

## 2QS、QB 型蒸汽往复泵 Mode- 2QS、QB Gold Shark Brand Pump

2QS、QB 型蒸汽往复泵是用蒸汽为动力,根据唧筒原理作用的一种抽水设备。其主要优点是构造简单,管理容易,只要有蒸汽来源的场所,连接上输送蒸汽管道即可使用。主要用于中小型锅炉给水,炼油厂输送石油产品,矿井排水等。

Model - 2QS、QB Steam Reciprocating Pump is a drawing water equipment which uses steam as a kind of power by principle of pump. Its main advantages are: simple structure, easily manage, connect with steam pipe to use as long as it has the place of source of steam. It is suitable for medium and small type boiler feed water, transportation petroleum product in a refinery, drainage in a mine etc.

### 主要规格和技术参数

泵型号意义:(例 2QS4.8/17 型)

- 2 —— 双缸
- Q —— 汽力驱动
- S —— 输送介质为水
- 4.8 —— 流量值(米<sup>3</sup>/小时)
- 17 —— 压力值(1.7MPa)

### Main Specification And Technical Parameter

Pump Model Meaning(i.g Model - 2QS4.8/17)

- 2 - double cylinder
- Q - steam power drive
- S - Water is medium
- 4.8 - flow value(m<sup>3</sup>/h)
- 17 - pressure value(1.7MPa)

## 2QS、QB 型蒸汽往复泵 Mode- 2QS、QB Gold Shark Brand Pump

型号 Model	原型号 Original Model	汽缸直径 (毫米) Cylinder dia (mm)	水缸直径 (毫米) Water cylinder dia (mm)	往复行程 (毫米) Reciprocating stroke (mm)	流量 (米 <sup>3</sup> /时) (升/秒) Flow (m <sup>3</sup> /h) (l/s)	往复次数 次/分钟 Reciprocating times (times/min)	连接管口径 Joint pipe caliber			
							进汽 steam inlet	排汽 steam discharge	进水 drainage	出水 water outlet
2QS-3.5/17	QB-2	80	50	75	2-4 0.55-1.1	50-75	10	15	25	20
2QS-4.8/17	QB-3	115	70	102	3-6 0.84-1.68	38-70	15	20	50	40
2QS-9/17	QB-4	133	89	127	5-11.5 1.4-3.22	30-64	20	32	65	40
2QS-15/17	QB-5	152	102	152	6-16.5 1.68-4.62	30-60	25	32	80	50
2QS-21/17	QB-6	190	110	200	11-20.5 3.08-5.74	30-50	40	50	100	80
2QS-29/17	QB-7	190	130	200	16.5-29.5 4.62-8.26	30-50	40	50	100	80
2QS-53/17	QB-9	250	150	250	22.5-53 6.3-14.8	26-45	50	65	125	100
2QS-63/17	QB-11	300	180	300	38-63 10.64-17.64	24-40	50	65	150	100

### 高压蒸汽往复泵主要规格和技术参数

#### High - pressured steam pump main specification and technical parameter

型号 Model	2QS-15/25	2QS-53/25	
汽缸直径(mm) Cylinder dia (mm)	152	250	
水缸直径(mm) Water cylinder dia (mm)	80	130	
往复行程(mm) Reciprocating stroke (mm)	152	250	
流量 (m <sup>3</sup> /h) Flow (m <sup>3</sup> /h)	6-16.5	24-40	
往复次数 次/分钟 Reciprocating times (times/min)	30-60	30-50	
连接管口(mm) Joint pipe caliber	进汽 steam	20	50
	排汽 steam discharge	40	65
	进水 drainage	65	125
	出水 water outlet	40	100
外形尺寸 External dimensions A x B x C	1124 x 406 x 528	1515 x 652 x 787	
底脚尺寸 Footing size D x E	753 x 320	1055 x 480	
底脚螺丝 Foundation bolt F	M12	M22	
机重(kg) Engine weight	326	920	

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(注) 当蒸汽泵用于锅炉给水时, 流量将降低20%左右。往复次数亦相应的减少。

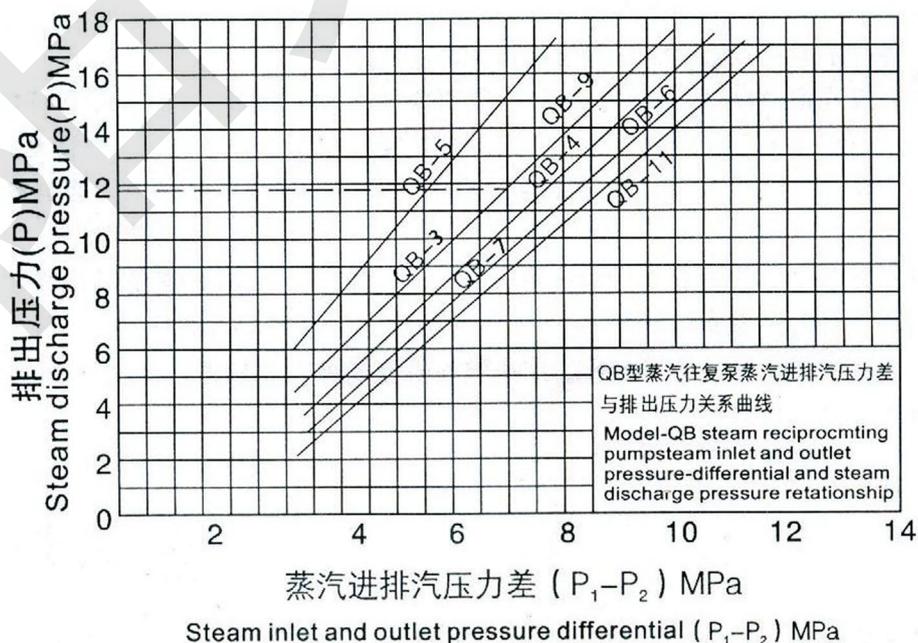
各种蒸汽泵的汽缸工作压力为1.4MPa, 排出压力为1.7MPa, 实际排出压力之大小, 须根据作用在汽缸活塞上蒸汽压力来决定, 即蒸汽压力越大。排出压力越大。附表为各种蒸汽泵的蒸汽进排气压力差和排出压力的关系曲线, 如QB-3及QB-9型蒸汽泵。当作用在汽缸活塞上的蒸汽压力差为0.7MPa时, 排出压力为1.17MPa时, (等于117米汞柱)如表中虚线所示, 各种蒸汽泵的最低蒸汽压力不小于0.3MPa, 否则泵不能启动。

Note: When steam pump is used for boiler feed water, flow will decrease about 20%, also reciprocating times decrease

Various steam pump cylinder working pressure is 1.4MPa, steam discharge pressure 1.7MPa, real pressure must be decided according to the steam pressure of cylinder piston i, e the bigger steam pressure is, the bigger steam discharge pressure is. Attached list is various kinds of relation curve between steam inlet and outlet pressure - differential and steam discharge pressure, for example: Model - QB - 3, QB - 9 Steam Pump, When steam pressure - differential in piston is 0.7MPa, steam discharge pressure is right 1.17MPa(equal to 117 m Hg) shown in list with dotted line, the lowest steam pressure more than 0.3 MPa, otherwise pump no starting.

### QB 型蒸汽往复泵蒸汽进排出压力差与排出压力关系曲线

Model - QB steam reciprocating pump steam inlet and outlet pressure - differential and steam discharge pressure relationship



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各种蒸汽泵适用于饱和蒸汽和过热蒸汽，气温不超过200℃。

各种蒸汽泵所配水缸活塞环，只适用于水温不能超过60℃，超过该温度而在105℃以内者。须掉换优质帆布夹层填料来制选水缸活塞环。各种蒸汽泵的理论吸水扬程为10.3米(当大气压为760毫米汞柱时)，但实际使用时吸水扬程包括管道阻力在内不应超过7米。当抽吸热水时吸水扬程随水温升高而降低。若水温过高或管道阻力过大。进水池最低水位须高于蒸汽泵的汽缸、水缸平直中心线。

Various steam pumps are suitable, for saturated steam and excessive hot steam, less than 200 °C.

Water cylinder piston ring in steam pumps is only suitable for water temperature less than 60°C, over 60°C and in 105°C, must be replaced with good canvas lined filling.

Various steam pumps theory suction delivery lift 10.3m (When atmosphere pressure is 760mm Hg), but suction delivery lift include pipe resistance is less than 7m when real using, When drawing and sucking hot water, suction delivery lift decreases with water temperature increasing. If water temperature is excessive high or resistance excessive big, water inlet pool the lowest water level has to be higher than cylinder of steam pump's, water cylinder is parallel with centre line.

### 安装及启动行走

蒸汽泵须安装在清洁、干燥及室内比较温暖的地方。须越靠近水源越好。连接水管越短越好。管路上弯头越少越好。以减少管路阻力。

蒸汽泵可安装在水泥楼板上。但须用螺栓紧固之。

泵的两端面处应预留地位以便检修。预留地位长度须能在检修时将活塞及活塞杆拉出即可。

进汽、排汽、进水及出水管口径不应小于泵上各口径尺寸，管路过长者管径放大。

安装管道时须不使管道的重量由泵来承受。因此，管道须另装支承柱子。否则将影响泵的水平度及将连接凸缘(法兰)破坏。

蒸汽管道及热水管道在安装须考虑由于膨胀而延伸管长。因此在管道上须另装膨胀接头或球形管。

进水管道的安装时须保持一斜度约1:20即连接在进水池的一端应低于连接泵凸缘(法兰)一端。这样可避免在进水管中造成空气囊。保证进水正常。

进水管必须保证不漏气。浸入进水池的一端须装一底阀及过滤器。以保证泵能迅速启动及防止杂物进入进水管。

在出汽管道上应靠近出水凸缘(法兰)处安装一逆止阀。以避免当泵停车时，出水管中水重全部由泵内水阀承受。以保证再行启动。

在进水管道上须安装一控制阀以控制蒸汽量进入蒸汽泵即控制泵的往复次数。

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在进水管道上须另装一引管道，在泵启动前将进水管及水缸部份充水并排出剩余空气。蒸汽管道外表面须包裹石棉以防止蒸汽中的热量散失。

全部管道在安装时须防止杂物遗留在管道内。以免损坏蒸汽泵，关于一般管道安装可参照附图，但由于使用情况不同，安装方法须根据实际设计。

### Installation and Starting Operation

Steam pump has to be install in clear, dry and warmer place, and the nearer by water souce, the better, it is; the shorter water pipe is, the better, it is, the less bends are, the better, it is, decrease resistance of pipe.

Steam pump can be installed on cement floor, but fix with hole, 1.

Leave place in advance for service in the two - end of pump, length must be able to draw out piston and rod. When servicing.

Steam admission, steam discharge, water inlet and water outlet pipe caliber must be more than each caliber size in pump, longer piping must expand pipe caliber.

Pump don't bear. Weight of piping, so has to install supporting pillars other wise effect pump straight, and destroy joint flange.

Must think over piping expansion when installed, so it must install expansion joint or ring pipe in addition.

Install water inlet piping, which must keep inclination about 1: 20 i.e. one end of piping connected with water inlet pool must lower than one side of connecting pump flange, avoid to result in air bag ensure normal feed water.

Water inlet pipe don't leak, install a base valve and a filter in one side of water inlet pool, ensure pump quickly starting and avoiding other material into water inlet pipe.

Install a inverted valve near by water outlet flange, avoid water weight in water outlet pipe all to bear by water valve in pump, when pump stopped, ensure to start again.

Install a control valve to control steam into steam pump on water inlet piping, i.e. control reciprocating times of pump.

Install other lead pipe on water inlet piping, before pump start, fill water into wawter inlet pipe and water cylinder, and draw off rest air. pack asbestos on the surface of pipe to keep heat. Avoid other material in piping when installed, so that damage steam pump. About general piping install see figure, but different use case, installation way according to real design.

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### 启动及启动前准备

泵在出厂前均经试车，故安装完毕后。在各拉杆端安装上密封垫料(在水缸部份装牛油盘根，在汽缸部份装铅粉石棉盘根)并加注润滑油后即可准备启动。

泵在启动前须检视地脚螺钉及各部位螺母是否全部坚固。各加油孔须灌注润滑油，进出水及排汽管上阀须全部开启。

泵启动时须将蒸汽控制阀逐渐开启。使泵逐渐启动。泵启动后。如果发现有故障，例如：漏气、漏水和特殊声音等。须立刻停车检查原因。待修复后才能再行启动。

泵行走正常后。可调节泵出水口处阀门到额定的排出压力为止。

水室盖上放气旋塞是用于排除室内存气。在启动时可以启动。

有水喷出即可关闭。

泵的往复行程次数须在规定的范围内。太慢可开大蒸汽控制阀，太快可关小蒸汽控制阀。

在正常运转下。泵的活塞行程尺寸。须符合规定。若行程达不到或超过规定须调整汽门阀。调整方法详后。

倘若停车后将停止使用一个时期须将汽缸和水缸下部放水旋塞开启。使缸内积水全部放净。

### Starting and prepare Before starting

Pump must pass through trial – run in the factory. Prepare to start after it has been installed well and installed seal packing on pull rod filled lubricating oil.

Before starting, inspect foot screw and all part nut if all solid. Each oil valves in water inlet and outlet pipe and steam discharge must be all open.

Gradually open steam control valve when pump starts. After pump started, if find ont trouble, i. g. leak steam, leak water and special voice etc. It must stop to inspect at once, start after repaired again.

After pump runs normally, regulate valve of water outlet to rated drawing off pressure.

Drawing off air plug is used for drawing off air in water room, open after started, close when jetting.

Reciprocating stroke time of pump must in fixed range. Too slow, open steam control valve to big level, too quick, regulate the valve to small level.

Piston stroke size must accord with stardard. If the stroke is not up to or over stardard, must regulate steam valve.

After stopped, must close oil cup in steam cylinder, stop oil into one.

If stop using for a period, open the steam cylinder and water cylinder down part drainplug, drain out all water.

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### 维 护

泵须经常保持清洁,泵体上不要放置物体。

每半小时在油孔处灌注润滑油一次,润滑油应无杂质。

经常注意泵行走正常。泵在行走时须无振动和敲击声,在冬季须做好保暖,水缸及水管外表须用保暖材料包好以防冰冻。

特别须注意当出水管道上装有闭路阀门时,在闭路阀门关闭时水缸内部积水未放出时,不能将泵启动。否则将造成高压力水柱而损坏水泵。为了避免上述事故发生,在泵停车时期,须将汽缸放水旋塞经常开启,在排出水管道上(在闭路阀门面前)安装安全放水阀(弹簧式),并经常检查安全放水阀是否失效。

该泵如不经常使用,应每周(月)进行空试一次。

### Service

Keep clear, don't put object on pump. Fill lubricating oil once half an hour, oil no other material.

Often pay attention to pump to run. Without vibrating and knocking voice. When running.

Insulate in wind, pack insulating material on the surface of water cylinder and water pipe to prevent frostbite.

Note especially: Don't start pump when installed closed valve in water outlet piping, and rest water in water cylinder don't draw off, other wise will damage pump because of high pressure water column. In order to avoid above accident during pump stopping, often open steam cylinder plug, install safe drawing off water valve on drainage pipe, and inspect safe divergence water valve if losed efficacy, put forth your strength to pry, if no often use, must try once each weed(mounth).

### 检 修

### Maintenance

蒸汽泵在使用一个时期后,一定要进行检修,检修时期可以安排一年一次。

After pump used a peiod, must maintain once a year.

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### 一、校正汽阀

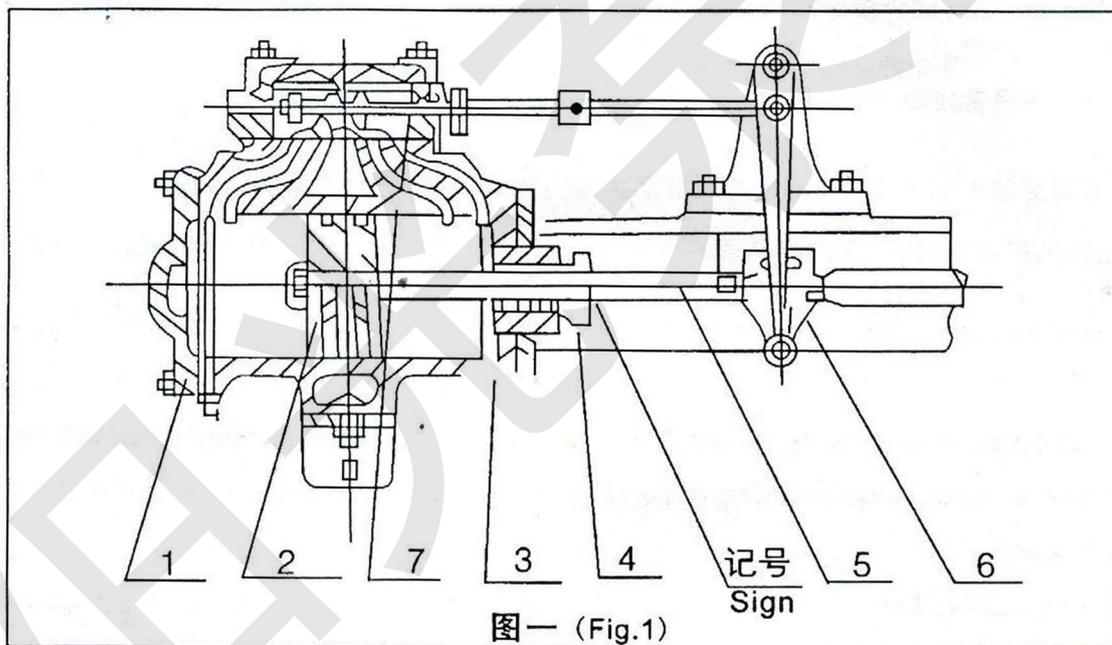
#### 1. corrected steam valve

1、将汽缸水缸放水旋塞开启。

(1) Open draw off plug of steam and water cylinder.

2、参阅图一，将撬棒将其中一只汽缸活塞②向左撬动，使活塞与汽缸塞①碰盖，撬棒可以靠十字头⑥处用力撬动。

(2) See fig. 1 Use a pry to remove a piston② towards the left, touch a piston with steam cylinder cover ①, near cross head ⑥ with pry.



3、在活塞杆⑤靠近填料套④处做一个记号

(3) Make a sign at piston rod near filling sleeve ④.

4、再用撬棒将活塞杆向右即向水缸一头撬动，使汽缸活塞碰着填料套一面即汽缸活塞碰着③处。

(4) Pry the piston rod towards the right i. e. towards one head of cylinder with a pry, make the piston touch the one side of filling sleeve i. e. the piston touch to ③.

5、从填料套④处到第一次做好的记号的一段活塞杆之间中心处做第二记号。

(5) Make the second sign centre between filling sleeve to the first sign.

6、再将活塞向左提撬，使第二个记号碰着④处，此时活塞在汽缸中心地位。

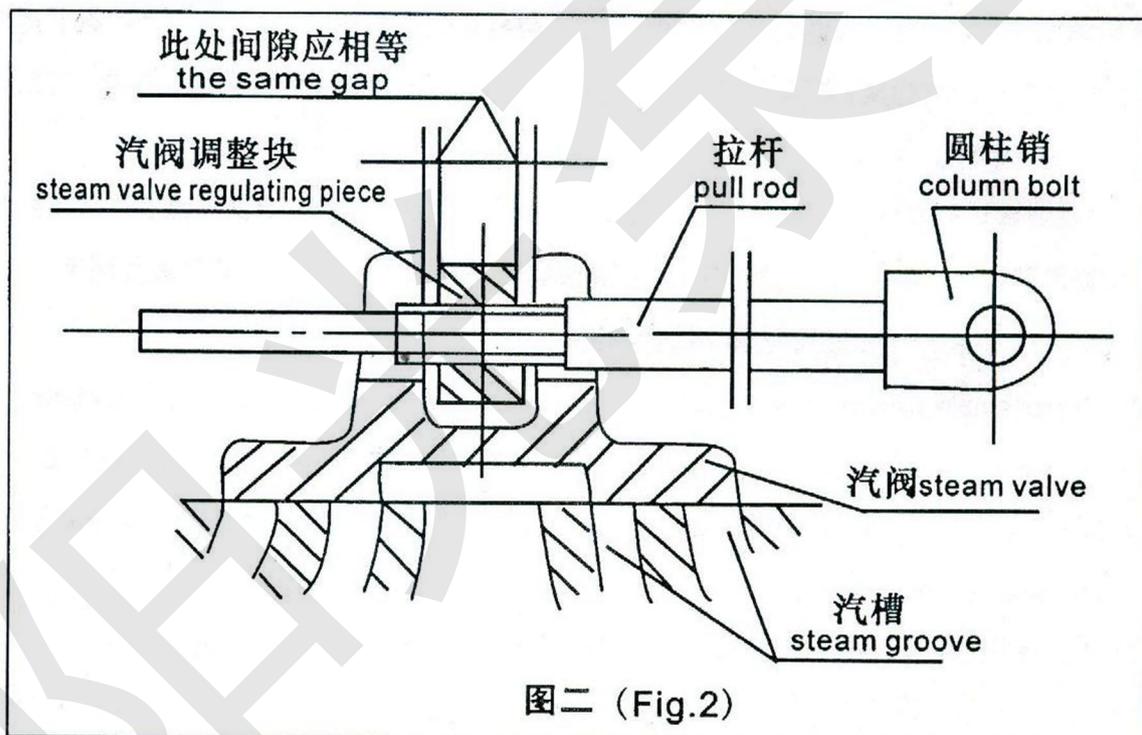
(6) Lift and pry the piston towards the left, make the second sign touch ④, right now the piston in

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the centre of steam cylinder.

7、将汽塞盖⑦拆卸，检查汽阀是否将汽槽全部盖没，参阅图二，倘发现汽阀偏左或偏右没有盖没汽槽，则须将拉杆连接处圆柱销拆下，然后将汽阀位置校正，汽阀的调整方块必须在中央，即两边空隙一样。

(7) Disassemble steam room cover, inspect valve if perfectly cover steam groove, see fig.2. If find out that steam valve cover steam groove right or left of centre, must dismount column pin from pull rod joint, then correct position, regulating square cake must in the centre, i.e. two-side space is the same.



8、以上是校正第一只汽缸汽阀的方法，校正第二只汽缸汽阀和上述方法一样。

(8) Above correcting way to the first steam cylinder and valve, the second cylinder steam valve the same as above.

9、须注意左面汽阀控制右面汽缸，右面汽阀控制左面汽缸。

(9) Pay attention to the left steam valve control the right steam cylinder, the right steam valve control the left steam cylinder.

10、在校正汽阀的同时可将汽阀拆下检视汽阀平面与汽阀座是否光滑密合，若发现有磨擦痕迹，不密合情况时须将汽阀与汽阀座用细的研磨砂研磨。研磨的方法用研磨砂涂在阀座及阀面上，

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将阀盖在阀座上下对磨。

(10) Correct steam valve, at the same time disassemble steam valve, inspect steam valve plane and valve cone if smooth and seal, must grind steam valve and valve cone with fine sand.

11、两只汽缸的汽阀完全校正后,必须将其中一只汽缸活塞用撬棒向左或向右撬动,使两只汽缸活塞不在同一地位,即二只缸的活塞位置错开,否则泵不能启动。

(11) After corrected, pry a piston towards the right or the left with pry, make them different position, otherwise pump will not start.

### 二、检查汽缸及汽缸活塞环

1、将汽缸盖拆除,检视汽缸壁是否有擦伤痕迹,特别是汽缸的底部是最容易磨损,必须用内径千分尺以测定汽缸的偏圆度,若偏圆度超出一定范围,则须重镗并调换放大尺寸的活塞,否则将影响泵效率及多耗蒸汽。

2、汽缸活塞环必须拆下检查,若发现磨损过多须掉换新活塞环,若活塞环弹性降低不能与汽缸壁贴牢而间隙过大,则亦必须掉换活塞环,检查活塞环是否与汽缸壁服贴,可用嵌片测定。

### 2. Inspect steam cylinder and piston ring.

(1) Disassemble cylinder cover, inspect steam cylinder wall if rubbing trace, especially easily wear and tear at the base of one. It must test cylinder degree of deviation round with inside diameter microcalliper, if the degree of deviation round goes beyond a certai scope, exchange amplifying size piston, otherwise will effect pump efficiency and consume much steam.

(2) Disassemble piston ring, if find out excessively worn and torn it, must replace ne piston ring. If the gap is excessive big between piston ring and steam cylinder wall, als replace it. Inspect piston ring whether nestle closely to steam cylinder wall, also replace. Inspect piston ring whether nestle closely to steam cylinder, test with inlaying piece.

### 三、检查水阀

每台蒸汽泵共有 8 只水阀,分为二层,上层 4 只排水阀装在夹板上,另 4 只进水阀装在水缸一端泵体上,只要将水室盖拆开即可看见上层 4 只,另 4 只须将夹板拆除方可看见:拆除夹板只要将夹板上 4 只螺母拆下即可取出。参阅水阀简图三。

检查水阀的关键问题,须检查阀片与阀座是否密合,泵使用一个时期后阀片与阀座可能已被

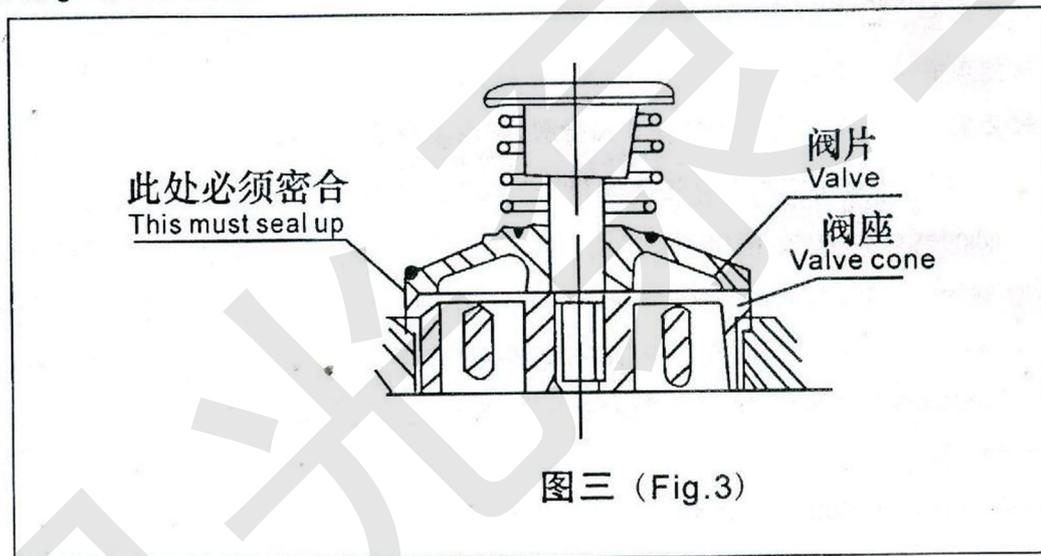
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腐蚀不平而漏水,因此在检修时须拆开检查,若已被腐蚀,则须用研磨砂研磨。

### 3. Inspect water valve

There is 8 tai water valve every steam pump, divided two – layer, upper 4 drainag valve is fixed on splints, other 4 ones on one end of water cylinder. See fig.3.

Inspect water valve key problem is that disassembles valve, if valve and valve cone at corroded, have to grind with sand.



### 四、调换水泵活塞环

水缸活塞环是用夹布橡胶做的,在使用一个时期后可能损坏,因此须掉换新的活塞环,在调换新活塞环时须注意:

- 1、活塞环材料须按水温度情况选购。
- 2、活塞环尺寸和搭扣尺寸须照原样割制。

### 4. Change pump piston ring

This ring is damaged to use for a period so replace new piston ring.

You must pay attention to:

- (1) When replacing, keep certain gap.
- (2) Piston ring materid is choosed by water temperature case.

## 2QS、QB 型蒸汽往复泵 Mode- 2QS、QB Gold Shark Brand Pump

### 五、检查及调换填料箱填料

汽缸及水缸活塞杆填料箱填料和汽室拉杆填料箱填料使用一个时期后，将会发硬而磨损活塞杆及拉杆，故在检修时须取出检查，倘已变质发硬须调换新的，填料是用麻棕石墨做成，须选购质量比较好的。

技术文件：

- 1、合格证一份。
- 2、装箱单一份。
- 3、安装使用维护说明书一份，内附外形尺寸，安装示意图。

(注：若液缸活塞环材料用酚醛夹布代替夹布橡胶，则也适用于输送油料。)

#### 5. Inspect and exchange filling box filling compound.

Steam cylinder and water cylinder piston rod filling compound in filling box and steam a pull rod filling xompond in filling box are used for a period, will change hard to weat tear piston rod and pull rod, when inspecting find out changing hard and replacing new

Filling compound is made from gunny coir and graphite, choose better ones.

Anical file

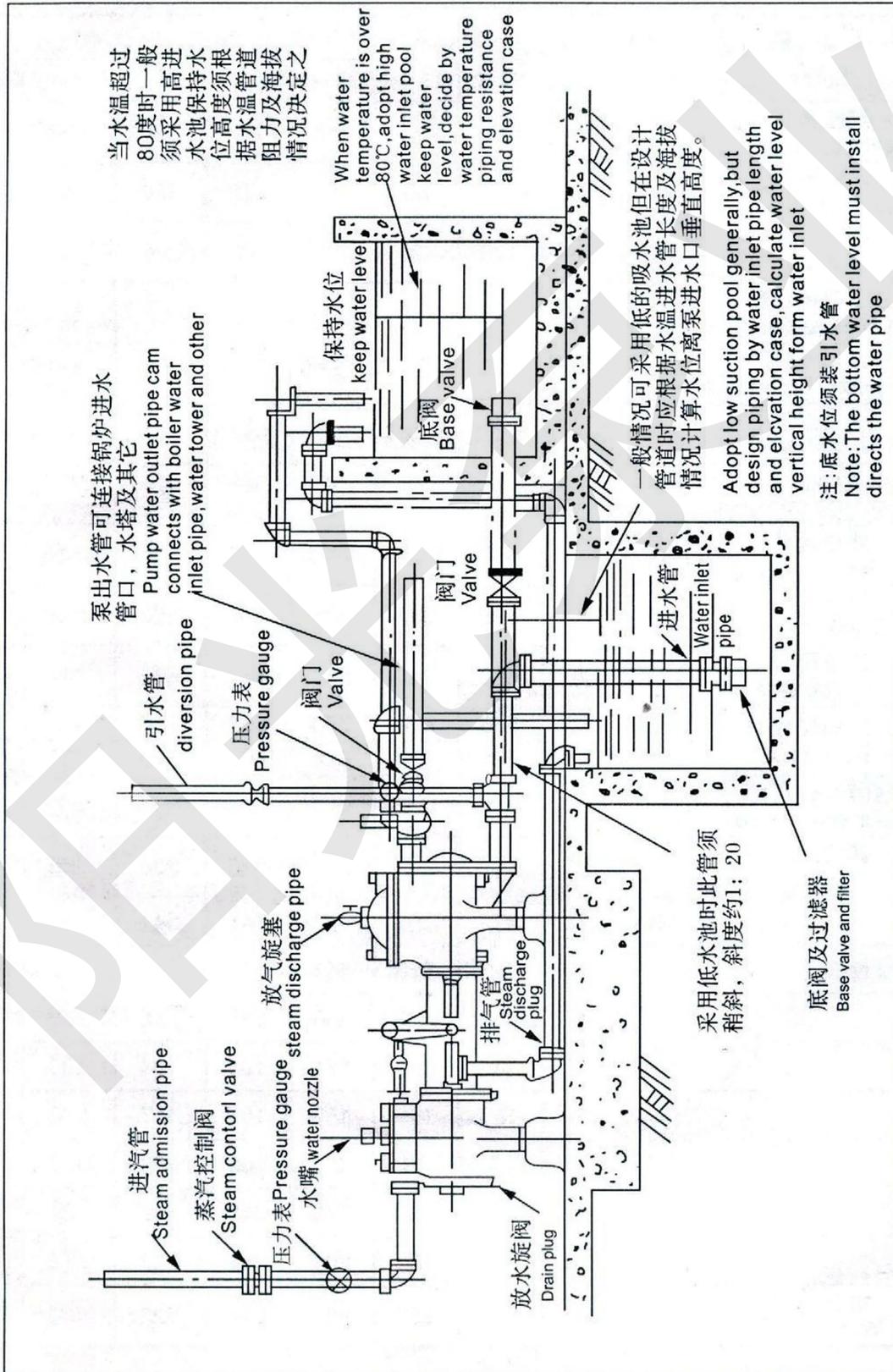
- (1) A piece of certificate of quality
- (2) A picec of shipping order
- (3) Directions of installation, operation and maintenance, include outside size figure, ination chart.

If liquid cylinder piston ring material is phenol clamp cloth instead of clamp cloth er, it is suitbale for transporting oil material.

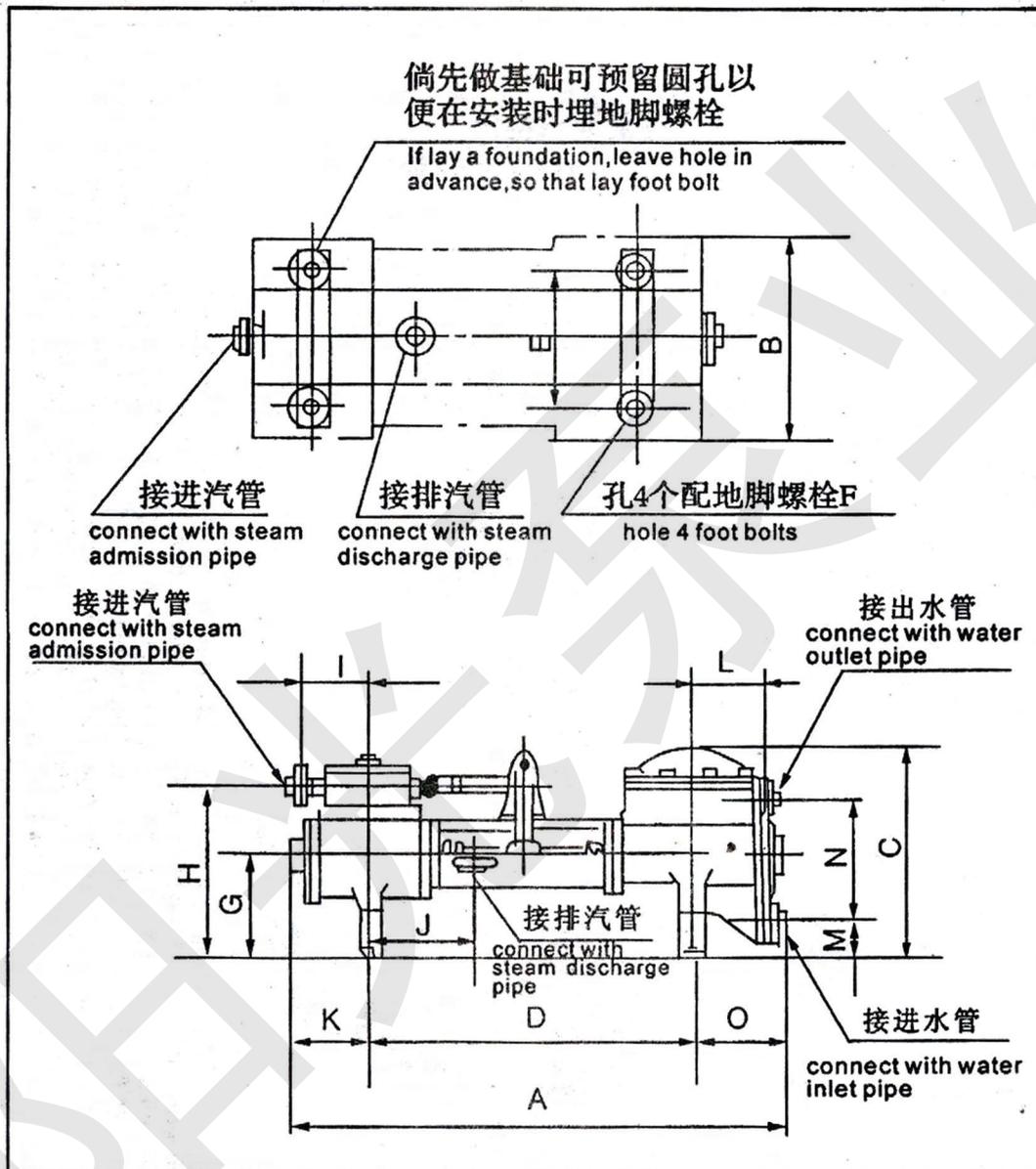
## 2QS、QB 型蒸汽往复泵 Mode- 2QS、QB Gold Shark Brand Pump

项次 No	项目名称 Name	代号 Code	型号及尺寸 (mm) Model & Size (mm)							
			QB - 2	QB - 3	QB - 4	QB - 5	QB - 6	QB - 7	QB - 9	QB - 11
1	汽缸直径 Steam cylinder D.		80	115	133	152	190	190	250	300
2	水缸直径 Water cylinder D.		50	70	89	102	110	130	150	180
3	行程 Stroke		75	102	127	152	200	200	250	300
4	进水口径(管) Water inlet caliber(pipe)		1 $\frac{1}{4}$ "	2"	2 $\frac{1}{2}$ "	3"	4"	4"	5"	6"
5	出水口径(管) Water outlet caliber(pipe)		1"	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	2"	3"	3"	4"	4"
6	进汽口径(管) Steam admission caliber(pipe)		3/8"	1/2"	3/4"	1"	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	2"	2"
7	排汽口径(管) Steam discharge caliber(pipe)		1/2"	3/4"	1 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	2"	2"	2 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "
8	外形尺寸 Outside size	A	700	880	1020	1124	1273	1273	1515	1763
9	外形尺寸 Outside size	B	235	325	388	406	460	460	652	742
10	外形尺寸 Outside size	C	340	470	480	528	672	672	787	835
11	地脚尺寸 Foot size	D	186	588	670	753	864	864	1055	1183
11		E	80	236	320	320	400	400	480	530
12	地脚螺钉尺寸 Foot screw size	F	M10	M12	M12	M12	M20	M20	M22	M22
13	其它尺寸 Other	G	138	191	229	243	280	280	345	370
14		H	222	323	383	422	541	541	650	678
15		I	85	113	128	147	202	202	227	227
16		J	196	219	237	260	295	295	355	392
17		K	195	130	160	171	184	184	188	227
18		L	139	136	149	165	187	187	230	255
19		M	185	75	99	97	100	100	150	145
20		N		242	238	279	345	345	382	425
21		O	295	162	190	200	225	225	272	303
22	机重(kg) Weight(kg)		82	172	255	326	510	520	880	1200

**2QS、QB 型蒸汽往复泵**  
Mode- 2QS、QB Gold Shark Brand Pump



## 2QS、QB 型蒸汽往复泵 Mode- 2QS、QB Gold Shark Brand Pump



进汽口径公称直径为  $\frac{1}{2}$ "、 $\frac{3}{4}$ "、1"者采用锥形螺管接头均配由凸缘内车管螺纹。

地脚螺钉地位尺寸仅供参考。倘需预先做好水泥基础,可在基础上预留圆孔平面图上虚线所示。

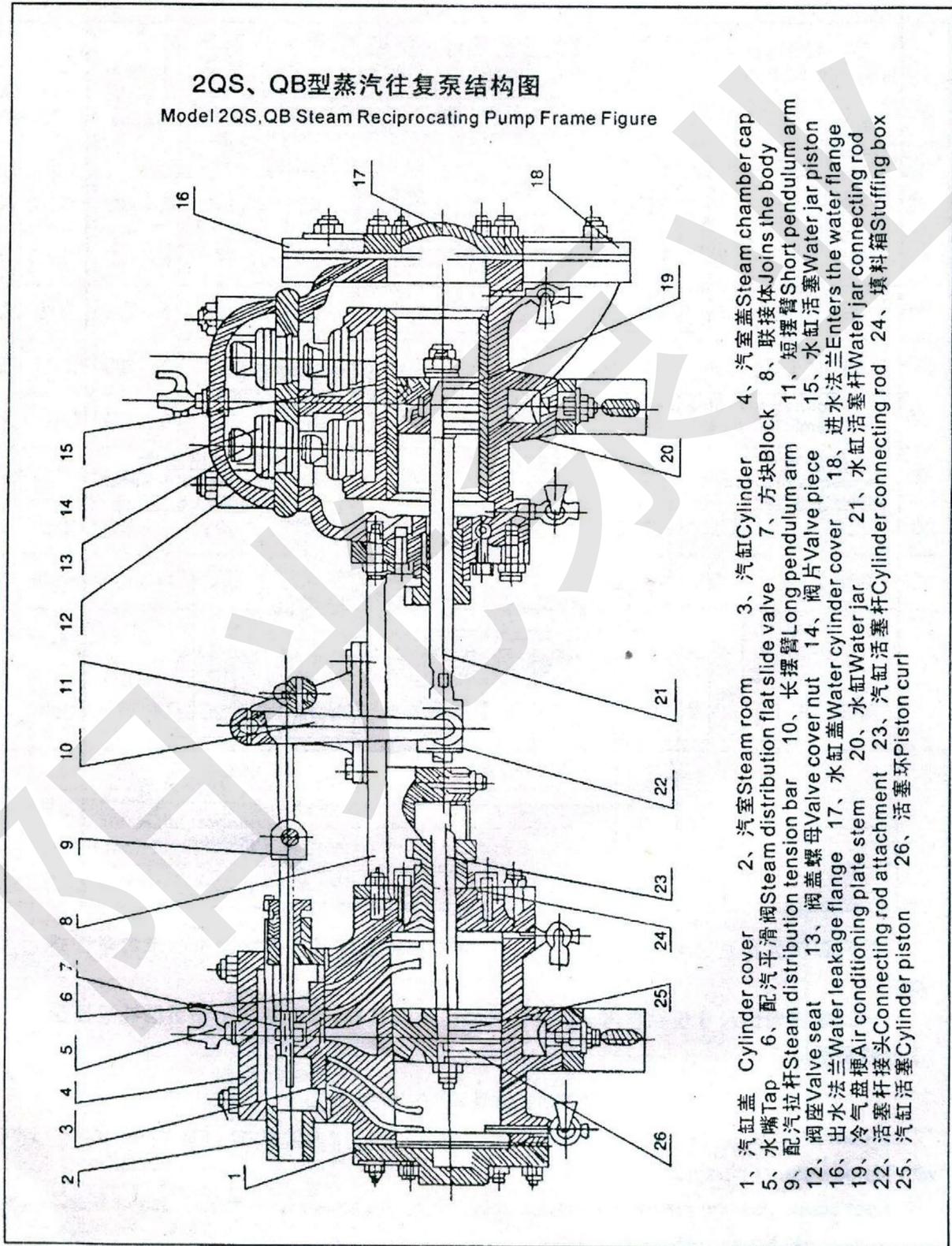
### Foot screw and other size figure

Steam inlet caliber nominal diameter  $\frac{1}{2}$ " ,  $\frac{3}{4}$ " , 1" adopt cone pipe screw thread joint with flange internal pipe screw - thread.

Foot screw position size for reference only. If lay a cement foundation, leave hole in advance, show in figure, with dotted line.

## 2QS、QB 型蒸汽往复泵 Model- 2QS、QB Gold Shark Brand Pump

2QS、QB型蒸汽往复泵结构图  
Model 2QS, QB Steam Reciprocating Pump Frame Figure



- 1、汽缸盖 Cylinder cover
- 2、汽室 Steam room
- 3、汽缸 Cylinder
- 4、汽室盖 Steam chamber cap
- 5、水嘴 Tap
- 6、配汽平滑阀 Steam distribution flat slide valve
- 7、方块 Block
- 8、联接臂 Joins the body
- 9、配汽拉杆 Steam distribution tension bar
- 10、长摆臂 Long pendulum arm
- 11、短摆臂 Short pendulum arm
- 12、阀座 Valve seat
- 13、阀盖螺母 Valve cover nut
- 14、阀片 Valve piece
- 15、水缸活塞 Water jar piston
- 16、出水法兰 Water leakage flange
- 17、水缸盖 Water cylinder cover
- 18、进水法兰 Enters the water flange
- 19、冷气盘梗 Air conditioning plate stem
- 20、水缸 Water jar
- 21、水缸活塞杆 Water jar connecting rod
- 22、活塞杆 Connecting rod attachment
- 23、汽缸活塞杆 Cylinder connecting rod
- 24、填料箱 Stuffing box
- 25、汽缸活塞 Cylinder piston
- 26、活塞环 Piston curl

### 调 试 说 明

- 1、首先详细检查泵各部位的螺栓、螺帽等紧固件是否有松动的现象。如有则需全部拧紧。特别是十字接头与活塞杆配合的部位。不能有松脱的现象。
- 2、泵的启动压力(即蒸汽压力)。必须保证在0.3MPa以上。特别注意的是：进蒸汽泵的蒸汽压力。必须与锅炉自身的压力相等。否则即使进汽压力超过了0.3MPa。但低于锅炉的压力，也进不了水!
- 3、排汽部位不能安装阀门。以确保排汽的畅通无阻。
- 4、修理时注意：泵启动前。首先把中心轴架上的长短摆臂调整到泵的中心位置，然后打开汽室盖。汽室内部有汽阀2只，汽缸上左、右各有5只孔。一定要盖住(用汽阀盖住，即：每只汽阀盖住5只孔，参考说明书图二)。然后把汽室盖盖上。再把长、短摆臂按前后方向叉开。
- 5、如果该泵以前已经使用过。或已进过水。那么现在调试时，则需把汽缸内部的水全部放完(只需打开泵底部汽缸端4只阀门即可排水。待水排尽后关闭阀门)。
- 6、进水管阀门关闭。即可接通汽源。然后开启进水管阀门。该泵如不经常使用。每周(月)应进行空试一次。

### The debugging explained

First in detail inspects pumps various fastener and so on spots bolt, cap nut whether has the loose phenomenon, like has then must screw tight completely, specially the cross joint and the connecting rod coordinate the spot, cannot have the phenomenon which loosens.

Pumps the starting pressure (namely steam pressure), must guarantee above 0.3Mpa, pays attention specially: Is enters the steam pump the steam pressure, must be equal with boiler own pressure, otherwise even if the manifold pressure has surpassed 0.3Mpa, but is lower than the boiler the pressure, also could not enter the water!

The exhaust spot cannot install the valve, by guarantees the exhaust unimpeded.

When repair pays attention: Pumps before the start, first suspends the central bearing stand on length the arm to adjust to the central position which pumps, then turns on the steam chamber cap, the steam room interior has steam valve 2, on the cylinder left, right has 5 holes respectively, certainly must cover (covers with steam valve, namely each steam valve covers 5 holes, in data book chart two), then covers the steam chamber cap, is again long, the short pendulum, arm splits according to the around direction.

If should pump before has already used, or has entered the water, then time present debugging, then must put completely the cylinder interior water (only must hit the pumping base cylinder to carry 4 valves then to drain water, after waits water to drain away closes valve).

The water inlet pipe valve closure, then puts through the steam source, then opens a water inlet pipe valve, should pump like uses not frequently, each week (month) should carry on dry practice.