

**ZP275 ROTARY TABLE**  
**INSTRUCTION MANUAL**

**Distributed by**



**Charles Rig Supplies, Inc**

## CONTENTS

1.USE .....	1
2.TECHNICAL SPECIFICATION .....	1
3.STRUCTURE .....	1
4.ASSEMBLY .....	3
5.MAINTENANCE .....	3
6. LUBRICATION .....	4
7.PACKING AND DELIVERY .....	4
8. BEARINGS .....	5
9. CONSUMABLE ACCESSORIES .....	5
10.SPECIAL TOOLS .....	5
11.ACCOMPANYING FIGURE .....	5

## 1. USE

ZP275 rotary table is mainly used for:

- 1.1 Drive the drill pipe in the process of drill or fishing operation.
- 1.2 Equalize the torque reaction of the drill string during drill.
- 1.3 Suspend the pipe string while unloading the drill pipe or casing.
- 1.4 Loosen the thread join while raising the drill pipe.

The product is designed, manufactured and verified in accordance with API specification 7K 2001.

## 2. TECHNICAL SPECIFICATION

Max. Static Load:	4500KN
Max. Rotating Speed:	300r/min
Opening Diameter:	698.5mm(27 ½ in)
Transmission Ratio:	3.67:1
Distance between rotary table center and the row 1:	1353mm
Weight:	6163kg
Size(L×W×H):	2391.5×1670×685 mm

## 3. STRUCTURE

The ZP275 rotary table is consist of basement(1),rotating turret device (2),master bushing device (3),cover plate(4), horizontal shaft assembly(5) and locking device (6).

Sizes of rotary shaft extension and borehole conform to API standards (See the Structure Scheme).

### 3.1 Cast welding basement

The basement is the cast welding combined parts, being welded of cast steel basement and metal structural member. The basement is also served as oil pool, which can lubricate sector gear and bearing.

### 3.2 Rotating turret device

The rotating turret device is made up of rotating turret, big toothed rim ,bearing I and bearing II. It is moved by one pair of sector gear, the opening hole of the rotating turret is used for passing the drilling tool and casing pipe pillar. In the square hole upper the borehole, two arc slots are cut in the opposite walls, ensure master bushing runs safely insert pin in each slot.

### 3.3 Master bushing device

Master bushing device is made up of two halves.

### 3.4 Horizontal shaft assembly

The horizontal shaft assembly is made up of bevel pinion, centripetal short-cylindrical rollers bearing, centripetal spherical rollers bearing, horizontal shaft and double-row sprocket.

### 3.5 Locking device

The locking mechanism is made up of the left and right sides pawl, control rod pin, shot pin and control rod. In order to brake the rotating turret, the left and right sides pawl can be sent into one of 26 slots on the turntable by control rod.

## 4. ASSEMBLY

4.1 All parts and disassemblies must be inspected and verified, ensure they are clean and cut all corners.

4.2 Adjust the thickness of iron pad between the bearing shell and the rotary table shell to guarantee the flank clearance of 0.34~0.76 mm.

The normal temperature of the bearings should be down to 45°C, it shouldn't exceed 80°C.

4.4 All gaskets are placed manually. No metallic tools in assembling procedure.

4.5 After assembly, gear pair runs smoothly, no abnormal noise and latching mechanism should be flexible and reliable.

## 5. MAINTENANCE

5.1 Maintenance before service

5.1.1 Checking the locking device on the location of control rod, it should be in the relax location before the rotary table service.

5.1.2 Checking rotating turret and main master bushing on the slipper and pin, they should turn flexible.

5.1.3 Checking the level of lubrication oil and quality, the level of lubrication oil shouldn't be below scale.

5.1.4 For temperature down to 0°C, runs the rotary table 0.5h on unload.

5.2 Maintenance in service

- 5.2.1 Checking the horizontal shaft whether the lip seal is reliably.
- 5.2.2 There is no snap-in and collision during the rotary table operating.
- 5.2.3 Checking up whether the bearing temperature is normal
- 5.2.4 Checking up whether the chain sprocket has the axial displacement, if having, fastening the flange with bolt.
- 5.2.5 Checking up the level of lubrication oil and quality in a shift (8 hours), the level of lubrication oil shouldn't be below scale.
- 5.2.6 Feed the grease fitting with grease once in a shift(8 hours).
- 5.2.7 Remove the cover plate to clear away the mud once or twice each month. Increase the frequency of cleaning especially in the freezing winter.

## **6. LUBRICATION**

- 6.1 Fill the rotary table with 90 # sulphur-phosphorous Ep gear oil(SAE90), change the oil once every two months, checking up the lubrication oil once weekly, if dirty, it should be changed timely.
- 6.2 The pin of the locking mechanism is lubricated with 2# lithium grease once weekly (SY1412).

## **7. PACKING AND DELIVERY**

when convey the rotary table, suspend the four corner at bottom, dragging on the ground is forbidden.

## 8. BEARINGS

Bearings for ZP275 rotary table

No.	Description	Code	Sizes	Quantity
1	main bearing	91682/800	800×1060×155	1
2	auxiliary bearing	1681/800	800×950×120	1
3	horizontal shaft bearing I	NU 2330	150×320×108	1
4	horizontal shaft bearing II	22330	150×320×108	1

## 9. CONSUMABLE ACCESSORIES

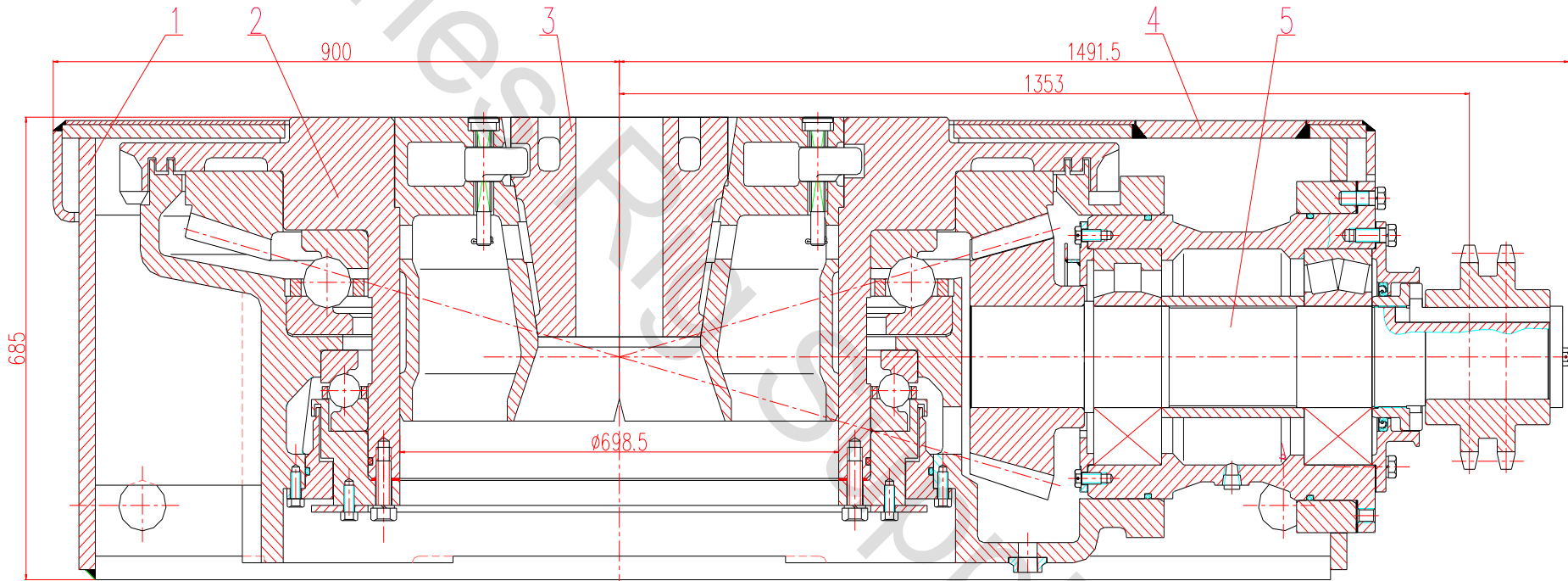
No.	Code	Description	Sizes	Quantity	Weight (kg)
1	805.10.15	o-shaped seal ring	Φ 800 X Φ 8.6	1	0.14
2	805.10.20	o-shaped seal ring	Φ 1000 X Φ 8.6	1	0.16
3	D4-5-73	o-shaped seal ring	Φ 420 X Φ 8.6	2	0.07
4	D7-1-67	lip seal ring		1	0.178

## 10. SPECIAL TOOLS

No.	Code	Description	Quantity	Weight(kg)
1	805.10.FJ	square slip bail	2	7.4

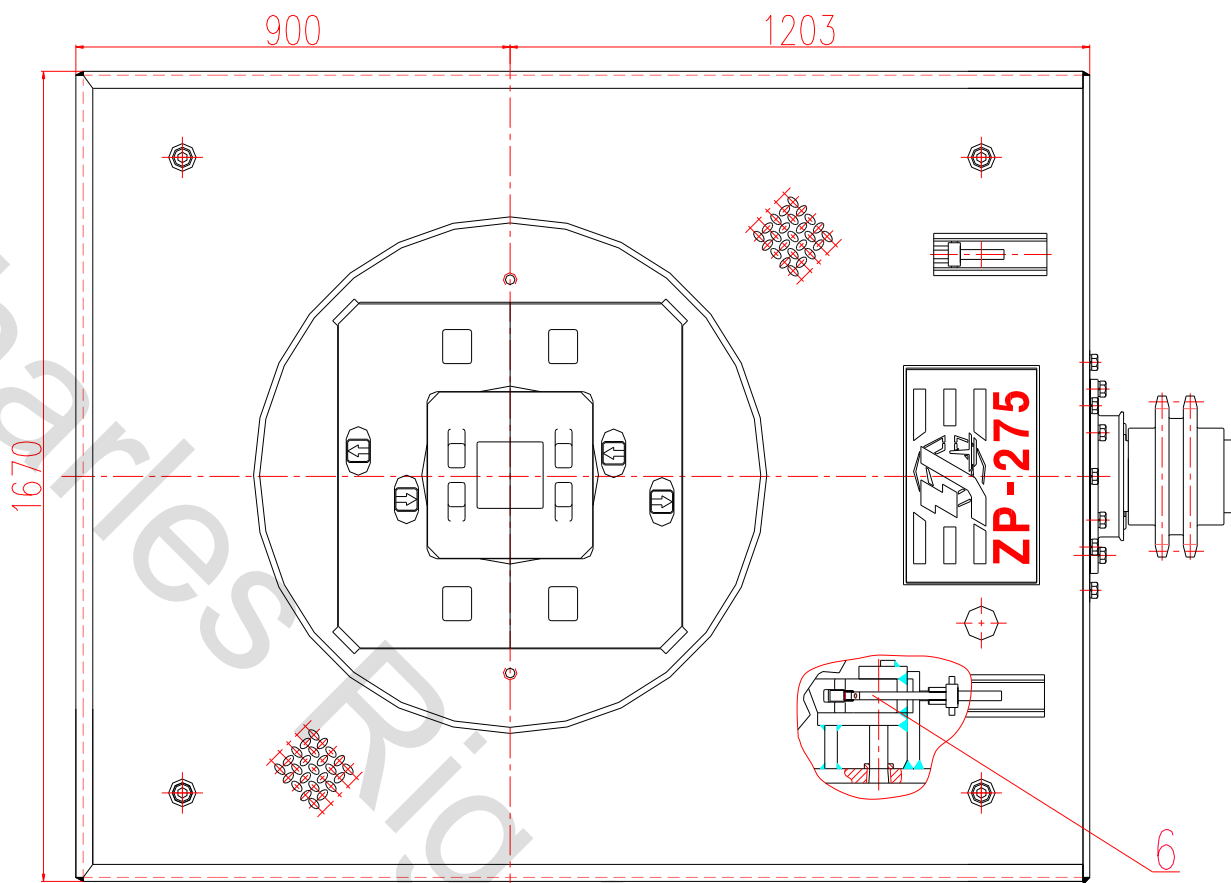
## 11. ACCOMPANYING FIGURE

### 11.1 Figure for assembling sizes

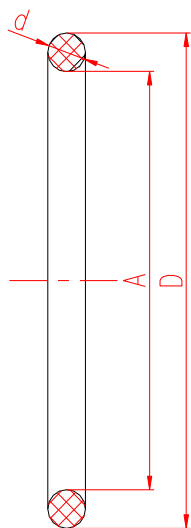


1. cast welding basement    2. rotating turret device    3. master bushing device  
 4. cover plate    5. horizontal shaft assembly    6. locking mechanism





11.2 Figure for Consumable Accessories



o-shaped seal	D (mm)	d (mm)	A (mm)	material
Φ 1000 X Φ 8.6	Φ 1000	Φ 8.6 ± 0.25	Φ 983.9 ± 1.6	rubber I -4
Φ 800 X Φ 8.6	Φ 800	Φ 8.6 ± 0.25	Φ 783.9 ± 1.6	rubber I -4
Φ 420 X Φ 8.6	Φ 420	Φ 8.6 ± 0.25	Φ 403.9 ± 1.6	rubber I -4