

DRIVING & CHASSIS**TABLE OF CONTENTS**

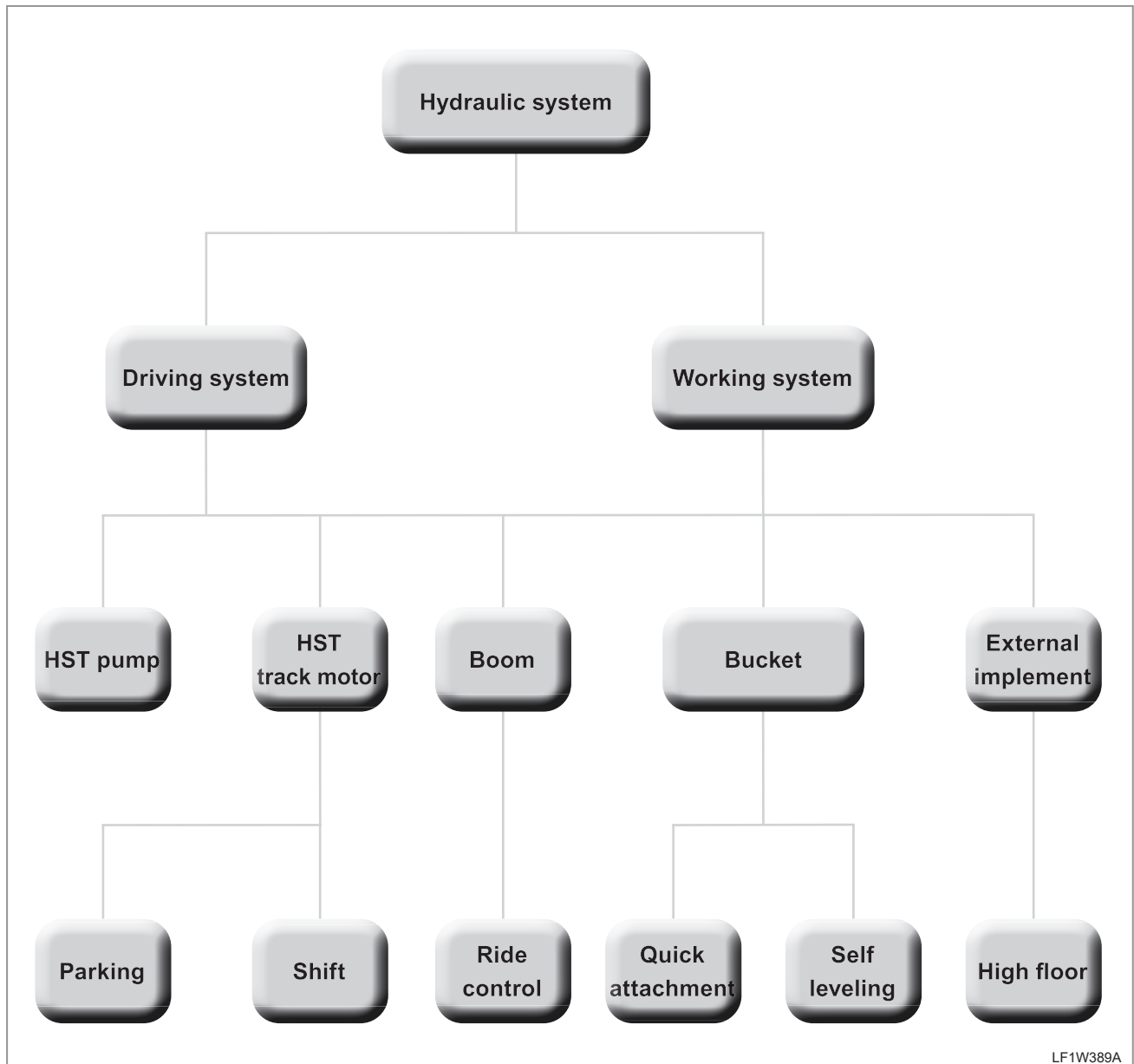
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1. DRIVING SYSTEM

1.1 OVERVIEW

As the engine's rotating power is supplied to the HST pump through the coupling assembly of the engine flywheel, the hydraulic oil pressure built in the HST pump is delivered to the driving HST track motors on the left and right sides of the vehicle.

As the drive sprockets of the HST track motors for driving on the left and right sides operate, their rotating power is delivered to the crawlers that are connected to the idler rollers and drive rollers.



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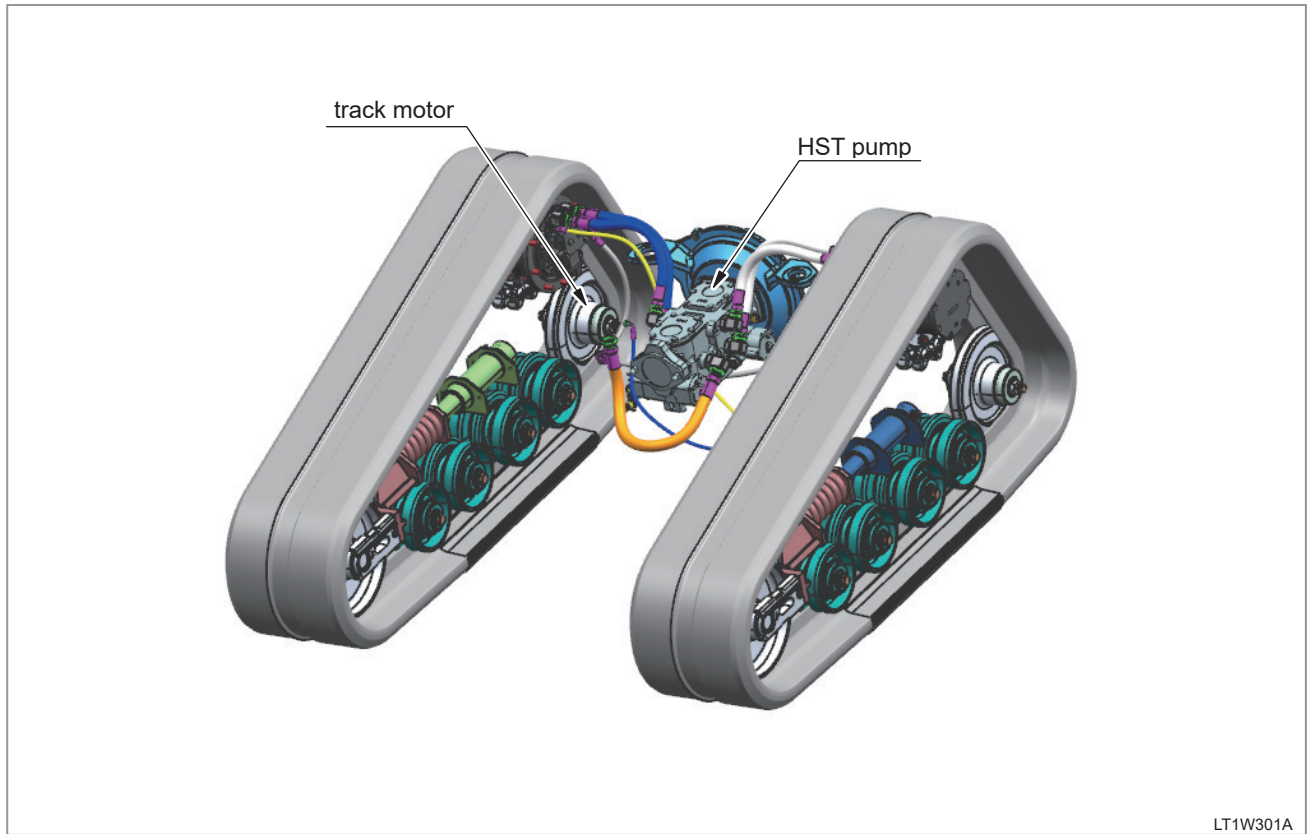
HYDRAULIC SYSTEM

ELECTRIC SYSTEM

CABIN

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1.2 MAJOR SPECIFICATION



Item	Model	HT100V	
	Nominal Horsepower (HP)	74	
	Unit	1 speed	2 speed
Engine rotation speed (rated)	rpm	2,400	
Engine rotation speed (high idle)	rpm	2,550	
HST pump speed	rpm	2,550	
HST pump capacity	cc/rev	34.4	
	LPM	88	
Track motor capacity	cc/rev	31.5	20.6
Rotation speed of track motor output shaft 1	rpm	2,785	4,258
No. of drive sprocket teeth		15	
Track motor gear ratio		25.68	
Track motor oil		Capacity: 1L, Grade: API GL-4, SAE 90	
Axle rotation speed	rpm	108	166
Crawler specification		400(W) x 86(P) x 52(L)	
Machine speed (calculation)	km/hr	7.5	11.5

1.3 EXPLODED VIEW

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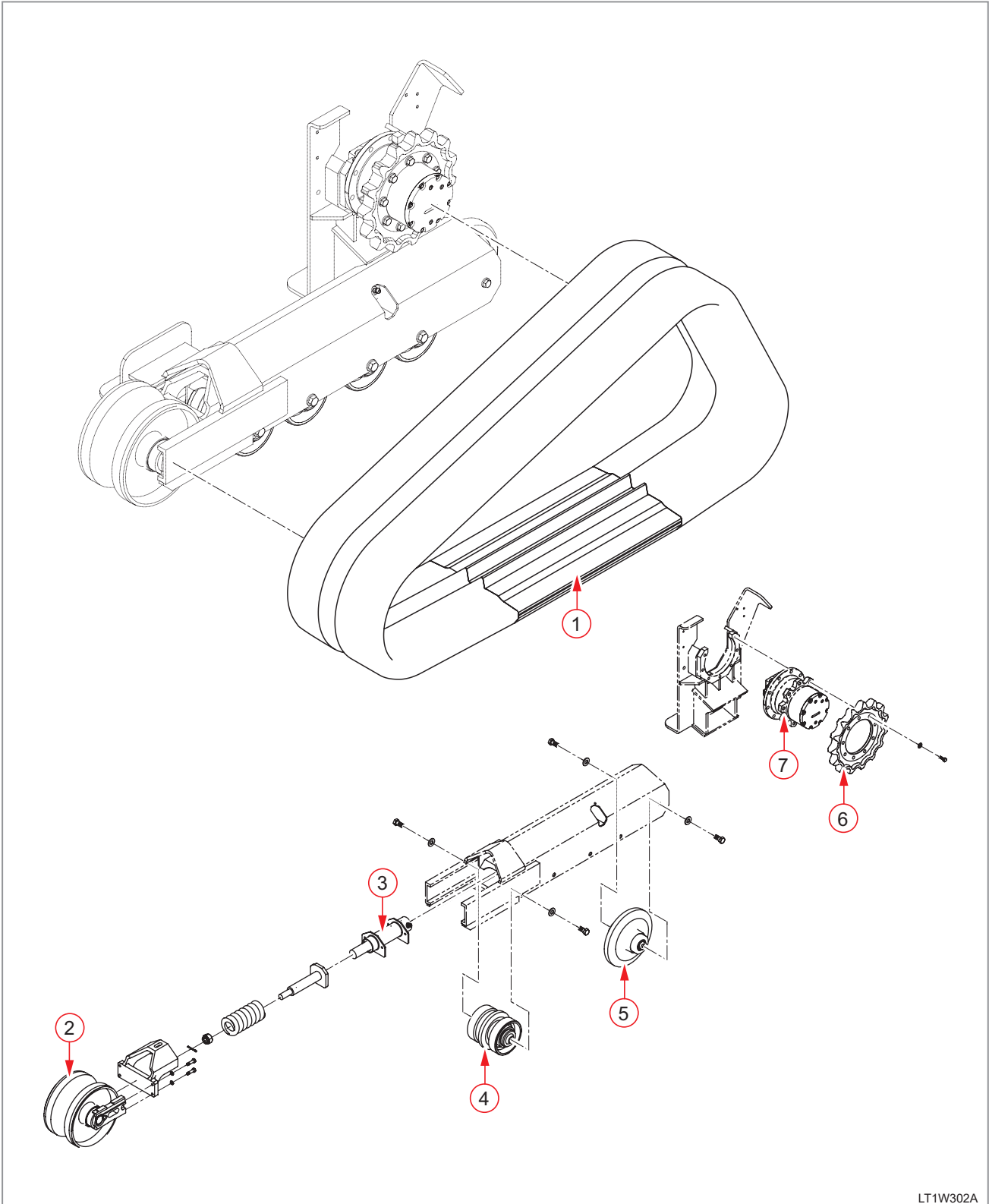
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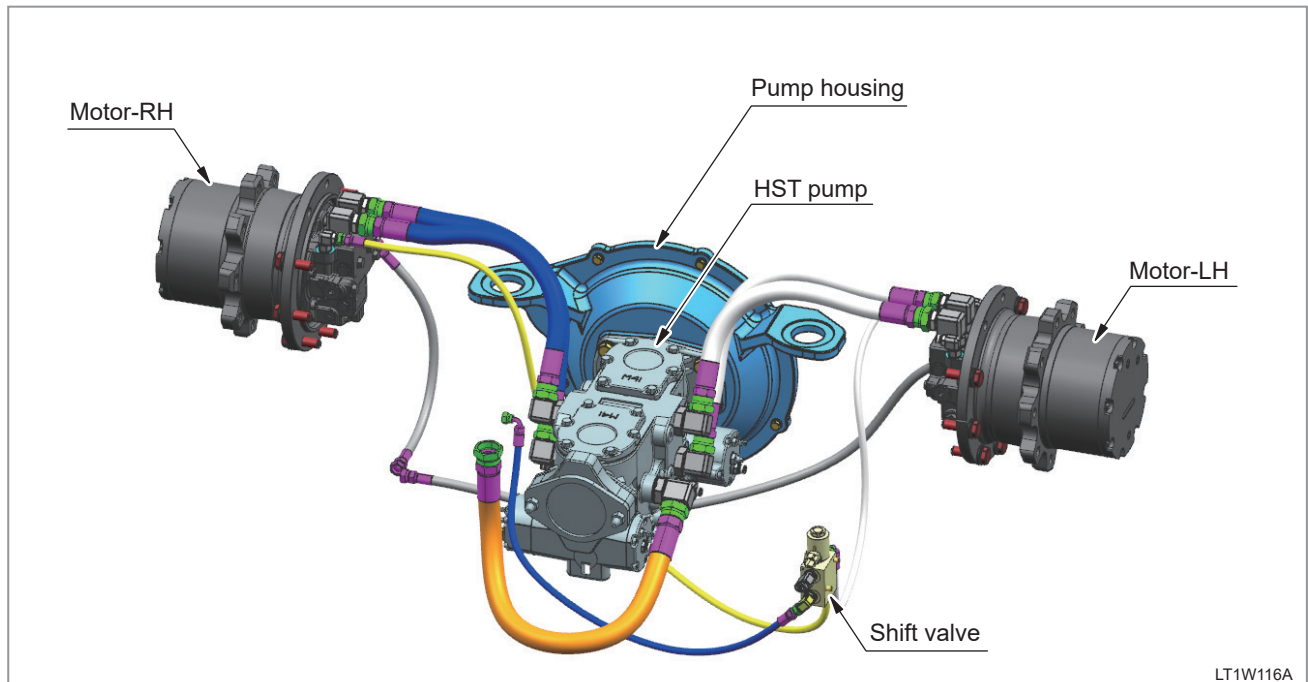
LT1W302A

- (1) Crawler
- (2) Assy idler-FR
- (3) Assy adjuster, tension
- (4) Track roller
- (5) Idler roller-RR
- (6) Sprocket
- (7) Track(HST) motor

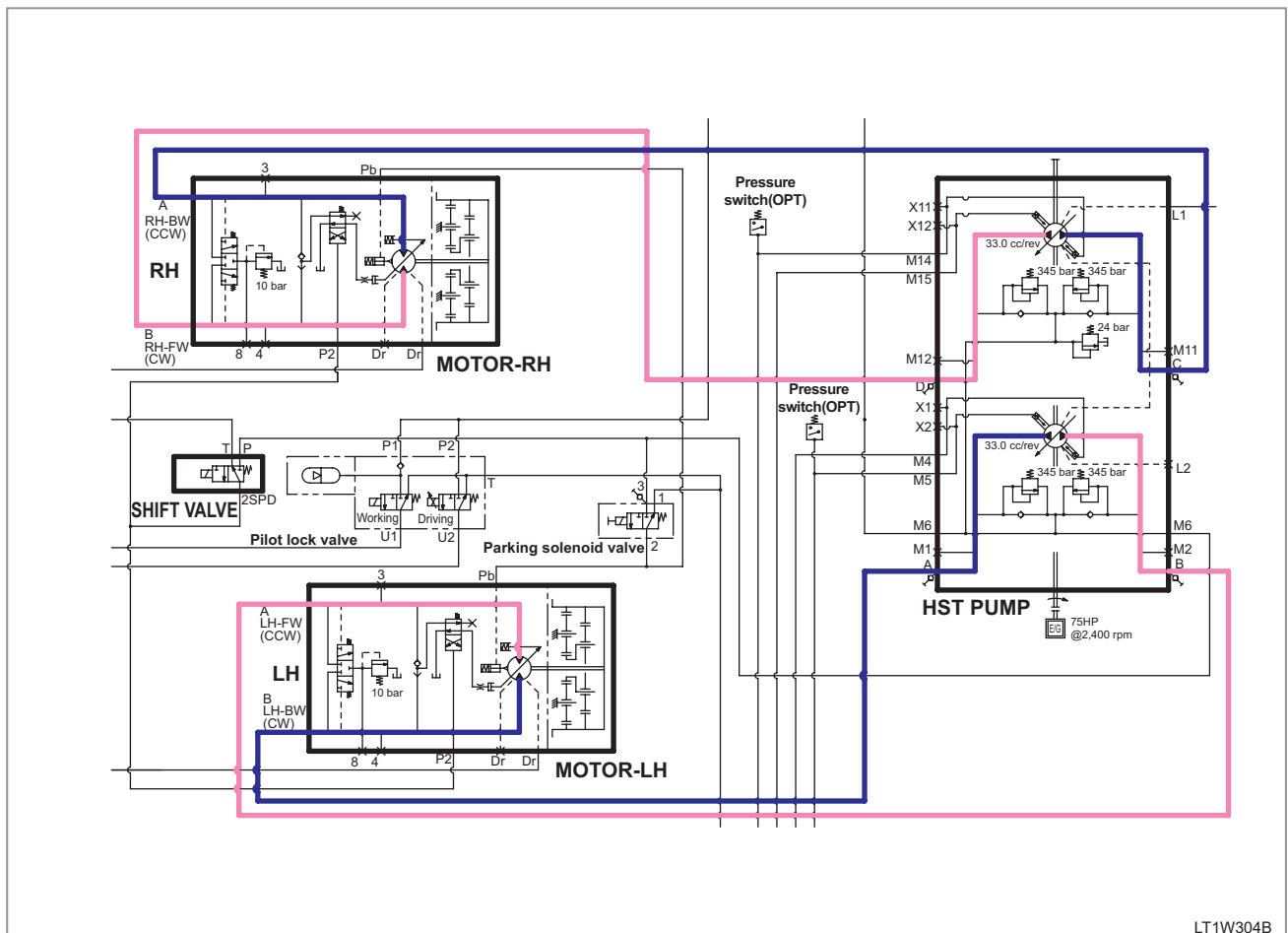
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1.4 PRINCIPLE OF POWER TRANSFER & SPECIFICATIONS OF COMPONENTS

1.4.1 POWER TRANSFER SYSTEM



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LT1W304B

When the HST pump receives a forward drive signal input from the pilot line, oil travels through the red line and passes through the piston in the motor, rotating the motor shaft. The CTL motor does not undergo final gear reduction by means of a chain, so the motor is equipped with an internal reduction gear. After passing through the piston, the oil returns to the HST pump.

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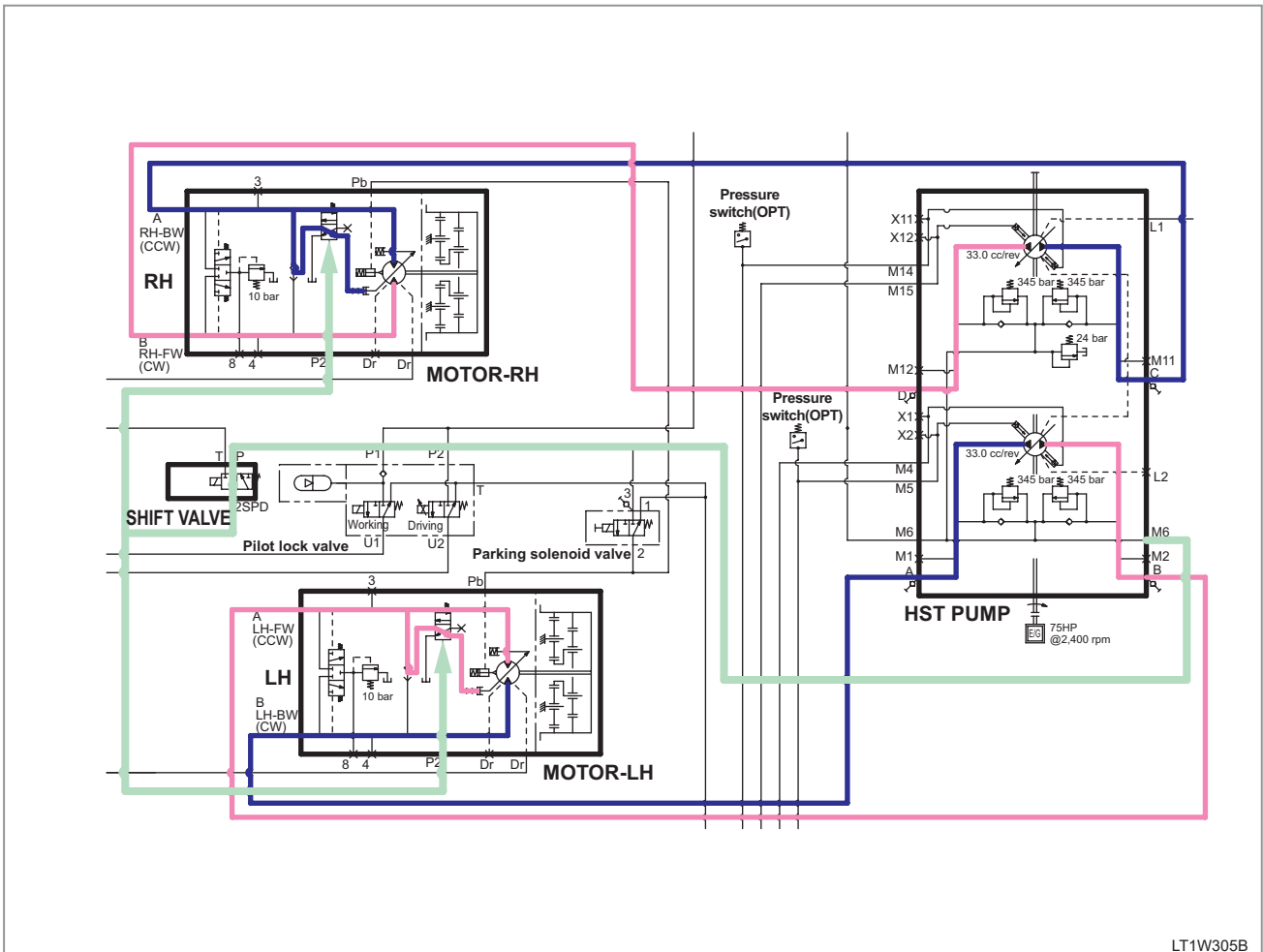
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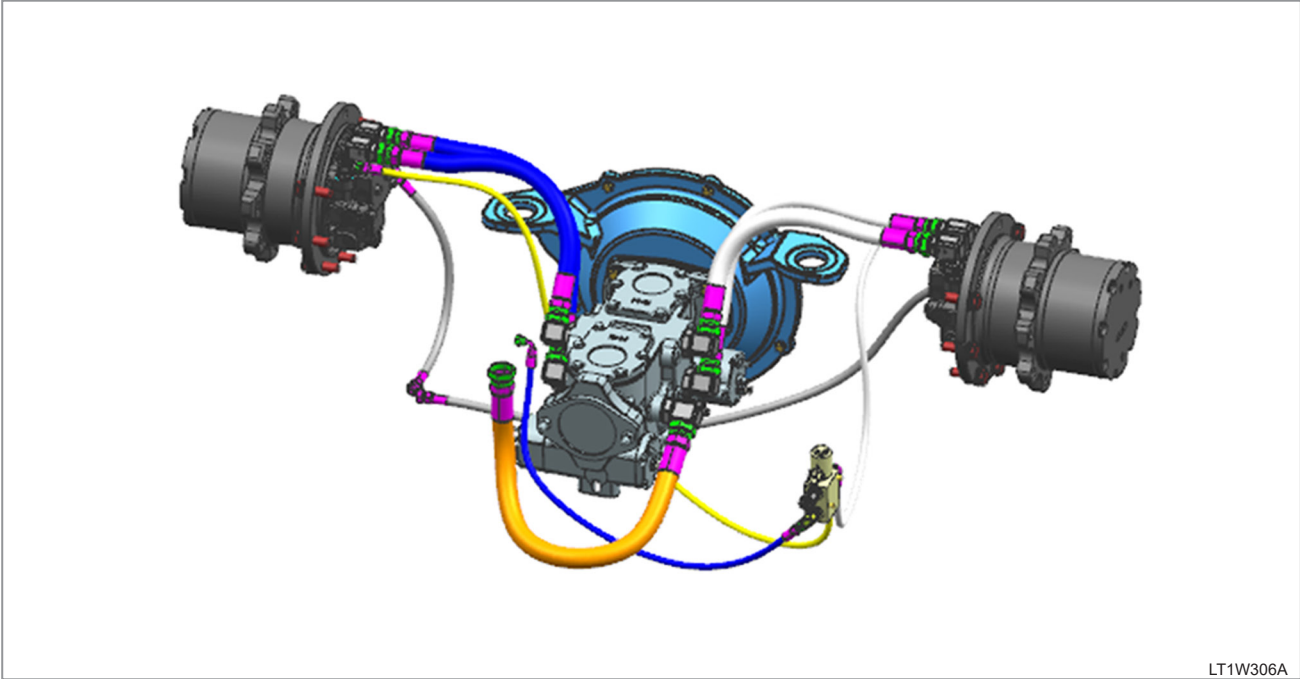


When the shift valve receives an electrical signal, the valve is actuated and the flow path opens.

The oil from the HST pump passes through the shift valve and actuates the valve in the motor, thereby reducing the motor capacity. The volume decreases while the flow rate remains constant, and the motor rpm increases as a result.

1.4.2 SPECIFICATIONS

HST GROUP



LT1W306A

ENGINE

- Rotation speed (high idle) : 2,550 rpm

PUMP

- Rotation speed (high idle) : 2,550 rpm
- Capacity : 34.4 cc/rev
- Flow rate : 88 lpm

MOTOR

- Capacity : 31.5 cc/rev, 20.6 cc/rev
- Reduction gear ratio : 1/25.68 (0.039)

$$\text{Motor rpm} = \text{Pump rpm} \times \frac{\text{Pump displacement}}{\text{Motor displacement}} = 2785 \text{ rpm}, 4258 \text{ rpm}$$

$$\text{Reduced rpm} = \text{motor rpm} \times \text{reduction gear ratio} = 108 \text{ rpm}, 166 \text{ rpm}$$

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ENGINE

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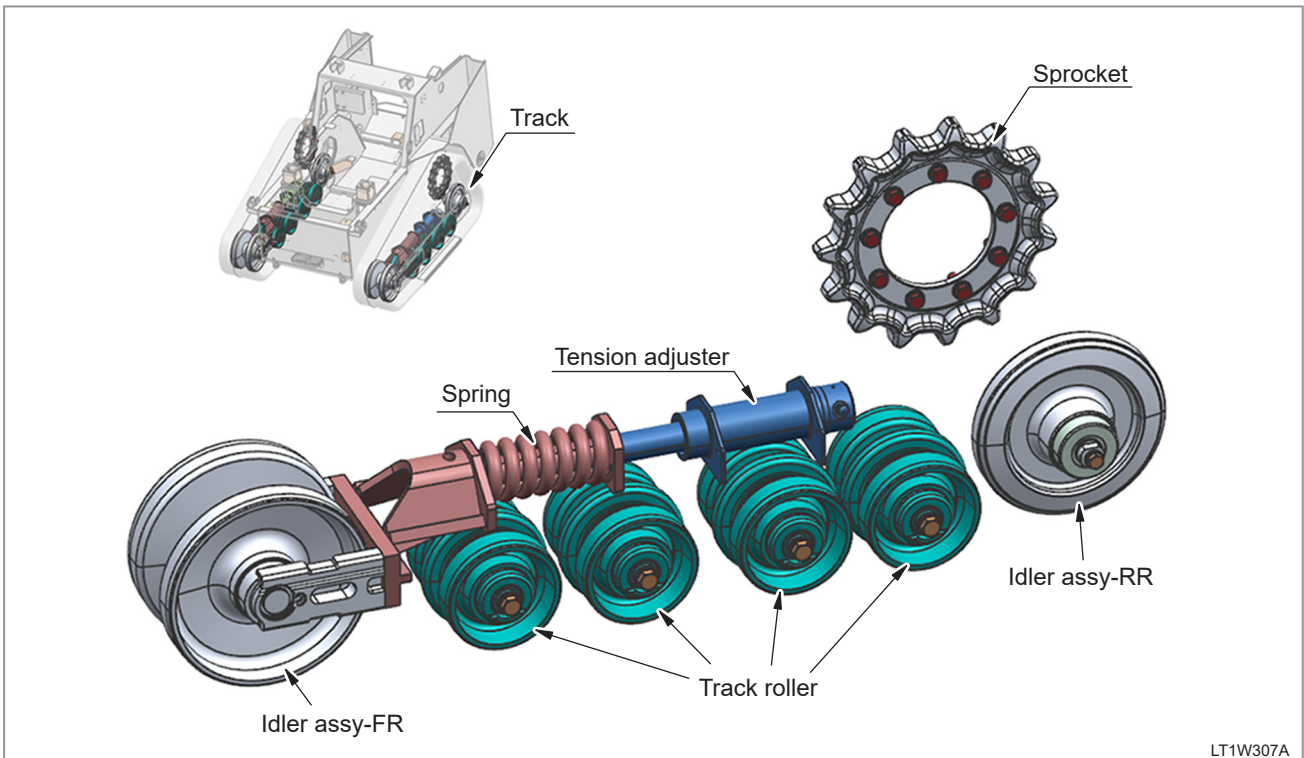
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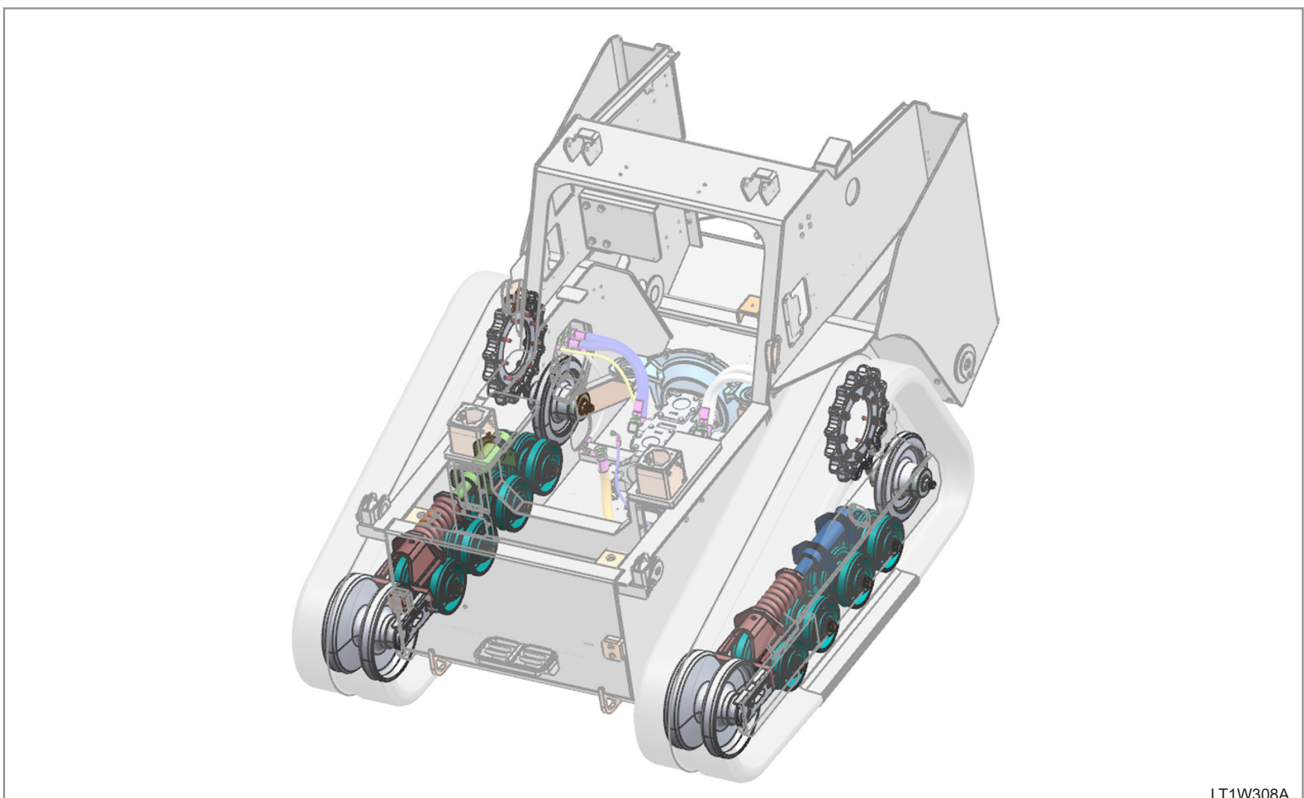
CABIN

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UNDERCARRIAGE - TRACK GROUP

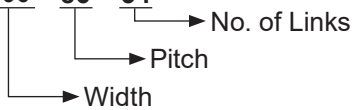


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LT1W308A

TRACK : 400 × 86 × 54



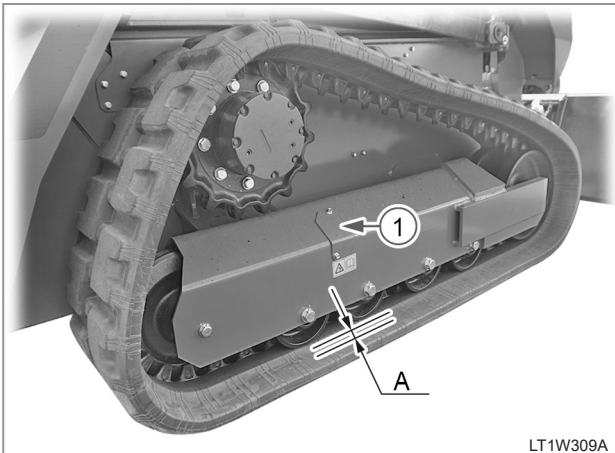
- Rubber track circumference : 4472 mm (176 in.)
- No. of steel cords : 54 pcs
- Rubber track thickness : 51 mm (2 in.)

SPROCKET

- No. of teeth : 15 EA
- Effective diameter : 416mm (16.38 in.)
- Reduced rpm : 108 rpm, 166 rpm
- Speed(km/h) = $(60 \times \pi \times D \times 10^{-6}) \times \text{Reduced rpm}$
- Speed : 8.5 km/h (5.28 MPH), 13.0 km/h (8.08 MPH)

1.5 CHECK & ADJUSTMENT

1.5.1 CRAWLER TENSION ADJUSTMENT



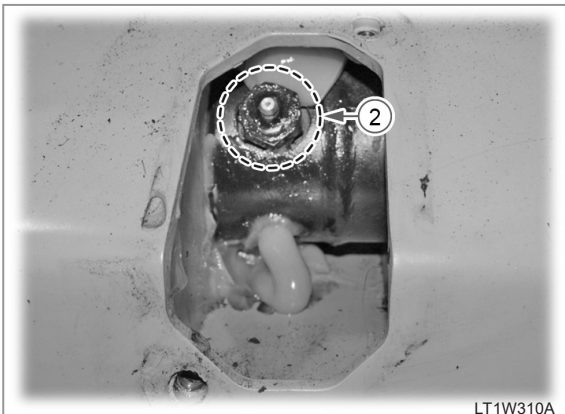
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(1) Cover

1. Park the vehicle on firm level ground and stop the engine.
2. Support the stand or hydraulic jack under the rear and front section of the main frame and lift the both sides simultaneously to lift the crawlers off the ground.
3. Set the track roller in the middle balanced horizontally and measure the distance from the crawler.
4. Check the tension of the crawlers frequently. Use the tension adjuster to maintain their tension within the standard range.
 - Deflection of the crawler (A) : 20 ~ 30 mm (0.787 ~ 1.181 in.)

REMARK

CRAWLER TENSION ADJUSTMENT

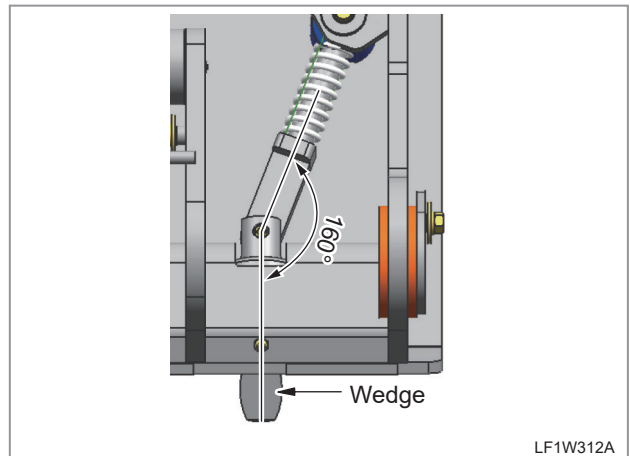


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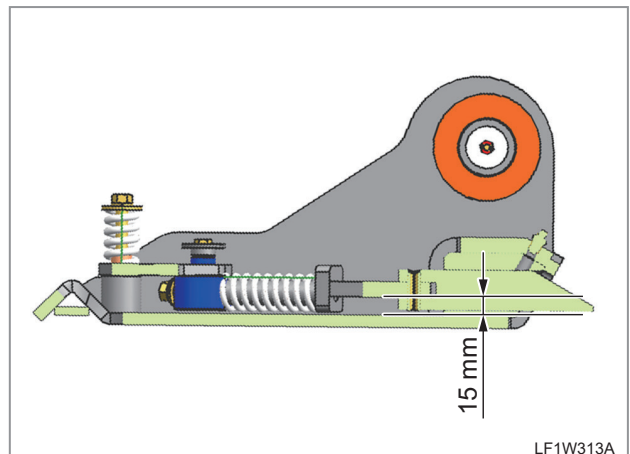
- Remove the cover (1) of the track frame and add grease through the grease nipple valve (2) of the tension adjuster to adjust the tension of the crawler.

1.5.2 QUICK ATTACHMENT CHECK

WEDGE ASSEMBLY ANGLE

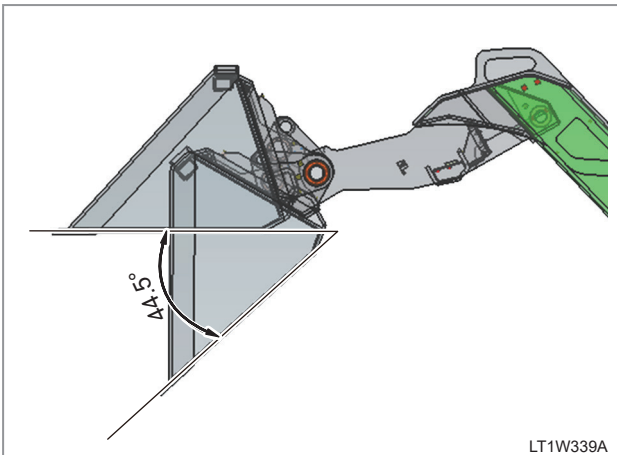
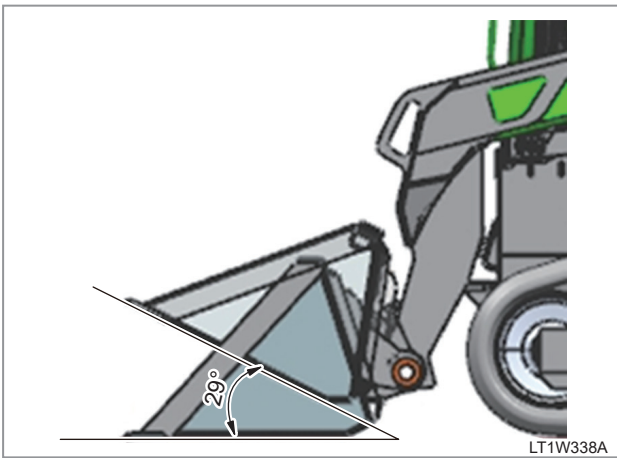


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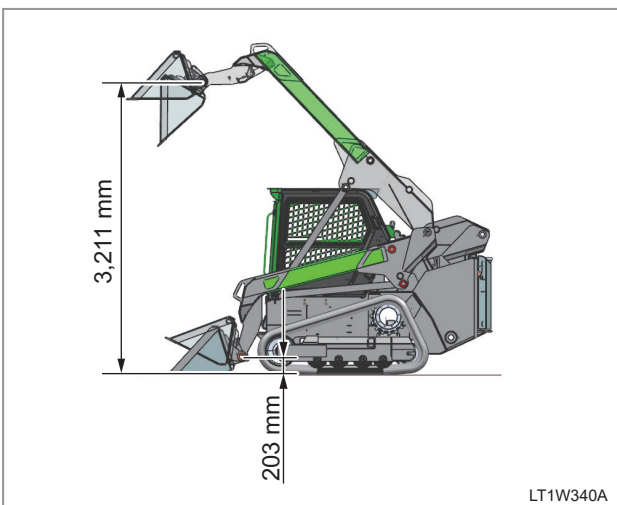


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BUCKET APPLYING ANGLE

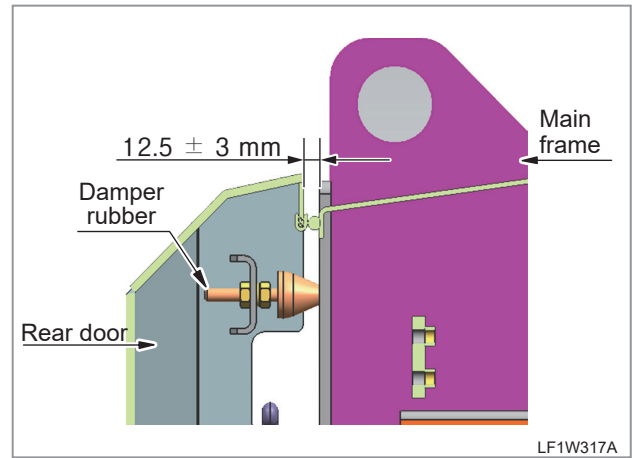


INITIAL BOOM FRAME LOCATION



1.5.3 REAR DOOR OPERATION CHECK

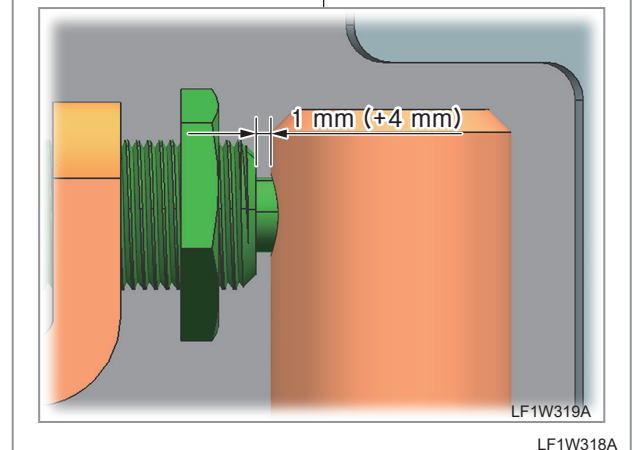
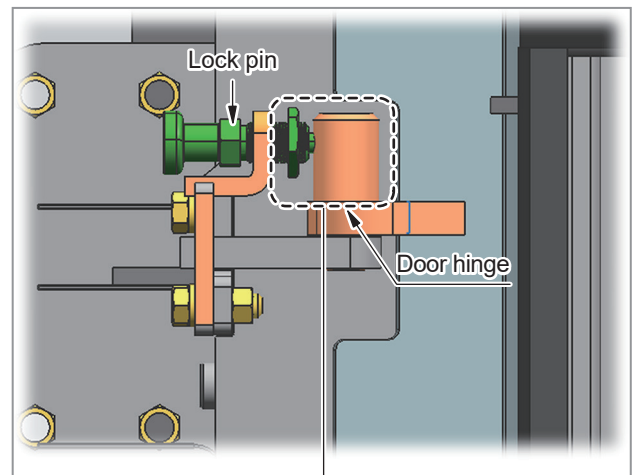
CLEARANCE OF REAR DOOR & MAIN FRAME



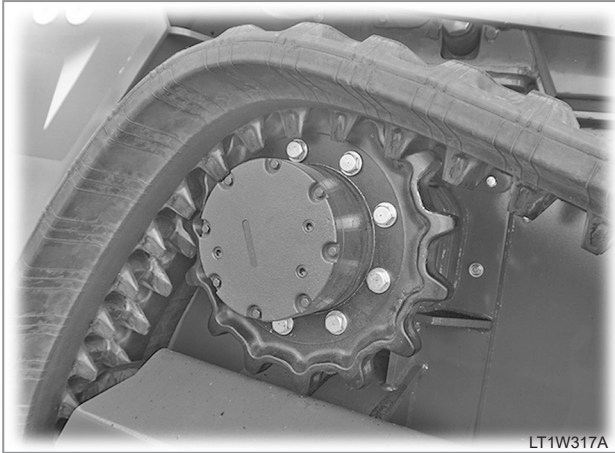
REMARKS

- Deflection of the rubber damper by the main frame when tightened
Deflection: 2-3 mm

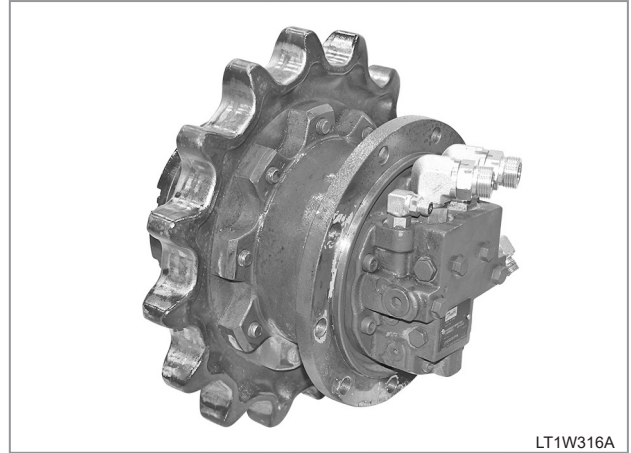
CLEARANCE OF REAR DOOR, LOCK PIN, DOOR HINGE



2. BRAKE (PARKING BRAKE)



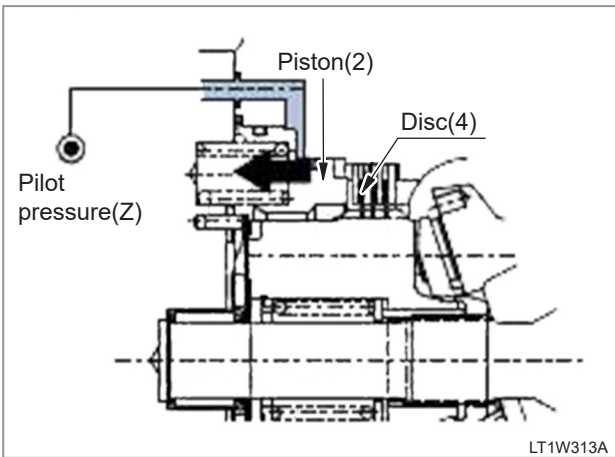
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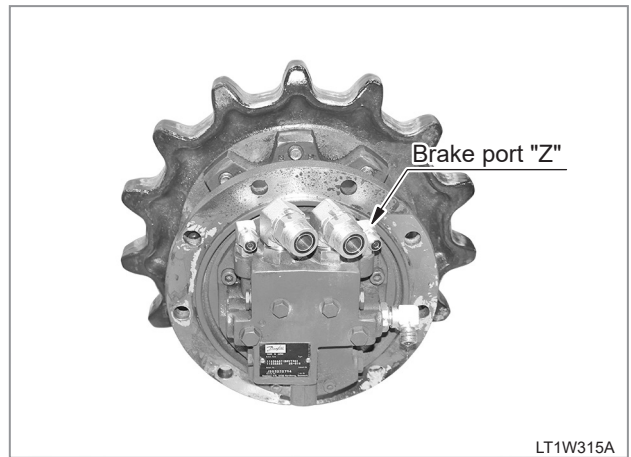
LT1W316A

The brake packs are installed in the track motors while the track motors are located on the left and right sides of the vehicle.

BRAKE RELEASED

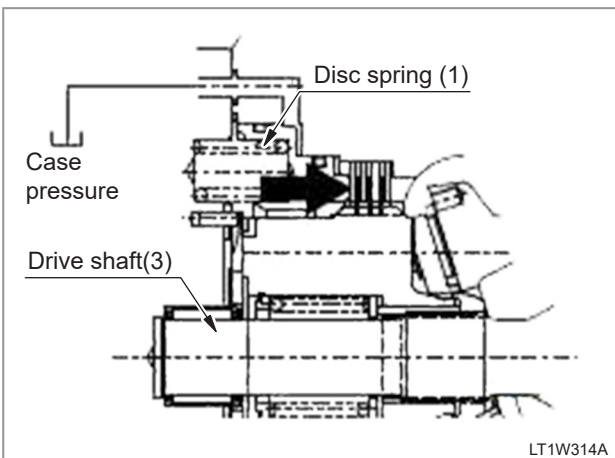


LT1W313A



LT1W315A

BRAKE ENGAGED



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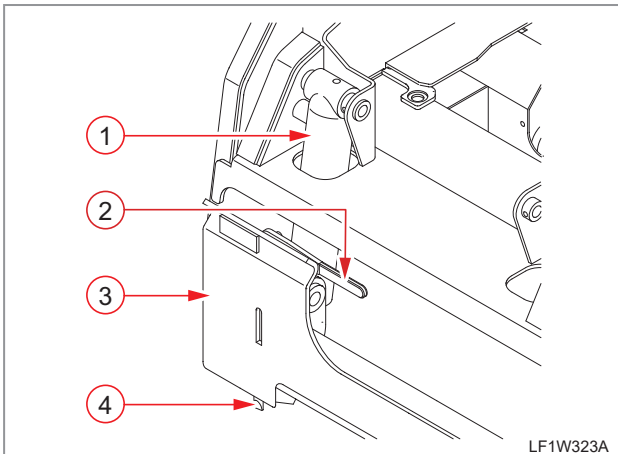
Basically, when pressure is not built up in the hydraulic system, the parking brake of the track (HST) motor is operated.

As shown in the figure, the hydraulic pressure is no longer applied on the brake area, and the disc spring (1) pushes the piston (2) that then compresses the discs. Then, as the drive shaft (3) is connected to the discs (4) with the splines, and the discs are fixed to the housing, this driving power is lost, thereby resulting in braking.

On the other hand, when the hydraulic pressure is supplied to the brake port Z, the brake piston is pushed, resulting in pushing the disc spring in the opposite direction. As a result, the parking brake is released and the driving power is restored and becomes ready to be used.

3. WORKING SYSTEM

3.1 WORKING SYSTEM HOLDER (QUICK COUPLER)

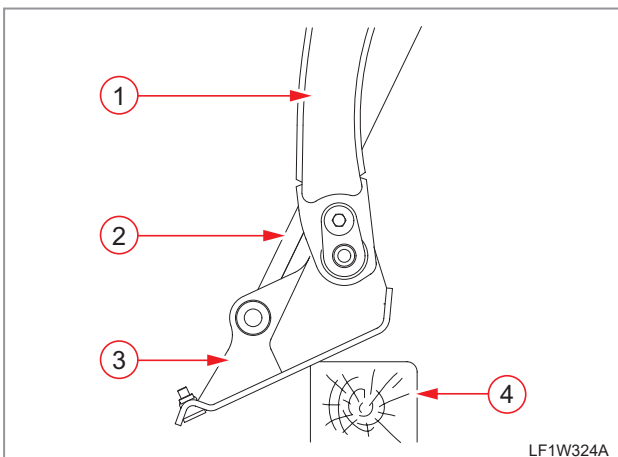


- | | |
|---------------------|---------------------------|
| (1) Bucket cylinder | (3) Working system holder |
| (2) Hand lever | (4) Lock pin |

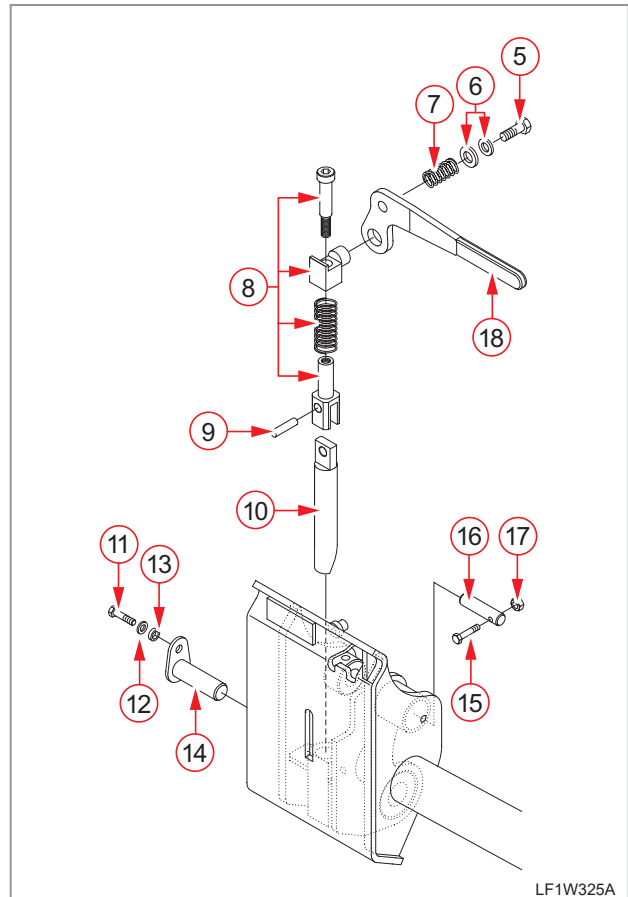
The attachment holder is designed to attach and detach an attachment to/from the body easily.

This is connected to the bucket cylinder with the pin, cap screw, and lock nut, and the hand lever and lock pin are used to lock an attachment onto the attachment holder.

REMOVAL



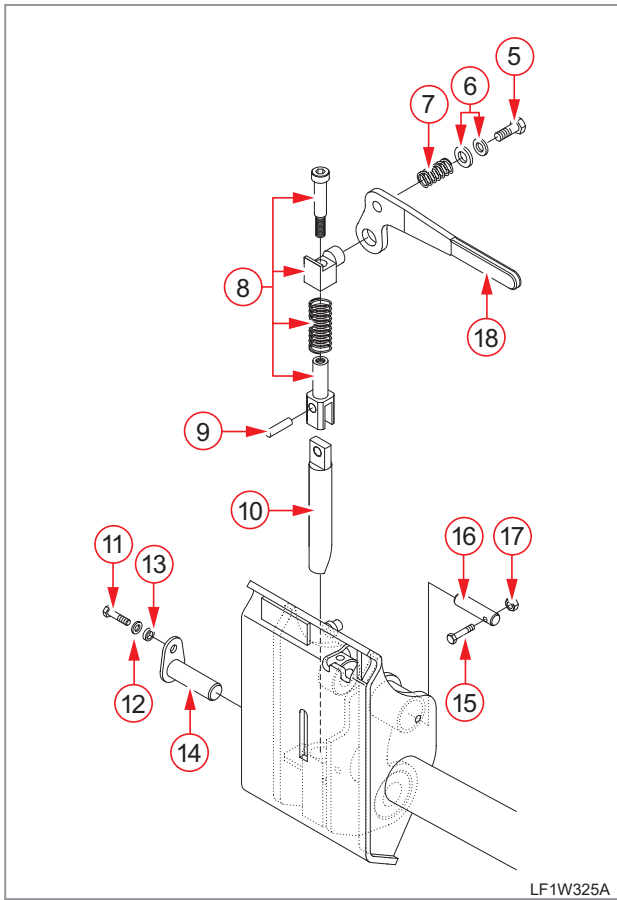
- | | |
|---------------------|---------------------------|
| (1) Boom | (3) Working system holder |
| (2) Bucket cylinder | (4) Block |



- | | |
|------------------|-----------------|
| (5) Hex. bolt | (12) Washer |
| (6) Plain washer | (13) Spacer |
| (7) Spring | (14) Pin |
| (8) Control unit | (15) Bolt |
| (9) Spring pin | (16) Pin |
| (10) Pin | (17) Nut |
| (11) Bolt | (18) Hand lever |

1. Remove the attachment from the attachment holder.
2. Raise the boom and place a chock block behind the attachment holder.
3. Lower the boom so that the bottom of the attachment holder is supported by the block.
4. Move the bucket cylinder to place the front of the attachment holder on the ground.
5. Stop the engine.
6. Operate the control lever to release pressure in the system.
7. Undo the bolt (15), lock nut and pin to separate the bucket cylinder from the attachment holder.
8. Undo the bolt (11), washer, spacer and pin to separate the boom cylinder from the attachment holder.

INSTALLATION



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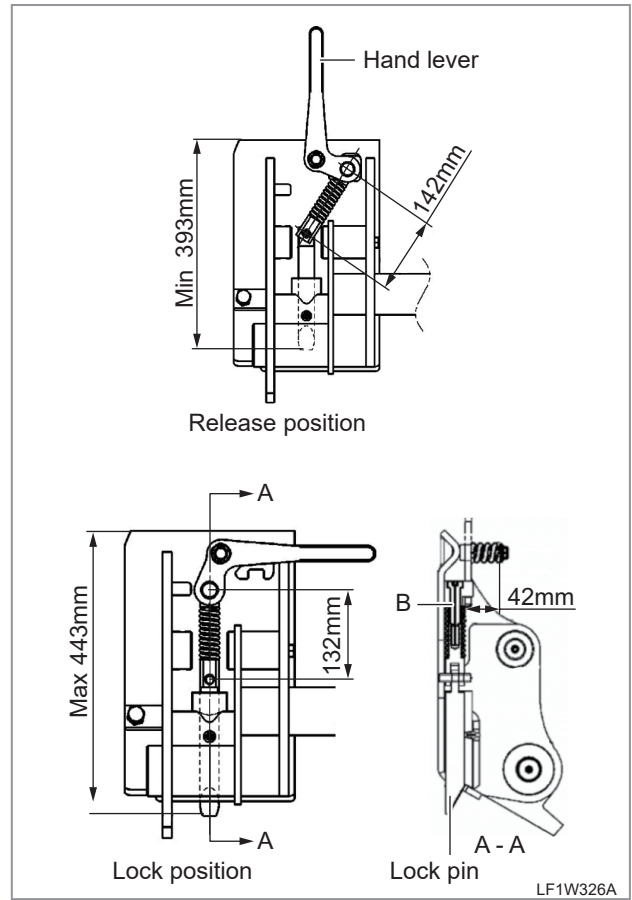
- | | |
|------------------|-----------------|
| (5) Hex. bolt | (12) Washer |
| (6) Plain washer | (13) Spacer |
| (7) Spring | (14) Pin |
| (8) Control unit | (15) Bolt |
| (9) Spring pin | (16) Pin |
| (10) Pin | (17) Nut |
| (11) Bolt | (18) Hand lever |

- Align the attachment holder with the boom.
- Place a hydraulic jack under the attachment holder and raise the attachment holder until its bushing is aligned with the hinge of the boom.
- Install the boom pin (14), and then install the bolt (11), spacer, and washer.
- After installing the bucket cylinder pin (16), install the bolt (15) and nut (17).
- Grease the pins (14 & 16) through the grease fitting.

Hex. bolt (5)

**Tightening torque 42.1 ~ 58.8 Nm
4.3 ~ 6.0 kgf-m
31.0 ~ 43.3 lb-ft**

LOCK PIN ADJUSTMENT



LF1W326A

- Park the vehicle on level ground.
- Stop the engine.
- After pushing up the hand lever of the attachment holder, check that the lock pin is out of the bucket slot (in the release position).
- Measure the distance from the top of the attachment holder to the pin end. (If the distance is not 393 mm, adjust the bolt (B) to set the distance to 393 mm.
- Perform this procedure on the opposite side.

4. TROUBLESHOOTING

4.1 DRIVING HYDRAULIC SYSTEM/BRAKE

SYMPTOM	CAUSE	SOLUTION
The driving force on one side is weak. (Identical for the forward driving and reverse driving)	Insufficient oil in the tank	<ul style="list-style-type: none"> Check for leakage and add the oil as necessary.
	Loose pedal linkage	<ul style="list-style-type: none"> Adjust and reconnect the pedal linkage.
	Broken pump neutral bracket	<ul style="list-style-type: none"> Replace it. Check the neutral bracket (for loose bolt or excessive play).
	Damaged high-pressure line	<ul style="list-style-type: none"> Replace the line. Check the pump mounting bolt and HST track motor.
	Damaged HST track motor	<ul style="list-style-type: none"> Replace any defective part. Check the motor mounting bolt.
	Defective pump	<ul style="list-style-type: none"> Check and repair the defective part.
	Faulty HST pump. The driving force on one side is weak at first, but, in a few minutes, the driving force on both sides becomes weak.	<ul style="list-style-type: none"> Check and repair the defective part.
	Excessive internal oil leakage or damaged control pump motor or HST track motor	<ul style="list-style-type: none"> Check and repair any defective part. Clean the tank and the hydraulic lines. Replace the filter. Check the engine RPM and the hydraulic oil.
The driving force on one side is weak. (Only for the forward driving or reverse driving)	Defective relief valve of the valve block	<ul style="list-style-type: none"> Replace the relief valve.
	Stuck or damaged shuttle valve of the HST track motor	<ul style="list-style-type: none"> Check and replace any defective part.
The driving force on one side is lost. (No hydraulic pressure delivered at all)	Insufficient oil level in the oil tank	<ul style="list-style-type: none"> Check for oil leakage. Add the oil.
	Damaged coupling between the engine and pump	<ul style="list-style-type: none"> Check and replace any damaged part. Check for misalignment.
	Malfunctioning HST pump	<ul style="list-style-type: none"> Check and replace any damaged part.
The driving force on both sides is lost. (No hydraulic pressure built at all)	Damaged spline coupling (in the control pump)	<ul style="list-style-type: none"> Check and replace any damaged part.
	Damaged implement pump shaft	<ul style="list-style-type: none"> Check and replace any damaged part.
The driving force on both sides is lost. (Overall hydraulic pressure built)	Malfunctioning HST pump	<ul style="list-style-type: none"> Check and replace any damaged part.
	Defective relief valve of the HST pump	<ul style="list-style-type: none"> Check and replace any damaged part.
	Excessive internal leakage	<ul style="list-style-type: none"> Clean the tank and hydraulic lines. Replace the filter.
	Defective control pump or HST track motor	<ul style="list-style-type: none"> Check the engine RPM and hydraulic oil specification.
When driving the loader forward, it skews to a side.	Stuck control lever	<ul style="list-style-type: none"> Check for interference with other parts. Adjust it again.
When releasing the control lever, it does not return to its neutral position.	Incorrectly adjusted	<ul style="list-style-type: none"> Check if the centering spring is stuck or improperly adjusted. Adjust it again.

SYMPTOM	CAUSE	SOLUTION
Defective driving/hydraulic system	Defective HST track motor	<ul style="list-style-type: none"> Check and replace any damaged part. Refer to the driving/hydraulic system circuit diagrams.
	Cavitation occurred or piston off the cam due to excessively low charge pressure	<ul style="list-style-type: none"> Check the charge pressure according to the equipment specification. If necessary, adjust, repair, or replace the charge pump (closed circuit) or another source of charge pressure (open circuit).
Faulty HST Defective of the HST track motor	2-Speed spool off the cam or partially moved	<ul style="list-style-type: none"> Check the case pressure according to the equipment specification. If the pressure is excessively high, check if the drain line is clogged.
	2-Speed pool partially moved due to low 2-speed shift pressure	<ul style="list-style-type: none"> Check the 2-speed shift pressure according to the equipment specification. If the pressure is excessively low, adjust, repair, or replace the source of the pressure.
	2-Speed spool partially moved and stuck in place	<ul style="list-style-type: none"> Check the 2-speed spool. If necessary, replace the spool and/or the motor housing.
	Motor hitting the frame and vibrating due to a loose motor mounting screw	<ul style="list-style-type: none"> Check that the motor mounting screw is properly tightened to the specification.
	Hydraulic line hitting the frame and vibrating due to improper installation	<ul style="list-style-type: none"> Check if the line is properly installed according to the equipment specification.
	Internally damaged radial piston motor	<ul style="list-style-type: none"> Remove and check the motor. Replace any defective part. If necessary, replace the whole motor.
	Air sucked in	<ul style="list-style-type: none"> Bleed the hydraulic line completely. Check that all connections are properly tightened.
	Brake not released fully, due to excessively low brake release pressure	<ul style="list-style-type: none"> Check the brake release pressure according to the equipment specification. If necessary, adjust, repair, or replace the source of the pressure.
Excessive pressure fluctuation	Internally damaged radial piston motor	<ul style="list-style-type: none"> Remove and check the radial piston motor. Replace any defective part. If necessary, replace the whole motor.
	Unbalanced or load changed	<ul style="list-style-type: none"> Check the load and load attachment according to the equipment specification, and then make any necessary adjustment.
	Clogging or wrong size of the feed or return line	<ul style="list-style-type: none"> Check to ensure that the main lines for the motor A/B ports are not clogged and their sizes are according to the equipment specification.
Excessive speed fluctuation	Internal oil leakage due to internal motor damage	<ul style="list-style-type: none"> Remove and check the motor while being careful with the piston ring. Replace any defective part. If necessary, replace the whole motor.
	Defective pump or pump controller	<ul style="list-style-type: none"> Check the pump and pump controller according to the equipment specification. If necessary, adjust, repair, or replace them.

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SYMPTOM	CAUSE	SOLUTION
Insufficient output torque or draft force	Insufficient pressure built in the pump	<ul style="list-style-type: none"> Apply the full load on the motor and check the maximum pressure according to the equipment specification. If the measurement is excessively low, plug the lines A & B and measure the maximum pressure at the blocked line. If the measurement is still too low, adjust, repair, or replace the pump, pump adjuster, or system pressure relief valve as necessary.
	Excessive oil leakage from the motor and impossible to build full pressure	<ul style="list-style-type: none"> Apply the full load on the motor and check the maximum pressure according to the equipment specification. If the measurement is excessively low, plug the lines A & B and measure the maximum pressure at the blocked line. If the measurement is proper, remove and inspect the motor. Replace any faulty part. If necessary, replace the whole motor.
	Insufficient break-in of the motor	<ul style="list-style-type: none"> Operate the motor for 24-48 hours continuously (under load) to achieve its maximum efficiency. If the output torque increases continuously, this symptom may appear during this period.
	2-Speed spool partially or fully moved unintentionally due to high 2-speed shift pressure	<ul style="list-style-type: none"> If the spool does not move properly according to the equipment specification, check the 2-speed shift pressure. If the pressure is excessively high, adjust, repair, or replace the control valve. If necessary, check if the line is clogged.
	2-Speed spool partially or fully moved and stuck in place	<ul style="list-style-type: none"> Remove the 2-speed valve and check all the components, including the bore of the motor housing. Remove any foreign material. If necessary, replace any necessary component or the motor housing.
	Brake not released fully, due to excessively low brake release pressure	<ul style="list-style-type: none"> Check the brake release pressure according to the equipment specification. If necessary, adjust, repair, or replace the source of the pressure. If the source of the pressure is normal, remove the brake and replace the brake seal as necessary.
	Internal damage to the motor	<ul style="list-style-type: none"> Apply the full load on the motor and check the maximum pressure according to the equipment specification. If the measured pressure is normal and there is no apparent defect, other than the one described above, remove and check the motor. Replace any defective part. If necessary, replace the whole motor.

SYMPTOM	CAUSE	SOLUTION
Expected output speed cannot be achieved.	Insufficient hydraulic flow built in the pump	<ul style="list-style-type: none"> Check the engine speed and pump flow. If necessary, adjust, repair, or replace the engine or pump.
	Excessive oil leakage from the motor	<ul style="list-style-type: none"> Remove and check the motor. Replace any defective part. If necessary, replace the whole motor.
	2-Speed spool partially moved or not moved at all sometimes due to low 2-speed shift pressure	<ul style="list-style-type: none"> If the spool moves properly according to the equipment specification, check the 2-speed shift pressure. If the pressure is excessively low, adjust, repair, or replace the external control valve for 2-speed operation. If necessary, check if the line is clogged.
	2-Speed spool partially moved or stuck in the original place	<ul style="list-style-type: none"> Remove the 2-speed valve and check all of the components, including the bore of the motor housing. Remove any foreign material. If necessary, replace any necessary component or the motor housing.
The motor does not rotate.	The motor torque is achieved, but the load exceeds the motor torque.	<ul style="list-style-type: none"> Check the system pressure. If the pressure is increased up to the relief valve setting value, reduce the load applied on the motor.
	The expected motor torque is not achieved, and the load exceeds the motor torque.	<ul style="list-style-type: none"> Refer to the instructions for "Insufficient output torque or draft force" in the troubleshooting section.
	No oil supplied to the motor	<ul style="list-style-type: none"> Check the engine speed, pump oil flow, and control valve operation. If necessary, adjust, repair, or replace the engine, pump, or valve.
	Impossible to release the brake	<ul style="list-style-type: none"> Refer to the instructions for "Impossible to release the brake" in the troubleshooting section.
The motor rotates in the incorrect direction.	Incorrectly connected oil feed connection for the motor	<ul style="list-style-type: none"> Connect the oil feed connection correctly.
The hydraulic oil temperature is excessively high.	Overheated motor	<ul style="list-style-type: none"> Check the cooling system and flushing valve.
	Malfunctioning pressure control valve (example: relief valve and pressure controller)	<ul style="list-style-type: none"> Check the corresponding component, and then repair or replace it as necessary.
	Excessively high output speed	<ul style="list-style-type: none"> Check the motor speed according to the equipment specification. If the speed is excessively high, reset the pump and/or engine speed.
	Flushing valve closed due to excessive high motor case discharge pressure	<ul style="list-style-type: none"> Check the case pressure according to the equipment specification. If the pressure is excessively high, check if the drain line is clogged.

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SYMPTOM	CAUSE	SOLUTION
External oil leakage	Damaged external seal (example: shaft/cam/brake seal)	<ul style="list-style-type: none"> Check the oil cleanliness and motor pressure. In addition, check to ensure that no discharge line is clogged and that the discharge pressure is within the equipment specification. Remove the motor and check any suspicious seal for leakage. If the shaft seal is damaged, check the bearing. If necessary, replace the part.
	Loose bolt	<ul style="list-style-type: none"> Check that all the bolts are properly tightened to the torque setting value.
	Loose connection	<ul style="list-style-type: none"> Check that all the connections are tightened to the specified torque setting values.
Insufficient braking torque	Excessive pressure of the brake release chamber (disc brake)	<ul style="list-style-type: none"> Check that the brake pressure is applied according to the equipment specification. If the pressure is too high, check the control valve and drain line for the tank. If necessary, repair/replace it or remove clogging materials.
	Brake released partially due to excessively high motor case drain pressure (disc brake)	<ul style="list-style-type: none"> Check the case pressure according to the equipment specification. If the pressure is excessively high, check if the drain line is clogged.
	Worn brake lining or disc	<ul style="list-style-type: none"> If necessary, replace the brake shoe or brake disc. If the parking brake (disc brake) is worn, find its cause. The brake should neither be used actively nor worn out.
	Anti-seize compound/anti-slip compound mixed in hydraulic oil (disc brake)	<ul style="list-style-type: none"> Drain and flush the system and replenish it with hydraulic oil without any additive. Remove all of the motor components, wash them thoroughly, and replace all of the brake discs with new ones.
	Insufficient brake operating pressure (service brake)	<ul style="list-style-type: none"> Check if the pressure is proper according to the equipment specification. In addition, check the source of the pressure. When necessary, repair or replace the component.

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SYMPTOM	CAUSE	SOLUTION
Impossible to release the brake	Excessively low brake release pressure (disc brake)	<ul style="list-style-type: none"> Check the brake release pressure according to the equipment specification. If necessary, adjust, repair, or replace the source of the pressure. If the source of the pressure is normal, remove the brake and replace the brake seal as necessary.
	Damaged brake piston or seal (disc brake)	<ul style="list-style-type: none"> When necessary, replace the brake piston or seal.
	Deposited brake plate (disc brake)	<ul style="list-style-type: none"> Remove and inspect the brake. If necessary, replace the part. If it is deposited, find the cause. The parking brake should never be used as a service brake.
The 2-speed adjuster is malfunctioning	Incorrect 2-speed adjusting pressure	<ul style="list-style-type: none"> Check the adjusting pressure when moved and not moved according to the equipment specification. Check the adjusting components, and repair or replace them as necessary.
	Damaged 2-speed valve	<ul style="list-style-type: none"> Remove the 2-speed valve and check all of the components, including the bore of the motor housing. Remove any foreign material. If necessary, replace any necessary component or the motor housing.
	2-Speed valve partially moved or not moved at all due to excessively high motor case drain pressure	<ul style="list-style-type: none"> Check the case pressure according to the equipment specification. If the pressure is excessively high, check if the drain line is clogged.

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4.2 CONTROL SYSTEM

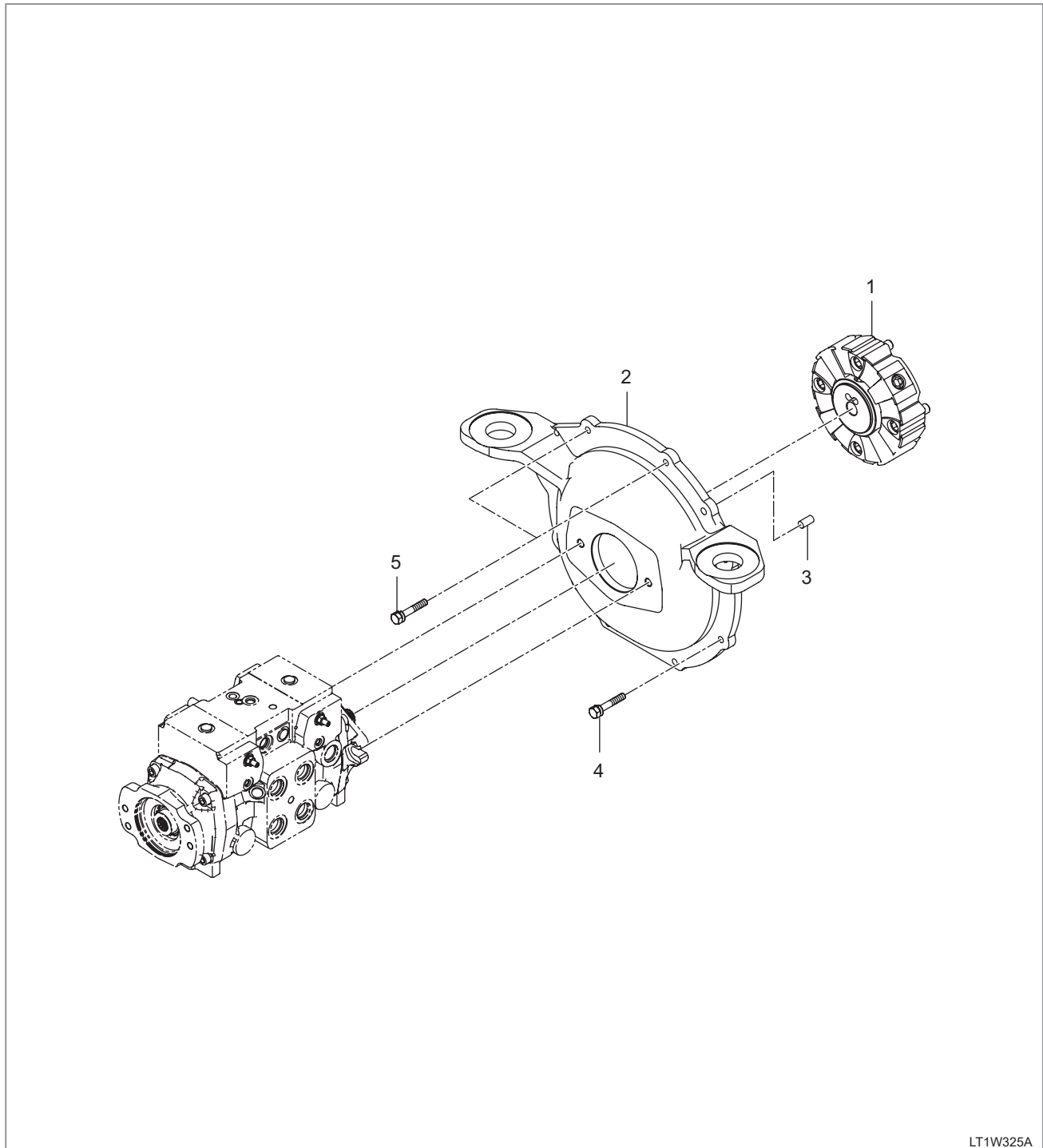
SYMPTOM	CAUSE	SOLUTION
The control lever is not in the neutral (center) position.	Defective linkage control device	<ul style="list-style-type: none"> Adjust it again.
	Disconnected linkage	<ul style="list-style-type: none"> Adjust it again. Check for worn rod end or loose nut.
	Damaged center (neutral) spring	<ul style="list-style-type: none"> Replace it.
	Linkage stuck due to interference	<ul style="list-style-type: none"> Fit the spring bushing into the housing and align the housing and linkage in a line.
	Control lever interfered with the cover or sound insulator	<ul style="list-style-type: none"> Check for interference.
The equipment malfunctions.	Loose adjustment linkage	<ul style="list-style-type: none"> Check if the ball joint section of the linkage is worn. In addition, tighten the lock nut firmly.
	Linkage out of position	<ul style="list-style-type: none"> Tighten it.
	Leakage from the control pump	<ul style="list-style-type: none"> Inspect and repair the defective part. Clean the tank and hydraulic line and replace the filter. Check the engine RPM and operating oil specification.
The control lever won't return to the neutral position.	Stuck control lever or linkage	<ul style="list-style-type: none"> Check and clean or replace it.
	Malfunctioning spool centering spring of the control valve	<ul style="list-style-type: none"> Check and repair it as necessary.
The control lever cannot be operated smoothly, but it is rather moved with steps.	Worn or damaged control lever linkage	<ul style="list-style-type: none"> Check and repair it as necessary.
	Malfunctioning control valve	<ul style="list-style-type: none"> Check and repair it as necessary.
The equipment does not stop properly when parking it.	Defective HST track motor parking solenoid valve	<ul style="list-style-type: none"> Check and replace it as necessary.
	Worn or defective HST track motor parking disc	<ul style="list-style-type: none"> Check any damaged part and replace it as necessary.
	Defective charge pump	<ul style="list-style-type: none"> Check any damaged part and replace it as necessary.

5. EXPLODED VIEW

REMARKS

- The manufacturing parts are subject to change without notice. Therefore, check the parts catalog or electronic manual for latest information.

5.1 LF1-G121003 CLUTCH HOUSING GROUP



COMPONENTS

- (1) Ass'y Couplin G
- (2) Housing, Pump

- (3) Pin, Dowel
- (4) Washer Bolt

- (5) Bolt

5.2 LF1-G4D2001 LEVER GUIDE GROUP

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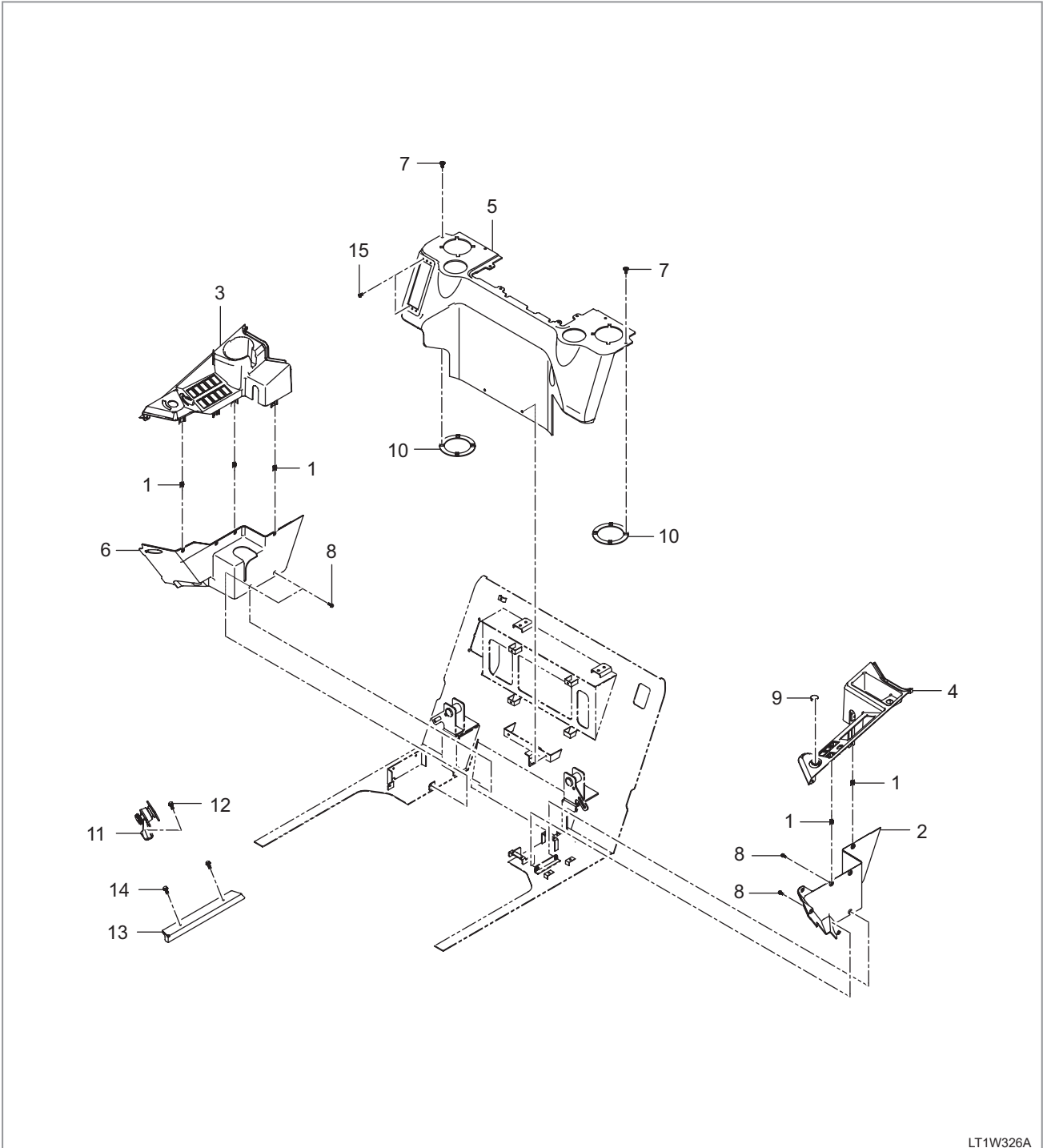
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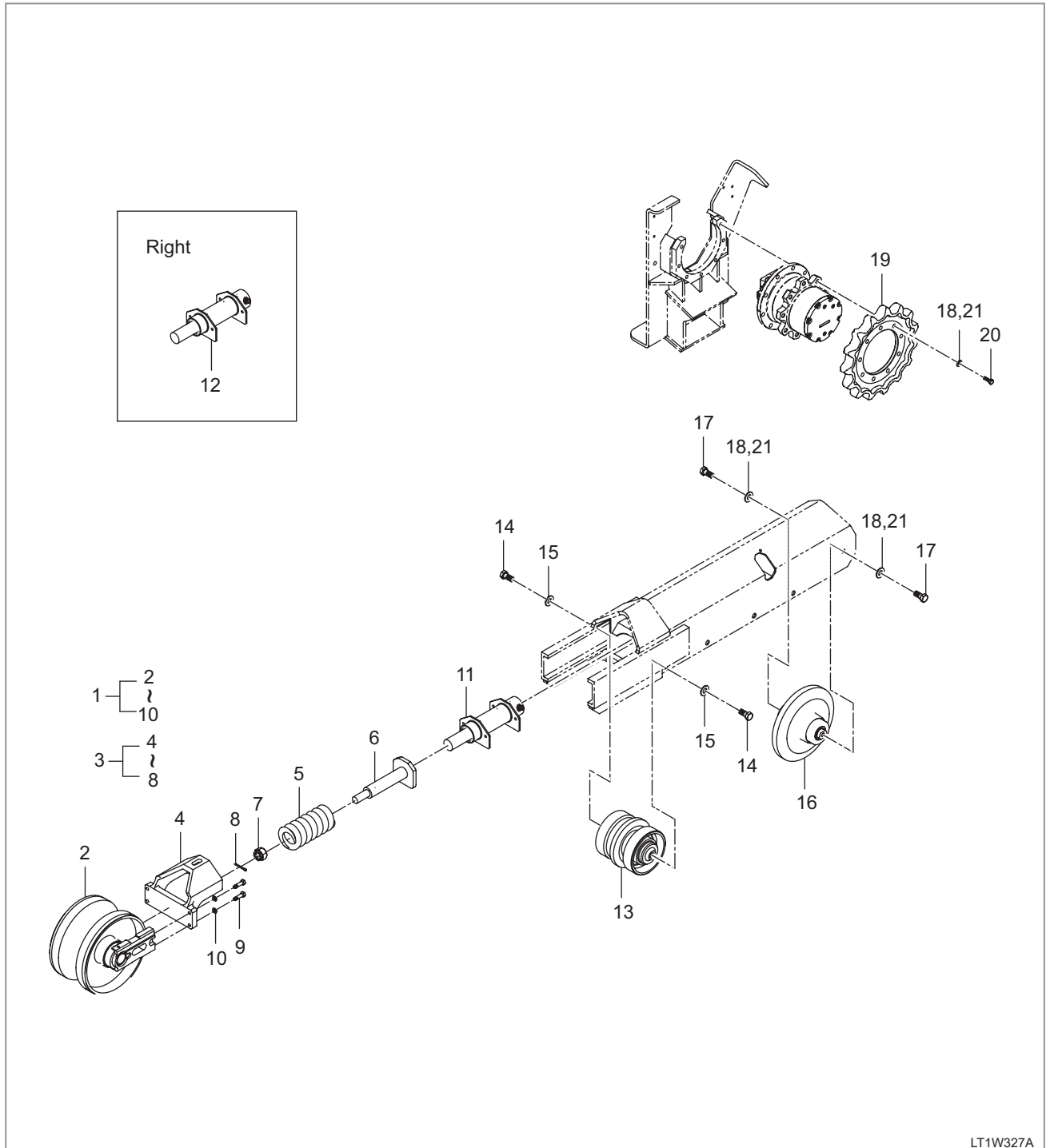


LT1W326A

COMPONENTS

- | | | |
|-------------------------|-------------------------|-------------------------|
| (1) Nut, Spring | (6) Guide, Lever-Rh Lwr | (11) Bracket, Monitor |
| (2) Guide, Lever-Lh Lwr | (7) Rivet, Screw | (12) Bolt, Washer |
| (3) Guide, Lever-Rh Up | (8) Bolt Flange | (13) Guide, Lever-Rh Fr |
| (4) Guide, Lever-Lh Up | (9) Cap-Auxcover | (14) Flange Bolt |
| (5) Hood-Rr | (10) Bracket, Speaker | (15) Nut |

5.3 LF1-G4H1001 UNDERCARRIAGE GROUP



LT1W327A

COMPONENTS

- | | | |
|-------------------------|--------------------------------|--------------------|
| (1) Total Assy Idler-Fr | (8) Pin, Cotter | (15) Washer |
| (2) Assy Idler-Fr | (9) Bolt | (16) Assy Idler-Rr |
| (3) Assy Recoil | (10) Spring Washer | (17) Bolt |
| (4) Yoke | (11) Assy Adjuster, Tension-Lh | (18) Washer |
| (5) Spring | (12) Assy Adjuster, Tension-Rh | (19) Sprocket |
| (6) Rod | (13) Assy Roller, Track | (20) Bolt |
| (7) Nut | (14) Bolt | (21) Washer |

5.4 LF1-G4H2001 TRACK GROUP

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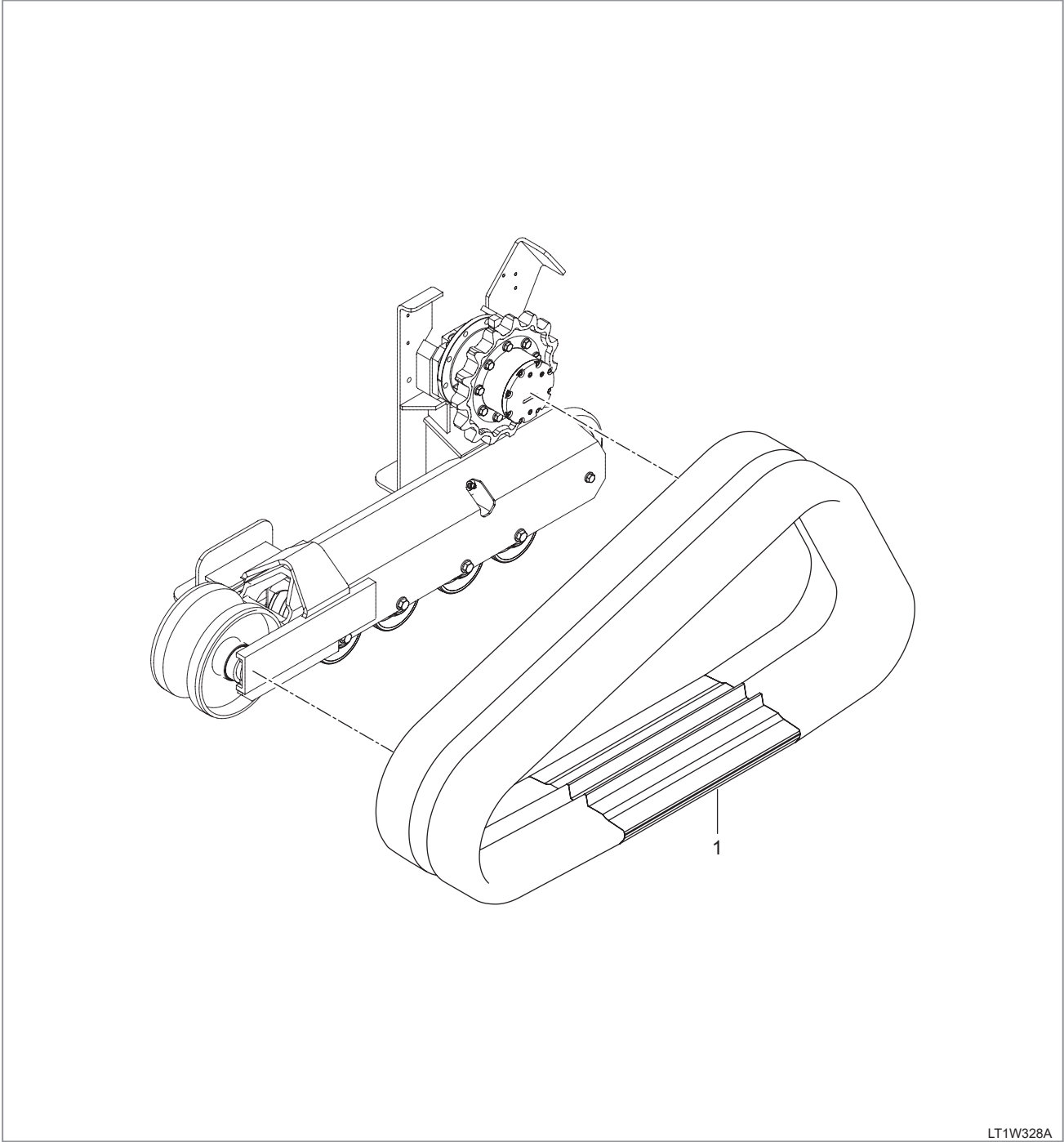
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COMPONENTS

- (1) Crawler

5.5 LF1-G421003 COOLING SYSTEM GROUP

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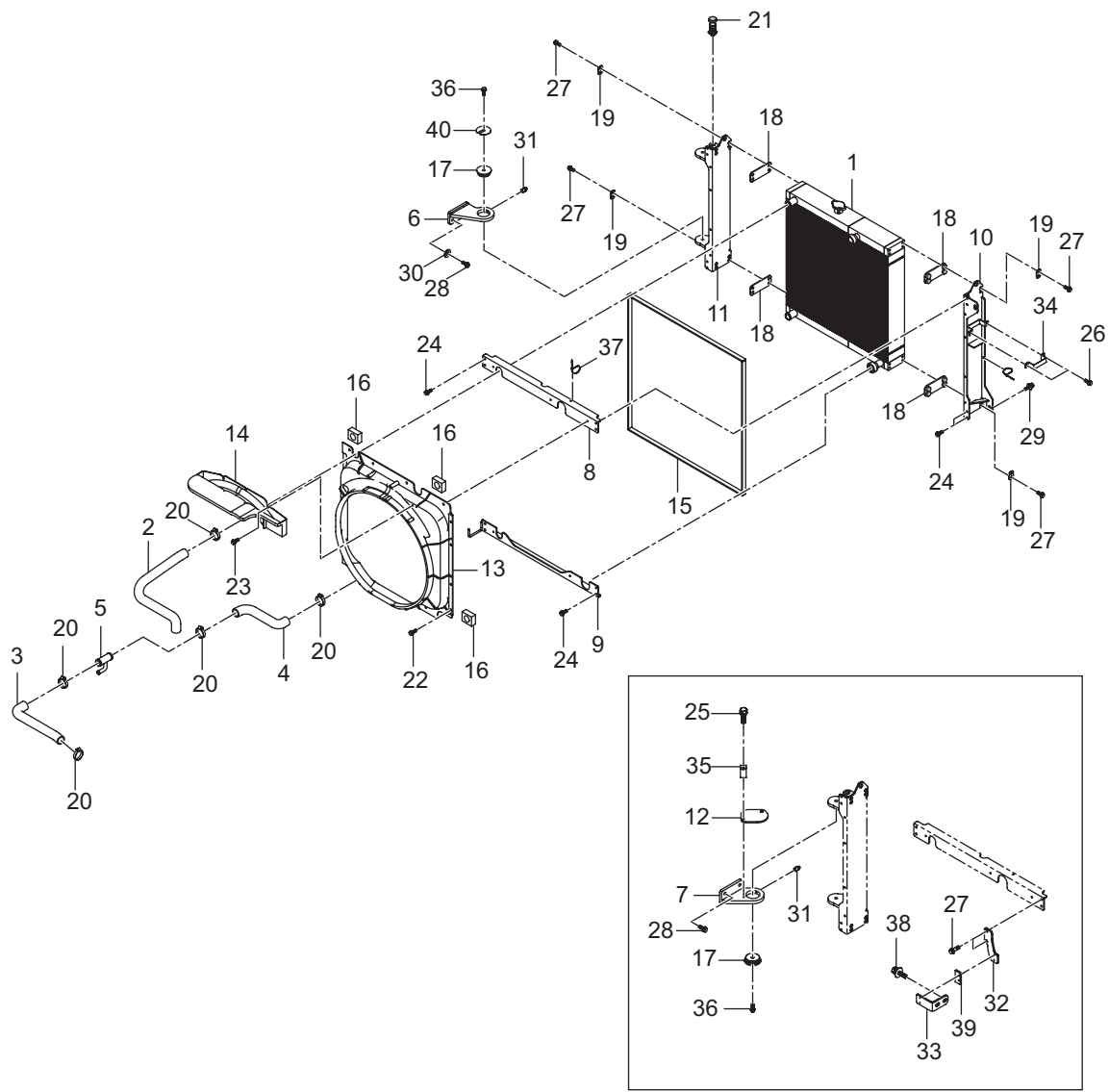
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LT1W329A

COMPONENTS

- | | | |
|-----------------------------------|----------------------------------|------------------------------------|
| (1) Assy Unit, Cooling | (15) Pad, Sealing 2 | (29) Bolt, Washer |
| (2) Hose, Cooling Water-Upr | (16) Pad, Sealing 3 | (30) Washer, Plain |
| (3) Hose, Cooling Water-Lwr 1 | (17) Shaft, Support | (31) Nipple Grease Fitting, Pt1/8" |
| (4) Hose, Cooling Water-Lwr 2 | (18) Rubber, Damper | (32) Bracket Safety 2 |
| (5) Hose, Water | (19) Plate 1 | (33) Bracket Safety 1 |
| (6) Bracket, Radiator Support-Upr | (20) Clamp, Hose stainless 32-50 | (34) Bracket |
| (7) Bracket, Radiator Support-Lwr | (21) Pin, Fixing | (35) Plate, Guide |
| (8) Bracket, Radiator-Upr | (22) Flange Bolt | (36) Washer Bolt |
| (9) Bracket, Radiator-Lwr | (23) Bolt, Flange | (37) Band, Cord |
| (10) Bracket, Radiator-Lh | (24) Bolt, Washer | (38) Bolt, Washer |
| (11) Bracket, Radiator-Rh | (25) Bolt With Washer | (39) Sponge-Isolation |
| (12) Plate | (26) Bolt, Washer | (40) Shim, Adjusting-T2.0 |
| (13) Assy Shroud, Fan | (27) Bolt | |
| (14) Shroud-Upr | (28) Bolt, Washer | |

5.6 LF1-G431003 FUEL TANK GROUP

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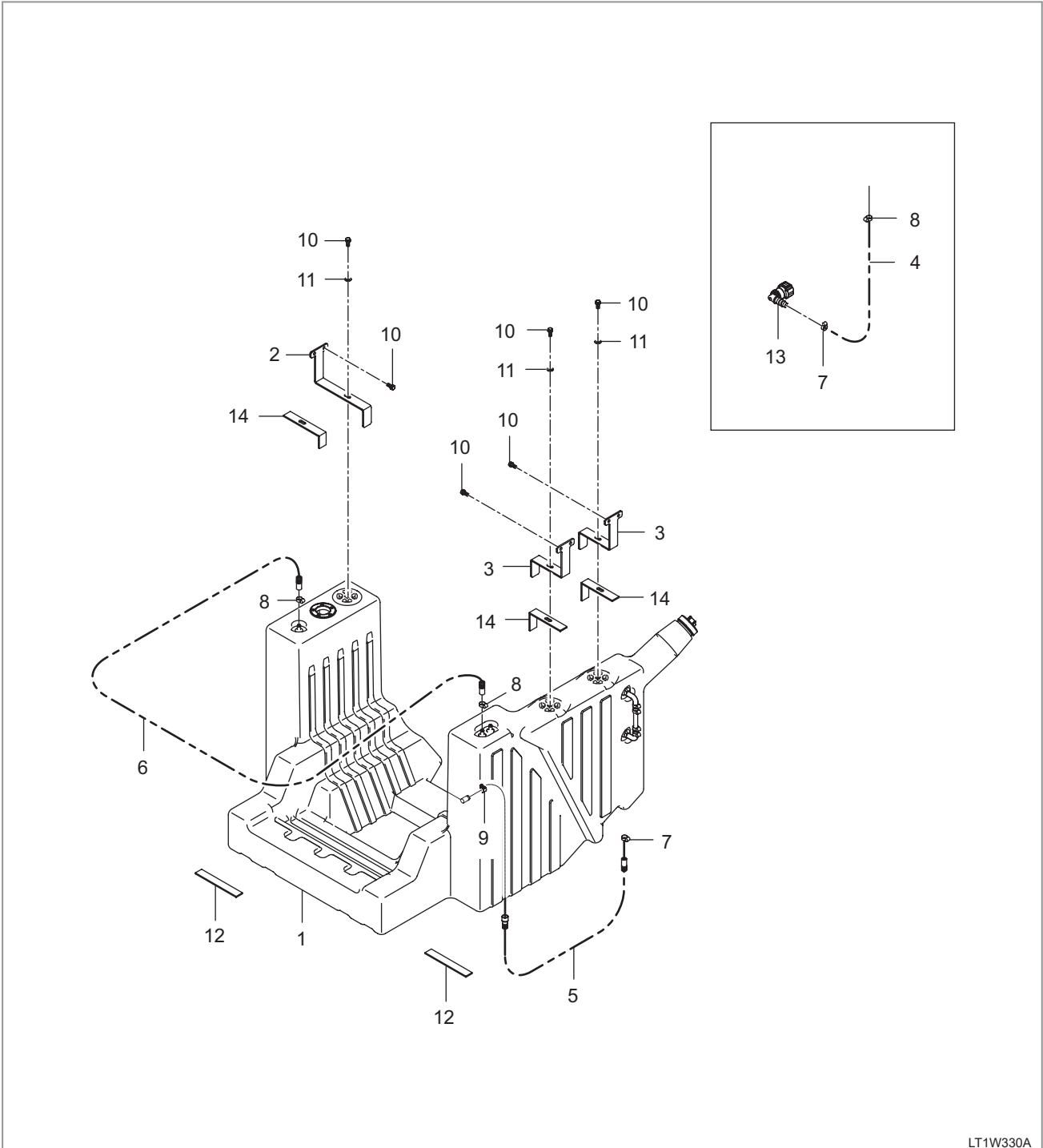
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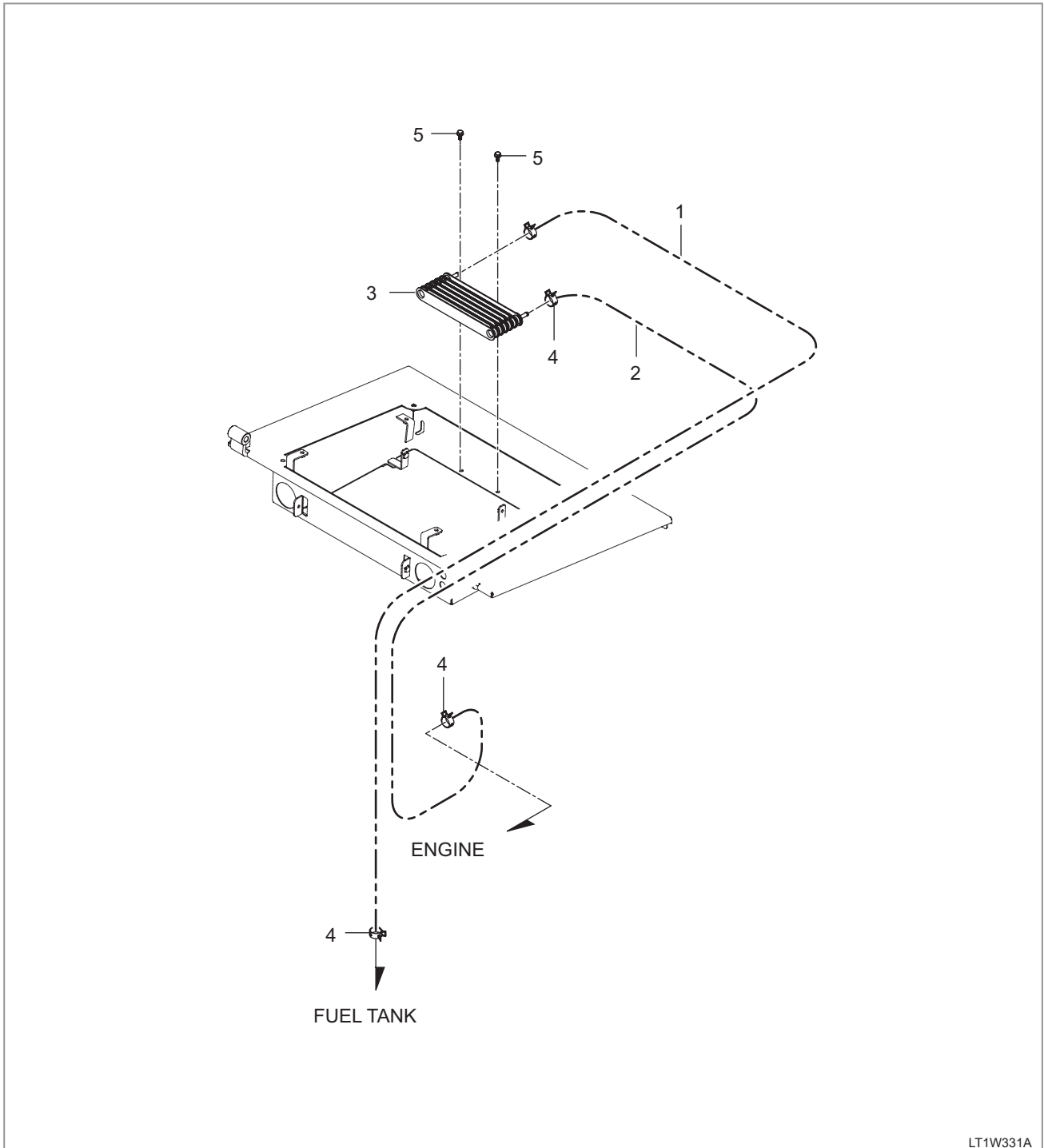


LT1W330A

COMPONENTS

- | | | |
|--------------------------|-------------------|-----------------------|
| (1) Assy Tank, Fuel | (6) Hose, Fuel 5 | (11) Washer, Plain |
| (2) Bracket, Fuel Tank 1 | (7) Clmap, Hose | (12) Rubber, Cushion |
| (3) Bracket, Fuel Tank 2 | (8) Clmap, Hose | (13) Connector, Quick |
| (4) Hose, Fuel-1 | (9) Clamp, Hose | (14) Rubber, Cushion |
| (5) Hose, Fuel-2 | (10) Bolt, Washer | |

5.7 LF1-G432001 FUEL COOLER GROUP



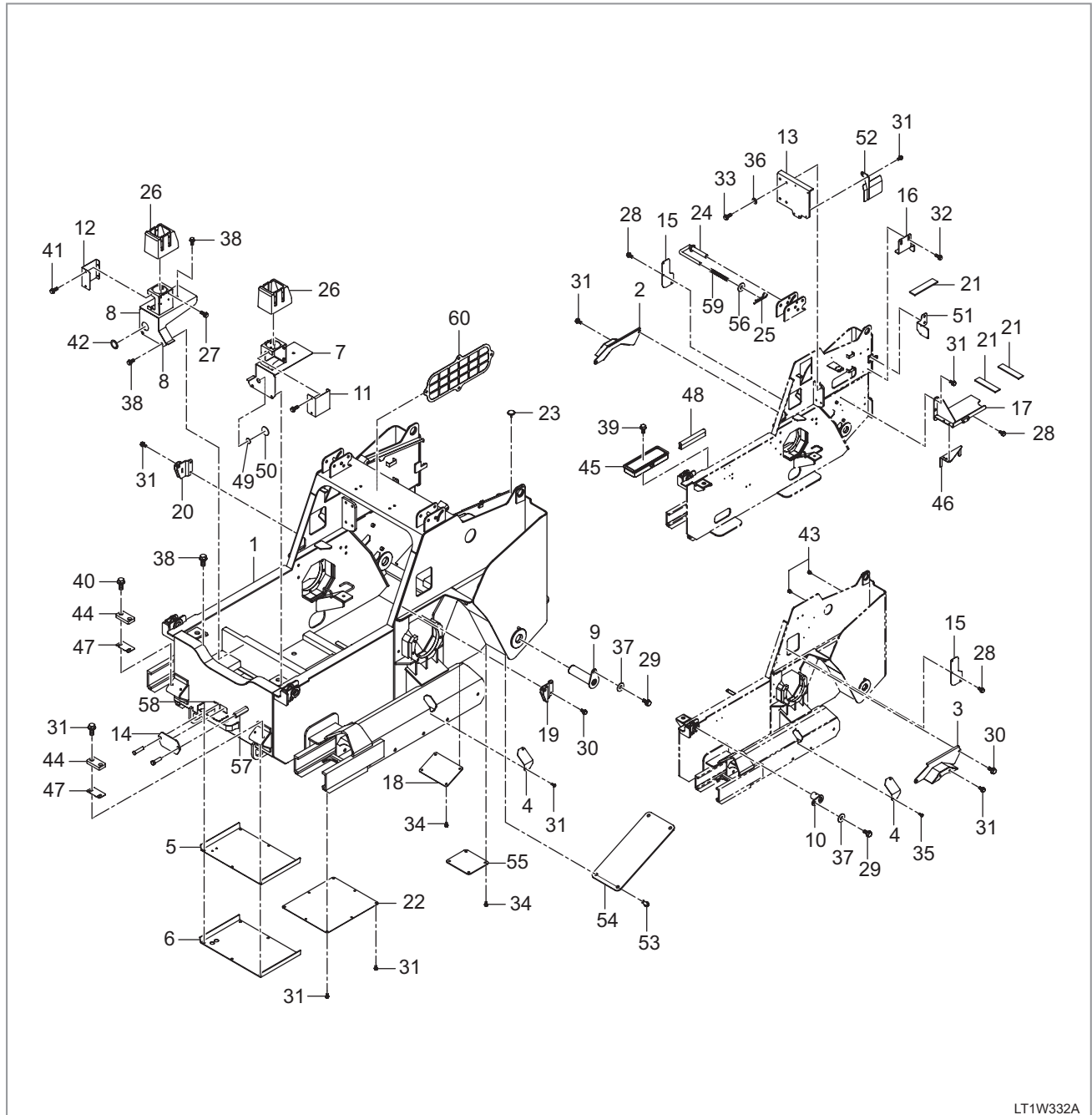
COMPONENTS

- (1) Hose, Fuel 3
- (2) Hose, Fuel 4

- (3) Fuel Cooler
- (4) Clmap, Hose

- (5) Hex Head Cap Screw

5.8 LF1-G461002 MAIN FRAME GROUP



LT1W332A

COMPONENTS

- | | | | |
|-------------------------------|----------------------------|------------------------|--------------------------------|
| (1) Total Assy Frame, Main | (16) Bracket, Battery | (31) Washer Bolt | (46) Plate, Wire Harness |
| (2) Frame, Cover-Rh | (17) Bracket, Battery | (32) Bolt With Washer | (47) Shim-1.0 |
| (3) FRAME, COVER-LH | (18) Window, Maintenance 4 | (33) Bolt | (48) Weatherstrip |
| (4) Cover | (19) Bracket, CYL Rh | (34) Bolt, Flange | (49) Sound Absorber-2 |
| (5) Floor 1 | (20) Bracket, CYL Lh | (35) Bolt, Flange | (50) Sound Absorber |
| (6) Pad, Sealing 2 | (21) Rubber, Cushion | (36) Washer, Plain | (51) Plate, Fixing |
| (7) Bracket, Joystick-Lh | (22) Window, Maintenance | (37) Washer, Plain | (52) Assy Plate, Interception |
| (8) Bracket, Joystick-Rh | (23) Cushion | (38) Bolt, Washer | (53) Bolt |
| (9) Pin, Link-Lwr | (24) Assy Pin | (39) Bolt, Washer | (54) Cover, Maintenance Window |
| (10) Link Pin, Control-Lwr | (25) Pin, Split | (40) Bolt, Flange | (55) Bracket, Cover |
| (11) Bracket, Joystick-Upr Lh | (26) Cover, Joystick-Lh | (41) Bolt, Washer | (56) Flat Washer |
| (12) Bracket, Joystick-Upr Rh | (27) Bolt, Flange | (42) Pad, Sealing | (57) Bolt, Hexagon |
| (13) Bracket, Valve | (28) Bolt, Washer | (43) Rubber, Dustproof | (58) Pin, Snap |
| (14) Window, Maintenance | (29) Bolt | (44) Stopper | (59) Spring, Compression |
| (15) Window, Maintenance 1 | (30) Bolt | (45) Box, Tool | (60) Plate, Cover |

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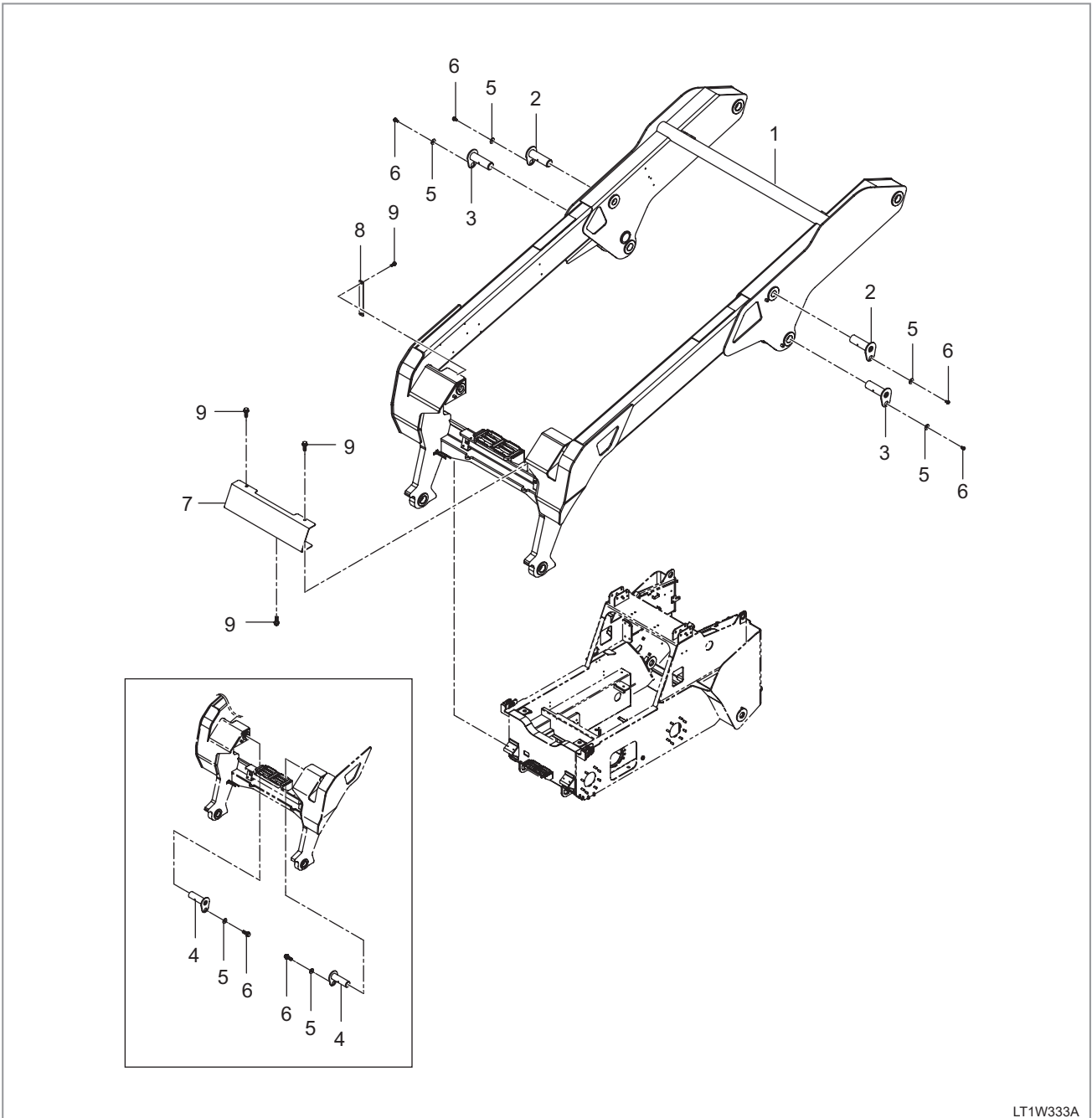
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5.9 LF1-G462002 BOOM FRAME GROUP



LT1W333A

COMPONENTS

- (1) Assy Boom
- (2) Pin, Lift Cylinder
- (3) Link Pin, Control-Upr

- (4) Pin, Tilt Cylinder-Upr
- (5) Washer, Plain
- (6) Bolt

- (7) Plate
- (8) Plate, Holder
- (9) Bolt

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5.10 LF1-G463001 ROTATION FRAME GROUP

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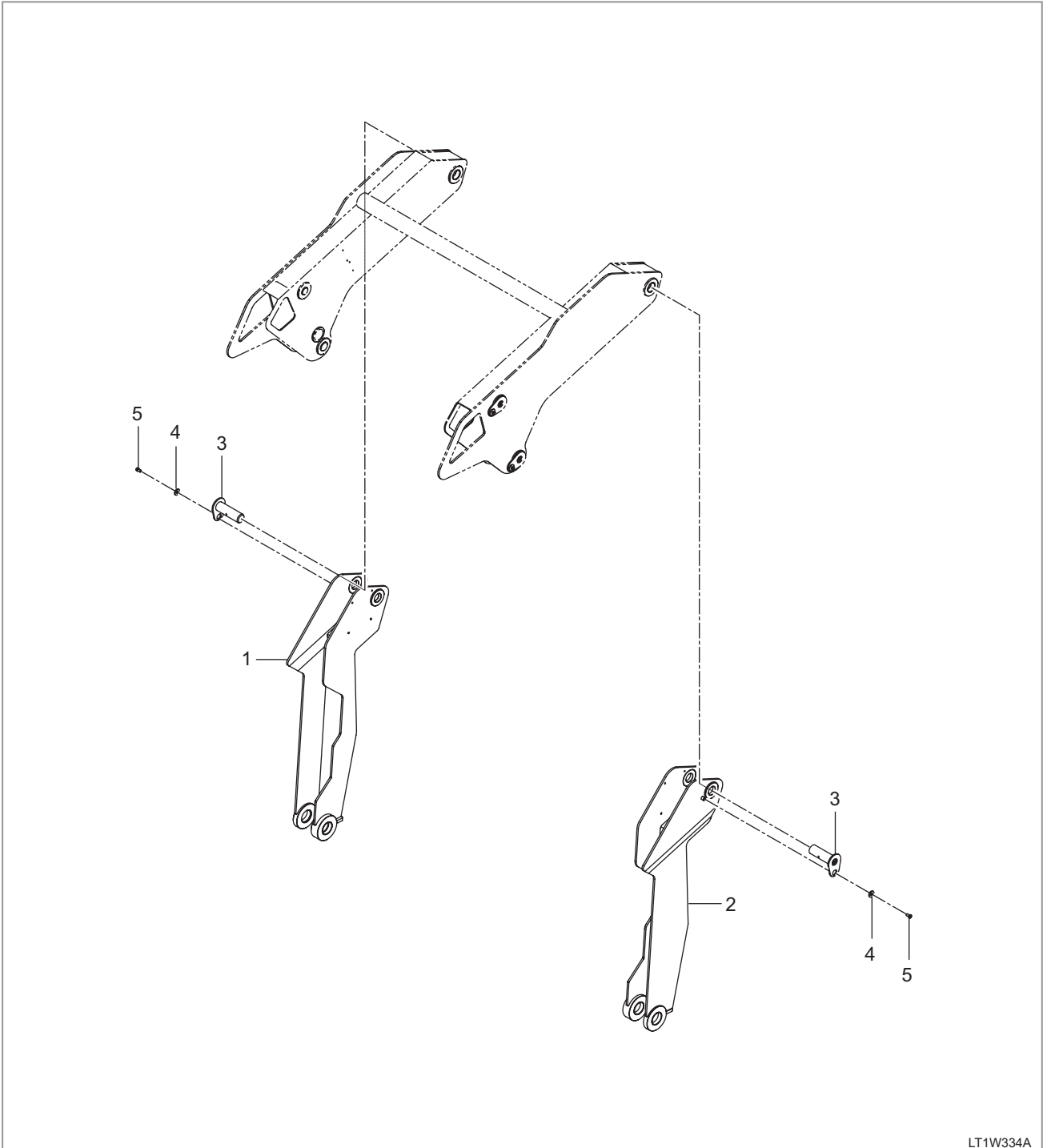
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LT1W334A

COMPONENTS

- (1) Link Rotating-Rh
- (2) Link Rotating-Lh

- (3) Pin, Link-Upr
- (4) Washer, Plain

- (5) Bolt

5.11 LF1-G464001 CONTROL FRAME GROUP

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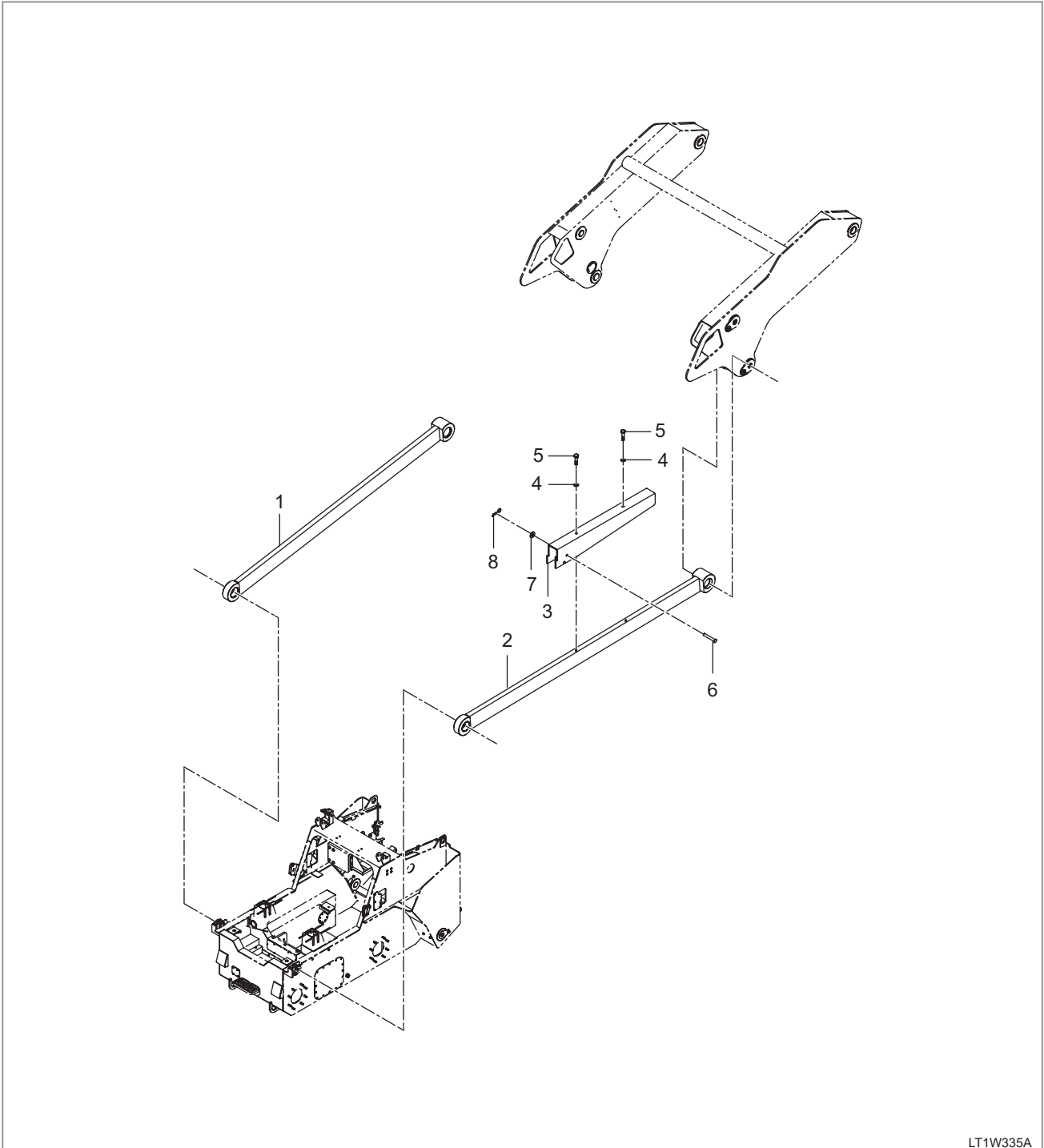
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LT1W335A

COMPONENTS

- (1) Link, Control-Rh
- (2) Link, Contol-Lh
- (3) Plate, Boom Support

- (4) Washer, Plain
- (5) Bolt, Washer
- (6) Pin Joint

- (7) Washer, Plain
- (8) Pin, Snap

5.12 LF1-G465002 QUICK ATTACH GROUP

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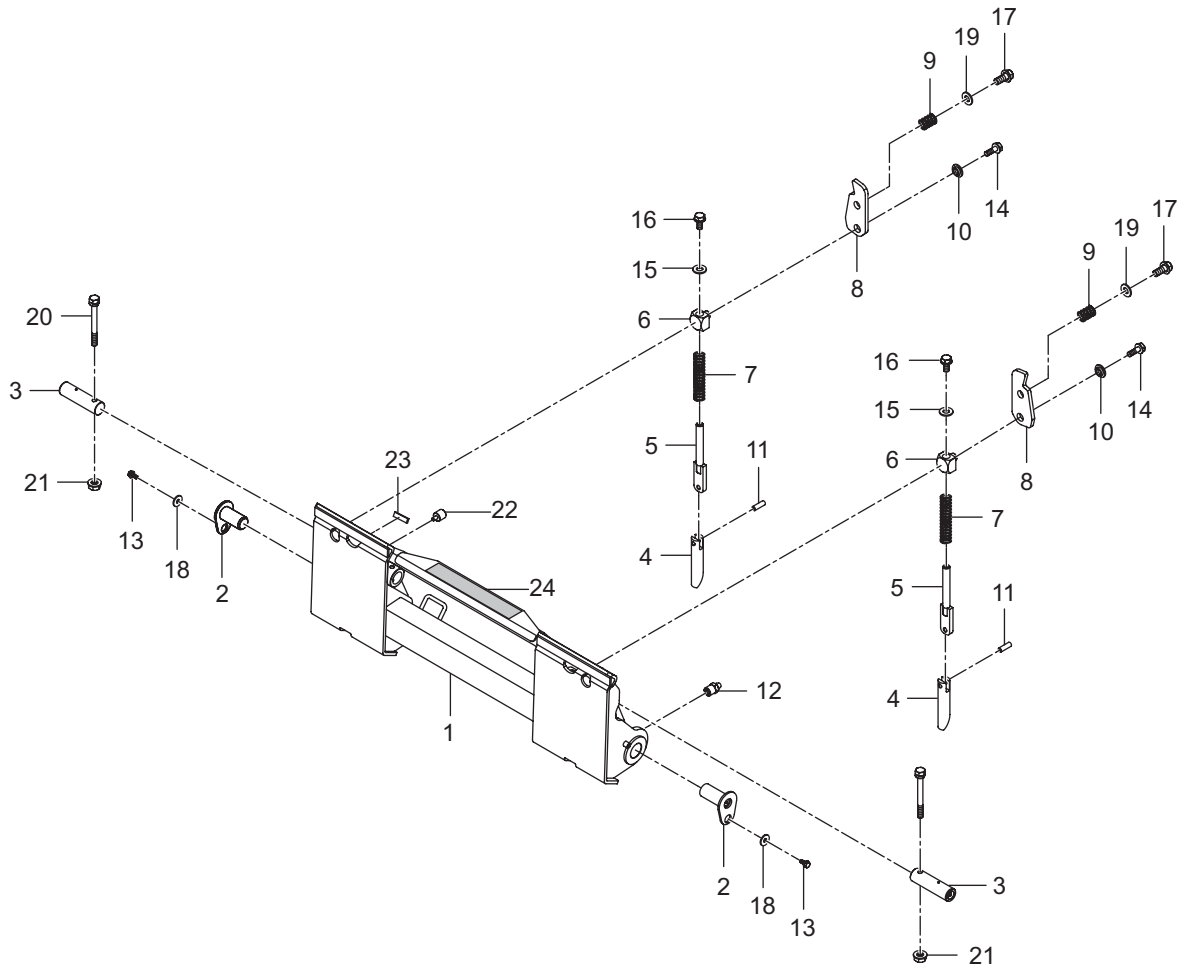
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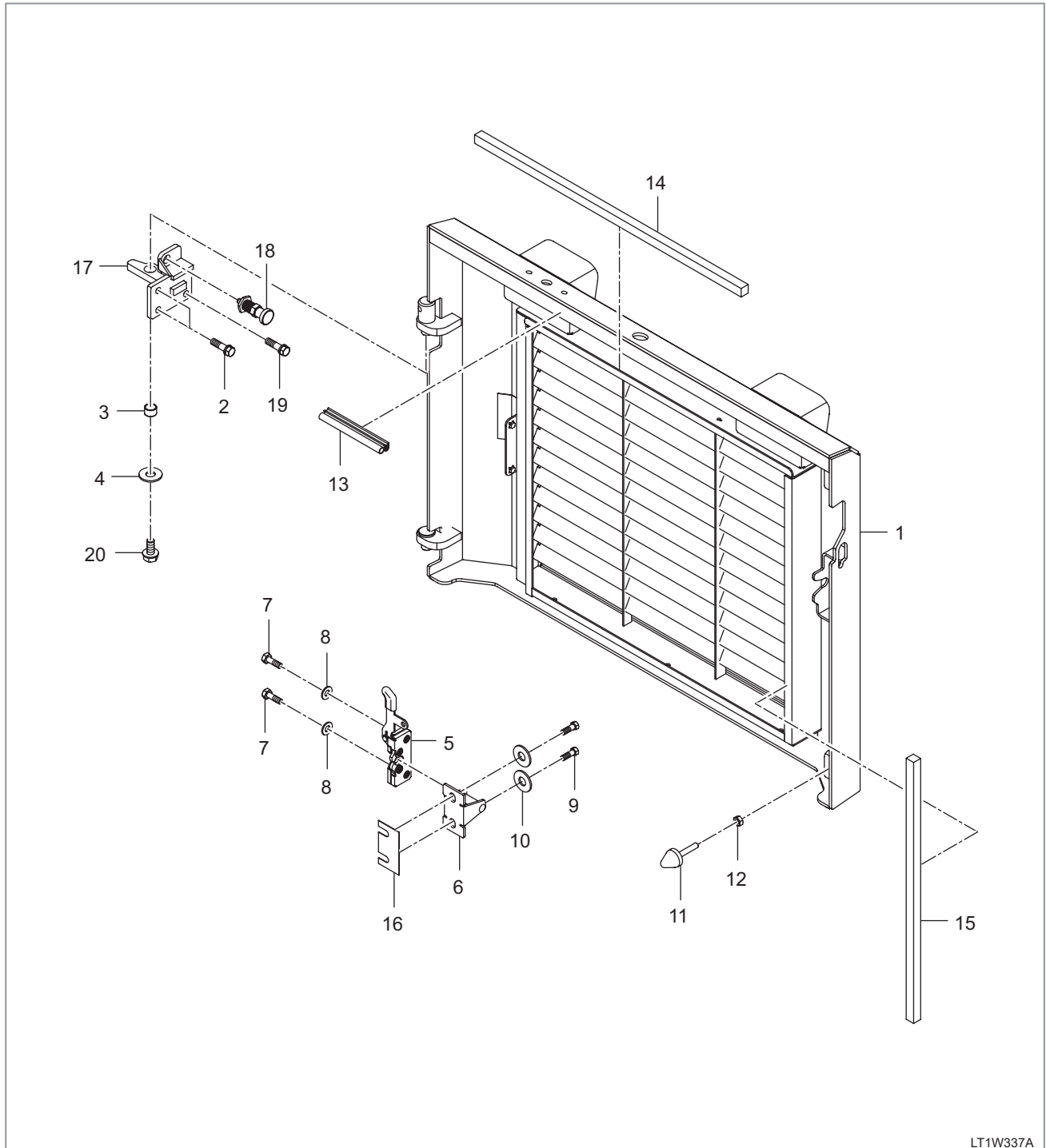


LT1W336A

COMPONENTS

- | | | |
|----------------------------|------------------------------------|----------------------------|
| (1) Assy Quick Attach-Q | (9) Spring | (17) Bolt, Washer |
| (3) Pin, Tilt Cylinder-Lwr | (10) Boss | (18) Washer, Plain |
| (2) Pin, Quick Attach-Lwr | (11) Lock Spring | (19) Plain Washer |
| (4) Wedge | (12) Nipple Grease Fitting, Pt1/8" | (20) Bolt, Washer |
| (5) Boss 7 | (13) Bolt | (21) Nut, Lock |
| (6) Boss 6 | (14) Bolt, Washer | (22) Pipe |
| (7) Spring 2 | (15) Washer, Plain | (23) Plate-10 |
| (8) Lever | (16) Bolt | (24) Pad, Preventing Slide |

5.13 LF1-G472001 REAR DOOR GROUP



LT1W337A

COMPONENTS

- | | | |
|--------------------|---------------------|---------------------|
| (1) Assy Door-Rr | (8) Washer, Plain | (15) Pad, Sealing 2 |
| (2) Bolt | (9) Bolt | (16) Shim 1.0 |
| (3) Bush | (10) Washer, Plain | (17) Bracket |
| (4) Washer, Plain | (11) Rubber, Damper | (18) Pin, Fixing |
| (5) Latch-Rr | (12) Nut | (19) Washer Bolt |
| (6) Striker, Latch | (13) Weatherstrip | (20) Bolt |
| (7) Bolt Washer | (14) Pad, Sealing 1 | |

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6. MAINTENANCE

6.1 UNDERCARRIAGE DISASSEMBLY, ASSEMBLY

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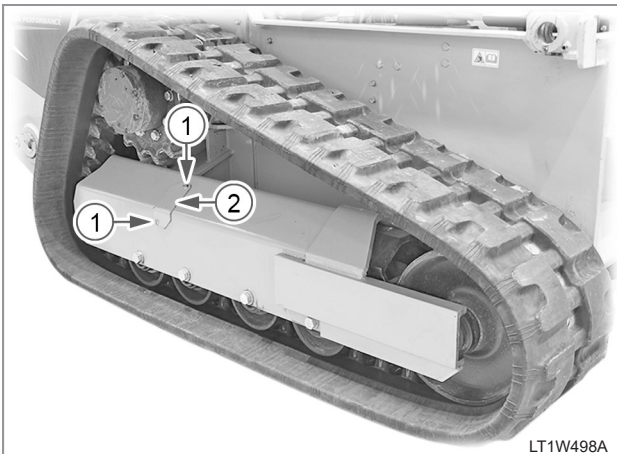
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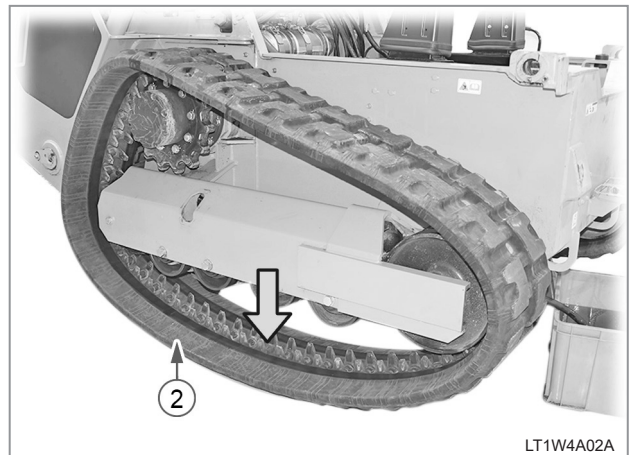
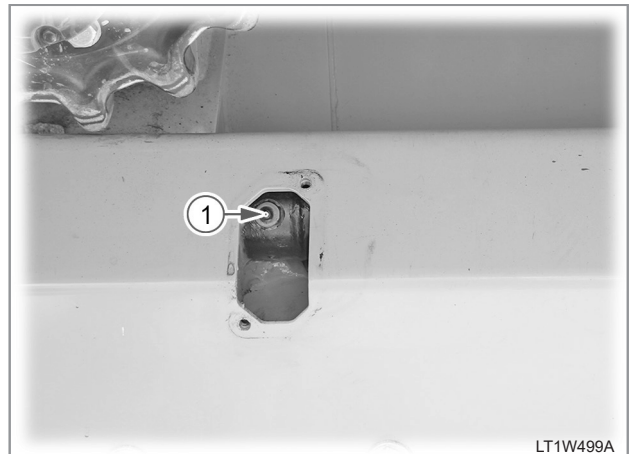
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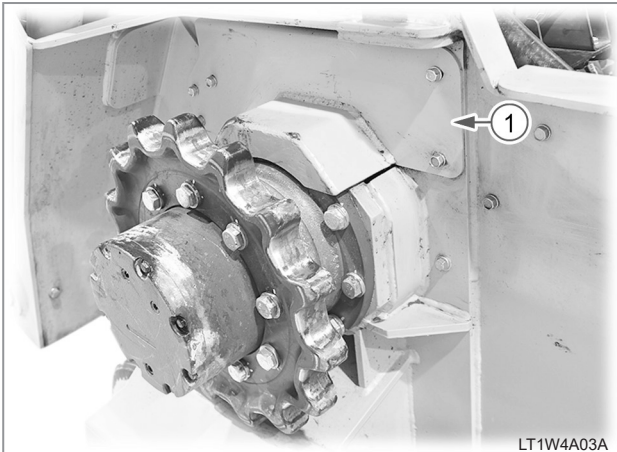
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1. Unscrew the cover mounting flange bolts (1)(2EA) on the top of the track frame to remove the cover (2).



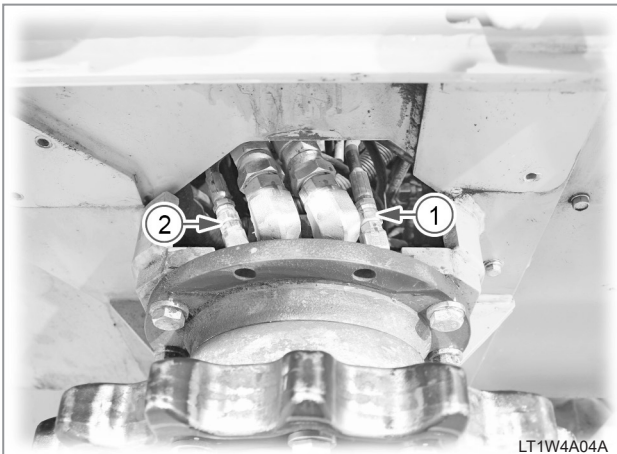
2. Release the tension of the crawler tension adjuster by unscrewing the grease nipple valve (1) of the tension adjuster and draining the grease from the inside. Then, loosen the crawler (2) to remove it.



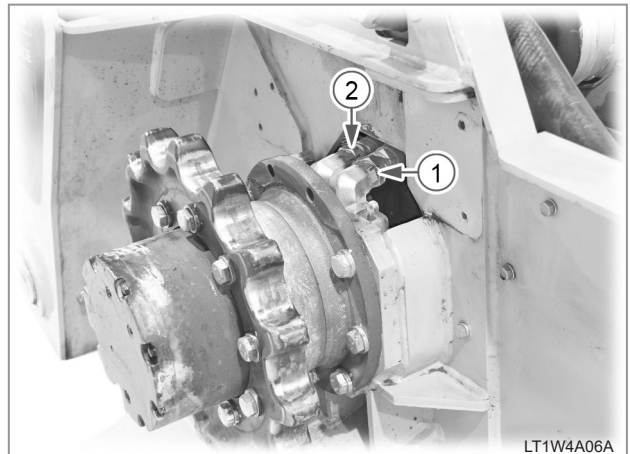
3. Remove the cover frame (1).



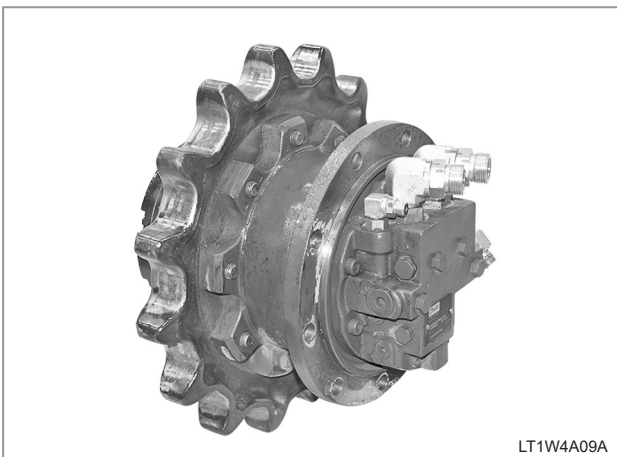
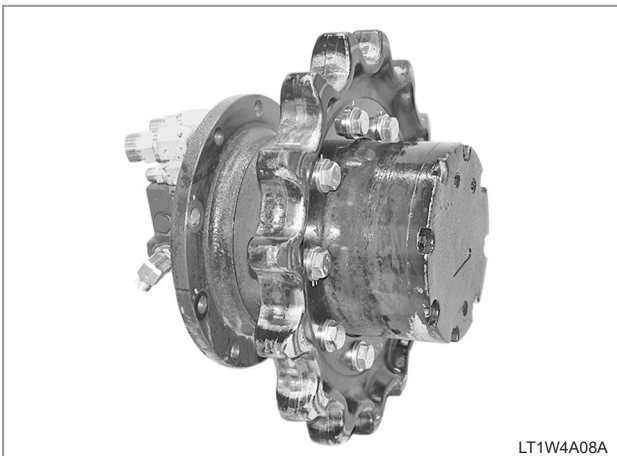
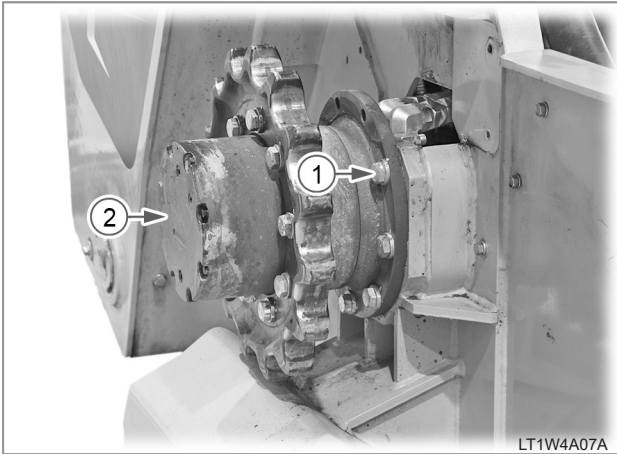
5. Disconnect the oil tank hydraulic hose (1).



4. Disconnect the parking valve hydraulic hose (1) and shift valve hydraulic hose (2) of the track motor.



6. Disconnect the hydraulic hose (1) of the HST pump (forward driving) and hydraulic hose (2) of the HST pump (reverse driving).



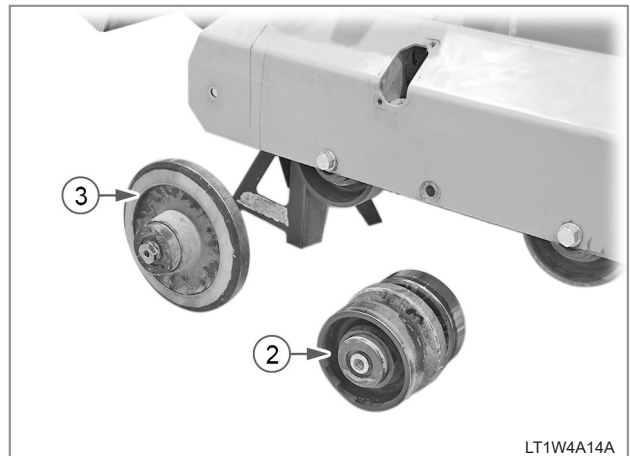
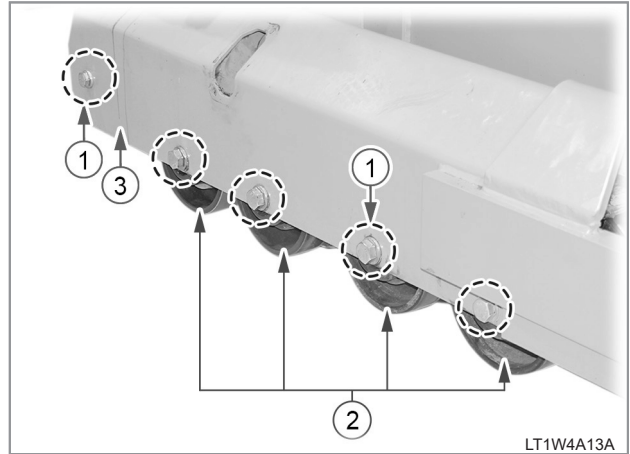
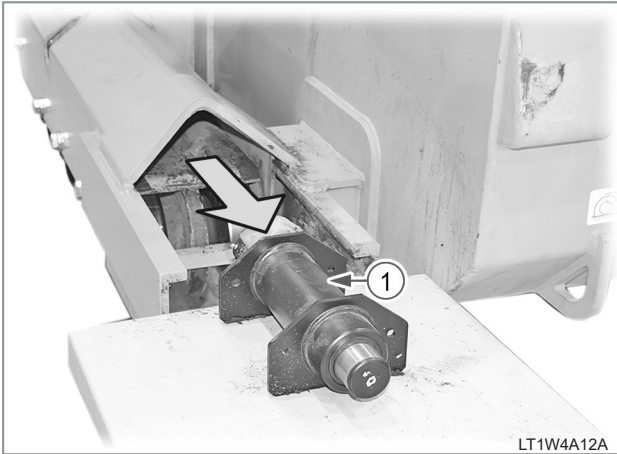
8. Remove the idler total assembly (1) by pulling it forward from the track frame with a hoist.

7. Unscrew the mounting bolts (1)(7EA) to remove the track motor assembly (2).

When tightening the mounting bolts, apply LOCTITE 271 or equivalent to the threads and tighten them to the specified torque.

Mounting bolt (M16 P2.0)

tightening torque..... 308.7 ~ 340.1 N·m
 31.5 ~ 34.7 kgf·m
 227.4 ~ 250.5 lb·ft



9. Pull out the tension adjuster (1) in the track frame to remove it.

10. Unscrew the roller mounting bolts (1) from the track frame and remove the track roller (2) and idler assembly (Rear)(3).

When reinstalling it, apply LOCTITE 271 or equivalent to its mounting bolts and tighten them to the specified torque.

Track roller mounting bolt (M20 P2.5)

tightening torque..... 602.7 ~ 666.4 N·m

61.5 ~ 68.0 kgf·m

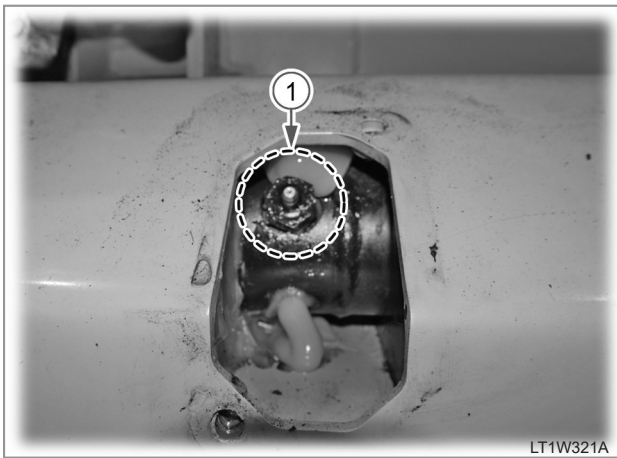
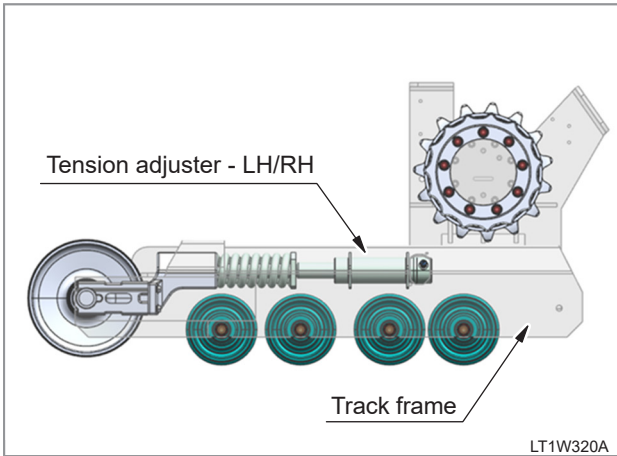
442.8 ~ 489.6 lb·ft

Idler mounting bolts (M16 P1.5)

tightening torque..... 344.0 ~ 402.8 N·m

35.1 ~ 41.1 kgf·m

252.7 ~ 296.0 lb·ft



11. When installing the tension adjuster back on the track frame, ensure that the grease nipple valve (1) faces the cover hole and tighten the grease nipple valve to the specified torque.

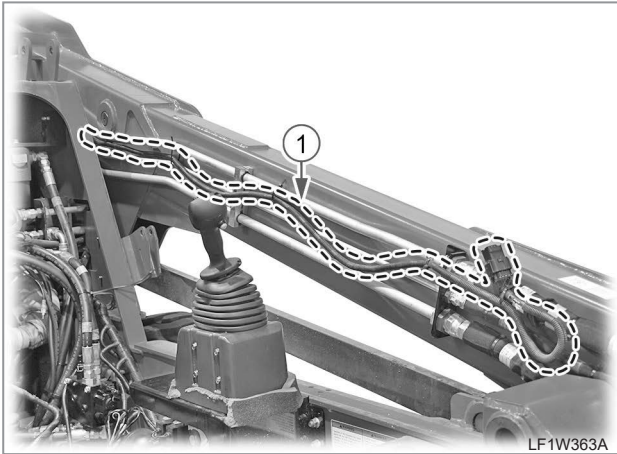
Grease nipple valve

tightening torque..... 29.0 ~ 38.9 N·m

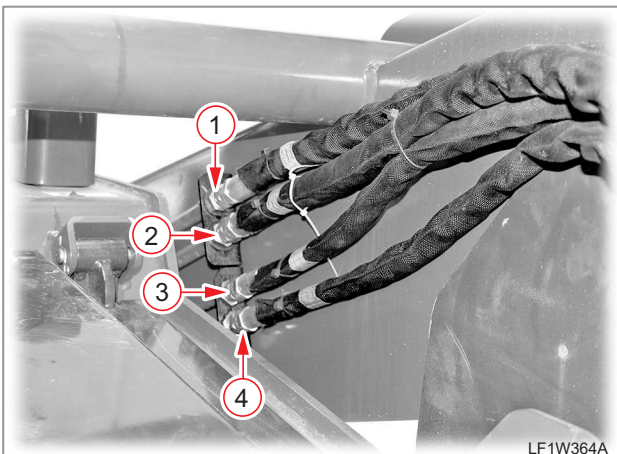
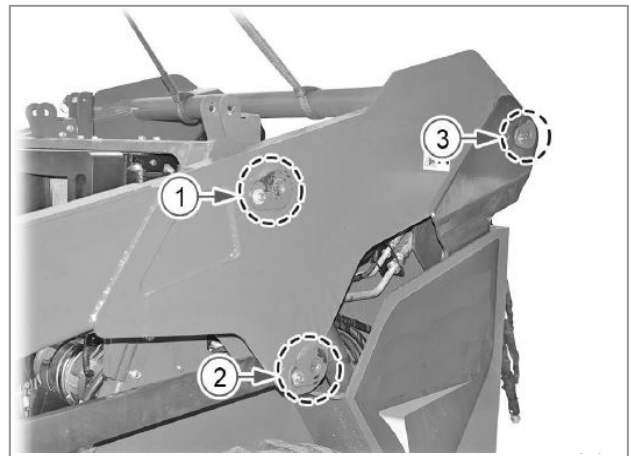
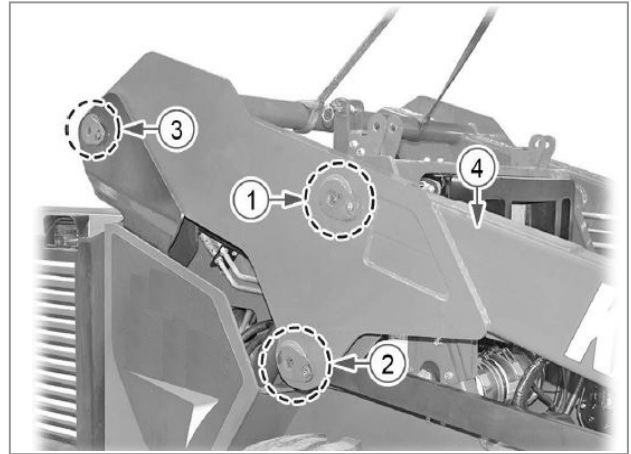
2.96 ~ 3.97 kgf·m

21.3 ~ 28.6 lb·ft

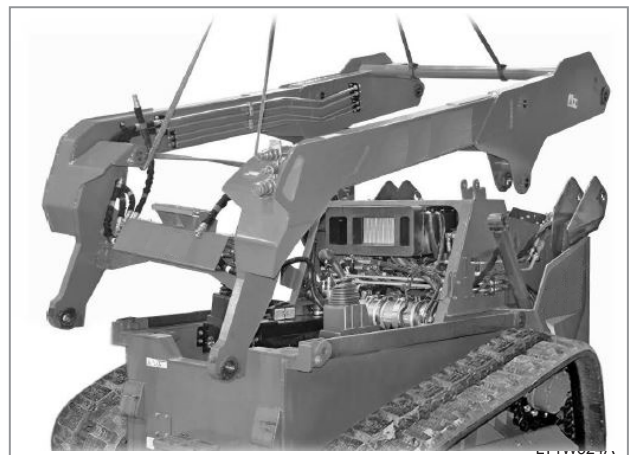
6.2 BOOM DISASSEMBLY



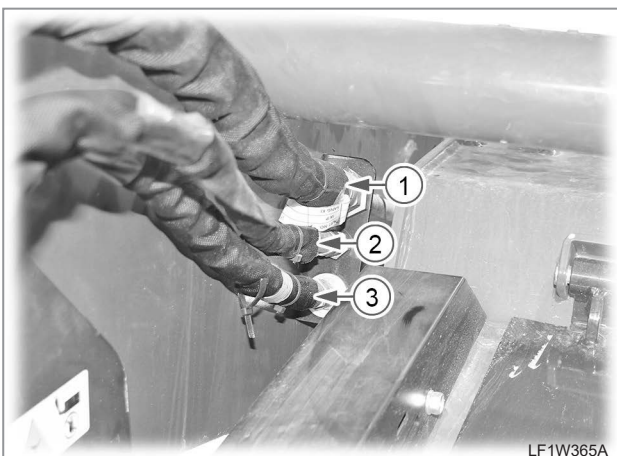
1. Disconnect the wiring (1) from the boom assembly.



2. Disconnect the hydraulic hoses (1, 2, 3 (brown) & 4 (green)) from the right rear side of the boom assembly.



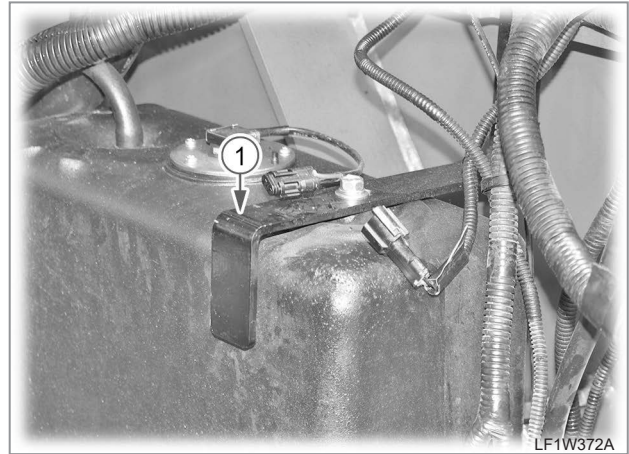
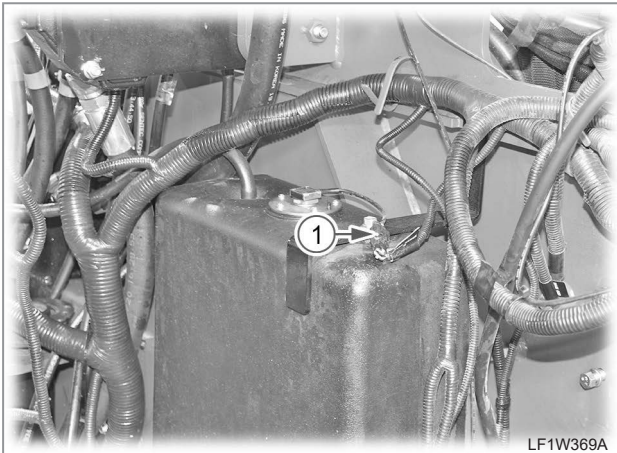
4. Remove the lift cylinder retaining pins (1), boom auxiliary support pins (2) and boom retaining pins (3) to remove the boom assembly (4).



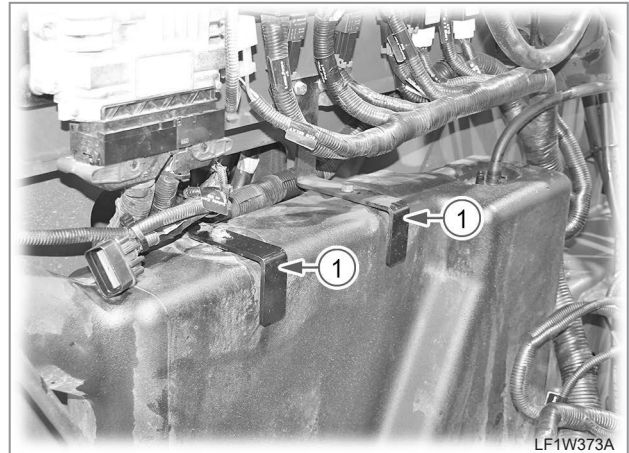
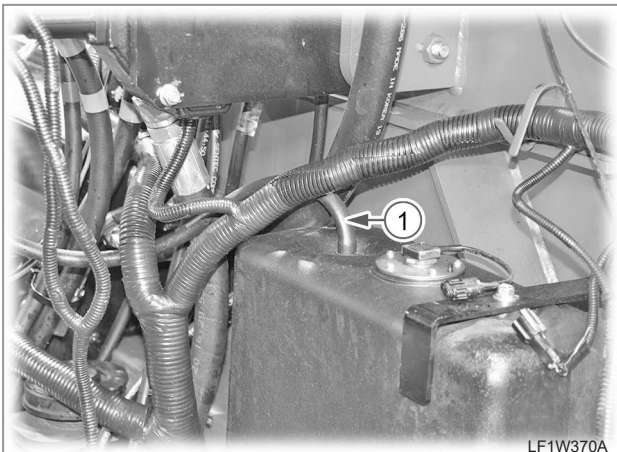
3. Disconnect the hydraulic hoses (1, 2 & 3 (brown)) from the left rear side of the boom assembly.

6.3 FUEL TANK DISASSEMBLY

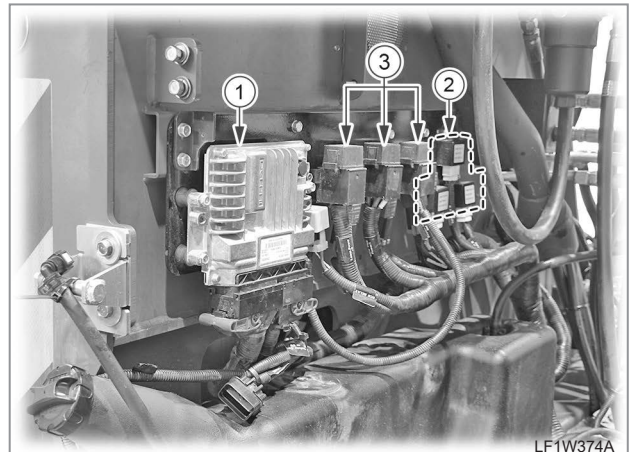
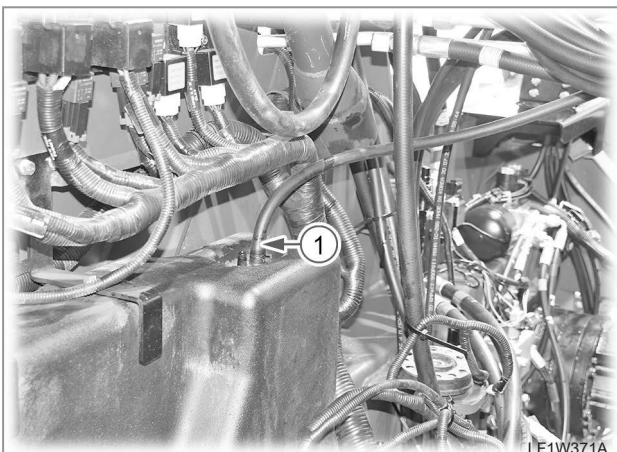
1. Remove the engine/HST pump assembly.
(Refer to "Engine removal" in Chapter 2, Engine.)



2. Disconnect the fuel sender connector (1).



4. Remove the three fuel tank supports (1).



5. Remove the ECU (1), relays (2), and fuses (3).

3. Disconnect the fuel tank bleeding hose (1).

SAFETY FIRST

ENGINE

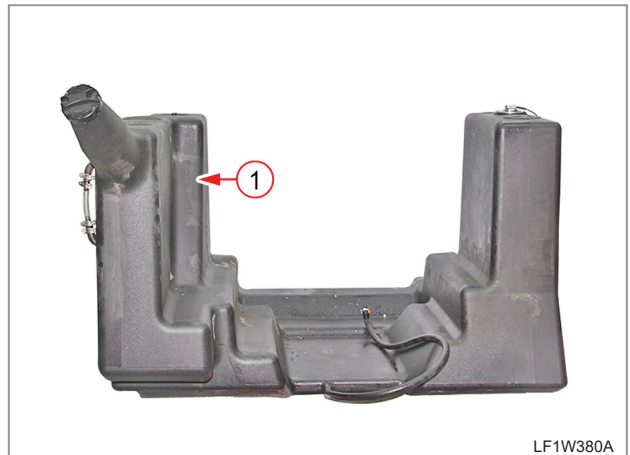
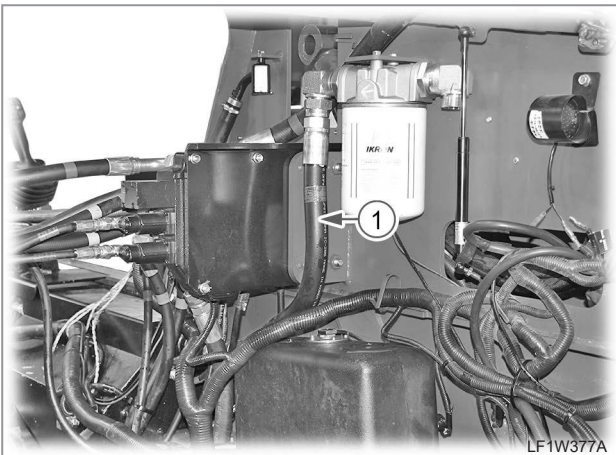
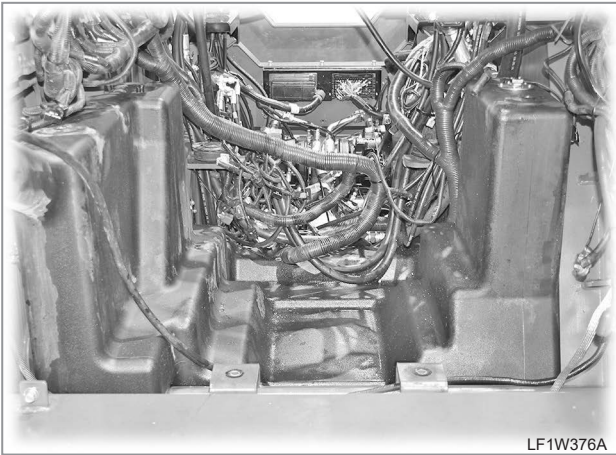
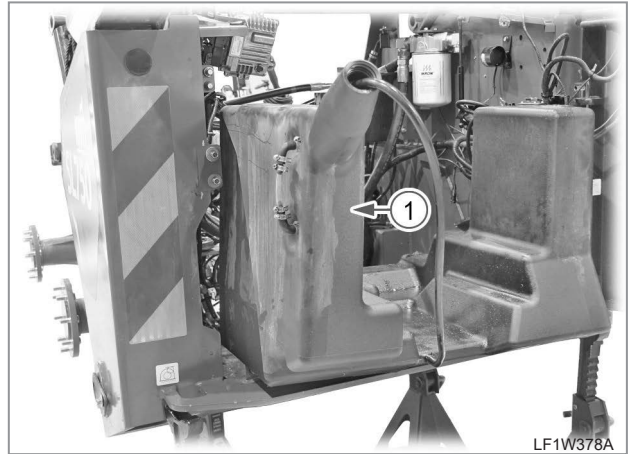
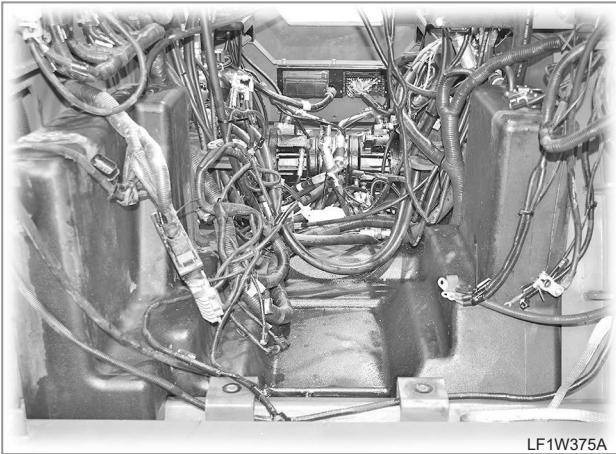
DRIVING & CHASSIS

HYDRAULIC SYSTEM

ELECTRIC SYSTEM

CABIN

INDEX



6. After arranging the wirings properly, disconnect the hydraulic hose (1).

7. Remove the fuel tank (1) from the main frame.

6.4 FUEL COOLER DISASSEMBLY

SAFETY FIRST

ENGINE

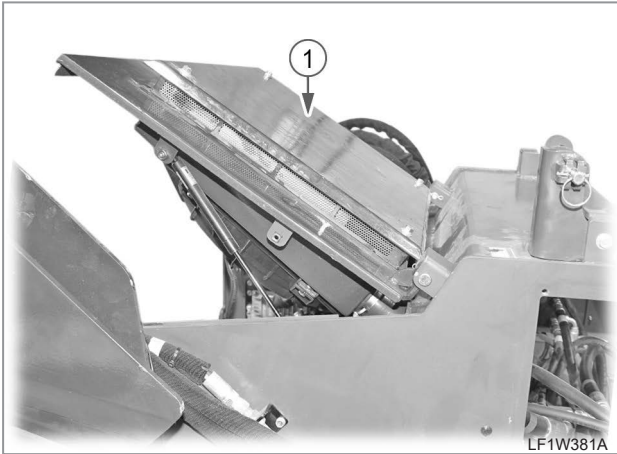
DRIVING & CHASSIS

HYDRAULIC SYSTEM

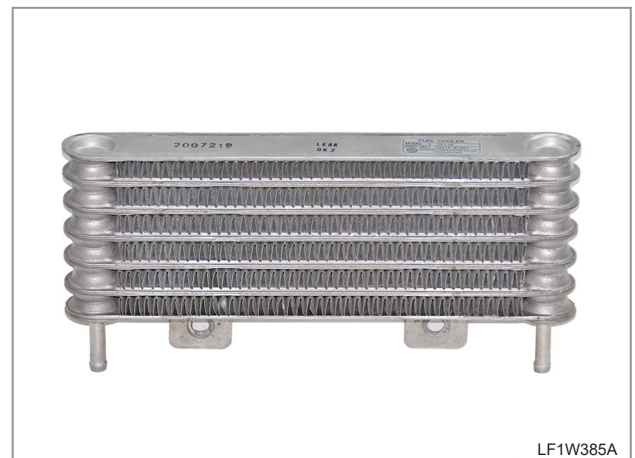
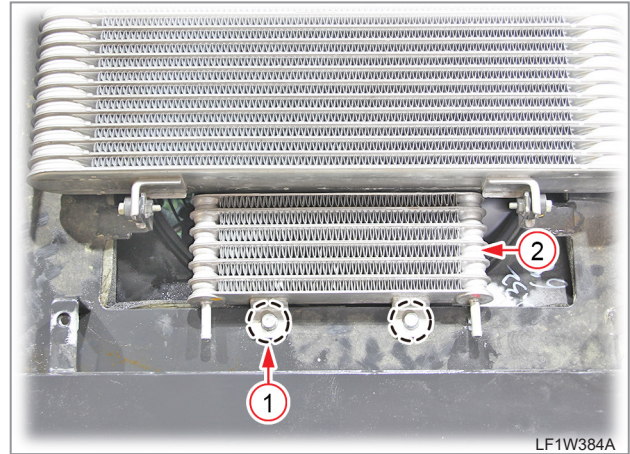
ELECTRIC SYSTEM

CABIN

INDEX



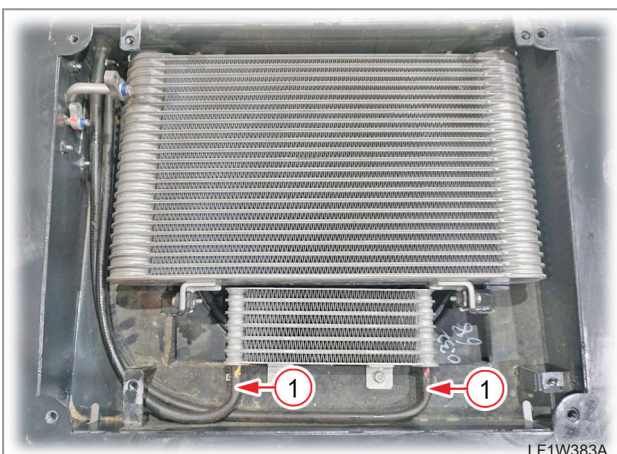
1. Remove the top cover (1) of the engine compartment.



4. Unscrew the fuel cooler mounting bolts (1)(2EA) and remove the fuel cooler (2).



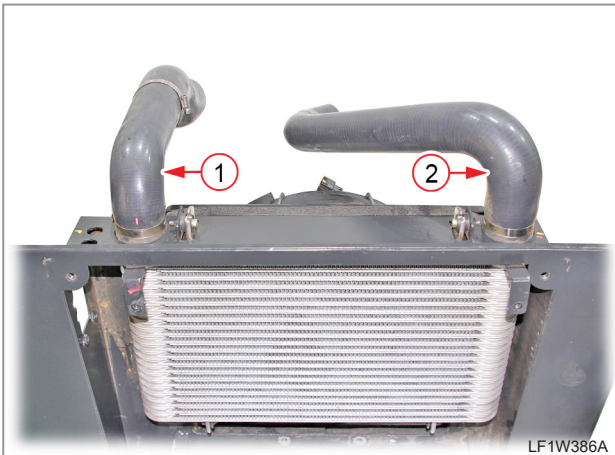
2. Unscrew the cover mounting bolts (1), and then remove the condenser from the inside.



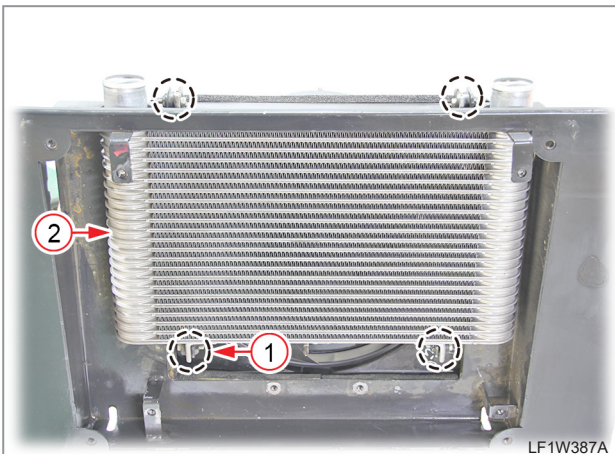
3. Disconnect the fuel hoses (1).

6.5 INTERCOOLER DISASSEMBLY

1. Remove the A/C condenser.



2. Disconnect the intercooler hoses (1 & 2).



3. Unscrew the four intercooler mounting bolts (1)(4EA), and then remove the intercooler (2).

