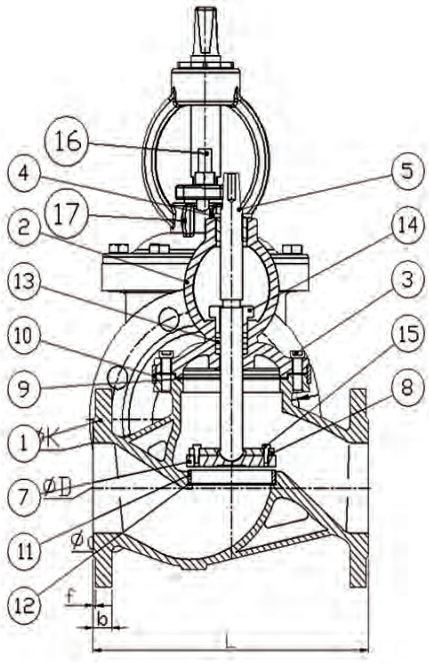
DN	PN	L	b	f	H	H1	K	d2	Bolts	Weight (kg)
50	10/16	230	19	3	160	250	125	19	4*M16	11
65	10/16	290	19	3	180	285	145	19	4*M16	17
80	10/16	310	19	3	215	330	160	19	8*M16	22
100	10/16	350	19	3	235	365	180	19	8*M16	33.5
125	10/16	400	19	3	280	425	210	19	8*M16	37.5
150	10/16	480	19	3	320	480	240	23	8*M20	50
200	10/16	600	20	3	405	610	295	23	8*M20	66
250	10	730	22	3	500	790	355	23	8*M20	130
	16		24.5	4				28	8*M24	

Part No.	Part Name	Material
1	Cap	GJS400
2	Cap Gasket	Fireproof card-board
3	Filter	Stainless steel
4	Body	GJS400
5	Washer	Standard
6	Bolt	Steel 8.8 DIN 931

Size	DN 50 - DN 250
Pressure	10/16
Hydrostatic test	ISO 5208

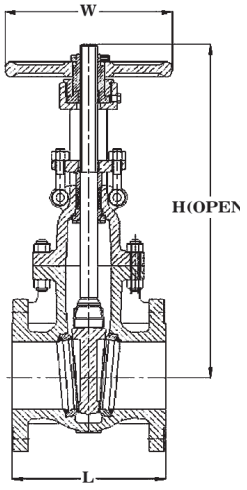


Cast Steel Gate Valve



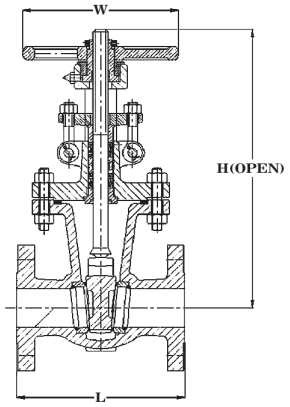
Cast Steel Gate Valve		
No.	Name	Material
1	Body	ASTM A216 GR.WCB
2	Bonnet	ASTM A216 GR.WCB
3	Wedge	ASTM A216 GR.WCB OVERLAY BY ER 410
4	Seat Ring	ST 45.8 OVERLAY BY ER 410
5	Stem	ASTM A276 TYPE. 410 / 420
6	Back Seat Bushing	ASTM A276 TYPE. 410 / 420
7	Packing	Braided Graphite
8	Packing	Braided Graphite
9	Gland	ASTM A276 TYPE. 410 / 420
10	Gland Flange	ASTM A105
11	Eye Bolt	ASTM A307 GR. B
12	Eye Bolt Nut	ASTM A194 GR. 2H
13	Gasket	Soft Iron
14	Stud Bolt	ASTM A193 GR. B7
15	Stud Nut	ASTM A194 GR. 2H
16	Stem Nut	ASTM A 439 TYPE D-2
17	Yoke Cap	ASTM A536 GR. 65 - 45 -12
18	Handwheel	ASTM A536 GR. 65 - 45 -12
19	Handwheel Nut	ASTM A536 GR. 65 - 45 -12
20	Groove Pin	ASTM A105
21	Split Pin	Steel
22	Lubricator	Steel
23	Spring Pin	Steel

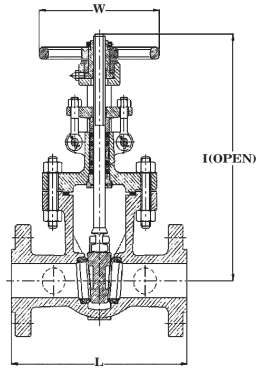
Dimensions and Weight Cast Steel Gate Valve Class 150								
Description	Valve Size							
		2″	3″	4″	6″	8″	10″	12″
Flanged End L	in	7.00	8.00	9.00	10.50	11.50	13.00	14.00
	mm	178	203	229	267	292	330	356
Height to Open H	in	16.14	20.79	236.46	32.44	39.17	45.27	51.57
	mm	410	528	606	824	995	1150	1310
Handwheel Dia. W	in	7.87	8.66	10	13.97	18.00	19.29	20.47
	mm	200	220	254	355	457	490	520
Weight (RF)	lb	46	75	112	178	312	457	653
	Kg	21	34	51	81	142	207	296



Cast Steel Gate Valve

Dimensions and weight Cast Steel Gate Valve Class 300					
Description	Valve Size				
		2″	3″	4″	6″
Flanged End L	in	8.50	11.12	12.00	15.88
	mm	178	282	305	403
Height to Open H	in	15.98	19.48	24.56	32.44
	mm	406	495	624	824
Handwheel Dia. W	in	7.87	8.66	10	13.98
	mm	200	220	254	355
Weight (RF)	lb	76	110	167	323
	Kg	34	50	76	147





Dimensions and weight Cast Steel Gate Valve Class 600					
Description	Valve Size				
		2″	3″	4″	6″
Flanged End L	in	11.50	13.00	17.00	22.00
	mm	292	356	432	559
Height to Open H	in	16.33	20.27	20.45	37.08
	mm	415	515	672	942
Handwheel Dia. W	in	7.87	8.66	13.97	18.00
	mm	200	220	355	457
Weight (RF)	lb	86	161	300	640
	Kg	39	73	136	290

RUBBER Gate Valve PN 10/16

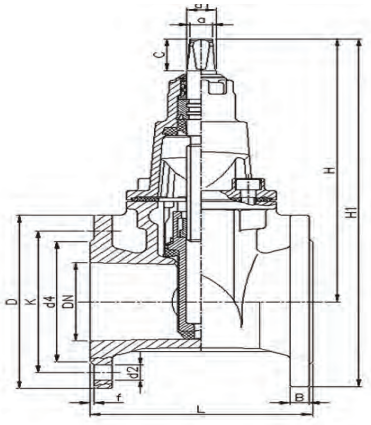
•The Valve is used for fluid flow ON/OFF purposes, on industrial and constructional installations.
•Designing and manufacturing are done according to DIN 3352-Part 4
•Designed to be used in all water line systems and all non-corrosive liquids with a maximum temperature of 80°c
•Body and bonnet are made of ductile iron (GJS 400) EN1563 (DIN 1693) even in PN 10 valves
•Gate of ductile iron (GJS400) encapsulated with vulcanized EPDM with drain hole
•Spindle from stainless steel 1.4021 (X20Cr13) and rolled thread
•Flange face to face dimension: short, according to EN558 (DIN 3202-F4) and long type, according to EN558 (DIN 3202-F5)
•Flange drilled according to EN 1092-P2 (DIN 2501)
•Epoxy powder coating (refer to page 2)
•Ease of opening and closing with complete sealing Maintenance-free in its lifetime

Size (mm)	DN 50 - DN 300	
Pressure (bar)	10/16	
Hydrostatic test ISO 5208	Body	24
	Wedge	18

part No.	Name	Material
1	Spindle	Stainless steel (1.4021)
2	Wiper ring	EPDM
3	O-ring	NBR
4	Thrust collar	MS58
5	Spindle ring	MS58
6	Black seal	EPDM
7	Allen screws	Steel 8.8 DIN 912
8	Bonnet	GJS 400
9	Bonnet gasket	EPDM
10	Body	GJS 400
11	Nut of Gate	MS58
12	Gate	GJS 400 Rubberized with vulcanized EPDM

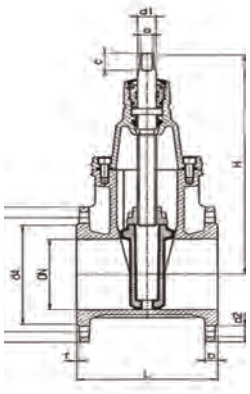
RUBBER Gate Valve PN 10/16

DN	PN	Flange					Bolts			Spindle			Valve				Weight (kg)	
		D	B	K	D4	F	QTY	Thread	D2	A	C	D1	H	H1	L short	L long	Short	Long
50	10 16	165	19	125	98	3	4	M16	19	14.8	30	22	237	320	150	250	10	11.5
65	10 16	185	19	145	118	3	4	M16	19	16.3	31	22	255	347	170	270	13	14.5
80	10 16	200	19	160	133	3	4 8	M16	19	17.3	35	25	288	388	1800	280	16	18.5
100	10 16	220	19	180	153	3	8	M16	19	19.3	38	25	334	444	190	300	21	24
125	10 16	250	19	210	183	3	8	M16	19	19.3	38	28	403	528	200	325	28.5	32.5
150	10 16	285	19	240	209	3	8	M20	23	19.3	38	28	465	608	210	350	38	41
200	10 16	340	20	295	264	3	8 12	M20	23	24.3	48	32	551	721	230	400	58	75
250	10 16	400	22	350 355	319	3	12	M20 M24	23 28	27.3	48	36	680	880	250	450	98	118
300	10 16	455	24.5	400 410	367	4	12	M20 M24	23 28	27.3	48	36	782	1010	270	500	147	163



G2 RUBBER Gate Valve PN 10/16/25

•The Valve is used for fluid flow ON/OFF purposes, on industrial and constructional installations.
•Designed and manufactured according to DIN 3352-P4
•In addition to specifications, G2 rubber gate valve is a new series of its kind which has unique advantages as follows:
•Closing and opening with minimum force (and connection to the actuator possible)
•Very low erosion and wear because of using two-side wear-resistant plastic guide
•Stainless steel solid spindle 1.4021 (X20Cr13) with rolled thread
•Replaceable O-rings under pressure
•Inside and outside of wedge fully rubberized with vulcanized EPDM



Size (mm)	DN 50 - DN600	
Pressure (bar)	10/16/25	
Hydrostatic test ISO 5208	Body	24/38
	Wedge	18/28

Part No.	Name	Material
1,2	Body & Bonnet	GJS 400
3	Spindle	Stainless steel (1.4021)
4	Gate	GJS 400 Rubberized with vulcanized EPDM
5	Gate Guide	POM
6	Nut of Gate	MS58
7	O-ring Bush	MS58
8	O-ring	NBR
9	Back seal	EPDM
10	Circlip	POM
11	Wiper ring	EPDM
12	Bonnet Gasket	EPDM
13	Allen Screws	Steel 8.8 DIN 912

G2 RUBBER Gate Valve PN 10/16/25

DN	PN	Flange				Bolts			Spindle			Valve				Weight(kg)	
		D	B	D4	F	QTY	Thread	D2	A	C	D1	H	H1	L short	L ling	Short	Long
50	10	165	19	98	3	4	M16	19	14.8	30	22	260	342	150	250	11	12
	16																
	25																--
65	10	185	19	118	3	4	M16	19	17.3	35	25	328	420	170	270	17	18.5
	16																
	25																--
80	10	200	19	133	3	4	M16	19	17.3	35	25	338	440	1800	280	19	50.5
	16					8											
	25																--
100	10	220	19	153	3	8	M16	19	19.3	38	25	376	490	190	300	24.5	27.5
	16																
	25	235					M20	23								26	--
125	10	250	19	183	3	8	M16	19	19.3	38	28	450	575	200	325	35	38
	16																
	25	270					M24	29								37.5	--
150	10	285	19	209	3	8	M20	23	19.3	38	28	472	615	210	350	43	46
	16																
	25	300	20				M24	28								46.2	--
200	10	340	20	264	3	8	M20	23	24.3	48	32	563	733	230	400	66	72
	16																
	25	360	22	274		12	M24	28								72.5	--
250	10	400	22	319	3	12	M20	23	27.3	48	34	670	870	250	450	100	121
	16						M24	28									
	25	425	24.5	330			M27	31								111	--
300	10	455	24.5	367	4	12	M20	23	27.3	48	34	753	981	270	500	147	170
	16						M24	28									
	25	485	27.5	389		16	M27	31								164	--
350	10	520	26.5	427	4	16	M20	23	27.3	48	34	838	1098	290	550	213	--
	16						M24	28									
400	10	580	28	477	4	16	M24	28	32.3	55	44	974	1264	310	600	276	--
	16						M27	31									
500	10	715	31.5	582	4	20	M24	28	32.3	55	44	1212	1570	350	700	520	--
	16						M30	34									
600	10	780	30	682	5	20	M27	31	32.3	55	44	1380	1800	390	--	700	--
	16	840	36	720			M33	37									

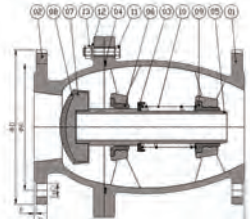
Spring Check Valve S2 PN 10/16

•The valve is used as a one-way flow valve to prevent backflow on industrial and constructional installations
•For use in all water line systems and all non-corrosive liquids with a maximum temperature of 80°c
•The body is made of ductile iron (GJS400) EN 1563 (DIN 1693) even in PN 10 valves.
•A wedge of ductile iron (GJS400) encapsulated with vulcanized EPDM resistant against friction and hammer effects
•Flange face to face dimension according to EN 558 (DIN 3202-P1-F6)
•Flange drilled to EN 1092-P2(DIN 2501)
•Opening range proportional to water pressure
•Minimum opening differential pressure 0.1 bar
•Minimum closing differential pressure 0.5 bar
•Suitable for installing in the vertical and horizontal position
•Fast closing of the wedge with spring pressure and preventing the return of water (suitable in pumping stations where the return of water causes impact and is harmful to the system)
•Epoxy powder coating
•When installing the valve, pay great attention to the direction of the arrow on the body

Advantages:

1.Minimum pressure reduction
2.Ease of disassembly The.
3.The fast reaction against hammer effects
4.Operation without noise

DN	PN	D	K	D2	Holt QTY	B	f	Weight (kg)	L
50	10/16	165	125	19	4	21	3	10	200
65	10/16	185	145	19	4	21	3	14	240
80	10/16	200	160	19	8	21	3	18	260
100	10/16	220	180	19	8	21	3	26	300
125	10/16	250	210	19	8	21	3	35	350
150	10/16	285	240	23	8	21	3	50	400
200	10/16	340	295	23	8	22	3	90	500
					12				
250	10/16	400	350	23	12	24	3	145	600
			355	28					
300	10/16	445	400	23	12	24	4	170	700
			410	28					



part No.	Name	Material
1	Body	GJS 400
2	Upper body	GJS 400
3	Spring seat	MS58
4	O-ring	NBR
5	Wedge Extention	MS58
6	Small bush	POM
7	Wedge	GJS 400 Rubberized with vulcanized EPDM
8	Long bush	POM
9	Spring	DIN 17440 (1.4301) 1.6900
10	Hexagon bolt	DIN 931
11	Washer	DIN 125
12	Nut	DIN 934

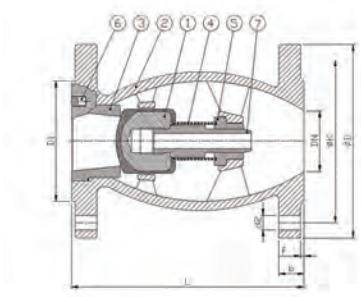
Size (mm)	DN 50 - DN 300
Pressure (bar)	10/16
Hydrostatic test	ISO 5208

Spring Check Valve PN 10/16

•The valve is used as a one-way flow valve to prevent backflow on industrial and constructional installations
•Utilized in all water line systems and all non-corrosive liquids with a maximum temperature of 80°c
•Body made of ductile iron (GJS400) EN 1563 (DIN 1693) even in PN 10 valves.
•The wedge of ductile iron (GJS400) encapsulated with vulcanized EPDM resistant against friction and hammer effects
•Flange face to face dimension according to EN 558 (DIN 3202-P1-F6)
•Flange drilled to EN 1092-P2 (DIN 2501)
•Opening range proportional to water pressure
•Minimum opening differential pressure 0.1 bar
•Minimum closing differential pressure 0.5 bar
•Suitable for installing in the vertical position
•Fast closing of the wedge with spring pressure and preventing the return of water (suitable) in pumping stations where the return of water causes impact and is harmful to the system.
•When installing the valve, pay great attention to the direction of the arrow on the body

DN	PN	D	K	D1	D2	Holt QTY	B	f	Weight (kg)	L
50	10/16	165	125	105	19	4	21	3	10	200
65	10/16	185	145	123	19	4	21	3	14	240
80	10/16	200	160	136	19	8	21	3	18	260
100	10/16	220	180	156	19	8	21	3	26	300
125	10/16	250	210	188	19	8	21	3	35	350
150	10/16	285	240	216	23	8	21	3	50	400
200	10/16	340	295	246	23	8 12	22	3	90	500
250	10/16	400	350 355	322	23 28	12	24	3	145	600
300	10/16	455	400 410	370	23 28	12	24	4	170	700

part No.	Name	Material
1	Wedge	GJS 400 Rubberized with vulcanized EPDM
2	Body	GJS 400 DIN EN 1563
3	Wedge seat	Phosphor bronze
4	Spring	Stainless Steel 1.4301
5	Spring seat	POM
6	Allen screws	Steel 8.8 DIN 915
7	Wedge extension	MS58



Size (mm)	DN 50 - DN 300
Pressure (bar)	10/16
Hydrostatic test	ISO 5208

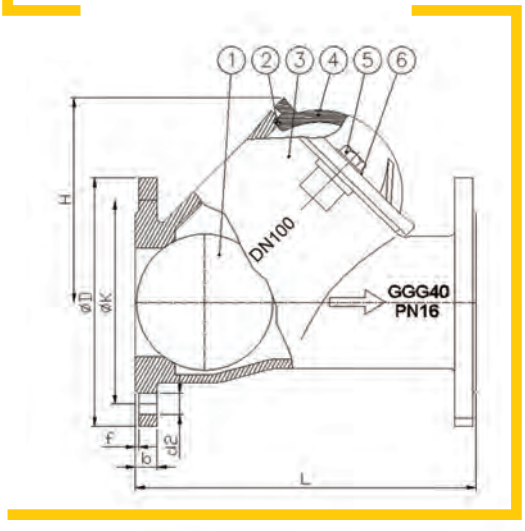
Ball Check Valve PN 10/16

•The valve is used in water purifiers and pump stations to prevent backflow of the liquid
•Body and cap made of ductile iron (GJS 400) EN 1563 (DIN 1693)
•Ball made of aluminum encapsulated with NBR rubber (or steel with PUR) resistant against friction and hammer effects
•Flange face to face dimension according to EN558 (DIN 3202-part 1-F5)
•Flange to EN 1092 and drilled to EN 1092 (DIN 2501)
•Usable horizontally or vertically with no leakage (minimum pressure needed for sealing in horizontal status 0.6 bar)
•Epoxy powder coating (refer to page 2)
•Self-cleaning property due to continuous rotating movement of the ball
•Better application inflow rate of maximum 2 m/s
•Free flow of the liquid with least pressure decrease
•Easy maintenance, no sediment are the properties of this valve
•When installing the valve, one should pay great attention to the direction of the arrow on the body

DN	PN	L	B	F	H	K	D2	Weight(kg)
32	10/16	140	*	*	83	*	*	2
40	10/16	140	19	3	83	*	*	2
50	10/16	180	19	3	101	125	19	3
65	10/16	230	19	3	148	145	19	12
80	10/16	260	19	3	148	160	19	13
100	10/16	300	19	3	182	180	19	18
125	10/16	350	19	3	251	210	19	30.5
150	10/16	400	20	3	251	240	23	37.5
200	10/16	500	22	3	333	295	23	70
250	10	600	24.5	4	406	350	23	128
	16					355	28	

Part No.	Part Name	Material
1	Blocker	EPDM/NBR
2	O-ring	NBR
3	Cap	GJS 400
4	Hexagonal bolt	DIN 931
5	Washer	DIN 125
6	Body	GJS 400

Size (mm)	DN 32 - DN 250
Pressure (bar)	10/16
Hydrostatic test	ISO 5208



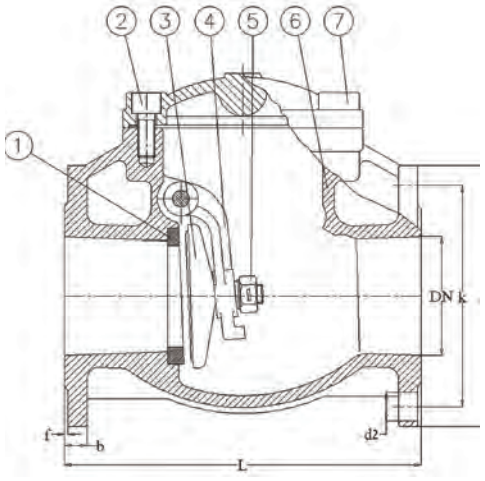
Non-Return Valve PN 10/16

•The valve is used in water purifiers and pump stations to prevent backflow of the liquid
•For use in all water line systems and all non-corrosive liquids with a maximum temperature of 80°c
•Body and cap made of ductile iron (GJS400) EN 1563 (DIN 1693) even in PN 10
•Flange face to face dimension according to EN 558 (DIN 3202-P1-F6)
•Flange drilled to EN 1092-P2 (DIN 2501)
•Epoxy powder coating (refer to page 2)
•When installing the valve, pay great attention to the direction of the arrow on the body

DN	L	K	D	D2	B	F	Weight(kg)
80	260	160	200	19	22	3	19
100	300	180	220	19	24	3	30.5
125	350	210	250	19	26	3	45.5
150	400	240	285	23	26	3	54.5
200	500	295	340	23	30	3	103

part No.	Name	Material
1	Seat	Stainless steel 1.4021
2	Allen Screws	Steel 8.8 DIN 912
3	Disk	GJS 400 Rubberized with vulcanized EPDM
4	Disk Lever Arm	GJS 400
5	Nut, Washer & Cotter pin	Standard
6,7	Body & Cap	GJS 400

Size (mm)	DN 80 - DN 200
Pressure (bar)	10/16
Hydrostatic test	ISO 5208



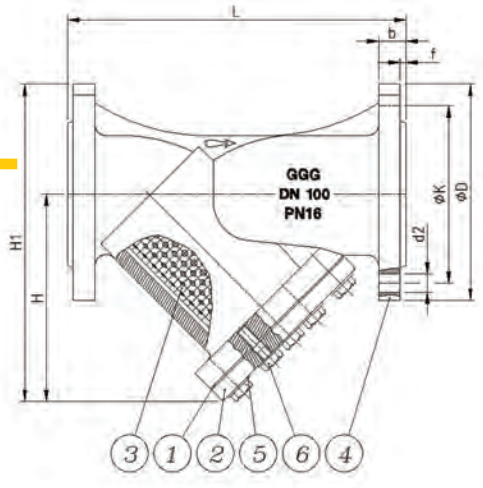
Strainer Y Type PN 10/16

•The Strainer is used to prevent particles and suspended objects enter the water net
•This could be used in all water line systems and all non-corrosive liquids with a maximum temperature of 80 °C
•Body and cap are made of ductile iron (GJS 400) EN 1563 (DIN 1693) even in PN 10
•Flange face to face dimension according to EN558 (DIN 3202-part 1-F1)
•Flange drilled to EN 1092 - P2 (DIN 2501)
•Stainless steel double - layer filter prevents particles bigger than 0.5 mm (DN 50 - DN 150) or 0.6 mm (DN 200 - DN 250)
•Epoxy powder coating (refer to page 2)
•Using and installing methods: This strainer is suitable for liquid pipelines where impurities and particles are harmful to pumps, pressure reducing valves, etc. If water flow is downward it can be installed in a sloppy or vertical direction. Water flow direction must be like arrow direction on the strainer while its cover is downward.

Size (mm)	DN 50 - DN 250
Pressure (bar)	10/16
Hydrostatic test	ISO 5208

Part No.	Part Name	Material
1	Cap	GJS 400
2	Cap gasket	EPDM
3	Filter	Stainless steel
4	Body	GJS 400
5	Washer	Standard
6	Bolt	Steel 8.8 DIN 931

DN	PN	L	H	H1	K	D2	B	F	Bolts	Weight (kg)
50	10/16	230	160	250	125	19	19	3	4*M16	11
65	10/16	290	180	285	145	19	19	3	4*M16	17
80	10/16	310	215	330	160	19	19	3	8*M16	22
100	10/16	350	235	365	180	19	19	3	8*M16	33.5
125	10/16	400	280	425	210	19	19	3	8*M16	37.5
150	10/16	480	320	480	240	23	23	3	8*M20	50
200	10/16	600	405	610	295	23	23	3	8*M20	66
250	10	730	500	790	355	23	23	3	8*M20	130
	16					28	28	4	8*M24	



COMBINATION Air Valve PN 10/16

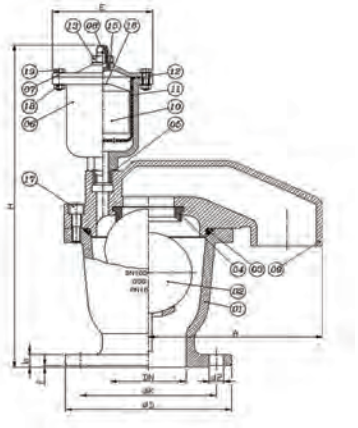
•The Valve is used to enter and exit air to the piping net with exclusive application
•Designed and manufactured according to DIN 1074 - Part 4
•Utilized in all water line systems and all non-corrosive liquids with a maximum temperature of 80 °C
•Body and cap made of ductile iron (GJS400) according to EN1563(DIN1693)
•The float is made of polymer with high strength and anti-sediment
•Flange drilled to EN 1092-P2 (DIN 2501)
•Epoxy powder coating or coated with polyester (resistant against sunlight) according to customer order
•Working pressure in the range: 0.2-16 bar. (4-230 psi)

Advantages

•Min. need to maintenance during usage lifetime
•Reliable operation reduces water hammer incidents
•Dynamic design allows high-velocity air discharge up to 0.8 bar differential pressure; preventing premature closing
•Lightweight, small dimensions, simple and reliable structure
•The automatic valve float coated with soft rubber ensures sealing at low pressures
•The automatic valve plastic screen basket prevents contact between the float and the casting, enabling smoother operation

Part No.	Part Name	Material
01	Big Loophole Body	GJS 400
02	Floater	AISI 316/PC
03	Big O-ring	NBR
04	Big Orifice Sealing Ring	NBR
05	O-ring	NBR
06	Small Hold loop Body	GJS 400
07	Cap of Small Holdloop Body	GJS 400
08	Brass Valve	BRASS
09	Cap of Big Holdloop Body	GJS 400
10	Small Floater	PE
11	Case Floating	PE
12	Small O-ring	NBR
13	Small Holdloop Screw	4301 / BRASS
14	Brass Hexagon Bolt O-ring	NBR
15	Blocker Washer	NBR
16	Washer	DIN 125
17	Allen Screw	DIN 912
18	Nut	DIN 934
19	Hexagon Screw	DIN 936

DN	PN	H	K	d2	E	A
50	10/16	158	125	19	-	118
80	10/16	420	160	19	132	234
100	10/16	460	180	19	132	291
150	10/16	585	240	23	132	466
200	10/16	585	295	23	132	466



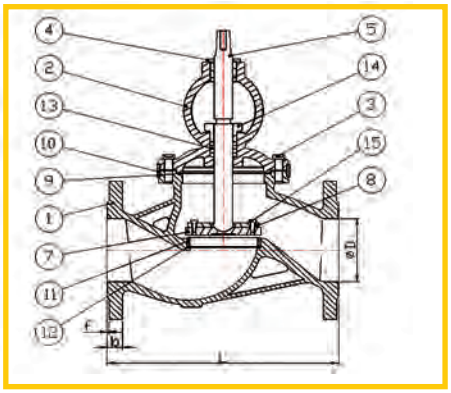
Globe Valve PN 10/16

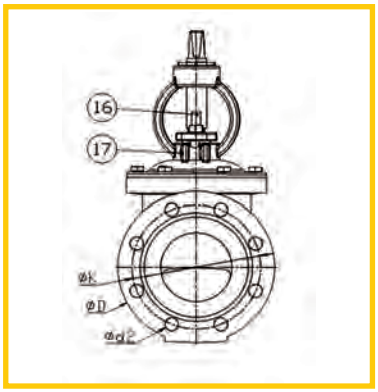
- The valve is used to control the fluid pressure in industrial and constructional installations.
- Utilized in all water line systems and all non-corrosive liquids with a maximum temperature of 80°c
- Body and bonnet are made of ductile iron (GJS400) valves EN 1563 (DIN 1693) even in PN 10
- Water blocker disk made of stainless steel 1.4021 (X20Cr13)
- Spindle from stainless steel 1.4021 (X20Cr13) and rolled thread
- Flange face to face dimension: according to EN 558 (DIN 3202-F1)
- Flange to EN 1092 and drilled to EN 1092-P2 (DIN 2501)
- Epoxy powder coating
- Easy service and change of parts with no need to detach the valve from the system
- Long-life due to use of stainless steel for spindle and blocker ring
- Similar applications to needle valves with extraordinary low price

DN	L	B	K	D2	F	H1	H2	D
50	230	19	125	19	3	361	391	165
65	290	19	145	19	3	375	405	185
80	309	21	160	19	3	420	460	200
100	349	21	180	19	3	450	490	220
150	480	21	240	23	3	580	630	285
200	600	22	295	23	3	580	630	340
250	730	24	355	28	3	825	875	405
300	850	26	410	28	3	965	1015	460

Size	DN 50 - DN 400	
Pressure	10/16	
Hydrostatic test ISO 5208	Body	24
	Wedge	18

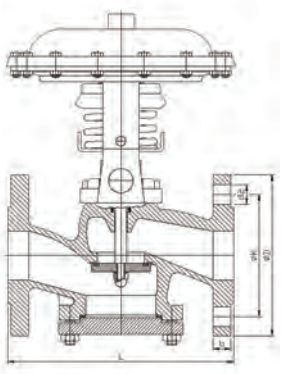
Part No.	Part Name	Material
01	Body(Farme)	GJS400
02	Bonnet	GJS400
03	Brass bolt	MS58
04	Spindle	1.4021
05	Packing cap	GJS400
06	Water blocker	P.T.F.E
07	Big washer	Fireproof cardboard
08	Belt	PE
09	Gategrip	1.4021
10	Gate	1.4021
11	Set	1.4021
12	Small gasket	Fireproof cardboard
13	Steel Allen screw	DIN 912
14	NUT	DIN 934
15	Hexagon screw	DIN 933
16	Allen Screw	DIN 912





Pressure Operated Valve With Diaphragm Type Operator

•The valve is used for corrosive fluids flow ON/ OFF purposes automatically and instantly
•Used for a great scope of corrosive liquids
•Body and parts in contact with the liquid are made from AISI 316
•Packing and sealing are made from PTFE
•Actuator diaphragm from Viton and all bolts and nuts of AISI 316
•Working pressure: Max 16 bar
•Simulation pressure: Max 4 bar
•Pilot fluid: Air
•Working temperature: -10°c to +100°c
•Steel parts coating: epoxy powder with 200µ thickness minimum
•Flange dimensions as to DIN 3202-F1
•Face to face flange dimensions as to DIN 3202-F1



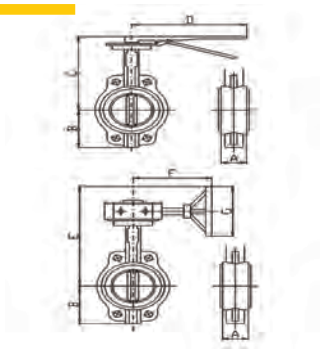
Part No.	Part Name	Material
01	Cap	AISI 316
02	Cap water blocker	P.T.F.E
03	Seat	AISI 316
04	Seat water blocker	P.T.F.E
05	Stalk	AISI 316
06	Stalk sealing spring	AISI 304
07	Hook stable nut	BRASS
08	Lower holder of spring	ST37
09	Lower holder pin of spring	AISI 316
10	Hook	GJS400
11	Upper holder of spring	ST37
12	Simulation spring	AISI 304
13	Diaphragm cap	ST37
14	Air output	ST37
15	Upper holder nut of spring	AISI 316
16	Disc	GJS400
17	Diaphragm	VITON
18	Sealing tank screw	AISI 316
19	Sealing tank gasket	P.T.F.E
20	Metal sealing	AISI 316
21	Stalk sealing	P.T.F.E
22	Stalk tick sealing	P.T.F.E
23	Stalk sealing spring clamp	AISI 316
24	Frame	AISI 316
25	Sealing gasket	P.T.F.E
26	cap nut	DIN 1584-AISI 316
27	Hexagonal bolt	DIN 931-AISI 316
28	NUT	DIN 934-AISI 316

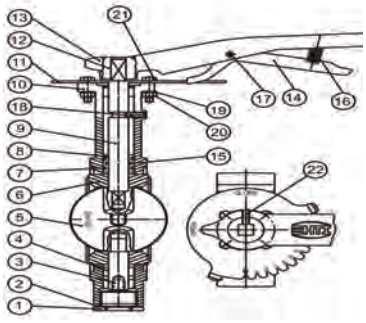
DN	D	L	B	K	d
15	95	130	14	65	14
25	115	160	16	85	14
32	140	180	18	100	18
40	150	200	18	110	18
50	165	230	20	125	18

Wafer Butterfly Valve PN 10/16

•The Valve is used for flow control on industrial and constructional installations
•Used in all water systems, potable water, non-corrosive liquids, with a maximum temperature of 120°c
•The body is made of ductile iron (GJS 400) EN 1563 (DIN 1693) even in PN 10 valves
•Wedge made of stainless steel with high - quality resistance against friction
•Internal rubber gaskets are made of EPDM with high resistance against friction and backward impacts
•All internal and external surfaces are covered with epoxy powder and thickness of minimum 250 µm
•Lengths of the body according to ISO 5752/DIN 3202 - K1
•Installation in different angles (horizontal, vertical and Oblique)
•Opening and closing lever with lock and indicator to control the flow rate
•The valves are appropriate for installation between flanges with boring as to EN 1092 - P2 (DIN 2501)
•Solenoid or pneumatic opening and closing systems possible
•Flange connection to the actuator as to ISO 5211

Part No.	Part Name	Material
01	Hexagonal Bolt	1.4021/GJS 400
02	Hexagonal Bolt O-ring	NBR
03	Short Shaft	1.4021
04	Bush	POM
05	Gate	GJS 400
06	Rubber Ring	EPDM
07	Bigger O-ring	NBR
08	O-ring Bush	MS58
09	Tall Shaft	1.4021
10	Frame	GJS 400
11	Index disc	ST37
12	Plug	ST37
13	Handle	ST37
14	Lock	ST37
15	Small O-ring	NBR
16	Spring	DIN 2098
17	Split Pin	DIN 1481
18	Gate Welt Bolt	DIN 915
19	Elastic Gasket	DIN 127
20	Nut	DIN 934
21	Hexagonal Bolt	DIN 931
22	Welt Allen Screw	DIN 913

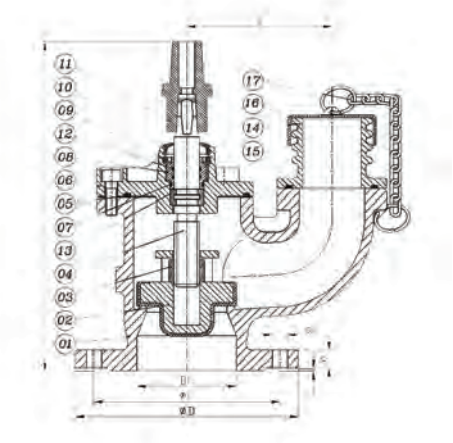




Normal Size		A (mm)	B (mm)	CBFV - W			GCBFV - W			
mm	inch			C (mm)	D (mm)	Weight (kg)	E (mm)	F (mm)	G (mm)	Weight (kg)
50	2	43	73	154	210		274	120	170	
65	-	46	53	167	210		287	120	170	
80	3	46	105	185	225		287	130	170	
100	4	52	120	206	225		300	130	170	
125	5	52	114	206	225		310	130	170	
150	6	56	155	235	225		310	130	170	
200	8	60	170	274	357.5		424	226.4	290	

Underground Fire Hydrant Valve PN 10/16

•The usage of this type is below the ground surface with self - discharge mode for safety purposes in residential and industrial areas
•Body, cap and outlet made of ductile iron (GJS 400) EN 1563 (DIN 1693) even in PN 10 valves
•Wedge of ductile iron (GJS 400) encapsulated with vulcanized EPDM
•Spindle from stainless steel 1.4021 (X20Cr13) with rolled thread
•Flange drilled to EN 1092 (DIN 2501)
•Double-end outlet or threaded outlet (Customer Selection)
•Epoxy powder coating



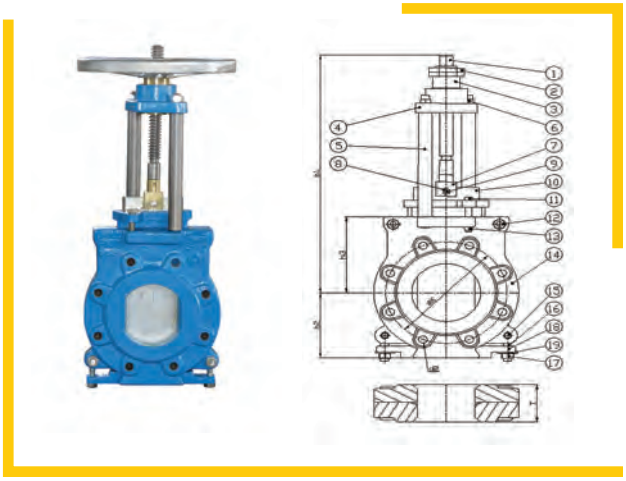
DN	D	B	K	D	F	H	A
80	200	21	160	19	3	325	143
100	200	21	180	19	3	325	143

Part No.	Part Name	Material
01	Freme	GJS 400
02	Gate	GJS 400/NBR
03	Gate Nut	RG7
04	Spindle	1.4021
05	Flange O-ring	NBR
06	Triangle Flange	GJS 400
07	O-ring	NBR
08	Hexagonal screw	MS58
09	Ring	POM
10	Whisk	NBR
11	Head of the spindle bonnet	GJS 400
12	O-ring	NBR
13	Spindle ring	MS58
14	Turned Flange	GJS 400/MS58
15	O-ring	NBR
16	Cap	GJS 400
17	Chain & hook	S4

Knife Valve PN 6/10

•Knife valve is used in food and drink industries, chemical industries, and dough making industries such as papier mache, high viscosity clammy liquid production line such as clammy liquids, sugar paste, wastes, chemical slush and also use in thermal power plants.
•One-sided Isolation
•Installation between two flanged pipe
•A full uplift movement to help passing solid materials
•Accommodate with every thermal variety with any effect on valve function
•Flange dimensions according to EN 1092-P2 (DIN 2501)
•Test pressure according to standard EN 12266-P1
•Blade isolation by a packing layer
•Minimum contact between moving parts
•Easy blade movement upward and downward without contacting with valve body
•Color would be ordered by the customer

DN	M	N	K	H3	H2	H1	T
50	M16	4	125	105	76	282	40
65	M16	4	145	95	86	309	40
80	M16	8	160	115	105	375	50
100	M16	8	180	131	113	411	50
125	M16	8	210	150	124	414	52
150	M20	8	240	148	132	475	60
200	M20	8	295	191	165	607	60
250	M20	12	350	265	197.5	720	68
300	M20	12	400	290	222.5	788	78
350	M20	16	460	338	261	903	96
400	M24	16	515	350	298	1002	102
450	M24	20	565	432	313	1097	106
500	M24	20	620	425	345	1240	127
600	M27	20	725	590	401	1428	127

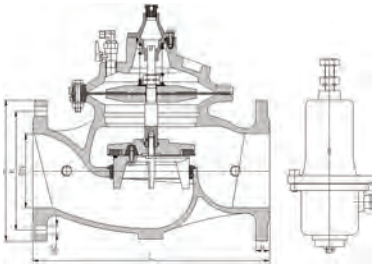


Part No.	Part Name	Material
01	Shaft	1.4021
02	Fastening nut	ST37
03	Bush	MS58
04	Packing cap	GJS400
05	Joiner rod	ST37
06	Hexagonal nut	Galvanized Steel / A2
07	Joiner	MS58
08	Hexagonal nut	Galvanized Steel / A2
09	Hexagonal bolt	Galvanized Steel / A2
10	Blade	1.4301
11	Hexagonal screw	Galvanized Steel / A2
12	Allen screw	Galvanized Steel / A2
13	Hexagonal nut	Galvanized Steel / A2
14	Body (Frame	GJS400
15	Cylindrical pin	ST37
16	Spherical bolt	Galvanized Steel / A2
17	Hexagonal nut	Galvanized Steel / A2
18	Diaphragm holder	GJS400
19	Bonnet Gasket	ST37

Pressure Reducing Valve

•The valve usage is for automatically pressure reducing with high safety index.
•The valve is actuated under a hydraulic system and diaphragm.
•Applicable in low-pressure systems via secondary control housing through installing a separating disc in the valve without any need to detach the valve from the system
•Applicable in very low-pressure systems via secondary control housing and applying control pressure from an external source instead of the system
•Application in low-pressure conditions eliminates any need for special equipment for low-pressure lines and thus reduces purchase and installation cost for this equipment
•Body and disks are made from ductile cast iron
•Seat and spindle are made from stainless steel. resistant against friction
•The seat is easily changeable without need to be detached from the water line system
•Spindle unique design as floating causes no friction and necessary sealing and has easy maintenance
•Epoxy Powder Coating.100-250 micron
•Face to face dimensions as to standard EN 558-1 (DIN 3202- F1)
•Flange dimensions as to standard ISO 7005-1
•Applicable for all control operation conditions
•Very low-pressure reduction when fully open The blocking disc has a sealing washer of high resistant rubber against tension and
•friction and thus guarantees no friction and no loose function
•Smooth closing of the valve prevents any hammer effect and its subsequent destruction to the system

DN	PN	D	B	K	Holt QTY	D2	L
50	10/16	165	19	125	4	19	230
65	10/16	185	19	145	4	19	290
80	10/16	200	19	160	8	19	310
100	10/16	220	19	180	8	19	350
150	10/16	285	19	240	8	19	480
200	10	340	20	295	8	23	600
	16	340	20	295	12	23	
250	10	395	22	350	12	23	730
	16	405	22	350		28	
300	10	445	24.5	400	12	23	850
	16	460	24.5	410		28	



Important Points for Choosing the Automatic Control Valves:

The minimum and maximum rate of passing water are important for choosing an automatic control valve (especially pressure plug valve), not the tube size.

In the following table, the minimum, normal and maximum rates of passing in valves with different sizes are shown.

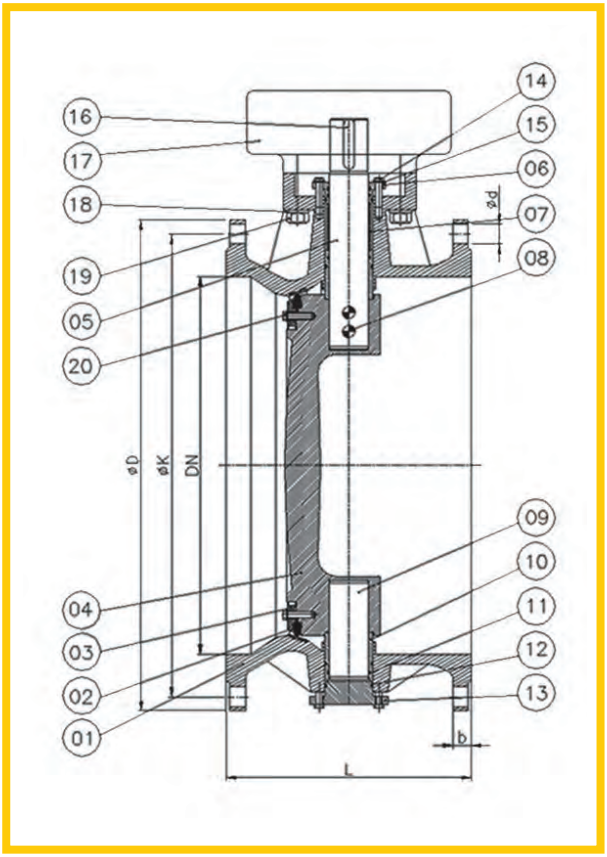
In the case of permanent usage of the valve, the maximum rate of passing water is considered 20%

DN	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800
Min.l/s	1.6	2.7	4	20	20	28	50	78	120	144	200	314	452	507	602
Nor l/s	6	10	15	37	37	5	94	147	212	289	377	589	848	1154	1508
Max. l/s	10	17	25	61	61	88	157	245	353	481	628	982	1414	1924	2513

Butterfly Valve

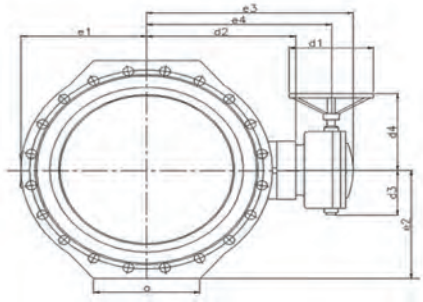
•The valve is used for fluid flow ON/OFF purposes, on industrial and constructional installations.
•Design is based on EN 593 standard
•Disk with double centric shaft
•Body and disk are made of ductile cast iron GJS400
•Shafts are made of 1.4021 (X20cr13) (valve & gearbox)
•Sealing ring EPDM-NBR
•Sealing ring changeable with no need to disassemble the disk
•Body sealing seat of stainless steel with high resistance against corrosion and frictions
•Face to face flange dimensions to standards EN 5581 14 series 1 (DIN3202-F4)
•Coating epoxy powder with 250 µ thickness fully covering inside and outside surfaces

Hydrostatic pressure test based on ISO5208			
Scope		Hydrostatic test (bar)	
Pressure class(bar)	Size(mm)	Body	Sealing Disk
10	200-200	15	11
16	200-200	24	18



Part No.	Part Name	Material
01	Body	GJS400
02	Rubber Block Ring	EPDM
03	Holder Ring	GJS400
04	Disc	GJS400
05	Shaft	1.4021
06	Gearbox & Body Medium	GJS400
07	Spacer	ST37
08	Pin	1.4021
09	Shaft	1.4021
10	Bush	GCuSn10
11	O-ring	NBR
12	O-ring	NBR
13	Cap	GJS400
14	Hexagon bolt	DIN 931
15	Gasket	DIN 125
16	Thistle	DIN 6885
17	Gearbox	AUMA
18	Gasket	DIN 125
19	Nut	DIN 934
20	Hexagon bolt	DIN 931

DN	PN	A	D	D2	D3	D4	E1	E2	E3	E4	L	D	K	C
200	10	160	250	216	96	150	150	175	308	256	230	340	295	20
	16							170						
250	10	180	250	259	96	200	180	205	351	299	250	395	350	22
	16											405	355	
300	10	200	250	309	128	300	215	232	401	249	270	445	400	24.5
	16											460	410	
350	10	224	250	319	128	300	240	265	411	359	290	505	460	24.5
	16		350	333	133			270	440	378		520	470	26.5
400	10	250	350	358	133	300	261	288	465	403	310	585	515	24.5
	16		400	356			285	297	463	401		580	525	28
500	10	291	400	416	187	300	345	340	539	473	350	670	620	26.5
	16	300	500	424			357	363	583	499		715	650	31.5
600	10	330	500	466	187	300	392	395	625	541	390	780	725	30
	16			510	192		413	425	673	585		840	770	36
700	10	400	500	559	192	300	462	455	722	634	430	895	840	32.5
	16			573	290		470	460	736	648		910	950	39.5
800	10	450	400	609	192	300	515	513	772	684	470	1015		35
	16			631	290		537	518	822	721		1025	1050	43
900	10	550	400	675	290	500	656	568	830	750	510	1115		37.5
	16		500	724	370		615		935	839		1125	1160	46.5
1000	10	600	400	729	370	500	630	633	900	820	550	1230		40
	16		500	773			666		985	888		1255	1170	50
1200	10	700	500	874	370	500	740	750	1104	989	630	1455	1380	45
	16			884	402		784		1235	1014		1485	1390	57
1400	10	800	400	920	402	500	845	850	1285	1150	710	1675	1590	46
	16			928	550		915	860	1315	1075		1685		60
1600	10	900	500	1013	550	500	965	965	1386	1226	790	1915	1820	49
	16		400	1058			1045	975	1415	1255		1930	1710	65
1800	10	100	500	1154	550	600	1065	1075	1460	1300	870	2115	2020	52
	16			1270	600		1170	1080	1725	1530		2130		70
2000	10	1100	500	1370	600	600	1180	1185	1825	1630	950	2325	2230	55
	16			1314			1301		1684	1489		2345		75

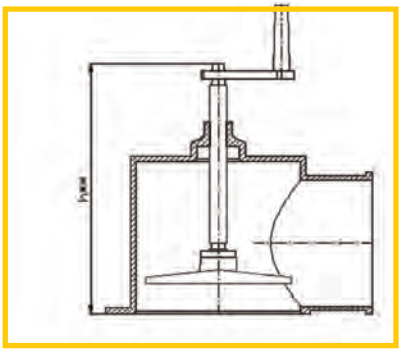


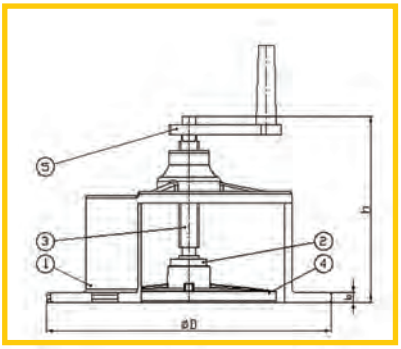
End valve (Evacuation) ** End valve (Toggle)

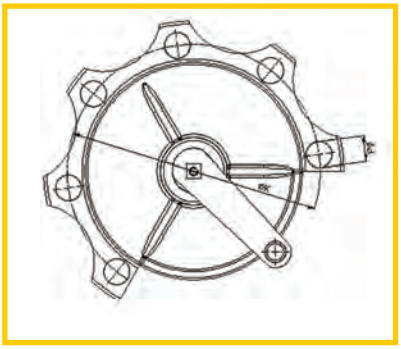
•This valve is used for evacuation at the end of flow lines
•Dimensions and pricking the flange according to EN 1092-P2 (DIN 2501)
•Epoxy powder coating on all inner and outer surfaces
•Axle made of stainless steel 1.4021 (X20Cr13) with rolling cover and extraordinary firmness
•Gate made of ductile cast iron GJS400 with rubber coating made of EPDM with high resistance against friction and cutting
•Body and bonnet are made of ductile cast iron GJS400 EN 1563 (DIN 1693), even for valves PN10
•Easy to open and choose the valve and perfect sealing (water blocker).
•No need to any service during utilization

DN	D	B	K	D	N	H	H**
80	200	8	160	19	8	150	
100	220	8	180	19	8	165	200
150	285	8	240	23	8	186	260
200	340	8	295	23	8	195	310

Part No.	Part Name	Material
01	Body (Frame)	GJS400
02	Spindle grip	GJS400
03	Spindle	1.4021
04	Gate	GJS400
05	Handle	GJS400







Stand Post Hydrant PN 10/16

•This hydrant is used in residential industrial areas and places where safety equipment is necessary for fire extinguishing purposes.
•Base and bonnet are made of ductile cast iron GJS400 EN 1563 (DIN 1693) covered with epoxy powder fluidized bed coating with a minimum thickness of 250 µm
•Wedge made of GJS400 encapsulated with EPDM and resistant against friction and tear
•Spindle made of stainless steel 1.4021 (X20Cr13) and rolled thread with high strength
•Galvanized pipes with epoxy powder coating
•O-rings resistant against corrosion (DIN 3547-T1)
•The other parts are also resistant against corrosion and friction
•Opening stroke: 50 mm
•Drain via a pipe made of PE
•Bonnet can be removed by opening 4 stainless steel bolts with 360° turning capability
•The flange between the pipes is connected by 4 semi-cut screws. So in case of any stroker impact, the upper part is removed easily
•The form of the hydrant is so that it can be repaired easily uponimpacts
•Easy handling and transportation and low pressure to the pipe system due to lightness

Size (mm)	DN 80 - DN 100	
Pressure (bar)	10/16	
Hydrostatic Test ISO 5208	Body	24
	Wedge	18

DN	Output			Frame			Depth of Pipe Under Ground	Flange				Weight (kg)
	A	B	C	h1(±10)	h2 (±10)	h3 (±10)	RD	D	K	Bolte	QTY	
80	-	1	2	1820	1620	925	1250	200	160	M16	8	72
80	-	2	-	1820	1620	925	1250	200	160	M16	8	70
100	-	1	2	1820	1520	900	1250	220	180	M16	8	75
100	-	2	-	1820	1520	900	1250	220	180	M16	8	73

Stand Post Hydrant, Model M2

•This hydrant is used in residential industrial areas and places where safety equipment is necessary
•for fire extinguishing purpose
•Operates in all climatic conditions
•Equipped with 1*4" and 2*2.5" outlets as to standard ISIRI 2481
•Sealing direction upward. This improves the better sealing of the gate due to the pressure of the flow. In case of any impact to the valve, the upper part detaches while no leakage occurs
•Body, bonnet, and extension pipes are made of ductile cast iron GJS400 EN 1563 (DIN 1693). The lower part is located underground coated with epoxy powder (resistant against corrosion) and the upper part is located on the ground, coated with polyester (resistant against sunlight)
•Gate rubbers, NBR, changeable
•Inner parts are made of anti-corrosion materials (stainless steel, bronze)
•Standard parts (bolts and nuts…) are galvanized coated
•Self-discharge system to prevent from freezing in wintertime
•Protection guard to prevent steal of brass parts
•Couplings are made of forged aluminum with unique stability and resistant against impact
•Coupling caps are made of non-recycled plastics
•Hydraulic tests as to standard ISIRI 2481
•Protection rubber on the nuts to prevent corrosion and easy screw and unscrew

DN	A	B	h1(±10)	h2(±10)	h3(±10)	D	K	Bolte	QTY	Weigth(kg)
100	4	2 1/2	1475	1975	1186	220	180	M16	8	197

Size	DN 100	
Pressure	10/16	
Hydrostatic Test ISO 5208	Body	24
	Wedge	18

CNG Equipment

•CNG Conversion of Various Gasoline- Fuel Cars
•Manufacturing CNG Tanks in Different Sizes
•Design and Manufacturing Medium Size Refueling
•CNG Stations (Fast Home Fuel)
•Production, Sales and Aftersales Services of CNG Equipment
•Annual Inspection of Bi-fuel Cars and Issuing Insurance Card and Refueling Label
•Periodic Inspection of CNG Tanks (Every 3 Years)
•Training the Installation of Bi-fuel Kit to Volunteers
•CNG Tanks Replacement
•Exporting CNG Kit Equipment

ME Reducer

Comply with: ECER 110

Operating Temperature	-40-120 °C
Operating Pressure	200 Bar
Hydrostatic	330 Bar
Weight	1.9 kg
Power	100 kW
Body	Aluminum Alloy
O- Ring	Viton

Three Reducing Stage Type
Filter Included
Water Circulating to Avoid Excessive Cooling of Fuel
Idle Speed Adjustment
Equipped with Safety Valve

Tecno M Reducer

Comply with: ECER 110

Operating Temperature	-40-120 °C
Operating Pressure	200 Bar
Hydrostatic	330 Bar
Weight	1.3 kg
Power	80 kW
Body	Aluminum Alloy
O- Rina	Viton

Three Reducing Stage Type
Filter Included
Water Circulating to Avoid Excessive Cooling of Fuel
Idle Speed Adjustment
Equipped with Safety Valve

Design, manufacture, support, and selling of CNG tanks
Design and manufacture of compressed gas storage and handling packages in 600 -800 liters
Design and manufacture of type 2 vessels (reinforced with carbon fibers)
Design, manufacture, support, and selling of integrated pressure vessels (industrial)
Design and manufacture of compressed CNG gas carrying trailers
Supply of vehicle CNG tanks in 101, 95, 82, 75, 65, 62, 57, 35, and 28 liters.

Manufacturer of Medium-Sized CNG Refueling Stations (Model: SFCNG27)

The development of CNG bi-fuel cars in the country and the limited number of refueling stations in metropolises and big cities has resulted in long queues and a long waste of time for refueling. Consequently, We after a deep investigation selected an up-to-date technology which complies with our geographical conditions and began to transmit the technology and localizing the production of medium-sized CNG refueling station, named SFCNG27, which is appropriate for complexes.

Places of Usage

This machine can work in different weather conditions of Iran and it can be installed in large apartment complexes, taxi terminals, factories, governmental centers, garrisons, and even in large refueling stations for night usage to decrease electricity consumption and equipment deprecation. Significant Features:

Significant Features:

The low wearing of parts because of the low RPM of the engine

The gas temperature control system

Separate fan for gas cooling

Automatic gas cut-off and compressor turn-off system in case a problem occurs, using PLC

Since the fuel resources are deteriorating, the alternative fuel market has found a very significant role worldwide.

Pressur Gauge

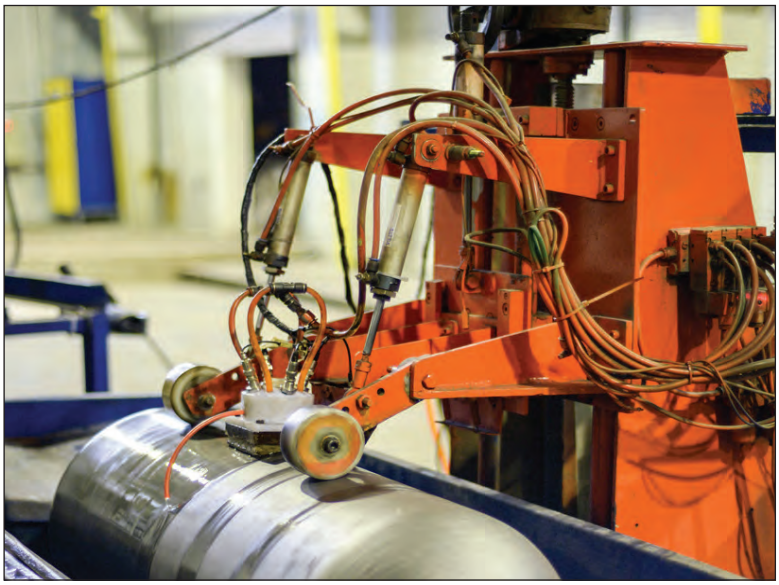
Electric Cylinder Valve

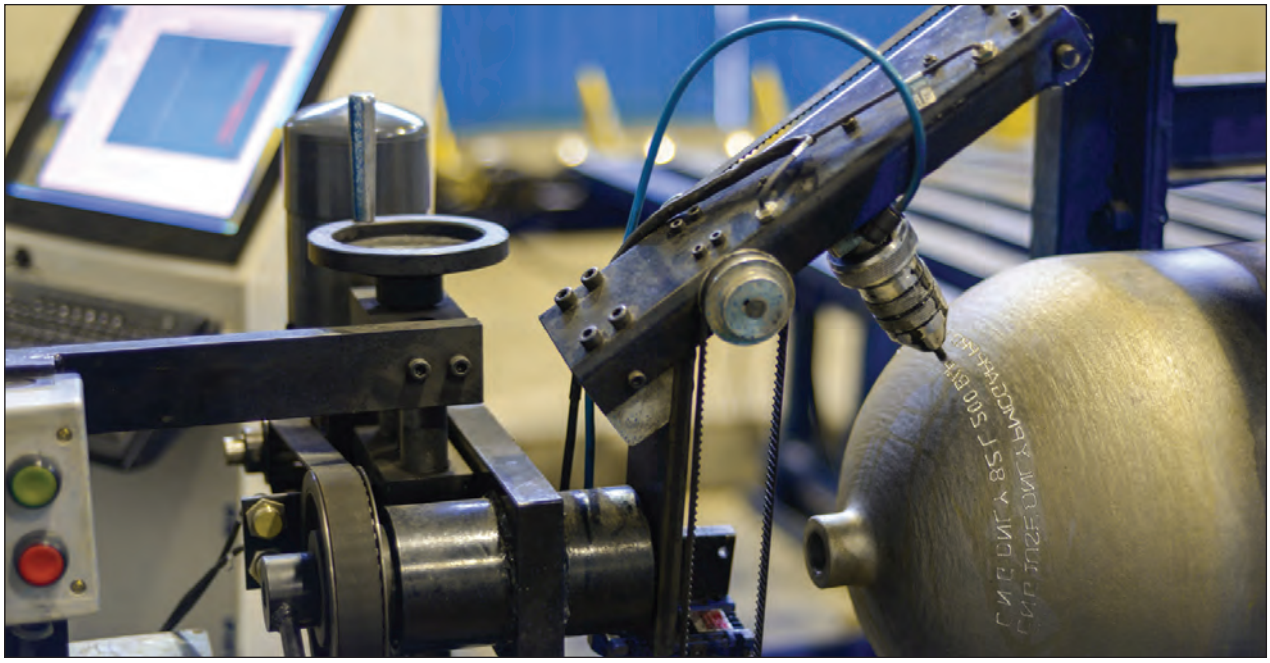
Emulator

Elegant Change Over Switch

In this regard, a Technology Transfer and Licensing contract was concluded with a well-known CNG and LPG kit manufacturer, MTM S.R.L (BRC), and manufacturing the kits were localized by then. Afterward, the conversion of gasoline cars to bi-fuel (gasoline-CNG) and the following success path has been achieved:

- Achieving 60 percent of Iran's CNG aftermarket conversion.
- Successful export of CNG equipment and kits to neighboring countries.
- Building the biggest after-market conversion network in Iran.





Methanol Distillation Tower

We have manufactured a methanol distillation tower with 71.5m height, 7.5m diameter, 22 & 43mm thickness in Bandar Abbas shipyard, and shipped it to install in one of the Asaluyeh refineries. Our subsidiary industries can manufacture pressure vessels and refinery towers in different weights and dimensions.

Smart Monitoring of Oil & Gas Fields

The monitoring system of extraction of the parameters from an oil field modeling base
Receiving meaningful data utilizing sensors on the system

Advantages

Efficiency increase through the decrease in extraction costs to 20%
Maximum extraction from fields Resources to 40%
Production increase to 50%

Capabilities

Smart monitoring of the oil fields in the way of total solution turn key
Production of required sensors
Smart network
Network design and software production
Design and production of different types of operators

Online monitoring to repair and maintain oil pipelines via optical fiber

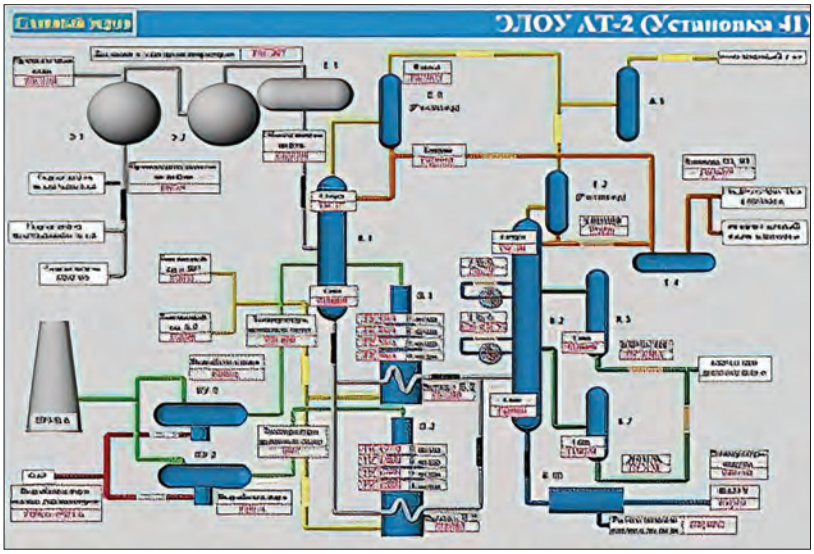
Decrease of the physical maintenance of oil and pipelines
Decrease of the time of the pipelines leakage and fraction prevention of the terrorism actions

Online monitoring and control of the distribution of fuel from the refinery to the fuel distribution platform

Prevention of fuel contraband
Decrease of observation of the fuel quantity in tanks
Increase of accurate measurement of the fuel quantity
Decrease of required human resources
Management and planning of the available fuel in platforms in possible minimum time
Transmission of the real-time data of the available fuel in tanks to the distribution company

System Capabilities

Measurement Accuracy 1 mm
Measurable height from 300 to 18000 mm
Height measurability of the tank floor is designed
based on Eexdll-BT4
Data recording in the regulated time interval
Controlling capability of 32 tanks by one or several monitors
The measurement accuracy of temperature to 1-degree centigrade
Including data center to record the tank data



Oil Field Capabilities

Design and manufacturing Down-Hole Completion String Design and manufacturing Measuring While Drilling (MWD). Design and manufacturing SRP and ESP pumps Providing manufacturing services and injection of nitrogen to well by mobile NGU system Design and manufacturing fixed and mobile gas and steam turbines blades
Design and manufacturing water reservoirs and drilling mud
Design and manufacturing GOV Actuators
Design and manufacturing types of butterfly valves
Design and manufacturing lattice system

Some Projects

Manufacturing oil down holes for National Iranian South Oil Company
Manufacturing down-hole completion strings (ten technology items) logistics,
Manufacturing and goods supply management
Manufacturing down holes for Iranian Offshore Oil Company Development and optimization of Rightel Co. telecom lines Expansion, SWAP, Relocation, TKS, and landscaping agreement with Irancell Co.
Sales of equipment, mast, fence, and panel to Ericson and Naghsh Aval Keifiat companies.
Agreement on modernization and Roll Out of Ericson sites
Manufacturing drilling masts equipment for National Iranian Drilling Company and other private companies
Manufacturing types of industrial parts and complexes

Design ,Engineering & Manufacturing

Development of Imen Iranian Co

Providing types of drilling technical and engineering services
Manufacturing equipment for oil and gas industries
Power plant special parts
Masts and BTS sites
Down-hole complementary fields
Turbine blades

We, having an expert and skilled staff and equipped factories, are active in the design, manufacturing, installation of oil and gas equipment, power plant special parts, design and implementation of telecom GSM networks, and manufacturing types of masts and equipment related to BTS sites. This company is currently in the vendor list of National Iranian South Oil Company, Iranian Offshore Oil Company, Iranian Central Oil Fields Company (ICOFC), and Kalaye Tehran Office as well as telecom GC of mobile phone operating companies, including Irancell and Rightel; and in the vendor list of Hamrah Aval and Ericson companies.

The Oldest & Largest and Modern Battery Manufacturer in Middle East

Products

- Car Battery Manufacturing (LM, FM)
- Industrial Battery Manufacturing (OPZS, VRLA, PZS, etc.)
- Lithium Battery Manufacturing
- Production of wind, solar and combined wind-solar plants
- Production of Combined Heat and Power (CHP)
- Plants Production of Solar Water Purifiers
- Production of Combined Cycle Plants
- Manufacturing of Refractory Products
- Manufacturing of Deep Cycle Batteries
- Design and Production of the above-mentioned products
- Lines and Factories

SABA BATTERY Automotive Batteries (MF Sealed & LM dry)

type	NO.	CAPACITY (Ah)	CCA (A)		weight (kg)	length (mm)	width (mm)	height (mm)	PCS in pallet
			IEC	EN					
LM (low maintenance)	1	12V-30Ah Sealed Acid Filled Battery	190	280	10.8	207	175	190	84
	2	12V-30Ah Sealed Acid Filled Battery (L2)	190	280	11.3	242	175	190	84
	3	12V-40Ah Sealed Acid Filled Battery	210	310	12.1	207	175	190	72
	4	12V-40Ah Acid Filled Battery (L2)	210	310	12.7	242	175	190	72
	5	12V-50Ah Acid Filled Battery	290	380	13.3	207	175	190	72
	6	12V-55Ah Acid Filled Battery	320	420	14.5	242	175	190	72
	7	12V-60Ah Acid Filled Battery	380	500	16.7	255	175	227	72
	8	12V-65Ah Acid Filled Battery	450	570	17	276	175	190	72
	9	12V-70Ah Acid Filled Battery	470	540	17.3	255	175	225	72
	10	12V-74Ah Acid Filled Battery	520	640	17.5	276	175	190	72
	11	12V-88Ah Acid Filled Battery	540	660	20.1	300	168	225	48
	12	12V-90Ah Acid Filled Battery	620	740	22.7	350	175	235	48
	13	12V-100Ah Acid Filled Battery	620	740	26	404	170	235	36
	14	12V-100Ah Acid Filled Battery	650	770	27	404	180	235	36
	15	12V-120Ah Acid Filled Battery	750	790	35	510	220	240	36
	16	12V-150Ah Acid Filled Battery	900	950	38.5	525	220	235	21
	17	12V-150Ah Acid Filled Battery	900	950	40	540	220	240	21
	18	12V-170Ah Acid Filled Battery	950	1000	40.5	525	220	220	21
	19	12V-200Ah Acid Filled Battery	1000	1050	40.5	525	220	220	21

type	NO.	CAPACITY (Ah)	CCA (A)		weight (kg)	length (mm)	width (mm)	height (mm)	PCS in pallet
			IEC	EN					
MF (maintenance-free)	1	12V-30Ah Acid Filled Battery	190	280	10.7	207	175	190	84
	2	12V-32Ah Acid Filled Battery (NS40)	180	230	10.3	196	127	233	78
	3	12V-35Ah Acid Filled Battery (NS40Z)	200	259	10.9	196	127	233	78
	4	12V-40Ah Sealed Acid Filled Battery	210	310	12	207	175	190	72
	5	12V-40Ah Sealed Acid Filled Battery (L2)	210	310	12.7	242	175	190	72
	6	12V-50Ah Sealed Acid Filled Battery	290	380	12.7	207	175	190	84
	7	12V-50Ah Sealed Acid Filled Battery (L2	290	380	13.8	242	175	190	72
	8	12V-55Ah Sealed Acid Filled Battery	320	420	14.7	242	175	190	72
	9	12V-60Ah Sealed Acid Filled Battery	380	500	15.4	242	175	190	72
	10	12V-60Ah Sealed Acid Filled Battery FX	380	500	16.6	250	175	222	72
	11	12V-60Ah Sealed Acid Filled Battery D23 550 (KS)	550	(KS)	16.6	240	174.5	223	72
	12	12V-66Ah Sealed Acid Filled Battery	450	570	17.3	276	175	190	72
	13	12V-70Ah Sealed Acid Filled Battery	470	540	17.3	250	175	222	72
	14	12V-74Ah Sealed Acid Filled Battery	520	640	17.6	276	175	190	72
	15	12V-90Ah Sealed Acid Filled Batter	620	740	22	355	175	190	48
	16	16 12V-100Ah Sealed Acid Filled Battery	620	740	27	404	175	235	36
	17	12V-120Ah Sealed Acid Filled Battery	650	770	27.7	404	175	235	36
	18	12V-120Ah Sealed Acid Filled Battery	650	770	37.3	500	220	224	36
	19	12V-150Ah Sealed Acid Filled Battery	900	950	39.5	500	220	224	21
	20	20 12V-170Ah Sealed Acid Filled Battery	950	1000	41	500	220	224	21
	21	12V-200Ah Sealed Acid Filled Battery	1000	1050	41	500	220	224	21

Industrial Batteries with a width of 198mm

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 70 Ah, Total Height: 400 mm				
2 PzS 140	140	45	10.5	2.4
3 PzS 210	210	63	14.7	3.1
4 PzS 280	280	81	18.9	4
5 PzS 350	350	99	22.9	4.9
6 PzS 420	420	118	27.8	5.6
7 PzS 490	490	136	31.8	0.8
8 PzS 560	560	154	36.5	7.7
9 PzS 630	630	173	42.2	11.8
10 PzS 700	700	191	44.5	10.9

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 55 Ah, Total Height: 340 mm				
2 PzS 110	110	45	8.6	2
3 PzS 165	165	63	12	2.6
4 PzS 220	220	81	15.3	3.4
5 PzS 275	275	99	18.8	4.2
6 PzS 330	330	118	22.3	5
7 PzS 385	385	136	26.9	7.8
8 PzS 440	440	154	30.7	9.1
9 PzS 495	495	173	34.3	10.2
10 PzS 550	550	191	38.1	11.3

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 100 Ah, Total Height: 565 mm				
2 PzS 200	200	45	15.2	3.1
3 PzS 300	300	63	21	4.5
4 PzS 400	400	81	26.7	5.8
5 PzS 500	500	99	34.1	7.2
6 PzS 600	600	118	39.9	8.6
7 PzS 700	700	136	45.2	10
8 PzS 800	800	154	50.9	11.3
9 pzs 900	900	173	58.6	12.8
10 PzS 1000	1000	191	64.2	14.2

Weight ± 2.5%

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 80 Ah, Total Height: 480 mm				
2 PzS 160	160	45	12	2.5
3 PzS 240	240	63	17	3.5
4 PzS 320	320	81	22	4.5
5 PzS 400	400	99	29.1	5.5
6 PzS 490	490	118	32.1	6.6
7 PzS 560	560	136	37.1	7.7
8 PzS 640	640	154	41.5	8.8
9 PzS 720	720	173	50.6	14.4
10 PzS 800	800	191	55.8	15.6

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 140 Ah, Total Height 715 mm				
2 PzS 280	280	45	13.7	3
3 PzS 420	420	63	20	4.7
4 PzS 560	560	81	26.2	6.3
5 PzS 700	700	99	32.3	7.7
6 PzS 840	840	118	38.5	9.3
7 PzS 980	980	136	44.8	10.8
8 PzS 1120	1120	154	51	12.3
9 PzS 1260	1260	173	57.2	14
10 PzS 1400	1400	191	63.4	15.4

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 125 Ah, Total Height: 601 mm				
2 PzS 250	250	45	11.8	2.5
3 PzS 375	375	63	17.2	3.9
4 PzS 500	500	81	22.4	5.2
5 PzS 625	625	99	27.7	6.4
6 PzS 750	750	118	33	7.8
7 PzS 875	875	136	38.3	9
8 PzS 1000	1000	154	43.6	10.3
9 PzS 1125	1125	173	48.9	11.6
10 PzS 1250	1250	191	54.3	12.8

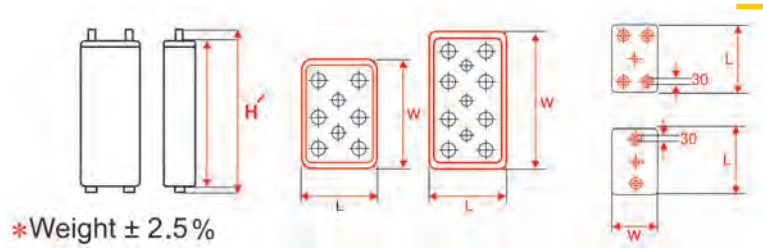
Industrial Batteries Producer 110 AH PZS Batteries

No	Battery Type	Capacity Ah	Discharge Time H	Discharge Current A	Final Voltage (V/Cell)	Width Length Height (mm)	Charged Battery Weight (kg)	Electrolyte Weight (kg)
31	5 PzS 500	328 441 500	1 3 5	328 147 100	1.55 1.68 1.70	101 198 565	32.1	7.2
32	6 PzS 600	393 529.5 600	1 3 5	393 176.5 120	1.55 1.68 1.70	119 198 565	38.1	6.8
33	7 PzS 700	459 618 700	1 3 5	459 206 140	1.55 1.68 1.70	137 198 565	44.5	10
34	8 PzS 800	524 706 800	1 3 5	524 235 160	1.55 1.68 1.70	155 198 565	50.8	11.3
35	9 PzS 900	590 795 900	1 3 5	590 265 180	1.55 1.68 1.70	173 198 565	58.6	12.8
36	10 PzS 1000	655 882 1000	1 3 5	655 294 200	1.55 1.68 1.70	191 198 565	62.4	14.2
37	3 PzS 360	243 324 360	1 3 5	243 108 72	1.50 1.65 1.70	65 198 720	26	6.8
38	4 PzS 480	324 432 480	1 3 5	324 144 96	1.50 1.65 1.70	83 198 720	33.9	8.8
39	5 PzS 600	405 540 600	1 3 5	405 180 120	1.50 1.65 1.70	101 198 720	41.6	11
40	6 PzS 720	486 648 720	1 3 5	486 216 144	1.50 1.65 1.70	119 198 720	49.1	13
41	7 PzS 840	567 756 840	1 3 5	567 252 168	1.50 1.65 1.70	155 198 720	65.8	15
42	9 PzS 960	648 864 960	1 3 5	648 288 192	1.50 1.65 1.70	137 198 720	63.3	17.2
43	10 PzS 1200	810 1080 1200	1 3 5	810 360 240	1.50 1.65 1.70	191 198 720	78.3	21.5

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 155 Ah, Total Height: 745 mm				
2 PzS 310	310	45	14.7	3.2
3 PzS 465	465	63	21.2	4.9
4 PzS 620	620	81	27.7	6.5
5 PzS 775	775	99	34.2	8.1
6 PzS 930	930	118	40.7	9.8
7 PzS 1085	1085	136	47.3	11.3
8 PzS 1240	1240	154	53.8	12.9
9 PzS 1395	1395	173	60.3	14.6
10 PzS 1550	1550	191	66.8	16.1

Type	Capacity (5Ah)	Length	Weight of Dry Battery	Weight of Electrolyte
Positive Plate Capacity: 80 Ah, Total Height: 480 mm				
4 PzS 500	500	198	27.7	6.7
4 PzS 560	560	198	34.8	8.6
5 PzS 625	625	198	32.5	7.8
3 PzS 165	165	158	10.5	2
3 PzS 195	195	158	12	1.9
3 PzS 225	225	158	10.8	3.1
4 PzS 220	220	158	11	2.5
4 PzS 260	260	158	13	2.5

Stationery Batteries (OPZS Series)



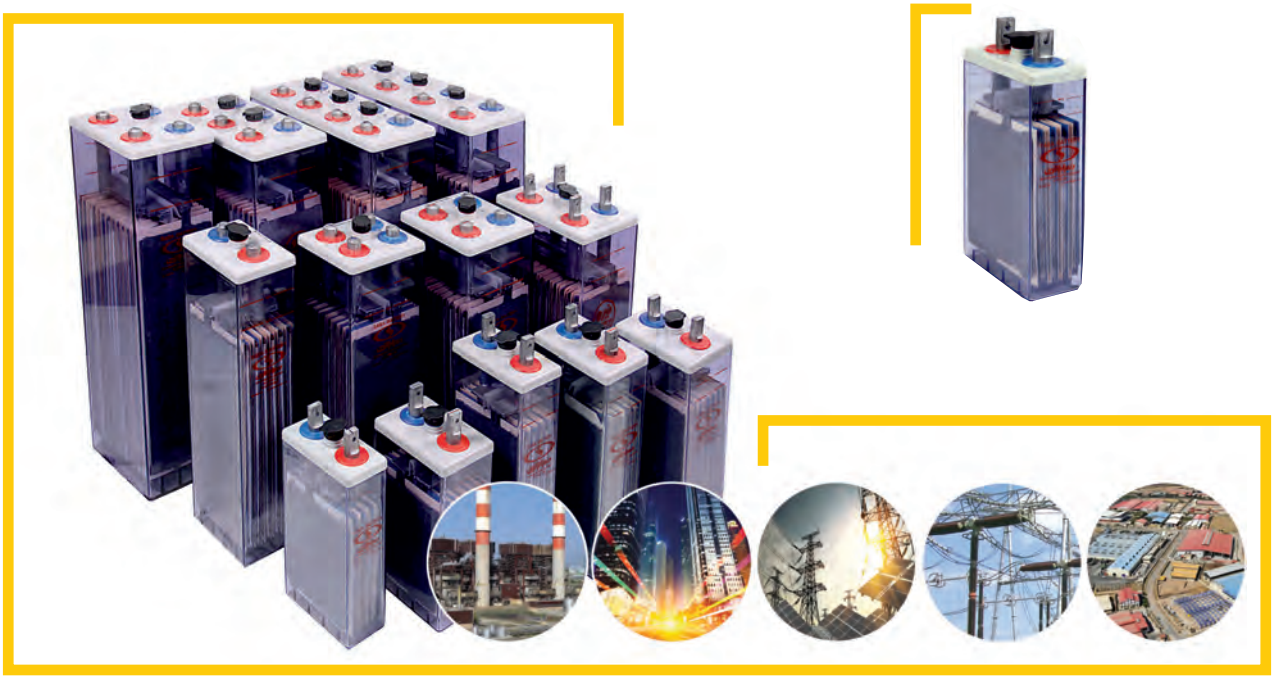
*Weight ± 2.5%

No.	Type	Capacity (5Ah)	(H)Time Discharging	(A)Current Discharge	Final Voltage (V)	Dimensions				Weight of Dry Battery	Weight of Electrolyte
						Length	Width W	HEight H	HeightTotal		
1	4 OPzS 200	150 170 200	3 5 10	50 34 20	1.77 1.79 1.82	206	103	355	412	12.6	4.8
2	5 OPzS 250	189 215 250	3 5 10	63 43 25	1.77 1.79 1.82	206	124	355	412	15.2	6.1
3	6 OPzS 300	225 255 300	3 5 10	75 51 30	1.77 1.79 1.82	206	145	355	412	17.6	7.3
4	5 OPzS 350	264 300 350	3 5 10	88 60 35	1.77 1.79 1.82	206	124	471	522	20.7	8.6
5	6 OPzS 420	315 360 420	3 5 10	105 72 42	1.77 1.79 1.82	206	145	471	522	23.7	10.3
6	7 OPzS 490	369 425 490	3 5 10	123 85 49	1.77 1.79 1.82	206	166	471	522	28	12
7	6 OPzS 600	450 510 600	3 5 10	150 102 60	1.75 1.77 1.80	210	145	644	680	34	14.7
8	8 OPzS 800	600 690 800	3 5 10	200 138 80	1.75 1.77 1.80	210	191	646	680	47.6	19.6
9	10 OPzS 1000	750 865 1000	3 5 10	250 173 100	1.75 1.77 1.80	210	233	646	680	57	24.4
10	12 OPzS 1200	900 1040 1200	3 5 10	300 208 120	1.75 1.77 1.80	210	275	646	680	68.6	29.3
11	12 OPzS 1500	1152 1302 1500	3 5 10	384 260.4 150	1.74 1.77 1.80	210	275	800	837	84	34
12	16 OPzS 2000	1536 1736 2000	3 5 10	512 347 200	1.74 1.77 1.80	212	397	755	810	105	28
13	20 OPzS 2500	1920 2170 2500	3 5 10	640 434 250	1.74 1.77 1.80	212	487	755	810	130	60
14	24 OPzS 3000	2304 2604 3000	3 5 10	768 521 300	1.74 1.77 1.80	212	576	755	810	153	72

4 OPZS 200 (2V 200 Ah)

SINGLE CELL BATTERIES								
Type According to SIN 40736	Capacity		Discharge		Charging			Size of Plates in Amp/h @ 10 hrs rate of discharge OPzS
	In Amp/ hr	Rate of discharge hours	Amps	Until final voltage v/ cell	To 2.4 cell Amps	over 2.4 v/cell		
						Falling by Amps	Falling to Amps	
4 OPzS 200	200 170 150	10 5 3	20 34 50	1.82 1.79 1.77	30	14	7	50

Constant Current (Amp) Discharge Table at 25 C (77F)									
Final voltage	Discharge time								
	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h
1.90 V	81	65.2	46	36	30.4	26.6	23.4	19.2	16.2
1.87 V	95	74.8	51.6	40	33.6	29.2	25.8	21	17.6
1.83 V	111	85.6	58	44.8	36.8	31.8	28.4	22.8	19
1.80 V	122	92	61.6	47.2	38.6	33.2	29.6	24	20
1.75 V	142	100	66.4	50.4	40.8	35	31.2	25.2	-
1.70 V	156	108	69.6	52.4	42.4	36.2	32	-	-



8 OPzS 800 (2V 800 Ah)

SINGLE CELL BATTERIES								
Type According to SIN 40736	Capacity		Discharge		Charging			Size of Plates in Amp/h @ 10 hrs rate of discharge OPzS
	In Amp/ hr	Rate of discharge hours	Amps	Until final voltage v/ cell	To 2.4 cell Amps	over 2.4 v/cell		
						Falling by Amps	Falling to Amps	
8 OPzS 800	800 690 600	10 5 3	80 138 200	1.8 1.77 1.75	120	54	27	100

Constant Current (Amp) Discharge Table at 25 C (77F)									
Final voltage	Discharge Time								
	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h
1.90 V	256	217	162	132	116	100	88	71.2	57.6
1.87 V	316	258	189	153	131	112	98.4	80	65.6
1.83 V	390	304	216	173	145	125	109	88.8	76
1.80 V	440	336	235	185	154	132	116	93.6	78.4
1.75 V	514	380	256	199	162	140	122	99.2	-
1.70 V	569	412	279	208	169	146	127	-	-

24 OPzS 3000 (2V 3000 Ah)

SINGLE CELL BATTERIES								
Type According to SIN 40736	Capacity		Discharge		Charging			Size of Plates in Amp/h @ 10 hrs rate of discharge OPzS
	In Amp/ hr	Rate of discharge hours	Amps	Until final voltage v/ cell	To 2.4 cell Amps	over 2.4 v/cell		
						Falling by Amps	Falling to Amps	
24 OPzS 3000	3000 2605 2304	10 5 3	300 521 768	1.8 1.77 1.74	450	200	100	125

Constant Current (Amp) Discharge Table at 25 C (77F)									
Final voltage	Discharge time								
	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h
1.90 V	792	792	592	523	438	388	345	276	220
1.87 V	1023	927	698	592	500	436	388	307	249
1.83 V	1320	1082	820	652	548	480	422	338	278
1.80 V	1456	1182	880	690	574	498	444	357	295
1.75 V	1680	1334	970	745	618	528	468	379	-
1.70 V	1910	1514	1034	796	648	548	480	-	-

Single Cells in Plastic Containers

			Vmc = 1/80 V/CELL DISCHARGE CURRENT IN A								
No	Type	Rated Capacity (Ah) 10 h	30	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h
1	4 OPzS 200	200	122	92.00	61.60	47.20	38.60	33.20	29.60	24.00	20.00
2	5 OPzS 250	250	153	115	77.00	59.00	48.25	41.50	37.00	30.00	25.00
3	6 OPzS 300	300	184	138	92.40	70.80	57.90	49.80	44.40	36.00	30.00
4	5 OPzS 350	350	199	154	106	82.00	68.00	58.00	50.00	40.50	34.00
5	6 OPzS 420	420	238	185	127	98.40	81.60	69.60	60.00	48.60	40.80
6	7 OPzS 490	490	278	216	149	114	95.20	81.20	70.00	56.70	47.60
7	6 OPzS 600	600	330	252	176	139	115	99.60	87.00	70.20	58.80
8	8 OPzS 800	800	440	336	235	185	154	132	116	93.60	78.40
9	10 OPzS 1000	1000	550	420	294	232	193	166	145	117	98.00
10	12 OPzS 1200	1200	660	504	352	278	231	199	174	140	117
11	12 OPzS 1500	1500	728	591	440	345	287	249	222	178	147
12	16 OPzS 2000	2000	970	788	586	460	382	332	296	237	196
13	20 OPzS 2500	2500	1213	985	733	575	478	415	370	298	246
14	24 OPzS 3000	3000	1456	1182	880	690	574	498	444	357	295

Usage Instruction, Charge, and Deeping of VRLA Stationary Sealed Lead Acid Batteries

1.Saba Stationary Sealed Lead Acid Battery.

One of the outstanding characteristics of Saba stationary Sealed Lead Acid batteries is their electrolyte impermeability in them and so there is no need for keeping and particular attention. This advantage is a result of high technology in recomposing of oxygen. Because of AGM's particular performance the oxygen which is emitted from positive plates spreads through the negative plates and due to the process of producing water in the battery, there is no need of adding water and this process makes the battery-free from the need of care or special attention.

2. Components of Sealed Batteries:

Positive Plates: Positive plates are made of lead-calcium alloy with a special formula.

Negative Plates: Negative plates are made of lead-calcium alloy with a special formula.

Separator: AGM separator is made in a way that its porosity drain at its top makes enough electrolytes for the reaction of active elements of plates

Safety relief valve: The valve is designed in a way that can emit extra gas from the battery and keeps the inner pressure at the safety level.

3. The Unique Specifications of Sealed Batteries:

No servicing and keeping required
No electrolyte leaking
Long Life
Usable in Any Position
Low self-discharge
Lowest possible weight and volume
Installable on various equipment

4.Usage :

Long life and high capacity are from among sealed batteries' main features. The usage of these batteries can be divided into 2 sections.

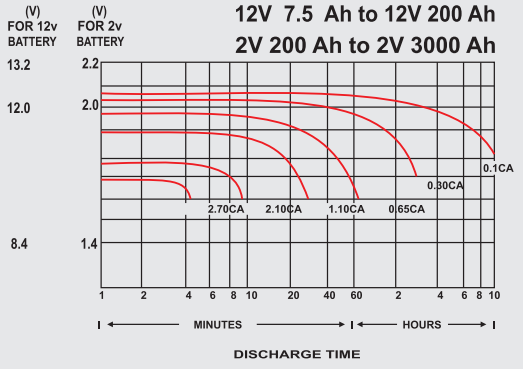
Cycling Usage

- Audio/Video Equipments
- Medical Equipments
- Photography Equipments
- Portable Power Supplying Equipments
- Lighting Equipments
- Personal Computers
- Computers Systems
- Toys

Using In Stand By Systems

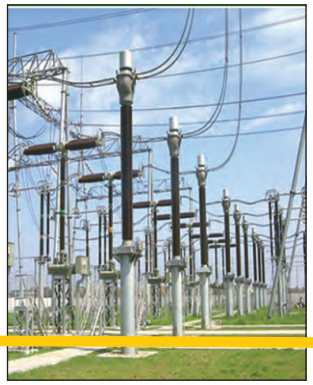
-Security and Alarming Systems
- Back Up Computers
- Emergency Lighting
- Communication Equipments
- Solar Cells
- Path Lighting
- Power Supplying Stations
- Portable Power Resources
- UPS

Discharge Curves 25 C (77 F)



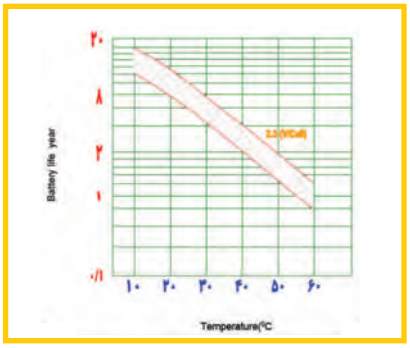
Discharge and Final Voltage Table According to IEC60886-21						
Discharge time	0.25h	1h	3h	5h	8h	10h
Final Voltage	1.60VPC	1.60PVC	1.70PVC	1.73PVC	1.75PVC	1.80PVC

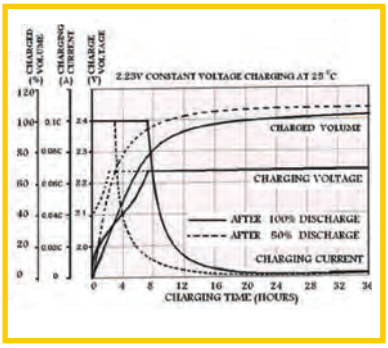


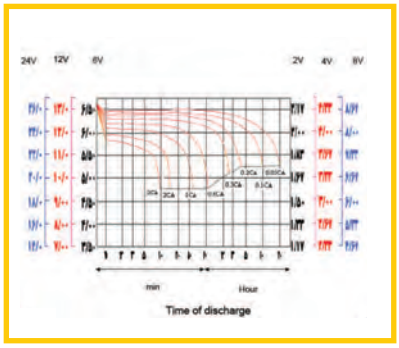


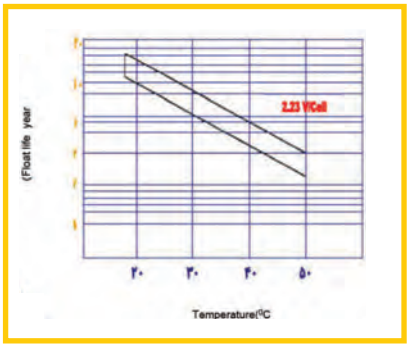

Item	Type of Battery	Voltage	Volume Ah			Dimensions (mm)				Weight	Container
			Cl	C3	C10	Length	Width	Height	Total Height		
1	2SB200	2	110	150	150	171	110	330	365	13/35	ABS
2	2SB250	2	137	186	186	171	150	330	365	16	ABS
3	2SB300	2	165	225	225	171	150	330	365	20	ABS
4	2SB350	2	192	261	261	210	171	330	365	26	ABS
5	2SB420	2	231	315	315	210	171	330	365	28	ABS
6	2SB600	2	330	450	450	302	175	330	367	40	ABS
7	12SB1000	2	550	738	738	473	174	330	365	63	ABS
8	12SB1500	2	825	1125	1125	400	350	345	382	115	ABS
9	12SB2000	2	1100	1533	1533	490	350	342	382	135	ABS
10	12SB3000	2	1650	2307	2307	710	350	342	382	195	ABS

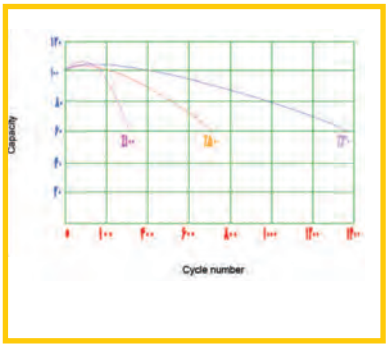
The below-mentioned weights are with +2/5% tolerance

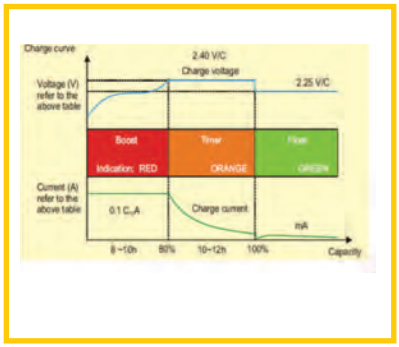












Item	Type of Battery	Voltage	Volume Ah			Dimensions (mm)				Weight	Container
			CI	C3	C10	Length	Width	Height	Total Height		
1	(Motorcycle)12 SB6/5	12	3/57	4/87	6/5	151	65	94	98	2/7	ABS
2	6SB4/5	12	2/34	3/18	4/5	70	47	100	105	0/9	ABS
3	12SB4/5	12	2/34	3/18	4/5	89/3	69/3	101	106/2	1/8	ABS
4	12SB7/5	12	3/9	5/3	7/5	151	65	94	98	2/7	ABS
5	12SB9	12	4/68	6/36	9	151	65	94	98	2/85	ABS
6	(Motorcycle) 12 SB9	12	4/68	6/36	9	136/4	76/5	134/5	134/5	2/9	ABS
7	12SB12	12	6/2	8/5	12	151	98	95	100	3/8	ABS
8	12SB18	12	9/4	29/9	18	181	78	165	165	6/5	ABS
9	12EV20	12	13/1	17/7	20	181	77	170	170	7/3	ABS
10	12SB28	12	14/5	19/8	28	175	166	125	125	9/5	ABS
11	12SB42	12	22	30	42	197	166	169	169	13/1	ABS
12	12SB65	12	34	46/5	65	349	167	180	185	23/85	ABS
13	12SB100	12	55	75	100	328	172	216	222	32	ABS
14	12SB100 Deep Cycle	12	55	75	100	328	172	216	222	30/5	ABS
15	12SB100 (FT)	12	55	75	100	328	110	285	285	33	ABS
16	12SB150(FT)	12	82	112	150	551	110	288	288	47	ABS
17	12SB155(w:110)	12	84	114	155	551	110	288	288	49	ABS
18	12SB155	12	84	114	155	560	126	280	289	54	ABS
19	12SB200	12	106/1	142/5	200	530	126	320	320	64	ABS

The below-mentioned weights are with +2/5% tolerance

Lead Industry

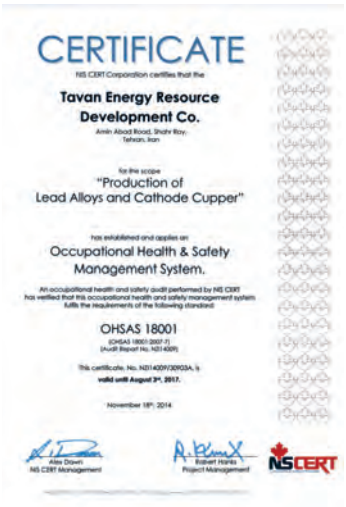
We provide lead for battery manufacturing industries of Iran. This industry benefited from high-tech systems of lead melting and alloy making can offer over 40 types of lead ingot with a capacity of 60 thousand tons annually. The major production of this industry is SPL with a purity of 99.999 percent.

Major Lead Alloys

SPL	COS	9.7 AS	LSN	4.5 s
8.7 ST	CRN	CRP	5 N	99.99 S
Pb-Ca	L14	RP&RS	Pb-se	L16

Copper Industries

We utilize the highest global known technologies based on ATSM standards with over 6,000 tons of copper cathode production with a purity of 99.99 percent for global markets.


CERTIFICATE

NS CERT Corporation certifies that the

Tavan Energy Resource Development Co.

Amin Abad Road, Shahr Rey, Tehran, Iran

for the scope

"Production of Lead Alloys and Cathode Cupper"

has established and applies an

Occupational Health & Safety Management System.

An occupational health and safety audit performed by NS CERT has verified that this occupational health and safety management system fulfils the requirements of the following standard

OHSAS 18001

(OHSAS 18001:2007-7)
(Audit Report No. NZ1420F)

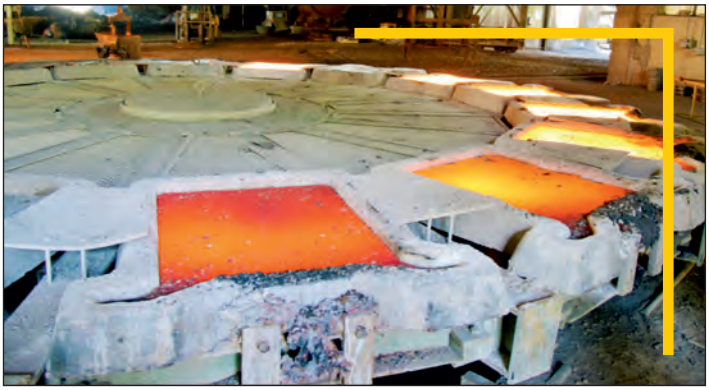
This certificate, No. NZ1420F/20F03A, is valid until August 3rd, 2017.

November 18th, 2014

Alex Dowd
NS CERT Management

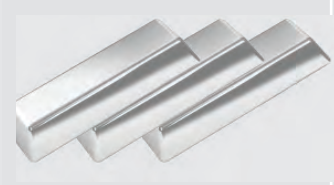
Robert Hanks
Project Management

NSCERT



Precious Metals

The other products of the Copper Industry are gold and silver extracted from electrolyzed chamotte

Product	
	Gold
	Silver

Refractory Products

We, act as the main provider of refractory products for main industries such as cement manufacturer, oil and gas industries, petrochemicals, etc. the annual production capacity of 12,000 tons of shaped products such as Chamotte Bricks, Bricks and alumina bricks, 5,000 tons of none-shaped products (Castables, light Castables, and Mortars), 2,000 tons of ingot casting system bricks, (in use for casting) and 15,000 tons of Chamotte and Bauxite is the portfolio of this industry.

Varieties of Usages and Production

Shaped products

Product	Type	Raw Material	Max Working Temp (°C)	Usage
Chamotte Bricks	Niru1	Chamotte	1340	Cement kiln Casting, rolling mill kiln, etc.
	Niru2	Chamotte	1320	Cement kiln, rolling mill kiln, general use, etc.
	Al50	Bauxite	1350	Cement kiln, calcination kiln, rotary kiln, lime kiln, etc.
Alumina Bricks	Al70	Bauxite	1420	Cement kiln, rotary mill kiln(hot zone), security layer of the iron ladle, etc.
	Al70 SP	Bauxite	1420	Aluminum industries, cement industries, etc.
	Al80	Bauxite	1430	Security layer of the iron kiln, preheat kiln, etc.
	Al80 sp	Bauxite	1430	Aluminum industries, cement industries, the bottom of rolling mill kiln, etc.

Shaped Products

Products Varieties

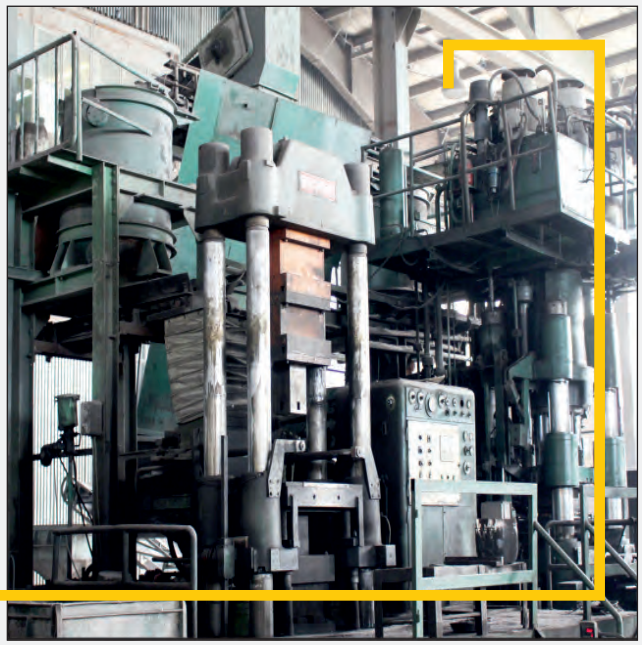
Product	Type	Raw Material	Max Working Temp (°C)	Usage
Castables Chamotte	Nirucast 45	1320	Chamotte + Cement	General
	Nirucast 50 lic	1350	Chamotte + High Alumina Cement	Shaped Products Products Varieties Bricks & Ceramic kiln bottoms
Alumina Castables	Nirucast 60	1400	Chamotte + Bauxite + High Alumina Cement	Aluminum Industry, cement industries
	Nirucast 70	1500	Rotary Bauxite + High Alumina Cement	Rolling mill kiln, ladle edge castables
	Nirucast 80	1550	Rotary Bauxite + High Alumina Cement	Rolling mill kiln blocks
	Nirucast 94	1750	Tabular Alumina + High Cement Alumina	Electric Arc Furnace (EAF) Top, Bottom of Ladles
Mortars	Mortar Chamotte	---	Chamotte + Refractory Ball Clay	Chamotte Bricks
	Alumina Mortar	---	Rotary Bauxite + Refractory Ball Clay	Alumina Bricks

Quality Control and R&D

Due to day by day increase of requests for refractory products and the importance of increasing the quality of these products, using and applying quality control systems and Lab and also R&D department is a non-separable part of this industry. The ATSM Standards demand a well-equipped lab with low tolerance.

Technical specs of Alumina Bricks

Properties	Chemical Analysis (%)					Physical					
Brand Name	Al_2O_3	SiO_2	TiO_2	Fe_2O_3	$K_2O+Na_2O+Li_2O$	Bulk Density (g/cm^3)	Apparent Porosity (%)	Crushing Strength C.C.S (Kg/cm^2)	R.U.L / T 0.5 (°C)	Refractoriness (°C)	Thermal Shock (Cycle)
Medium Alumina Bricks											
NIRU AL50	48-51	41-44	< 2.5	< 2.5	< 1	2.25-2.4	15-22	350-650	1360	1750	25
High Alumina Bricks											
NIRU AL55	53-55	38-41	< 2	< 2	<1	2.3-2.4	15-22	350-650	1360	1750	25
NIRU AL60	57-61	28-31	< 3	<2.5	<1	2.3-2.45	15-22	350-650	1360	1750	25
NIRU AL70	67-70	19-22	<3.5	<2.5	<1	2.4-2.6	17-23	400-600	1425	1750	25
NIRU AL80	76-80	13-15	<3	<2	<1	2.5-2.65	17-23	400-600	1450	1800	30
Phosphate Bond Bricks											
NIRU AL70 SP (Phosphate Bond)	67-70	19-22	<3.5	<2.5	<1	2.3-2.55	17-23	600-900	1420	1760	25
NIRU AL85 SP (Phosphate Bond)	80-85	8-12	<3.5	<2.5	<1	2.5-2.7	17-23	600-900	1460	1800	30



Technical Specs of Mortars

Properties		Brand Name	
		Chamotte	Alumina
Physical	Required water for troweling (Lit/30Kg)	9-11	8-12
	Physical Required mortar/1000 standard bricks: (Kg) - Laid dry then grouted - Dipped thinly troweled joints	100-120 150-190	110-130 160-220
	Modulus of Rupture at Joints: (Kg/cm2) - After drying at 110 °C - After drying at 925 °C	28-50 18-42	32-55 20-45
Chemical Analysis	Al2O3	40	71
	SiO2	52	21
	TiO2	3	3
	Fe2O3	2.5	1.2
	CaO	0.6	0.3
	MgO	0.4	0.1
	K2O+Na2O+Li2O	1.2	0.8

Technical Specs of Chamotte Bricks

Properties	Chemical Analysis (%)					Physical					
Brand Name	Al_2O_3	SiO_2	TiO_2	Fe_2O_3	$K_2O+Na_2O+Li_2O$	Bulk Density (g/cm^3)	Apparent Porosity (%)	Crushing Strength C.C.S (Kg/cm^2)	R.U.L / T 0.5 (°C)	Refractoriness (°C)	Thermal Shock (Cycle)
Super Quality Fire Clay Bricks											
NIRU 1	40-42	51-53	<2	<2	<0.8	2.2-2.32	14-19	400-600	1340	1730	17
NIRU 2	38-40	51-55	<4.5	<2.5	<1	2.2-2.3	15-19	350-550	1320	1710	15
NIRU 45	43-45	48-50	<1.5	<1.5	<0.8	2.25-2.35	14-18	400-650	1350	1740	20
Silica Bricks											
NIRU 2 SB	24-26	66-69	<1	<1	<4.5	2-2.2	9-13	300-500	-	-	-

Casts - Chamottes & Alumina

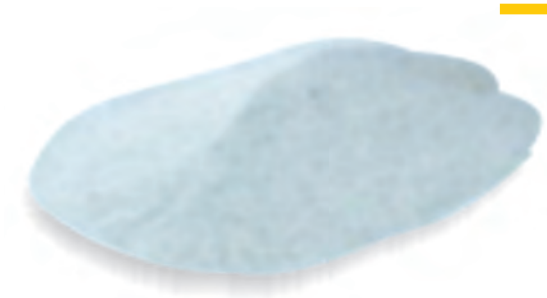
Properties	Chemical Analysis (%)				Physical & Mechanical					
Brand Name	Al_2O_3	SiO_2	Fe_2O_3	CaO	Water Required (%)	Maximum Service Temperature (°C)	Bulk Density (Kg/m3)	Cold Crushing Strength C.C.S (Kg/cm2) At 110 °C	Cold Crushing Strength	
									C.C.S (Kg/cm2)	At (°C)
NIRUCAST 45	40-45	39-43	5	10	11-14	1320	2-2.2	300-450	200-300	1280
NIRUCAST 45 MCC	40-45	40-43	4	8	9-11	1340	2-2.2	300-500	300-450	1320
NIRUCAST 45 ST	42-47	37-43	<2.5	<10	11-14	1350	2-2.25	300-500	250-450	1350
NIRUCAST CH	28-32	55-60	8	12	11-14	1100	2-2.1	350-500	300-450	1000
NIRUCAST 50 LIC	47-50	35-39	<3	<6	10-13	1350	2.2-2.3	300-500	300-450	1350
NIRUCAST 60	55-60	30-35	<2	<5	10-13	1500	2.2-2.35	450-650	350-600	1400
NIRUCAST70	67-70	18-20	<2.5	<5	9-11	1600	2.3-2.45	450-650	400-600	1450
NIRUCAST 80	77-80	7-10	<2.5	<5	9-11	1680	2.4-2.6	450-650	350-600	1500
NIRUCAST 85	80-85	4-6	<2	<5	9-11	1700	2.4-2.6	450-650	350-600	1500
NIRUCAST 90	88-90	-	<0.2	<4	9-11	1750	2.5-2.7	450-700	400-600	1500
NIRUCAST 94	93-94	-	<0.1	<4	8-10	1800	2.6-2.75	450-750	500-700	1500
NIRUCAST 97 MCC	96-97	1	<0.1	<3	6-8	1830	2.7-2.85	400-600	600-900	1600
Special										
NIRUCAST Cr30	40	<3	<10	<6	9-11	1500	2.5-2.8	400-650	350-600	1400

Polypropylene - Granule and Chips

One of the side products is Polypropylene of scrap batteries. This industry with a capacity of 20 tons of black and white chips of this product can supply both the national and international markets. The usage of this product is in special plastic production industries such as battery cover production, plastic injection industries, and special electronic equipment.

Sodium Sulfate - Environmental Protection

Sodium Sulfate is another side product of the Lead Production Industry with a capacity of 16 tons daily. This unit simultaneously increases the efficiency of protecting the environment in battery scrapping



High-Tech Separation

We use the highest technologies of battery separation systems in an area over 3,600 Squaremeters.

Amount	Detail
20 tons/Hour	Capacity
National	Know-How
Italy Engitec	Standard

Technology - Sorting

To improve the efficiency of the manufacturing line, to supply the separation system and to protect the environment, the Sorting Line has been designed and used with a capacity of 100 tons per day.

Technology - Filtratio

As of 1995 to comply with environmental regulations the filter is designed and applied to the system. Up to today, 7 different filters were designed and installed using intensive technology and the total filtration is 280 units and filtration of 30,000 square meters.
We can design and manufacture all the required filters for sub-industries
.

Quality Control

The quality control unit of these industries is using the highest technologies to control lines and production flow, laboratory services, etc. Our labs are a reference lab for copper and lead at the national level.

R&D Department

The R&D department was established to develop technologies of recycling lead and copper and to ease gold, silver, and other product manufacturing processes. This department, focusing on energy sections and minerals benefited from an experienced team.

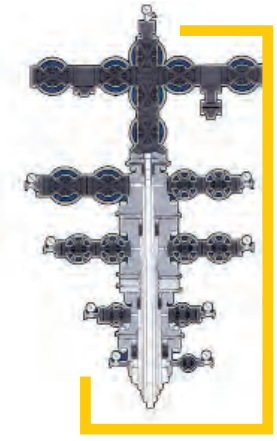
Liquid Helium Grade 5

Research and development department of fossil energies is another department to comply with environmental regulations and DMAZ is one of these department products.

WELLHEAD EQUIPMENT (forging)

providing a complete line of conventional wellhead and Christmas tree equipment bodies form 2000 psi through 10000 psi working pressure. The followings are the main items that IRI Ministry of Defence has manufactured for several companies based on API specifications.

- Casing head housing
- Casing/Tubing head spool
- Bonnet
- Y-tubing spool (Y-block)
- Gate valve body
- Safety valve body
- Upper master block (solid block)
- Lower master block
- Cross
- Tee
- Cap
- Adapter flange(D.S.A. flange)



Casing Head Housing

We manufacture the casing head housing body in two standard types of casing connections (threaded type or slip-on welded connection). Working pressure range from 2000 psi to 10000 psi and material classification AA through FF.

Casing Head Housing
Size: 21 1/4” 2000 psi (2m)
Material: AISI 4130
Trim: NACE DD, EE

Casing Head Housing
Size: 20 3/4” 3000 psi (3m)
Material: AISI 4130
NACE DD, EE

Christmas tree Components (Forging)

Casing /Tubing Head Spool

manufacturing the casing/tubing head spool body in two types of construction without side outlets or with two side outlets. The side outlets are threaded for lower working pressures or flanged studded for higher working pressures. Material specification upon customer requests.

Casing Head Spool
Size: 13 5/8" 3m -11"3m
Size: 13 5/8" 3m -11"5m
Material: AISI 4130
Trim: NACE DD, EE

Tubing Head Spool
Size: 9" 3m -11"5m
Material: AISI 4130
Trim: NACE DD, EE

We can produce all Christmas tree components bodies as per customer requested specifications. These components include Gate Valve and Safety Valve Body, Upper Master Block (Solid Block), Lower Master Block, Y-block, Adapter Flange, Bonnet, Cross, Tee, Cap, etc.

Y-Tubing Spool (Y- block)
Size: 11" 5M -11"5m
Material: AISI 4130
Trim: NACE EE
Weight: 2042 kg

Gate Valve Body
Size: 5 1/8 " 5m flange ends
Material: AISI 4130
Trim: NACE EE
Weight: 670 kg

Composite Tree Block
Size: 7 1/16, 9" 5m
Material: AISI4130
Trim: NACE EE
Weight: 5000 kg

DRILLING EQUIPMENT (forging)

Lower Master Block
Size: 5 1/8” 5m Studded Top
11”5M Flange Bottom
Material: AISI 4130
Trim: NACE EE
Weight: 940 kg

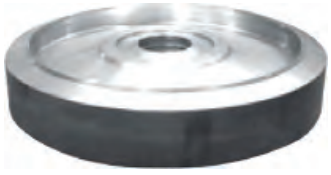
Upper Master Block
Size: 5 1/8” 5m Studded Top
8 7/8” 4 ACME Threaded Bottom
Material: AISI 4130
Trim: NACE, EE

Stabilizer
Material: AISI 4145H
Size: 17 1/2” ,12 1/4” ,....

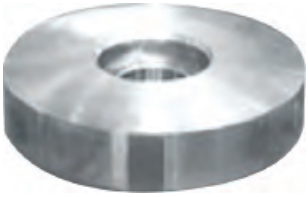
Drill Collar
Material: AISI4140H - 4145H
Size: 8 1/2", 9 1/2",...

Gas Turbo Compressor components (forging)

Gas Turbo Compressor Shell
Part Name: Shell
Material: 1.0571
Size: O.D. 1530 mm



Gas Turbo Compressor Casing Cover
Part Name: Loos Cover
Material: 1.0571
Size: O.D. 1530mm



Gas Turbo Compressor
Part Name: Welding Cover
Material: 1.0571
Size: O.D. 1520 mm

Gas Turbo Compressor Nozzle
Part Name: Discharge Nozzle
Material: GS 38

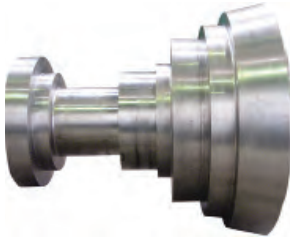
Gas Turbo Compressor Nozzle
Part Name: Suction Nozzle
Material: GS 38

power plant shafts (forging)

Intermediate Shaft (V94.2)
Material: 1.6948 (26NiCrMoV115)
Weight: 6500 kg

Stub Shaft- GEF5
Material: 1.6948 (26NICrMoV115)
Weight: 900 kg

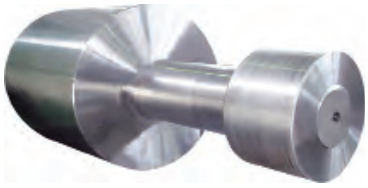
Center Hollow Shaft (V94.2)
Material: 1.6957 (30NiCrMoV 145-Mod)
Weight: 5550 kg



Front Hollow Shaft (V94.2)
Material: 1.6948 (26NICrMoV115)
Weight: 6000 kg

Stub Shaft-GEF9

Power Plant Shafts (Forging)



Turbin Half- Shaft
Material: 1.7709 (21CrMoV57)
Dia.: 1200 mm
Length: 2540 mm

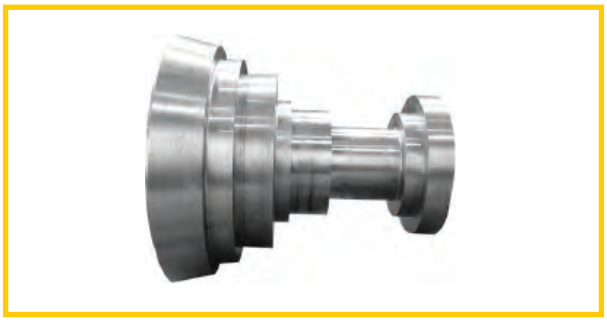
Wind Turbine Shaft
Material: 1.6582 (34CrNiMo6)
Type: 1.5 MW / 660 KW

F.D.Fan Shaft
Material: 1.6580 (30 CrNiMo8)
Length: 6255 mm

I.D. Fan Shaft
Material: 1.6580 (30 CrNiMo8)
Dia.: 520 mm
Length: 3751 mm

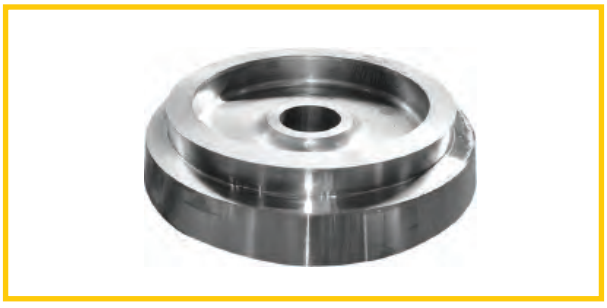
Tie Rod (V94.2) / (v93.0)
Material: 1.6948 (26NiCrMoV115)
Dia.: 285 mm /250 mm
Length: 8350 mm / 9400 mm

Power Plant Parts (Forging)

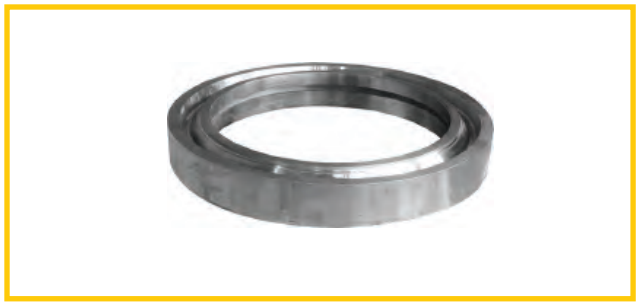


Rear Hollow Shaft (V94.2)
Material: 1.6948 (26NiCrMoV115)
Weight: 3200 kg

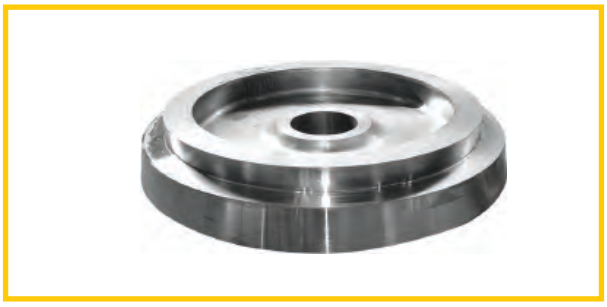
Turbin Disc2 (V94.2)
Material: 1.6957 (26NiCrMoV145-Mod)
Weight: 2900 kg



Compr Disc2 (V94.2)
Material: 1.6948 (26NiCrMoV115)
Weight: 1500 kg



Turbin Rotor Ring1 (V94.2)
Material:1.6957 (26NiCrMoV145- Mod)
Weight: 350 kg



Compr Disc4 (V94.2)
Material: 1.6948 (26NiCrMoV115)
Weight: 1400 kg

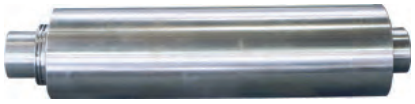
Turbine Disc3 (V94.2)
Material: 1.6957 (26NiCrMoV145-Mod)
Weight: 3550 kg

Other Products (Forging)

Material: 1.7225 (42CrMo4) &1.1191 (Ck45)
Dia.: 685 mm
Length: 3265 mm
Weight: 6100 kg

Material: 1.1191 (CK45)
Dia.: 450 mm
Length: 6000 mm
Weight: 500 kg

Material: 1.8070 (21CrMoV5-11)



Material: 1.8070 (21CrMoV 5-11)
Dia.: 230 mm
Length: 1300 mm

Other Parts of the Steel Industry

Centrifugal Pipe Casting Mould
Material: 1.2313 (21CrMo10)
Inner Dia.: 350, 400, 500 mm
Outer Dia.: 370, 420, 520 mm
Length: 6m

Half Coupling
Material: 1.6562 (40NiCrMo8-4)
Weight: 6000 kg

Coupling Head
Material: 1.7225(42CrMo4)
Weight: 5500 kg

Other Products (Forging)

Forging Balance Shaft

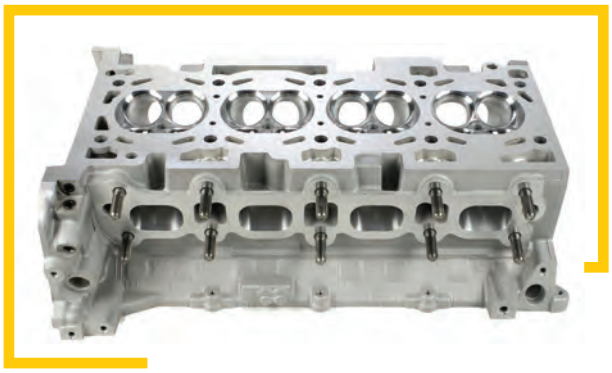
Forging Drill

Flange

Crank Shaft CNG Compressors

Casting Products

Road Wheel

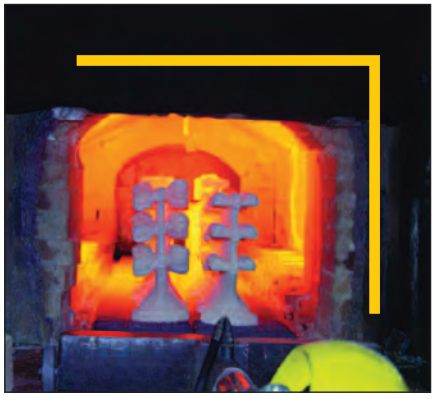


Cylinder

Capabilities

•Establishing a turnkey plant
•Manufacturing different machines
•Supplying spare parts
•Supplying raw materials
•Training and technical assistance
•Aftersales services up to 10 years
•This investment casting production line is designed for producing:
•Military
•Industrial
•Automotive
•And high technological parts.

The proposed investment casting production line is used for:
•Steel parts (from 5 gr to 50 kg)
•Cast iron
•Brass
•Aluminum
•Bronze
•High production rate
•Possibility of manufacturing complex parts
•Desired surface roughness
•Cost reduction in manufacturing parts



Casting products

Slag Ladle

Material: 1.2313 (21CrMo10)
Inner Dia.: 350, 400, 500 mm
Outer Dia.: 370, 420, 520 mm
Length: 6m

All Kinds Of Nails And Adapter Construction Machinery (Aluminum Casting)

Casting products (pellet car)

Operation of Pellet Car

Pellet car is carried through a special furnace for heating reasons. The crude pellet onto the furnace is carried out from drying, preheating, heating, and cooling regions and undergo the 10MT weight at 60 deg. Centigrade each cycle.

Creep Resistant Steels Produced in SFAE

A) Pellet car device used in the pellet production line

B) Center part used in pellet production line production method: Casting, Heat treatment, Machining Dimension: 340* 150*35 cm Material: 1.7357 Weight: 3800 Kg

Quality Control

- Dimensional control
- Ultrasonic test(UT)
- Cold drawing test
- Hot drawing test
- Mechanical properties test
- Impact test

Specifications				
Weight(kg)	Dimension(cm)	Material	Production method	Specimen
5152	400*150* 45	1.7357	Casting, heat treatment, machining	Center
1323	150*60* 40	1.7357	Casting, heat treatment, machining	End Casting
		1.7225	Treatment, machining, forging, heat	Wheel
		1.1191	Treatment, machining, forging, heat	Axle

Table of Products

STEEL GROUP	No.	SYMBOL DIN	Chemical Composition (%)									Forging	Annealing	Hardening	Quenchant
			C	Si	Mn	Cr	Mo	Ni	V	W	Other				
HEAT TREATABLE STEELS	1	Ck35	0.35	0.25	0.65	-	-	-	-	-	-	850-1100	650-700	840-870,850-880	WATER- OIL
	2	Ck45	0.45	0.25	0.65	-	-	-	-	-	-	850-1100	650-700	820-850,830-860	WATER- OIL
	3	C45	0.45	0.25	0.65	-	-	-	-	-	-	850-1100	650-700	820-850,830-860	WATER- OIL
	4	C55	0.55	0.25	0.75	-	-	-	-	-	-	850-1050	650-700	805-835,815-845	WATER- OIL
	5	Ck60	0.61	0.35	0.75	-	-	-	-	-	-	850-1050	650-700	800-830,810-840	WATER- OIL
	6	36CrNiMo4	0.36	0.25	0.65	1.05	0.2	1.05	-	-	-	850-1050	650-700	820-850	WATER- OIL
	7	40NiCrMo8-4	0.4	0.3	0.8	0.8	0.35	1.8	-	-	Al=0.028	850-1050	650-700	820-850	OIL
	8	30CrNiMo8	0.3	0.3	0.5	2	0.35	2	-	-	-	850-1050	650-700	830-860	OIL
	9	34CrNiMo6	0.34	0.3	0.5	1.5	0.2	1.5	-	-	-	850-1050	650-700	830-860	OIL
	10	41Cr4	0.41	0.25	0.65	1.05	-	-	-	-	-	850-1050	680-720	820-850,830-860	WATER- OIL
	11	25CrMo4	0.26	0.3	0.7	1.1	0.25	-	-	-	-	850-1050	680-720	840-870,850-880	WATER- OIL
	12	34CrMo4	0.34	0.3	0.7	1.1	0.2	-	-	-	-	850-1050	680-720	830-860,840-870	WATER- OIL
	13	42CrMo4	0.41	0.3	0.7	1.1	0.2	-	-	-	-	850-1050	680-720	820-850,830-860	WATER- OIL
CEMANTATION STEELS	14	14NiCr14	0.14	0.3	0.45	0.7	-	3.5	-	-	-	850-1150	650-700	880 620 830 780 980 650 860 800	WATER-OIL-SALT BATH
	15	15CrNi6	0.17	0.3	0.5	1.5	-	1.6	-	-	-	850-1150	650-700	880 630 830 780 980 650 870 820	WATER-OIL-SALT BATH
	16	18CrNi8	0.18	0.3	0.5	2	-	2	-	-	-	850-1150	650-700	880 630 840 800 980 650 870 830	WATER-OIL-SALT BATH
	17	16MnCr5	0.17	0.3	1.2	0.9	-	-	-	-	-	850-1150	650-700	880 650 860 790 980 680 900 820	WATER-OIL-SALT BATH
	18	20MnCr5	0.2	0.25	1.25	1.15	-	-	-	-	-	850-1150	650-700	880 650 860 780 980 680 900 820	WATER-OIL-SALT BATH
	19	20MnCrS5	0.2	0.25	1.3	1.2	-	-	-	-	S=0.03	850-1150	650-700	880 650 860 780 980 680 900 820	WATER-OIL-SALT BATH
HEAT RESISTANT STEELS	20	13CrMo4-5	0.13	0.25	0.6	1	0.45	-	-	-	Cu≤0.30	850-1100	600-700	890-950	OIL-AIR
	21	21CrMoV5-11	0.21	0.45	0.45	1.1	1.35	0.45	0.3	-	-	850-1100	650-740	900-950	OIL-AIR
	22	24CrMo5	0.26	0.3	0.7	1.1	0.25	-	-	-	-	850-1100	680-720	900-950	OIL-AIR
COLD WORK TOOL STEELS	23	X210Cr12	2	0.25	0.3	11	-	-	-	-	-	850-1050	800-850	940-970	OIL-SALT BATH-AIR
	24	X165CrMoV12	1.6	0.35	0.3	11.5	0.6	-	0.2	0.50	-	850-1050	800-850	980-1010,1050-1080	OIL-SALT BATH-AIR & NITRIDING
	25	X210CrW12	2.1	0.35	0.35	11.5	-	-	-	0.70	-	850-1050	800-850	950-980,1020	OIL-SALT BATH-AIR & NITRIDING
	26	X155CrVMo12-1	1.55	0.3	0.3	11.5	0.7	-	1	-	-	850-1050	800-850	1020-1040,1060-1080	OIL-SALT BATH-AIR & NITRIDING
	27	X100CrMoV51	0.98	0.3	0.5	5.1	1	-	0.15	-	-	850-1050	800-850	950-980	OIL-SALT BATH-AIR
	28	X45NiCrMo4	0.45	0.25	0.4	1.3	0.25	4	-	-	-	850-1050	610-650	840-870	OIL-AIR
	29	115CrV3	1.18	0.25	0.3	0.7	-	-	0.1	-	-	850-1050	710-750	780-810,810-840	WATER - OIL
	30	100MnCrW4	0.95	0.3	1.1	0.5	-	-	0.12	0.60	-	850-1050	710-750	780-820	OIL-SALT BATH
	31	60WCrV7	0.63	0.6	0.3	1.1	-	-	0.18	1.95	-	850-1050	710-750	870-900	OIL
	32	45WCrV7	0.48	0.9	0.3	1	-	-	0.18	1.95	-	850-1050	710-750	830-850,890-920	WATER-OIL
	33	90MnCrV8	0.9	0.25	2	0.35	-	-	0.13	-	-	850-1050	680-720	790-820	OIL-SALT BATH
	34	100Cr6	1	0.3	0.35	1.5	-	-	-	-	-	850-1050	710-750	800-820,830-860	WATER-OIL
	35	100CrMn6	0.9	0.5	1.1	1.5	-	-	-	-	Cu≤0.30	850-1100	750-800	830-870	OIL-SALT BATH
	36	50NiCr13	0.5	0.25	0.5	1	-	3.1	-	-	-	850-1050	610-650	840-870	OIL-AIR
HOT WORK TOOL STEELS	37	X38CrMoV5-3	0.39	0.25	0.3	5	2.9	-	0.55	-	-	900-1100	750-800	1030-1080	OIL-SALT BATH-AIR
	38	X32CrMoV3-3	0.39	0.3	0.35	2.9	2.8	-	0.5	-	-	900-1100	750-800	1010-1050	OIL-SALT BATH
	39	X40CrMoV5-1	0.39	1	0.4	5.1	1.3	-	1	-	-	900-1100	750-800	1020-1080	OIL-SALT BATH-AIR
	40	X38CrMoV5-1	0.39	1.1	0.4	5	1.3	-	0.4	-	-	900-1100	750-800	1000-1040	OIL-SALT BATH-AIR
	41	X30WCrV5-3	0.32	0.25	0.3	2.4	-	-	0.6	4.25	-	900-1100	750-800	1060-1100	OIL-SALT BATH-AIR
	42	56NiCrMoV7	0.55	0.25	0.73	1.1	0.5	1.7	0.1	-	-	850-1100	650-700	870-900,830-870	OIL-AIR
	43	55NiCrMoV6	0.55	0.25	0.75	0.7	0.3	1.65	0.1	-	-	850-1050	680-710	840-870	OIL
	44	21CrMo10	0.21	0.3	0.3	2.4	0.45	-	-	-	-	850-1050	700-740	920-950	WATER-OIL
CARBON TOOL STEELS	45	C45W	0.44	0.25	0.7	-	-	-	-	-	-	800-1100	680-710	800-830	WATER
	46	C60W	0.6	0.3	0.7	-	-	-	-	-	-	800-1050	680-710	790-820,800-830	WATER-OIL
	47	C80W1	0.8	0.2	0.2	-	-	-	-	-	-	800-1050	680-710	780-810	WATER
	48	C105W1	1.05	0.2	0.2	-	-	-	-	-	-	800-1000	680-710	770-800	WATER
	49	C105W2	1.05	0.2	0.2	-	-	-	-	-	-	800-1000	680-710	770-800	WATER
SPRING STEELS	50	CK75	0.75	0.25	0.7	-	-	-	-	-	-	850-1050	650-690	810-840	OIL
	51	50CrV4	0.5	0.25	0.9	1	-	-	0.15	-	-	850-1050	640-680	830-860	OIL
PLASTIC MOULD STEELS	52	40CrMnMoS-8-6	0.4	0.4	1.5	1.9	0.2	-	-	-	S=0.075	850-1050	720-740	840-860,860-880	OIL-AIR
	53	X42Cr13	0.42	≤1.0	≤1.0	12.0	-	-	-	-	-	850-1050	730-780	1000-1050	OIL
	54	40CrMnMo7	0.40	0.30	1.45	1.95	0.2	-	-	-	-	850-1050	720-740	840-860,860-880	OIL-AIR
STAINLESS STEELS	55	X6Cr13	0.08	1	1	13	-	-	-	-	-	800-1100	750-800	950-1000	OIL-AIR
	56	X12Cr13	0.11	0.4	1	12.5	-	-	-	-	-	800-1100	750-800	950-1000	OIL-AIR
	57	X6Cr17	0.05	0.4	0.4	16.5	-	-	-	-	-	750-1050	750-850	"	"
	58	X20Cr13	0.2	0.4	0.4	12.5	-	-	-	-	-	800-1100	730-780	980-1030	OIL-AIR
	59	X39Cr13	0.36	1	1	12.5	-	-	-	-	-	800-1100	750-850	980-1030	OIL-AIR
	60	X17CrNi16-2	0.19	0.25	0.4	15.9	-	1.6	-	-	-	800-1100	650-750	980-1030	OIL-AIR
	61	X5CrNi18-10	0.05	0.5	1.4	18.5	-	9.5	-	-	N≤0.11	900-1200	"	1000-1100	WATER-AIR
	62	X5CrNiMo17-12-2	0.05	0.5	1.4	16	2.2	11	-	-	N≤0.11	900-1200	"	1020-1100	WATER-AIR
	63	X2CrNiMo17-12-2	0.03	0.5	1.4	17	2.2	11.5	-	-	N≤0.11	900-1200	"	1020-1100	WATER-AIR
	64	X6CrNiTi18-10	0.08	0.5	1.8	18	-	11	-	-	Ti 5*C≤0.7	900-1200	"	1020-1100	WATER-AIR
	65	X6CrNiMoTi17-12-2	0.08	0.5	1.4	17	2.2	11	-	-	Ti 5*C≤0.7	900-1200	"	1020-1120	WATER-AIR
HIGH SPEED STEELS	66	X15CrNiSi25-20	≤0.2	2.0	≤2.0	25.0	-	20.5	-	-	N≤0.11	800-1150	"	1050-1100	WATER-AIR
	67	X15CrNiSi-20-12	≤0.2	2.0	≤2.0	20.0	-	12.0	-	-	N≤0.11	800-1150	"	1050-1100	WATER-AIR

Tempering	DIN	SAARSTAHL (ROCHLING)	BOHLER		POLDI	B.S.	UNI	JIS	ASSAB	SS	GOST	A.I.S.I SAE/ASTM
			(OLD)	(NEW)								
550-680	1.1181	R3	ENH	V935	W6W	080M36	C35	S35C	"	1572	35	1035(SAE)
550-680	1.1191	RM4	H.EH	V945	W6H	080M46	C45	S45CM	"	1672	45	1045(SAE)
550-680	1.0503	"	"	"	"	080M46	C45	S45C	"	1650	45	1045(SAE)
550-680	1.0535	"	"	"	"	070M55	C55	S55C	"	1655	55	1055(SAE)
550-680	1.1221	"	"	V960	"	060A62	C60	S58C	"	1665	60GA	1064(SAE)
540-680	1.6511	MONIX 10	VCN100	V165	BOZI	36CrNiMo4	36CrNiMo4	"	"	"	40ChGNM	6342H(AMS)
540-680	1.6562	"	"	"	"	817N40	40NiCrMo7	SNB22-4	"	"	"	4340(SAE)
540-680	1.6580	MONIX2	VCN200	V145	BOZS	30CrNiMo8	30CrNiMo8	SNCM1	"	"	"	"
540-680	1.6582	MONIX15	VCN150	V155	BOZD	34CrNiMo6	34CrNiMo6	SNCM9	705	34CrNiMo6	38Ch2N2MA	"
540-680	1.7035	VC135	"	V500	AUTO D	530M40	41Cr4	SCr4	"	"	40Ch	5140(SAE)
540-680	1.7218	MO25	VCL135	V340	CM3	25CrMo4	25CrMo4	SCM22	707	25CrMo4	20ChM	4130(SAE)
540-680	1.7220	"	"	V330	CM4	34CrMo4	39CrMo4KB	SCCrN3	709M	34CrMo4	35ChM	4130(SAE)
540-680	1.7225	MO40	VCL 140	V320	CM5	708M40	38CrMo4KB	SCM4	709	42CrMo4	"	4140(SAE)
150-200	1.5752	"	"	E200	TEM	655H13	"	SNC22	"	"	"	3310(SAE)
150-200	1.5919	"	"	E230	CN1	"	"	"	2512	"	"	4320(SAE)
150-200	1.5920	RECN	ECN200	E220	BEYG OE2	"	"	"	7210	"	"	"
150-200	1.7131	EC80	EM80	E410	CE2	527M17	16MnCr5	"	2173	2173	18ChG	5115(SAE)
150-200	1.7147	EC100	"	E400	CE4	"	20MnCr5	SMNC21H	SMNC21H	"	"	5120(SAE)
150-200	1.7149	"	"	E401	"	"	"	"	"	"	"	"
630-730	1.7335	"	"	D330	"	13CrMo4-5	13CrMo4-5	SFVAF12	"	2216	12ChM	A182(F12)ASTM
680-740	1.8070	"	"	"	"	"	"	"	"	"	"	"
650-710	1.7258	"	"	V340	"	"	"	SCM14	"	"	"	"
100-400	1.2080	RCC	SPK	K100	2002	BD3	X205Cr12KU	SKD1	USB SR1	"	Ch12	A681(D3)ASTM
100-400,520-570	1.2601	RCC SP	SPK NL	K105	2002 R	"	X165CrMoW12KU	"	XW41	"	"	"
100-400,500	1.2436	RCC EXTRA	SPKR	K107	2002 SP	"	X215CrW121KU	"	XW5	2312	"	"
100-400,520-570	1.2379	RCC SUPRA	"	K110	"	BD2	X155CrMo121KU	SKD11	UHB-SR21	2310	"	A681(D2)ASTM
100-400	1.2363	"	"	K305	"	BA2	X100CrMoV51KU	SKD12	"	2260	"	A2(AISI)
100-400	1.2767	RAB W	NWN	K600	CNB	"	40NiCrMoV16KU	"	"	"	"	"
100-400	1.2210	RTS	CV	K510	DS SPECIAL	"	107CrV3KU	"	SILVER S	"	"	A681(L2)ASTM
100-400	1.2510	RUS 3	AMUTIT S	K460	STABIL K	B01	95MnWCr5KU	"	DF2	"	"	A681(01)ASTM
100-400	1.2550	RTWK	KL,KLD	K455	TENAX NB	"	55WCrV8KU	"	"	"	"	"
100-400	1.2542	RTW2H	"	K450	TENAX N	BS1	45WCrV8KU	"	M4	2710	5ChW2SF	A681(S1)ASTM
100-300	1.2842	RUS	MST	K720	STABIL	BO2	90MnVCr8KU	"	UHB AROS	"	"	A681(O2)ASTM
100-400	1.2067	"	"	K200	"	BL3	"	SUJ2	"	"	Ch	A681(L3)ASTM
150-170	1.3520	"	"	"	CRK3R	"	"	"	"	"	SchCh15SG	A485(2)ASTM
100-400	1.2721	"	"	K605	"	"	"	"	"	"	"	"
400-700	1.2367	"	"	W303	"	"	"	"	"	"	"	"
400-700	1.2365	RPG 3	WMD	W320	LN	BH10	30CrMoV1227KU	"	"	"	3Ch3M3F	A681(H10)ASTM
400-700	1.2344	RDC 2V	"	W302	TLI	BH13	X40CrMoV511KU	SKD61	8407	2242	4Ch5MF1S	6408A(AMS)
400-700	1.2343	RDC 2	USULTRA	W300	TLH	BH11	X37CrMoV51KU	SKD6	8407	"	4Ch5MFS	6437E(AMS)
400-700	1.2567	RWA	WKZ50	W105	212D2	"	X30WCrV53KU	SKD4	"	"	"	"
400-650	1.2714	RGS1	GNME	W500	TBM EXTRA 1	"	55NiCrMoV7KU	"	SOMDE	"	5ChGNM	"
500-650	1.2713	RGS1	GNM	W501	TBM1	BH224/5	"	SKT4	ALVAR14	"	5ChNM	A681(L6)ASTM
300-650	1.2313	"	"	W329	"	"	"	"	"	"	"	"
100-300	1.1730	"	"	K945	T6H EXTRA	"	"	"	"	"	"	"
100-300	1.1740	T5	MS60	K960	T5W EXTRA	"	"	SK6M	760	"	"	"
100-300	1.1525	"	"	K980	"	"	C80KU	"	"	"	U8A-1	A686(W1)ASTM
100-300	1.1545	RB10	PMH100	K990	EZH	EZH	C100KU	"	"	1880	U10A-1	T72301(UNS)
100-300	1.1645	RB10	PMH100	K990	POLDI 4	"	"	SK3	"	"	U10-1	"
300-500	1.1248	"	"	"	"	060A78	"	"	"	1774	75(A)	1075(SAE)
350-550	1.8159	F2K	CRV	F550	CV4	51CrVA	50CrV4	SUP10	"	2230	50ChFA	6150(SAE)
600-650	1.2312	MFRS	"	M200	GS3	"	"	"	718	"	"	"
100-200	1.2083	"	"	M310	"	"	"	"	"	2314	"	"
650-670	1.2311	"	"	M201	"	"	35CrMo8KU	"	"	"	"	"
650-750	1.4000	"	"	"	"	403S17	X6Cr13	SUS403	"	2301	08Ch13	403(AISI)
680-780	1.4006	"	"	N100	AK1	410S21	X12Cr13	SUS410	"	2302	12Ch13	~403(AISI)
"	1.4016	"	"	N200	AK1B	430S17	X8Cr17	SUS430	"	2320	12Ch17	430(AISI)
600-750	1.4021	RNO	"	N320	AK2S	420S37	X20Cr13	SUS420J1	"	2303	2CCh13	420(AISI)
100-200	1.4031	"	"	"	"	X39Cr13	X40Cr14	"	"	"	"	A5.9(ER420)
620-720	1.4057	"	"	N350	AKINT	431S29	X17CrNi16-2	SUS431	"	2321	20Ch17N2	431(AISI)
"	1.4301	ANOXIN 2P	"	A500	AKV7	302S17	X5CrNi1810	SUS304	"	2332	08Ch18N10	304(AISI)
"	1.4401	ANOXIN4NP	"	A120	AKV EXTRA7	316S17	X5CrNiMo1712	SUS316	"	2347	08Ch16N11N3	316(AISI)
"	1.4404	"	"	A200	AKV EXTRA2	316C12	GX2CrNiMo1911	SUS316L	"	2348	"	316L(AISI)
"	1.4541	"	"	A700	AKVS9	321S12	X6CrNiTi1811	SUS321	"	2337	06Ch18N10T	321(AISI)
"	1.4571	"	"	A300	AKV EXTRAS9	320S18	X6CrNiMoTi1712	SUS316Ti	"	2350	08Ch16N11M3T	316Ti(AISI)
"	1.4841	NH22	ANTINIT FFB	H525	AKC	314S25	"	SUH310	"	"	20Ch25N20S2	310(AISI)
"	1.4828	"	"	H550	"	309S24	X16CrNi2314	SUH309	"	"	20Ch20N14S2	309(AISI)

Miscellaneous

Manufacturing the cement industries equipment such as important devices, including crusher, raw material department (stocker, reclaimer, conveyors in turn-key position), the equipment of raw material line (conveyors, air slide, elevators), cement grinding department (roller press), loading terminals, stocking equipment, etc, which were ordered by as per customer's request.

Crushing Plant or Limestone and Marl Mixture

Raw Material Transport

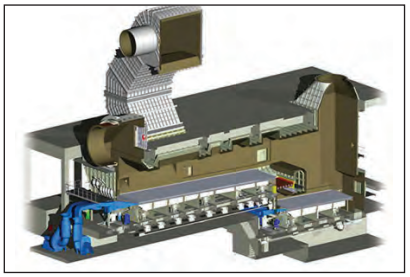
Limestone Storage and Mixing Bed and

Raw material proportioning

Raw grinding plant

Preheater with calciner

Rotary Kiln



Clinker Cooler

Clinker Storage

Clinker Discharge and Transport To Clinker Proportioning

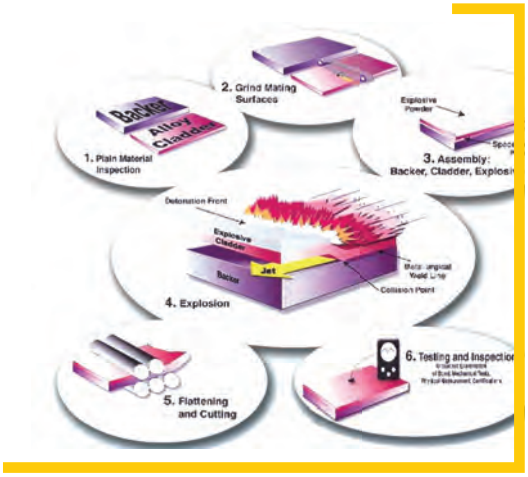
Cement silos

Packing Plant and Bag Loading

Explosion Welded (EXW) clad plates

General

- Explosion welding can supply two or multi-material plates
- in various dimensions.
- The metalogical cladding of plates
- Copper - Aluminum
- Steel - Nickel
- Stainless Steel - Steel
- Stainless Steel or Steel - Titanium, etc.



Application

- Oil, gas and petrochemical industries
- Naval industries
- Military industries