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GENERAL INFORMATION

Technological accessories for running and cementing casings are a high-tech line of products designed for cementing oil and gas wells. The main range of equipment is represented by the well-proven easy-to-drill BITART tooling the hallmark of which is reliability, the ability to use in wells with any curvature and quick, trouble-free drilling with PDC bits. A wide range is able to satisfy almost any customer requirements. Despite the results achieved, the development of a new, more effective tool is ongoing.

BITART reaming shoes are an example of such a tool. The use of shoes allows active reaming of problem areas of the wellbore by rotating the casing. And the possibility of equipping with PDC cutters, carbide teeth, one or two check valves valves, various materials of drillable core- these are the advantages that allow the customer to choose the most suitable type of equipment for specific application conditions.

For reaming the wellbore during casing running without rotation drillable BIT-DM and non-drillable BIT-DOK motors were developed. BIT-DM motor is the optimal solution in those cases when you need to run the casing through complicated sections of the wellbore, cement and continue drilling the next section. Due to the use of easy-to-drill materials, the time spent on drilling out "BIT-DM" slightly exceeds the drilling time of a standard circulation check valve. The non-drillable BIT-DOK motor is designed to run the last sections or liners. The hydraulic power drive, by analogy with BIT-DM, is implemented using a rotor-screw pair. This allows achieving high torque values during the operation of the tool. And the relatively small sizes do not impede the passage of the string through the intervals with high dogleg severity.

Solid experience in successful oil and gas wells casing is a guarantee of the high quality of our casing running equipment.

You can find detailed information about the equipment offered on the pages of the catalogue, and also always get advice from our company specialists.

SHOE WITH PLASTIC PLUG

BITART-120 AND MODIFICATIONS

APPLICATION

It designed for fitting bottomhole assembly for the purpose of its direction along the wellbore and protection from damage during running and well casing.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Plastic plug is not subject to destruction during the transportation of the shoe, installation in the casing or run in the well. Due to this, the shoe is resistant to high axial compressive and bending loads, which allows using it in the construction of wells with a complex profile;
- Compact size and small weight ease the transportation, storage and mounting the shoe to casing on the rig.



OPTIONS AND MODIFICATIONS

Additional options	Type 120	Type 121
Side holes	+	-

SHOE WITH ECCENTRIC FREE PLASTIC PLUG

BITART-150 AND MODIFICATIONS

APPLICATION

It designed for fitting bottomhole assembly for the purpose of its direction along the wellbore and protection from damage during well construction of difficult wells.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Rotating in the direction of least resistance the plug orients the shoe during running operations allowing bypassing obstacles providing uninterrupted casing or liner RIH;
- The eccentric plastic plug is resistant to high axial compression and bending loads;



SHOE WITH FLOAT VALVE

BITART-210 AND MODIFICATIONS

APPLICATION

It designed for fitting bottomhole assembly for the purpose of its direction along the wellbore and protection from damage during running as well as preventing fluid or cement slurry backflow from annular space to casing during cementing.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.



FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Design of shoe mounted back valve provides ability of its use in well of any curvature;
- Presence of additional option “Auto fill-up” allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.

OPTIONS AND MODIFICATIONS

Additional options	Type 210	Type 211	Type 212	Type 213
Auto fill	-	+	-	+
Counterrotation mechanism	-	-	+	+

SHOE WITH FLOAT VALVE AND ECCENTRIC FREE PLASTIC PLUG

BITART-250 AND MODIFICATIONS

APPLICATION

It designed for fitting bottomhole assembly for the purpose of its direction along the wellbore, passing tight spots and protection from damage during running as well as preventing fluid or cement slurry backflow from annular space to casing during cementing.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Design of shoe mounted back valve provides ability of its use in well of any curvature;
- When rotating the guide plug orients the shoe during running operations allowing bypassing obstacles providing uninterrupted casing or liner RIH;
- The eccentric plastic plug is resistant to high axial compression and bending loads;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.



OPTIONS AND MODIFICATIONS

Additional options	Type 250	Type 251	Type 252	Type 253
Auto fill	-	+	-	+
Counterrotation mechanism	-	-	+	+

TOP CEMENTING PLUG

BITART-310 AND MODIFICATIONS

APPLICATION

It is designed for separating spacer fluid and cement slurry squeezed to annular space during casing cementing. It provides cleaning of casing inner surface from cement slurry residues as well as leak-proof fit to back valve and cementing process end signal.

Casing equipping in the range from 114,30mm (4 1/2 inches) up to 339,70mm (13 3/8 inches).

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.



OPTIONS AND MODIFICATIONS

Additional options	Type 310	Type 311
Counterrotation mechanism	-	-

BOTTOM CEMENTING PLUG

BITART-320 AND MODIFICATIONS

APPLICATION

It is designed for separating spacer fluid or mud and cement slurry squeezed to annular space for the purpose of excluding the shift zone. It provides cleaning of casing inner surface from mud residues as well as leak-proof fit of top cement plug and cementing process end signal.

Casing equipping in the range from 146,05mm (3/4 inches) up to 339,70mm (13 3/8 inches).

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.



OPTIONS AND MODIFICATIONS

Additional options	Type 320	Type 321
Counterrotation mechanism	-	+

FLOAT COLLAR

BITART-410 AND MODIFICATIONS

APPLICATION

It designed for fitting bottomhole assembly for the purpose of preventing fluid or cement slurry backflow from annular space to casing during cementing as well as leak-proof fit of cement plug and receiving cementing process end signal.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Design is fully adapted for drilling-out with PDC bit;
- Design of valve unit provides ability of its use in well of any curvature;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.



OPTIONS AND MODIFICATIONS

Additional options	Type 410	Type 411	Type 412	Type 413
Auto fill	-	+	-	+
Counterrotation mechanism	-	-	+	+



REAMING SHOE WITH FLOAT VALVE AND ALUMINUM PLUG

BITART-171 AND MODIFICATIONS

APPLICATION

Designed for BHA set-up with the purpose of its directing and running with reaming in vertical, directional and horizontal wells with complicated geological and technical conditions of well construction. It ensures the improvement of string running and guaranteed approaching of the given target depth.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Aluminum plug;
- Spiral gage blades on body are reinforced with carbide teeth;
- Design is fully adapted for drilling-out with PDC bit;
- Design with one, two and no valves;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.

Spiral blades on body and in cutting and gage parts are reinforced with carbide teeth



Side flushing ports on body for better cement return are made inverted

OPTIONS AND MODIFICATIONS

Additional options	Type 171/271	Type 072*/172/272	Type 173/273	Type 174/274
Auto fill	+	-	-	+
Counterrotation mechanism	+	-	+	-
Quantity of valves, pcs	1/2	0*/1/2	1/2	1/2

*Design with no valves

REAMING SHOE WITH FLOAT VALVE AND ALUMINUM PLUG

BITART-176 AND MODIFICATIONS

APPLICATION

Designed for BHA set-up with the purpose of its directing and running with reaming in vertical, directional and horizontal wells with complicated geological and technical conditions of well construction. It ensures the improvement of string running and guaranteed approaching of the given target depth.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Aluminum plug;
- Active gage is reinforced with PDC cutters;
- Spiral gage blades on body are reinforced with carbide teeth;
- Design is fully adapted for drilling-out with PDC bit;
- Design with one, two and no valves;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.

Special grooves between cutters on body allow receiving more aggressive cutting structure



Side flushing ports on body for better cement return are made inverted

OPTIONS AND MODIFICATIONS

Additional options	Type 176/276	Type 077*/176/277	Type 178/278	Type 179/279
Auto fill	+	-	-	+
Counterrotation mechanism	+	-	+	-
Quantity of valves, pcs	1/2	0*/1/2	1/2	1/2

*Design with no valves

REAMING SHOE

WITH FLOAT VALVE AND BRONZE PLUG

BITART-182 AND MODIFICATIONS

APPLICATION

Designed for BHA set-up with the purpose of its directing and running with reaming in vertical, directional and horizontal wells with complicated geological and technical conditions of well construction. It ensures the improvement of string running and guaranteed approaching of the given target depth.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Bronze plug;
- Active gage is reinforced with PDC cutters;
- Spiral gage blades on body are reinforced with carbide teeth;
- Design is fully adapted for drilling-out with PDC bit;
- Design with one, two and no valves;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.

Special grooves between cutters on body allow receiving more aggressive cutting structure



Side flushing ports on body for better cement return are made inverted

OPTIONS AND MODIFICATIONS

Additional options	Type 182/282	Type 087*/187/287	Type 188/288	Type 189/289
Auto fill	+	-	-	+
Counterrotation mechanism	+	-	+	-
Quantity of valves, pcs	1/2	0*/1/2	1/2	1/2

*Design with no valves

REAMING SHOE WITH FLOAT VALVE AND REINFORCED BRONZE PLUG

BITART-183 AND MODIFICATIONS

APPLICATION

Designed for BHA set-up with the purpose of its directing and running with reaming in vertical, directional and horizontal wells with complicated geological and technical conditions of well construction. It ensures the improvement of string running and guaranteed approaching of the given target depth.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Bronze plug;
- Active gage is reinforced with PDC cutters;
- Spiral gage blades on body are reinforced with carbide teeth;
- Design is fully adapted for drilling-out with PDC bit;
- Design with one, two and no valves;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours.

Special grooves between cutters on body allow receiving more aggressive cutting structure



Side flushing ports on body for better cement return are made inverted

OPTIONS AND MODIFICATIONS

Additional options	Type 183/283	Type 084*/184/284	Type 185/285	Type 186/286
Auto fill	+	-	-	+
Counterrotation mechanism	+	-	+	-
Quantity of valves, pcs	1/2	0*/1/2	1/2	1/2

*Design with no valves

REAMING SHOE WITH BRONZE PDC REINFORCED PLUG

BITART-190 AND MODIFICATIONS

APPLICATION

Designed for BHA set-up with the purpose of its directing and running with reaming in vertical, directional and horizontal wells with complicated geological and technical conditions of well construction. It ensures the improvement of string running and guaranteed approaching of the given target depth.

Casing equipping in the range from 101,60mm (4 inches) up to 339,70mm (13 3/8 inches) with tool joints: OTTM, OTTG, Buttress, and premium types TMK UP FMC, TMK UP PF, TMK UP GF, etc.

FEATURES

- Bronze plug and active gage are reinforced with PDC cutters;
- Spiral gage blades on body are reinforced with carbide teeth;
- Design is fully adapted for drilling-out with PDC bit;
- Design with one, two and no valves;
- Presence of additional option "Auto fill-up" allows casing running without loss of time for periodic stops for casing fill-up;
- Presence of counterrotation teeth allows excluding cement plug rotation during drilling-out, facilitate drilling-out process, and reduce drilling-out time.
- Valve unit was tested by back-pressure of 35MPa and flushing fluid with high content of sand within 24 hours

Special grooves between cutters on body allow receiving more aggressive cutting structure



Side flushing ports on body for better cement return are made inverted

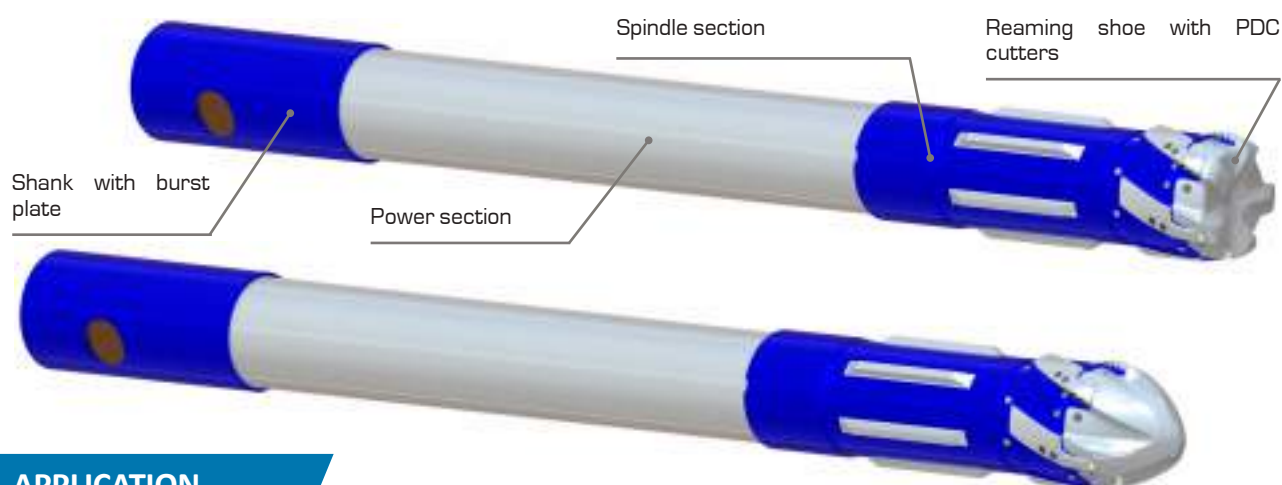
OPTIONS AND MODIFICATIONS

Additional options	Type 090* 190/290	Type 191/291	Type 192/292	Type 193/293
Auto fill	-	+	-	+
Counterrotation mechanism	-	+	+	-
Quantity of valves, pcs	0* 1/2	1/2	1/2	1/2

*Design with no valves



CASING RUNNING DRILLABLE MOTOR WITH REAMING SHOE BIT-DM



APPLICATION

Motor is designed for reaming previously drilled well bore during running casing, cementing though motor section lost in bottomhole and after reaching target depth its subsequent drilling out with rock destruction tool. It is possible to produce motor with pike-shaped reaming shoe which allow avoiding slacking off and sidetracking.

FEATURES

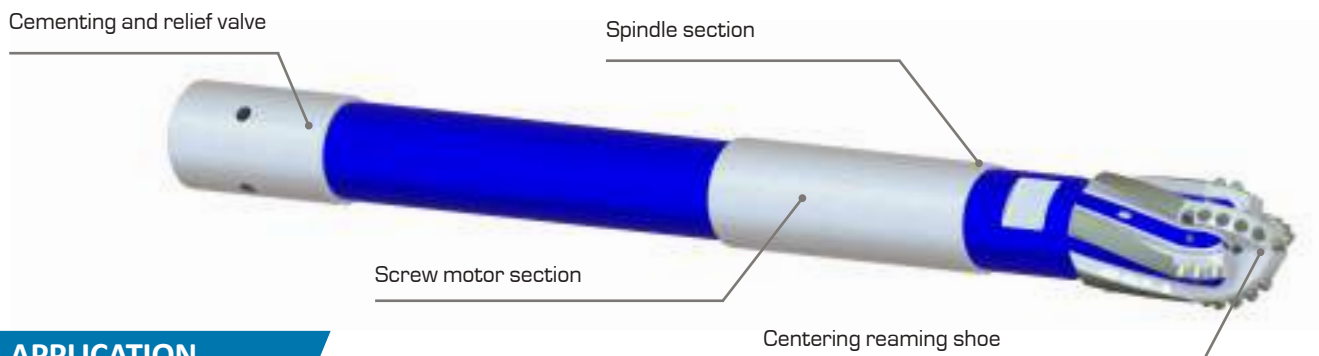
- Casing running improvement to target depth due to the ability of reaming difficult intervals;
- Availability of casing auto-fill;
- No need of string rotation (availability of motor section);
- PDC reinforced reaming shoe;
- PDC drillable motor inner part;
- Reliable counterrotation mechanism for easy drilling out after cementing;
- Cementing through motor and burst plate;
- Ability of installing standard circulation check valve to assembly adapted for PDC bit drilling out.

TECHNICAL CHARACTERISTICS

Characteristic	BIT-DM-178	BIT-DM-245
Size, mm	178	245
Reaming shoe OD*, mm	211	291
Shoe cutting structure	PDC cutters	
Flow rate range, l/sec	10-30	
Quantity of blades*, pcs	5	
Quantity/diameter of flushing ports, pcs/mm	5x16 and 1x20	6x20
Tool joint*	OTTG-178	OTTG-245
Height*, mm	2100	2417
Drift ID after drilling out, mm	159	226
Cementing plate average burst pressure, atm	90-110	
Torque, min, N*m	1500	2000

*Data may vary, designs are permanently revised

CASING RUNNING NON-DRILLABLE MOTOR WITH REAMING SHOE BIT-DOK



APPLICATION

Motor is designed for reaming previously drilled well bore during running and cementing casing through pressure relief unit. It is used for running last casing section or liners.

FEATURES

- Reaming tight spots releasing from slack offs;
- No need of string rotation (availability of motor section);
- Stably high torque;
- Casing orientation and protection;
- Possibility of avoiding wiper trip operations;
- No pressure jumps in system;
- Casing protection from excess torque due to pressure relief unit;
- Cementing through pressure relief unit.

TECHNICAL CHARACTERISTICS

Characteristic	BIT-DOK-106
Motor OD, mm	106
Length*, mm	2200
Reaming shoe diameter*, mm	106-155
Quantity of flushing ports, pcs	3
Diameter of flushing ports, mm	16
Quantity of cementing ports*, pcs	4
Diameter of cementing ports*, mm	15
Tool joint*	Upon customer request
Shoe tool joint	Z-76
Flow rate, l/sec	5-12
Motor shaft torque, N*m	Up to 600
Differential pressure, atm	25-40
Cementing windows opening pressure, atm	40-45

*Data may vary, designs are permanently revised



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