



## PRODUCT CATALOGUE



DRILLING TOOLS

# ABOUT THE COMPANY

VNIIBT-Drilling Tools Ltd. was established in 2003 on the basis of the Perm Branch of the Russian Research Institute of Drilling Technologies (VNIIBT) founded on November 26, 1963. Now it incorporates the following companies:

**VNIIBT-Drilling Tools Ltd**  
(Perm)

**OJSC "NPO "Burovaya Technika"**  
(Moscow)

**OJSC Pavlovsky Machinery Plant**

(Pavlovsky Settlement, Perm Krai)

**Kotovo Branch of VNIIBT-Drilling Tools Ltd.,**  
(Kotovo city, Volgograd Region)

Being a part of Integra Group of Companies we employ more than 1500 people.

**Our mission** is creation of high quality competitive tools meeting or surpassing consumer's expectations in terms of operating performance, reliability and life. We also render wide range of services, providing support to our clients at all stages of the tools operation.

**Business principles:** commissioning of the most advanced and progressive practices and technologies, fulfillment of all taken obligations, professionalism, reliability, customer oriented approach.

Our competitive advantage is complex approach to each client, including help in choosing the most efficient decision meeting customer's requirements, provision and improvement of necessary equipment, engineering and consulting, warranty observation. The Company's specialists carry out continuous equipment monitoring with the purpose of further development and improvement.

At present the enterprise produces more than 120 models of motors and over 30 models of high speed and geared turbodrills as well as equipment for motors maintenance, coring tools, components of casing and drilling strings, jars, shock-absorbers, packers, fishing tools, etc.

Pumps production is developed dynamically. Series manufacture of oil-producing submersible screw pumps with top drive, single-screw multiphase pumping systems and sludge pumps for mud sump cleaning are developed.

The company has substantial R&D, design engineering and technological basis as well as unique production facilities, which allow us to manufacture products on world level. The Company's personnel have significant practical experience and undergo regular training and certification. Real experts work for our company: their inventions are patented in the USA, Germany, France, Great Britain, Japan and many other countries.

We value our good name and reputation of reliable business partner and guarantee high quality of the products and services.

Among our clients are big Russian and foreign oil & gas companies.

Under brand name Integra-Drilling Tools our products present in international oil & gas market. Tools are known as SiberMotor, SiberTurbine and SiberJar registered trade marks.

# QUALITY MANAGEMENT

Quality Management System certification is the warrantee, that a company complies with and fulfills all the requirements stated in international standards.

INTEGRA-Drilling Tools' Quality Management System is certified by the American Petroleum Institute, API, for compliance with standards ISO 9001:2008, ISO/TS 29001, API Spec Q1 and API 7-1.

The Quality Management System in Pavlovsky Machinery Plant is certified according to method TÜV CERT by TÜV SÜD Management Service GmbH, for compliance with standard DIN EN ISO 9001:2000.

The Quality Management System of the Kotovo branch, is certified on the basis of standard ISO 9001:2000 (DIN EN ISO 9001:2000) accredited by TÜV Thüringen e.V.

As our main goal is creation of high quality competitive equipment meeting or even exceeding all expectations of our clients in terms of operation quality and reliability as well as high quality service provision, our Company has the following **business conduct principles in the area of quality:**

- consumer orientation, complete current and future needs satisfaction for our clients;
- implementation of advanced practices and processes as well as constant improvement of our products and services;
- improvement of scientific and technical activity directed to new products, services and advanced technologies development;
- permanent improvement of our specialist's activity, development of their professional competences and skills;
- constant improvement of the Quality Management System in force that complies with international and Russian standards.



Taking into account the principles specified the Company accepts the following **obligations to its clients in terms of quality:**

- provision of produced equipment workability, including presence of necessary functions, quick adaptation to changes in requirements;
- reliable and trouble-free equipment operation;
- fulfillment of all obligations before consumers within the product life-cycle.



# SIBERMOTOR™

is a highly efficient tool corresponding to the requirements of all modern oil and gas on- and off-shore well drilling technologies.

## SIBERMOTOR ADVANTAGE

Positive displacement motors (PDM) standard configuration has adjustable bent housing, except for three small diameter motors. Bend angle values are specified in the table. There is possibility to supply PDM equipped with X-over subs instead of adjustable bent housing upon the customer's requirement.

Flex groove, i.e. middle part stator OD narrowing, improves stator threaded connections fatigue damage resistance under the run with drill string rotation. As a result there is no need to use special flex sub above the motor.

PDM top sub has regular type connecting box thread and simultaneously acts as a catching device of the rotor. Such technical invention reduces probability of the motor loss in a hole even in cases when upper part of stator is damaged.

Additionally installed float and/or damp subs also have standard connecting regular type threads that excludes usage of supplementary X-over subs.

Power section of any motor can be made of a rubber compound having increased mechanical properties, so called "hard rubber". This provides PDM power and operating torque growth up to 50%. This technical decision is economically approved in comparison with the technology of stator lining reinforcement.

It is necessary to fill in special PDM selection form in order to make right choice. This will ensure delivery of the equipment mostly suitable for the operation conditions and get maximum running efficiency.



### BASIC DESIGNATION OF MOTOR

**SM375.7850**

Product code

**SM - SIBERMOTOR**

Diameter in the decimal representation of the size in inches X100  
3 3/4"

Lobes configuration, rotor/stator  
7/8

Stages x 10  
5,0



### ADDITIONAL LETTERS IN THE CODE

**SM375S.7850H.C**

S - (spindle) increased diameter spindle corresponding to the diameter of the next size

D - (direct) straight motor

H - (high speed) super high RPM

T - (temperature) heat resistant version

N - (nitrogen) nitrogen resistant version

U - (ultra power) hard rubber

X - reinforced stator

C - (tungsten carbide) rotor hard coating



## SIBERMOTOR Specification (imperial)

### High performance mud motors with base type rubber power sections

Product code	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 1 11/16 "</b>																		
SM168.3450	1 11/16	N/A	6.14	N/A	N/A	30.8	2 5/16	M16 x 1.5	NC 12	39.4	3/4	5.0	3.2 - 7.9	138 - 336	290	22 - 44	1.9	1323
SM168.5636	1 11/16	N/A	7.5	N/A	N/A	42		NC12		51.2	5/6	3.6	16 - 32	282 - 564	290	59 - 111	9.8	1764
<b>Tool OD 2 1/8 "</b>																		
SM217.5642	2 1/8	N/A	12.2	N/A	N/A	99	2 21/64 - 3	NC 16	NC 16	79	5/6	4.2	16 - 48	120 - 360	435	111 - 207	12.2	2204
<b>Tool OD 2 7/8 "</b>																		
SM287.4542	2 7/8	N/A	12.8	40.7	0° - 3°	220	3 3/8 - 3 7/8	2 3/8 Reg	P.A.C. 2 3/8 NC23 2-3/8 Reg	75	4/5	4.2	48 - 79	240 - 396	435	443 - 590	34	4409
SM287S.2369	2 7/8	N/A	16.6	40.7	0° - 3°	233				116	2/3	6.9	48 - 79	360 - 600	580	405 - 516	36	5511
<b>Tool OD 3 1/2 "</b>																		
SM350.5651	3 1/2	N/A	13.3	45.1	0° - 2.5°	403	3 7/8 - 4 3/4	2 3/8 Reg	2-3/8 Reg	79	5/6	5.1	79 - 111	288 - 408	580	811 - 959	59	8818
<b>Tool OD 3 3/4 "</b>																		
SM375.5650	3 3/4	N/A	17.5	51.6	0° - 2.5°	485	4 7/16 - 4 3/4	2 7/8 Reg	NC 26	118	5/6	5.0	79 - 159	180 - 360	580	1033 - 1623	68	11023
SM375.6728		N/A				485				118	6/7	2.8		84 - 168	435	1106 - 1696	38	

## SIBERMOTOR Specification (imperial)

### High performance mud motors with base type rubber power sections

Product code	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 3 3/4 "</b>																		
SM375S.5650	4 3/16	N/A	17.7	50.8	0° - 2.5°	529	4 3/4 - 4 7/8	2 7/8 Reg	NC 26	118	5/6	5.0	79 - 159	180 - 360	580	1033 - 1623	68	13228
SM375S.6728		N/A	17.7			529				118	6/7	2.8		84 - 168	435	1106 - 1696	38	
SM375S.4565		3 5/8	24.2			573	197			4/5	6.5	162 - 324		870	1475 - 2213	129		
SM375S.7868		3 5/8	20.3			551	150			7/8	6.8	48 - 127	90 - 252	870	1401 - 2139	103		
SM375.3488HS		N/A	17.4	N/A	397	4 3/4 - 4 7/8	118			3/4	8.8	79 - 159	396 - 810	435	811 - 959	122	11023	
<b>Tool OD 4 3/16 "</b>																		
SM418.4560	4 3/16	N/A	17.6	49.0	0° - 2.5°	631	4 3/4 - 5 15/16	2 7/8 Reg	NC 31	118	4/5	6.0	95 - 190	198 - 396	580	1475 - 2213	128	17637
SM418.7837		N/A	17.6	49.0		639				118	7/8	3.7		96 - 192	725	1696 - 2581	61	
SM418.5670		3 15/16	21.3	53.2	0° - 2.5°	635		2 7/8 Reg	NC 31	157	5/6	7.0	95 - 190	156 - 318	870	1991 - 3319	194	
<b>Tool OD 4 3/4 " &amp; 5 "</b>																		
SM475.6743	4 3/4	N/A	18.7	57.9	0° - 2.5° (0° - 3°)	802	5 5/8 - 6 1/2	3 1/2 Reg	NC 38	118	6/7	4.3	159 - 317	168 - 336	580	2065 - 3319	157	22046
SM475.7850		4 7/16	22.2	57.9		849				159	7/8	5.0		132 - 264	725	3098 - 4425	163	
SM475S.7850	5.0	4 7/16	22.3	60.6	0° - 2.5°	884				159	7/8	5.0		132 - 264	725	3098 - 4425	163	30865
SM500.7837	5.0	N/A	18.8	60.6	0° - 2.5°	922	5 5/8 - 6 1/2	3 1/2 Reg	NC 38	118	7/8	3.7	159 - 317	120 - 240	580	2803 - 4057	131	30865
SM500.7826		N/A	18.8			922				118	7/8	2.6		81 - 162	435	2213 - 4057	89	
SM500.5657		4 13/16	22.1			952				157	5/6	5.7		162 - 324	435	2360 - 3688	170	

## SIBERMOTOR Specification (imperial)

### High performance mud motors with base type rubber power sections

Product code	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 6 3/4 "</b>																		
SM675.4572	7.0	6 3/4	28.2	74.9	0° - 2° (0° - 3°)	2474	8 7/16 - 9 5/8	4 1/2 Reg	NC 50	200.8	4/5	7.2	301 - 602	150 - 294	797	4720 - 6564	277	66138
SM675.5661						5/6					6.1	114 - 228		725	5532 - 8482	285		
SM675.7856						7/8					5.6	84 - 168		653	7376 - 11432	287		
SM675.7862			7/8			6.2					80 - 160	725		9220 - 11580	261			
<b>Tool OD 8 "</b>																		
SM800.4562	8 1/4	8.0	31.2	85.7	0° - 2° (0° - 3°)	3814	10 5/8 - 12 1/4	6 5/8 Reg	6 5/8 Reg	212.6	4/5	6.2	301 - 901	72 - 228	870	5531 - 8998	385	66138
SM800.7849						212.6				7/8	4.9	49 - 149		870	8039 - 13718	367		
<b>Tool OD 9 5/8 "</b>																		
SM962.7841	9 1/2	N/A	26.3	91.1	0° - 2° (0° - 3°)	4081	11 5/8 - 17 1/2	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	141.7	7/8	4.1	476 - 793	84 - 144	507	9588 - 11801	260	88185
SM962.5664		N/A	26.3			4004				141.7	5/6	5.0		120 - 198	580	8113 - 11063	320	
SM962.3460		9 1/16	31.1			4506				200.8	3/4	6.0	555 - 1014	138 - 240	725	9588 - 13719	441	
SM962.7855		9 1/4	32.5			5366				216.5	7/8	5.5	476 - 1189	62 - 155	580	19176 - 28764	585	

## SIBERMOTOR Specification (metric)

### High performance mud motors with base type rubber power sections

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN-m	Max power, kWt	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 1 11/16 " (43 mm)</b>																		
SM168.3450	43	N/A	1.87	N/A	N/A	14	58.0	M16 x 1.5	NC 12	1000	3/4	5.0	12 - 30	138 - 336	20	0.03 - 0.06	1.4	0.6
SM168.5636	43	N/A	2.29	N/A	N/A	19		NC12		1300	5/6	3.6	60 - 120	282 - 564	20	0.08 - 0.15	7.2	0.8
<b>Tool OD 2 1/8 " (55 mm)</b>																		
SM217.5642	55	N/A	3.73	N/A	N/A	45	59.0 - 76.0	NC 16	NC 16	2000	5/6	4.2	60 - 180	120 - 360	30	0.15 - 0.28	9.0	1
<b>Tool OD 2 7/8 " (73 mm)</b>																		
SM287.4542	73	N/A	3.9	1035	0° - 3°	100	83.0 - 98.4	2 3/8 Reg	P.A.C. 2 3/8 NC23 2-3/8 Reg	1900	4/5	4.2	180 - 300	240 - 396	30	0.6 - 0.8	25	2
SM287S.2369	76	N/A	5.05	1070	0° - 3°	106				3000	2/3	6.9	180 - 300	360 - 600	40	0.55 - 0.70	36	2.5
<b>Tool OD 3 1/2 " (88 mm)</b>																		
SM350.5651	89	N/A	4.06	1146	0° - 2.5°	183	98.4 - 120.6	2 3/8 Reg	2 3/8 Reg	2000	5/6	5.1	300 - 420	288 - 408	40	1.1 - 1.3	43	4
<b>Tool OD 3 3/4 " (95 mm)</b>																		
SM375.5650	95	N/A	5.35	1310	0° - 2.5°	220	112.0 - 120.6	2 7/8 Reg	NC 26	3000	5/6	5.0	300 - 600	180 - 360	40	1.4 - 2.2	50	5
SM375.6728		N/A				220				3000	6/7	2.8		84 - 168	30	1.5 - 2.3	28	

## SIBERMOTOR Specification (metric)

### High performance mud motors with base type rubber power sections

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN·m	Max power, kWt	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 3 3/4 " (95 mm)</b>																		
SM375S.5650	106	N/A	5.39	1290	0° - 2.5°	240	120.6 - 123.8	2 7/8 Reg	NC 26	3000	5/6	5.0	300 - 600	180 - 360	40	1.4 - 2.2	50	6
SM375S.6728		N/A	5.39			240				3000	6/7	2.8		84 - 168	30	1.5 - 2.3	28	
SM375S.4565		92	7.39			260	120.6 - 142.9			5000	4/5	6.5		162 - 324	60	2.0 - 3.0	95	
SM375S.7868		92	6.19			250				3800	7/8	6.8	180 - 480	90 - 252	60	1.9 - 2.9	76	
SM375.3488HS		N/A	5.32	N/A	N/A	180	120.6 - 123.8			3000	3/4	8.8	300 - 600	396 - 810	30	1.1 - 1.3	90	
<b>Tool OD 4 3/16 " (106 mm)</b>																		
SM418.4560	106	N/A	5.36	1245	0° - 2.5°	257	120.6 - 151.0	2 7/8 Reg	NC 31	3000	4/5	6.0	360 - 720	198 - 396	40	2.0 - 3.0	94	8
SM418.7860		N/A	5.36	1245		268				3000	7/8	3.7		96 - 192	30	2.3 - 3.5	45	
SM418.5670	106	100	6.48	1352	0° - 2.5°	288	120.6 - 151.0	2 7/8 Reg	NC 31	4000	5/6	7.0	360 - 720	156 - 318	60	2.7 - 4.5	143	
<b>Tool OD 4 3/4 " &amp; 5 " (120 &amp; 127 mm)</b>																		
SM475.6743	120	N/A	5.7	1470	0° - 2.5° (0° - 3°)	364	139.7 - 165.1	3 1/2 Reg	NC 38	3000	6/7	4.3	600 - 1200	168 - 336	40	2.8 - 4.5	115	10
SM475.7850		113	6.76	1470		385				4050	7/8	5.0		132 - 264	50	4.2 - 6.0	120	10
SM475S.7850	127	113	6.81	1542	0° - 2.5°	401				4050	7/8	5.0		132 - 264	50	4.2 - 6.0	120	14
SM500.7837	127	N/A	5.74	1540	0° - 2.5°	418	139.7 - 165.1	3 1/2 Reg	NC 38	3000	7/8	3.7	600 - 1200	120 - 240	40	3.8 - 5.5	96	14
SM500.7826		N/A	5.74			418				3000	7/8	2.6		81 - 162	30	3.0 - 5.5	65	
SM500.5657		122	6.74			432				4000	5/6	5.7		162 - 324	30	3.2 - 5.0	125	

## SIBERMOTOR Specification (metric)

### High performance mud motors with base type rubber power sections

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN·m	Max power, kWt	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 6 3/4 " &amp; 7 " (172 mm)</b>																		
SM675.4572	178	172	8.6	1903	0° - 2° (0° - 3°)	1122	214.3 - 244.5	4 1/2 Reg	NC 50	5100	4/5	7.2	1140 - 2280	150 - 294	55	6.4 - 8.9	204	30
SM675.5661						5/6					6.1							
SM675.7856						7/8					5.6							
SM675.7862						7/8					6.2							
<b>Tool OD 8 " (203 mm)</b>																		
SM800.4562	216	203	9.51	2176	0° - 2° (0° - 3°)	1732	269.9 - 311.1	6 5/8 Reg	6 5/8 Reg	5400	4/5	6.2	1140 - 3420	72 - 228	60	7.5 - 12.2	283	30
SM800.7849						1825				5400	7/8	4.9						
<b>Tool OD 9 5/8 " (244 mm)</b>																		
SM962.7841	240	N/A	8.03	2315	0° - 2° (0° - 3°)	1851	295.3 - 444.5	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	3600	7/8	4.1	1800 - 3000	84 - 144	35	13.0 - 16.0	191	40
SM962.5664		N/A	8.03			1816				3600	5/6	5.0						
SM962.3460		230	9.5			2044				5100	3/4	6.0	2100 - 3840	138 - 240	50	13.0 - 18.6	325	
SM962.7855		235	9.9			2434				5500	7/8	5.5	1800 - 4500	62 - 155	40	26.0 - 39.0	430	

## SIBERMOTOR Specification (imperial)

### Ultra high performance mud motors with hard rubber power sections

Product code/ Serial No	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 3 3/4 "</b>																		
<b>SM375.5650U</b>	3 3/4	N/A	17.5	51.6	0° - 2.5°	485	4 7/16 - 4 3/4	2 7/8 Reg	NC 26	118	5/6	5.0	79 - 159	180 - 360	754	1343 - 2110	88	11023
<b>SM375S.5650U</b>	4 3/16	N/A	17.7	50.8	0° - 2.5°	529	4 3/4 - 4 7/8	2 7/8 Reg	NC 26	118	5/6	5.0		180 - 360	754	1343 - 2110	88	13228
<b>SM375S.4565U</b>		3 5/8	24.2			573	4 3/4 - 5 5/8			197	4/5	6.5		162 - 324	1130	1918 - 1877	168	
<b>SM375.3488HSU</b>		N/A	17.4	N/A	397	4 3/4 - 4 7/8	118	3/4	8.8	396 - 810	565	1055 - 1247		159	11023			
<b>Tool OD 4 3/16 "</b>																		
<b>SM418.4560U</b>	4 3/16	N/A	17.6	49.0	0° - 2.5°	631	4 3/4 - 5 15/16	2 7/8 Reg	NC 31	118	4/5	6.0	95 - 190	198 - 396	754	1918 - 2877	166	17637
<b>SM418.5670U</b>		3 15/16	21.3	53.2	0° - 2.5°	635				157	5/6	7.0	95 - 190	156 - 318	1131	2588 - 4315	252	
<b>Tool OD 4 3/4 " &amp; 5 "</b>																		
<b>SM500.5657U</b>	5.0	4 13/16	22.1	60.6	0° - 2.5°	952	5 5/8 - 6 1/2	3 1/2 Reg	NC 38	157	5/6	5.7	159 - 317	162 - 324	565	3068 - 4795	221	30865

## SIBERMOTOR Specification (imperial)

### Ultra high performance mud motors with hard rubber power sections

Product code/ Serial No	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 6 3/4 "</b>																		
SM675.4572U	7.0	6 3/4	28.2	74.9	0° - 2° (0° - 3°)	2474	8 7/16 - 9 5/8	4 1/2 Reg	NC 50	200.8	4/5	7.2	301 - 602	150 - 294	1036	6136 - 8533	360	66138
SM675.5661U						2526					5/6	6.1						
<b>Tool OD 8 "</b>																		
SM800.4562U	8 1/4	8.0	31.2	85.7	0° - 2° (0° - 3°)	3814	10 5/8 - 12 1/4	6 5/8 Reg	6 5/8 Reg	212.6	4/5	6.2	301 - 901	72 - 228	1131	7190 - 11697	500	66138
<b>Tool OD 9 5/8 "</b>																		
SM962.5664U	9 1/2	N/A	26.3	91.1	0° - 2° (0° - 3°)	4004	11 5/8 - 17 1/2	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	141.7	5/6	5.0	476 - 793	120 - 198	754	10547 - 14382	416	88185
SM962.3460U		9 1/16	31.1			4506				200.8	3/4	6.0	555 - 1014	138 - 240	943	12464 - 17834	573	

## SIBERMOTOR Specification (metric)

### Ultra high performance mud motors with hard rubber power sections

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN·m	Max powr, kWt	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 3 3/4 " (95 mm)</b>																		
<b>SM375.5650U</b>	95	N/A	5.35	1310	0° - 2.5°	220	112.0 - 120.6	2 7/8 Reg	NC 26	3000	5/6	5.0	300 - 600	180 - 360	52	1.8 - 2.8	65	5
<b>SM375S.5650U</b>	106	N/A	5.39	1290	0° - 2.5°	240	120.6 - 123.8	2 7/8 Reg	NC 26	3000	5/6	5.0	300 - 600	180 - 360	52	1.8 - 2.8	65	6
<b>SM375S.4565U</b>		92	7.39			260	120.6 - 142.9			5000	4/5	6.5		162 - 324				
<b>SM375.3488HSU</b>		N/A	5.32	N/A	N/A	180	120.6 - 123.8			3000	3/4	8.8	300 - 600	396 - 810	39	1.4 - 1.7	117	
<b>Tool OD 4 3/16 " (106 mm)</b>																		
<b>SM418.4560U</b>	106	N/A	5.36	1245	0° - 2.5°	257	120.6 - 151.0	2 7/8 Reg	NC 31	3000	4/5	6.0	360 - 720	198 - 396	52	2.6 - 3.9	122	8
<b>SM418.5670U</b>	106	100	6.48	1352	0° - 2.5°	288	120.6 - 151.0	2 7/8 Reg	NC 31	4000	5/6	7.0	360 - 720	156 - 318	78	3.5 - 5.9	186	
<b>Tool OD 4 3/4 " &amp; 5 " (120 &amp; 127 mm)</b>																		
<b>SM500.5657U</b>	127	122	6.74	1540	0° - 2.5°	432	139.7 - 165.1	3 1/2 Reg	NC 38	4000	5/6	5.7	600 - 1200	162 - 324	39	4.2 - 6.5	163	14

## SIBERMOTOR Specification (metric)

### Ultra high performance mud motors with hard rubber power sections

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN-m	Max powr, kWt	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 6 3/4 " (172 mm)</b>																		
SM675.4572U	178	172	8.6	1903	0° - 2° (0° - 3°)	1122	214.3 - 244.5	4 1/2 Reg	NC 50	5100	4/5	7.2	1140 - 2280	150 - 294	72	8.3 - 11.6	204	30
SM675.5661U						1146					5/6	6.1		114 - 228				
<b>Tool OD 8 " (203 mm)</b>																		
SM800.4562U	216	203	9.51	2176	0° - 2° (0° - 3°)	1732	269.9 - 311.1	6 5/8 Reg	6 5/8 Reg	5400	4/5	6.2	1140 - 3410	72 - 228	78	9.7 - 15.9	283	30
<b>Tool OD 9 5/8 " (244 mm)</b>																		
SM962.5664U	240	N/A	8.03	2315	0° - 2° (0° - 3°)	1816	295.3 - 444.5	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	3600	5/6	5.0	1800 - 3000	120 - 198	52	14.3 - 19.5	236	40
SM962.3460U		230	9.5			2044				5100	3/4	6.0	2100 - 3840	138 - 240	65	16.9 - 24.2	325	

## SIBERMOTOR Specification (imperial)

### Extreme performance mud motors with even rubber power sections (ERT)

Product code/ Serial No	Housing OD, in	Flex groove OD of Power section stator, in	Overall length, ft	Length to bend, in	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Length of active part of the stator, in	Lobes	Stages	Flow rate, gpm	No-load RPM	Max allowed differential pressure drop, psi	Parameters at max power		WOB, lbf
								Bit box	Top sub							Torque, ft-lbs	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 4 3/4 " &amp; 5 "</b>																		
SM475.7850X	4 3/4	4 7/16	22.2	57.9	0° - 2.5° (0° - 3°)	849	5 5/8 - 6 1/2	3 1/2 Reg	NC 38	159	7/8	5.0	159 - 317	132 - 264	1015	4337 - 6195	228	22046
SM475S.7850X	5.0	4 7/16	22.3	60.6	0° - 2.5°	884				159	7/8	5.0		132 - 264	1015	4337 - 6195	228	30865
SM500.7837X	5.0	N/A	18.8	60.6	0° - 2.5°	922	5 5/8 - 6 1/2	3 1/2 Reg	NC 38	118	7/8	3.7	159 - 317	120 - 240	812	3924 - 5680	183	30865
SM500.7826X		N/A	18.8			922				118	7/8	2.6		81 - 162	609	3098 - 5680	125	
<b>Tool OD 6 3/4 "</b>																		
SM675.7856X	7.0	6 3/4	28.2	74.9	0° - 2° (0° - 3°)	2621	8 7/16 - 9 5/8	4 1/2 Reg	NC 50	200.8	7/8	5.6	301 - 602	84 - 168	914	10326 - 16005	402	66138
SM675.7856X			31.2			2875				236.2	7/8	6.2		80 - 160	1015	12908 - 16212	365	
<b>Tool OD 8 "</b>																		
SM800.7849X	8 1/4	8.0	31.2	85.7	0° - 2° (0° - 3°)	4023	10 5/8 - 12 1/4	6 5/8 Reg	6 5/8 Reg	212.6	7/8	4.9	301 - 901	49 - 149	1218	11255 - 19205	514	66138
<b>Tool OD 9 5/8 "</b>																		
SM962.7841X	9 1/2	N/A	26.3	91.1	0° - 2° (0° - 3°)	4081	11 5/8 - 17 1/2	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	141.7	7/8	4.1	476 - 793	84 - 144	710	13423 - 16521	364	88185
SM962.7855X		9 1/4	32.5			5366				216.5	7/8	5.5	476 - 1189	62 - 155	800	26500 - 37500	755	

## SIBERMOTOR Specification (metric)

### Extreme performance mud motors with even rubber power sections (ERT)

Product code/ Serial No	Housing OD, mm	Flex groove OD of Power section stator, mm	Overall length, m	Length to bend, mm	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Length of active part of the stator, mm	Lobes	Stages	Flow rate, lpm	No-load RPM	Max allowed differential pressure drop, Bar	Parameters at max power		WOB, ton
								Bit box	Top sub							Torque, kN-m	Max power, hp	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Tool OD 4 3/4 " &amp; 5 " (120 &amp; 127 mm)</b>																		
SM475.7850X	120	113	6.76	1470	0° - 2.5° (0° - 3°)	385	139.7 - 165.1	3 1/2 Reg	NC 38	4050	7/8	5.0	600 - 1200	132 - 264	70	5.9 - 8.4	168	10
SM475S.7850X	127	113	6.81	1542	0° - 2.5°	401				4050	7/8	5.0		132 - 264	70	5.9 - 8.4	168	14
SM500.7837X	127	N/A	5.74	1540	0° - 2.5°	418	139.7 - 165.1	3 1/2 Reg	NC 38	3000	7/8	3.7	600 - 1200	120 - 240	56	5.3 - 7.7	135	14
SM500.7826X		N/A	5.74			418				3000	7/8	2.6		81 - 162	42	4.2 - 7.7	91	
<b>Tool OD 6 3/4 " (172 mm)</b>																		
SM675.7856X	178	172	8.6	1903	0° - 2° (0° - 3°)	1189	214.3 - 244.5	4 1/2 Reg	NC 50	5100	7/8	5.6	1140 - 2280	84 - 168	63	14.0 - 21.0	295	30
SM675.7862X			9.5			1304				6000	7/8	6.2		80 - 160	70	17.5 - 22.0	269	
<b>Tool OD 8 " (203 mm)</b>																		
SM800.7849X	216	203	9.51	2176	0° - 2° (0° - 3°)	1825	269.9 - 311.1	6 5/8 Reg	6 5/8 Reg	5400	7/8	4.9	1140 - 3410	49 - 149	84	15.3 - 26.0	378	30
<b>Tool OD 9 5/8 " (244 mm)</b>																		
SM962.7841X	240	N/A	8.03	2315	0° - 2° (0° - 3°)	1851	295.3 - 444.5	6 5/8 Reg	6 5/8 FH 7 5/8 Reg	3600	7/8	4.1	1800 - 3000	84 - 144	49	18.2 - 22.4	267	40
SM962.7855X		235	9.9			2434				5500	7/8	5.5	1800 - 4500	62 - 155	55	36.0 - 50.5	555	

## TURBODRILL DESIGNATION

**ST475AHS.T1**

Product code

ST - SIBERTURBINE

Diameter in the decimal representation of the size in inches X100

4 3/4"

A (adjustable) adjustable bent housing

HS (high speed) high speed

GR (gear reduction) geared

T1 turbine stage type



In gear reduction turbodrills the RPM is decelerated multiply due to a special planetary gear reducer that is able to receive extremely high loads. Alongside with that torque increases multiply which is enough for driving the high-value torque PDC bits. All parts of the bearing section in a gear reduction turbodrill are oil filled.

## SIBERTURBINE HS<sup>®</sup>

is a high speed turbodrill for the optimal performance while drilling hard and highly abrasive formations with impregnated bits.

## SIBERTURBINE GR<sup>®</sup>

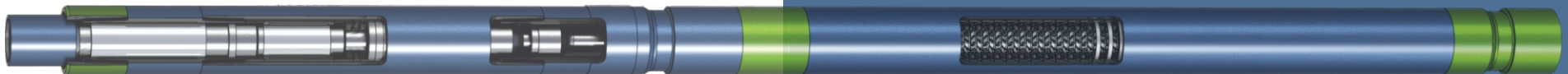
is turbodrill with planetary gear reducer, is the only real alternative to drill high-temperature wells and in cases when high-value torque PDC bits are used.

The most efficient method of drilling hard and highly abrasive formations is drilling with impregnated bits. The bigger RPM to such rock destruction tool the drive provides, the higher is ROP. The best drive in this situation is a high speed turbodrill. The hydrodynamic principle of fluid circulating in turbine stages energy conversion allows to achieve unprecedented output rotating frequency, up to 2000 RPM. Our experience shows that in such conditions drilling speed was 2-3 times higher, that significantly reduce well construction time.

The main competitive advantage of our turbodrills is a patented design of the turbine stage blading. The use of special configuration provides the power characteristics at a minimum pressure losses.

In addition to the above, when drilling with high speed turbodrills, the customer gains the following advantages:

- guaranteed heat resistance up to 200°C;
- eliminated BHA vibrations;
- dramatically enhanced time between maintenance due to the thrust bearing with PDC inserts as well as turbine section radial bearings reinforced by the HVOF coating;
- power characteristics stability within the turbodrill run in a well.



## SIBERTURBINE Specification (imperial)

Product code	Nominal tools diameter, in	Max. housing OD, in	Overall length, ft	Length to bend, ft	Bend angles	Weight, lbs	Diameter of bits used, in	Connection threads		Turbine stages type	Number of stages, pcs	Flow rate, gpm	No-load RPM	Stall torque, ft-lbs*	Max. stall torque, ft-lbs**	Full power condition*			WOB, lbf
								Bit box	Top sub							RPM	Max power, hp	Pressure drop, psi	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>High Speed Turbodrills</b>																			
<b>ST475HS.T1</b>	4 3/4	4 13/16	28.2	N/A	N/A	1210	5 1/2 - 6 1/2	3 1/2 Reg	NC 38	T1 - 120	150	222 - 269	2164 - 2628	619 - 913	1063	1082 - 1314	115	928 - 1378	11023
<b>ST475AHS.T1</b>	4 3/4	4 13/16	28.2	5.2	0° - 2.5°	1210	5 1/2 - 6 1/2	3 1/2 Reg	NC 38	T1 - 120	150	222 - 269	2164 - 2628	619 - 913	1063	1082 - 1314	115	928 - 1378	11023
<b>ST675HS.T5</b>	6 3/4	7.0	34.4	N/A	N/A	3553	7 7/8 - 8 1/2	4 1/2 Reg	NC 50	T5 - 178	144	371 - 483	1580 - 2059	1488 - 2528	2940	790 - 1030	250	1059 - 1755	22046
<b>ST675AHS.T5</b>	6 3/4	7.0	34.4	7.2	0° - 2°	3553	7 7/8 - 8 1/2	4 1/2 Reg	NC 50	T5 - 178	144	371 - 483	1580 - 2059	1488 - 2528	2940	790 - 1030	250	1059 - 1755	22046
<b>ST962AHS.TV2</b>	9 7/16	9 7/16	34.8	9.2	0° - 3°	5404	12 1/4 - 15 1/2	6 5/8 Reg	6 5/8 FH	Tv2 - 240	133	872 - 1014	1016 - 1200	3835 - 5192	5900	508 - 600	308	740 - 972	55115
<b>Geared Turbodrills</b>																			
<b>ST675GR.T2/T5</b>	6 3/4	7 1/4	44.6	8.2	0° - 3°	4382	8 3/8 - 8 3/4	4 1/2 Reg	NC 50	T2/T5 - 178	114/44	412 - 506	392 - 481	5294 - 7971	7971	196 - 241	184	914 - 1378	22046
<b>ST962GR.TS</b>	9 7/16	9 7/16	41.3	10.6	0° - 3°	6768	12 1/4 - 15 1/2	6 5/8 Reg	6 5/8 Reg	TS	102	691 - 940	302 - 411	8205 - 15172	15267	151 - 205	299	711 - 1334	44092

\*parameters at Mud density of 10 ppg

\*\*parameters at Mud density of 16 ppg

## SIBERTURBINE Specification (metric)

Product code	Nominal tools diameter, in	Max. housing OD, mm	Overall length, m	Length to bend, m	Bend angles	Weight, kg	Diameter of bits used, mm	Connection threads		Turbine stages type	Number of stages, pcs	Flow rate, lpm	No-load RPM	Stall torque, kN·m*	Max. stall torque, kN·m**	Full power condition*			WOB, ton
								Bit box	Top sub							RPM	Max power, kWt	Pressure drop, Bar	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>High Speed Turbodrills</b>																			
ST475HS.T1	120	122	8.6	N/A	N/A	590	139.7 - 165.1	3 1/2 Reg	NC 38	T1 - 120	150	840 - 1020	2164 - 2628	0.84 - 1.24	1.45	1082 - 1314	85	64 - 95	5
ST475AHS.T1	120	122	8.6	1.8	0° - 2.5°	590	139.7 - 165.1	3 1/2 Reg	NC 38	T1 - 120	150	840 - 1020	2164 - 2628	0.84 - 1.24	1.45	1082 - 1314	85	64 - 95	5
ST675HS.T5	172	178	10.5	N/A	N/A	1578	200.3 - 215.9	4 1/2 Reg	NC 50	T5 - 178	144	1404 - 1830	1580 - 2059	2.02 - 3.44	4.00	790 - 1030	185	73 - 121	10
ST675AHS.T5	172	178	10.5	2.2	0° - 2°	1578	200.3 - 215.9	4 1/2 Reg	NC 50	T5 - 178	144	1404 - 1830	1580 - 2059	2.02 - 3.44	4.00	790 - 1030	185	73 - 121	10
ST962AHS.TV2	240	240	10.6	2.8	0° - 3°	2635	311.2 - 393.7	6 5/8 Reg	6 5/8 FH	Tv2 - 240	133	3300 - 3840	1016 - 1200	5.20 - 7.04	8.00	508 - 600	228	51 - 67	25
<b>Geared Turbodrills</b>																			
ST675GR.T2/T5	172	184	13.6	2.31	0° - 3°	1992	212.7 - 222.3	4 1/2 Reg	NC 50	T2/T5 - 178	114/44	1560 - 1914	392 - 481	7.20 - 10.84	10.84	196 - 241	136	63 - 95	10
ST962GR.TS	240	240	12.6	3.24	0° - 3°	3300	311.2 - 393.7	6 5/8 Reg	6 5/8 Reg	TS SH	102	2616 - 3558	302 - 411	11.13 - 20.57	20.7	151 - 205	221	49 - 92	20

\* parameters at Mud density of 1.2 g/cm<sup>3</sup>

\*\* parameters at Mud density of 1.92 g/cm<sup>3</sup>

# SIBERJAR®

is the drilling tool applied for the release of stuck tools. Jar has been designed as a BHA component. In case of drill string stuck, the jar facilitates its release.

The optimal means stuck release is to force down or pull up the drill string. Thus, forced pull or slack off drill string is to be applied. At the moment of the jar actuation, the stuck point is jarred with various degrees of intensiveness in the certain direction. The jar enables to accumulate and instantly release the energy of the pulled up or compressed DS interval located above the stuck zone.

The impulse transmits to the stuck drill string and releases it.

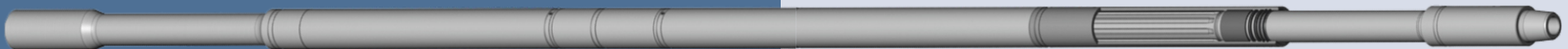
## HYDRAULIC DOUBLE-ACTING DRILLING JAR

- The jar is not equipped with latch activation mechanism. Therefore, the jar may be operated at extended reach well, complicating the establishment of an axial force required for jar recharging.
- The application of a hydraulic jet allows the hydraulic delay stability.
- The spline joint between the housing and the mandrel ensures reliable torque transmission at drill-string rotation.
- The jar is applicable at BHT up to 230°C provided certain specific heatproof sealing elements are installed.
- The splined section is placed in the jar's bottom section which decreases the possibility of damage to the tungsten carbide coating on the spline mandrel at the rig floor while the assembling.

BASIC DESIGNATION OF THE JAR	
<b>SJ475HM</b>	
Product code SJ - SIBERJAR	
Diameter in the decimal representation of the size in inches X100 4 3/4"	
"w/o lettering" - hydraulic type HM - hydromechanical type	

## HYDROMECHANICAL DOUBLE-ACTING DRILLING JAR

- The jar equipped with latch activation mechanism, which excludes the possibility of unintentional actuation in case of build-up force or while the drilling process.
- The jar is optimal for operation in vertical or low inclination wells, where it is possible to apply and control axial force.
- The jar's ID does not allow to pull up wireline equipment.



## SIBERJAR SPECIFICATION (metric)

Parameters	SJ475HM	SJ675HM	SJ425	SJ475	SJ675	SJ800HM
Max. OD, mm	124	175	109.5	124	175	210
Internal passage diameter, mm	56	70	50	56	70	70
Free movement length after hydraulic delay, mm	185	190	203	185	190	
Total spindle movement, mm	600					550
Hydraulic delay time, sec.	30...150					30...90
Upward latch clamping force, ton (adjustable)	10 - 25	15 - 40				20 - 50
Max. extension force over the jar parts during hydraulic delay, ton	36.5	86	32	35	86	100
Max. extension force over the jar parts, ton	110	320	82	96	320	250
Max. torque transmitted on the jar parts, kN•m	14	39	10	14	39	50
Connecting threads: Top, box, Bottom, pin	NC38 NC38	NC50 NC50	NC 31 NC 31	NC38 NC38	NC50 NC50	6 5/8 Reg (6 5/8 FH) 6 5/8 Reg (6 5/8 FH)
Make-up torque of connecting threads, kN•m	13±1	26±1	9±0.5	13±1	26±1	40±1 (50±1)
Working temperature, °C, max.	120					
Length in open position with a sub under elevator, m	7.1	7.3	5.4	5.5	5.7	7.15
Total length when the latch is fixed, m	6.5	6.7				6.8
Time between maintenance, hours below rotary table	500	700	500		700	500
Weight, kg	404	1685	243	320	682	1325

## SIBERJAR SPECIFICATION (imperial)

Parameters	SJ475HM	SJ675HM	SJ425	SJ475	SJ675	SJ800HM
Max. OD, in	4 7/8	6 7/8	4 1/4	4 7/8	6 7/8	8 1/4
Internal passage diameter, in	2 3/16	2 3/4	2	2 3/16	2 3/4	2 3/4
Free movement length after hydraulic delay, in	7 1/4	7 1/2	8	7 1/4	7 1/2	
Total spindle movement, in	23 5/8					21 5/8
Hydraulic delay time, sec.	30...150					
Upward latch clamping force, lbf (adjustable)	22046-55116	33069-88185				40000 - 100000
Max. extension force over the jar parts during hydraulic delay, lbf	80469	189500	70548	78000	189500	200000
Max. extension force over the jar parts, lbf	242508	705479	180779	212000	705479	500000
Max. torque transmitted on the jar parts, ft•lbs	10326	28765	7376	10326	28765	36878
Connecting threads: Top, box Bottom, pin	NC38 NC38	NC50 NC50	NC31 NC31	NC38 NC38	NC50 NC50	6 5/8 Reg (6 5/8 FH) 6 5/8 Reg (6 5/8 FH)
Make-up torque of connecting threads, ft•lbs	9588±738	19177±738	6638±369	9588±738	19177±738	29502±738 (36878±738)
Working temperature, °F, max.	248					
Length in open position with a sub under elevator, in	280	287	213	217	224	282
Total length when the latch is fixed, in	256	264				268
Time between maintenance, hours below rotary table	500	700	500		700	500
Weight, lbs	900	1685	547	705	1504	2921

# CIRCULATING SUB

## APPLICATION

The circulating sub is designed for cutting off the inflow of drilling fluid into the lower section of the BHA and redirecting it into the annulus. The control of the sub operation is performed without tripping.

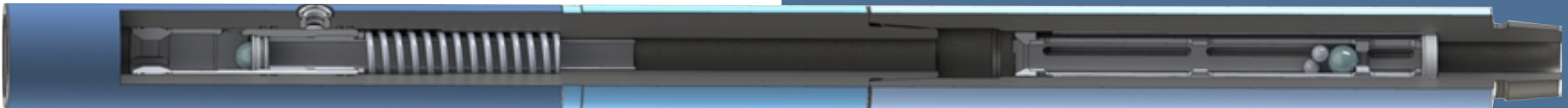
The sub is recommended for permanent use as the part of BHA and is involved in the following cases:

- pumping of the acids. Fillers and bridging agents to the wellbore face, which are not desirable to pump through the underlying BHA elements;
- cleaning the wellbore given the need to increase the flow velocity in the annulus by **supplying enhanced flow** of drilling fluid.

## FEATURES

- Simplified design.
- Simple control and control actuation scheme.
- Prolonged time between repairs.
- Operating temperature up to 150°C.

Technical specification		
Parameter name	CS475	CS675
Basic Parameters and Dimensions		
Type	Hydraulic, control through stimulation system	
Housing outer diameter, mm	120	172
Length, mm - minimum	2400	2544
Weight, kg - maximum	145	340
Connecting threads: - to drill pipes - to PDM	NC38 NC38	NC 50 or NC 46 with x-over sub NC 50 or NC46 with x-over sub
Intended use figures		
Activation pressure, MPa	0.3 - 1.4	0.8 - 1.4
Deactivation pressure (adjustable), MPa	14.5	
Activation ball moving pressure, MPa	7.7	
The number of operational cycles at wellbore face	4	
Pumped fluid flow rate, l/sec	10 - 25	19 - 45
Pressure drop at the sub (with the empty filter basket) given the maximum flow rate, MPa max - under the direct flow regime with empty filter basket - under the flow regime through the side openings	0.5	0.75
	0.4	0.85



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