

Document Title: <b>Frame and track unit, specifications</b>	Function Group: <b>700</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
Profile:			

## Frame and track unit, specifications

### Specifications

Item	Unit	EC360	EC460	
Length of undercarriage	mm	5182	5370	
	inch	204	211.4	
Track link pitch	mm	215.9	215.9	
	inch	8.5	8.5	
No. of links	EA	50	52	
No. of top roller	EA	2 × 2	2 × 2	
No. of bottom roller	EA	9 × 2	10 × 2	
Spring	Type	–	Hydraulic adjuster (grease)	
	Spring, set length	mm	636 (25)	683 (26.9)
	Spring, free length	(in)	755 (29.7)	824 (32.1)
	Set load	kg (lbs)	22000 (48500)	28070 (61882)
	Adjust	mm	–30 ~ +110	0 ~ +150
inch		–1.18 ~ +4.72	–1.18 ~ +4.72	
Sprocket	No. of tooth	EA	21	21
No. of shoes		EA	100	104
Ground contact pressure with standard attachment (boom, arm, and bucket)	600 mm width (Triple grouser)	kgf / cm2(psi)	0.66 (9.39)	0.78 (11.10)
	700 mm width (Triple grouser)	kgf / cm2(psi)	0.58 (8.25)	0.68 (9.67)
	750 mm width (Triple grouser)	kgf / cm2(psi)	-	0.64 (9.10)
	800 mm width (Triple grouser)	kgf / cm2(psi)	0.52 (7.40)	0.60 (8.53)
	900 mm width (Swamp)	kgf / cm2(psi)	0.46 (6.54)	0.54 (7.68)
	600 mm width (Triple double grouser)	kgf / cm2(psi)	0.66 (9.39)	0.78 (11.10)

Document Title: <b>Upper (Superstructure), removal</b>	Function Group: <b>frame 710</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/10</b>
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## Upper frame (Superstructure), removal

### **WARNING**

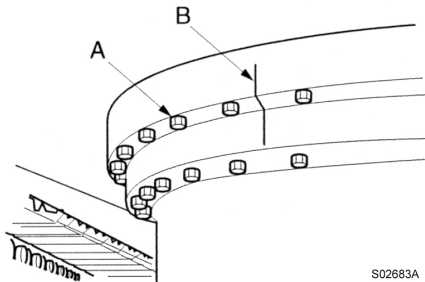
The superstructure weigh approximate 4 ~ 7 tons (excluding counterweight and digging units). Pay attention to safe footing and the area around the crane before proceeding to remove or install the superstructure.

1. Remove the digging unit.
2. Disconnect turning joint clamping capscrew, seal cover, hydraulic oil hoses, drain hose, and one servo hydraulic oil hose from turning joint.

**NOTE!**

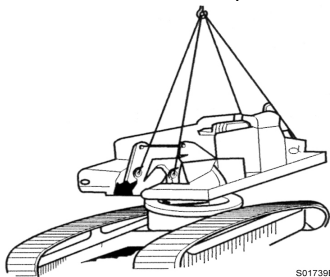
Bundle the hoses. Blind plug each disconnected hose and pipe.

3. Remove capscrews (A) fixing the outer race of the swing ring.



**Figure 1**  
**Swing ring installed**

1. A Hexagon capscrew
  2. B Confirm alignment of match marks
4. Dismantle the cab, counterweight and guard. Place a wire rope on the upper frame and lift it with a crane to an extent that the wire rope is not slack.



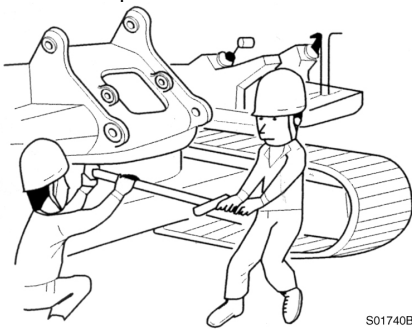
**Figure 2**  
**Lifting the upper frame**

5. Lift the upper frame just a little, and after confirming safety all around, lift it up and out.

Document Title: <b>Upper (Superstructure), installation</b>	<b>frame</b>	Function Group: <b>710</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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## Upper frame (Superstructure), installation

1. Bundle the hoses attached to the turning joint together and place them upright.
2. Coat the capscrews and threaded holes of the swing ring with "Three Bond 1215" (Loctite #515).



**Figure 1**  
**Installing the upper frame**

3. Lift the upper frame and install it to the swing ring.  
**NOTE!**  
Lower the superstructure so that the swing pinion and the swing ring are engaged.  
**NOTE!**  
For tightening torque, refer to torque chart.  
**NOTE!**  
Tighten diagonally opposite screws in sequence.
4. Connect the hoses, turning joint clamping capscrew and seal cover disconnected for removal.

Document Title: <b>Additional counterweight &amp; digging unit</b>	Function Group: <b>716</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/10</b>
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## **Additional counterweight & digging unit**

When special attachments (such as : scrap handling clam, log loader etc.,) are installed on the excavators, an additional counterweight is required for stability.

In these cases, check the attachment specifications and compare it carefully to the excavator load lifting capacity chart.

And if in doubt, contact your local dealer for advice.

Additional counterweight can be installed according to special attachments, however we are not responsible for any failure of the excavator or breakage of attachments due to such application.

For reference, an excavator is basically designed only for excavating and is not designed to be used as a crane.

Document Title: <b>Counterweight, installation</b>	Function Group: <b>716</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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## Counterweight, installation



**Lift the counterweight just a little, and after confirming safety and horizontal position, proceed to install it.**

Lower the counterweight to the mounting face at the rear of the upper frame.

### Weight table

Model	Unit	Specifications
EC360	kg (lbs)	7,000 (15432)
EC460	kg (lbs)	9,300 (20503)

### Tightening torque

No.	Unit	Specifications
2	kgf·m(lbf·ft)	135 ± 5 (975 ± 36)
8		90 ± 10 (650 ± 72)

**Figure 1**  
**Removing the counterweight**

1	Counter weight	5	Spacer	8	Capscrew
2	Capscrew	6	Cover(EC460)	9	Nut (EC360)
3	Lock nut	7	Stopper (EC360)		Plain washer (EC460)
4	Plate		Spring washer (EC460)	10	Reflector

Document Title: <b>Counterweight, removal</b>	Function Group: <b>716</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/10</b>
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## Counterweight, removal

### **WARNING**

**The counterweight weighs (See weight table). Take care in performing removal. To lift the counterweight, use certified wire ropes in good condition, of adequate load rating and length.**

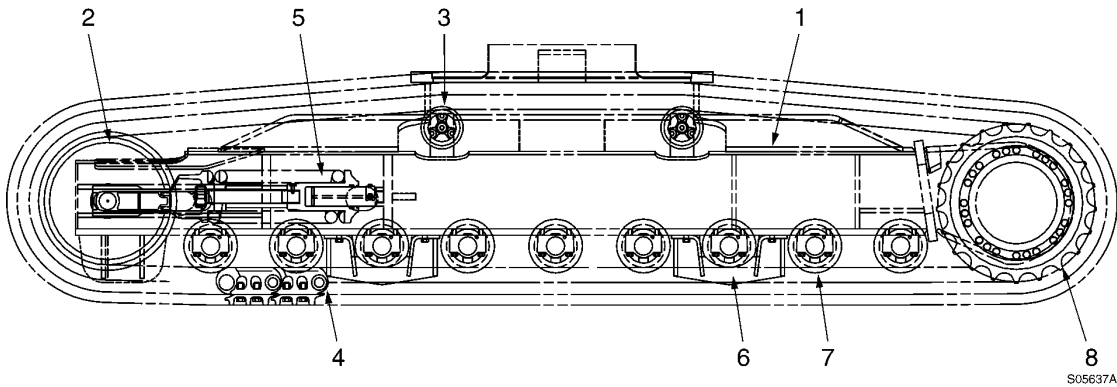
1. Attach wire slings to the lifting eyes at the top surface of the counterweight and lift until there is no slack in the wire ropes.
2. Remove lock nut (3), using socket wrench or power wrench.
3. Remove capscrew (8) using socket wrench.
4. Lift the counterweight just a little, and after confirming safety all around, lift it up and out.

Document Title: <b>Undercarriage, description</b>	Function Group: <b>7181</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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## Undercarriage, description

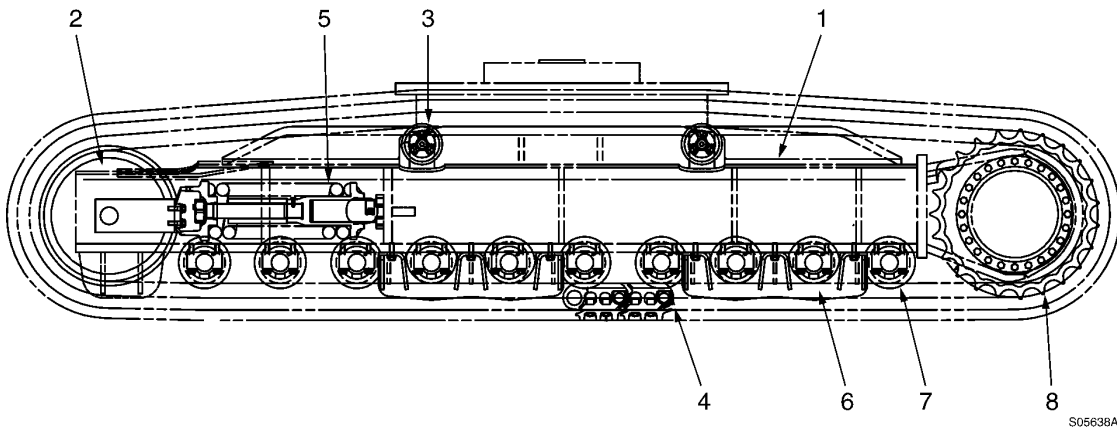
Undercarriage consists of idlers, recoil springs, top and bottom rollers, sprockets, track links, track frame and track guards.

### EC360



**Figure 1**  
**Structure, undercarriage (EC360)**

### EC460



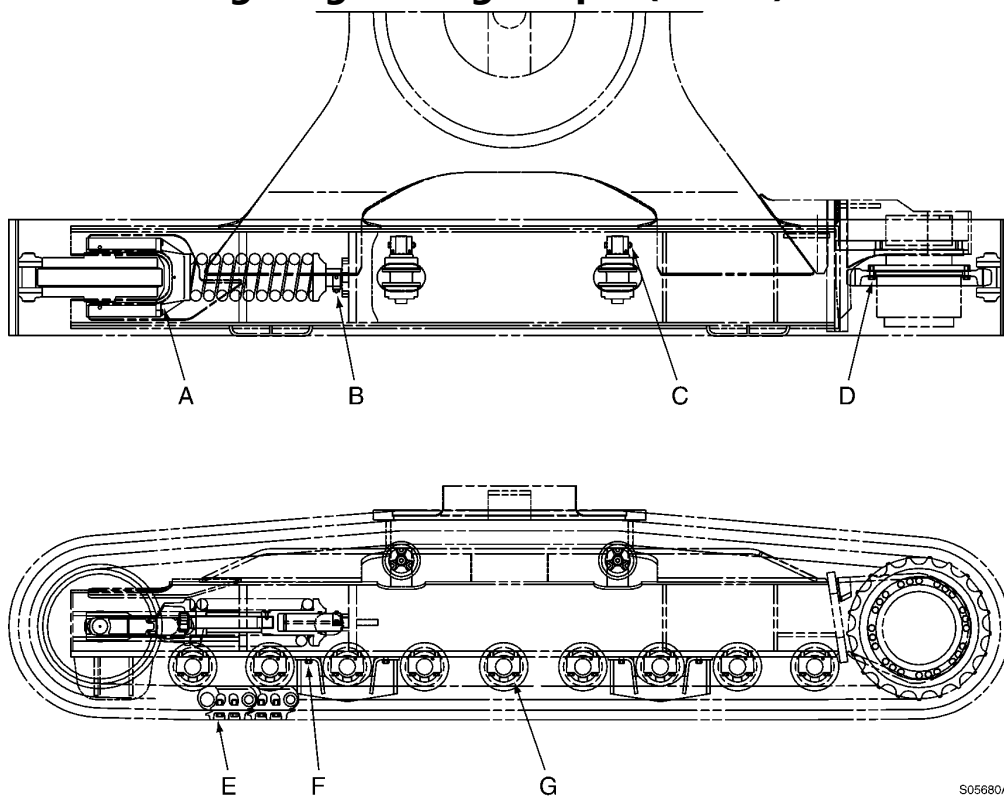
**Figure 2**  
**Structure, undercarriage (EC460)**

1	Track frame	5	Recoil spring
2	Idler	6	Track guard
3	Top roller	7	Bottom roller
4	Track links	8	Sprocket



Document Title: <b>Undercarriage, tightening torque (EC360)</b>	Function Group: <b>7181</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/10</b>
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**Undercarriage, tightening torque (EC360)**



**Figure 1**  
**Tightening torque, kgf-m (lbf-ft)**

A	27 ± 3 (195 ± 22)	E	110 ± 5 (795 ± 36)
B	7 ± 0.25 (50 ± 2)	F	52 ± 5 (376 ± 36)
C	52 ± 5 (376 ± 36)	G	52 ± 5 (376 ± 36)
D	44 ~ 49 (318 ~ 354)		

Document Title: <b>Selection of track shoes</b>	Function Group: <b>775</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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## Selection of track shoes

Choose suitable track shoes to match the ground conditions.



### Method of selecting shoes

Confirm the category from the list of uses in the following table then use the table "Selection, track shoes" to select the shoe.

Categories "B" and "C" are wide shoe, so there are restrictions on their use. Therefore, before using, check the restrictions and consider carefully the conditions of use before selecting a suitable shoe width. If necessary, give the customer guidance in their use.

When selecting the shoe width, select the narrowest possible within the range that will give no problem with flotation and ground pressure. If a wider shoe than necessary is used, there will be a large load on the shoe, and this may lead to bending of the shoe, cracking of the links, breakage of the pins, loosening of the shoe capscrews, or other problems.

### Category, track shoes

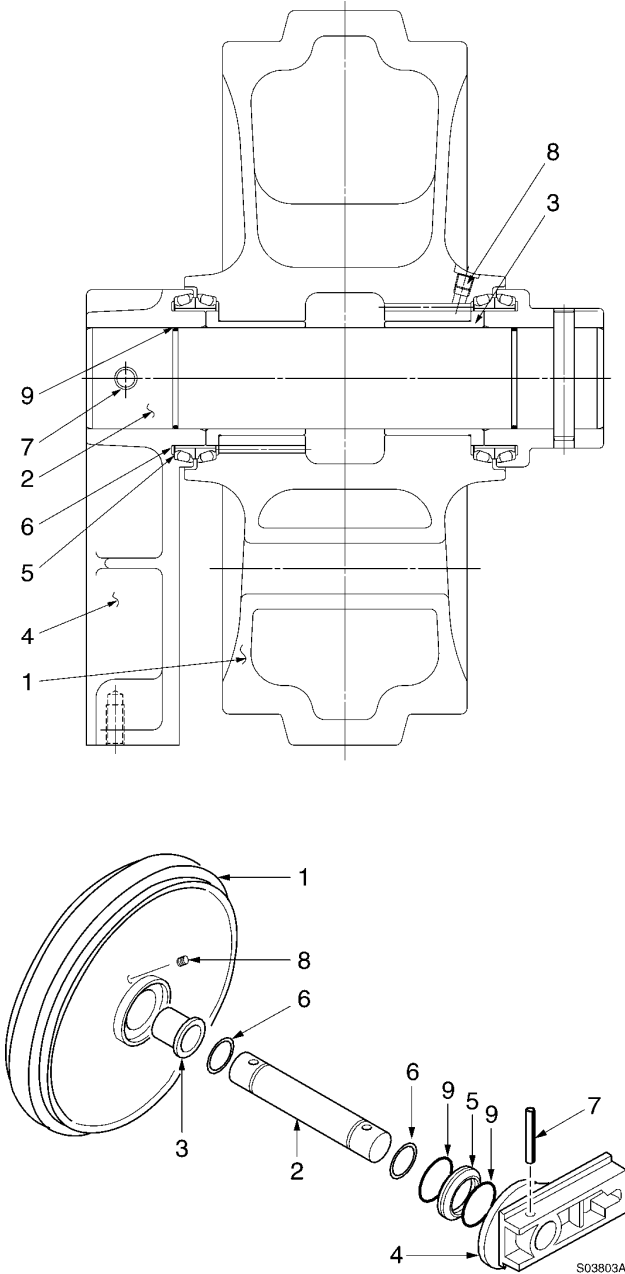
Category	Use	Precautions when using
A	Rocky ground, normal soil	Travel in low speed when traveling on rough ground with obstacles such as large boulders and fallen trees.
B	Soft ground	Travel in high speed only on flat ground. When it is impossible to avoid traveling over obstacles, lower the travel speed to approximate half of low speed.   Cannot be used on rough ground where there are large obstacles such as boulders and fallen trees.
C	Extremely soft ground (swamp ground)	Use only for ground where "A" and "B" are impossible to use. Travel in high speed only on flat ground. When it is impossible to avoid traveling over obstacles, lower the travel speed to approximate half of low speed.   Cannot be used on rough ground where there are large obstacles such as boulders and fallen trees.

### Selection, track shoes

Specifications	EC360	EC460
600 mm grouser	A	A
700, 800 mm grouser	B	B
900 mm grouser and 910 mm swamp	C	C

Document Title: <b>Idler, description</b>	Function Group: <b>7751</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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**Idler, description**



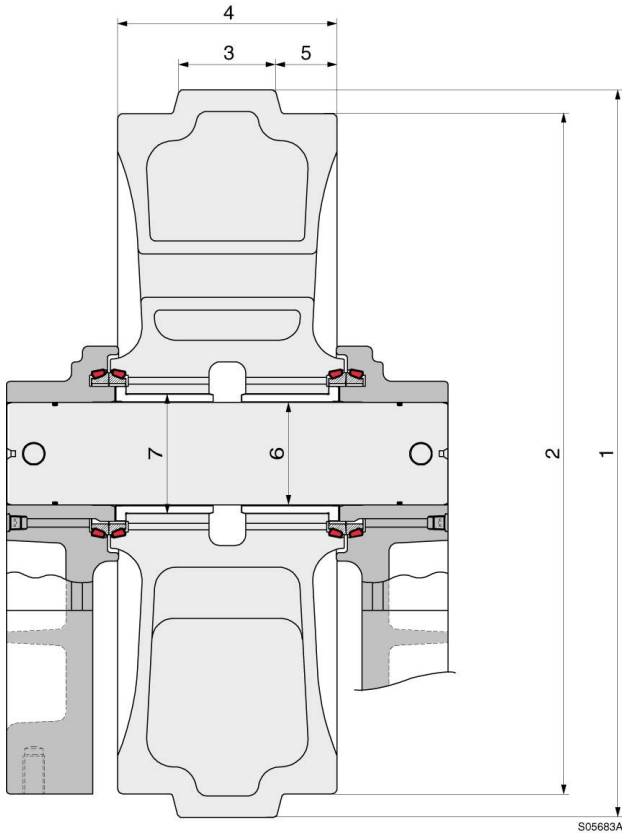
**Figure 1**  
**Structure, idler**

1	Idler wheel	6	O-ring
2	Shaft	7	Pin
3	Bushing	8	Plug
4	Support	9	O-ring (shaft)



Document Title: <b>Idler, measurement of wear</b>	Function Group: <b>7751</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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**Idler, measurement of wear**



**Figure 1**  
**Idler**

**Limit of wear (EC360), unit : mm (in)**

No.	Check item	Standard size		Repair limit		Remedy	
1	Outside diameter of flange	644 (25.35)		-		Repair or replace	
2	Outside diameter of tread	594 (23.38)		582 (22.91)			
3	Width of flange	101.6 (4)		92.6 (3.65)			
4	Total Width of tread	203.2 (8)		195.2 (7.68)			
5	Width of tread	50.8 (2)		-			
6	Clearance between shaft and bushing	Standard size	Tolerance		Clearance		Replace bushing
			Shaft	Hole	Standard size	Repair limit	
		80 (3.15)	0 - 0.03 (- 0.001)	+ 0.40~ + 0.35 (+ 0.016 ~ 0.014)	0.35 ~ 0.43 (0.014 ~ 0.017)	1.5 (0.059)	
7	Interference between idler and	90	+ 0.159	+ 0.054	0.070	-	Replace

bushing	(3.54)	+ 0.124 (+ 0.006 +0.005)	0 (+ 0.002)	~ 0.159 (0.003 ~ 0.006)
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**Limit of wear (EC460), unit : mm (in)**

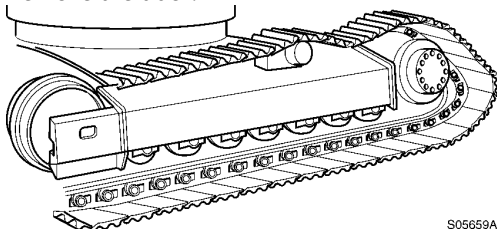
No.	Check item	Standard size		Allowable limits		Remedy
1	Outside diameter of flange	674 (26.5)		-		Rewelding or replacing
2	Outside diameter tread	630 (24.8)		620 (24.4)		
3	Width of flange	101 (4.0)		91 (3.6)		
4	Total width of tread	204 (8.0)		195.2 (7.69)		
5	Width of tread	51.5 (2.03)		46.5( 1.83)		
6	Clearance between shaft and bushing	Standard size	Tolerance limits		Clearance	
			Shaft	Hole	Standard	Limits
		95 (3.7)	0 - 0.035 ( 0 - 0.0013)	+ 0.515 + 0.415 (+ 0.020 + 0.016)	0.415 ~ 0.550 ( 0.0164 ~ 0.0216)	1.5 (0.059)
7	Interference between idler and bushing	110 (4.3)	+ 0.159 + 0.124 ( + 0.0062 + 0.0049)	+ 0.054 0 ( + 0.0021 0)	+ 0.07 ~ 0.159 (+ 0.0027 ~ 0.0062)	-

Document Title: <b>Idler, removal</b>	Function Group: <b>7751</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/1 0</b>
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## Idler, removal

### Removal of the idler and the spring package

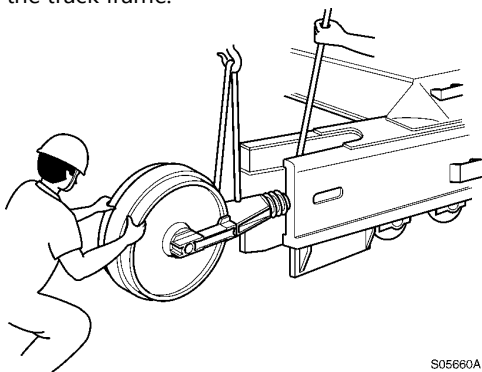
1. Remove the track.



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**Figure 1**  
**Removal, track**

2. Pass a wire rope around the track spring bracket, lift the idler assembly and using a pry bar, push the bracket out of the track frame.

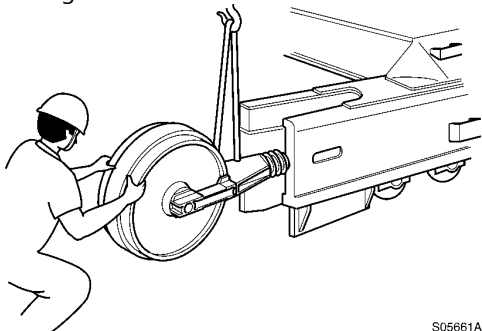


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**Figure 2**  
**Removal, idler assembly**

### Installing the idler and the track spring

1. Pass a wire rope around the track spring bracket, lift the idler assembly, then fit and push the slide block into the slide groove in the track frame.



S05661A

**Figure 3**  
**Instal, idler assembly**



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