Gland Packing

IZOLOCK

TU U 26.8-25301932-002:2005

2017

IZOLA

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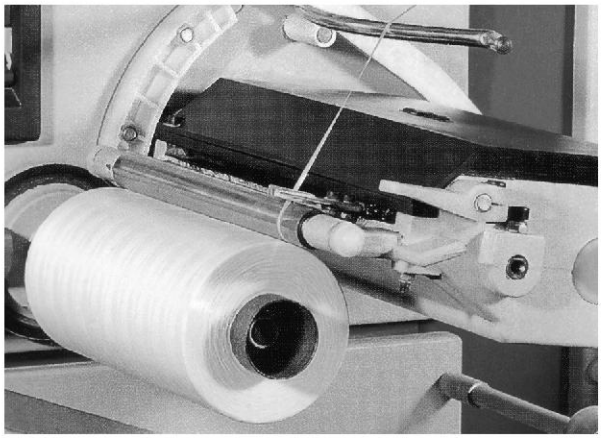
Introduction

About Company

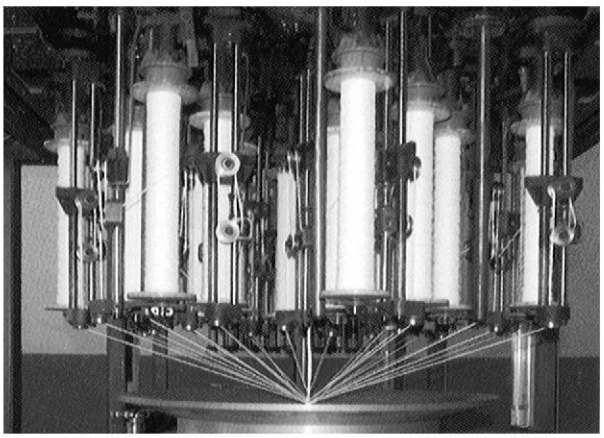
Company IZOLA was founded in 1998. The main business of company is manufacturing asbestos-free heat-insulating and packing materials.

Gland packing is one of the most important businesses of the company. Our gland packing is sold under the trademark IZOLOCK. It doesn't concede to modern analogs by novelty, quality and reliability. Company specialists constantly watch for news of packing and raw markets, their production technologies. Thanks to the big experience of our employees, our company can make specific products, specially designed for individual customers.



Technologies

Sometimes people say that gland packing technology is obsolete. This statement is right, when it is about using asbestos packing. We expand assortment of packing, using technically new fibers and threads. IZOLOCK packing brilliantly solves any technical problems, associated with sealing and makes equipment last longer.



Production

IZOLA is certified with quality system ISO 9001:2008. This allowed us to grasp and change approach to customer satisfaction. Before market offered 5-6 types of asbestos packing, but now the range of our company includes more than 30 types, which are capable of providing any needs in stuffing-box pressurization sphere.

Quality and safety

All gland packing types are produced according to own standards of IZOLA and don't contain asbestos fibers. All manufacturing phases, from buying of raw materials to package of finished products, accompanied by control of quality.
IZOLA is certified by ISO 9001: 2008.

Type A

IZOLOCK Type A

Description
Type A packing consists of high-strength acrylic, aramid threads and modern Nomex, Kynol threads. It has high resistance to abrasion, good chemical options and thermal endurance.

Application
Chemically reactive mediums with high abrasive content. Refining industry, energetic complex, chemical, paper and cement industries, sugar production, metallurgy, mining and mineral processing production.

IZOLOCK A-001

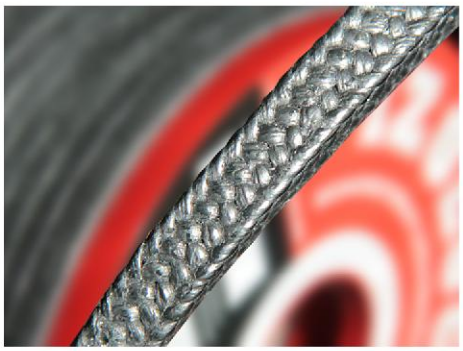
Description
Packing is made of high purity acrylic fiber and antifriction impregnation. It has low price and suits perfectly as a replacement for old asbestos packing. It's very flexible and elastic, goes well in stuffing-box, doesn't stick and pollute it.

Application
All types of pumps and industrial fittings. Refining and chemical industry, energetic, paper, sugar and food industry.

Parameters
Temperature, °C.....-100/+250
pH.....2-12
Speed, m/s.....12

Pressure
Rotary pump, bar.....40
Piston pump, bar.....100
Valve, bar.....150

IZOLOCK A-002



Description
Packing consists of high purity acrylic fiber and antifriction impregnation based on graphite. It's perfect as a replacement for asbestos packing with graphite impregnation. Each fiber is impregnated separately with quality graphite suspension with addition of corrosion inhibitor and other components.

Application
Refining and chemical industry, shipbuilding, energetic, paper and cement industries.

Parameters
Temperature, °C.....-100/+260
pH.....2-12
Speed, m/s.....10

Pressure
Rotary pump, bar.....40
Piston pump, bar.....100
Valve, bar.....150

Type A

IZOLOCK A-010

Description

Multipurpose, braided packing made of high-strength aramid thread, which is impregnated with PTFE suspension before and after the weaving process. It's also made of high-temperature components which withdraw heat from rubber worktops. It has superior extrusion resistance, even when working with abrasive mediums.

Application

Water, vapor, solvents, weakly acidic and weakly alkaline mediums, oil. Refining and chemical industry, energetic, paper and sugar industry, mining and processing works.

Parameters		***Pressure***	
Temperature, °C	*-100/+280*	*Rotary pump, bar*	*40*
pH	*2-12*	*Piston pump, bar*	*200*
Speed, m/s	*15*	*Valve, bar*	*250*

IZOLOCK A-010P

Description

Packing is made of staple aramid fiber and antifriction impregnation. IZOLOCK A-010P passes 3 types of impregnation: each fiber passes individually before weaving process, during weaving and surface coating of the finished product. This provides great antifriction and packing features.

Application

All types of pumps and industrial fittings. Refining and chemical industry, metallurgy and shipbuilding.

Parameters		***Pressure***	
Temperature, °C	*-100/+290*	*Rotary pump, bar*	*40*
pH	*1-13*	*Piston pump, bar*	*100*
Speed, m/s	*20*	*Valve, bar*	*200*

IZOLOCK A-020

Description

IZOLOCK A-020 consists of graphitized PTFE fiber and aramid thread which is woven into the corners. It gives high mechanical strength, resistance to high pressure and stuffing-box extrusion. Each fiber is impregnated with high quality antifriction suspension with added corrosion inhibitor and other required components.

Application

Abrasive mediums, acid, alkali, solvents and oil. Paper and cement industries, chemistry and petrochemistry and boilers.

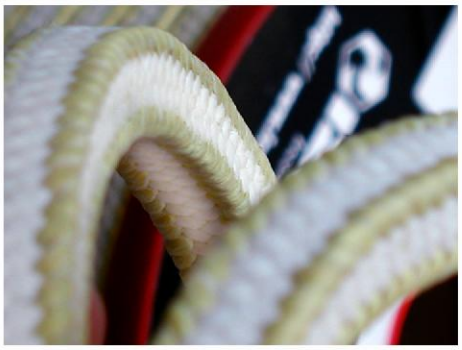
Parameters		***Pressure***	
Temperature, °C	*-100/+280*	*Rotary pump, bar*	*40*
pH	*2-12*	*Piston pump, bar*	*200*
Speed, m/s	*20*	*Valve, bar*	*250*

Type A

IZOLOCK A-030

Description

Packing IZOLOCK A-030 is made of high-purity PTFE fibers and high-strength aramid thread which is woven into corners to give packing high strength. It has good extrusion resistance when working with abrasive mediums.



Application

High-aggressive mediums, except melts of alkali metals, solvents, weak acids, oil, corrosive gases. Refining and chemical industry, energetic, paper and sugar industry, mining and processing works.

Parameters		***Pressure***	
Temperature, °C	*-100/+280*	*Rotary pump, bar*	*30*
pH	*2-13*	*Piston pump, bar*	*100*
Speed, m/s	*12*	*Valve, bar*	*200*

IZOLOCK A-040

Description

Packing is made of environmentally friendly thermostable chemical fiber which has better resistance to oxidants than graphite and carbon threads have. It's also more durable than PTFE fibers.

Application

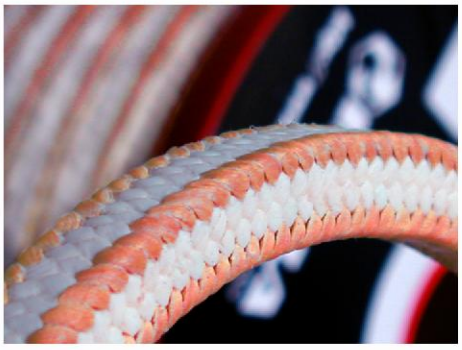
All types of pumps and industrial fittings. Refining and chemical industry, paper industry and shipbuilding.

Parameters		***Pressure***	
Temperature, °C	*-100/+250*	*Rotary pump, bar*	*80*
pH	*1-13*	*Piston pump, bar*	*200*
Speed, m/s	*15*	*Valve, bar*	*250*

IZOLOCK A-043

Description

IZOLOCK A-043 consists of pure PTFE fiber and thermal stable chemical fiber which is woven into corners. This gives high mechanical strength, resistance to high pressure and to stuffing-box extrusion. Each fiber is impregnated with high quality antifriction suspension with added corrosion inhibitor and other components.



Application

Abrasive and chemical mediums, seawater. Paper and food industry, chemistry and petrochemistry, boilers.

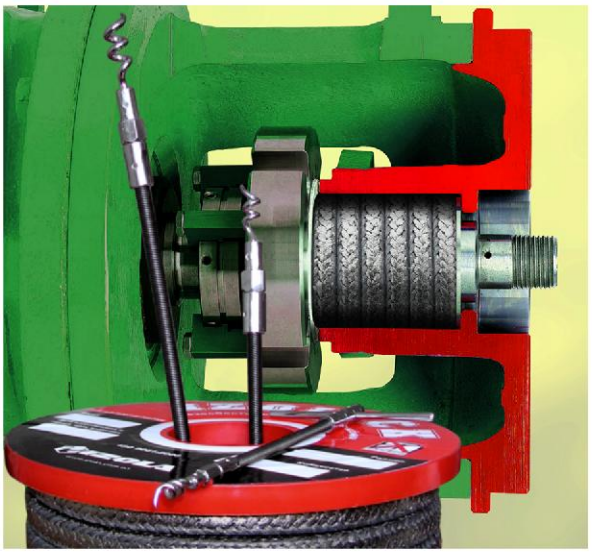
Parameters		***Pressure***	
Temperature, °C	*-100/+250*	*Rotary pump, bar*	*80*
pH	*0-13*	*Piston pump, bar*	*200*
Speed, m/s	*12*	*Valve, bar*	*250*

Type C

IZOLOCK Type C

Description
This is the most extensive group. It includes gland packing based on carbon, graphite and other high-temperature threads. They have resistance to high temperature, good chemical parameters, excellent packing features and low coefficient of friction.

Application
Water, vapor, superheated vapor, aggressive chemical mediums. Nuclear and steam power plants, metallurgical complex, chemistry and petrochemistry.



IZOLOCK C-001

Description
IZOLOCK C-001 is made of high-purity carbonized fiber and antifriction impregnation. It has low price and it's suitable as a replacement for old asbestos packing. It's flexible and elastic, fits well into stuffing-box, doesn't stick and doesn't pollute it.

Application
All types of pumps and industrial fittings. Refining and chemical industry, energetic, water supply.

Parameters
Temperature, °C.....-100/+260
pH.....0-12
Speed, m/s.....10

Pressure
Rotary pump, bar.....40
Piston pump, bar.....150
Valve, bar.....200

IZOLOCK C-010

Description
Packing is made of high purity carbon fiber and antifriction impregnation which is based on graphite. Thanks to complex carbon yarn, packing has more flexible and strong structure unlike graphite packing. It has high resistance to all chemical mediums except oleum, fuming nitric acid, aqua regia and fluorine.

Application
Almost all types of equipment for most chemical mediums and superheated vapor.

Основные параметры
Temperature, °C.....-250/+650
pH.....0-14
Speed, m/s.....20

Давление
Rotary pump, bar.....30
Piston pump, bar.....100
Valve, bar.....300

Type C

IZOLOCK C-010R

Description

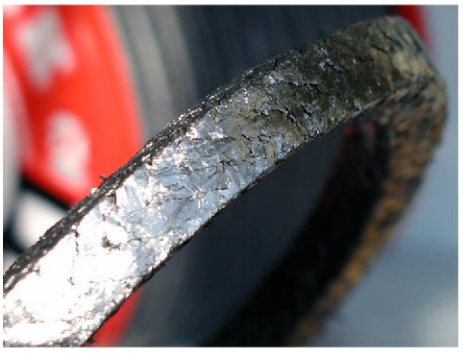
Packing is made of high quality carbon thread which is reinforced with stainless wire and impregnated in process of weaving with graphite suspension and other high-temperature components. It has high strength and great resistance to extrusion.

Application

Hot water, overheated vapor. Energetic, paper industry, mining and processing complexes, metallurgy.

Parameters	***Pressure***
Tempereture, °C.....-100/+650	*Rotary pump, bar..... -*
pH.....0-14	*Piston pump, bar.....200*
Speed, m/s.....10	*Valve, bar.....400*

IZOLOCK C-200



Description

Packing is made of general-purpose quality thermal-expanded graphite. IZOLOCK C-200 has great antifriction and packing properties. It's treated with corrosion inhibitor. It forms homogeneous mass under pressure during installation process. It prevents leakage.

Application

All types of pumps and industrial fittings. Refining and chemical industry, energetic, paper industry, metallurgy and shipbuilding.

Parameters	***Pressure***
Temperature, °C.....-240/+650	*Rotary pump, bar.....30*
pH.....1-14	*Piston pump, bar.....100*
Speed, m/s.....10	*Valve, bar.....200*

IZOLOCK C-200R

Description

IZOLOCK C-200R consists of, reinforced by inconel thread, thermal-expanded graphite. It gives high mechanical strength and resistance to high pressure. Each fiber is impregnated with quality antifriction suspension with added corrosion inhibitor and other components.

Application

Piston pumps and fittings. Water vapor, aggressive chemical mediums except strong oxidants. Energetic, chemistry and petrochemistry, metallurgy complex.

Parameters	***Pressure***
Temperature, °C.....-240/+650	*Rotary pump, bar..... -*
pH.....1-14	*Piston pump, bar.....100*
Speed, m/s.....10	*Valve, bar.....300*

Type C

IZOLOCK C-210

Description

Packing consists of high quality thermal-expanded graphite, which is reinforced with glass fiber roving and impregnated graphite-added suspension. It has good chemical resistance.

Application

Hot water, overheated vapor. Nuclear and thermal energetic, paper industry, mining and processing complex, metallurgy.

Parameter	***Pressure***
Temperature..., °C.....-250/+650	*Rotary pump, bar.....30*
pH.....0-14	*Piston pump, bar.....100*
Speed, m/s.....10	*Valve, bar.....250*

IZOLOCK C-210M

Description

It consists of high-quality thermal expanded graphite. Each thread is reinforced with glass fiber roving and braided with tight net which is made of stainless metal thread. IZOLOCK C-210M has great packing features and resistance to stuffing-box extrusion. It's treated with corrosion inhibitor.

Application

All types of check valves and faucets. Energetic, refining and chemical industry, paper industry, metallurgy and shipbuilding.

Parameters	***Pressure***
Temperature, °C.....-250/+650	*Rotary pump, bar..... -*
pH.....0-14	*Piston pump, bar.....300*
Speed, m/s.....5	*Valve, bar.....500*

IZOLOCK C-220

Description

Each thread is of this thermal expanded graphite packing is reinforced with carbon fiber, which gives high mechanical strength flexibility. Each fiber is impregnated with high quality antifriction suspension with added corrosion inhibitor and other required components.

Application

Piston pumps and fittings. Hot water, overheated vapor, aggressive chemical mediums except strong oxidants. Energetic, chemistry and petrochemistry, metallurgy complex.

Parameters	***Pressure***
Temperature, °C.....-250/+650	*Rotary pump, bar.....30*
pH.....0-14	*Piston pump, bar.....200*
Speed, m/s.....15	*Valve, bar.....350*

Type C

IZOLOCK C-230

Description

IZOLOCK C-230 consists of high-quality thermal expanded graphite which is reinforced with aramid thread. It gives flexibility and strength. Packing has good chemical resistance and tightness.

Application

Hot water, vapor, aggressive chemical mediums. Energetic, shipbuilding, mining and processing complex, metallurgy.

Parameters	***Pressure***
Temperature, °C.....-100/+280	*Rotary pump, bar.....35*
pH.....0-14	*Piston pump, bar.....250*
Speed, m/s.....25	*Valve, bar.....250*

IZOLOCK C-240

Description

IZOLOCK C-240 consists of quality thermal expanded graphite and carbon thread which is woven into the packing corners. Such construction has great packing features and resistance to stuffing-box extrusion.

Application

All types of ventiles, check valves and pumps. Energetic, refining and chemical industry, paper industry, metallurgy and shipbuilding.

Parameters	***Pressure***
Temperature, °C.....-250/+650	*Rotary pump, bar.....35*
pH.....0-14	*Piston pump, bar.....250*
Speed, m/s.....15	*Valve, bar.....400*

IZOLOCK C-250

Description

Packing consists of high-temperature thread and thermal expanded graphite. It has higher mechanical strength and flexibility than usual graphite packing. Each fiber is impregnated with high quality antifriction suspension with added corrosion inhibitor.

Application

Piston pumps and fittings, hot water, overheated vapor, aggressive chemical mediums. Energetic, chemistry and petrochemistry, metallurgy complex.

Parameters	***Pressure***
Temperature..., °C.....-250/+650	*Rotary pump, bar.....30*
pH.....0-14	*Piston pump, bar.....150*
Speed, m/s.....10	*Valve, bar.....250*

Type G

IZOLOCK Тип G

Description
Packing of this group consists of strong glass and mineral threads. They have high resistance to extreme temperatures and reactive mediums. It's cheap and it's a good alternative to asbestos packing.

Application
Chemically active substance with high temperature.

IZOLOCK G-010

Description
Packing is made of glass textured roving with elementary fibers with thickness of 9 mcm and antifriction impregnation based on PTFE emulsion and silicone. It has low price and it's ideal as a replacement for old asbestos packing.

Application
Water, vapor, solvents, abrasive and crystallized chemical products. Refining and chemical industry, energetic.

Parameters
Temperature, °C.....-50/+280
pH.....2-12
Speed, m/s.....8

Pressure
Rotary pump, bar.....20
Piston pump, bar.....40
Valve, bar.....150

IZOLOCK G-020

Description
IZOLOCK G-020 consists of textured glass fiber roving and graphite-based antifriction impregnation. It's ideal as a replacement for asbestos packing with graphite impregnation. Each fiber is impregnated separately with high quality graphite suspension and added corrosion inhibitor.

Application
Refining and chemical industry, energetic.

Parameters
Temperature, °C.....-50/+590
pH.....4-11
Speed, m/s.....2

Pressure
Rotary pump, bar..... -
Piston pump, bar..... -
Valve, bar.....150

Type G

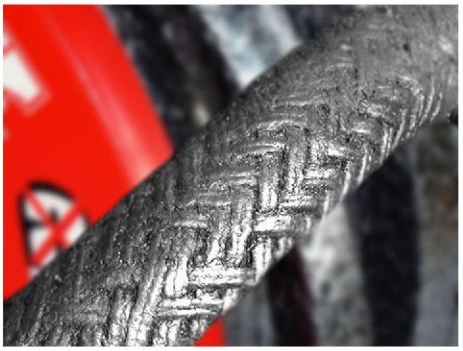
IZOLOCK G-100

Description
Packing consists of high quality leached glass fiber roving. It has good chemical resistance to extreme temperatures.

Application
High temperature medium. Packing of fixed connections, hatches, boilers and etc. Energetic, mining and processing complexes, metallurgy.

Parameters	***Pressure***
Temperature, °C.....-100/+1000	*Rotary pump, bar..... -*
pH.....0-14	*Piston pump, bar..... -*
Speed, m/s.....2	*Valve, bar.....50*

IZOLOCK G-120



Description
Packing is made of quality leached textured glass fiber roving. Each thread is reinforced with stainless metal thread and treated with graphite. IZOLOCK G-120 has good packing features and resistance to stuffing-box extrusion. Unlike graphite packing, it's not prone to oxidation.

Description
All types of check valves and ventiles. Energetic, refining and chemical industry, metallurgy.

Parameters	***Pressure***
Temperature, °C.....-100/+700	*Rotary pump, bar..... -*
pH.....0-14	*Piston pump, bar..... -*
Speed, m/s.....2	*Valve, bar.....50*

IZOLOCK G-200

Description
IZOLOCK G-200 is a dry packing made of ceramic thread, reinforced with stainless wire. It is a good alternative to asbestos dry packing. G-200 application temperature exceeds temperature of asbestos analogue more than in 2 times.

Description
Packing of fixed connections. Energetic, chemistry and petrochemistry, metallurgy complex.

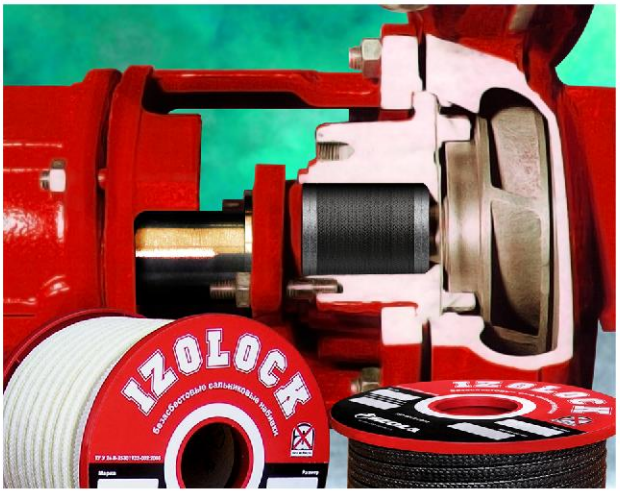
Parameters	***Pressure***
Temperature, °C.....-100/+1100	*Rotary pump, bar..... -*
pH.....1-13	*Piston pump, bar..... -*
Speed, m/s.....0	*Valve, bar..... -*

Type P

IZOLOCK Тип P

Description
Type P packing consists of strong thread based on PTFE. It has high resistance to chemical exposure, good anti-frictional options and packing features.

Application
Reactive, food and pharmaceutical mediums, chemistry and petrochemistry, food and pharmaceutical industry, shipbuilding, energetic, paper and cement industry, color metallurgy.



IZOLOCK P-010

Description
Packing is made of high-purity PTFE fiber and antifriction impregnation based on PTFE suspension. It's very flexible and elastic, fits well into the stuffing-box, doesn't stick and doesn't pollute it. It has high chemical resistance and low coefficient of friction.

Application
All types of pumps and industrial fittings. Refining and chemical industry, energetic, sugar, food and pharmaceutical industry.

Parameter		***Pressure***	
Temperature, °C	*-200/+280*	*Rotary pump, bar*	*30*
pH	*0-14*	*Piston pump, bar*	*150*
Speed, m/s	*8*	*Valve, bar*	*150*

IZOLOCK P-100

Description
IZOLOCK P-100 packing consists of high-quality filament PTFE-fiber and anti-friction impregnation based on PTFE suspension. Every thread of packing has textured structure which increases packing strength and maximum working pressure.

Application
All types of pumps and industrial fittings. Refining and chemical industry, energetic, food industry and metallurgy.

Parameters		***Pressure***	
Temperature, °C	*-200/+280*	*Rotary pump, bar*	*50*
pH	*0-14*	*Piston pump, bar*	*150*
Speed, m/s	*20*	*Valve, bar*	*250*

Type P

IZOLOCK P-200

Description

Packing consists of graphitized PTFE fiber and antifriction impregnation based on PTFE suspension. The graphite content provides better anti-friction features and additional heat removal from friction surfaces.

Application

All types of pumps and industrial fittings. Refining and chemical industry, energetic.

Parameters		***Pressure***	
Temperature, °C	*-200/+260*	*Rotary pump, bar*	*30*
pH	*0-14*	*Piston pump, bar*	*100*
Speed, m/s	*20*	*Valve, bar*	*200*

IZOLOCK P-210

Description

Packing is made of high-strength graphitized PTFE Gore-Tex fiber and antifriction impregnation based on PTFE suspension. P-210 is flexible and elastic. It's recommended for application in responsible nodes. It has high chemical resistance and low coefficient of friction.

Application

All types of pumps and industrial fittings. Refining and chemical industry, energetic, sugar, food and pharmaceutical industry.

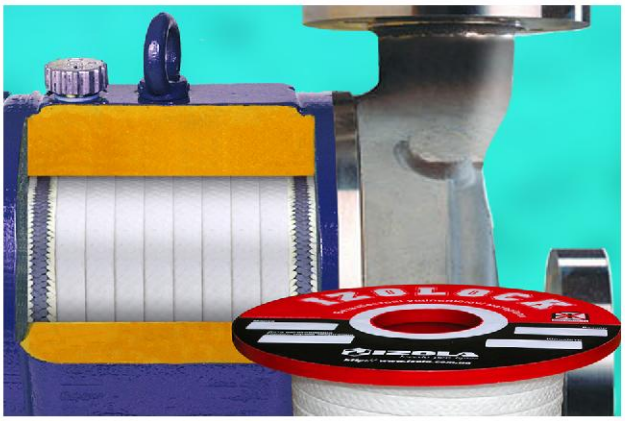
Parameters		***Pressure***	
Temperature, °C	*-200/+280*	*Rotary pump, bar*	*30*
pH	*0-14*	*Piston pump, bar*	*150*
Speed, m/s	*22*	*Valve, bar*	*250*

Type N

IZOLOCK Type N

Description
This packing consists of strength natural threads. It has high resistance to weak chemical exposures, good anti-frictional options and packing features.

Application
Water supply, food and sugar industry.



IZOLOCK N-001

Description
IZOLOCK N-001 consists of natural cotton fiber and antifriction impregnation based on PTFE suspension. Fibers are subjected to triple impregnation before weaving, in weaving process and after. It's very flexible and elastic, suits well into stuffing-box, doesn't stick to it and doesn't pollute it. It has good chemical resistance and low coeffi-cient of friction.

Application
Potable and drinking water, sewer water, oils and solvents. All types of pumps and industrial fittings. Sugar and food industry, water supply.

Parameters
Temperature, °C.....-50/+140
pH.....5-11
Speed, m/s.....10

Pressure
Rotary pump, bar.....25
Piston pump, bar.....60
Valve, bar.....100

IZOLOCK N-010

Description
Packing is made of natural ramie fibers and antifriction impregnation which is based on PTFE suspension. Fiber impregnation happens in three stages: before, during and after weaving. Ramie fibers have much strength characteristics than cotton fibers.

Application
Potable and sea water, food mediums. All types of pumps and industrial fittings. Food industry and water supply, shipbuilding.

Parameters
Temperature, °C.....-150/+140
pH.....4-12
Speed, m/s.....10

Pressure
Rotary pump, bar.....40
Piston pump, bar.....80
Valve, bar.....100

Type N

IZOLOCK N-020

Description

This is packing is not expensive, it consists of high-quality cotton threads which are impregnated with antifriction composition, based on natural fats and technical Vaseline.

Application

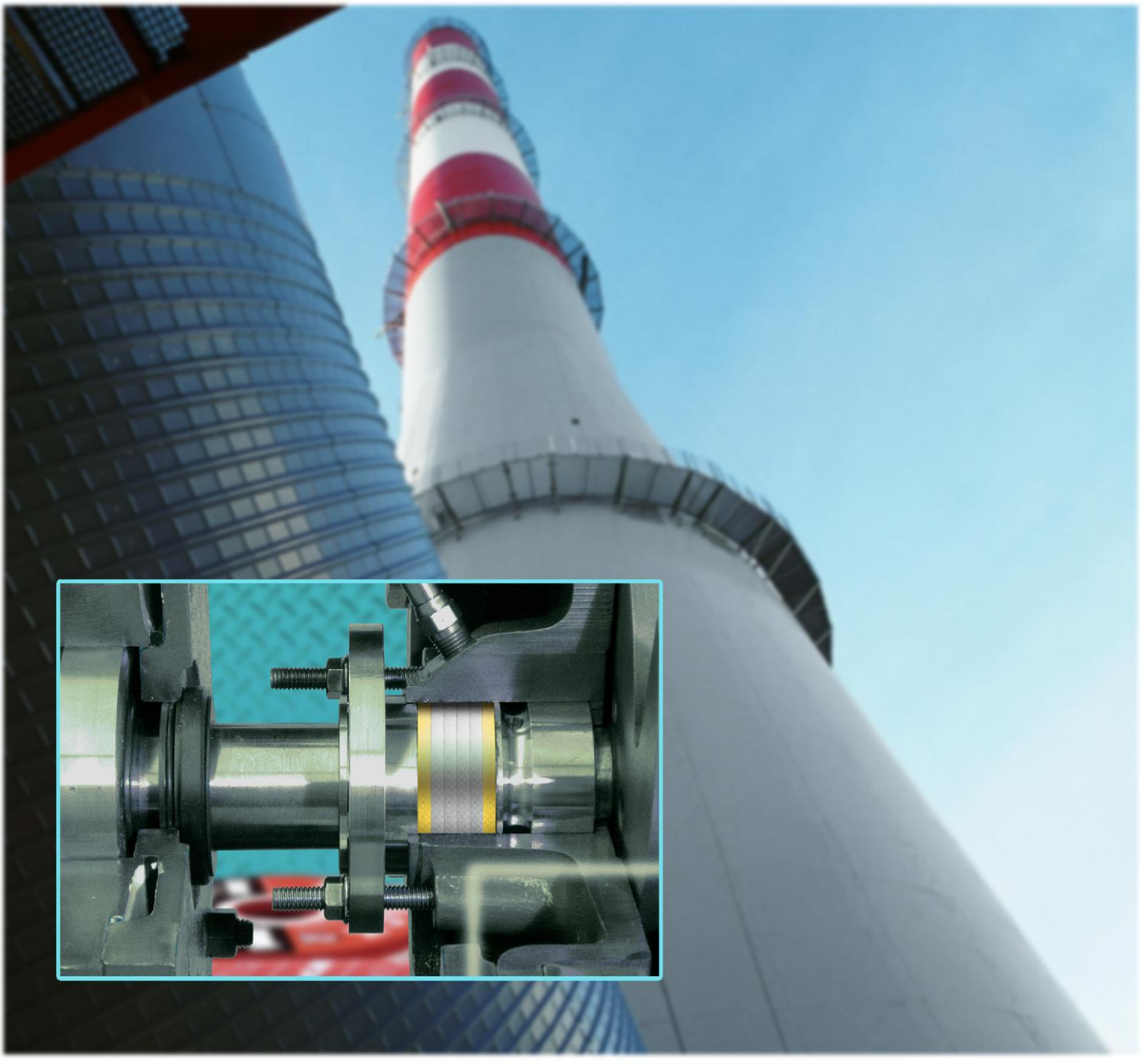
Potable and sea water. Water supply and sewage.

Parameters

Temperature, °C.....-50/+120
pH.....5-9
Speed, m/s.....10

Pressure

Rotary pump, bar.....20
Piston pump, bar.....10
Valve, bar.....40



Additional Information

Packing installation

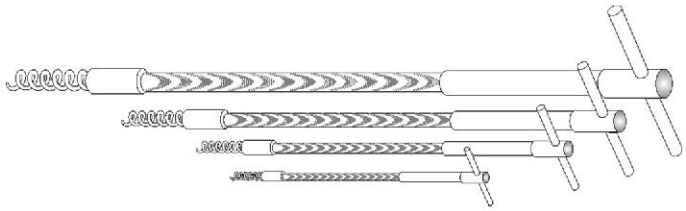
We offer you to read this instruction for maximum effective using of IZOLOCK packing. Here is introduced all process of packing installation into pumps and fittings step-by-step.

1. Remove old packing using the special instrument (extractor) (look at pic. 1) from stuffing-box. After removing of packing, you need to clean the cell carefully.

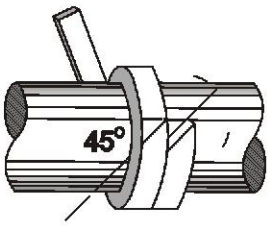
2. Check the wear of shaft (spindle, stock). The gap between shaft and body must to be minimal. Maximal gap width between shaft (spindle, stock) and body, shouldn't exceed 0,03 x s (s = packing width). Maximal shaft beat shouldn't be more than 0,001 x d (d = shaft or spindle diameter).

3. Packing of required length should be chopped at an angle of 45 or 90 degrees (look at pictures 2 and 3). Then, put it in stuffing box in the form of rings, turning the ring joint 180 or 90 degrees with attitude to the joint of previous ring.

4. Use the cutting machine.

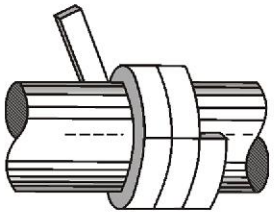


pic. 1



pic. 2

cutoff at 45° angle



pic. 3

cutoff at right angle

Packing installation into:

Fittings:

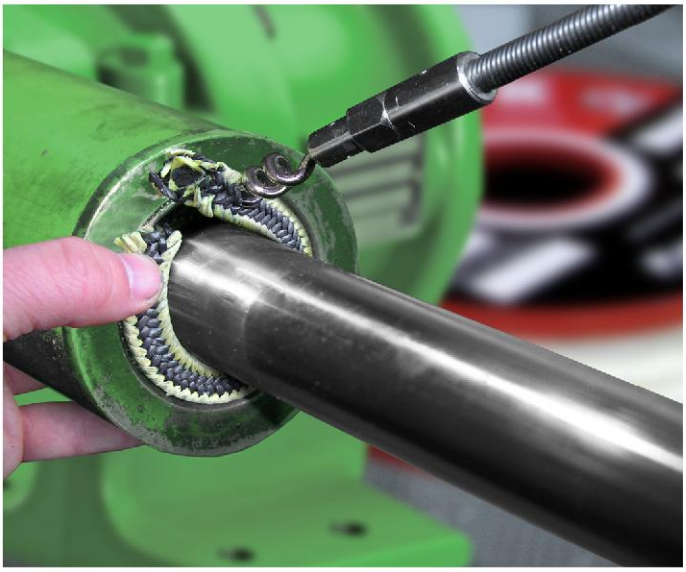
Recommended pressure of packing tightening in cell
a) Liquids
- to 40 bar … 2 x working pressure (min. 5 N/mm2)
- more than 40 bar … 1,5 x working pressure

gases
- to 40 bar … 5 x working pressure (min. 10 N/mm2)
- 40-200 bar … 2,5 – 5 x working pressure

During fittings packing, bolts can be tightened all the way. During this process, turn the spindle of fittings and keep tightening until the resistance will be felt but not yet to interfere with the spindle movement. After 24 hours, slightly tighten bolts again, even if leakage hasn't appeared. Thanks to this, natural packing compression will be compensated.

Pumps:
Recommended pressure of packing tightening in cell amounts to 1,5-2 times greater working pressure of medium. Practical tightening pressure values depend on further factors (construction, condition of packing space, temperature, viscosity). Therefore results of packing can differ in different places under the same conditions.

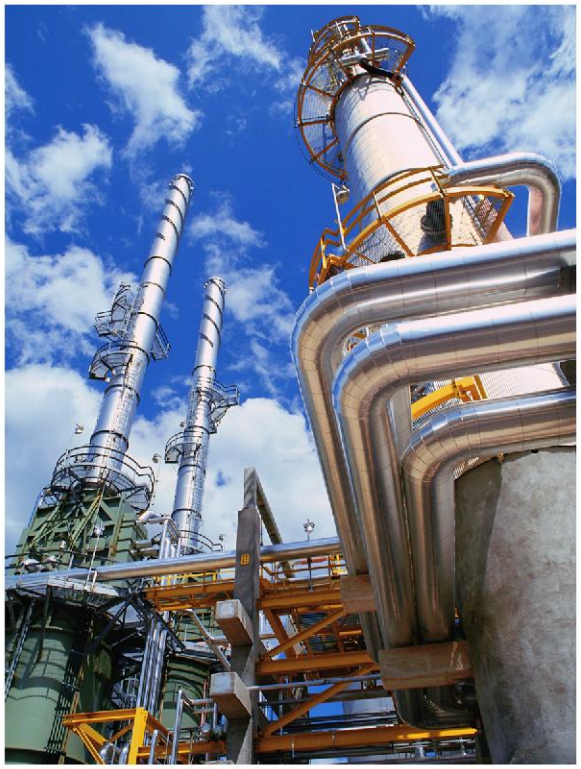
After installing of packing, tighten the cap bolts carefully and uniformly. Then turn on the pump. Carefully tightening bolts, reduce the medium leakage to acceptable level. After every tightening wait 10-15 minutes and keep tightening. Turn bolts every time only 45 degrees.

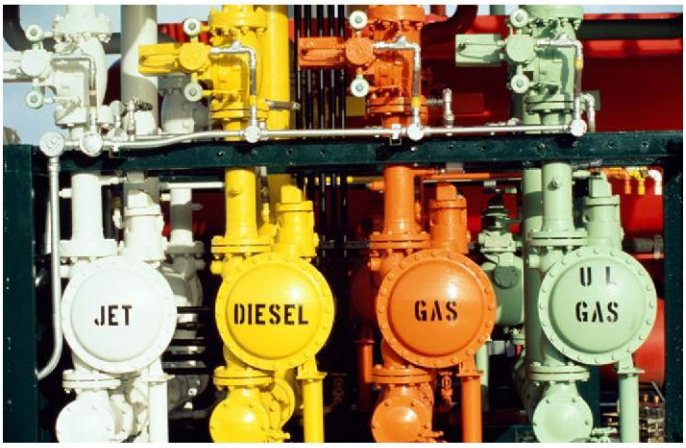


Application

Chemical Industry

light chemicals (pH 5-9)	*A-020, A-030, P-010, P-200*
strong acids (pH 1-4):	
valves and piston pumps	*P-010, P-100*
centrifuges	*P-100, P-210*
strong alkali (pH 10-14):	
valves and piston pumps	*P-100, P-210*
centrifuges	*P-100, P-210*
pumps for dissolvent	*A-010P, C-010, P-010, P-100*
pumps for saponaceous mortar	*A-010P, P-010, P-100*
air compressors	*A-040, P-010, P-100*
paint pumps	*A-010, A-010P, A-040*
crushers, mills:	
steam systems	*C-210M*
water systems	*A-010P, P-010, N-010*
calenders:	
steam systems	*C-010, P-100*
water systems	*A-010, A-010P, P-100*
steam systems:	
with temperature less than +260 °C	*C-200, C-210M, P-100*
with temperature more than +260 °C	*C-010, C-210M, C-240*
regulating valves	*C-210, C-210M, P-100*
devulcanizers	*C-210M*





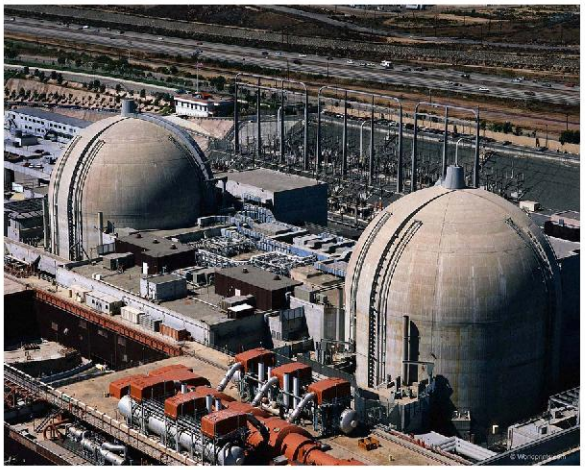
Oil- and Gas Processing

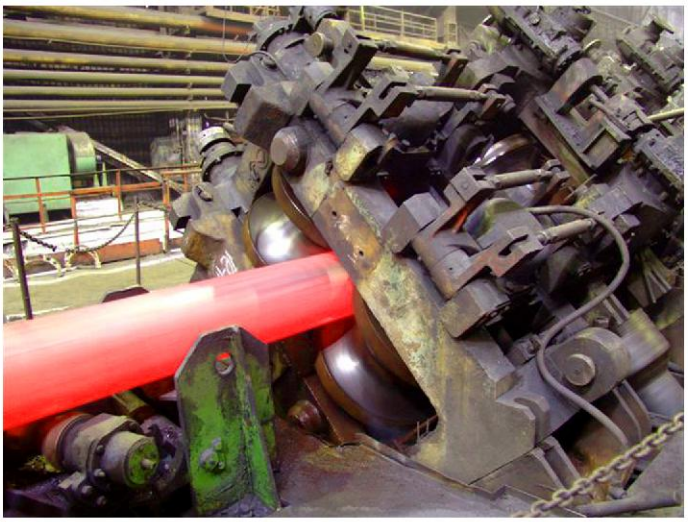
light chemicals (pH 5-9)	*A-020, A-030, P-010, P-200*
strong acids (pH 1-4):	
valves and piston pumps	*P-010, P-100, P-200, P-210*
centrifuges	*P-010, P-100, P-200*
strong alcali (pH 10-14):	
valves and piston pumps	*P-010, P-100, P-200, P-210*
centrifuges	*P-010, P-100, P-200, P-210*
gasoline, light fuel oils, lubricating oil:	
with temperature less than +230 °C	*A-040, C-210, P-100, P-200*
with temperature more than +230 °C	*C-010, C-210*
Chemical regulating valves:	
with temperature less than +260 °C	*C-210, C-210M, P-100*
with temperature more than +260 °C	*C-210, C-210M*
condensate pumps	*C-010, C-200*
cooling tower (acid) pumps	*A-020, A-030, P-010, P-200*
air compressors	*A-040, P-100, P-200*
heat pumps	*C-010, C-200, P-200*
ammonia pumps	*A-040, C-210, P-010*
ammonia valves	*C-210, P-100*
crude oil	*A-040, C-210, P-100*
ventilator shapts	*C-200*
gas oil	*A-040, C-210, P-100*
gas tar	*A-040, C-210, P-100*
naphthalene	*C-210*

Application

Power Generation

steam fitting:	
with temperature less than +260 °C	*C-010R, C-210M, C-240*
with temperature more than +260 °C	*C-210M, C-240, C-250*
cooling pumps	*C-010, P-100, P-210, A-040*
condensate pumps	*C-010, C-210, P-210*
circulation pumps	*A-040, C-010, P-010, P-210*
boiler pumps	*C-010, C-210*
fuel pumps	*C-210, P-100, P-210*
swap pumps	*C-210, P-100, P-200*
acid injectors	*P-100, P-210*
alcali injectors	*P-100, P-210*





Heavy Engineering and Metallurgy

steam fitting:	
with temperature less than +260 °C	*C-010, C-210, P-010*
with temperature more than +260 °C	*C-010, C-210, C-210M*
water valves	*C-010, C-210M*
ammonia valves	*C-210, P-100*
propane valves	*C-010, C-210, P-100*
oil valves	*C-010, C-210M*
water centrifugal pumps	*C-210, P-200*
bonderite pumps	*P-010*
paint pumps	*A-040*
acid pumps	*P-010, P-100, P-200, P-210*
heat-treatment oil pumps	*A-010, A-040, P-100*
hydraulic pumps	*A-010, P-100, P-200*
oil centrifugal pumps	*P-100*
furnace pumps	*C-010, P-100, P-200*
collector pumps	*P-010, P-200*
boring rig pumps	*P-100, P-200*
fire-pumps	*A-010, A-010P, C-010, P-100, P-200*
turbine pumps	*A-010, C-010, C-210, P-100, P-200*
drain pumps	*A-020, P-010, P-200, N-010*
condensate pumps	*C-010, C-210, P-200*
circulation pumps	*A-010P, C-010, P-010, P-200*
cooling pumps	*A-010, C-010, P-010, P-200*
boiler pumps	*C-010, C-210*
fuel pumps	*C-210, P-100, P-200*
swap pumps	*C-210, P-100, P-200*
ammonia compressors	*C-210*
propane compressors	*P-100, P-200*
acid injectors	*P-100, P-200*
alcali injectors	*P-100, P-200*
steam-driven hammers	*C-010, C-010R*

Application

Pulp-and-Paper Industry

regulating valve:	
with temperature less than +260 °C	*C-001,C-200*
with temperature more than +260 °C	*C-010, C-210, C-210M*
weak chemicals pH 5-9	*P-010, A-010P, P-200*
strong acids pH 1-4:	
fittings	*C-010R, C-220, P-100, P-210*
pumps	*A-040, C-010R, C-220, P-100, P-210*
strong alkali pH 10-13:	
fittings	*C-010R, C-210, P-100*
pulp pumps	*A-010, A-040, C-010, C-010R, P-100, P-200*
white lye pumps	*A-010, A-040, C-210, P-010, P-200*
black lye pumps	*C-210, P-200, P-210*
green lye pumps	*C-010, C-210, P-200*
bleaching lye pumps	*P-010, P-100, P-200, P-210*
chlorine pumps	*P-010, P-100, P-200, P-210*
soda, sulfite and bisulfite	*C-010R, P-010, P-200*
concentrate paste pump	*C-010, C-010R, P-010, P-100*
chamber acid pumps	*P-010, P-100, P-200*
hydraulic pumps	*P-010, P-200*
hydrobeaters	*A-010, C-010, P-010S, P-200*
refiners	*C-010, C-200, P-100, P-200*
evaporating pans	*C-210, P-010, P-200*
lime pump	*C-210, P-200*
caustic	*P-100, P-200*
press defibrator	*A-010, A-040, P-100*
mixer, bleaching tank	*P-010, P-100, P-200*
drier rolls	*P-010, P-100*
cancellers	*P-010S*
veneer press	*C-010, P-200*

Rubber Production

crushers and mills:	
steam branch tube	*C-200R*
water branch tube	*N-010, P-100, P-200*
calanders:	
steam branch tube	*C-010R, P-100*
water branch tube	*N-010, P-100, P-200*
air compressors	*A-010, C-200, P-010, P-200*
steam fittings:	
temperature less than +260 °C	*C-010R, C-210, C-210M, P-010, P-100*
temperature more than +260 °C	*C-010R, C-210, C-210M*
solvent pumps	*C-010, C-210, P-200*
mixers	*A-010, A-040, P-010, P-210*
devulcanizers	*C-210M*

Application

Food Industry

air copressors	A-040, C-210, P-100, P-200
food rotary pump	P-010, P-100, N-001, N-010
food piston pumps	A-010P, A-040, P-010, P-100
ammonia compessors	C-210
oil compressors	A-010, A-030, P-200
oil pumps	A-040, C-210, P-010, P-200
ammonia valves	P-010, P-100, C-210
liquid ammonia pumps	C-010, C-210, P-010
grain syrup pumps	P-010, P-100
mixers	P-010, P-100
acid pumps	A-010, A-030, P-010, P-200
salt pumps	P-010, P-100
beer pumps	P-010, P-100
milk pumps	P-010, P-100
raw beer pump	P-010, P-100, P-200
cod-liver oil pump	A-040, P-010, N-010
caustic pumps	A-040, P-010, P-200
flushing pump	P-010, P-100, P-200
oil pumps	P-010, P-100, A-040
sludge pumps	A-010, A-040, P-210
alcali flushing pumps	P-010, P-200
lye pumps	P-010, P-200
hexanes pumps	A-040, C-010, C-210
cooker and cooking kettle	P-100, A-040
bottle washing	A-010, P-010, P-200
alcohol pumps	P-010, P-100
rotary dryer	P-010, A-040
evaporating drum driers	P-010, P-100, P-010S

Sugar Industry

alkali flushing pump	C-200, P-010, P-100, P-200
acid flushing pump	A-040, C-010, C-210, P-010
aqueous suspension pumps	P-100, P-200 , N-010
syrup pumps	P-010, P-100, P-210
water condensate pumps	A-010P, C-010, C-200, P-100
pickle pumps	A-040, P-010, P-100
refiner pumps	C-210, P-010, P-100
melting pumps	C-210, P-010, P-100
clarified mortar pumps	C-010, P-010, P-100, P-200
aerated juice pumps	A-010, A-040, P-010, P-200
rotary apparatus pumps	A-010P, A-020, A-030, P-010
filtered sediment pumps	A-010, A-010P, A-020, A-030
lime milk pumps	P-010, P-200
carbonation sludge pumps	A-010, A-020, C-010
acid pumps	P-010, P-100, P-200
evaporating apparatus pumps	P-010, P-100, P-200
melting mixers	C-200, P-010, P-200
centrifugal mixers	C-200, P-010, P-100
chilling machine sealant	A-010, A-040, P-100
centrifugal mixer sealant	A-010, A-010P, P-100

Application

Water-supply and Sewerage

sewage disposal plant:	
chlorine pumps	*P-010, P-100, P-200, P-210*
alkali	*P-010, P-100, P-200*
acid	*P-010, P-100*
water valves	*C-200, C-200R, C-210M, P-100*
dirt collector pumps:	
acid	*P-010, P-100, P-200*
alkali	*P-010, P-100, P-200*
water gate	*N-001, N-010, C-010, C-210, P-100*
water-supply systems:	
piston pumps	*P-010, P-100, N-001, N-010*
rotary pumps	*P-100, P-200, N-001, N-010*
fecal pumps	*A-010, A-020, A-030, A-040*

Shipbuilding

condensate pumps	*C-010, C-210, P-200*
transfer pumps:	
chemicals	*P-010, P-100,P-200*
neutral medium	*C-010, P-100, G-010, N-010*
extraction pumps	*C-010, C-210, P-100, P-200, N-010*
fresh water pumps	*P-010, N-001, N-010*
boiler feed-pumps	*C-010, C-200, C-210*
sea water pumps	*A-010, A-030, N-001, N-010*
hydraulic pumps	*C-010, P-100, P-200*
bilge pumps	*P-100, P-200, A-030, A-040*
fire-pumps	*A-030, C-210, P-010*
fuel-oil pumps	*P-010, P-200, C-200, A-040*
steam system:	
fitting (less than +260 °C)	*C-010, C-210, C-210M*
fitting (more than +260 °C	*C-210, C-210M*

Cement and asphalt production mineral resource industry

air compressors	*P-100, P-200*
bitumen pumpes	*C-200, P-200*
bitumen mixes	*C-210, P-010S*
mud pumps	*A-030, A-040, P-100*
piston scum pumps	*P-010, P-200*
steam pumps	*C-010, C-210*
centrifugals	*A-010, A-020, A-030, A-040*
acid pumps	*P-010, P-100, P-200*
phosphate rotary pumps	*A-010, A-040, P-100*
kaolin clay suspension pumps	*A-010, A-040, P-010, P-100*
piston pumps for pulp	*C-010, P-210*
sweet-water pumps	*A-010, A-040, P-100*
fuel pumps	*C-200, P-100, P-200*