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PRODUCTS CATALOG

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DOWNHOLE TOOLS



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Arsa Activation Sub

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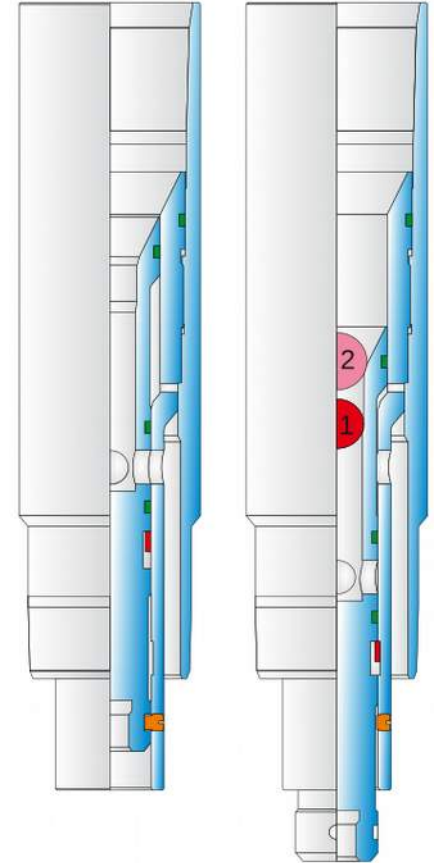
Arsa Activation Sub is used with the Multistage Stimulation Assembly and it is activated by the ball.

Activation Sub allows direct circulation of fluid through the bottom of the assembly and provides complete isolation from above and below once activated.

Activation Sub also allows pressure build up inside the MSS assembly to set an open hole packers and to activate other downhole equipment.

Activation process of the sub is done by dropping the setting ball from the surface and by building up pressure inside the tubing. Activation pressure can be adjusted by the number of shear screws.

If primary ball is failed to activate the sub (due to erosion or damage), then secondary ball can be used for activation.



Liner size		Activation Sub OD		Setting ball (D1 / D2)		Pressure rating		Temperature rating	
in	mm	in	mm	in	mm	psi	MPa	°C	°F
4.0	101.6	4.5	114.3	1.125 / 1.5	28.6 / 38.1	10,000	70.3	135	275
4.5	114.3	5.0	127.0	1.5 / 1.75	38.1 / 44.5	10,000	70.3	135	275
5.5	139.7	6.0	152.4	1.625 / 1.875	41.3 / 47.6	10,000	70.3	135	275



Arsa-RFS-C Reclosable Frac Sleeve (Cemented)

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Reclosable Frac Sleeve is used in multistage stimulation. This frac sleeve can be shifted close by hydraulic shifting tool.

Activation of the ARSA-RFS-C frac sleeve is performed by the setting ball and pressure applied from the surface. Activation pressure of the sleeve can be adjusted by the number of shear pins.

Ball seat of the sleeve is made of a cast iron and can be milled by the standard milling assembly.

Double o-ring seals provide reliable sealing in case the frac sleeve is closed after long period of well production.

Bi-directional wiper rings help to keep seal surfaces of the sleeve clean and free of debris.

Collet mechanism of the sleeve is isolated from production fluids and therefore prevents debris and deposits accumulation on the collet. Design of the collet provides positive indication of the sleeve shifting and also fixes the sleeve in open/close positions.

The sleeve can be run in highly deviated or horizontal open hole applications where extra durability is required.

ARSA-RFS-C cemented frac sleeve can be used in cemented applications. Design of the frac sleeve minimizes cement contamination inside the sleeve and also allows effective residual cement cleaning by a conventional wiper plugs.

The frac sleeve is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Liner size		Frac Sleeve OD		Frac Sleeve ID		Pressure rating		Temperature rating	
in	mm	in	mm	in	mm	psi	MPa	°C	°F
4.0	101.6	5.25	133.35	3.48	88.50	10,000	70.3	135	275
4.5	114.3	5.63	143.00	3.90	98.60	10,000	70.3	135	275
5.5	139.7	7.50	190.50	4.65	118.11	10,000	70.3	135	275



Arsa-RFP-C Reclosable Frac Port (Cemented)

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Reclosable Frac Port is used in multistage stimulation or multizone acidizing. This port can be shifted open/close by hydraulic shifting tool. Frac Port has full bore internal diameter.

Operation of the ARSA-RFP-C frac port is performed by the upward or downward movements of the shifting tool.

Initial activation force of the port can be adjusted by the number of shear pins.

Double o-ring seals provide reliable sealing in case the frac port is closed after long period of well production.

Bi-directional wiper rings help to keep seal surfaces of the port clean and free of debris.

Collet mechanism of the port is isolated from production fluids and therefore prevents debris and deposits accumulation on the collet. Design of the collet provides positive indication of the port shifting and also fixes the port in open/close positions.

The port can be run in highly deviated or horizontal open hole applications where extra durability is required.

ARSA-RFP-C cemented frac port can be used in cemented applications. Design of the frac port minimizes cement contamination inside the port and also allows effective residual cement cleaning by a conventional wiper plugs.

The frac port is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Liner size		Frac Sleeve OD		Frac Sleeve ID		Pressure rating		Temperature rating	
in	mm	in	mm	in	mm	psi	MPa	°C	°F
4.0	101.6	5.25	133.35	3.48	88.50	10,000	70.3	135	275
4.5	114.3	5.63	143.00	3.90	98.60	10,000	70.3	135	275
5.5	139.7	7.50	190.50	4.65	118.11	10,000	70.3	135	275



Arsa-OHP-G Open Hole Packer

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Arsa-OHP-G open hole hydraulic set packer is designed for zonal isolation in open hole completion. Packer is mainly used in multistage stimulation systems. The number of packers in the open hole is defined by the number of stimulated zones.

The packer is designed for highly deviated or horizontal well application where extra durability is required.

To set all the packers, pressure is applied to the liner. All packers are set at the same time. Packing element is equipped with anti extrusion rings that allow packer to withstand multiple pressure cycles in both directions.

Short design of the packer allows smooth running through dog legs.

Setting pressure can be adjusted in the filed by changing number of the shear screws.

The packer can be rotated with the liner during running in hole or fluid displacement operations.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Liner size		Open Hole size		Packer OD		Packer ID		Pressure rating	
in	mm	in	mm	in	mm	in	mm	psi	MPa
4.5	114.3	6-1/8	155.6	5.75	146.1	3.90	99.0	10,000	70.3
5.5	139.7	8-1/2	215.9	8.00	203.2	4.79	121.7	10,000	70.3



Arsa-FS Frac Stinger

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The Arsa Frac Stinger is used to provide an effective seal in the packer bore or seal bore receptacle and to isolate communication between work string and the casing during fracturing operations.

The Frac Stinger consist of several components:

- No-Go Locator
- Spacer Tube(s)
- Seal Unit(s)
- Half Mule Shoe

No-go locator shoulders on the packer bore or on the seal bore receptacle and provides clear indication of the stinger position.

Spacer Tube allows some space out between the no-go locator and seal units for longer seal bore receptacle.

Seal Units provide isolation between polished bore receptacle and the work string. Modular structure of the seal units allows to connect multiple units together and to make long isolation seal assembly.

Seal Units are equipped with the bonded seals. Bonded seals provide excellent isolation and at the same time allow movement of the seal assembly inside the polished bore.

Bonded seals are made from either Nitrile or Viton. Bonded seals can withstand running inside the tubing or casing and provide integrity after multiple movements in and out of the seal bore.

Frac Stinger is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Seal Bore		Stinger OD		Stinger ID		Pressure rating	
in	mm	in	mm	in	mm	psi	Mpa.
4.00	101.6	4.50	114.3	3.03	77.0	10,000	70.3
5.00	127.0	5.50	139.7	3.92	99.6	10,000	70.3
5.25	133.4	5.75	146.1	4.36	110.7	10,000	70.3



Arsa-SBPH-P Seal Bore Packer-Hanger (Permanent)

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Arsa seal bore packer-hanger can be used as a production packer or as a hanger for standalone screens application and multistage stimulation. It can also be used for liner deployment in an extended reach wells.

The packer is designed for highly deviated or horizontal well application where extra durability is required. The packer can be rotated with the liner during run in hole or fluid displacement operations.

Arsa-SBPH-P is a hydraulic set, permanent packer, with polished seal bore. Large seal bore diameter maximizes production through the packer.

The packer seal bore can be extended by the external polished bore receptacle that is attached below the packer.

The packer is deployed on the tubing or drill pipe and set with the Arsa Standard Hydraulic Setting Tool. It can also be run on the wireline and set with e-setting tool and standard wireline adapter kit.

The packer can be removed with conventional milling tools.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements. Packer element can be made of either HNBR, Viton or Aflas materials.



Casing size		Casing weight / wall		Packer OD		Packer ID		Pressure rating	
in	mm	lbs/ft	mm	in	mm	in	mm	psi	MPa
6-5/8	168.3	20-24	7.3-8.9	5.73	145.5	4.0	101.6	10,000	70.3
7.0	177.8	26-29	9.2-10.4	5.99	152.2	4.0	101.6	10,000	70.3
9-5/8	244.5	47-53.5	11.9-13.8	8.34	211.8	6.0	152.4	10,000	70.3



Arsa-SBPH-R Seal Bore Packer-Hanger (Retrievable)

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Arsa seal bore retrievable packer-hanger can be used as a production packer or as a hanger for standalone screens application and multistage stimulation. It can also be used for liner deployment in an extended reach wells.

The packer is designed for highly deviated or horizontal well application where extra durability is required. The packer can be rotated with the liner during run in hole or fluid displacement operations.

Arsa-SBPH-R is a hydraulic set, retrievable packer, with polished seal bore. Large seal bore diameter maximizes production through the packer.

The packer seal bore can be extended by the external polished bore receptacle that is attached below the packer.

The packer is deployed on the tubing or drill pipe and set with the Arsa Standard Hydraulic Setting Tool. It can also be run on the wireline and set with e-setting tool and standard wireline adapter kit.

The packer can be retrieved with the Arsa Packer Retrieving Tool.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements. Packer element can be made of either HNBR, Viton or Aflas materials.



Casing size		Casing weight / wall		Packer OD		Packer ID		Pressure rating	
in	mm	lbs/ft	mm	in	mm	in	mm	psi	MPa
6-5/8	168.3	20-24	7.3-8.9	5.73	145.5	4.0	101.6	10,000	70.3
7.0	177.8	26-29	9.2-10.4	5.99	152.2	4.0	101.6	10,000	70.3
9-5/8	244.5	47-53.5	11.9-13.8	8.34	211.8	6.0	152.4	10,000	70.3



Arsa-SBPHM-P Seal Bore Packer-Hanger with Mechanical Set (Permanent)

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Arsa seal bore packer-hanger with mechanical set can be used as a production packer or as a hanger for standalone screens application and multistage stimulation. It can also be used for liner deployment in an extended reach wells.

The packer is designed for highly deviated or horizontal well application where extra durability is required. The packer can be rotated with the liner during run in hole or fluid displacement operations.

Arsa-SBPHM-P is a hydraulic set, permanent packer, with polished seal bore. Large seal bore diameter maximizes production through the packer.

The packer seal bore can be extended by the external polished bore receptacle that is attached below the packer.

The packer is deployed on the tubing or drill pipe and set with the Arsa Mechanical Backup Hydraulic Setting Tool.

If for any reason packer could not be set hydraulically, then there is a backup mechanical setting mechanism by applying work string weight on top of the packer.

The packer can be removed with conventional milling tools.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements. Packer element can be made of either HNBR, Viton or Aflas materials.



Casing size		Casing weight / wall		Packer OD		Packer ID		Pressure rating	
in	mm	lbs/ft	mm	in	mm	in	mm	psi	MPa
6-5/8	168.3	20-24	7.3-8.9	5.73	145.5	4.0	101.6	10,000	70.3
7.0	177.8	26-29	9.2-10.4	5.99	152.2	4.0	101.6	10,000	70.3
9-5/8	244.5	47-53.5	11.9-13.8	8.34	211.8	6.0	152.4	10,000	70.3



Arsa-SBPHM-R Seal Bore Packer-Hanger with Mechanical Set (Retrievable)

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Arsa seal bore retrievable packer-hanger with mechanical set can be used as a production packer or as a hanger for standalone screens application and multistage stimulation. It can also be used for liner deployment in an extended reach wells.

The packer is designed for highly deviated or horizontal well application where extra durability is required.

The packer can be rotated with the liner during run in hole or fluid displacement operations.

Arsa-SBPHM-R is a hydraulic set, retrievable packer, with polished seal bore. Large seal bore diameter maximizes production through the packer.

The packer seal bore can be extended by the external polished bore receptacle that is attached below the packer.

The packer is deployed on the tubing or drill pipe and set with the Arsa Mechanical Backup Hydraulic Setting Tool.

If for any reason packer could not be set hydraulically, then there is a backup mechanical setting mechanism by applying work string weight on top of the packer.

The packer can be retrieved with the Arsa Packer Retrieving Tool.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements. Packer element can be made of either HNBR, Viton or Aflas materials.



Casing size		Casing weight / wall		Packer OD		Packer ID		Pressure rating	
in	mm	lbs/ft	mm	in	mm	in	mm	psi	MPa
6-5/8	168.3	20-24	7.3-8.9	5.73	145.5	4.0	101.6	10,000	70.3
7.0	177.8	26-29	9.2-10.4	5.99	152.2	4.0	101.6	10,000	70.3
9-5/8	244.5	47-53.5	11.9-13.8	8.34	211.8	6.0	152.4	10,000	70.3



Arsa-HSP-P Hydraulic Set Packer (Permanent)

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Arsa hydraulic set permanent packer has single packing element and full-circle slips to operate in wide range of casing weights and at the same time to minimize casing damage.

Packer is activated by applying hydraulics pressure to the tubing. It can be also set with a setting tool.

This packer can be used as a production packer or as a hanger for standalone screens application and multistage stimulation.

The packer can be run in highly deviated or horizontal well application where extra durability is required.

Large bore diameter maximizes production through the packer.

The packer can be removed with conventional milling tools.

The packer is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements. Packer element can be made of either HNBR, Viton or Aflas materials.



Casing size		Casing weight / wall		Packer OD		Packer ID		Pressure rating	
in	mm	lbs/ft	mm	in	mm	in	mm	psi	MPa
7.0	177.8	26-32	9.2-11.5	5.99	152.2	4.0	101.6	10,000	70.3
9-5/8	244.5	47-58.4	11.9-15.2	8.34	211.8	6.0	152.4	10,000	70.3



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Arsa-SHST Hydraulic Setting Tool

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Arsa-SHST Hydraulic Setting Tool is a hydraulically activated tool, that can set various Arsa retrievable and permanent packers.

Setting Tool allows circulation of fluid during run in hole process. It also allows rotation of the workstring and torque transmission through the packer mandrel. After packer is set, it can be mechanically and hydraulically tested with the setting tool.

Setting Tool is activated by the primary brass ball. Ball can be pumped to the seat in highly deviated or horizontal wells. If primary ball fails, then secondary composite ball can be used to activate the tool.

Setting Tool is hydraulically released from the packer. If hydraulic release mechanism fails, then tool can be released mechanically by rotation to the right.

Two sizes of the Setting Tool are available:

7.0 in Arsa-SHST Setting Tool for the 6-5/8 in and 7.0 in Arsa packers.

9-5/8 in Arsa-SHST Setting Tool for the 9-5/8" Arsa packers.

The Setting Tool is made from alloy steel (4145) and heat treated to comply with NACE MR0175 requirements.





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Arsa-SHST-M Hydraulic Setting Tool

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Arsa-SHST-M Hydraulic Setting Tool is a hydraulically activated tool with mechanical backup, that can set various Arsa retrievable and permanent packers.

Setting Tool allows circulation of fluid during run in hole process. It also allows rotation of the workstring and torque transmission through the packer mandrel. After packer is set, it can be mechanically and hydraulically tested with the setting tool.

Setting Tool is activated by the primary brass ball. Ball can be pumped to the seat in highly deviated or horizontal wells. If primary ball fails, then secondary composite ball can be used to activate the tool.

If hydraulic setting mechanism fails, then Setting Tool can be released from the packer, pulled out of the packer bore, and mechanical setting dogs activated. Packer can be set mechanically by applying the weight down.

Setting Tool is hydraulically released from the packer. If hydraulic release mechanism fails, then tool can be released mechanically by rotation to the right.

Two sizes of the Setting Tool are available:

7.0 in Arsa-SHST-M Setting Tool for the 6-5/8 in and 7.0 in Arsa packers.

9-5/8 in Arsa-SHST-M Setting Tool for the 9-5/8" Arsa packers.

The Setting Tool is made from alloy steel (4145) and heat treated to comply with NACE MR0175 requirements.





Arsa-FJ Flush Joint Connection

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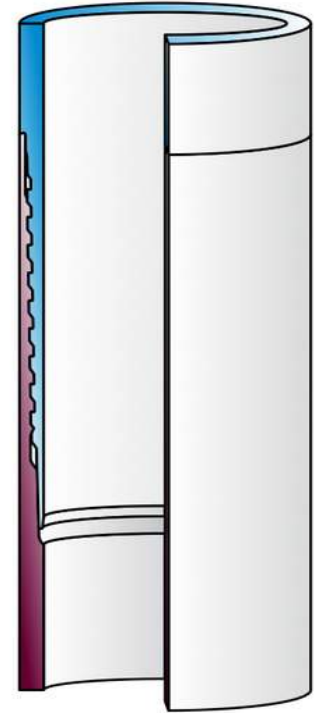
Arsa-FJ flush joint thread is the cost effective and robust connection. Thread can be used in a wash over pipes or in a gravel pack applications.

Negative angle on the thread profile helps to increase mechanical properties and torque values of the thread. Metal-to-metal seal on the bottom of the thread provides high pressure rating.

Negative torque shoulder prevents the thread from over-torquing and also act as an indicator of an optimum torque during make up.

Thread design allows to assemble connections with a regular pipe wrenches.

In addition, the connection can be supplied with the set of gauges for a filed inspection. These gauges allow to perform regular field inspection and rejection of damaged connections. The set of gauges includes: plug, nut, profile gauge for both pin and box.



Mechanical properties

Pipe OD		Pipe grade		Burst		Collapse		Tensile		Torque	
in	mm	API	GOST	psi	atm	psi	atm	lbs	ton	Lbf.ft	Hm
2-3/8	60.3	L-80	E	7840	533	8190	557	45000	20.4	1518	2059
2-3/8	60.3	P-110	M	10780	733	11200	762	56000	25.4	1900	2576

Torque values

Pipe OD		Pipe grade		Minimum torque		Optimum torque		Maximum torque	
in	mm	API	GOST	Lbf.ft	Hm	Lbf.ft	Hm	Lbf.ft	Hm
2-3/8	60.3	L-80	E	300	407	400	542	500	678
2-3/8	60.3	P-110	M	400	542	500	678	600	814



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Arsa-TS Tubing Swivel

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Tubing Swivel is used between wash pipe and setting tool assembly in horizontal completion. Swivel allow rotation of the setting tool without turning the wash pipe. Rotation can be done in any direction.

Swivel is made of only few components. Double o-ring seal provide means of isolation between tubing and the annulus. The brass bearing rings helps to reduce friction during rotation of the wash pipe at tension. The retainer is locked in place by the set crew preventing it from backing off during counterclockwise rotation.

Tubing Swivel is made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Wash pipe size		Swivel OD		Swivel ID		Pressure rating	
in	mm	in	mm	in	mm	psi	MPa
2-3/8	60.3	3.43	87.12	1.867	47.4	5,000	34.47
2-7/8	73.0	3.93	99.82	2.441	62.0	5,000	34.47
3-1/2	88.9	4.55	115.70	2.992	76.0	5,000	34.47



Arsa-LN Lifting Nubbin

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Lifting nubbins are necessary to run flush joint connections in hole. This is steel plug with flush joint pin thread without lower seal lip.

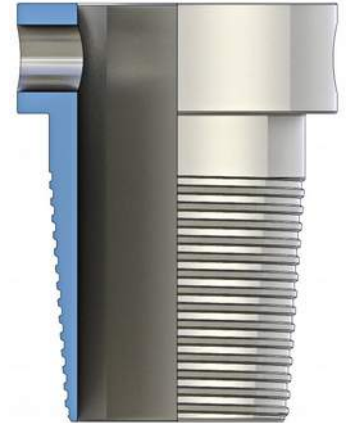
The upper flange of the plug is designed to seat on the side door elevator with enough overlap to allow flush joint string to be lifted.

The plug is designed to support the weight of the whole wash pipe string.

The upper flange shoulder can also act as a stop collar in case of unplanned slippage of the wash pipe string.

Maximum lifting capacity is stamped on the plug. Four through holes on the top flange of the plug allow easy rotation during assembling to the wash pipe. It is not necessary to apply thread lubricant to the lifting plug.

All plugs are phosphate coated for protection against corrosion.



Wash pipe size		Nubbin OD		Nubbin ID		Lifting capacity	
in	mm	in	mm	in	mm	lbs	ton
2-3/8	60.3	3.000	76.20	1.867	47.4	36,000	16.3
2-7/8	73.0	3.500	88.90	2.441	62.0	50,000	22.7
3-1/2	88.9	4.125	104.78	2.992	76.0	72,000	32.6



Arsa-SSU Stub Acme Seal Unit

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Seal Units are used in the seal assemblies along with snap latch, anchor latch or the no-go locator.

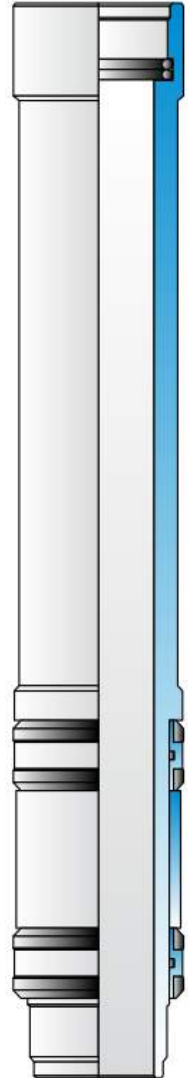
Seal Units provide isolation between polished bore receptacle and the production tubing.

Modular structure of the seal units allows to connect multiple units together and to make long isolation seal assembly.

Seal Units equipped by the set of the bonded seals. Bonded seals provide excellent isolation and at the same time allow movement of the seal assembly inside the polished bore receptacle.

Bonded seals are made from either Nitrile or Viton.

Seal Units are made from alloy steel (4140) and heat treated to comply with NACE MR0175 requirements.



Seal Bore size		Seal Unit OD		Seal Unit ID		Pressure rating	
in	mm	in	mm	in	mm	psi	MPa
4.00	101.60	3.96	100.58	3.03	76.96	10,000	70.3
5.00	127.00	4.96	125.98	3.92	99.57	10,000	70.3
5.25	133.35	5.21	132.33	4.36	110.74	10,000	70.3



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Arsa 4s – sintered four layer depth filter

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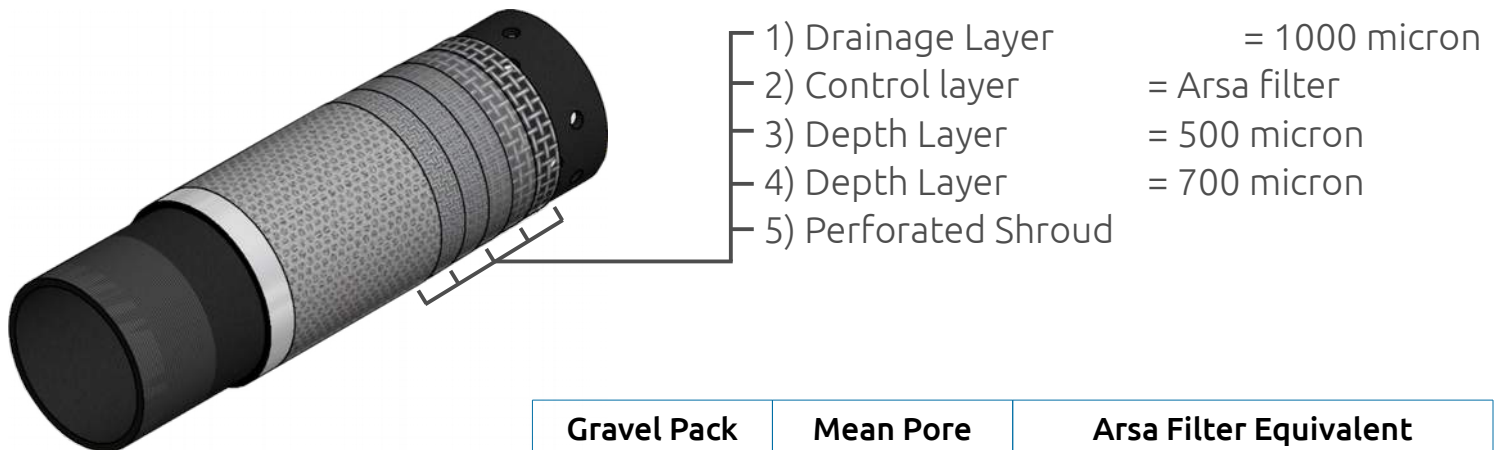
Arsa 4s is a multilayer sintered mesh based screen. This screen provides highest level of sand control that can be installed in a well without gravel pack.

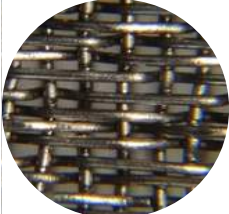
It can be used for stand-alone screen service or with a gravel pack as a secondary sand control layer in case the gravel pack is damaged, washed out, settled, or otherwise compromised due to reservoir compaction.

Arsa 4s screen is built from a series of precise pore meshes that are sintered together.

The unique construction of the standard Arsa 4s screen allows high torque to be placed on the pipe without affecting the screen jacket.

The screen can be rotated in place to more effectively displace the well bore and mix the breaker in the open hole section, resulting in better filter-cake break and lower skins.



Gravel Pack Size	Mean Pore Size (micron)	Arsa Filter Equivalent	
40/60	70-90		Fine
20/40	100-120		Medium
10/30	175-220		Coarse