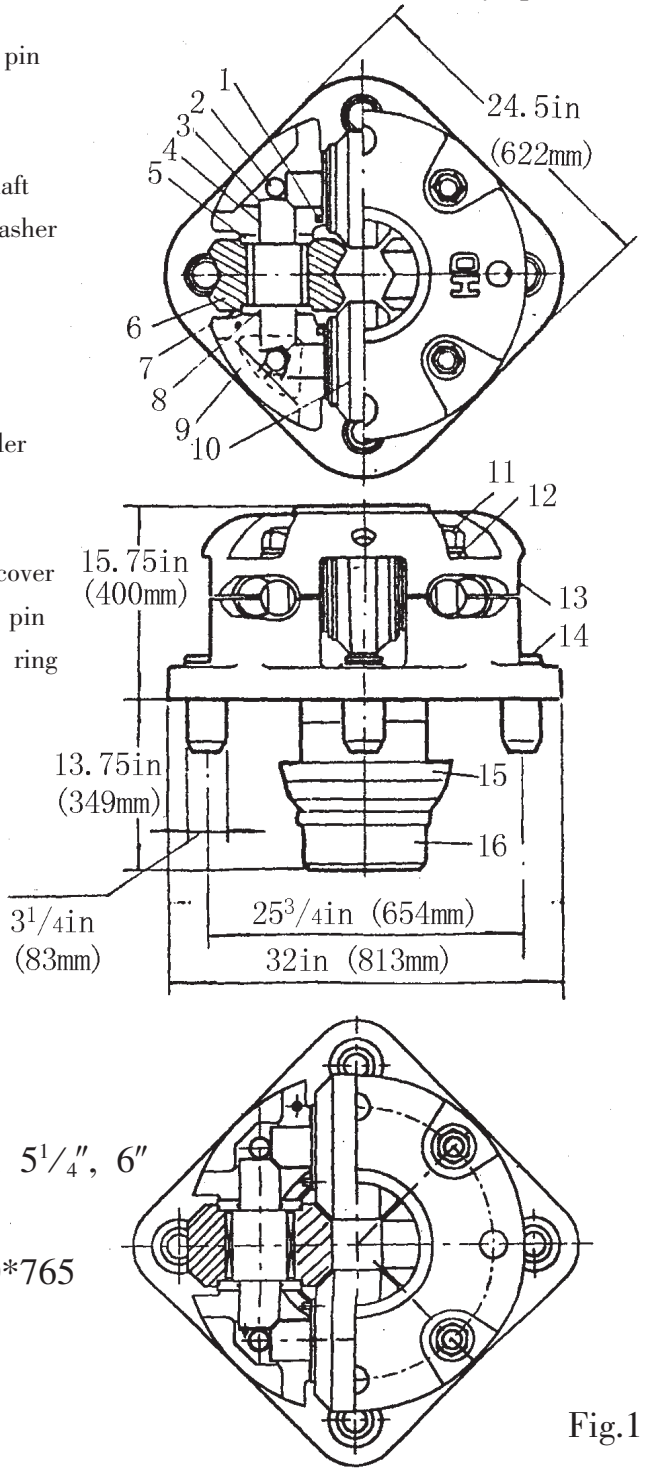
Ⅰ. Introduction

Roller Kelly Bushing is a necessary tool for drilling. It matches with master bushing to drive kelly pipe. When kelly pipe is drilling in, the rollers of the bushing favour the motion of kelly pipe and keep it concentric with well hole.

Chart one is 27–HDP type rolling kelly bushing. It is designed for the most rugged, high torque, high speed drilling conditions. Its roller assembly provides an efficient driving mechanism that maintains good driving edges on the kelly and in condition of certain velocity, the drilling rod couldn´t bend.

27–HDP rolling bushing fits for 23″, 26″, 27½″, 37½″ and 49½″ rotary table Rolling bushing has four pins of 3¼″ (83mm) diameter. With central distance 25¾″ (654mm). The pins match with3½″~6″ square and hexagonal drilling rod. By changing the size of roller, the bushing can be used to kinds of kelly.

1. location pin
2. bolts
3. oil cup
4. roller shaft
5. thrust washer
6. V–roller
7. bearing
8. O–ring
9. pin
10. flat roller
11. nut
12. washer
13. upper cover
14. driving pin
15. floating ring
16. seleeve



Technical specifications:

Applicable kelly size: 3″, 3½″, 4¼″, 5¼″, 6″

Max. torque: 27110N·m

Overall dimensions: L*W*H=630*630*765

Weight: 730kg

Fig.1

Ⅱ. Installation

1. Liffing bushing and putting it into master bushing.
2. Screwing off four nuts and washers.
3. Taking out the upper cover along the bolts.
4. Taking out four rollers from the lower body of bushing.
5. Connecting with the upper cover and lower body.
6. Putting the kelly into bushing.
7. Lifting the upper cover and installing roller group.
8. Laying down the upper cover and making the location pin align to center.
9. Installing washers and nuts.
10. Before being used, adding lubricating oil to rollers

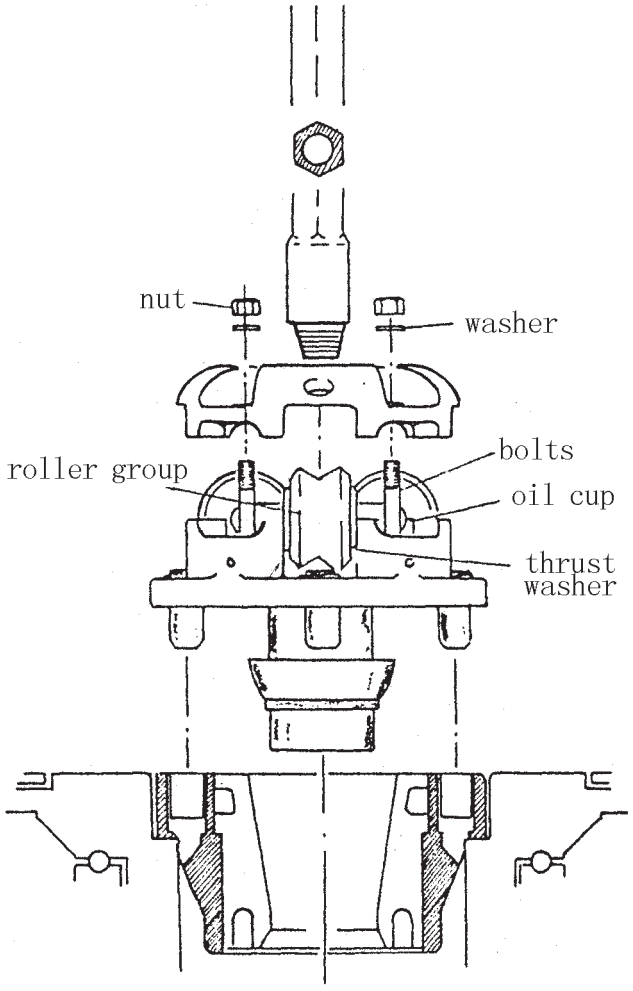


Fig.2

Ⅲ. Operation

1. Putting the kelly roller bushing into master. Its sleeve enters into the bushing along the cone. The surfaces of sleeve smear the butter to make the floating ring slide better.

2. When the roller bushing lays down, the rotary table is turning slowly, the rolling bushing could align to the center, and the driving pin could be laid into the driving hole.

3. You must be careful to prevent the kelly from colliding any rollers, and sudden stopping would damage the roller group.

4. Using the rubber blocking mud board, the lifespan of the kelly and roller bushing group would increase by 20 percent; the board can prevent the dirt from entering the clearance between the kelly and rolling bushing.

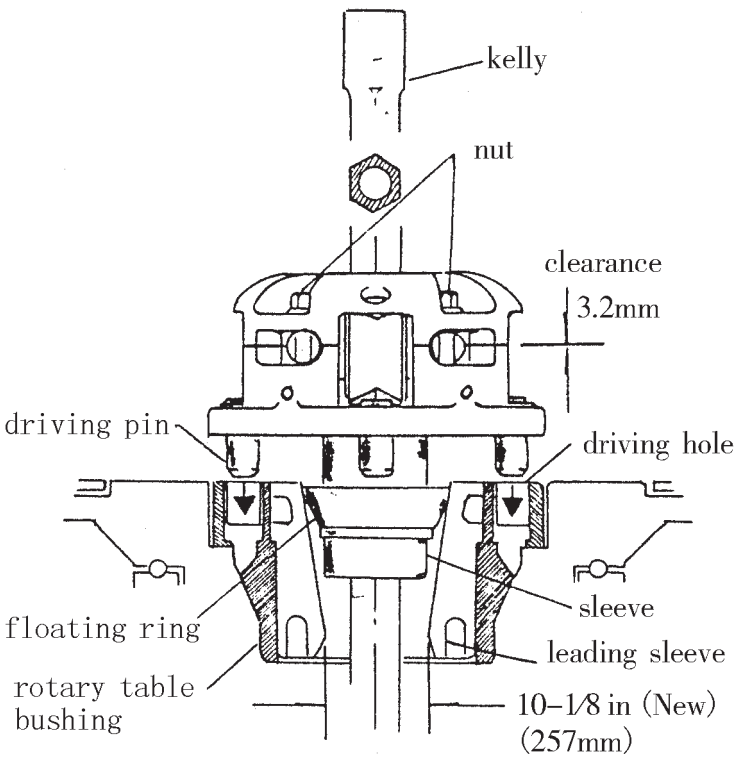


Fig.3

Ⅳ. Maintenance

1. Checking up the bolts once every week.

2. Adding lubricating oils to rollers every day.

3. Lubricating the lower sleeve to make it slide esily.

4. Inspecting the clearance doesn´t exceed 1/8in (3.2mm). If not, it could make roller group wear fastly.

5. Checking the wearing of rollers. The max. wearing of hexagonal kelly is 1/16in(1.6mm) and for square kelly, it is 1/8in(3.2mm).

6. The clearance of the upper and lower body is 1/8in(3.2mm). It can be used to inspect the wearing of roller group.

Annotations: Another driving type of kelly rolling bushing is by square stage surface of under the lower body. It´s square dimensions is 332*332mm, the others is ditto.