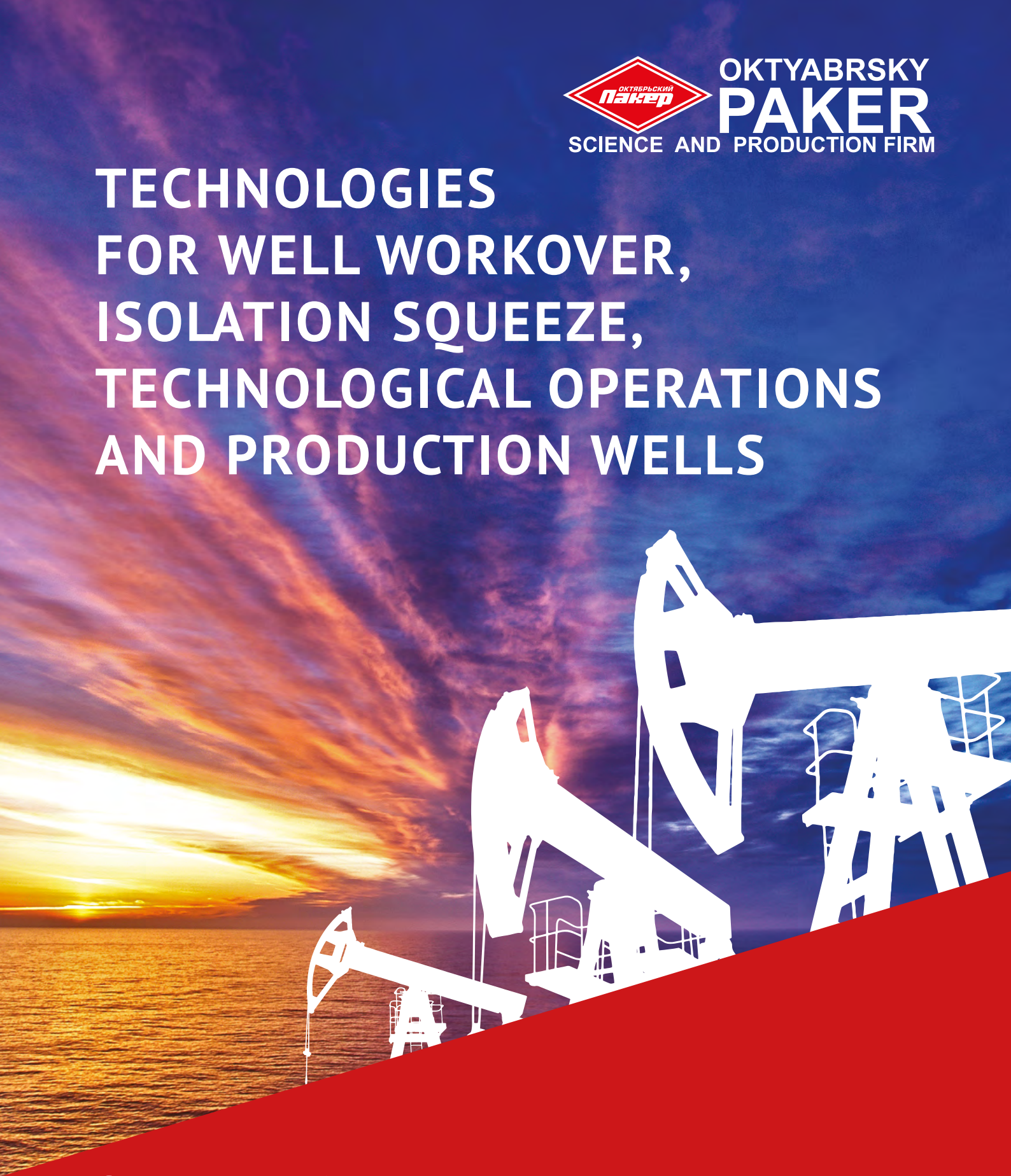
OKTYABRSKY
PAKER
SCIENCE AND PRODUCTION FIRM

TECHNOLOGIES FOR WELL WORKOVER, ISOLATION SQUEEZE, TECHNOLOGICAL OPERATIONS AND PRODUCTION WELLS



Our solutions for
oil recovery improvement
and cost reduction

www.npf-paker.com

DEAREST COLLEAGUES!

For more than 30 years, SPF «Paker» LLC has been creating and implementing advanced technologies that are useful and in demand for your difficult and ambitious projects, including the effective use of environmentally friendly technologies throughout the production chain.

However, in our opinion, important things are not only the quality of technological solutions and the supplied equipment but also constant partner dialogue.

This brochure presents equipment and technologies that, we are sure, will help you to solve already known problems and respond to new challenges, continue to develop and achieve success.

With kind regards,
Marat M. Nagumanov
SPF «Paker» LLC
Director

WE INVITE YOU TO VISIT OUR COMPANY AND PERSONALLY VIEW OUR PRODUCTION FACILITIES!

In this latter decade many oil producers face a problem of deposits depletion and decline of oil rates. Therefore, the question of production costs reduction in oil business becomes more and more important. Year by year the number of idle, plugged and abandoned wells grows.

Due to external reasons, deposits are developed slowly. This leads to progressive drowning of wells, Major workover operations require big investments, but drilling of new wells requires more. Market situation, new types of equipment and innovative technologies make it economically advantageous to work the wells over.

Technical specialists of Science and Production Firm «Paker» LLC developed a series of technologies that make well operation cheaper and more effective. Our single-packer (1PROK-IVE) and double-packer (2PROK-IVEG) assemblies are very cheap, quick-set and functional solutions for effective Isolation of well sections.

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

RTTS Analogue

Mechanical packers (rated operating pressure up to 15000 psi)

FIELD OF USE:

- 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.

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 repairability.

SPECIFICATIONS

Type	Design Documentation Code	Casing		Maximum differential pressure, psi	Packer OD, in	Packer ID, in, not less than	Maximum temperature, F	Length, ft, not more than	Weight, lb, not more than	NUE connection thread*	
		OD, in	Nominal Weight, lb/ft							Top (coupling)	Bottom (nipple)
Axial set packers											
PRO-YAMO3-YAG2-82	AXA 2.839.296	4”	7.5	15000	3.23	1.34	302	6.56	108	2 3/8”	1.900”
PRO-YAMO3-YAG2-88	AXA 2.839.296-01	4 1/2”	15.0-17.7		3.46			6.82	117		
PRO-YAMO3-YAG2-92	AXA 2.839.296-02	4 1/2”	11.6-13.5		3.62				125		
PRO-YAMO3-YAG2-100	AXA 2.839.296-03	5”	18.0-21.0		3.94	1.57		7.35	172		
PRO-YAMO3-YAG2-104	AXA 2.839.296-04	5”	13.0-15.0		4.09				187,5		
PRO-YAMO2-YAG1(M)-112	AXA 2.839.213	5 1/2”	20.0-23.0		4.41	1.81		7.24	200	2 7/8”	2 3/8”
		5 3/4”	24.5								
PRO-YAMO3-YAG3(M)-114	AXA 2.839.292-01	5 1/2”	17.0-23.0		4.49	2.32		7.38	181	2 7/8”	
PRO-YAM03-YAG3(M)-116	AXA 2.839.292-02	5 1/2”	15.5-20.0		4.57				185		
		5 3/4”	22.0-24.5								
PRO-YAM03-YAG3(M)-118	AXA 2.839.292-03	5 1/2”	15.5-17.0		4.65				187.4		
		5 3/4”	20.0-24.5								
PRO-YAMO3-YAG3(M)-122	AXA 2.839 292-04	5 3/4”	15.5-20		4.8				196		
PRO-YAMO2-YAG1(M)-136	AXA 2.839.213-05	6 5/8”	28.0-32.0		5.35	2.32		7.48	291.0	3 1/2”	2 7/8”
PRO-YAMO2-YAG1(M)-142	AXA 2 839.213-06	6 5/8”	20.0-24.0		5.6				306.5		
PRO-YAMO2-YAG1(M)-145	AXA 2.839.213-07	7”	20.0-38.0	8700	5.71			7.87	364		
PRO-YAMO2-YAG1(M)-158	AXA 2 839 213-08	7 5/8”	24.0-43.0	7250	6.22	2.6		8.22	450	4”	3 1/2”
PRO-YAMO2-YAG1(M)-182	AXA 2.839.213-09	8 5/8”	28.0-49.0	5800	7.17	3.15		8.33	582	4 1/2”	
PRO-YAMO2-YAG1(M)-204	AXA 2.839.213-10	9 5/8”	36.0-58.4		8.03	3.54		8.37	712		
Rotation set packers											
PRO-YAM3-YAG2-82	AXA 2.839.211	4”	7,5	150000	3.23	1.34	302	5.38	106	2 3/8”	1.900”
PRO-YAM3-YAG2-88	AXA 2.839.211-01	4 1/2”	15.0-17.7		3.46			6.23	115		
PRO-YAM3-YAG2-92	AXA 2.839 211-02	4 1/2”	11.6-13.5		3.62				125		
PRO-YAM3-YAG2-100	AXA 2.839.211-03	5”	18.0-21.0		3.94	1.57		6.59	134.5		
PRO-YAM3-YAG2-104	AXA 2.839.211-04	5”	13.0-15.0		4.09				136.7		
PRO-YAM2-YAG1(M)-112	AXA 2.839.212	5 1/2”	20.0-23.0		4.41	1.81		5.95	187.4	2 7/8”	2 3/8”
		5 3/4”	24.5								
PRO-YAM3-YAG3(M)-114		5 1/2”	17.0-23.0		4.57	2.33		6.72	160	2 7/8”	
PRO-YAM3-YAG3(M)-116		5 1/2”	15.5-20.0		4.65				163		
		5 3/4”	22.0-24.5								
PRO-YAM3-YAG3(M)-118-59		5 1/2”	15.5-17.0		4.65				165		
		5 3/4”	20.0-24.5								
PRO-YAM3-YAG3(M)-122-59	AXA 2.839.507-03	5 3/4”	15.5-20		4.8				173.7		
PRO-YAM2-YAG1(M)-136-59	AXA 2.839.212-05	6 5/8”	28.0-32.0		5.35	2.32		6.5	267	3 1/2”	2 7/8”
PRO-YAM2-YAG1(M)-142-59	AXA 2.839.212-06	6 5/8”	20.0-24.0		5.6				282		
PR0-YAM2-YAG1(M)-145	AXA 2.839.212-07	7”	20.0-38.0	8700	5.71			6.88	337		
PRO-YAM2-YAG1(M)-158		7 5/8”	24.0-43.0	7250	6.22	2.6		7.24	419	4”	3 1/2”
PRO-YAM2-YAG1(M)-182		8 5/8”	28.0-49.0	5800	7.17	3.15		7.35	547	4 1/2”	
PRO-YAM2-YAG1(M)-204		9 5/8”	36.0-58.4		8.03	3.54		7.38	668		

* Other threads are available upon request.

- **Packer setting load is 13489 to 26977 lbf.**

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

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P-EG

Hydromechanical ESP packer for 9 5/8'' casing

FIELD OF USE:

- ESP packer used to protect casing from influence of oil well fluid during ESP well operation. Also can used for water shutoff in upper intervals during ESP well operation.

ADVANTAGES:

- can transmit ESP cable, upon customer request packer can be manufactured with additional tubing for chemical injection;
- can be used any type of penetrator above and below packer*;
- two hydraulic anchors and double slips provides sealing packer with 5000 psi pressure belowand above packer;
- releasing force is regulated by share pinsand can be adjusted to minimal 66000 lbs.

**packer can be provided with penetrator SPF Paker LLC*

Setting method – hydraulically, stepped tubing pressurization to 2600 psi. Releasing provided by tensioning.

SPECIFICATIONS:

Product type	P-AG-YaD-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
Body Material	Steel 30XMA GOST 4543-2016
Body Material(analogs)	AISI 4140/4130 (80Ksi, 22 HRC Max.)
Casing size and weight range	9 5/8'' 40-47 lb/ft
Casing ID and Drift (inches)	8, 681 – 8,835 '' / 8.525" – 8.679"
Upper tubing connection	4-1/2" 12.6 lb/ft EUE box
Lower tubing connection	4-1/2" 12.6 lb/ft EUE pin (by request 3 ½" EUE)
Penetrator	if required
Penetrator type	1 x Single mandrel
Penetrator connection	EUE 2 3/8" box
Penetrator Bore ID (inches)	1 x 2"
Control Line Bypass	2 x ½" NPT Box x Box
Seal Element Material	HNBR
Weight (kg)	281kg

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P-EGM

Hydromechanical ESP packer

FIELD OF USE:

- 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.

APPLICATION OF THE ASSEMBLY ALLOWS:

- 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.

SPECIFICATIONS

Type	Casing		Paker OD, in	Maximum load on the packer during tripping operations, lb		Paker ID, in (not less than)	Length, ft, (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 (coupling)	Bottom (nipple)
P-EGM-118	5 1/2"	15.5-17.0	4.65	22040	35274	302	7.55	302	165	2 3/8"	
	5 3/4"	20.0-24.5									
P-EGM-122	5 3/4"	15.5-20,0	4.8						176		
P-EGM-142	6 5/8"	20.0-28.0	5.6			2.36			220	2 7/8"	
	7"	35,0-38,0									
P-EGM-152	7"	23.0-29.0	4.65						242		

* Other threads are available upon request.

- **Maximum differential pressure on the packer is 3625 psi.**
- **Packer setting load is 6613-17637 lb.**

Upon customer request hydraulic packer for ESP can be manufactured with the penetrator for 7" casing

P-EMO

Mechanical ESP packer

FIELD OF USE:

- 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 area[1], installing the geophysical devices on the cable in the below-packer area.

CONSTRUCTION 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] 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.

SPECIFICATIONS

Type	Design Documentation Code	Casing		Packer OD, in	Maximum load on the packer during tripping operations, lb		Packer ID, in (not less than)	Length, ft, 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 (coupling)	Bottom (nipple)
P-EMO-118	AXA 2.839.606-20	5 1/2"	13.0-17.0	4,64	22040	35274	1,968	7,55	302	165	2 7/8"	
		5 3/4"	22.0-24.5									
P-EMO-122	AXA 2.839.606-21	5 3/4"	15.5-22.0	4,80						176		
P-EMO-142	AXA 2.839.650	6 5/8"	22.0-28.0	5,51			2,441	7,51		220		
		7"	38.0-40.6									
P-EMO-145	AXA 2.839.650-01	7"	32.0-35.0	5,7								
P-EMO-152	AXA 2.839.650-02	7"	23.0-29.0	5,98						142		

* Other threads are available upon request.

- **Maximum differential pressure on the packer is 3625 psi.**
- **Packer setting load is 6613-17637 lb.**
- **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

Drillable cement retainer (bridge plug)

FIELD OF USE:

- for isolation of production string intervals;
- 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.

ADVANTAGES:

- simple design;
- comprised of IUG Setting Tool and PRZ Drillable Cementing Plug;
- setting and disconnection pressure of 3675…4165 psi;
- IUG setting tool can be used multiply;
- IUG design allows to pump fluid for circulation along the string and not into formation;
- average time to drill out PRZ with a three-cone bit is 6.30 hrs.

SPECIFICATIONS

Type	Code	Casing		Packer OD, in	Packer ID, in, not less than	Length, ft, 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"	7.5	3.23	0,82	7,48	55,1	302	PRZ-82	IUG-82	2 3/8"
PR-88	AXA 2.889.603-01	4 1/2"	15.0-17.7	3.46			56,2		PRZ-88		
PR-92	AXA 2.889.603-02		9.5-13.5	3.62					PRZ-92		
PR-114	AXA 2.889.401	5 1/2"	14,0-20,0	4.49	1,73	8,57	112,4		PRZ-114	IUG-114	2 7/8"
		5 3/4"	22-24.5								
PR-120	AXA 2.889.527	5 1/2"	14,0-15,5	4,72			121,2		PRZ-120		
		5 3/4"	15.5-22,0								
PR-140	AXA 2.889.527-01	6 5/8"	20,0-28,0	5,51	1,89	8,69	152		PRZ-140	IUG2-132	
		7"	35,0-40,6								
PR-148	AXA 2.889.527.01-01	7"	17,0-32,0	5,82			154,3		PRZ-148		

* Other threads are available upon request.

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1PROK-IRIR-1

Isolation packer assembly (retrievable bridge plug)

FIELD OF USE:

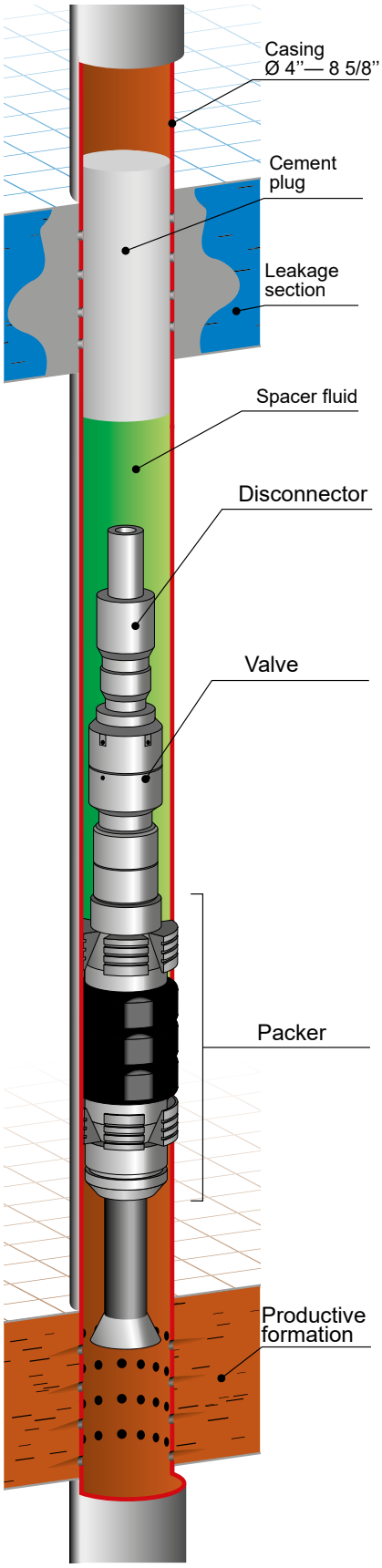
- for isolation squeeze in wells with pipe nominal outer diameter 4” — 8 5/8”.

APPLICATION OF THE ASSEMBLY ALLOWS:

- to avoid more expensive isolation squeeze procedures;
- to perform underlying productive formation isolation procedure succeeded by equipment pullout;
- to reduce well downtime significantly;
- to forgo the procedure of underlying productive formation isolation with cement plugs and to avoid colmatation of its bottom-hole zone.

ADVANTAGES:

- sustainable isolation of the production string sections;
- time of productive formation isolation is cut by 24-48 hours in contrast to conventional technologies with use of cement plug or drillable packer or bottom filling;
- add-on equipment allows to balance pressure of the assembly and annulus when retrieving as well as enhance the safety of repair and emergency works.



SPECIFICATIONS

Code	Casing		Packer OD, in	Packer ID, in (not less than)	NUE connection thread	
	OD,in	Nominal Weight, lb/ft			Top (coupling)	Bottom (nipple)
1PROK-IRIR-1-89-34 -350-T100[1]-K1-X[3]	4 ½”	15.1-19	3.5”	1.34”	2 7/8”	2 3/8”
1PROK-IRIR-1-114-50[2] -250-T100[1]-K1-X[3]	5 1/2”	17.0-23.0	4.49	1.96	3 1/2”	2 3/8”
1PROK-IRIR-1-114-50[2] -350-T100[1]-K1-X[3]	5 3/4”	22-24.5				
1PROK-IRIR-1-118-50[2] -250-T100[1]-K1-X[3]	5 1/2”	15.5-17.0	4.65			
1PROK-IRIR-1-118-50[2] -350-T100[1]-K1-X[3]	5 3/4”	20.0-24.5				
1PROK-IRIR-1-122-50[2] -250-T100[1]-K1-X[3]	5 3/4”	15.5-20	4.8			
1PROK-IRIR-1-122-50[2] -350-T100[1]-K1-X[3]						
1PROK-IRIR-136-62[2] -250-T100[1]-K1-X[3]	6 5/8”	28.0-32.0	5.51	2.44		2 7/8”
1PROK-IRIR-136-62[2] -350-T100[1]-K1-X[3]	6 5/8”	24.0-28.0				
1PROK-IRIR-1-142-62[2] -250-T100[1]-K1-X[3]	7”	38.0	5.6			
1PROK-IRIR-1-142-62[2] -350-T100[1]-K1-X[3]	6 5/8”	20.0 – 24.0				
1PROK-IRIR-1-145-62[2] -250-T100[1]-K1-X[3]	6 5/8”	20.0	5.71			
1PROK-IRIR-1-145-62[2] -350-T100[1]-K1-X[3]	7”	32.0-38.0				
1PROK-IRIR-1-182-80[2] -250-T100[1]-K1-X[3]	8 5/8”	28.0-49.0	7.17	3.15		3 1/2”
1PROK-IRIR-1-182-80[2] -350-T100[1]-K1-X[3]						

[1] the packers can be supplied for T=302 °F (150°C) optionally
[2] Pass is conventional
[3] number of a complete set

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2PROK-SIAG-1

Selective isolation double -packer assembly

FIELD OF USE:

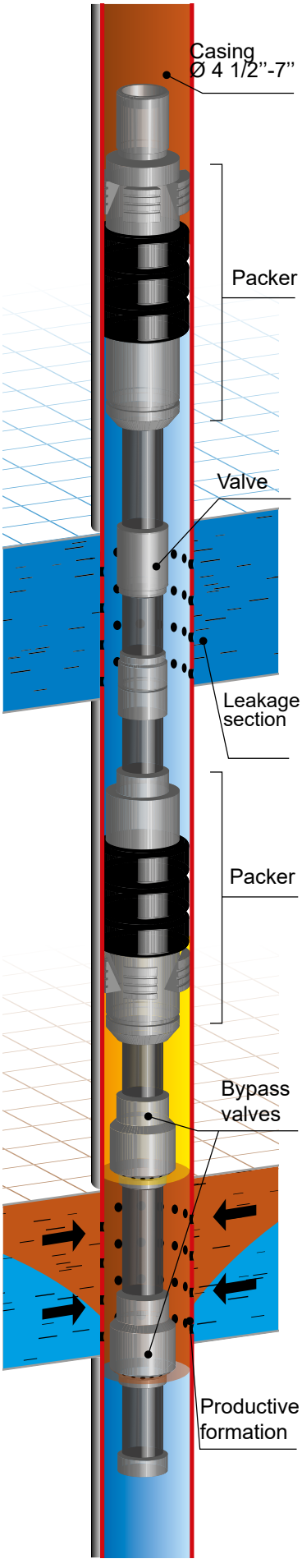
- for well operation with simultaneous isolation of above located leak or perforation interval, with water inflow in production strings with pipe nominal outer diameter 4 ½" — 7"

APPLICATION OF THE ASSEMBLY ALLOWS:

- to avoid more expensive isolation squeeze procedures;
- 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).

ADVANTAGES:

- **after the assembly is set, the tubing is disconnected easily;**
- sustainable isolation of the production string leaking section;
- downhole pumping equipment replacement is carried out without plugging and decreasing the reservoir properties or the formation bottom-hole area;
- no contact between well-killing fluid and formation fluid;
- add-on equipment enables to operate wells with maximum oil flow rate and enhanced safety during workover and emergency works.



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 (coupling)	Bottom (nipple)
2PROK-SIAG-1-94-40-350-T100[1]-K3-X[2]	4 ½”	11.6-13.5	3.7	1.57	302	2 7/8”	2 7/8”
2PROK-SIAG-1-118-50-350-T100[1]-K3-X[2]	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-1-122-50-350-T100[1]-K3-X[2]	5 3/4”	15.5-20	4.8				
2PROK-SIAG-1-5 33/64”-59-350-T100[1]-K3-X[2]	6 5/8”	28.0- 32.0	5.51	2.32			
	6 5/8”	24.0-28.0					
2PROK-SIAG-1-145-59-350-T100[1]-K3-X[2]	6 5/8”	20.0	5.71				
	7”	32.0-38.0					

[1] the packers can be supplied for T=302 °F (150°C) optionally

[2] configuration number

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2PROK-SO-2

Selective treatment packer assembly

FIELD OF USE:

- for operations in wells with pipe nominal outer diameter 5 ½" — 7"

APPLICATION OF THE ASSEMBLY ALLOWS:

- to detect leakage section of the production casing;
- to perform selective chemical reagents treatment;
- to perform hydraulic pressure testing of the production casing intervally;
- to cut time of well service operations significantly.

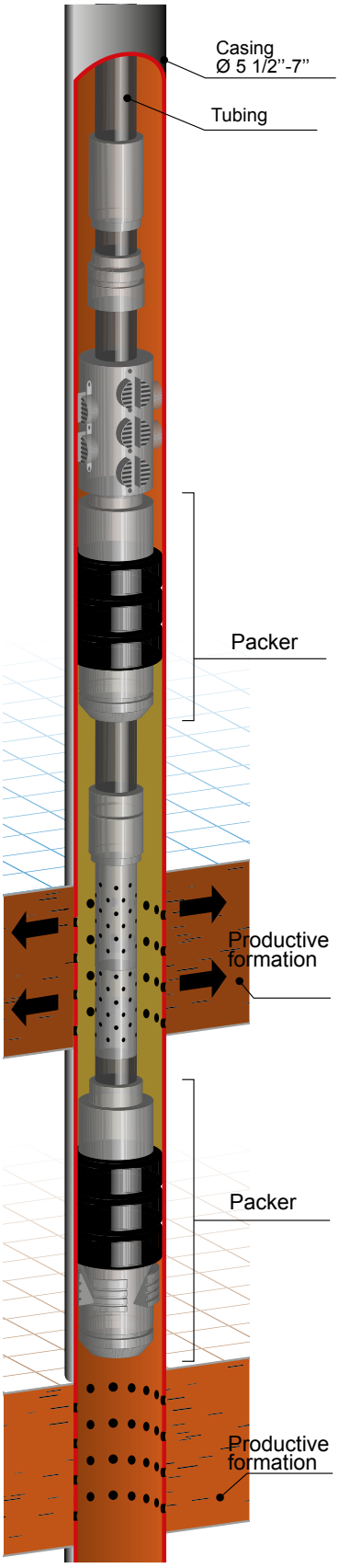
ADVANTAGES:

- multiple action during one RIH/POOH operation;
- sustainable isolation of the production RIH/POOH between two packers;
- can be set in any section of the production casing;
- add-on equipment enables easy unsetting procedure and enhances safety during workover works.

SPECIFICATIONS

Code	Casing		BHA OD, in	BHA ID, in (not less than)	Diameter of production string between packers, in	NUE connection thread	
	OD,in	Nominal Weight, lb/ft				Top (coupling)	Bottom (nipple)
2PROK-SO-2-112-46-350-T100[1]-K3-X[2]	5 1/2"	20.0-23.0	4.41	1.81	2 7/8"	3 1/2"	2 7/8"
	5 3/4"	24.5					
2PROK-SO-2-118-46-350-T100[1]-K3-X[2]	5 1/2"	15.5-17.0	4.65				
	5 3/4"	20.0-24.5					
2PROK-SO-2-122-46-350-T100[1]-K3-X[2]	5 3/4"	15.5-20	4.8				
2PROK-SO-2-136-59-350-T100[1]-K3-X[2]	6 5/8"	28.0-32.0	5.35	2.28	3 1/2"		
2PROK-SO-2-142-59-350-T100[1]-K3-X[2]	6 5/8"	20.0-24.0	5.6				
2PROK-SO-2-145-59-350-T100[1]-K3-X[2]	7"	20.0-38.0	5.71				

[1] the packers can be supplied for T=302 °F (150°C) optionally
[2] number of a complete set



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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 26 000 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 tubing;
- 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 tubing;
- this equipment can be used multiply for one round-trip operation; high repairability.

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P-YADZH-G

Double acting hydraulic packer

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 10 000 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 (coupling)	Bottom (nipple)
Packers								
P-YaDZh-G-140-76-700-T100[1]-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-T100[1]-K3	AXA 2.839.647-01	6 5/8’	20-24	10000	3”	315		
		7”	26-38					
P-YaDZh-G -152-76-700-T100[1]-K3	AXA 2.839.647-02	7”	23-29	10000	3”	350		

[1] the packers can be supplied for T=302 °F (150°C) optionally

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P-YADZH-G2-KB

Hydraulic packer (pressure drop both above and under packer up to10000 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 unsetted and released by tension of the tubing string, analogous to mechanical packers.

SPECIFICATIONS

Type	Design Documentation Code[2]	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 (coupling)	Bottom (nipple)
Packers										
P-YADZH-G2-KB-118-50-700-T100[1]-K4	AXA 2.839.778	5 ½"	46-54	10000	1,97	4,64	6,1	187	TMK TMK UP PF 3 1/2	TMK UP PF 3 1/2
		5 ¾"	77							
P-YADZH-G2-KB-152-62-700-T100[1]-K4	AXA 2.839.758-01	7	77-95	10000	2,44	5,98	6,07	265		

[1] When ordering equipment for temperature up to T=150° C (302 °F) , T100 (212 °F) in the name changes to T150.

[2] Design documentation is being developed and the packer is manufactured at the customer's request.

Pressure drop for packer installation from 1740 to 4350 psi.

At the request of the customer, it is possible to manufacture other packer dimentions.

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 bolls;
- 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.

SPECIFICATIONS

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 temperature, °F (°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, ft not more than	 4.488 1.57 3.15 0.62
Weight, lbs, not more than	17
Threads NUE: - top (coupling);	 3 1/2"

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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.

FIELD OF USE:

- flowing and gaslift well operation;
- artificial lift operation;
- in packer downhole assemblies during well operations or downhole procedures.

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-93-53-350-T100[1]-K3 AXA 4.239.010.01	MRG-108-62-350-T100[1]-K3 AXA 4.239.010.01-01
Inner diameter of the production string, inches (not less than)	4”	4.5
Maximum pressure differential, psi	5075	
Diameter of the ball used to open the valve, inches	2.16	2.56
Dimensions, inches:		
- maximum case diameter;	3.66	4.25
- passage bore diameter;	2.08	2.44
Length, ft	1.59	1.64
Weight, lbs, not more than	63.05	86.42
Pressure differential to disconnect the sleeve (after the ball is dropped), psi	362-1380[2]	
Connection thread, NUE:	2 7/8”	3 1/2”
1) in top (coupling)		
2) in bottom (nipple)		

[1]When placing an order for T=302 °F (150°C), please indicate T150.
[2]Modified by the number of the shear pins.

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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	26.4
NUE connection thread*	2 3/8”	2 7/8”	3 1/2”
Top (coupling)			
Bottom (nipple)			

* Other threads are available upon request.

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

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RK

String disconnector

Designed to connection packer with tailpipe (screen) and their disconnection because of sticking

DESCRIPTION APPLICATIONS:

- production of oil, gas and injection wells;
- providing isolation squeeze and other technological operations where can be sticking of underground equipmen.

ADVANTAGES:

- disconnection because of sticking don't need rotation, conducted by tensioning.

FEATURES:

- key joint for transmitting rotation;
- possibility of adjustment tension load up to 4409-61729.

SPECIFICATIONS

Dimension name	PK-89-53-3503-T100[1]-K3 AXA 4.239.113	PK89-108-62-3503-T100[1]-K3 AXA 4.239.123
Overall dimensions, in: - maximum diameter of body - flow area diameter Length, ft	 3.5” 2.08 1.04	 4.25” 2.44 1.18
Tension load for disconnection, lbs, not more than	4409-61729	4409-39683
Weight, lbs, not more than	20	26.4
NUE connection thread: - in top (coupling) - in bottom (nipple)	 2 7/8”	 3 ½”

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KCM

Multiple-use Circulating Valve

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

DESCRIPTION APPLICATIONS:

- 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 repairability.

DESIGN FEATURES

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

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			Weight, lb, not more than	Plain-end NUE connection thread*
								OD,in, not more than	ID, in	length, ft, not more than		
KCM-112	AXA 2.505.021	4.67	1080[1]±145	302	1000±145	0.82	7250	4.41	2.36	1.77	51.8	3 1/2”
KCM-114	AXA 2.505.001	4.67					10000	4.49	2.36	1.75	39.7	
KCM-118	AXA 2.505.001-01	4.90						4.65	2.36		44.0	
KCM-136	AXA 2.505.002	5.67				1.06		5.35	2.99	2.02	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.

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REGISTRATION NO. Q1-2091

Certificate of Registration

The American Petroleum Institute certifies that the quality management system of

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LIMITED LIABILITY COMPANY
7, Severnaya Street
Oktyabrskiy, Bashkortostan Republic
Russian Federation

has been assessed by the American Petroleum Institute and found to be in conformance with the following:

API Specification Q1

The scope of this registration and the approved quality management system applies to the:

Design, Manufacture, Delivery and Service of
Packer, Anchor and Valve Equipment

API approves the organization's justification for excluding:

No Exclusions Identified as Applicable

Effective Date: DECEMBER 21, 2020
Expiration Date: DECEMBER 21, 2023
Registered Since: JUNE 26, 2014

Vice President of Global Industry Services

API Spec Q1 Registered

Certificate API Spec Q1 ("inactive" status)

Certificate of Authority to use the Official API Monogram

License Number: 11D1-0184 ORIGINAL

PAKER SCIENCE AND PRODUCTION COMPANY,
LIMITED LIABILITY COMPANY
7, Severnaya Street
Oktyabrskiy, Bashkortostan Republic
Russian Federation

API-11D1

11D1-0184

American Petroleum Institute

Effective Date: JANUARY 14, 2022
Expiration Date: DECEMBER 21, 2023

Certificate API 11D1 («inactive» status)

CERTIFICATE

for the management system according to ISO 9001:2015 and ISO 14001:2015 and ISO 45001:2018

Limited Liability Company
"Research and Production Firm
"Packer"
452606, Oktyabrsky, Republic of Bashkortostan, ul. Severnaya, 7, Russian Federation

Scope:
Manufacturing and maintenance of packer-anchor and valve equipment with responsibility for design

TÜV THÜRINGEN

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.

Weatherford
Schlumberger
Baker Hughes
HALLIBURTON
ROSNEFT
REPSOL
Shell
ZARUBEZHNEFT
GAZPROM NEFT
LUKOIL
TATNEFT
INA
GAZPROM
NIS
GAZPROM NEFT

Major Clients

OKTYABRSKY
PAKER
SCIENCE AND PRODUCTION FIRM

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 Nagumanov

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

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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

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