

# **DX140LC**

Shop Manual

K1034080E

Serial Number 5001 and Up

*DOOSAN* reserves the right to improve our products in a continuing process to provide the best possible product to the market place. These improvements can be implemented at any time with no obligation to change materials on previously sold products. It is recommended that consumers periodically contact their distributors for recent documentation on purchased equipment.

This documentation may include attachments and optional equipment that is not available in your machine's package. Please call your distributor for additional items that you may require.

Illustrations used throughout this manual are used only as a representation of the actual piece of equipment, and may vary from the actual item.

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# Track Excavator Safety

Edition 1

# SAFETY PRECAUTIONS

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## CAUTION!

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Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that are in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

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## APPLICABLE MODELS

The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DX140LC	5001 and Up
DX180LC	5001 and Up
DX225LC	5001 and Up
DX225NLC	5001 and Up
DX255LC	5001 and Up
DX300LC	5001 and Up
DX340LC	5001 and Up

# TO THE OPERATOR OF A EXCAVATOR

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**DANGER!**

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**Unsafe use of the excavator could lead to serious injury or death. Operating procedures, maintenance and equipment practices or traveling or shipping methods that do not follow the safety guidelines on the following pages could cause serious, potentially fatal injuries or extensive damage to the machine or nearby property.**

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Please respect the importance of taking responsibility for your own safety, and that of other people who may be affected by your actions.

The safety information on the following pages is organized into the following sections:

1. "General Safety Essentials" on page 1-10
2. "Location of Safety Labels" on page 1-11
3. "Summary of Safety Precautions for Lifting in Digging Mode" on page 1-12
4. "Unauthorized Modifications" on page 1-13
5. "General Hazard Information" on page 1-13
6. "Before Starting Engine" on page 1-23
7. "Machine Operation" on page 1-27
8. "Maintenance" on page 1-34
9. "Battery" on page 1-43
10. "Towing" on page 1-45
11. "Shipping and Transportation" on page 1-46
12. "Lifting With Sling" on page 1-46



## **WARNING!**

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Improper operation and maintenance of this machine can be hazardous and could result in serious injury or death.

Operator and maintenance personnel should read this manual thoroughly before beginning operation or maintenance.

Keep this manual in the storage compartment to the rear of the operator's seat, and have all personnel involved in working on the machine read the manual periodically.

Some actions involved in operation and maintenance of the machine can cause a serious accident, if they are not done in a manner described in this manual.

The procedures and precautions given in this manual apply only to intended uses of the machine.

If you use your machine for any unintended uses that are not specifically prohibited, you must be sure that it is safe for any others. In no event should you or others engage in prohibited uses or actions as described in this manual.

*DOOSAN* delivers machines that comply with all applicable regulations and standards of the country to which it has been shipped. If this machine has been purchased in another country or purchased from someone in another country, it may lack certain safety devices and specifications that are necessary for use in your country. If there is any question about whether your product complies with the applicable standards and regulations of your country, consult *DOOSAN* or your *DOOSAN* distributor before operating the machine.

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## **SAFETY ALERT SYMBOL**



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**Be Prepared - Get to Know All Operating and Safety Instructions.**

**This is the Safety Alert Symbol. Wherever it appears in this manual or on safety signs on the machine you should be alert to the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.**

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### **Learn the Signal Words Used with the Safety Alert Symbol**

The words "**CAUTION**," "**WARNING**," and "**DANGER**" used throughout this manual and on decals on the machine indicate degree of risk of hazards or unsafe practices. All three degrees of risk indicate that safety is involved. Observe precautions indicated whenever you see the Safety Alert "Triangle," no matter which signal word appears next to the "Exclamation Point" symbol.

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#### **CAUTION!**

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**This word is used on safety messages and safety labels and indicates potential of a hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used to alert against a generally unsafe practice.**

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#### **WARNING!**

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**This word is used on safety messages and safety labels and indicates potential of a hazardous situation that, if not avoided, could result in serious injury or death. It may also be used to alert against a highly unsafe practice.**

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#### **DANGER!**

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**This word is used on safety messages and safety labels and indicates an imminent hazard of a situation that, if not avoided, is very likely to cause death or extremely serious injury. It may also be used to alert against equipment that may explode or detonate if handled or treated carelessly.**

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Safety precautions are described in SAFETY from page -11 on.

*DOOSAN* cannot predict every circumstance that might involve a potential hazard in operation and maintenance. Therefore the safety messages in this manual and on the machine may not include all possible safety precautions. If any procedures or actions not specifically recommended or allowed in this manual are used, you must be sure that you and others can do such procedures and actions safely and without damaging the machine. If you are unsure about the safety of some procedures, contact a *DOOSAN* distributor.

# Swing Reduction Gear

Edition 1

# GENERAL DESCRIPTION

## Theory of Operation

The swing motor final drive is a two-stage planetary gearbox with two planet gears, two sun gears and two-stage output reduction. The planetary gear engages the ring gear. The pinion gear is connected to the output shaft and spline.

The final drive reduces swing motor rpm to increase swing motor output torque. The available maximum swing speed provides a fast turning rate for efficient, rapid work cycling with more than adequate power for good acceleration.

# REASSEMBLY

## Parts List

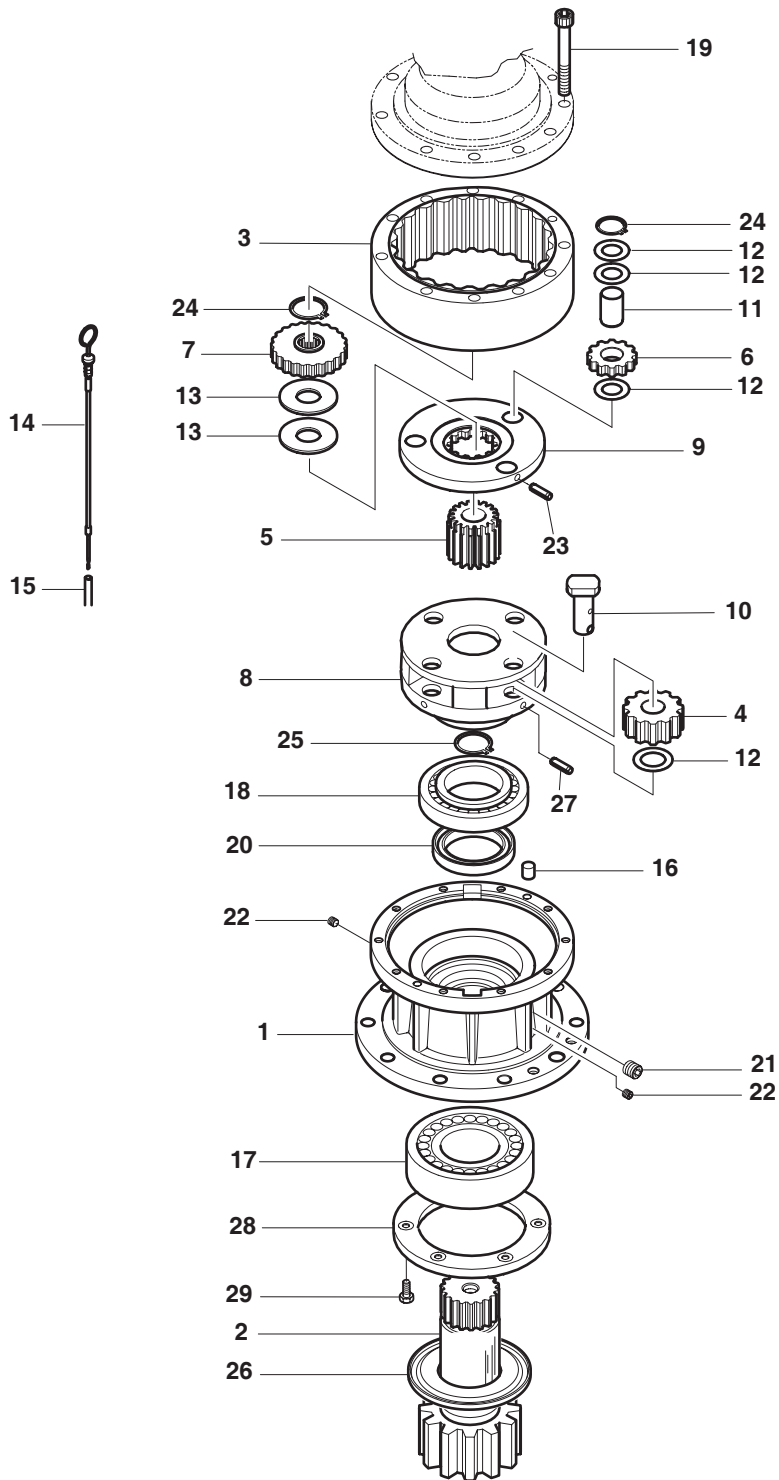


Figure 1

FG005349

Reference Number	Description
1	Casing
2	Driveshaft
3	Ring Gear
4	Planetary Gear
5	Sun Gear 2
6	Planetary Gear
7	Sun Gear 1
8	Carrier 2
9	Carrier 1
10	Pin Assembly
11	Pin Assembly
12	Adjustment Washer
13	Adjustment Washer
14	Level Bar
15	Level Gauge Piping

Reference Number	Description
16	Pin
17	Roller Bearing
18	Roller Bearing
19	Socket Bolt
20	Oil Seal
21	Plug
22	Plug
23	Spring Pin
24	Retainer Ring
25	Retainer Ring
26	Ring
27	Spring Pin
28	Support Plate
29	Screw Bolt

# SHRINKAGE FITTING OF SHAFT AND FLEXIBLE BEARING

1. Washing of shaft  
Remove fluids like anticorrosive fluid applied to the shaft and use an air conditioner to remove foreign substances.
2. Insert the support plate and the NILOS ring into the prepared shaft as shown in the figure and heat bearings (#22314, 2109-1041) on the heater.

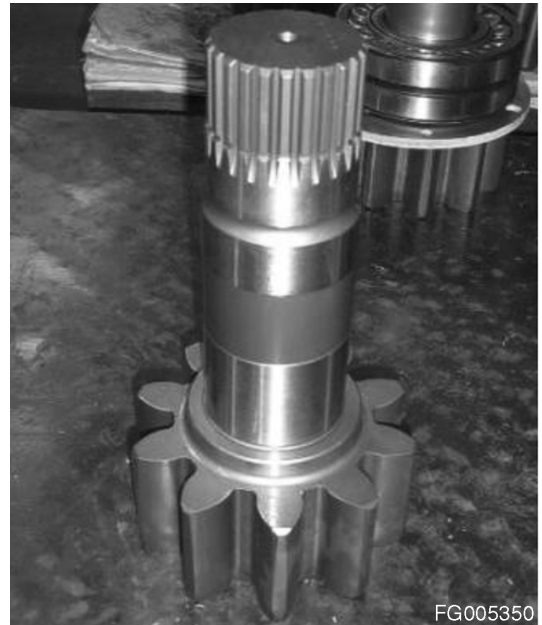


Figure 2



Figure 3



Figure 4

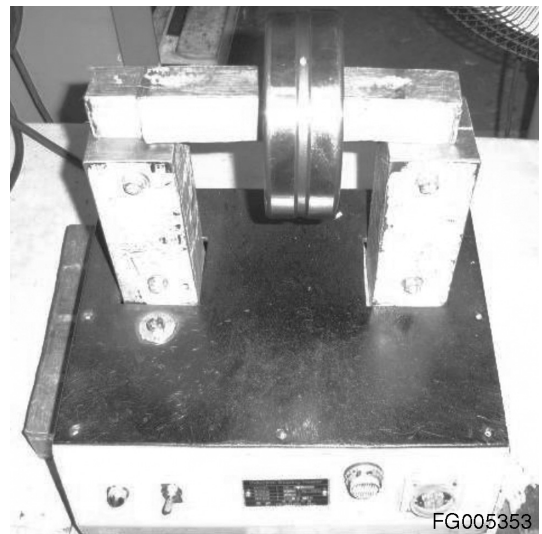


Figure 5

3. When bearing is heated up to 90°C - 100°C, remove it from the heater, hold it with both hands, and insert it into the shaft evenly.

To do so, slowly insert bearing 4-5 mm that it seats itself and then push it strongly to contact the NILOS ring.

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 **CAUTION!**

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**Do not heat bearing above 120°C.**

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4. After assembling the bearing, let it cooled fully in the air for 1 to 2 hours.



Figure 6