

EQUIPMENT FOR OIL PRODUCTION



RIMERA
IZHNEFTEMASH



ABOUT IZHNEFTEMASH PLANT 4

6 Quality

**EQUIPMENT
FOR OIL PRODUCTION 8**

8 Submersible sucker rod pumps (SRP)

22 Pump versions

108 Pump Assembly Units

126 Devices Used with SRP

144 Downhole equipment

OUR CONTACTS 152



ABOUT IZHNEFTMASH PLANT

4 ABOUT IZHNEFTEMASH PLANT

Izhneftemash is a specialized enterprise producing oil and gas field equipment for drilling, arrangement and repair of oil and gas wells, oil production.

Izhneftemash production capabilities and technical competence of its specialists allow to develop and implement fully-integrated solutions of any complexity for the customer business tasks in a short time.

In 2020, the share of Izhneftemash in the Russian market of the sucker rod pumps was about 47%.

Izhneftemash is one of the leading Russian enterprises in the oil engineering industry. The plant was founded in 1956 and is located in Izhevsk – the capital of the Udmurt Republic.

Izhneftemash produces a wide range of equipment for oil production and oilfield service enterprises: sucker rod submersible pumps, sucker rod pump drives (pumping units), special equipment, electric centrifugal pump drives, drilling tongs, equipment for multistage hydraulic fracturing, tubing couplings, spare parts for oil production equipment and others.

The plant ensures execution of orders on time due to availability of up-to-date high-end technologies, long-term experience in the production of oilfield equipment,

powerful human and scientific potential.

All produced oilfield equipment is subject to strict control at all stages of the manufacturing cycle.



The company's quality management system meets the requirements of ISO-9001 and APIQ1 international standards and is certified by the American Petroleum Institute's Quality Registration Bureau. The manufactured products meet the requirements of GOST R standards and industrial safety rules.

Also Izhneftemash has a certificate of conformity No. DSAT RU.OCO15. TOO506 for the provision of services to maintain and repair vehicles, machinery and equipment. This gives the company the right to carry out work on the conversion of vehicles.

All produced oilfield equipment is subject to strict control at all stages of the manufacturing cycle.



EQUIPMENT FOR OIL PRODUCTION

Submersible sucker rod pumps

Oil production equipment



The pump designs in terms of the main parameters, except for the tubing threads, meet the requirements of the 11AX specification of the American Petroleum Institute and consist of a one-piece thick-walled cylinder with two extensions, a plunger, discharge and suction valves and an attachment assembly.

More than 2000 pump designs as of standard design (according to API 11AX specification), as of special design, including for work in particularly severe downhole conditions.

Sucker rod pumps are produced using up-to-date equipment that makes it possible to produce pumps in conformity with world standards.



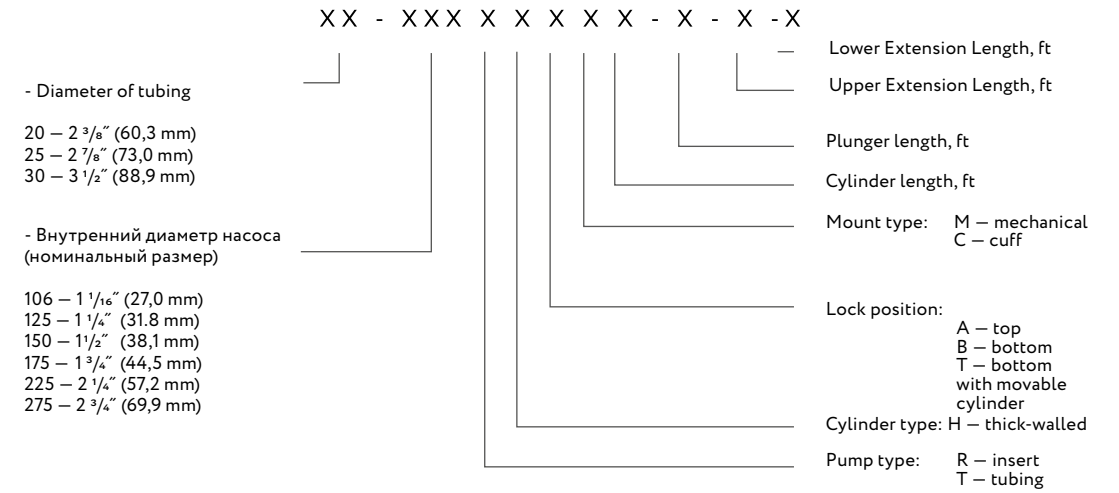
Laureate of the "Russian Brand" National Competition



Laureate of the "100 best goods of Russia" Competition Program



STRUCTURE OF SRP FULL DESIGNATION BY API:



All manufactured pumps are modified for domestic downhole equipment for their installation in a string of smooth (with non-upset ends) tubing in accordance with GOST 633-80 and connections with a rod string in accordance with GOST 13877-96.

LP female thread (pipe thread) – 1:16 cone; 11.5 threads per inch is provided for connecting filters or other protective devices to the bottom of the pump. Thread diameter: 1", 1 1/4", 1 1/2", 2" (depending on pipe type and diameter).

Versions of pump parts:

Cylinder:

- alloy steel, nitrided (HN);
 - carbon steel, chrome plated (CR);
- cylinder lengths: nitrided up to 14 feet; chrome plated up to 16 feet; stacked cylinders (for long-stroke pumps) up to 28 feet.

Plunger (nipple type):

- made of carbon steel, sprayed with chromium-nickel hard-alloy powder (T);
- grooved or smooth;
- length - up to 5 feet; compound plunger - up to 10 feet.

Valves:

- standard and special designs, including double discharge and suction.

Valve bodies:

- alloy steel;
- made of stainless steel.

Ball-and-seat:

- stainless steel (SS);
- cobalt alloy (ST);
- tungsten carbide (TC1).

Plunger gap:

- Fit-1 – 0,025 ... 0,088 mm;
- Fit-2 – 0,025 ... 0,113 mm;
- Fit-3 – 0,075 ... 0,138 mm;
- Fit-4 – 0,100 ... 0,163 mm;
- Fit-5 – 0,125...0,188 mm;
- Fit-6 – 0,150...0,213 mm;
- Fit-7 – 0,175...0,238 mm.

Types of manufactured pumps:

- Insert
- Tubing

When ordering pumps specify the following data:

- name, full designation of the pump, incl. tubing diameter; diameter and type of pump;
- length of cylinder, plunger, and extensions (or required plunger travel);
- option of upper mechanical fastening of insert pumps: standard (according to API), in OM support (according to OST) or special fastening of the cone-into-cone type;
- suction valve version of tubing pumps: standard (according to API), non-withdrawable;
- plunger gap (Fit 1,2,3, ...);
- pump installation depth (head);
- material option of cylinder, plunger, valves, valve bodies;
- additional requirements for the pump versions.

Standard pumps: HN cylinder, T plunger, SS valves, alloy steel valve bodies, Fit2, heads up to 1500 m.

Optional equipment (ordered separately):

- anchor shoes (lock supports) for fastening insert pumps;
- filters;
- drain valves;
- auto-couplers;
- other devices for sucker rod pumps.

We are ready to make custom pumps with a cylinder length of up to 36 feet

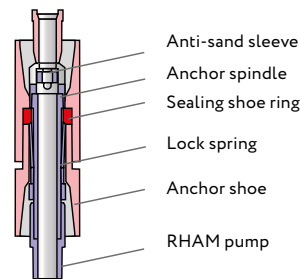
sert pumps are characterized by the fact that the pump package is installed into / dismantled from the tubing string together with the sucker rods. When installed, the pump is secured

in the support (anchor shoe) of the tubing string. When using an automatic coupler, the pump is lowered into the well together with the tubing string (without sucker rods), followed by lowering and automatic coupling of the rod string with the pump plunger.

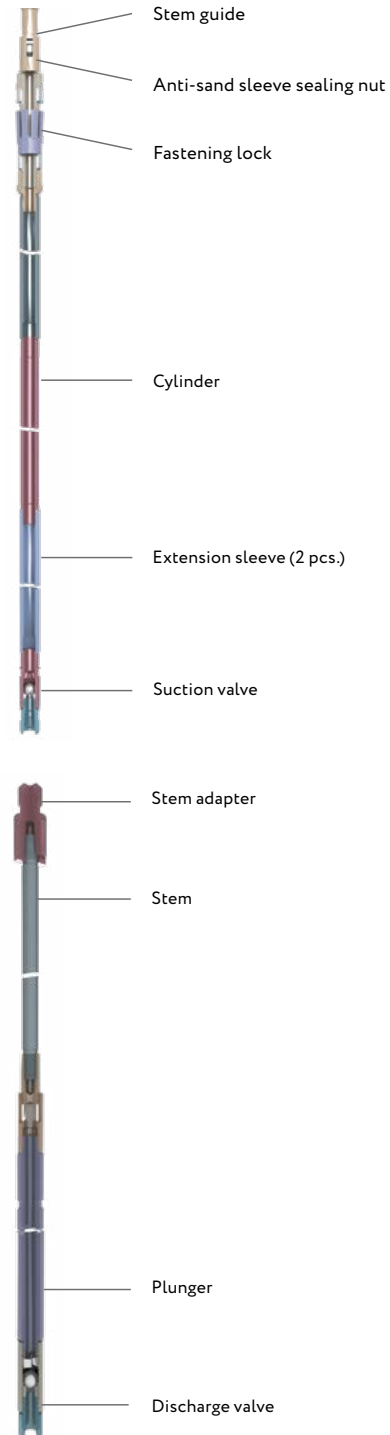
All insert pumps are supplied with a sand-proof sleeve. The sleeve is installed in the rod guide and prevents sand from settling when the pump is not running.

To ensure tightness of the pump mounting unit in corrosive conditions, the anchor spindle of the upper mechanical fastening lock according to API is prefabricated with a stainless steel sealing nut.

Pump mounting assembly diagram



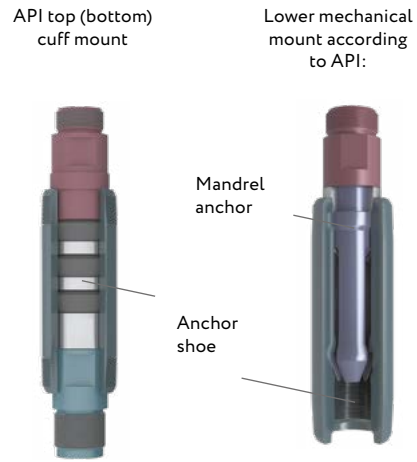
API Top-Mount Insert Pump Diagram



INSERT PUMP VERSIONS

Fastening version	Pump inner diameter, mm	Tubing diameter, mm	Pump designation	Anchor shoe designation (support)
Top mechanical by API	27,0	60,3	20-106 RHAM	40116-ZUS
		73,0		40116-M-ZUS
	31,8	60,3	20-125 RHAM	40116-ZUS
		73,0		40116-M-ZUS
	38,1	73,0	25-150 RHAM	40117-ZUS
44,5	25-175 RHAM			
Upper mechanical in support OM by OST 26.16.06-86	27,0	60,3	20-106 RHAM	OM-60
	31,8		20-125 RHAM	
	38,1	73,0	25-150 RHAM	OM-73
	44,5		25-175 RHAM	
Upper special (cone-into-cone)	27,0	73,0	25-106 RHAM	32001-M, 32001-KM, 40116-KM-ZUS
	31,8		25-125 RHAM	
	38,1		25-150 RHAM	32002-M, 32002-KM, 40117-KM-ZUS
	44,5		25-175 RHAM	
Upper cuff by API	27,0	60,3	20-106 RHAC	32521
		73,0	25-106 RHAC	32522
	31,8	60,3	20-125 RHAC	32521
		73,0	25-125 RHAC	
	38,1	73,0	25-150 RHAC	32522
44,5	25-175 RHAC			
Lower mechanical by API	27,0	60,3	20-106 RHBM	32756
		73,0	25-106 RHBM	32757
	31,8	60,3	20-125 RHBM	32756
		73,0	25-125 RHBM	
	38,1	73,0	25-150 RHBM	32757
44,5	25-175 RHBM			
57,2	88,9	30-225 RHBM	32758	
Lower mechanical, two-stage pump	57,2/38,1	88,9	30-225/150 RHBM 12-4-2-2	32758
Lower cuff by API	27,0	60,3	20-106 RHBC	32521
			20-125 RHBC	
	31,8	73,0	25-125 RHBC	32522
			25-150RHBC	
	44,5	73,0	25-175 RHBC	
Top mechanical by API installed at the bottom of the pump	27,0	73,0/ 60,3	25/20-106 RHM-T	40116-MT-ZUS
	31,8		25/20-125 RHM-T	
	38,1		25/20-150 RHM-T	
	44,5		25/20-175 RHM-T	
Movable cylinder, lower mechanical according to OST	44,5	73,0	25-175RHTM	OM-73

*The pump designation is given without specifying the lengths of the cylinder, plunger and extensions, which are selected for each pump size based on the required plunger stroke length.



Mounting type		Designation	Connecting thread, mm
Upper mechanical	by API	40116-ZUS	60
		40116-M-ZUS 40117-ZUS	73
		40116-MT-ZUS	73/60
	cone-into-cone	32001-M, 40-116-KM-ZUS	73
		32002-M, 40117-KM-ZUS	73
by OST	OM-60	60	
	OM-73	73	
Upper and lower of cuff type	by API	32521	60
		32522	73
Lower mechanical	by API	32756	60
		32757	73
		32758	89

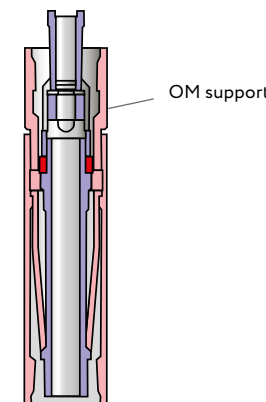
Versions:

- RHAM pumps with a lock in the pump upper part for installation in OM supports according to OST 26.16.06-86;
- RHAM pumps with a lock in the pump upper part for installation in a cone-into-cone anchor shoe;
- RHM-T pump with diameter of 27, 32, 38 and 44 mm, in the lower part of which anchor
- Anchor shoe an API lock for upper mechanical fastening was installed for pumps with diameters of 27 mm and 32 mm. The pumps are installed in an anchor shoe 40116-MT-ZUS with connecting threads NKT-73 at the top and NKT-60 at the bottom. This design allows to install pumps with a diameter of 27 and 32 mm of the standard RHAM design and pumps of the RHM-T design of all diameters (25 / 20-106 RHM-T, 25/20-125 RHM-T, 25 / 20-150 RHM-T, 25 / 20-175 RHM-T);
- two-stage pumps;
- At the request of consumers, standard pumps can be supplied with double suction and discharge valves.

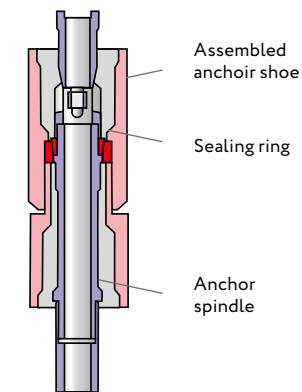
An example of the designation of an insert pump:

Diameter of 32mm with bottom mechanical mount according to API, cylinder length is 12ft, plunger length is 4ft, extensions - 2ft, for installation in tubing of 73mm: 25-125 RHBM 12-4-2-2

Upper mechanical fastening in the OM support



Upper mechanical mount cone-into-cone (also available as a one piece anchor shoe)



RHM-T pump (plunger not shown)



Comprises the following:

- a cylinder with a suction valve. In the upper part of the cylinder there is a hollow rod guide that acts as a seal for the upper chamber (high pressure stage);
- a plunger with a discharge valve and a hollow polished stem with an additional valve at the top of the stem. The stem is connected to the plunger by means of an adapter with side holes connecting the inner cavities of the plunger and the stem to the upper chamber formed by the space between the stem and the cylinder.

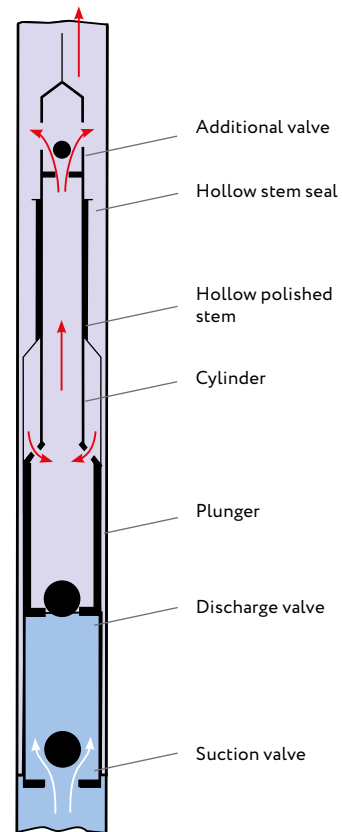
The internal cavities of the plunger with a discharge valve, the stem with the valve and the upper chamber create a high pressure stage. The sub-plunger space (lower chamber) is a low pressure stage.

Principle of pump operation:

- when the plunger moves up, both plunger valves are closed, the suction valve is opened - well fluid enters the lower chamber;
- when the plunger moves down, the upper plunger valve remains closed, the suction valve closes. Through the opened lower plunger valve, liquid enters the upper chamber;
- at the next upward stroke of the plunger, the lower plunger valve is closed by fluid pressure due to a decrease in the volume of the upper chamber;
- when the pressure in the upper chamber is equal to the pressure of the liquid column in the tubing string, the upper plunger valve opens and the liquid enters the cavity of the tubing string. At the same time, the liquid enters the lower chamber through the open suction valve.

Thus, the lower chamber is filled and emptied without the influence of the pressure of the liquid column in the tubing, which creates favorable conditions for pumping out aerated well fluid.

Scheme of operation of two-stage pump

**PLUNGER STROKE LENGTH OF INSERT PUMPS DEPENDING ON COMBINATION OF LENGTHS
CYLINDER-PLUNGER-EXTENSIONS**

Cylinder - Plunger - Extension - Extension	Maximum stroke length of the plunger (from stop to stop), m
7-4-1,5-1,5	1,4
9-4-1,5-1,5	2,0
10-4-1,5-1,5	2,3
12-4-1,5-1,5	2,9
12-4-2-2	3,2
14-4-1,5-1,5	3,5
14-4-2-2	3,8
14-5-1,5-1,5	3,2
22-4-2-2	6,2

Tubing pumps are mainly used for pumping large volumes of liquid from shallow depths. The limited extraction depth is due to the maximum ultimate load on the tubing string. With the same tubing size, the pump flow will always be greater than of the insert pump flow due to the larger cylinder diameter.

Since in tubing pumps, the pump cylinder is an integral part of the tubing string, it must be built in with the tubing. When using an automatic coupler, the pump is installed and lowered into the well as an assembly with a plunger, followed by lowering and automatic coupling of the rod string with the pump plunger.

VERSIONS OF TUBING PUMPS

Fastening version of suction valve	Pump inner diameter, mm	Tubing diameter, mm	Pump designation
Acc. to spec. API 11AX with bayonet-type fishing device (THM) or wit cuff mount (THC)	31,8	60,3	20-125 THM
		73,0	25-125 THM
	44,5	60,3	20-175 THM (THC)
		73,0	25-175 THM (THC)
Special (cone)	57,2	73,0	25-225 THM (THC)
	69,9	88,9	30-275 THM
	31,8	73,0	25-125 THM-K
Non-removable valve (an additional SKOK type drain valve is used)	44,5	73,0	25-175 THM-K
	57,2	73,0	25-225 THM-K
	69,9	88,9	30-275 THM-K
Fixed Valve, long plunger (10ft), cylinder with side hole	31,8	73,0	25-125 THM-T 11-10-2-2
	44,5	73,0	25-175 THM-T 11-10-2-2
	57,2	73,0	25-225 THM-T 11-10-2-2
	69,9	88,9	30-275 THM-T 11-10-2-2
Non-removable single (C) or double (CC) valve with built-in whipped-type drain device	31,8	73,0	25-125 THM-C(CC)
	38,1	73,0	25-150 THM-C(CC)
	44,5	73,0	25-175 THM-C(CC)
	57,2	73,0	25-225 THM-C(CC)
	69,9	88,9	30-275 THM-C

* The length of the cylinder, plunger and extensions (except TNM-T 11-10-2-2) to be selected or each pump size based on the required plunger stroke length.

Scheme of a tubing pump THM with mechanical fastening of a suction valve according to API



**Plunger Stroke of Standard Tubing Pumps (TNM)
depending on length of the CYLINDER - PLUNGER - EXTENSIONS combination**

Cylinder - Plunger - Extension - Extension	Maximum stroke length of the plunger (from stop to stop), m
7-4-2-2	1,5
9-4-2-2	2,1
11-4-2-2	2,7
11-4-2-3	3,0
14-4-2-2	3,6
11-10-2-2	3,0
22-4-2-2	6,0
14-5-1,5-1,5	3,2
22-4-2-2	6,2

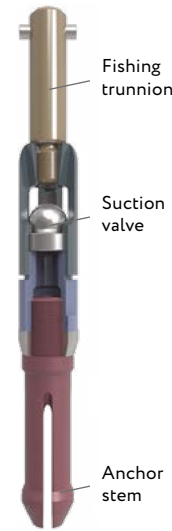
An example of the designation of a tubing pump

Diameter of 44.5mm, API Standard Suction Valve Mount, 11ft Cylinder, 4ft Plunger, 2ft Extensions, 73mm Tubing: 25-175 THM 11-4-2-2.

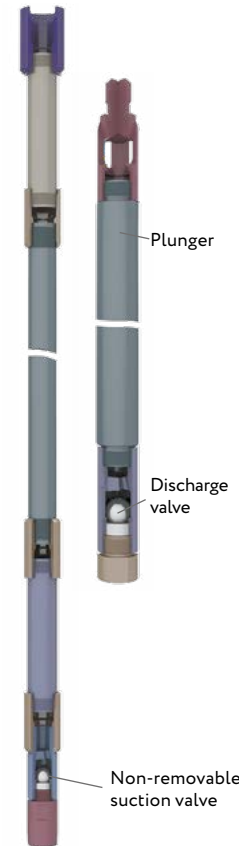
SPECIAL VERSIONS OF TUBING PUMPS

TNM-T pumps with a diameter of 32, 44, 57 and 70 mm with a non-removable suction valve.

The suction valve is installed at the bottom of the pump instead of the anchor shoe; there is no fishing device. The diameter of the suction valve (seat-and-ball) of pumps with a diameter of 32, 44, 57 mm is enlarged, which ensures more stable operation of the pump (no sticking of valve due to waxing). The pumps are used in conjunction with a drain valve (of the SKOK type or other design), which is installed above the pump and serves to drain fluid from the tubing when the pump is lifted.



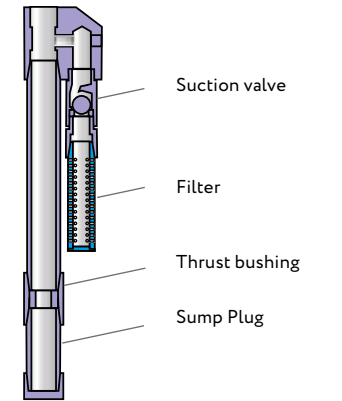
Pump with non-removable suction valve TNM-T



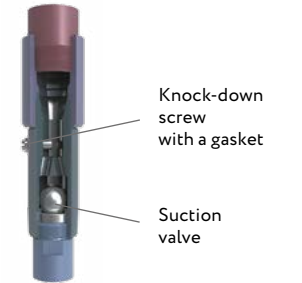
VERSIONS DEVELOPED ON THE BASIS OF TNM-T PUMPS

- Pumps with non-removable suction valve, cylinder with side drain opening and long plunger (10 ft) (TNM-T 11-10-2-2). The plunger is adjusted in such a way that, during operation, the side hole of the cylinder is permanently blocked by the plunger, while the stroke length of the plunger is 3 m. Both when the plunger is pulled out on the rods, and when the rods and plunger parts are broken or unscrewed the fluid drainage from the tubing is ensured as well as direct flushing is provided when killing wells.
- pumps with a side suction valve (SSV). The Company produces SSV for the modification of tubing pumps of the TNM-T type with a diameter of 32 and 44 mm. SSV are supplied separately and installed under the cylinder instead of the lower part of the pump. In pumps with SSV there is practically no "dead" space in the cylinder at the lower position of the plunger. This makes it possible to operate wells with a slight submersion of the pump under the dynamic level without risk of pump starvation due to its blocking by gas.
- pumps with a non-removable single (TNM-S) or double (TNM-SS) suction valve with a built-in knock-down drain device. The diameter of the suction valve (seat-and-ball) in pumps with a diameter of 32, 44, 57 mm is enlarged. There is no fishing device in the pumps, the drainage of liquid from the tubing is provided through the hole of the knock-down screw, which is destroyed with the help of a knock-down tool thrown into the well.

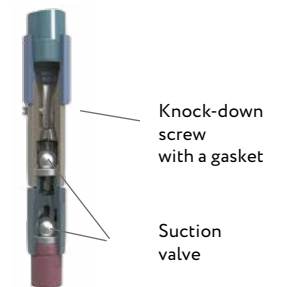
Side suction valve (SSV)



Pump TNM-S

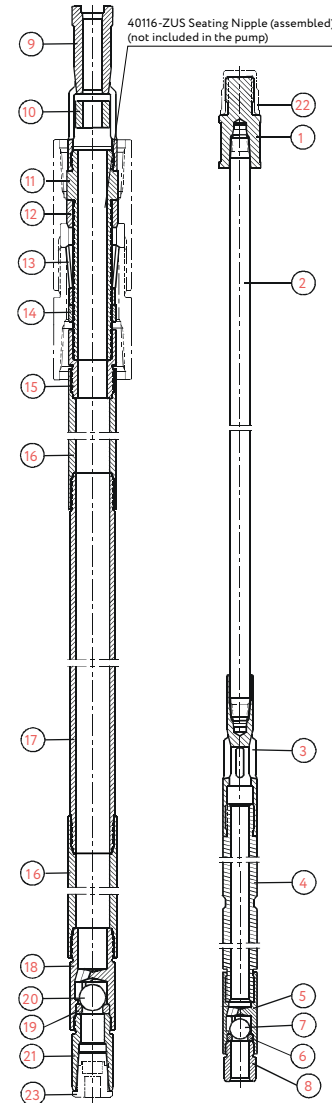


Pump TNM-SS



**20-106 RHAM ROD PUMP,
API TOP MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-. MOD
5	1	Closed Valve Cage	11201	C13-106MOD
6	1	Seat, Valve	14..1-S	V11-106
7	1	Ball, Valve	14..1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Seating Mandrel	40106-H	S21-20MOD
12	1	Sealing Nut	40006-K	S21-20MOD
13	1	Lock Spring	40126	S21-20MOD
14	1	Lock Nut	40131	S21-20MOD
15	1	Bushing	28802	S21-20MOD
16	2	Extension coupling	261..	C31-106-..
17	1	Barrel	080..	B12-106-..
18	1	Closed Valve Cage	11303	C14-20
19	1	Seat, Valve	14..4-S	V11-175
20	1	Ball, Valve	14..4-B	V11-175
21	1	Seat Bushing	23102	B22-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-



NOTE.

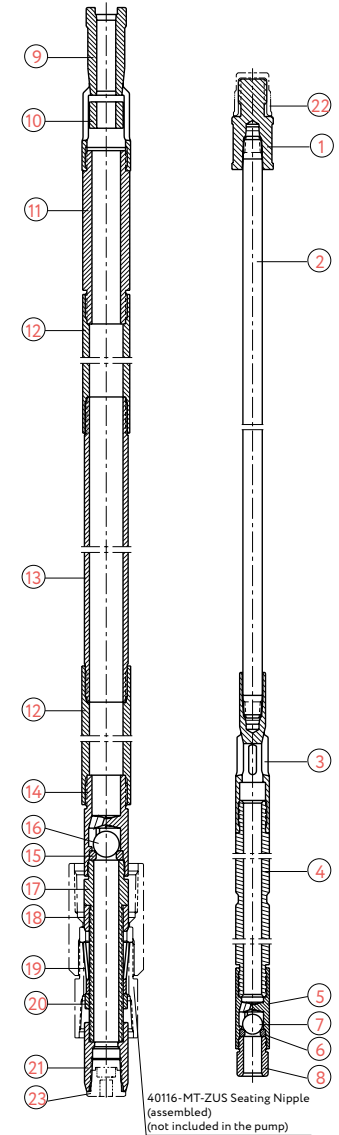
Under customer request the sucker rod pumps can be supplied in the following designs:

- with 40116-M-ZUS or 40116-T-ZUS Seating Nipple for installation in tubing of 73 mm (2 7/8");
- with anchor and special 32001-M, 32001-KM or 40116-KM-ZUS Seating Nipple (25-106-RHAM Pump) for installation in tubing of 73 mm (2 7/8");
- with increased API seating assembly for 40117-ZUS Seating Nipple (25-106 RHAM-T Pump) for installation in tubing of 73 mm (2 7/8");
- with double valves

Types of seating assemblies are given in the section "Pump Assembly Units".

**25/20-106 RHM-T ROD PUMP,
API MECHANICAL SEATING ASSEMBLY IN THE BOTTOM**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-. MOD
5	1	Closed Valve Cage	11201	C13-106MOD
6	1	Seat, Valve	14..1-S	V11-106
7	1	Ball, Valve	14..1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension coupling	261..	C31-106-..
13	1	Barrel	080..	B12-106-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14..4-S	V11-175
16	1	Ball, Valve	14..4-B	V11-175
17	1	Seating Mandrel	40106-H-T	S21-20MOD
18	1	Sealing Nut	40006-K	S21-20MOD
19	1	Lock Spring	40126	S21-20MOD
20	1	Lock Nut	40131	S21-20MOD
21	1	Coupling	40281-T	-
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

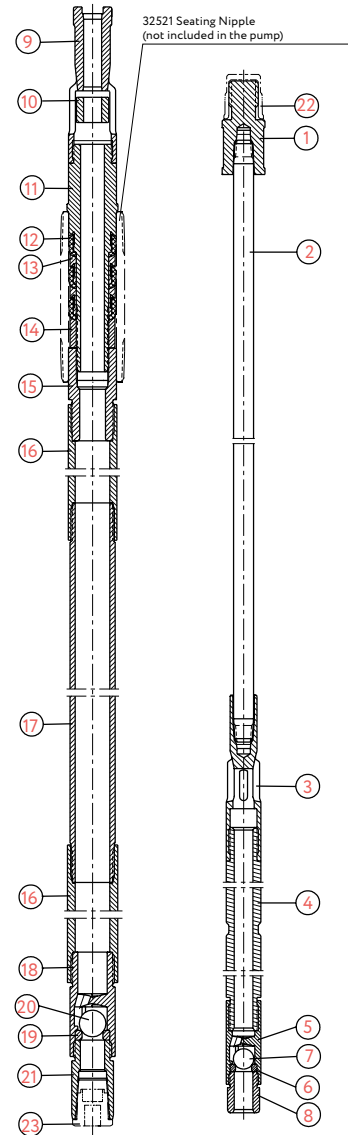


**20-106 RHAC ROD PUMP,
TOP CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-. MOD
5	1	Closed Valve Cage	11201	C13-106MOD
6	1	Seat, Valve	14.1-S	V11-106
7	1	Ball, Valve	14.1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Seating Mandrel	35002	S11-20
12	3	Seating Cup	36001-N	S12-20
13	2	Seating Cup Ring	37001	S13-20
14	1	Seating Cup Nut	38002	S14-20
15	1	Seating Cup Bushing	28302	S15-20
16	2	Extension Coupling	261..	C31-106-..
17	1	Barrel	080..	B12-106-..
18	1	Closed Valve Cage	11303	C14-20
19	1	Seat, Valve	14..4-S	V11-175
20	1	Ball, Valve	14..4-B	V11-175
21	1	Seat Bushing	23102	B22-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

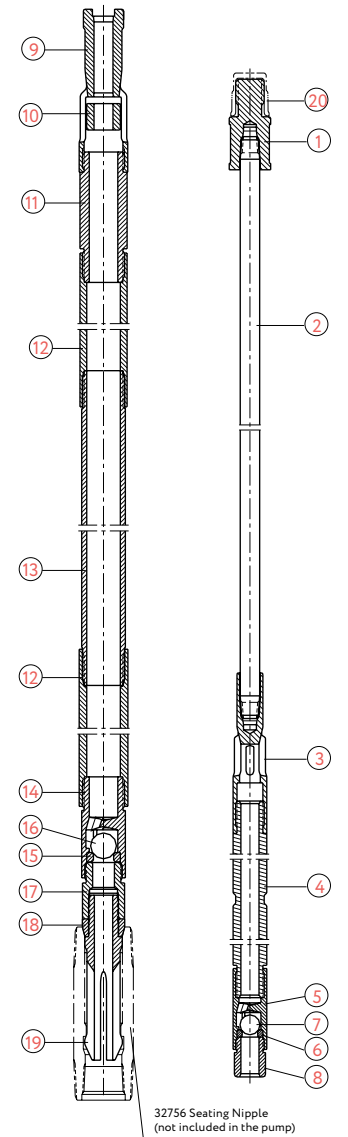
NOTE.

Under customer request, pumps can be delivered with increased seating assembly for 32522 Seating Nipple (for installation in tubing of 73 mm (2 7/8") - 25-106 RHAC Pump.



**20-106 RHBM ROD PUMP,
BOTTOM MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-. MOD
5	1	Closed Valve Cage	11201	C13-106 MOD
6	1	Seat, Valve	14.1-S	V11-106
7	1	Ball, Valve	14.1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension Coupling	261..	C31-106-..
13	1	Barrel	080..	B12-106-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14..4-S	V11-175
16	1	Ball, Valve	14..4-B	V11-175
17	1	Anchor Nipple	34071	S22-20
18	1	Sealing Ring	34079-K	S22-20 MOD
19	1	Anchor Mandrel	34091-N	S22-20
20	1	Safety cap	F115-12	-

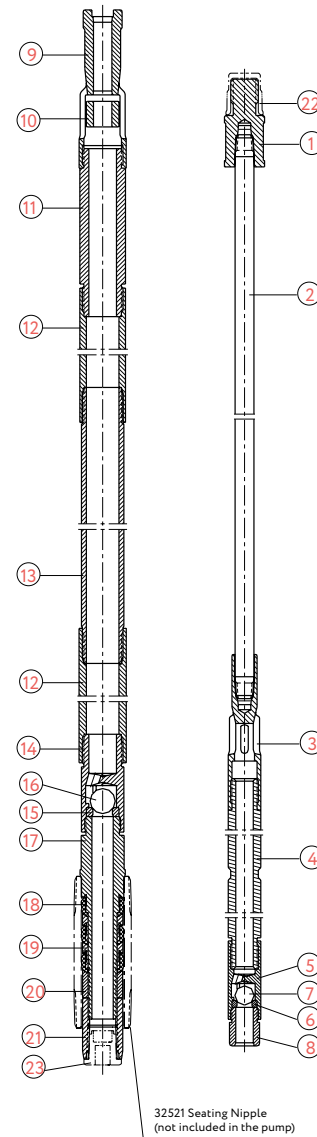


**20-106 RHBC ROD PUMP,
BOTTOM CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-. MOD
5	1	Closed Valve Cage	11201	C13-106MOD
6	1	Seat, Valve	14.1-S	V11-106
7	1	Ball, Valve	14.1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension Coupling	261..	C31-106-..
13	1	Barrel	080..	B12-106-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14.4-S	V11-175
16	1	Ball, Valve	14.4-B	V11-175
17	1	Seating Mandrel	35002	S11-20
18	3	Seating Cup	36001-N	S12-20
19	2	Seating Cup Ring	37001	S13-20
20	1	Seating Cup Nut	38002	S14-20
21	1	Anchor Seating Coupling	39002	S16-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

NOTE.

Under customer request, pumps can be delivered with increased seating assembly for 32522 Seating Nipple (for installation in tubing 73 mm (2 7/8") - 25-106 RHBC Pump).



32521 Seating Nipple
(not included in the pump)

**20-125 RHAM ROD PUMP,
API TOP MECHANICAL SEATING ASSEMBLY**

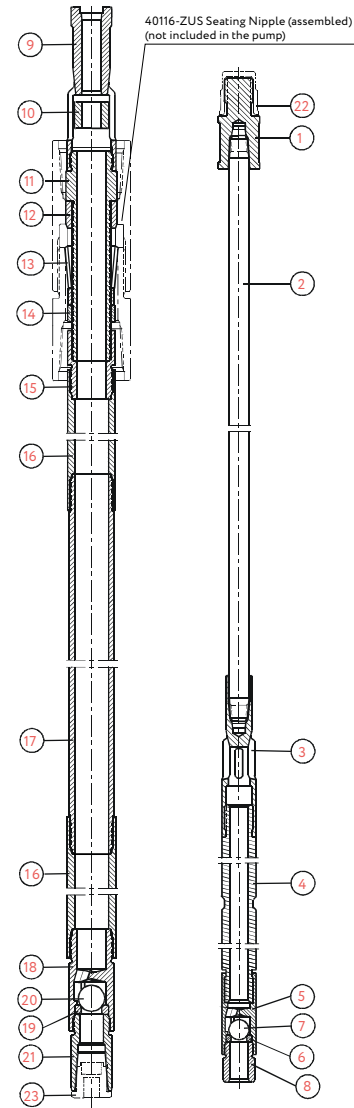
Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14.2-S	V11-125
7	1	Ball, Valve	14.2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Seating Mandrel	40106-H	S21-20MOD
12	1	Sealing Nut	40006-K	S21-20MOD
13	1	Lock Spring	40126	S21-20MOD
14	1	Lock Nut	40131	S21-20MOD
15	1	Bushing	28802	S21-20MOD
16	2	Extension Coupling	262..	C31-125-..
17	1	Barrel	081..	B12-125-..
18	1	Closed Valve Cage	11303	C14-20
19	1	Seat, Valve	14.4-S	V11-175
20	1	Ball, Valve	14.4-B	V11-175
21	1	Seat Bushing	23102	B22-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

NOTE.

Under customer request the sucker rod pumps can be supplied in the following designs:

- with 40116-M-ZUS or 40116-T-ZUS Seating Nipple for installation in tubing of 73 mm (2 7/8");
- with anchor and special 32001-M, 32001-KM or 40116-KM-ZUS Seating Nipple «Cone-in-Cone» type (25-125 RHAM Pump) for installation in tubing of 73 mm (2 7/8");
- with increased API seating assembly for 40117-ZUS Seating Nipple (25-125 RHAM-T Pump) for installation in tubing of 73 mm (2 7/8");
- with double valves;
- with assembled Barrels up to 24 ft length (long-stroke RHAM-D pumps).

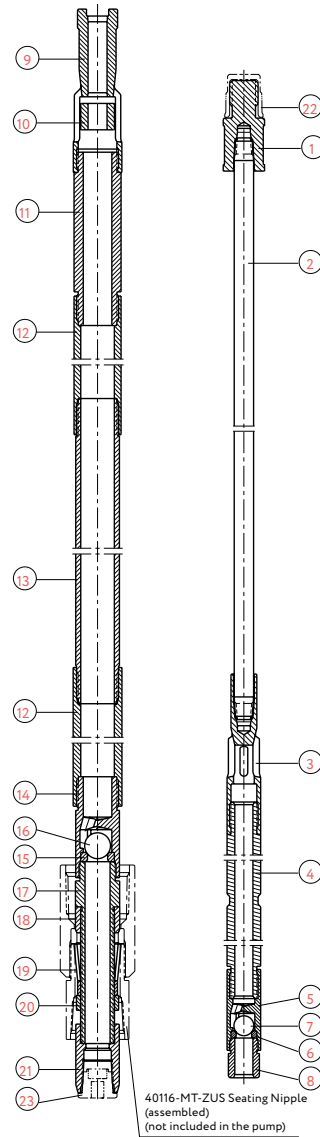
Types of seating assemblies are given in the section "Pump Assembly Units".



40116-ZUS Seating Nipple (assembled)
(not included in the pump)

**25/20-125 RHM-T ROD PUMP,
API MECHANICAL SEATING ASSEMBLY IN THE BOTTOM**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-. MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension Coupling	262..	C31-125-..
13	1	Barrel	081..	B12-125-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14..4-S	V11-175
16	1	Ball, Valve	14..4-B	V11-175
17	1	Seating Mandrel	40106-H-T	S21-20MOD
18	1	Sealing Nut	40006-K	S21-20MOD
19	1	Lock Spring	40126	S21-20MOD
20	1	Lock Nut	40131	S21-20MOD
21	1	Coupling	40281-T	-
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

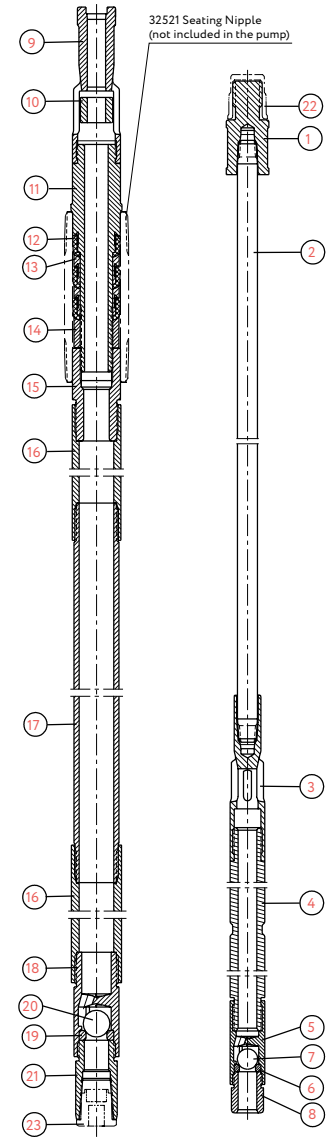


**20-125 RHAC ROD PUMP,
TOP CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Seating Mandrel	35002	S11-20
12	3	Seating Cup	36001-N	S12-20
13	2	Seating Cup Ring	37001	S13-20
14	1	Seating Cup Nut	38002	S14-20
15	1	Seating Cup Bushing	28302	S15-20
16	2	Extension Coupling	262..	C31-125-..
17	1	Barrel	081..	B12-125-..
18	1	Closed Valve Cage	11303	C14-20
19	1	Seat, Valve	14..4-S	V11-175
20	1	Ball, Valve	14..4-B	V11-175
21	1	Seat Bushing	23102	B22-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

NOTE.

Under customer request, pumps can be delivered with increased seating assembly for 32522 Seating Nipple (for installation in tubing of 73 mm (2 7/8") - 25-125 RHAC Pump.

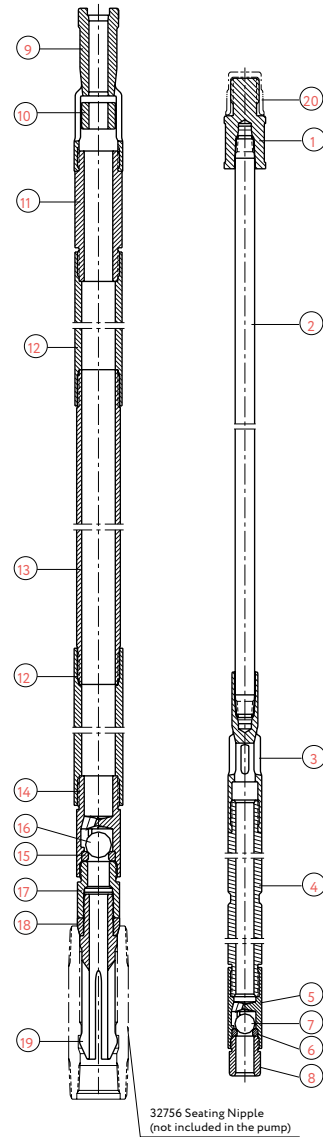


**20-125 RHBM ROD PUMP,
BOTTOM MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125M OD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..4-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension Coupling	262..	C31-125-..
13	1	Barrel	081..	B12-125-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14..4-S	V11-175
16	1	Ball, Valve	14..4-B	V11-175
17	1	Anchor Nipple	34071	S22-20
18	1	Sealing Ring	34079-K	S22-20 MOD
19	1	Anchor Mandrel	34091-N	S22-20
20	1	Safety cap	F115-12	-

NOTE.

- Under customer request, pumps can be delivered:
- with increased seating assembly for 32757 Seating Nipple (for installation in tubing of 73 mm (2 7/8") - 25-125 RHBM Pump;
 - with double valves.

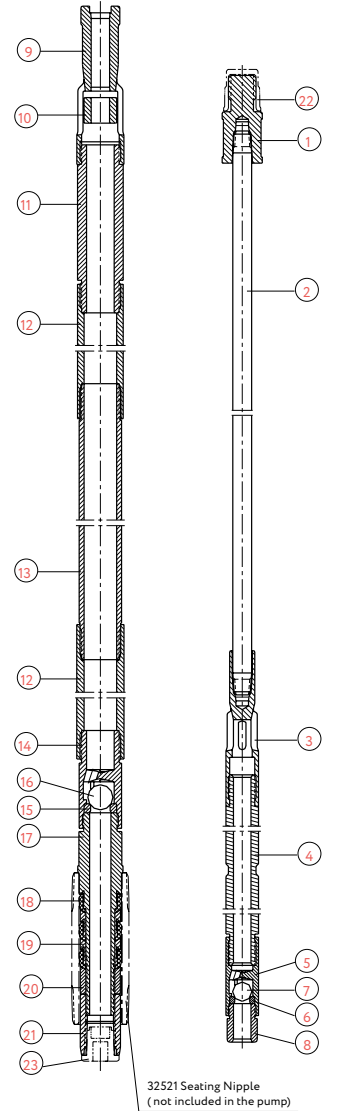


**20-125 RHBC ROD PUMP,
BOTTOM CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202	C21-20
12	2	Extension Coupling	262..	C31-125-..
13	1	Barrel	081..	B12-125-..
14	1	Closed Valve Cage	11303	C14-20
15	1	Seat, Valve	14..4-S	V11-175
16	1	Ball, Valve	14..4-B	V11-175
17	1	Seating Mandrel	35002	S11-20
18	3	Seating Cup	36001-N	S12-20
19	2	Seating Cup Ring	37001	S13-20
20	1	Seating Cup Nut	38002	S14-20
21	1	Anchor Seating Coupling	39002	S16-20
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

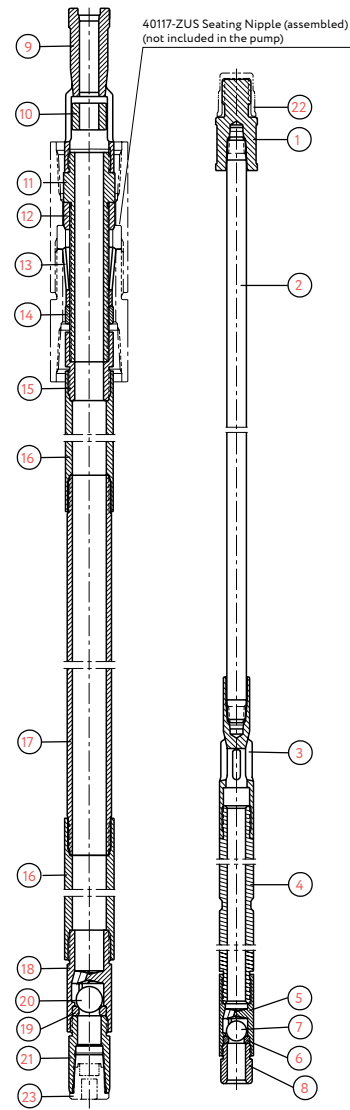
NOTE.

- Under customer request, pumps can be delivered with increased seating assembly for 32522 Seating Nipple (for installation in tubing of 73 mm (2 7/8") - 25-125 RHBC Pump.



**25-150 RHAM ROD PUMP,
API TOP MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Seating Mandrel	40107-H	S21-25MOD
12	1	Sealing Nut	40007-K	S21-25MOD
13	1	Lock Spring	40127	S21-25MOD
14	1	Lock Nut	40132	S21-25MOD
15	1	Bushing	28803	S21-25MOD
16	2	Extension Coupling	262..	C31-150-..
17	1	Barrel	082..	B12-150-..
18	1	Closed Valve Cage	11304	C14-25
19	1	Seat, Valve	14..6-S	V11-225
20	1	Ball, Valve	14..6-B	V11-225
21	1	Seat Bushing	23103	B22-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-



NOTE.

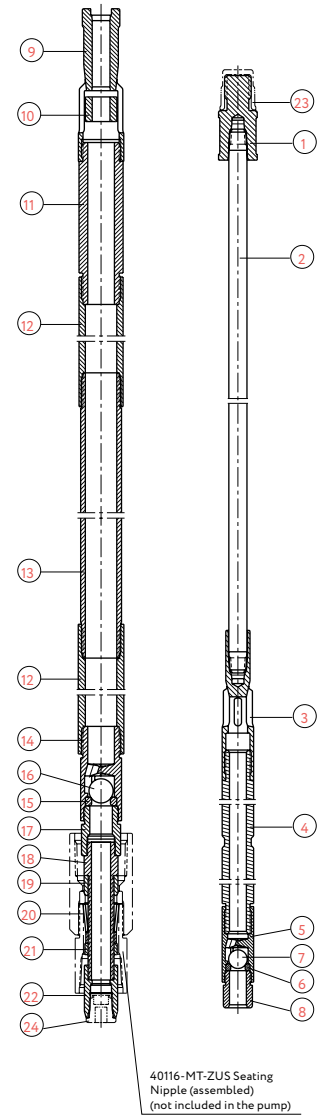
Under customer request, pumps can be delivered with:

- with anchor and special 32002-M, 32002-KM or 40117-KM-ZUS Seating Nipple "Cone-in-Cone" type;
- with double valves;
- with assembled Barrels up to 24 ft length (long-stroke RHAM-D pumps).

Types of seating assemblies are given in the section "Pump Assembly Units".

**25/20-150 RHM-T ROD PUMP, REDUCED API
MECHANICAL SEATING ASSEMBLY IN THE BOTTOM**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Connector	22203	C21-25
12	2	Extension Coupling	262..	C31-150-..
13	1	Barrel	082..	B12-150-..
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14..6-S	V11-225
16	1	Ball, Valve	14..6-B	V11-225
17	1	Nipple	40271-T	-
18	1	Seating Mandrel	40106-H	S21-20MOD
19	1	Sealing Nut	40006-K	S21-20MOD
20	1	Lock Spring	40126	S21-20MOD
21	1	Lock Nut	40131	S21-20MOD
22	1	Coupling	40281-T	-
23	1	Safety cap	F115-12	-
24	1	Safety plug	F113-01A	-

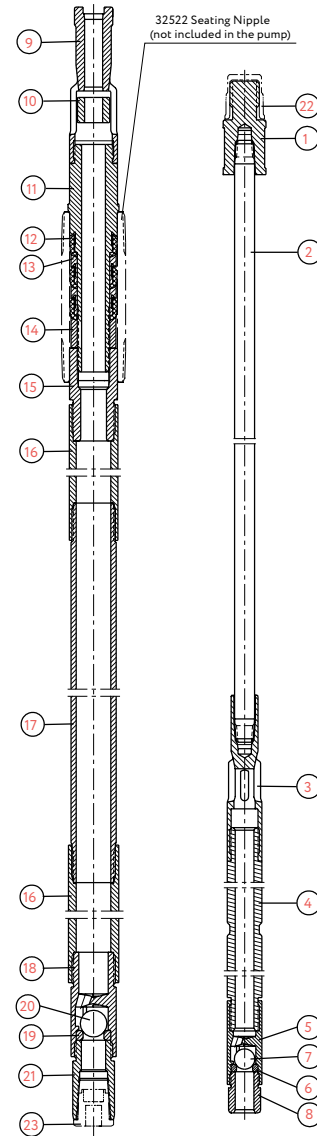


NOTE.

Under customer request, pumps can be delivered with the assembled Barrels up to 24 ft length (long-stroke RHM-TD pumps).

**25-150 RHAC ROD PUMP,
TOP CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Seating Mandrel	35003	S11-25
12	3	Seating Cup	36002-N	S12-25
13	2	Seating Cup Ring	37002	S13-25
14	1	Seating Cup Nut	38003	S14-25
15	1	Seating Cup Bushing	28303	S15-25
16	2	Extension Coupling	262..	C31-150-..
17	1	Barrel	082..	B12-150-..
18	1	Корпус клапана закрытый	11304	C14-25
19	1	Seat, Valve	14..6-S	V11-225
20	1	Ball, Valve	14..6-B	V11-225
21	1	Closed Valve Cage	23103	B22-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-

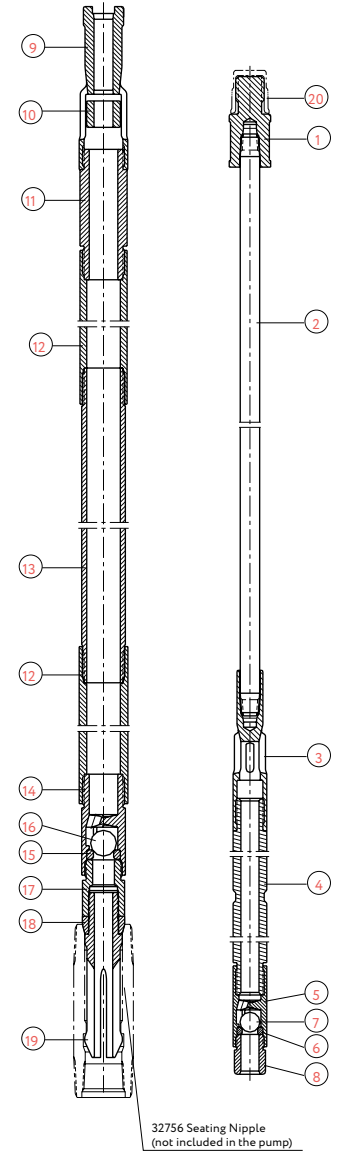


**25-150 RHBM ROD PUMP,
BOTTOM MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150 MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Connector	22203	C21-25
12	2	Extension Coupling	262..	C31-150-..
13	1	Barrel	082..	B12-150-..
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14..6-S	V11-225
16	1	Ball, Valve	14..6-B	V11-225
17	1	Anchor Nipple	34072	S22-25
18	1	Sealing Ring	34080-K	S22-25 MOD
19	1	Anchor Mandrel	34092-N	S22-25
20	1	Safety cap	F115-12	-

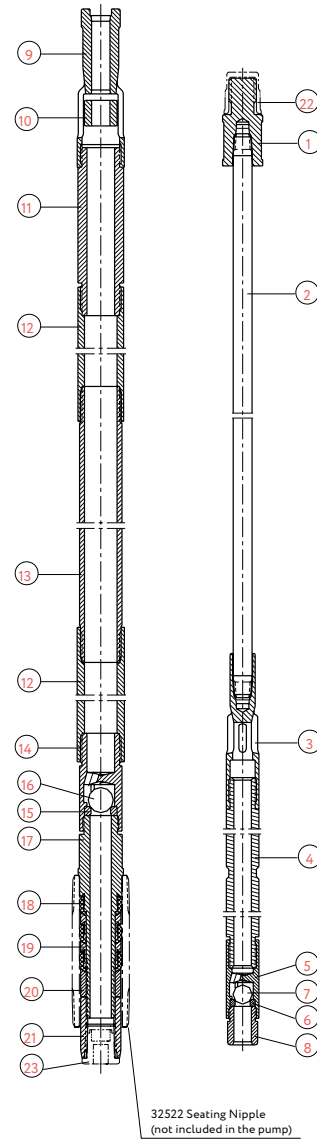
NOTE.

Under customer request, pumps can be delivered with assembled Barrels up to 24 ft length (long-stroke RHBM-D pumps).



**25-150 RHBC ROD PUMP,
BOTTOM CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Connector	22203	C21-25
12	2	Extension Coupling	262..	C31-150-..
13	1	Barrel	082..	B12-150-..
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14..6-S	V11-225
16	1	Ball, Valve	14..6-B	V11-225
17	1	Оправка	35003	S11-25
18	3	Манжета	36002-N	S12-25
19	2	Seating Cup Ring	37002	S13-25
20	1	Seating Cup Nut	38003	S14-25
21	1	Anchor Seating Coupling	39003	S16-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-

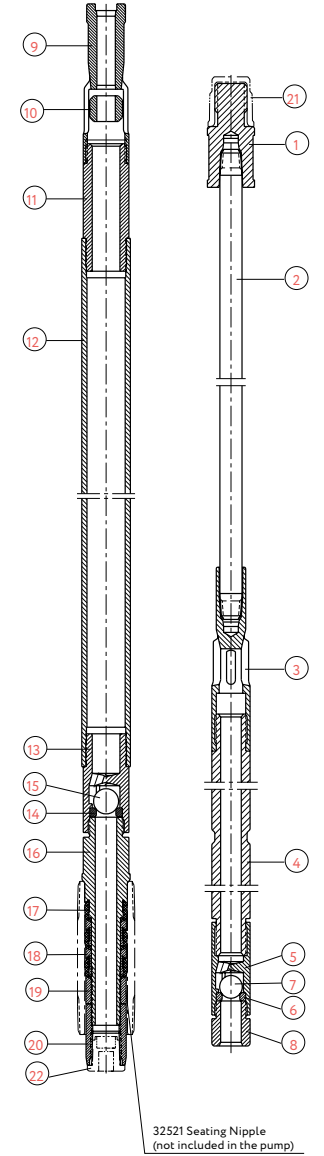


NOTE.

Under customer request, pumps can be delivered with increased seating assembly for 32521 Seating Nipple with crossover coupling for tubing 73/60 (2 7/8" x 2 3/8"), in-installed under tubing 73 mm (2 7/8") (25/20-150 RHBC Pump).

**20-150 RHBC ROD PUMP,
REDUCED BOTTOM CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15002	B21-20
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10103-A	C12-150-20
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Guide, Rod	24512-H	-
10	1	Sleeve	47501-H	-
11	1	Connector	22202-A	C21-20
12	2	Barrel	062..	-
13	1	Closed Valve Cage	11303-A	C14-20
14	1	Seat, Valve	14..4-S	V11-175
15	1	Ball, Valve	14..4-B	V11-175
16	1	Оправка	35002	S11-20
17	1	Манжета	36001-N	S12-20
18	1	Seating Cup Ring	37001	S13-20
19	1	Seating Cup Nut	38002	S14-20
20	1	Anchor Seating Coupling	39002	S16-20
21	1	Safety cap	F115-12	-
22	1	Safety plug	F113-01A	-



25-175 RHAM ROD PUMP, API TOP MECHANICAL SEATING ASSEMBLY

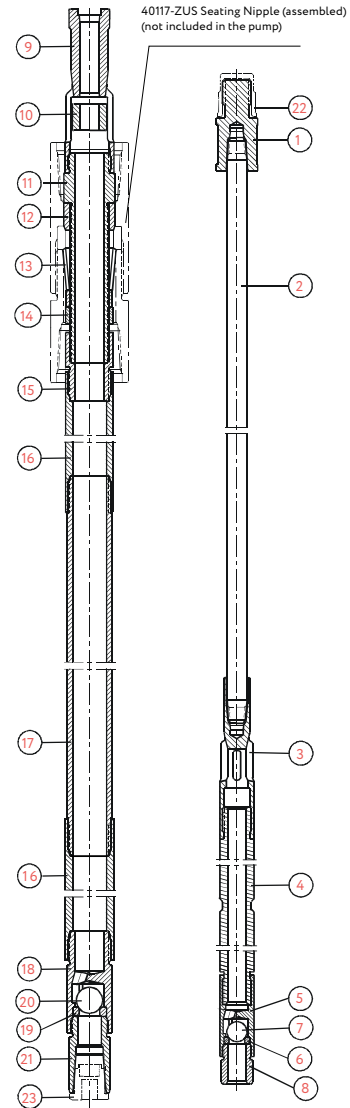
Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10105	C12-175
4	1	Plunger	183..	P21-175-.MOD
5	1	Closed Valve Cage	11204	C13-175MOD
6	1	Seat, Valve	14..4-S	V11-175
7	1	Ball, Valve	14..4-B	V11-175
8	1	Seat Plug	23004	P12-175
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Seating Mandrel	40107-H	S21-25MOD
12	1	Sealing Nut	40007-K	S21-25MOD
13	1	Lock Spring	40127	S21-25MOD
14	1	Lock Nut	40132	S21-25MOD
15	1	Bushing	28803	S21-25MOD
16	2	Extension Coupling	263..	C31-175-..
17	1	Barrel	083..	B12-175-..
18	1	Closed Valve Cage	11304	C14-25
19	1	Seat, Valve	14..6-S	V11-225
20	1	Ball, Valve	14..6-B	V11-225
21	1	Seat Bushing	23103	B22-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-

NOTE.

Under customer request, pumps can be delivered with:

- the anchor and special 32002-M, 32002-KM or 40117-KM-ZUS Seating Nipple "Cone-in-Cone" type;
- with assembled Barrels up to 24 ft length (long-stroke RHAM-D pumps);
- with double valves.

Types of seating assemblies are given in the section "Pump Assembly Units"



25-175 RHAM-P ROD PUMP, API TOP MECHANICAL SEATING ASSEMBLY AND CONTROLLED TRAVELING VALVE

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Rod Cage	10344-P	-
4	1	Valve Rod	413..-P	-
5	1	Plunger	203..-1T-	-
6	1	Valve Bushing	51344-P	-
7	1	Valve	14344-P	-
8	1	Rod Guide	24513-H	-
9	1	Sleeve	47502-H	-
10	1	Seating Mandrel	40107-H	S21-25MOD
11	1	Sealing Nut	40007-K	S21-25MOD
12	1	Lock Spring	40127	S21-25MOD
13	1	Lock Nut	40132	S21-25MOD
14	1	Bushing	28803	S21-25MOD
15	2	Extension Coupling	263..	C31-175-..
16	1	Barrel	083..	B12-175-..
17	1	Closed Valve Cage	11304	C14-25
18	1	Seat, Valve	14..6-S	V11-225
19	1	Ball, Valve	14..6-B	V11-225
20	1	Seat Bushing	23103	B22-25
21	1	Safety cap	F115-12	-
22	1	Safety plug	F113-02A	-

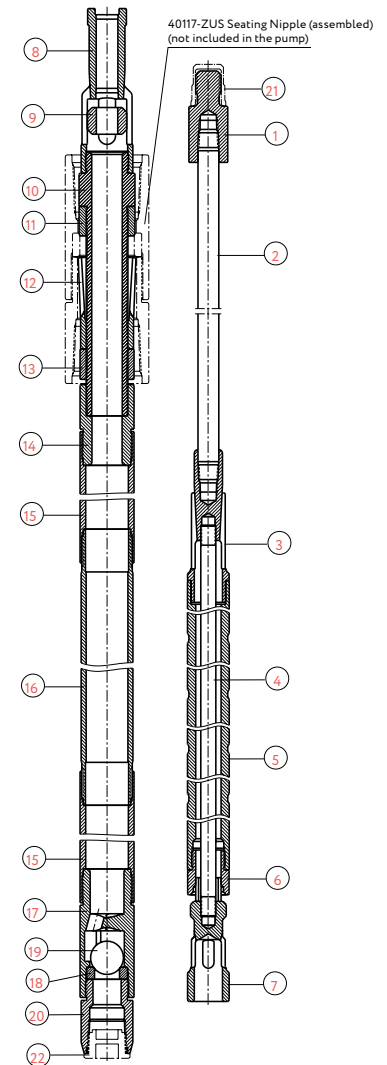
NOTE.

The pump is intended for pumping of fluid with in-creased viscosity and increased gas content.

Under customer request, pumps can be delivered with:

- the anchor and special 32002-M, 32002-KM or 40117-KM-ZUS Seating Nipple «Cone-in-Cone" type.

Types of seating assemblies are given in the section "Pump Assembly Units".

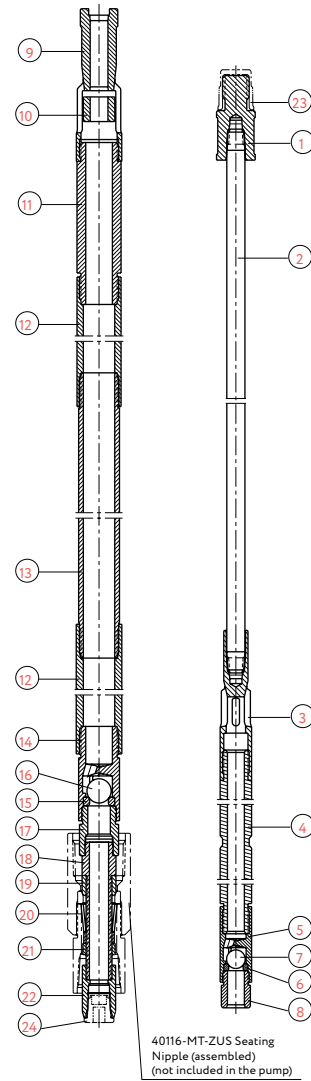


**25/20-175 RHM-T ROD PUMP, REDUCED
API MECHANICAL SEATING ASSEMBLY IN THE BOTTOM**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10105	C12-175
4	1	Plunger	183..	P21-175-.MOD
5	1	Closed Valve Cage	11204	C13-175MOD
6	1	Seat, Valve	14..4-S	V11-175
7	1	Ball, Valve	14..4-B	V11-175
8	1	Seat Plug	23004	P12-175
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Connector	22203	C21-25
12	2	Extension Coupling	263..	C31-175-..
13	1	Barrel	083..	B12-175-..
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14..6-S	V11-225
16	1	Ball, Valve	14..6-B	V11-225
17	1	Nipple	40271-T	-
18	1	Seating Mandrel	40106-H	S21-20MOD
19	1	Sealing Nut	40006-K	S21-20MOD
20	1	Lock Spring	40126	S21-20MOD
21	1	Lock Nut	40131	S21-20MOD
22	1	Coupling	40281-T	-
23	1	Safety cap	F115-12	-
24	1	Safety plug	F113-01A	-

NOTE.

Under customer request, pumps can be delivered with assembled Barrels up to 24 ft length (long-stroke RHM-TD pumps).

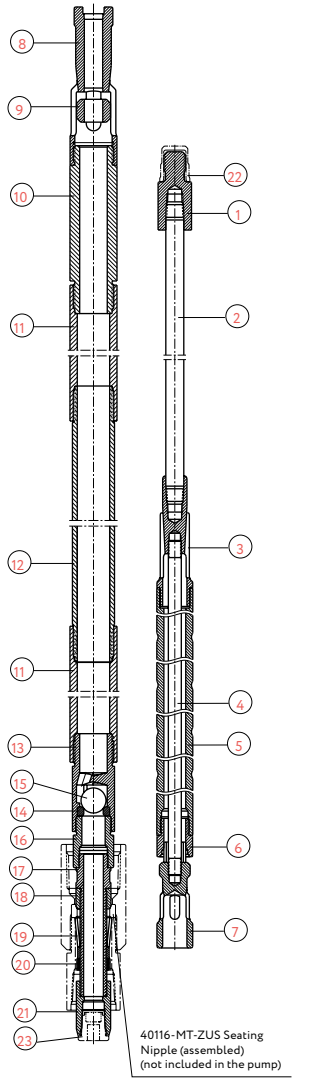


**25/20-175 RHM-TT ROD PUMP, REDUCED API MECHANICAL SEATING ASSEMBLY
IN THE BOTTOM AND CONTROLLED TRAVELING VALVE**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Rod Cage	10344-P	-
4	1	Valve Rod	413..-P	-
5	1	Plunger	203..-1T-	-
6	1	Valve Bushing	51344-P	-
7	1	Valve	14344-P	-
8	1	Rod Guide	24513-H	-
9	1	Sleeve	47502-H	-
10	1	Connector	22203	C21-25
11	2	Extension Coupling	263..	C31-175-..
12	1	Barrel	083..	B12-175-..
13	1	Closed Valve Cage	11304	C14-25
14	1	Seat, Valve	14..6-S	V11-225
15	1	Ball, Valve	14..6-B	V11-225
16	1	Nipple	40271-T	-
17	1	Seating Mandrel	40106-H	S21-20MOD
18	1	Sealing Nut	40006-K	S21-20MOD
19	1	Lock Spring	40126	S21-20MOD
20	1	Lock Nut	40131	S21-20MOD
21	1	Coupling	40281-T	-
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-01A	-

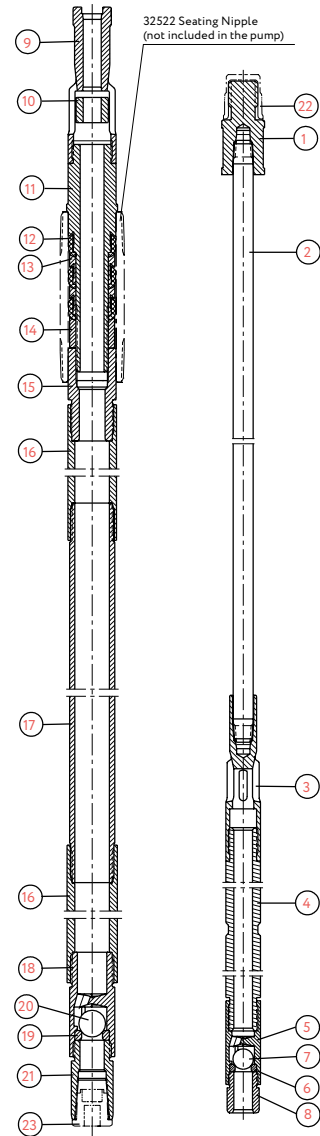
NOTE.

The pump is intended for pumping of fluid with in-cresed viscosity and increased gas content.



**25-175 RHAC ROD PUMP,
TOP CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10105	C12-175
4	1	Plunger	183..	P21-175-.MOD
5	1	Closed Valve Cage	11204	C13-175MOD
6	1	Seat, Valve	14..4-S	V11-175
7	1	Ball, Valve	14..4-B	V11-175
8	1	Seat Plug	23004	P12-175
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Seating Mandrel	35003	S11-25
12	3	Seating Cup	36002-N	S12-25
13	2	Seating Cup Ring	37002	S13-25
14	1	Seating Cup Nut	38003	S14-25
15	1	Seating Cup Bushing	28303	S15-25
16	2	Extension Coupling	263..	C31-175-..
17	1	Barrel	083..	B12-175-..
18	1	Closed Valve Cage	11304	C14-25
19	1	Seat, Valve	14..6-S	V11-225
20	1	Ball, Valve	14..6-B	V11-225
21	1	Seat Bushing	23103	B22-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-

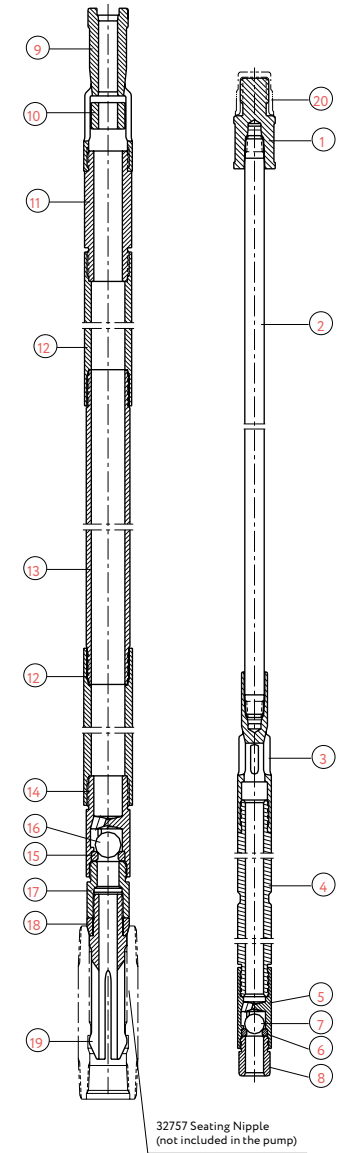


**25-175 RHBM ROD PUMP,
BOTTOM MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10105	C12-175
4	1	Plunger	183..	P21-175-.MOD
5	1	Closed Valve Cage	11204	C13-175 MOD
6	1	Seat, Valve	14..4-S	V11-175
7	1	Ball, Valve	14..4-B	V11-175
8	1	Seat Plug	23004	P12-175
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Connector	22203	C21-25
12	2	Extension Coupling	263..	C31-175-..
13	1	Barrel	083..	B12-175-..
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14..6-S	V11-225
16	1	Ball, Valve	14..6-B	V11-225
17	1	Anchor Nipple	34072	S22-25
18	1	Sealing Ring	34080-K	S22-25 MOD
19	1	Anchor Mandrel	34092-N	S22-25
20	1	Safety cap	F115-12	-

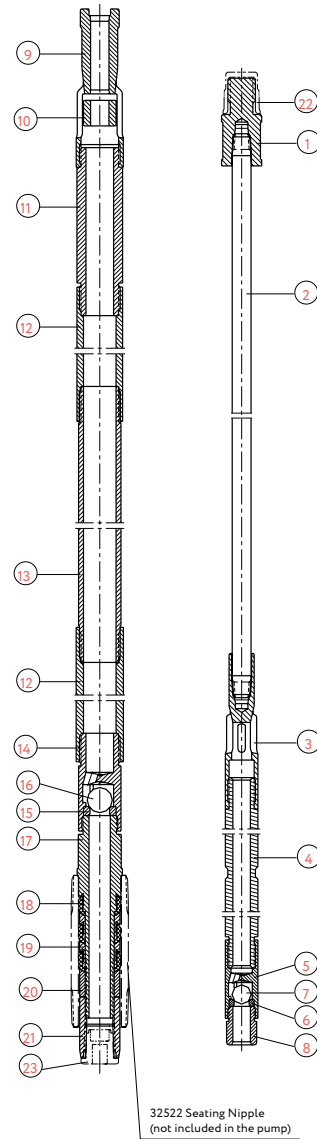
NOTE.

Under customer request, pumps can be delivered with assembled Barrels up to 24 ft length (long-stroke RHBM-D pumps), and with double valves.



**25-175 RHBC ROD PUMP,
BOTTOM CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10105	C12-175
4	1	Plunger	183..	P21-175-.MOD
5	1	Closed Valve Cage	11204	C13-175MOD
6	1	Seat, Valve	14..4-S	V11-175
7	1	Ball, Valve	14..4-B	V11-175
8	1	Seat Plug	23004	P12-175
9	1	Guide, Rod	24513-H	-
10	1	Sleeve	47502-H	-
11	1	Seating Mandrel	35003	S11-25
12	3	Seating Cup	36002-N	S12-25
13	2	Seating Cup Ring	37002	S13-25
14	1	Seating Cup Nut	38003	S14-25
15	1	Seating Cup Bushing	28303	S15-25
16	2	Extension Coupling	263..	C31-175-..
17	1	Barrel	083..	B12-175-..
18	1	Closed Valve Cage	11304	C14-25
19	1	Seat, Valve	14..6-S	V11-225
20	1	Ball, Valve	14..6-B	V11-225
21	1	Seat Bushing	23103	B22-25
22	1	Safety cap	F115-12	-
23	1	Safety plug	F113-02A	-

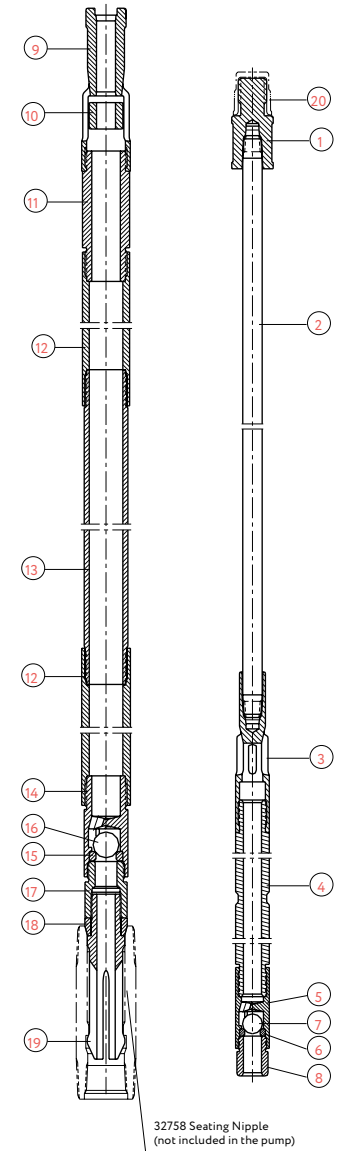


NOTE.

Under customer request, pumps can be delivered with reduced seating assembly for 32521 Seating Nipple with crossover coupling for tubing 73/60 (2 7/8" x 2 3/8"), in-stalled under tubing 73 mm (2 7/8") (25/20-175 RHBC pump).

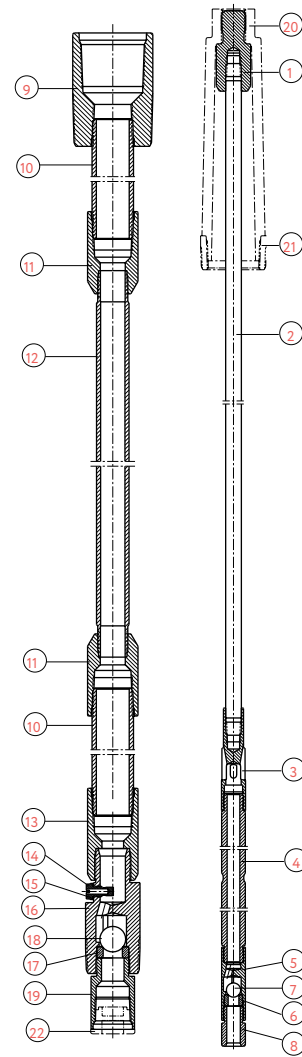
**30-225 RHBM ROD PUMP,
BOTTOM MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15004-H	B21-30
2	1	Rod, Valve	44...	R11-30-...MOD
3	1	Open Valve Cage	10107-H	C12-225
4	1	Plunger	185..	P21-225-.MOD
5	1	Closed Valve Cage	11206	C13-225MOD
6	1	Seat, Valve	14..6-S	V11-225
7	1	Ball, Valve	14..6-B	V11-225
8	1	Seat Plug	23006	P12-225
9	1	Guide, Rod	24514-H	-
10	1	Sleeve	47503-H	-
11	1	Connector	22204-H	C21-30
12	2	Extension Coupling	26368-.	C31-225-..
13	1	Barrel	084..	B12-225-..
14	1	Closed Valve Cage	11305-H	C14-30
15	1	Seat, Valve	14..7-S	V11-250
16	1	Ball, Valve	14..7-B	V11-250
17	1	Anchor Nipple	34073	S22-30
18	1	Sealing Ring	34081-K	S22-30 MOD
19	1	Anchor Mandrel	34093-N	S22-30
20	1	Safety cap	F115-12	-



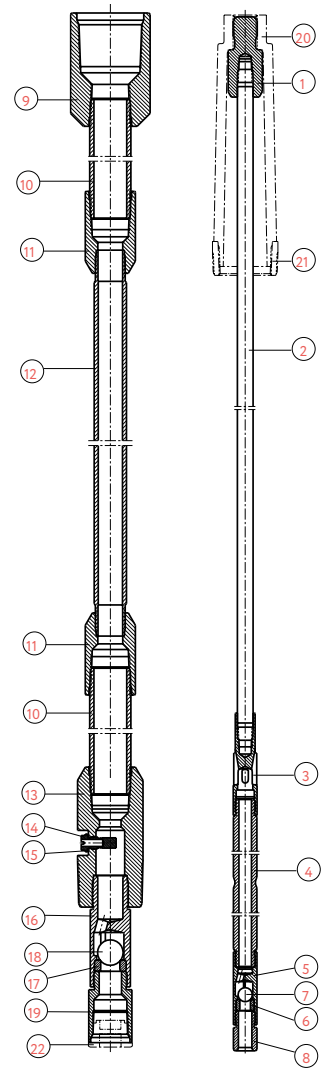
**25-106 THM-C TUBING PUMP, NON-FISHABLE
INCREASED STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-.MOD
5	1	Closed Valve Cage	11201	C13-106 MOD
6	1	Seat, Valve	14.1-S	V11-106
7	1	Ball, Valve	14.1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Crossover Coupling	01632-C	-
10	2	Extension Nipple	260..	-
11	2	Coupling	01410-H	-
12	1	Barrel	080..	B12-106-..
13	1	Coupling	01410-C	-
14	1	Knock-off Screw	48001-C	-
15	1	Gasket	49001-C	-
16	1	Closed Valve Cage	11303-C	-
17	1	Seat, Valve	14.4-S	V11-175
18	1	Ball, Valve	14.4-B	V11-175
19	1	Seat Bushing	23102-C	-
20	1	Plunger Safety Bushing	F111-05M	-
21	1	Crossover Coupling	F111-05B	-
22	1	Safety Plug	F113-02A	-



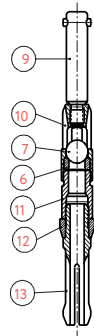
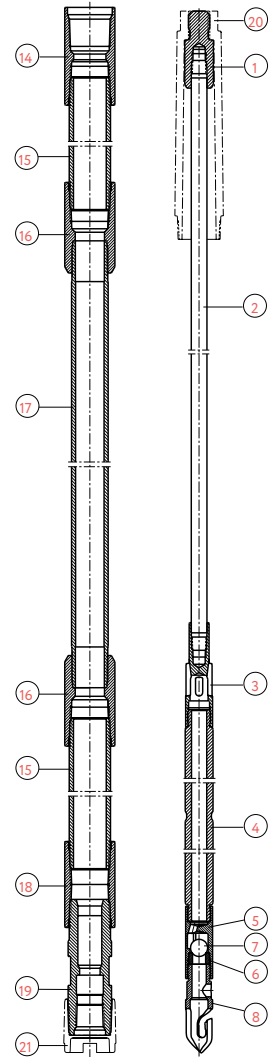
**25-106 THM-CЛ TUBING PUMP, NON-FISHABLE
INCREASED STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10101	C12-106
4	1	Plunger	180..	P21-106-.MOD
5	1	Closed Valve Cage	11201	C13-106 MOD
6	1	Seat, Valve	14.1-S	V11-106
7	1	Ball, Valve	14.1-B	V11-106
8	1	Seat Plug	23001	P12-106
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	260..	-
11	2	Coupling	01410-H	-
12	1	Barrel	080..	B12-106-..
13	1	Housing	51001	-
14	1	Knock-off Screw	48002-C	-
15	1	Gasket	49002-C	-
16	1	Closed Valve Cage	11303	C14-20
17	1	Seat, Valve	14.4-S	V11-175
18	1	Ball, Valve	14.4-B	V11-175
19	1	Seat Bushing	23102-C	-
20	1	Plunger Safety Bushing	F111-05M	-
21	1	Crossover Coupling	F111-05B	-
22	1	Safety Plug	F113-02A	-



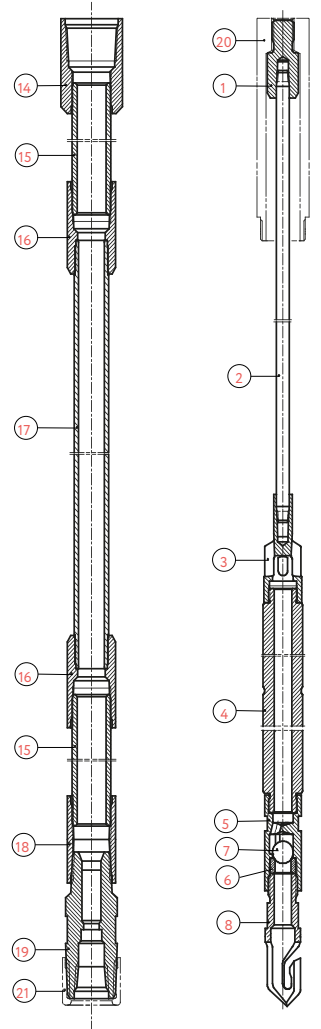
**15-125 THM TUBING PUMP,
STANDING VALVE MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414-T	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125 MOD
6	2	Seat, Valve	14..2-S	V11-125
7	2	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	25041-T	-
9	1	Fishing Pin	25032	-
10	1	Closed Valve Cage	13010	-
11	1	Anchor Nipple	34526	-
12	1	Sealing Ring	34527-K	-
13	1	Anchor Mandrel	34528-N	-
14	1	Crossover Coupling	01632-T	-
15	2	Extension Nipple	260..	-
16	2	Coupling	01411	-
17	1	Barrel	081..	B12-125-..
18	1	Coupling	01413	C34-15 MOD
19	1	Seating Nipple	32755-T	-
20	1	Plunger Safety Bushing	F111-05C	-
21	1	Safety cap	F116-01T	-

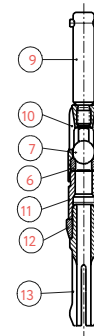


**20-125 THM TUBING PUMP, STANDING VALVE
MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	2	Seat, Valve	14..2-S	V11-125
7	2	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	25041	-
9	1	Fishing Pin	25032	-
10	1	Standing Valve Cage	13010	-
11	1	Anchor Nipple	34526	-
12	1	Sealing Ring	34527-K	-
13	1	Anchor Mandrel	34528-N	-
14	1	Crossover Coupling	01632	-
15	2	Extension Nipple	260..	-
16	2	Coupling	01411	-
17	1	Barrel	081..	B12-125-..
18	1	Coupling	01413	C34-15MOD
19	1	Seating Nipple	32755	-
20	1	Plunger Safety Bushing	F111-05M	-
21	1	Safety cap	F116-01A	-



Standing Valve as-assembly
(installed in Seating Nipple pos. 19)



NOTE.

Under customer request, pumps can be delivered in the following designs:

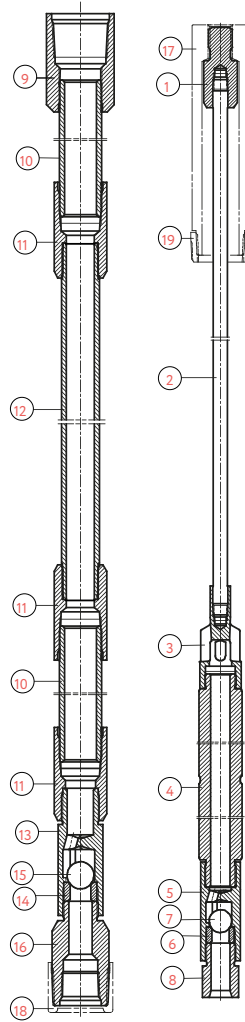
- with increased 01632-M upper coupling (14) for installation in tubing of 73 mm (2 7/8") (25-125 THM pump);
- with 25041-T Fishing Bushing (with side hole);
- with Standing Valve Seating Assembly "Cone-in-Cone" type (25-125 THM-K Pump);
- with assembled Barrels up to 22 ft (long-stroke 25-125 THM -D pumps).

**25-125 THM-T TUBING PUMP,
NON-FISHABLE INCREASED STANDING VALVE**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	260..	-
11	3	Coupling	01411	-
12	1	Barrel	081..	B12-125-..
13	1	Closed Valve Cage	11303-T	-
14	1	Seat, Valve	14..4-S	V11-175
15	1	Ball, Valve	14..4-B	V11-175
16	1	Seat Bushing	23102-T	-
17	1	Plunger Safety Bushing	F111-05M	-
18	1	Safety cap	F116-01A	-
19	1	Crossover Coupling	F111-05B	-

NOTE.

The pump to be used c/w SKOK-50-N Drain Valve, installed above the pump.

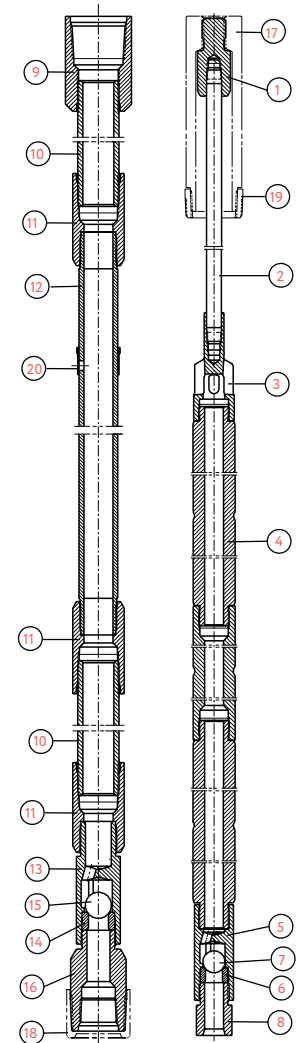


25-125 THM-T 11-10-2-2 TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE, LONG PLUNGER AND A SIDE HOLE IN THE BARREL

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42060	R11-20-060 MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	18110-T.	-
5	1	Closed Valve Cage	11202	C13-125 MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	26056	-
11	3	Coupling	01411	-
12	1	Barrel	08111-..	B12-125-11 MOD
13	1	Closed Valve Cage	11303-T	-
14	1	Seat, Valve	14..4-S	V11-175
15	1	Ball, Valve	14..4-B	V11-175
16	1	Seat Bushing	23102-T	-
17	1	Plunger Safety Bushing	F111-05M	-
18	1	Safety Cap	F116-01A	-
19	1	Crossover Coupling	F111-05B	-
20	1	Safety Nipple	50001-T	-

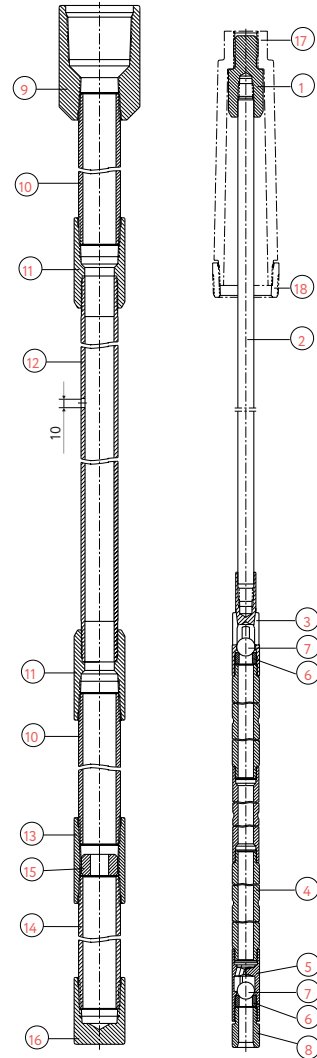
NOTE.

A side hole in the Barrel closed with the rubber Safety Nipple is intended for fluid drain from the tubing during pump POOH (Safety Nipple doesn't interrupt fluid drain).



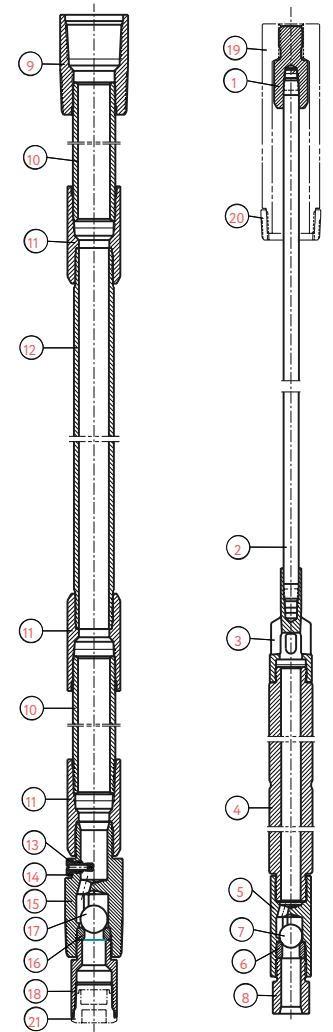
**25-125 TH 11-9-2-2, TUBING PUMP,
WITHOUT STANDING VALVE**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42073	R11-20-073 MOD
3	1	Open Valve Cage	10102-H	C12-125
4	1	Plunger assembled	18109-T-	-
5	1	Closed Valve Cage	11202	C13-125 MOD
6	2	Seat, Valve	14..2-S	V11-125
7	2	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	26056	-
11	2	Coupling	01411	-
12	1	Barrel	08111-..	B12-125-11 MOD
13	1	Coupling	01413	C34-15 MOD
14	1	Extension Nipple	26056-M	-
15	1	Thrust Bushing	46001-H	-
16	1	Cap	01411-H	-
17	1	Plunger Safety Bushing	F111-05M	-
18	1	Crossover Coupling	F111-05B	-



**25-125 THM-C TUBING PUMP, NON-FISHABLE
INCREASED STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-C	-
10	2	Extension Nipple	260..	-
11	3	Coupling	01411	-
12	1	Barrel	081..	B12-125-..
13	1	Knock-off Screw	48001-C	-
14	1	Gasket	49001-C	-
15	1	Closed Valve Cage	11303-C	-
16	1	Seat, Valve	14..4-S	V11-175
17	1	Ball, Valve	14..4-B	V11-175
18	1	Seat Bushing	23102-C	-
19	1	Plunger Safety Bushing	F111-05M	-
20	1	Crossover Coupling	F111-05B	-
21	1	Safety Plug	F113-02A	-

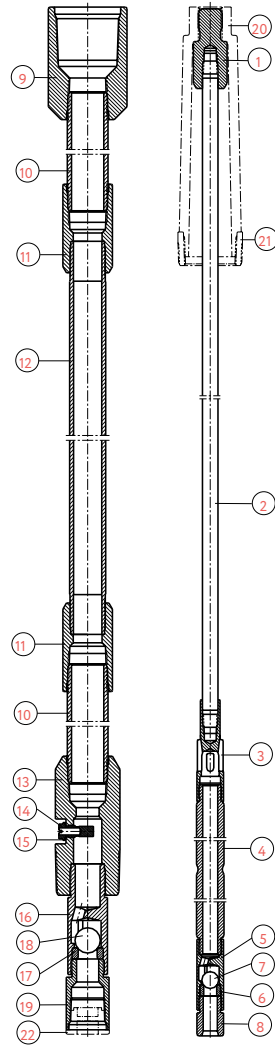


NOTE.

Under customer request, pumps can be delivered with double Standing Valve and single or double Traveling Valve (25-125 THM-CC Pump).

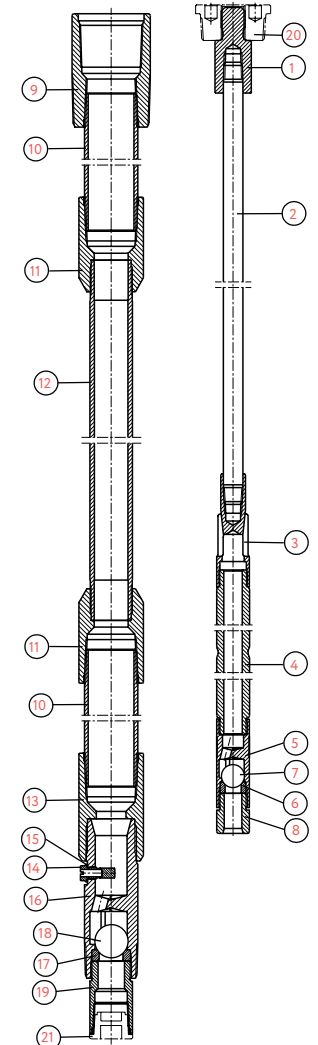
25-125 THM-C/L TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	260..	-
11	2	Coupling	01411	-
12	1	Barrel	081..	B12-125-..
13	1	Housing	51001	-
14	1	Knock-off Screw	48002-C	-
15	1	Gasket	49002-C	-
16	1	Closed Valve Cage	11303	C14-20
17	1	Seat, Valve	14..4-S	V11-175
18	1	Ball, Valve	14..4-B	V11-175
19	1	Seat Bushing	23102-C	-
20	1	Plunger Safety Bushing	F111-05M	-
21	1	Crossover Coupling	F111-05B	-
22	1	Safety Plug	F113-02A	-



25-150 THM-C TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Crossover Coupling	01661-C	-
10	2	Extension Nipple	260..	N22-20-...MOD
11	2	Coupling	01530-H	-
12	1	Barrel	082..	B12-150-..
13	1	Coupling	01530-C	-
14	1	Knock-off Screw	48002-C	-
15	1	Gasket	49002-C	-
16	1	Closed Valve Cage	11304-C	-
17	1	Seat, Valve	14..6-S	V11-225
18	1	Ball, Valve	14..6-B	V11-225
19	1	Seat Bushing	23103-C	-
20	1	Plunger Safety Bushing	F111-02	-
21	1	Safety Plug	F113-02A	-

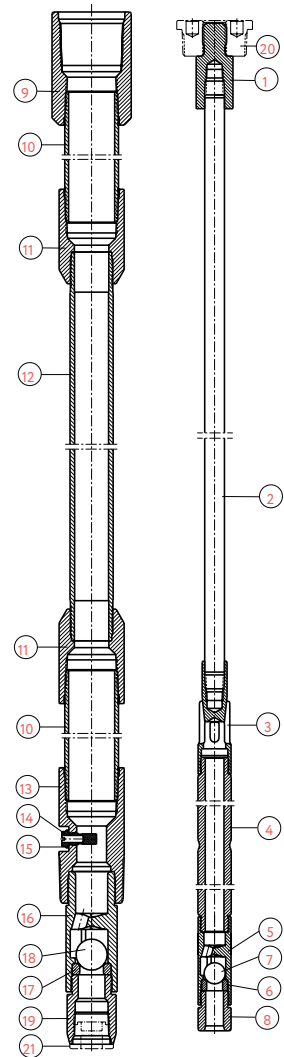


NOTE.

Under customer request, pumps can be delivered with double Standing Valve and single or double Trav-eling Valve (25-150 THM-CC Pump), as well as with assembled Barrels up to 22 ft length (long-stroke 25-150 THM-CD pumps).

25-150 THM-СЛ TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15003	B21-25
2	1	Rod, Valve	43...	R11-25-...MOD
3	1	Open Valve Cage	10104	C12-150-25
4	1	Plunger	182..	P21-150-.MOD
5	1	Closed Valve Cage	11203	C13-150 MOD
6	1	Seat, Valve	14..3-S	V11-150
7	1	Ball, Valve	14..3-B	V11-150
8	1	Seat Plug	23003	P12-150
9	1	Crossover Coupling	01661-M	-
10	2	Extension Nipple	260..	N22-20-...MOD
11	2	Coupling	01530-H	-
12	1	Barrel	082..	B12-150-..
13	1	Housing	51002	-
14	1	Knock-off Screw	48002-C	-
15	1	Gasket	49002-C	-
16	1	Closed Valve Cage	11304	C14-25
17	1	Seat, Valve	14..6-S	V11-225
18	1	Ball, Valve	14..6-B	V11-225
19	1	Seat Bushing	23103	B22-25
20	1	Plunger Safety Bushing	F111-02	-
21	1	Safety Plug	F113-02A	-

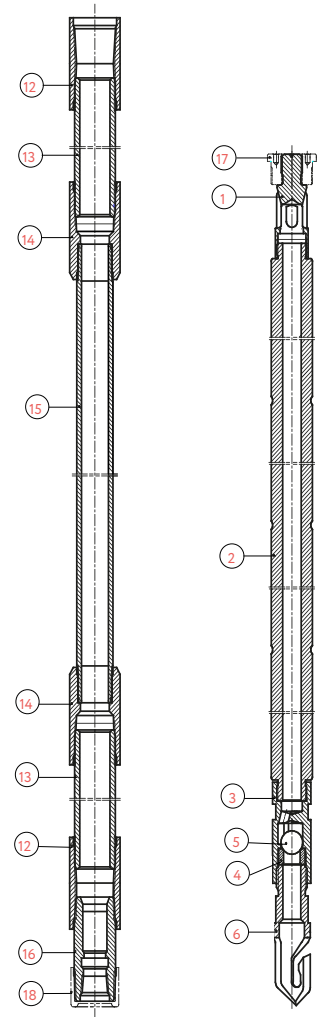


20-175 THM TUBING PUMP, STANDING VALVE MECHANICAL SEATING ASSEMBLY

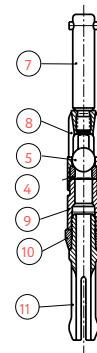
Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10001	C11-20
2	1	Plunger	183..	P21-175-.MOD
3	1	Closed Valve Cage	11204	C13-175 MOD
4	2	Seat, Valve	14..4-S	V11-175
5	2	Ball, Valve	14..4-B	V11-175
6	1	Fishing Bushing	25043	P31-175
7	1	Fishing Pin	25034	P31-175
8	1	Standing Valve Cage	13001	C16-175
9	1	Anchor Nipple	34071	S22-20
10	1	Sealing Ring	34079-K	S22-20 MOD
11	1	Anchor Mandrel	34091-N	S22-20
12	2	Coupling	01661	C34-20 MOD
13	2	Extension Nipple	260..	N22-20-..MOD
14	2	Coupling	01531	C35-20 MOD
15	1	Barrel	090..	B13-175-..
16	1	Seating Nipple	32756	N12-20 MOD
17	1	Plunger Safety Bushing	F111-01	-
18	1	Safety cap	F116-01A	-

NOTE.

- Under customer request, pumps can be delivered with:
- increased 01661-M or 01661-C Upper Coupling (12) for installation in tubing 73 mm (2 7/8") (25-175 THM pump);
 - 25043-T Fishing Bushing (with side hole);
 - Standing Valve seating assembly "Cone-in-Cone" type with-out Anchor Mandrel (25-175 THM-K pump);
 - with assembled Barrels up to 28 ft lenth (long-stroke 25-175 THM-D Pump);
 - Valve Rod (THM-A pumps).



Standing Valve as-sembly
(installed in Seating Nipple pos. 16)



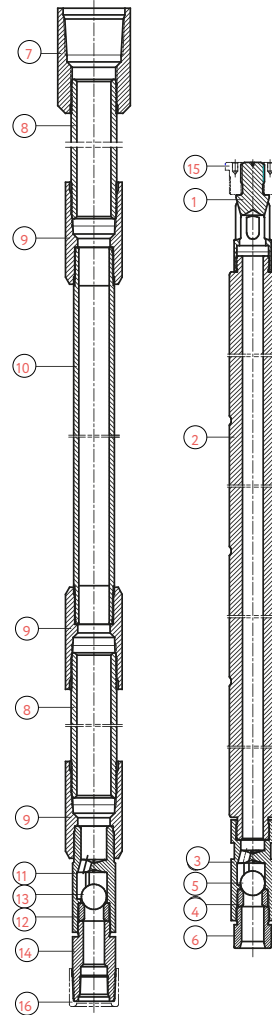
25-175 THM-T TUBING PUMP, STANDING VALVE MECHANICAL SEATING ASSEMBLY

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15414	-
2	1	Rod, Valve	42...	R11-20-...MOD
3	1	Open Valve Cage	10102	C12-125
4	1	Plunger	181..	P21-125-.MOD
5	1	Closed Valve Cage	11202	C13-125MOD
6	1	Seat, Valve	14..2-S	V11-125
7	1	Ball, Valve	14..2-B	V11-125
8	1	Seat Plug	23002	P12-125
9	1	Crossover Coupling	01632-M	-
10	2	Extension Nipple	260..	-
11	3	Coupling	01411	-
12	1	Barrel	081..	B12-125-..
13	1	Closed Valve Cage	11303-T	-
14	1	Seat, Valve	14..4-S	V11-175
15	1	Ball, Valve	14..4-B	V11-175
16	1	Seat Bushing	23102-T	-

NOTE.

The pump to be used with SKOK-50-N Drain Valve installed above the pump.

Under customer request, the pump can be delivered with Valve Rod and 01661-C Coupling (7) with tubing thread OD 89 mm (3 1/2") (THM-TA pump).



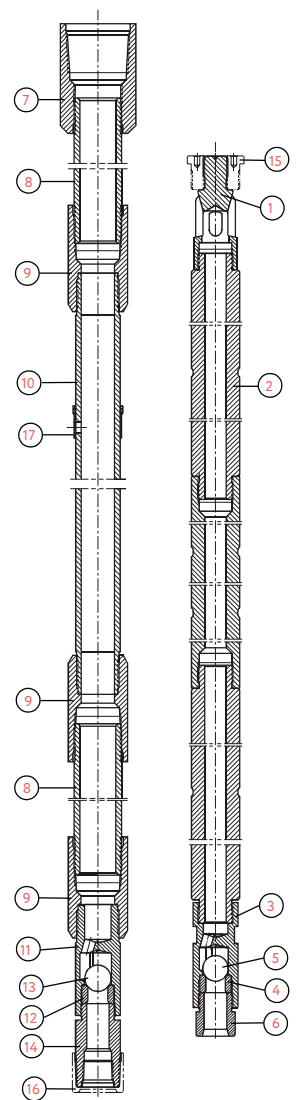
25-175 THM-T 11-10-2-2 TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE, LONG PLUNGER AND A SIDE HOLE IN THE BARREL

Pos.	Qty	Description	Drw No.	API designation
1	1	KopOpen Valve Cage	10001	C11-20
2	1	Plunger assembled	18310-T-	-
3	1	Closed Valve Cage	11204	C13-175MOD
4	1	Seat, Valve	14..4-S	V11-175
5	1	Ball, Valve	14..4-B	V11-175
6	1	Seat Plug	23004	P12-175
7	1	Coupling	01661-M	-
8	2	Extension Nipple	26059	N22-20-24MOD
9	3	Coupling	01531	C35-20MOD
10	1	Barrel	09011-..	B13-175-11
11	1	Closed Valve Cage	11304-T	-
12	1	Seat, Valve	14..6-S	V11-225
13	1	Ball, Valve	14..6-B	V11-225
14	1	Seat Bushing	23103-T	-
15	1	Plunger Safety Bushing	F111-02	-
16	1	Safety cap	F116-01A	-
17	1	Safety Nipple	50002-T	-

NOTE.

A side hole in the Barrel closed with the rubber Safety Nipple is intended for fluid drain from the tubing during pump POOH (Safety Nipple doesn't interrupt fluid drain).

Under customer request, the pump can be delivered with Valve Rod and 01661-C Coupling (7) with tubing thread OD 89 mm (3 1/2") (THM-TA pump).

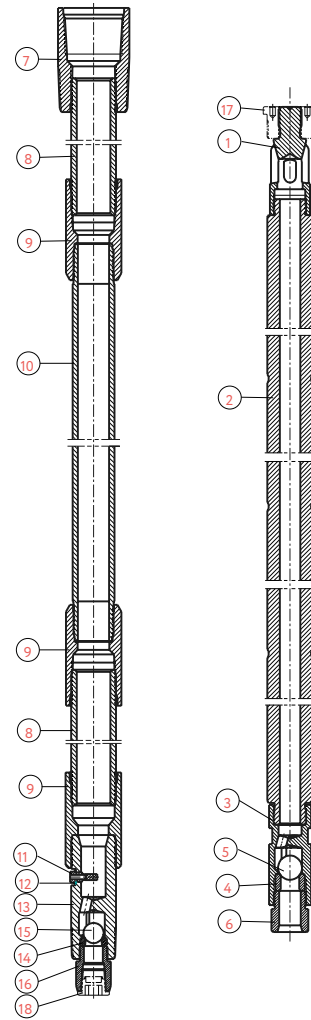


25-175 THM-C TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10001	C11-20
2	1	Plunger	183..	P21-175-.MOD
3	1	Closed Valve Cage	11204	C13-175MOD
4	1	Seat, Valve	14. 4-S	V11-175
5	1	Ball, Valve	14. 4-B	V11-175
6	1	Seat Plug	23004	P12-175
7	1	Coupling	01661-C	-
8	2	Extension Nipple	260..	N22-20-..MOD
9	3	Coupling	01531	C35-20MOD
10	1	Barrel	090..	B13-175-..
11	1	Knock-off Screw	48002-C	-
12	1	Gasket	49002-C	-
13	1	Closed Valve Cage	11304-C	-
14	1	Seat, Valve	14. 6-S	V11-225
15	1	Ball, Valve	14. 6-B	V11-225
16	1	Seat Bushing	23103-C	-
17	1	Plunger Safety Bushing	F111-02	-
18	1	Safety Plug	F113-02A	-

NOTE.

Under customer request, pumps can be delivered with double Standing Valve and single or double Traveling Valve (25-175 THM-CC pump), pumps with as-sembled Barrels up to 22 ft length (long-stroke 25-175 THM-CD pumps), as well as pumps with Valve Rod (THM-CA, THM-CCA, THM-CDA pumps).

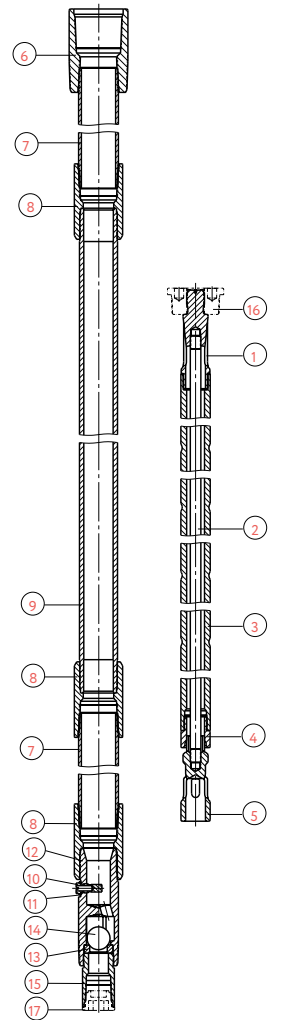


25-175 THM-CP TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE, CONTROLLED TRAVELING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Rod Cage	10343-P	-
2	1	Valve Rod	41344-P	-
3	1	Plunger	20344-1T-	-
4	1	Valve Bushing	51344-P	-
5	1	Valve	14344-P	-
6	1	Crossover Coupling	01661-C	-
7	2	Extension Nipple	260..	N22-20-..MOD
8	3	Coupling	01531	C35-20 MOD
9	1	Barrel	090..	B13-175-..
10	1	Knock-off Screw	48002-C	-
11	1	Gasket	49002-C	-
12	1	Closed Valve Cage	11304-C	-
13	1	Seat, Valve	14. 6-S	V11-225
14	1	Ball, Valve	14. 6-B	V11-225
15	1	Seat Bushing	23103-C	-
16	1	Plunger Safety Bushing	F111-02	-
17	1	Safety Plug	F113-02A	-

NOTE.

Under customer request, pumps can be delivered with Valve Rod (THM-CPA pumps).

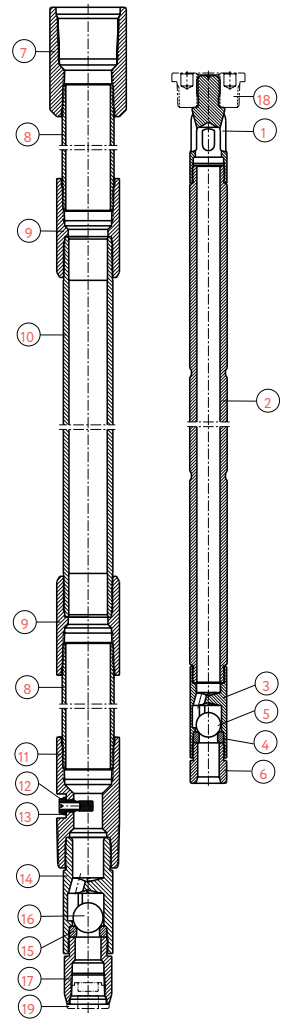


**25-175 THM-C/Л TUBING PUMP, NON-FISHABLE
INCREASED STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10001	C11-20
2	1	Plunger	183..	P21-175-.MOD
3	1	Closed Valve Cage	11204	C13-175MOD
4	1	Seat, Valve	14. 4-S	V11-175
5	1	Ball, Valve	14. 4-B	V11-175
6	1	Seat Plug	23004	P12-175
7	1	Coupling	01661-M	-
8	2	Extension Nipple	260..	N22-20-.MOD
9	2	Coupling	01531	C35-20MOD
10	1	Barrel	090..	B13-175-..
11	1	Housing	51002	-
12	1	Knock-off Screw	48002-C	-
13	1	Gasket	49002-C	-
14	1	Closed Valve Cage	11304	C14-25
15	1	Seat, Valve	14. 6-S	V11-225
16	1	Ball, Valve	14. 6-B	V11-225
17	1	Seat Bushing	23103	B22-25
18	1	Plunger Safety Bushing	F111-02	-
19	1	Safety Plug	F113-02A	-

NOTE.

Under customer request, pumps can be delivered with Valve Rod and 01661-C Coupling (7) with tubing thread OD 89 mm (3 1/2") (THM-C/ЛA pump).



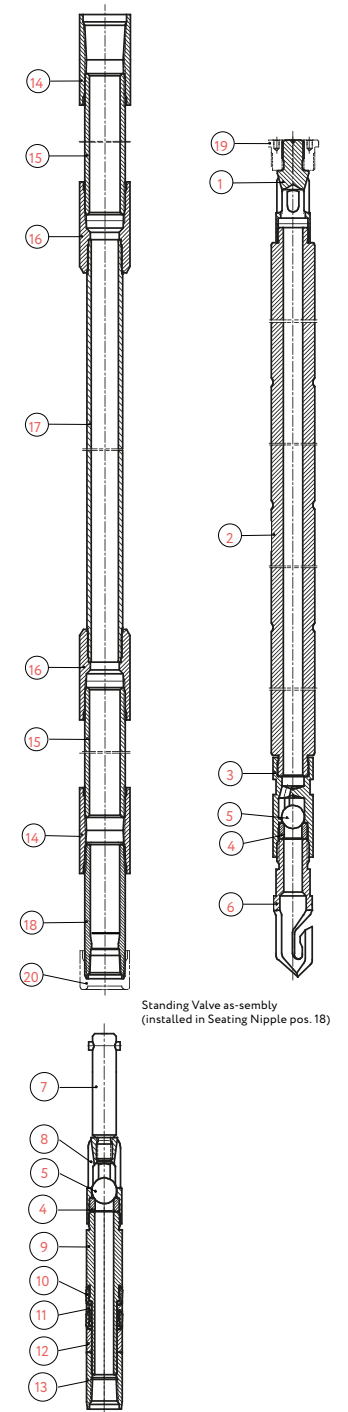
**20-175 THC, TUBING PUMP,
STANDING VALVE CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10001	C11-20
2	1	Plunger	183..	P21-175-.MOD
3	1	Closed Valve Cage	11204	C13-175MOD
4	2	Seat, Valve	14. 4-S	V11-175
5	2	Ball, Valve	14. 4-B	V11-175
6	1	Fishing Bushing	25043	P31-175
7	1	Fishing Pin	25034	P31-175
8	1	Closed Valve Cage	13001	C16-175
9	1	Seating Mandrel	35102	S17-20
10	2	Seating Cup	36101-N	S18-20
11	1	Seating Cup Ring	37001	S13-20
12	1	Seating Cup Nut	38002	S14-20
13	1	Anchor Seating Coupling	39002	S16-20
14	2	Coupling	01661	C34-20MOD
15	2	Extension Nipple	260..	N22-20-.MOD
16	2	Coupling	01531	C35-20MOD
17	1	Barrel	090..	B13-175-..
18	1	Seating Nipple	32141	N13-20MOD
19	1	Plunger Safety Bushing	F111-01	-
20	1	Safety Plug	F116-01A	-

NOTE.

Under customer request, pumps can be delivered with:

- increased 01661-M or 01661-C upper coupling (14) for in-stallation in tubing of 73 mm (2 7/8") (25-175 THC pump);
- 25043-T Fishing Bushing (with side hole);
- Valve Rod (THC-A pump).



Standing Valve as-sembly
(installed in Seating Nipple pos. 18)

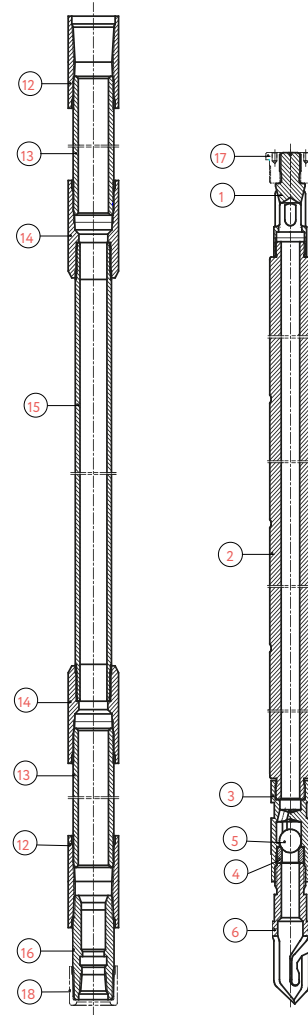
**25-225 THM TUBING PUMP,
STANDING VALVE MECHANICAL SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10001	C11-20
2	1	Plunger	183..	P21-175-MOD
3	1	Closed Valve Cage	11204	C13-175MOD
4	1	Seat, Valve	14. 4-S	V11-175
5	1	Ball, Valve	14. 4-B	V11-175
6	1	Seat Plug	23004	P12-175
7	1	Coupling	01661-C	-
8	2	Extension Nipple	260..	N22-20-..MOD
9	3	Coupling	01531	C35-20MOD
10	1	Barrel	090..	B13-175-..
11	1	Knock-off Screw	48002-C	-
12	1	Gasket	49002-C	-
13	1	Closed Valve Cage	11304-C	-
14	1	Seat, Valve	14. 6-S	V11-225
15	1	Ball, Valve	14. 6-B	V11-225
16	1	Seat Bushing	23103-C	-
17	1	Plunger Safety Bushing	F111-02	-
18	1	Safety Plug	F113-02A	-

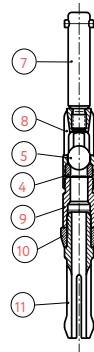
NOTE.

Under customer request, pumps can be delivered with:

- 25045-T Fishing Bushing (with side hole);
- Standing Valve seating assembly "Cone-in-Cone" type without Anchor Mandrel (25-225 THM-K pump);
- with assembled Barrels up to 28 feet length (long-stroke THM-D pumps).



Standing Valve as-sembly
(installed in Seating Nipple pos. 16)

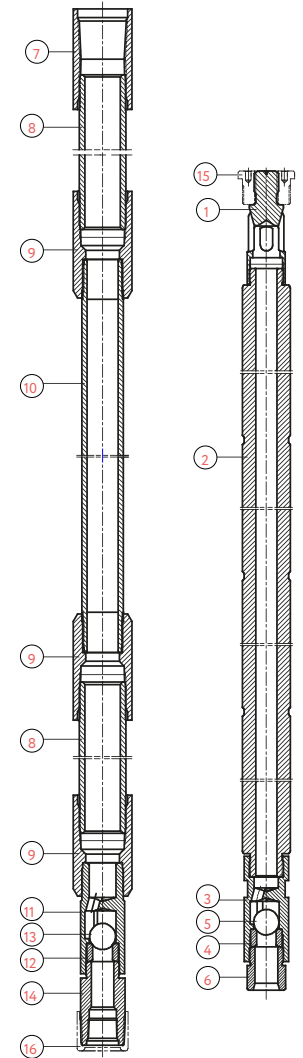


**25-225 THM-T TUBING PUMP,
NON-FISHABLE INCREASED STANDING VALVE**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10002	C11-25
2	1	Plunger	185..	P21-225-MOD
3	1	Closed Valve Cage	11206	C13-225 MOD
4	1	Seat, Valve	14. 6-S	V11-225
5	1	Ball, Valve	14. 6-B	V11-225
6	1	Seat Plug	23006	P12-225
7	1	Coupling	01662	C34-25 MOD
8	2	Extension Nipple	260..	N22-25-..MOD
9	3	Coupling	01532	C35-25 MOD
10	1	Barrel	091..	B13-225-..
11	1	Closed Valve Cage	11305-T	-
12	1	Seat, Valve	14. 7-S	V11-250
13	1	Ball, Valve	14. 7-B	V11-250
14	1	Seat Bushing	23104-T	-
15	1	Plunger Safety Bushing	F111-02	-
16	1	Safety cap	F116-02A	-

NOTE.

The pump to be used with SKOK-50-H Drain Valve installed above the pump.

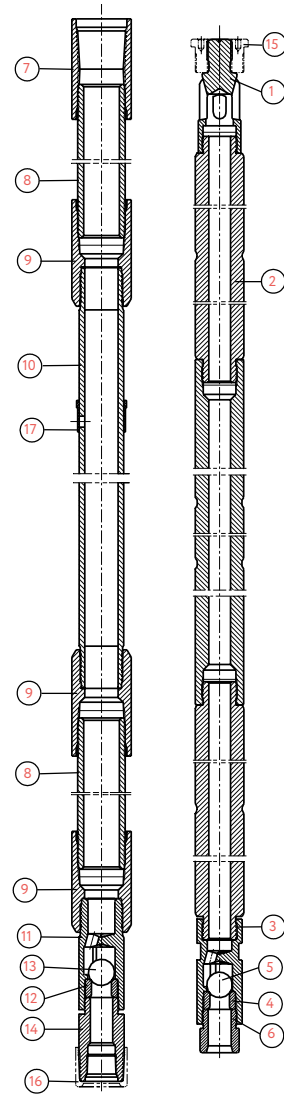


25-225 THM-T 11-10-2-2 TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE, LONG PLUNGER AND A SIDE HOLE IN THE BARREL

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10002	C11-25
2	1	Plunger assembled	18510-T-	-
3	1	Closed Valve Cage	11206	C13-225MOD
4	1	Seat, Valve	14..6-S	V11-225
5	1	Ball, Valve	14..6-B	V11-225
6	1	Seat Plug	23006	P12-225
7	1	Coupling	01662	C34-25MOD
8	2	Extension Nipple	26060	N22-25-24MOD
9	3	Coupling	01532	C35-25MOD
10	1	Barrel	09111-..	B13-225-11
11	1	Closed Valve Cage	11305-T	-
12	1	Seat, Valve	14..7-S	V11-250
13	1	Ball, Valve	14..7-B	V11-250
14	1	Seat Bushing	23104-T	-
15	1	Plunger Safety Bushing	F111-02	-
16	1	Safety cap	F116-02A	-
17	1	Safety Nipple	50003-T	-

NOTE.

A side hole in the Barrel closed with the rubber Safety Nipple is intended for fluid drain from the tubing during pump POOH (Safety Nipple doesn't interrupt fluid drain).

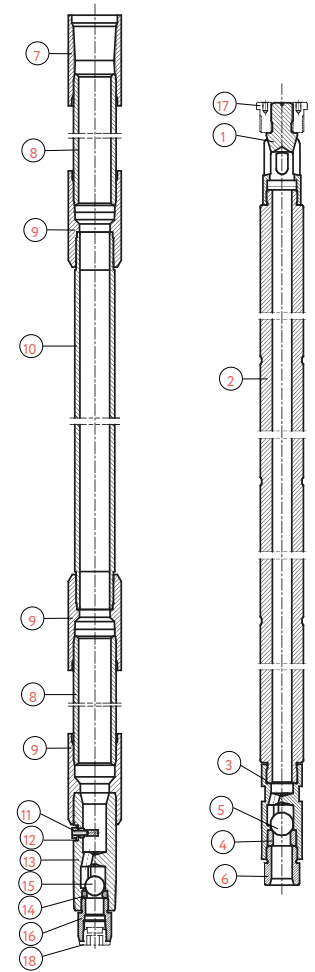


25-225 THM-C TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE AND KNOCK-OFF SCREW

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10002	C11-25
2	1	Plunger	185..	P21-225-.MOD
3	1	Closed Valve Cage	11206	C13-225MOD
4	1	Seat, Valve	14..6-S	V11-225
5	1	Ball, Valve	14..6-B	V11-225
6	1	Держатель седла клапана	23006	P12-225
7	1	Муфта	01662	C34-25MOD
8	2	Extension Nipple	260..	N22-25-.MOD
9	3	Coupling	01532	C35-25MOD
10	1	Barrel	091-..	B13-225-..
11	1	Knock-off Screw	48003-C	-
12	1	Прокладка	49003-C	-
13	1	Closed Valve Cage	11305-C	-
14	1	Seat, Valve	14..7-S	V11-250
15	1	Ball, Valve	14..7-B	V11-250
16	1	Seat Bushing	23104-C	-
17	1	Plunger Safety Bushing	F111-02	-
18	1	Safety plug	F113-03A	-

NOTE.

Under customer request, pumps can be delivered with double Standing Valve and single or double Traveling Valve (25-225 THM-CC pump), pumps with as-sembled Barrels up to 22 ft length (long-stroke 25-225 THM-CD pumps), as well as pumps with Valve Rod (THM-CA, THM-CCA, THM-CDA pumps).

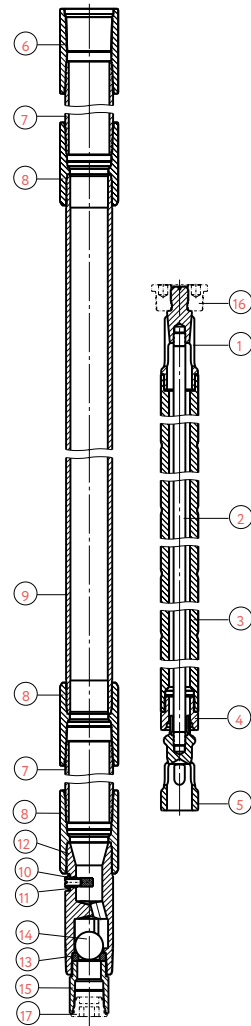


**25-225 THM-СП TUBING PUMP, NON-FISHABLE INCREASED STANDING VALVE,
CONTROLLED TRAVELING VALVE AND KNOCK-OFF SCREW**

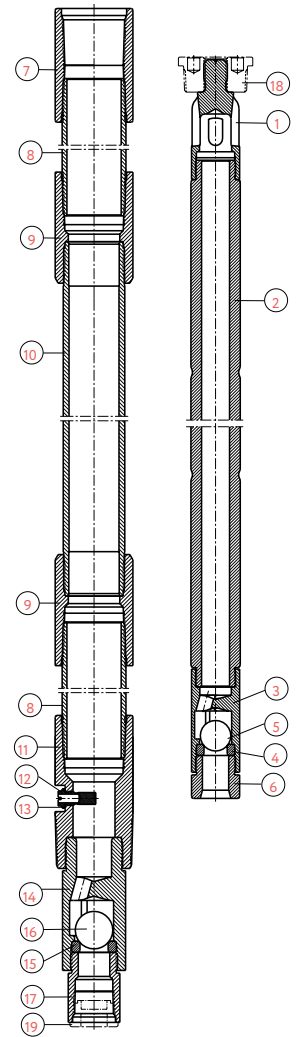
Pos.	Qty	Description	Drw No.	API designation
1	1	Rod Cage	10543-P	-
2	1	Valve Rod	41544-P	-
3	1	Plunger	20544-1T-	-
4	1	Valve Bushing	51544-P	-
5	1	Valve	14544-P	-
6	1	Coupling	01662	-
7	2	Extension Nipple	260..	N22-25-..MOD
8	3	Coupling	01532	C35-25 MOD
9	1	Barrel	091..	B13-225-..
10	1	Knock-off Screw	48003-C	-
11	1	Gasket	49003-C	-
12	1	Closed Valve Cage	11305-C	-
13	1	Seat, Valve	14..7-S	V11-250
14	1	Ball, Valve	14..7-B	V11-250
15	1	Seat Bushing	23104-C	-
16	1	Plunger Safety Bushing	F111-02	-
17	1	Safety plug	F113-03A	-

NOTE.

По заказу потребителей могут поставляться насосы со штоком Plungera (насосы THM-СПА).

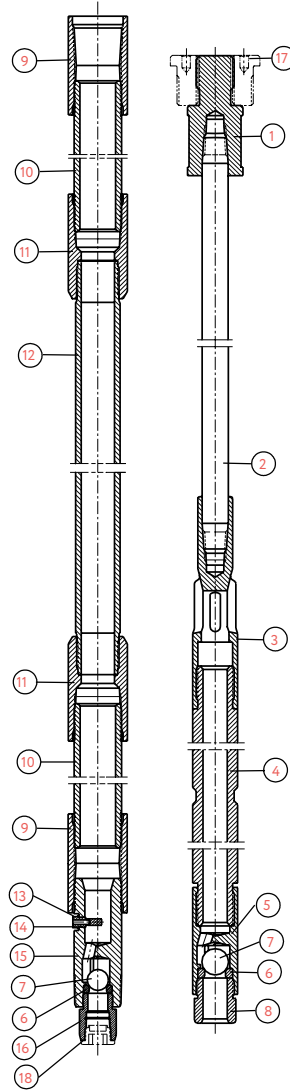

**25-225 THM-СЛ TUBING PUMP, NON-FISHABLE
INCREASED STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10002	C11-25
2	1	Plunger	185..	P21-225-MOD
3	1	Closed Valve Cage	11206	C13-225MOD
4	1	Seat, Valve	14..6-S	V11-225
5	1	Ball, Valve	14..6-B	V11-225
6	1	Seat Plug	23006	P12-225
7	1	Coupling	01662	C34-25MOD
8	2	Extension Nipple	260..	N22-25-..MOD
9	2	Coupling	01532	C35-25MOD
10	1	Barrel	091..	B13-225-..
11	1	Housing	51003	-
12	1	Knock-off Screw	48003-C	-
13	1	Gasket	49003-C	-
14	1	Closed Valve Cage	11305-H	C14-30
15	1	Seat, Valve	14..7-S	V11-250
16	1	Ball, Valve	14..7-B	V11-250
17	1	Seat Bushing	23104-C	-
18	1	Plunger Safety Bushing	F111-02	-
19	1	Safety plug	F113-03A	-



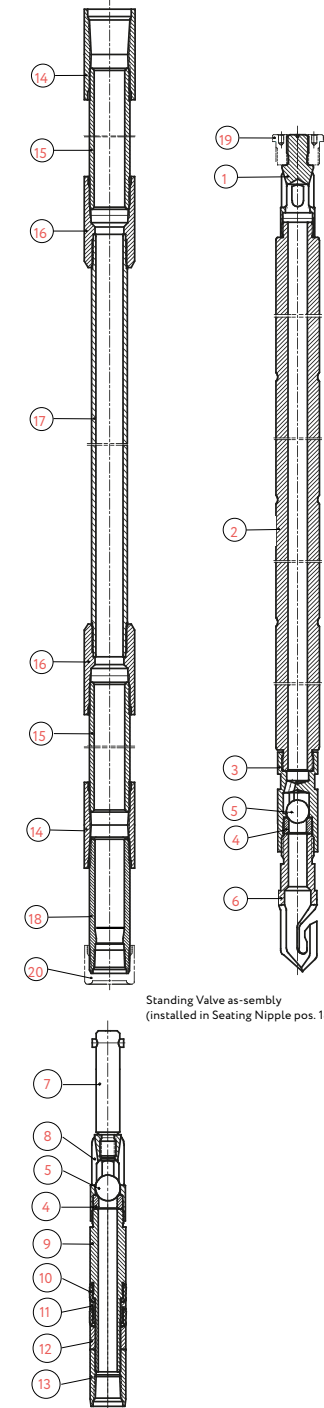
**25-225 THM-CA(SP2083-4...CA) TUBING PUMP,
NON-FISHABLE STANDING VALVE AND KNOCK-OFF SCREW**

Pos.	Qty	Description	Drw No.	API designation
1	1	Bushing, Valve Rod	15004-H	B21-30
2	1	Rod, Valve	44...	R11-30-...MOD
3	1	Open Valve Cage	10107-H	C12-225
4	1	Plunger	185..	P21-225-. MOD
5	1	Closed Valve Cage	11206	C13-225MOD
6	2	Seat, Valve	14..6-S	V11-225
7	2	Ball, Valve	14..6-B	V11-225
8	1	Seat Plug	23006	P12-225
9	2	Coupling	01662	C34-25MOD
10	2	Extension Nipple	260..	N22-25-..MOD
11	2	Coupling	01532	C35-25MOD
12	1	Barrel	091..	B13-225-..
13	1	Knock-off Screw	48003-CA	-
14	1	Gasket	49003-C	-
15	1	Closed Valve Cage	11305-CA	-
16	1	Seat Bushing	23103	B22-25
17	1	Plunger Safety Bushing	F111-02	-
18	1	Safety plug	F113-02A	-



**25-225 THC TUBING PUMP,
STANDING VALVE CUP SEATING ASSEMBLY**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10002	C11-25
2	1	Plunger	185..	P21-225-.MOD
3	1	Closed Valve Cage	11206	C13-225MOD
4	2	Seat, Valve	14..6-S	V11-225
5	2	Ball, Valve	14..6-B	V11-225
6	1	Fishing Bushing	25045	P31-225
7	1	Fishing Pin	25034	P31-225
8	1	Standing Valve Cage	13002	C16-225
9	1	Seating Mandrel	35103	S17-25
10	2	Seating Cup	36102-N	S18-25
11	1	Seating Cup Ring	37002	S13-25
12	1	Seating Cup Nut	38003	S14-25
13	1	Anchor Seating Coupling	39003	S16-25
14	2	Coupling	01662	C34-20MOD
15	2	Extension Nipple	260..	N22-25-..MOD
16	2	Coupling	01532	C35-25MOD
17	1	Barrel	091..	B13-225-..
18	1	Seating Nipple	32142	N13-25MOD
19	1	Plunger Safety Bushing	F111-02	-
20	1	Safety plug	F116-02A	-



NOTE.

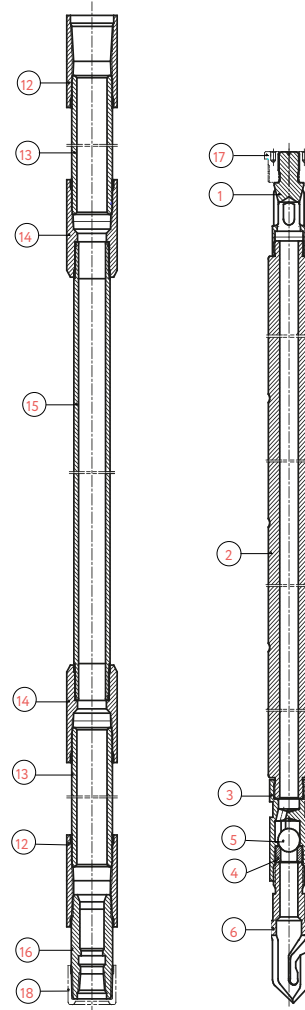
Under customer request, pumps can be delivered with 25045-T Fishing Bushing (with side hole).

**30-275 THM TUBING PUMP,
STANDING VALVE MECHANICAL SEATING ASSEMBLY**

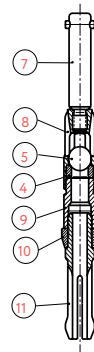
Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10516	C11-30MOD
2	1	Plunger	187..	P21-275-.MOD
3	1	Closed Valve Cage	11208	C13-275 MOD
4	2	Seat, Valve	14..7-S	V11-250
5	2	Ball, Valve	14..7-B	V11-250
6	1	Fishing Bushing	25047	P31-275
7	1	Fishing Pin	25038	P31-275
8	1	Standing Valve Cage	13003	C16-275
9	1	Anchor Nipple	34073	S22-30
10	1	Sealing Ring	34081-K	S22-30 MOD
11	1	Anchor Mandrel	34093-N	S22-30
12	1	Coupling	01663	C34-30 MOD
13	2	Extension Nipple	260..	N22-30-..MOD
14	2	Coupling	01533	C35-30 MOD
15	1	Barrel	092..	B13-175-..
16	1	Seating Nipple	32758	N12-30 MOD
17	1	Plunger Safety Bushing	F111-03	-
18	1	Safety plug	F116-03A	-

NOTE.

- Under customer request, pumps can be delivered with:
- 25045-T Fishing Bushing (with side hole);
 - Standing Valve seating assembly "Cone-in-Cone" type with-out Anchor Mandrel (30-275 THM-K pump);
 - with assembled Barrels up to 22 ft (long-stroke THM-D pumps).



Standing Valve as-sembly
(installed in Seating Nipple pos. 16)

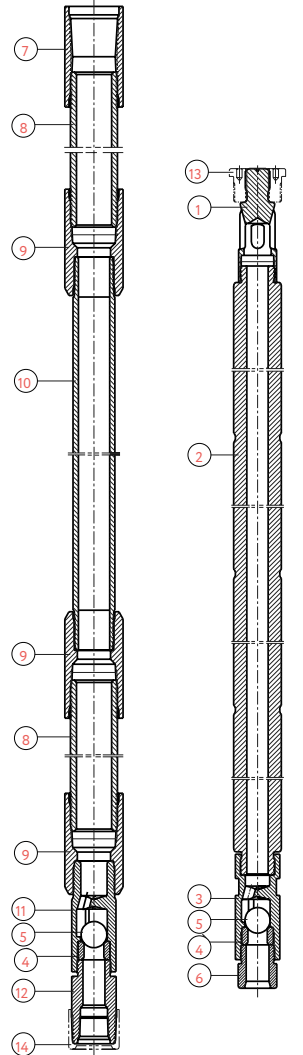


**30-275 THM-T TUBING PUMP,
NON-FISHABLE STANDING VALVE**

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10516	C11-30MOD
2	1	Plunger	187..	P21-275-.MOD
3	1	Closed Valve Cage	11208	C13-275MOD
4	2	Seat, Valve	14..7-S	V11-250
5	2	Ball, Valve	14..7-B	V11-250
6	1	Seat Plug	23008	-
7	1	Coupling	01663	C34-30MOD
8	2	Extension Nipple	260..	N22-30-..MOD
9	3	Coupling	01533	C35-30MOD
10	1	Barrel	092..	B13-275-..
11	1	Closed Valve Cage	11306-T	-
12	1	Closed Valve Cage	23105-T	-
13	1	Plunger Safety Bushing	F111-03	-
14	1	Safety plug	F116-03A	-

NOTE.

Pump to be used with SKOK-70-N Drain Valve installed above the pump.

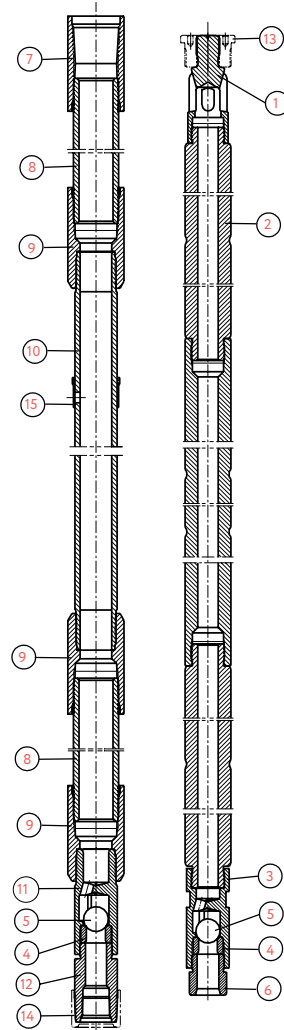


30-275 THM-T 11-10-2-2 TUBING PUMP, NON-FISHABLE STANDING VALVE, LONG PLUNGER AND A SIDE HOLE IN THE BARREL

Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10516	C11-30 MOD
2	1	Plunger assembled	18710-T.	-
3	1	Closed Valve Cage	11208	C13-275MOD
4	2	Seat, Valve	14..7-S	V11-250
5	2	Ball, Valve	14..7-B	V11-250
6	1	Seat Plug	23008	-
7	1	Coupling	01663	C34-30MOD
8	2	Extension Nipple	26061	N22-30-24MOD
9	3	Coupling	01533	C35-30MOD
10	1	Barrel	09211-..	B13-275-11
11	1	Closed Valve Cage	11306-T	-
12	1	Seat Bushing	23105-T	-
13	1	Plunger Safety Bushing	F111-03	-
14	1	Safety plug	F116-03A	-
15	1	Safety Nipple	50004-T	-

NOTE.

A side hole in the Barrel closed with the rubber Safety Nipple is intended for fluid drain from the tubing during pump POOH (Safety Nipple doesn't interrupt fluid drain).

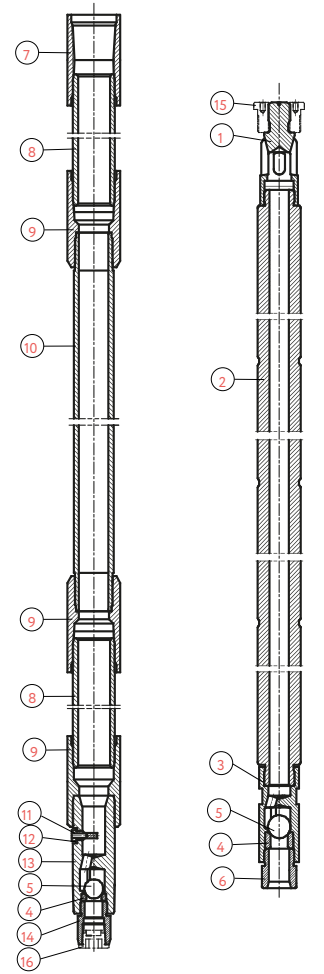


30-275 THM-C TUBING PUMP, NON-FISHABLE STANDING VALVE AND KNOCK-OFF SCREW

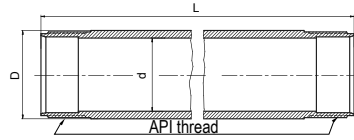
Pos.	Qty	Description	Drw No.	API designation
1	1	Open Valve Cage	10516	C11-30 MOD
2	1	Plunger	187..	P21-275-MOD
3	1	Closed Valve Cage	11208	C13-275MOD
4	2	Seat, Valve	14..7-S	V11-250
5	2	Ball, Valve	14..7-B	V11-250
6	1	Seat Plug	23008	-
7	1	Coupling	01663	C34-30MOD
8	2	Extension Nipple	260..	N22-30-..MOD
9	3	Coupling	01533	C35-30MOD
10	1	Barrel	092..	B13-275-..
11	1	Knock-off Screw	48004-C	-
12	1	Gasket	49004-C	-
13	1	Closed Valve Cage	11306-C	-
14	1	Seat Bushing	23104-C	-
15	1	Plunger Safety Bushing	F111-03	-
16	1	Safety Plug	F113-03A	-

NOTE.

Under customer request, pumps can be delivered with double Standing Valve and single or double Traveling Valve (30-275 THM-CC pump).



HEAVY-WALL BARRELS FOR ROD (RH) AND TUBING (TH) PUMPS



Pump Bore	L**		API Designation	Drw No.	D (mm)/in	d ^{+0,05} (mm)/in	Thread (mm—turns per 1")	Тип насоса				
	ft	mm										
27 mm (1 1/16") 106	10	3048	B12-106-10	08010-..*	36,00/1,417"	26,988/ 1 1/16"	33,338-16	RH, TH				
	12	3658	B12-106-12	08012-..*								
	14	4267	B12-106-14	08014-..*								
31,8 mm (1 1/4") 125	8	2438	B12-125-8	08108-..*	40,75/1,643"	31,75/ 1 1/4"	39,954-16	RH, TH				
	9	2743	B12-125-9 MOD	08109-..*								
	10	3048	B12-125-10	08110-..*								
	11	3353	B12-125-11 MOD	08111-..*								
	12	3658	B12-125-12	08112-..*								
38,1 mm (1 1/2") 150	10	3048	B12-150-10	08210-..*	48,42/1,963"	38,10/ 1 1/2"	47,625-16	RH, TH				
	11	3353	B12-150-11 MOD	08211-..*								
	12	3658	B12-150-12	08212-..*								
	14	4267	B12-150-14	08214-..*								
44,5 mm (1 3/4") 175	9	2743	B12-175-9MOD	08309-..*	53,80/2,118"	44,45/ 1 3/4"	53,010-16	RH (API seating assy)				
	10	3048	B12-175-10	08310-..*								
	12	3658	B12-175-12	08312-..*								
	14	4267	B12-175-14	08314-..*								
	9	2743	-	08359-..*	53,80/2,118"	44,45/ 1 3/4"	51,994-16	RH (special seating assy)				
	10	3048	-	08360-..*								
	12	3658	-	08362-..*								
	14	4267	-	08364-..*								
57,2 mm (2 1/4") 225	7	2134	B13-175-7	09007-..*	57,64/2,269"	44,45/ 1 3/4"	56,845-11 1/2	TH				
	9	2743	B13-175-9	09009-..*								
	10	3048	B13-175-10	09010-..*								
	11	3353	B13-175-11	09011-..*								
	14	4267	B13-175-14	09014-..*								
57,2 mm (2 1/4") 225	8	2438	B13-225-8	09108-..*	70,34/2,769"	57,15/ 2 1/4"	69,545-11 1/2	TH				
	10	3048	B13-225-10	09110-..*								
	11	3353	B13-225-11	09111-..*								
	14	4267	B13-225-14	09114-..*								
69,9 mm (2 3/4") 275	12	3658	B12-225-12	08412-..*	70,34/2,769"	57,15/ 2 1/4"	65,354-16	RHBM				
	14	4267	B12-225-14	08414-..*								
	8	2438	B13-275-8	09208-..*					83,04/3,269"	69,85/ 2 3/4"	82,245-- 11 1/2	TH
	10	3048	B13-275-10	09210-..*								
11	3353	B13-275-11	09211-..*									
14	4267	B13-275-14	09214-..*									

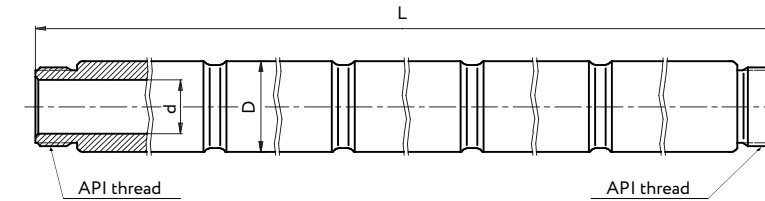
* Designs:

HN - from alloy steel with internally surface hardening by ion nitriding in depth of 0,3-0,5 mm , hardness min 822 HK (64 HRC); length up to 14 ft;

CR - из углеродистой стали с жестким хромовым покрытием толщиной min 0,076 mm, hardness min 900 HV (67 HRC); length up to 16 ft.

** On customer's request the barrels can be manufactured in various length being divisible by entire feet, as well as assembled Barrels with length up to 28 ft for long-stroke pumps.

GROOVED PLUNGER



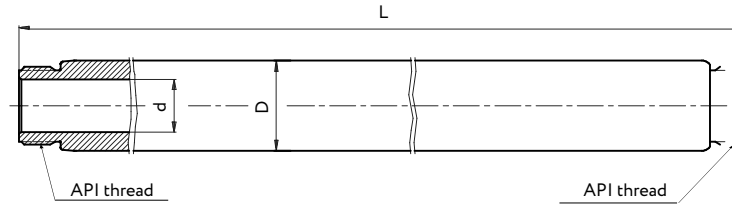
Pump Bore	L**		API Designation	Drw No.	D ^{-0,013} (mm)/in	d (mm)/in	Thread
	ft	mm					
27 mm (1 1/16") 106	4	1333	P21-106-4MOD	18044-1T-.*	26,988-Fit/ 1 1/16" - Fit	14,0/0,551"	22,225-14
	5	1638	P21-106-5MOD	18054-1T-.*			
31,8 mm (1 1/4") 125	4	1333	P21-125-4MOD	18144-1T-.*	31,75-Fit/ 1 1/4" - Fit	17,0/0,669"	25,400-14
	5	1638	P21-125-5MOD	18154-1T-.*			
38,1 mm (1 1/2") 150	4	1333	P21-150-4MOD	18244-1T-.*	38,1-Fit/ 1 1/4" - Fit	21,0/0,827"	31,750-14
	5	1638	P21-150-5MOD	18254-1T-.*			
44,5 mm (1 3/4") 175	4	1337	P21-175-4MOD	18344-1T-.*	44,45-Fit/ 1 3/4" - Fit	27,0/1,063"	37,348-14
	5	1641	P21-175-5MOD	18354-1T-.*			
57,2 mm (2 1/4") 225	4	1340	P21-225-4MOD	18544-1T-.*	57,15-Fit/ 2 1/4" - Fit	32,0/1,26"	45,781-14
	5	1645	P21-225-5MOD	18554-1T-.*			
69,9 mm (2 3/4") 275	4	1343	P21-275-4MOD	18744-1T-.*	69,85-Fit/ 2 3/4" - Fit	36,0/1,417"	53,581-11 1/2
	5	1648	P21-275-5MOD	18754-1T-.*			

Plungers are sprayed with hard alloy (T), hardness min 595 HV (55 HRC).

*Fit (example: 18344-1T-2 – Plunger Fit-2).

** Under customer request, Plungers can be made with the length 3 ft (example: 18324-1T-2), as well as plungers assembled from 2 pieces with the length from 6 to 10 ft (example: 18306-T-2 - Plunger with the length 6 ft Fit-2; 18310-T-2 - Plunger with the length 10 ft Fit-2).

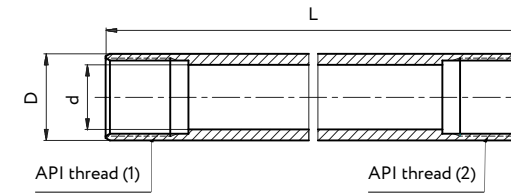
SMOOTH PLUNGER (ONLY AS SPARE PARTS)



Pump Bore	L [⊗]		API Designation	Drw No.	D ^{0,013} (mm)/in	d (mm)/in	Thread
	ft	mm					
27 mm (1 1/16") 106	4	1333	P21-106-4	17044-1T- [⊗]	26,988-Fit/ 1 1/16" - Fit	14,0/0,551"	22,225-14
	5	1638	P21-106-5	17054-1T- [⊗]			
31,8 mm (1 1/4") 125	4	1333	P21-125-4	17144-1T- [⊗]	31,75-Fit/ 1 1/4" - Fit	17,0/0,669"	25,400-14
	5	1638	P21-125-5	17154-1T- [⊗]			
38,1 mm (1 1/2") 150	4	1333	P21-150-4	17244-1T- [⊗]	38,1-Fit/ 1 1/4" - Fit	21,0/0,827"	31,750-14
	5	1638	P21-150-5	17254-1T- [⊗]			
44,5 mm (1 3/4") 175	4	1337	P21-175-4	17344-1T- [⊗]	44,45-Fit/ 1 3/4" - Fit	27,0/1,063"	37,348-14
	5	1641	P21-175-5	17354-1T- [⊗]			
57,2 mm (2 1/4") 225	4	1340	P21-225-4	17544-1T- [⊗]	57,15-Fit/ 2 1/4" - Fit	32,0/1,26"	45,781-14
	5	1645	P21-225-5	17554-1T- [⊗]			
69,9 mm (2 3/4") 275	4	1343	P21-275-4	17744-1T- [⊗]	69,85-Fit/ 2 3/4" - Fit	36,0/1,417"	53,581-11 1/2
	5	1648	P21-275-5	17754-1T- [⊗]			

Plungers are sprayed with hard alloy (T), hardness min 595 HV (55 HRC). [⊗]Fit (example:17344-1T-2 – Plunger Fit-2).

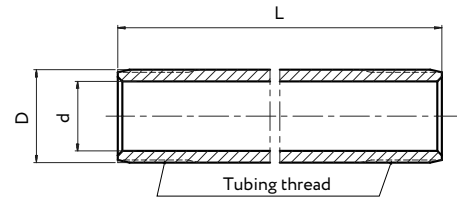
EXTENSION COUPLINGS FOR RH PUMPS



Pump Bore	L [⊗]		API Designation	Drw No.	Thread		D (mm)/in	d (mm)/in
	ft	mm			(1)	(2)		
27 mm (1 1/16") 106	1	331	C31-106-12	26168-S	33,338-16	39,954-16	44,7/1,760"	27,8/1,945"
	1 1/2	483	C31-106-18	26168				
	2	636	C31-106-24	26168-L				
	3	940	C31-106-36	26168-X				
31,8 mm (1 1/4") 125	1	340	C31-125-12	26218-S	39,954-16	39,954-16	44,7/1,760"	32,5/1,280"
	1 1/2	493	C31-125-18	26218				
	2	645	C31-125-24	26218-L				
	3	950	C31-125-36	26218-X				
38,1 mm (1 1/2") 150	1	340	C31-150-12	26268-S	47,625-16	53,010-16	57,4/2,260"	39,7/1,563"
	1 1/2	493	C31-150-18	26268				
	2	645	C31-150-24	26268-L				
	3	950	C31-150-36	26268-X				
	1 1/2	493	-	26417 [⊗]				
	2	645	-	26417-L [⊗]				
3	950	-	26417-X [⊗]					
44,5 mm (1 3/4") 175	1	340	C31-175-12	26318-S	53,010-16	53,010-16	57,4/2,260"	45,2/1,780"
	1 1/2	493	C31-175-18	26318				
	2	645	C31-175-24	26318-L				
	3	950	C31-175-36	26318-X				
	1 1/2	493	-	26418 [⊗]				
	2	645	-	26418-L [⊗]				
3	950	-	26418-X [⊗]					
57,2 mm (2 1/4") 225	1 1/2	493	C31-225-18	26368-H	65,354-16	65,354-16	70,1/2,760"	58,1/2,287"
	2	645	C31-225-24	26368-L-H				

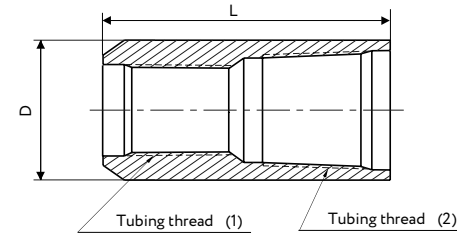
[⊗] Pump with special seating assembly.

EXTENSION NIPPLE FOR TH PUMPS



Pump Bore	L ^{§§}		API Designation	Drw No.	D (mm)/in	d (mm)/in	Thread (in—threads per 1")
	ft	mm					
27,0 mm (1 1/16") 106 and 31,8 mm (1 1/4") 125	1	305	-	26056-M	46/1,811"	36,5/1,437"	1,66"-10EURD (42 EU)
	2	610	-	26056			
	3	914	-	26056-L			
38,1 mm (1 1/2") 150 and 44,5 mm (1 3/4") 175	1	305	N22-20-12MOD	26059-M	60,3/ 2 3/8"	51,8/2,039"	2 3/8"-10 NURD (60)
	2	610	N22-20-24 MOD	26059			
	3	914	N22-20-36MOD	26059-L			
57,2 mm (2 1/4") 225	1	305	N22-25-12MOD	26060-M	73,0/ 2 7/8"	62,0/2,441"	2 7/8"-10NURD (73)
	2	610	N22-25-24MOD	26060			
	3	914	N22-25-36MOD	26060-L			
69,9 mm (2 3/4") 275	1	305	N22-30-12MOD	26061-M	88,9/ 3 1/2"	77,9/3,067"	3 1/2"-10 NURD (89)
	2	610	N22-30-24MOD	26061			
	3	914	N22-30-36MOD	26061-L			

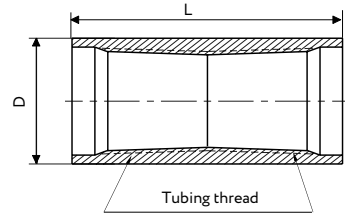
CROSSOVER COUPLING FOR TH PUMPS



Tubing	Pump Bore	Drw No.	Thread		L (mm)/in	D (mm)/in
			(1)	(2)		
48,3 mm (1,9") 15	31,8 mm (1 1/4") 125	01632-T	1,66"-10EURD (42 ext. upset)	1,9"-10NURD (48)	108/4,252"	55,9/2,279"
60,3 mm (2 3/8") 20	31,8 mm (1 1/4") 125	01632	1,66"-10EURD (42 ext. upset)	2 3/8"-10NURD (60)	108/4,252"	73,0/2 7/8"
73,0 mm (2 7/8") 25	31,8 mm (1 1/4") 125	01632-M, 01632-C*	1,66"-10EURD (42 ext. upset)	2 7/8"-10NURD (73)	127/5"	88,9/3 1/2"
	38,1 mm (1 1/2") 150	01661-M, 01661-C*	2 3/8"-10NURD (60)			
	44,5 mm (1 3/4") 175					

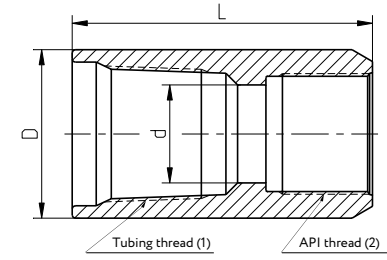
§§With additional external thread 3 1/2"-10NURD in the lower (left) part (for THM-K, THM-C, THM-CC pumps).

COUPLING FOR TH PUMPS



Pump Bore	API Designation	Drw No.	Thread	L (mm)/in	D (mm)/in
31,8 mm (1 1/4") 125	C34-15 MOD	01413	1,66"-10EURD (42 ext. upset)	95/3,742"	55,9/2,279"
44,5 mm (1 3/4") 175	C34-20 MOD	01661	2 3/8"-10NURD (60)	108/4,252"	73,0/2 7/8"
57,2 mm (2 1/4") 225	C34-25 MOD	01662 01662-A	2 7/8"-10NURD (73)	130/5,118" 157/6,181"	88,9/3 1/2"
69,9 mm (2 3/4") 275	C34-30 MOD	01663	3 1/2"-10NURD (89)	144 / 5,669"	108,0/4 1/4"

COUPLING FOR TH PUMPS



Pump Bore	API Designation	Drw No.	Thread		L (mm)/in	D (mm)/in	d (mm)/in
			(1)	(2)			
27,0 mm (1 1/16") 106	-	01410-H*	1,66"- 10EURD (42 ext. upset)	33,338-16	92/3,622"	55,9/2,279"	27,8/1,945"
	-	01410-C**		39,954-16	103/4,055"		24/0,945"
31,8 mm (1 1/4") 125	-	01411	1,66"- 10EURD (42 ext. upset)	39,954-16	100/3,937"	55,9/2,279"	32,5/1,28"
38,1 mm (1 1/2") 150	-	01530-H***	2 3/8"- 10NURD (60)	47,625-16	106/4,173"	73,0/2 7/8"	38,7/1,524"
	-	01530-C****		56,845-11 1/2	121/4,764"		33,5/1,319"
44,5 mm (1 3/4") 175	C35-20 MOD	01531	2 3/8"- 10NURD (60)	56,845-11 1/2	115/4,528"	73,0/2 7/8"	46,1/1,815"
57,2 mm (2 1/4") 225	C35-25 MOD	01532	2 7/8"- 10NURD (73)	69,545-11 1/2	127/5"	88,9/3 1/2"	58,8/2,315"
69,9 mm (2 3/4") 275	C35-30 MOD	01533	3 1/2"- 10NURD (89)	82,245-11 1/2	135/5,315"	108,0/4 1/4"	71,5/2,815"

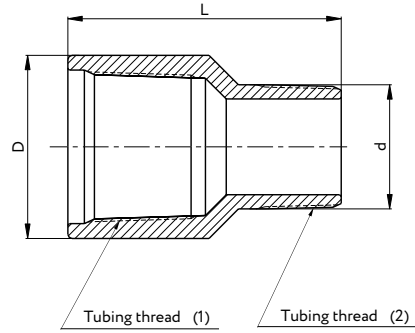
* For 25-106 THM-C, 25-106 THM-СЛ pumps

** For 25-106 THM-C pumps

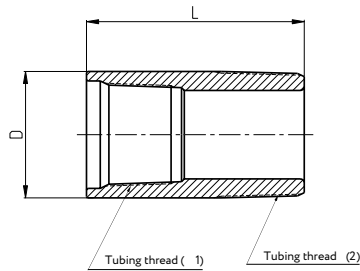
*** For 25-150 THM-C, 25-150 THM-СЛ pumps

**** For 25-150 THM-C pumps

CROSSOVERS FOR TUBING PUMPS TH



Drw No.	Thread		L (mm)/in	D (mm)/in	d (mm)/in
	(1)	(2)			
01525-H	2 7/8" -10NURD (73)	2 3/8" -10NURD (60)	133/5,236"	88,9/3 1/2"	60,3/2 3/8"

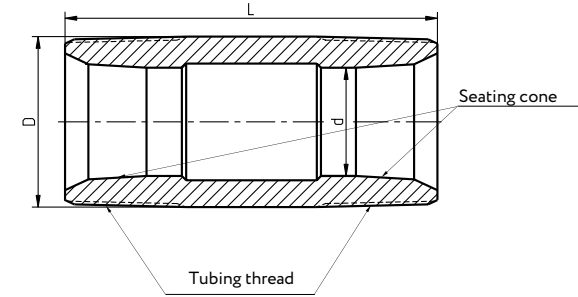


Drw No.	Thread		L (mm)/in	D (mm)/in
	(1)	(2)		
01526-H	2 3/8" -10NURD (60)	2 7/8" -10NURD (73)	126/4,961"	73,0/2 7/8"
01527-H	2 7/8" -10NURD (73)	3 1/2" -10NURD (89)	127/5"	88,9/3 1/2"

Note.

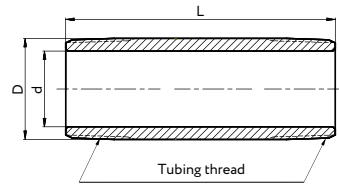
Under customer request, 01662-M Crossover Coupling can be delivered with internal tubing threads 2 7/8" (73) and 3 1/2" (89).

SEATING NIPPLE (ONE-PIECE) FOR SPECIAL TOP MECHANICAL SEATING ASSEMBLY OF RHAM ROD PUMPS



НКТ	Диаметр насоса	Drw No.	Thread	L (mm)/in	D (mm)/in	d (mm)/in
73,0 mm (2 7/8") 25	27,0 mm (1 1/16") 106	32001-M or 32001-KM	2 7/8"-10 NURD (73)	160/6,299"	73,0/2 7/8"	46,4/1,827"
	31,8 mm (1 1/4") 125			200/7,874"		
	38,1 mm (1 1/2") 150	32002-M or 32002-KM		160/6,299"		57,4/2,260"
	44,5 mm (1 3/4") 175			200/7,874"		

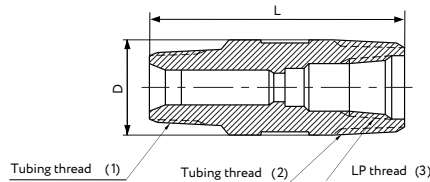
SEATING NIPPLE FOR CUP SEATING ASSEMBLY OF RHAC, RHBC ROD PUMPS



* For 20-150 RHBC pump (with reduced seating assembly).
 ** For 25-106 RHAC, 25-125 RHAC pumps (with increased seating assembly).

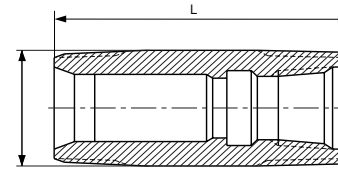
Tubing	Pump Bore	API Designation	Drw No.	Thread	D (mm)/in	d (mm)/in	L (mm)/in
60,3 mm (2 3/8") 20	27,0 mm (1 1/16") 106	N11-20 MOD	32521	2 3/8"-10NURD (60)	60,3/2 3/8"	45,212/1,780"	160/6,299"
	31,8 mm (1 1/4") 125						
	38,1 mm (1 1/2") 150						
73,0 mm (2 7/8") 25	27,0 mm (1 1/16") 106	N11-25 MOD	32522	2 7/8"-10NURD (73)	73,0/2 7/8"	58,420/2,3"	
	31,8 mm (1 1/4") 125						
	38,1 mm (1 1/2") 150						

SEATING NIPPLE FOR STANDING VALVE MECHANICAL SEATING ASSEMBLY OF 20-125 THM (25-125 THM) AND 15-125 THM TUBING PUMPS



Pump Bore	Drw No.	Thread			L (mm)/in	D (mm)/in
		(1)	(2)	(3)		
31,8 mm (1 1/4") 125	32755	1,66"-10EURD (42 ext. upset)	2 3/8"-10NURD (60)	1 1/4" LP-11 1/2	160/6,299"	60,3/2 3/8"
	32755-T		1,9"-10NURD (48)	1" LP-11 1/2	150/5,905"	48,3/1,9"

SEATING NIPPLE FOR STANDING VALVE MECHANICAL SEATING ASSEMBLY OF THM TUBING PUMPS AND FOR BOTTOM MECHANICAL SEATING ASSEMBLY OF RHBM ROD PUMPS

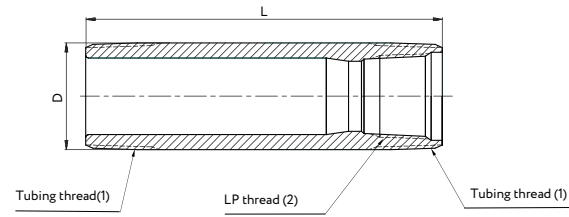


Tubing thread (1) LP thread (2) Tubing thread (1)

Tubing for Rod Pump	Pump Bore		API Designation	Drw No.	Thread		L (mm)/in	D (mm)/in
	Tubing	Rod			(1)	(2)		
60,3 mm (2 3/8") 20	44,5 mm (1 3/4") 175	27,0 mm (1 1/16") 106	N12-20 MOD	32756	2 3/8"-10NURD (60)	1 1/4" LP-11 1/2	175/6,89"	60,3/2 3/8"
		31,8 mm (1 1/4") 125						
73,0 mm (2 7/8") 25	57,2 mm (2 1/4") 225	27,0 mm (1 1/16") 106	N12-25 MOD	32757	2 7/8"-10NURD (73)	1 1/2" LP-11 1/2	200/7,874"	73,0/2 7/8"
		31,8 mm (1 1/4") 125						
		38,1 mm (1 1/2") 150						
		44,5 mm (1 3/4") 175						
88,9 mm (3 1/2") 30	69,9 mm (2 3/4") 275	57,2 mm (2 1/4") 225	N12-30 MOD	32758	3 1/2"-10NURD (89)	2" LP-11 1/2	230/9,055"	88,9/3 1/2"

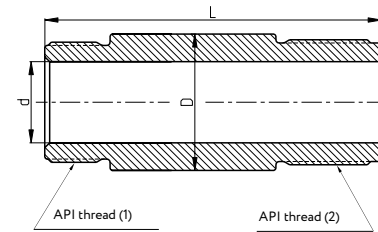
* For 25-106 RHBM, 25-125 RHBM pumps (with increased seating assembly).

SEATING NIPPLE FOR STANDING VALVE CUP SEATING ASSEMBLY OF THC TUBING PUMPS



Pump Bore	API Designation	Drw No.	Thread		L (mm)/in	D (mm)/in
			(1)	(2)		
44,5 mm (1 3/4") 175	N13-20MOD	32141	2 3/8"-10NURD (60)	1 1/2"LP-11 1/2	200/7,874	60,3/2 3/8"
57,2 mm (2 1/4") 225	N13-25MOD	32142	2 7/8"-10NURD (73)	2" LP-11 1/2	235/9,252	73,0/2 7/8"

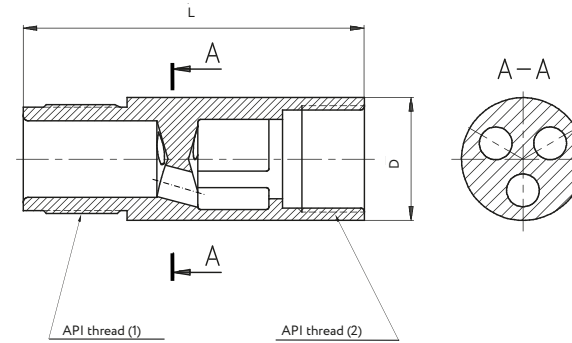
CONNECTOR (RHBM, 25/20-... RHM-T PUMPS)



* For 20-150 RHBC pump (with reduced seating assembly).

Pump Bore	API Designation	Drw No.	d (mm)/in	D (mm)/in	L (mm)/in	Thread	
						(1)	(2)
27,0 mm (1 1/16") 106	C21-20	22202, 22202-A*	24,0/0,945"	44,7/1,76"	122/4,803"	37,348-14	39,954-16
31,8 mm (1 1/4") 125							
38,1 mm (1 1/2") 150	C21-25	22203	32,0/1,26"	57,4/2,26"	136/5,354"	45,781-14	53,010-16
44,5 mm (1 3/4") 175							
57,2 mm (2 1/4") 225	C21-30	22204-H	38,0/1,496"	70,1/2,76"	138/5,433"	53,581-11 1/2	65,354-16

CLOSED VALVE CAGE (STANDING VALVE OF ROD PUMPS AND THM-СЛ TUBING PUMPS)



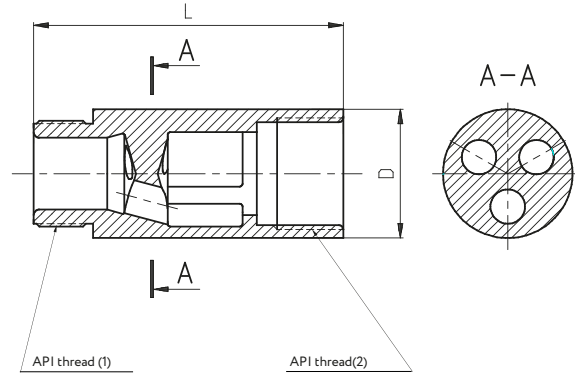
Pump Bore	API Designation	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread	
						(1)	(2)
27,0 mm (1 1/16") 106	C14-20	11303, 11303-K*, 11303-A***, 11303-AK***(*)	V11-175	44,7/1,76"	125/4,921"	39,954-16	37,348-14
31,8 mm (1 1/4") 125							
38,1 mm (1 1/2") 150	C14-25	11304 11304-K*	V11-225	57,4/2,26"	135/5,315"	53,010-16	45,781-14
44,5 mm (1 3/4") 175							
38,1 mm (1 1/2") 150	-	11324**, 11324-K**(*)	V11-225	56,7/2,232"	135/5,315"	51,994-16	45,781-14
44,5 mm (1 3/4") 175							
57,2 mm (2 1/4") 225	C14-30	11305-H, 11305-HK*	V11-250	70,1/2,76"	152/5,984"	65,354-16	53,581-11 1/2

* Stainless steel.

** Pump with special seating assembly.

*** For 20-150 RHBC pumps (with reduced seating assembly).

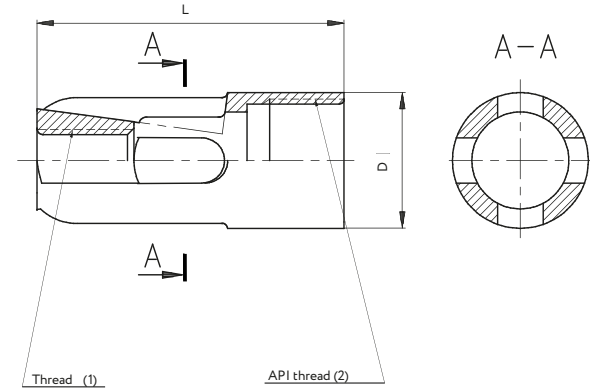
CLOSED VALVE CAGE (BOTTOM STANDING VALVE OF ROD PUMPS WITH DOUBLE VALVES)



Pump Bore	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
27,0 mm (1 1/16") 106	11303-H	V11-175	44,7/1,76"	108/4,252"	37,348-14	37,348-14
31,8 mm (1 1/4") 125						
38,1 mm (1 1/2") 150	11304-H	V11-225	57,4/2,26"	119/4,685"	45,781-14	45,781-14
44,5 mm (1 3/4") 175						
38,1 mm (1 1/2") 150	11324-H*	V11-225	56,7/2,232"	119/4,685"	45,781-14	45,781-14
44,5 mm (1 3/4") 175						

* Pump with special seating assembly.

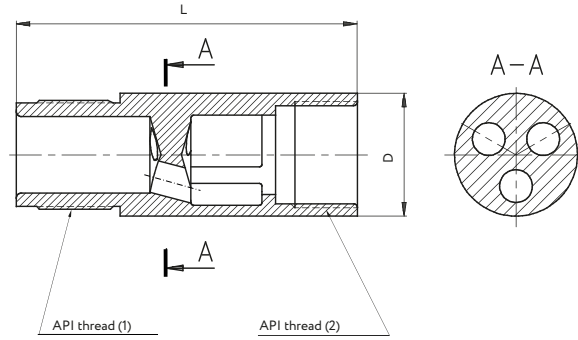
OPEN VALVE CAGE (STANDING VALVE OF THM, THC TUBING PUMPS)



Pump Bore	API Designation	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread	
						(1)	(2)
31,8 mm (1 1/4") 125	-	13010, 13010-K*	V11-125	30,0/1,181"	77/3,031"	1/2-20 UNF-2B (12,7-20)	25,4-14
44,5 mm (1 3/4") 175	C16-175	13001, 13001-K*	V11-175	42,5/1,673"	95/3,740"	API-Thread 19,05-10	37,348-14
57,2 mm (2 1/4") 225	C16-225	13002, 13002-K*	V11-225	55,0/2,165"	107/4,213"		45,781-14
69,9 mm (2 3/4") 275	C16-275	13003, 13003-K*	V11-250	67,8/2,669"	117/4,606"		53,581-11 1/2

* Stainless steel

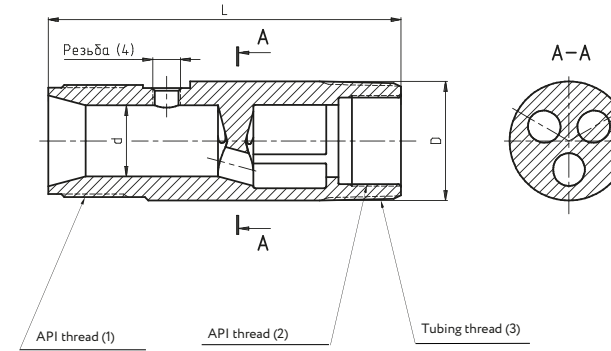
CLOSED VALVE CAGE (STANDING VALVE OF THM-T TUBING PUMPS)



Pump Bore	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
31,8 mm (1 1/4") 125	11303-T, 11303-TK*	V11-175	47,6/1,874"	129/5,079"	39,954-16	37,348-14
44,5 mm (1 3/4") 175	11304-T, 11304-TK*	V11-225	60,3/2 3/8"	140/5,512"	56,845-11 1/2	45,781-14
57,2 mm (2 1/4") 225	11305-T, 11305-TK*	V11-250	70,1/2,760"	157/6,181"	69,545-11 1/2	53,581-11 1/2
69,9 mm (2 3/4") 275	11306-T	V11-250	83/3,268"	157/6,181"	82,245-11 1/2	53,581-11 1/2

* Stainless steel.

CLOSED VALVE CAGE(STANDING VALVE OF THM-C, THM-CC TUBING PUMPS)



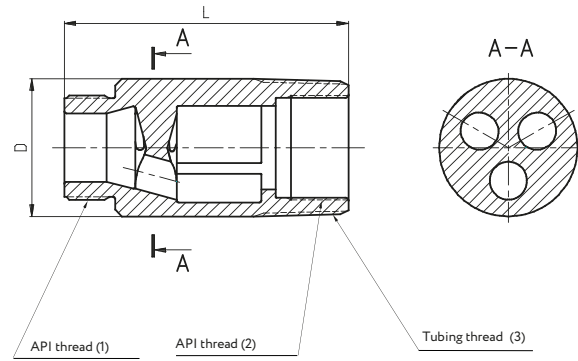
Pump Bore	Drw No.	Valve API	D (mm)/in	d (mm)/in	L (mm)/in	Thread			
						(1)	(2)	(3)	(4)
31,8 mm (1 1/4") 125	11303-C, 11303-CK*	V11-175	60,3/2 3/8"	28,0/1,102"	140/5,512"	39,954-16	37,348-14	2 3/8"-10NURD (60)	M12x1,5
38,1 mm (1 1/2") 150	11304-C, 11304-CK*	V11-225	60,3/2 3/8"	36,0/1,417"	179/7,047"	56,845-11 1/2	45,781-14	2 3/8"-10NURD (60)	M14x1,5
44,5 mm (1 3/4") 175									
57,2 mm (2 1/4") 225	11305-C, 11305-CK*	V11-250	73,0/2 7/8"	40,0/1,575"	202/7,953"	69,545-11 1/2	53,581-11 1/2	2 7/8"-10NURD (73)	M16x1,5
69,9 mm (2 3/4") 275	11306-C, 11306-CK*	V11-250	88,9/3 1/2"	40,0/1,575"	215/8,465"	82,245-11 1/2	53,581-11 1/2	3 1/2"-10NURD (89)	M18x1,5

Note.

In the threaded hole (4) a knock-off screw is installed correspondingly
48001-C, 48002-C, 48003-C, 48004-C with copper gasket
49001-C, 49002-C, 49003-C, 49004-C.

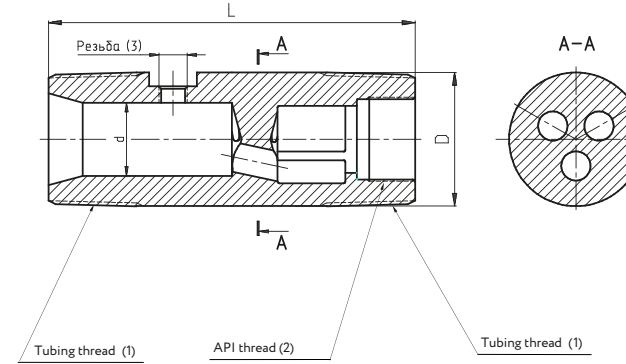
* Stainless steel.

CLOSED VALVE CAGE(BOTTOM STANDING VALVE OF THM-CC TUBING PUMPS WITH DOUBLE STANDING VALVE)



Pump Bore	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread		
					(1)	(2)	(3)
31,8 mm (1 1/4") 125	11303-CH	V11-175	60,3/ 2 3/8"	112/4,409"	37,348-14	37,348-14	2 3/8"- -10NURD (60)
44,5 mm (1 3/4") 175	11304-CH	V11-225	60,3/ 2 3/8"	124/4,882"	45,781-14	45,781-14	45,781-14
57,2 mm (2 1/4") 225 69,9 mm (2 3/4") 275	11305-CH	V11-250	73,0/ 2 7/8"	147/5,787"	53,581-11 1/2	53,581-11 1/2	2 7/8"- -10NURD (73)

CLOSED VALVE CAGE (STANDING VALVE OF 25-225 THM-CA TUBING PUMPS SP2083-4...CA)

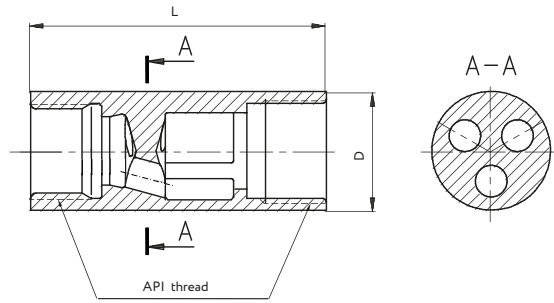


Pump Bore	Drw No.	Valve (API)	D (mm)/in	d (mm)/in	L (mm)/in	Thread		
						(1)	(2)	(3)
57,2 mm (2 1/4") 225	11305-CA	V11-225	73,0/2 7/8"	40,0/ 1,575"	200/ 7,874"	2 7/8"- -10NURD (73)	45,781-14	M16x1,5

Note.

In the threaded hole (3), a knock-off screw 48003-C or 48003-CA with copper gasket 49003-C is installed.

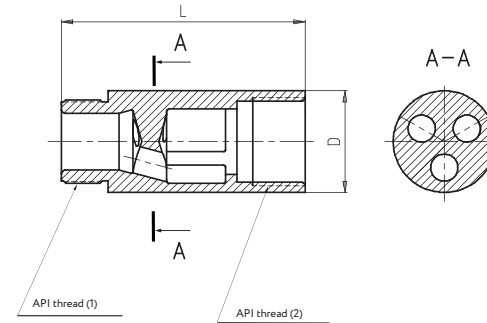
CLOSED VALVE CAGE (TRAVELING VALVE OF ROD AND TUBING PUMPS)



Pump Bore	API Designation	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread
27 mm (1 1/16") 106	C13-106 MOD	11201, 11201-K*	V11-106	26,3/1,035"	82/3,228"	22,225-14
31,8 mm (1 1/4") 125	C13-125 MOD	11202, 11202-K*	V11-125	30,0/1,181"	80/3,150"	25,400-14
38,1 mm (1 1/2") 150	C13-150 MOD	11203, 11203-K*	V11-150	37,0/1,457"	99/3,898"	31,750-14
44,5 mm (1 3/4") 175	C13-175 MOD	11204, 11204-K*	V11-175	42,5/1,673"	106/4,173"	37,348-14
57,2 mm (2 1/4") 225	C13-225 MOD	11206, 11206-K*	V11-225	55,0/2,165"	118/4,646"	45,781-14
69,9 mm (2 3/4") 275	C13-275 MOD	11208, 11208-K*	V11-250	67,8/2,669"	132/5,197"	53,581-11 1/2

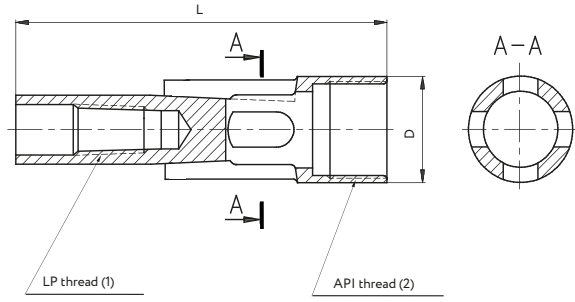
* Stainless steel

CLOSED VALVE CAGE (BOTTOM TRAVELING VALVE OF ROD AND TUBING PUMPS WITH DOUBLE VALVES)



Pump Bore	Drw No.	Valve (API)	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
27 mm (1 1/16") 106	11201-H	V11-106	26,3/1,035"	84/3,307"	22,225-14	22,225-14
31,8 mm (1 1/4") 125	11202-H	V11-125	30,0/1,181"	88/3,465"	25,400-14	25,400-14
38,1 mm (1 1/2") 150	11203-H	V11-150	37,0/1,457"	99/3,898"	31,750-14	31,750-14
44,5 mm (1 3/4") 175	11204-H	V11-175	42,5/1,673"	108/4,252"	37,348-14	37,348-14
57,2 mm (2 1/4") 225	11206-H	V11-225	55,0/2,165"	119/4,685"	45,781-14	45,781-14

OPEN VALVE CAGE (PLUNGERS OF ROD AND TUBING PUMPS WITH VALVE ROD)

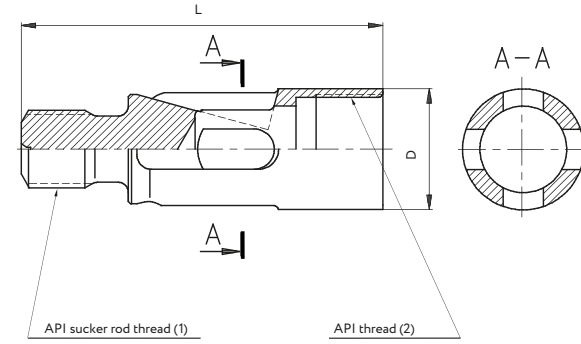


Pump Bore	API designation	Drw No.	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
27 mm (1 1/16") 106	C12-106	10101, 10101-K*	26,6/1,047"	115/4,528"	3/8" LP mod-18	22,225-14
31,8 mm (1 1/4") 125	C12-125	10102, 10102-K*	30,0/1,181"	115/4,528"	3/8" LP mod-18	25,400-14
38,1 mm (1 1/2") 150	C12-150-20	10103-A** 10103-AK**(*)	37,0/1,457"	127/5"	3/8" LP mod-18	31,750-14
	C12-150-25	10104, 10104-K*			1/2" LP mod-14	
44,5 mm (1 3/4") 175	C12-175	10105, 10105-K*	43,0/1,693"	137/5,394"	1/2" LP mod-14	37,348-14
57,2 mm (2 1/4") 225	C12-225	10107-H, 10107-HK*	55,0/2,165"	155/6,102"	3/4" LP mod-14	45,781-14

* Stainless steel.

** For 20-150 RHBC pumps (with reduced seating assembly).

OPEN VALVE CAGE (PLUNGERS OF TUBING PUMPS)

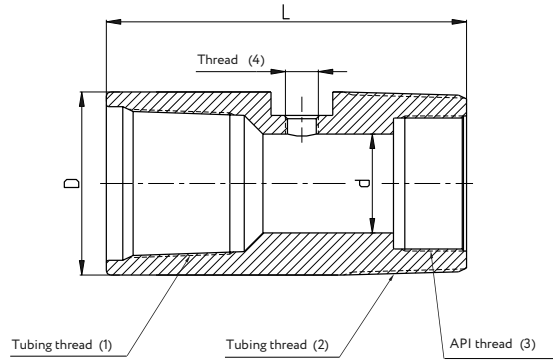


Pump Bore	API designation	Drw No.	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
44,5 mm (1 3/4") 175	C11-20	10001, 10001-K*	43,0/1,693"	125/4,921"	3/4" SR-10 (Sh19)	37,348-14
57,2 mm (2 1/4") 225	C11-25	10002, 10002-K*	55,0/2,165"	137/5,394"	3/4" SR-10 (Sh19)	45,781-14
	-	10515-H**	67,8/2,669"	151/5,945"		53,581-11 1/2
69,9 mm (2 3/4") 275	C11-30 MOD	10516, 10516-K*	67,8/2,669"	156/6,142"	7/8" SR-10 (Sh22)	53,581-11 1/2

* Stainless steel.

** For 30-225/150 RHBM Pump.

KNOCK-OFF SCREW HOUSING (THM-CЛ TUBING PUMPS)

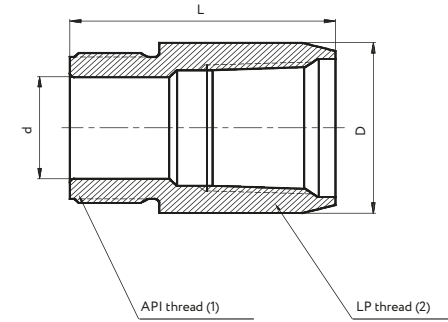


Pump Bore	Drw No.	D (mm)/in	d (mm)/in	L (mm)/in	Thread			
					(1)	(2)	(3)	(4)
31,8 mm (1 1/4") 125	51001	73/2 7/8"	26,0/1,024"	157/6,181"	1,66"-10EURD (42 ext. upset)	2 7/8"-10NURD (73)	39,954-16	M14x1,5
38,1 mm (1 1/2") 150	51002	73/2 7/8"	33,5/1,319"	152/5,984"	2 3/8"-10NURD (60)	2 7/8"-10NURD (73)	53,010-16	M14x1,5
44,5 mm (1 3/4") 175					2 7/8"-10NURD (73)			
57,2 mm (2 1/4") 225	51003	88,9/3 1/2"	48,0/1,890"	175/6,890"	2 7/8"-10NURD (73)	3 1/2"-10NURD (89)	65,354-16	M16x1,5

Note.

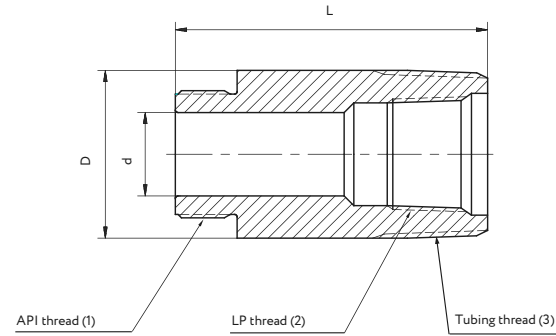
In the threaded hole (4) a knock-off screw is installed, correspondingly 48002-C (M14x1,5), 48003-C (M16x1,5) with copper gasket correspondingly 49002-C, 49003-C.

SEAT BUSHING (STANDING VALVE OF RHA ROD PUMPS AND 25-150 THM-CЛ, 25-175 THM-CЛ, 25-225 THM-CA SP2083-4...CA TUBING PUMPS)



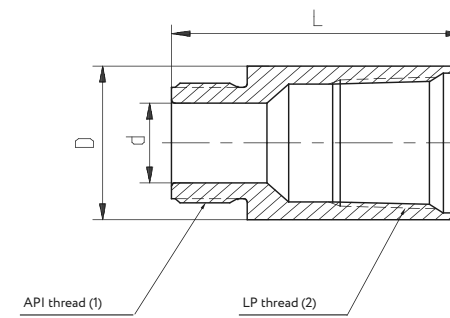
Pump Bore	API Designation	Drw No.	d (mm)/in	D (mm)/in	L (mm)/in	Thread	
						(1)	(2)
27,0 mm (1 1/16") 106	B22-20	23102	25,0/0,984"	42,5/1,673"	75/2,953"	37,348-14	1"LP-11 1/2
31,8 mm (1 1/4") 125							
38,1 mm (1 1/2") 150	B22-25	23103	30,0/1,181"	55,0/2,165"	78/3,071"	45,781-14	1 1/4"LP-11 1/2
44,5 mm (1 3/4") 175							
57,2 mm (2 1/4") 225							

SEAT BUSHING (STANDING VALVE OF THM-T TUBING PUMPS)

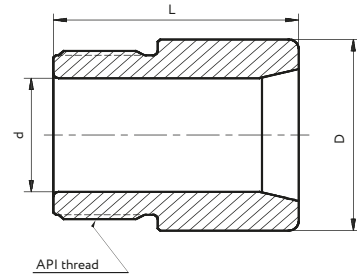


Pump Bore	Drw No.	d (mm)/in	D (mm)/in	L (mm)/in	Thread		
					(1)	(2)	(3)
31,8 mm (1 1/4") 125	23102-T	25,0/0,984"	60,3/2 3/8"	110/4,331"	37,348-14	1 1/4"LP-11 1/2	2 3/8"- -10NURD (60)
44,5 mm (1 3/4") 175	23103-T	30,0/1,181"	60,3/2 3/8"	112/4,409"	45,781-14	1 1/4"LP-11 1/2	2 3/8"- -10NURD (60)
57,2 mm (2 1/4") 225	23104-T	36,0/1,417"	73/2 7/8"	125/4,921"	53,581-11 1/2	1 1/2"LP-11 1/2	2 7/8"- -10NURD (73)
69,9 mm (2 3/4") 275	23105-T	36,0/1,417"	88,9/3 1/2"	135/5,315"	53,581-11 1/2	2"LP-11 1/2	3 1/2"- -10NURD (89)

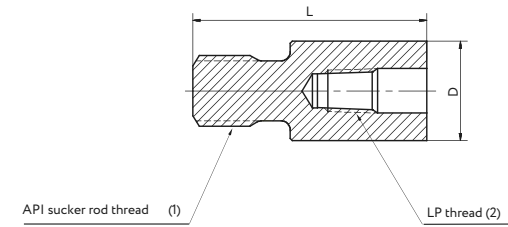
SEAT BUSHING (STANDING VALVE OF THM-C, THM-CC, 25-125 THM-СЛ, 25-225 THM-СЛ, 25-225 THM-CA SP2083-2... CA TUBING PUMPS)



Pump Bore	Drw No.	d (mm)/in	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
31,8 mm (1 1/4") 125	23102-C	25,0/0,984"	48,2/1,898"	80/3,15"	37,348-14	1 1/4"LP-11 1/2
38,1 mm (1 1/2") 150	23103-C	30,0/1,181"	48,2/1,898"	82/3,228"	45,781-14	1 1/4"LP-11 1/2
44,5 mm (1 3/4") 175						
57,2 mm (2 1/4") 225	23104-C	36,0/1,417"	59,0/2,323"	80/3,15"	53,581-11 1/2	1 1/2"LP-11 1/2
69,9 mm (2 3/4") 275						

SEAT PLUG (TRAVELING VALVE OF ROD PUMPS AND THM-T, THM-C, THM-CC, THM-CA, THM-СЛ TUBING PUMPS)


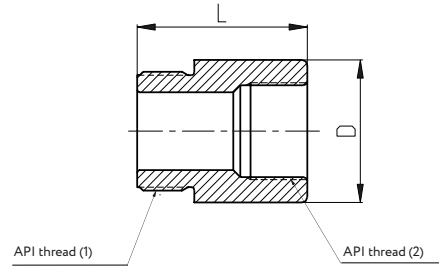
Pump Bore	API Designation	Drw No.	d (mm)/in	D (mm)/in	L (mm)/in	Thread
27 mm (1 1/16") 106	P12-106	23001	15,0/0,591"	26,0/1,024"	45/1,772"	22,225-14
31,8 mm (1 1/4") 125	P12-125	23002	16,0/0,63"	30,0/1,181"	45/1,772"	25,400-14
38,1 mm (1 1/2") 150	P12-150	23003	20,0/0,787"	37,0/1,457"	99/3,898"	31,750-14
44,5 mm (1 3/4") 175	P12-175	23004	25,0/0,984"	42,5/1,673"	106/4,173"	37,348-14
57,2 mm (2 1/4") 225	P12-225	23006	32,0/1,260"	55,0/2,185"	118/4,646"	45,781-14
69,9 mm (2 3/4") 275	-	23008	36,0/1,417"	67,8/2,669"	132/5,197"	53,581-11 1/2

VALVE ROD BUSHING (ROD PUMPS AND TUBING PUMPS WITH VALVE ROD)


Pump Bore	API Designation	Drw No.	D (mm)/in	L (mm)/in	Thread	
					(1)	(2)
27 mm (1 1/16") 106 и 31,8 mm (1 1/4") 125	B21-20	15002	38,1/1,5"	90/3,543"	3/4"SR-10 (Sh19)	3/8"LP mod-18
	-	15414*			Sh16	
38,1 mm (1 1/2") 150 и 44,5 mm (1 3/4") 175	B22-25	15003	41,3/1,626"	96/3,937"	3/4"SR-10 (Sh19)	1/2" LP mod-14
	-	15415-H*				
57,2 mm (2 1/4") 225	B21-30	15004-H	41,3/1,626"	100/3,937"	3/4"SR-10 (Sh19)	3/4" LP mod-14
	-	15416-H*				

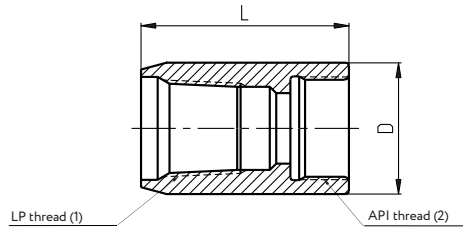
* For Tubing Pump (without ribs of the face).

NIPPLE (25/20-150 RHM-T, 25/20-175 RHM-T PUMPS)



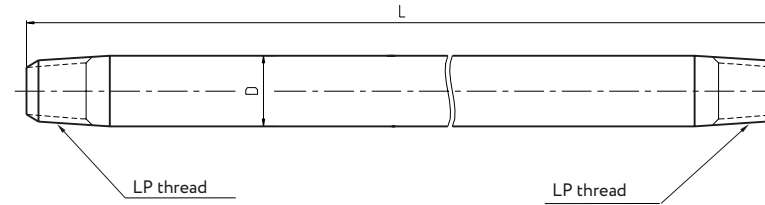
Pump Bore	Drw No.	D (mm)/in	L (mm)/in	Thread	
				(1)	(2)
38,1 mm (1 1/2") 150	40271-T	55/2,165"	66/2,598"	45,781-14	37,348-14
44,5 mm (1 3/4") 175					

COUPLING (25/20- ... RHM-T PUMPS)



Pump Bore	Drw No.	D (mm)/in	L (mm)/in	Thread	
				(1)	(2)
27,0 mm (1 1/16") 106	40281-T	44,7/1,76"	71/2,795"	1"LP-11 1/2	34,925-14
31,8 mm (1 1/4") 125					
38,1 mm (1 1/2") 150					
44,5 mm (1 3/4") 175					

VALVE ROD (ROD PUMPS AND 20-125 TH, 25-125 TH, 25-150 TH, 25-225 THM-CA TUBING PUMPS)

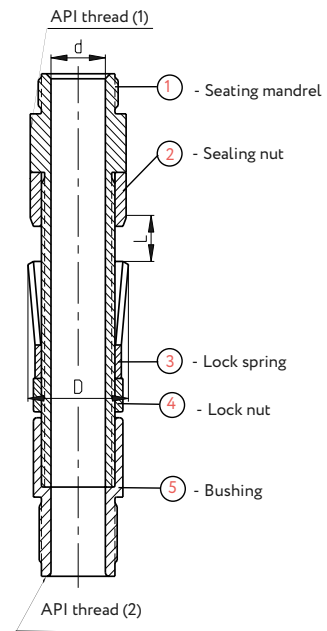


Pump Bore	L		API Designation	Drw No.	D (mm)/in	Thread
	in	mm				
27 mm (1 1/16") 106	122	3099	R11-20-122 MOD	42122	17,5/0,689	3/8"LPmod-18
	128	3251	R11-20-128 MOD	42128		
	132	3353	R11-20-132 MOD	42132		
	133	3378	R11-20-133 MOD	42133		
	134	3404	R11-20-134 MOD	42134		
	140	3556	R11-20-140MOD	42140		
	145	3683	R11-20-145 MOD	42145		
	146	3708	R11-20-146 MOD	42146		
	152	3861	R11-20-152 MOD	42152		
	156	3962	R11-20-156 MOD	42156		
31,8 mm (1 1/4") 125	157	3988	R11-20-157 MOD	42157	22,2/0,874	1/2"LPmod-14
	158	4013	R11-20-158 MOD	42158		
	169	4293	R11-20-169 MOD	42169		
	127	3226	R11-25-127 MOD	43127		
	128	3251	R11-25-128 MOD	43128		
	132	3353	R11-25-132 MOD	43132		
	133	3378	R11-25-133 MOD	43133		
	134	3404	R11-25-134 MOD	43134		
	135	3429	R11-25-135 MOD	43135		
	139	3531	R11-25-139 MOD	43139		
44,5 mm (1 3/4") 175	140	3556	R11-25-140 MOD	43140	27,0/1,063	3/4"LPmod-14
	144	3658	R11-25-144 MOD	43144		
	145	3683	R11-25-145 MOD	43145		
	146	3708	R11-25-146 MOD	43146		
	147	3734	R11-25-147 MOD	43147		
	151	3835	R11-25-151 MOD	43151		
	152	3861	R11-25-152 MOD	43152		
	156	3962	R11-25-156 MOD	43156		
	157	3988	R11-25-157 MOD	43157		
	159	4039	R11-25-159 MOD	43159		
	163	4140	R11-25-163 MOD	43163		
	164	4166	R11-25-164 MOD	43164		
	168	4267	R11-25-168 MOD	43168		
	169	4293	R11-25-169 MOD	43169		
	170	4318	R11-25-170 MOD	43170		
	171	4343	R11-25-171 MOD	43171		
	57,2 mm (2 1/4") 225	114	2896	R11-30-114MOD		
139		3531	R11-30-139MOD	44139-H		
151		3835	R11-30-151MOD	44151-H		
163		4140	R11-30-163MOD	44163-H		

Note.

Due to the wide product range, the Table shows dimensions (length) of the most widely used Valve Rods. Valve Rods with the length from 60 to 268 inches are used in the manufactured pumps.

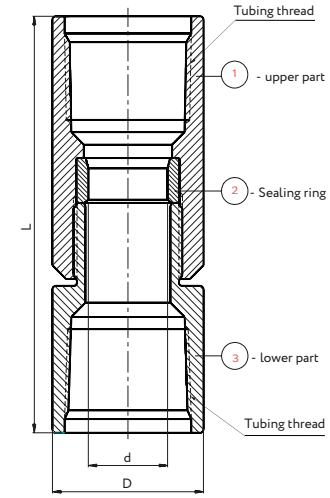
API TOP MECHANICAL SEATING ASSEMBLY FOR RHAM, RHAM-T ROD PUMPS



Pump Bore	API Designation	Parts		Dimensions (mm)			Thread	
		Pos.	Drw No.	D max	d	L	(1)	(2)
27 mm (1 1/16") 106	S21- 20MOD	1	40106-H	48,7/ 1,917"	24/ 0,945"	23,99 ^{-0.05} / 0,944 ^{-0.0002} (40126-KL gage)	37,348-14	39,954-16
		2	40006-K					
		3	40126					
4		40131						
5		28802						
38,1mm (1 1/2") 150		1	40107-T,	61,4/ 2,417"	24/ 0,945"	22,72 ^{-0.05} / 0,894 ^{-0.002} (40127-KL gage)	37,348-14	39,954-16
2	40007-K							
3	40127							
4	40132							
5	28803-T							
27,0mm (1 1/16") 106 ^ø	S21- 25MOD	1	40107-H	61,4/ 2,417"	32,5/ 1,28"	22,72 ^{-0.05} / 0,894 ^{-0.002} (40127-KL gage)	45,781-14	53,010-16
38,1mm (1 1/2") 150		2	40007-K					
44,5mm (1 3/4") 175		3	40127					
		4	40132					
		5	28803					

*25-106 RHAM-T, 25-125 RHAM-T pumps (with increased seating assembly for 40117-ZUS Seating Nipple).

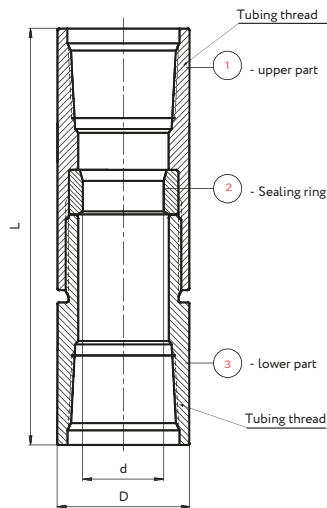
SEATING NIPPLE (STANDARD) FOR API TOP MECHANICAL SEATING ASSEMBLY OF RHAM, RHAM-T ROD PUMP



HKT	Pump Bore	API Designation	Drw No	Parts		Dimensions (mm)			Thread
				Pos.	Drw No.	D	d	L	
603mm (2 3/8") 20	27 mm (1 1/16") 106	N14-20MOD	40116-ZUS	1	40158	73/2 7/8"	45,2/ 1,78"	227/ 8,937"	2 3/8"- -10NURD (60)
				2	40116-K				
				3	01521				
73,0mm (2 7/8") 25	270mm (1 1/16") 106 ^ø	N14-25MOD	40117-ZUS	1	40159	89/3 1/2"	57,9/ 2,28"	243/ 9,567"	2 7/8"- -10NURD (73)
				2	40117-K				
				3	01522				
					38,1mm (1 1/4") 150				
	44,5mm (1 3/4") 175								

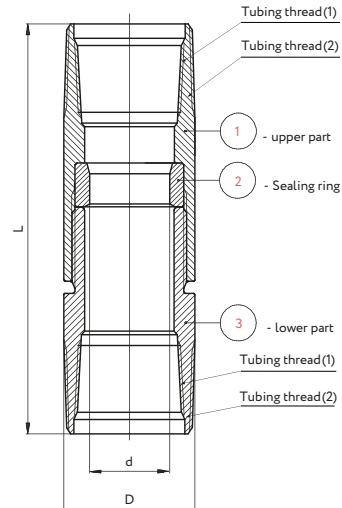
*Pumps 25-106 RHAM-T, 25-125 RHAM-T (with an enlarged fastening lock)

SEATING NIPPLE (INCREASED) FOR API TOP MECHANICAL SEATING ASSEMBLY OF RHAM ROD PUMPS



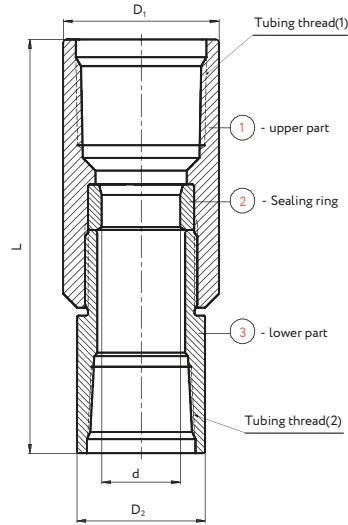
Tubing	Pump Bore	Drw No	Parts		Dimensions (mm)			Thread
			Pos.	Drw No.	D	d	L	
73,0mm (27/8") 25	27 mm (1 1/16") 106	40116-M-ZUS	1	40158-M	89/ 3,504"	45,2/ 1,78"	244/ 9,606"	2 7/8"- 10NURD (73)
	2		40116-K					
	3		01521-M					

SEATING NIPPLE (UNIVERSAL) FOR API TOP MECHANICAL SEATING ASSEMBLY OF RHAM ROD PUMPS



Tubing	Pump Bore	Drw No.	Parts		Dimensions (mm)			Thread	
			Pos.	Drw No.	D	d	L	(1)	(2)
60,3mm (23/8") 20 or 73,0mm (27/8") 25	27 mm (1 1/16") 106	40116-T-ZUS	1	40158-T	73/2 7/8"	45,2/ 1,78"	227/ 8,937"	2 3/8"- -10NURD (60)	2 7/8"- -10NURD (73)
	2		40116-K						
	3		01521-T						
73,0mm (27/8") 25 or 88,9mm (3 1/2") 30	38,1mm (1 1/2") 150	40117-T-ZUS	1	40159-T	89/3 1/2"	57,9/ 2,28"	243/ 9,567"	2 7/8"- -10NURD (73)	3 1/2"-10 NURD (89)
	2		40117-K						
	3		01522-T						

SEATING NIPPLE (CROSSOVER) FOR API MECHANICAL SEATING ASSEMBLY OF 25/20-... RHM-T ROD PUMPS

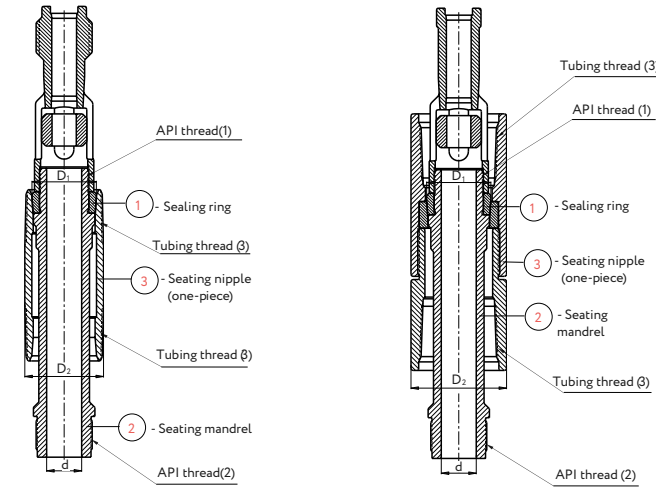


Tubing	Pump Bore	Drw No.	Parts		Dimensions (mm)				Thread	
			Pos.	Drw No.	D ₁	D ₂	d	L	(1)	(2)
73,0mm (2 7/8") 25 (сверху), 60,3mm (2 3/8") 20 (снизу)	27 mm (1 1/16") 106	40116-MT-ZUS	1	40158-M	89/ 3 1/2"	73/ 2 7/8"	45,2/ 1,78"	243/ 9,567"	2 7/8"- 10NURD (73)	2 3/8"- 10NURD (60)
	2		40116-K							
	3		01521							
	31,8mm (1 1/4") 125									
	38,1mm (1 1/2") 150									
	44,5mm (1 3/4") 175									

Note.

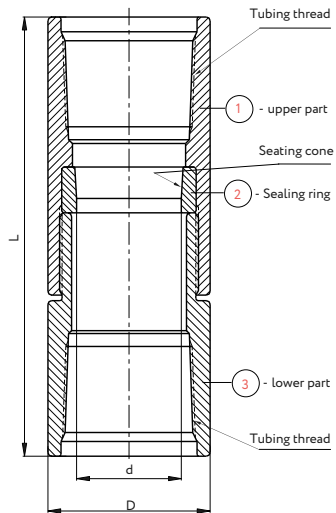
Seating Nipple can be used for standard rod pumps 20-106 RHAM and 20-125 RHAM with API top mechanical seating assembly.

SPECIAL TOP MECHANICAL SEATING ASSEMBLY OF RHAM ROD PUMPS («CONE-IN-CONE» TYPE)



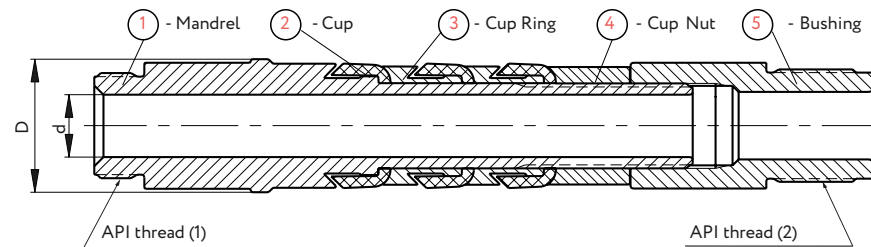
Tubing	Pump Bore	Parts		Dimensions (mm)			Thread		
		Pos.	Drw No.	D ₁	D ₂	d	(1)	(2)	(3)
73,0mm (2 7/8") 25	27 mm (1 1/16") 106	1 2 3	40191-KM 40171 32001-M, 32001-KM (one-piece) or 40116-KM- -ZUS (assembled)	49,83/ 1,962"	73 / 2 7/8" (for 32001-M, 32001-KM) 89 / 3 1/2" (for 40116- -KM-ZUS)	24/ 0,945"	37,348- 14	39,954- 16	2 7/8"- 10NURD (73)
	31,8mm (1 1/4") 125								
	38,1mm (1 1/2") 150								
	44,5mm (1 3/4") 175								
	38,1mm (1 1/2") 150	1 2 3	40192-KM 40172 32002-M, 32002-KM (one-piece) or 40117-KM- -ZUS (assembled)	59,5/ 2,343"	73 / 2 7/8" (for 32002-M, 32002-KM) 89 / 3 1/2" (for 40117- -KM-ZUS)	32,5/ 1,28"	45,781- 14	51,994- 16	2 7/8"- 10NURD (73)
	31,8mm (1 1/4") 125								
	38,1mm (1 1/2") 150								
	44,5mm (1 3/4") 175								

SEATING NIPPLE (ASSEMBLED) SPECIAL TOP MECHANICAL SEATING ASSEMBLY OF RHAM ROD PUMPS



Tubing	Pump Bore	Drw.No.	Parts		Dimesions (mm)			Thread
			Pos.	Drw No.	D	d	L	
73,0mm (27/8") 25	27 mm (1 1/16") 106	40116-KM-ZUS	1	40158-M	89/3 1/2"	46,6/1,835"	244/9,606"	2 7/8"- -10NURD (73)
	31,8mm (1 1/4") 125		2	40116-KM				
			3	01521-M				
	38,1mm (1 1/2") 150	40117-KM-ZUS	1	40159				
44,5mm (1 3/4") 175	2		40117-KM					
			3	01522				

TOP CUP TYPE SEATING ASSEMBLY FOR RHAC ROD PUMPS

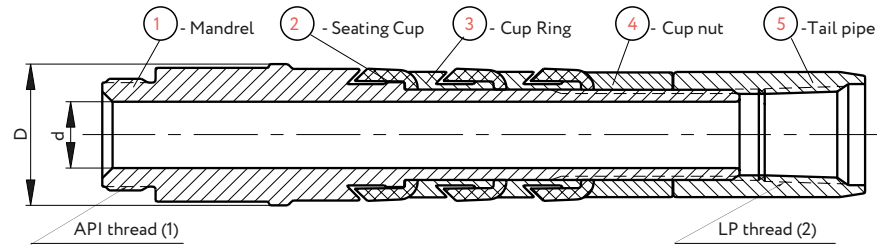


Pump Bore	Parts			Dimesions (mm)/in		Thread	
	Pos.	API Designation	Drw No.	D	d	(1)	(2)
27,0 mm (1 1/16") 106 ^o	1	S11-20	35002	47,2/1,858"	22,5/0,886"	37,348-14	39,954-16
	2	S12-20	36001-N				
	3	S13-20	37001				
31,8mm (1 1/4") 125 ^o	4	S14-20	38002	59,5/2,343"	24/0,945"	37,348-14	39,954-16
	5	S15-20	28302				
27,0mm (1 1/16") 106 ^o	1	-	35003-H	59,5/2,343"	24/0,945"	37,348-14	39,954-16
	2	S12-25	36002-N				
	3	S13-25	37002				
31,8mm (1 1/4") 125 ^o	4	S14-25	38003	59,5/2,343"	30,5/1,201"	45,781-14	53,010-16
	5	-	28303-H				
38,1mm (1 1/2") 150	1	S11-25	35003	59,5/2,343"	30,5/1,201"	45,781-14	53,010-16
	2	S12-25	36002-N				
	3	S13-25	37002				
44,5mm (1 3/4") 175	4	S14-25	38003	59,5/2,343"	30,5/1,201"	45,781-14	53,010-16
	5	S15-25	28303				

* 20-106 RHAC and 20-125 RHAC pumps (for 32521 Seating Nipple).

** 25-106 RHAC and 25-125 RHAC pumps (with increased seating assembly for 32522 Seating Nipple).

BOTTOM CUP TYPE SEATING ASSEMBLY FOR RHBC ROD PUMPS

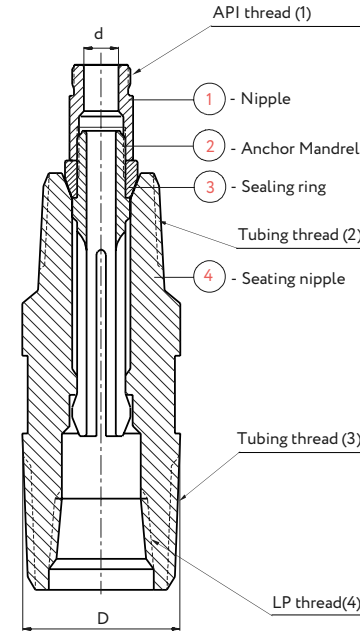


Pump Bore	Parts			Dimensions (mm)/in		Thread	
	Pos.	API Designation	Drw No.	D	d	(1)	(2)
27,0 mm (1 1/16") 106							
31,8mm (1 1/4") 125	1	S11-20	35002	47,2/1,858"	22,5/0,886"	37,348-14	1"LP-11 1/2
	2	S12-20	36001-N				
3	S13-20	37001					
38,1mm (1 1/2") 150*	4	S14-20	38002				
	5	S16-20	39002				
44,5mm (1 3/4") 175*							
27,0mm (1 1/16") 106**	1	-	35003-H	59,5/2,343"	24/0,945"	37,348-14	1 1/4"LP-11 1/2
	2	S12-25	36002-N				
	3	S13-25	37002				
31,8mm (1 1/4") 125**	4	S14-25	38003				
	5	S16-25	39003				
38,1mm (1 1/2") 150	1	S11-25	35003	59,5/2,343"	30,5/1,201"	45,781-14	1 1/4"LP-11 1/2
	2	S12-25	36002-N				
	3	S13-25	37002				
44,5mm (1 3/4") 175	4	S14-25	38003				
	5	S16-25	39003				

* 20-150 RHBC; 25/20-150 RHBC; 25/20-175 RHBC pumps (with reduced seating assembly for 32521 Seating Nipple).

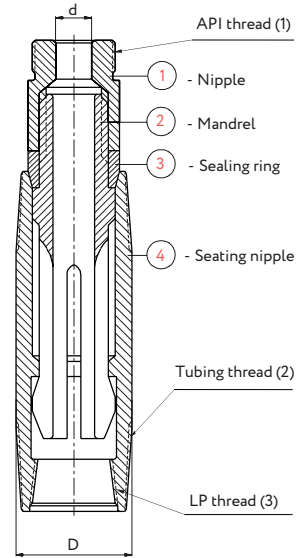
** 25-106 RHBC and 25-125 RHBC pumps (with increased seating assembly for 32522 Seating Nipple).

STANDING VALVE MECHANICAL SEATING ASSEMBLY OF 20-125 THM AND 25-125 THM TUBING PUMPS



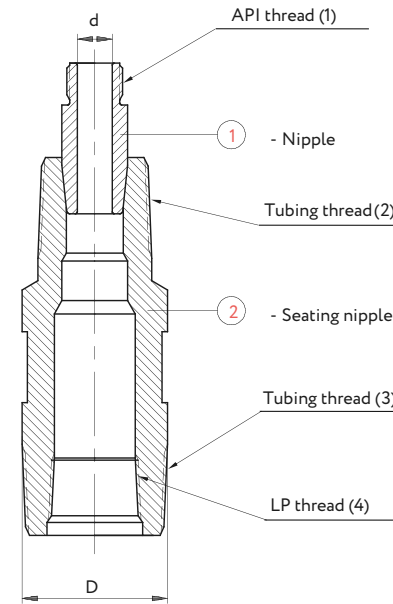
Pump Bore	Parts		Dimensions (mm)/in		Thread			
	Pos.	Drw No.	D	d	(1)	(2)	(3)	(4)
31,8 mm (1 1/4") 125	1	34526	60,3/2 3/8"	16,0/0,63"	25,400-14	1,66"- -10EURD (42 ext. upset)	2 3/8"- -10NURD (60)	1 1/4"LP- -11 1/2
	2	34528-N						
	3	34527-K						
	4	32755						

STANDING VALVE MECHANICAL SEATING ASSEMBLY OF THM TUBING PUMPS AND BOTTOM MECHANICAL SEATING



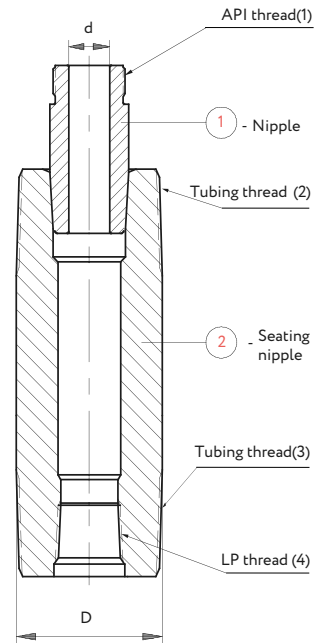
Tubing for Rod Pump	Pump Bore		Parts			Dimensions (mm)/in		Thread		
	RHBM	THM	Pos.	API Designation	Drw No.	D	d	(1)	(2)	(3)
60,3 mm (2 3/8") 20	27,0 mm (1 1/16") 106°	44,5 mm (1 3/4") 175	1	S22-20	34071	60,3/2 3/8"	22,0/0,866"	37,348-14	2 3/8"-10NURD (60)	1 1/4"LP-11 1/2
	31,8 mm (1 1/4") 125°		4		N12-20 MOD					
73,0 mm (2 7/8") 25	27,0 mm (1 1/16") 106°	-	1	-	34072-H	73,0/2 7/8"	22,0/0,866"	37,348-14	2 7/8"-10NURD (73)	1 1/2"LP-11 1/2
	31,8 mm (1 1/4") 125°		2		34092-N					
			3		34080-K					
			4		N12-25 MOD					
88,9 mm (3 1/2") 30	38,1 mm (1 1/2") 150	57,2 mm (2 1/4") 225	1	S22-25	34072	73,0/2 7/8"	26,0/1,024"	45,781-14	2 7/8"-10NURD (73)	1 1/2"LP-11 1/2
	44,5 mm (1 3/4") 175		2		34092-N					
			3		34080-K					
			4		N12-25 MOD					
88,9 mm (3 1/2") 30	-	69,9 mm (2 3/4") 275	1	S22-30	34073	88,9/3 1/2"	35,0/1,378"	53,581-11 1/2	3 1/2"-10NURD (89)	2"LP-11 1/2
			2		34093-N					
			3		34081-K					
			4		N12-30 MOD					

"CONE-IN-CONE" TYPE SEATING ASSEMBLY FOR STANDING VALVE OF 25-125 THM-K TUBING PUMPS



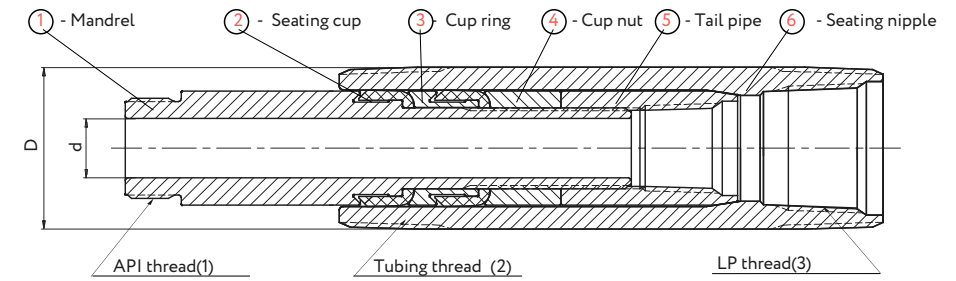
Pump Bore	Parts		Dimensions (mm)/in		Thread			
	Pos.	Drw No.	D	d	(1)	(2)	(3)	(4)
31,8 mm (1 1/4") 125	1 2	34526-M 32755-M	60,3/2 3/8"	16,0/0,63"	25,400-14	1,66"-10EURD (42 ext. upset)	2 3/8"-10NURD (60)	1 1/4"LP-11 1/2

"CONE-IN-CONE" TYPE SEATING ASSEMBLY FOR STANDING VALVE OF THM-K TUBING PUMPS



Pump Bore	Parts		Dimensions (mm)/in		Thread		
	Pos.	Drw No.	D	d	(1)	(2)	(3)
31,8 mm (1 1/4") 125	1	34071-M	60,3/2 3/8"	22,0/0,866"	37,348-14	2 3/8"- -10NURD (60)	1 1/4"LP-11 1/2
	2	32756-M					
57,2 mm (2 1/4") 225	1	34072-M	73,0/2 7/8"	26,0/1,024"	45,781-14	2 7/8"- -10NURD (73)	1 1/2"LP-11 1/2
	2	32757-M					
88,9 mm (2 3/4") 275	1	34073-M	88,9/3 1/2"	35,0/1,378"	53,581-11 1/2	3 1/2"- -10NURD (89)	2"LP-11 1/2
	2	32758-M					

STANDING VALVE CUP SEATING ASSEMBLY OF THC TUBING PUMPS



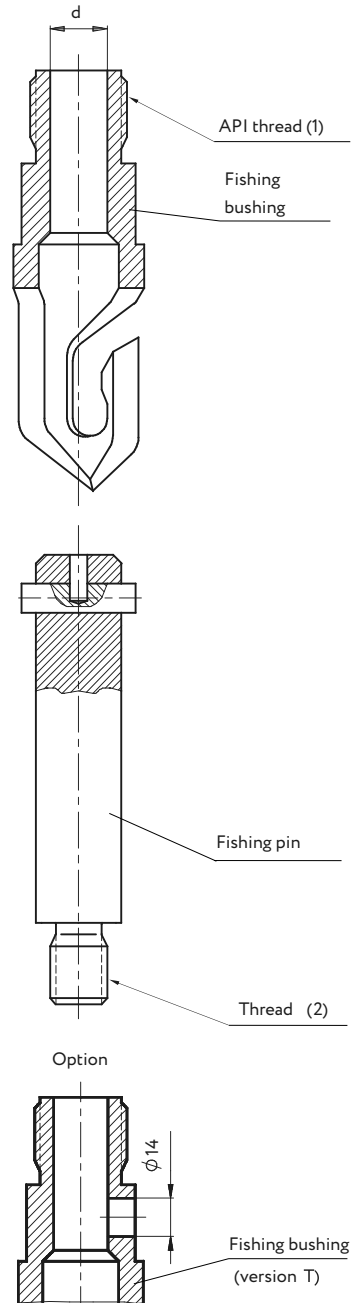
Pump Bore	Parts			Dimensions (mm)/in		Thread		
	Pos.	API Designation	Drw No.	D	d	(1)	(2)	(3)
44,5 mm (1 3/4") 175	1	S17-20	35102	60,3/2 3/8"	22,5/0,886"	37,348-14	2 3/8"- -10NURD (60)	1 1/2"LP-11 1/2
	2	S18-20	36101-N					
	3	S13-20	37001					
	4	S14-20	38002					
	5	S16-20	39002					
	6	N13-20MOD	32141					
57,2 mm (2 1/4") 225	1	S17-25	35103	73,0/2 7/8"	30,5/1,201"	45,781-14	2 7/8"- -10NURD (73)	2"LP-11 1/2
	2	S18-25	36102-N					
	3	S13-25	37002					
	4	S14-25	38003					
	5	S16-25	39003					
	6	N13-25MOD	32142					

FISHING TOOL, TYPE A (THM, THM-K, THC TUBING PUMPS)

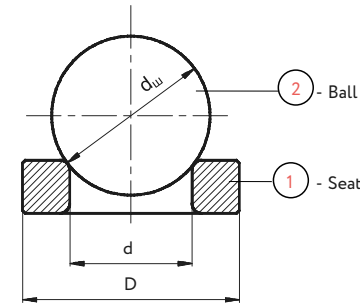
Pump Bore	API Designation	Drw No.		d (mm)	Thread	
		Втулка	Цапфа		(1)	(2)
31,8 mm (1 1/4") 125	-	25041 or 25041-T	25032	16,0/0,63"	25,4-14	1/2-20 UNF-2A (12,7-20)
44,5 mm (1 3/4") 175	P31-175	25043 or 25043-T	25034	26,0/1,024"	37,348-14	API- Thread 19,050-10
57,2 mm (2 1/4") 225	P31-225	25045 or 25045-T	25036	28,0/1,102"	45,781-14	
69,9 mm (2 3/4") 275	P31-275	25047 or 25047-T	25038	35,0/1,378"	53,581-11 1/2	

Note.

A side hole in the fishing bushing of T-design (refer to "Option") is intended for fluid circulation during well killing by a pump aggregate in case of rod string breakage.



STANDARD VALVE (BALL AND SEAT)



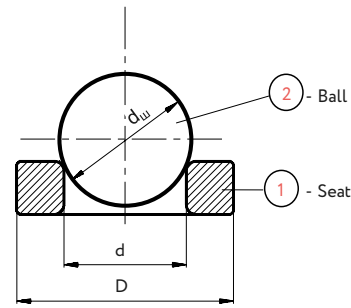
Designs:

- SS - stainless steel (specific gravity 7,85 g/cm3);
 - ST - Cobalt alloy (specific gravity 8,7-8,8 g/cm3);
 - TC1 - Tungsten Carbide (specific gravity 14,0 g/cm3).
- Hardness of working surfaces:
- SS - Seat 52-56 HRC, Ball 58-65 HRC;
 - ST - Seat 50-56 HRC, Ball 56-63 HRC;
 - TC1 - Seat and Ball 87-90 HRA.

Valve Size	API Designation	Drw No.			Pos.	Parts		
		SS	ST	TC1		Drw No.		
		SS	ST	TC1		SS	ST	TC1
1 1/16	V11-106	14001	14891	14801	1	14001-S	14891-S	14801-S
					2	14021-B	14841-B	14281-B
1 1/4	V11-125	14002	14892	14802	1	14002-S	14892-S	14802-S
					2	14022-B	14842-B	14282-B
1 1/2	V11-150	14003	14893	14803	1	14003-S	14893-S	14803-S
					2	14023-B	14843-B	14283-B
1 3/4	V11-175	14004	14894	14804	1	14004-S	14894-S	14804-S
					2	14024-B	14844-B	14284-B
2 1/4	V11-225	14006	14896	14806	1	14006-S	14896-S	14806-S
					2	14026-B	14846-B	14286-B
2 1/2, 2 3/4	V11-250	14007	14897	14807	1	14007-S	14897-S	14807-S
					2	14027-B	14847-B	14287-B

Valve Size	API Designation	Drw No.			Dimensions(mm)		
		SS	ST	TC1	d _b	d	D
1 1/16	V11-106	14001	14891	14801	15,875/0,625"	11,89/0,468"	20,142/0,793"
1 1/4	V11-125	14002	14892	14802	19,05/0,75"	14,61/0,575"	23,317/0,918"
1 1/2	V11-150	14003	14893	14803	23,8125/0,938"	17,83/0,702"	29,667/1,168"
1 3/4	V11-175	14004	14894	14804	28,575/1,125"	21,08/0,83"	35,255/1,388"
2 1/4	V11-225	14006	14896	14806	34,925/1,375"	26,57/1,046"	43,688/1,720"
2 1/2, 2 3/4	V11-250	14007	14897	14807	42,8625/1,688"	32,13/1,265"	51,054/2,010"

VALVE (BALL AND SEAT) WITH REDUCED BALL



Materials:

SS - stainless steel;

ST - Cobalt Alloy.

Hardness of working surfaces (HRC):

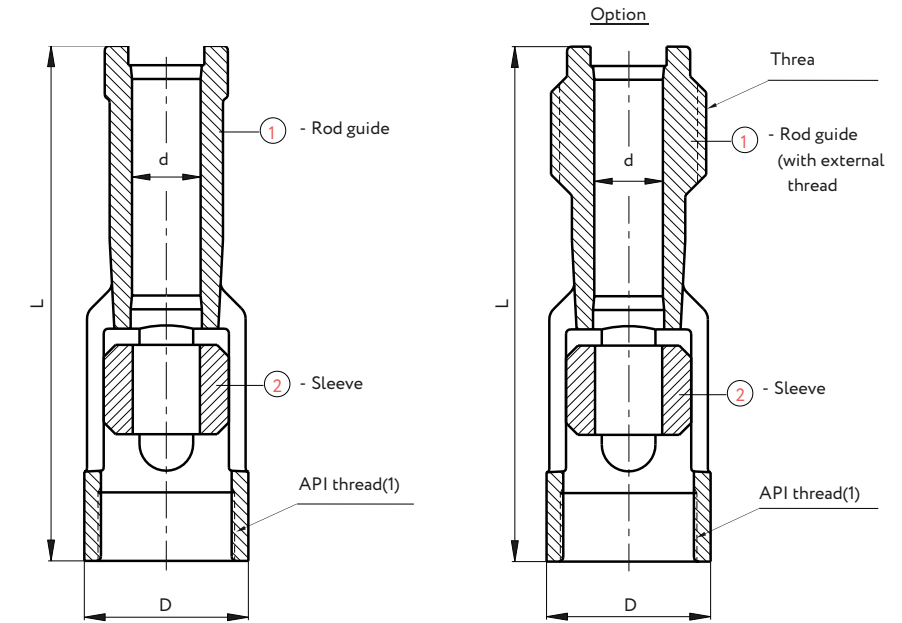
SS - Seat 52-56 Ball 58-65;

ST - Seat 50-56 Ball 56-63.

Valve Size	Drw No.		Pos.	Parts	
	SS	ST		Drw No.	
				SS	ST
1 1/16	14001-M	14891-M	1	14001-M-S	14891-M-S
			2	14021-M-B	14841-M-B
1 1/4	14002-M	14892-M	1	14002-M-S	14892-M-S
			2	14022-M-B	14842-M-B
1 1/2	14003-M	14893-M	1	14003-M-S	14893-M-S
			2	14023-M-B	14843-M-B
1 3/4	14004-M	14894-M	1	14004-M-S	14894-M-S
			2	14024-M-B	14844-M-B
2 1/4	14006-M	14896-M	1	14006-M-S	14896-M-S
			2	14026-M-B	14846-M-B
2 1/2, 2 3/4	14007-M	14897-M	1	14007-M-S	14897-M-S
			2	14027-M-B	14847-M-B

Valve Size	Drw No.		Dimensions (mm) / in		
	SS	ST	d _b	d	D
1 1/16	14001-M	14891-M	14,2875/0,563"	11,89/0,468"	20,142/0,793"
1 1/4	14002-M	14892-M	17,4625/0,688"	14,61/0,575"	23,317/0,918"
1 1/2	14003-M	14893-M	22,225/0,875"	17,83/0,702"	29,667/1,168"
1 3/4	14004-M	14894-M	25,4/1"	21,08/0,83"	35,255/1,388"
2 1/4	14006-M	14896-M	31,75/1,250"	26,57/1,046"	43,688/1,720"
2 1/2, 2 3/4	14007-M	14897-M	38,1/1 1/2"	32,13/1,265"	51,054/2,010"

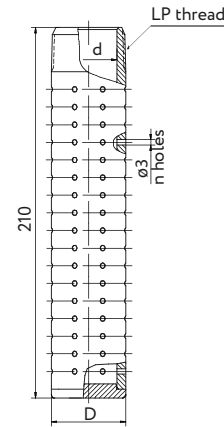
VALVE GUIDE WITH SAND SLEEVE (RH ROD PUMPS)



Pump Bore	Parts		Dimensions (mm)/in			Thread		Rod OD (mm) / in
	Pos.	Drw No.	L	D	d	(1)	(2)	
27,0 mm (1 1/16") 106	1	24512-H or 24512-HM (с наружной резьбой) 47501-H	155/6,102"	44,7/1,76"	18,0/0,709"	37,348-14	M42x3-6g	17,5 (1 1/16")
	2							
38,1 mm (1 1/2") 150	1	24513-H or 24513-HM (с наружной резьбой) 47502-H	173/6,811"	55,0/2,165"	23,0/0,906"	45,781-14	M52-6g	22,2 (7/8")
	2							
57,2 mm (2 1/4") 225	1	24514-H or 24514-HM (с наружной резьбой) 47503-H	184/7,244"	67,8/2,669"	28,0/1,102"	53,581-11 1/2	M56-6g	27,0 (1 1/16")
	2							

SAFETY FILTER

Designation	Drw No.	Dimensions (mm)/in		Thread	Number of holes, n	Application (pumps and devices)
		D	d			
Filter 1"	AFNI.061146.002	34,0/ 1,339"	24,0/ 0,945"	1" LP- 11/2	102	15-125 THM 20-106 RHAM, RHAC, RHBC 25-106 RHAM, RHAM-T 25-106 RHAC 20-125 RHAM, RHAC, RHBC 25-125 RHAM, RHAM-T 25-125 RHAC 25/20-... RHM-T, RHBC KOH-1.00, KOH-2.00, KOH-3.00
Filter 1 1/4"	AFNI.061146.003	42,5/ 1,673"	32,0/ 1,26"	1 1/4" LP- 11/2	153	20-106 RHBM, 20-125 RHBM (в башмак 32756) 25-106 RHBC 25-125 RHBC 25-150 RHAM, RHAC, RHBC 25-175 RHAM, RHAC, RHBC 25-106 THM-C(-CЛ) 20-125 THM 25-125 THM (-K,-T,-C,-CC,-CЛ) 25-150 THM-C (-CЛ,-CC) 20-175 THM (THM-A) 25-175 THM (-K,-T,-C,-CC,-CЛ,-A,-TA,-CA, -CЛA,-CCA) 25-225 THM-CA (SP2083-4...)
Filter 1 1/2"	AFNI.061146.005	48,3/ 1,9"	40,3/ 1,587"	1 1/2" LP- 11/2	204	25-106 RHBM, 25-125 RHBM, 25-150 RHBM, 25-175 RHBM (в башмак 32757) 20-175 THC 25-125 THM-CCV 25-150 THM-CCV 25-175 THM-CCVA 25-225 THM (-K,-T,-C,-CC,-CЛ,-CA) 30-275 THM-C (CC)
Filter 2"	AFNI.061146.006	60,3/ 2,38"	50,3/ 1,980"	2" LP- 11/2	204	30-225 RHBM (в башмак 32758) 25-225 THC 30-275 THM (-K,-T)

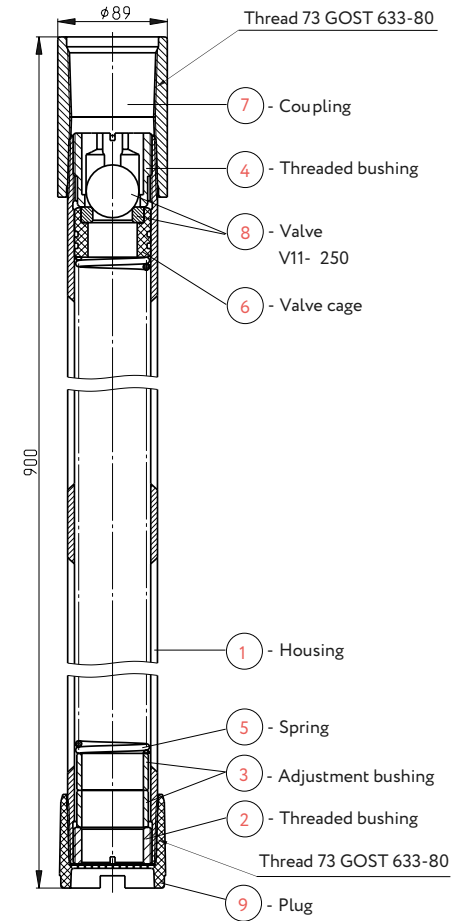


FSP-73/89 SPRING FILTER

Spring Filter is intended for protection of sucker rod pumps from mechanical impurities of a definite size. It is installed below SRP on the tubing .

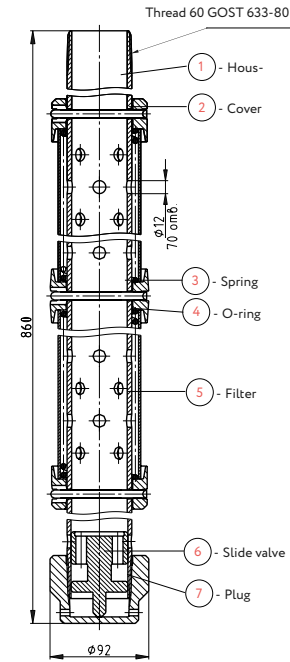
Filter allows:

- to separate particles of a definite size by adjustment of clearance between spring turns (a filtering element) from 0,2 to 0,8 mm with the help of Bushing pos.4 and one, two or none bushings pos.3;
- to clean the spring (a filtering element) during axial movement of the valve (ball and seat) impacting on the spring during operation of the sucker rod pump.



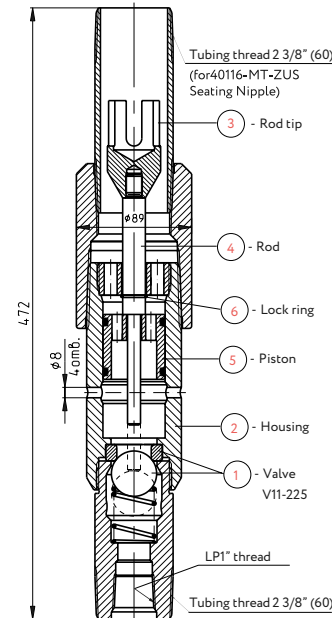
FS-60/92 WELL STRAINER

Well Strainer is intended for cleaning of well fluid from mechanical impurities. A grid fixed in a metal cage is used as a filtering element. Fluid passes through the grid and Ø12 holes to the pump suction. In case of strainer clogging, a slide valve is activated, and fluid passes to the pump suction without cleaning. The well strainer is installed on the tubing below SRP.



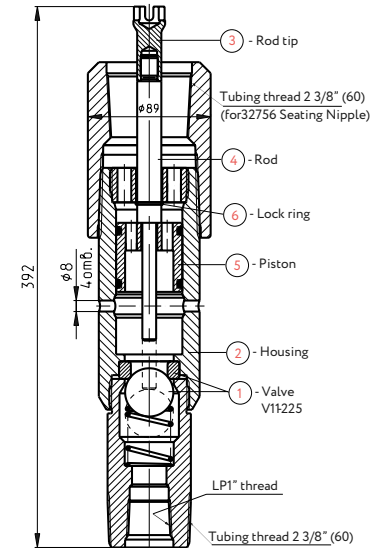
KON-1.00 SHUTDOWN VALVE (FOR 25/20-106 RHM-T, 25/20-125 RHM-T, 25/20-150 RHM-T, 25/20-175 RHMT ROD PUMPS)

Shutdown Valve is intended for well repair without well killing in case of pump re-placement without tubing POOH. It is installed below 40116-MT-ZUS Seating Nipple. Before the first pump RIH, Valve1 with spring-loaded ball is closed; fluid passes to internal space of the tubing through Ø8 side holes in the Housing 2. After pump RIH and setting in the Seating Nipple, the pump presses on Rod Tip 3, Rod 4 moves Piston 5, closing the side holes, and opens Valve1, thus providing fluid suction during pump operation. After pump POOH, Piston 5 remains in the same position (side holes are closed), while spring-loaded ball closes the valve under formation pressure, and Rod 4 moves freely upward (Lock Ring 6 works as a thrust). During the next pump RIH, Valve is opened again with the Rod 4.



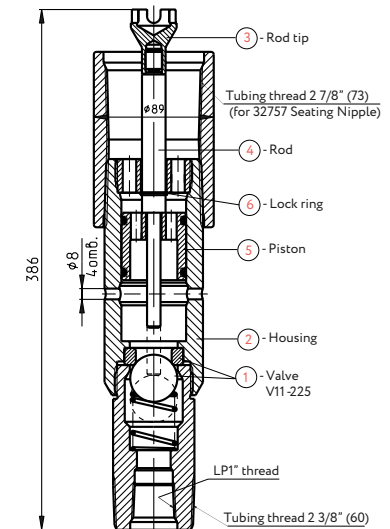
KON-2.00 SHUTDOWN VALVE (FOR 20-106 RHBM AND 20-125 RHB ROD PUMPS)

Installed below 32756 Seating Nipple. Purpose and operation are similar to KON-1.00 Shutdown Valve.



KON-3.00 SHUTDOWN VALVE (FOR (25-106 RHBM, 25-125 RHBM, 25-150 RHBM, 25-175 RHBM ROD PUMPS)

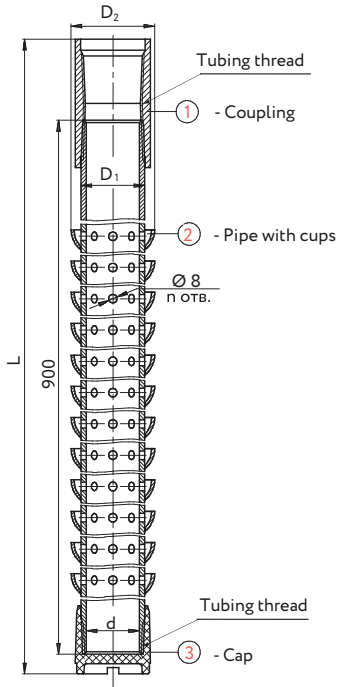
Installed below 32757. Purpose and operation are similar to KON-1.00 and KON2.00 Shutdown Valve.



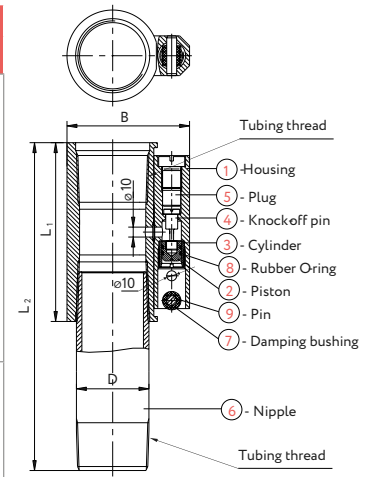
Designation	Drw No.	Parts		Dimensions (mm)/in				Thread	Number of holes, n
		Pos.	Drw No.	L	D ₁	D ₂	d		
Gas Anchor 2 3/8"(60)	AFNI. 611613.001	1	01661	1010/ 39,764"	60,3/ 2 3/8"	79/ 3,110"	51,8/ 2,039"	2 3/8"- 10NURD (60)	96
		2	-						
		3	F116-01A						
Gas Anchor 2 7/8"(73)	AFNI. 611613.002	1	01662	1020/ 40,157"	73,0/ 2 7/8"	94/ 3,701"	62,0/ 2,441"	2 7/8"- 10NURD (73)	120
		2	-						
		3	F116-02A						
Gas Anchor 3 1/2"(89)	AFNI. 611613.003	1	01663	1030/ 40,551"	88,9/ 3 1/2"	109/ 4,291"	77,9/ 3,067"	3 1/2"- 10NURD (89)	144
		2	-						
		3	F116-03A						

Note.

For gas separation, up to three Gas Anchors connected with each other are used. They are screwed to the tubing string below the pump (for pumps with top lock) or on the seating nipple (for pumps with bottom lock) being themselves as the external suction pipe. The tubing plugged with a cap is connected to the lower gas anchor, and internal suction pipe coming into the lower (plugged) tubing is screwed in the pump suction. Internal suction pipe is not supplied.



Tubing	Drw No. клапана	Parts		Dimensions (mm)/in				Thread
		Pos.	Drw No.	D	B	L ₁	L ₂	
73,0 mm (2 7/8")	СКОК-50-H	1	СКОК-60-H	73/2 7/8"	123/ 4,843"	180/ 7,087"	330/ 12,992"	2 7/8"- 10NURD (73)
		2	СКОК-01-H					
		3	СКОК-02-H					
		4	СКОК-03-H					
		5	СКОК-04-H					
		6	СКОК-05-H					
		7	СКОК-06-H					
		8	014-018-25-2-2 ГОСТ18829-73 2.10x40					
		9	ГОСТ3128-70					
88,9 mm (3 1/2")	СКОК-70-H	1	СКОК-80-H	88,9/ 3 1/2"	142/ 5,591"	180/ 7,087"	330/ 12,992"	3 1/2"- 10NURD (89)
		2	СКОК-01-H					
		3	СКОК-02-H					
		4	СКОК-03-H					
		5	СКОК-04-H					
		6	СКОК-35-H					
		7	СКОК-06-H					
		8	014-018-25-2-2 ГОСТ18829-73 2.10x40					
		9	ГОСТ3128-70					

**Note.**

Drain Valve is used for fluid drain from the tubing during tubing pump dismantle. Valve is installed on the pump upper coupling or in the tubing above the pump. To drain the fluid, excessive pressure is injected in to the string, the neck of a knock-off pin is broken, after that the piston is knocked out from the barrel till pin thrust, thus opening drain holes in the housing. Knock-off pin is supplied in 3 pcs in the set of spare parts.

Valve activating pressure—from 100 till 210 kgf/cm².

Necessary activating pressure shall be indicated in the order.

AUTOMATIC COUPLING DEVICE

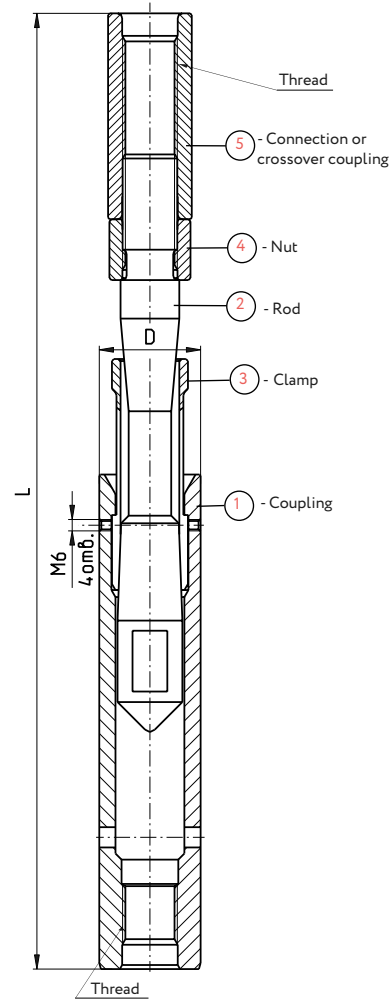
Automatic Coupling Device is intended for connection of sucker rod string with the pump installed in the well.

Automatic Coupling Device allows running tubing pumps assembled with the plunger, and rod pumps together with the tubing string. This prevents from valve clogging and damaging of tubing pump plungers, provides tightness of rod pump setting in the seating nipple, because the pump is set in the seating nipple before RIH.

Lower part of the device (Coupling pos.1) is set on the plunger or on the valve rod before pump RIH. After pump RIH, the upper part of the Device with the clamp is run on the sucker rod string until it connects with the coupling of the Device, thus providing connection of sucker rod string with the pump plunger.

Automatic Coupling Device is supplied in open position.

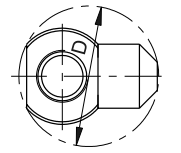
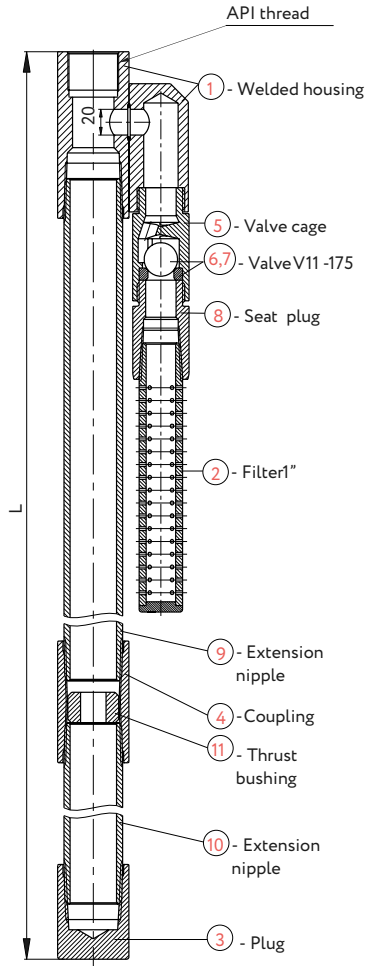
Tubing	Designation and Drw No.	Parts		Dimensions (mm)/in		Thread
		Pos.	Drw No.	D	L	
60,3 mm (2 3/8")	AFNI.303671.016 (AC-19/60)	1	AFNI.715164.001	42/ 1,654"	477/ 18,780"	Sh19
		2	AFNI.716713.003			
		3	AFNI.723236.002			
		4	AFNI.758441.006			
		5	AFNI.715163.004			
73,0 mm (2 7/8")	AFNI.303671.012 (AC-19/73)	1	AFNI.715364.001	50/ 1,969"	473/ 18,622"	Sh19
		2	AFNI.716713.001			
		3	AFNI.723236.001			
		4	AFNI.758459.003			
		5	MШ19			
73,0 mm (2 7/8")	AFNI.303671.015 (AC-22/89)	1	AFNI.715362.003	50/ 1,969"	473/ 18,622"	Sh22
88,9 mm (3 1/2")		2	AFNI.716713.001			
		3	AFNI.723236.001			
		4	AFNI.758459.003			
		5	AFNI.715163.003			



SIDE STANDING VALVE (FOR REWORK OF 25-125 THM-T AND 25-175 THM-T TUBING PUMPS)

It is installed below the pump barrel instead of its bottom part with the standing valve. It is intended for elimination of impact of dead space and gas on pump operation due to capability to move the plunger with the traveling valve below BVK standing valve.

Drw No.	Parts		Dimensions (mm)/in		Thread API
	Pos.	Drw No.	L	D	
BVK-32.00 (with SS valve) or BVK-32.00-01 (with ST valve)	1	BVK-32.10	1090/ 42,913"	109/ 4,291"	Ø39,954-16
	2	AFNI.061146.001			
	3	01411-H			
	4	01413			
	5	11204-H			
	6,7	14004 (SS) or 14894 (ST)			
	8	23102			
	9	26056			
	10	26056-M			
	11	46001-H			
	BVK-44.00 (with SS valve) or BVK-44.00-01 (with ST valve)	1			
2		AFNI.061146.001			
3		01531-H			
4		01661			
5		11204-H			
6,7		14004 (SS) or 14894 (ST)			
8		23102			
9		26059			
10		26059-H			
11		46002-H			



**GAS-SAND ANCHOR
GPYAN-73**

Gas-Sand Anchor consists of Couplings pos.1, 4 and 6, Suction Pipe pos.7, Crossover Subs po 8, Jacket pos.9, Pipes pos.3 and 10, Plug pos.11 и Spiral pos.5.

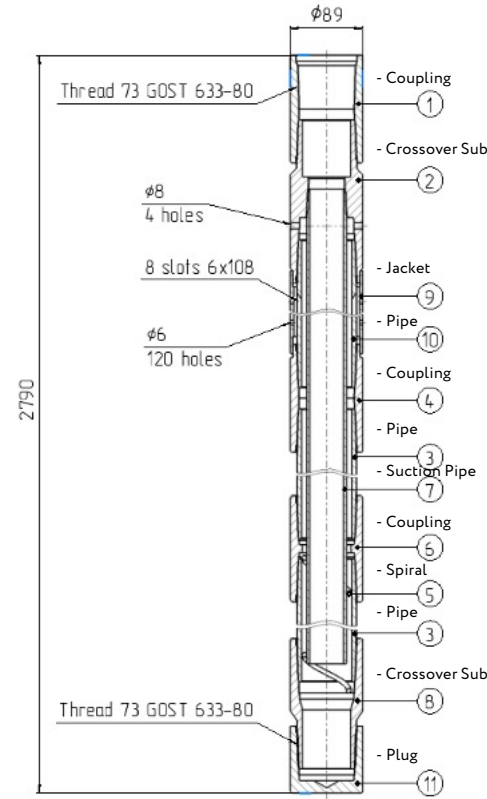
Produced fluid enters into internal cavity of Gas-Sand Anchor through the holes in Jacket pos.9. ing into Pipe pos.10, the fluid is directed downwards very slowly between the walls of Pipe pos.3 and tion Pipe pos.7, allowing gas which is contained in the fluid to move upward contra-stream and to

through the holes in Crossover Sub pos.2 into the annulus. Then, the fluid enters the sand Spiral pos the Sand Spiral, the fluid moves over the circle downward, and sand is depositing in the collector. W fluid enters into Suction Pipe pos.7 with open bottom, the fluid turns on 180o, providing additional sep of mechanical particles due to inertia and gravity forces. The fluid enters into the pump through the cavity of Suction Pipe pos.7. Separated impurities are gathered in the collector.

Installation instructions during running into the well:

-Gas-Sand Anchor is installed below Seating Nipple of a rod pump, or below tubing pump. Whe essary, a pipe or a nipple of tubing 73 mm can be installed between Seating Nipple and Coupling

When the fluid contains sand and other mechanical particles, tubing 73 mm can be installed be bottom Crossover Sub pos.8 and Plug pos.11 as a collector of mechanical



APPENDICES

**APPENDIX 1.
TECHNICAL SPECIFICATIONS FOR API-11AX SUCKER ROD PUMPS**

Pump Type	API Designation	Pump bore, mm/in
Rod pumps with top mechanical seating assembly	20-106 RHAM	27/1 1/16"
	20-125 RHAM	31,8/1 1/4"
	25-150 RHAM	38,1/1 1/2"
	25-175 RHAM	44,5/1 3/4"
Rod pumps with bottom mechanical seating assembly	20-106 RHBM	27/1 1/16"
	20-125 RHBM	31,8/1 1/4"
	25-150 RHBM	38,1/1 1/2"
	25-175 RHBM	44,5/1 3/4"
Tubing pumps	30-225 RHBM	57,2/2 1/4"
	20-125 THM	31,8
	20-175 THM	44,5
	25-225 THM	57,2
	30-275 THM	69,9

Plunger stroke

Plunger stroke of API pumps is defined by lengths of Barrel, Plunger and Extension nipples (ref. to "Stroke length of SRP Plunger").

Head

API-11AX pumps are manufactured with Plungers 4 ft (length of working area is 1295 mm), 5 ft (length of working area is 1600 mm) and 6 ft (length of working ar- ea is1905 mm), that corresponds to head up to 1500 m (4921'), 2000 m (6562') and 2200 m (7218').

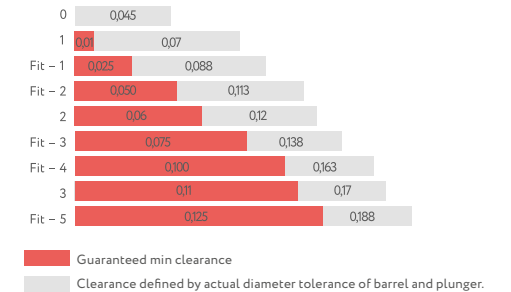
Pump valve designs:

Standing and traveling valves in all types of API-11AX pumps are single. Under customer request, pumps with double valves can be supplied.

Plunger clearance, mm

API Pumps

- Fit-1 – 0,025 ÷ 0,088 mm (0,001 ÷ 0,0035 in)
- Fit-2 – 0,050 ÷ 0,113 mm (0,002 ÷ 0,0044 in)
- Fit-3 – 0,075 ÷ 0,138 mm (0,003 ÷ 0,054 in)
- Fit-4 – 0,100 ÷ 0,163 mm (0,0049 ÷ 0,064 in)
- Fit-5 – 0,125 ÷ 0,188 mm (0,0049 ÷ 0,0074 in)
- Fit-6 – 0,150 ÷ 0,213 mm (0,0059 ÷ 0,0084 in)
- Fit-7 – 0,175...0,238 mm (0,069 ÷ 0,0094 in)



Plunger clearance is ensured by close manufacturing tolerances on plunger (D-0,013) and barrel (D+0,05). Max total tolerance is 0,063 mm (0.002 in).

APPENDIX 2. ORDER SHEET (FOR PUMPS AND SEATING NIPPLES)

1. PUMP TYPES:

- Tubing pumps (TH)
- Rod pumps with heavy-wall stationary Barrel and metal plunger (RH)

2. PUMP BORE, MM/IN :

27,0 / 1 1/16" (106) – RH; TH
 31,8 / 1 1/4" (125) – RH; TH
 38,1 / 1 1/2" (150) – RH; TH
 44,5 / 1 3/4" (175) – RH; TH; RHTM
 57,2 / 2 1/4" (225) – TH; RHBM
 69,9 / 2 3/4" (275) – TH
 95,3 / 3 3/4" (375) -

3. TUBING NOMINAL DIAMETER, MM/IN:

48,3/1,9" (15) - TH-125
 60,3 / 2 3/8" (20) – RH-106, 125; TH – 125, 175
 73,0 / 2 7/8" (25) – RH-106, 125, 150, 175; TH – 125, 150, 175, 225
 88,9 / 3 1/2" (30) – TH-275, RHBM-225; RHBM-225/150

4. SEATING ASSEMBLY OF RH ROD PUMPS:

- Top (A) – mechanical (M)
- as per API 11AX (RHAM);
- special "Cone-in-Cone" type(RHAM);
- cup (C) as per API 11AX (RHAC);
- Bottom (B) – mechanical (M) as per API 11AX (RHBM);
- cup (C) as per API 11AX (RHBC)
- Special with API top mechanical seating assembly set in the bottom part of the pump (pumps 25/20-106 (125, 150, 175) RHM-T)

5. SEATING NIPPLES FOR ROD PUMPS – PLEASE REFER TO THE SECTION «DEVICES USED WITH SRP».

6. SEATING ASSEMBLIES FOR TUBING PUMP STANDING VALVES:

- mechanical (M)
- as per API 11AX (THM);
- special "Cone-in-Cone" type (THM-K);
- Cup (C) as per API 11AX (THC);
- Special with non-fishable increased standing valve (THM-T, THM-C).

7. PLUNGER STROKE (COMBINATION OF BARREL, PLUNGER, AND EXTENSION NIPPLES LENGTHS)- PLEASE REFER TO THE SECTION "SRP PLUNGER STROKE LENGTH".

8. PLUNGER CLEARANCE:

Fit – 1 (clearance 0,025 ÷ 0,088 mm / 0,001 ÷ 0,0035 in);
 Fit – 2 (clearance 0,050 ÷ 0,113 mm / 0,002 ÷ 0,0044 in);
 Fit – 3 (clearance 0,075 ÷ 0,138 mm / 0,003 ÷ 0,0054 in);
 Etc.

9. BARREL:

- Alloy steel with ion nitriding (HN);
- Carbon steel with hard chrome plate (CR).

10. PLUNGER:

Plunger length:
 - 4' (1295 mm) – head up to 1500 m (4921');
 - 5' (1600 mm) – head up to 2000 m (6562');
 - 6' (1905 mm) – head up to 2200 m (7218')
 - 9' (2819 mm) and 10'(3124 mm) – for special tubing pumps;
 Plunger design:
 - grooved;
 - non-grooved (only as spare parts);
 Plunger materials:
 -Sprayed with hard alloy (T).

11. VALVES (STANDING AND TRAVELING):

Design:
 - single (with open or closed valve cage);
 - double (with closed valve cage);
 Ball:
 - standard diameter;
 - reduced diameter;
 Material (ball, seat):
 - stainless steel 95X18 (SS);
 - cobalt alloy - Stellite (ST);
 - carbide (TC1, TC3).

12. ROD GUIDE OF ROD PUMPS:

- standard design with sand sleeve;
- with additional external thread.

13. FISHING BUSHING OF TUBING PUMPS:

- standard design;
- with additional side hole.

14. ADDITIONAL DEVICES USED WITH PUMPS:

- Safety filters;
- Gas anchor (without internal suction pipe);
- Automatic coupling device;
- SKOK Drain valve (for THM-T Tubing Pumps);
- KON Shutdown valve (for RHM-T and RHBM pumps);
- BVK Side Suction Valve (for THM-T Tubing Pump).

1. ROD PUMP WITH THE BORE 31,8 MM (1 1/4"), WITH API TOP MECHANICAL SEATING ASSEMBLY, POLISHED ROD STROKE LENGTH—MAX 2,5 M (8,2 FT), PLUNGER LENGTH - 4" (HEAD UP TO 1500 M (4921)'), PLUNGER CLEARANCE FIT-2, WITH A SINGLE STANDING AND TRAVELING VALVES (BALL WITH STANDARD OD), ROD GUIDE WITHOUT EXTERNAL THREAD, WITH THE SEATING NIPPLE FOR OPERATION IN THE TUBING 60,3 MM (2 3/8"), WITH SAFETY FILTER AND AUTOMATIC COUPLING DEVICE:

20-125 RHAM Rod Pump 12-4-1,5-1,5 Filter 1" and automatic coupling device AS19/ 60, Plunger clearance - Fit - 2, 40116 - ZUS Seating nipple.

2. THE SAME FOR OPERATION IN THE TUBING 73,0 MM (2 7/8"):

20- 125 RHAM Rod Pump 12-4-1,5-1,5 with the filter 1" and automatic coupling device AC19/73, plunger clearance - Fit-2, 40116-M-ZUS Seating nipple .

3. THE SAME FOR SPECIAL PUMP SEATING ASSEMBLY ("CONE-IN-CONE" TYPE), WITH ONE PIECE SEATING NIPPLE, FOR OPERATION IN THE TUBING 73,0 MM (2 7/8"), WITHOUT AUTOMATIC COUPLING DEVICE:

25-125 RHAM Rod Pump 12-4-1,5-1,5 with the filter 1", plunger clear-ance - Fit - 2, 32001-M Seating nipple .

4. TUBING PUMP WITH THE BORE 44,5 MM, FOR OPERATION IN THE TUBING 60,3 MM (2 3/8"), WITH STANDARD FISHING DEVICE, POLISHED ROD STROKE - MAX 3,0 M ((9.8)'), PLUNGER LENGTH - 4' (HEAD UP TO 1500 M (4921)'), PLUNGER CLEARANCE - FIT-3, C WITH SAFETY FILTER AND AUTOMATIC COUPLING DEVICE:

20-175 THM Tubing Pump 11-4-2-3 with the filter 1 1/4" automatic cou-pling device AC19/ 60, plunger clearance - Fit-3.

5. THE SAME FOR OPERATION IN THE TUBING 73,0 MM (2 7/8"), WITHOUT FILTER AND AUTOMATIC COUPLING DEVICE:

25-175 THM Tubing Pump 11-4-2-3, plunger clearance - Fit-3.

6. TUBING PUMP WITH THE BORE 44,5 MM , FOR OPERATION IN THE TUBING 73,0 MM (2 7/8"), WITH NON-FISHABLE STANDING VALVE, LONG PLUNGER (10') AND A SIDE HOLE IN THE BARREL, POLISHED ROD STROKE - MAX 3,0 M ((9.8)'), PLUNGER CLEARANCE - FIT-2, WITHOUT FILTER AND AUTOMATIC COU-PLING DEVICE:

25-175 THM-T Tubing Pump 11-10-2-2, plunger clearance - Fit-2.

7. THE SAME WITH THE PLUNGER 4' AND KNOCK-OFF SCREW IN THE CAGE OF A SINGLE NON FISHBLE STANDING VALVE, WITH SAFETY FILTER:

25-175 THM-C Tubing Pump 11-4-2-2 with the filter 1 1/4" , plunger clearance -Fit-2.

ADDITIONALLY, THE ORDER SHALL INDICATE MATERIALS OF THE BARREL, PLUNGER AND VALVES, EX-AMPLE:

- Barrel - HN;
- Plunger - T;
- Valve (ball and seat) - ST.

APPENDIX 3.

SRP PLUNGER STROKE LENGTH

Plunger stroke length is defined by a pump design and combination of lengths of barrel, plunger and extensions. Approximate max stroke length for each size of standard pumps are shown below, accepting that:

- max plunger stroke length : Plunger is moved out from the barrel into extensions before bottom and top dead centers (please refer to Operation Manual);

- min plunger stroke length : Plunger is not moved out from the barrel into extensions, ends of plunger working section in the upper and lower position coin-cide with the ends of barrel working section.

Because of elastic deformation of sucker rod string and the tubing, plunger stroke length is always less than polished rod stroke length of a pumping unit. Taking into consideration deformation of sucker rod string and the tubing, actual plunger stroke length shall be calculated for each definite well. Depending on pump setting depth, sucker rod string design, tubing diameter, plunger stroke length is less than polished rod length on 200-500 mm .

1. ROD PUMPS

1.1. 20(25)-106 RHAM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-1,5-1,5	1450/57"	770/30"	1,2-0,9/47"-35"
8-4-1,5-1,5	1755/69"	1075/42"	1,5-1,2/59"-47"
9-4-1,5-1,5	2060/81"	1380/54"	1,8-1,5/71"-59"
10-4-1,5-1,5	2365/93"	1685/66"	2,1-1,8/83"-71"
10-4-2-2	2670/105"	1685/66"	2,5-1,8/98"-71"
12-4-1,5-1,5	2975/117"	2295/90"	2,8-2,5/110"-98"
12-4-2-2	3280/129"	2295/90"	3,0-2,5/118"-98"
14-4-1,5-1,5	3585/141"	2905/114"	3,0/118"
14-4-2-2	3890/153"	2905/114"	3,5-3,0/138"-118"

1.2. 20(25)-125 RHAM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-1,5-1,5	1450 / 57"	750 / 30"	1,2-0,9 / 47" - 35"
8-4-1,5-1,5	1755 / 69"	1055 / 42"	1,5-1,2 / 59" - 47"
9-4-1,5-1,5	2060 / 81"	1360 / 54"	1,8-1,5 / 71" - 59"
10-4-1,5-1,5	2365 / 93"	1665 / 66"	2,1-1,8 / 83" - 71"
10-4-2-2	2670 / 105"	1665 / 66"	2,5-1,8 / 98" - 71"
12-4-1,5-1,5	2975 / 117"	2275 / 90"	2,8-2,5 / 110" - 98"
12-4-2-2	3280 / 129"	2275 / 90"	3,0-2,5 / 118" - 98"
14-4-1,5-1,5	3585 / 141"	2885 / 114"	3,0 / 118"
14-4-2-2	3890 / 153"	2885 / 8114"	3,5-3,0 / 138" - 118"
14-5-1,5-1,5	3280 / 129"	2580 / 102"	3,0-2,8 / 118" - 110"

1.3. 25-150 RHAM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-1,5-1,5	1425 / 56"	750 / 30"	1,2-0,9 / 47" - 35"
8-4-1,5-1,5	1730 / 68"	1055 / 42"	1,5-1,2 / 59" - 47"
9-4-1,5-1,5	2035 / 80"	1360 / 54"	1,8-1,5 / 71" - 59"
10-4-1,5-1,5	2340 / 92"	1665 / 66"	2,1-1,8 / 83" - 71"
10-4-2-2	2645 / 104"	1665 / 66"	2,5-1,8 / 98" - 71"
12-4-1,5-1,5	2950 / 116"	2275 / 90"	2,8-2,5 / 110" - 98"
12-4-2-2	3255 / 128"	2275 / 90"	3,0-2,5 / 118" - 98"
14-4-1,5-1,5	3560 / 140"	2885 / 114"	3,0 / 118"
14-4-2-2	3865 / 152"	2885 / 114"	3,5-3,0 / 138" - 118"
14-5-1,5-1,5	3255 / 128"	2580 / 102"	3,0-2,8 / 118" - 110"

1.4. 25-175 RHAM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-1,5-1,5	1400 / 55"	750 / 30"	1,2-0,9 / 47" - 35"
8-4-1,5-1,5	1705 / 67"	1055 / 42"	1,5-1,2 / 59" - 47"
9-4-1,5-1,5	2010 / 79"	1360 / 54"	1,8-1,5 / 71" - 59"
10-4-1,5-1,5	2315 / 91"	1665 / 66"	2,1-1,8 / 83" - 71"
10-4-2-2	2620 / 103"	1665 / 66"	2,5-1,8 / 98" - 71"
12-4-1,5-1,5	2925 / 115"	2275 / 90"	2,8-2,5 / 110" - 98"
12-4-2-2	3230 / 127"	2275 / 90"	3,0-2,5 / 118" - 98"
14-4-1,5-1,5	3535 / 139"	2885 / 114"	3,0 / 118"
14-4-2-2	3840 / 151"	2885 / 114"	3,5-3,0 / 138" - 118"
14-5-1,5-1,5	3230 / 127"	2580 / 102"	3,0-2,8 / 118" - 110"

Notes.

1. Max plunger stroke length of RHBM, RHAC, RHBC pumps is almost equal to the stroke lengths of the corresponding RHAM pumps (difference is 20 mm max).

2. TUBING PUMPS

2.1. 20(25)-125 THM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-2-2	1680 / 66"	750 / 30"	1,5-0,9 / 59" - 35"
8-4-2-2	1985 / 78"	1055 / 42"	1,8-1,2 / 71" - 47"
9-4-2-2	2290 / 90"	1360 / 54"	2,1-1,5 / 83" - 59"
10-4-2-2	2595 / 102"	1665 / 66"	2,5-1,8 / 98" - 71"
11-4-2-2	2900 / 114"	1970 / 6,01'	2,8-2,1 / 110" - 83"
11-4-2-3	3205 / 126"	1970 / 6,01'	3,0-2,1 / 118" - 83"
14-4-2-2	3815 / 150"	2885 / 114"	3,5-3,0 / 138" - 118"

2.2. 20(25)-175 THM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-2-2	1565 / 62"	740 / 29"	1,5-0,9 / 5' - 2.7'
8-4-2-2	1870 / 74"	1045 / 41"	1,8-1,2 / 5.5' - 4'
9-4-2-2	2175 / 86"	1350 / 53"	2,1-1,5 / 6.4' - 5'
10-4-2-2	2480 / 98"	1655 / 65"	2,1-1,8 / 6.4' - 5.5'
11-4-2-2	2785 / 110"	1960 / 77"	2,5-2,1 / 8.2' - 6.4'
11-4-2-3	3090 / 122"	1960 / 77"	3,0-2,1 / 9.8' - 6.4'
14-4-2-2	3700 / 146"	2875 / 113"	3,5-3,0 / 11.5' - 9.8'

2.3. 25-225 THM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
7-4-2-2	1510 / 59"	740 / 2,26'	1,5-0,9 / 59" - 35"
8-4-2-2	1815 / 71"	1045 / 3,19	1,8-1,2 / 71" - 47"
9-4-2-2	2120 / 83"	1350 / 4,12'	2,1-1,5 / 83" - 59"
10-4-2-2	2425 / 95"	1655 / 5,05'	2,1-1,8 / 83" - 71"
11-4-2-2	2730 / 107"	1960 / 5,98'	2,5-2,1 / 98" - 83"
11-4-2-3	3035 / 119"	1960 / 5,98	3,0-2,1 / 118" - 83"
14-4-2-2	3645 / 144"	2875 / 8,77'	3,5-3,0 / 138" - 118"

2.3. 25-225 THM X-X-X-X

X-X-X-X	Max plunger stroke length, mm/in	Min plunger stroke length, mm/in	Polished rod stroke, m/in
8-4-2-2	1740 / 69"	1045 / 41"	1,5-1,2 / 59" - 47"
10-4-2-2	2350 / 93"	1655 / 65"	2,1-1,8 / 83" - 71"
11-4-2-2	2655 / 105"	1960 / 77"	2,5-2,1 / 98" - 83"
11-4-2-3	2960 / 117"	1960 / 77"	3,0-2,1 / 118" - 83"
14-4-2-2	3570 / 141"	2875 / 113"	3,5-3,0 / 138" - 118"

Note.

1. Max plunger stroke length of pumps with non-fishable standing valve (THM-T, THM-C, THM-CA, THM-СЛ, THM-CC pumps) is at the average 1 ft (305 mm) more than stroke length of the corresponding THM and THM-K pumps.

PLUNGER CLEARANCE, MM

API Pumps

Fit-1 – 0,025 ÷ 0,088 mm (0,001 ÷ 0,0035 in)	Fit-5 – 0,125 ÷ 0,188 mm (0,0049 ÷ 0,0074 in)
Fit-2 – 0,050 ÷ 0,113 mm (0,002 ÷ 0,0044 in)	Fit-6 – 0,150 ÷ 0,213 mm (0,0059 ÷ 0,0084 in)
Fit-3 – 0,075 ÷ 0,138 mm (0,003 ÷ 0,054 in)	Fit-7 – 0,175...0,238 mm (0,069 ÷ 0,0094 in)
Fit-4 – 0,100 ÷ 0,163 mm (0,0049 ÷ 0,064 in)	

Plunger clearance is ensured by close manufacturing tolerances on plunger (D – 0,013) and barrel (D + 0,05). Max total tolerance is 0,063 mm (0.002 in).

APPENDIX 4.
MAIN UNITS AND DEVICES USED WITH SRP

Pump type	Seating Nipple, tubing thread (API)	Safety Filter, LP thread (API)	Automatic Coupling Device (sucker rod thread and tubing diameter)
20-106 RHAM 20-125 RHAM (API seating assembly)	40116-ZUS (2 3/8") or 40116-M-ZUS (2 7/8") or 40116-T-ZUS (2 3/8" и 2 7/8") or 40116-MT-ZUS (2 7/8" и 2 3/8")		AFNI.303671.016 (AC-19/60) or AFNI.303671.012 (AC-19/73)
25/20-106 RHM-T 25/20-125 RHM-T 25/20-150 RHM-T 25/20-175 RHM-T(-ТП) (API top seating assembly installed in the bottom part of the pump)	40116-MT-ZUS (2 7/8" и 2 3/8")	AFNI.061146.002 (1")	AFNI.303671.012 (AC-19/73)
25-106 RHAM 25-125 RHAM (special seating assembly in the cone)	32001-M or 32001-KM (one-piece 2 7/8") or 40116-KM-ZUS (assembled 2 7/8")		
25-106 RHAM-T 25-125 RHAM-T 25-150 RHAM 25-175 RHAM (RHAM-П) (API seating assembly)	40117-ZUS (2 7/8") or 40117-T-ZUS (2 7/8" и 3 1/2")		AFNI.303671.012 (AC-19/73)
25-150 RHAM 25-175 RHAM (special seating assembly in the cone)	32002-M or 32002-KM (one-piece 2 7/8") or 40117-KM-ZUS (assembled 2 7/8")	AFNI.061146.003 (1 1/4")	
20-106 RHBM 20-125 RHBM	32756 (2 3/8")	AFNI.061146.003 (1 1/4") to Seating Nipple	AFNI.303671.016 (AC-19/60)
25-106 RHBM 25-125 RHBM 25-150 RHBM 25-175 RHBM	32757 (2 7/8")	AFNI.061146.005 (1 1/2") to Seating Nipple	AFNI.303671.012 (AC-19/73)
30-225 RHBM 30-225/150 RHBM	32758 (3 1/2")	AFNI.061146.006 (2") to Seating Nipple	
20-106 RHAC 20-106 RHBC 20-125 RHAC 20-125 RHBC 20-150 RHBC	32521 (2 3/8")	AFNI.061146.002 (1")	AFNI.303671.016 (AC-19/60)

Pump type	Seating Nipple, tubing thread (API)	Safety Filter, LP thread (API)	Automatic Coupling Device (sucker rod thread and tubing diameter)
25-106 RHAC 25-125 RHAC		AFNI.061146.002 (1")	
25-106 RHBC 25-125 RHBC 25-150 RHAC 25-150 RHBC 25-175 RHAC 25-175 RHBC	32522 (2 7/8")		AFNI.303671.012 (AC-19/73)
15-125 THM			-
20-125 THM	-		
25-125 THM (THM-K,- T,-C,-СЛ)	-	AFNI.061146.003 (1 1/4") (for 15-125 THM -AFNI.061146.002 (1"); for 25-175 THC - AFNI.061146.005 (1 1/2"))	AFNI.303671.012 (AC-19/73), besides THM and THM-K
25-150 THM-C (-СЛ)	-		AFNI.303671.012 (AC-19/73)
20-175 THM (THM-A)	-		-
25-175 THM (THM-A,- K,-KA,-T, -TA,-C,-CA,-СЛ, -СЛА, -СП, -СПА) 25-175 THC (THC-A)	-		AFNI.303671.016 (AC-19/60) or AFNI.303671.012 (AC-19/73), instead of THM, THM-A, THM-K, THM-KA, THC, THC-A
25-225 THM-CA (only SP2083-4...CA)	-		AFNI.303671.012 (AC-19/73), instead of THM and THM-K
25-225 THM (THM-K,- T,-C,-CA, -СЛ, -СП, -СПА)	-	AFNI.061146.005 (1 1/2")	
30-275 THM (THM-T)	-	AFNI.061146.006 (2")	AFNI.303671.015 (AC-22/89), instead of THM
30-275 THM-C	-	AFNI.061146.005 (1 1/2")	

Note.
Compliance of API tubing thread with GOST 633-88 tubing thread:

1,9" - 48
2 3/8" - 60
2 7/8" - 73
3 1/2" - 89

BOREHOLE MIXER SS-89

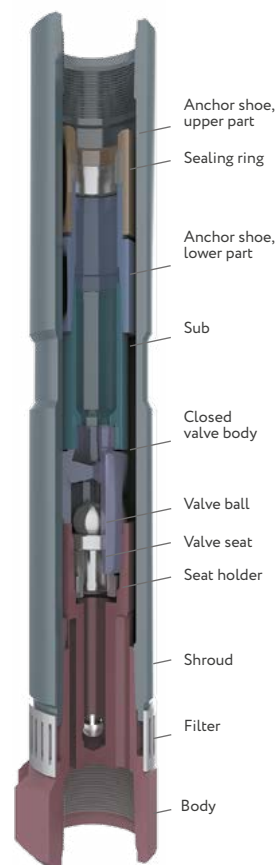
Advantages:

- A filter protecting from mechanical impurities is installed at the sucker rod pump intake;
- Compared to analogs, a valve pair with an increased flow area is used.

The mixer design allows the following:

- To mix fluids from two formations separated by a packer, with their dual by one lift with the use of ESP for the lower formation and RHM-T sucker rod pumps for the upper formation;
- to install the pump of the RHM-T type.

Equipment parameters	Value
Connecting thread by GOST 633-80	89
Overall dimensions, mm, not more:	
- diameter of the circumscribed circle	123,5
- length	700
Axial channel diameter (for ESP), mm	17 (6 holes)
Diameter of side channels (for sucker rod pumps), mm	19 (2 holes)
Dimensions of grooves in the filter (for sucker rod pumps), mm	3 × 25 (36 grooves)
Ball and seat (valve V11-225):	
- material	St. steel 95 x 18
- ball diameter, mm	34.925
- inner diameter of the seat, mm	26.570
Weight, kg, no more	27.5
Operating conditions:	
- ambient	Oil, gas, water
- working environment temperature, ° C, no more	100
- head, m, at most	1500



PROTECTIVE FILTERS

Designed to prevent foreign particles larger than 3 mm from entering the pump.

The filter is a pipe with a welded plug and holes with a diameter of 3 mm. An LP connecting thread is cut at the pipe top to match the female thread on the bottom of the pump (or the anchor shoe of RHBM pumps).

Equipment parameters	Value			
	Filter 1"	Filter 1 1/4"	Filter 1 1/2"	Filter 2"
LP thread diameter	1"	1 1/4"	1 1/2"	2"
Outer diameter, mm	34	42,5	48,3	60,3
Inner diameter, mm	24	32	40,3	50,3
Length, mm	210			
Total area of holes Ø 3, mm	720 (102 holes)	1080 (153 holes)	1440 (204 holes)	
Weight, kg, no more	0,75	1,00	0,85	1,50



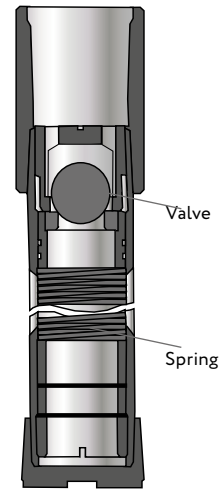
WELL SPRING FILTER FSP-73/89

The filter element is a spring.

The FSP filter is installed in the tubing NKT-73 under the sucker rod pump and is designed to protect the pumps from the ingress of mechanical particles larger than 0.2 ... 0.8 mm. Particle size depends on adjustment of the gap between the spring coils.

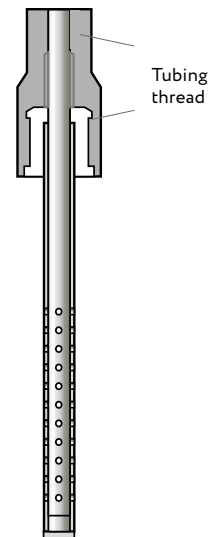
The filter is a self-cleaning unit. The filter element (spring) is cleaned with the axial movement of the valve (ball-and-seat), acting on the spring during operation of the sucker rod pump.

Equipment parameters	Value
Connecting thread	NKT-73
Overall dimensions, mm, not more:	900
- length	89
- diameter	15
Weight, kg, no more	

**SLUDGE CATCHER AFNI.631632.001**

It is installed under the pump and serves to clean the produced fluid from impurities (sludge).

Equipment parameters	Value
Connecting thread by GOST 633-80	NKT-73
Filtering holes:	
- diameter, mm	5
- number	44
- total area, mm ²	860
Overall dimensions, mm	1346x90
Weight, kg	7

**WELL SPRING FILTER FSP-73/105
PATENT NO.123829**

Designed to filter the produced product from foreign inclusions, sand and other mechanical impurities coming from wells.

The filter can be operated as part of downhole pumping equipment.

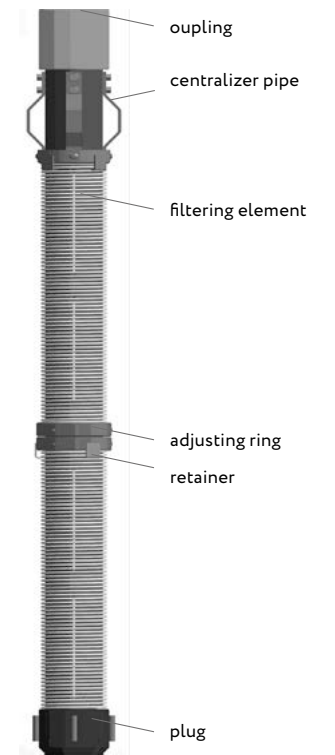
Equipment parameters	Value
Nominal size of the pipe strin	NKT-73
Dimensions of grooves in the filter, mm	3x150 (16 grooves)
Flow area, mm ²	7128
Pipe flow area, mm ²	3017
Overall dimensions, mm	1670x120
Weight, kg	26

GAS ANCHOR

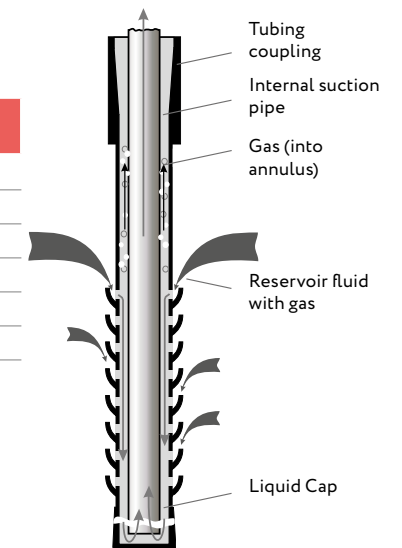
Designed for separating gas from oil when pumping it out with sucker rod pumps.

Typically, up to three interconnected gas anchors are used, screwed onto the tubing under the pump and constituting an external suction pipe. A tubing pipe plugged with a cap is connected to the lower anchor, and an internal suction pipe is screwed into the pump inlet, which goes into the lower (plugged) tubing pipe.

Parameters/Type	Gas anchor 2 3/8" (60)	Gas anchor 2 7/8" (73)	Gas anchor 3 1/2" (89)
Connecting thread by GOST 633-80	NKT-60	NKT-73	NKT-89
Anchor pipe diameter, mm	60,3	73	88,9
Anchor cup diameter, mm	79	94	109
Anchor length, mm	1010	1020	1030
Number of holes Ø 8 mm	96	120	144
Weight, kg, no more	8	12	16



To pump



AUTOMATIC COUPLING DEVICE (AUTO COUPLER)

Designed for coupling a sucker rod string with a pump installed in a well.

The use of an autocoupler allows the following:

- run insert pumps installed in an anchor shoe with tubing string;
- run tubing pumps with a plunger installed in the cylinder.

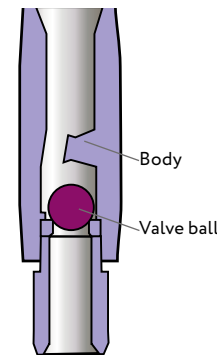
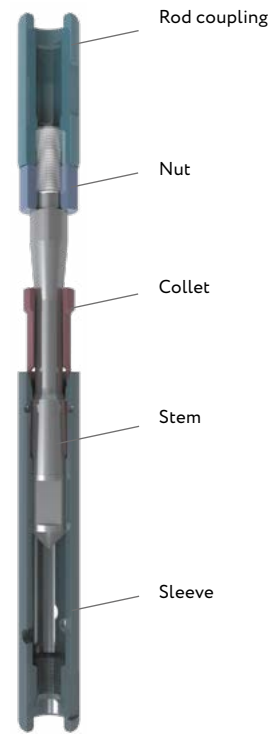
Equipment parameters	Value		
	AC-19/60	AC - 19/73	AC-22/89
Connecting thread by GOST 13877-96	SH19	SH19	SH22
Tubing diameter, mm	60,3	73,0	73,0 89,0
Retaining force, kN	75	100	100
Overall dimensions (in coupling), mm:			
length	477	473	473
- diameter	42	50	50
Weight, kg, no more	3,3	4,3	4,5

PRESSURE TESTING VALVE KO-73

Pressure testing valve KO-73 is designed for interval pressure testing of the tubing string when running the ESP, as well as shutting off the fluid flow when the pump is stopped.

It is used for rodless well operation. Installed in the tubing string above the pump.

Equipment parameters	Value
Tubing diameter, mm	73
Pressure, MPa	15
Overall dimensions, mm, not more:	
- outer diameter	73
- height	264
Weight, kg, no more	5,5



DRAIN VALVE SKOK

A quick-disconnect drain valve is used to drain fluid from the tubing string. When the valve is used in conjunction with a tubing pump with a non-removable suction valve (TNM-T), the valve is installed on the upper pump coupling or built into the tubing string above the pump.

To reuse the valve, a new quick-disconnect bar must be installed. The bars are supplied in spare parts set.

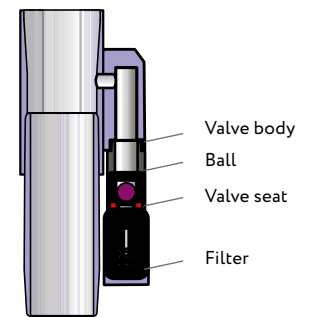
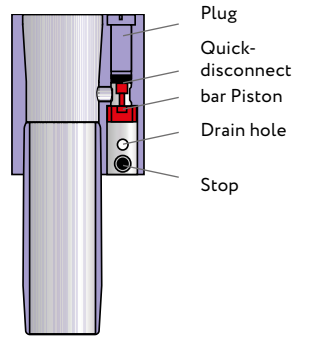
To drain the liquid from the tubing string, when the pump is lifted, the pressure required to operate the valve is created in the string, while the neck of the quick-disconnect bar breaks, after which the valve piston leaves the cylinder, opening the passage for the drained liquid through the holes in the valve body into the annulus.

Equipment parameters	Value	
	SKOK-50-H	SKOK-70-H
Connecting tubing thread	2 7/8" (73 mm)	3 1/2" (88,9 mm)
Diameter of drain holes, mm	10 (2 holes)	
Diameter of the circumscribed circle, mm	124	143
Valve length, mm	330	
Actuation pressure, MPa	From 10.0 to 20.0 upon request of customer	
Weight, kg, no more	7,2	9,2

BACKWASH VALVE KP 73-15

Designed to supply flushing fluids through the annulus into the tubing cavity during technical operations. It is installed in the tubing string at the required depth.

Equipment parameters	Value
Tubing diameter, mm	73
Pressure, MPa	15
Overall dimensions, mm, not more:	
- outer diameter	120
- height	405
Weight, kg, no more	7,3



SHUT-OFF VALVE KON

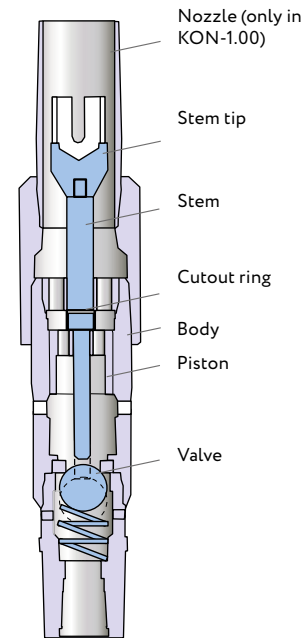
Designed for repair of wells without killing them in case of replacement of pumps without lifting the tubing. Installed under the anchor shoe of the insert pump.

Before the first run of the pump, under the action of reservoir pressure and a spring, the valve (seat-and-ball) is closed, the side holes in the valve body are open and through them the well fluid enters the tubing cavity.

When the pump is seated in the anchor shoe, the pump presses on the valve stem, the stem moves the piston and the ball, while the piston closes the side holes, and the valve opens, providing fluid suction when the pump is running.

When the pump is lifted, the piston remains in the same position (the side holes are closed), and the ball, under the action of reservoir pressure and a spring, closes the valve, blocking the flow of fluid in the tubing, and at the same time moves the stem to the upper position. The next time the pump is released, the valve is reopened by the stem

Valve versio	Pump type	Anchor shoe type8	Connecting thread	Length, mm	Diameter, mm	Weight, kg, no more
KON-1.00	25/20-... RHM-T	4011 6-MT-ZUS	NKT 2 3/8" (60)	472	89	10,4



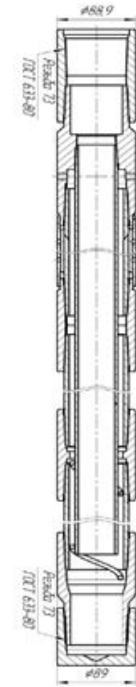
GAS-SAND ANCHOR GPYAN-73

Designed to separate gas dissolved in oil and mechanical impurities contained in the well fluid. It is mounted at the sucker rod pump intake. It is recommended to install a pipe — a sludge accumulator (for collecting mechanical impurities) below the gas-sand anchor.

Применение газопесочного якоря позволяет:

- prevents sand removal;
- increases the pump filling ratio;
- eliminates the pump clogging and improve its reliability in operation;
- increases the overhaul period of the well.

Equipment parameters	Value
tConnecting thread by GOST 633-80	73
Overall dimensions, mm:	
- diameter	89
- length	2790
Number of holes with a diameter of 6 mm, pcs.	120
Weight, kg	50



IZHNEFTEMASH

2, Ordzhonikidze Str., Izhevsk
Russia, 426063

T. +7 (3412) 68-91-91, 68-91-61

izhneftemash@rimera.com

www.rimera.com





РИМЕРА
ИЖНЕФТЕМАШ