

## Subsurface sucker rod pumps

By their design the pumps meet main requirements (except tubing thread) of API Specification 11AX. They consist of one-piece heavy wall barrel with two extensions, one plunger, traveling and standing valves and anchor.

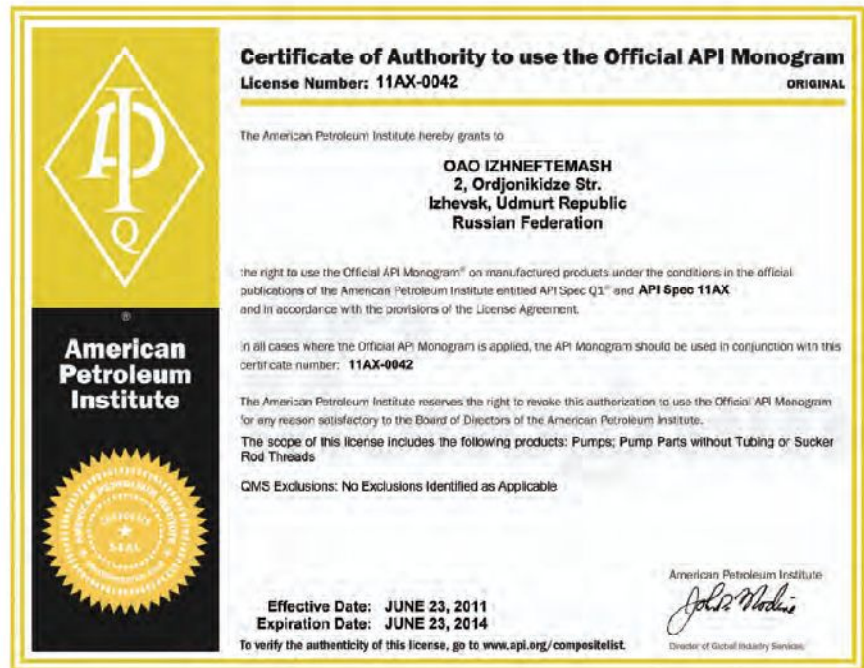
There produced more than 800 pump types and versions, both standard (as per API Specification 11AX) and special versions including pumps for operation in extra-heavy well conditions.



Awardee of national contest «Russian Tracemarks»



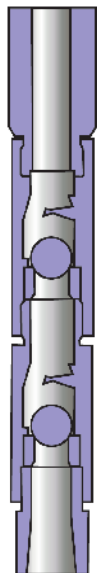
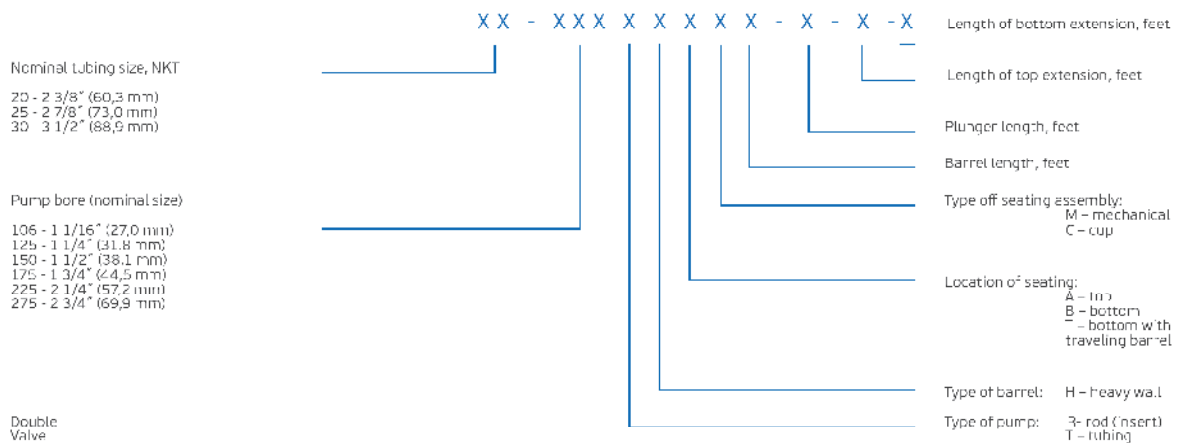
Awardee of contest program «100 Best Russian Products»



## TYPES OF PRODUCED PUMPS

PUMP TYPE		DESIGNATION MECHANICAL SEALING ARRANGEMENT	CUP SEALING ARRANGEMENT	COMBINATION OF TUBING SIZE AND PUMP BORE
Insert pumps with standing barrel	With top anchor	RHAM	RHAC	20-106(25-106) 20-125(25-125)
	With bottom anchor	RHBM	RHBC	25-150 25-175 30-225
Insert pumps with travelling barrel	With bottom anchor	RHIM	-	25-175
Two-stage insert pumps	With bottom anchor	RHBM	-	30-225/150
Tubing pumps		THM (THM-T, THM-C, THM-I)	THC	25-106 20-125 (25-125) 25-150 20-175 (25-175) 25-225 30-275

## Full API pump designation:



All the manufactured pumps are modified for Russian downhole equipment for installing in straight NUE tubing string (with non-upset ends) as per GOST 633-80 and connecting with sucker rod string as per GOST 13877-96.

For connecting of filters or other safety devices to bottom of a pump – LP internal thread (pipeline thread) – 1:16 taper; 11,5 threads per inch. Thread diameter: 1", 1 1/4", 1 1/2", 2" (depending on pump type and diameter).

### VERSIONS OF PUMP COMPONENTS: BARREL:

- Alloy steel, nitride-plated (HN);
  - Carbon steel, chrome-plated (CR);
- Length of nitride-plated barrels – up to 14 feet, chrome-plated – up to 16 feet, compound barrels (for long-stroke pumps) – up to 28 feet.

### PLUNGER (NIPPLE TYPE) PLUNGER:

- Carbon steel, chromium-nickel hard alloy powder sprayed (T);
- Grooved, smooth;
  - Length – up to 5 feet, compound – up to 10 feet.

### VALVES:

- Standard and special designs, including double travelling and standing valves.

### VALVE CAGE:

- Alloy steel;
- Stainless steel.

### BALL AND SEAT:

- Stainless steel (SS);
- Cobalt alloy (ST);
- Tungsten carbide (TC1).

Plunger clearance is defined as a difference between nominal diameters of a plunger and a barrel plus sum of tolerances for plunger and barrel diameters.

### PLUNGER CLEARANCE (RANGE):

- Fit-1 — 0,025 ... 0,088 mm;
- Fit-2 — 0,050 ... 0,113 mm;
- Fit-3 — 0,075 ... 0,138 mm;
- Fit-4 — 0,100 ... 0,163 mm.

When making a request/order for pumps Customer should specify:

- Denomination, full designation of a pump including tubing diameter; diameter and type of a pump; length of a barrel, plunger and extensions (or required plunger stroke);
- Type of top seating arrangement of insert pumps: standard (according to API), in OM anchor (according to Industry standard OST) or special «taper-in-taper» type;
- Type of seating arrangement of standing valve of tubing pumps: standard (according to API), non-removable;
- Plunger clearance (Fit 1,2,3,...);
- Depth of pump installation (discharge);
- Material of barrel, plunger, valves, valve cages;
- Additional requirements to pump versions.

If no any requirements to material, clearance and discharge of pumps are specified, then pumps are delivered in the following type and version: barrel HN, plunger T, valves SS, alloy steel valve cages, Fit2, discharge up to 1500 m.

Seating nipples (anchors) of insert pumps, as well as filters, overflow valves, automatic tractive connections and other tools for SRP are not included in delivery set and should be ordered optionally.