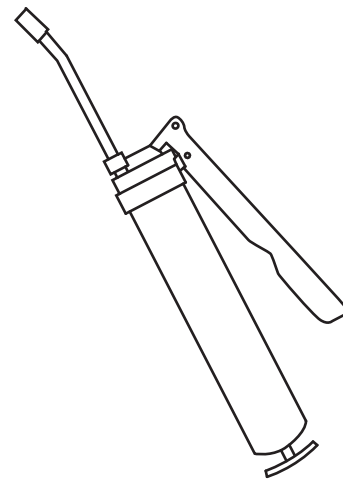
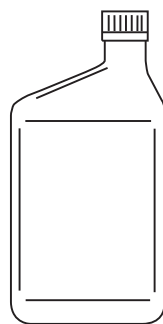
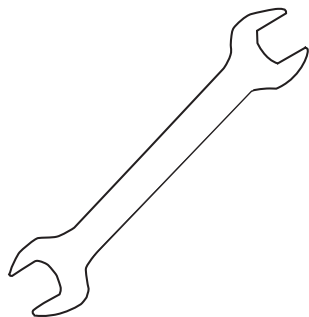


Lubrication and Maintenance Schedule Freeman Side Feed Balers



Applicable to Balers shipped after 6/1/2016.

Safety



WARNING

To help prevent personal injury caused by unexpected movement, be sure to service the machine on a level surface.

If machine is connected to a tractor, engage tractor parking brake and/or place transmission in "Park", shut off engine and remove key.

If machine is detached from tractor, block wheels to prevent movement.

Before servicing or adjusting baler:

1. Disengage all power.
2. Shut off tractor engine.
3. Wait until all moving parts have stopped.
4. Let all components cool.

IMPORTANT: Disconnect power supply to electronic controls when servicing electrical systems or when welding on baler. Over-voltage can damage the electronic controls.

Always disconnect the negative (-) battery terminal before welding on the baler.

See Operator's Manual for complete safety information.

Using This Manual

NOTICE

This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

Lubricant Specifications



WARNING

Disengage all power, shut off engine, and wait until all moving parts have stopped before servicing.

Through timely service, maintenance, and the proper adjustments, you can realize the optimum performance and long life expected from this equipment. Follow the recommended service checks at their suggested intervals to maximize the baler's performance and service life.

HYDRAULIC OIL:

Hydraulic Oil: Mobil 424 or Mobil DTE 15M or equivalent to a Viscosity greater than 10 centistokes at 180°F and less than 200 centistokes at 60°F.

Use **NEW** oil when refilling oil tank. Fill to the full mark on the oil tank site gauge located on the oil tank (See Figure 6-1-15). Oil must be filtered 10 micron or less before entering the tank. Clean around the fill area with compressed air before opening the fill port.

GEAR OIL:

Mobilube HD PLUS 80W-90 Gear Oil

Allied Part Number: 235720

GREASE FITTINGS:

(Clean grease fittings before applying grease.)

Multi-purpose Lithium base #2, EP grease.

Allied Part Number: LBR0000099

AUTOMATIC KNOTTER LUBER:

SAE 30 SE, SF, or CD Motor Oil

Allied Part Number: LBR0000030

Bull Gear Grease

Freeman Bull Gear Grease.

Allied Part Number: F000007626

Service Intervals

Service intervals listed are for average conditions. If baler is used in extreme conditions, baler should be serviced more often.

LUBRICATION AND MAINTENANCE SCHEDULE*

* For engine balers, refer to their respective manufacturers' owners manual for maintenance Instructions and Intervals.					
Figure	Item Description	Points	Description	Approved Material	Applies to Model
Every 3 to 4 hours (750 bales) whichever comes first*					
6-1-1	Bull Gears	2	See Bull Gear Luber in Settings and Adjustments	Freeman bull gear grease F000007626 only.	All
Daily, or every 8 hours (1,600 bales) whichever comes first*					
6-1-11	Driveline Clutch	1	Check taper pin torque		All
Daily, or every 10 hours (2,000 bales) whichever comes first*					
	Engine oil* Air filters*	All	Check daily. See manufacturers' owners manuals for details		Engine Balers
6-1-32	Gearbox Oil, Baler	1	Check oil level daily (oil should be above the sight glass)		Gearbox Balers
6-1-34	Driveline Gearbox Oil	1	Check oil level daily (oil should be level with lower plug)		Driveline Balers
	Clean Knotters & Engine Cylinders	All	Blow off dust & debris with compressed air		All
	Oil Cooler	1	Check fan and make sure grill is clean		Hydro Balers
	Check for Loose Bolts	All	Especially pay attention to the area around the engine, where there is more vibration		All
	Check Needle Timing		See needle timing in Settings and Adjustments		All
	Check Knife Adjustments & Sharpness	2	Plunger knife/stationary knife		All
6-1-2	Check Chain Tightness	All	Mid span, total deflection: knotter = 1"; pickup = 2"; tension = 3/4"; auger = 1"; luber = 3/4"		All
6-1-3	Hay Saver Wheel	2	Grease	Multi-purpose grease-LBR0000099	All
6-1-4	Torque Shaft Bushing Housing	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-5	Con Rod Bushing, Bull Gear Side	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-6	Con Rod /Plunger Side	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-7	Con Rod Bearing Mount, Gearbox	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-8	Plunger Rollers	4	Grease	Multi-purpose grease-LBR0000099	All
6-1-9	Plunger Stop Dog	1	Grease/Make sure stop dog moves freely	Multi-purpose grease-LBR0000099	All
6-1-10	Plunger Stop Dog Return Lever	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-12	Needle Yoke Drive Rod Ends	4	Grease	Multi-purpose grease-LBR0000099	All
6-1-13	Knotter Clutch	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-14	Pickup Drive Shaft	2	Grease	Multi-purpose grease-LBR0000099	All
6-1-15	Draw Bar	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-16	Knotter Luber Tank	1	Check level at tank site tube	SAE 30 SE, SF, or CD motor oil	Conventional Knot
6-1-17	Hydraulic Reservoir Hydro Balers	1	Check oil level. See site gauge on tank Capacity: 41 gallons	Hydraulic oil: Mobil 424 or Mobil DTE 15M or equivalent.	Hydro Balers



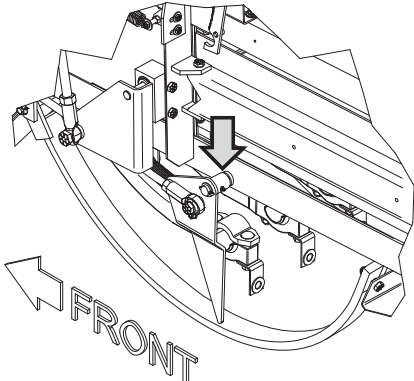
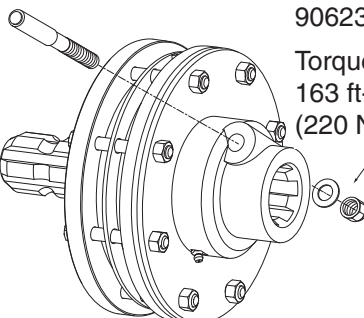
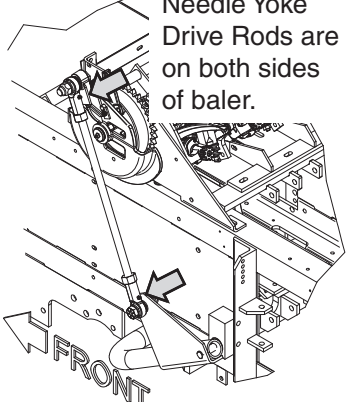
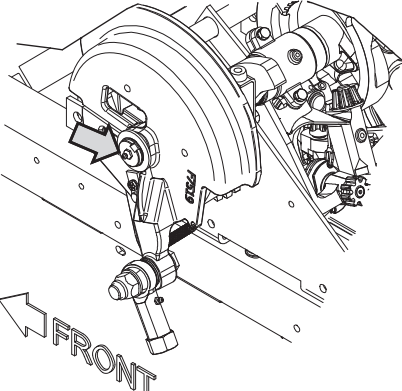
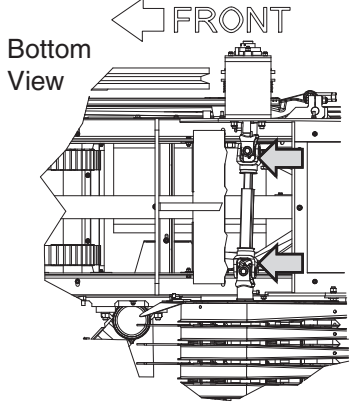
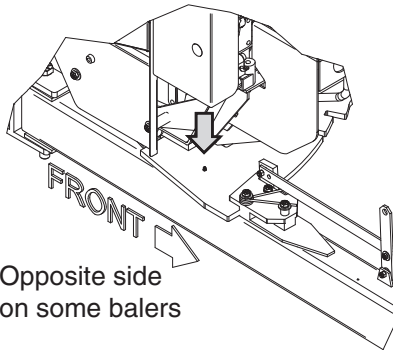
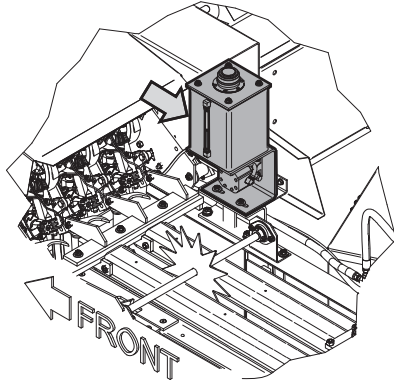
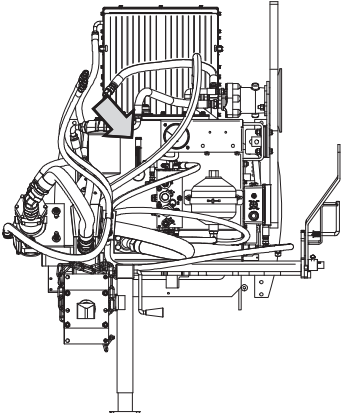
* For engine balers, refer to their respective manufacturers owners manual for maintenance Instructions and Intervals.					
Item	Item Description	Points	Description	Approved Material	Applies to Model
Daily or every 10 hours (2,000 bales) whichever comes first* Continued...					
6-1-11	Driveline Clutch	1	Check taper pin torque		All
6-1-18	Hydraulic Reservoir Engine Balers	1	Check oil level. Capacity: 5 gallons	Hydraulic oil: Mobil 424 or Mobil DTE 15M or equivalent.	280, 285, 380, 385 Engine Balers
6-1-19	PTO Clutch Throw Out Bearing	1	Grease	Multi-purpose grease-LBR0000099	Engine Balers
6-1-40	Gearbox Shaft Seals	4	Check for leaks		Gearbox Balers
Every 50 hours (10,000 bales) whichever comes first*					
	Torque Wheel Lug Bolts	All	See Wheel & Tire Setup 2-3	Torque wrench	All
	Tires	All	Check pressure	See tire sidewall for pressure	All
	Bull Gears	2	Check and adjust if necessary	See PB0000102 for adjustment instructions	All
6-1-11	Driveline Clutch	1	Check taper pin torque		All
6-1-20	Belt, Drive	1	Check belt deflection	3/4" belt deflection at 25 to 35 lbs.	All
6-1-35	Driveline	9	Grease	Multi-purpose grease-LBR0000099	Driveline Balers
6-3-33	Driveline Clutch	1	Grease	Multi-purpose grease-LBR0000099	Driveline Balers
6-1-21	Feed Arm Latch	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-22	Pinion Shaft Bearings	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-23	Con Rod Bearing Housing, Bull Gear side	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-24	Feed Arm Yoke's	6	Grease	Multi-purpose grease-LBR0000099	All
6-1-25	Saddle Lever	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-26	Knotter Trip Lever	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-27	Pickup Clutch Dogs	2	Oil	SAE 30 SE,SF, or CD motor oil	All
6-1-19	PTO Clutch Main & Cross Shaft Bearings.	3	Grease	Multi-purpose grease-LBR0000099	All Engine Balers
6-1-41	Gearbox Breather	1	Clean and evaluate. Replace if necessary.		Gearbox Balers
6-1-34	Driveline Gearbox Oil (1st 50 hours only, subsequent changes at seasonal/1000 hour intervals)	1	Change oil (135 oz)	Mobilube HD PLUS 85W-90 gear oil	Driveline Balers

LUBRICATION AND MAINTENANCE SCHEDULE*

Item	Item Description	Points	Description	Approved Material	Applies to Model
Monthly or Every 160 hours (32,000 bales) whichever comes first*					
6-1-36	Cinch Pin	1	Verify bolt torque		Gearbox Balers
6-1-37	Drawbar Mounting Bracket	2-4	Verify condition of bolts and brackets		Gearbox Balers
6-1-38	Expander Crank Pin Bolt Torque	1	Verify bolt torque		Gearbox Balers
Every 3 Months or 480 Hours (96,000 Bales) whichever comes first*					
6-1-11	Driveline Clutch	1	Check taper pin torque		All
6-1-36	Gearbox Crank Arm & Feeder Arm	5	Torque bolts	Torque wrench	Gearbox Balers
* For engine balers, refer to their respective manufacturers owners manual for maintenance Instructions and Intervals.					
Every 250 hours or 50,000 bales, whichever comes first*					
6-1-11	Driveline Clutch	1	Check taper pin torque		All
6-1-32	Gearbox Oil, Baler	All	Change oil (aprox 1.5 gal-lons)	Mobilube HD PLUS 85W-90 gear oil	Gearbox Balers
Every 1000 hours or 200,000 bales, whichever comes first*					
	Wheel Bearings	All	Clean & repack	Multi-purpose grease-LBR0000099	All
6-1-11	Driveline Clutch	1	Check taper pin torque		All
6-1-27	Pickup Clutch	1	Before use each season, completely loosen clutch springs and assure that clutch will slip. Adjust so that clutch almost slips.		All
6-1-28	Feed Arm Bearing Housing	1	Grease	Multi-purpose grease-LBR0000099	All
6-1-29	Side Plate Bearings	2	Grease	Multi-purpose grease-LBR0000099	All
6-1-30	Hydraulic Reservoir Hydro Balers	1	Change oil and filter Capacity: 41 gallons	Hydraulic oil: Mobil 424 or Mobil DTE 15M or equivalent to a viscosity greater than 10 centistokes at 180°F and less than 200 centistokes at 60°F	All Hydro Balers
6-1-18	Hydraulic Reservoir, Engine Balers	1	Change oil and filer Capacity: 5 gallons	Hydraulic oil: Mobil 424 or Mobil DTE 15M or equivalent.	280, 285, 380, 385 Engine Balers
6-1-34	Driveline Gearbox Oil	1	Change oil (135 oz)	Mobilube HD PLUS 85W-90 gear oil	Driveline Balers
6-1-31	Tension Control Pump	1	Change oil and filter	Hydraulic oil: Mobil 424 or Mobil DTE 15M or equivalent.	
6-1-16	Automatic Knotter Luber	1	Change oil, clean tank & filter	SAE 30 SE,SF, or CD motor oil	Conventional Knot

<p>2-3 turns to distribute bull gear grease.</p> <p>FRONT →</p>	<p>← FRONT</p>	<p>FRONT →</p>
<p>Figure 6 - 1 - 1 Bull Gears</p>	<p>Figure 6 - 1 - 2 Knotter Chain</p>	<p>Figure 6 - 1 - 3 Hay Saver Wheel</p>
<p>FRONT →</p>	<p>← FRONT</p>	<p>← FRONT</p>
<p>Figure 6 - 1 - 4 Torque Shaft Bearing Housing</p>	<p>Figure 6 - 1 - 5 Connecting Rod, Bull Gear Side</p>	<p>Figure 6 - 1 - 6 Connecting Rod Plunger Side</p>
<p>FRONT →</p>	<p>← FRONT</p>	<p>← FRONT</p> <p>Make sure Stop Dog moves freely when greasing.</p>
<p>Figure 6 - 1 - 7 Connecting Rod Attachment</p>	<p>Figure 6 - 1 - 8 Plunger Rollers</p>	<p>Figure 6 - 1 - 9 Plunger Stop Dog</p>

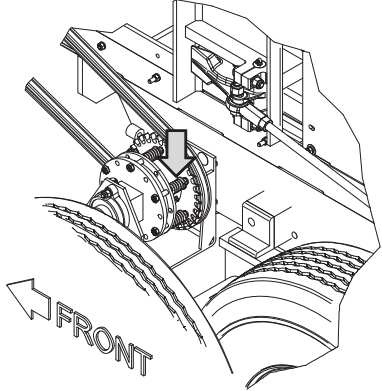
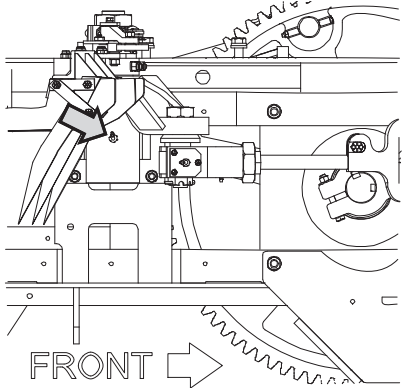
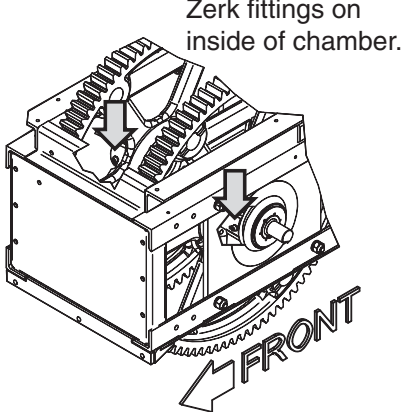
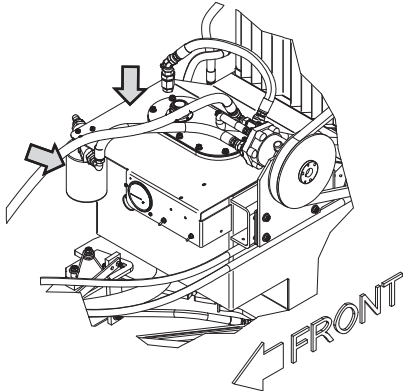
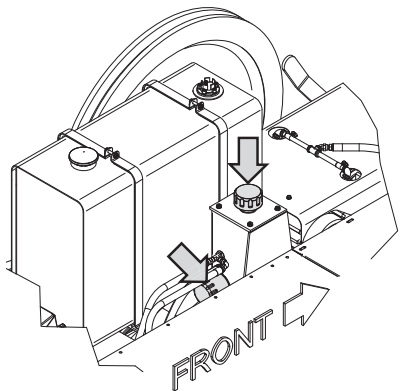
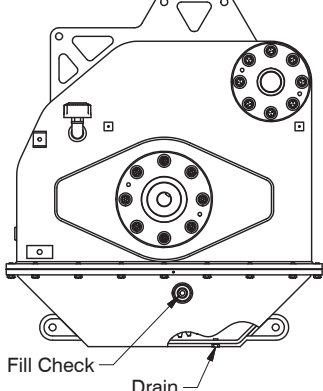
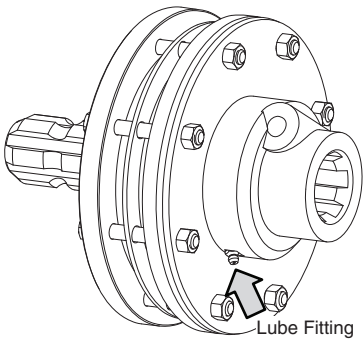
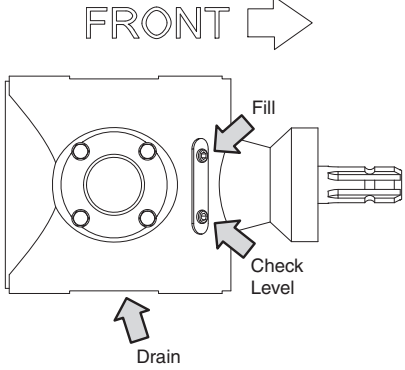
This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

 <p>Ensure Stop Dog moves freely.</p>	 <p>Taper Pin, Nut and Washer Kit 906233</p> <p>Torque to 163 ft-lbs (220 N-m)</p>	
<p>Figure 6 - 1 - 10 Plunger Stop Dog Return Lever</p>	<p>Figure 6-1-11 Driveline Clutch Taper Pin Torque</p>	
 <p>Needle Yoke Drive Rods are on both sides of baler.</p>		 <p>Bottom View</p>
<p>Figure 6 - 1 - 12 Needle Yoke Drive Rod Ends</p>	<p>Figure 6 - 1 - 13 Knotter Clutch</p>	<p>Figure 6 - 1 - 14 Pickup Drive Shaft</p>
 <p>Opposite side on some balers</p>		
<p>Figure 6 - 1 - 15 Draw Bar</p>	<p>Figure 6 - 1 - 16 Knotter Luber Tank</p>	<p>Figure 6 - 1 - 17 Hyd Oil Reservoir, Hydro Baler</p>

This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

<p>Figure 6-1-18 Oil Reservoir 80/85 Engine Balers</p>	<p>Figure 6 - 1 - 19 PTO Clutch</p>	<p>Figure 6 - 1 - 20 Belt Deflection</p>
<p>Figure 6 - 1 - 21 Feed Arm Latch</p>	<p>Figure 6 - 1 - 22 Pinion Shaft Bearings</p>	<p>Figure 6 - 1 - 23 Bull Gear Bearing Housing</p>
<p>Figure 6 - 1 - 24 Feed Arm Yokes</p>	<p>Figure 6 - 1 - 25 Saddle Lever</p>	<p>Figure 6 - 1 - 26 Knotted Trip Lever</p>

This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

		
<p>Figure 6 - 1 - 27 Pickup Clutch</p>	<p>Figure 6 - 1 - 28 Feed Arm Bearing Housing</p>	<p>Figure 6 - 1 - 29 Side Plate Bearings</p>
		
<p>Figure 6 - 1 - 30 Hydro Reservoir and Filter</p>	<p>Figure 6 - 1 - 31 Tension Tank and Filter</p>	<p>Figure 6 - 1 - 32 Gearbox Oil Change</p>
		
<p>Figure 6 - 1 - 33 Driveline Clutch Lubrication</p>	<p>Figure 6 - 1 - 34 Driveline Gearbox Oil Change</p>	

This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

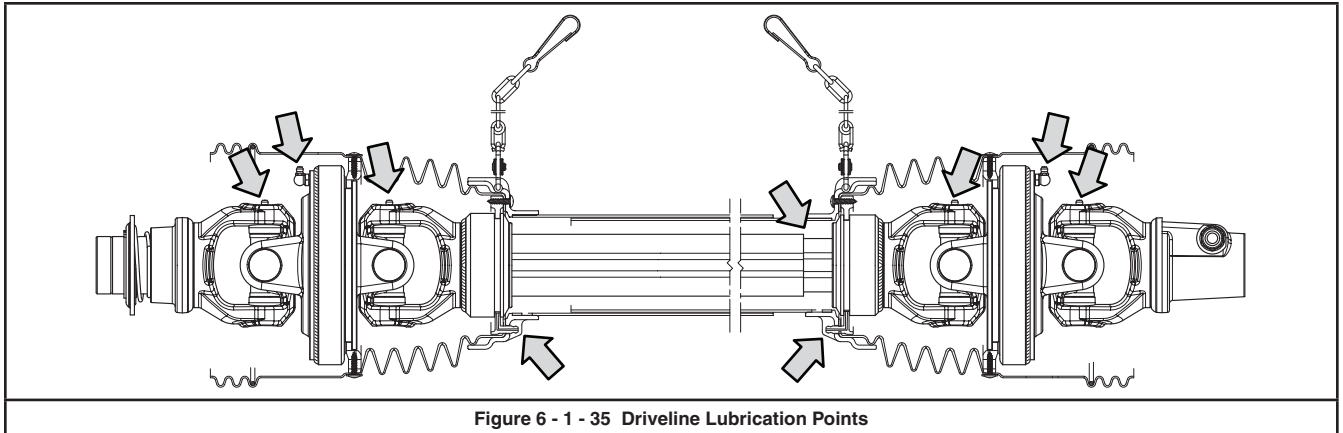


Figure 6 - 1 - 35 Driveline Lubrication Points

This document is meant to cover all side feed balers. Parts listed may not apply to your machine.

WARNING

Shields are for your protection - DO NOT REMOVE.
Disengage all power, shut off engine, and wait until all moving parts have stopped before servicing/inspecting.

NOTICE

Be certain to specify the serial number of your sidefeed baler when ordering parts.

Cinch Bolt: The cinch bolt on the drive arm must be torqued between 750-755 ft lbs at all times. You may need a torque multiplier to check this.

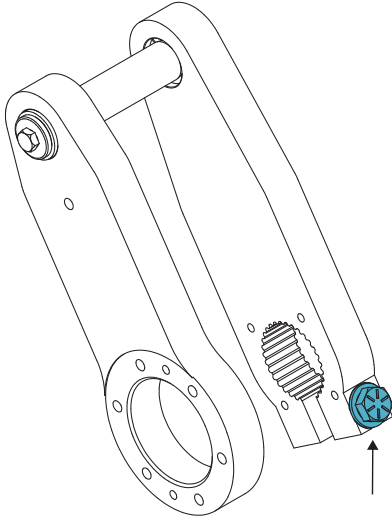
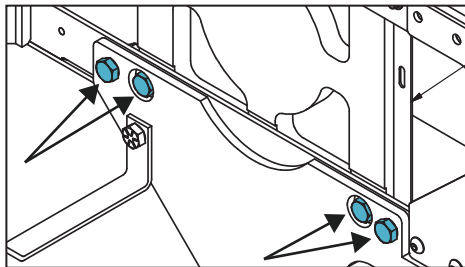


Figure 6 - 1 - 36 Check Torque on Drive Arm Cinch Bolt

Drawbar Mounting Bracket: There are two (2) styles of drawbar-mounting brackets. Make sure bolts are fastened and brackets are in good condition.

Style 1



Style 2 (P/N: 909766)

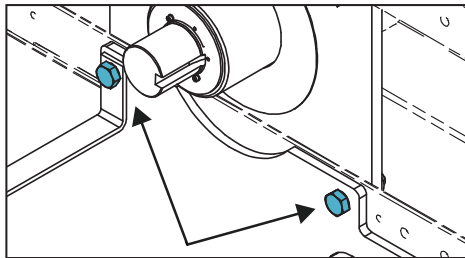


Figure 6 - 1 - 37 Check Torque on Drawbar Mounting Bracket Bolts

Expander Crank Pin Bolt Torque: The expander bolt must be torqued between 129-134 ft lbs at all times. Verify the torque using a torque wrench and 24mm socket.

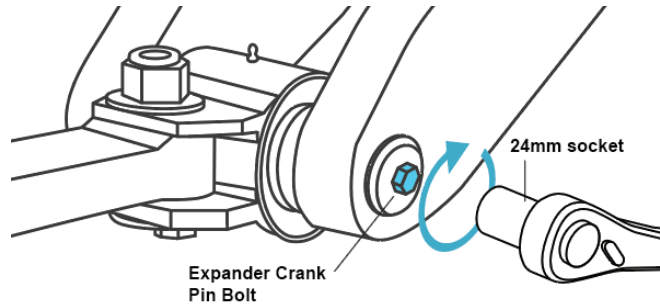


Figure 6 - 1 - 38 Verify the Expander Pin Bolt Torque

The torque must be checked multiple times (see Table 6-1-1) when the baler is first delivered, or if the expander pin is replaced. After the first week, assuming that the expansion sleeves are successfully seated, the torque should be checked monthly.

Torque Schedule	
After 1 hour	* When you re-torque and the wrench “clicks out” on setting without additional torque, you have successfully “seated” the expansion sleeves and the installation process is complete.
After 3 hours	
After 10 hours or 1 day *	
After 40 hours or 4 days*	
If expansion sleeves have not “seated” within one week of operation, call Allied Systems at (503) 625-2560 for instructions.	

Table 6 - 1 - 1 Initial Torque Schedule

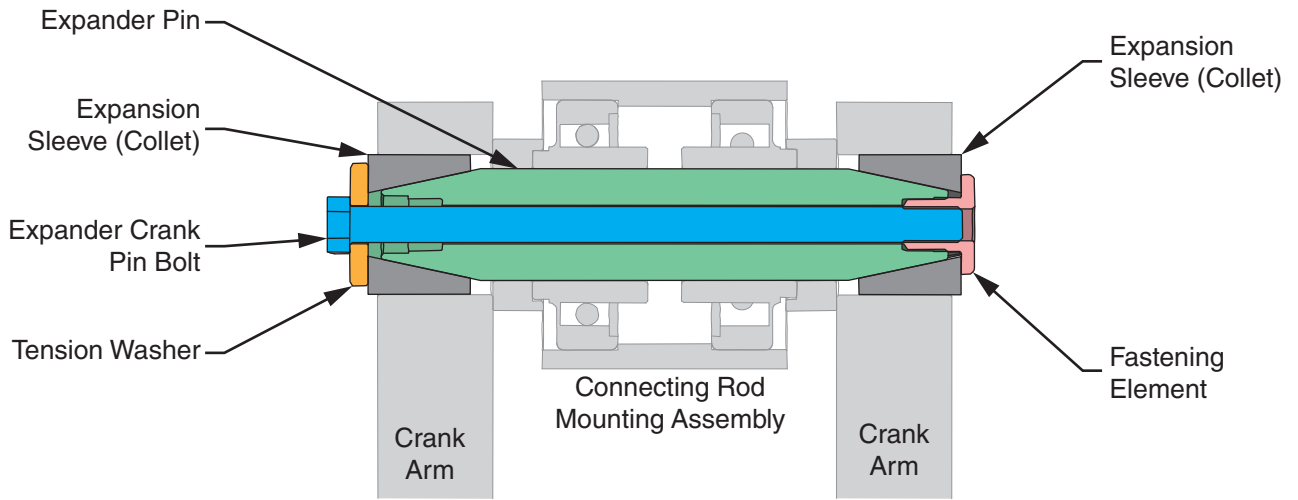


Figure 6 - 1 - 39 Expander Pin Installation

Sleeve Kit: If the crank pin bores in the crank arm and drive arm become elongated, there is a sleeve kit (part# 910555) that allows continued use of the existing components without needing to replace with new. The original expansion sleeves are discarded, and replaced with the oversized expansion sleeves in the kit.

This kit is applicable when the bore in the crank arm is between 2.50" & 2.58". If the bore exceeds 2.58", the arms will need to be replaced with new.

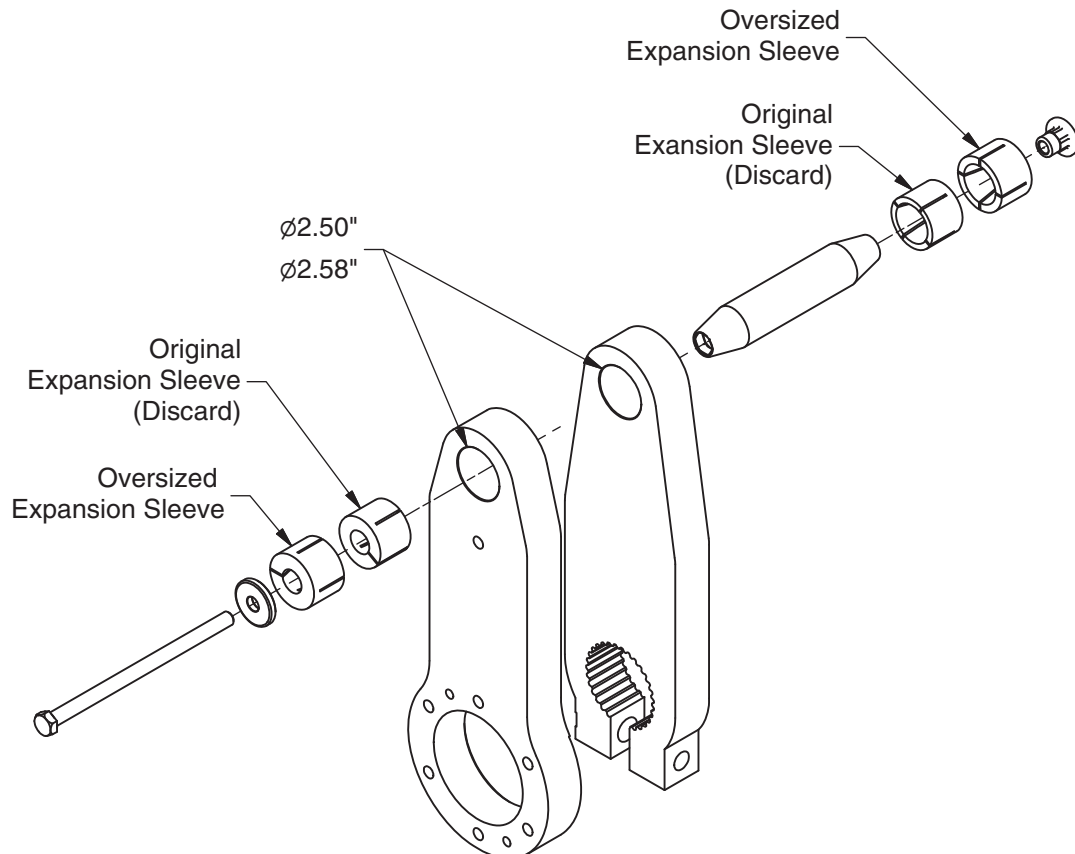


Figure 6 - 1 - 39 Sleeve Kit 910555

Gearbox shaft seals: Inspect the seals on the gear shaft and pinion shaft for any leakage. Document whether it is the inside seal (nearest crank arms) or the outer seal (nearest timing sprocket). Check gearbox oil level and check condition.

- Pinion Shaft Seal (P/N: 906798)
- Gear Shaft Seal (P/N: 910092)

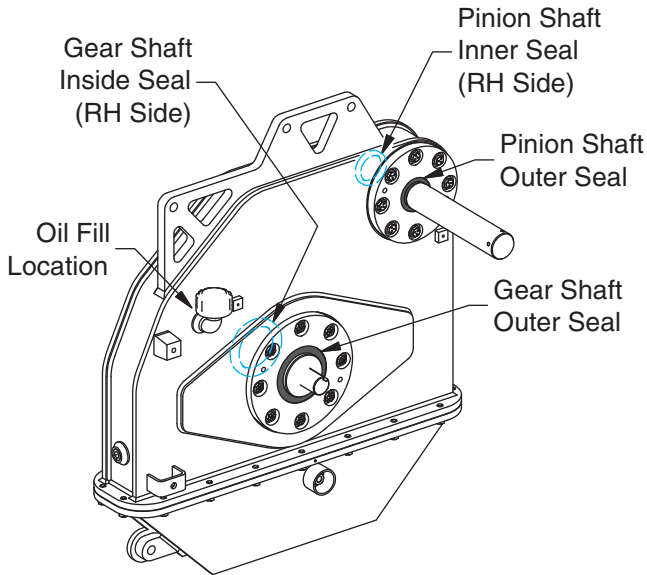


Figure 6 - 1 - 40 Check Gearbox Shaft Seals

Gearbox Breather: The current Allied gearbox is equipped with a 40 micron breather (P/N: 910519). This filter needs to be cleaned out regularly or it can get plugged with sediment. The breather should be cleaned every 40 hours of baler operation.

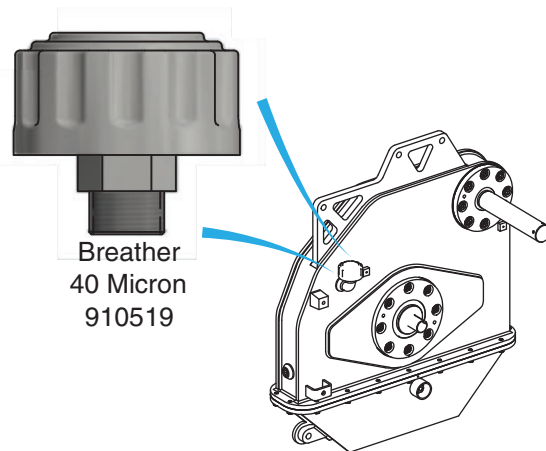


Figure 6 - 1 - 41 Clean Gearbox Breather

- Use a 1 3/16" wrench to unscrew breather. Clean filter with forced air and reinstall.
- For a more thorough clean, soak breather in mineral spirits.
- If the breather is damaged, worn, or can't be cleaned, replaced with a new part.



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