

# Packing glands GREFSEAL

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**1 About Company** 



# **About Company:**

Full Company Name: Limited Liability Company 'Graphtrade';

Short name: 'Graphtrade' LLC

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E-mail: grefseal.office@gmail.com;

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Company Chief Executive Officer: Director General Anna Mikhailovna Naumenko:

# Brief history of the Company:

'Graphtrade' LLC started its operations on 9 December 2003. In accordance with the current legislation of Ukraine, business activity of 'Graphtrade' LLC is not subject to compulsory licensing.

The enterprise manufactures sealing products with its own trademark: Grefseal.

Trade mark of the manufacturing enterprise has been certified by State Intellectual Property Service of Ukraine. Certificate No. 64151 of 17.07.2006.

Products manufactured by 'Graphtrade' LLC are mainly consumed by enterprises of energy industry, chemical and oil refining industry, coal mining industry, metallurgical industry as well as mining and processing integrated plants.

Our enterprises manufactures sealing products in accordance with the following specially developed and formally approved technical specifications:

1.TU U 26.8-32786757-001:2008 - 'Grefseal Grapgite Packings' (for nuclear power stations);

2.TU U 26.8-32786757-002:2011 - 'Grefseal Flanged Sealing Gaskets';

3.TU U 28.1-32786757-002:2012 - 'Grefseal Sealing Rings and Sealing Ring Sets';

4.TU U 29.1-32786757-001:2004 - 'Grefseal Asbestos-Free Packings;

5.TU U 28.1-32786757-003:2012 - 'Grefseal Asbestos-Free Sealing Sheets and Gaskets from Asbestos-Free Sealing Sheets':

6.TU U 26.8-25323997-001:2007 - 'Foil and Pressboard from Thermally Expanded Graphite';

7.TU U 28.2-32786757-004:2013 - 'Grefseal Double Jacketed and Waved Flanged Gaskets'.

In March 2006 'Graphtrade' LLC received Russian Maritime Register of Shipping Certificate of Type Approval No. 06.61049.184 of 03.03.2006 for graphite packing that was later prolonged under No.11.61039.184 of 25.02.2011. This Certificate permitted manufacture and installation of packing for stern gears of all types of navigation ships.

In November 2006 the enterprise was awarded with International IQNet System Certificate and Certificate of Russian Register Certification System for compliance of the effective enterprise quality management system with ISO 001:2000 International Standard.

Certificate No. 06.527.026 of 2 November 2006: in November 2009 года the enterprise quality management system was re-certified by Russian Register for compliance with ISO 9001:2008 International Standard. In 2008 NNEGC 'Energoatom' and State Nuclear Regulatory Inspectorate of Ukraine approved the enterprise's technical specifications for manufacture and delivery of sealing products for nuclear power stations and in April 2009 'Graphtrade' LLC was confirmed as manufacturer and supplier of sealing products for nuclear power stations (Resolution on Approval No. 3Ш-П. 1.21.08-09).

In December 2008 'Graphtrade' LLC also obtained expert findings No. 63.2-03-4959.08 'Conclusion report on possibility to use Grefseal flanged gaskets from thermally expanded graphite manufactured under TU U 26.8-32786757-002:2005, foil and pressboard from thermally expanded graphite manufactured under TU U 26,8-25323997-001:2007 and asbestos-free packings manufactured under TU U 29.1-32786757-001-2004 in the environment of chemical and oil refining industry of Ukraine' issued by 'UkrNIIkhimmash' OJSC Ukrainian Scientific Research Institute.

In 2018 Certificate of compliance with ISO 9001:2015 Quality Management System was obtained.

#### Grefseal NGS-S



**Main components:** thermally expanded graphite with a corrosion inhibitor, reinforced with fiberglass.

Equipment: centrifugal pumps, plunger pumps, fittings.

**Application environment:** cold and hot water, steam, superheated steam, oils, oil products, solvents.

Branches of industry: water supply, oil refining, thermal power, food, paper, gas, mining and processing industry.

Advantages of using this type of packing gland: has high thermal conductivity, low coefficient of friction, self-lubrication, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil.

Characteristics:

Operating temperature: -200 ~ +650 °C; Slip speed:

Centrifugal pumps - 3 MPa; Centrifugal pumps - 20 m/s
Plunger pumps - 25 MPa; Plunger pumps - 2 m/s
Fittings - 35 MPa; Fittings - 2 m/s

pH: 0-14; Dimensions of sections: from 4 to 50 mm in increments of 1 mm.

#### Example of the designation when ordering:

#### Grefseal NGS-S 6x6 TU U 29.1-32786757-001-2004

Packing gland made of thermally expanded graphite with a corrosion inhibitor, reinforced with fiberglass, with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGS-SI



Main components: thermally expanded graphite with a corrosion inhibitor, reinforced with Inconel wire.

Equipment: shut-off and control valves.

**Application environment:** cold and hot water, steam, superheated steam, hydrogen, oils, ammonia, cooling liquids, petroleum products, solvents.

**Branches of industry:** water supply, oil refining, thermal power, food, paper, gas, mining and processing, chemical industry.

Advantages of using this type of packing gland: has high thermal conductivity, strength, high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, does not need vulcanization, does not harden.

Characteristics:

Operating temperature: -200 ~ +650 °C; Slip speed:

Fittings - 35 MPa; Fittings - 2 m/s

pH: 0-14; Dimensions of sections: from 4 to 50 mm in increments of 1 mm.

# Example of the designation when ordering:

#### Grefseal NGS-SI 6x6 TY Y 29.1-32786757-001-2004

Packing gland made of thermally expanded graphite with a corrosion inhibitor, reinforced with Inconel wire, with cross-sectional area of 6x6 mm. manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGS-SI1

Main components: thermally expanded graphite with a corrosion inhibitor reinforced with Inconel wire, and also each thread is braided with Inconel

Equipment: high pressure shut-off and control valves.

Application environment: cold and hot water, steam, superheated steam, oils, ammonia, hydrogen, oil products, solvents, cooling liquids.

Branches of industry: water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing industry.

Advantages of using this type of packing gland: has high thermal conductivity, high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, has high strength, does not need vulcanization, does not harden, is not blown and is not washed out under pressure drops or during washing.



Characteristics:

Operating temperature: -250 ~ +740 °C:

Operating pressure: Slip speed: Fittings - 50 MPa; Fittings - 2 m/s;

pH: 0-14 Dimensions of sections: from 4 to 50 mm

in increments of 1 mm.

#### Example of the designation when ordering:

#### Grefseal NGS-SI1 6x6 TU U 29.1-32786757-001-2004

Packing gland made of thermally expanded graphite with a corrosion inhibitor reinforced with Inconel wire, and each thread is braided with Inconel wire, with a cross-sectional area of 6×6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGS-Sf

Main components: thermally expanded graphite with a corrosion inhibitor, reinforced with glass fiber and impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: cold and hot water, steam, superheated steam, oils, ammonia, hydrogen, oil products, solvents, cooling liquids.

Branches of industry: water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing industry.



**Characteristics:** 

Operating temperature: -200 ~ +280 °C (+450 °C - steam);

Operating pressure: Slip speed:

Centrifugal pumps - 3 MPa Centrifugal pumps - 30 m/s; Plunger pumps- 25 MPa Plunger pumps - 2 m/s:

Fittings - 30 MPa: Fittings - 2 m/s:

pH: 0-14 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

#### Example of the designation when ordering:

Grefseal NGS-Sf 6x6 TU U 29.1-32786757-001-2004

Packing gland made of thermally expanded graphite with a corrosion inhibitor reinforced with glass fiber and impregnated with PTFE suspension, with a cross-sectional area of 6×6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NFS



Main components: expanded fluoroplastic fibers.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: acids, alkali, cold and hot water, steam, superheated steam, oils, oil products, solvents.

Branches of industry: water supply, oil refining, thermal power, food, paper, gas, mining and processing, chemical industry.

Advantages of using this type of packing gland: is resistant to chemical substances, has low coefficient of friction, high strength and sterility, has long life and does not have cavities.

Characteristics:

Operating temperature: -200 ~ +260 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 4 m/s; Centrifugal pumps - 2 MPa; Plunger pumps - 20 MPa; Plunger pumps - 2 m/s;

Fittings - 20 MPa; Fittings - 2 m/s;

pH: 0-14 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

# Example of the designation when ordering:

Grefseal NFS packing gland 6x6 TU U 29.1-32786757-001-2004

Packing gland made of expanded fluoroplastic fibers with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

#### Grefseal NFS-Af2



Main components: expanded fluoroplastic fibers and aramide filament fibers in the corners.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: clay, abrasive water, cement, coal products, cold and hot water, water steam, superheated steam, hydrogen, oils, ammonia, cooling liquids, petroleum products, solvents.

Branches of industry: water supply, oil refining, thermal power, food, paper, gas, mining and processing, chemical, coal-mining, building and construction industry.

Advantages of using this type of packing gland: has high thermal conductivity, high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, has strength, does not need vulcanization, does not harden.

Characteristics:

Operating temperature: -250 ~ +280 °C:

Operating pressure: Slip speed:

Centrifugal pumps - 3 MPa; Centrifugal pumps - 12 m/s; Plunger pumps - 20 MPa; Plunger pumps - 2 m/s; Fittings - 20 MPa:

Fittings - 2 m/s:

pH: 0-14; Dimensions of sections: from 8 to 50 mm in

increments of 1 mm.

#### Example of the designation when ordering:

# Grefseal NFS-Af2 packing gland 8x8 TU U 29.1-32786757-001-2004.

Packing gland made of expanded fluoroplastic fibers with corners reinforced by aramide filament fibers with crosssectional area of 8x8 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGFS

Main components: expanded graphite-reinforced fluoroplastic fibers.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: cold and hot water, steam, superheated steam, oils, ammonia, hydrogen, oil products, solvents, cooling liquids, acids, alkali,

Branches of industry: water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing, chemical industry.

Advantages of using this type of packing gland: has high thermal conductivity, high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, has strenath.



Characteristics:

Operating temperature: -250 ~ +280 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 20 m/s; Centrifugal pumps - 3 MPa;

Plunger pumps - 25 MPa; Plunger pumps - 2 m/s;

Fittings - 25 MPa; Fittings - 2 m/s;

pH: 0-14; Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

#### Example of the designation when ordering:

Grefseal NGFS 6x6 TU U 29.1-32786757-001-2004

Packing gland made of expanded graphite-reinforced fluoroplastic fibers, with a cross-sectional area of 6×6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGFS-Af2

Main components: expanded graphite-reinforced fluoroplastic, corners are reinforced by aramide filament fibers.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: cold and hot water, steam, superheated steam, oils, ammonia, hydrogen, oil products, solvents, cooling liquids, acids, alkali, sugar, abrasive water, sand.

Branches of industry: water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing, chemical, sugar, building and construction industry.



Characteristics:

Operating temperature: -100 ~ +280 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 4 MPa: Centrifugal pumps - 20 m/s: Plunger pumps- 25 MPa; Plunger pumps - 3 m/s;

Fittings - 50 MPa: Fittings - 2 m/s:

pH: 2-12 Dimensions of sections: from 8 to 50 mm in

increments of 1 mm.

#### Example of the designation when ordering:

#### Grefseal HΓΦC-Aφ2 10x10 TU U 29.1-32786757-001-2004

Packing gland made of expanded graphite-reinforced fluoroplastic fibers, with corners reinforced by aramide filament fibers and with a cross-sectional area of 10×10 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NFfS



Main components: microwave filament fluoroplastic fibers.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment; acids, alkali, cold and hot water, steam, superheated steam, oils, oil products, solvents, gases.

Branches of industry: water supply, oil refining, thermal power, food, paper, mining and processing, chemical, gas industry.

Advantages of using this type of packing gland: is resistant to chemical substances, has low coefficient of friction, high strength and sterility, has long life and does not have cavities, is intended for long-life performance.

Characteristics:

Operating temperature: -200 ~ +280 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 5 MPa; Centrifugal pumps - 20 m/s; Plunger pumps - 15 MPa; Plunger pumps - 2 m/s;

Fittings - 25 MPa: Fittings - 2 m/s:

pH: 0-14 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

Example of the designation when ordering:

Grefseal NFfS 6x6 TU U 29.1-32786757-001-2004

Packing gland made of filament (microwave) fluoroplastic with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

#### Grefseal NAfS-f



Main components: filament aramide fibers impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: clay, abrasive water, cement, coal products, cold and hot water, water steam, superheated steam, oils, cooling liquids, petroleum products, solvents, waste waters, sugar, several acids.

Branches of industry: water supply, oil refining, thermal power, food, paper, gas, mining and processing, chemical, coal-mining, building and construction, sugar

Advantages of using this type of packing gland: has high strength and high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, ensures sterility.

Characteristics:

Operating temperature: -100 ~ +280 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 25 m/s; Centrifugal pumps - 8 MPa; Plunger pumps - 40 MPa; Plunger pumps - 5 m/s;

Fittings - 40 MPa; Fittings - 3 m/s;

pH: 2-12 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

#### Example of the designation when ordering:

# Grefseal NAfS-f 6x6 TU U 29.1-32786757-001-2004

Packing gland made of filament aramide fibers and impregnated with PTFE suspension, with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NUS

Main components: carbon fibers.

Equipment: centrifugal pumps, plunger pumps, fittings.

**Application environment:** cold and hot water, water steam, superheated steam, oils, hydrogen, oil products, solvents, cooling liquids, acids, alkali, fluorine, abrasive media.

**Branches of industry:** water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing, chemical industry.

Advantages of using this type of packing gland: has high thermal conductivity, high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, has strength and is resistant to chemical substances.



**Characteristics:** 

Operating temperature: -200 ~ +650 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 3 MPa; Centrifugal pumps - 20 m/s;

Plunger pumps - 40 MPa; Plunger pumps - 4 m/s;

Fittings - 40 MPa; Fittings - 2 m/s;

pH: 0-14 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

# Example of the designation when ordering:

Grefseal NUS 6x6 TU U 29.1-32786757-001-2004

Packing gland made of carbon fibers, with a cross-sectional area of 6×6 mm, manufactured according to TU U 29.1-32786757-001-2004.

#### Grefseal NUS-f

Main components: carbon fibers impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

**Application environment:** cold and hot water, steam, superheated steam, oils, oil products, solvents, acids, alkali, sugar, abrasive water.

**Branches of industry:** water supply, oil refining, thermal power engineering, food, paper, gas, mining and processing, chemical, sugar, building and construction industry.



**Characteristics:** 

Operating temperature: -200 ~ +280 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 3 MPa; Centrifugal pumps - 25 m/s; Plunger pumps - 10 MPa; Plunger pumps - 4 m/s;

Fittings - 30 MPa; Fittings - 2 m/s;

pH: 2-12 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm

#### Example of the designation when ordering:

Grefseal UUS-f 10x10 TY Y 29.1-32786757-001-2004

Packing gland made of carbon fibers impregnated with PTFE suspension, with a cross-sectional area of 10×10 mm, manufactured according to TU U 29.1-32786757-001-2004.

Grefseal NAKS-f



Main components: acrylic fibers impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: acids, alkali, cold and hot water, water steam, superheated steam, oils, oil products, solvents, gases, abrasive media.

**Branches of industry:** water supply, oil refining, thermal power, food, paper, mining and processing, chemical, gas industry.

Advantages of using this type of packing gland: is resistant to chemical substances, has low coefficient of friction, high strength and sterility, has long life and does not have cavities, is intended for long-life performance.

Characteristics:

Operating temperature: -200 ~ +260 °C:

Operating pressure: Slip speed:

Centrifugal pumps - 4 MPa; Centrifugal pumps - 12 m/s; Plunger pumps - 10 MPa; Plunger pumps - 2 m/s;

Fittings - 15 MPa; Fittings - 2 m/s;

pH: 2-12 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

# Example of the designation when ordering:

# Grefseal NAKS-f 6x6 TU U 29.1-32786757-001-2004

Packing gland made of acrylic fibers impregnated with PTFE suspension, with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NKS-f



Main components: kynol fibers impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

**Application environment:** clay, abrasive water, cement, coal products, cold and hot water, water steam, superheated steam, oils, cooling liquids, petroleum products, solvents, waste waters, sugar, cement dust.

**Branches of industry:** water supply, oil refining, thermal power, food, paper, gas, mining and processing, chemical, coal-mining, building and construction, sugar, cement industry.

Advantages of using this type of packing gland: has high strength and high density, is self-lubricating, does not cause corrosion, is easily removed from the stuffing box, does not age, does not boil, ensures sterility.

Characteristics:

Operating temperature: -200 ~ +260 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 8 MPa; Centrifugal pumps - 20 m/s; Plunger pumps - 20 MPa; Plunger pumps - 3 m/s;

Fittings - 25 MPa; Fittings - 2 m/s;

pH: 0-13 Dimensions of sections: from 4 to 50 mm in

increments of 1 mm.

# Example of the designation when ordering:

# Grefseal NKS-f 6x6 TU U 29.1-32786757-001-2004

Packing gland made of kynol fibers and impregnated with PTFE suspension, with cross-sectional area of 6x6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NGS

Main components: thermally expanded graphite fibers reinforced with cotton yarn and glass fiber.

Equipment: stern gears.

Application environment: sea water and soft water.

Branches of industry: naval industry.

Characteristics:

Operating temperature: 0 ~ +270 °C; Operating pressure: 25 MPa;

Slip speed: 25 m/s;

pH: 0-14:

Dimensions of sections: from 4 to 55 mm in increments of 1 mm.



# Example of the designation when ordering:

# Grefseal NGS 6x6 TU U 29.1-32786757-001-2004

Packing gland made of thermally expanded graphite fibers reinforced with cotton yarn and glass fiber, with a cross-sectional area of 6×6 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal NRS-f

Main components: fibers (Rami) impregnated with PTFE suspension.

Equipment: centrifugal pumps, plunger pumps, fittings.

Application environment: cold and hot water, water steam, oils, oil products, solvents, fats, acids, alkali.

Branches of industry: water supply, oil refining, food, paper, gas, mining and processing, chemical, sugar, building and construction industry.



Characteristics:

Operating temperature: -60 ~ +140 °C;

Operating pressure: Slip speed:

Centrifugal pumps - 4 MPa; Centrifugal pumps - 15 m/s; Plunger pumps- 10 MPa; Plunger pumps - 2 m/s;

Fittings - 10 MPa: Fittings - 2 m/s:

pH: 5-11 Dimensions of sections: from 4 to 50 mm in increments of 1 mm.

#### Example of the designation when ordering:

#### Grefseal NRS-f 10x10 Ty y 29.1-32786757-001-2004

Packing gland made of fibers (Rami) impregnated with PTFE suspension, with a cross-sectional area of 10×10 mm, manufactured according to TU U 29.1-32786757-001-2004.

# Grefseal graphite sealing rings



Main components: thermally expanded graphite foil, stainless steel (depending on

Intended use: sealing of stuffing boxes of fittings, centrifugal pumps and plunger

Branches of industry: chemical, petrochemical, electric-power, gas, food, paper, building and construction, cement, nuclear and other branches of industry.

Characteristics: Operating pressure: up to 40 MPa; Operating temperature: -200 ~ +650 °C; pH - 0-14.

Types of sealing rings: V - twisted ring;

VA - twisted reinforced ring;

C - layered ring:

P - braided ring

Index	Ring outline	Type of ring design
00		Ring without obturator
01		Ring equipped with one face-type flat obturator
21		Ring equipped with two face-type flat obturators
02		Ring equipped with one face type Π-shaped (disk-shaped) obturator or with two angular obturators
22		Ring equipped with two face type Π-shaped obturators or with four angular obturators
03		Ring equipped with one external angular obturator
23		Ring equipped with two external angular obturators
04		Ring equipped with one internal angular obturator
24		Ring equipped with two internal angular obturators
05		Ring equipped with an internal and an external angular obturators
06		Ring equipped with two external and one internal angular obturators, or with one face type II-shaped and one external angular obturators
07		Ring equipped with two internal and one external angular obturators, or with one face type 1-shaped and one internal angular obturators
08		Conical ring
09		Cup-shaped ring







It is also possible to deliver rings in kits depending on different operating conditions of the Customer.

# Kit of extractors for removal of packing glands



Intended use: extractors are intended for removal of wasted packing glands from stiffing boxes of fittings and pumps. The use of the extractor will allow, when removing the seal, to exclude damage to the surface of the chamber and the stem. In cases of emergency replacement of a packing gland, partial disassembly of the valve or pump is possible.

# Structure of a gland extractor:

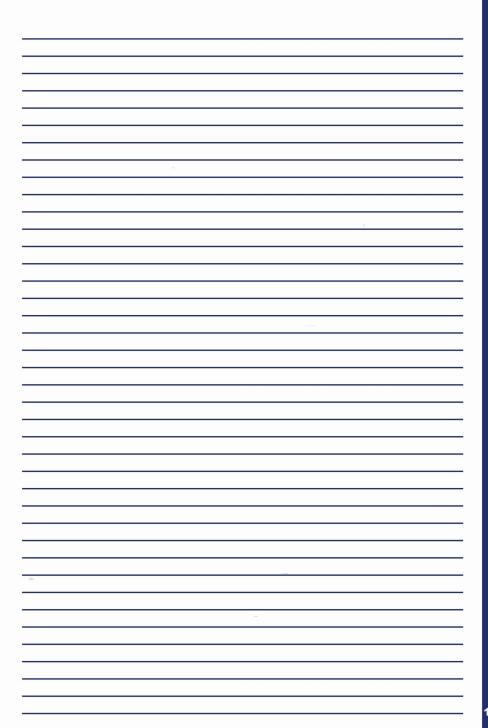
- 1) Flexible shaft made of high-quality steel rope;
- 2) Steel T-shaped handle;
- 3) The tip is made in the form of a screw (corkscrew), and also in the form of a screw. The tip is made of high-quality hardened steel according to special geometry, which makes it possible to easily and reliably screw the tip into various types of packing glands.

#### The kit includes:

- 1) Flexible gland extractor A 2 pieces: for 3 to 10 mm packing glands;
- 2) Hard gland extractor A 1 piece: for 3 to 10 mm packing glands;
- 3) Screw tip A 3 pieces: for 3 to 10 mm packing glands;
- 4) Self-tapping tip A 1 piece: for 3 to 10 mm packing glands;
- 5) Flexible gland extractor B 2 pieces: for 11 to 18 mm packing glands;
- 6) Hard gland extractor B 1 piece: for 11 to 18 mm packing glands;
- 7) Screw tip B 3 pieces: for 11 to 18 mm packing glands;
- 8) Self-tapping tip C 1 piece: for 11 to 18 mm packing glands;
- 9) Flexible gland extractor C 2 pieces: for 19 to 50 mm packing glands.
- 10) Hard gland extractor B 1 piece: for 19 to 50 mm packing glands;
- 11) Screw tip B 3 pieces: for 19 to 50 mm packing glands;
- 12) Self-tapping tip B 1 piece: for 19 to 50 mm packing glands;
- 13) Wrench for tightening the tips 1 piece;
- 14) Plastic tool box 1 piece.



# Notes;





# OTHER PRODUCTS:







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