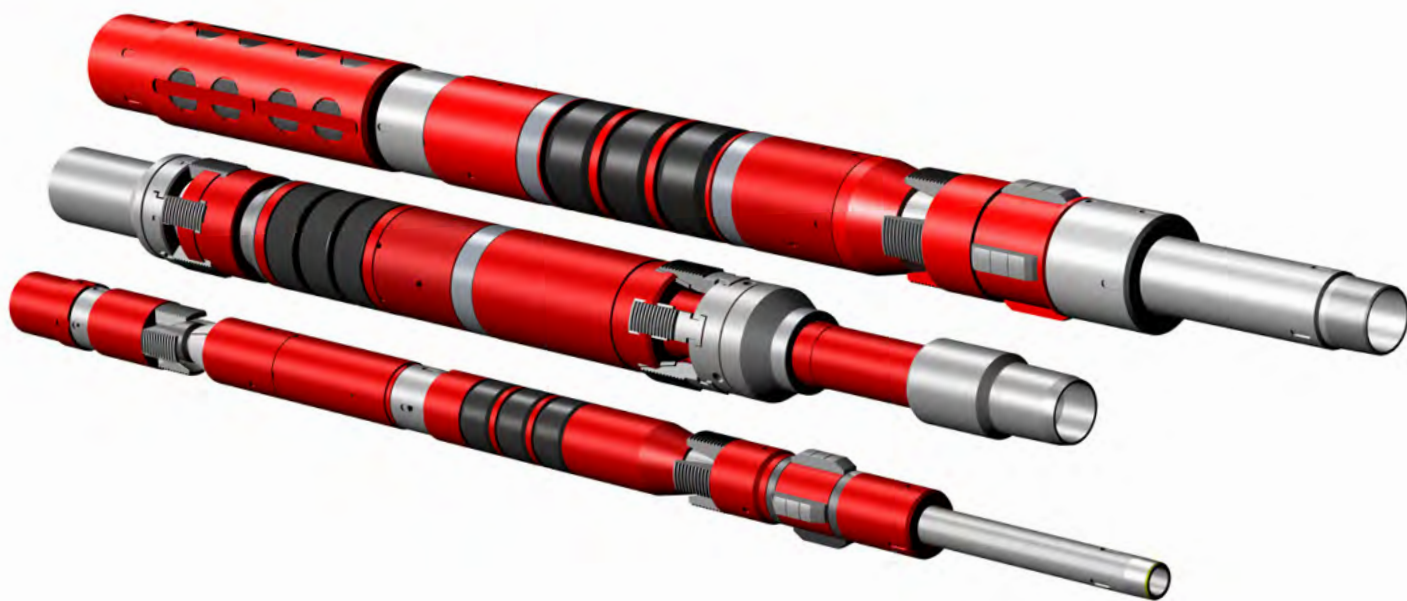


PRODUCT CATALOGUE



Packer and anchor equipment for production of oil and gas, repair and insulation works of wells.

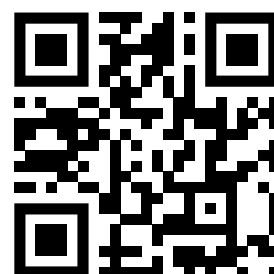
**Developing cooperation we find
optimal decision and succeed together!**



PRODUCT CAT

Thank you that choose us!

www.npf-paker.com





Central entrance of SPF Paker



Museum



Russian Federation Government Prize for quality awards ceremony, Moscow



21th World Petroleum Congress, Moscow



General equipment shop



CNC machines shop



Laundry



Canteen



Electronic display with production indicators

Dear colleagues

SPF Paker LLC welcomes you on the pages of our product catalogue. SPF Paker LLC takes a leading position in Russia and in the CIS countries in designing, production and maintenance service of packer-and-anchor equipment and borehole assemblies for operation, intensification, development and workover of oil and gas wells.

In the sphere of quality, one of the main goals of SPF Paker LLC is to meet the requirements of our consumers.

The quality of products manufactured by SPF Paker LLC is ensured by constant improvement and control over its production process: from design decision to manufacture of finished items. This is thanks to using modern automation systems for creation of project and process documentation such as SolidWork, SprutCAM, SWR-PDM; to manufacturing of parts on machining centers of world machine-building leaders like Mori Seiki (Japan), Sigma (Italy), FMB (Italy), DANOBAT (Spain); thanks to highly qualified maintenance personnel and quality management system effective at the enterprise, certified by TÜV Thüringen e.V. for compliance with the requirements of ISO 9001:2008. In June 2014 SPF Paker LLC achieved the QMS certificate of API Q1 Standard (American Petroleum Institute).

At the enterprise the special focus is on personnel recruitment and training. Our experts adopt experience of world leaders in machine-building production, undergoing training in Japan and Italy as well as taking part in major industry exhibitions.

We produce almost the whole list of packer-and-anchor equipment and borehole assemblies, required for oil production, formation pressure maintenance system, intensification (including Hydraulic Fracturing), drilling, repair and development of wells. A full product cycle from cutting blanks to a control operation includes the following:

- Turn-milling, heat treatment;
- Marking;
- Assembling;
- End products testing;
- Packaging and shipping to a customer.

Besides sale of equipment, shown in the catalogue, SPF Paker LLC renders the following range of services:

Engineering and technological services with packer equipment (transportation of equipment to the facility, erection, setting and releasing), selection of equipment with development of efficient measures for its use, as applied to conditions of customer with application of our own methods;

Rental of packer assemblies manufactured by SPF Paker LLC for oil production, formation pressure maintenance system, intensification (including Hydraulic Fracturing), drilling, repair and development of oil and gas wells;

Repair of the whole list of packer equipment manufactured by SPF Paker LLC;



Manufacture of steel items according to the drawings of the customer;

Development and manufacture of non-standard packer and other equipment according to the technical requirements of the customer.

Nowadays, the service centers were built in the 5 regions of Russian Federation. Highly qualified specialists work in these service centers, equipped with modern equipment that enhances the efficiency of oil and gas producing and oil service companies.

Thanks to using state-of-the-art developments and modern equipment during manufacture coupled with extensive scientific and production experience of highly qualified specialists, we provide our customers with reliable, highly technological, high-quality, efficient and cost effective service.

All the manufactured equipment has certificates, permission of Rostekhnadzor of Russia, and patented in the Russian Federation.

To increase the rendered services quality SPF Paker LLC welcomes for cooperation:

Dealers and suppliers to deliver equipment of SPF Paker LLC to Russia, CIS and foreign countries;

Partners in service introducing various technologies to carry out joint comprehensive activities in oil production, formation pressure maintenance, development and repair of wells (including dual completion, dual injection);

Developers and inventors of packers, valves as well as equipment for workover and oil production technologies;

Regional representatives abroad the UAE .

We wish you success in your work! We hope that our catalogue will help you to facilitate your work.

**Faithfully yours,
Marat M. Nagumanov,
Director of SPF Paker LLC**



Certificate API Spec Q1
("inactive" status)



Certificate API 11D1
("inactive" status)



Certificate of Quality
Management System
for ISO

Market volume in Russia, CIS and other countries on given technologies is more than 400 oil and gas companies.



Major Clients

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CONTACTS LIST

PACKERS FOR
TECHNOLOGICAL
OPERATIONS

EQUIPMENT
FOR OIL & GAS
PRODUCTION




PACKERS FOR
INJECTION
WELLS

ABOUT COMPANY



Finished products storage area

CONTACTS LIST

Contact	The scope of the issues involved:
 <p>Marat Nagumanov Director +7-927-237-54-70, +7-34767-6-63-64 E-mail: NagumanovM@npf-paker.ru</p>	Feel free to contact with the questions of strategic business development and products quality.
 <p>Dinar Sufiyanov Director of sales development +7-937-318-87-56, +7 (34767) 5-21-01; E-mail: SufiyanovDI@npf-paker.com</p>	Feel free to contact with the questions regarding equipment sale and development of your independent or our joint regional service with the equipment manufactured by SPF Paker LLC (Surgut city, CIS countries and foreign countries).
 <p>Timur Minnivaleev Deputy director for external relations, Ph.D +7-927-468-33-87; E-mail: MinnivaleevTN@npf-paker.com</p>	Feel free to contact with the questions regarding equipment sale, discussing partnership, cooperation in your region.



Blank production shop

PACKERS FOR TECHNOLOGICAL OPERATIONS



PRO-YAMO2-YAG1(M), PRO-YAM2-YAG1(M)

Mechanical Packers (rated operating pressure up to 15000 psi)

These packers are designed for sealed separation of casing string intervals and protection of the casing against the dynamic effect of various well operations.

DESCRIPTION APPLICATIONS



recommended for casing string pressure and tightness testing;

- pressure acidizing;
- squeeze cementing and other various technological operations;
- installation in pressure and production wells.

**RTTS
Analogue**

ADVANTAGES



- packers contain expandable supports to prevent rubber seal elements extrusion into annulus which increases the reliability of sealing and relieves packers unsetting;

- reliable sealing of production string during operations requiring high pressure differential on the packer;
- easy to release without additional tensile loads;
- packers design is proven by years of successful application.

FEATURES

- PRO-YAMO2-YAG1(M), PRO-YAMO3-YAG2, PRO-YAMO3-YAG3(M) packers are set mechanically into the well by axial movements of the string (no rotation required) and brought into run-in position by tensioning of the string;
- PRO-YAM2-YAG1(M), PRO-YAM3-YAG2, PRO-YAM3-YAG3(M) packers are set into the well by one quarter turn right hand rotation of the string with set down motion, they are brought into run-in position by tensioning of the string;
- packer's equipped with a top hydraulic anchoring device that keeps the packer from moving upwards and actuated by generating pressure inside the tubing;
- this equipment can be used multiply during one round-trip operation;
- high reparability.



**TOP
CHOICE**

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaaleevTN@npf-paker.com

SPECIFICATIONS

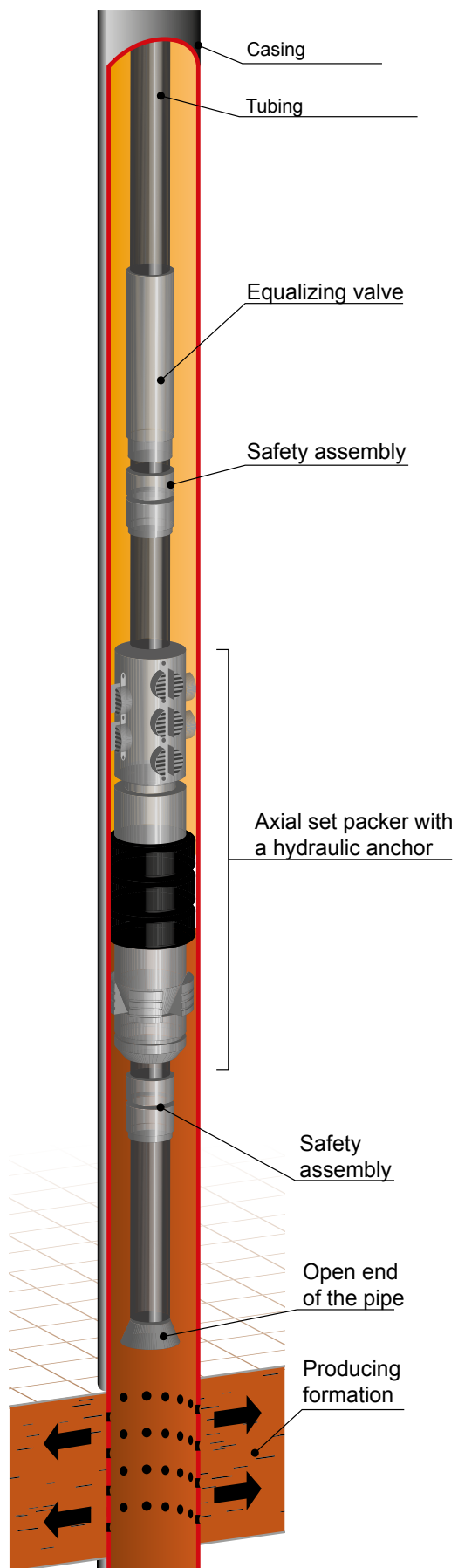
Type	Design Documentation Code	Casing		Maximum differential pressure, psi	Packer OD, in	Packer ID, in, not less than	Maximum temperature, F	Length, in, not more than	Weight, lb, not more than	NUE connection thread*	
		OD, in	Nominal Weight, lb/ft							Top (box)	Bottom (nipple)
Axial set packers											
PRO-YAM03-YAG2-82	AXA 2.839.296	4"	8.8-11	15000	3.23	1.34	302	6.56	102	2 3/8"	1.900"
PRO-YAM03-YAG2-88	AXA 2.839.296-01	4 1/2"	15.0-17.5		3.46			6.82	124		
PRO-YAM03-YAG2-92	AXA 2.839.296-02	4 1/2"	11.4-13.1		3.62			7.02	133		
PRO-YAM03-YAG2-100	AXA 2.839.296-03	5"	18.0-20.6		3.94	157					
PRO-YAM03-YAG2-104	AXA 2.839.296-04	5"	12.8-15.0		4.09	7.08		170	2 7/8"	2 3/8"	
PRO-YAM02-YAG1(M)-112	AXA 2.839.213	5 1/2"	19.5-23.5		4.41	1.81		200			
PRO-YAM03-YAG3(M)-114	AXA 2.839.292-01	5 3/4"	26.6		4.49	2.32		7.38	181	2 7/8"	
PRO-YAM03-YAG3(M)-116	AXA 2.839.292-02	5 1/2"	17.5-21.5		4.57				185		
PRO-YAM03-YAG3(M)-118	AXA 2.839.292-03	5 3/4"	22.5-26.6		4.65				187.4		
PRO-YAM03-YAG3(M)-122	AXA 2.839.292-04	5 1/2"	15.4-17.5		4.8				196		
PRO-YAM02-YAG1(M)-136	AXA 2.839.213-05	6 5/8"	26.0-31.0	5.35	2.32	7.28		306.5	3 1/2"	2 7/8"	
PRO-YAM02-YAG1(M)-142	AXA 2.839.213-06	6 5/8"	18.7-23.7	5.6				306.5			
PRO-YAM02-YAG1(M)-145	AXA 2.839.213-07	7"	19.8-38.0	8700	5.71	7.87		364	4"	3 1/2"	
PRO-YAM02-YAG1(M)-152	AXA 2.839.857										
PRO-YAM02-YAG1(M)-158	AXA 2.839.213-08	7 5/8"	21.7-41.8	7250	6.22	2.6		7.69	450	4 1/2"	
PRO-YAM02-YAG1(M)-182	AXA 2.839.213-09	8 5/8"	27.0-48.2	5800	7.17	3.15		8.33	582		
PRO-YAM02-YAG1(M)-204	AXA 2.839.213-10	9 5/8"	46.3-57.2		8.03	3.54		8.37	712		
Rotation set packers											
PRO-YAM3-YAG2-82	AXA 2.839.211	4"	8.8-11	150000	3.23	1.34	302	6.56	102	2 3/8"	1.900"
PRO-YAM3-YAG2-88	AXA 2.839.211-01	4 1/2"	15.0-17.5		3.46			6.82	124		
PRO-YAM3-YAG2-92	AXA 2.839.211-02	4 1/2"	11.4-13.1		3.62			7.02	133		
PRO-YAM3-YAG2-100	AXA 2.839.211-03	5"	18.0-20.6		3.94	157					
PRO-YAM3-YAG2-104	AXA 2.839.211-04	5"	12.8-15.0		4.09	7.08		170	2 7/8"	2 3/8"	
PRO-YAM2-YAG1(M)-112	AXA 2.839.212	5 1/2"	19.5-23.5		4.41	1.81		200			
PRO-YAM3-YAG3(M)-114		5 3/4"	26.6		4.57	2.33		7.38	181	2 7/8"	
PRO-YAM3-YAG3(M)-116		5 1/2"	17.5-21.5		4.65				185		
PRO-YAM3-YAG3(M)-118-59		5 3/4"	22.5-26.6		4.65				187.4		
PRO-YAM3-YAG3(M)-122-59	AXA 2.839.507-03	5 1/2"	15.4-17.5		4.8				196		
PRO-YAM2-YAG1(M)-136-59	AXA 2.839.212-05	6 5/8"	26.0-31.0	5.35	2.32	7.28		306.5	3 1/2"	2 7/8"	
PRO-YAM2-YAG1(M)-142-59	AXA 2.839.212-06	6 5/8"	18.7-23.7	5.6				306.5			
PRO-YAM2-YAG1(M)-145	AXA 2.839.212-07	7"	19.8-38.0	8700	5.71	7.87		364	4"	3 1/2"	
PRO-YAM2-YAG1(M)-158		7 5/8"	21.7-41.8	7250	6.22	2.6		7.69			450
PRO-YAM2-YAG1(M)-182		8 5/8"	27.0-48.2	5800	7.17	3.15		8.33	582	4 1/2"	
PRO-YAM2-YAG1(M)-204		9 5/8"	46.3-57.2		8.03	3.54		8.37	712		

* Other threads are available upon request.

- Packer setting load is 13489 to 26977 lbf.

1PROK-GRPB-2

Single Packer BHA for Massive Hydraulic Fracturing (rated operating pressure up to 15000 psi)



This BHA is used for hydraulic fracturing including massive hydraulic fracturing in production strings with tubing of nominal outside diameter of 5 1/2" to 7" with pressure differential up to 14500 psi.

DESCRIPTION BHA APPLICATION ALLOWS

- to carry out hydraulic fracturing with probability of complications reduced to minimum both during BHA round-trip and during the operation itself.

ADVANTAGES

- possibility of massive hydraulic fracturing;
- downhole equipment BHA is set into a well by axial movements;
- attachments: equalizing valve, safety assemblies enable easy packer releasing and enhance the safety of remedial and emergency operations;
- enables to carry out several hydraulic fracturing cycles without tripping the BHA out.

SPECIFICATIONS

Type	Casing		BHA OD, in	BHA ID, in, not less than	Maximum temperature, F	NUE connection thread*		
	OD, in	Nominal Weight, lb/ft				Top (box)	Bottom (nipple)	
1PROK-GRPB-2-112-X ¹	5 1/2"	19.5-23.5	4.41	1.81	302	2 7/8"	2 7/8"	
	5 3/4"	26.6						
1PROK-GRPB-2-114-X ¹	5 1/2"	17.5-21.5	4.49					
1PROK-GRPB-2-116-X ¹	5 1/2"	15.4-19.5	4.57	2.09				
	5 3/4"	22.5-26.6						
1PROK-GRPB-2-118-X ¹	5 1/2"	15.4-17.5	4.65	2.99		3 1/2"		
	5 3/4"	21.5-24.6						
1PROK-GRPB-2-122-X ¹	5 3/4"	15-21.5	4.8					
1PROK-GRPB-2-136-X ¹	6 5/8"	26.2-31.0	5.35	2.28				
1PROK-GRPB-2-142-X ¹	6 5/8"	18.7-23.7	5.6					
1PROK-GRPB-2-145-X ¹	7"	19.8-38.0	5.71					

* Other threads are available upon request.

¹ Configuration number.

Sample order code for BHA of the **first configuration**:

1PROK-GRPB-2-114-1, where:

- 1PROK** - single packer BHA by SPF "Paker" Ltd.;
- GRPB** - massive hydraulic fracture;
- 2** - two emergency disconnection assemblies;
- 114** - **BHA OD**;
- 1** - **the first configuration**.

If you have any questions regarding equipment purchase, feel free to contact us:

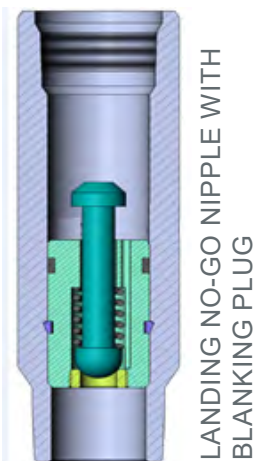


Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaaleevTN@npf-paker.com

LANDING NO-GO NIPPLE WITH BLANKING PLUG (Quadro valve APU+APr)



PURPOSE

- for installation and extraction of the Quadro shut-off valve (plug) (APr) on a cable or coiled tubing for tubing pressure testing or installing a hydraulic packer or temporary abandonment of the well.

THE PRINCIPLE OF OPERATION

- the Quadro valve (APU)-108-67-700-T150-K3-00 is screwed in tubing when the assembly is lowered. It has a chamfer for fixing the retrievable shut-off valve (plug).

DESCRIPTION APPLICATION

- » - To install the retrievable Quadro Valve (APr)-70-X(39)-500-T150-K3-00, the Quadro-LC-M(S) tool is used, which is included in the valve delivery package.
- The valve is lowered on wireline or coiled tubing. When the depth of the Quadro installation adapter (APU) is reached, the wireline or coiled tubing is unloaded by 200 kg, the valve is fixed.
- When the tool is pulled up, it is disconnected from the valve.
- The valve is removed by lowering the tool.
- The tool is configured to perform installation and removing at the wellhead by installing pins of various loads.

SPECIFICATIONS

Name	Measure	2 7/8 tubing NKT (A)	2 7/8 tubing NKT (B)	3 1/2 tubing NKT (A)	3 1/2 tubing NKT (B)
Dimension of the APU valve:					
• Outer diameter	in	3 1/2	3 1/2	5,35	4,25
• Inner diameter	in	2,08	2,2	2,08	2,75
• Equivalent diameter of circulation channels (fitting)	in	1,53	1,53	1,53	1,53
Dimension of the APr plug:					
• Outer diameter	in	2,2			2,75
• Equivalent diameter of the pressure equalization channel	in	1,53			1,53
Maximum pressure drop from under or above the valve	psi	7250		7250	
Stretching force for removing retrievable valve (plug), it can be regulated	lb		550-2200		
Force for installing valve (plug) APr	lb		330		
Threads GOST 633-80 coupling of tubing (top) nipple of tubing (bottom)	in in	TMK UP PF 2 7/8 2 7/8		NKTB 3 1/2 3 1/2	
Maximum temperature	°C (°F)		150 (302)		

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

SLIDING SLEEVE DOOR

(Quadro circulation valve(C)-136-72(72)-700-T150-K3

PURPOSE

- designed to make connection between the space inside the tubing and annulus space.

THE PRINCIPLE OF OPERATION

- the valve is operated by a special tool on the coiled tubing or wireline. The valve is opened in the downward direction. Closing in the upward direction. It is possible to connect the control via hydraulic lines from the wellhead.

DESCRIPTION APPLICATION

- » - The principle of operation is that the Quadro valve(C) is mounted in the tubing above the packer and descends into the well.
- If it is necessary to carry out flushing, well production testing or killing of the well, a valve opening/closing tool is mounted on the coiled tubing or wireline at the wellhead.
- Descends into the well to the depth of the installation of the Quadro valve (C). When the tool reaches the engagement point in the valve, its fastening with this place. A further downward movement opens the valve.
- After the end of the washing operations, the tool descends, engages with the valve and closes it with an upward movement.



SPECIFICATIONS

Parameter name, unit of measurement	Values
Maximum temperature, °C (°F)	150 (302)
Maximum valve pressure, psi	10000
Valve switching force, lb	1100
Dimensions of the valve, in <ul style="list-style-type: none">- outer diameter- inner diameter	5,35 2,83
Equivalent diameter of the circulation channels, in	2,9
Type of threads	HKT B89 (3 1/2)
Maximum torque transmitted through the valve, N·m (lb·ft)	1200 (885)
Maximum tensile and compressive load, lb	145000
Opening method	Hydraulic / Mechanical
Maximum dimension of the mechanical tool, in	2,72



EXPANSION JOINT (US-122-76-350-T150-K3-00)

PURPOS

- Designed to compensate for axial movements along the movable tubing connection with thermobaric changes in the length of the tubing.

DESCRIPTION APPLICATIONS

- The principle of operation is that the compensator is installed in the tubing above the packer.
- The compensator has the possibility of mounting in tubing column in a fully closed, in the middle and fully extended position.
- When the packer is set, the screws are cut off because of the weight of the tubing column and the expansion joint moves to the working position, the body and housing move relative to the rod and compensate for the axial movements of the tubing column relative to the packer

GENERAL INFORMATION:

Product type	US-122-76-350-T150-K3-00
	EXPANSION JOINT
Outer diameter, in	4,8
Diameter of passage channel, in	3
Length in collapsed (extended) position, ft	16,66 (26,37)
Length of movement, ft	9,71
Maximum pressure drop, psi	5000
Maximum operating temperature, °C (°F)	150 (302)
Maximum compressive load, lb	92500
Maximum tensile load, lb	10500
Maximum torque transmitted through the equipment, H*m (lb*ft)	1622
Connecting thread in the upper part (coupling), lower part (nipple)	HKTБ (3 1/2)

** 3000 psi lower Annular

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

KCM

Multiple-use Circulating Valve (rated to 10000 psi)

It is designed for sealed separation and communication between the annulus and the interior of tubing.

DESCRIPTION APPLICATION

» - in emergency situations to kill the well when used jointly with a packer;

- in combination with a packer during formation hydraulic fracturing as well as various well operations in the course of well completion and operation.

ADVANTAGES

» - these valves can be used multiply for one tripping operation;

- proven by years of successful application experience;
- low price;
- high reparability.

DESIGN FEATURES

- the valve is opened by generating annulus pressure that exceeds the pressure inside the valve and the tubing.



SPECIFICATIONS

Type	Code	Minimum inner diameter for the production string, in	Pressure differential required to initially open the valve, psi	Maximum temperature for the operating environment, F	Pressure differential required to open the valve in case the ring breaks up (after the initial opening), psi	Equivalent diameter for the side ports, in	Maximum inner pressure sensed by the valve (inside the tubing), psi	Overall dimensions, in			Weight, lb, not more than	Plain-end NUE connection thread*
								OD, not more than	ID	length, not more than		
KCM-112	AXA 2.505.021	4.67	1080±145 ¹	302	1000±145	0.82	7250	4.41	2.36	21.3	51.8	3 1/2"
KCM-114	AXA 2.505.001	4.67					10000	4.49	2.36	21.0	39.7	
KCM-118	AXA 2.505.001-01	4.90				4.65		2.36	24.2	44.0		
KCM-136	AXA 2.505.002	5.67				5.35		2.99		83.8		
KCM-140	AXA 2.505.002-01	5.79				5.51	2.99	90.4				

* Other threads are available upon request.

¹ Pressure differential required to initially open the valve can be modified upon the customer's request within the range of 870 to 2320 psi.

KCM VALVE SCHEME

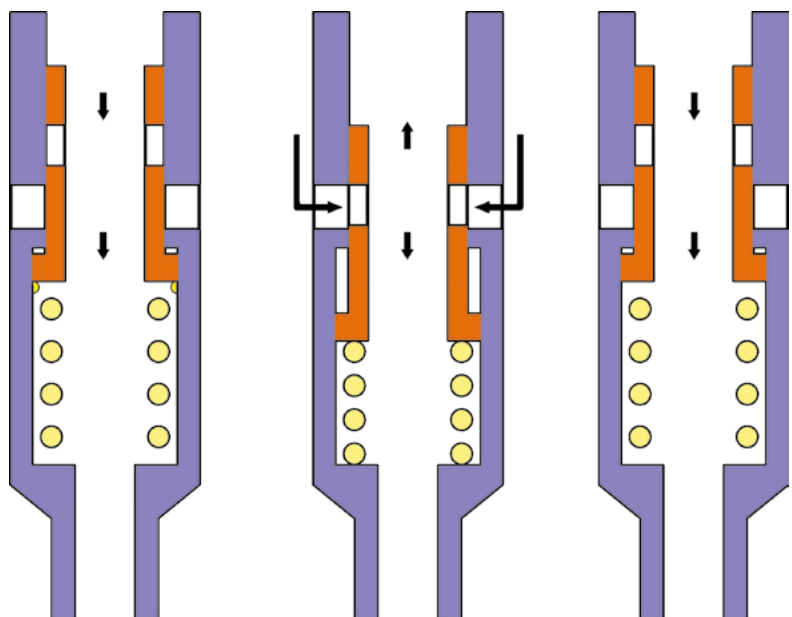
1. THE VALVE IS CLOSED

2. THE VALVE IS OPEN

The valve is open after generating the initial annulus pressure which exceeds the inner tubing pressure. This causes the ring to break, the piston to move downwards and circulating ports to open. To keep the the valve further open a pressure difference of 290±145 psi must be generated.

3. THE VALVE IS CLOSED

The valve is closed after equalizing the pressure between the tubing annulus and interior. The spring brings the piston back to its initial position, the circulating ports are shut off.



KUM

Mechanical Equalizing Valve (rated to 10000 psi)

It is designed to equalize the pressure in the annulus above the packer and the pressure inside the tubing string.

DESCRIPTION APPLICATION

- it is used in combination with a packer during hydraulic fracturing and other well operations after which circulation between the tubing annulus and interior is mechanically generated.

ADVANTAGES



- it provides easy packer releasing after hydraulic fracturing or other well operation;
- the valve has a spline joint that provides torque transmission via tubing string to the equipment installed below it;
- this valve can be used multiply during one round-trip operation;
- it eliminates complications while packer releasing in multi-packer BHAs caused by significant pressure differences above and below a packer.

DESIGN FEATURES

- the valve is mechanically actuated by tensioning the tool upwards;
- the valve actuation force is adjusted by the manufacturer upon the customer's request;
- the valve is closed by unloading the tool.

SPECIFICATIONS

Parameter, unit of measurement	KUM-82	KUM-112	KUM-136
	AXA 4.465.016-01	AXA 4.465.001	AXA 4.465.002
Minimum inner diameter of the production string, in	3.42	4.67	5.67
Force required to actuate the valve when the tool is tensioned upwards, klb	2.2-11 ¹	2.2-13.2 ¹	2.2-13.2 ¹
Maximum inner pressure sensed by the valve in closed position (inside the tubing), psi	10000		
Maximum temperature, F	302		302
Equivalent diameter of side ports, in	0.59		
Dimensions, in:			
- OD, not more than	3 2/9	4 2/5	5 1/3
- ID	1 4/7	2 1/3	3
- length, not more than, ft	2.62	2.43	2.67
Weight, lb (not more than)	44	62	90
NUE connection thread*			
Top (box)	2 3/8"	2 7/8"	3 1/2"
Bottom (nipple)			

* Other threads are available upon request.

¹ Actuation force needed while tensioning the tool upwards can be changed upon the customer's request.



KUM



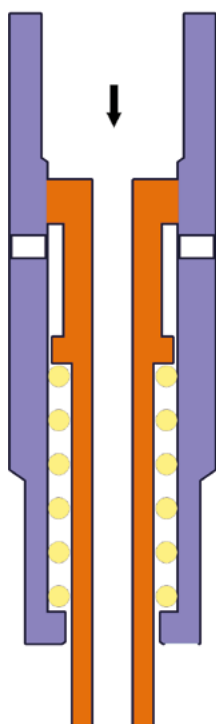
Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



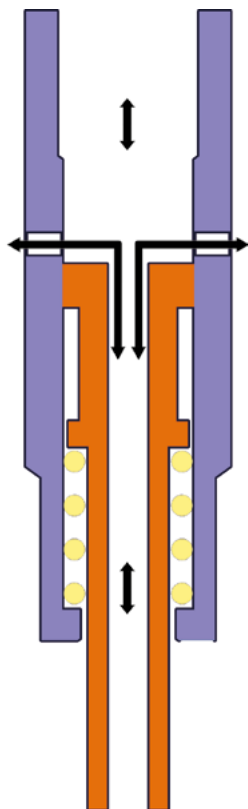
Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

KUM VALVE SCHEME

1. THE VALVE IS CLOSED (Tubing pressure)
The valve is closed by unloading the tool on it.



2. THE VALVE IS OPEN (Annulus pressure)
The valve is open to equalize pressure after the tool is tensioned upwards by the force exceeding the specified (preset) actuation force taking into account the weight of the equipment that has been run in.



PB Safety Sub



This sub is designed to easily disconnect tubing from stuck downhole equipment during well operations.

DESCRIPTION APPLICATION IN PACKER BHAS

- for formation hydraulic fracturing;
- for pumping water in injection wells;
- for oil and gas wells operation;
- for squeeze cementing and other well operations during which downhole equipment can get stuck.

ADVANTAGES



- in case equipment gets stuck disconnection is carried out by right hand rotation of the tubing string.

FEATURES

- connection pressure-tightness is ensured without rubber sealing elements.

SPECIFICATIONS

Parameter, unit of measurement	PB-60	PB-73	PB-89
	AXA 6.340.006	AXA 6.340.001	AXA 6.340.003
Maximum inner pressure , (inside the tubing), psi	10000		
Dimensions, in, not more than:			
- OD	3.07	3.67	4.48
- ID	1.97	2.44	3
- length, ft	1	1	1.11
Weight, lb, not more than	11	15.4	26.45
NUE connection thread*			
Top (box)	2 3/8"	2 7/8"	3 1/2"
Bottom (nipple)			

* Other threads are available upon request.



- Safety subs with different sizes and various connection threads can be manufactured upon customer's request.

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaaleevTN@npf-paker.com

PR Drillable Packer (rated operating pressure up to 5075 psi). Comprised of IUG Setting Tool and PRZ Drillable Cementing Plug

It is designed for sealed separation of the casing string intervals.

DESCRIPTION ADVANTAGES

- simple design;
- IUG setting tool can be used multiply;
- enlarged passage bore;
- IUG design allows to pump fluid for circulation along the string and not into formation;
- easy to transport and install due to small dimensions;
- IUG can be used multiply.

APPLICATION:

- setting and disconnection pressure of 2175...2465 psi;
- for remedial works performed above or below PRZ installation area;
- for two-interval remedial works performed successively in the upward direction;
- for isolation of the lower formation without cementing.

SPECIFICATIONS

Type	Code	Casing		Packer OD, in	Packer ID, in, not less than	Length, in, not more than	Weight, lb, not more than	Maximum temperature, F	Packer components		NUE connection thread*
		OD, in	Nominal Weight, lb/ft						Drillable Plug	Setting Tool	
PR-82	AXA 2.889.603	4"	8.8-10.3	3.23	0,82	8	55,1	302	PRZ-82	IUG-82	2 3/8"
PR-88	AXA 2.889.603-01	4 1/2"	15.0-17.5	3.46			PRZ-88				
PR-92	AXA 2.889.603-02		9.4-13.1	3.62			PRZ-92				
PR-114	AXA 2.889.401	5 1/2"	13.7-20.0	4.49	1,73	9.12	112,4		PRZ-114	IUG-114	2 7/8"
PR-120	AXA 2.889.527	5 3/4"	21.5-24	4,72			121,2		PRZ-120		
		5 1/2"	13.7-15.4								
		5 3/4"	15-21.5								
PR-140	AXA 2.889.527-01	6 5/8"	19.4-27.6	5,51	1,89	9.35	152		PRZ-140	IUG2-132	
PR-148	AXA 2.889.527.01-01	7"	34.8-40.5	5,82			154,3		PRZ-148		
		7"	16.8-31.7								

* Other threads are available upon request.



● NOVELTY

PRZ Drillable cement retainer (bridge plug) (rated operating pressure up to 5075 psi)

It is designed for pressure-tight separation of the casing string intervals.

DESCRIPTION ADVANTAGES:

- it is used as a cementing or a bridge plug;
- easy to install by generating excess pressure within the tubing;
- pressure tightness at the top and at the bottom after installation and retrieval of the setting tool;
- protection against premature setting of the slips;
- small length of the drillable area;
- good drillability of the applied materials;



- average time to drill out PRZ with a three-cone bit is 6.30 hrs.

FEATURES:

- the plug has two valves to prevent cement from overflowing from above and below the PRZ installation area;
- individual design of the slips teeth ensures secure fastening with the casing string and prevents PRZ from rotating while drilling out;
- allows pressure cementing above PRZ.

SPECIFICATIONS:

Type	Code	Casing		Packer OD, in	Packer ID, in, not less than	Maximum temperature, F	Length, in, not more than	Weight, lb, not more than	Setting Tool
		OD, in	Nominal Weight, lb/ft						
PRZ-82	AXA 5.884.129-20	4"	8.8-10.3	3.23	1.49	302	1020	7.7	IUG-82
PRZ-88	AXA 5.884.129-01	4 1/2"	15.0-17.5	3.46				9.7	
PRZ-92	AXA 5.884.129-02		9.4-13.1	3.62				9.7	
PRZ-114	AXA 5.884.022-20	5 1/2"	13.7-20.0	4.49	2.36	302	1102	14.7	IUG-114
		5 3/4"	21.5-24						
PRZ-120	AXA 5.884.022-21	5 1/2"	13.7-15.4	4.72				17.6	
		5 3/4"	15-21.5						
PRZ-140	AXA 5.884.121-20	6 5/8"	19.4-27.6	5.51	2.36	302	1102	22	IUG2-132
		7"	34.8-40.5						
PRZ-148	AXA 5.884.121-21	7"	16.8-31.7	5.82				24.2	

* Other threads are available upon request.



NOVELTY ●

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaaleevTN@npf-paker.com

IUG Hydraulic Setting Tool

It is designed for tripping in and setting of PRZ drillable plug.

DESCRIPTION ADVANTAGES:



- simple design;
- this tool can be used multiply;
- enlarged passage bore;
- IUG design allows to pump fluid for circulation along the string and not into formation.

FEATURES:



- easy disconnection after setting of the cementing drillable plug;
- possibility of emergency disconnection by tensioning.

SPECIFICATIONS:

Type	Code	OD, in	ID, in	Operating setting and disconnection pressure, psi	Length, in, not more than	Weight, lb, not more than	Plain-end NUE connection thread*	Drillable Plug
IUG-82	AXA 5.889.120-20	4"	0,82	2175-2465	8	66	2 3/8"	PRZ-82
IUG-114	AXA 5.889.010-20	4 1/2"	1,73		9.12	127	2 7/8"	PRZ-88
IUG2-132	AXA 5.889.113-20	5 1/2"	1,89		9.35	154		PRZ-92
								PRZ-114
								PRZ-120
								PRZ-140
								PRZ-148

* Other threads are available upon request.

Maximum differential pressure on IUG is 5075 psi.



IUG



HEIDENHAIN

108 Front door open

	X	Y	Z	U	V	W
0 X	-158.514					
Y		+0.000				
Z			-0.500			
R				+62.684		
C					+302.4	
S1					263.9	

100% S-OVR 14:50
4% F-OVR

EQUIPMENT FOR OIL & GAS PRODUCTION





P-YADZH-G

Double acting hydraulic packer (10 000 psi)

These packers are designed for sealed separation of casing string intervals in oil and gas production wells

DESCRIPTION APPLICATIONS

- To provide different technological operations and technologies of production or injection liquid with cycling character of stream course and high differential pressure;
- Can be used as tubing catcher with tensioning after setting without loss of sealing;
- To provide large-volume and multi-set hydraulic fracturing;
- To provide other different technological operations.

ADVANTAGES

- reliable sealing of production string during operations requiring high pressure differential on the packer up to 10K psi;
- easy setting in different depth with different inclination angle, multi-set packer;
- mechanical fixing in set position – possibility of autonomous setting in the well;
- possibility of tubing tensioning after setting without loss of sealing casing intervals.

FEATURES

- Setting pressure of packer adjustable with setting share elements
- After pressure relief packer is staying mechanically set in casing
- Releasing of packer provides by tubing tensioning as mechanical packers.

SPECIFICATIONS

Type	Design Documentation Code	Casing		Maximum differential pressure, psi	Packer ID, in	Weight, lb, not more than	NUE connection thread*	
		OD, in	Nominal Weight,lb/ft				Top (box)	Bottom (nipple)
Packers								
P-YaDZh-G-140-76-700-T1001-K3	AXA 2.839.647	6 5/8'	24-28	10000	3"	291	3 ½"	3 ½"
		7"	38-40					
P-YaDZh-G -145-76-700-T1001-K3	AXA 2.839.647-01	6 5/8'	20-24	10000	3"	315		
		7"	26-38					
P-YaDZh-G -152-76-700-T1001-K3	AXA 2.839.647-02	7"	23-29	10000	3"	350		

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

P-YADZH-G2-KB

Hydraulic paker (pressure drop both above and under packer up to 10 000 psi)

Designed for hermetically separating casing intervals during the operation of oil, gas condensate and gas wells, technological operations

DESCRIPTION APPLICATIONS

- setting method - hydraulically;
- carrying out technological operations and technologies for the extraction or injection of fluid of a cyclic method with variable flow direction and high pressure drops;
- autonomous operation in downhole equipment assemblies;
- work as a pipe holder, with the tension of the tubing string after the packer is set, without violating the tightness of separation of the intervals of casing;
- carrying out large-volume hydraulic fracturing;
- carrying out other technological operations.

ADVANTAGES

- reliable separation of production casing intervals with pressure drops up to 10000 psi;
- easy installation at any depth at any zenith angle;
- mechanical fixation in the working position - the possibility of autonomous installation in the well;
- the possibility of tension of the tubing column after setting of the packer without violating the tightness of separation of the intervals of the production casing;
- possibility of equalization of pressure between annulus and under the packer space;
- manufacturing of corrosion-resistant steel packer is available.

FEATURES

- the pressure adjustment of the packer installation is carried out by the installation of shear elements;
- after removing the installation pressure, the packer remains mechanically installed in the casing;
- the packer is unset and released by tension of the tubing string, analogous to mechanical packers.

SPECIFICATIONS

Type	Design Documenta- tion Code	Casing		Maximum differential pressure, psi	Packer ID, in	Packer OD, in	Length, ft no more than	Weight, lb, not more than	NUE connection thread*	
		OD, in	Nominal Weight,lb/ft						Top (box)	Bottom (nipple)
Packers										
P-YADZH-G2-KB-118-50-700-T1 OO1 -K4	AXA 2.839.778	5 ½"	46-54	10000	1,97	4,64	6,1	187	TMK UP PF 3 1/2	TMK UP PF 3 1/2
		5¾"	77							
P-YADZH-G2-KB-152-62-700-T 1 00'-K4	AXA 2.839.758-01	6 5/8'	77-95	10.000	2,44	5,98	6,07	265		
		7"								

* Other threads are available upon request.

¹ Configuration number.



KOC-V

Landing nipple with shear seat



Using for activating and setting hydraulic packers and for pressure test of injection or production wells

DESCRIPTION APPLICATIONS

- Injection water on injection wells
- Development and operation of oil, gas and injection wells, providing different technological operations

ADVANTAGES

- Possibility of multiple pressurizing by 1 trip using dissolvable balls
- Can be used as re-entry guide with possibility of pressure test hole completion tubing with packer

FEATURES

- Adjustment of actuation pressure is providing by quantity of shear pins
- Possibility of changing shear seat with other flow area by special request

Name of parameters, measurement unit	KOC-V-114-40-X-T200-K3-00
	AXA 2.505.234
Minimum casing ID for using landing nipple, in	4.71"
Maximum temprature, °C	392 (200)
Opening pressure difference, psi	1469-7350
Diameter of the ball to open landing nipple, in	1.75
Overall dimensions, in: 1) OD, not more than 2) flow area diameter with seat 3) flow area diameter after action (without seat) 4) length, not more than	4.488 1.57 3.15 0.62
Weight, lbs, not more than	17
Threads NUE: - top (box);	3 1/2"

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Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

KPE Bypass Valve for Operation with Submersible Pumping Equipment (rated up to 5075 psi)

It is designed to bypass fluid or gas from the annulus to tubing when they are operated with the closed annulus.

DESCRIPTION APPLICATION

- flowing well operation;
- pumping of wells with high gas ratio;
- mixed well operation (start up with a pump and flowing operation after the pump is shut down).

ADVANTAGES

- large passage area across the valves allows the pump unit to operate in its normal mode as well as with a closed annulus;
- allows well operation in the flowing mode with the pump equipment tripped in;
- the valves generate harmonic oscillations of the bottomhole pressure and increase well flow rates;
- in combination with the ESP Unit it allows to operate wells with high gas ratio (up to several thousands of m3/m3) – an engineering calculation is required.

DESIGN FEATURES

- valve has a rotating body with a slot for the submersible electric equipment cable;
- flowing capacity doesn't decrease in any position of its body.

SPECIFICATIONS

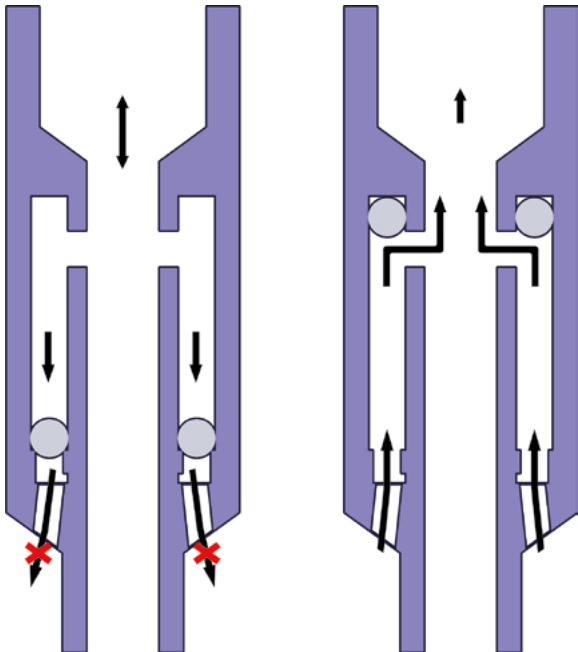
Type	Design Documentation code	Minimum inner diameter for the production string, in	Maximum t for the operating environment, F	Maximum inner pressure sensed by the valve in its the closed position (inside tubing), psi	Pressure differential required to open the valve, MPa (not more than)	Overall dimensions, in			Weight, lb, (not more than)	Equivalent Diameters of the side ports, in	Well inclination angle in the installation point, degree (not more than)	EUE connection thread*		Version
						OD (not more than)	Min. ID	length (not more than)				top (box)	Bottom (nipple)	
KPE-115	AXA 2.505.134-20/02	4,77	302	5075	29	4.52	2.44	13.78	22	0.63	25	2 7/8"		Standard
KPE-115	AXA 2.505.138-21/02													Corrosion and wear-resistant

* Other threads are available upon request.

KPE VALVE SCHEME

1. THE VALVE IS CLOSED
Annulus pressure.

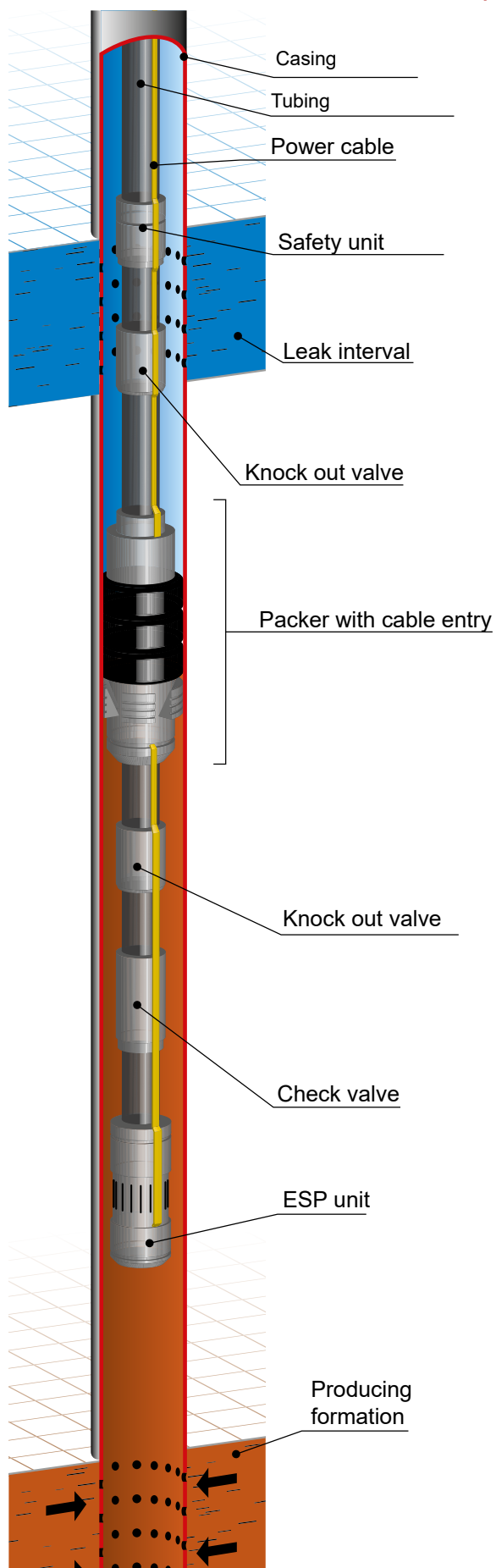
2. THE VALVE IS OPEN
Pressure inside the tubing.



KPE

1PROK-IVE-1

Single-Packer BHA for Wells Operation with Submersible Electric Pump with Simultaneous Isolation of Leak Interval Located Above (rated up to 5000 psi)



It is used for pumping production of oil with simultaneous isolation of a leak interval located above with water inflow in production strings casing OD from 5 1/2" to 7" in.

BHA APPLICATION ALLOWS

- » - to turn the well back on after a non-production or shutdown period due to a high water-cut of the product, to put the well back to the stock of producing wells;
- to develop the well drainage area with the maximum possible output of hydrocarbon reserves;
- to isolate a water inflow or leak interval in a fast, reliable and cost-effective manner;
- to avoid expensive remedial works (cost savings up to 1 mln rub.).

ADVANTAGES

- reliable isolation of the production string leaking section;
- attachments:
 - safety assembly enables to release the packer in case of complications related to its head padding thus enhancing the safety during workover and emergency works;
 - check flush valve provides conditions for wells production with minimum possible complications and maximum oil flow rate. The valve enables to flush the pump cavity in the course of well production or to treat the pump with various chemical agents;
 - makes the assembly of the BHA possible at subzero temperature of the environment.

SPECIFICATIONS

Code	Casing		BHA OD, in	BHA ID, in, not less than	NUE connection thread*	
	OD, in	Nominal Weidht, lb/ft			Top (box)	Bottom (nipple)
1PROK-IVE-1-118-X ¹	5 1/2"	15.5-17.0	4.65	2	2 7/8"	
	5 3/4"	20.0-24.5				
1PROK-IVE-1-122-X ¹	5 3/4"	15.5-20.0	4.8	2.36	3 1/2"	2 7/8"
1PROK-IVE-1-142-X ¹	6 5/8"	20.0-28.0	5.6			
	7"	35.0-38.0				
1PROK-IVE-1-152-X ¹	7"	23.0-29.0	5.98			

* Other threads are available upon request.

¹ Configuration number.

Sample order code for BHA of the first configuration – 1PROK-IVE-1-118-1, where:

- 1PROK** - single-packer BHA by SPF "Paker" Ltd.;
- IVE** - for isolation of the leak interval located above in the production string when the well's operated with submersible electric pumps;
- 1** - one emergency disconnection assembly;
- 118** - **BHA OD;**
- 1** - **the first configuration.**

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaaleevTN@npf-paker.com

HYDROMECHANICAL ESP PACKER **for 9 5/8" casing**



FIELD OF USE

- Completion and production from oil wells by means of ESP or other submersible electrical equipment located below individual sections of the production string require sealing.

ADVANTAGES

- Installation hydraulically, by supplying pressure to the internal cavity.
- Protection against premature activation of the packer during tripping operations.
- The anchor of the packer is protected by the upper sealing element, which reduces the risk of dusting and sticking of the packer in the well.
- Withstands double-sided differential pressure up to 5000 psi.
- It can transmit the ESP cable. Upon customer request, the packer can be manufactured with an additional pipe for chemical injection.
- It allow to use any type of penetrator above and below packer.

FEATURES

- After pressure relief packer is staying mechanically set in casing
- Releasing of packer provides by tubing tensioning as mechanical packers.

GENERAL INFORMATION:

Product type	P-EG-AD3-215-98-350-T150-K3-00	
Product Functionality	ESP Paker	
Product number	AXA 2.839.963-01	
Setting Method	Hydraulic	
Release Method	Straight-Pull-Release	
Casing size and weight range	245 mm (10-12)	9-5/8 40-47 lb/ft
Casing ID	220,5 — 224,5 mm	8, 681 – 8,835 "
Connecting thread: - box (top) - pin (down)	HKT 114	4-1/2" NUE
Connecting thread for penetrator -box (top) -pin (down)	HKTБ 60 HKT 60	EUE 2 3/8" NUE 2 3/8"

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

TECHNICAL CHARACTERISTIC :

Connecting thread for inhibitor lines (2 channels): -box (top) -pin (down)	K 1/2 ГОСТ 6111-52	NPT 1/2"
Seal Element Material	HNBR	
Body Material	Сталь 30ХМА ГОСТ 4543-2016	AISI 4140/4130 (80Ksi, 22 HRC Max.)
Maximum pressure drop over the packer	35 МПа	5000 psi
Maximum pressure drop under the packer	35 МПа	5000 psi
Maximum operating temperature	150°C	300 F / 423 K
Internal main flow channel (operational)	Ø98 мм	Ø3.85 inch
Internal cable channel (penetrator)	Ø51 мм	Ø2,007 inch
Inner channel of inhibitor lines	Ø12 мм	Ø0,47 inch
Pressure drop for setting the packer - initial pressure - final pressure	5** МПа 25 МПа	725** psi 3626 psi
Service	NACE MR0175 / H2S ISO15156 (up to 6%)	
Maximum tensile load (tensile rating)	641 кН	144102 lbs
Release Force	28*** Т	61800*** lbs
Dimensional Data: - Maximum OD - length without top branch pipe (Sub Axa 8.660.254) - length with the top branch pipe (Sub Axa 8.660.254)	Ø215 мм 2221 мм 3633 мм	Ø8.4646 inch 87.45 inch 143.04 inch
Weight (kg)	281 кг	619 lbs

* At the request of the customer, it is possible to manufacture another connecting thread.

** Starting pressure can be increased by installing more shear screws.

***At the request of the customer, it is possible to supply shear rings with lower shear forces to enable the equipment to be adjusted before running into the well (with a decrease in the maximum drop from bottom to top).





P-EGM

P-EGM

Hydromechanical Packer with Cable Entry

This packer is designed for well operation with submersible electrical pumping equipment with leak intervals of the production string above producing formations.

DESCRIPTION APPLICATION

- for well pumping.

ADVANTAGES

- » - when used in an underground BHA with an electrical submersible pump it ensures continuity of the power cable line;
- two additional passages that allow to inject various chemical agents, to bypass gas from the area below the packer;
- it allows to save up to 1 mln rub. on remedial works;
- possibility of installation at subzero temperatures of the surrounding environment.

DESIGN FEATURES

- the packer is installed into the well hydromechanically and comprises:
- a packer setting device used for sealed separation of the casing string intervals;
- a bottom anchor device used to engage with the casing string and prevent the packer from moving downwards;
- cable sealing assembly enabling to control its pressure-tightness after it's installed into the packer prior to tripping it in;
- no axial tubing movements required when setting a packer;
- sealing assembly reliability has been tested by hundreds of introductions of this packer in Russia and CIS countries.

- » - 1 Upon special order the packer is provided with either one or two capillary tubes with the outside diameter and connection dimensions agreed with the customer.

SPECIFICATIONS

Type	Casing		Packer OD, in	Maximum load on the packer during tripping operations, lbf		Packer ID, in (not less than)	Length, in, (not more than)	Maximum temperature, F	Weight, lb (not more than)	NUE connection thread*	
	OD, in	Nominal Weight, lb/ft		Compressive load	Tensile load					Top (box)	Bottom (nipple)
P-EGM-118	5 1/2"	15.5-17.0	4.65	22481	35969	2,36	7.71	302	165	2 3/8"	
	5 3/4"	20.0-24.5							176		
P-EGM-122	5 3/4"	15.5-20.0	4.8						220	2 7/8"	
P-EGM-142	6 5/8"	20.0-28.0	5.6			2.36			242		
P-EGM-152	7"	35.0-38.0									
	7"	23.0-29.0	4.65								

* Other threads are available upon request.

- Maximum differential pressure on the packer is 3625 psi.
- Packer setting load is 6744-17984 lbf.

Upon customer request hydraulic packer for ESP can be manufactured with the penetrator for 7" and 9 5/8" casings

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

P-EMO

Packer with the cable gland of mechanical installation

It is intended for the well operation with the electric submersible pumping equipment with the production casing leak intervals above the productive formations, as well as in the dual production and injection ones.

DESIGNATED AREA:

- for pumping well operation.

ADVANTAGES

- » - If you use the electric submersible pump together with the underground equipment, it ensures the power cable line continuity;
- The presence of two additional channels allows injecting of various kinds of chemicals during the working process, carrying over gas from the below-packer area¹, installing the geophysical devices on the cable in the below-packer area.

CONSTRUCTION FEATURES:

The packer is set in the borehole by mechanical means and consists of:

- packer device for hermetic separation of the intervals of well hole boring casing;
- lower-anchoring device for hooking with the boring casing and preventing packer downward movement;
- the possibility of cable hermetization in the packer without the armor welding (compound injection)
- hermetic seal allowing monitoring the cable integrity after the packer installation and before its trip in hole.

¹ In the case of special order, the packer is equipped with one or two capillary tubes with the outer diameter of 0,39 in with the connection dimensions agreed with the customer.



P-EMO

SPECIFICATIONS

Type	Design Documentation Code	Casing		Packer OD, in	Maximum load on the packer during tripping operations, lbf		Packer ID, in (not less than)	Length, in, not more than	Maximum temperature, F	Weight, lb, not more than	NUE connection thread*				
		OD, in	Nominal Weight, lb./ft		Compressive load	Tensile load					Top (box)	Bottom (nipple)			
P-EMO-118	AXA 2.839.606-20	5 1/2"	13.0-17.0	4,64	56202	44962	1.968	11,3	302	165	2 7/8"				
P-EMO-122	AXA 2.839.606-21	5 3/4"	22.0-24.5	4,80			2.441	9.7		176					
P-EMO-142	AXA 2.839.650	6 5/8"	22.0-28.0	5,51						220					
P-EMO-145	AXA 2.839.650-01	7"	38.0-40.6	5,7						142					
P-EMO-152	AXA 2.839.650-02	7"	32.0-35.0	5,98											

* Other threads are available upon request.

- Maximum differential pressure on the packer is 3625 psi.
- Packer setting load is 11000-18000 lbf.
- The type of the used cable of ESP is agreed with the Customer.

Upon customer request hydraulic packer for ESP can be manufactured with the penetrator for 7" and 9 5/8" casings

RKU

General-Purpose String Disconnecter

It is designed to set and disconnect a tubing string, to provide a movable pressure-tight connection between the tubing string and packer and anchor equipment in the production string as well as to retrieve this equipment.

DESCRIPTION APPLICATION

- recommended for multiple-zone production and multiple-zone injection;
- in injection, oil and gas production cased wells;
- remedial cementing and other technological operations that require disconnection of the tubing string from the downhole equipment;
- operations requiring a compensation for the tubing string axial movements and maintaining the pressure-tightness.

ADVANTAGES

- disconnection assembly can be actuated in three ways:
- after dropping a ball into the tubing and generating pressure inside the tubing;
- without dropping the ball by generating pressure inside the tubing or
- by generating pressure in the annulus;
- movable (up to 85.12 in) pressure-tight connection between the tubing string and packer and anchor equipment;
- this tool can be used multiply;
- using this tool for downhole well operations allows to reduce the workover time and material costs.

DESIGN FEATURES

- sealing assembly;
- spline joint for rotation transmission;
- disconnecting and fishing devices are combined in one RKU assembly.



SPECIFICATIONS

Type	Design Documentation Code	Casing ID in, (not less than)	Travel length, in	Dimensions, in			Load on RKU, lbf (not more than)		Disconnection pressure in the tubing or in the annulus, psi	Maximum temperature, F	Weight, lb (not more than)	NUE connection thread*	
				OD	ID	Length, in compressed position	Compression load	Tensile load				Top (box)	Bottom (nipple)
RKU-118	AXA 4.239.127	5 1/2 5 3/4	59.00	4.64	2.32	85.12	67461	78683	1015-6525 ¹	302	275	3 1/2"	
RKU-140	AXA 4.239.128	6 5/8 7	59.00	5.51	2.32	7	67461	78683	1015-6525 ¹	302	275	3 1/2"	
RKU-150	AXA 4.239.129	7	59.00	5.9	2.32	7	67461	78683	1015-6525 ¹	302	287	3 1/2"	

* Other threads are available upon request.

¹ Disconnection pressure in the tubing or in the annulus depends on the number of the set pins.

Upon customer's request Design Documentation is prepared and other standard sizes are manufactured.

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

MRG

Hydraulic Split Sleeve

It is designed for disconnection of the tubing string in case of complications with tripping the downhole equipment in and out.

DESCRIPTION APPLICATION

- flowing and gaslift well operation;
- well pumping;
- in packer downhole BHAs during well operations or downhole procedures;
- used with P-EGM packer.

ADVANTAGES



- in case of complications it enables to disconnect downhole equipment and tubing string in the MRG installation point;
- reduces the risk of serious complications during well pumping with ESP units, with high scale build-up;
- the sleeve contains a spline joint that provides torque transmission via the tubing string to the equipment installed below.

DESIGN FEATURES

- it has movable cams to connect the case and the rod;
- it has a movable bushing and a ball to disconnect the case and the rod.

SPECIFICATIONS

Parameter, unit of measurement	MRG-93	MRG-108
	AXA 4.239.010.01	AXA 4.239.010.01-01
Casing ID, in (not less than)	4	4.5
Maximum pressure differential, psi	5000	
Diameter of the ball used to open the valve, in	2.16	2.56
Dimensions, in:		
- OD;	3.66	4.25
- ID;	2.08	2.44
- length.	1.59	1.59
Weight, lb, not more than	28.6	39.2
Pressure differential to disconnect the sleeve (after the ball is dropped), psi	362-1380 ¹	
NUE connection thread*		
Top (box)	2 7/8"	3 1/2"
Bottom (nipple)		

* Other threads are available upon request.

¹ Modified by the number of the shear pins.



PRO-YAT-O Mechanical Double Grip Pipe Hanger Packers with the ability of tubing tensioning (rated up to 5075 psi)

These packers are designed for sealed separation of casing string intervals and protection of the casing against the dynamic effect of various well operations.

DESCRIPTION APPLICATION



recommended for multiply repeated well operations associated with generating pressure and fluid pumping with alternating pressure differential within one setting of the packer;

- for separation of formations during multiple-zone production and multiple-zone injection;
- for long-term autonomous (without connection to the tubing) isolation of the production string interval which needs to be separated;
- for installation into injection wells and for other long-term well operations with cyclic pressure differential across the packer.

ADVANTAGES



- packers contain expandable supports to prevent rubber seal elements extrusion into annulus which increases the reliability of sealing and relieves packers unsetting;

- ability to tension tubing up to 264 lb after the packer is seated without breaking of the sealed separation of the production string intervals;
- reliable sealing of the production string for a long-term period as well as during the cyclic fluid supply, is achieved due to a top mechanical anchor provided in the packer design unlike other packers with similar functions that are provided with a top hydraulic anchor;
- easy packer releasing without additional tensile load.

DESIGN FEATURES

- PRO-YAT-O packer is mechanically set into the well by axial tubing movements (no tubing rotation is required) and brought into transit position by tensioning of the string;
- PRO-YAT packer is set into the well by one quarter right hand rotation of the string with set down motion, brought into transit position by tensioning of the string;
- this equipment can be used multiply for one round-trip operation;
- high reparability.



**TOP
CHOICE**

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

SPECIFICATIONS

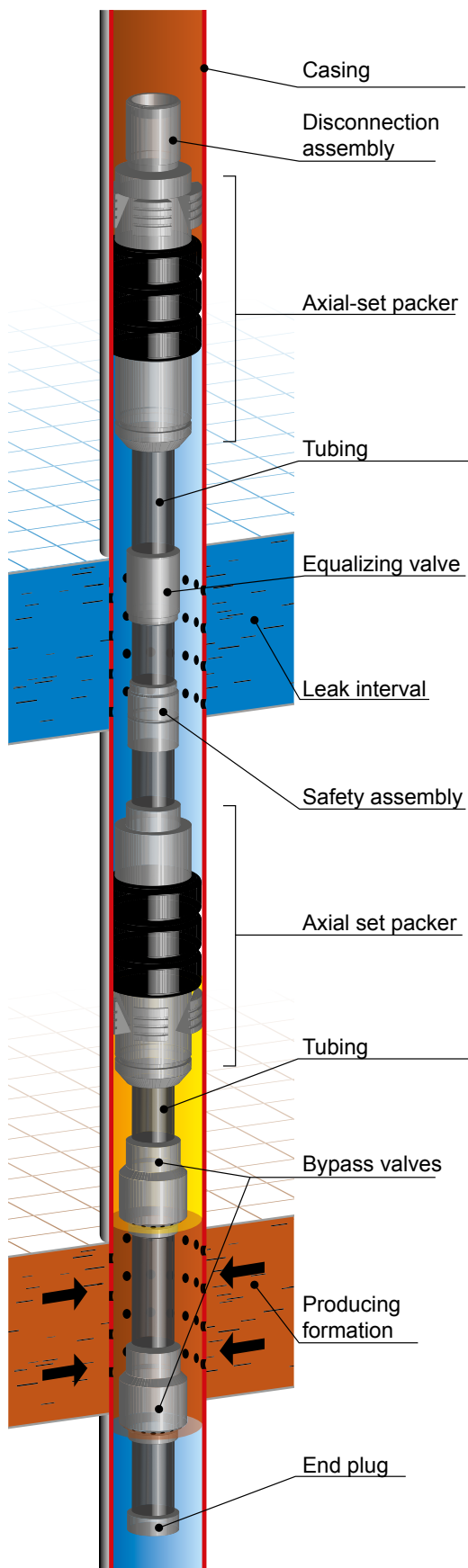
Type	Design Documentation Code	Casing		Packer OD, in	Range of tubing tensioning admissible forces after the packer is seated, lbf (not more than) ¹	Packer ID, in; not less than	Length,ft, not more than	Weight, lb, not more than	Maximum temperature, F	NUE connection thread*	
		OD, in	Nominal Weight, lb./ft							Top (coupling)	Bottom (nipple)
Axial set packers											
PRO-YAT-O-88	AXA 2.839.368	4 1/2"	15.0-17.7	3.46	110	1.33	6.76	127.6	302	2 3/8"	1.900"
PRO-YAT-O-92	AXA 2.839.368-01		11.6-13.5	3.62				138.6			
PRO-YAT-O-114	AXA 2.839.259	5 1/2"	17.0-23.0	4.49	110-284	1.96		198.0		2 7/8"	2 3/8"
PRO-YAT-O-118	AXA 2.839.259-01	5 3/4"	22-24.5	4.65				213.4			
		5 1/2"	15.5-17.0					222.2			
PRO-YAT-O-122	AXA 2.839.259-02	5 3/4"	15.5-20	4.8				286.0			
PRO-YAT-O-136	AXA 2.839.503	6 5/8"	28.0-32.0	5.35			2.44	6.73			
PRO-YAT-O-140	AXA 2.839.320	6 5/8"	24.0-28.0	5.51		275.0					
PRO-YAT-O-142	AXA 2.839.320-01	7"	38.0	5.6		343.2					
		6 5/8"	20.0-24.0			327.8					
PRO-YAT-O-145	AXA 2.839.321	7"	32.0-38.0	5.71							
PRO-YAT-O-152	AXA 2.839.501	7"	20.0-29.0	5.98							
Rotation set packers											
PRO-YAT-114	AXA 2.839.260	5 1/2"	17.0-23.0	4.49	110-284	1.96	6.76	86	302	2 7/8"	2 3/8"
PRO-YAT-118	AXA 2.839.260-01	5 3/4"	22-24.5	4.65				91			
		5 1/2"	15.5-17.0					96			
PRO-YAT-122	AXA 2.839.260-02	5 3/4"	20.0-24.5	4.8				242			
PRO-YAT-140	AXA 2.839.318	6 5/8"	28.0-32.0	5.51		2.44	6.76	248.6			
PRO-YAT-142	AXA 2.839.318-01	7"	38.0	5.6				255.2			
		6 5/8"	20.0-24.0								
PRO-YAT-145		6 5/8"	20.0	5.71							
PRO-YAT-152		7"	32.0-38.0	5.98							
PRO-YAT-212		7"	20.0-29.0	5.98							

* Other threads are available upon request.

¹ The value of the admissible tensioning force of the string after setting of the packer is specified within the range of 110-284 lbf upon the customer's request.

- **Packer setting load is 26977-35968 lbf.**
- **Upon special request packer setting device can be equipped with two rubber sealing elements.**
- **Maximum axial setting force generated by the tubing weight is 56200 lbf.**
- **Upon Customer's request packers can be manufactured with other sizes.**

2PROK-SIAG-1 Stand-alone Two-Packer BHA for Selective Isolation with Hydraulic Disconnection from the Tubing (rated up to 5075 psi)



DESCRIPTION BHA APPLICATION ALLOWS

- » - to isolate the leak interval by a well servicing team with minimum costs;
- » - to turn the well back on after a non-production or shutdown period due to a high water-cut of the product, to put the well back to the stock of producing wells;
- to develop the well drainage area with the maximum possible output of hydrocarbon reserves;
- to decrease the water-cut percentage of the well fluid down to 10-30% and enhance oil production by water-repellent treatment of the bottom-hole formation area (an engineering calculation is needed);
- to avoid expensive remedial works.

ADVANTAGES

- after BHA is set the tubing is disconnected hydraulically without tubing string rotation;
- reliable isolation of the production string leak interval;
- workover activities to replace downhole pumping equipment are carried out without plugging and decreasing the reservoir properties or the formation bottom-hole area;
- attachments: bypass valves create conditions for well production with maximum oil output, equalizing valve and safety assembly enhance the safety during workover and emergency activities.

SPECIFICATIONS

Code	Casing		BHA OD, in	BHA ID, in (not less than)	Maximum temperature, F	NUE connection thread*	
	OD, in	Nominal Weight, lb./ft				Top (box)	Bottom (nipple)
2PROK-SIAG-1-118-X ¹	5 1/2"	15.5-17.0	4.65	1.96	302	3 1/2"	2 7/8"
	5 3/4"	20.0-24.5					
2PROK-SIAG-1-122-X ¹	5 3/4"	15.5-20	4.8				
2PROK-SIAG-1-140-X ¹	6 5/8"	28.0-32.0	5.51	2.32			
	6 5/8"	24.0-28.0					
	6 5/8"	20.0	5.71				
2PROK-SIAG-1-145-X ¹	7"	32.0-38.0					

* Other threads are available upon request.

¹ Configuration number.

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov

Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev

Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

IPM Mechanical ON/OFF tool

It is designed for the tubing string connection and disconnection with the stand-alone packer and anchor equipment in the production string.

DESCRIPTION APPLICATION

- for oil and gas wells operation;
- for remedial works and other well workover operations.

ADVANTAGES

- » - high reliability of the setting tool sealing assembly enables to carry out annulus pressure testing of a packer and subsequent disconnection from it after running the tool together with the packer into the well and subsequent setting of the packer;
- this tool can be used multiply;
- using this tool allows to reduce material costs significantly during remedial works and other well workover operations.

DESIGN FEATURES

- the complete set of IPM consists of a tool for setting a stand-alone packer and subsequent disconnection from the tubing, a tool for connection between the tubing and a stand-alone packer and anchor equipment and its further release and retrieval from the well;
- after a packer is set into the well the tool and the tubing are disconnected from it by a 5 to 8 turn right-hand rotation of the tubing with simultaneous unloading of the tool from the weight of the run-in tubing;
- tool attachment: the top part (run-in) and the bottom part (left in the well) are attached by application of an axial force (without rotation) within the range of 13488 to 20232 lbf generated by the weight of the tubing.



SPECIFICATIONS

Type	Design Documentation Code	Casing ID, in		Maximum inner and outer pressure sensed by the tool, psi	Maximum axial load transferred to the packer through the tool, lbf (not more than)	OD, in (not more than)	ID, in	Length, in (not more than)	Weight, lb (not more than)	NUE connection thread*	
		Min	Max							Top (box)	Bottom (nipple)
IPM-114	AXA 4.241.001	4.77	4.96	5075	44000	4.49	1.96	26.96	77	2 7/8"	
IPM-118	AXA 4.241.001-01	4.90	5.19			4.65					
IPM-140	AXA 2.839.258	5.74	5.98			5 1/2"					
						2.44		26.57	110	3 1/2"	

* Other threads are available upon request.

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyarov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyarovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com

IPG

Hydraulic ON/OFF tool

It is designed for installation, disconnection and connection of the tubing string with the stand-alone packer and anchor equipment in the production string.

DESCRIPTION APPLICATION IN PACKER BHA

- for oil and gas wells operation and water injection;
- for remedial works, multi-packer BHAs installation and other well workover operations.

ADVANTAGES

- » - high reliability of the setting tool's sealing assembly enables to carry out all the required operations at maximum pressure differential across the packer;
- pressure-tight connection of the fishing tool after its attachment allows to carry out well operations at a pressure up to 3625 psi or continue the well operation;
- using this tool saves up considerable material costs in the course of remedial works, multi-packer BHA's installation and other well workover operations;
- no rotation of the tubing needed for disconnection.

DESIGN FEATURES

- IPG set consists of a tool for setting a packer, disconnection from the latter for autonomous operation and IL fishing tool for a pressure-tight connection with IPG tool body and subsequent packer releasing;
- IPG is hydraulically disconnected after the ball is dropped, and IL fishing tool is connected by mechanical unloading of the tubing weight not less than 11240 lbf.



SPECIFICATIONS

Type	Design Documentation Code	Casing		Tool releasing pressure, psi	Maximum pressure differential, psi		Maximum compressive load, lbf	Maximum tensile load, kN		Dimensions, in				Weight, lb		NUE connection thread*	
		OD, in	Nominal Weight, lb./ft.		Setting tool	Fishing tool		Setting tool	Fishing tool	OD, in	ID, in		length	Setting tool	Fishing tool	Top (box)	Bottom (nipple)
											Setting tool	Fishing tool					
IPG-118	AXA 4.241.007	5 1/2"	15.5-17.0	536-3190 ¹	7250	3625	77160	44090	77160	4.64	2.28	2.08	23.62	57	39	3 1/2"	2 7/8"
		5 3/4"	20.0-24.5							5.35			24.05	79	46	3 1/2"	
IPG-136	AXA 4.241.014	6 5/8"	28.0-32.0							7			24.01	79	46		
IPG-152	AXA 4.241.019	7"	20.0-26.0														

* Other threads are available upon request.

¹ Adjusted by the number of shear pins.



CNC turning machine

PACKERS FOR INJECTION WELLS



PRO-YADZH-O, PRO-YADZH Mechanical Double-Grip Packers (rated up to 5075 psi)

These packers are designed for long-term sealed separation of injection well casing string intervals and protection of the casing against the dynamic effect of the injected water.

DESCRIPTION APPLICATION



recommended for installation in injection and production strings;

- for long-term stand-alone (without connection to the tubing) isolation of a production string interval which needs to be separated;
- for use in multiple-packer BHAs;

ADVANTAGES



- packers contain expandable supports to prevent rubber seal elements extrusion into annulus which increases the reliability of sealing and relieves packers unsetting;
- reliable long-term sealing of the production string as well as during the cyclic delivery of the injected fluid is ensured by the top mechanical anchor provided in the packer design unlike similar packers with the top hydraulic anchor;
- easy to release without additional tensile load;
- use of this packer allows to reduce as much as possible the non-production time and extend the well overhaul period as well as save materials, time and energy resources;
- packer design has been verified by many years of its successful application.

DESIGN FEATURES

- PRO-YADZH-O packer is mechanically set into the well by axial movements of the string (no tubing rotation required), it's brought into its transit position by tensioning the string;
- PRO-YADZH packer is set into the well by ¼ right-hand rotation of the string with simultaneous downward movement and it is brought into its transit position by tensioning of the string;
- this equipment can be used multiply during one tripping operation;
- simple design and easy maintenance.



If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaleev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivaleevTN@npf-paker.com

SPECIFICATIONS

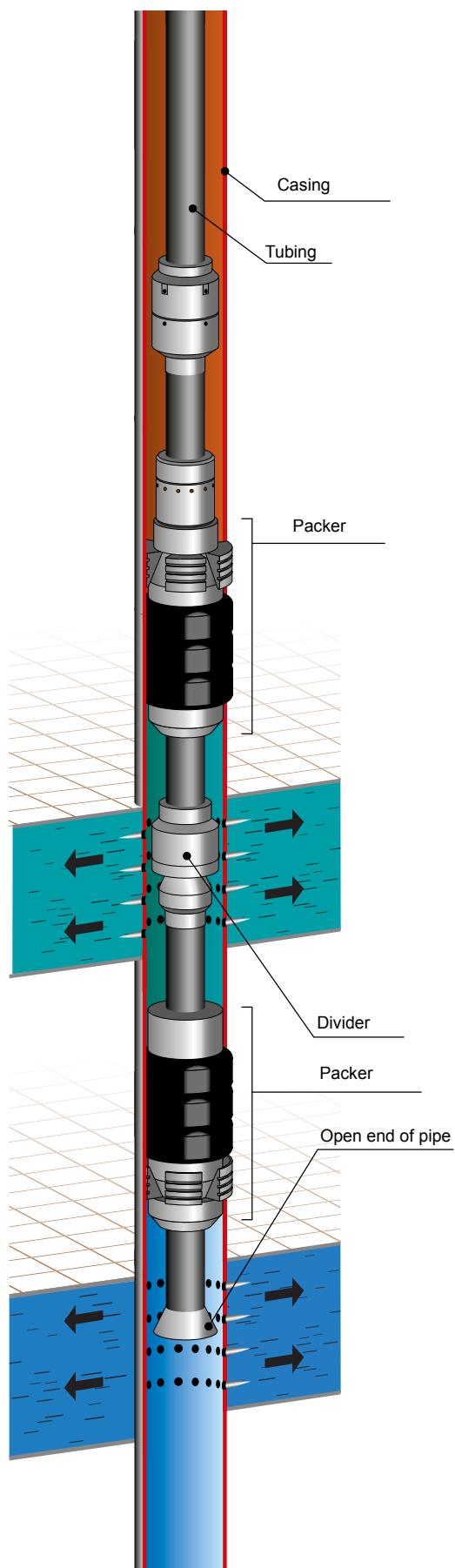
Type	Design Documentation Code ²	Casing		Packer OD, in	Packer ID, in, not less than	Length, in (not more than)	Weight, lb (not more than)	Maximum temperature, F	NUE connection thread*		
		OD, in	Nominal Weight, lb./ft						Top (box)	Bottom (nipple)	
Axial set packers											
PRO-YADZH-O-114	AXA 2.839.193	5 1/2" 5 3/4"	17.0-23.0 22-24.5	4 1/2"	1.96	94.48	198	302	2 7/8"	2 3/8"	
PRO-YADZH-O-118	AXA 2.839.193-01	5 1/2" 5 3/4"	15.5-17.0 20.0-24.5	4.65			204				
PRO-YADZH-O-122	AXA 2.839.193-03	5 3/4"	15.5-20	4.8			211				
PRO-YADZH-O-140	AXA 2.839.214	6 5/8" 7"	24.0-28.0 38.0	5 1/2"	2.44	96.81	220		3 1/2"	2 7/8"	
PRO-YADZH-O-142	AXA 2.839.214-01	6 5/8" 6 5/8"	20.0-24.0 20.0	5.6			242				
PRO-YADZH-O-145	AXA 2.839.215	7" 7"	32.0-38.0 20.0-29.0	5.71			97.9				264
PRO-YADZH-O-152	AXA 2.839.373	6 5/8"	24.0-28.0	5.98	396						
PRO-YADZH-O-182	AXA 2.839.350	8 5/8"	28.0-49.0	7.17	3.15	108.66					605
PRO-YADZH-O-204	¹	9 5/8"	36.0-58.4	8.03	3.54	116.14	660				4 1/2"
Rotation set packers											
PRO-YADZH-114	AXA 2.839.190	5 1/2" 5 3/4"	17.0-23.0 22-24.5	4 1/2"	1.96	79.13	165		302	2 7/8"	2 3/8"
PRO-YADZH-118	AXA 2.839.190-01	5 1/2" 5 3/4"	15.5-17.0 20.0-24.5	4.65			176				
PRO-YADZH-120	AXA 2.839.190-02	5 3/4"	15.5-20	4.8			182				
PRO-YADZH-122	AXA 2.839.190-03	6 5/8" 7"	24.0-28.0 38.0	5 1/2"	2.44	81.96	187	3 1/2"		2 7/8"	
PRO-YADZH-140	AXA 2.839.217	6 5/8"	20.0-24.0	5.6			209				
PRO-YADZH-142	AXA 2.839.217-01	6 5/8" 7"	20.0 32.0-38.0	5.71			215				
PRO-YADZH-145	AXA 2.839.249	7" 6 5/8"	20.0-29.0 24.0-28.0	5.98	85	220					
PRO-YADZH-152	¹	8 5/8"	28.0-49.0	7.17		90.55	352				
PRO-YADZH-182	¹	9 5/8"	36.0-58.4	8.03		3.15	84.64				550
PRO-YADZH-204	¹	5 1/2"	17.0-23.0	4 1/2"	3.54	102.36	616	4 1/2"			

* Other threads are available upon request.

¹ Design documentation is developed and prepared upon customer's request.

- **Setting load is 26997-35968 lbf.**
- **Upon Customer's request packers can be manufactured with other sizes.**

Two-packer system for dual injection (rated up to 5075 psi) 2PROK-ORZ



It is used for maintenance of reservoir pressure during the development of oil fields with the dual water injection to several production intervals for the production casings with the nominal outer diameter from 5 1/2" to 7" in.

THE SYSTEM USAGE ALLOWS

- carrying out the water injection to several production intervals via one borehole;
- significantly reducing the capital expenditure and operating costs during the construction and operation of waterflooding patterns in oilfields;
- **installing and removing the systems during one tripping.**

ADVANTAGES

- dual injection via one OWT elevator;
- ➡ **change of the outlets by the geophysical elevator during one tripping;**
- implementation of the integrated researches - general researches as well as of each reservoir separately;
- geophysical researches of the injectivity profile of the lower reservoir with the outlet from OWT;
- measurements of injection flow and pressure with the help of standart geophysical equipment;
- ➡ **there is no need to use the downhole systems and wireline technique;**
- the divider installation can be implemented with its dumping into the casing of OWT.**

SPECIFICATIONS

Code	Casing		BHA OD, in	BHA ID, in (not less than)	Maximum temperature, F	NUE connection thread*	
	OD, in	Nominal Weight, lb./ft				Top (box)	Bottom (nipple)
2PROK-ORZ-1-118-X ¹	5 1/2"	15.5-17.0	4.65	2.32	302	2 7/8"	2 7/8"
	5 3/4"	20.0-24.5					
2PROK-ORZ-1-122-X ¹	5 3/4"	15.5-20	4.8				
2PROK-ORZ-1-140-X ¹	6 5/8"	28.0-32.0	5.51				
	6 5/8"	20.0-24.0	5.59				
2PROK-ORZ-1-142-X ¹	7"	35.0-38.0					
	6 5/8"	20.0	5,71				
2PROK-ORZ-1-145-X ¹	7"	23.0-35.0					

* Other threads are available upon request.

¹ Configuration number.

If you have any questions regarding equipment purchase, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com



Advertising column of SPF Paker

ABOUT COMPANY



DEAR PARTNERS!

Experience does not only come with time, but it is also a mutually beneficial thing. SPF Paker not only adopts the experience of the world's enterprises, but also shares it with all the representatives of business organizations. We hold us out as an open platform for experience exchange in the issues concerning the formation of the enterprise corporate culture.

For its development, you need new ideas, insights, tips. Therefore, we try to build partnerships with all our partners and look forward to see you at our enterprise, in order to share experiences, successes and failures and to move forward together. We wish the development of the enterprises all over the world, and we hope each of us can make this world a little bit kinder and warmer.

COMPANY HISTORY!

April 14, 1992

The foundation of the Limited Liability Company, SPF Paker.

2005

Marat Mirsatovich Nagumanov headed SPF Paker LLC.

2007

SPF Paker LLC was certified for the compliance with the quality management system requirements according to the standard DIN EN ISO 9001:2000, TUV CERT (Germany).

2008

The first service center was opened in Nizhnevartovsk, the Tyumen region, KhMAD-Yugra.

2009

SPF Paker started the implementation of the subsystems of "Lean production": Improvement/5S, General productive equipment maintenance (TPM), Lean office.

2010

The service centers and offices were opened: in Nyagan of the Tyumen region KhMAD-Yugra, in Muravlenko of the Tyumen region YNAO, in Leninogorsk of the Republic of Tatarstan.

The quality management system of LLC SPF Paker passed the recertification in TUV Thuringen e.V. (Germany) for the compliance with the standard requirements of DIN EN ISO 9001:2008.

2012 г.

SPF Paker LLC was awarded with the prize of the President of the Republic of Bashkortostan for the first place in the field of product quality (goods and services) for 2011.

The government of the Republic of Tatarstan rewarded SPF Paker LLC with the diploma for the achievement of the significant results in the field of quality in 2012.

The company was acknowledged with the diploma of the laureate of rating of Russian high-tech fast-developing companies "TehUspeh", being in the top 30 of the best companies.



Founder of LLC SPF Paker
NAGUMANOV
Mirsat Mirsalimovich



The award ceremony of the President Award of the Republic of Bashkortostan in the sphere of quality goods and services, Ufa, 2012

ABOUT COMPANY

2013

SPF Paker LLC was endowed with the diploma of Laureate of rating of Russian high-tech fast-developing companies "TehUspeh", being in the top 50 of the best companies (the diploma of the Ministry of Economic Development of the Russian Federation).

The newspaper "Respublika Bashkortostan" awarded the director of SPF Paker LLC Nagumanov M.M. with the title "Man of the Year", 2013 for the idea of creation of the state system of health preservation of workers.

The director of SPF Paker LLC Nagumanov M.M. was graced with the Diploma of "Russian Quality Leader" within the competition "Russian Quality Leader".

SPF Paker LLC was awarded with the title of Laureate of the award competition of the Government of the Republic of Tatarstan for the quality in 2013.

2014 г.

SPF Paker LLC has been prized with the award of the Government of the Russian Federation in 2013 in the sphere of quality for the achievement of the significant results in sphere of quality of products and services and the implementation of highly effective methods of quality management.

The certification procedure of quality management system of SPF Paker LLC for compliance with the requirements of the American Petroleum Institute for the specification API Spec Q1 has been finished.

It has received the Certificate API Spec Q1, valid from June 26, 2017 to December 21, 2020.

As a part of this certification, the evaluation of the quality management system of SPF Paker LLC has been implemented for compliance with the requirements of ISO 9001: 2008 and, accordingly, the certification body (APIQR) has issued the certificate.

2015 г.

SPF Paker was included into top-30 largest Russian fast growing hi-tech companies of the 4th national rating «TechUp-2015».

On 14 February 2015, SPF Paker was visited by the Head of the Republic of Bashkortostan, R.Z. Khamitov. Mr. Khamitov and the officials accompanying him visited most of production and auxiliary facilities.

2016 г.

On 13 January 2016, official ceremony for awarding the IV volume of the Book of Charity Providers and Letters of Gratitude of the Republican Fund «Vozrozhdenie» participated by M.M. Nagumanov took place.

By Resolution of Economic Council of CIS of 18 March 2016, SPF Paker was awarded with CIS 2015 Prize for the achievements in the sphere of quality of products and services in the nomination «Production of industrial products with staff from 251 to 3 000 people.»

2017 г.

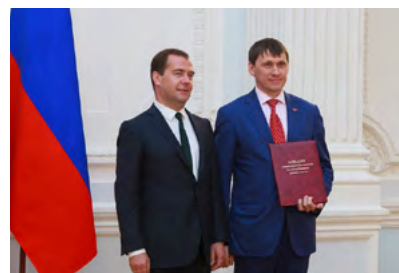
Pursuant to the instruction from the President of the Republic of Tatarstan, Chairman of the Board of Directors of PJSC "Tatneft" R.N. Minnikhanov in order to provide employment for former staff members of CJSC TGC "Urussinskaya GRES", a joint venture of PJSC "Tatneft" and SPF "Paker" was set up – Experimental Machine-Building Plant "TAPART" (OEMZ «TAPART»).



21st World Petroleum Congress, Moscow, 2014



During the award ceremony of the Government of the Republic of Tatarstan for the quality, 2013



During the award ceremony of the Government of the Russian Federation in 2013 in the sphere of quality



International exhibition ADIPEC 2019 in Abu Dhabi

2018

Packer updated the certificate of registration in the Russian Calibration System.

2019 г.

SPF «Paker» was awarded with gratitude for the help in organizing the International Youth Conference «Oil and Gas - 2019».

2020 г.

In 2020, for production success and contribution to the development of the republic, Marat Mirsatovich was awarded the Order of Salavat Yulaev. The award was presented by the Head of the Republic of Bashkortostan Radiy Khabirov.

2021 г.

Another reason to strengthen and further develop the fruitful partnership between Packer and Kazakhstani consumers was the 27th International Oil and Gas Exhibition - KIOGE-2021, which took place in the first ten days of October 2021 in NurSultan, the capital of Kazakhstan.

SPF «Packer» became the winner of the first republican business award of the Republic of Bashkortostan «Time of the First» in the nomination «Company with the most favorable working conditions»

2022 г.

In 2022, the specialists of SPF «Paker» took part in the 24th International Exhibition «Oil and Gas of Uzbekistan - Oil&Gas Uzbekistan - 2022». It took place in Tashkent and brought together more than 120 companies and brands from 15 countries, including Russia, Italy and Germany.

The staff of SPF Packer was awarded the gratitude of the head of Bashkortostan Radiy Khabirov for his contribution to the development of an inclusive society and the creation of modern conditions for the employment of people with disabilities.

SPF «Packer» - the winner of the «Exporter of the Year» contest of the Republic of Bashkortostan.



Marat Mirsatovich was awarded the Order of Salavat Yulaev, for production success and contribution to the development of the republic



Business award of the Republic of Bashkortostan «Time of the First» in the nomination «Company with the most favorable working conditions»



24th International Exhibition «Oil and Gas of Uzbekistan - Oil&Gas Uzbekistan - 2022»

Production characteristics

SPF Paker LLC provides a complete production cycle from raw stock cutting to control operation, including:

- turning and milling, heat treatment;
- marking;
- assembly;
- testing of finished products;
- packing and shipment to the customer.



All-Russian award in the field of international cooperation and export



Certificate of Quality Management System for ISO



SPF «Packer» - the winner of the «Exporter of the Year» contest of the Republic of Bashkortostan in 2022



MORI SEIKI
THE MACHINE TOOL COMPANY

CNC machines shop



CNC machine



Threads calibration

PRODUCTION CHARACTERISTICS

Turning machining centers with CNC which allow turning, drilling and milling of blanks with maximum diameter of 420 mm, 650 mm length and blanks with diameter of up to 160 mm, length up to 2000 mm in a back rest, accuracy of machining is up to 7 quality class. Axis motion: X is 210 mm; Y is 50 mm; Z is 2040 mm;

Vertical milling machining 3-axis CNC center with a turn table (4th axis), which allow to do 3-D machining of prismatic blanks as well as cylindrical blanks with length of up to 1500 mm and diameter of up to 400 mm by using an angle turn table, back rest of back center, accuracy of machining is up to 7 quality class.

Table dimensions: 1750x770mm. Axis motion: X is 1600 mm; Y is 810 mm; Z is 630 mm;

The fleet of all-purpose turning, milling, drilling machines; equipment for hydraulic pressure testing up to 700 kg/cm² (by oil); band sawing equipment (maximum diameter of cut circle is 320 mm) and others.

Machine fleet and equipment are constantly renewed to meet the demands of our clients

Hydraulic anchor body



In 2008-2011 SPF Paker LLC opened 5 service centers and representation offices in the regions of Russian Federation.

Highly qualified specialists work in these service centers which are equipped with modern equipment thus allowing to provide the following range of services:

- Selection and rental of packer assemblies manufactured by SPF Paker LLC for Hydraulic Fracturing, Formation Pressure Maintenance, operation, intensification and workover of oil and gas wells;
- Engineering and technological services with packer equipment (transportation of equipment to the facility, erection, setting and releasing), selection of equipment with development of efficient methods for its use, as applied to conditions of customer with application of our own techniques;
- Development and manufacture of non-standard packer and other equipment according to the requirements of the customer;
- Repair of the whole list of packer equipment manufactured by SPF Paker LLC.

SPF Paker sales its products to Russian Federation companies and to the CIS countries (Kazakhstan, Belorussia, Ukraine, Azerbaijan, Turkmenistan, Uzbekistan).

Since 2010 NPF Paker started to enter the world markets. In the period of 2010-2018 employees of SPF Paker visited and attended such world exhibitions as: PETROTECH-2010, OGAV-2011, CIPPE-2012, GPS-2011, GPS-2013, OTC-2011, OTC-2013, OTC-2014, ADIPEC 2012–2018 business trips to Algeria and visits to national oil company SONATRAC in 2012-2013. In the mentioned period the products were shipped to Serbia, Oman and Cuba.



Service centre



Transport for service operations



Service job on the well



Quality control



Work operation

Marking of the tools



Due to increase of our production capacities and diversification SPF Paker offers manufacture of metal items according to the customer's drawings.

PRODUCT QUALITY IS ENSURED BY:

full product cycle coverage: from designing to manufacture of finished products, thanks to application of modern automation systems for design and process documentation such as SolidWork, SprutCAM, SWR-PDM;

Manufacture of parts in machining centers by world machine-building leaders like Mori Seiki (Japan), Sigma (Italy), FMB (Italy), DANOBAT (Spain);

Work of highly qualified personnel and CNC machine operators trained in Japan and Italy on the territory of machine-building leaders Mori Seiki and Sigma;

Functioning quality management system, certified by TÜV Thüringen e.V. for compliance with the requirements of DIN EN ISO 9001:2008.

In June 2014 NPF Paker achieved the QMS certificate of API Q1 Standard (American Petroleum Institute).

NPF "Paker" aims at long-term and mutually beneficial cooperation with its partners.



DO NOT STEP BACK BEFORE THE LEADERS

In the SPF Paker the ceremony of guest reception is perfected to automatism: delivery of protective headpieces at the entrance control post (it is forbidden to be at the territory of the factory with no helmet), safety rules introduction, excursions across the workshops and engineering departments, which are conducted like in the Hermitage. Everything is done accurately like clockwork. Receiving delegations almost every day, it seems that hosts of the enterprise have extensive experience in that. And the guests who get their own framed photo with the caption "We are partners!" on it at the end of excursion, leave welcoming "Paker" amazed. As there is no such other enterprise, perhaps, even on a scale of the country.

THERE WILL NOT BE THE SECOND STEP WITHOUT THE FIRST ONE

A little bit of history for beginning. On 14th of April SPF Paker celebrated its 19th anniversary. Then, back in 1992 when science funding stopped at once and research institutes employees with academic degrees had to be sellers, the father of the current head of the plant Mirsat Nagumanov, PhD. and eminent inventor of BashSSR, took a risk and organized his own production in Oktyabrsky city. He started with a small design department, dealing with development of equipment to repair oil and gas wells. In 1996 he rented areas where "Paker" is located now. In several years he managed to redeem them, and then he enlarged them by attaching production premises of the bankrupted factory. Today, SPF Paker LLC, being the family business of the Nagumanovs, is known as one of leaders in designing and production of packer-and-anchor equipment for oil and gas production. Among its consumers there are over 250 Russian oil and gas producers, oil-well experts of Belarus, Ukraine, Kazakhstan, Turkmenistan. The enterprise is developing so fast that the foremost American companies many times offered Marat Nagumanov, its current head, to sell the company. "We are not interested in that," Marat Mirsatovich shakes his head. "Foreign companies which at present have bought "half of Russia", tomorrow will dictate us how to live for our money. And who will then restore the country? That is why we are ready to develop partnership, but we will run our business by ourselves".

The 1st of May 2009 became the beginning of a new era for SPF Paker LLC. Since that day the factory

proceeded to implementation of the "Lean Production" principles, managing for a short period of time to greatly advance in the chosen way. Introducing all the people concerned with first results of project implementation, Marat Nagumanov represents his enterprise in the following way:

- The company "Paker" is the best machine-building company in Russia. The company "Paker" will be one of the best self-training and self-developing companies in the world because the best personnel and self-training and self-developing director work here.

And after a short pause he adds:

- So far it corresponds to the reality by 0.1 percent (in terms of self-training and self-development) – we're doing our first steps to get the access to the world level. But without the first step all the rest are impossible.

THINK IN A NEW WAY

What is "Lean Production"? Originally, the idea belonged to the Japanese corporation Toyota and the point is in the utmost optimization of the production system by detecting and eliminating losses at each area. Starting travelling across the world, the term has been creatively was being creatively rethought, acquiring new meaning, and gradually turning into a certain philosophy, system of values, in which achieving maximum efficiency of labour comes first. And which means to use the company decides in its own way. There are no stereotypes as there are no two identical enterprises.

- Two main principles of "lean production" are to reduce losses and respect people – Yuriy Chinchik, manager of quality service, voices his position. – Reducing losses of time, raw materials, material resources, energy and efforts of employees, we achieve increase in productivity, cost improvement per item, and, respectively, increase in its competitiveness at the market. But it is impossible to realize lean production unless each member of the team is involved. That is why the super-idea of the project can



CNC machines



CNC machines shop

be called “readjustment” of people minds who should not just work but also think in a new way, clearly seeing the relation between the enterprise success and their own well-being.

At the first stage of “Lean Production” system implementation, the personnel were trained. Management consultants, invited from Moscow, Vladimir Rastimeshin and Tatyana Kupriyanova (authors of “Orderliness. A way to create quality work place”) conducted five seminars each lasting for three days, explaining to the department managers, lead specialists and employees what the essence of innovation is and how it is necessary and useful for them personally. “I don’t know what management consultant can teach me, a turner with twenty years of experience”, - one of workers frankly said spending three days away from his machine. “It turns out that we have so many reserves to increase labour productivity, but we’re not using them!” – he exclaimed upon completion of the seminar and, without waiting for an official order, implemented the first steps of the “Orderliness/5S” at his work place: he took away all unnecessary things, divided the space in areas, rationally placed tools. Thus, workplaces of a turner, a miller, a CNC operator, arranged in a similar manner, appeared at the enterprise. At these workplaces every little thing is at hand. 1500 unused tools and appliances, detected during implementation of the system, were returned back to the warehouse. Another, more important component of the project is the “Lean office” system. To implement the principle of “Lean Production” in office is a more difficult issue than in a workshop, but it is here where the great amount of losses are. It is impossible to count how many orders the enterprise loses, if it does not respond to a customer’s request, without proposing a convenient scheme of cooperation, exceeding the allotted time for contract consideration. For timely decision of current problems and

to simplify the office processes within the framework of the system, small groups were created. They combine, depending on a set goal, employees of various departments– process engineers, designers, marketing experts, and economists. The approach to office arrangement also changed. Engineers are gradually transferred from small rooms isolated from each other to common rooms, equipped as per the western offices model. As a result, work performance is remarkably increasing. All this success of the “cutting down” would be impossible without continuous work of the whole personnel and consulting support of the mentioned Vladimir Rastimeshin and Tatyana Kupriyanova.

PUT DIAMONDS ON THE TABLE!

Oktyabrsky “Paker” got its own “Diamond Fund” long before starting the “Lean Production” project. It refers to the “Diamond” system – that is what they call a faulty part presented by the employee who has made it. No punishment threatens him for that.

- The main thing for the factory is that the faulty part, if any, would not get to consumer, - Yuriy Chinchik explains. – Controllers cannot notice all fault and we strive for an employee not to have a reason for hiding his mistake. There are tables for “diamonds” in all production areas. They are in plain view, reminding: less losses there are, higher the salary budget. The reasons of defects are analyzed on a mandatory basis, and process engineers search for ways of their elimination.

Excursions across the factory workshops leave an indelible mark. First thing they see, entering any area, are school whiteboards full of notes. Problematic issues, arising during work and requiring a solution, are written down on them. Until the problem is solved, a record is not erased. Thus, each comment is being addressed and not forgotten. Although, it is not all that simple. Sometimes some problems are not solved for a long time, and pessimists begin to resent: “What’s the point to write, if nothing is done”. The main thing in this case is not to give up and continue to move on, proving by work that the system works.

The working day of a machine-tool operator begins with taking care of a machine. In a special log book, it is accurately scheduled what an employee should do before pushing a start button, to check oil level,



CNC machine

grease guides and so on. Thanks to this, a person considers himself a master of his workplace, and the machine serves him without troubles. Taking into consideration a huge load on equipment (the factory operates 24/7), it is not hard to imagine how much this unsophisticated method saves up for the enterprise. Competition between operators for the best work place serves the same goal. Its final results are summarized every month, and the prize is a cake, a bottle of honey and...a dinner with the director in the city restaurant.

Personnel qualification has a primary importance in terms of lean and reasonably organized production. What is the point in building super modern factories and bringing expensive equipment from abroad, if there is nobody to work on it, the director fairly suggests. That is why a keystone in "Paker" is self-training, self-development, transfer of knowledge. Here is one example. Having purchased eight metal working centers with program control in Japan several years ago, factory employees invited a company representative for to stay in Oktyabrsky for 90 days, occupied with commissioning work and training of employees. In addition, machine operators and repair personnel, 18 people in total, visited Japan on their own to attend advanced courses, and now they can cope with all the work related to maintenance and repair by themselves. Needless to say that people had seen such production culture which they should strive at.

As per geography Oktyabrsky machine builders travelled over the significant part of the world. Japan, Germany, France, Spain, Italy, China, Malta, India, UAE and others – specialists of the enterprise carefully study the experience of world leaders, participate in large industry exhibitions. Planning to get access to the international market, today, "Paker" actively builds up the complex of services in maintenance, installation and repair of its equipment right at the well and at the same time it is preparing for certification according to the worldwide acknowledged system of American Petroleum Institute (API). Although, it is not an easy task, the Americans do not hurry to let extra competitors to their market.

- We are ready to compete with foreign manufacturers both in price and in many quality parameters. As per production culture we almost keep up with them. And as for manufacturing efficiency and elimination

of losses – here, of course, there's room for improvement, - Yuriy Alekseevich notes.

WE WANT TO LIVE BETTER

In a prominent place not far from central entrance in the administrative building of SPF Paker there is a plate "We are working without injuries and accidents for 372 days". Figures are updated every day, and the principle remains unchanged: business, Marat Mirsatovich keeps repeating, is first of all, second of all and third of all occupational safety. And only then goes the rest.

- Some years ago there was an accident at one of the city enterprises: a facing bounced off from the machine right into the worker's eye and he became blind – accompanying people tell. – Our director then said: if within ten years of wearing glasses we manage to save at least one eye, that'd be worth it. Since then all our employees and visitors when entering production areas put on glasses. The same strict requirements are as follows: wearing head protection and special clothing, safety shoes, and from May 2010 the suggestion system "For safe labour" has become effective at the enterprise. It works simply but efficiently. Employees record suggestions to enhance industrial safety and signals from places in special forms and put them into boxes, and the director receives them daily. Actions are taken immediately.

The same principle was applied in 2006 when a system for submission of rational suggestions was organized to optimize the working process "We want to live better". Nobody knows better than the employees themselves what should be done to increase their working efficiency, - it was decided at the enterprise, asking employees to review their workplaces and say what is wrong and suggest a solution. The most part of the team is involved in a rationalization activity: engineers, locksmiths, turners, packagers



Tool storage room

interrupting each other suggest to upgrade the design of this or that machine, equip a machine with additional appliances or just fix a door check. None, even the most utopian idea, remains unanswered; authors of implemented rational suggestions are rewarded with money. In 2010, 1301 suggestions were submitted, 300 of them are implemented, the authors of the ideas received over 300 thousand rubles. The main problem is the delayed implementation. The company management fairly announced that it cannot implement all the suggestions without the authors' help and asked them to participate in implementation, having changed accordingly the motivation system for suggestions. Taking into account the advanced world experience, since January 2011 SPF Paker has adopted a new principle of taking decision about the reasonability of a suggestion: now working groups and small groups themselves will decide if this or that suggestion submitted by their group member is useful or not. The task of the management is to create all the conditions for implementation.

The director's salary is one ruble.

Perhaps, it might seem strange to somebody, but all the information about orders received, won tenders, profits— in brief, all that is considered a commercial secret – is displayed for everybody in SPF Paker. Here they think that any employee should know what is going on at the enterprise.

- The tradition came up during the crisis, - our guide Yuriy Chinchik explains. – In order to stop rumours among the staff about reductions and administrative leaves, the administration decided to keep people informed. This is in line with the principles of "lean production" thus allowing each person to feel their participation in the common deal.

It should be mentioned that crisis did not come by the company: from November 2008 to March 2009 the salary for the whole team was reduced by 30 percent. But no employee was either fired or put on enforced leave. On the contrary, when factories stopped their work and many highly qualified specialists were out of work, the company "Paker" recruited more than one hundred people, although the profits at the enterprise that year dropped in three times in comparison with the previous year. It was, of course, a difficult time, but the management was thinking about the future, and moreover service centers were opened and the enterprise required experts with the field experience



Engineering department

that were missing. By the way, for the crisis period the director set his salary in the amount of ... one ruble. Now we are approaching to the point from which, perhaps, we should start our story about the research and production company "Paker": to the idea of respecting people, which would be just a slogan, no matter which principles the company implied, if the management did not have the relevant personal qualities. However, the director himself sets forth this idea far shorter: first of all, you need to be a human, and then build business.

- The basis of any business, the core of all its success and failures is the attitude to people, - Marat Nagumanov tells his deepest conviction. – If you manage make the enterprise feel like it's their own place where everyone is willing to devote themselves to work, then such team will bring the company out of any trouble, will find a way out of any dead end. The hardest part is to achieve that, but it is necessary to look for such methods.

More than 600 people work in SPF Paker LLC. Many of them came from bankrupted companies with wan eyes and a lost heart. How to make them believe in success, teach them not to be afraid of world leaders? First of all, the director believes that it is necessary to let people feel like a human, create conditions for productive work and only then demand the results. For example, in SPF Paker they are ashamed to pay low salary. A boy, who comes to the workshop as an apprentice for his internship, will at once get a monthly salary in the amount of 7.5 thousand rubles. If he has a college diploma, he will be get 12.5 thousand rubles and more. On the whole, average monthly salary of employees in the factory amounted to 26.6 thousand rubles in March 2011. In addition, there's a standing



Tool box

rule in the company: 10 percent of net income, if any, is for employees' bonuses, and this amount is divided equally for each person.

- I want people to understand that if tomorrow we increase profits by five times, the bonus of each employee will be increased by five times as well, - Nagumanov says. – We're just beginning to create an effective personnel motivation system. This is one of the most complicated issues in the world, but we should try. As a rule, in order to evaluate attitude of the management to the staff, you just need to walk around the enterprise, look into personal service rooms and locker rooms. They showed us locker rooms of the "Paker" employees: "personal" lockers with name tags, shower cabins, special driers for shoes. Workers take dirty work clothing to the laundry and get a clean and ironed outfit instead. Everywhere – in the offices, workshops, hallways – there are coolers with drinking water; there are thermoses with herbal tea on tables. During viral infections periods, the medical department of the factory prepares herbal teas. It should be noted that "Paker" health center is one of the best equipped centers in the republic. There are two physicians receiving patients here, medical treatment room and physiotherapeutic room are operating in two shifts during the whole week, and there is a day patient department. Anyone willing can get a free membership for a swimming-pool, shaping, fitness, aqua aerobics and yoga. The company assigns money to dental services for employees, treatments in a preventive clinic, helps to get rid of nicotine addiction by inviting an acupuncture doctor. Smoke control is real here and not just to observe formalities. At the factory territory, cigarettes are outlawed. Non-smokers started receiving fruits on a monthly basis from March 2011.

- We should love people and treat them in a human way, without building a wall between a cleaner and a chief accountant. We all are equal, we all came here to work, - he says.

Nagumanov believes that the most important point is not to leave out of account those who are at the lowest step of the social ladder. In August, a new canteen was opened at the enterprise. Till November a set lunch consisting of three meals including fruits and baked goods cost one hundred rubles. Marat Mirsatovich pondered for a while, calculated the expenses and... cancelled the lunch payment for good.



Discussion of technical matters

AFTERWORD

"I used to avoid any type of guests in the factory – either ministry delegation or journalists", Nagumanov underlines sincerely. "And now I came to understand: one can't build up an ideal society in a closed-door company. We have to develop the society in general, raise the manufacturing culture, share our successful experience. That is why we have people visiting from Kazan, Perm, Moscow region, Siberia etc."

Marat Mirsatovich does all the things that are traditionally considered uncomfortable and unbeneficial. For instance, during excursions he enjoys demonstrating not only advantageous but weak spots of the company as well. It works as a great incentive to fix the problem. He has no fear to be surrounded by strong and intelligent people: communicating with such people makes him grow as a person. He is looking for a reliable partnership with any company, thus preferring to unite with the competitors and becoming twice as strong. Because so far the companies within one industry are extinguishing each other and then the Americans arrive and win over the market.

"We are only doing our first steps in business and the most important point now is to gain new knowledge, explore the world practice, learn to manage", the director of SPF Paker LLC says. –There's no moving ahead until educated and modern entrepreneurs start working in the Economics. Such entrepreneurs that are ashamed to look you in people's eyes until these people have what they need the most.

Tatyana Kruglova

**Press-correspondent for
"The Republic of Bashkortostan"
Newspaper**



METALWORK

In the autumn of 2008 in the midst of global economic crisis, a team of professionals of SPF Paker successfully mastered a new activity direction – metalwork of the products according to the customer's drawings.

A high level of quality, individual approach to each client proved that SPF Paker is a reliable partner in the production of non-core products, which, in its turn, contributed to the development of long-term relationships with the companies of engineering and defense industries and research institutes.

The existing enterprise philosophy of “lean production” contributes to the achievement of a constant high level of quality and compliance with the standards; the guarantee of the result consistency and its improvement is the certification in accordance with the standard ISO 9001:2008.

General characteristics of the production:

- turning, milling, boring and drilling processing of parts;
- heat treatment;
- phosphate treatment;
- laser and dot peen marking;
- assortment of material from in-stock: seamless hot-deformed pipes of general-purpose GOST 8731-74, GOST 8732-78; bare pipes for machine processing GOST 23270-89; hot-rolled round steel GOST 2590-88, 4543-71.

Distinguishing features

- a progressive cutting tool of international manufacturers is in use;
- the coverage of the complete production cycle: from the design concept with the help of modern automation systems for the creation of engineering and technological documentation, such as SolidWorks, SprutCAM, PLMClient to the production of finished products and their testing;
- high-skilled personnel and operators of CNC machines, trained in Japan and Italy.



*Work at the machining center
Leader-6*



Finished part

Equipment

- turning CNC machining centers, allowing turning, drilling and milling (with the movement of the tool along the axis $Y \pm 50$ mm) of the raw stock with maximum diameter of 360 mm and length up to 2000 mm in centers and the raw stock with diameter up to 160 mm and length up to 2000 mm in the lunette, the processing accuracy is up to 7 quality class (the movement along the axes: X-210 mm; Z-2040 mm; $Y \pm 50$ mm);
- vertical milling 3-coordinate CNC machining centers with the rotary table (4th axis), allowing processing the prismatic raw stock along three coordinates, as well as cylindrical raw stock with length up to 1500 mm and diameter up to 400 mm with the use of the corner rotary table, lunette or rear center, the processing accuracy is up to 7 quality class (table size: 1750x770 mm. The movement along the axes: X-1600 mm; Y-810 mm; Z-630 mm);
- vertical milling 5-coordinate CNC machining centers with the table 2300x730 mm;
- the park of universal turning, milling and drilling machines;
- band resaw (the maximum diameter of the being cut circle is 320 mm) and others.

Specific features

- gas carburizing in the hydrocarbon environment;
- laser marking of parts: logo marking, 2D code on metal, plastic, rubber, painted surfaces;
- hydraulic product testing with pressure up to 1000 kg/cm²;
- carrying out of non-destructive testing (ultrasonic testing, ultra-sonic thickness measurement, magnetic particle method, method of metal magnetic memory, eddy current method);
- incoming control of materials (chemical analysis, macrostructure control, microanalysis, determination of mechanical properties, determination of microhardness).



If you have any questions regarding equipment purchase, feel free to contact us:



Dinar SUFIYANOV
Deputy director of sales development
+7-937-318-87-56, +7-34767-5-21-01;
E-mail: SufiyanovDI@npf-paker.ru



Part process



The part measuring after turning with the help of hole gauge

METROLOGY

Metrological service of SPF Paker LLC was created in 2006.

In December 2013, it received the certificate of registration in Russian calibration system for compliance with the requirements of Russian calibration system, GOST ISO/IEC 17025-2009.

The metrological service carries out the repair of the measuring devices of geometric quantities and calibration work according to the competence recognition area in particular, the implementation of the calibration work, which includes the measuring devices of geometric quantities, including the gauges, as well as the measuring devices of mechanical quantities - only 29 items.



Certificate of registration in Russian calibration system

For implementation of calibration works, **the metrological service has all the necessary resources:**

- a) working standards and calibration tools ensuring the transfer of unit sizes from the standards to the calibrated measuring tools;
- b) normative and technical documents regulating the organization and implementation of calibration works, including the calibration techniques developed by the metrological service of LLC SPF "Paker";
- c) trained and certified staff according to the prescribed manner;
- d) facilities, corresponding according to the production area the condition and provided requirements of the applicable legal requirements for calibration, sanitary norms and rules, requirements of occupational safety and health and the environment.

In order to define the caliber gauge parameters, the caliber gauges are used as well as stationary equipment: two-coordinate measuring device DIP-3M and horizontal length gage Labconcept 500 of Swiss Company Trimos.

Advantages of horizontal length gage Labconcept 500:

- 1) The possibility to control the smooth and threaded gauge rings and the internal thread of the above mentioned types, up to 550 mm;
- 2) Accuracy $\pm 0,3$ mkm.



Check of gauges of oil assortment for Labconcept-500



A metrology engineer calibrates the threaded metric rings according to the control caliber gauges



A workplace for studying the machine operators and supervisors and the rules of measuring device use



Repair laboratory of measuring devices

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The metrological service of SPF Paker LLC provides the services to external organizations in repair and calibration of measuring devices of geometric quantities, as well as the calibration of thread and smooth caliber gauges for the control of external and internal threads (caps and rings): metrical, trapezoidal, compressing, joint, cylindrical, conical inching and tapered pipes.



Two-coordinate measuring device DIP-3M for measuring the linear and angular dimensions



CENTRAL PLANT LABORATORY

Central Plant Laboratory (CPL) monitors the quality of metal, finished products, process liquids according to the legal requirements, approved procedures and instructions for compliance with the requirements of LR for products and materials.

The laboratory is certified as a testing laboratory by the Federal Budget Institution “State Regional Center of Standardization, Metrology and Testing in the Republic of Bashkortostan” and has a certificate of assessment of measuring devices in the laboratory No SMCC RB.OSI.PR.02442 issued 28.01.2013.

CPL is accredited by the accreditation body of OJSC “SPF “Industrial safety” as a testing laboratory of destroying and other types of testing in accordance with the requirements of GOST ISO/IEC 17025-2009 “General competence requirements to the testing and calibration laboratories” and SAR-15-2009 “Requirements to the testing laboratories”.

The guarantee of work quality is the high qualification of personnel (higher professional education, certification in NOAP on Level II) and the advanced testing and measuring equipment from leading international manufacturers (TESA SA, SHIMADZU, “Spektrosoft”, OLYMPUS, et al.)



Certificate of assessment of measuring devices in the laboratory



Testing machine for determination of the mechanical properties of steels



Investigation of metal microstructure

The main types of tests:

1. Mechanical static tests:

- 1.1 Tension capacity at normal temperature
- 1.2 Flexing strength

2. Mechanical dynamic tests:

- 2.1 Determination of impact toughness at low, ambient and high temperatures

3. Methods of hardness measurement:

- 3.1 According to Brinell (ball indentation)
- 3.2 According to Rockwell (indentation of the pattern (product) of the diamond cone or steel ball attachment in the surface)
- 3.3 Microhardness according to Vickers (diamond pyramid indentation)

4. Technological tests: flattening

5. Metallographic surveys (determination of the bad quality causes, production control)

- 5.1 Microanalysis
 - 5.1.1 Determination of the amount of non-metallic inclusions
 - 5.1.2 Determination of grain grade
 - 5.1.3 Determination of the depth of the decarburized and cemented layer
- 5.2 Macroscopic analysis, including analysis of the fractures of welded joints

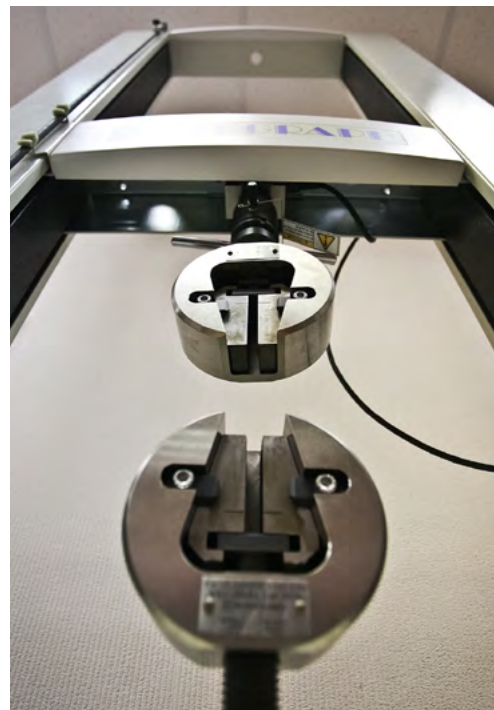
6. Spectral analysis of steels, cast irons and non-ferrous alloys based on Al, Ni



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Tensile machine for 1 ton for determination of the mechanical properties of materials



Pendulum impact bending machine



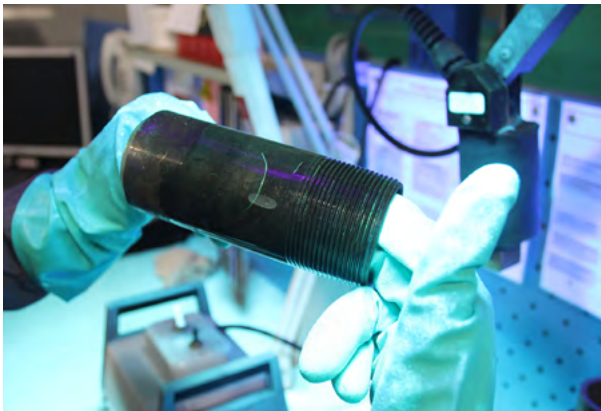
Control of materials

NONDESTRUCTIVE TESTING LABORATORY

- Will provide services for implementation of non-destructive equipment and material control;
- Will help to improve the equipment reliability, to reduce the risk of accidents due to the early detection of stress concentration zones (SCZ), endurance defects of the critical structural elements.



Certificate of Attestation



Magnetic particle test of parts



Eddy current test of thread

The laboratory of non-destructive methods of control of LLC SPF “Paker” is certified in the unified system of conformance evaluation in the sphere of industrial and environmental safety, energy and construction safety.

The main laboratory objective is:

To exclude the equipment failures due to latent defects, to ensure the reliability, objectivity and accuracy of the required control results.

Timely and quality control is performed by qualified laboratory personnel, certified according to the rules of personnel certification in the sphere of non-destructive control and the availability of modern equipment.

The laboratory is equipped with:

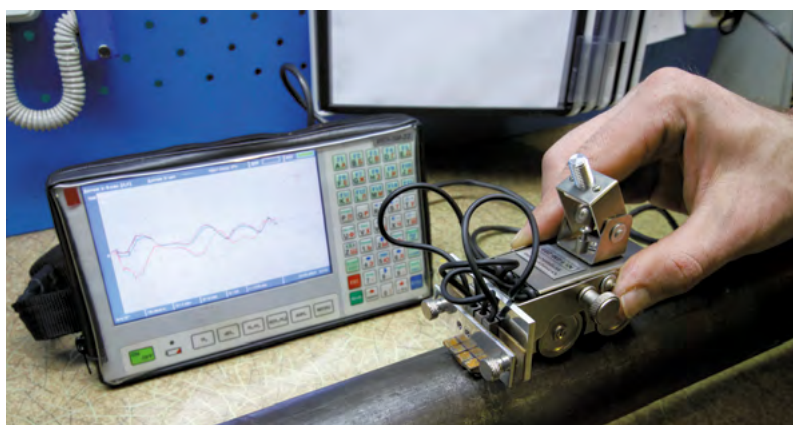
- The modern devices and equipment for non-destructive control implementation.
- Highly skilled specialists of the 2nd and 3rd level, certified according to the prescribed manner, both Russian and European standards, having the proper training, theoretical knowledge and practical experience necessary for quality work according to TC.

The methods of non-destructive control and diagnostics used in the laboratory:

- Ultrasound (ultrasonic thickness measurements, ultrasonic welding examination)
- Magnetic (magnetic particle, magnetic metal memory)
- Eddy current test
- Visual and measuring



Ultrasonic testing



Welding examination according to the magnetic metal memory method



Ultrasonic testing

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SAFETY



Guard desk of the enterprise



Fire post



Entry into the enterprise territory

***First of all, business is
labour safety, and only
then making profit...***



Annual personnel training for first aid treatment

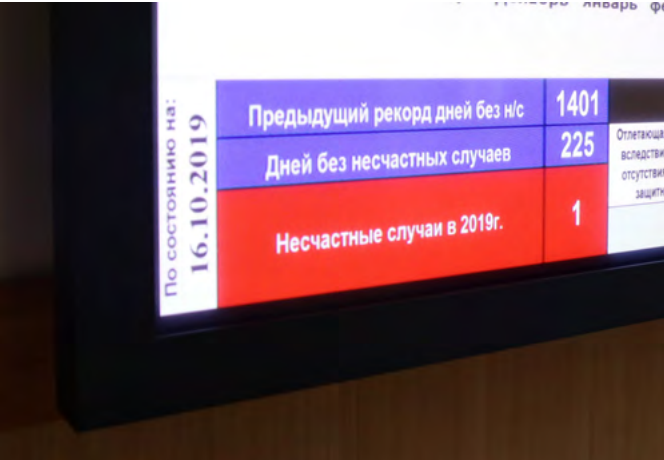
Training on fire safety



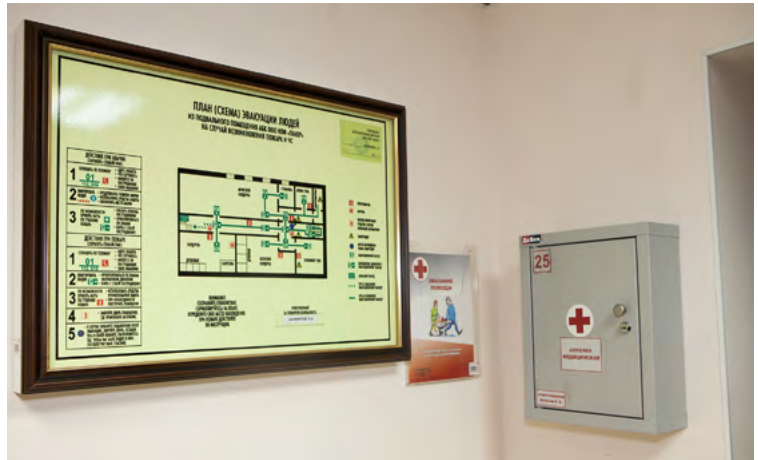
A box "We are for safe labour" for massages about any bugs or safety violations and violations in the field of occupational safety



The icons in the corridors and marking in industrial premises



Stand with information about the number of days without any occupational injuries



Plan of emergency exits and first aid kit

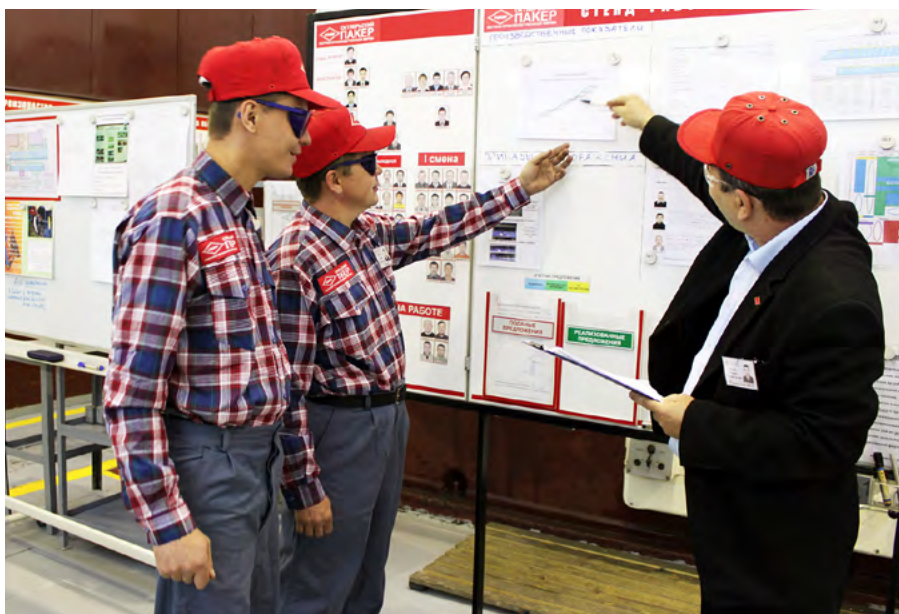
5S WORKPLACE



Meeting of a small group



Stand with information about ordering 5S



Problem discussions of the personnel



A box for suggestions in order to improve the working processes and working conditions

TPM is a system of equipment maintenance, allowing providing its highest efficiency over the entire work cycle



Journal of equipment maintenance by the operator of CNC machine



Regulations for independent equipment maintenance

ORGANIZATION



Storage of tools in the workshop



Storage of stationery at ETP

***Storage regulations
5S - everything is
always in its place,
everything is always
“at hand”***



Storage of tools at the warehouse



Storage of tools at the warehouse



*Organization of a comfortable working
place for a group of operators of CNC
machines*

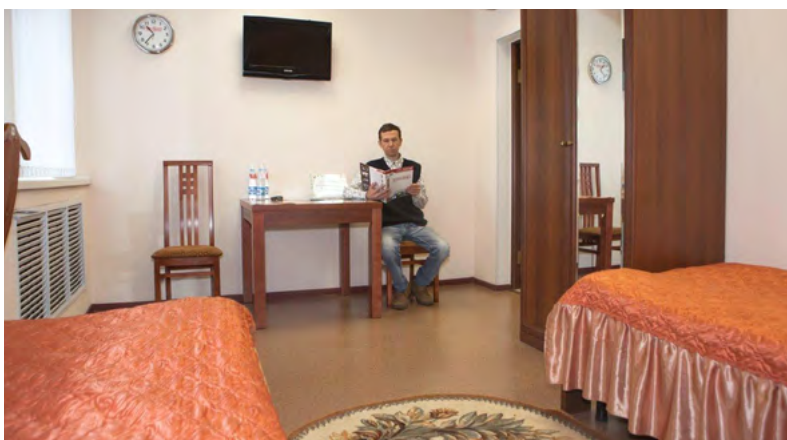
SOCIAL CONDITIONS



In order to preserve the health of the employees, in all the premises there are coolers with bottled water



Recreation area for employees



Lounge for drivers coming for finished products



Table for herbal tea



Free meals for all the employees (TIPI is only kept - 13% of the cost of food)



Lavatory



Showers for employees



Washing of work clothes in the laundry room



Minor repairs of work clothes



Shoe dryer



In the locker room of the production personnel, the lockers are assigned to specific employees



Training of employees

MEDICINE



Physiotherapy room



Medical treatment room



KUF apparatus for the treatment of ENT diseases



*Cameras with UV radiation
for storage of sterile medical
devices*

***Employees
and their families
have free health
care services***



Phototherapy lamp "Solluks"



Stand of medical service



Massage chair



Diagnosis of smoking with the help of the detector Smoke Check



Nebulizer "Omron"



Hand disinfection



Magnetic therapy

TESTIMONIALS ABOUT THE COMPANY

I was very impressed about the structure, the philosophy and the attention to all the details.
Christian Haesner, Baker Hughes
17/03/17

*Dear Paker Management
de Great Team!
I was so glad from this visit
in particular, your team kindness, professionalism &
hospitality.
The HSE was clear as the top of your priority and the*

A visit that was truly attending!
The company culture is exceptional. Every one working for Paker must be proud and happy to be part of this fantastic family. Paker really take care of core thing.

'A visit that was truly outstanding! The company culture is exceptional. Everyone working for Paker must be proud and happy to be part of this fantastic family. Paker really takes care of everything.'

*Mirko Schulz
Baker Hughes
17.03.2017*

Mirko Schulz, Baker Hughes
17/03/17



«Baker Hughes»

March 17, 2017

Dear Paker Team,

Thank You for hosting us!

We are really impressed by the "attention to detail" that you do in lot of things at your manufacturing. You are following the basic Lean manufacturing component that of "Visualise" - seeing things.

Following 5S.

Keep it up.

Muthukumar Sg - 23/Aug/18

Baker Hughes

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Keep it up.

Muthukumar Sg - 23/Aug/18

Baker Hughes



«Baker Hughes»

August 23, 2018

TESTIMONIALS ABOUT THE COMPANY

was Indeed pleasure to visit your facility. Apart from laboratory it was our primary purpose, we were pleasantly surprised to see for mfg and design capabilities. Keep up the good work guys.

It was indeed pleasure to visit your facility.
For industry which was our primary purpose,
we were pleasantly surprised to see SPF Paker
manufacturing and design capabilities. Keep up the
good work guys

Ritesh Padmawar

Halliburton Energy

*Ritesh Padmawar
Rohini
4/March/2020
Halliburton Energy*



Halliburton and ART-Osnastka, Woscow, Ufa

March 04, 2020

Elwethaq Ethadate oil services company
 17 March 2023
 magnificent tour was conducted in the facility
 of Paker company
 Paker have very well organized manufactures
 they follow safety rules and precautions
 in their facility.
 their ^{tools} is in high standard level of
 technology and they ranked the first
 in Russia by providing the best tool
 and best technique and design.
 it is really pleasure to get closer
 with the Paker company in making business.

Zeyad Ibrahim
 General Manager 17/3/2023

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 17 march 2023

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Zeyad Ibrahim
 General manager
 17/3/2023



Elwethaq, Tripoli, Libya

March 17, 2023

GOVERNMENT AWARD OF RUSSIAN FEDERATION



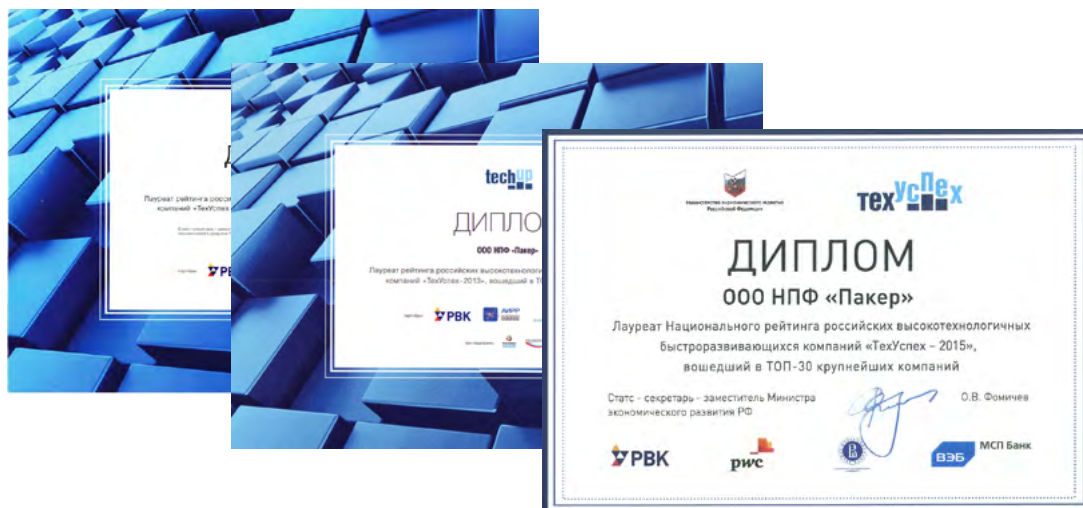
LLC SPF Paker is the laureate of the Government award of the Russian Federation in the sphere of quality



ACHIEVEMENTS



Laureate of the Government award of the Republic of Tatarstan for the quality



Since 2013 SPF Paker make the TOP-50 companies of "TechUspeh" rating

[illegible]





DEAR PARTNERS!

SPF "Paker" invites you to visit our enterprise to develop partnership relations, as well as to get acquainted with the first steps in the corporate culture building.

We adopt the experience from various Russian and foreign companies, as well as sincerely share it with everyone who wants to develop their companies. We hold us out as an open platform for experience exchange in the issues concerning the formation of the enterprise corporate culture. We wish development of enterprises all over the world, we hope, each of us can make this world a little bit kinder and warmer.

Sincerely,
Director of SPF Paker
Marat Nagumov

WELCOME TO OUR ENTERPRISE TO DEVELOP PARTNERSHIP RELATIONS



19th International Exhibition
"NEFTEGAZ-2019", Expocentre, Moscow



23rd International Exhibition and
Conference - "Oil&Gas Uzbekistan -
2019", Tashkent



XXVII International Exhibition "Gas. Oil.
Technologies - 2019", VDNH EXPO, Ufa



Kazakhstan International OIL and GAS
Exhibition and Conference - "KIOGE
2022", "Atakent" IEC, Almaty



International specialized exhibition within
the framework of the Tatarstan
Petrochemical Forum "Oil, gas.
Petrochemistry 2019", Kazan



Abu Dhabi International Petroleum
Exhibition and Conference "Adipec-2019",
Abu Dhabi

If you have any questions regarding the visit of our enterprise, feel free to contact us:



Dinar Sufiyanov
Director of sales development
+7-937-318-87-56, +7 (34767) 5-21-01;
E-mail: SufiyanovDI@npf-paker.com



Timur Minnivaliev
Deputy director for external relations, Ph.D
+7-927-468-33-87;
E-mail: MinnivalievTN@npf-paker.com