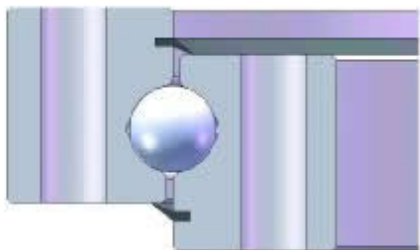




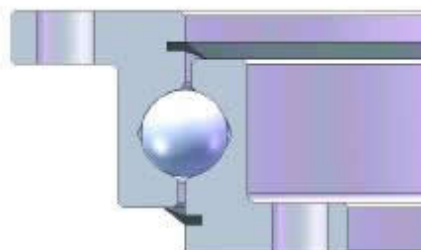
# Slewing Rings

# Slewing Ring Series

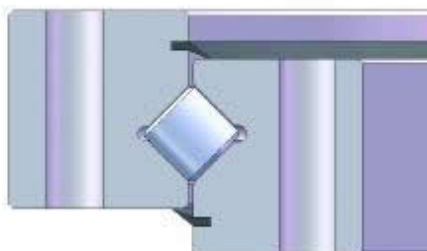
Single Row Ball



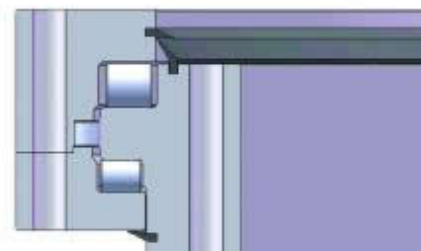
L Single Row Ball



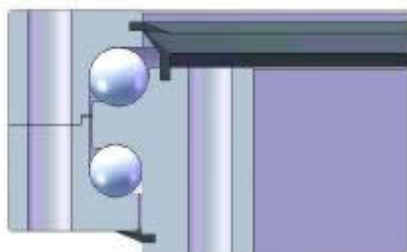
Cross Roller



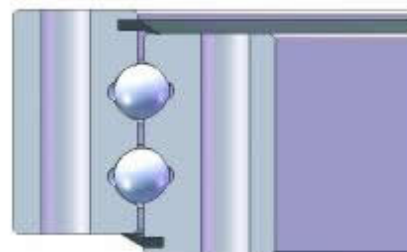
Three Row Roller



Double Row Different Diameter Ball



Double Row Eight Point Contact Ball



# Building A Slewing Ring Number

## JB/T 10839-2008 ( JJ36.1-91 )

(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)---	Type of slewing ring					
Q:	Q: Single-row ball					
S:	S: 3-row roller					
(2)---	Code of driven type					
W:	Outer gear					
N:	Inner gear					
U:	No gear					
(3)---	Code of installation hole type					
A:	Both rings with bolt holes					
B:	Both rings with screw holes					
C:	Outer ring with screw holes, inner ring with bolt holes					
D:	Outer ring with bolt holes, inner ring with screw holes					
(4)---	( Upper row ) Diameter of track center					
(5)---	( Upper row ) Diameter of rolling element					
(6)---	Classification code No.of gear module					
A:	A:Bigger module, without A:normal					
(7)---	Classification of precision grade					
G:	G:High precision, without G: normal					

For example:

Single-row ball, bigger module, outer gear, outer ring with screw holes, inner ring with bolt holes, diameter of track center 1250mm, diameter of ball 40mm, normal precision, type of the product sign as follows: slewing ring QWC1250.40A JB/T10839-2008

## JB/T 2300-1999

(1)	(2)	(3)	(4)	(5)	(6)
(1)---	Type of slewing ring				
01:	01: Single-row ball				
02:	02: Double-row different diameter ball				
11:	11: Single cross-roller				
13:	13: 3-row roller				
(2)---	Code of gear driven type				
0:	No gear				
1:	Normal, outer gear				
2:	Bigger module, outer gear				
3:	Normal, inner gear				
4:	Bigger module, inner gear				
(3)---	( Upper row ) Diameter of rolling element				
(4)---	( Upper row ) Diameter of track center				
(5)---	Code of installation fitting type				
0:	No fitting circle				
1:	With fitting circle				
2:	Special type				
(6)---	Code of installation hole type				
0:	Both rings with bolt holes				
1:	Both rings with screw holes				
2:	Outer ring with bolt holes, inner ring with screw holes				
3:	Outer ring with screw holes, inner ring with bolt holes				

For example:

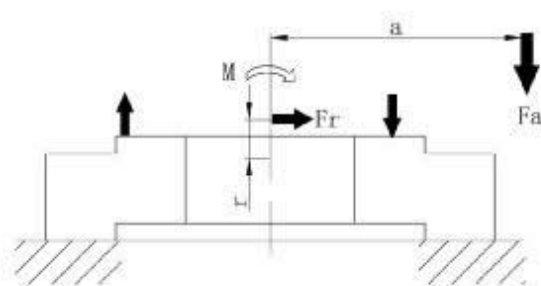
Single-row ball, bigger module, inner gear, diameter of ball 40mm, diameter of track center 1000mm, with fitting circle, both rings with bolt holes, type of the product sign as follows: slewing ring 014.40.1000.10 JB/T 2300-1999

# Selection and Calculation of Slewing Rings

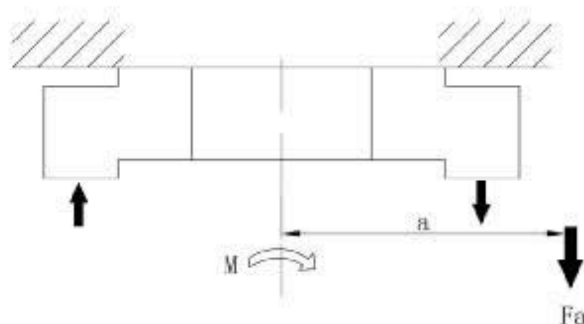
## Supporting Load of Slewing Ring

During the use of slewing ring, it is usually endure axial force, radial force and overturning moment together. For different application situation, due to the vary of working manner and structure form, the fuction combined condition also different of the above three loads. Sometimes may be the combination of two loads, sometimes may be only one load.

Generally speaking, installation of slewing ring have two kinds of mode: compressive installation and suspended installation. The load of the bearing of this two kinds of installation see as follows:



Compressive Installation



Suspended Installation

If the slewing ring is compressive installation, the customer could select and calculate as follows; if the slewing ring is suspended installation, please contact our Engineering Department for assistance.

## Selection of Slewing Ring

### Selection of Structure

Common structure of slewing ring have four kinds: single row ball slewing ring, cross-roller slewing ring, double-row different diameter ball slewing ring, three-row roller slewing ring.

Based our experience and calculation, we have follow conclusion:

·Do < 2000, single row ball slewing ring first; Do > 2000, three-row roller slewing ring first.

·For the slewing ring have the same figure size, the load capacity of single row ball slewing ring is more than the cross roller and double-row different diameter slewing ring.

·Single row ball slewing ring of Q-series have higher compact structure, less weight and more economically. They are the first chose of single row ball slewing ring.

2、

(1)

### Select Product Type by Calculation

#### Calculation of single-row ball slewing ring

##### Calculation of rated static capacity

$$C_0 = 0.6 \times D_o \times d_o^{0.5}$$

C<sub>0</sub> ——— kN

D<sub>o</sub> ——— mm

d<sub>o</sub> ——— mm

Rated static capacity

Diameter of track center

Diameter of ball

Equivalent load calculation according outside compound load

②

$$C_p = F_a + 4370M/D_o + 3.44F_r$$



# Selection and Calculation of Slewing Rings

Cp	_____	kN	Equivalent axial load
M	_____	kN · m	Overturning moment
Fa	_____	kN	Axial force
Fr	_____	kN	Radial force
③			Safety factor

$$fs = Co / Cp \geq fo$$

See the following table

( 2 )

Calculation of 3-row roller slewing ring

Calculation of rated static capacity

$$Co = 0.534 \times Do \times do^{0.75}$$

Co	_____	kN	Rated static capacity
Do	_____	mm	Diameter of track center
do	_____	mm	Upper row roller diameter

②

Equivalent load calculation according outside compound load

$$Cp = Fa + 4500M/Do$$

Cp	_____	kN	Equivalent axial load
M	_____	kN·m	Overturning moment
Fa	_____	kN	Axial force

③

Safety factor

$$fs = Co / Cp \geq fo$$

See the following table

Safety Factor of Slewing Ring fo

Working condition	Characteristic	Example	fo
Light duty	Not often full load, smooth slewing, small impact	Stacker, truck cranes, non-port wheeled cranes	1.00~1.15
Middle duty	Not often full load, slewing quickly, impact	Tower cranes, marine cranes, crawler cranes	1.15~1.30
Heavy duty	Often full load, heavy impact	Clamshell grabbing cranes, harbour cranes, single bucket excavator, container cranes	1.30~1.45
Extremely heavy duty	Full load, heavy impact or working condition badly	Bucker wheel excavators, tunnelling machines, metallurgical cranes, offshore work platform cranes	1.45~1.70

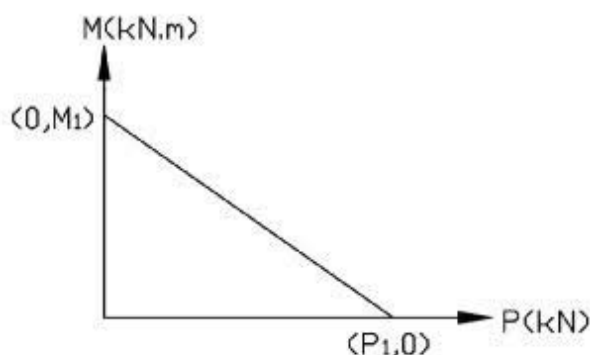
3、

Select Product Type Use Static Load Curve

Static load curve show the maximum load of slewing ring when in the static state. Each type of the slewing ring in this specimen has a corresponding load capacity curve. Load capacity curve can help customer to make an elementary chose of slewing ring.

Draw the static load curve. Customer draw the static load curve based on the type which wanted to be selected. See as follows:

# Selection and Calculation of Slewing Rings



$$P_1 = C_0$$

$$M_1 = C_0 \cdot D_o / 4370 \text{ (三排柱式: } M_1 = C_0 \cdot D_o / 4500 \text{)}$$

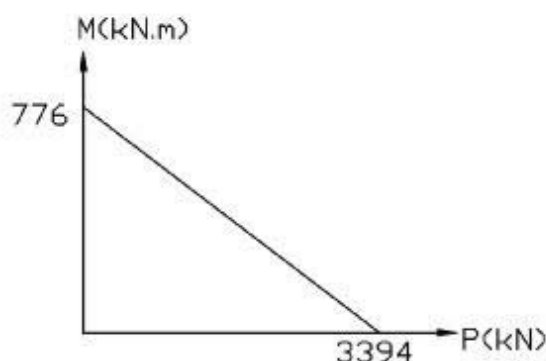
The point which total axial force  $F_a$  and total overturning moment  $M$  multiply the safety factor respectively should located below the static load curve.

Example: Draw the static load curve of QUA1000.32

$$P_1 = C_0 = 0.6 \cdot 1000 \cdot 32^{0.5} = 3394 kN$$

$$M_1 = C_0 \cdot D_o / 4370 = 3394 \cdot 1000 / 4370 = 776 kN \cdot m$$

Static load curve see as following:



Technical Parameter of Slewing Ring Selection

After making an elementary chose of slewing ring, customer could confirm the selecting result together with our Engineering Department or provide some informations about slewing ring to our company. When the selection is made by our company, please filling 'Technical References Concerned for Selection of Slewing Ring of Maanshan Tongli Slewing Ring CO.,LTD' in detail, so as to provide you economical and suitable selection of the slewing ring as soon as we can.

# Selection and Calculation of Slewing Rings

Technical References Concerned for Selection of Slewing Ring					
Name of company: Contactor: Telephone:			Address: Department: Fax:		
Using condition ( Model of Main Machine )		Installing type ( Compression or suspension )			
Requirement of gear shape: (inner teeth, outer teeth, no teeth or no restrict)		Application character		Revolution per minute	
		Only positioning		Normal	
		Intermittent rotation		Maximum	
		Continuous rotation			
Value of Load					
Type of Load	Maximum Working Load		Maximum Testing Load		Destroy Load
Axial Load					
Radial Load					
Overturning Moment					
( kNm ) : _____ : _____					
Load driving torque : Normal _____ Maximum _____ No. of Drive Pinion: _____					
Special requirement: special situation, temperature, fit size, figure size limit etc.					
Detailed load condition	Axial load	Radial load	Overturning moment	Revolution per minute	Working time
1)					
2)					
3)					
4)					
5)					
.....					
					100%
Continue working condition _____ r pm					
Life: Under the mean speed of _____ rpm, work at least _____ hours					
Intermittent working condition _____ + / - _____					
Required life: Under angular of + / - _____ degree, work at least _____ hours					
Please fill this table thoroughly so as to provide you economical and suitable selection of the slewing ring as soon as we can.					
Signature: _____			Date: _____		

# Selection and Calculation of Slewing Rings

## Appendix: Confirmation of the Load Outside the Slewing Ring

- a.  $M, N \cdot mm;$
- b.  $Fa, N;$
- c.  $M$   $Fr, N_o$

When selecting the slewing ring, customer first to confirm the outside load of the slewing ring. The outside load of single row ball slewing ring is the total load after combination which include:

- a. overturning moment  $M, N \cdot mm$
- b. total axial force  $Fa, N$
- c. total radial force  $Fr$  of the fuctional surface of total overturning moment  $M$

When the outside mechanical force composing the outside load, customer should put working condition factor  $K$  into consideration which based on the working type of the machine. The following are examples of crane and excavator which explain the confirmation of outside load.(The listed calculational position not always represent the abominable condition of working condition, customer should calculate according to the maximum working condition.

### 1、Crane(see figure 1)

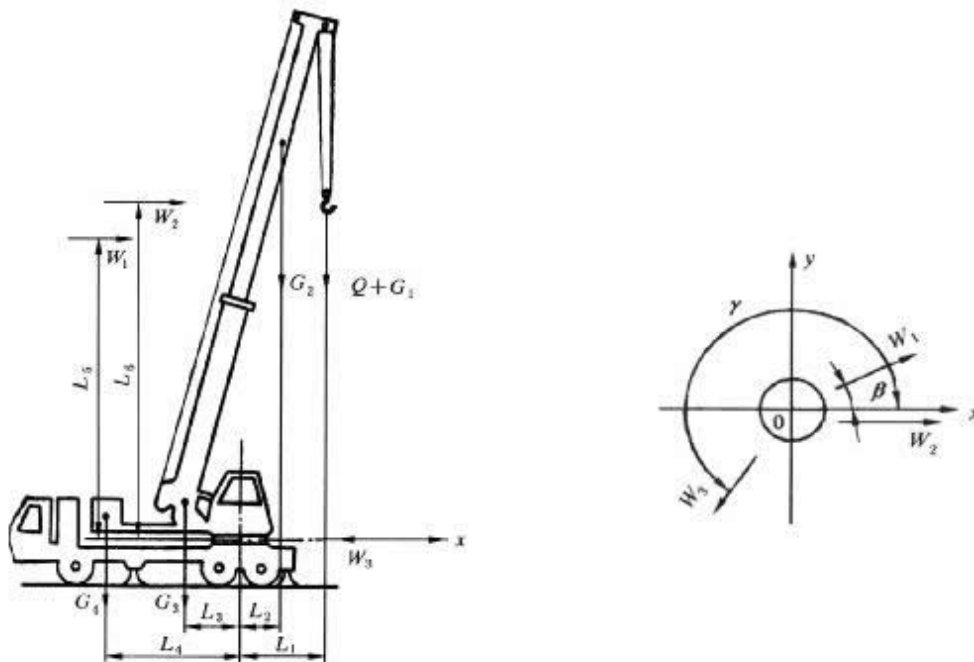


Figure of Crane Calculation

$$Fa = [K \cdot (Q + G_1) + G_2 + G_3 + G_4] \cdot g$$

$$M = [K \cdot (Q + G_1) \cdot L_1 + G_2 \cdot L_2 + G_3 \cdot L_3 + G_4 \cdot L_4] \cdot g + W_1 \cdot L_5 \cdot \cos\beta + W_2 \cdot L_5$$

$$Fr = W_1 \cdot \cos\beta + W_2 + W_3 \cdot \cos\gamma$$

Q —  
 $G_1$  — kg;  
 $G_2$  — kg;  
 $G_3$  — kg;  
 $G_4$  — kg;

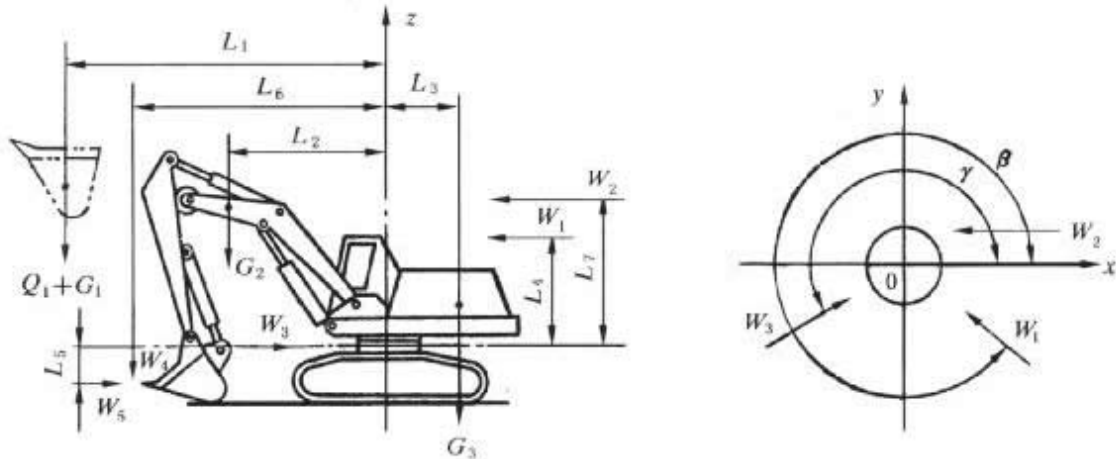
KG Maximum rated lifting weight under this working condition, kg;  
 Weight of hoist tool  
 Weight of amplitude part  
 Weight of turntable  
 Balance weight



# Selection and Calculation of Slewing Rings

$W_1$ —	Horizontal force of inertia
$W_2$ —	Wind force
$W_3$ —	Meshing force of gear
$L_1$ —	Working amplitude
$L_2$ —	Horizontal distance from gravity of amplitude part $G_2$ to slewing center
$L_3$ —	Horizontal distance from gravity of turntable $G_3$ to slewing center
$L_4$ —	Horizontal distance from gravity center of balance weight to slewing center
$L_5$ —	Vertical distance from point of horizontal force of inertia $W_1$ to slewing ring
$L_6$ —	Vertical distance from point of wind force $W_2$ to slewing ring
$g$ —	$g \approx 9.8m/s^2$ ; Gravity acceleration
$\beta$ —	Angle between horizontal force of inertia $W_1$ and M surface
$\gamma$ —	Angle between meshing force of gear $W_3$ and M surface
$K$ —	Working condition factor, decide by table 1.

## 2、Excavator(see figure 2)



Figures of Excavator Calculation

### 2.1 Full Bucket Revolution Condition

$$Fa = [k \cdot (Q + G_1) + G_2 + G_3] \cdot g$$

$$M = [k \cdot (Q + G_1) \cdot L_1 + G_2 \cdot L_2 + G_3 \cdot L_3] \cdot g + W_1 \cdot L_4 \cdot \cos \beta + W_2 \cdot L_7$$

$$Fr = W_1 \cdot \cos \beta + W_2 + W_3 \cdot \cos \gamma$$

### 2.2 Excavate Condition

$$Fa = k \cdot W_4 + [k \cdot (Q + G_1) + G_2 + G_3] \cdot g$$

$$M = k \cdot W_4 \cdot L_6 + [K \cdot (Q + G_1) \cdot L_1 + G_2 \cdot L_2 + G_3 \cdot L_3] \cdot g + K \cdot W_5 \cdot L_5 + W_2 \cdot L_7$$

$$Fr = W_2 + W_3 \cdot \cos \gamma + W_5$$

# Selection and Calculation of Slewing Rings

$Q$ —	Material mass in full bucket condition
$G_1$ —	Bucket weight
$G_2$ —	Weight of amplitude part
$G_3$ —	Weight of non-amplitude part of turntable
$W_1$ —	Horizontal force of inertia in revolution condition
$W_2$ —	Wind force
$W_3$ —	Meshing force of gear
$W_4$ —	Vertical excavate force
$W_5$ —	Horizontal excavate force
$L_1$ —	Horizontal distance from gravity of bucket and material to slewing center
$L_2$ —	Horizontal distance from gravity of amplitude part $G_2$ to slewing center
$L_3$ —	Horizontal distance from gravity of non-amplitude part of turntable $G_3$ to slewing center
$L_4$ —	Vertical distance from horizontal force of inertia in revolution $W_1$ to slewing ring
$L_5$ —	Vertical distance from horizontal excavate force $W_5$ to slewing ring
$L_6$ —	Horizontal distance from vertical excavate force $W_4$ to slewing center
$L_7$ —	Vertical distance from point of wind force $W_2$ to slewing ring
$\beta$ —	Angle between horizontal force of inertia $W_1$ and M surface
$\gamma$ —	Angle between meshing force of gear $W_3$ and M surface
$K$ —	Working condition factor, decide by table 1.

Table 1 working condition factor K

Working condition	Example	K
Light duty	Stacker, truck cranes, non-port wheeled cranes,	1.10~1.25
Middle duty	Tower cranes, marine crane, scrawler cranes	1.20~1.35
Heavy duty	Clamshell grabbing cranes, harbour cranes, container cranes	1.30~1.50
	Single bucket excavator, dredger, offshore work platform cranes	1.40~1.70
Extremely heavy duty	Bucker wheel excavators, tunnelling machines, metallurgical cranes	1.60~2.00

# Slewing Ring Usage

## Requirement of Installation and Usage

1. The soft zone (shown by a letter 'S' stamped on a surface of the gear ring) and the loading plug should be located at non-loading area, non-always loading area or slightly loading area.

2. The mounting surface must keep clean and flat, and should not have scrape, burr formation and other extraneous material on it. The flatness of mounting surface should accord with table 2.

The permissible flatness values including angle deviation

D <sub>t</sub> (mm)	The flatness of supporting bracket		
	Four point contact of single row	Double-row ball	Roller
~1000	0.15	0.20	0.10
>1000~1500	0.19	0.25	0.12
>1500~2000	0.22	0.30	0.15
>2000~2500	0.25	0.35	0.17
>2500~4000	0.30	0.40	0.20

3. The mounting platform should have enough rigidity to avoid the slewing rings failure of work due to the deformation of slewing rings installation which caused by lacking rigidity installing frame. The maximum deformation should accord with table 3 under rated load.

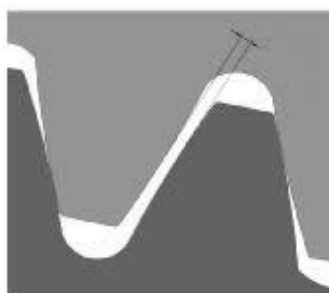
Deflection under permissible maximum load

(D) Diameter of track center	~1000	>1000~1500	>1500~2000	>2000~2500	>2500~3000	>3000~3500	>3500~4000
Max (mm) The maximum deflection of frame's flat surface	0.6	0.8	1.0	1.2	1.5	2.0	2.5

## Notice of gear installation:

External gearing: The backlash between gear and pinion should not less than 0.03m (m is module).

Internal gearing: The backlash between gear and pinion should not less than 0.06m (m is module).



# Slewing Ring Usage

## Notice of Selection and Installation of Bolt

1. You can select the bolt of GB3098.1 and GB5782, and also could design the hexagon head blot by yourself. The performance classification include 8.8, 10.9 and 12.9.

It is usually use 10.9 level of bolt in the commonly construction machine.

If there is a strictly requirement on bolt static strength under rated load and bolt yield strength under maximum load but not rigid on fatigue strength, you can use 12.9 level bolt.

In the condition that load change frequently and have extreme demand on bolt fatigue strength, you'd better choose 8.8 level bolt.

2. Tightening nut have GB3098.2, GB6175 and also could design the hexagon head nut by yourself. The performance classification should accord with the bolt.

3. The use of any type of elasticwasher is forbidden. It is advised to use quenched and tempered flat washers which has lockvein on double-face or use double nuts. When use double nuts, two nuts can select from GB6170; or select one thick outside nut from GB6175 and one thin inside nut from GB6172. The material of two nuts must use the same one.

4. When tightening the bolt, the screw thread and nut should be greased and using torque wrench symmetrically tightening bolt several times along the 180°direction. See figure 3:

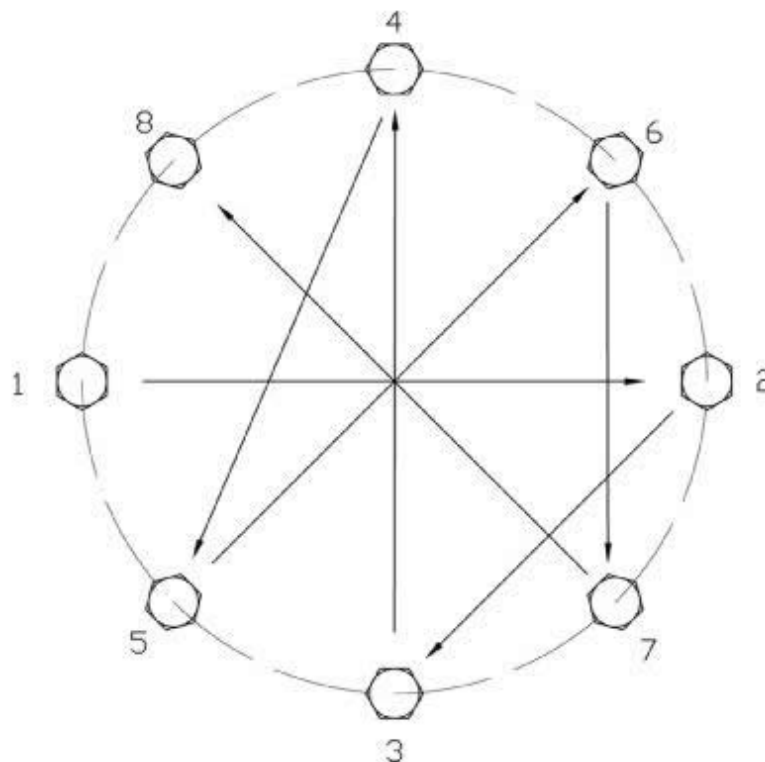


figure 3

# Slewing Ring Usage

5. Bolt must have enough pre-tighten force, and the produced pre-tighten stress on it should accord with table 4.

Pre-tightening torque or forces of bolts

Specifications of bolts	(GB/T3098.1-2000) Bolt's strength class		
	8.8	10.9	12.9
	Pre-tightening torque $M_A(N \cdot m)$		
M10	44	62	75
M12	77.5	110	130
M14	120	170	210
M16	190	265	320
M18	260	365	435
M20	370	520	620
M22	500	700	840
M24	640	900	1080
M27	950	1350	1620
M30	1300	1800	2160
	Pre-tightening force $F_A(10^3N)$		
M33	293	412	495
M36	344	484	581
M39	414	584	698
M42	473	665	798
M45	553	777	932
M48	623	876	1050
M52	749	1054	1265
M56	863	1214	1457
M60	1008	1418	1621

6. When using screw connection, the length L of bolt screwing into the slewing ring should meet the requirement of table 5.

Bolt performance class	8.8	10.9	12.9
L	0.70T	0.75T	0.8T

Note: T is the length of screw thread

7. In order to insure the reliability of bolt, avoid it appears lack of pre-tightening force, we recommend checking the pre-tightening torque of the bolt after first 100 hours and 500 hours of use.



# Slewing Ring Usage

## Packaging, Transport and Maintenance of Slewing Ring

### 1. Packaging

At present, our products generally use three kinds of packaging: non-wooden packaging, wooden packaging, wood care packaging.

1)Non-wooden packaging This type of packaging is fit for short-distance transport. After painting the anti-rust coating oil, inner layer of the slewing ring wrapping with flax tightly, the outer wrapping with plastic sheeting, and could put several together using metal band.

2)Wooden packaging Who need repeated transfer or long-distance transport of slewing ring must be in wooden packaging. Single or multiple packaged slewing ring could together with metal band, and fixed in a wooden box.

3)Wood care packaging This type of packaging is the main mode of transport for long distance.

### 2. Transportation

1)Slewing ring handling in the loading and unloading process should be done gently, and non-throwing, hitting. Weighting more than 30kg slewing ring, it should be use lifting holes when in the handling process.

2)Slewing ring must be horizontal in the transport. For the non-wooden packaging of slewing ring, the bottom must be put in wooden pads and should have anti-slip steps.

3)For the diameter greater than 3000mm or easily deformed slewing ring, bearing should have assistant supporting.

### 3.Maintenance of the Slewing Ring

1) The slewing ring had been filled a few of No.3 lithium based grease in the race before delivery. Consumers should fill the new grease suitably according to different working condition before use it. Generally, it is necessary to fill in grease once every 100 hours for ball slewing ring, and once every 50 hours for roller slewing ring. When filling in lithium based grease, it must make the grease even till the grease out off from the sealing. The filling period should be shorten if there is the special working condition such as at the torrid zone, high humidity, severe dust, large temperature variation and long continuing working time.

2) It should be filled with new grease before and after the machine being long time stop working.

3)The gear faces exposed in air should periodically cleaned and spread with appropriate oil on it.

4) In general working condition, check the pre-tighten force of the bolts after first 100 working hours then check it every 500 hours of the slewing ring. It must be always kept enough pre-tighten force.

5) Cleaning the slewing ring with high-pressure water is not permissible during operation so as to avoid the water entering to the rolling race.

6) Stop and check the machine during operation if there is abnormal noise, vibration occurred or suddenly power rose. Remove the trouble or dismantle it for repairing if necessary.

7) Should not let the hard materials access or enter in the engaging area of the gear.

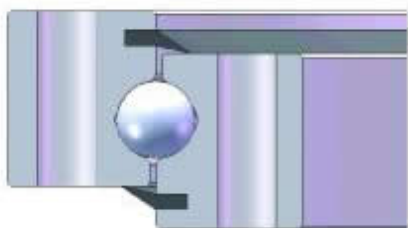
8) Regularly check the seal ring is that OK or not. Replace it if it is damaged and reset it when it is fallen.

9) Multi-slewing rings overlapping together horizontally must put at least 3-5 pads evenly in the direction of circumference between the slewing rings. And the upper and lower pads put in the circumferential direction of the position should be consistent. Slewing ring stand up is prohibited.

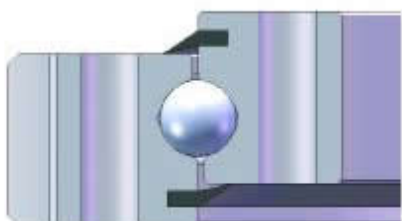
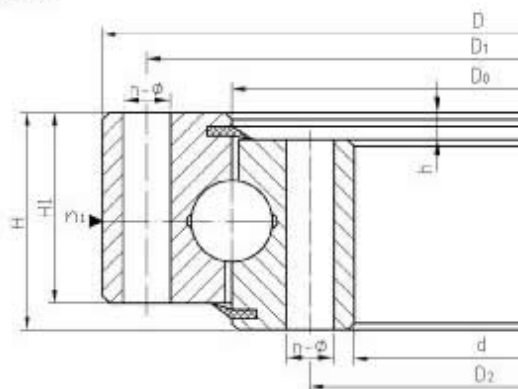
10) Slewing ring should be placed on non-corrosive medium, and stored in dry, flat indoor room, can not be soaked or watered.

# Basic Slewing Ring Data

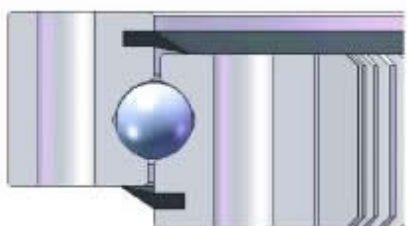
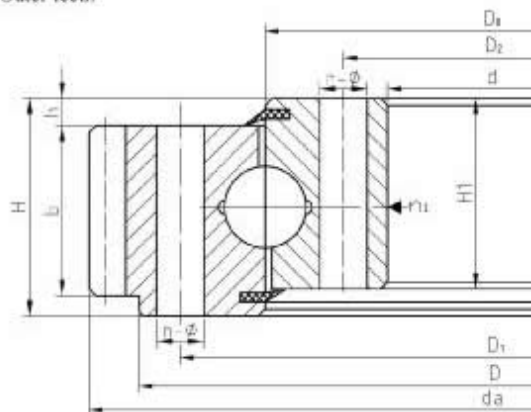
Single-row ball



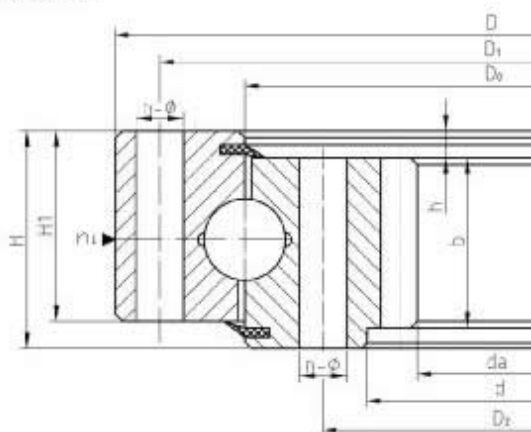
No teeth



Outer teeth



Inner teeth





# Basic Slewing Ring Data

JB/T10839-2008 (JJ 36.1-91) Basic data of standard series Q.

Recommendation)

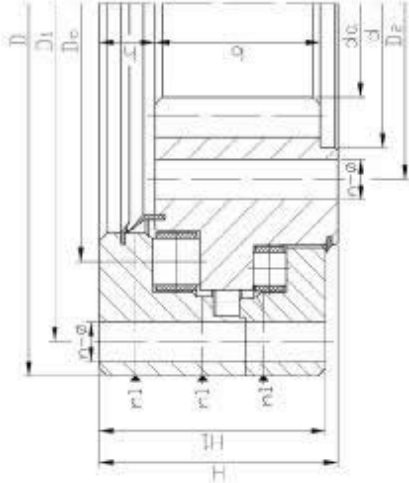
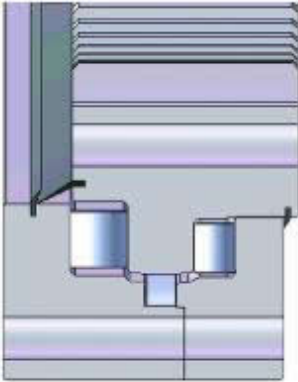
Basic Size		Configuration Size				Mounting Size						Structural Size				Gear Data	Outer Gear Data		Inner Gear Data		kg weight			
		Outer teeth		Inner teeth		H	D <sub>1</sub>	D <sub>2</sub>	n	A	Screw Hole			n <sub>1</sub>	H <sub>1</sub>	h	b	m	X=-0.5		X=+0.5		outer gear	inner gear
		D	d	D	d					Φ	Φ	T						da	Z	da	Z			
NO.	QU.QW.QN.	D	d	D	d					Φ	Φ	T							da	Z	da	Z		
1	315.20	406	222	408	224	60	370	260	10	17	M16	24	2	50	10	40	3	423	140	207	70	34	35	
	315.20A																4	428	106	200	51	35	36	
2	355.20	446	262	448	264	60	410	300	10	17	M16	24	2	50	10	40	3	462	153	246	84	39	40	
	355.20A																4	468	116	240	61	40	41	
3	400.20	490	307	493	310	60	455	345	12	17	M16	24	2	50	10	40	4	512	127	288	73	44	45	
	400.20A																5	520	103	280	57	46	47	
4	450.20	540	357	543	360	60	505	395	12	17	M16	24	2	50	10	40	4	564	140	336	85	50	51	
	450.20A																5	570	113	330	67	52	43	
5	500.20	590	407	593	410	60	555	445	14	17	M16	24	2	50	10	40	5	615	122	385	78	55	56	
	500.20A																6	624	103	378	64	57	58	
6	560.20	654	464	656	468	70	618	502	14	17	M16	30	2	60	10	50	4	680	169	440	111	76	78	
	560.20A																5	685	136	435	88	77	79	
7	630.20	724	534	726	538	70	688	572	16	17	M16	30	2	60	10	50	4	748	186	512	129	84	86	
	630.20A																5	755	150	505	102	86	88	
8	710.20	804	614	806	618	70	768	652	18	17	M16	30	2	60	10	50	5	835	166	585	118	97	99	
	710.20A																6	840	139	582	98	97	101	
9	800.20	894	704	896	708	70	858	742	20	17	M16	30	2	60	10	50	6	930	154	672	113	110	114	
	800.20A																8	936	116	664	84	111	114	
10	800.25	904	692	908	694	78	864	736	18	22	M20	36	2	68	10	58	6	942	156	654	110	142	143	
	800.25A																8	952	118	648	82	142	147	
11	900.25	1004	792	1008	794	78	964	836	20	22	M20	36	2	68	10	58	8	1048	130	744	94	163	162	
	900.25A																10	1060	105	740	75	162	168	
12	1000.25	1104	892	1108	894	78	1064	936	24	22	M20	36	2	68	10	58	8	1152	143	848	107	178	182	
	1000.25A																10	1160	115	840	85	179	185	
13	1000.32	1120	876	1124	880	90	1074	926	24	24	M22	40	2	80	10	70	8	1160	144	832	105	230	227	
	1000.32A																10	1170	116	830	84	227	232	
14	1120.32	1240	996	1244	1000	90	1194	1046	28	24	M22	40	4	80	10	70	10	1300	129	940	95	263	272	
	1120.32A																12	1308	108	936	79	262	275	
15	1250.32	1370	1126	1374	1130	90	1324	1176	32	24	M22	40	4	80	10	70	10	1430	142	1070	108	294	302	
	1250.32A																12	1440	119	1068	90	290	309	
16	1400.32	1520	1276	1524	1280	90	1474	1326	36	24	M22	40	4	80	10	70	12	1584	131	1212	102	333	337	
	1400.32A																14	1596	113	1204	87	336	347	
17	1250.40	1390	1108	1394	1110	102	1336	1164	32	26	M24	45	4	90	12	80	10	1450	144	1050	106	388	396	
	1250.40A																12	1452	120	1044	88	388	392	
18	1400.40	1540	1258	1544	1260	102	1486	1314	36	26	M24	45	4	90	12	80	12	1608	133	1188	100	444	448	
	1400.40A																14	1610	114	1190	86	434	443	
19	1600.40	1740	1458	1744	1460	102	1686	1514	40	26	M24	45	4	90	12	80	12	1812	150	1392	117	509	528	
	1600.40A																14	1820	129	1386	100	511	534	
20	1800.40	1940	1658	1944	1660	102	1886	1714	44	26	M24	45	4	90	12	80	14	2016	143	1582	114	576	583	
	1800.40A																16	2032	126	1568	99	591	607	
21	1600.50	1762	1434	1766	1438	124	1704	1496	40	30	M27	50	4	112	12	100	12	1824	151	1368	115	714	714	
	1600.50A																14	1834	130	1358	98	723	727	
22	1800.50	1964	1634	1966	1638	124	1904	1696	44	30	M27	50	4	112	12	100	14	2044	145	1568	113	794	845	
	1800.50A																16	2048	127	1552	98	818	843	
23	2000.50	2162	1834	2166	1842	124	2104	1896	48	30	M27	50	6	112	12	100	16	2240	139	1760	111	891	912	
	2000.50A																18	2250	124	1746	98	913	927	
24	2240.50	2402	2074	2406	2078	124	2344	2136	54	30	M27	50	6	112	12	100	16	2480	154	1984	125	1044	1020	
	2240.50A																18	2502	138	1980	111	1041	1078	
25	2500.50	2662	2334	2666	2342	124	2604	2396	60	30	M27	50	6	112	12	100	18	2754	152	2250	126	1132	1171	
	2500.50A																20	2760	137	2240	113	1148	1175	
26	2500.60	2696	2304	2696	2308	150	2626	2374	60	33	M30	56	6	136	14	122	18	2790	154	2214	124	1621	1677	
	2500.60A																20	2800	139	2200	111	1654	1701	
27	2800.60	2992	2604	2996	2608	150	2926	2674	66	33	M30	56	6	136	14	122	18	3078	170	2502	140	1871	1817	
	2800.60A																20	3100	154	2500	126	1857	1904	
28	3150.60	3342	2954	3346	2958	150	3276	3024	72	33	M30	56	8	136	14	122	20	3440	171	2840	143	2144	2087	
	3150.60A																22	3454	156	2838	130	2129	2139	
29	3550.60	3742	3354	3746	3358	150	3676	3424	78	33	M30	56	8	136	14	122	20	3840	191	3240	163	2425	2355	
	3550.60A																25	3875	154	3225	130	2437	2500	
30	4000.60A	4200	3804	4196	3808	150	4126	3874	80	33	M30	56	8	136	14	122	22	4312	195	3696	169	2683	2787	
	4000.60A																25	4325	172	3675	148	2763	2827	



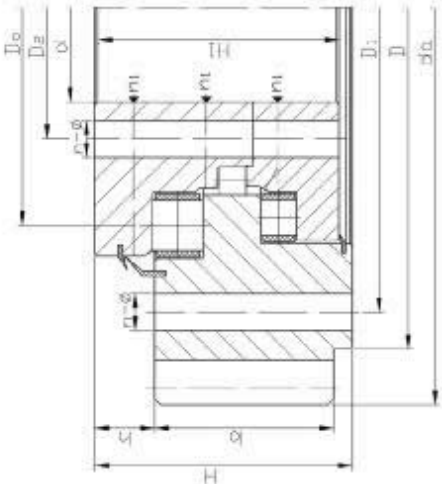
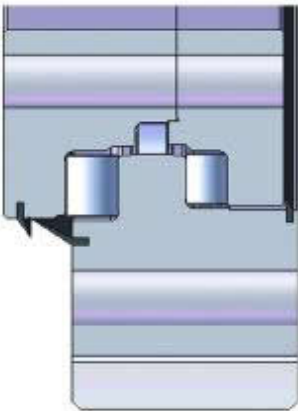


# Basic Slewing Ring Data

Inner teeth

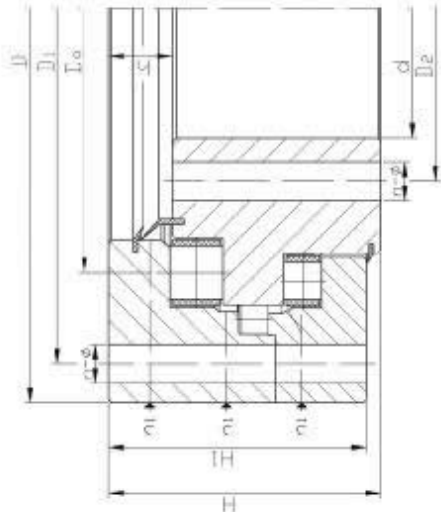
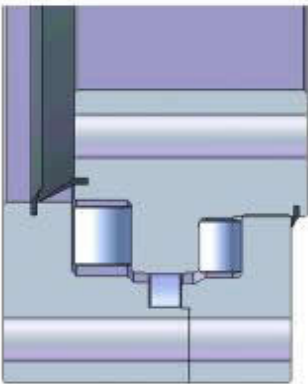


Outer teeth



Three-row roller

No teeth





# Basic Slewing Ring Data

JG/T68-1999 (JJ36, 3-91) Basic data of Standard series S

NO.	Basic Size	Configuration Size				Mounting Size										Structural Size				Gear Data				Outer Gear Data				Inner Gear Data				kg Weight																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Outer teeth		Inner teeth		H	Outer teeth				Inner teeth				n	Bit Hole		Screw Hole		n <sub>1</sub>	H <sub>1</sub>	h	b	x	m	da	Z	da	Z	da	Z		inner gear	outer gear																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		D	d	D	d		D <sub>1</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	A	B		C	E	φ	T																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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# Basic Slewing Ring Data

(JB/T2300-1999) Basic data of Standard series 13

NO.	Basic Size		Configuration Size			Mounting Size				Structural Size			Gear Data			Outer Gear Data		Inner Gear Data					
	No teeth D <sub>o</sub>	Outer teeth D <sub>o</sub>	Inner teeth D <sub>o</sub>	D	d	H	D <sub>1</sub>	D <sub>2</sub>	n	Bolt Hole C	Screw Hole 1,2,3 Φ	T	n <sub>1</sub>	H <sub>1</sub>	h	b	x	m	da	Z	da	Z	kg Weight
1	130.25.500	131.25.500	133.25.500	634	366	148	598	402	24	18	M16	32	4	138	32	80	-0.5	5	664	130	337	68	224
		132.25.500	134.25.500															6	664.8	108	338.4	57	
2	130.25.560	131.25.560	133.25.560	694	426	148	658	462	24	18	M16	32	4	138	32	80	-0.5	5	724	142	397	80	240
		132.25.560	134.25.560															6	724.8	118	398.4	67	
3	130.25.630	131.25.630	133.25.630	764	496	148	728	532	28	18	M16	32	4	138	32	80	-0.5	6	808.8	132	458.4	77	270
		132.25.630	134.25.630															8	806.4	98	459.2	58	
4	130.25.710	131.25.710	133.25.710	844	576	148	808	612	28	18	M16	32	4	138	32	80	-0.5	6	886.8	145	536.4	90	300
		132.25.710	134.25.710															8	886.4	108	539.2	68	
5	130.32.800	131.32.800	133.32.800	964	636	182	920	680	36	22	M20	40	4	172	40	120	-0.5	8	1006.4	123	595.2	75	500
		132.32.800	134.32.800															10	1008	98	594	60	
6	130.32.900	131.32.900	133.32.900	1064	736	182	1020	780	36	22	M20	40	4	172	40	120	-0.5	8	1102.4	135	691.2	87	600
		132.32.900	134.32.900															10	1108	108	694	70	
7	130.32.1000	131.32.1000	133.32.1000	1164	836	182	1120	880	40	22	M20	40	5	172	40	120	-0.5	10	1218	119	784	79	680
		132.32.1000	134.32.1000															12	1221.6	99	784.8	66	
8	130.32.1120	131.32.1120	133.32.1120	1284	956	182	1240	1000	40	22	M20	40	5	172	40	120	-0.5	10	1338	131	904	91	820
		132.32.1120	134.32.1120															12	1341.6	109	904.8	76	
9	130.40.1250	131.40.1250	133.40.1250	1445	1055	220	1393	1107	45	26	M24	48	5	210	50	150	-0.5	12	1509.6	123	988.8	83	1200
		132.40.1250	134.40.1250															14	1509.2	105	985.6	71	
10	130.40.1400	131.40.1400	133.40.1400	1595	1205	220	1543	1257	45	26	M24	48	5	210	50	150	-0.5	12	1665.6	136	1144.8	96	1300
		132.40.1400	134.40.1400															14	1663.2	116	1139.6	82	
11	130.40.1600	131.40.1600	133.40.1600	1795	1405	220	1743	1457	48	26	M24	48	6	210	50	150	-0.5	14	1873.2	131	1335.6	96	1520
		132.40.1600	134.40.1600															16	1868.8	114	1334.4	84	
12	130.40.1800	131.40.1800	133.40.1800	1995	1605	220	1943	1657	48	26	M24	48	6	210	50	150	-0.5	14	2069.2	145	1531.6	110	1750
		132.40.1800	134.40.1800															16	2076.8	127	1526.4	96	
13	130.45.2000	131.45.2000	133.45.2000	2221	1779	231	2155	1845	60	33	M30	60	6	219	54	160	-0.5	16	2300.8	141	1702.4	107	2400
		132.45.2000	134.45.2000															18	2300.4	125	1699.2	95	
14	130.45.2240	131.45.2240	133.45.2240	2461	2019	231	2395	2085	60	33	M30	60	6	219	54	160	-0.5	16	2556.8	157	1926.4	121	2700
		132.45.2240	134.45.2240															18	2552.4	139	1933.2	108	
15	130.45.2500	131.45.2500	133.45.2500	2721	2279	231	2655	2345	72	33	M30	60	8	219	54	160	-0.5	18	2822.4	154	2185.2	122	3000
		132.45.2500	134.45.2500															20	2816	138	2188	110	
16	130.45.2800	131.45.2800	133.45.2800	3021	2579	231	2955	2645	72	33	M30	60	8	219	54	160	-0.5	18	3110.4	170	2491.2	139	3400
		132.45.2800	134.45.2800															20	3116	153	2488	125	
17	130.50.3150	131.50.3150	133.50.3150	3432	2868	270	3342	2958	72	45	M42	84	8	258	65	180	-0.5	20	3536	174	2768	139	5000
		132.50.3150	134.50.3150															22	3537.6	158	2758.8	126	
18	130.50.3550	131.50.3550	133.50.3550	3832	3268	270	3742	3358	72	45	M42	84	8	258	65	180	-0.5	20	3936	194	3168	159	5600
		132.50.3550	134.50.3550															22	3933.6	176	3154.8	144	
19	130.50.4000	131.50.4000	133.50.4000	4282	3718	270	4192	3808	80	45	M42	84	8	258	65	180	-0.5	22	4395.6	197	3116.8	165	6400
		132.50.4000	134.50.4000															25	4395	173	3610	145	



NOTE:

1.Q series are more scientific,reasonable and economic than 01 series,please see the detail article of 'The effect of slewing ring product standard to reasonable selection' in the third issue in 2002 of 'Construction Mechanism' or consult the website of our company.

2.No teeth slewing ring consists of outside gear  $D$  and inside gear  $d$  with the same track center diameter.The plug and oil-hole are located on the outer ring.

3.In Standard Series JB3300-1999,more than the diameter of ball 30,we add to the series of small diameter of ball,the series are twice,but the other data is the same.01 series is omitted in the table

4.T is the length of screw.