SRP – Sucker Rod Pump

INSERT ROD PUMPS

Full range of API 11AX Insert Rod Pumps.

All pumps come standard with our full open cages, reduced lift cages, high flow top open cages, specifically selected balls & seats and more.

INSERT ROD PUMPS

API 11AX Insert Rod Pump Range

- RHA - Heavy Wall, Top Seating
- RHB - Heavy Wall, Bottom Seating
- RWA - Thin Wall, Top Seating
- RWB - Thin Wall, Bottom Seating
- RWT - Thin Wall, Travelling Barrel
- RXB - Heavy Wall, Bottom Seating
- RST - Thin Wall, Soft Pack Plunger

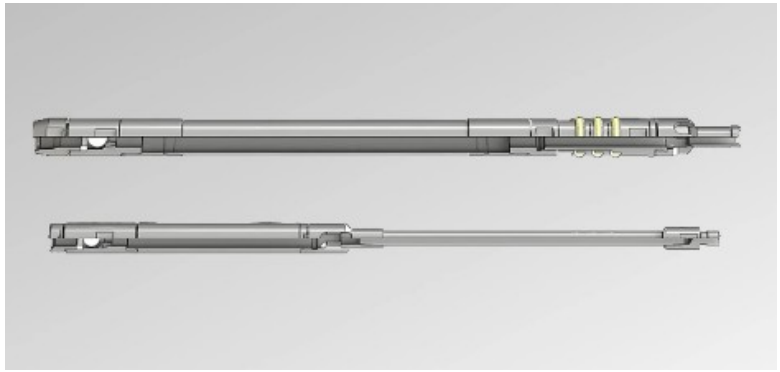
All pumps are available in both cup & mechanical hold down seating configurations.

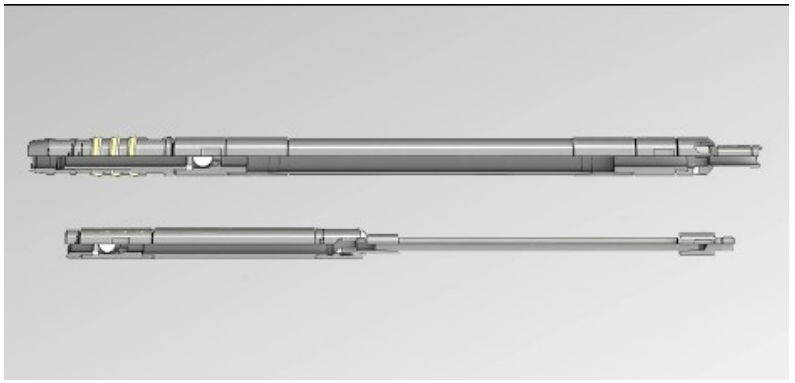
General Specifications

- Built with bottom or top hold downs
- Available with 3 cup seating assembly or mechanical hold down with 443 Brass or 440C SS
- Precision barrels up to 36'
- Barrels available in Hardened & Honed, Chrome plated, 443 Brass, and Nickel Carbide
- Manufactured with spray metal plunger

INSERT ROD PUMPS

- Insert pumps are installed by running in hole with the rod string. Once the pump reaches the desired pump depth, the hold down assembly seals with the tubing by seating into the hold down nipple. From there, your production fluids are effectively sealed from the reservoir fluid and pumping can begin. To remove the pump, simply pull the rod string out of hole.





INSERT ROD PUMPS

The "RH" Rod Pump

- Heavy Wall pump is an API all precision metal pump
- O.D. threads for pump extensions
- Extension available on both ends, and proper spacing will allow it to be a stroke through pump
- the "RH" barrel has a wall thickness of 3/16" or 1/4“

The "RW" Rod Pump

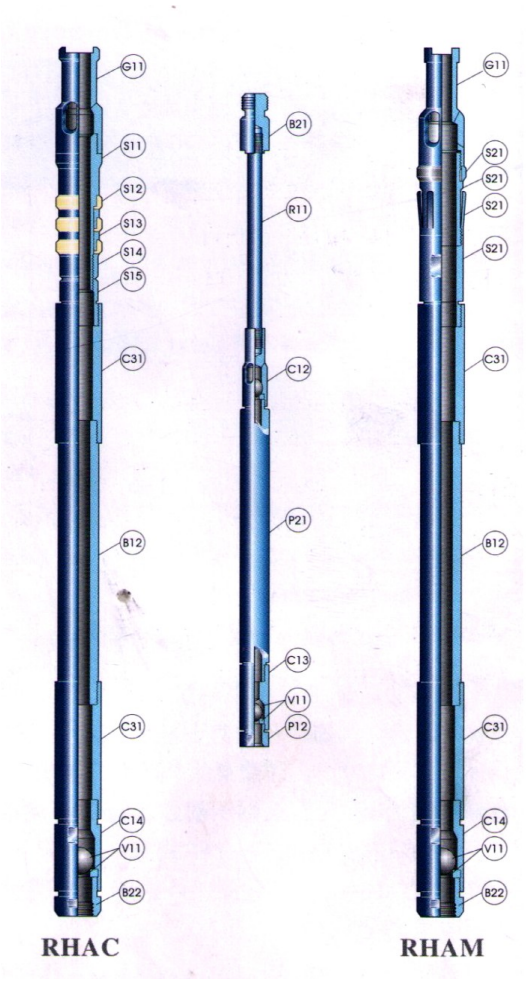
- Thin Wall pump is an API all precision metal pump
- The pump has I.D. threads
- The "RW" barrel has a wall thickness of 1/8"
- Used to maximize production for an insert pump

≤7.5

Stationary Barrel, Top Anchor Rod Pump

The type of seating assembly for Stationary Barrel, Top Anchor Rod Pump : Cup & Mechanical, the designation is RHAM for mechanical and RHAC for Cup.

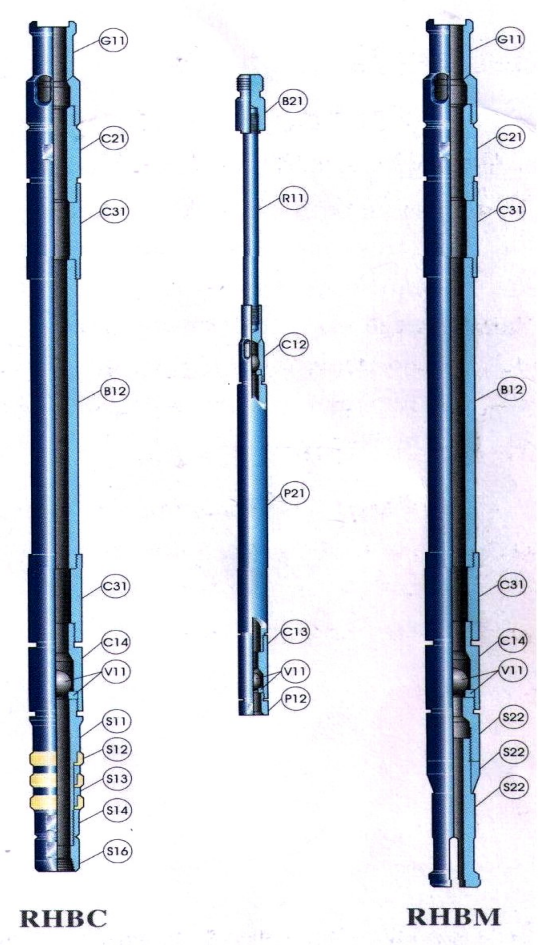
Specification	Pump Size	Max. O.D	Size of Sucker Rod	Tubing Size
20-112RHAC	28 (1.12)	47.5	3/4	$2^3/8$
20-112RHAM		47.6		
20-125RHAC	32 (1.25)	47.5		$2^3/8$
20-125RHAM		47.6		
25-150RHAC	38 (1.50)	59.4		$2^7/8$
25-150RHAM		59.5		
25-175RHAC	44 (1.75)	59.4		$2^7/8$
25-175RHAM		59.5		
30-225RHAC	57 (2.25)	72.1		$3^1/2$
30-225RHAM		72.2		



Stationary Barrel, Bottom Anchor Rod Pump

The type of seating assembly for Stationary Barrel, Bottom Anchor Rod Pump : Cup & Mechanical, the designation is RHBM for mechanical and RHBC for Cup.

Specification	Pump Size	Max. OD	Sucker Rod Size	Tubing Size
20-112RHBC	28 (1.12)	47.5	3/4	$2^{3}/8$
20-112RHBM		44.7		
20-125RHBC	32 (1.25)	47.5	3/4	$2^{3}/8$
20-125RHBM		44.7		
25-150RHBC	38 (1.50)	59.4	3/4	$2^{7}/8$
25-150RHBM		57.4		
25-175RHBC	44 (1.75)	59.5	3/4	$2^{7}/8$
25-175RHBM		57.4		
30-225RHBC	57 (2.25)	72.1	3/4	$3^{1}/2$
30-225RHBM		70.1		



TUBING PUMPS

Our Tubing Pump Range:

- TH pumps - Designed for more rugged well conditions such as higher volumes, deeper wells and higher pressures.
- TW pumps - Heavy wall barrel type tubing pumps for deeper wells that produces sand, scale, paraffin and high level of gas.
- OTP pumps - Oversized tubing pumps where the pump bore is larger than the tubing ID.

General Specifications

- The "TH" is an API all precision heavy wall metal barrel
- The barrel is connected to the bottom of the tubing, becoming a part of the tubing string
- The "TH" pump is made for higher volumes and pressures
- Extensions can be added to both top and bottom of the barrel, where proper spacing will allow it to be a stroke through pump
- Barrels available in hardened and honed, brass, steel chrome ID, and NiCarb.

TUBING PUMPS

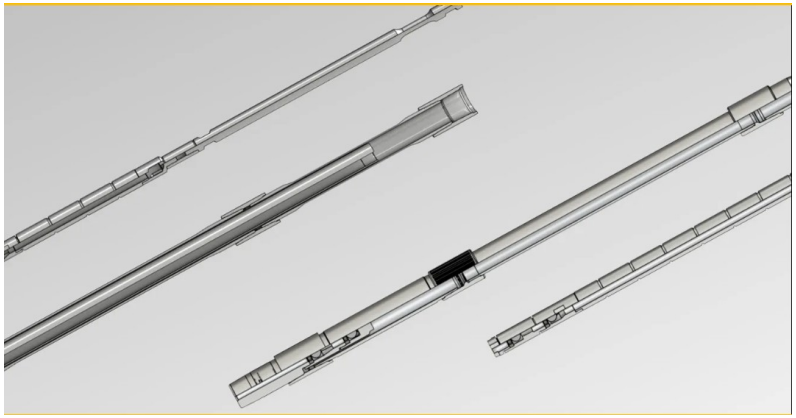
Introduction

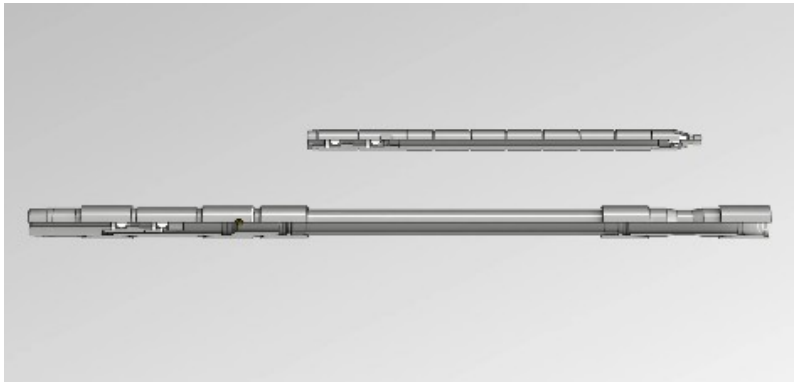
- Tubing pumps are installed by running in hole with the tubing string. Depending on the size and style of this pump, the plunger assembly is installed with the rod string or is already inside the pump with an On/Off Tool. In conjunction with the size and style of this pump, the standing valve assembly is either installed as a retrievable and is installed similar to the Insert Pumps, or it is stationary and is already installed with the pump. These pumps are best for rugged well conditions that need large production and are also ideal for horizontal wells; since there is no seating nipple to set/unset and is rod spacing friendly.
- Fixed type tubing pumps standing valve assembly is attached below the pump barrel as part of the tubing string. A larger valve can be installed than with a retrievable type but the tubing must be pulled in order to repair it. When barrel repairs are required on a tubing pump, the entire tubing string must be pulled.
- The retrievable type standing valve rests in a cup-type or mechanical type seating nipple at the bottom of the tubing string. This can be removed with the sucker string by means of a puller pin assembly which is permanently attached to the lower end of the plunger.

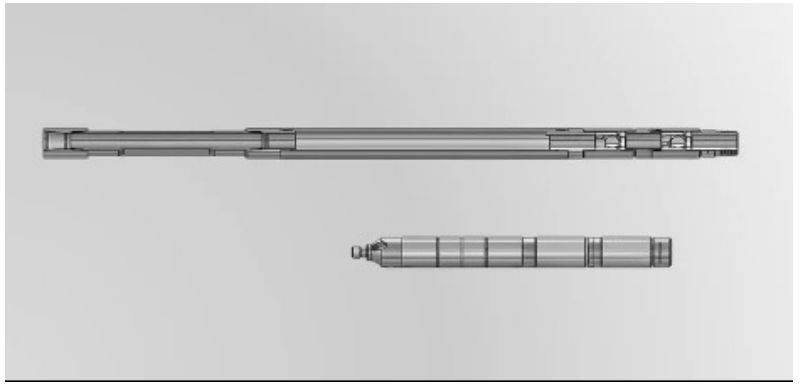
TUBING PUMPS

General

- Screws on to the tubing
- Manufactured according to API 11AX specs
- Proprietary improvements
- Designed for better performance



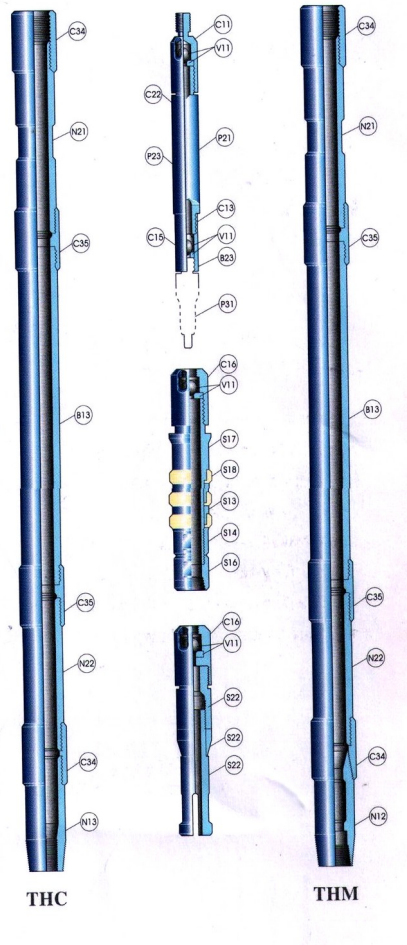




TUBING PUMPS

The Tubing Pump types - THD & THC/THM.

Specification	Pump Size mm(in.)	Max. OD mm	Sucker Rod Size in.	Tubing Size in.	Stroke m
20-125TH	32 （1.25）	73	3/4	2 3/8	≤7.3
25-125TH	32 （1.25）	88.9	3/4	2 7/8	
20-150TH	38 （1.50）	73	5/8 or 3/4	2 3/8	
25-150TH	38 （1.50）	88.9	5/8 or 3/4	2 7/8	
20-175TH	44 （1.75）	73	3/4	2 3/8	
25-200TH	51 （2.00）	88.9	3/4	2 7/8	
25-250TH	63.5 （2.50）	88.9	3/4	3 1/2	
30-275TH		108	7/8	3 1/2	



SPECIALTY PUMPS

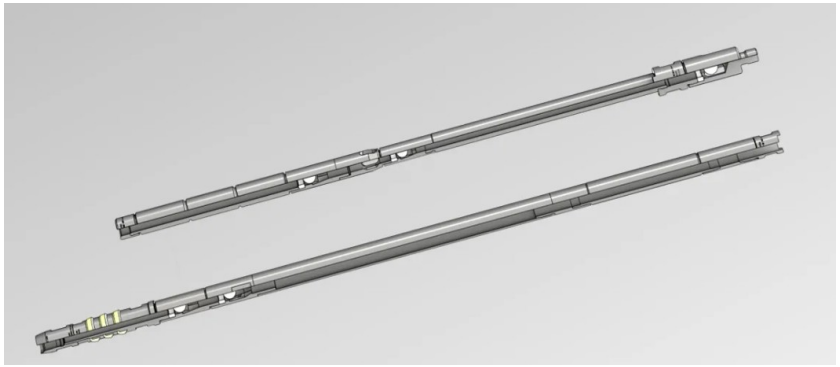
- HH has been engineering and developing specialty pumps over the last years as a response to the growing need in the oil & gas industry for solutions above and beyond the capabilities of a standard API rod pump.
- These specialty pumps are designed for high solids, sand, gas handling, aggressive pumping, scale & paraffin, and mitigate pump damages such as fluid washing, corrosion, beat-out cages, failed balls & seats. They also push the limits of rod pump fluid production, gas and solids handing capabilities, and efficiencies.
- They are engineered to solve the most challenging pumping applications known to rod pumps.

BARREL LENGTH PLUNGER PUMP

- Designed to move very high level of solids
- Plunger strokes out of pump
- Sand check valve at discharge
- Full open high efficiency cages
- Machined shoulder plunger
- Strainer nipple or mesh strainer (optional)
- Barrel Length Plunger Pump is designed to improve pump efficiency and run times in the presence of sand, scale, and/or trash. The plunger assembly is designed to keep sand in suspension and to prevent sand from settling between the plunger and barrel.
- The plunger is wiped clean after every down stroke, mitigating the possibility of a stuck pump. Traveling and standing valve cages have a double valve to increase the potential run life of the pump.

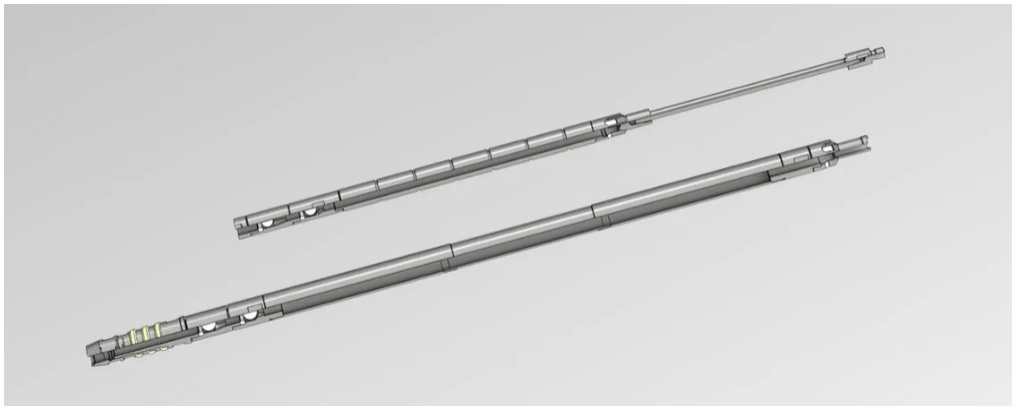
GAS BOOSTER PUMP

- Designed to mitigate gas interference and gas locking issues
- Highly effective in moving gas through pump
- Increases pumping efficiencies for gassy wells
- Able to tolerate moderate amount of solids and fines
- Full open high efficiency cages
- Machined shoulder plungers for longer pump life
- Gas Booster Pump is the most effective solution for gassy well application. The pump is designed to mitigate gas interference and gas locking by allowing gas to break out within the pump into a special vacuum compression chamber on every upstroke and gets moved out of the pump on every down stroke.



STROKE THRU PUMP

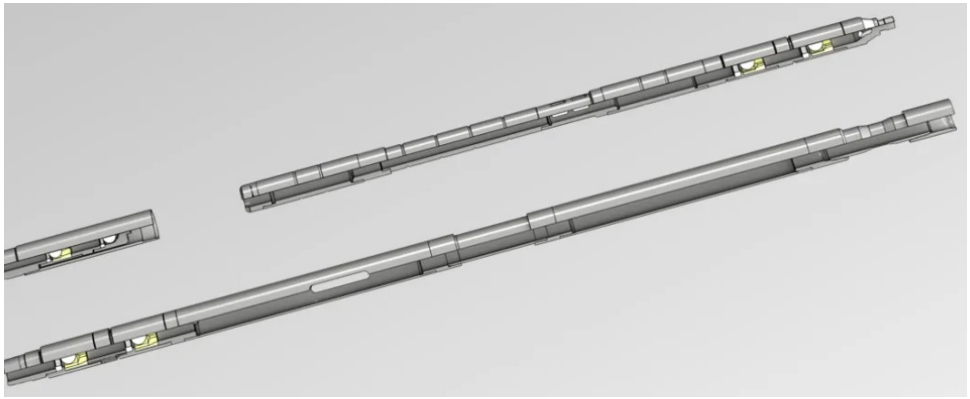
- Designed to move high level of solids
- Plunger strokes through top and bottom of barrel
- Full open high efficiency cages
- Machined shoulder plunger
- Strainer nipple or mesh strainer (optional)
- Stroke Trough Plunger Pump is designed for wells with sand, scale, and/or trash. Based off your well conditions and unit, a shorter barrel is used with long extensions and plunger. As the pump strokes, the plunger is always protruding out of the barrel. A sand seal is recommended below the valve rod guide.



DOUBLE DISPLACEMENT PUMP

- Double Displacement Pump is ideal for applications involving restricted pump bore size due to small casing diameters. The pump increases production without having to up size the pump bore or pumping unit.
- On the upstroke, fluid is produced like a normal tubing pump. On the down stroke, the added production is pushed into the production tubing. These pumps are all double valved for improved run life

- Up to 30% more flow without increasing rod & structural loading
- No changes to well set up, rod design, pumping unit size
- Product on both up and down strokes
- Designed to maximize well production
- Ideal for restricted pump bore size wells
- Full open high efficiency cages

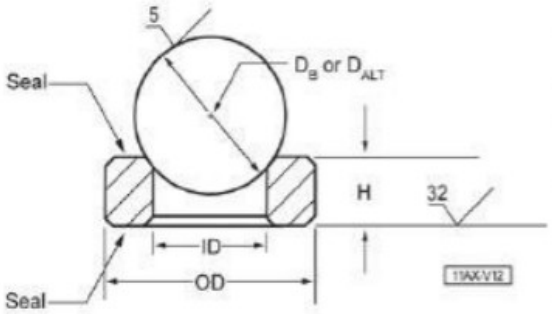


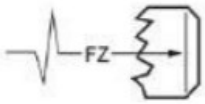
NON-COMPRESSION PUMP

- Eliminates the problem of solid/sand settlement on top of standing valve
- Mitigates gas problems such as gas interferrence and gas locking
- Plunger strokes out of pump to prevent solid/sand settlement above the plunger
- Helps with rod-fall in heavy-crude application
- Impact-Resistant (IR) cages available
- **The Non-Compression (NC) pump is our most revolutionary pump that provides both solids and gas handling solution.**

Parts and Accessories

Hard alloy valve balls have evolved from traditional plug valves, with the opening and closing components being a sphere that wraps around the axis of the valve stem to achieve the purpose of opening and closing.





Detail of seal and 45° chamfer or radius — optional with manufacturer

表 C.62—V12— 阀球 (见注解)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
尺寸符号	零件号							
标准阀球编号	V12-106	V12-125	V12-150	V12-175	V12-200	V12-225	V12-250	V12-375
D_B	0.625 (15.88)	0.750 (19.05)	0.938 (23.83)	1.125 (28.58)	1.250 (31.75)	1.375 (34.93)	1.688 (42.88)	2.250 (57.15)
备用阀球编号	V12A106	V12A125	V12A150	V12A175	V12-175	V12-200	V12A250	V12A375
D_{ALT}	0.5625 (14.29)	0.6875 (17.46)	0.875 (22.23)	1.000 (25.40)	1.125 (28.58)	1.250 (31.75)	1.500 (38.10)	2.000 (50.80)

注： 1 所有尺寸用英寸表示，括号内为相应的毫米数。

注： 2 球阀和座阀用在F22的内螺纹中。

注： 3 阀球的附加要求：圆度最大为0.0001英寸（0.003毫米）、表面粗糙度最大为5RA、阀球外径公差：对于所有直径小于2英寸的阀球，外径公差为± 0.001 英寸 (± 0.025 毫米)；对于所有直径大于等于2英寸的阀球，阀球外径公差为± 0.002英寸(± 0.050毫米) 。

Pump Barrel

Features

Good chemical stability and not act in alkalis, sulfides, nitric acid, and most organic acids, with superior anti-corrosion and corrosion resistance performance.

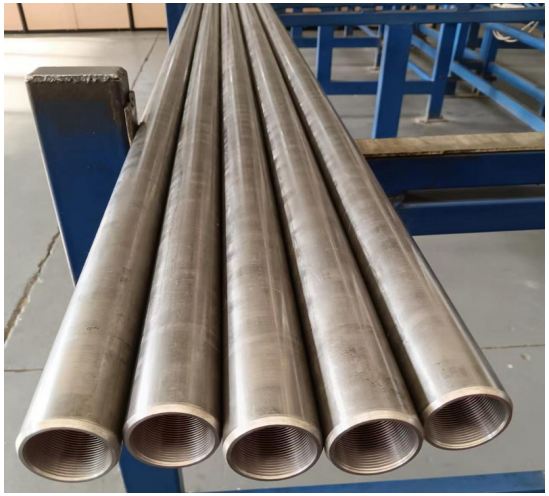
size	Nominal diameter ㎜（in）	I.D. tolerance (㎜)	Thickness (㎜)	Material	Length (m)	Internal hole treatment method
Φ32	31.75㎜/ 11/4”	+0.05 0	3.18㎜/ 1/8”	Carbon steel pipe	⩽11	Chromium and nickel plated carbon compounds
Φ38	38.10㎜/ 11/2”	+0.05 0				
Φ44	44.45㎜/ 13/4”	+0.05 0				
Φ50	50.8㎜/ 2”	+0.05 0	6.35㎜/ 1/4”			
Φ57	57.15㎜/ 2 1/4”	+0.05 0	9.53㎜/ 3/8”	Alloy steel pipe		
Φ63	63.5㎜/ 2 1/2”	+0.05 0				
Φ70	69.85㎜/ 2 3/4”	+0.05 0	19.05㎜/ 3/4”			
Φ83	82.55㎜/ 3 1/4”	+0.05 0		Brass pipe		
Φ95	95.25㎜/ 3 3/4”	+0.05 0				

Pump Barrel

Features

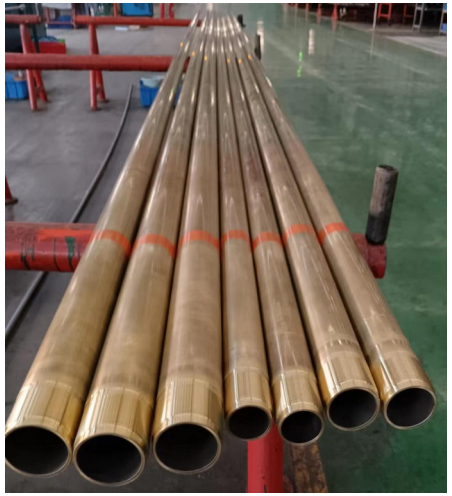
1. Uniform coating, high bonding strength, and precise dimensional accuracy;
2. The surface hardness of the inner hole reaches HV100900-1160, with low friction coefficient and good wear resistance. It can be used in oil wells containing sand and other friction
3. Material: carbon steel, brass 44300, 4-6 Chrome

Material:



Carbon steel pump barrel

Alloy pump barrel



Brass pump barrel

Plunger

The plunger is composed of an equal diameter joint, a plunger, and a movable valve cover.

Size	Nominal diameter mm (in)	Wall Thickness (mm)	Material	Length (m)
Φ32	31.75mm/ 1 1/4"	3.18mm/ 1/8" 6.35mm/ 1/4" 9.53mm/ 3/8" 19.05mm/ 3/4" 22.23mm/ 7/8" 25.4mm/ 1"	Carbon steel pipe Alloy steel pipe Brass pipe	1.2m-1.8 m 4' -6'
Φ38	38.10mm/ 1 1/2"			
Φ44	44.45mm/ 1 3/4"			
Φ50	50.8mm/ 2"			
Φ57	57.15mm/ 2 1/4"			
Φ63	63.5mm/ 2 1/2"			
Φ70	69.85mm/ 2 3/4"			
Φ83	82.55mm/ 3 1/4"			
Φ95	95.25mm/ 3 3/4"			
Φ108	107.95mm/ 4 1/4"			

Tool - Disconnector

Usage: Used for working conditions with small oil pipe diameter and large oil well pump diameter, or in special oil well pumps.
Structure: The connector is composed of an upper assembly consisting of a stabilizer joint and a claw spring, a lower assembly consisting of a core rod, locking slide sleeve, spring, and lower joint, and a release joint.

Features:

1. Reasonable structure, compact radial dimensions, and the ability to enter the pump barrel for operation without adding any operational procedures

2. It has a self-locking structure, high success rate of connection and disconnection, and reliable operation

3. High quality spring steel and alloy structural steel are used, with low docking and detachment forces and high load-bearing capacity;

4. The use of chemical plating anti-corrosion treatment extends the service life.

Tool - Oil Drain

Usage: A rod type oil drain is a downhole tool used in conjunction with a oil well pump. During oil well operations, the tubing and casing can be connected, and the well fluid in the tubing can be timely discharged into the casing, effectively avoiding pollution to the surface environment during operations.

Structure: Mainly composed of the main body and the oil drain pin.

Working principle: The oil drain is installed between the coupling under the pump barrel and the fixed valve, and is lowered into the well with the oil pump. When inspecting the pump, first lift out the pumping rod and plunger, and then insert a piece of about 1 meter long into the oil pipe Φ 19 or Φ The 22 headless sucker rod is impacted by the rod's falling impact and cuts off the oil release pin. The oil pipe and casing are connected, and the well fluid in the oil pipe is injected into the casing to achieve the purpose of oil release.