沉砂气锚
Sanding Gas Anchor

该沉砂气协结构新顾简单可 n,采用堀血分离与潸脱效应分离的原理, 使液流在管内踊环的过程中实现两级分离的效果, 井可在洗井时游免洗井礦满入地廉起到 油 e 噪 p 的作用，

LZX 沉砂气慑由上陵头、分流体. 啊审. 姐旋片、伞亂下接头等部件组成. 液流从外管上部的筛孔通谊螺旋片和弟彩入中心管内. W.液体中的 G 泡受 姬离心力帕“力分舁的作用延中 1＞管外蛋上浮到吸入潮 L,在柱畫下冲程排到董管和油管环空中. 砂粒在寓＜0 力和助作用下, 下沉 8 嫌下嵐管中实观一次分 «!. 液流从中心胃, 分流憧饶那由覽环空中从分流首侧孔上行进入杲内. 液流在分漁曾内的循环过程中， 由于■力彳慑脱效用的件用，气翘上行 H 闭加疵环空中 . 砂国下行沉阴到膨口袋中，完成了气砂的汝分离.

The grit gas anchor the new structure is simple and reliable, using the principle of separation of spiral separator and slippage effect, so that the flow to achieve a two-stage separation process results in the inner tube of the cycle, and avoid flushing fluid poured from the formation during cleanout to reservoir protection.

LZX gas anchor the sand on the joint, split body, center tube, spiral slice, release valve, fittings and other components under. Flow from the upper portion of the outer tube through the sieve into the helical segments and rotary fluid within the central tube. In this case, the liquid bubbles by centrifugal force and gravity segregation spiral effect extended floating center tube wall to the suction sieve, discharged at the stroke of the plunger casing and tubing once, sand in the centrifugal force and gravity, sink next to the pump to achieve a separation of the tail pipe. Flow from the center of the tube, shunt tube collar around the air from the oil shunt tube upstream side of the hole into the pump. Shunt flow during the cycle inside, because the force of gravity and slippage, bubble collar upstream oil discharged air, sand sedimentation downstream oil pocket to complete the second separation gas sand.

技术参数
Technical Parameters

规格型号 Size	钢体最大外径 Max OD (mm)	连接扣型 Connection	长度 Length (mm)	适用套管尺寸 In casing size
CSQM · 102	＜t)102	2 7/8NUE	3730	*5-1/2"*

Other sizes and connections available on request 尺寸可帳 IB 憂求做相应调 SI

Gas Separator

I. Introduction

When the oilfield enters the middle and late development stage, the sand content in the well fluid

increases, and there are impurities left in the wellbore in the usual workover operation. As a result, the screen of the pump is easily blocked by the granular sand and debris in a short time, thereby causing insufficient supply of the pump, and in addition, the gas contained in the well fluid is prone to air lock.

The above problems seriously damage the parts of the pump and reduce the working efficiency of the pump, and even make the pump unable to work, thereby increasing the number of inspections, greatly affecting the normal production of crude oil, increasing production costs, and time-consuming. In response to the above problems, our company has developed a set of antisand, anti-blocking and anti-gas devices for the pump.

III. Product Working Principle

The gas anchor structure is novel, simple and reliable, and it adopts the principle of spiral separation and the slippage effect to realize the effect of the two-stage separation in the process of circulating the liquid in the tube, and the washing liquid can be prevented from being poured into the formation to protect the oil layer during the well washing.

The gas anchor is composed of an upper joint, a fluid separation body, a central pipe, a spiral piece, an umbrella cap, a lower joint and the like. The liquid flows from the sieve hole in the upper portion of the outer tube into the center tube through the spiral plates and the umbrella cap.

At this time, the air bubbles in the liquid are lifted by the centrifugal force of the spiral and the gravity along the outer wall of the center tube to the suction screen hole, and are discharged to the casing and the tubing annular space in the downward stroke of the plunger. And under the action of centrifugal force and gravity, the sand sinks into the lower tail pipe to achieve a separation.

The liquid flow is wound from the central pipe and the branch pipe into the tubing and casing annular space, and enters the pump from the side hole of the branch pipe. During the circulation of the liquid flow in the shunt tube, due to the effect of gravity and slippage, the air bubbles are discharged upward into the tubing and casing annulus, and the sand particles descend down into the oil well pocket, completing the secondary separation of the gas sand.

IV. Product performance profile:

3.1 Sand control: Under the action of the guide fluid, a large centrifugal force is generated in the liquid column, and the liquid is centrifugally purified and filtered, so that the sand in the liquid is separated and deposited into the tail pipe.

3.2 Anti-blocking: This device can wash away the debris adsorbed on the surface of the screen.

3.3 Anti-gas: Since the device can generate large centrifugal force of the liquid in the wellbore, when the liquid rotates at high speed, the movement of the material molecules is increased, and the gas in the liquid is effectively separated, completely solving the air lock problem.

V. Product performance technical parameters:

Item	QM139	QM108	QM83	Remark
Length	2.35m (92.5in)	2.271m (89.4in)	2.271mm (89.4in)	Depending on user requirements
OD	但 33.4	少 108	082.6	
OD of inner center tube	① 92.3	e76	063.7	
ID：	e76	g2	050.8	
Intake hole diameter	e24	020	014	
Air exit hole diameter	e24	^20	014	
Connecting thread：	3 1/2"EUE BxP	2 刀 8"EUE BxP	2 3/8"EUE BxP	Depending on user requirements
Fit casing size	27 “	25-1/2 “	24-1/2 “	

4.1 Coupling, center tube, outer screen tube, spiral body, inner center screen tube and tubing joint material

are all made of P110 high quality pipe, which is excellent in acid, alkali, salt corrosion and high temperature resistance, and is treated with quenched and tempered HB230-259, and the appearance of anti-corrosion treatment.

VI、Operating rules and regulations：

1、Flush-by must be carried out before operation；

2、Check gas separator and land it following the string diagram of construction design. Screen pipe is not attached to the gas separator but directly to the settling tail pipe. Running speed must be controlled when landing.

VII、 Announcements：

1、String screw must be cleaned up and screwed tight before landing.

2、The equipment must be placed evenly and kept away from corrosion.

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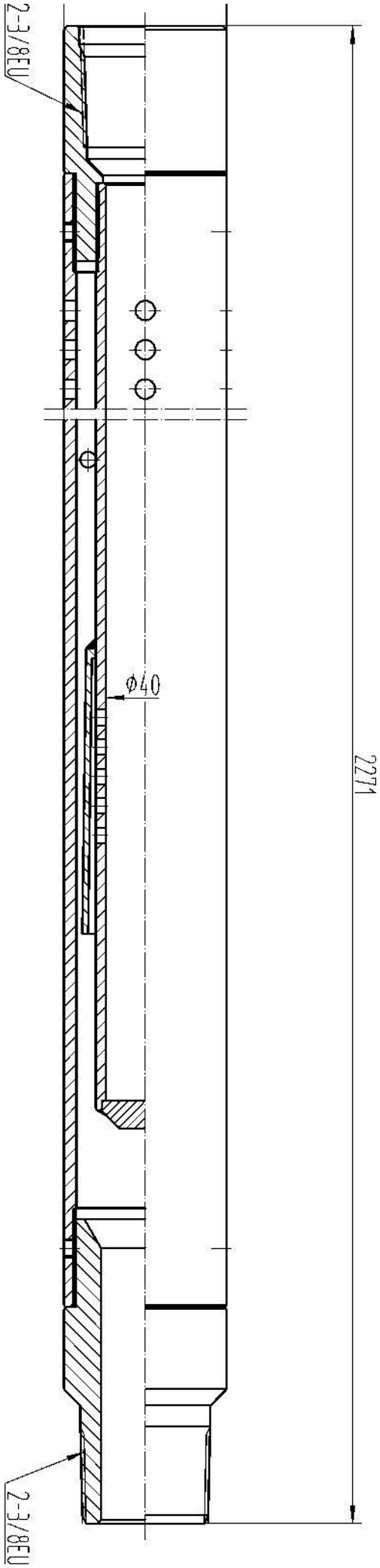
082.6



Instruction Manual of Wire Wound Air Anchor

1、 Preface

When the oilfield enters the middle and late recovery stage, the sand content in the well fluid increases. In addition, there are impurities left in the wellbore in the usual workover operation, which makes the screen pipe of the oil well pump easily blocked by granular sand and impurities in a short time, resulting in insufficient fluid supply of the oil well pump. Moreover, the gas in the well fluid is easy to cause gas lock. Thus the above problems seriously damage the parts of the oil well pump and reduce its working efficiency, and even make the oil well pump unable to work, thus increasing the number of pump inspection operations, greatly affecting the normal production of crude oil, increasing the production cost and time-consuming. In view of the above problems, our company has developed a set of sand control, plugging control and gas control device for oil well pump.

2、 Product overview

The wire wound air anchor developed and produced by our company is a sand control tool for oil well pump developed based on wire wound screen pipe. Stainless steel wire wound air anchor is widely used for sand control in oil and gas wells because of its excellent performance and the mechanism of spiral sand separation, spiral gas separation and settling gas separation. The sand control particle size is more than or equal to 4.8um. It can replace the screen tube and has simple structure. It can be used for all kinds of casings with a daily liquid handling capacity of 355m3 and a gas-liquid ratio of 155. The structure of the device is scientific, practical and reliable. It can completely achieve the purpose of sand control, plugging control and gas control, and extend the pump inspection cycle and the service life of pump valve. At the same time, the device has the effect of the previous sand control pump, sand control pipe and gas anchor, which can reduce the material consumption, improve the work efficiency and achieve considerable economic benefits.

3、 Technical parameters:

Specs & Model	Product size & Handling capacity	Sand control coefficient	Working principle
RSQM-93	Max. OD 93mm Min. ID 34mm The daily liquid treatment capacity is 355m3 Gas liquid ratio 155	With the function of gas and sand control, and the sand control strength is > 48um .	With the mechanism of sand separation by swirling flow, gas separation by swirling flow and sedimentation, and the effect of sand and gas control.

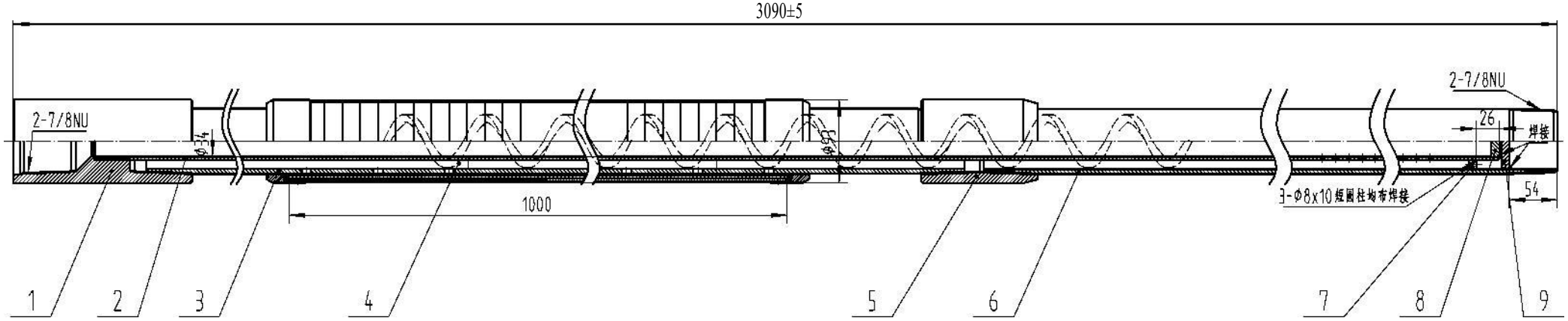
4、 Maintenance and transportation

1. When the whole assembly tool leaves the factory, the user is not allowed to disassemble it by himself, so as to avoid that the original technical performance cannot be achieved after assembly.

2. The used tools shall be delivered to the manufacture for maintenance to ensure their performance.

3. The product should avoid collision and rain during transportation and storage, and the screw thread at both ends should be equipped with protective wire.

4. This product should be placed on the tool rack to avoid falling and touching during loading and unloading. It is strictly forbidden to contact acid, alkali, salt and other corrosive substances.



Technical requirement

1. After assembly, apply sealant on the threaded joint;

2. The pipe thread at both ends is equipped with a protective cap to protect the pipe buckle;

3. Clean the surface of the tool;

4. After passing the inspection, the package shall be put into storage.

9	RSQM-93-09	界接凰柱 Welding cylinder	1	45#			
8	RSQM-9M8	瞅 Plug	1	45#			
7	RSQM-93-07	舞接短囲柱 Welding short cylinder	3				
6	RSQM-93-06	外管 Outer tube	1	N80			
5	RSQM-93-05	搜箍 Coupling	1				
4	RSQM-93-04	厭 Spiral	1				
3	RSQM-93-03	统丝俾曾 Wound screen pipe	1	见统丝篩管组装图 See			
2	RSQM-93-02	中心曾 Central tube	1	45#			
1	RSQM-93-01	上接头 Upper joint	1	45#			
騁	代号 Code	名称 Name	《	林料 Material	单件		备注

						见删表		SHANDONG SAIGAO GROUP CORPORATION
标记	处	分区	更蚊件	签名	年、月、			姐装图
设计		201'/0 川				阶段标记	重量 比例	RSQM-93-00
							14.5	
审核								
工艺			批准			共 张第 张		绕丝气锚