

CLD
CYCLICAL LEVER DRIVE
(9000 WHEELCHAIRS)



WARNING

DO NOT INSTALL THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING THIS MANUAL AND THE 9000 WHEELCHAIR OWNER'S MANUAL (PART NUMBER 1056953) AND SERVICE MANUAL (PART NUMBER 1076155) . IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS, AND INSTRUCTIONS, CONTACT A HEALTHCARE PROFESSIONAL, DEALER OR TECHNICAL PERSONNEL IF APPLICABLE BEFORE ATTEMPTING TO USE THIS EQUIPMENT - OTHERWISE INJURY OR DAMAGE MAY RESULT.

THE PROCEDURES IN THIS MANUAL MUST BE PERFORMED BY A QUALIFIED TECHNICIAN.

SAVE THESE INSTRUCTIONS

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SAFETY SUMMARY

NOTE: Refer to the 9000 Wheelchair Owner's Manual, Part Number 1056953 and Service Manual, Part Number 1076155 for additional safety information and overall maintenance requirements.

STABILITY WARNINGS

CLD installation may require changes to the current configuration of the wheelchair with respect to rear wheel and caster size. The back height, front caster size and/or position, seat-to-floor angle, position and/or size of the rear wheels, correct anti-tipper as well as the end user's disability or end user's physical condition and capabilities directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the ten (10) may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

Seat-to-floor heights have specific positions depending on rear wheel size, rear wheel position, front caster position and seat-to-floor angle. These adjustments **MUST** be performed by a qualified technician.

If changing the seat-to-floor height with or without changing the rear wheel size, the correct anti-tippers **MUST** be ordered to maintain a 1-1/2 to 2-inch ground clearance. Refer to the 9000 wheelchair owner's manual, part number 1056953.

INSTALLATION WARNINGS

CLD installation **MUST** be performed on the side of the wheelchair specified when ordered.

GENERAL WARNINGS

After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

When installing the CLD onto 9000 wheelchairs with specific measurements, the wheelchairs **MUST** be equipped with the space saver arms. Refer to the chart on page 6 for specific measurements.

DO NOT operate the CLD on hills or inclines.

The weight limitation for the CLD is 250 lbs.

MAINTENANCE

EVERY THREE (3) MONTHS

Place a drop of oil on all linkage points (3-in-1 oil[®] or equivalent).

Inspect and tighten bolts if loosened.

Clean chrome components with a soft cloth.

ANNUALLY

The CLD should be inspected by a qualified technician.

This Procedure includes the following:

Assemblies

Tools Needed

NOTE: The procedures in this manual should be performed on the specific side of the wheelchair the CLD was ordered for.

ASSEMBLIES (FIGURE 1)

The Cyclical Lever Device (CLD) consists of several assemblies shown in FIGURE 1 and described on this page. For proper installation follow INSTALLING CLD ON EXISTING WHEELCHAIR in PROCEDURES 1-6 and perform PROCEDURE 7.

The following five (5) items are included in each kit. Each numbered line represents a complete assembly;

Wheelchairs Built **BEFORE** 09/05/00 -

1. Hub Attachment, Transmission and Wheel Lock
2. Drive Arm Assembly, Support Bracket, and Steering Link
3. Drive Arm
4. Fork Assembly
5. Front Rigging Release Handle

Wheelchairs Built **AFTER** 09/05/00

1. Transmission and Wheel Lock
2. Drive Arm Assembly, Support Bracket and Steering Link
3. Upper Drive Arm
4. Fork Assembly
5. Rear Wheel Mounting Hardware

TOOLS NEEDED

NOTE: Have the following tools available.

Torque Wrench

7/16-inch Socket or Box Wrench

7/16-inch Open End Wrench

1/2-inch Socket or Box Wrench

11/16-inch Socket or Box Wrench

3/4-inch Socket or Box Wrench

5/32 Hex Key

3/16 Hex Key

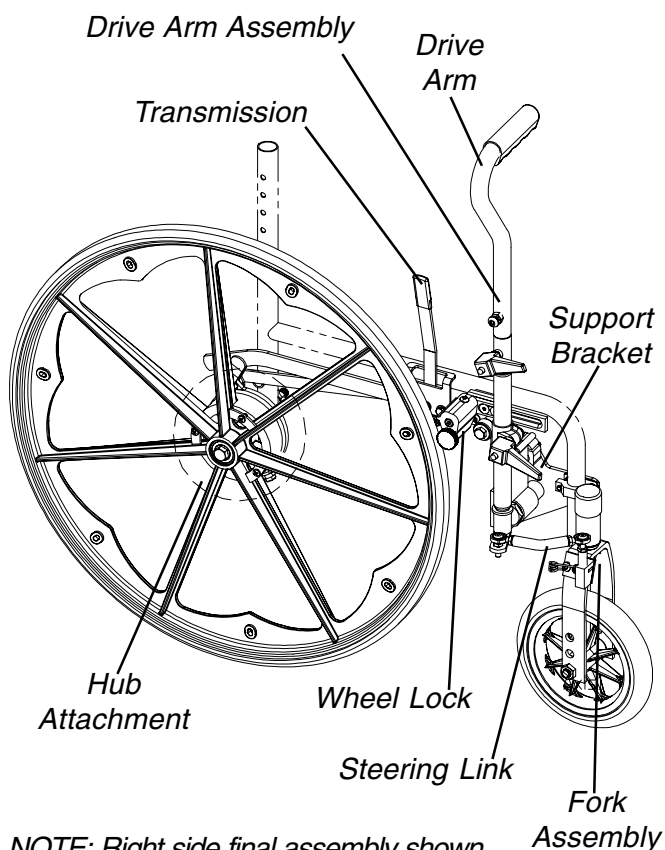
No. 1 Phillips Screw Driver

*M13 Socket or Box Wrench - Wheelchairs Built **BEFORE** 09/05/00 **ONLY**

6MM Hex Key - Wheelchairs Built **BEFORE** 09/05/00 **ONLY**

*And adjustable wrench can be used in place of the M13 wrench.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

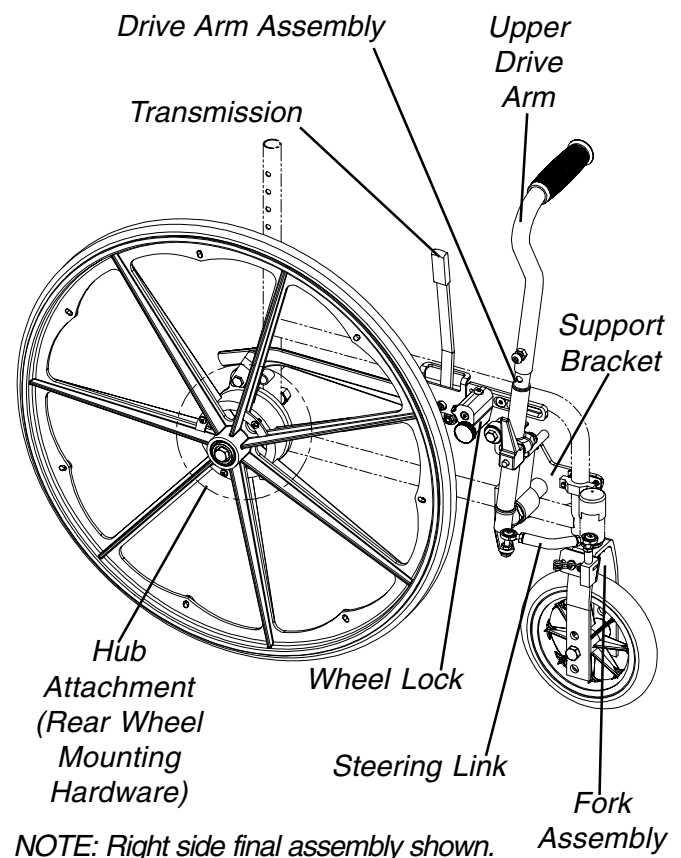


FIGURE 1 - ASSEMBLIES

This Procedure includes the following:

Installing CLD on Existing Wheelchair

Replacing CLD Fork Assembly

Removing Fork and Caster

Mounting Caster to CLD Fork Assembly

Installing CLD Fork Assembly onto Wheelchair

WARNING

After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD ON EXISTING WHEELCHAIR

1. Remove the EXISTING fork and caster. Refer to REMOVING FORK AND CASTER in this procedure of the manual.
2. Mount the EXISTING caster onto the NEW CLD fork assembly. Refer to MOUNTING CASTER TO CLD FORK ASSEMBLY in this procedure of the manual.
3. Install the NEW CLD fork assembly (with the EXISTING caster) onto the wheelchair. Refer to INSTALLING CLD FORK ASSEMBLY ONTO WHEELCHAIR in this procedure of the manual.

REPLACING CLD FORK ASSEMBLY

1. Removing the EXISTING CLD fork and caster. Refer to REMOVING FORK AND CASTER in this procedure of the manual.
2. Mount the EXISTING caster onto the NEW CLD Fork Assembly. Refer to MOUNTING CASTER TO CLD FORK ASSEMBLY in this procedure of the manual.
3. Install the NEW CLD fork assembly (with the EXISTING caster) onto the wheelchair. Refer to INSTALLING CLD FORK ASSEMBLY ONTO WHEELCHAIR in this procedure of the manual.

REMOVING FORK AND CASTER (FIGURE 1)

Removing Existing Fork

1. Remove the dust cover.
2. Remove locknut that secures fork to caster headtube.
3. Drop front caster and fork out of caster headtube.
4. Remove the caster from the fork. Refer to REMOVING CASTER in this procedure of the Owner's Manual.

Removing CLD Fork

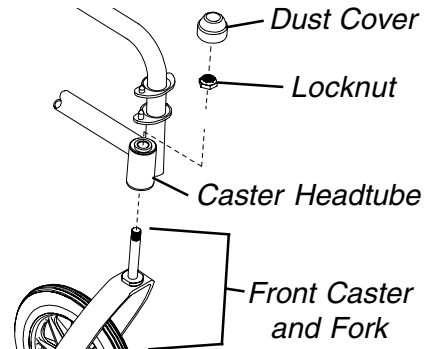
1. Remove the caster journal cap.
2. Remove the hex nut securing the fork to the caster headtube.
3. Drop the caster and fork out of the caster headtube.
4. Remove the caster from the fork. Refer to REMOVING CASTER in this procedure of the Owner's Manual.

Removing Caster

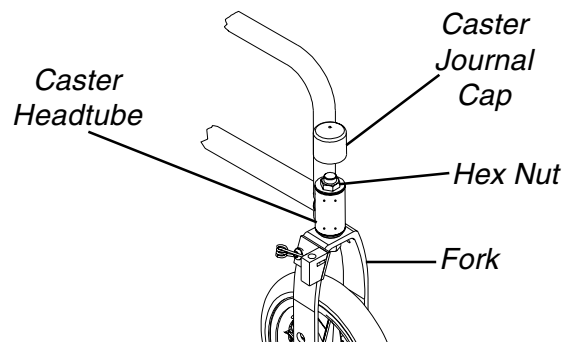
1. Remove the hex screw, washers and locknut securing the caster to the fork.

NOTE: Save the hex screw, washers and locknut for installation on NEW fork.

REMOVING EXISTING FORK



REMOVING CLD FORK



REMOVING CASTER

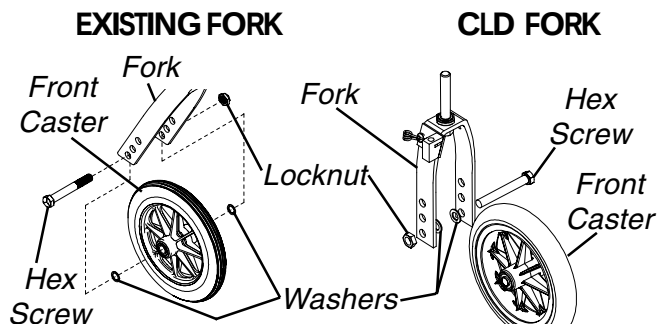


FIGURE 1 - REMOVING FORK AND CASTER

MOUNTING CASTER TO CLD FORK ASSEMBLY (FIGURE 2)

WARNING

If not changing the wheelchair's current configuration (seat angle, caster size or seat-to-floor height), refer to the chart below to determine the caster and/or rear wheel mounting positions.

If changing the wheelchair's current configuration (seat angle, caster size or seat-to-floor height), refer to the 9000 Wheelchair Service Manual, Part Number 1076155.

When installing the CLD onto 9000 wheelchairs with specific measurements, the wheelchairs **MUST** be equipped with the space saver arms. Refer to the chart below for specific measurements.

1. Refer to the chart below to determine which mounting position should be used.
2. Secure the caster to the CLD fork assembly in the mounting position determined in STEP 1 with the hex head bolt, washers and the hex nut as shown in FIGURE 2. Tighten securely.

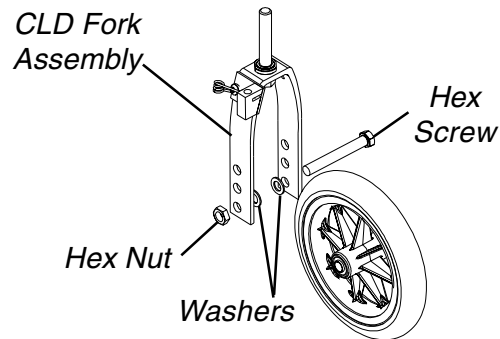


FIGURE 2 - MOUNTING CASTER TO CLD FORK ASSEMBLY

9000 WHEELCHAIRS				
Caster Size	Seat-to-floor	Caster Mounting Position	Rear Wheel Size	Rear Wheel Position
6	15.5	Top	20	*Top
6	16.5	Middle	22	*Top
6	17.5	Bottom	24	*Top
6	17.5	Bottom	20	Bottom
8	17.5	Top	20	Bottom
8	17.5	Top	24	*Top
8	18.5	Middle	22	Bottom
8	19.5	Bottom	24	Bottom

*Space Saver Arms required for 9000 wheelchairs.

NOTE: Measurements in the chart are in inches.

INSTALLING CLD FORK ASSEMBLY ONTO WHEELCHAIR (FIGURE 3)

1. Remove the hex nut from the CLD fork stem.
2. Insert the CLD fork stem into the caster headtube.
3. Secure the CLD fork assembly to the caster headtube with the hex nut.

NOTE: DO NOT overtighten the hex nut. The CLD fork should turn freely with no side to side play.

4. Install the caster journal cap onto the caster headtube.

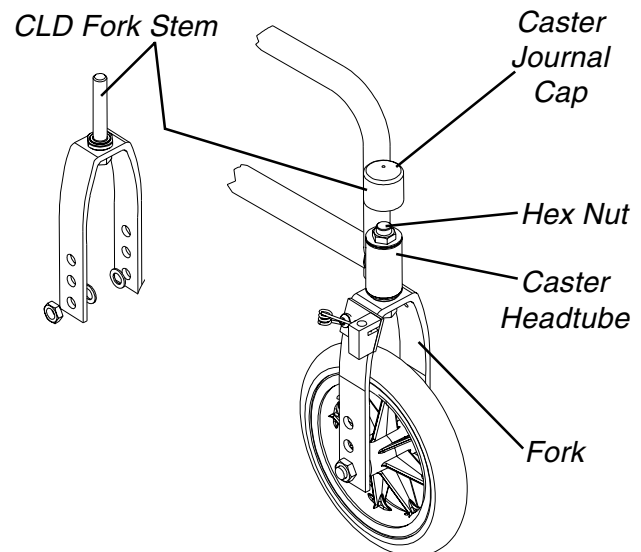


FIGURE 3 - INSTALLING CLD FORK ASSEMBLY ONTO WHEELCHAIR

This procedure includes the following:

Installing CLD on Existing Wheelchair
Replacing the Hub Attachment
Replacing the Transmission
Removing Existing Wheel Lock
Removing the Existing Rear Wheel
Installing/Removing Rear Wheel to/from
Transmission Rear Hub
Installing/Removing the Hub Support Plates
Installing/Removing the Axle Bolt

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD ON EXISTING WHEELCHAIR

1. Remove the EXISTING wheel lock. Refer to REMOVING EXISTING WHEEL LOCK in this procedure of the manual.
2. Remove the EXISTING rear wheel. Refer to REMOVING THE EXISTING REAR WHEEL in this procedure of the manual.
3. Install the EXISTING rear wheel onto the transmission rear hub. Refer to INSTALLING/REMOVING REAR WHEEL TO/FROM THE TRANSMISSION REAR HUB in this procedure of the manual.
4. Install the hub support plates onto the EXISTING rear wheel/transmission rear hub. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.
5. Install the EXISTING rear wheel/transmission rear hub BACK onto the wheelchair. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.

REPLACING THE HUB ATTACHMENT

NOTE: The hub attachment consists of the hub support plates and the axle bolt.

1. Remove the EXISTING hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.
2. Remove the EXISTING axle bolt. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.
3. Install the NEW axle bolt. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.

4. Install the NEW hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.

REPLACING THE TRANSMISSION

1. Remove the EXISTING drive arm assembly from the transmission rear hub. Refer to INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION LEVER in PROCEDURE 4 of the manual.
2. Remove the EXISTING hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.
3. Remove the EXISTING axle bolt. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.
4. Remove the EXISTING rear wheel from the transmission rear hub. Refer to INSTALLING/REMOVING REAR WHEEL TO/FROM THE TRANSMISSION REAR HUB in this procedure of the manual.
5. Remove the EXISTING wheel lock. Refer to INSTALLING/REMOVING CLD WHEEL LOCK TO/FROM TRANSMISSION in this procedure of the manual.
6. Install EXISTING or NEW wheel lock onto NEW rear transmission hub. Refer to INSTALLING/REMOVING CLD WHEEL LOCK TO/FROM TRANSMISSION in this procedure of the manual.
7. Reinstall the EXISTING rear wheel onto the NEW transmission rear hub. Refer to INSTALLING/REMOVING REAR WHEEL TO/FROM THE TRANSMISSION REAR HUB in this procedure of the manual.
8. Reinstall the EXISTING hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.
9. Reinstall the EXISTING axle bolt. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.
10. Reinstall the EXISTING drive arm assembly onto the NEW transmission lever. Refer to INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION LEVER in PROCEDURE 4 of the manual.

REMOVING EXISTING WHEEL LOCK (FIGURE 1)

1. Remove the locknut and bolt securing the wheel lock to the wheelchair frame.
2. Remove the wheel lock from the wheelchair frame.

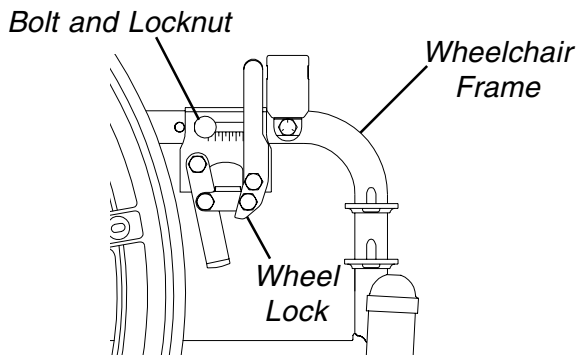


FIGURE 1 - REMOVING EXISTING WHEEL LOCK

REMOVING THE EXISTING REAR WHEEL

Permanent Axles (FIGURE 2)

1. Note the mounting position on the wheelchair frame for proper reinstallation of the rear wheel.
2. Remove dust cap (if applicable), mounting screw and locknut that secure the rear wheel and axle spacer (if applicable) to the wheelchair.

NOTE: Axle spacer is used only if wheelchair is equipped with conventional arms.

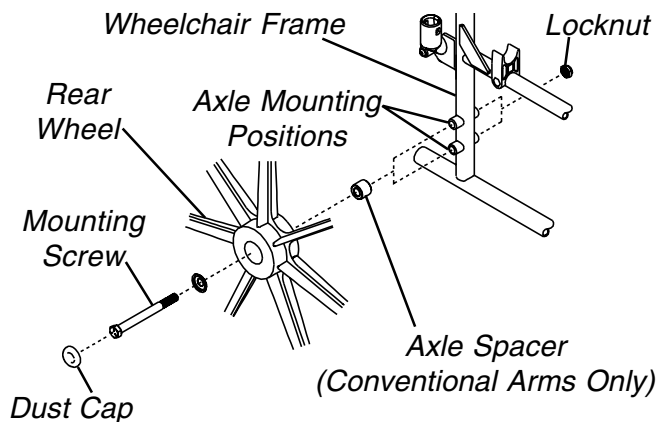


FIGURE 2 - REMOVING THE EXISTING REAR WHEEL - PERMANENT AXLES

Quick-Release Axles (FIGURE 3)

1. Push in the tip of the quick-release axle (with wheel) and pull the axle out through the opening in the center of the rear wheel and axle spacer.

NOTE: The axle spacer is used only if wheelchair is equipped with conventional arms.

2. Push in the tip of the quick release axle again and pull the axle out of the rear wheel.

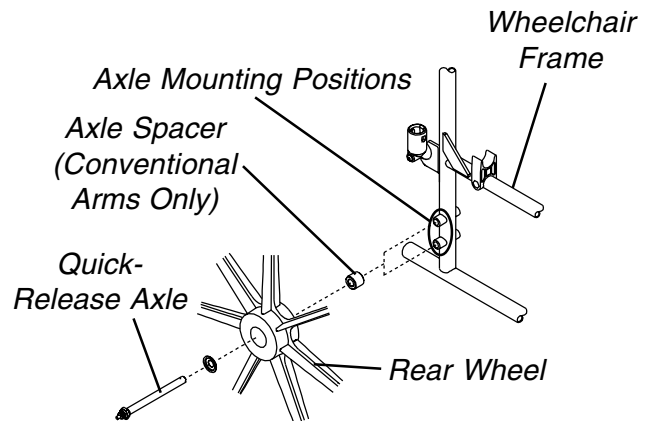


FIGURE 3 - REMOVING THE EXISTING REAR WHEEL - QUICK-RELEASE AXLES

INSTALLING/REMOVING REAR WHEEL TO/FROM TRANSMISSION REAR HUB (FIGURE 4)

Installing

1. Position rear wheel hub spokes in slots on transmission rear hub.
2. Slide NEW axle bolt through rear wheel bearing.
3. Install hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.

Removing

1. If necessary, remove the three (3) hub support plates. Refer to INSTALLING/REMOVING THE HUB SUPPORT PLATES in this procedure of the manual.
2. Remove axle bolt. Refer to INSTALLING/REMOVING THE AXLE BOLT in this procedure of the manual.
3. Pull the rear wheel hub spokes off transmission rear hub.

INSTALLING/REMOVING THE HUB SUPPORT PLATES (FIGURE 4)

Installing

1. Align mounting holes in transmission rear hub with holes in hub support plates.
2. Secure three (3) hub support plates to rear wheel hub with three (3) pan head screws. Tighten securely.

Removing

1. Remove the three (3) pan head screws securing the three (3) hub support plates to transmission rear hub.
2. Remove hub support plates.

INSTALLING/REMOVING THE AXLE BOLT (FIGURE 4)

Installing

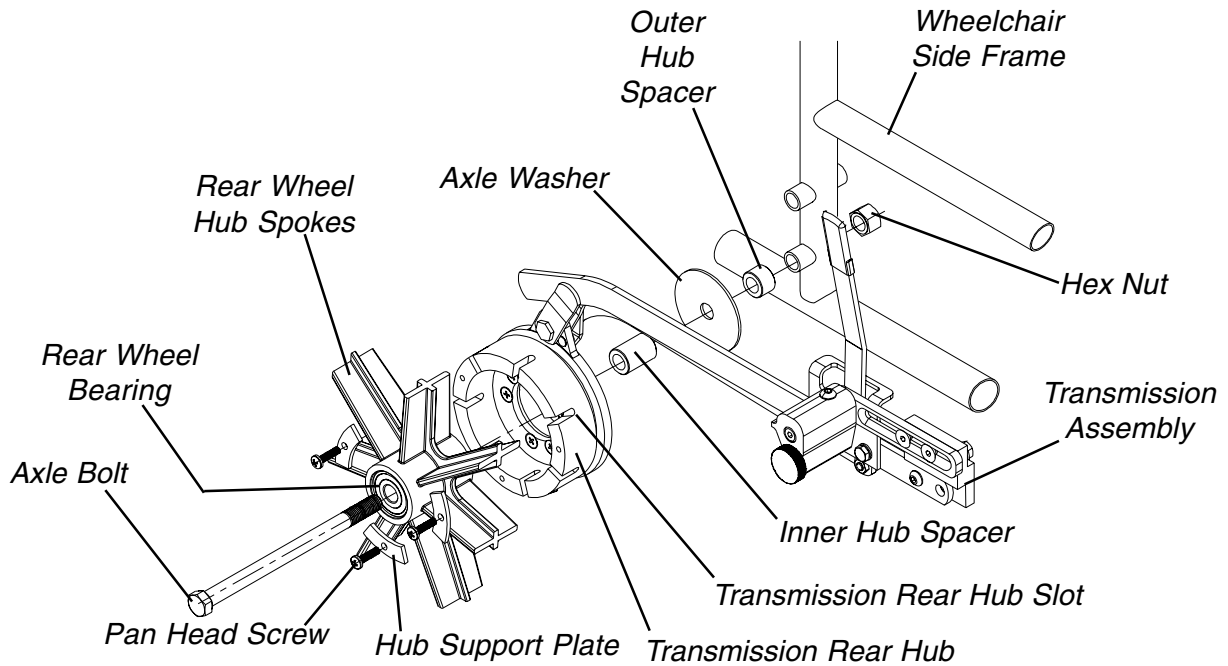
1. If necessary, install rear wheel onto transmission rear hub. Refer to INSTALLING/REMOVING THE REAR WHEEL TO/FROM THE TRANSMISSION REAR HUB in this procedure of the manual.
2. Insert axle bolt through rear wheel bearing.
3. Slide inner hub spacer, axle washer and outer hub spacer over axle bolt.

4. Secure axle bolt to wheelchair side frame with hex nut. Tighten securely.

Removing

1. Remove hex nut securing axle bolt to wheelchair side frame.
2. Remove axle bolt from wheelchair side frame.
3. Remove inner hub spacer, axle washer and outer hub spacer from axle bolt.
4. Remove axle bolt from rear wheel bearing.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

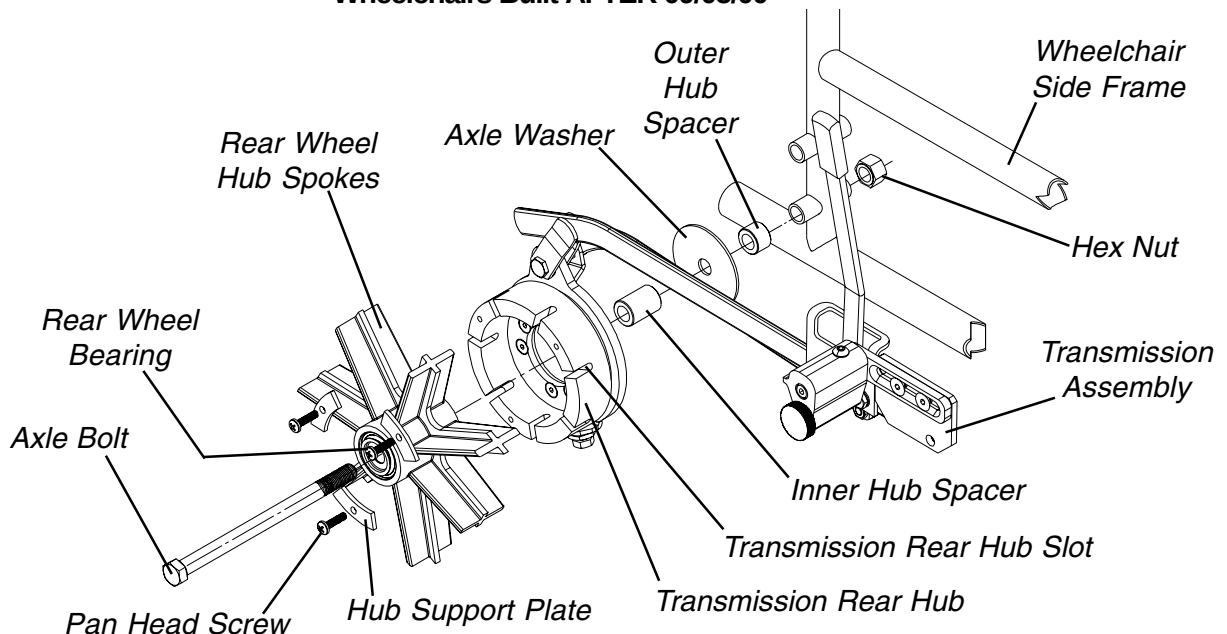


FIGURE 4 - INSTALLING/REMOVING REAR WHEEL TO/FROM TRANSMISSION REAR HUB - INSTALLING/REMOVING THE HUB SUPPORT PLATES - INSTALLING/REMOVING THE AXLE BOLT

This procedure includes the following:

Installing CLD on Existing Wheelchair

Replacing Support Bracket

Replacing Drive Arm Assembly

Mounting/Removing Support Bracket To/From Wheelchair

Removing/Installing Support Bracket To/From Drive Arm Assembly

Installing/Removing Drive Arm Assembly To/From Transmission

Installing/Removing Drive Arm

Adjusting Drive Arm Release Lever/Bracket Release Lever

Adjusting Drive Arm Height

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD ON EXISTING WHEELCHAIR

1. Mount the support bracket onto the wheelchair. Refer to MOUNTING/REMOVING SUPPORT BRACKET TO WHEELCHAIR in this procedure of the manual.
2. Install the drive arm assembly onto the transmission. Refer to INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION in this procedure of the manual.
3. Install the drive arm. Refer to INSTALLING/REMOVING DRIVE ARM in this procedure of the manual.
4. Adjust the drive arm release lever. Refer to ADJUSTING DRIVE ARM RELEASE LEVER in this procedure of the manual.
5. Adjust the drive arm height. Refer to ADJUSTING DRIVE ARM HEIGHT in this procedure of the manual.

REPLACING SUPPORT BRACKET

1. Remove the EXISTING support bracket from the wheelchair. Refer to MOUNTING/REMOVING SUPPORT BRACKET TO WHEELCHAIR in this procedure of the manual.
2. Remove the EXISTING support bracket from drive arm assembly. Refer to REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY in this procedure of the manual.
3. Install the NEW support bracket onto drive arm assembly. Refer to REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY in this procedure of the manual.

4. Install the NEW support bracket onto the wheelchair. Refer to MOUNTING/REMOVING SUPPORT BRACKET TO WHEELCHAIR in this procedure of the manual.

REPLACING DRIVE ARM ASSEMBLY

1. Remove the EXISTING support bracket. Perform STEPS 5-6 in REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY in this procedure of the manual.
2. Remove the EXISTING steering link. Refer to REMOVING/INSTALLING STEERING LINK in PROCEDURE 6 of the manual.
3. Remove the EXISTING drive arm assembly from the transmission. Refer to INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION in PROCEDURE 6 of the manual.
4. Reinstall the EXISTING steering link. Refer to REMOVING/INSTALLING STEERING LINK in PROCEDURE 6 of the manual.
5. Reinstall the EXISTING support bracket onto the NEW drive arm assembly. Perform STEPS 1, 2 AND 4 in REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY in this procedure of the manual.
6. Install the NEW drive arm assembly onto the transmission. Refer to INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION in this procedure of the manual.

MOUNTING/REMOVING SUPPORT BRACKET TO/FROM WHEELCHAIR (FIGURE 1)

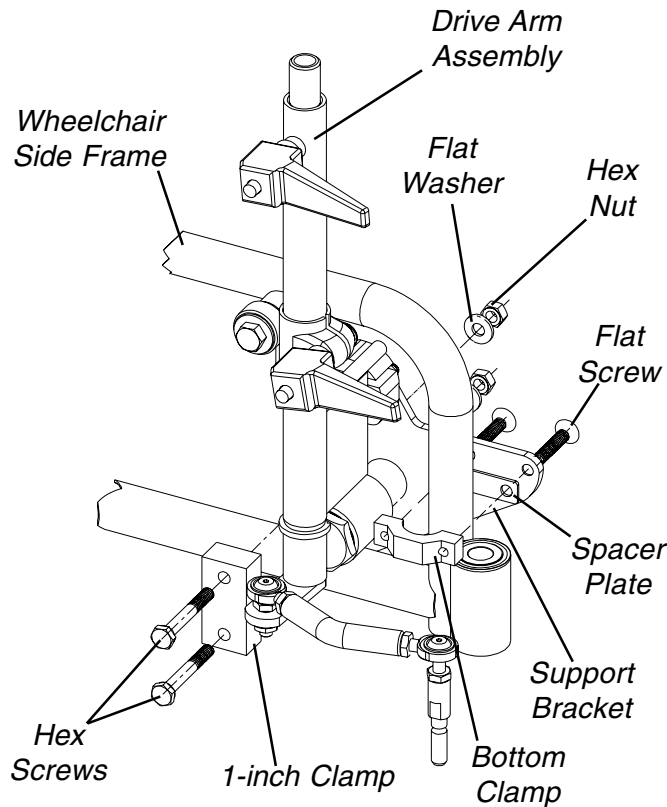
Mounting

1. Secure the bottom clamp and the spacer plate to the wheelchair and the support bracket with the two (2) flat screws as shown in FIGURE 1. Torque to 7 ft./lb. (84 in./lb.).
2. Secure the 1 inch clamp to the wheelchair and the support bracket with the two (2) hex screws, flat washers and hex nuts. Torque to 7 ft./lb. (84 in./lb.).

Removing

1. Remove the two (2) flat head screws securing the bottom clamp and the spacer plate to the wheelchair.
2. Remove the two (2) hex screws, washers and hex nuts securing the 1-inch clamp to the wheelchair.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

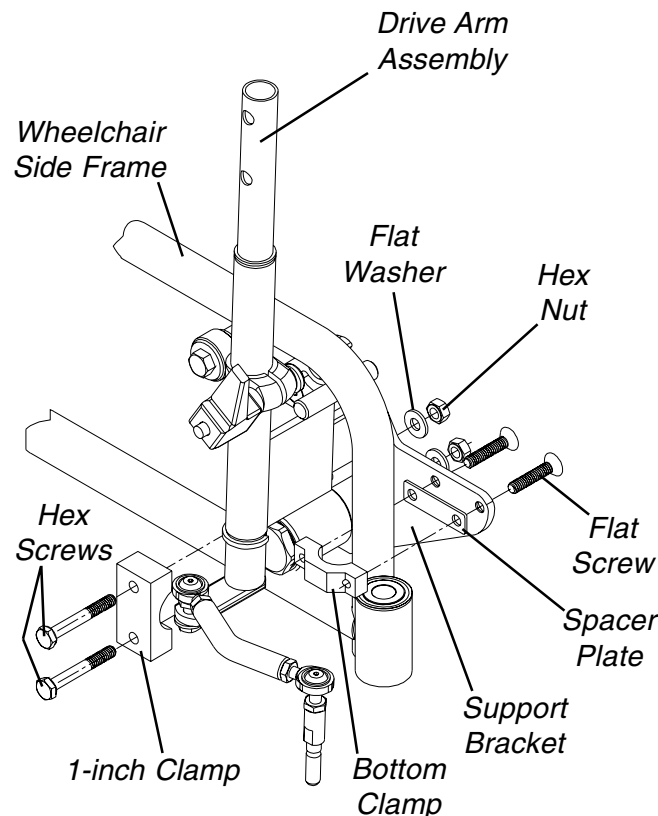


FIGURE 1 - MOUNTING/REMOVING SUPPORT BRACKET TO/FROM WHEELCHAIR

REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY (FIGURE 2)

Removing

1. Remove the locknut securing the drive arm assembly bolt to the support bracket.

NOTE: DO NOT remove the drive arm assembly bolt, spacer or washer from the drive arm assembly when removing it from the support bracket.

2. Remove the drive arm assembly, including the drive arm assembly bolt, spacer and washer from the support bracket.
3. Remove the support bracket.

Installing

1. Insert the drive arm assembly bolt, including the drive arm assembly bolt, spacer and washer, through the mounting hole in the support bracket.
2. Securely tighten locknut on drive arm assembly bolt.

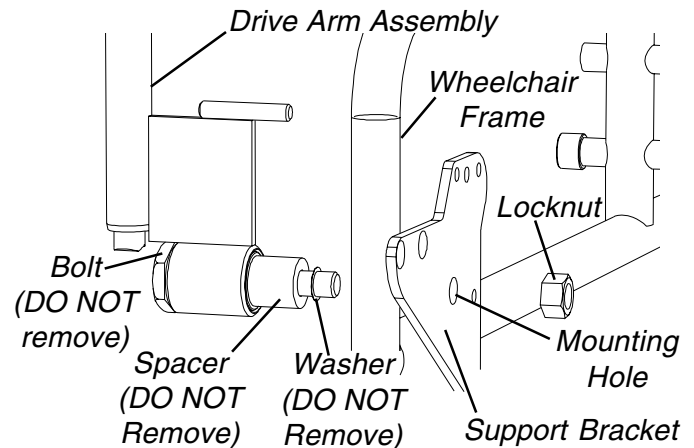


FIGURE 2 - REMOVING/INSTALLING SUPPORT BRACKET TO/FROM DRIVE ARM ASSEMBLY

INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION (FIGURE 3)

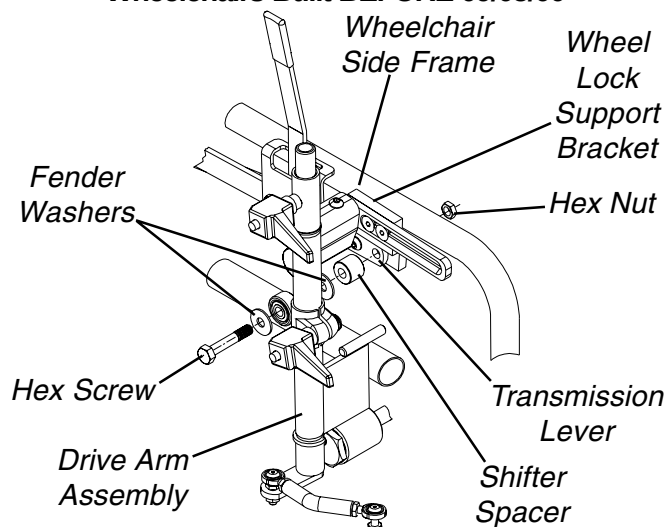
Installing

1. Secure the drive arm assembly to the transmission lever and wheel lock support bracket with hex screw, two (2) fender washers, shifter spacer and hex nut. Tighten securely.

Removing

1. Remove the hex nut securing the hex screw to the transmission lever.
2. Remove the hex screw, fender washers and shifter spacer from the transmission lever.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

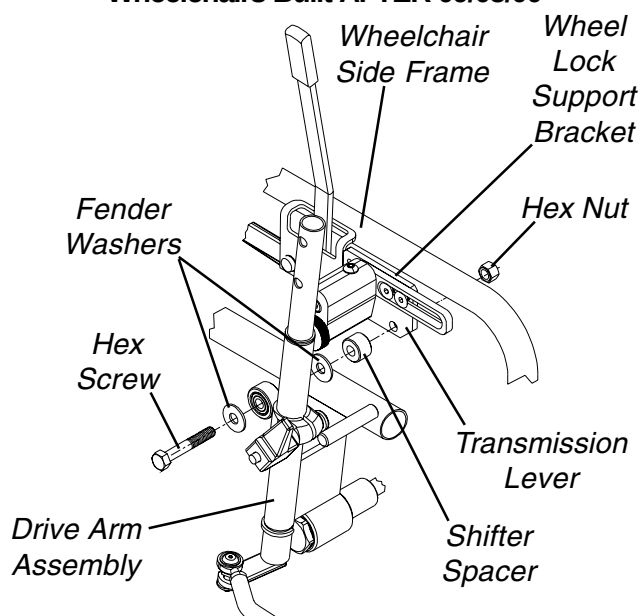


FIGURE 3 - INSTALLING/REMOVING DRIVE ARM ASSEMBLY TO/FROM TRANSMISSION

INSTALLING/REMOVING DRIVE ARM (FIGURE 4)

Installing

WHEELCHAIRS BUILT BEFORE 09/05/00.

1. Loosen, but DO NOT remove the drive arm release lever by rotating COUNTERCLOCKWISE.
2. Rotate the drive arm to align the flat surface on the drive arm with the drive arm release lever.
3. Insert the drive arm into the plunger extension tube.
4. Secure the drive arm to the plunger extension tube by turning the drive arm release lever CLOCKWISE. Tighten securely.

WHEELCHAIRS BUILT AFTER 09/05/00.

1. Remove the button screw located on the drive arm.
2. Align one (1) of the two (2) mounting holes in the plunger tube with the button screw mounting hole in the drive arm
3. Install the button screw into the drive arm and plunger tube mounting hole to secure the drive arm to the plunger tube. Tighten securely.

Removing

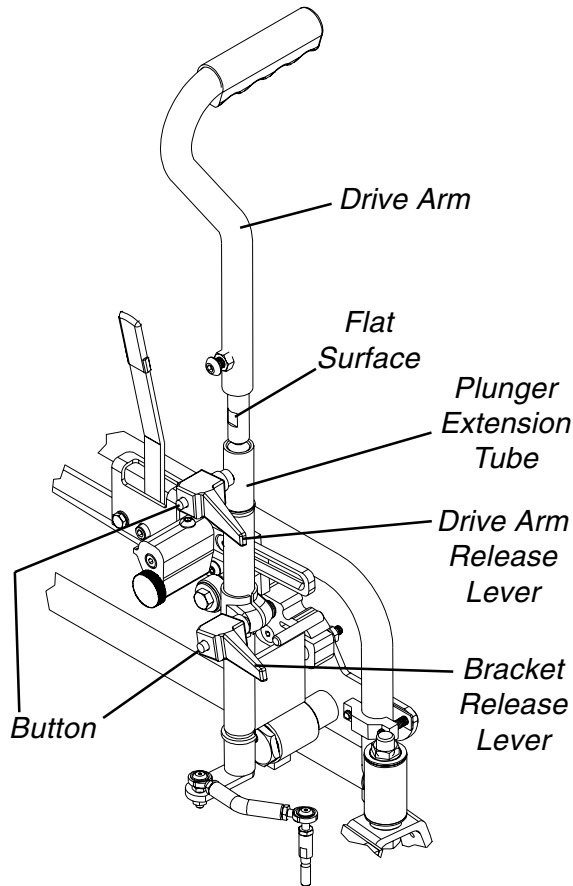
WHEELCHAIRS BUILT BEFORE 09/05/00.

1. Loosen, but DO NOT remove the drive arm release lever by rotating COUNTERCLOCKWISE.
2. Lift up on the drive arm to remove.

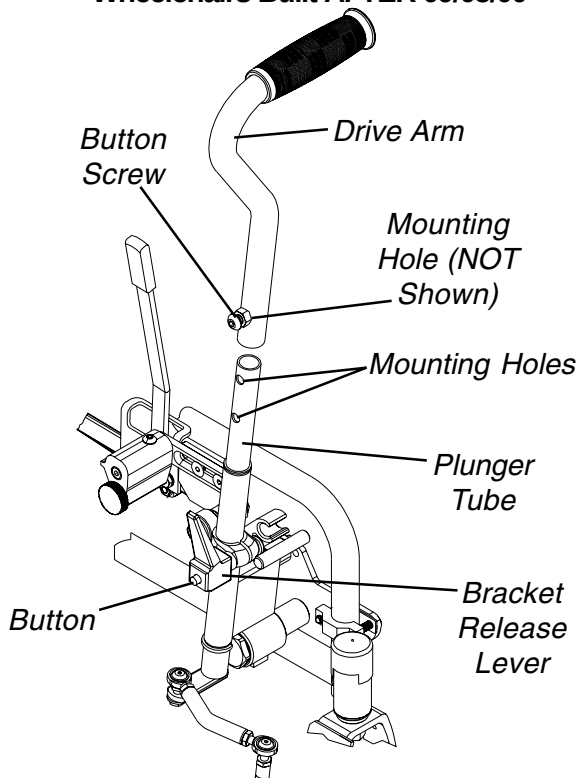
WHEELCHAIRS BUILT AFTER 09/05/00.

1. Remove the button screw located on the drive arm.
2. Lift up on the drive arm to remove.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00



ADJUSTING DRIVE ARM RELEASE LEVER/BRACKET RELEASE LEVER (FIGURE 4)

NOTE: Wheelchair built BEFORE 09/05/00 are equipped with a drive arm release lever AND a bracket release lever, wheelchairs built AFTER 09/05/00 are equipped with a bracket release lever ONLY.

NOTE: The drive arm release lever/ bracket release lever can be rotated to keep it from protruding from the drive arm.

1. Depress and hold the button on the drive arm release lever/bracket release lever.
2. Rotate the drive arm release lever/bracket release lever to the desired position.
3. Release the button to lock in place.

ADJUSTING DRIVE ARM HEIGHT (FIGURE 5)

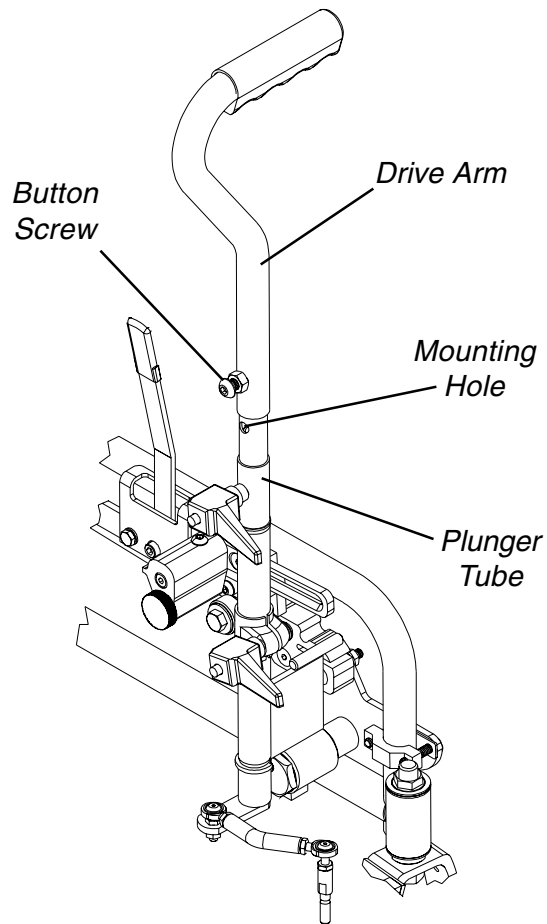
1. Remove the button screw located on the drive arm.
2. Lift up on the drive arm to expose the plunger tube.

NOTE: Wheelchairs built BEFORE 09/05/00 have three (3) mounting holes in the plunger tube and wheelchairs built AFTER 09/05/00 have two (2) mounting holes in the plunger tube.

3. Align one (1) of the two (2) (or three (3)) mounting holes in the plunger tube with the button screw mounting hole on the drive arm.
4. Install the button screw into the drive arm and plunger tube mounting hole to secure the drive arm to the plunger tube. Tighten securely.

**FIGURE 4 - INSTALLING/REMOVING DRIVE ARM
- ADJUSTING DRIVE ARM RELEASE LEVER/
BRACKET RELEASE LEVER**

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

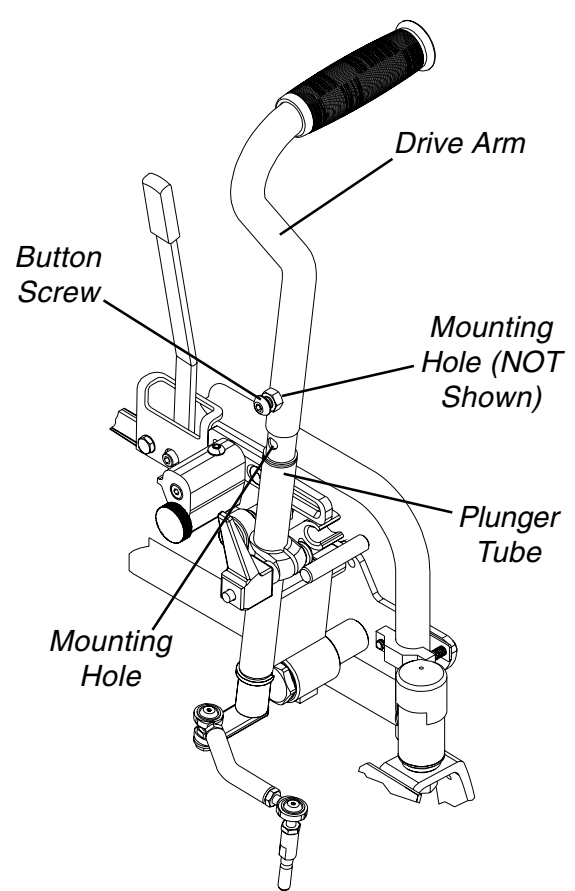


FIGURE 5- ADJUSTING DRIVE ARM HEIGHT

DRIVE
ARM

SUPPORT
BRACKET

This procedure includes the following:

Installing CLD on Existing Wheelchair

Replacing the CLD Wheel Lock

Installing/Removing CLD Wheel Lock

Adjusting Wheel Lock Assembly Position

Adjusting Wheel Lock Engagement Position

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD ON EXISTING WHEELCHAIR

1. Adjusting the wheel lock assembly position. Refer to ADJUSTING WHEEL LOCK ASSEMBLY POSITION in this procedure of the manual.
2. Adjust the wheel lock engagement position. Refer to ADJUSTING WHEEL LOCK ENGAGEMENT POSITION in this procedure of the manual.

REPLACING THE CLD WHEEL LOCK

1. Remove the EXISTING CLD wheel lock. Refer to INSTALLING/REMOVING THE CLD WHEEL LOCK in this procedure of the manual.
2. Install the NEW CLD wheel lock. Refer to INSTALLING/REMOVING THE CLD WHEEL LOCK in this procedure of the manual.

INSTALLING/REMOVING THE CLD WHEEL LOCK (FIGURE 1)

Installing

1. Secure the wheel lock to the transmission support bracket with the two (2) flat screws. Securely tighten.

Removing

1. Remove the two (2) flat screws securing the wheel lock to the transmission support bracket.
2. Remove the wheel lock from the transmission support bracket.

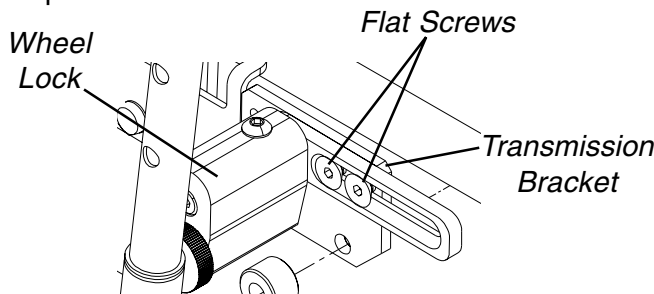


FIGURE 1 - INSTALLING/REMOVING THE CLD WHEEL LOCK

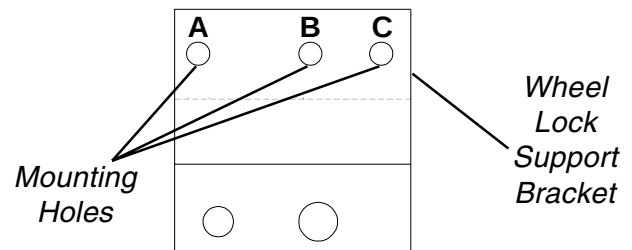
ADJUSTING WHEEL LOCK ASSEMBLY POSITION (FIGURE 2)

NOTE: If wheels are pneumatic, before adjusting the wheel lock, ensure that the tires are inflated to the recommended psi located on the side wall of the tire.

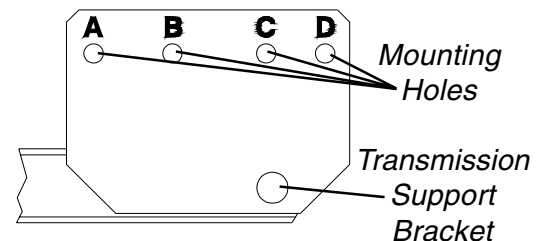
1. Refer to the chart on this page to determine the mounting position of the two (2) flat screws securing the wheel lock adjustment rod to the wheel lock support bracket.
2. Secure wheel lock adjustment rod to the wheel lock support bracket with the two (2) flat screws. Tighten securely.

FRONT VIEW OF TRANSMISSION SUPPORT BRACKET

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

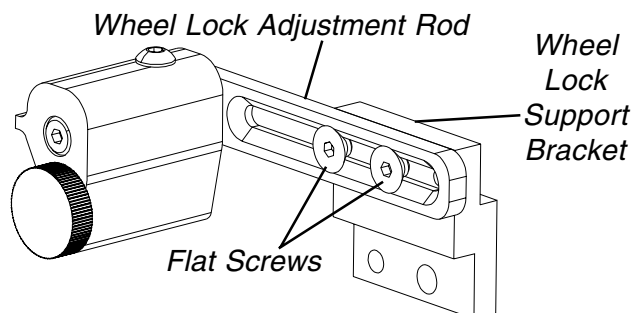
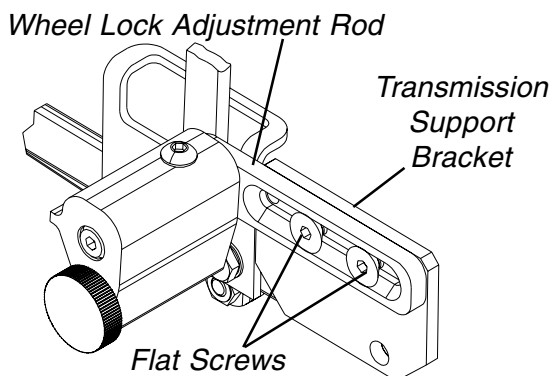


Mounting Hole Position for Flat Screws - Wheelchairs Built BEFORE 09/05/00

Rear Wheel Size	Hole-A	Hole-B	Hole-C
20	X	X	
22	X		X
24		X	X

Mounting Hole Position for Flat Screws - Wheelchairs Built AFTER 09/05/00

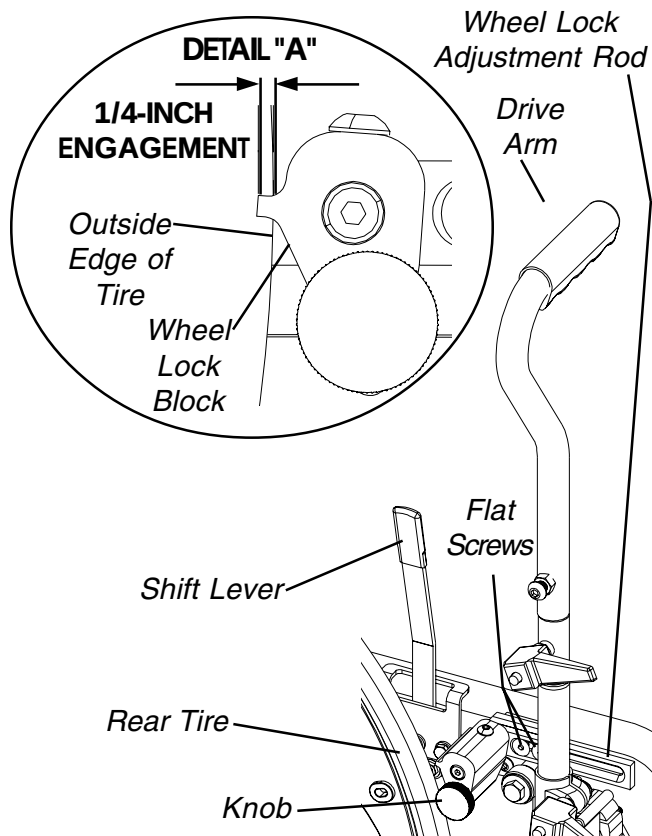
Rear Wheel Size	Hole-A	Hole-B	Hole-C	Hole-D
20	X	X		
22		X	X	
24			X	X

Wheelchairs Built BEFORE 09/05/00**Wheelchairs Built AFTER 09/05/00****FIGURE 2 - ADJUSTING WHEEL LOCK ASSEMBLY POSITION****ADJUSTING WHEEL LOCK ENGAGEMENT POSITION (FIGURE 3)****WARNING**

The shift lever **MUST** be in the neutral position before activating the wheel lock. Failure to do so can cause accidental release and make it more difficult to disengage the wheel lock feature.

1. Place the shift lever in the neutral (center) position.
2. Perform one (1) of the following (DETAIL "A"):
 - A. **HORIZONTAL POSITION** - Perform the following:
 - i. Pull the knob on the wheel lock block OUT.
 - ii. Rotate the wheel lock block to the vertical position.
 - iii. Release the knob.
 - B. **VERTICAL POSITION** - Proceed to STEP 3.
3. Pull BACK on the drive arm until the wheel lock engages.
4. Ensure that there is a minimum of 1/4-inch engagement between the wheel lock block and the outside edge of the rear tire (DETAIL "A").
5. If the engagement is less than 1/4-inch, perform the following:
 - A. Push FORWARD on the drive arm to disengage the wheel lock.
 - B. Loosen, but DO NOT remove the two (2) flat screws securing the wheel lock adjustment rod.
 - C. Slide the wheel lock adjustment rod towards the rear wheel.
 - D. Tighten the flat screws until secure.
 - E. Repeat STEPS 3-5 until there is a minimum of 1/4-inch engagement between the wheel lock block and the outside edge of the rear tire.

Wheelchairs Built BEFORE 09/05/00



Wheelchairs Built AFTER 09/05/00

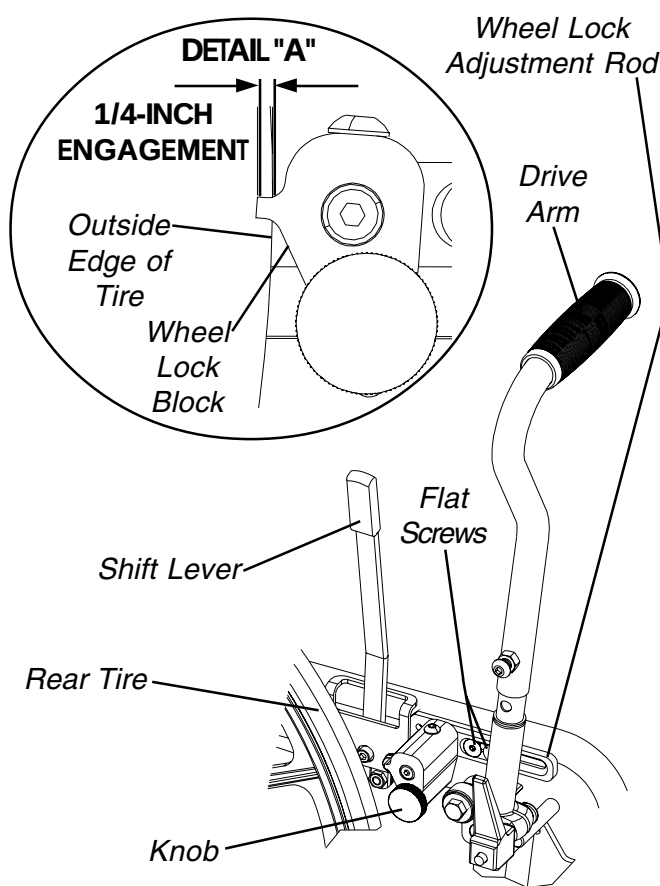


FIGURE 3- ADJUSTING WHEEL LOCK ENGAGEMENT POSITION

This procedure includes the following:

Installing CLD on Existing Wheelchair

Replacing the Steering Link

Connecting/Removing Steering Link To/From Fork

Adjusting Caster and Drive Arm Alignment

Removing/Installing Steering Link

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD ON EXISTING WHEELCHAIR

1. Connect the steering link to the fork. Refer to CONNECTING/REMOVING THE STEERING LINK TO/FROM THE FORK in this procedure of the manual.
2. Adjust the caster and drive arm alignment. Refer to ADJUSTING CASTER AND DRIVE ARM ALIGNMENT in this procedure of the manual.

REPLACING THE STEERING LINK

1. Remove the EXISTING steering link from the fork. Refer to CONNECTING/REMOVING THE STEERING LINK TO/FROM THE FORK in this procedure of the manual.
2. Remove the existing steering link from the drive arm assembly. Refer to REMOVING/INSTALLING STEERING LINK in this procedure of the manual.
3. Install the NEW steering link onto the drive arm assembly. Refer to REMOVING/INSTALLING STEERING LINK in this procedure of the manual.
4. Connect the NEW steering link to the fork. Refer to CONNECTING/REMOVING THE STEERING LINK TO/FROM THE FORK in this procedure of the manual.
5. Adjust the caster and drive arm alignment. Refer to ADJUSTING CASTER AND DRIVE ARM ALIGNMENT in this procedure of the manual.

CONNECTING/REMOVING STEERING LINK TO/FROM FORK (FIGURE 1)

Connecting

1. Compress and hold the straight section of the fork spring by pushing the spring horizontally towards the fork.
2. Insert the steering pin into the hole in the fork.

NOTE: It may be necessary to rotate the caster to align the steering pin with the hole in the fork.

3. Release the straight section of the fork spring.
4. Ensure the spring has snapped into the groove on the steering pin by lifting up on the steering link.

Removing

1. Compress and hold straight section of the fork spring by pushing spring horizontally towards fork.
2. Pull up on the steering pin to remove from the fork.

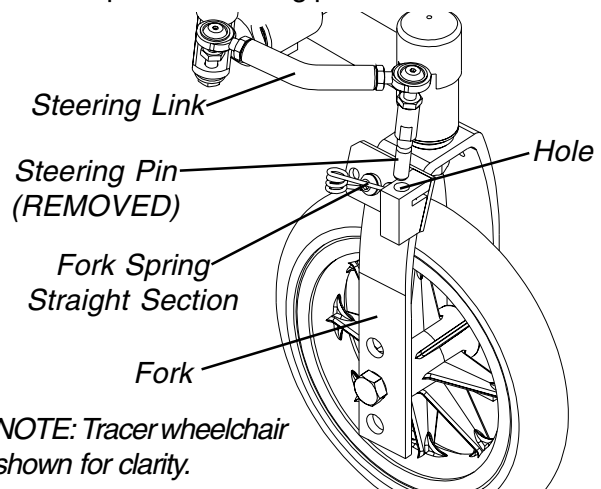


FIGURE 1 - CONNECTING/REMOVING STEERING LINK TO/FROM FORK

ADJUSTING CASTER AND DRIVE ARM ALIGNMENT (FIGURE 2)

Aligning the Caster and Drive Arm

NOTE: The wheelchair should be on a flat surface when examining the drive arm and caster alignment.

1. Position the drive arm so it is perpendicular to the wheelchair frame.
2. Face the front of the wheelchair and examine the caster and perform one (1) of the following:
 - A. **CASTER POINTS STRAIGHT AHEAD** - No adjustment is needed at this time.
 - B. **CASTER POINTS TO INSIDE OF WHEELCHAIR** - Steering link should be shortened. Continue to STEP 3.
 - C. **CASTER POINTS TO OUTSIDE OF WHEELCHAIR** - Steering link should be lengthened. Continue to STEP 3.
3. Remove the steering link from the fork. Refer to CONNECTING/REMOVING STEERING LINK TO/FROM FORK in this procedure of the manual.
4. Loosen both steering link adjustment nuts.
5. Rotate the steering pin rod end to adjust the length of the steering link.

Turning steering link:

CLOCKWISE - shortens the steering link.

COUNTERCLOCKWISE - lengthens the steering link.
6. Connect the steering link to the fork. Refer to CONNECTING/REMOVING STEERING LINK TO/FROM FORK in this procedure of the manual.

7. Repeat STEPS 1-6 until the caster points straight ahead.
8. Balance the steering link. Refer to BALANCING THE STEERING LINK in this procedure of the manual.

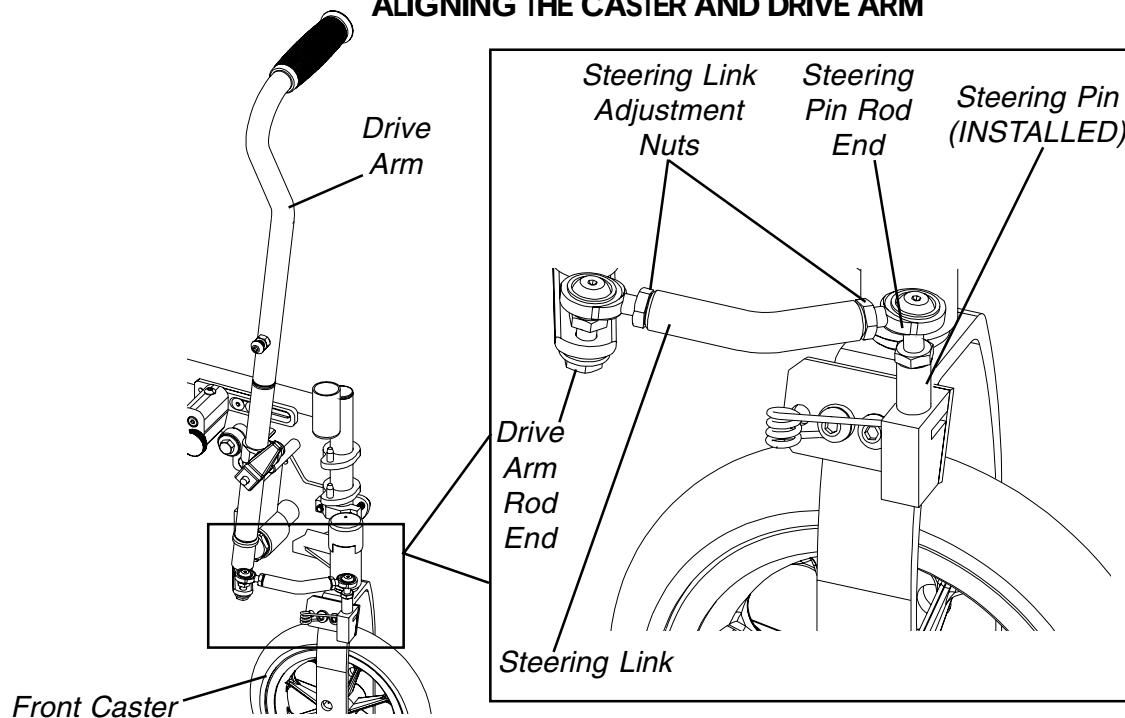
Balancing the Steering Link

NOTE: The steering link MUST be balanced to ensure it is properly secured to the rod ends.

1. Remove the steering link from the fork. Refer to CONNECTING/REMOVING STEERING LINK TO/FROM FORK in this procedure of the manual.
2. Rotate the steering link adjustment nuts until they are against the steering link as shown in FIGURE 2. DO NOT tighten

3. Perform the following steps. Refer to CHART A for an example of thread calculation.
 - A. Count the number of drive arm threads and steering pin threads between the rod ends and the steering link.
 - B. Divide the number of threads determined in STEP A in half.
 - C. Rotate the steering pin rod end and the steering link until only the number of threads determined STEP B are showing at each end.
4. Securely tighten both steering link adjustment nuts against the steering link.
5. Connect the steering pin to the fork. Refer to CONNECTING/REMOVING STEERING LINK TO/FROM FORK in this procedure of the manual.

ALIGNING THE CASTER AND DRIVE ARM



BALANCING THE STEERING LINK

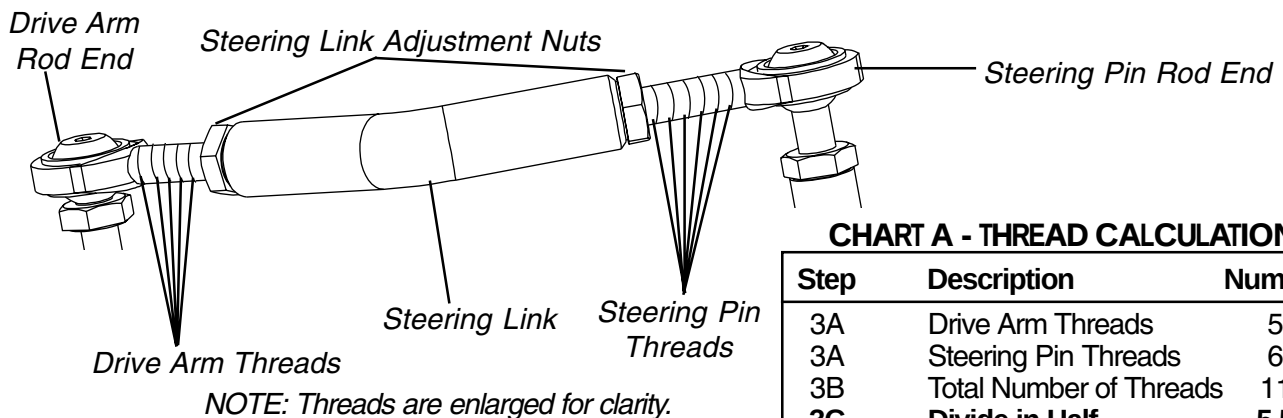


CHART A - THREAD CALCULATION

Step	Description	Number
3A	Drive Arm Threads	5
3A	Steering Pin Threads	6
3B	Total Number of Threads	11
3C	Divide in Half	5.5

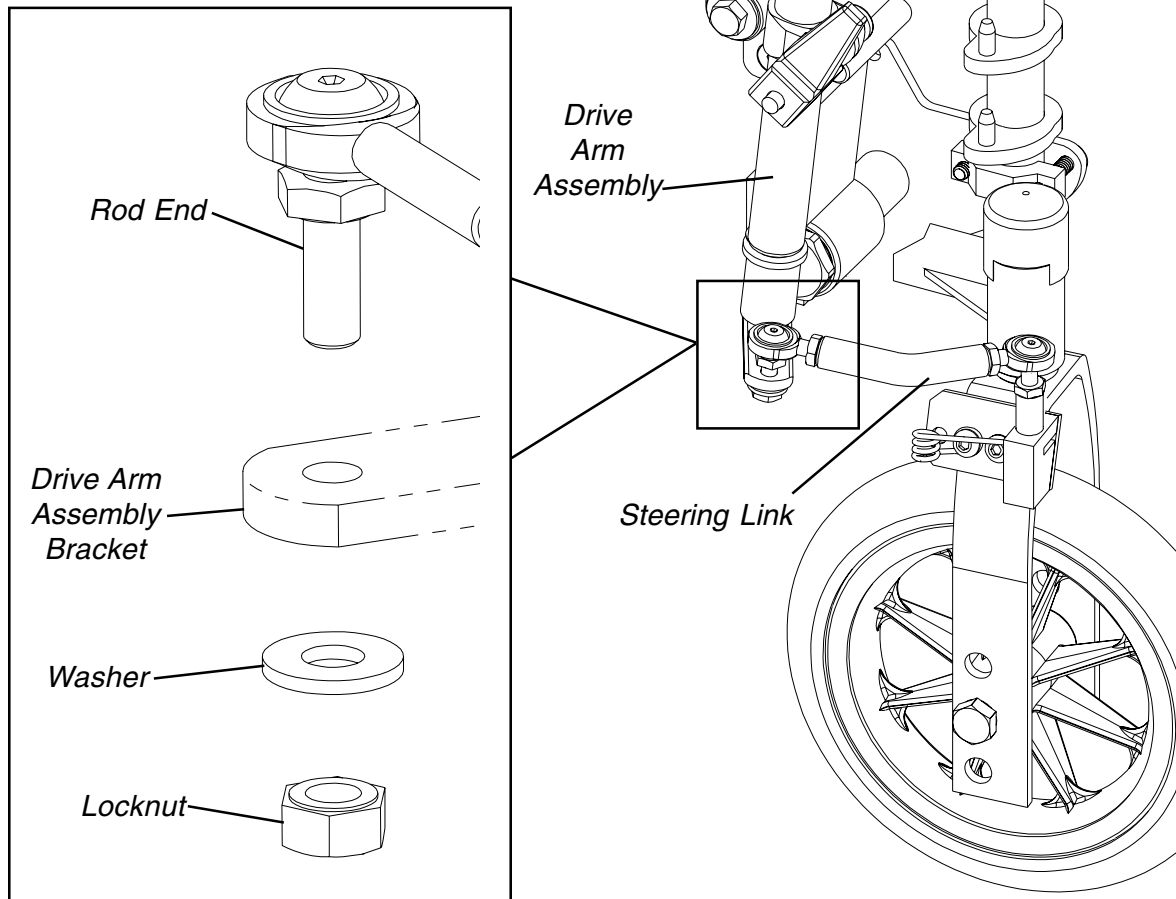
FIGURE 2 - ADJUSTING CASTER AND DRIVE ARM ALIGNMENT

REMOVING/INSTALLING STEERING LINK (FIGURE 3)**Removing**

1. Remove the locknut and washer securing the rod end of the steering link to the bracket at the bottom of the drive arm assembly.
2. Remove the rod end from the drive arm assembly.

Installing

1. Install the NEW rod end into the bracket at the bottom of the drive arm assembly.
2. Secure the new rod end to the drive arm assembly bracket with the washer and locknut. Tighten securely.

**FIGURE 3 - REMOVING/INSTALLING STEERING LINK**

This procedure includes the following:

Installing CLD Front Rigging Release Handle

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING CLD FRONT RIGGING RELEASE HANDLE (FIGURE 1)

1. Remove the two (2) pan head screws, hex nut, bushing and spring from the EXISTING front rigging release handle and retain for later use.
2. Position the bushing between the two (2) mounting holes near the tab on the CLD release handle.

3. Secure the bushing to the CLD release handle with a pan head screw and hex nut. Tighten securely.
4. Position mounting hole "A" UNDER mounting hole "B".
5. Position the hole in the spring UNDER mounting hole "A" in the orientation shown in FIGURE 1.

NOTE: The bent portion of the spring should hook over the mounting plate as indicated in FIGURE 1 and the straight end of the spring should rest inside the CLD release handle and point away from the tab.

6. Secure the spring and CLD release handle to the mounting plate with the remaining pan head screw and riv nut. Tighten securely.

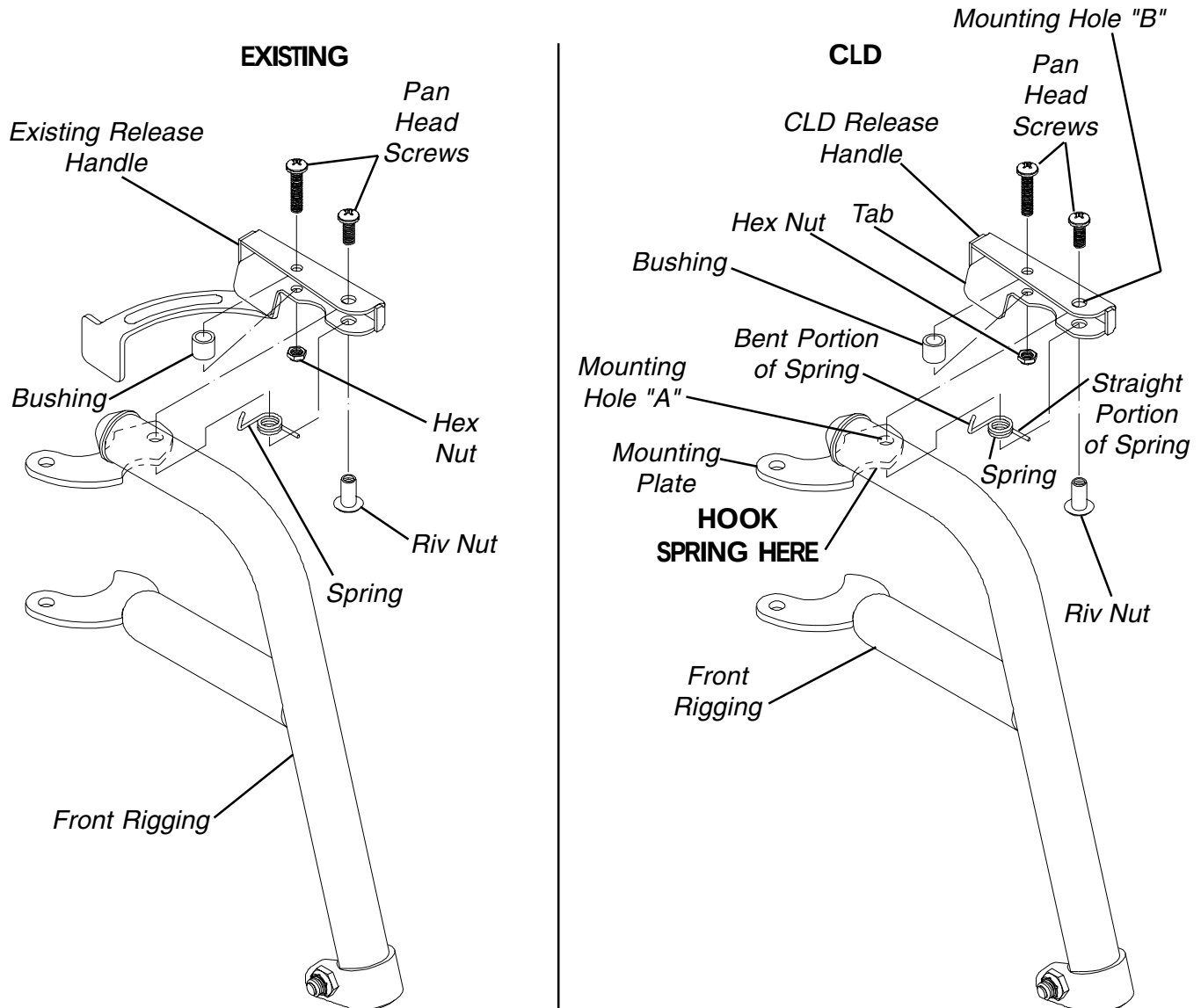


FIGURE 1 - INSTALLING CLD FRONT RIGGING RELEASE HANDLE

LIMITED WARRANTY

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This warranty is extended only to the original purchaser/user of our products.

This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

Invacare warrants its product to be free from defects in materials and workmanship for a period of one (1) years from date of purchase. If within such warranty period any such product shall be proven to be defective, such product shall be repaired or replaced, at Invacare's option. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Invacare's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

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