

地面控制屏 Control Pannel



本所提供可靠的QYK-A型地面控制屏。它包括：对电机的保护装置和柔性启动系统，也可按用户的要求提供带集成电路保护中心的控制屏。

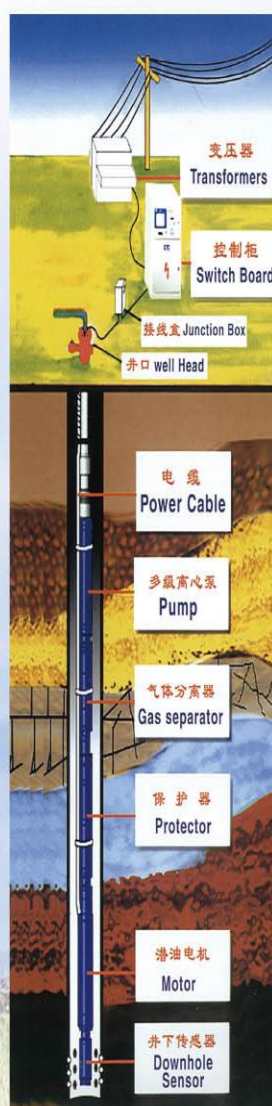
Our QYK-A control panel is a reliable device which includes the motor protecting device and soft starting system. We can also provide control panel with integrated circuit protective center depending upon customer's request.



本公司生产的KQR型潜入式电泵控制柜，单机不可逆变频启动控制之用。具有短路、过载等保护，同时还有主机电流、电压、工作频率等测量，以及井下压力、井下温度、井口温度、液体流量和气体流量等检测数据显示。

KQR type submersible electrical pump control unit is produced by our company, and is for single motor Irreversible variable frequency starting. The product has protection function of electrical leakage & overload, and can measure motor Amps, voltage & working frequency, and also can display down hole pressure, down hole temperature, wellhead temperature, fluid flow rate & gas flow rate on main screen.

潜油电泵 Electric Submersible Pump



潜油电泵是油田机械采油的重要设备之一。机组工作方式：由地面电源通过变压器控制箱，后经电缆给电机供电，使电机运转驱动多级离心泵，将井液举升到地面。

The electric submersible pump(ESP) is one of the important equipment used for mechanical oil production. By using a power cable, surface power is transmitted from transformer and control panel to the motor which drives the multistage centrifugal pump that lifts well fluid to the surface.

潜油电泵

Electric Submersible Pump

规格型号

Specifications and Types

规格数据 Specifications 型号 Types	排量 (方/日) Displacement (m ³ /d)	扬程 (米) Head Lift (m)
QYDB10/1000	10	1000
QYDB20/1000	20	1000
QYDB30/2500	30	2500
QYDB45/1500	45	1500
QYDB50/2300	50	2300
QYDB60/1500	60	1500
QYDB70/2000	70	2000
QYDB80/1800	80	1800
QYDB100/1800	100	1800
QYDB125/1800	125	1800
QYDB150/1800	150	1800
QYDB200/1500	200	1500
QYDB250/1500	250	1500
QYDB300/1500	300	1500
QYDB400/1500	400	1500
QYDB 450/1500	450	1500
QYDB 550/1500	550	1500
QYDB 700/1500	700	1500
QYDB 800/1500	800	1500
QYDB 900/1500	900	1500
QYDB 1200/1500	1200	1500

除去上面的规格外,还可以根据用户需要自由选择扬程、排量、机组最大轴向投影尺寸。

Except the above specifications, the customers can freely select the head lift, displacement and maximum axial projection size of the unit.

机组工作条件

在下列的环境中潜油电泵可以为您提供最满意的运行效果:

- 1、适应油井套管: $5\frac{1}{2}$ " , 7" , $9\frac{5}{8}$ "
- 2、井温: 50℃ , 90℃ , 120℃ , 150℃
- 3、工作介质为油气水混合物, PH值为6.5~8.5, 油气≤30%
- 4、含砂量(重量比)≤0.05%, 超过此标准定货时另议

Working conditions

The electric submersible pump will provide satisfactory production operation under the following conditions:

1. Casing size: $5\frac{1}{2}$ " , 7" , $9\frac{5}{8}$ "
2. Well temperature: 50℃ , 90℃ , 120℃ , 150℃
3. When well fluid is a mixture of oil, gas and water, PH value is within 6.5~8.5 and gas-oil content(GOC) is ≤30%
4. The amount of sand (by weight) is ≤0.05%. If exceeding the standard the pump's head lift and displacement should be adjusted respectively when ordering

潜油泵

Submersible Pump

潜油泵是多级离心泵，每一级由旋转的叶轮和固定的导轮组成，为满足不同的油井条件，泵级设计具有宽广的排量范围，通过多节泵的串联达到所要求的压头。

The submersible pump is a multi-stage centrifugal pump designed to operate in a broad of capacities in order to be used in different conditions. Each pump stage consists of a rotary impeller and a stationary diffuser. The required head lift can be obtained by multi-tandem pump construction.



潜油泵规格

Specifications of the Electric Submersible Pump

泵系列 Pump Series (mm) 外径O.D.	额定排量 (方/日) Rated Displacement (m ³ /d)	额定扬程 (米) Rated Head Lift (m)	泵效 Pump Efficiency (%)	额定转速 (转/分钟) Rated Rotary Speed (r/min)
88	20	根据用户 要求装配 Depending upon the customer's request	28	2850
	30		37	
	45		44	
	60		46.6	
	80		59.9	
	125		56	
95	30	根据用户 要求装配 Depending upon the customer's request	36	2850
	50		44	
	70		49	
	100		52	
	150		56	
	200		58	
	250		59	
	300		60	
	400		61	
	500		59	
98	30	根据用户 要求装配 Depending upon The customer's request	38	2850
	50		45	
	70		50	
	100		53	
	150		58	
	200		59	
	250		60	
	300		61	
	400		61	
	500		60	
130	150	根据用户 要求装配 Depending upon The customer's request	58	2850
	200		59	
	250		60	
	350		60	
	450		61	
	550		63	
	700		65	
	800		64	
	900		62	
	1200		60	

旋转式气体分离器

Rotary Gas Separator



旋转式气体分离器，可使井液中90%的自由气体在进入泵吸入口之前被分离，分离出的气体通过排气孔进入油管、泵环形空间，避免产生泵的气穴现象。

Rotary gas separator can separate 90% of free gas from the well fluid before it enters the pump intake. The separated gas enters the annulus between tubing and pump through the port to avoid the pump cavitation.

分离器规格

Specifications of Rotary Gas Separator

系列 Series	型号 Types	说明 Description	长度 Length		重量 Weight	
			mm	in	kg	lb
86	OYF86X	旋转式分离器 Rotary Separator	637	25	19	42
88	OYF88X	旋转式分离器 Rotary Separator	637	25	20.5	45
98	OYF98X	旋转式分离器 Rotary Separator	768	30	24	53
	OYF98X-S	双级旋转式分离器 Double Section Rotary Separator	1512	60	45	99
130	OYF130X	旋转式分离器 Rotary Separator	757	30	26	57

电机保护器

Protector



电机保护器用来阻止井液进入电机，并平衡电机内部与环形空间的压力，补偿由于电机油的热胀冷缩引起的压力变化，支撑泵的剩余轴向推力。

The protector is used to prevent the entry of well fluid into motor and equalize the pressure between the inner of the motor and the annulus. It compensates the pressure variation caused by motor oil expansion and contraction and support the surplus axial thrust of the pump.

保护器规格

Specifications of Protector

系列 Series	型号 Types	说明 Description	长度 Length		重量 Weight	
			mm	in	kg	lb
86	OYH86C	沉降式 Labyrinth chamber	1599	63	36	81
98	OYH98C	沉降式 Labyrinth chamber	1600	63	47	103
	OYH98J	胶囊式 Bag chamber	1687	62	45	99
130	OYH130C	沉降式 Labyrinth chamber	1639	65	51	112
	OYH130J	胶囊式 Bag chamber	1687	62	53	117



潜油电机

Submersible Motor

潜油电机是工频50Hz (或60Hz) 的两极三相鼠笼式电机。依靠增加电机的长度和转子的节数来达到所需要的功率, 电机采用浸漆绝缘达到H级 (200℃/392 F), 电机与电缆的联接可按用户的要求采用插接式或绕包式。

Our standard motor is a two-pole, three-phase, squirrel cage induction type motor which operates with 50 or 60 Hz.

The required power of motor can be obtained by adding its length and the number of rotors. Varnished insulation enables the motor to carry full load up to 200℃/392°F and temperature ratings above class“H”.The connection of the motor and the cable has two ways of “plug in” and “wind in” for customer to choose.



潜油电机技术参数

Technical Specifications of the Electric Submersible Motor

50Hz

电机系列 Motor Series (mm) 外径 O.D.	功率 Power (kW)	电压 Voltage (V)	电流 Current (A)
98	6.5	330	20
	9.3	330	28
	11.2	240	51
	11.2	320	39
	14	280	51
	15.8	310	51
	15.8	420	37
	15.8	530	30
	15.8	630	25
107	22	500	40
	6	380	14.5
	9	380	20
	12	380	26
	15	380	33
	18	380	40
	30	670	40
	35	750	40
	45	1020	40
	50	1100	40
114	55	1200	40
	65	1350	40
	6	380	15
	9	380	22
	12	380	27
	15	380	35
	18	380	42
	30	630	43
	35	715	43
	40	820	43
	45	945	43
	50	1071	43
	55	1134	43
	60	1280	43
	65	1345	43
	70	1430	43
	75	1575	43
	80	1660	43
	85	1765	43
	90	1890	43
	95	1954	43
	100	2079	43
	105	2205	43
	110	2268	43

引接电缆

Motor Flat Cable

为电机及保护器、泵在井筒中提供最大的空间、并与动力电缆链接。

The motor flat cable links with the power cable and provides the maximum space for the motor, protector and pump in the well bore.



动力电缆

Power Cable

本公司可以提供与潜油电泵配套用的动力电缆。

我们的电缆是为油井环境温度 96°C (250°F) 和 121°C (250°F) 而设计的动力电缆。

We can supply ESP power cables related to the electric submersible pumps.

Our cable is designed for operating in the wells with ambient temperature up to 96°C (205°F) .

We can offer the cables rated up to 121°C (250°F) on the special request.



潜油电泵配套产品

The Mating Products of the Electric Submersible Pump

电机油参数规格

序号	项 目	单位	技术指标
1	运动粘度	mm^2/s	8-10
2	粘度指数		不低于120
3	凝固点	$^{\circ}\text{C}$	不低于-25
4	闭点 (开口)	$^{\circ}\text{C}$	不低于220
5	灰分		0.01-0.03
6	水溶性酸或碱	%	无
7	氢氧化钠实验	级	不低于2
8	机械杂质	%	无
9	水分		无
10	透明度		透明
11	绝缘度	$\text{KV}/2.5\text{mm}$	不低于25
12	酸值	KOH/g	0.1
13	色度		淡黄



电机油产品
Product of motor oil



电缆卡子
Cable clamp



电缆护罩
Cable guard

Parameters of Motor Oil

Order	Item	Unit	Tech-index
1	Kinematic viscosity	mm^2/s	8-10
2	Viscosity index		no less than 120
3	Solidifying Point	$^{\circ}\text{C}$	no less than -25
4	Shut(open)point	$^{\circ}\text{C}$	no less than 220
5	ash content		0.01-0.03
6	Soluble acid/alkali	%	nothing
7	Sodium hydroxide test	级	no less than 2
8	Machining impurity	%	nothing
9	Water content		nothing
10	transparency		transparent
11	insulativity	$\text{KV}/2.5\text{mm}$	no less than 25
12	acide value	KOH/g	0.1
13	Colourity		light yellow



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Cable Clamp



Cable Guard



Gas Separator



Motor Flat Cable



Power Cable



Protector



Pump



VSD



ESP Install Workshop