

# **RINGSPANN® CORPORATION**

Power Transmission

Installation and Operating Instruction for  
RC 205 thru RC 210 Freewheels

E 08.617e



## **RINGSPANN CORPORATION**

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Date: 10/29/2014	Revision : 02 – E101420	By: PGW	Checked By: DNW	Number of Pages: 5	Page: 2

## Important

- Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.
- These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.
- Disregarding or misinterpreting installation and operating instructions invalidate any product liability or warranty by RINGSPANN CORPORATION; the same applies if the product is taken apart or changed.
- The installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others – either on its own or as part of a machine – to make it accessible to the user.

## Safety Notice

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited RINGSPANN CORPORATION agents.
- If a malfunction occurs, the product, or the machine into which it is installed, should be stopped immediately and either RINGSPANN CORPORATION or an accredited RINGSPANN CORPORATION agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine components must be protected by the purchaser.
- Supplies abroad are subject to the safety laws prevailing in those countries.

## Warranty

RINGSPANN CORPORATION “seller” agrees to repair or replace (at its sole option), defective materials or workmanship for a period of one year from the date of delivery. Seller must be notified of such a defect within a reasonable time after discovery (not to exceed thirty (30) days), and the defective product must be delivered, prepaid to the seller’s factory with evidence that, it has been properly installed, maintained and operated in accordance with the seller’s instructions. Seller’s limited warranty excludes remedy for damage or defect caused by abuse; failure to resist corrosion or erosion from any corrosive agent or fluid, due to deposits of foreign material from any fluid; modifications not executed by Seller; improper installation or operation; defects or failures arising out of, in any way related to, or as a result either direct or indirect, of the Buyer’s failure to properly advise Seller of all normal and special operating conditions, known to or suspected by Buyer, when Seller is manufacturing the Equipment for a specific operation; or normal wear and tear under usage. This remedy is exclusive and is given in lieu of any warranty of merchantability, fitness, for a particular purpose or any other warranty, whether express or implied. Seller shall not be liable for consequential damages (including but not limited to, loss of use, lost profits, business interruption and the like), incidental damages, indirect damages, whether the claim for such damage is based upon warranty, contract, tort, strict liability or any other theory of recovery.

## Backstop Rebuilding Service

RINGSPANN CORPORATION freewheels are precision devices manufactured under careful controls to meet manufacturing standards. When reconditioning is required, freewheels should be returned to RINGSPANN CORPORATION for service.



### CAUTION!

Disassembly and repair of RINGSPANN CORPORATION freewheels in the field is not recommended and will void any warranty.

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## Introduction

RINGSPANN CORPORATION RC series freewheels is precision built safety devices designed to protect inclined conveyors or vertical elevators from the dangers of gravity accelerated reverse runaway.

To be assured of reliable protection and the longest possible service life, it is important that the following recommendations be observed for the installation, lubrication, and maintenance of RINGSPANN CORPORATION freewheels.

As soon as the unit has been received, examine it carefully and report any damage to the transit company and RINGSPANN CORPORATION immediately.

All tags and bulletins attached to the unit should be carefully read before placing the unit in operation and then filed for future reference.



### **WARNING!**

Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

## Pre-installation Check

*The freewheel is delivered slightly lubricated and wrapped to protect against corrosion.*



### **WARNING!**

Consult applicable local and national safety codes for proper guarding of rotating members. Lock out power source and remove all external loads from drive before servicing drive or accessories. The backstop and normal associated equipment (shaft, pulleys, etc.) involve moving parts; therefore consult local, state, OSHA and ANSI safety codes for proper guarding of revolving parts and possible pinch points.



### **WARNING!**

Rotating equipment is potentially dangerous and should be properly guarded. The user should comply with all applicable safety codes to guard rotating equipment.



### **ATTENTION!**

Damage may occur to the freewheel if it remains inoperative under full load for extended periods of time. If the shaft was accidentally rotated in the wrong direction at start-up, the freewheel may have been damaged. Please return the freewheel to RINGSPANN CORPORATION for inspection upon such an occurrence.



### **DO NOT FORCE FREEWHEEL ONTO SHAFT!**

Evidence of damage during assembly caused by disregard of the above instructions is readily traceable and RINGSPANN CORPORATION will not be held responsible for failure of such affected part or parts.

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## Installation



### ATTENTION!

Before securing into place, check for proper rotation. As the clutch is symmetrical, in determining the proper direction of free rotation, orientate the clutch to match the directional arrows marked on either face of the inner race and then verify by spinning the freewheel by hand.

1. Make sure that the shaft and housing are clean and free of any metallic dust before installing freewheel.
2. The arrow on the face of the outer ring indicates the direction of FREE shaft rotation.
3. When mounting the freewheel on the shaft. Slowly rotate the shaft in the direction of the arrow and slide the freewheel onto the shaft.
4. Align the freewheel and housing keyways by rotating the shaft in the opposite direction of the arrow.
5. Once the keyways are aligned, slide the freewheel into the housing and install the key.
6. After the freewheel and key are mounted in the housing, install a retaining ring to hold the axial position of the freewheel within the housing.
7. There should be approximately 0.1mm clearance between the retaining ring and freewheel.

## Lubrication and Maintenance



### CAUTION!

Lubricants of the EP type (extreme pressure characteristics) should be approved by RINGSPANN CORPORATION. Those containing solid additives such as graphite or molybdenum disulphide should not be used.



### WARNING!

RINGSPANN CORPORATION is not responsible for any lubrication changes made by others after the freewheel leaves the RINGSPANN CORPORATION factory.

## Oil Lubrication

- The freewheel must be half-filled (to center line) with oil.
  - The oil in the freewheel must be changed after every 1000 hours of operation.
- Use oils selected from the following table according to the application and ambient temperature at the freewheel.

### Ambient Temperature Range

### Recommended Oil Lubricant

0°F to 150°F

MOBIL DEXRON-VI ATF or Equivalent DEXRON-VI

-20°F to 60°F

MOBIL DTE-15M or Equivalent

-50°F to 32°F

MOBIL Aero HF or Equivalent

Inspect the oil level once a month or every 160 hours of operation, whichever occurs first. Indexing applications that operate in excess of 150 strokes per minute and severe duty applications may require more frequent oil level inspection. Contact RINGSPANN CORPORATION for indexing applications in excess of 150 strokes per minute.



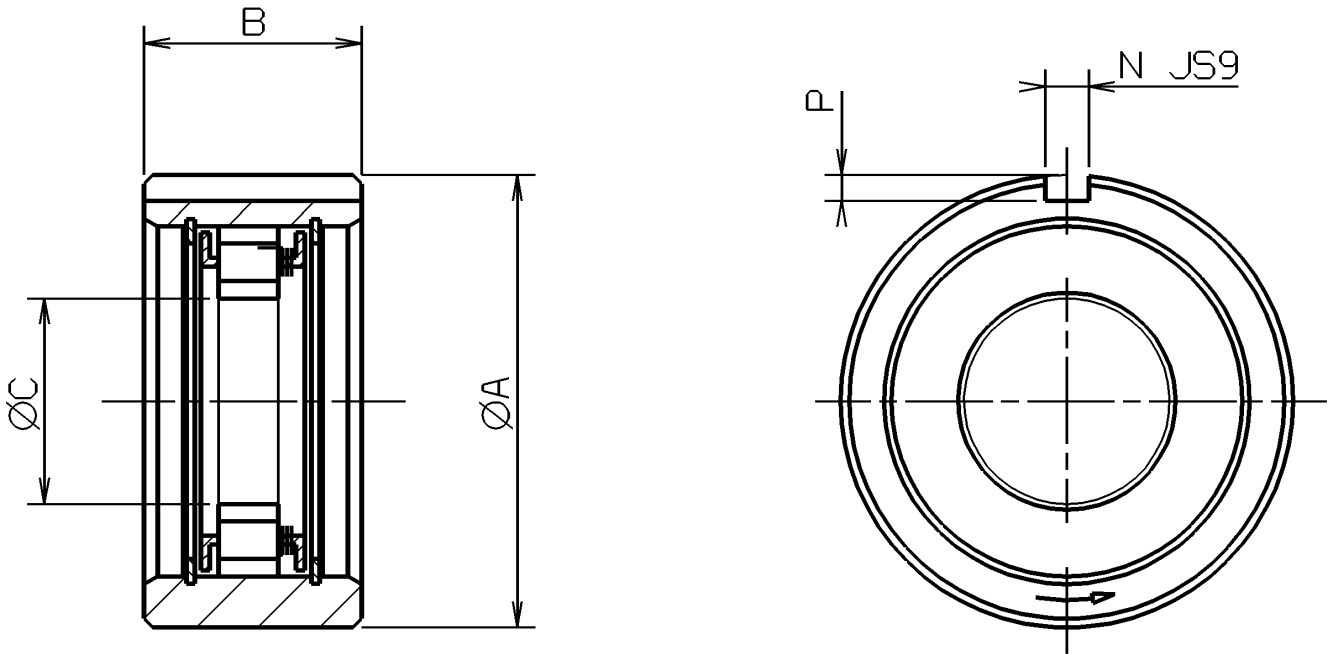
### WARNING!

Do not attempt to convert oil lubricated freewheels to grease lubrication or grease lubrication to oil lubrication. Any such conversion may result in malfunction and will void any warranty.

## Grease Lubrication

- Prior to start-up, the freewheel must be 50% filled with grease.
  - Grease level should be checked monthly and refilled if necessary.
  - For indexing applications, the grease level should be checked weekly.
  - Note that old grease in the freewheel can result in malfunction.
- Use Mobilgrease XHP 221 unless, specific recommendation has been verified by RINGSPANN CORPORATION.**

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The direction of arrow at the front side of the outer ring corresponds to the freewheeling direction of the shaft.

<b>Model RC-2xx</b>	<b>Max. Torque Lb-Ft (Nm)</b>	<b>-A- Housing Dia. (Inch)</b>	<b>-A- Freewheel Dia. (Inch)</b>	<b>-B- Width (Inch)</b>	<b>-C- Shaft Dia. (Inch)</b>	<b>-N x P- Keyway (Inch)</b>
RC-205	110 (150)	2.0482 2.0467	2.0463 2.0448	1.000	0.929 0.930	3/16 x 3/32
RC-206	195 (265)	2.4422 2.4407	2.4403 2.4388	1.125	1.289 1.290	1/4 x 1/8
RC-207	325 (440)	2.8360 2.8345	2.8341 2.8326	1.125	1.656 1.657	1/4 x 1/8
RC-208	450 (610)	3.1510 3.1495	3.1491 3.1476	1.250	1.840 1.841	3/8 x 3/16
RC-210	620 (840)	3.5447 3.5432	3.5428 3.5413	1.250	2.208 2.209	3/8 x 3/16

#### **Freewheel Characteristics:**

- Shaft Mounted
- Same OD as 200 series ball bearings
- For backstopping, indexing and overrunning applications
- Clutches require bearing support to assure concentricity between shaft and outer races

#### **Shaft Requirements:**

- Surface hardness after grinding Rc 58-62
- Case depth after grinding .050"-.060"
- Surface finish 16 micro-inch
- Eccentricity between shaft and housing bore should not exceed .002" T.I.R.
- Taper on shaft should not exceed .0002" per inch

#### **Lubrication:**

- RC Series sprag clutches may be oil or grease lubricated
- **Lubrication containing EP additives containing molybdenum disulphide must not be used.**