

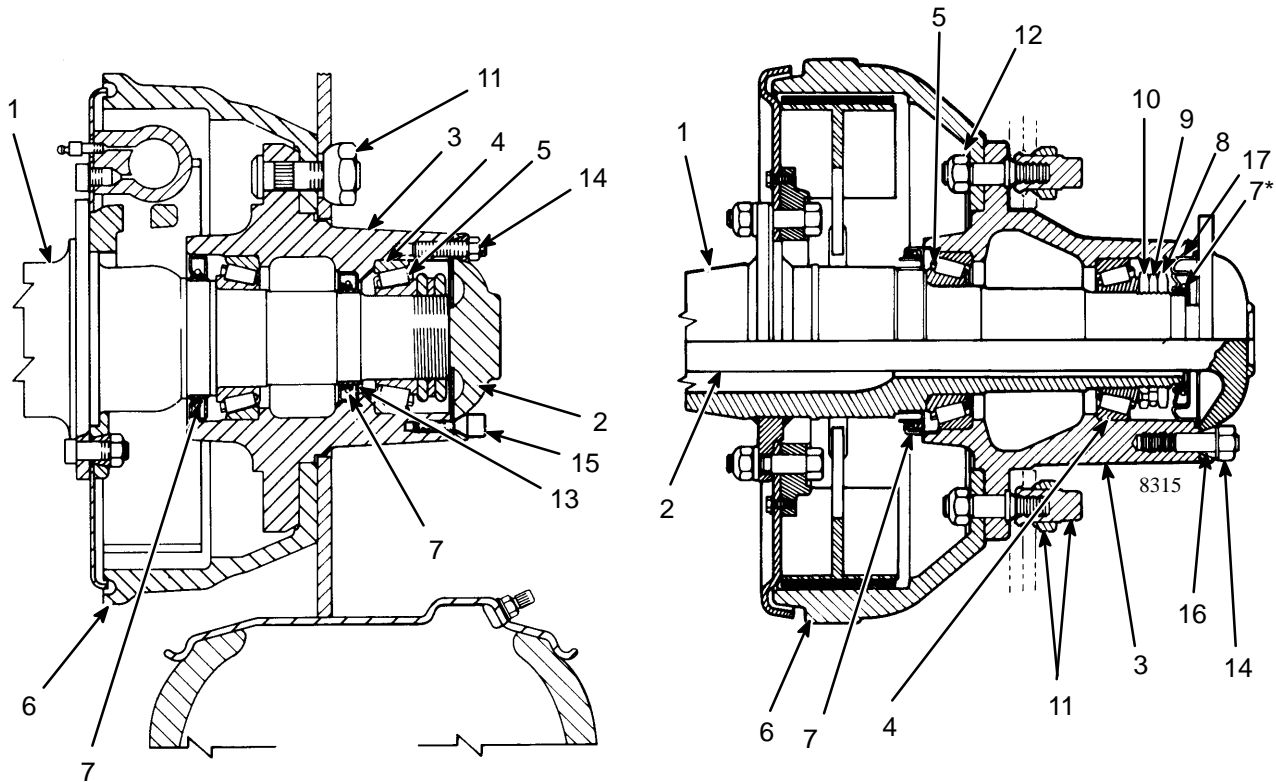
INTRODUCTION

GENERAL

The size of the drive axles, hubs and wheels vary with each series of lift trucks. The disassembly, assembly and service procedures for this type of axle are similar and are described in this section.

DESCRIPTION (See Figure 1.)

The direct drive axle has a housing, two axle shafts and two hubs. The rotation of the differential turns the axle shafts and the hubs. The hubs rotate on tapered roller bearings. The brake drums and wheels are installed on the hub.



TYPE 1 USED ON: H30-60H, H40-60J, H60-80C, H60-110E, P40-50A, J40-60A

TYPE 2 USED ON: H20-30E, S20-30A, S125-150A, H100-150F, H135-155XL, H150-275H*, P60-80A, P150-200B, KE

- | | | | |
|-----------------|-----------------|--------------------|----------------------|
| 1. AXLE HOUSING | 5. BEARING CONE | 9. LOCK PLATE | 13. WEAR SLEEVE |
| 2. AXLE SHAFT | 6. BRAKE DRUM | 10. ADJUSTMENT NUT | 14. AXLE SHAFT NUT |
| 3. HUB | 7. SEAL | 11. WHEEL NUT | 15. TAPERED CAPSCREW |
| 4. BEARING CUP | 8. LOCK NUT | 12. BRAKE DRUM NUT | 16. TAPERED SLEEVE |
| | | | 17. O-RING |

* This seal is not used on the H150-275H or P150-200B units starting with the following serial numbers: C7A-2267B, C7P-4034B, C7S-1632C

Figure 1. DRIVE AXLE

REPAIRS

WARNING

Completely remove the air from the tire before removing the tire and wheel from lift truck. Air pressure in the tires can cause the tire and wheel parts to explode causing serious injury or death.

NOTE: Late model lift trucks use tapered capscrews (15) instead of tapered sleeves and nuts on the end of the axle shafts.

It is usually not necessary to remove the axle housing from the frame for repairs to the drive axle.

The axle can be removed without removing the wheels and hubs.

The axle housing is normally removed during transmission removal. See the transmission sections if the axle housing needs removing.

DISASSEMBLY (See Figure 2.)

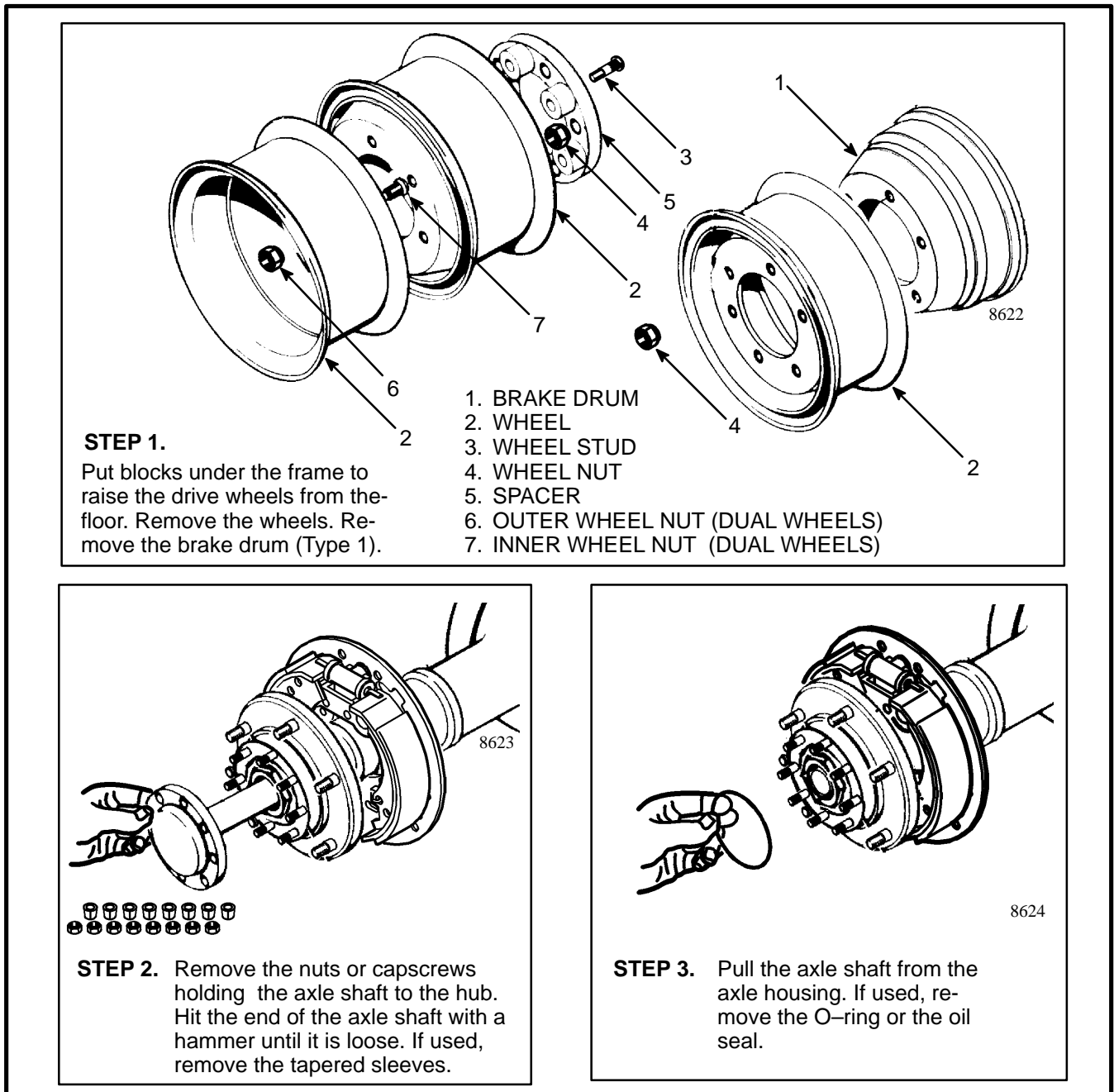


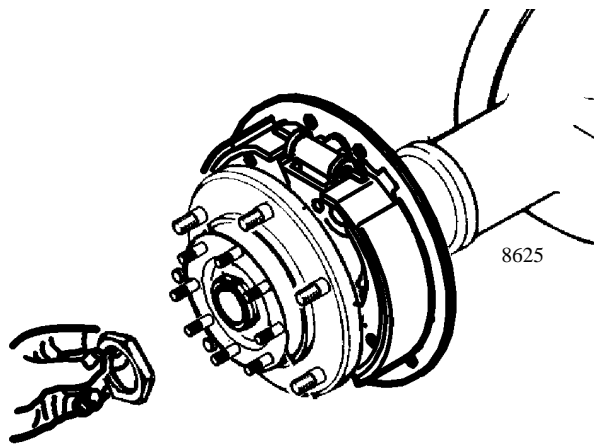
Figure 2. DISASSEMBLY OF THE DRIVE AXLE (1 of 2) (TYPE 1 SHOWN)

(More Content includes: Brake system, Capacities, and specifications, Frame, Hydraulic, System, Industrial battery, Main control, Valve, Mast repair, Fasteners, Schematics diagrams, Steering axle, Steering system, Wire harness repair And more)

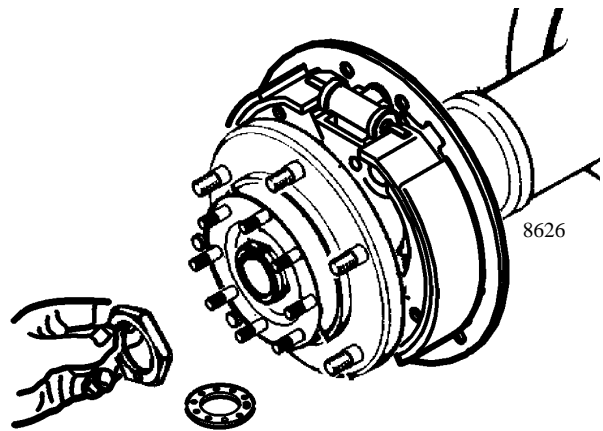
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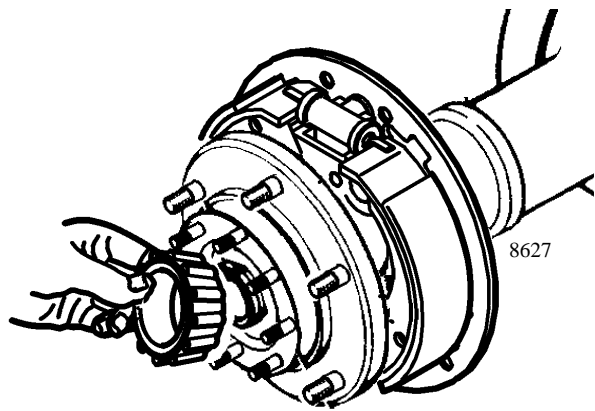
**Thank you very
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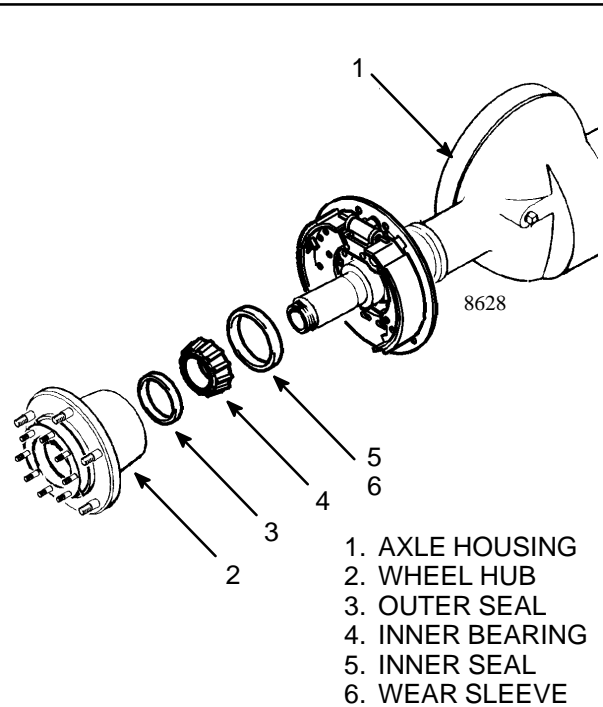
STEP 4. Remove the wheel bearing locknut. 1000–1500 kg (2000–3000 lb) capacity lift trucks use only a lock plate and adjustment nut.



STEP 5. Remove the lock plate and the adjustment nut.



STEP 6. Remove the hub and bearings from the housing. Remove the brake drum (Type 2).



STEP 7. Remove the seals and bearings from the hub.

Figure 2. DISASSEMBLY OF THE DRIVE AXLE (2 of 2) (TYPE 1 SHOWN)

CLEANING

WARNING

Cleaning solvents can be flammable and toxic, and can cause skin irritation. When using cleaning solvents, always follow the recommendations of the manufacturer.

Clean the parts of the axle with solvent. Dry the parts with compressed air.

INSPECTION

Inspect all machined surfaces and bearings for wear and damage.

ASSEMBLY (See Figure 3.)

WARNING

Add air to the tires only in a safety cage. Inspect

safety cage for damage before use. When adding air, use a clip on chuck with enough hose to let the operator stand clear of the cage.

NOTE: Some hubs (See Figure 1) (Type 1) have an outer oil seal between the inner and outer bearings. For this type of hub, the inner bearings are lubricated with grease. The outer bearings are lubricated with oil from the differential. Other hubs, (Type 2) have an outer oil seal outside of both the inner and outer bearings. For this type of hub, both sets of bearings are lubricated with grease.

Some hubs have only an inner oil seal (some Type 2). Both bearings are lubricated with oil from the differential.

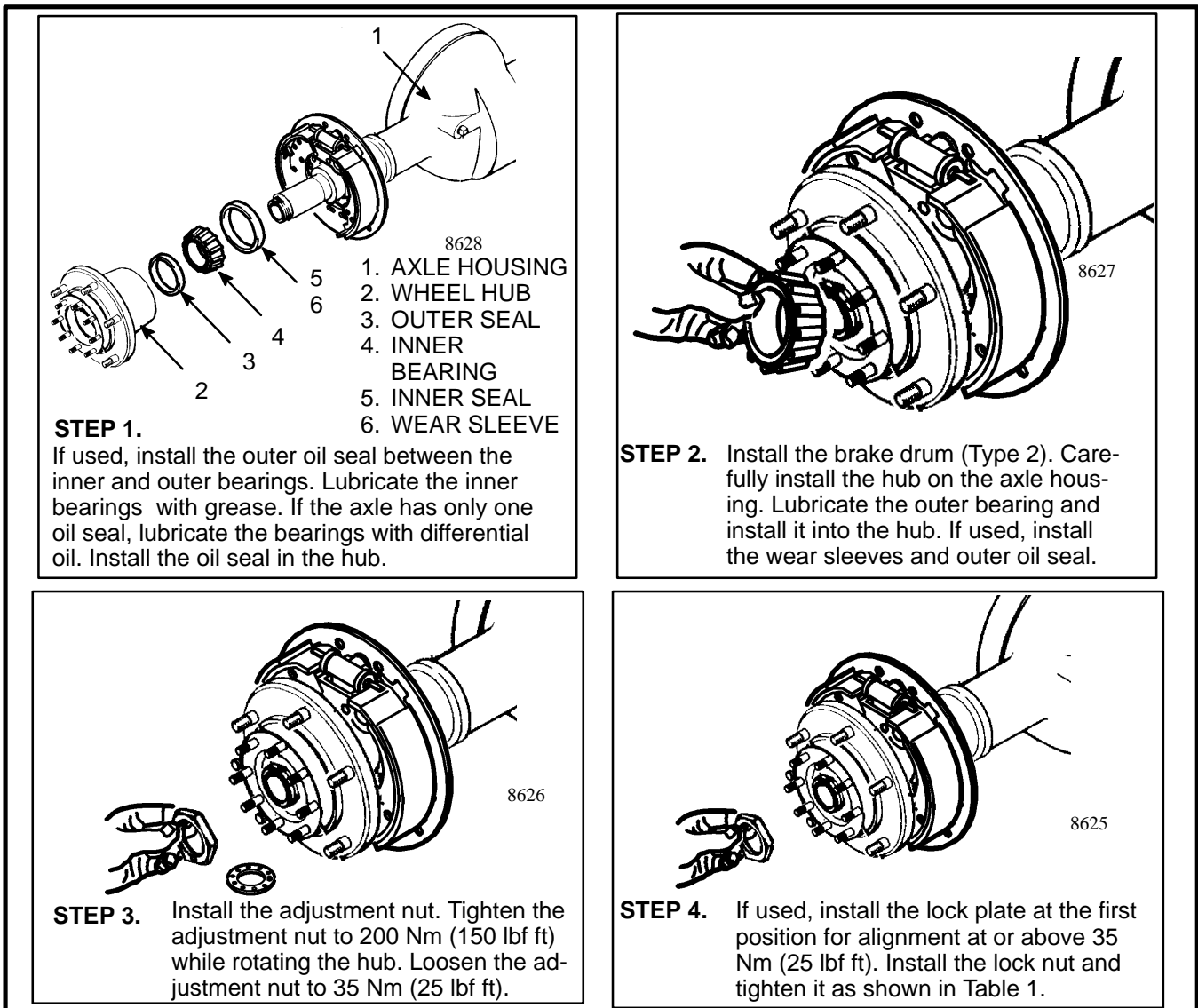
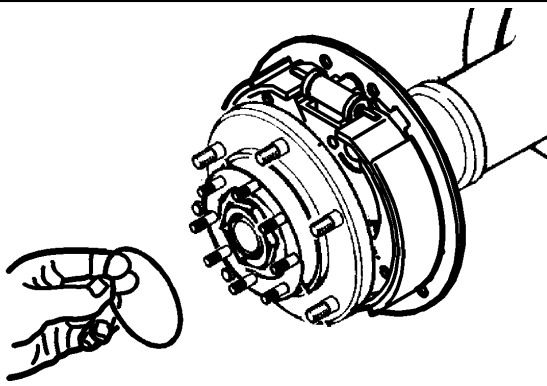
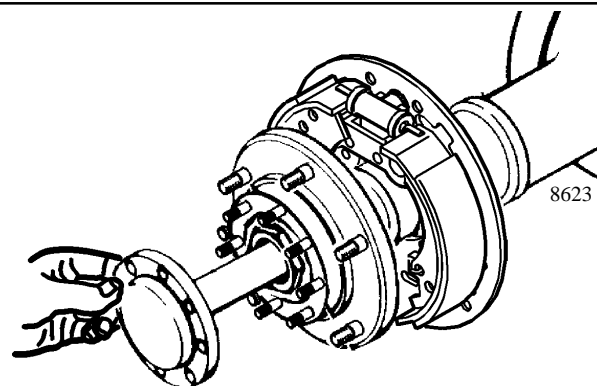


Figure 3. ASSEMBLY OF THE DRIVE AXLE (1 of 2) (TYPE 1 SHOWN)

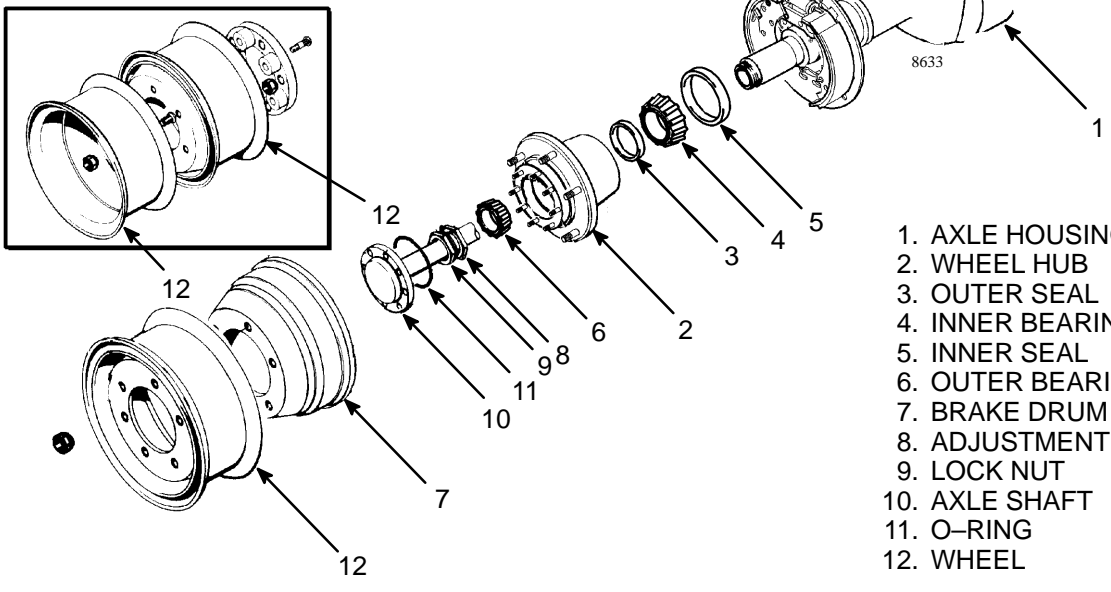


STEP 5. If used, install the oil seal and wear sleeve in the end of the hub. Use grease to hold the O-ring in position. For axles that do not use an oil seal, use a sealant. Apply the sealant to the axle flange.



STEP 6. Install the axle shaft. Install the tapered sleeves, nuts or tapered capscrews in the hub. Tighten the nuts or tapered capscrews as shown in Table 1.

STEP 7. Install the brake drum (Type 1). Install the wheels. Tighten the wheel nuts to the specifications shown in Table 1. Re-torque wheel nuts after 2-5 hours of operation. Check the oil level in the axle housing.



- 1. AXLE HOUSING
- 2. WHEEL HUB
- 3. OUTER SEAL
- 4. INNER BEARING
- 5. INNER SEAL
- 6. OUTER BEARING
- 7. BRAKE DRUM
- 8. ADJUSTMENT NUT
- 9. LOCK NUT
- 10. AXLE SHAFT
- 11. O-RING
- 12. WHEEL

Figure 3. ASSEMBLY OF THE DRIVE AXLE (2 of 2) (TYPE 1 SHOWN)

TABLE 1. TORQUE SPECIFICATIONS

UNIT	AXLE HOUSING TO FRAME NUTS		BRAKE DRUM NUTS		AXLE LOCK NUT		AXLE SHAFT NUTS OR CAPSCREWS		WHEEL NUTS	
	Nm	lbf ft	Nm	lbf ft	Nm	lbf ft	Nm	lbf ft	Nm	lbf ft
E20-30B/BH	220	160	-	-	Lockplate		-	-	200	150
H20-30E	95	70	-	-	Lockplate		80	60	240-300	175-225
S20-30A	95	70	-	-	Lockplate		80	60	240-300	175-225
H30-60H	60**	80**	-	-	135	100	80	60	610-680	450-500
H40-50J, 60JS	60**	80**	-	-	135	100	80	60	610-680	450-500
J40-60A J50-60AS	200-225 Top 475-540 Bottom	150-165 350-400	-	-	135	100	80	60	610-680	450-500
P40-50A	-	-	-	-	135	100	80	60	610-680	450-500
P60-80A	-	-	300-325	220-240	135	100	165	120	610-680	450-500
H60-80C	680	500	300-325	220-240	135	100	80	60	610-680	450-500
H60-110E	1000	740	-	-	135	100	165	120	680	500
H110-150F	610	450	300-325	220-240	135	100	165	120	610-680	450-500
H135-155XL	735	540	300-325	220-240	135	100	165	120	610-680	450-500
H150-250H P150-200B	400 610*	300 450*	220-240	160-180	340-540	250-400	120-150	90-110	Disc Type Wheels 610-670 450-500 Wheels w/ Rim Clamps 200 150	
KE	-	-	-	-	135	100	80	60	610-680	450-500
S125-150A	970	715	300-325	220-240	135	100	160	120	610-680	450-500
<p>* After S/N C7D1710E and C7N1521E.</p> <p>** The axle housing on these units must be free to rotate in the axle mounts. If, after installation, it does not move, add shim(s) between the frame mount and the hanger cap.</p>					<p>TYPICAL NUT TIGHTENING SEQUENCE</p> <p>Use a sequence as shown in the example when tightening the wheel nuts. Do not use any lubricant on the studs or nuts.</p>					

TROUBLESHOOTING		
PROBLEM	CAUSE	CORRECTIVE ACTION
The lift truck will not move.	The axle shaft(s) is broken.	Replace axle shaft(s)
	The axle shaft to hub studs are broken.	Replace the studs.
The axle has leaks.	The hub seals are worn or damaged.	Replace the hub seals.