



WARNING: Before attempting to operate the landing gear, you must read and understand the following procedures:

- Perform all procedures in lighted area clear of obstacles and other personnel.
- Always grip the crank handle securely with both hands.
- Maintain proper footing at all times.
- Never attempt to shift the landing gear while under load.
- Lifting and lowering of the trailer must always be done in LOW GEAR.
- DO NOT ATTEMPT TO LIFT OR LOWER TRAILER WITH LANDING GEAR IN HIGH GEAR, AS SERIOUS PERSONAL INJURY COULD OCCUR.
- Always secure the crank handle when not in use.

OPERATING INSTRUCTIONS

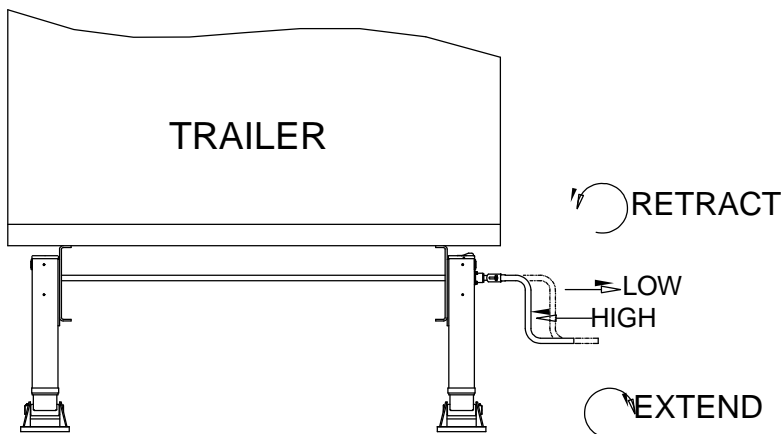


FIGURE 1

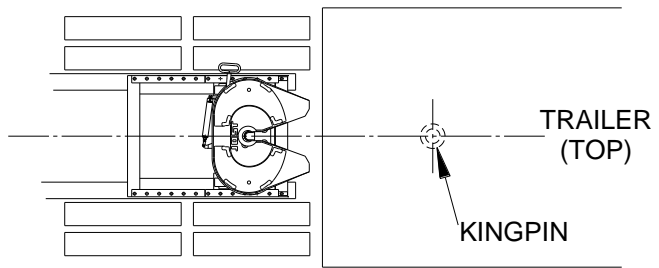
- Push crank handle **in** for **high** gear.
- Pull crank handle **out** for **low** gear.
- Turn crank:
Counterclockwise - Retract
Clockwise - Extend

Note: Both inside and outside mounts crank the same.

COUPLING PROCEDURES

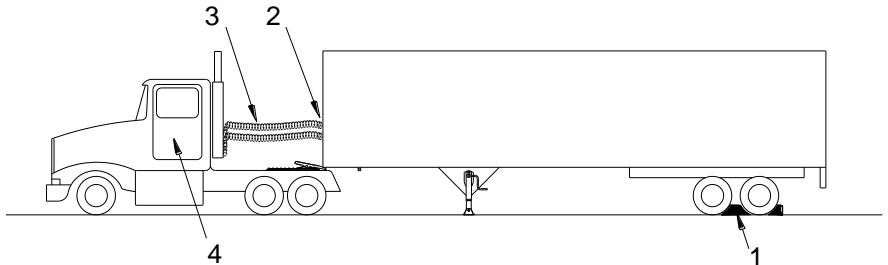
STEP 1

Inflate tractor air suspension and back up **close** to the trailer centering the kingpin with the throat of the fifth wheel and **STOP!** **DO NOT ATTEMPT TO COUPLE UNTIL STEPS 2 THROUGH 4 ARE COMPLETED.**



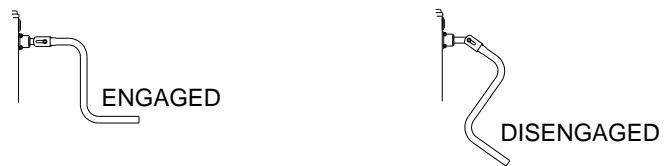
STEP 2

1. Chock trailer wheels.
2. Connect brake lines and light cord.
3. Support slack in lines to prevent interference.
4. Set trailer brakes.



STEP 3

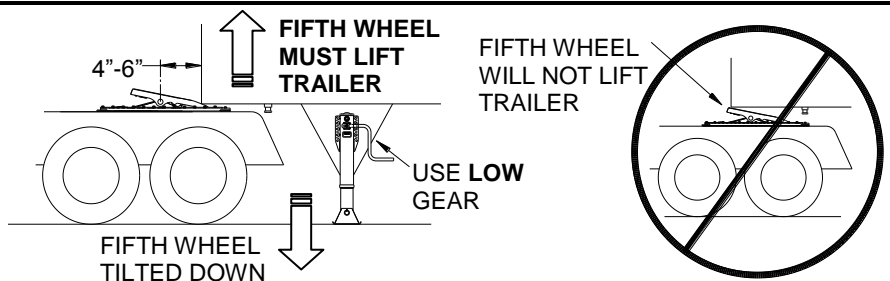
Make sure that the landing gear is in low gear (see figure 1) and engage crank handle.



STEP 4

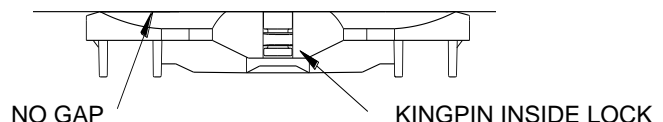
Adjust trailer height. The fifth wheel must contact the trailer bolster 4-6 inches behind the fifth wheel pivot.

The fifth wheel will lift the trailer.



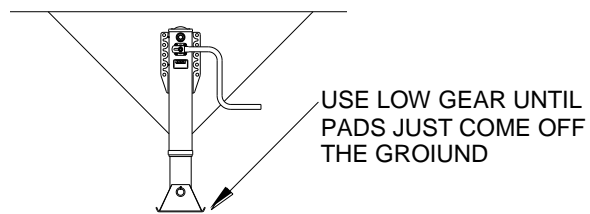
STEP 5

Couple and verify that there is no gap between fifth wheel and trailer and that the kingpin is inside the lock.



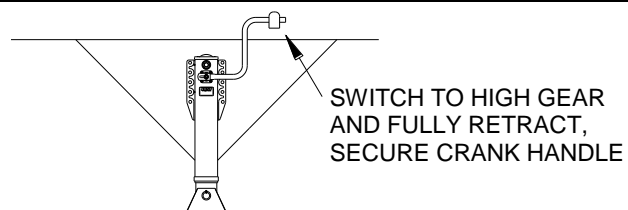
STEP 6

While still in low gear, retract landing gear until pads just come off the ground.



STEP 7

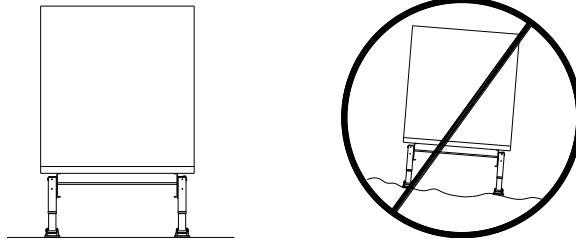
Switch to high gear and fully retract, secure crank handle.



UNCOUPLING PROCEDURES

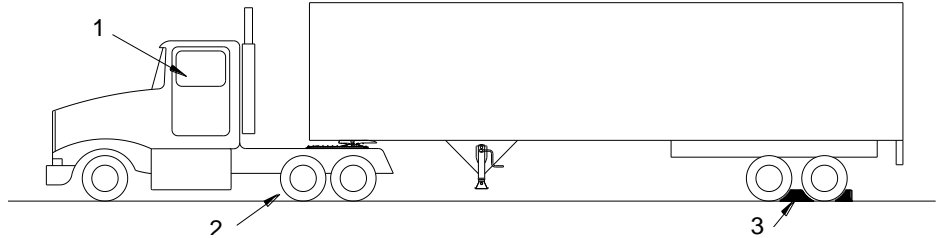
STEP 1

Position the tractor and trailer on level and solid ground, clear of persons and obstacles.



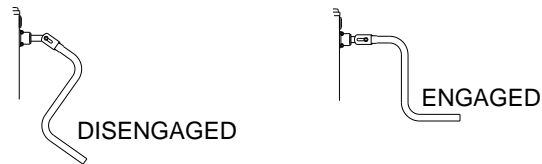
STEP 2

1. Set trailer brakes. Slowly back tractor tightly against trailer.
2. Set tractor brakes.
3. Chock trailer wheels.



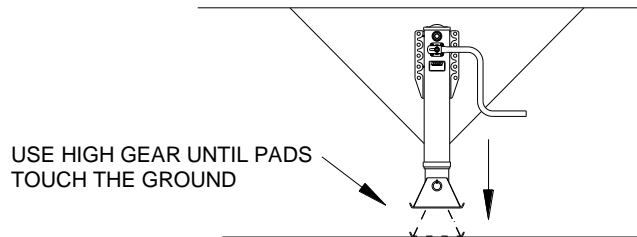
STEP 3

Shift landing gear to high gear (see figure 1) and engage crank handle.



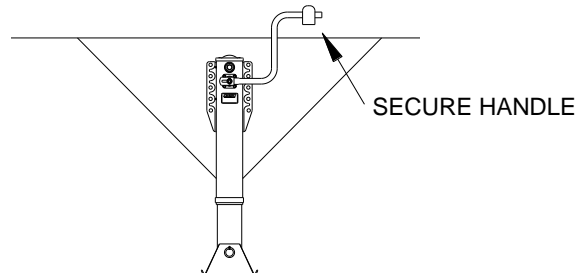
STEP 4

Extend landing gear until pads just touch the ground.



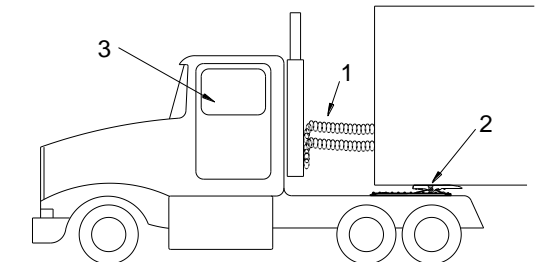
STEP 5

Switch to low gear and crank an additional 4-8 turns minimum.
Secure crank handle



STEP 6

1. Disconnect air lines and light cord.
2. Pull fifth wheel release handle.
3. Release tractor brakes and slowly drive away from trailer.



MAINTENANCE PROCEDURES

IMPORTANT: All inspections must be performed at least every 3-6 months, depending upon use.

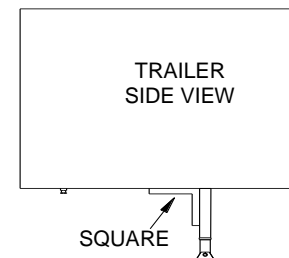
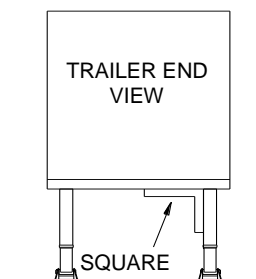
STEP 1: INSPECT LEGS AND MOUNTINGS:

Important: Landing gear with excessive play should be rebuilt or replaced.

Inspection		Possible Causes
	Cross shaft connection bolts and lock nuts must be secure, but allow side-to-side play in the cross shaft.	1. Cross shaft bolt too tight 2. Incorrect cross shaft length
	Tighten or replace bolts as necessary.	1. Bolts not tightened to proper torque 2. Improper coupling procedures
	Inspect the mounting flange for cracks or other signs of damage.	1. Overloading 2. Improper coupling techniques
	Repair or replace any broken or damaged parts of the landing gear assembly.	1. Legs not fully retracted 2. Overloading 3. Legs damaged by collision
	Extend the legs and, using a straightedge, inspect for bent lower leg and damaged footwear.	1. Legs not fully retracted when moving trailer 2. Improper ground clearance 3. Improper coupling procedures
	Check for interference between powder metal bushing and trailer mounting surface.	Holes too small or in incorrect location on mounting
	Inspect the crank handle bolt and lock nut. Tighten or replace as necessary.	Crank handle bolt too tight (the crank handle bolt must be loose enough to allow free engagement)
	Check for proper crank shaft shifting in both high and low gear.	Damage to crankshaft due to contact or collision

STEP 2: INSPECT ALIGNMENT:

Inspection		Possible Causes
	Using a square, check that both legs are square to the trailer and parallel with each other as shown.	1. Improper installation 2. Loose bracing bolts 3. Improper coupling techniques



MAINTENANCE PROCEDURES

STEP 3: INSPECT FOR PROPER OPERATION: (see Operating Instructions on page 1)

Action	Inspection (Look for the following indicators):	Possible Causes
1. Shift to high gear 2. Extend leg to the ground. 3. Inspect for smooth operation.	Lower leg wobbling or twisting.	1. Bent leg. 2. Bent lift screw.
	Lower leg makes a sudden drop (hopping).	Damage to lift screw threads.
	Inconsistent torques at different positions of the crank handle throughout the travel.	Bent or damaged screw.
	Without load in <u>high gear</u> the torque should not exceed approx. 7 ½ lbs at the crank handle.	1. Damage to lift screw or lift nut. 2. Gear not lubricated at routine maintenance intervals.
4. Extend leg to the ground. 5. Shift to low gear. 6. Crank an additional 8 to 10 turns.	With an empty trailer in <u>low gear</u> the torque should not exceed approx. 19 lbs at the crank handle.	Gear not lubricated at routine maintenance intervals.

If any of the above indicators are present the landing gear should be disassembled and inspected for actual wear and/or damage. Replace as required.

STEP 4: LUBRICATE:

The only solution for corrosion problems is regular re-lubing of the legs in both the gearbox (upper grease zerk) and the screw/nut cavity (lower grease zerk). This action will place a fresh coat of grease on all the surfaces protecting them from rust.

1. Lubricate at least every 5 years and more frequently in applications where the landing gear are exposed to excessive moisture (liquid salt water spray), dust, or if they are not used for extended periods.
2. Lubricate with the trailer securely coupled to a tractor (see coupling instructions on page 2).
3. Employ a lubricant compatible with the original type of grease used:

Standard – Lithium base 1-2% Moly EP-2

Low temperature – Arctic-grade, all weather white grease

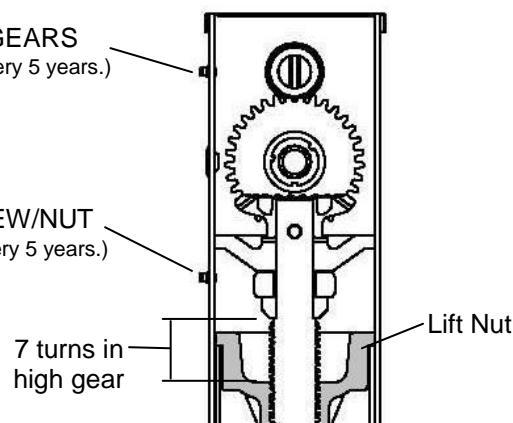
Warning: Do not use any lubricants containing Teflon

Bevel Gear Lubrication Instructions:	
	Lubricate in the top grease fitting as shown. At least 4oz. (50 pumps on a hand grease gun).

Lift Screw/Nut Lubrication Instructions:	
	Fully retract the landing gear, then using high gear extend 7 turns.
	Lubricate in the bottom grease fitting as shown. At least 4oz. (50 pumps on a hand grease gun).
	Extend and retract the landing gear to apply grease to the entire length of the screw.

BEVEL GEARS
(Add 4oz. Every 5 years.)

LIFT SCREW/NUT
(Add 4oz. Every 5 years.)



MAINTENANCE PROCEDURES

Grease Tube in Lower Leg Instructions:	
	Fully retract the landing gear, then using high gear extend 7 turns.
	Remove plastic plugs from access holes (Figure 1)
	Recharge grease tube in lower leg through grease fittings as shown. Add 24 oz. every 5 years.
	Replace plastic plugs in holes
	Extend and retract the landing gear to apply grease to the entire length of the screw.

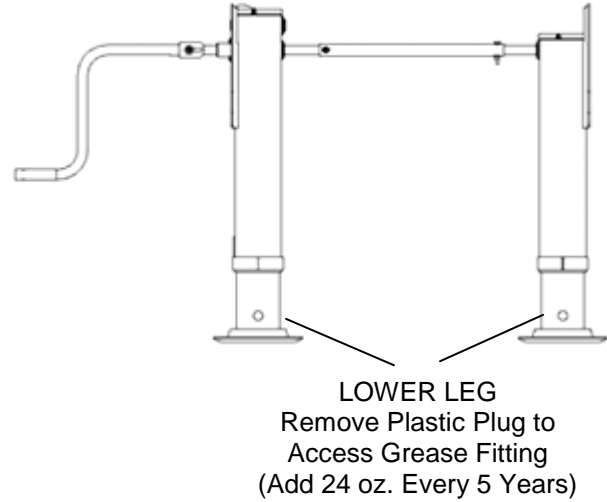


Figure 1

TROUBLE-SHOOTING POINTS

Problem	Cause	Correction
Hard to crank landing gear	1. Turning crank in wrong direction.	1. See below for proper crank handle rotation.
	2. Attempting to raise or lower trailer in high gear.	2. Shift to low gear (see figure 1, page1). DO NOT ATTEMPT TO LIFT OR LOWER IN HIGH GEAR.
	3. Legs are already fully extended or retracted.	3. Turn crank in opposite direction to retract or extend.
	4. Cross shaft binding: - over-tightened bolts. - cross shaft bent or too long.	4. Inspect cross shaft bolts. Back off bolts to allow lateral (side-to-side) movement of cross shaft. Use self-locking type nuts only.
	5. Mis-aligned landing gear legs.	5. Legs must be parallel and extend and retract evenly. Remove cross shaft; adjust landing gear legs to same height.
	6. Lack of grease.	6. Grease landing gear as directed in step 4 on page 5.
	7. Damaged lift screw or lift nut.	7. Check landing gear for signs of impact (accident) damage. Disconnect cross shaft and crank legs individually to determine which leg is damaged. Replace damaged leg.
	8. Interference between powder metal bushing and trailer mounting surface	8. Hole in trailer mounting surface may need to be enlarged.
Shaft turns but legs do not operate	1. Broken shaft or shaft bolt.	1. Replace broken bolt(s) and shaft as needed.
	2. Broken pinion gear or bevel gear or gear pins.	2. Replace broken gear(s) or pin.
Shaft does not turn	1. Broken gear teeth.	1. Replace broken gear(s).
	2. Damaged lift screw.	2. Replace inner leg or entire landing gear leg.
	3. Seized lift screw or nut	3. Replace inner leg or entire landing gear leg.
	4. Bent inner or outer leg tube.	4. Replace bent inner leg or outer leg, or entire landing gear leg.
Crank shaft skips when cranking	1. Broken gear teeth.	1. Replace broken gear(s).

REPAIR PROCEDURES

The item numbers mentioned in the following section refer to the spare parts list located on page 8.

Do not attempt to do the following repairs with the legs on the trailer. Please remove the legs before continuing.

Two Speed Leg Disassembly

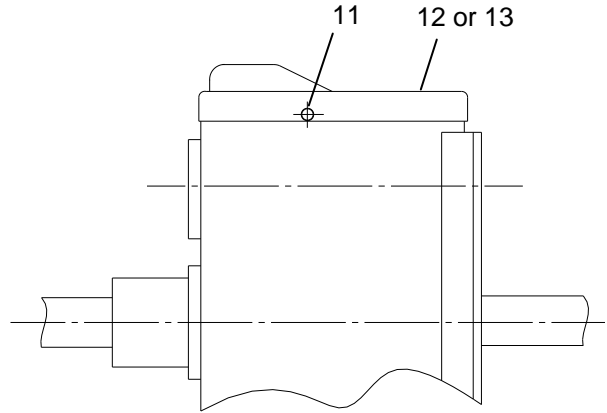
STEP 1

Remove (2) cover screws (item 11).

Lift off cover (item 12 or 13).

Important: The cover is sealed to the upper housing with a silicone sealant. Use Dow Corning #700 or equivalent when replacing the cover.

Remove the grease before continuing.

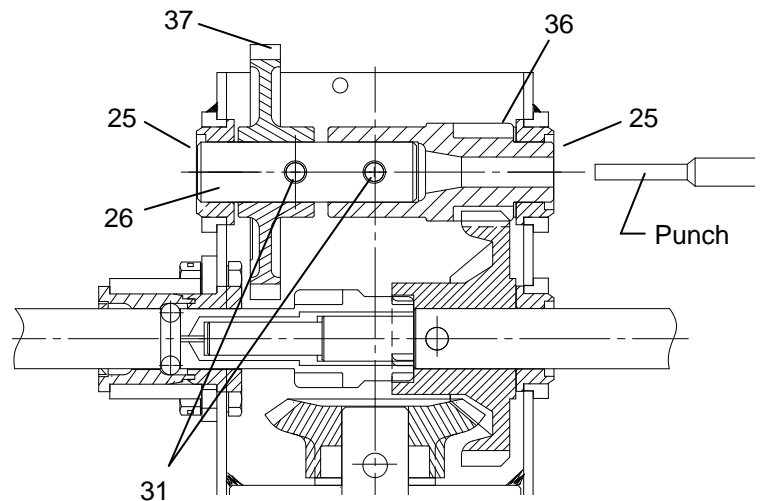


STEP 2

Remove the (2) Shaft Caps (item 25) from the bushings.

Drive (2) spiral pins (item 31) from the Output Spur Gear (item 36) and from the Input Gear (item 37).

Then drive out the Output Shaft (item 26) by placing a punch thru the hole in item 36.

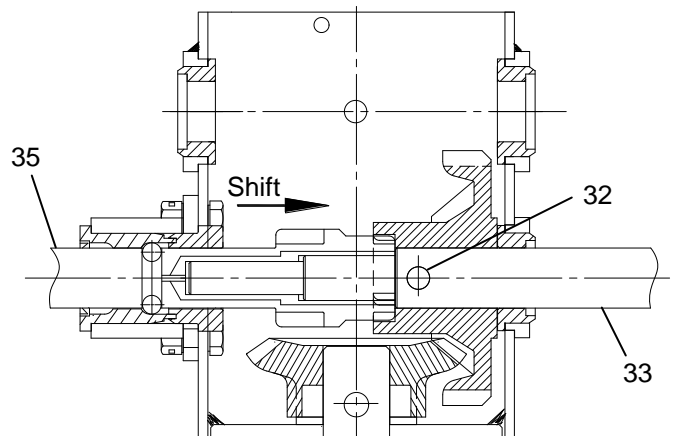


STEP 3

Remove the Cap Plug in outer housing exposing the ½ dia. access hole*.

Shift the Input Gear Shaft (item 35) to the high gear position. Drive out the roll pin (item 32) using the ½ dia. access hole.

Remove the Output Cluster Shaft (item 33).



REPAIR PROCEDURES

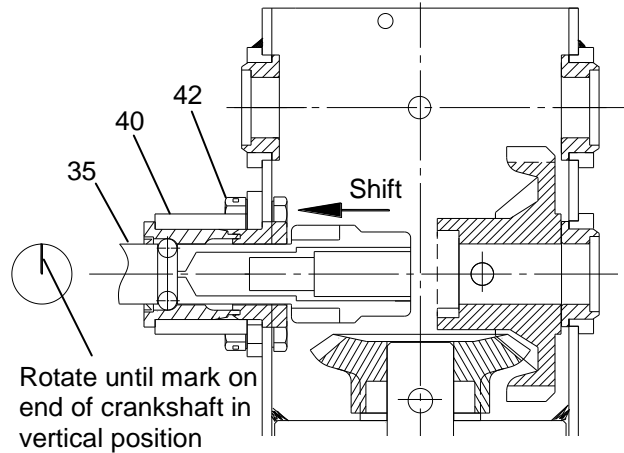
Two Speed Leg Disassembly con't

STEP 4

Shift the Input Gear Shaft (item 35) to the low gear position. Rotate until mark on the end is in the vertical position.

Remove (4) 5/16 locknuts (item 42) from Shift Housing (item 40).

Remove the Input Gear Shaft (item 35) and the Shift Housing (item 40) as one unit.

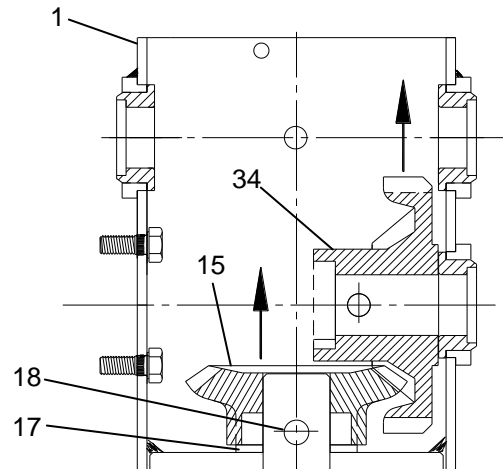


STEP 5

Remove Output Cluster Gear (item 34) and Bevel Gear (item 15) by lifting upwards on both parts at the same time.

Remove the Groove Pin (item 18) and Thrust Washer (item 17).

Now the Outer Housing (item 1) can be lifted off from the lower leg assembly.



STEP 6

Remove the Thrust Bearing (item 24).

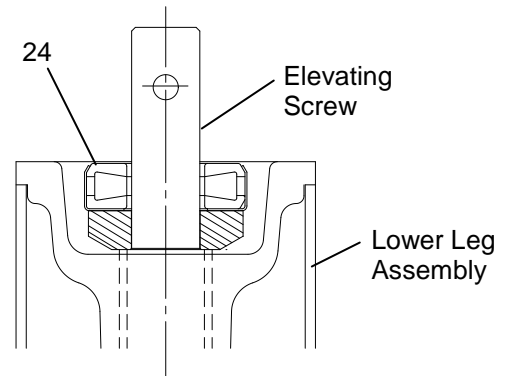
Attention: New thrust bearing must be packed with grease before assembly.

***Advice:**

Fully extend the elevating screw to inspect for damage, corrosion or wear. Replace the Lower Leg Assembly if there are hard to extend spots or the head orbits when extending and retracting.

Replace the Lower Leg Assembly if any elevating screw threads are corroded, damaged or worn thin.

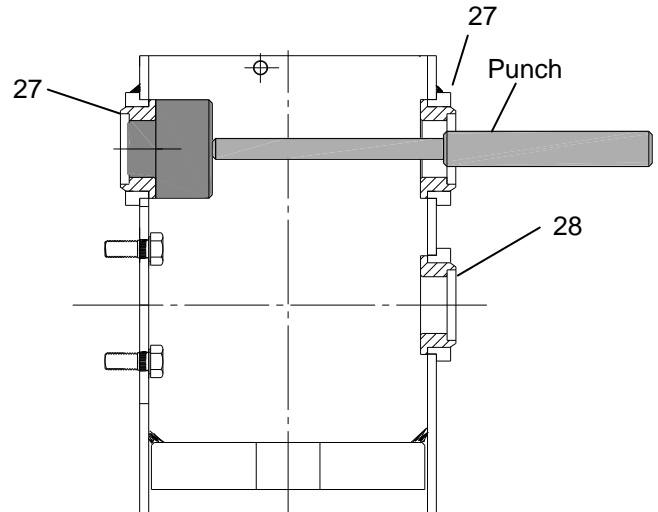
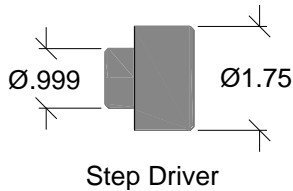
Coat the entire surface of the screw with a minimum of 4oz. (112 Grams) of Lithium base 1-2% Moly EP-2 grease before continuing.



REPAIR PROCEDURES

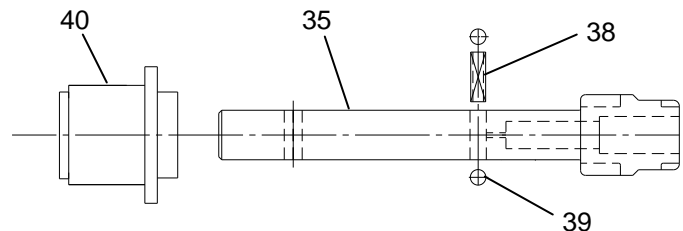
Bushing Installation – As Needed

If Bushings (items 27 & 28) are worn they must be replaced. Use part #A10255 (item 27) on all end shafts. Use part #A10727 (item 28) on input, output cluster and pinion shafts. Install bushings with a step driver and punch (see diagram).



Input Gear Shaft & Shift Housing Sub-Assembly

Apply a thin film of Lithium grease to the inside of the Shift Housing (item 40). Reassemble by compressing (2) Detent Balls (item 39) and Detent Spring (item 38) into hole in Input Gear Shaft (item 35). Then slide Shift Housing (item 40) onto the shaft, capturing the Detent Balls and Spring.



REPAIR PROCEDURES

Two Speed Leg Assembly

STEP 1

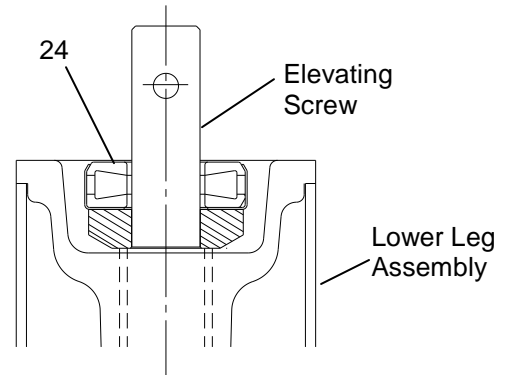
Attention: New thrust bearing (item 24) must be packed with grease before assembly.

***Advice:**

Fully extend the elevating screw to inspect for damage, corrosion or wear. Replace the Lower Leg Assembly if there are hard to extend spots or the head orbits when extending and retracting.

Replace the Lower Leg Assembly if any elevating screw threads are corroded, damaged or worn thin.

Coat the entire surface of the screw with a minimum of 4oz. (112 Grams) Lithium base 1-2% Moly EP-2 grease before continuing.



Warning: Do not use any lubricants containing Teflon

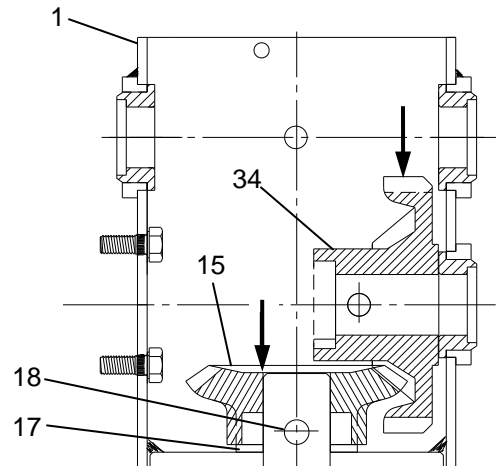
STEP 2

Now the Outer Housing (item 1) can be set on the lower leg assembly. Index the flange plate parallel to the pressed elevating nut stakes, also perpendicular to the sand shoe axle.

Install the Thrust Washer (item 17) and insert the Groove Pin (item 18).

Install Output Cluster Gear (item 34) and Bevel Gear (item 15) together.

Rotate the gears until the Bevel Gear (item 15) drops over the Grooved Pin (item 18) and the Output Cluster Gear (item 34) roll pin hole is facing up.



STEP 3

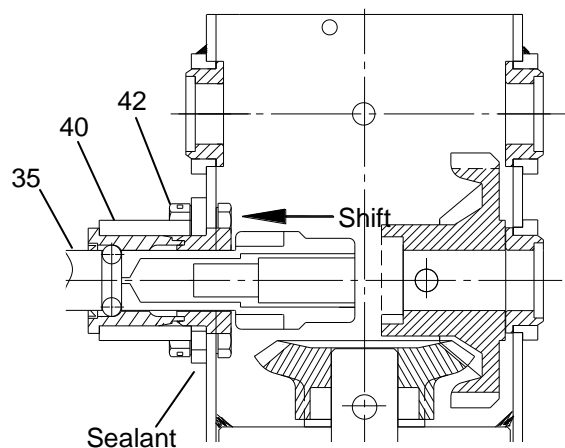
Apply silicone sealant to the face of the Shift Housing before installing.

Install the Input Gear Shaft (item 35) and the Shift Housing (item 40) as one unit.

Install (4) 5/16 locknuts (item 42) to secure the Shift Housing (item 40).

Shift the Input Gear Shaft (item 35) to the low gear position.

The right to alter specifications is reserved.



Page 11 of 13

REPAIR PROCEDURES

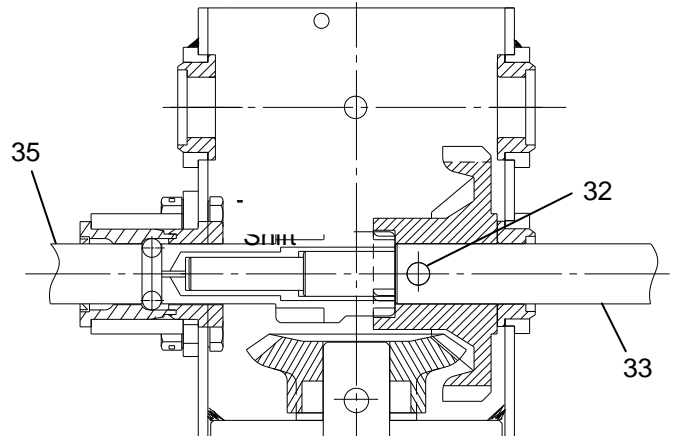
Two Speed Leg Assembly con't

STEP 4

Insert the Output Cluster Shaft (item 33). Align the roll pin hole with the hole in the Output Cluster Gear.

Drive in the 3/8" x 1-3/4" roll pin (item 32).

Insert the Cap Plug in outer housing closing the 1/2" dia. access hole.



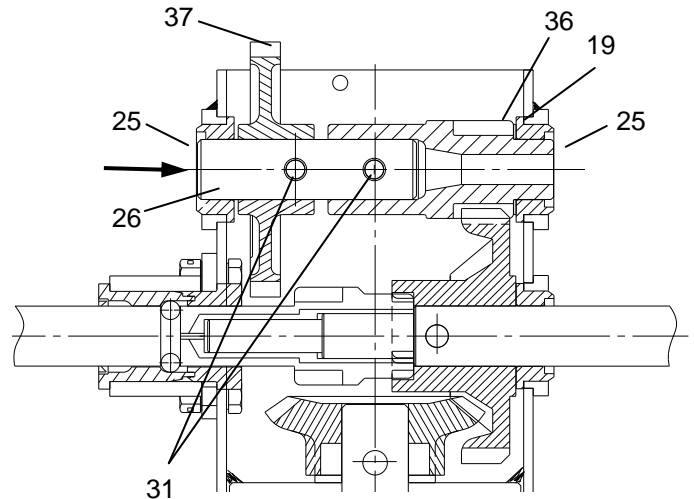
STEP 5

Place the Spacer Washer (item 19) against the output spur bushing. Insert the Output Spur Gear (item 36). Insert the Input Spur Gear (item 37).

Insert the Output Shaft (item 26) through the Bushing and the Input Spur Gear (item 37). Align the spiral pin holes.

Drive (2) spiral pins (item 31) into the Output Spur Gear (item 36) and into the Input Spur Gear (item 37).

Insert the (2) Shaft Caps (item 25) into the bushings. Seal each cap perimeter using RTV silicone.



STEP 6

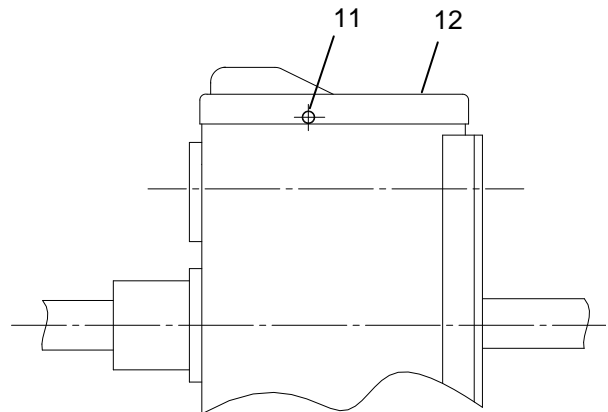
Install 20 oz. Lithium base 1-2% Moly EP-2 grease before continuing.

Warning: Do not use any lubricants containing Teflon

Important: The cover is sealed to the upper housing with a silicone sealant. Remove old sealant and grease. Use Dow Corning #700 or equivalent when replacing the cover.

Install the Cover (item 12).

The right to alter specifications is reserved.



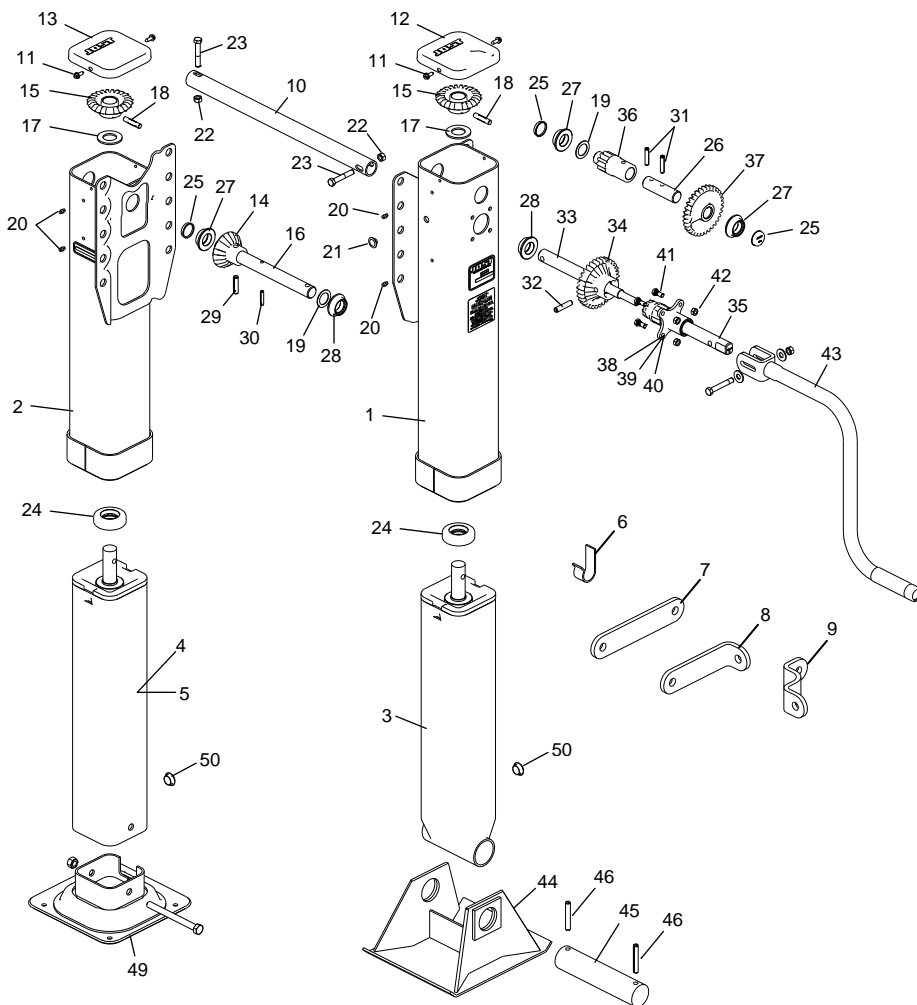
Parts List

5-YR Magnum Heavy Duty Assemblies

Item	Description		Outside Mount (H440)			Inside Mount (H441)		
			14" Travel	17" Travel	19" Travel	14" Travel	17" Travel	19" Travel
1	Upper Housing	Two-Speed (Drive Leg)	D11640.1	D11640.2	D11640.3	D11413.1	D11413.2	D11413.3
2	Upper Housing	One-Speed (Slave Leg)	D11641.1	D11641.2	D11641.3	D11414.1	D11414.2	D11414.3
3	Lower Leg Asm.	Standard (for Sand Shoe)	13101.10	13101.20	13101.30	13101.10	13101.20	13101.30
4	Lower Leg Asm.	10 x 10 Standard Cushion	13103.10	13103.20	13103.30	13103.10	13103.20	13103.30
5	Lower Leg Asm.	10 x 10 Low-Pro Cushion	13102.10	13102.20	13102.30	13102.10	13102.20	13102.30

10-YR Magnum Heavy Duty Assemblies

Item	Description		Outside Mount (H450)			Inside Mount (H451)		
			14" Travel	17" Travel	19" Travel	14" Travel	17" Travel	19" Travel
1	Upper Housing	Two-Speed (Drive Leg)	D11640.1	D11640.2	D11640.3	D11413.1	D11413.2	D11413.3
2	Upper Housing	One-Speed (Slave Leg)	D11641.1	D11641.2	D11641.3	D11414.1	D11414.2	D11414.3
3	Lower Leg Asm.	Standard (for Sand Shoe)	12867.10	12867.20	12867.30	12867.10	12867.20	12867.30
4	Lower Leg Asm.	10 x 10 Standard Cushion	13104.10	13104.20	13104.30	13104.10	13104.20	13104.30
5	Lower Leg Asm.	10 x 10 Low-Pro Cushion	12651.10	12651.20	12651.30	12651.10	12651.20	12651.30



Individual Components

Item	Description	Qty	Part No.
6	Crank Hanger	1	B10261
7	Brace Lug - Flat	2	C10262
8	Brace Lug - 90°	2	C10263
9	Brace Lug - W Standard	2	C10108
10	Cross Shaft	1	B10066
11	Cover Screw	4	A10059.1
12	Cover - Two-Speed	1	C10217
13	Cover - One-Speed	1	C10259
14	Pinion Gear - One-Speed	1	C10177
15	Bevel Gear	2	C10155
16	Pinion Shaft - One-Speed	1	B10130
17	Thrust Washer	2	A10102
18	Grooved Pin	2	A10052.3
19	Spacer Washer	2	A10218
20	Grease Fitting	4	A10040
21	Button Plug - Upper	1	A10500
22	Self-Locking Nut - 3/8-16	2	A10038.7
23	Cross Shaft Bolt - 3/8-16 x 2" Gr 5	2	A10037.1
24	Roller Bearing	2	A10033R
25	Shaft Cap	3	12113
26	Idler Shaft	1	A10212
27	Bushing (Standard)	3	A10255
28	Bushing w/Seal	2	A10727
29	Roll Pin - 3/8 x 1 1/2	1	A10054.3
30	Roll Pin 1/4" x 1 1/4"	1	A10054.6
31	Spiral Pin	2	A10260.1
32	Roll Pin - 3/8 x 1 3/4	1	A10054.7
33	Output Cluster Shaft	1	B10236
34	Output Cluster Gear	1	C10234
35	Input Gear Shaft	1	C10233
36	Output Spur Gear	1	C10078
37	Input Spur Gear	1	C10085
38	Detent Spring	1	A10049
39	Detent Ball	2	A10048
40	Shift Housing	1	B10229
41	Shift Housing Bolt	4	A10230
42	Self-Locking Nut - 5/16-18	4	A10038
43	Standard Crank with Hardware	1	C10592.2
44	Sand Shoe - 10 x 10 x 4 1/2 (T13)	2	C10619
	Sand Shoe - 10 x 10 x 1 5/8 (T18)	2	C11391
	Sand Shoe - 10 x 12 x 4 1/2 (T11)	2	C10612
	Sand Shoe - 10 x 12 x 2 (T30)	2	C11294
45	Solid Axle	2	C10619
46	Roll Pin 3/8 x 2 1/2	4	A10054.9
49	Removable Cushion Foot - 10 x 10	2	12497
50	Button Plug - Lower	2	12251

Shift Housing Assembly	Input Gear & Shift Housing Assembly
Includes Items 38, 39 & 40 above	Includes Items 35, 38, 39 & 40 above
Part Number - B10229S	Part Number - B10285

The right to alter specifications is reserved.

Page 13 of 13



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