

TX420 & 425 All Serial Numbers

Drive Belt Removal

1. Shut engine off, apply parking brake, and remove ignition key.
2. Open the engine hood assembly.
3. With a spring removal tool (Toro P/N 92-5771), connect the tool to the spring end located on the stud bolted to the loader tower edge. Pull up on the spring end to remove the spring from the bolt stud (Fig. 1131).



Fig 1131

DSC-0587

4. Remove the spring from the idler arm (Fig. 1132).



Fig 1132

PICT-1441

5. Remove the belt from the pulleys (Fig. 1133).

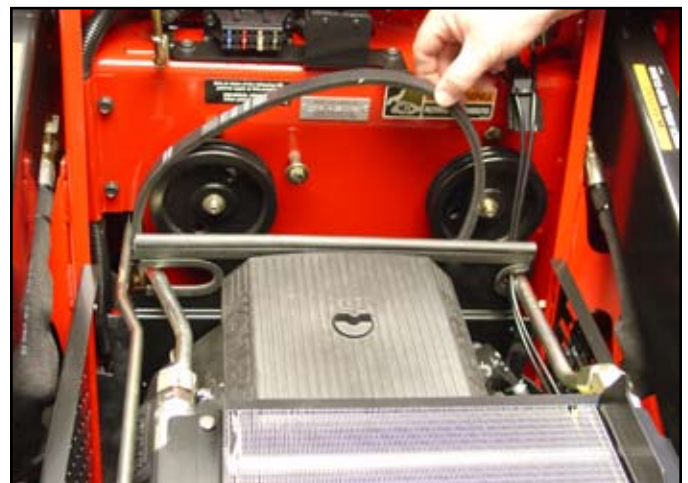


Fig 1133

DSC-0591

DRIVE SYSTEM

Drive Belt Installation

1. Install the drive belt around the engine crankshaft pulley, two hydrostatic pump pulleys, and the idler pulley (Fig. 1134).

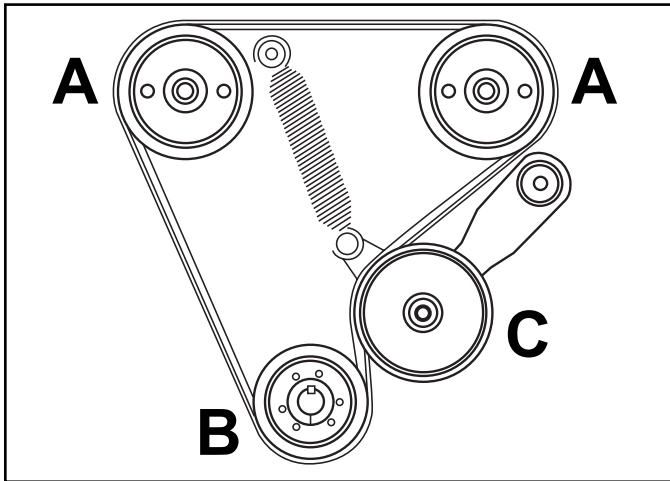


Fig 1134 belt routing diagram

- A. Hydrostatic pulley C. Idler pulley
B. Crankshaft pulley

2. Install one end of the idler spring to the idler arm (Fig. 1135).



Fig 1135 DSC-0592

3. Using the spring removal tool (Toro P/N 92-5771), install the spring to the stud located on the loader tower (Fig. 1136).

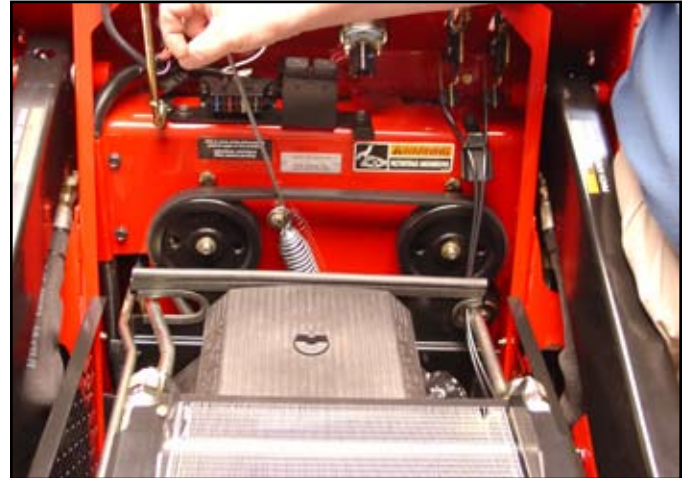


Fig 1136 DSC-0594

TX420 & 425 All Serial Numbers

Lifting Unit for Service

1. Place two pieces of approximately 2" (5.08cm) thick wood directly behind both tracks (Fig. 1137).



Fig 1137 DSC-0596

DRIVE SYSTEM

2. Back the unit up onto the wood blocks (Fig. 1138).

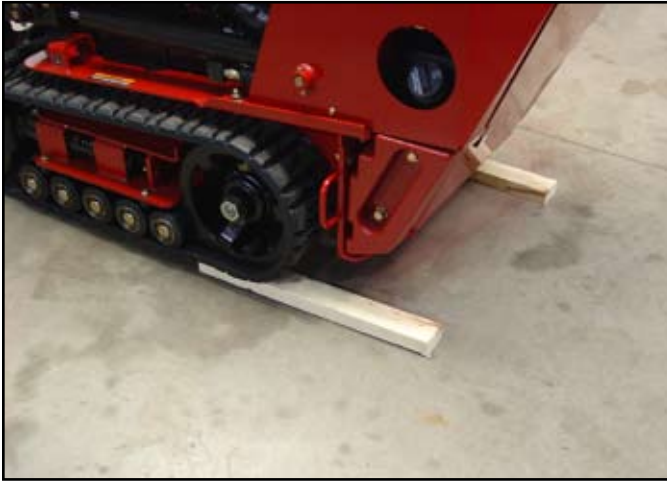


Fig 1138

DSC-0597

4. Raise the rear of the unit, remove the two wood blocks and install a jack stand under each corner of the frame (Fig. 1140).



Fig 1140

DSC-0600

3. Place a hydraulic floor jack under the rear frame of the unit (Fig. 1139).



Fig 1139

DSC-0598

5. Raise the hydraulic floor jack approximately 15" (38.10cm) and position it at the front of the unit (Fig. 1141).



Fig 1141

DSC-0601

DRIVE SYSTEM

6. Start the unit and raise the loader arm enough to clear the hydraulic floor jack. Place the floor jack directly below the quick attach plate and lower the loader arm onto the hydraulic floor jack. Continue lowering the loader arm to raise the tracks off the ground (Fig. 1142).



Fig 1142

DSC-0603

8. Lower the hydraulic floor jack so the unit rests on the jack stands (Fig. 1144).



Fig 1144

DSC-0605

7. Install two jack stands under the front frame (Fig. 1143).



Fig 1143

DSC-0604

9. Make sure the unit is securely supported by the jack stands.

TX420 All Serial Numbers

Track Removal

1. Raise and secure the unit off the ground. Refer to "Lifting Unit for Service", page 8-2.

DRIVE SYSTEM

2. Remove the bolt and nut securing the tensioner bolt (Fig. 1145).

Note: Serial number 250000399 and below may have square tensioner arms.



Fig 1145

DSC-0606

3. Using a 1/2" drive ratchet, release the drive tension by turning the tensioner bolt clockwise until the tensioning nut contacts the tensioner bolt head. Push the tension wheel toward the rear of the unit (Fig. 1146 and Fig. 1147).



Fig 1146

DSC-0607

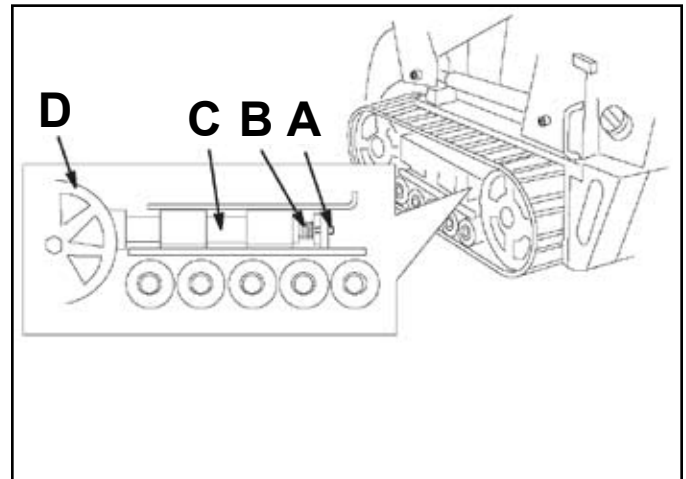


Fig 1147

fig. 34 m-4747

- | | |
|---------------------|------------------|
| A. Locking bolt | C. Tension tube |
| B. Tensioning screw | D. Tension wheel |

4. Make sure the loader arms are raised. Begin removing the track at the top of tension wheel, lifting up on the track to remove the slack from the bottom (Fig. 1148).



Fig 1148

DSC-0608

DRIVE SYSTEM

5. Start working the track off the front tension wheel while rotating the track forward (Fig. 1149).



Fig 1149

DSC-0609

7. Remove the track off the rear drive wheel (Fig. 1151).



Fig 1151

DSC-0611

6. Use a pry bar to help assist in removal of the track (Fig. 1150).



Fig 1150

DSC-0610a

TX420 All Serial Numbers

Tensioner Wheel Bearing Replacement

Note: The tensioner arm could have a square or round tube. This procedure is the same for both.

1. Remove the tensioner arm assembly out of the frame (Fig. 1152, square tube, or Fig. 1153, round tube).



Fig 1152

CLR DSC-1724

DRIVE SYSTEM



Fig 1153

DSC-0613

2. Remove the bolt and nut holding the tensioner wheel to the tensioner arm (Fig. 1154).



Fig 1154

CLR DSC-0804

3. Support the tensioner wheel so there is a space under it for bearing removal. Using a hammer, drive the upper bearing down to create a gap between spacer and bearing, then use a drift punch to hammer the lower bearing out. The spacer will fall out when the bearing is removed. Turn the tensioner wheel over and drive out the other bearing. Inspect the tensioner wheel housing and spacer (Fig. 1155)



Fig 1155

CLR DSC-0808

Bearing Installation

Note: The raised inner race of the bearing should be facing outward on both bearings on the tensioner wheel (Fig. 1156).



Fig 1156

CLR DSC-0810

DRIVE SYSTEM

1. Press the first bearing in so far that the outer bearing race is flush with the center hub. Turn the tensioner wheel over and install the spacer centered on the inner race (tensioner wheel bolt can be used to keep the spacer centered to the bearing inner race) and press the second bearing in until the spacer is held in tight between the bearings.

Important: Press on outer bearing race only, otherwise bearing damage could occur.

Note: The outer race of the bearing is flush with the center hub of the tensioner wheel (Fig. 1157).



Fig 1157

CLR DSC-0811

2. Reassemble the tensioner wheel to the tension arm.

Note: Make sure that grease is applied to the flat washers on both sides and the washers are installed between the tensioner arm and tensioner wheel on both sides (Fig. 1158).



Fig 1158

CLR DSC-0813

3. Torque the bolt and nut holding the tensioner wheel to the frame to 150 ± 15 ft-lbs. (203 ± 20 Nm) (Fig. 1159).



Fig 1159

CLR DSC-0814

4. Install compression spring and the bolt tensioner with tensioning nut.

Note: Make sure the tensioning nut is contacting the bolt tensioner (Fig. 1160).

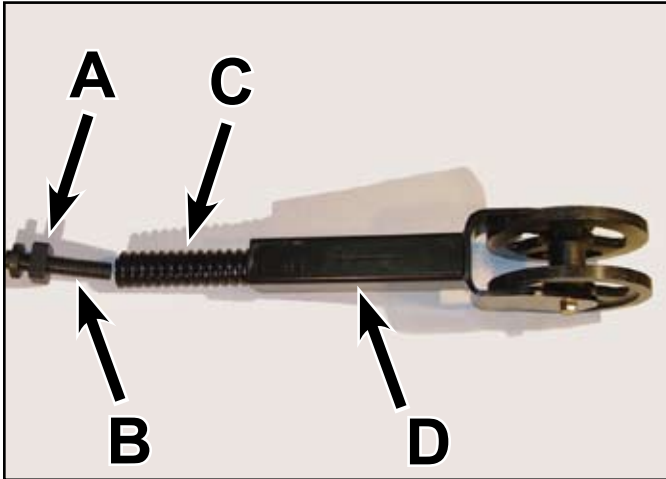


Fig 1160

CLR DSC-0815

- A. Tensioning nut
- B. Tensioning bolt
- C. Compression spring
- D. Tension Arm

5. Install the tensioner assembly into the frame (Fig. 1161).



Fig 1161

CLR DSC-1724

TX420 All Serial Numbers

Track Guide Removal

1. Raise and securely support the unit. Refer to "Lifting Unit for Service" on page 8-2.
2. Remove the track. Refer to "Track Removal" on page 8-4.
3. Position a hydraulic floor jack and a suitable board under the track guide (Fig. 1162).



Fig 1162

DSC-0616

4. Remove the four bolts holding the track guide to the frame (Fig. 1163).



Fig 1163

DSC-0617

DRIVE SYSTEM

5. Lower the track guide from the frame (Fig. 1164).



Fig 1164

DSC-0618

1. With a hydraulic floor jack and a board to support the track guide, raise the track guide up to the frame (Fig. 1166).

Note: Remove the tensioner arm for easier access to the inner bolts.



Fig 1166

DSC-0621

TX420 All Serial Numbers

Track Guide Installation

Note: The track guide end with the step, is mounted toward the drive sprocket (Fig. 1165).



Fig 1165

DSC-0619

2. Loosely install the four bolts that hold the track guide to the frame. Remove the board and hydraulic jack from under the track guide.
3. Install the tensioner arm into the frame above the track guide (Fig. 1167).



Fig 1167

DSC-0623

DRIVE SYSTEM

4. Alignment Tool – Toro P/N 110-0069 (Fig. 1168)



Fig 1168

CLR DSC-0624

6. Secure the end with the pin (Fig. 1170).



Fig 1170

DSC-0628

5. Insert the notched end of the alignment tool into the drive wheel spacer (Fig. 1169).



Fig 1169

DSC-0625

7. Rotate the tool and move the track guide as necessary until the tool fits into the track guide channel. Secure the end of the tool with a strap (Fig. 1171).



Fig 1171

DSC-0629

DRIVE SYSTEM

8. Tighten and torque the 4 track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1172).



Fig 1172

DSC-0631

1. Engage the lugs on the track between the spacers on the drive sprocket (Fig. 1173).



Fig 1173

DSC-0633

9. Remove the alignment tool.

2. Push the track under and between the road wheels. Starting at the bottom of the tension wheel, install the track around the wheel by rotating the track rearward while pushing the lugs onto the wheel (Fig. 1174).

TX420 All Serial Numbers

Track Installation

Important: Before installing the track, use the Alignment Tool Toro P/N 110-0069, for proper alignment between the drive sprockets and the front tension wheel.



Fig 1174

DSC-0609

DRIVE SYSTEM

- Turn the tensioning screw counterclockwise until the distance between the tension nut and the back tension tube is 2-3/4" (7cm) (Fig. 1175 and Fig. 1176).



Fig 1175

DSC-0607

- Align the closest notch in the tension screw to the locking bolt hole and secure the screw with the locking bolt and nut (Fig. 1177).



Fig 1177

DSC-0606

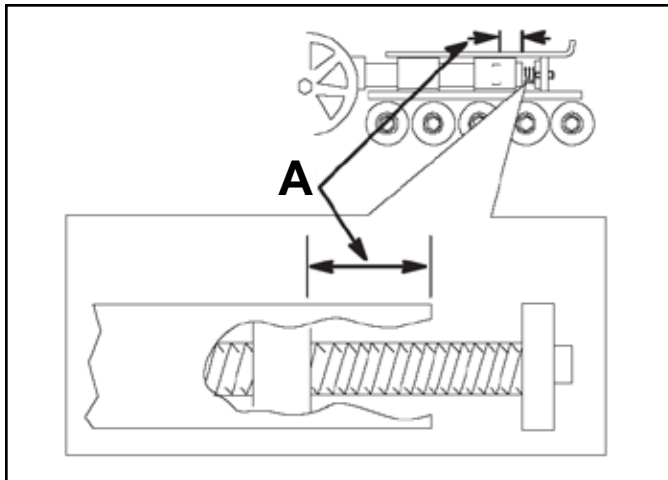


Fig 1176

fig. 33 m-4775

- A. 2-3/4 inches (7cm)

TX425

Track Removal

- Raise and secure the unit off the ground. Follow the procedures for "Lifting Unit for Service", page 8-2.

DRIVE SYSTEM

2. Remove the bolt and nut securing the tensioner bolt (Fig. 1178).

Note: Serial number 250000399 and below may have square tensioner arms.



Fig 1178

DSC-0636

3. Using a 1/2" drive ratchet, release the drive tension by turning the tensioner bolt clockwise until the tensioning nut contacts the tensioner bolt head. Push the tension wheel toward the rear of the unit (Fig. 1179 and Fig. 1180).



Fig 1179

DSC-0637

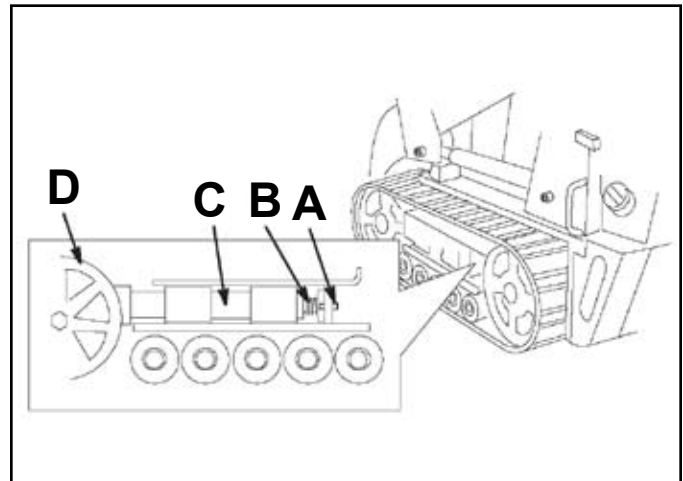


Fig 1180

fig. 35 m-4747

- | | |
|---------------------|------------------|
| A. Locking bolt | C. Tension tube |
| B. Tensioning screw | D. Tension wheel |

4. Using a 1-7/16" socket remove the nut and washer from the outer tension wheel (Fig. 1181).

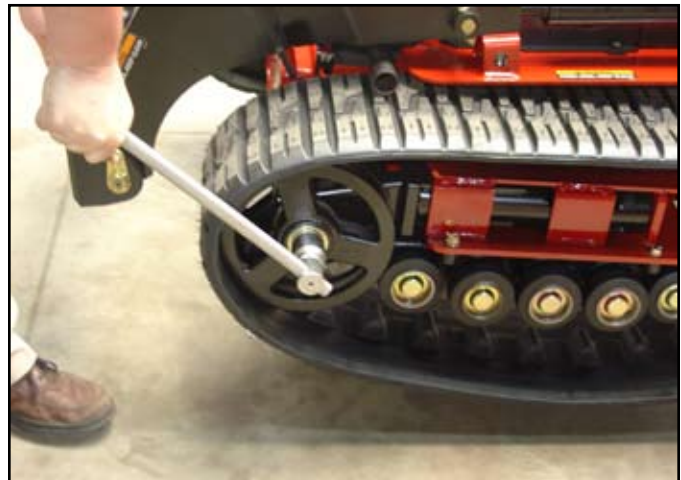


Fig 1181

DSC-0638

DRIVE SYSTEM

5. Remove the outer tension wheel and second washer (Fig. 1182).



Fig 1182

DSC-0639

7. Remove the track from the rear drive sprocket (Fig. 1184).



Fig 1184

DSC-0641

6. Remove the track from the front inner tension wheel (Fig. 1183).



Fig 1183

DSC-0640

TX425 22000401 & higher

Track Guide Removal

1. Raise and securely support the unit. Refer to "Lifting Unit for Service" on page 8-2.
2. Remove the track. Refer to "Track Removal" on page 8-13.

DRIVE SYSTEM

3. Install a hydraulic floor jack and a suitable board under the track guide (Fig. 1185).



Fig 1185

DSC-0642

5. Lower the track guide from the frame (Fig. 1187).



Fig 1187

DSC-0645

4. Remove the 4 bolts holding the track guide to the frame (Fig. 1186).



Fig 1186

DSC-0643

TX425 220000401 & higher

Track Guide Installation

1. With a hydraulic floor jack and a board to support the track guide, raise the track guide up to the frame (Fig. 1188).



Fig 1188

DSC-0645

DRIVE SYSTEM

2. Remove the tensioner arm for easier access to the inner bolts (Fig. 1189).



Fig 1189

DSC-0647

3. Install the 4 bolts that hold the track guide to the frame. Leave the bolts loose, do not tighten (Fig. 1191).



Fig 1191

PICT-0532

Note: The track guide end with a step is mounted toward the drive sprocket (Fig. 1190).

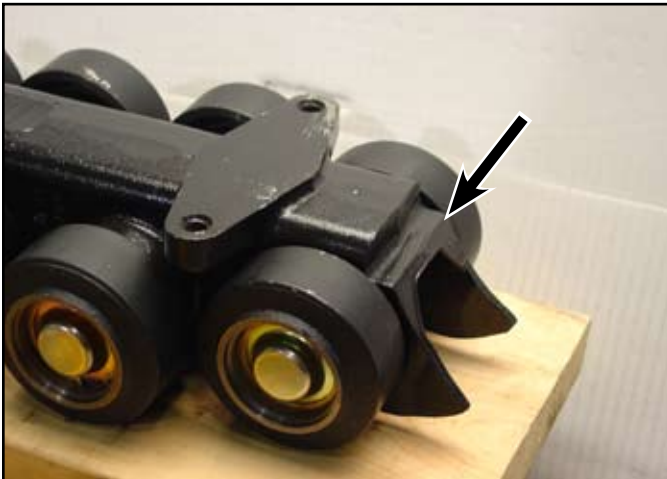


Fig 1190

DSC-0646

4. Install the tensioner arm back into the frame (Fig. 1192).



Fig 1192

PICT-0530

DRIVE SYSTEM

5. Install the first washer and then the outer tension wheel. Install the second washer and then the nut and snug the nut up (Fig. 1193).



Fig 1193

DSC-0648

6. Insert the notched end of the alignment tool into the drive wheel spacer (Fig. 1195).

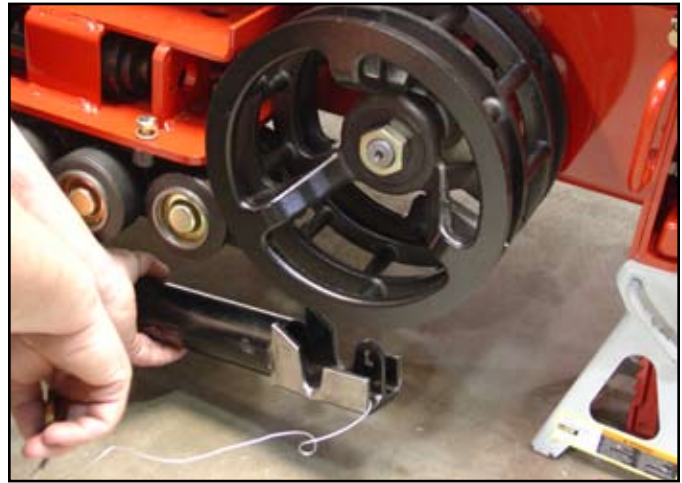


Fig 1195

DSC-0650

Alignment Tool - Toro P/N 110-0069 (Fig. 1194)



Fig 1194

CLR DSC-0624

7. Secure the end with the pin (Fig. 1196).



Fig 1196

DSC-0651

8. Rotate the tool and move the track guide as necessary until the tool fits into the track guide channel. Secure the end of the tool with a strap (Fig. 1197).



Fig 1197

DSC-0653

9. Tighten and torque the 4 track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1198).



Fig 1198

DSC-0654

10. Remove the alignment tool.

TX425

Track Installation

Important: Align the track guide. Refer to “Track Guide Alignment” on page 8-115.

1. Remove the nut, two washers, and the front outer tension wheel (Fig. 1199).



Fig 1199

DSC-0655

2. Install the track, ensuring that the lugs in the track fit between the spacers in the middle of the drive sprocket (Fig. 1200).



Fig 1200

DSC-0656

DRIVE SYSTEM

3. Push the tension wheel toward the drive sprocket and install the track around the inner tension wheel (Fig. 1201).



Fig 1201

DSC-0657

5. Torque the nut to 300 ft-lbs. (407 Nm) (Fig. 1203).



Fig 1203

DSC-0660a

4. Apply grease to the inner and outer washer for the outer tension wheel. Install the inner washer, tension wheel, outer washer and nut (Fig. 1202).



Fig 1202

DSC-0658

6. Turn the tensioning screw counterclockwise until the distance between the tension nut and the back tension tube is 2-3/4" (7cm) (Fig. 1204 and Fig. 1205).



Fig 1204

DSC-0661

DRIVE SYSTEM

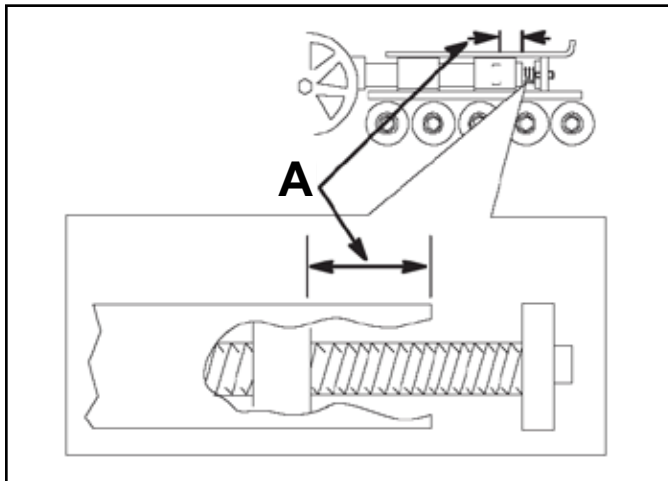


Fig 1205

fig. 33 m-4775

A. 2-3/4 inches (7cm)

7. Align the closest notch in the tension screw to the locking bolt and secure the screw with the locking bolt and nut (Fig. 1206).



Fig 1206

DSC-0662

TX420 240000100 & higher TX425 240000300 & higher

Wheel Motor Removal

Note: This procedure can be used for the left or right wheel motor.

1. Lift and securely support the unit. Refer to "Lifting Unit for Service" on page 8-2.
2. Remove the track. Refer to "Track Removal" as follows:
 - TX420 page 8-4
 - TX425 (with cast drive wheel) page 8-13
 - TX425 (with drive sprocket wheel) 8-29
3. Set the park brake. With a 1-3/4" socket, remove the nut on the drive sprocket (Fig. 1207).

Note: The nut retaining the drive sprocket is a patch-lock nut and needs to be replaced whenever removed.



Fig 1207

DSC-0664

8. Lower the traction unit to the ground.

DRIVE SYSTEM

- Using a wheel puller, remove the drive sprocket (Fig. 1208).



Fig 1208

PICT-0536

- Remove the three bolts retaining the LH rear cover support. Remove the LH rear cover support (Fig. 1210).



Fig 1210

DSC-0669

- Remove the rear access cover (Fig. 1209).

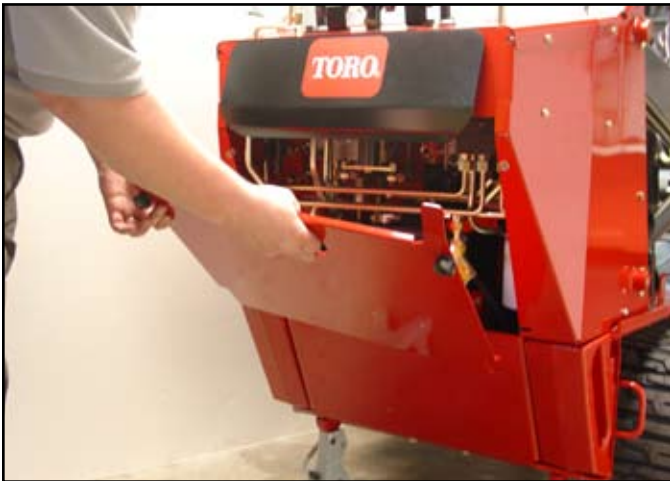


Fig 1209

DSC-0666

- Remove the right and left rear counterweights (Fig. 1211).



Fig 1211

PICT-0549

DRIVE SYSTEM

8. Remove the eight bolts retaining the rear chassis cover assembly and remove the rear chassis cover (Fig. 1212).



Fig 1212

DSC-0671

10. Carefully slide the tank out and disconnect the fuel hose from the fuel tank fitting (Fig. 1214).



Fig 1214

PICT-1716

9. Remove the two wires located on the fuel sender on the fuel tank (Fig. 1213).

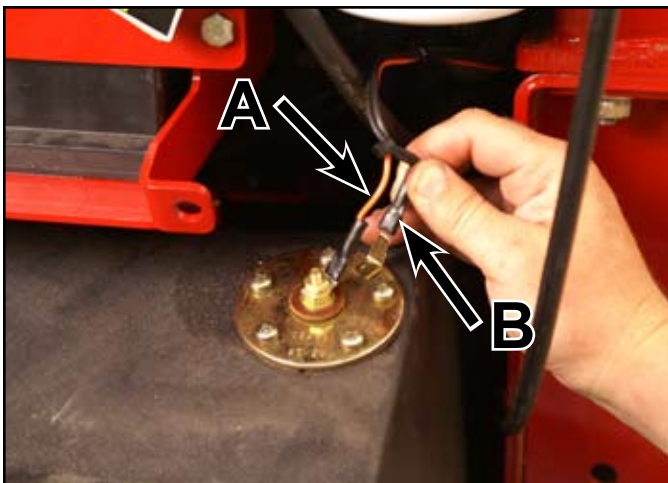


Fig 1213

PICT-1718

A. Center terminal orange wire

B. Right terminal black wire

11. Before removing the hydraulic lines from the motor, mark or tag one of the lines; this will make sure the hydraulic lines are reinstalled correctly (Fig. 1215).



Fig 1215

DSC-0677

DRIVE SYSTEM

- Place a drain pan under the motor wheel that is being removed. Using a 1-1/8" 15°/60° offset open end wrench, disconnect the two hydraulic lines running to the wheel motor. Install protective caps on the hydraulic lines and the wheel motor fittings (Fig. 1216).

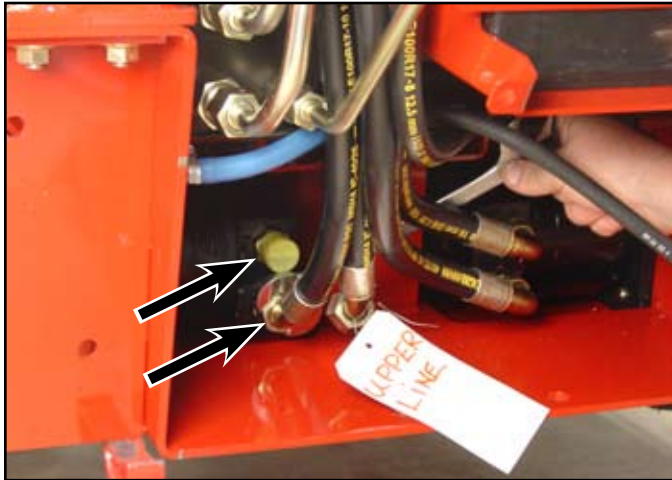


Fig 1216

DSC-0679

- Using a 1-1/16" socket, remove the two hydraulic fittings on the wheel motor (Fig. 1217).

Note: Protective caps removed.

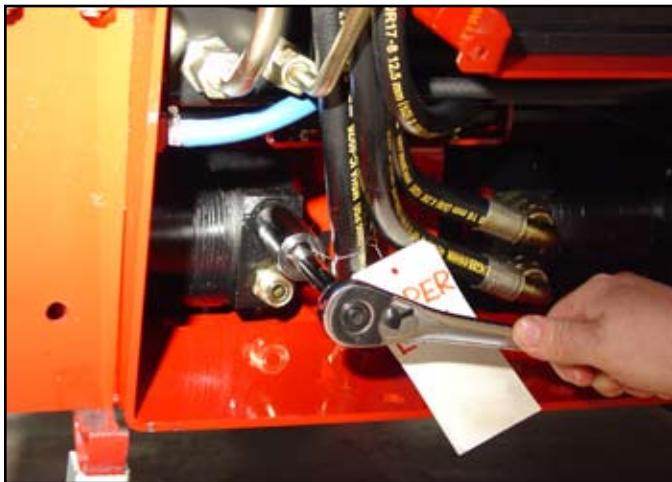


Fig 1217

DSC-0682

- Remove the 4 bolts, lock washers, and wheel motor mounting plates retaining the wheel motor to the frame (Fig. 1218).



Fig 1218

DSC-0680

- Rotate the wheel motor 90° so the hydraulic line ports are facing upward, this will allow the raised portion of the wheel motor to fit through the notch in the frame (Fig. 1219).



Fig 1219

DSC-0684

- To service the wheel motor, Refer to "Parker/Ross Wheel Motor Service Manual" (Toro form no. 492-4753).

Wheel Motor Installation

Note: Cap all lines and fittings to prevent debris from entering system.

1. Wheel motor mounting plates have a wide side and narrow side. The wide side faces up when installing the wheel motor (Fig. 1220).

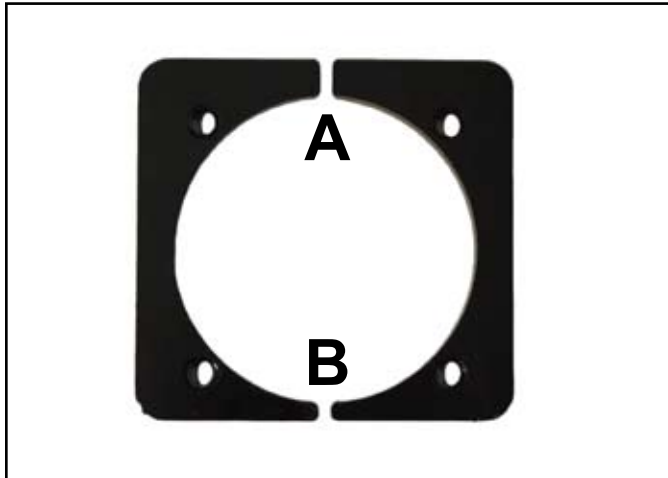


Fig 1220

CLR DSC-0686

- A. Wide side B. Narrow Side

2. Insert the wheel motor into the frame with the ports facing up. Rotate wheel motor 90° so the hydraulic ports are facing to the rear (Fig. 1221).



Fig 1221

DSC-0684

3. Install the wheel motor mounting plates on the inside of the frame. Apply a thread locking compound to the threads of the bolts (Fig. 1222).



Fig 1222

DSC-0688

4. Install the 4 bolts and lockwashers through the motor housing, frame and into the wheel motor mounting plates. Torque the bolts to 75 ± 8 ft-lbs. (102 ± 11 Nm) (Fig. 1223).

Note: Remove protective caps. Before installing the hydraulic fittings, replace the o-rings.



Fig 1223

DSC-0690

DRIVE SYSTEM

5. With a 1-1/16" socket, install the hydraulic fittings to the motor (Fig. 1224).

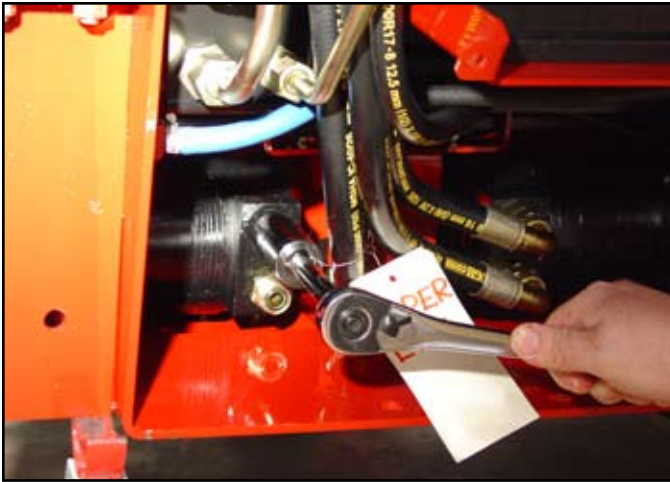


Fig 1224

DSC-0682

6. Reconnect the two hydraulic lines using a 1-1/8" 15°/60° offset open end wrench (Fig. 1225).

Note: To ease installation, connect the bottom hydraulic line first.



Fig 1225

DSC-0901

7. Connect the fuel line to the fuel tank and install the hose clamp (Fig. 1226).

Note: Before installing the fuel tank in the unit, disengage the park brake and start the unit. Refer to "Purging Air Procedures" on page 12-27. Check for any leaks in the hydraulic fittings and hydraulic hoses.



Fig 1226

PICT-1716

8. Slide the fuel tank into the frame of the unit (Fig. 1227).



Fig 1227

DSC-0691

DRIVE SYSTEM

9. Connect the two wires to the fuel sender (Fig. 1228).

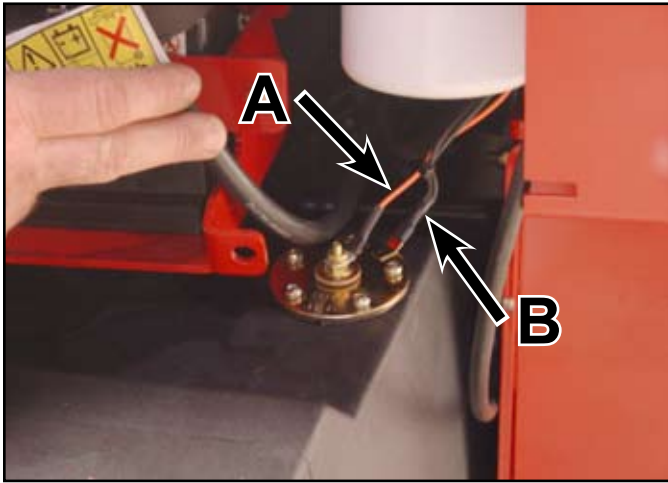


Fig 1228

DSC-0672

A. Center terminal
orange wire

B. Right terminal
black wire

10. Install the rear chassis cover with eight bolts, torque the bolts to 75 ft-lbs. (101.7 Nm) (Fig. 1229).



Fig 1229

DSC-0671

11. Install the left and right rear counterweights (Fig. 1230).



Fig 1230

PICT-0549

12. Install the LH rear cover support assembly with 3 bolts (Fig. 1231).



Fig 1231

DSC-0669

DRIVE SYSTEM

13. Install the rear access cover (Fig. 1232).



Fig 1232

DSC-0666

14. Before installing the rear sprocket drive wheel, make sure the motor shaft drive wheel is free of any lubricant, such as grease. Check and make sure the woodruff key is in place. Install the rear sprocket drive onto the motor shaft (Fig. 1233).

Note: This style of drive wheel can be reused. It does not need to be replaced unless it is damaged.



Fig 1233

DSC-0693

15. The retaining nut on the wheel motor is a patch-lock nut and should be replaced with a new one. Apply the park brake, install retaining nut, and torque the nut 300 ft-lbs. (407 Nm) (Fig. 1234).



Fig 1234

DSC-0694

16. Align the track guide. Refer to "Track Guide Alignment" as follows:
- TX420 page 8-113
 - TX425 page 8-115
17. Install the track. Refer to "Track Installation" as follows:
- TX420 page 8-12
 - TX425 (cast drive wheel) page 8-19
 - TX425 (drive sprocket wheel) page 8-49
18. Lower the unit to the floor.

TX425 220000001 - 220999999

Track Removal



Fig 1235

DSC-0698



Fig 1237

DSC-0703

1. Raise and secure the unit off the ground. Follow procedures for "Lifting Unit for Service", page 8-2.
2. Remove the bolt and nut securing the tensioner bolt (Fig. 1236).



Fig 1236

DSC-0700

4. Using a 1/2" drive ratchet, release the drive tension by turning the tensioner bolt clockwise until the tensioning nut contacts the tensioner bolt head. Push the tension wheel toward the rear of the unit (Fig. 1238 and Fig. 1239).



Fig 1238

DSC-0702

DRIVE SYSTEM

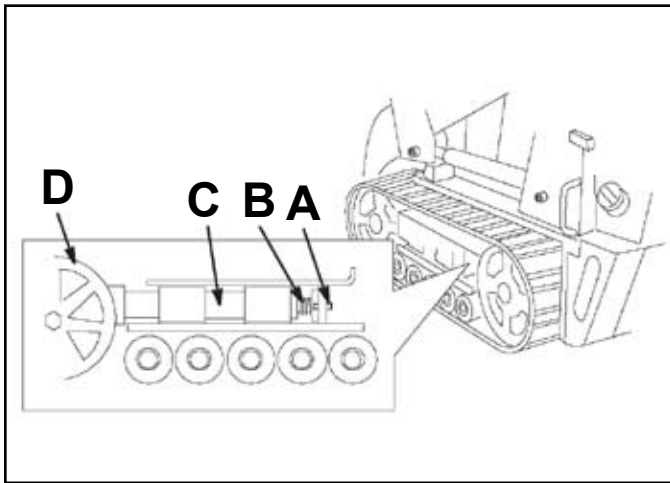


Fig 1239

fig. 35 m-4747

- A. Locking bolt
- B. Tensioning screw
- C. Tension tube
- D. Tension wheel

6. Remove the track off the front inner tension wheel (Fig. 1241).



Fig 1241

DSC-0706

5. Remove the outer tensioner wheel (Fig. 1240).



Fig 1240

DSC-0705

7. Remove the track off the rear drive sprocket wheel (Fig. 1242).



Fig 1242

DSC-0707

TX425 22000001 - 220999999

Track Guide Removal

1. Raise and securely support the unit. Refer to “Lifting Unit for Service”, page 8-2.
2. Remove the track. Refer to “Track Removal” on page 8-29.
3. Install a hydraulic floor jack and a suitable board under the track guide (Fig. 1243).



Fig 1243

DSC-0708

4. Remove the 3 nuts retaining the track clamp guide. Remove the clamp guide (Fig. 1244).



Fig 1244

DSC-0709

5. Remove the 2 bolts on the inside of the track guide (Fig. 1245).



Fig 1245

DSC-0710

DRIVE SYSTEM

6. Lower the track guide from the frame (Fig. 1246).



Fig 1246

DSC-0711

Note: If you have plastic road wheels, the inner bearings can not be replaced. The complete road wheel with bearings have to be replaced.

Note: To remove the carriage bolts that hold the track guide clamp, remove the 3rd and 4th road wheels (Fig. 1247).

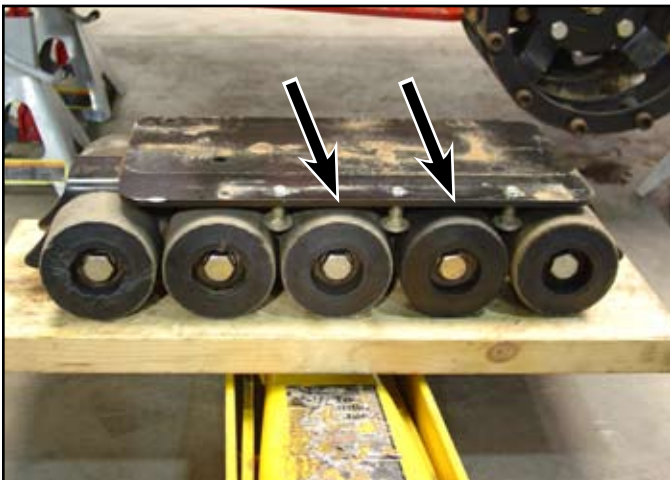


Fig 1247

DSC-0721

TX425 22000001 - 220999999

Track Guide Installation

1. Remove the tensioner arm for easier access to the inner bolts (Fig. 1248).



Fig 1248

DSC-0713

2. Loosely install 2 bolts on the inside track guide (Fig. 1249).

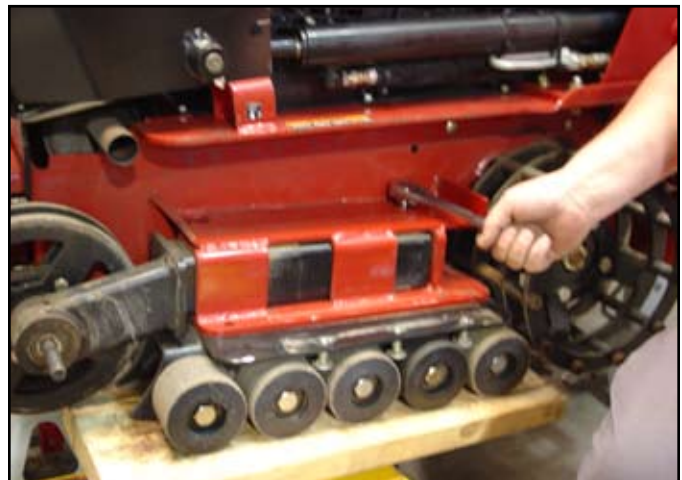


Fig 1249

DSC-0710

DRIVE SYSTEM

- Loosely install the track guide clamp and loosely install 3 nuts to the 3 carriage bolts (Fig. 1250).



Fig 1250

DSC-0709

- Follow the procedures for track alignment using the track alignment tool; refer to Track Guide Alignment on page 8-115.
- Once the track is aligned, tighten and torque the track guide clamp bolts and nuts to 75 ft-lbs. (102 Nm) (Fig. 1251).



Fig 1251

DSC-0715

- Install tensioner wheel assembly.

TX425 22000001 - 22099999

Tensioner Arm Bearing Replacement

Note: Remove the track. Refer to "Track Removal" on page 8-29.

- Remove the tensioner assembly out of the frame (Fig. 1252).



Fig 1252

DSC-0719

- Check the tensioner wheel bolt to make sure it is straight and round. Not worn or bent (Fig. 1253).



Fig 1253

CLR DSC-0720

DRIVE SYSTEM

3. Check the center hole on the outer and inner tensioner wheels for wear. The center hole should be 5/8" (1.58cm) round (Fig. 1254). If the hole is out of round the tensioner wheel(s) needs replacing: follow steps 4 - 9. If the center shows no sign of wear, go on to step 10.



Fig 1254

CLR DSC-0718

4. Disassembly: Remove two bolts and nuts retaining the tensioner wheel assembly (Fig. 1255).



Fig 1255

CLR DSC-0725

5. Assembly: Install bolts through the inner tensioner wheel, with the bolt heads on the chamfer edge side of the inner tensioner wheel (Fig. 1256).

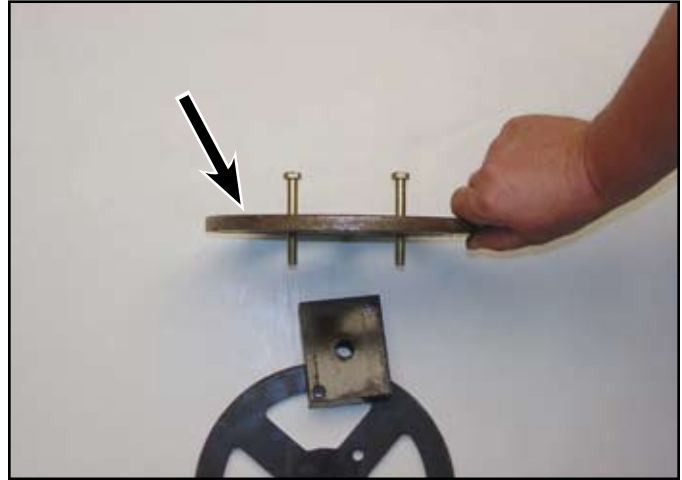


Fig 1256

CLR DSC-0726

6. Install the block spacer onto the bolts (Fig. 1257).



Fig 1257

CLR DSC-0727

DRIVE SYSTEM

7. Install the outer tensioner wheel and the two nuts (Fig. 1258).

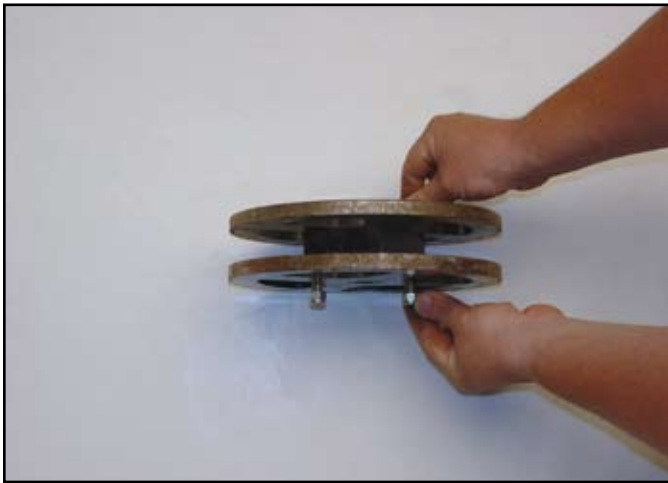


Fig 1258 CLR DSC-0728

9. Torque the two bolts and nuts to 30 ft-lbs. (41 N-m) (Fig. 1260).

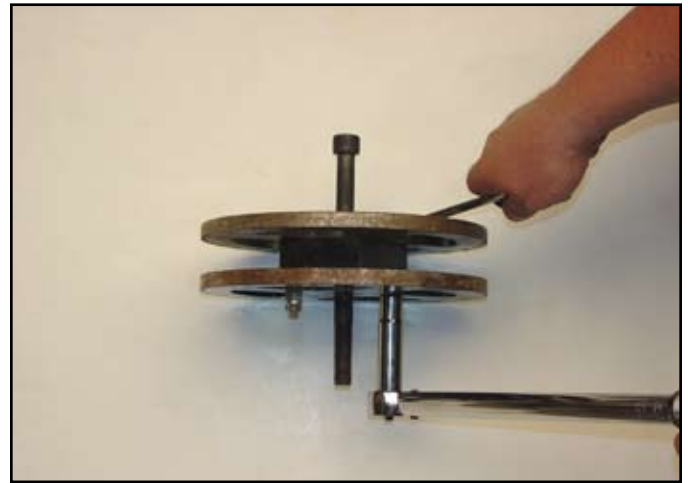


Fig 1260 CLR DSC-0730

8. Before tightening the bolts and nuts, slide the tensioner wheel bolt through the inner and outer tensioner wheels to make sure everything is aligned (Fig. 1259).



Fig 1259 CLR DSC-0729

10. Support the tensioner arm either in a bench vice or on a flat bench making sure there is space under it for bearing removal. Using a hammer and punch, drive the bottom bearing out of the housing. Turn the tensioner arm over and drive out the other bearing. Remove the spacer (Fig. 1261).



Fig 1261 DSC-0733

DRIVE SYSTEM

TX425 22000001 - 220999999

Tensioner Arm Bearing Installation

Note: The raised inner race of the bearing should be facing outward on both bearings on the tensioner arm (Fig. 1262).



Fig 1262

DSC-0737

1. Press the first bearing in so it seats against the inner race of the housing. Turn the tensioner assembly over and install the spacer centered on the inner race (tensioner wheel bolt can be used to keep the spacer centered to the bearing inner race) and press the second bearing in until it seats against the inner race and spacer (Fig. 1262).

Important: Press on outer bearing race only, otherwise bearing damage could occur.

Note: The outer race of the bearing is flush with the center hub of the tensioner assembly (Fig. 1263).



Fig 1263

DSC-0739

2. Reassemble the tensioner assembly with bolt, 2 washers, and nut.

Note: Make sure the chamfer edge of the inner tension wheel is toward the center (Fig. 1264).

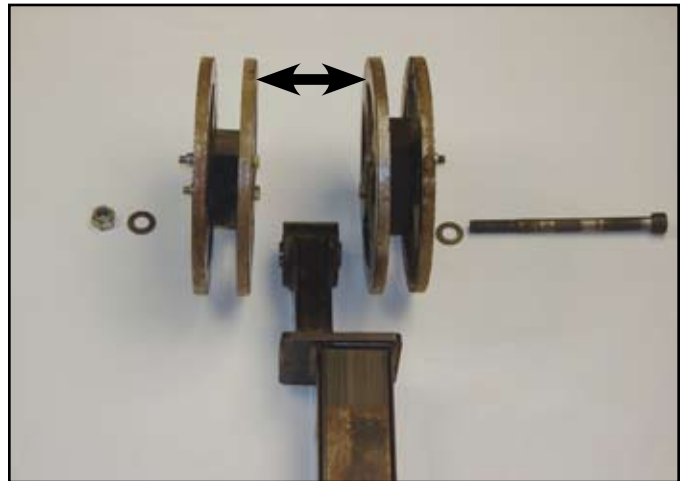


Fig 1264

CLR DSC-0741

DRIVE SYSTEM

Note: On model TX425 22307 serial number range 220000001 – 220000400 the tensioner arms are offset (Fig. 1265). On serial number range 220000401 – 220999999 the arm aligns with the tensioner tube.



Fig 1265

CLR DSC-0746

TX420 200000100 - 230000999

TX425 220000100 - 240000299

Wheel Motor Removal

Note: This procedure can be used for the left or right wheel motor.

1. Lift and securely support the unit. Refer to “Lifting Unit for Service”, page 8-2.
2. Remove the track. Refer to “Track Removal” as follows:
 - TX420 page 8-4
 - TX425 (with a cast drive wheel) page 8-13
 - TX425 (with drive sprocket wheel) page 8-29
3. Set the park brake.

4. Remove cotter pin from the wheel motor shaft (Fig. 1266).



Fig 1266

DSC-0894

5. With a 1-1/2” socket, remove the nut from the wheel motor shaft (Fig. 1267).



Fig 1267

DSC-0748

DRIVE SYSTEM

- Using a wheel puller, remove the drive sprocket (Fig. 1268).

Note: It may be helpful in removing the drive sprocket if heat is applied to the hub.



Fig 1268

PICT-8106

- Remove the nine bolts retaining the rear chassis cover assembly (Fig. 1270).



Fig 1270

DSC-0896

- Unlatch and open the rear access cover.
- Remove the right and left rear counterweights (Fig. 1269).



Fig 1269

DSC-0895

- On the top left side, remove the carriage bolt and nut retaining the fuel tank clamp (Fig. 1271).



Fig 1271

DSC-0752

DRIVE SYSTEM

11. Remove the rear chassis cover assembly (Fig. 1272).



Fig 1272

DSC-0897

13. Remove the hose clamp securing the fuel line to the fuel tank. Remove the fuel line and slide the fuel tank out of the frame (Fig. 1274).



Fig 1274

DSC-0763

12. Remove the two wires on the fuel sending unit, located on the top of the fuel tank (Fig. 1273).

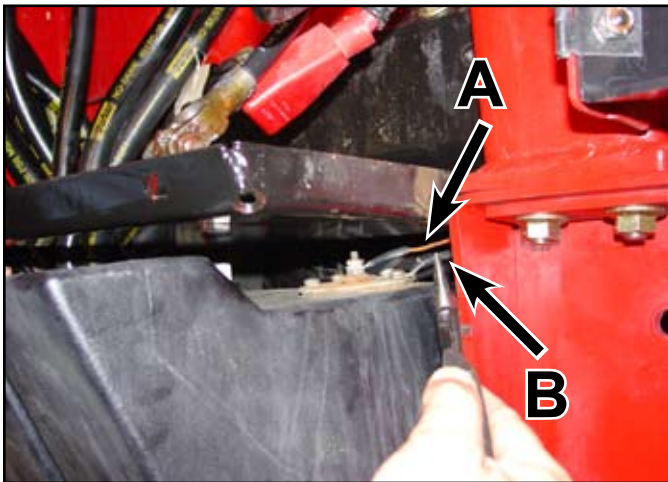


Fig 1273

DSC-0898

A. Center terminal
orange wire

B. Outside terminal
black wire

14. Before removing the hydraulic lines from the motor, mark or tag one of the lines, this will ensure the hydraulic lines are reinstalled in the proper ports (Fig. 1275).



Fig 1275

DSC-0901

DRIVE SYSTEM

15. Place a drain pan under the motor wheel that is being removed. Using a 1-1/8" 15°/60° offset open end wrench, disconnect the two hydraulic lines running to the wheel motor. Install protective caps on the hydraulic lines (Fig. 1276).

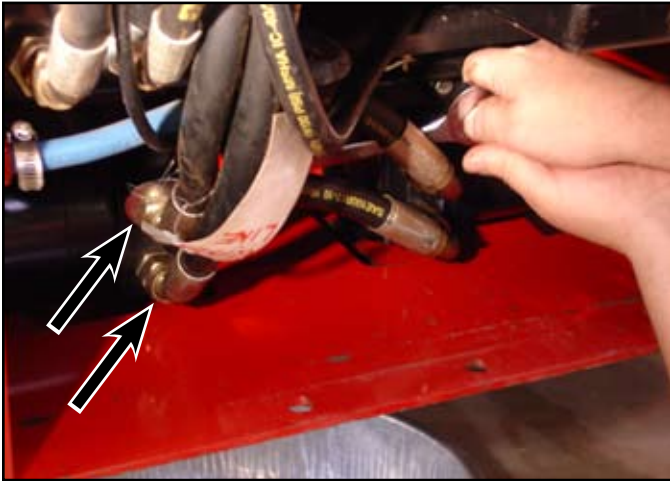


Fig 1276

DSC-0766

16. Using a 1-1/16" socket, remove the two hydraulic fittings from the wheel motor. Install protective caps in the wheel motor hydraulic openings (Fig. 1277).



Fig 1277

DSC-0767

17. Remove the 4 bolts and lock washers retaining the wheel motor to the frame (Fig. 1278).



Fig 1278

DSC-0902

18. Move the park brake to the OFF position, remove the two bolts and lock washers retaining the brake assembly (Fig. 1279).



Fig 1279

DSC-0903

DRIVE SYSTEM

19. Move the brake housing toward the center of the unit (Fig. 1280).

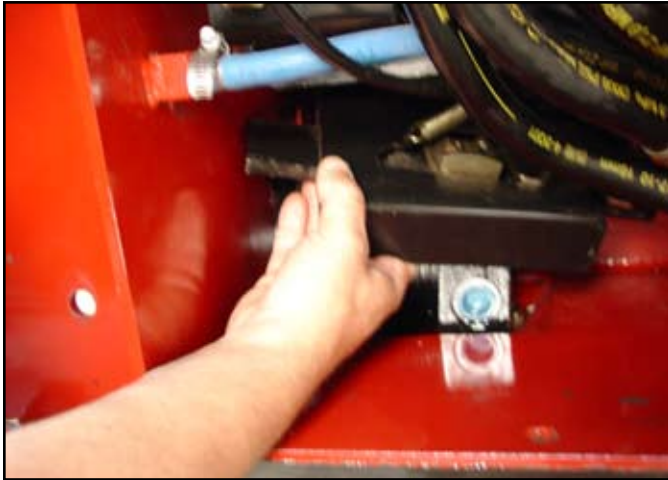


Fig 1280

DSC-0905

21. Rotate the wheel motor 90° so the hydraulic line ports are facing upward; this will allow the raised portion of the wheel motor to fit through the notch in the frame (Fig. 1282).



Fig 1282

DSC-0776

20. Remove the two wheel motor mounting plates (Fig. 1281).

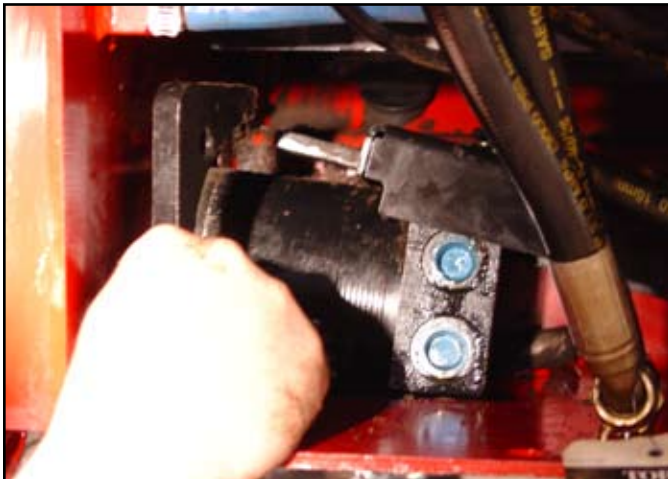


Fig 1281

DSC-0774

22. To service the wheel motor, refer to "Parker/Ross Wheel Motor Service Manual" (Toro form no. 492-4753).

Wheel Motor Installation

1. Wheel motor mounting plates have a wide side and narrow side. The wide side faces up when installing the wheel motor (Fig. 1283).

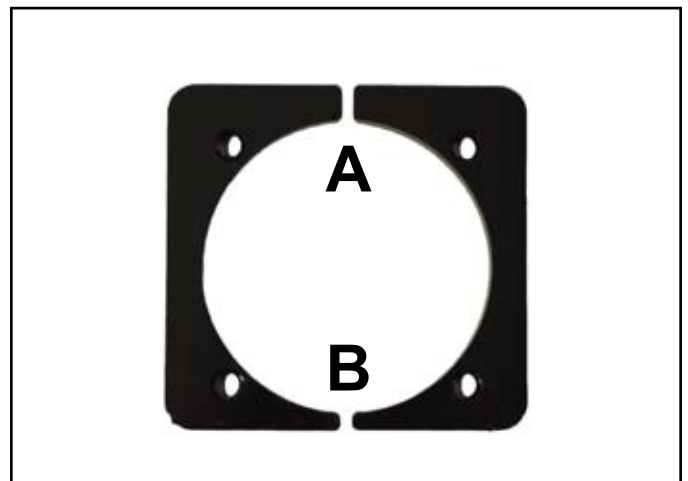


Fig 1283

CLR DSC-0686

A. Wide side

B. Narrow side

DRIVE SYSTEM

2. Insert the wheel motor into the frame with the ports facing up. Rotate the wheel motor 90° so the hydraulic ports are facing to the rear of the machine (Fig. 1284).



Fig 1284

DSC-0776

3. Install the wheel motor mounting plates on the inside of the frame.

Note: The wide side of the motor mounting plates faces up (Fig. 1285).



Fig 1285

DSC-0777

4. Apply locking compound to the threads of the wheel motor mounting bolts (Fig. 1286).

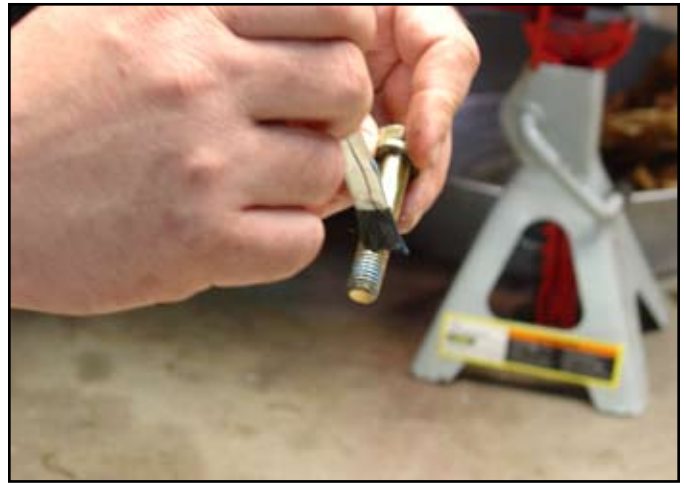


Fig 1286

DSC-0688

5. Install the 4 bolts and lockwashers through the motor housing, frame and into the motor mounting plates. Torque the bolts to 75 ± 8 ft-lbs. (102 ± 11 Nm) (Fig. 1287).



Fig 1287

DSC-0924

DRIVE SYSTEM

- Slide the brake housing back into the frame. Install and tighten the two bolts and lockwashers that retain the brake assembly to the frame. Torque the bolts to 30 ft-lbs. (40.67 Nm) (Fig. 1288).



Fig 1288

DSC-0925

- Install the two hydraulic lines, making sure the tagged or marked hydraulic fitting is connected to the proper fitting. Tighten the hydraulic lines using a 1-1/8" 15°/60° offset open end wrench (Fig. 1290).

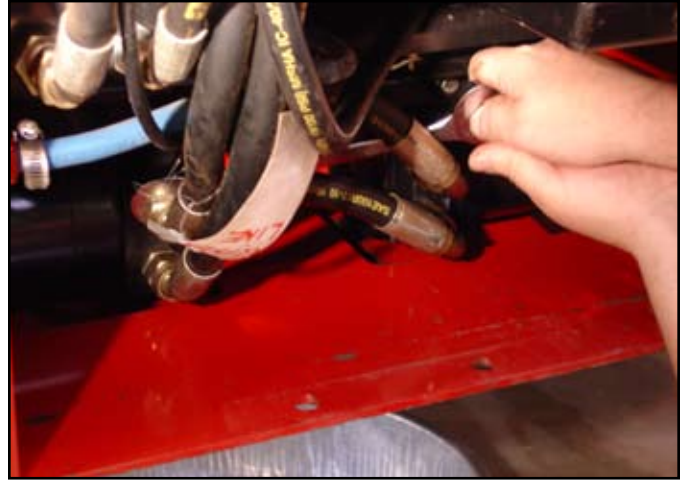


Fig 1290

DSC-0766

Note: Before installing the hydraulic fittings, replace the O-rings.

- Remove the plugs in the hydraulic fitting holes. With a 1-1/16" socket, install the hydraulic fittings to the wheel motor (Fig. 1289).



Fig 1289

DSC-0782

Note: Before installing the fuel tank, connect the fuel line, make sure the park brake is still disengaged and start the unit. Follow the procedures for purging; refer to "Purging Air Procedures" on page 12-27. Check for any leaks in the hydraulic fittings and hydraulic hoses.

- Slide the fuel tank into the frame and install the fuel line and hose clamp (Fig. 1291).



Fig 1291

DSC-0763

DRIVE SYSTEM

10. Install the two wires on the fuel sending unit, located on the top of the fuel tank (Fig. 1292).

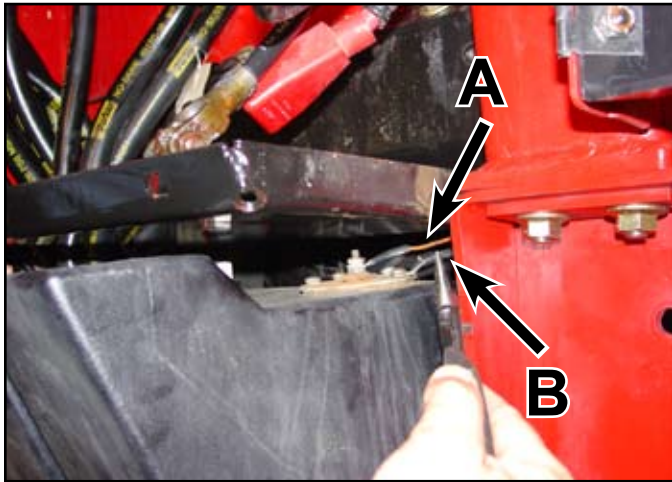


Fig 1292

DSC-0898

- A. Center terminal orange wire
B. Outside terminal black wire

12. At the top left of the rear chassis cover assembly, install the fuel tank clamp with carriage bolt and nut (Fig. 1294).



Fig 1294

DSC-0752

11. Install the rear chassis cover assembly (Fig. 1293).



Fig 1293

DSC-0897

13. Install the remaining eight bolts retaining the rear chassis cover assembly to the frame (Fig. 1295).



Fig 1295

DSC-0896

DRIVE SYSTEM

14. Install the right and left counterweights with 4 bolts and lockwashers (2 each per counterweight) (Fig. 1296).



Fig 1296

DSC-0895

15. Install a new or rebuilt drive sprocket wheel on the drive motor shaft, making sure the woodruff key is in place (Fig. 1297).

Note: Whenever this style drive wheel sprocket has been removed from the wheel motor, the center wheel hub drive must be replaced, **Do Not Reuse.** Reason: When the wheel drive sprocket is installed, the center wheel hub expands enough to fit the wheel motor shaft. Once the rear wheel drive sprocket has been removed it will not fit on the wheel motor shaft properly. Refer to "Drive Sprocket Rebuild", on page 8-46.



Fig 1297

DSC-0933

DRIVE SYSTEM

16. Install the castle nut on the motor drive shaft (Fig. 1298).

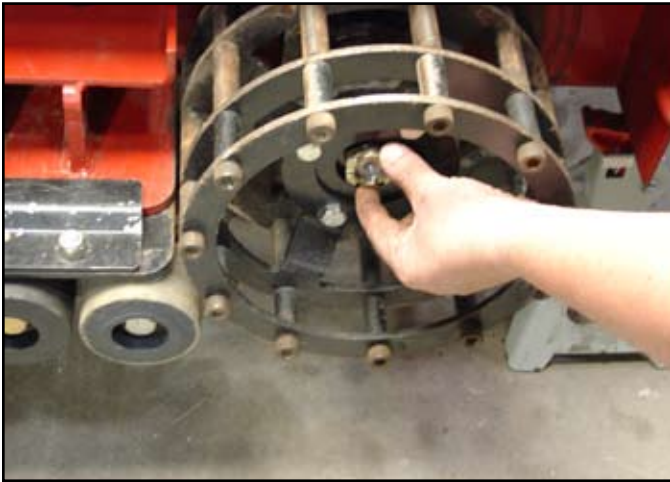


Fig 1298

DSC-0797

18. Install cotter pin (Fig. 1300).

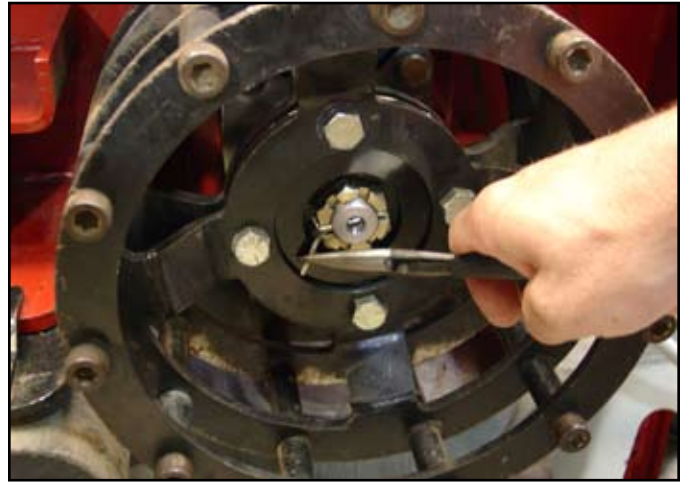


Fig 1300

DSC-0926

17. Engage the park brake and torque the castle nut to 300 ft-lbs. (406.74 Nm) (Fig. 1299).

Note: When torque has been obtained, check the alignment of the hole for the cotter pin, turn until the hole is aligned with the slot in the castle nut.



Fig 1299

DSC-0798

Drive Sprocket Rebuild

Note: Whenever the rear wheel drive sprocket has been removed from the wheel motor, the center hub must be replaced, Do Not Reuse. Reason: when the wheel drive sprocket is installed, the center wheel hub expands enough to fit the wheel motor shaft. Once the rear wheel drive sprocket has been removed it will not fit on the wheel motor shaft properly.

1. Loosen the 11 hex head bolts retaining the outer drive wheel ring to the drive wheel (Fig. 1301).



Fig 1301

CLR DSC-0783

DRIVE SYSTEM

2. Remove the wheel hex head bolts, drive wheel spacers, and the outer drive wheel ring (Fig. 1302).

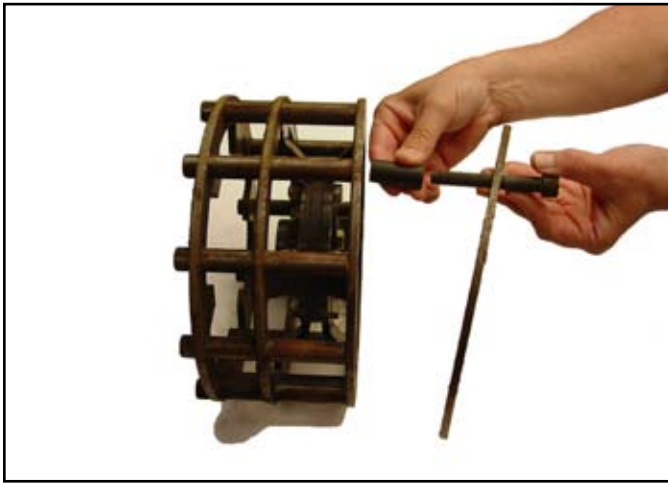


Fig 1302

CLR DSC-0784

4. Discard the old center hub. Install a new center hub in the drive wheel assembly. Turn the drive wheel assembly until all the inner and outer bolt holes line up. Install the 4 bolts and nuts in the center hub, Do Not Tighten (Fig. 1304).



Fig 1304

CLR DSC-0790

3. Remove the 4 bolts and nuts retaining the center hub to the drive wheel assembly (Fig. 1303).



Fig 1303

CLR DSC-0785

5. Assemble the outer drive wheel ring to the sprocket with the 11 spacers and hex head bolts (Fig. 1305).



Fig 1305

CLR DSC-0793

DRIVE SYSTEM

6. Torque the 4 bolts and nuts in the center wheel hub to 70 ft-lbs (94.9 Nm) and the 11 hex head bolts to 125 ft-lbs. (169.5 Nm) (Fig. 1306).



Fig 1306

CLR DSC-0794

7. Install the drive wheel sprocket to the motor shaft (Fig. 1307).



Fig 1307

DSC-0933

8. Install the crown nut on the motor shaft (Fig. 1308).

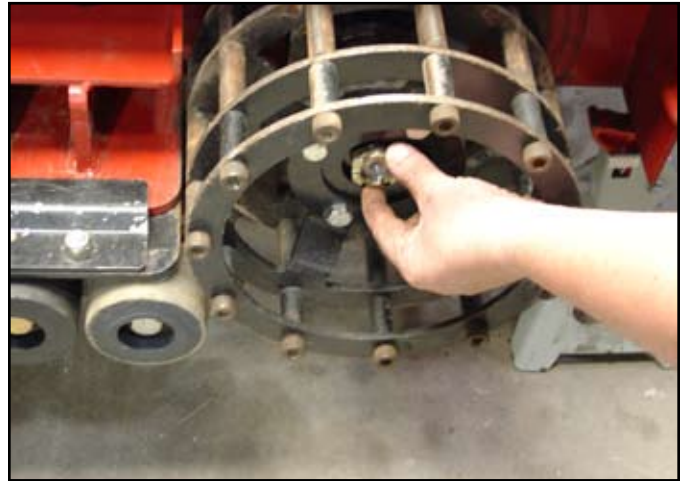


Fig 1308

DSC-0797

9. Torque the crown nut to 300 ft-lbs. (406.74 Nm) (Fig. 1309).

Note: Make sure the hole for the cotter pin is aligned with the crown nut and the motor shaft.



Fig 1309

DSC-0798

DRIVE SYSTEM

10. Install a cotter pin (Fig. 1310).



Fig 1310

DSC-0926

2. Loosen the 3 nuts on the carriage bolts located on the track guide clamp (Fig. 1312).



Fig 1312

DSC-0801

Track Installation

1. Install a washer, the outer tensioner wheel assembly, a second washer, and a nut. Do Not tighten nut, leave loose (Fig. 1311).



Fig 1311

DSC-0927

3. Loosen the two inner bolts retaining the track guide to the frame (Fig. 1313).



Fig 1313

DSC-0802

DRIVE SYSTEM

4. Insert the notched end of the alignment tool into the drive sprocket wheel spacer (Fig. 1314).



Fig 1314

DSC-0928

6. Rotate the tool and move the track guide as necessary until the tool fits into the track guide channel. Secure the end of the tool with a strap (Fig. 1316).

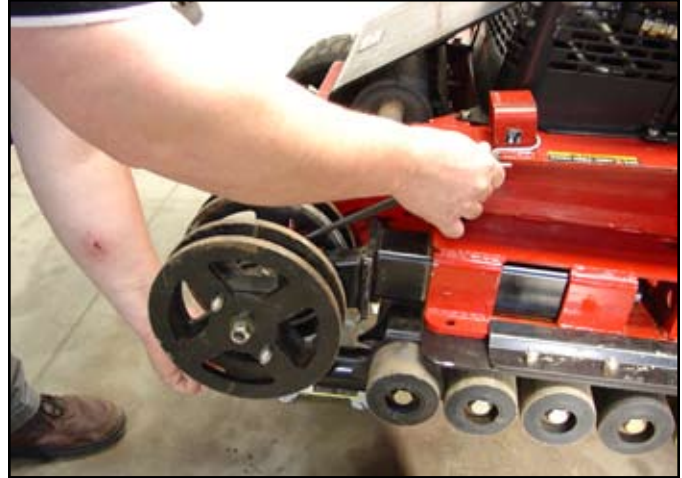


Fig 1316

DSC-0806

5. Secure the end with the pin (Fig. 1315).



Fig 1315

DSC-0805

7. Tighten and torque the two inner track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1317).

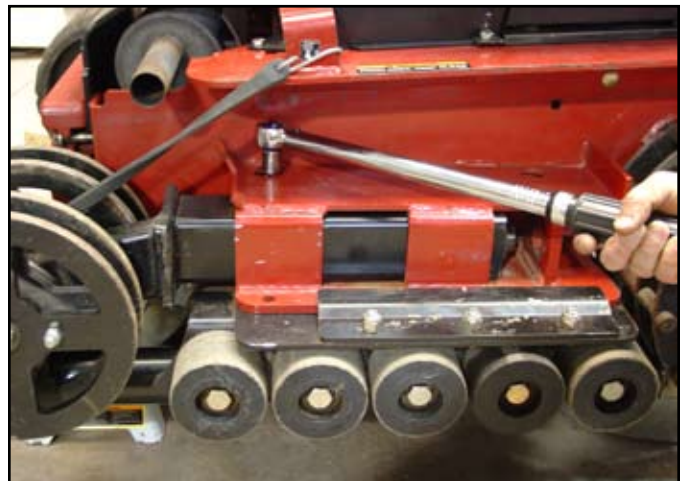


Fig 1317

DSC-0929

DRIVE SYSTEM

8. Tighten and torque the three nuts on the carriage bolts to 75 ft-lbs. (102 Nm) (Fig. 1318).



Fig 1318

DSC-0930

11. Install the track over the rear drive sprocket wheel (Fig. 1320).



Fig 1320

DSC-0812

9. Remove the alignment tool.

10. Remove the outer tensioner wheel (Fig. 1319).



Fig 1319

DSC-0811

12. Install the front of the track over the front inner tensioner wheel (Fig. 1321).



Fig 1321

DSC-0931

DRIVE SYSTEM

13. Re-install the outer tensioner wheel, washer, and nut (Fig. 1322).



Fig 1322

DSC-0814

15. With a 1/2" ratchet turn the tensioning screw counterclockwise until the distance between the tension nut and the back tension tube is 2-3/4" (7cm) (Fig. 1324 and Fig. 1325).



Fig 1324

DSC-0816

14. Tighten and torque the bolt and nut to 150 ft-lbs. (203.37 Nm) (Fig. 1323).



Fig 1323

DSC-0815

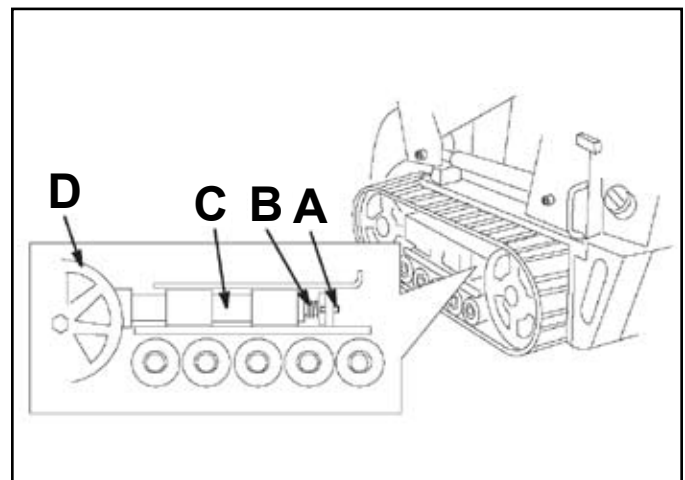


Fig 1325

fig. 35 m-4747

- A. Locking bolt
B. Tensioning screw
C. Tensioning tube
D. Tension wheel

DRIVE SYSTEM

16. Align the closest notch in the tension screw to the locking bolt and secure the screw with the locking bolt and nut (Fig. 1326).



Fig 1326

DSC-0932

3. Connect a spring removal tool (Toro P/N 92-5771), to the spring end located on the stud bolted to the loader tower assembly (Fig. 1327).



Fig 1327

DSC-0587

17. Lower the traction unit to the ground.

TX420 & 425 All Serial Numbers

Idler Arm Assembly Removal

1. Shut engine off, apply parking brake, and remove ignition key.
2. Lift the engine hood assembly.

4. Pull up on the spring end to remove the spring from the bolt stud (Fig. 1328).

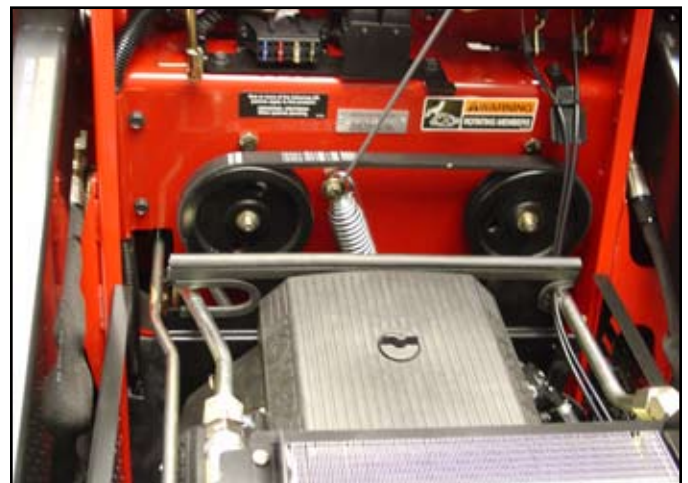


Fig 1328

DSC-0589

DRIVE SYSTEM

5. Remove the spring from the idler arm (Fig. 1329).



Fig 1329

PICT-7642

7. Remove left hand engine panel (Fig. 1331).



Fig 1331

DSC-3307a

6. Remove the belt from the pulleys (Fig. 1330).

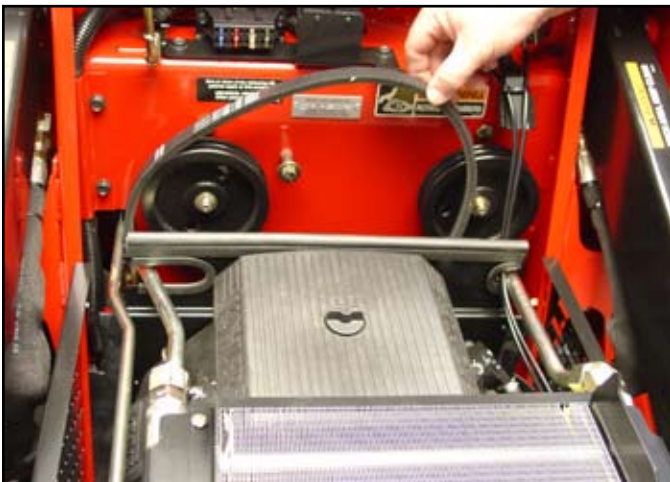


Fig 1330

DSC-0591

8. Open the rear chassis cover assembly.
9. Use a ratchet/socket/extension through the rear access area (Fig. 1332) and a wrench on the idler arm assembly (Fig. 1333) to remove the nut and bolt retaining the idler arm assembly to the loader tower assembly.



Fig 1332

DSC-3311

DRIVE SYSTEM



Fig 1333

DSC-3318

11. Inspect the pulley bearing and the two flange bushings for any wear (Fig. 1335).

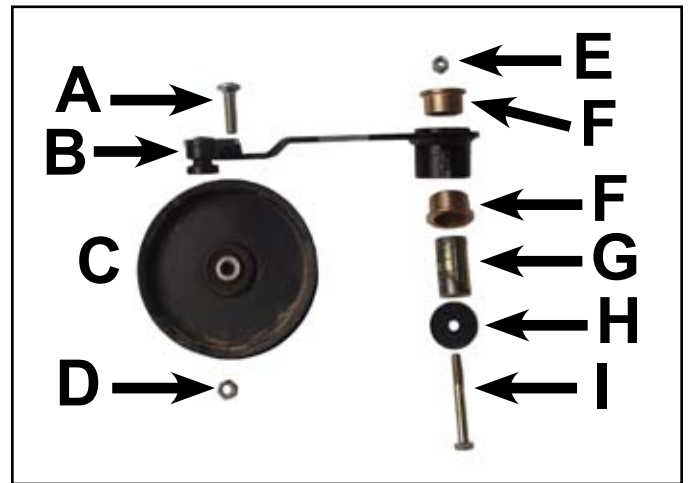


Fig 1335

CLR DSC-3321

10. Remove the idler arm assembly from the unit (Fig. 1334).



Fig 1334

DSC-3319

- | | |
|-----------------------|------------------------|
| A. Carriage Bolt | F. Flange Bushings (2) |
| B. Idler arm assembly | G. Mounting Spacer |
| C. Pulley | H. Washer |
| D. Nut | I. Bolt |
| E. Nut | |

TX420 & 425 All Serial Numbers

Idler Arm Assembly Installation

1. Install the idler arm assembly in the unit (Fig. 1336).



Fig 1336

DSC-3319

DRIVE SYSTEM

- Using a ratchet/socket/extension through the rear access area (Fig. 1337) and a wrench on the idler arm assembly (Fig. 1338), tighten the bolt and nut.



Fig 1337

DSC-3311

- Close the rear chassis cover assembly.
- Install the left hand engine panel (Fig. 1339).



Fig 1339

DSC-3307a



Fig 1338

DSC-3318

- Install the belt on the pulleys (Fig. 1340).

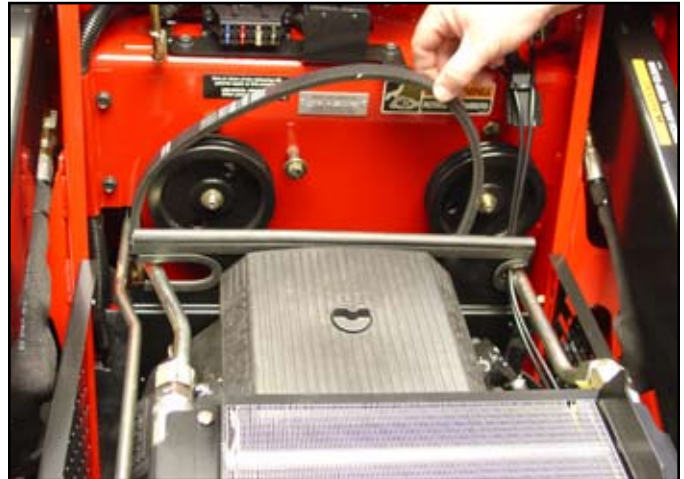


Fig 1340

DSC-0591

DRIVE SYSTEM

6. Install the idler spring on the idler arm assembly (Fig. 1341).



Fig 1341

PICT-7642

7. With a spring removal tool, connect the tool to the spring end and hook it to the stud located on the loader tower assembly (Fig. 1342).



Fig 1342

DSC-0587

8. Close the engine hood assembly.

TX420 & 425 230000999 & lower

Traction Control Handle Assembly Removal

1. Open the rear cover assembly.
2. Remove the bolt and nut retaining the control handle assembly to the drive rod assembly (Fig. 1343).



Fig 1343

DSC-3658

3. Remove the 4 screws retaining the reference bar to control panel assembly (Fig. 1344).



Fig 1344

DSC-3659

DRIVE SYSTEM

4. Remove the reference bar and control handle assembly (Fig. 1345).



Fig 1345

DSC-3660

6. Remove the bolt, spacer, and nut in the rod end bearing of the right side linkage rod connecting to the drive rod assembly (Fig. 1347).

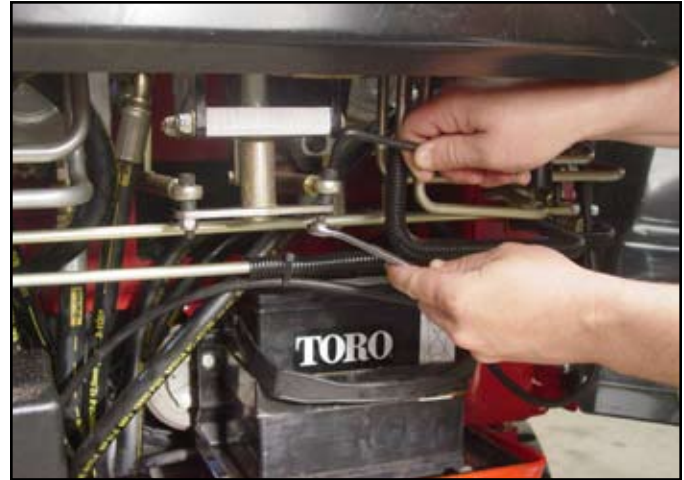


Fig 1347

CLR DSC-3666

5. Remove the center panel assembly (Fig. 1346).



Fig 1346

CLR DSC-3662

7. Remove the bolt, spacer, and nut in the rod end bearing of the left side linkage rod connecting to the drive rod assembly (Fig. 1348).

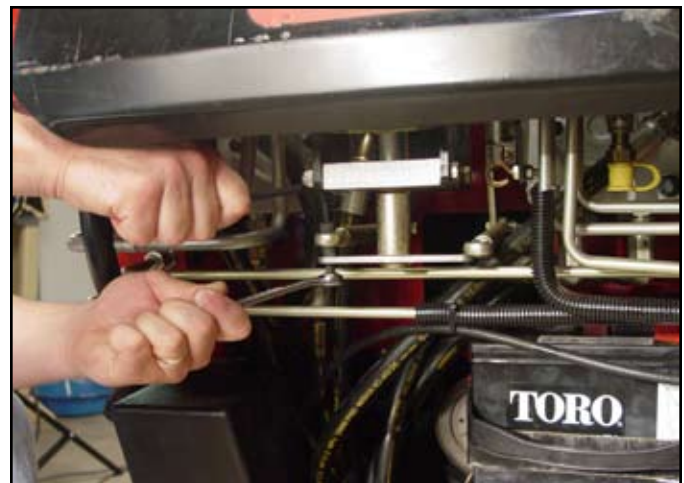


Fig 1348

DSC-3667

DRIVE SYSTEM

- Remove the 4 bolts and nuts retaining the left and right bushings retaining the pivot arm shafts (Fig. 1349).

Note: The right front bolt retaining the bushing can not be removed due to clearance with the hydraulic line.

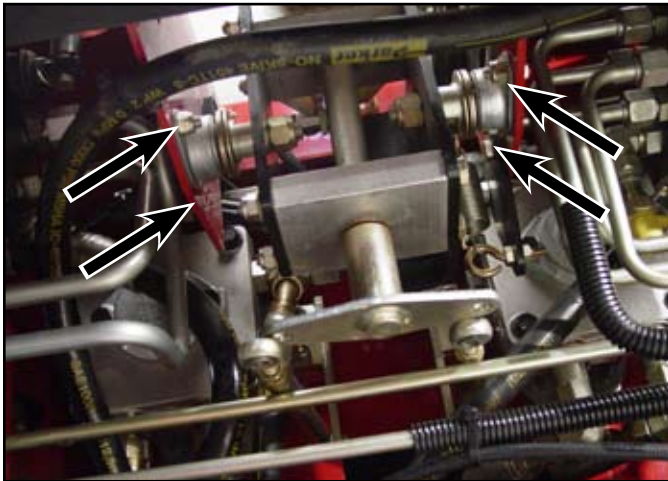


Fig 1349 DSC-3670

- Lower the traction control assembly out of the control panel (Fig. 1350).

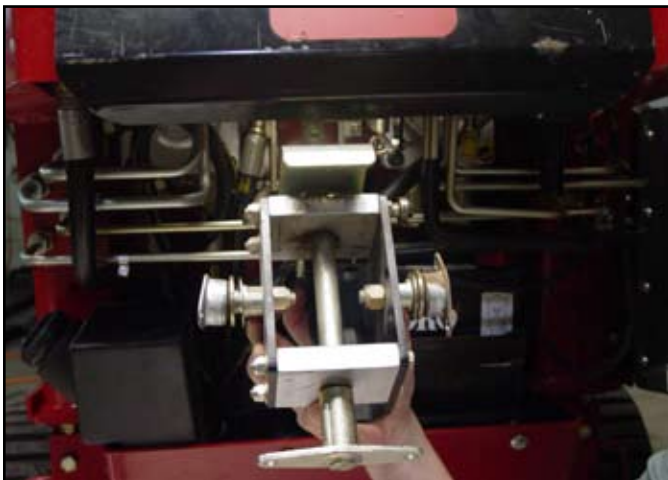


Fig 1350 DSC-3672

- Traction control assembly (Fig. 1351).

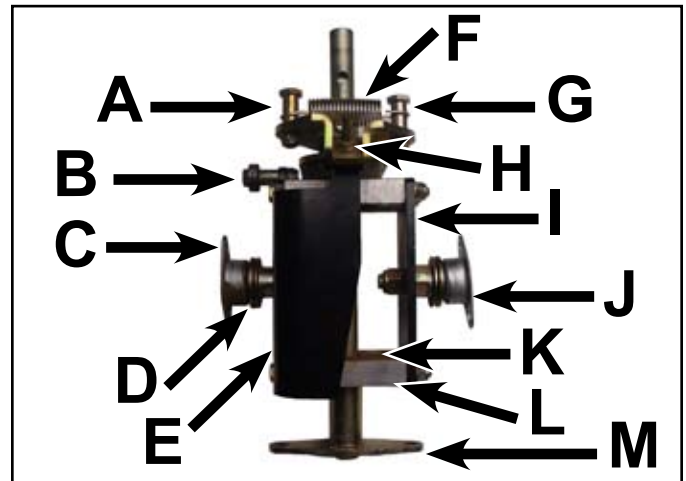


Fig 1351 CLR DSC-3675

- | | |
|------------------------------|-----------------------------|
| A. RH Lever Return | G. LH Lever Return |
| B. Bearing Return to Neutral | H. Bolt to Proximity Switch |
| C. Washers (2) | I. LH Pivot Bracket |
| D. Spring Washer | J. Bushings (2) |
| E. RH Pivot Bracket | K. Flange Bearings (2) |
| F. Extension Spring | L. Bearing Support Block |
| | M. Drive Rod Assembly |

Traction Control Handle Assembly Installation

- Raise the traction control assembly into the control panel (Fig. 1352).

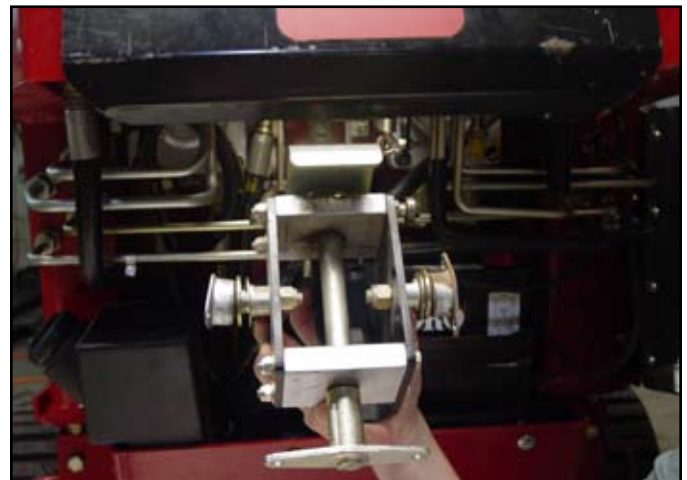


Fig 1352 CLR DSC-3672

DRIVE SYSTEM

2. Install the right and left bushings on the pivot arm shafts and install the 4 bolts and nuts retaining the bushings to the control panel assembly (Fig. 1353).

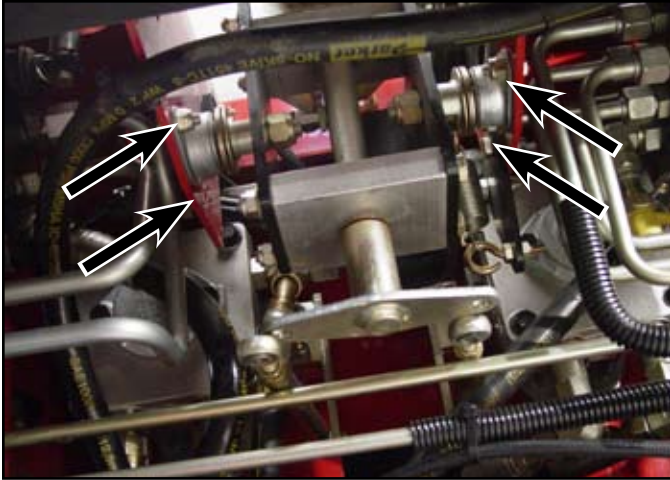


Fig 1353

DSC-3670

4. Install the right side linkage rod to the drive rod assembly with a bolt, spacer, and nut through the rod end bearing (Fig. 1355).

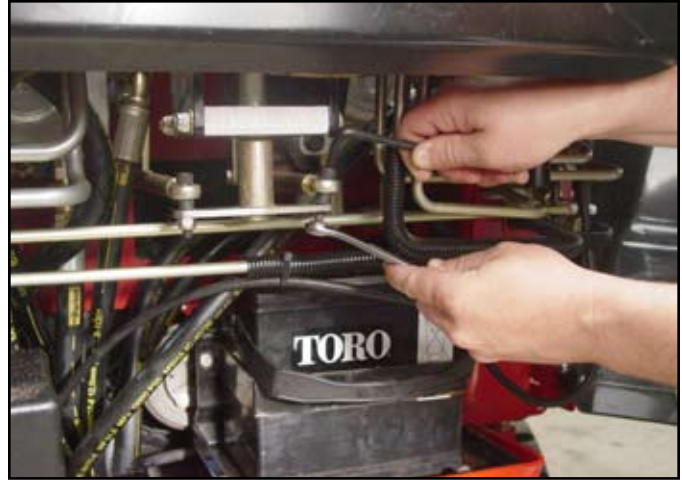


Fig 1355

CLR DSC-3666

3. Install the left side linkage rod to the drive rod assembly with a bolt, spacer, and nut through the rod end bearing (Fig. 1354).

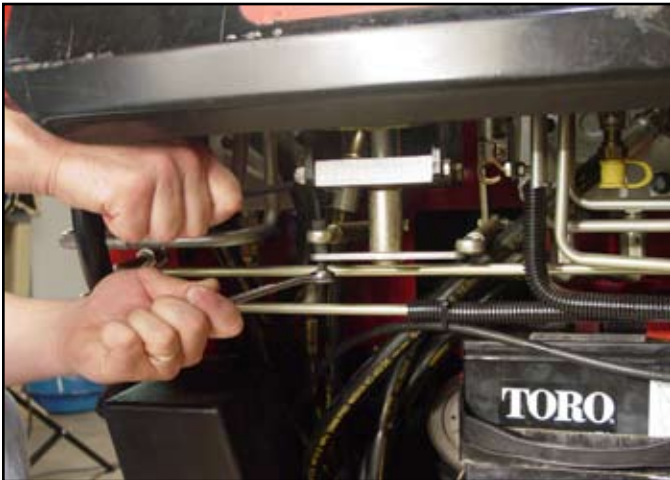


Fig 1354

DSC-3667

5. Install the center panel assembly (Fig. 1356).

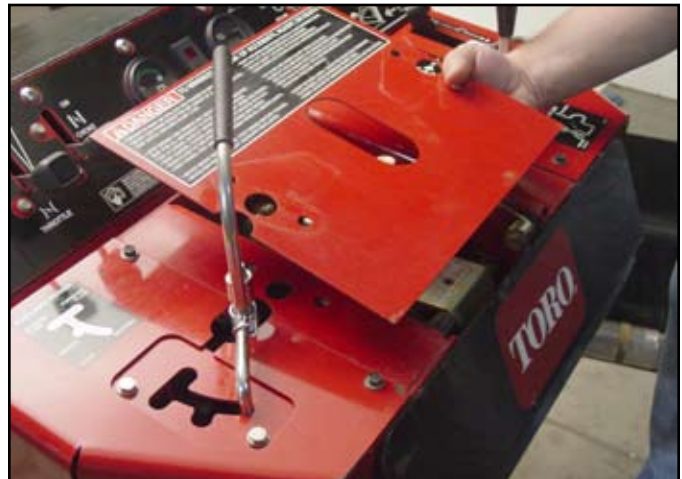


Fig 1356

CLR DSC-3662

DRIVE SYSTEM

6. Install the reference bar and the control handle assembly. The control handle assembly should fit over the drive rod assembly (Fig. 1357).



Fig 1357

DSC-3660

8. Install the bolt and nut retaining the control handle assembly to the drive rod assembly (Fig. 1359).



Fig 1359

DSC-3658

7. Install the 4 screws securing the reference bar to the control panel assembly (Fig. 1358).



Fig 1358

DSC-3659

9. Close the rear cover assembly.

TX420 & 425 240000301 & up

Hydrostatic Pump Removal (Right Side)

1. Raise the machine. Refer to "Lifting Unit for Service" on page 8-2.

DRIVE SYSTEM

Removal of Rear Panels

1. Remove the rear access cover (Fig. 1360).



Fig 1360

PICT-1026

2. Using a 1/2" socket and 1/2" wrench, remove the battery clamp (Fig. 1361).



Fig 1361

PICT-1029a

3. Disconnect the negative battery cable and then the positive battery cable (Fig. 1362).



Fig 1362

PICT-1032a

4. Remove the battery from the battery mounting tray (Fig. 1363).



Fig 1363

PICT-1034a

DRIVE SYSTEM

- Using a 3/8" socket, remove the right hand and left hand rear cover support assemblies (Fig. 1364).



Fig 1364

PICT-1037

- Using a 3/4" socket, remove both rear counter-weights (Fig. 1365).



Fig 1365

PICT-7633

- Using a 3/4" and a 9/16" socket, remove the rear chassis cover by removing the 8 sets of fasteners (Fig. 1366).

Note: Use a floor jack to raise the machine off the jack stands to remove the rear chassis cover from the machine. Lower the machine back onto the jack stands.

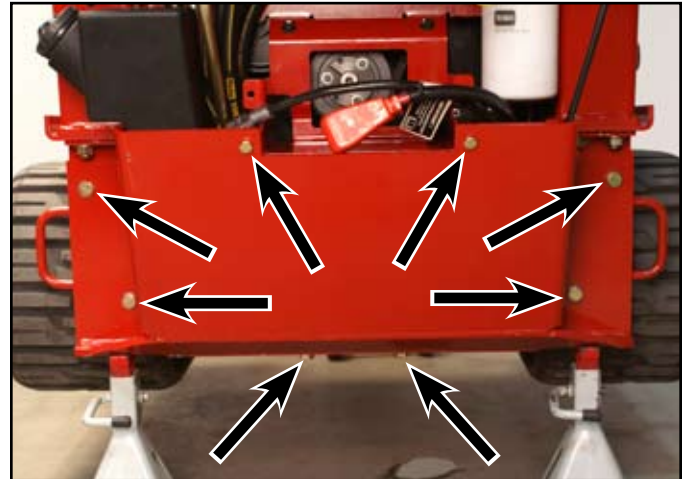


Fig 1366

PICT-7636

- Disconnect the two wires on the fuel sending unit located on top of the fuel tank (Fig. 1367).

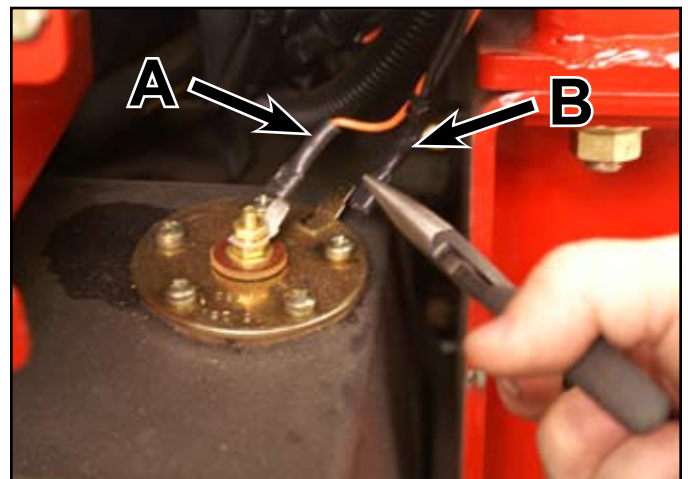


Fig 1367

PICT-0555

A. Center terminal
orange wire

B. Outside terminal
black wire

DRIVE SYSTEM

9. Remove the fuel line from the fuel tank. Slide the fuel tank out of the frame (Fig. 1368).



Fig 1368

PICT-7638

11. Remove the right hand panel from the control panel assembly (Fig. 1370).



Fig 1370

PICT-1414a

10. Using a 3/8" socket, remove the 4 screws holding the right hand panel to the control panel assembly (Fig. 1369).



Fig 1369

PICT-1413

12. Using a 3/8" socket, remove the 4 screws holding the left hand panel to the control panel assembly (Fig. 1371).



Fig 1371

PICT-1415

DRIVE SYSTEM

13. Remove the left hand panel from the control panel assembly (Fig. 1372).



Fig 1372

PICT-1416

Marking the Right Hand Hydrostatic Pump Lines

1. Mark the hydrostatic pump lines as follows:
 - A. Inlet line from the left hand hydrostatic pump (Fig. 1373).



Fig 1373

PICT-1417

- B. Inlet line from the hydraulic oil filter (Fig. 1374).



Fig 1374

PICT-1419

- C. Case drain line (Fig. 1375).

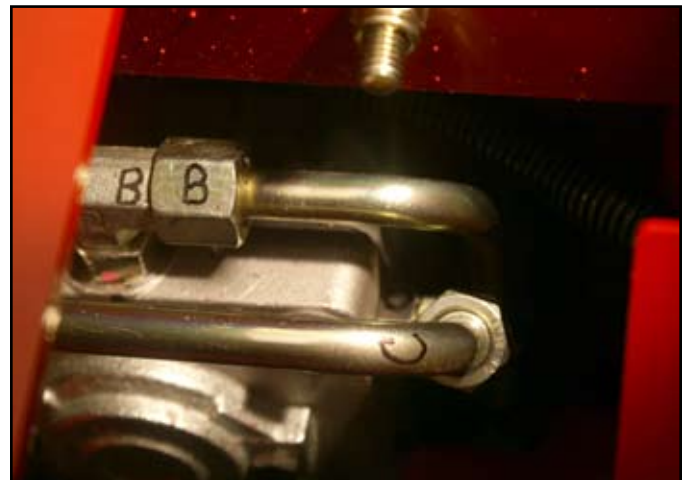


Fig 1375

PICT-1424a

DRIVE SYSTEM

- D. Hydraulic hose running from the “D” port on the right hydrostatic pump to the upper fitting on the left wheel motor (Fig. 1376).
- E. Hydraulic hose running from the “E” port on the right hydrostatic pump to the lower fitting on the left wheel motor (Fig. 1376).



Fig 1376 PICT-1427a

- B. Inlet line from the hydraulic oil filter (Fig. 1378).



Fig 1378 PICT-1429

- C. Case drain line (Fig. 1379).

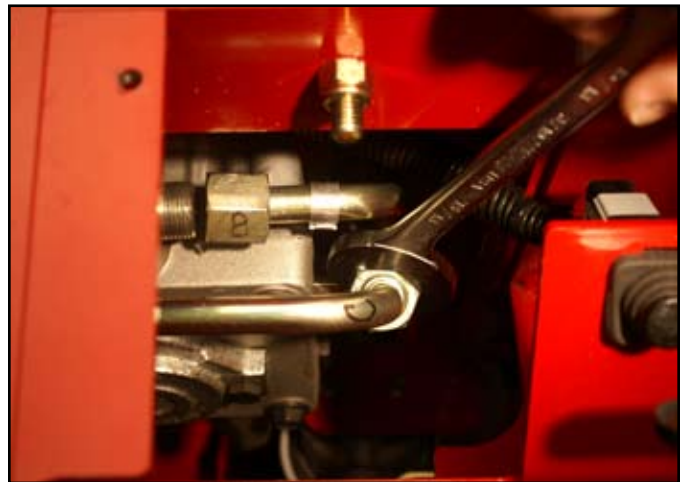


Fig 1379 PICT-1430

2. Using a 15/16” wrench, disconnect the right hand hydrostatic pump lines (just marked) as follows:
 - A. Inlet line from the left hand hydrostatic pump (Fig. 1377).

Note: Cap all hydraulic lines and fittings to prevent debris from entering system.



Fig 1377 PICT-1428

DRIVE SYSTEM

- D. Hydraulic hose running from the “D” port on the right hand hydrostatic pump to the upper fitting on the left wheel motor (Fig. 1380).
- E. Hydraulic hose running from the “E” port on the hydrostatic pump to the lower fitting on the left wheel motor (Fig. 1380).



Fig 1380

PICT-1433

- 4. Open the hood and prop it up in place with the hood support rod.
- 5. Using a spring removal tool (Toro P/N 92-5771), connect the tool to the spring end located on the stud bolted to the tower assembly. Pull up on the spring end to remove the spring from the bolt stud (Fig. 1382).



Fig 1382

PICT-1439

- 3. Using a 1/2” socket and wrench, remove the nut and bolt securing the steering linkage to the right hand pump control arm (Fig. 1381).



Fig 1381

PICT-1438

- 6. Remove spring from the idler arm (Fig. 1383).



Fig 1383

PICT-1441

DRIVE SYSTEM

7. Remove the belt from the pulleys (Fig. 1384).



Fig 1384

PICT-1442

8. Secure the right hand pulley and, using a 5/8" socket, remove the nut and washer securing the pulley to the right hydrostatic pump (Fig. 1385).

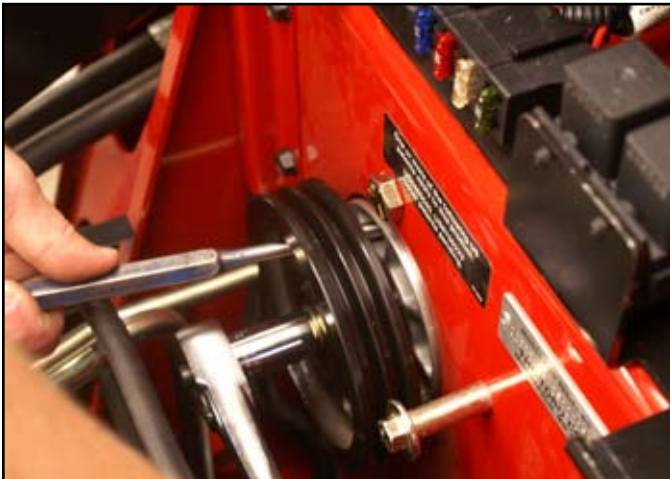


Fig 1385

PICT-1443

9. Using a 2 jaw puller, remove the right pulley from the hydrostatic pump shaft (Fig. 1386).

Note: The seal strip on the engine baffle may have to be removed from the baffle to allow for the 2 jaw puller.



Fig 1386

PICT-5629

10. Using a 3/4" wrench and socket with a swivel attachment or universal joint, remove the 2 bolts securing the hydrostatic pump to the tower (Fig. 1387).



Fig 1387

PICT-1446

11. Carefully remove the hydrostatic pump from the tower assembly by lowering it down and out at the battery box location (Fig. 1388).



Fig 1388

PICT-1447

12. To service the hydrostatic pump, refer to the "Hydro-Gear BDP-10A / 16A / 21L Service and Repair Manual" (Toro form no. 492-4789) or the "Hydro-Gear P Series Pumps Service and Repair Manual" (Form no. BLN 52503).

Hydrostatic Pump Installation (Right Side)

Prior to connecting the hydraulic lines, the o-rings should be replaced with new ones and lightly lubricated with oil.

1. When installing a new hydrostatic pump, make sure all the fittings are installed properly (Fig. 1389).

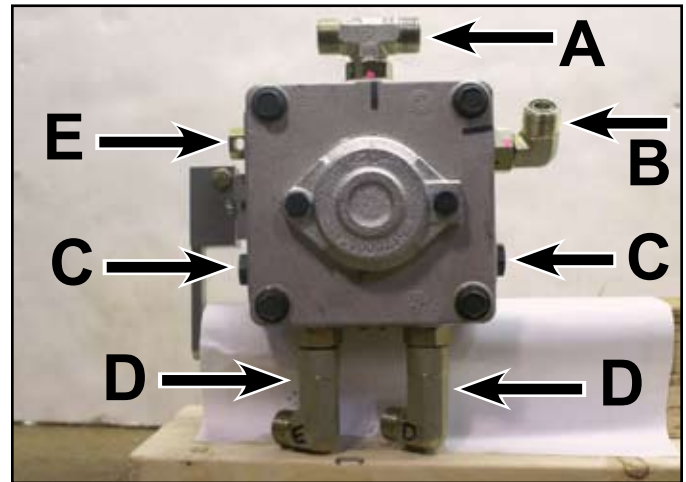


Fig 1389

PICT-1449a

- | | |
|--------------------|--------------------|
| A. Oil inlet | D. Wheel motor (2) |
| B. Case Drain | E. Pump bypass |
| C. Check valve (2) | |

DRIVE SYSTEM

2. Loosely install the lower bolt and nut with the head of the bolt toward the engine.
3. Carefully position the pump into the battery box location and up into position in the tower assembly (Fig. 1390).
4. Loosely install the upper bolt and nut to hold the pump in position.
5. Using a 15/16" wrench, connect the right hand hydrostatic pump lines as follows:
 - C. Case drain line (Fig. 1392).



Fig 1390

PICT-1447

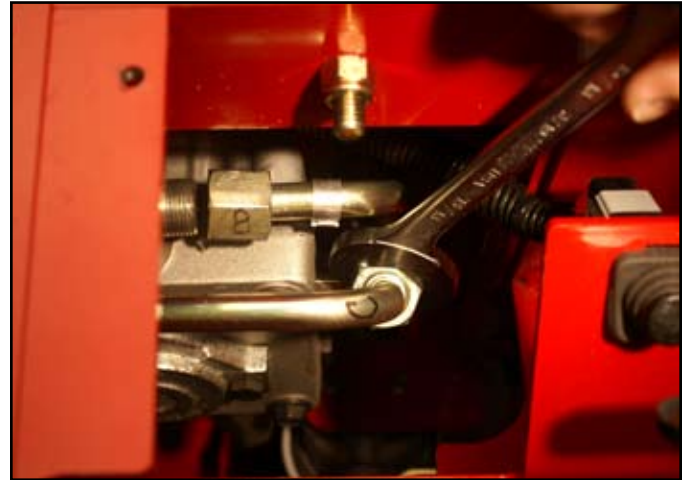


Fig 1392

PICT-1430

Note: Use the previously installed lower bolt and nut to help support the pump while installing (Fig. 1391).

- B. Inlet line from the hydraulic oil filter (Fig. 1393).



Fig 1391

PICT-1450



Fig 1393

PICT-1429

DRIVE SYSTEM

- A. Inlet line from the left hand hydraulic pump (Fig. 1394).



Fig 1394

PICT-1428

6. Using a 3/4" wrench and socket with a swivel or universal joint, tighten the 2 bolts and nuts to secure the hydraulic pump to the tower (Fig. 1396).



Fig 1396

PICT-1446

- D. Hydraulic hose running from the "D" port on the hydrostatic pump to the upper fitting on the left wheel motor (Fig. 1395).
- E. Hydraulic hose running from the "E" port on the hydrostatic pump to the lower fitting on the left wheel motor (Fig. 1395).



Fig 1395

PICT-1433

7. Ensure the foam engine baffle strip is installed properly on the top edge of the engine baffle.
8. Position the key in the keyway of the hydrostatic pump shaft (Fig. 1397).



Fig 1397

PICT-1452

DRIVE SYSTEM

- Slide the pulley onto the hydrostatic pump shaft aligning the keyway with the key (Fig. 1398).



Fig 1398

PICT-1453

- Install the washer and nut onto the hydrostatic pump shaft (Fig. 1399).



Fig 1399

PICT-1455

- Using a 5/8" socket, torque the nut on the hydraulic pump shaft to 18 - 25 ft-lbs. (24 - 33.9 Nm) (Fig. 1399).

- Install the drive belt. Refer to "Drive Belt Installation" on page 8-2.

- Using a 1/2" socket and wrench, install the nut and bolt to secure the steering linkage to the pump control arm (Fig. 1400).

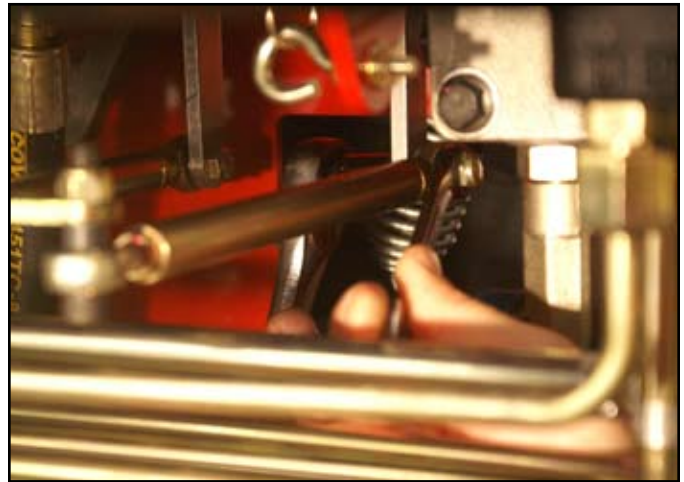


Fig 1400

PICT-1438

- Install the right hand panel onto the control panel assembly (Fig. 1401).



Fig 1401

PICT-1414a

DRIVE SYSTEM

15. Using a 3/8" socket, install 4 screws to secure the right hand panel to the control panel assembly (Fig. 1402).



Fig 1402

PICT-1413

17. Using a 3/8" socket, install 4 screws to secure the left hand panel to the control panel assembly (Fig. 1404).



Fig 1404

PICT-1415

16. Install the left hand panel from the control panel assembly (Fig. 1403).



Fig 1403

PICT-1416

18. Install the right hand panel from the control panel assembly (Fig. 1405).



Fig 1405

PICT-1414a

DRIVE SYSTEM

19. Using a 3/8" socket, install 4 screws to secure the right panel to the control panel assembly (Fig. 1406).



Fig 1406

PICT-1413

20. Start the engine, set the park brake.
 - Cycle loader valve to raise and lower lift and tilt cylinders.
 - Stroke the drive handle forward and back until the track drive is smooth and consistent.
 - Check for leaks.

21. Install rear cover (Fig. 1407).



Fig 1407

PICT-1026

Hydrostatic Pump Removal (Left Side)

1. Raise the machine. Refer to "Lifting Unit for Service" on page 8-2.

Removal of Rear Panels

1. Remove the rear access cover (Fig. 1408).



Fig 1408

PICT-1026

2. Using a 1/2" socket and wrench, remove the battery clamp (Fig. 1409).



Fig 1409

PICT-1029a

DRIVE SYSTEM

3. Disconnect the negative battery cable and then the positive battery cable (Fig. 1410).



Fig 1410

PICT-1032a

5. Using a 3/8" socket, remove the right hand and left hand rear cover support assemblies (Fig. 1412).



Fig 1412

PICT-1037

4. Remove the battery from the battery mounting tray (Fig. 1411).



Fig 1411

PICT-1034a

6. Using a 3/4" socket, remove both rear counterweights (Fig. 1413).



Fig 1413

PICT-7633

DRIVE SYSTEM

- Using a 3/4" and a 9/16" socket, remove the rear chassis cover by removing the 8 sets of fasteners (Fig. 1414).

Note: Use a floor jack to raise the machine off the jack stands to remove the rear chassis cover from the machine. Lower the machine back onto the jack stands.

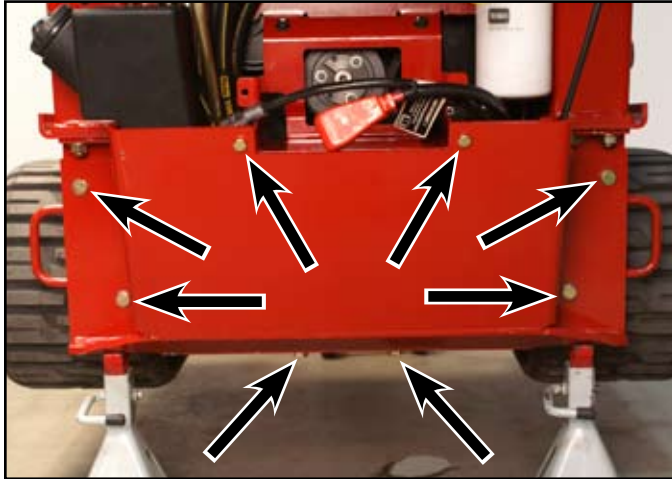


Fig 1414

PICT-7636

- Remove the fuel line from the fuel tank. Slide the fuel tank out of the frame (Fig. 1416).



Fig 1416

PICT-7638

- Disconnect the two wires on the fuel sending unit located on top of the fuel tank (Fig. 1415).

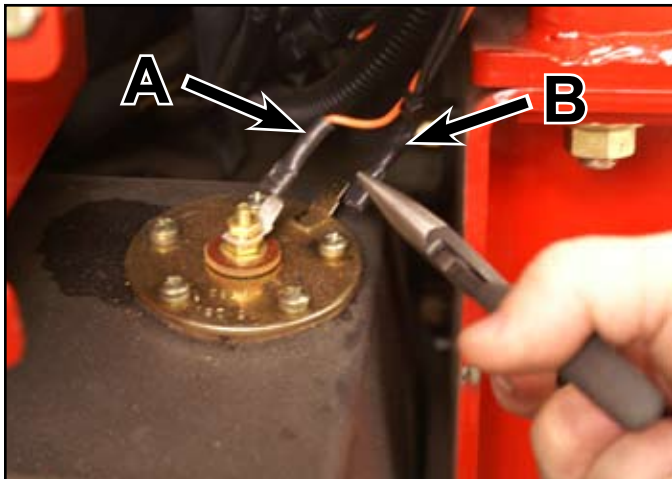


Fig 1415

PICT-0555

A. Center terminal
orange wire

B. Outside terminal
black wire



Fig 1417

PICT-1413

- Using a 3/8" socket, remove the 4 screws holding the right hand panel to the control panel assembly (Fig. 1417).

DRIVE SYSTEM

11. Remove the right hand panel from the control panel assembly (Fig. 1418).



Fig 1418

PICT-1414a

13. Remove the left hand panel from the control panel assembly (Fig. 1420).



Fig 1420

PICT-1416

12. Using a 3/8" socket, remove the 4 screws holding the left hand panel to the control panel assembly (Fig. 1419).



Fig 1419

PICT-1415

Marking the Left Hand Hydrostatic Pump Lines

1. Mark the hydrostatic pump lines as follows:
 - A. Hydraulic oil inlet from the filter (Fig. 1421).



Fig 1421

PICT-1457a

DRIVE SYSTEM

- B. Right pump case drain hose (Fig. 1422).



Fig 1422

PICT-1459

- D. Hydraulic hose running from the “D” port on the hydrostatic pump to the upper fitting on the right wheel motor (Fig. 1424).



Fig 1424

PICT-1462

- C. Case drain line returning to the hydraulic oil tank (Fig. 1423).



Fig 1423

PICT-1459

- E. Hydraulic hose running from the “E” port on the hydrostatic pump to the lower fitting on the right wheel motor (Fig. 1425).



Fig 1425

PICT-1462

DRIVE SYSTEM

- F. Hydraulic hose running from the “F” port on the right side pump to the lower fitting on the left wheel motor (Fig. 1426).

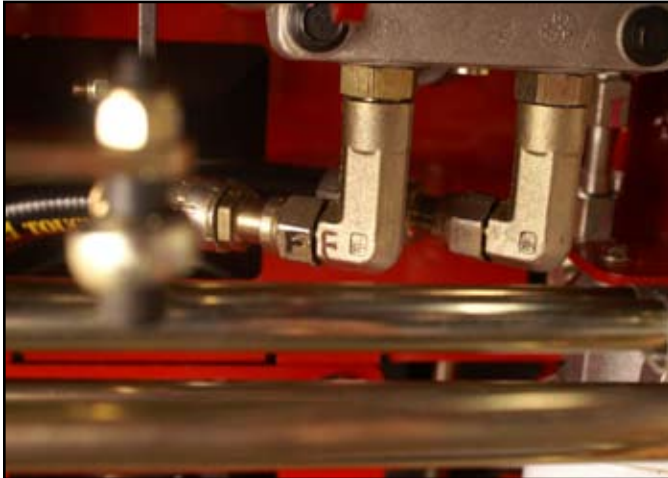


Fig 1426

PICT-1483

- B. Right pump case drain line (Fig. 1428).

Note: A 7/8” wrench may need to be used to hold the fitting while loosening the hydraulic line.



Fig 1428

PICT-1459

- 2. Using a 15/16” wrench, disconnect the left hand hydraulic pump lines (just marked) as follows:
 - A. Hydraulic oil inlet from the filter (Fig. 1427).



Fig 1427

PICT-1463a

- C. Case drain line returning to the hydraulic oil tank (Fig. 1429).



Fig 1429

PICT-1465

DRIVE SYSTEM

3. Using a 1-1/8" wrench, disconnect the remaining left hand hydrostatic pump lines (just marked) as follows:
 - D. Hydraulic hose running from the "D" port on the pump to the upper fitting on the right wheel motor (Fig. 1430).

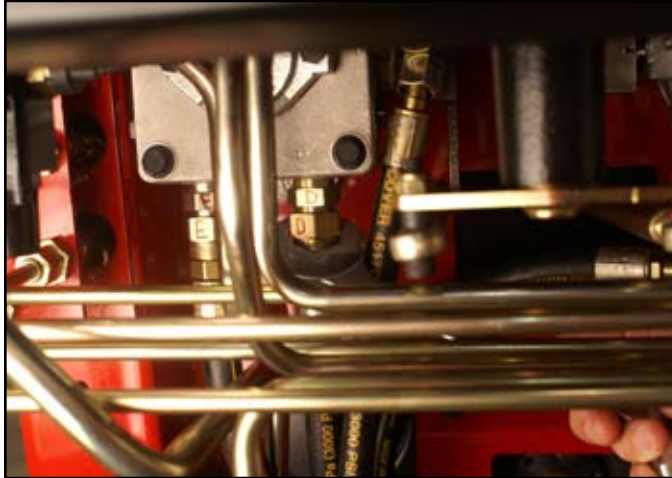


Fig 1430

PICT-1466

- F. Hydraulic hose running from the "F" port on the right side pump to the lower fitting on the left wheel motor (Fig. 1432).

Note: Cap all hydraulic lines and fittings to prevent debris from entering system.

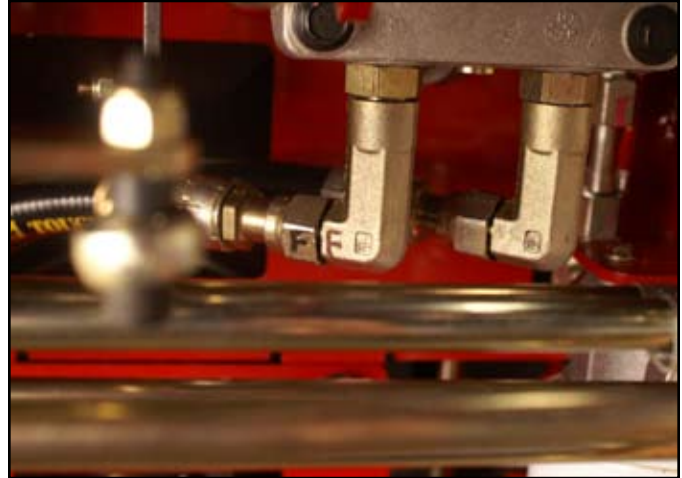


Fig 1432

PICT-1483

- E. Hydraulic hose running from the "E" port on the hydrostatic pump to the lower fitting on the right wheel motor (Fig. 1431).



Fig 1431

PICT-1468

4. Using a 1/2" socket and wrench, remove the nut and bolt securing the steering linkage to the left hand pump control arm (Fig. 1433).

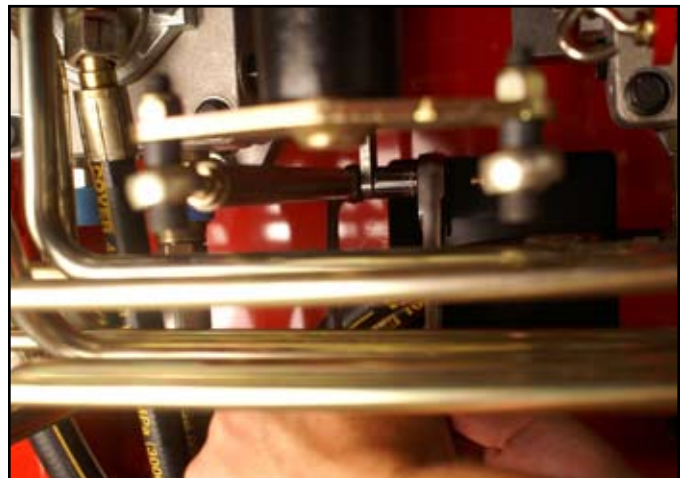


Fig 1433

PICT-1471

DRIVE SYSTEM

5. Open the hood and prop it up in place with the hood support rod.
6. Using a spring removal tool (Toro P/N 92-5771), connect the tool to the spring end located on the stud bolted to the tower assembly. Pull up on the spring end to remove the spring from the bolt stud (Fig. 1434).



Fig 1434

PICT-1439

7. Remove spring from the idler arm (Fig. 1435).



Fig 1435

PICT-1441

8. Remove the belt from the pulleys (Fig. 1436).

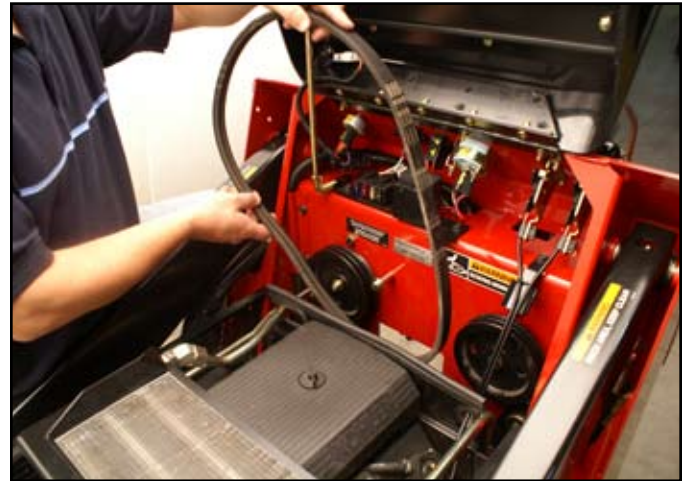


Fig 1436

PICT-1442

9. Secure the left hand pulley and, using a 5/8" socket, remove the nut and washer securing the pulley to the left hydrostatic pump (Fig. 1437).



Fig 1437

PICT-1472

DRIVE SYSTEM

- Using a 2 jaw puller, remove the left pulley from the hydrostatic pump shaft (Fig. 1438).

Note: The seal strip on the engine baffle may have to be removed from the baffle to allow for the 2 jaw puller.



Fig 1438

PICT-5627

- Carefully remove the hydrostatic pump from the tower assembly by lowering it down and out at the battery box location (Fig. 1440).

Note: The disconnected hydraulic lines may need to be moved out of the way to remove the pump.

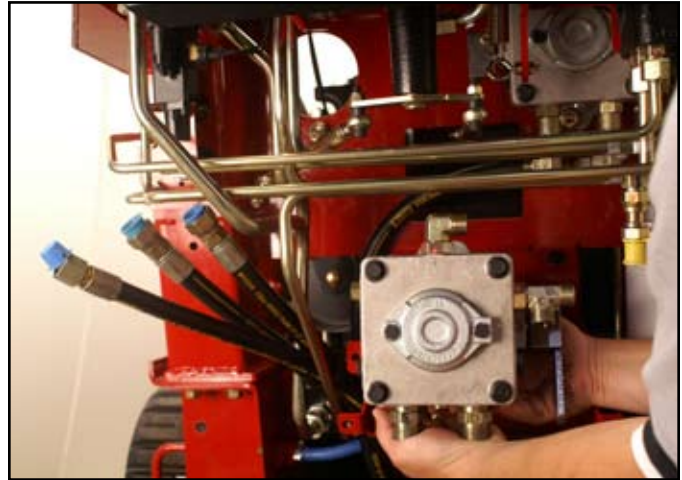


Fig 1440

PICT-1482

- Using a 3/4" wrench and socket with a swivel or universal joint, remove the 2 bolts securing the hydrostatic pump to the tower (Fig. 1439).



Fig 1439

PICT-1475

- To service the hydrostatic pump, refer to the "Hydro-Gear BDP-10A / 16A / 21L Service and Repair Manual" (Toro form no. 492-4789) or the "Hydro-Gear P Series Pumps Service and Repair Manual" (Form no. BLN 52503).

Hydrostatic Pump Installation (Left Side)

Prior to connecting the hydraulic lines, the o-rings should be replaced with new ones and lightly lubricated with oil.

DRIVE SYSTEM

1. When installing a new hydrostatic pump, make sure all the fittings are installed properly (Fig. 1441).

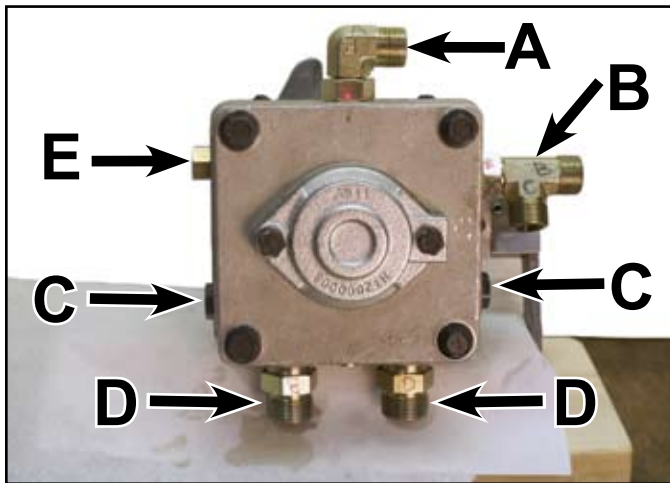


Fig 1441

PICT-1480a

- | | |
|--------------------|--------------------|
| A. Oil inlet | D. Wheel motor (2) |
| B. Case Drain | E. Pump bypass |
| C. Check valve (2) | |

2. Loosely install the lower bolt and nut with the head of the bolt toward the engine.
3. Carefully position the pump into the battery box location and then up into position in the tower assembly (Fig. 1442).

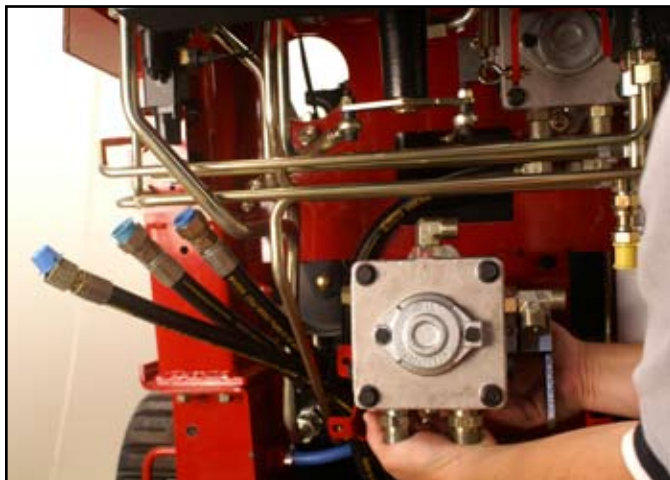


Fig 1442

PICT-1482

Note: Use the previously installed lower bolt and nut to help support the pump while installing (Fig. 1443).



Fig 1443

PICT-8061

4. Loosely install the upper bolt and nut to hold the pump in position.
5. Using a 15/16" wrench, connect the left hand hydrostatic pump lines as follows:
 - A. Hydraulic oil inlet from the filter (Fig. 1444).



Fig 1444

PICT-1463a

DRIVE SYSTEM

B. Right pump case drain hose (Fig. 1445).

Note: A 7/8" wrench may need to be used to hold the fitting while tightening the hydraulic line.

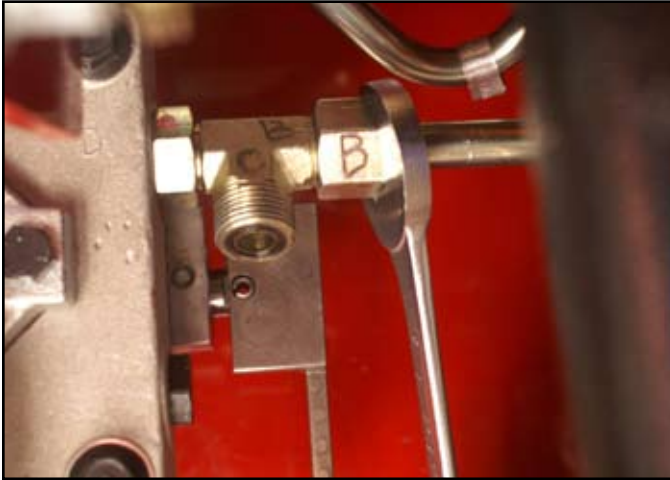


Fig 1445

PICT-1485

6. Using a 1/2" socket and wrench, install the nut and bolt to secure the steering linkage to the pump control arm (Fig. 1447).

Note: Ensure the case drain line (marked with the letter C) is not rubbing on the control linkage.

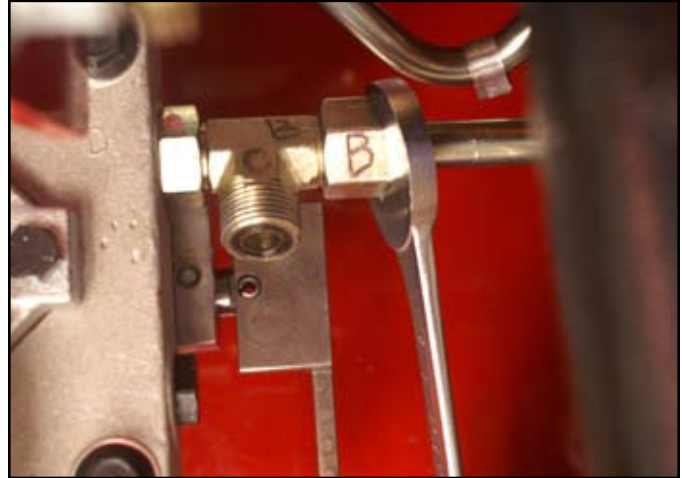


Fig 1447

PICT-1485

C. Case drain line returning to the hydraulic oil tank (Fig. 1446).



Fig 1446

PICT-1465

7. Using a 1-1/8" wrench, connect the remaining hydrostatic pump lines (just marked) as follows:

D. Hydraulic hose running from the "D" port on the hydrostatic pump to the upper fitting on the right wheel motor (Fig. 1448).



Fig 1448

PICT-1486

DRIVE SYSTEM

- E. Hydraulic hose running from the “E” port on the hydrostatic pump to the lower fitting on the right wheel motor (Fig. 1449).



Fig 1449

PICT-1487

8. Using a 3/4” wrench and socket with a swivel or universal joint, tighten the 2 bolts and nuts to secure the hydraulic pump to the tower (Fig. 1451).



Fig 1451

PICT-1475

- F. Hydraulic hose running from the “F” port on the right side pump to the lower fitting on the left wheel motor (Fig. 1450).

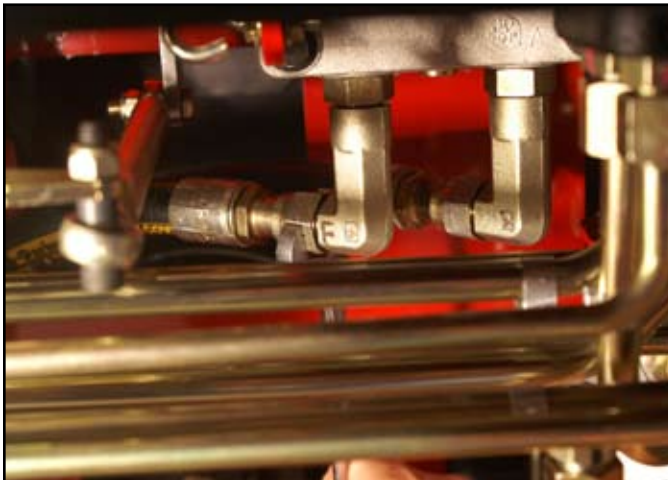


Fig 1450

PICT-1488

9. Position the key in the keyway of the hydrostatic pump shaft (Fig. 1452).



Fig 1452

PICT-1490

DRIVE SYSTEM

10. Slide the pulley onto the hydrostatic pump shaft, aligning the keyway with the key (Fig. 1453).



Fig 1453

PICT-1492

12. Using a 5/8" socket, install the washer and nut onto the hydrostatic pump shaft. Torque the nut to 18 - 25 ft-lbs. (Fig. 1455).



Fig 1455

PICT-1494

11. Install the washer and nut onto the hydrostatic pump shaft (Fig. 1454).



Fig 1454

PICT-1493

13. Install the drive belt. Refer to "Drive Belt Installation" on page 8-2.

14. Using a 1/2" socket and wrench, install the nut and bolt to secure the steering linkage to the pump control arm (Fig. 1456).



Fig 1456

PICT-1471

DRIVE SYSTEM

15. Install the right hand panel onto the control panel assembly (Fig. 1457).



Fig 1457

PICT-1414a

17. Install the left hand panel from the control panel assembly (Fig. 1459).



Fig 1459

PICT-1416

16. Using a 3/8" socket, install 4 screws to secure the right hand panel to the control panel assembly (Fig. 1458).



Fig 1458

PICT-1413

18. Using a 3/8" socket, install 4 screws to secure the left hand panel to the control panel assembly (Fig. 1460).



Fig 1460

PICT-1415

DRIVE SYSTEM

19. Install right hand panel (Fig. 1461).



Fig 1461

PICT-1414a

20. Using a 3/8" socket, install 4 screws to secure the right panel to control panel assembly (Fig. 1462).



Fig 1462

PICT-1413

21. Start the engine, set the park brake.

- Cycle loader valve to raise and lower lift and tilt cylinders.
- Stroke the drive handle forward and back until the track drive is smooth and consistent.
- Check for leaks.

22. Install rear cover (Fig. 1463).



Fig 1463

PICT-1026

TX420 & 425 240000300 & lower

Hydrostatic Pump (Left Side) Removal

Note: Left pump drives the right side wheel motor.

Note: Cleanliness is a key factor in a successful repair of any hydrostatic system. Thoroughly clean all exposed surfaces prior to any type of maintenance. Cleaning all parts by using a solvent wash and air drying is usually adequate. As with any precision equipment, all parts must be kept free of foreign material and chemicals. Protect all exposed sealing areas and open cavities from damage and foreign material.

Upon removal, all seals, o-rings, and gaskets should be replaced. During installation, lightly lubricate all seals, o-rings, and gaskets with clean petroleum jelly prior to assembly.

DRIVE SYSTEM

1. Raise and securely support the unit. Refer to “Lifting Unit for Service” on page 8-2.
2. Raise the hood assembly. Remove the 3 screws and washers located on the hydrostatic pump pulley (Fig. 1464).



Fig 1464

PICT-7643

4. Remove the hydrostatic drive belt off the hydrostatic pulley (Fig. 1466).

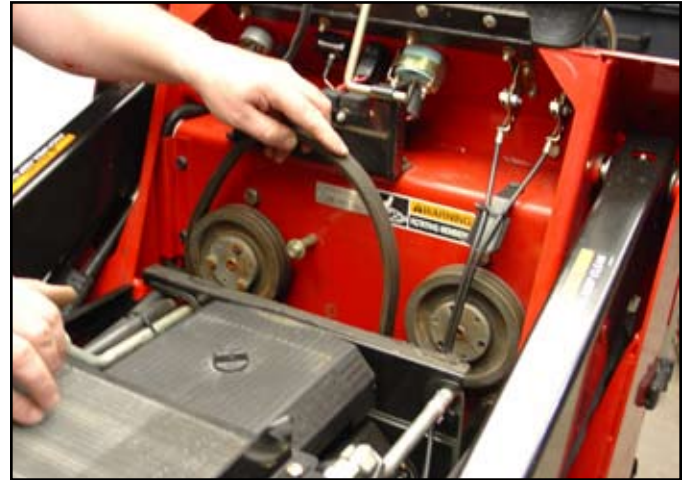


Fig 1466

CLR DSC-0826

3. Remove the idler arm spring from the stud located on the loader tower (Fig. 1465).



Fig 1465

DSC-0825

5. There are 3 threaded holes located in the pulley hub. Install the 3 bolts that were retaining the pulley hub and pulley and tighten them equally until the hub breaks free from the pulley (Fig. 1467).



Fig 1467

DSC-0827

DRIVE SYSTEM

6. Carefully remove the hub and the pulley (Fig. 1468).

Note: Remove the hub and pulley being careful not to lose the key that goes onto the pump shaft.



Fig 1468

PICT-2094

8. Remove the right hand panel by removing the 4 screws that retain the panel to the control panel (Fig. 1470).



Fig 1470

CLR DSC-0843

7. Remove the left hand panel by removing the 4 screws that retain the panel to the control panel (Fig. 1469).

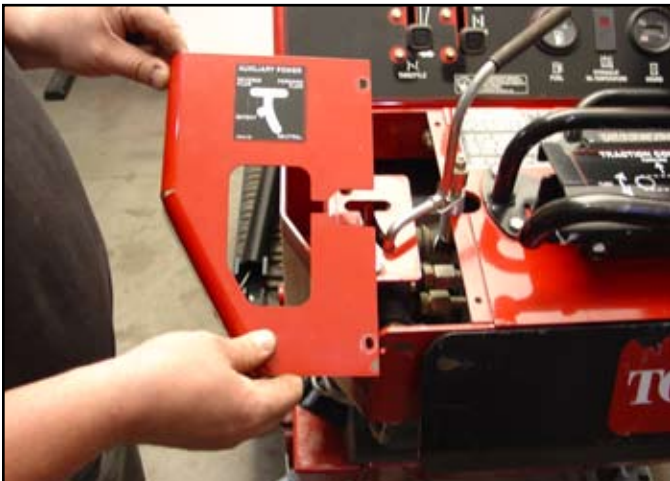


Fig 1469

DSC-0829

9. Open the rear access door.
10. Disconnect the negative and then the positive battery cable. Remove the battery bracket clamp. Tilt the battery and remove it from the unit.
11. Remove the bolt and nut retaining the control linkage to the pump lever assembly (Fig. 1471).



Fig 1471

CLR DSC-0835

DRIVE SYSTEM

12. Tag or mark the RH hydraulic line, so when you re-install the hydraulic line, the correct one will be connected to the right port of the hydraulic pump. Remove the right hand hydraulic hose from the bottom of the hydrostatic pump with a 1-1/8" 15°/60° offset open end wrench (Fig. 1472). Place a protective cap on the hose and on the hydraulic fitting on the hydrostatic pump.

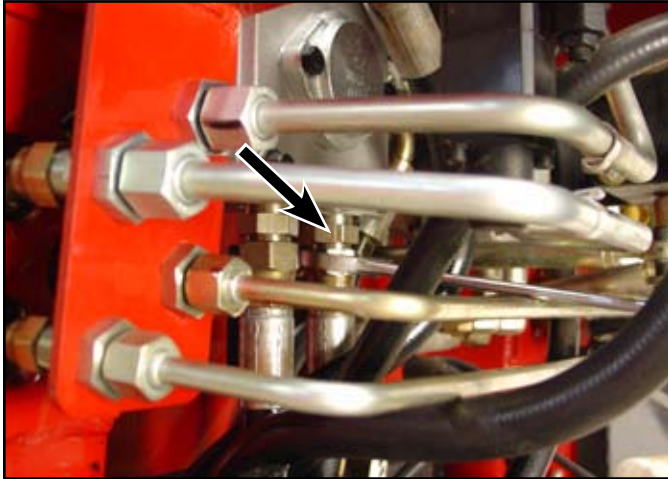


Fig 1472 DSC-0877

13. Remove the left hand hydraulic hose from the bottom of the hydrostatic pump using a 1-1/8" 15°/60° offset open end wrench (Fig. 1473). Place protective caps on the hose and the hydraulic fitting on the hydrostatic pump.



Fig 1473 DSC-0840

14. Remove the hydraulic hose from the T-fitting located on the right side of the hydrostatic pump using a 15/16" open end wrench (Fig. 1474). Place a protective cap on the hydraulic hose.

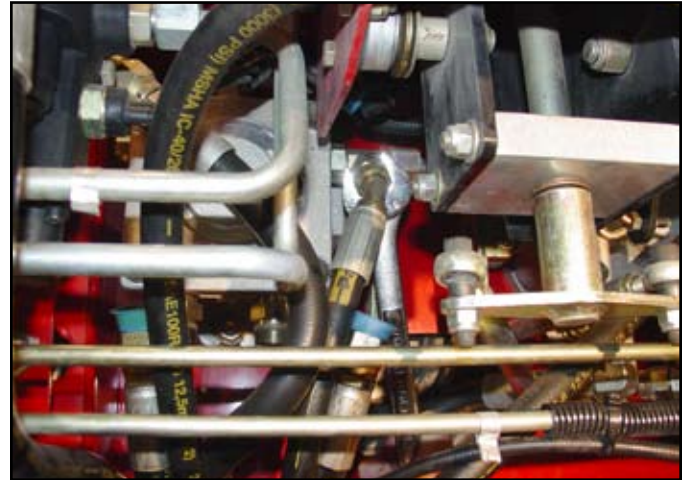


Fig 1474 CLR DSC-0841

15. Locate the metal hydraulic line going to the T-fitting on the right side of the hydrostatic pump. Remove it using a 15/16" open end wrench (Fig. 1475). Install a protective cap on the metal hydraulic line.

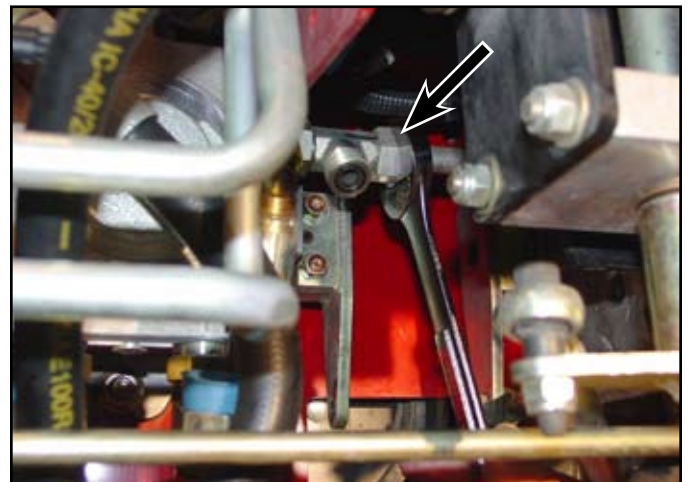


Fig 1475 CLR DSC-0842

DRIVE SYSTEM

16. With a 15/16" 15°/60° offset open end wrench, loosen the metal hydraulic line, located on the right side of the right hydrostatic pump. Do Not remove, just loosen. This is to allow you to swivel the other end of the metal line out of the way when removing and installing the left hydrostatic pump (Fig. 1476).



Fig 1476

DSC-0844

18. Remove the hydraulic return line on the auxiliary valve with a 1 1/8" open end wrench (Fig. 1478). This line needs to be disconnected to have enough room to remove the left hydrostatic pump. Install a protective cap on the fitting and the hydraulic line.



Fig 1478

DSC-0847

17. Remove the top hydraulic line located on the top of the left hydrostatic pump using a 15/16" open end wrench (Fig. 1477). Install a protective cap on the hydraulic line and on the hydraulic fitting.



Fig 1477

CLR DSC-0845

19. Remove the two bolts and nuts retaining the hydrostatic pump to the loader tower assembly (Fig. 1479).



Fig 1479

PICT-7645

20. Carefully remove the hydrostatic pump by lowering it toward the battery compartment area and then out of the unit (Fig. 1480).



Fig 1480

DSC-0853

21. To service the hydrostatic pump, refer to the "Hydro-Gear BDP-10A / 16A / 21L Service and Repair Manual" (Toro form no. 492-4789) or the "Hydro-Gear P Series Pumps Service and Repair Manual" (Form no. BLN 52503).

Hydrostatic Pump (Left Side) Installation

Prior to connecting the hydraulic lines, the o-rings should be replaced with new ones and lightly lubricated with oil.

1. When installing a new hydrostatic pump, make sure all the fittings are installed properly (Fig. 1481).

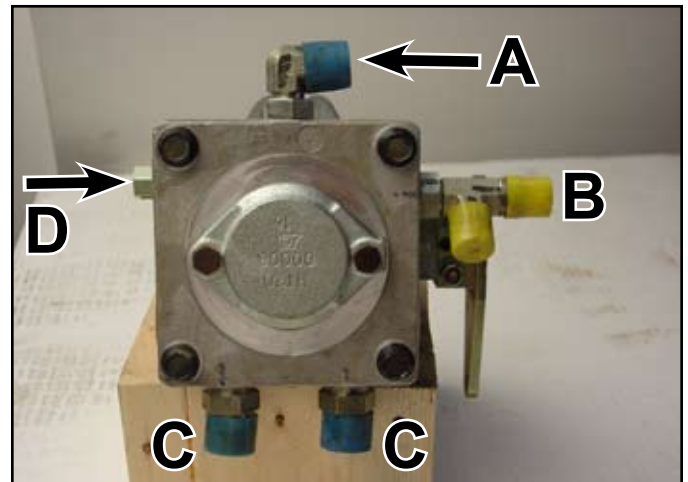


Fig 1481

CLR DSC-0852

- | | |
|---------------|--------------------|
| A. Oil inlet | C. Wheel motor (2) |
| B. Case Drain | D. Pump bypass |

DRIVE SYSTEM

2. Maneuver the left drive hydrostatic pump up into the loader tower assembly. Install with 2 bolts and nuts to the tower assembly. DO NOT tighten the bolts and nuts at this time (Fig. 1482).



Fig 1482

DSC-0855

4. Connect the top hydraulic line, located on top of the hydrostatic pump and tighten using a 15/16" open end wrench (Fig. 1484).



Fig 1484

CLR DSC-0845

3. Connect the hydraulic return line to the auxiliary valve and tighten the connection with a 1-1/8" open end wrench (Fig. 1483).

Note: Remove protective fitting caps prior to each line being connected.



Fig 1483

DSC-0847

5. Install and tighten the hydraulic hose going to the T-fitting located on the right side of hydrostatic pump using a 15/16" open end wrench (Fig. 1485).



Fig 1485

CLR DSC-0841

DRIVE SYSTEM

6. Tighten the hydraulic line nut located on the metal hydraulic line to the right hydrostatic pump using a 15/16" open end wrench (Fig. 1486).



Fig 1486

DSC-0844

8. Install the hydraulic hose (unmarked) to the left hydraulic fitting located on the bottom left side of the hydrostatic pump. Tighten with a 1-1/8" 15°/60° offset open end wrench (Fig. 1488).

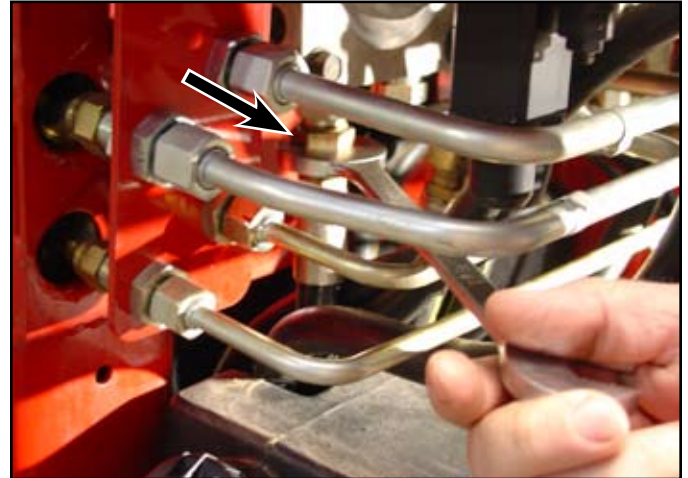


Fig 1488

DSC-0840

7. Install the hydraulic hose to the T-fitting located on the right side of the left hydrostatic pump (Fig. 1487).

Note: When connecting this hose, make sure there is enough clearance on the right side of the hose for the control linkage.

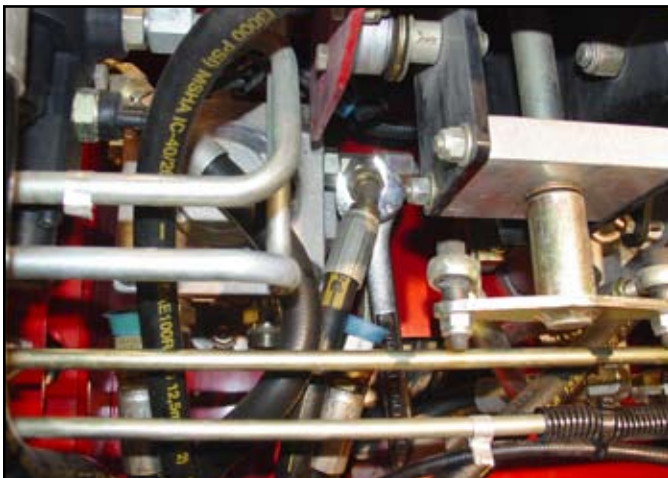


Fig 1487

CLR DSC-0841

9. Install the hydraulic line (the line that is tagged or marked) to the right hydraulic fitting located on the bottom right side of the hydrostatic pump. Tighten with a 1-1/8" 15°/60° offset open end wrench (Fig. 1489).

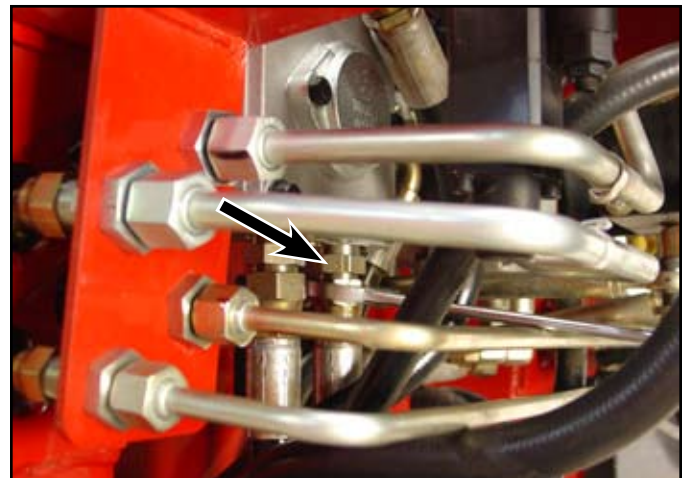


Fig 1489

DSC-0877

DRIVE SYSTEM

10. Tighten the two pump mounting bolts and nuts to the tower assembly (Fig. 1490).



Fig 1490

PICT-7645

12. Install the pulley key in the hydrostatic pump shaft and apply anti-seize compound to the shaft (Fig. 1492).

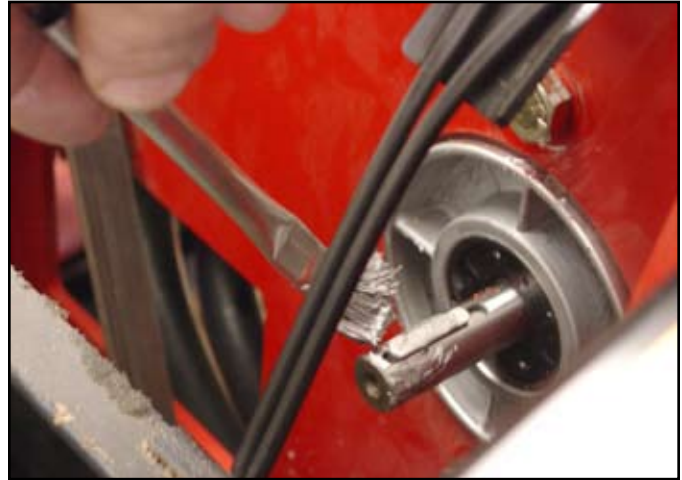


Fig 1492

CLR DSC-0857

11. Install the bolt and nut retaining the control linkage to the pump lever assembly (Fig. 1491).

Note: Bolt should go into pump bracket then through the control rod.



Fig 1491

CLR DSC-0835

13. The drive pulley assembly consists of the following parts: pulley, bushing, 3 screws, and 3 washers (Fig. 1493).

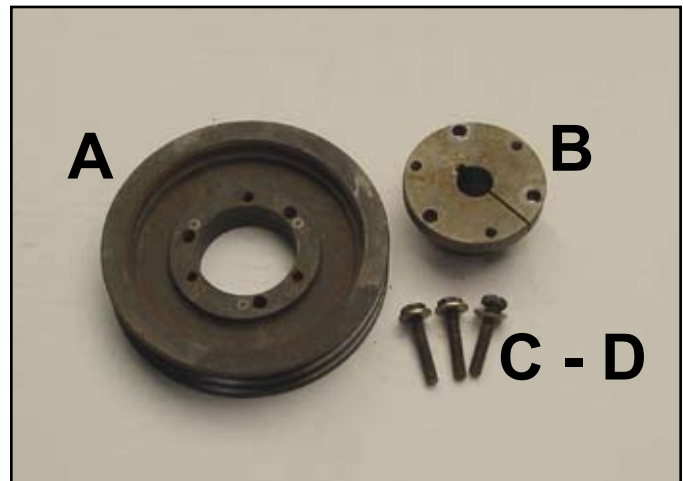


Fig 1493

CLR DSC-0858

- A. Pulley
B. Bushing
C. Screws
D. Washers

DRIVE SYSTEM

14. Assemble the pulley and bushing with the 3 screws and washers. Just start the screws in the threaded holes of the pulley (Fig. 1494).



Fig 1494

CLR DSC-0860

16. With a straight edge, align the hydrostatic pulley to the crankshaft pulley (Fig. 1496). Once aligned, tighten the 3 screws in the pulley.



Fig 1496

DSC-0892

15. Install the pulley on the hydrostatic pump shaft, aligning the key into the slot in the bushing (Fig. 1495). Start the screws into the pulley; Do Not tighten the screws at this time.



Fig 1495

DSC-0861

17. Once the pulleys are aligned, tighten the 3 pulley screws using a 7/16" socket (Fig. 1497).

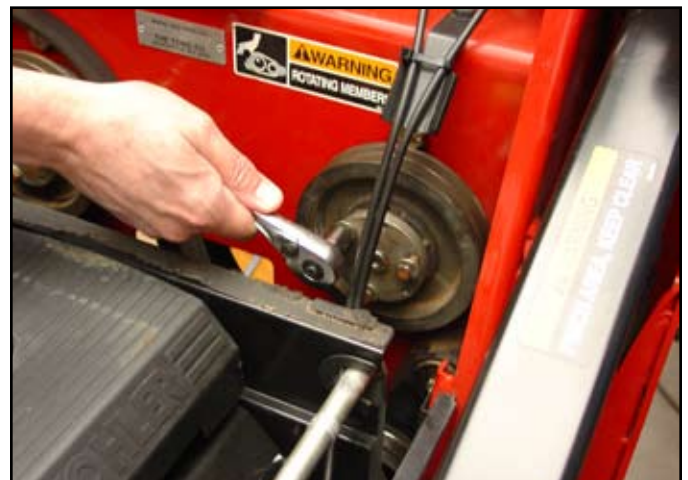


Fig 1497

DSC-0861

DRIVE SYSTEM

18. Install the drive belt around the hydrostatic pulley. Recheck and tighten the 3 pulley screws (Fig. 1498).



Fig 1498

DSC-0826

23. Install the left hand panel and retain it with 4 screws (Fig. 1500).

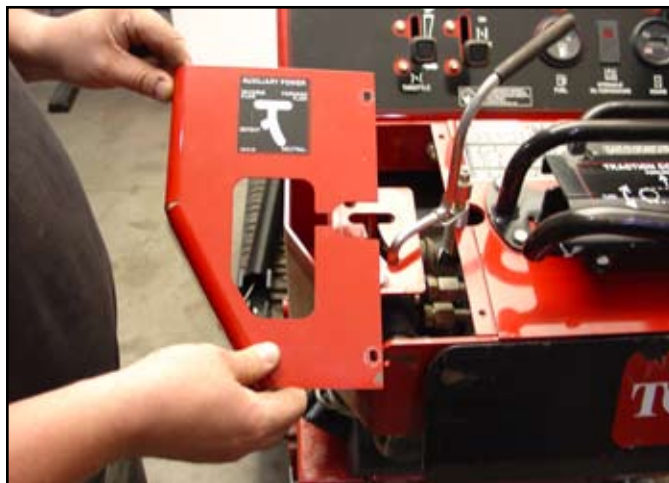


Fig 1500

DSC-0829

19. Install the battery and battery clamp. Connect the positive and then the negative battery cable.
20. Start the unit and purge the system; refer to "Purging Air Procedures" on page 12-27.
21. Check all the hydraulic line connections for any leaks.
22. Install the right hand panel and retain it with 4 screws (Fig. 1499).



Fig 1499

CLR DSC-0843

24. Check the traction control for neutral; refer to "Traction Control Neutral Adjustment" on page 12-27.
25. Check and fill the hydraulic tank. Refer to "Checking the Hydraulic Fluid" on page 3-4.
26. Close the rear back cover and the hood.
27. Lower the unit to the ground.

DRIVE SYSTEM

Hydrostatic Pump (Right Side) Removal

Note: Right pump drives the left side wheel motor.

Note: Cleanliness is a key factor in a successful repair of any hydrostatic system. Thoroughly clean all exposed surfaces prior to any type of maintenance. Cleaning all parts by using a solvent wash and air drying is usually adequate. As with any precision equipment, all parts must be kept free of foreign material and chemicals. Protect all exposed sealing areas and open cavities from damage and foreign material.

Upon removal, all seals, o-rings, and gaskets should be replaced. During installation, lightly lubricate all seals, o-rings, and gaskets with clean petroleum jelly prior to assembly.

1. Raise and securely support the unit. Refer to “Lifting the Unit for Service”, page 8-2.
2. Raise the hood assembly. Remove the 3 screws and washers located on the hydrostatic pump pulley (Fig. 1501).



Fig 1501

CLR DSC-0864

3. Using a spring removal tool (Toro p/n 92-5771) remove the idler arm spring off the stud located on the loader tower (Fig. 1502).



Fig 1502

DSC-0825

4. Remove the hydrostatic drive belt off the hydrostatic pulley (Fig. 1503).

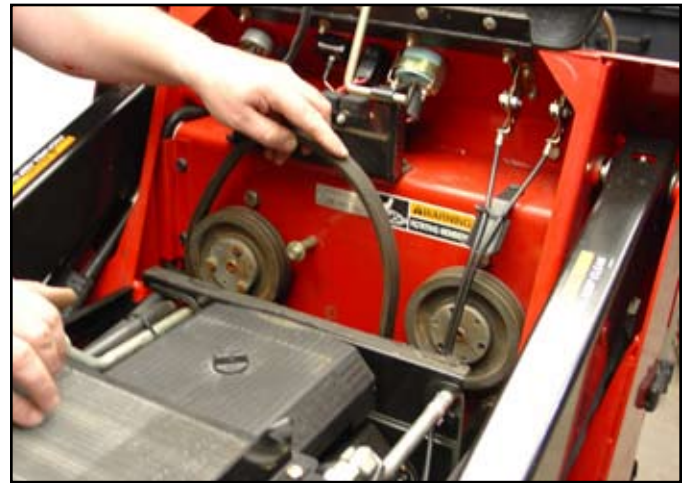


Fig 1503

CLR DSC-0826

DRIVE SYSTEM

5. There are 3 threaded holes located in the pulley bushing. Install the 3 bolts that were retaining the pulley hub and pulley. Tighten them until the bushing breaks free from the pulley (Fig. 1504).



Fig 1504 CLR DSC-0865

6. Carefully remove the hub and the pulley (Fig. 1505).

Note: While removing the hub and pulley, be careful not to lose the key that goes onto the pump shaft.



Fig 1505 CLR DSC-0866

7. Remove the left hand panel by removing 4 screws (Fig. 1506).

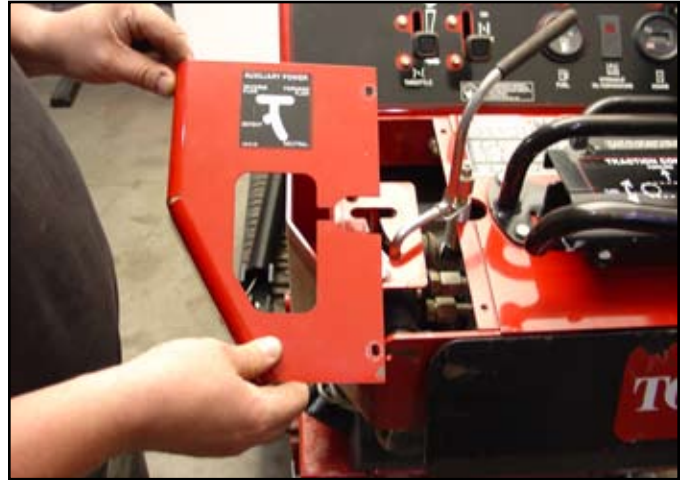


Fig 1506

DSC-0829

8. Remove the right hand panel by removing 4 screws (Fig. 1507).



Fig 1507

CLR DSC-0843

DRIVE SYSTEM

9. Open the rear access door.
10. Disconnect the negative and then the positive battery cable. Remove the battery bracket clamp. Tilt the battery to remove it from the unit.
11. Remove the bolt and nut retaining the control linkage to the pump lever assembly (Fig. 1508).



Fig 1508

CLR DSC-0868

12. Tag or mark the right side hydraulic line, so when you re-install the hydraulic line, the correct one will be connected to the right port of the hydraulic pump. Remove the right hand hydraulic hose from the bottom of the hydrostatic pump with a 15/16" 15°/60° offset open end wrench (Fig. 1509). Place a protective cap on the hose and on the hydraulic fitting on the hydrostatic pump.

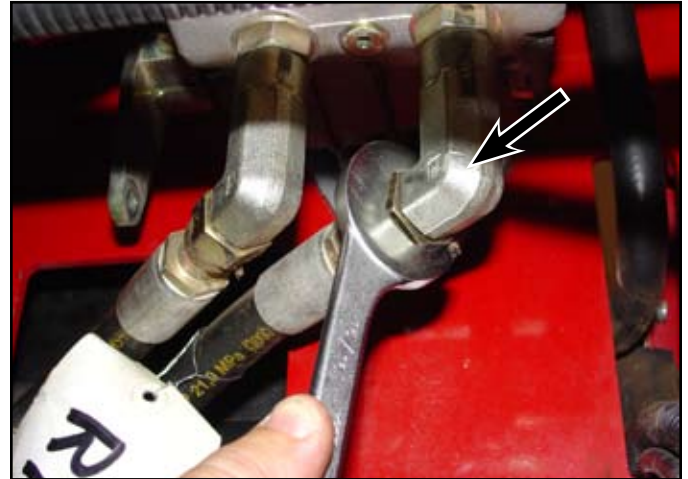


Fig 1509

DSC-0870

13. Remove the left side hydraulic hose from the bottom of the hydrostatic pump using a 15/16" 15°/60° offset open end wrench (Fig. 1510). Place a protective cap on the hose and the hydraulic fitting on the hydrostatic pump.

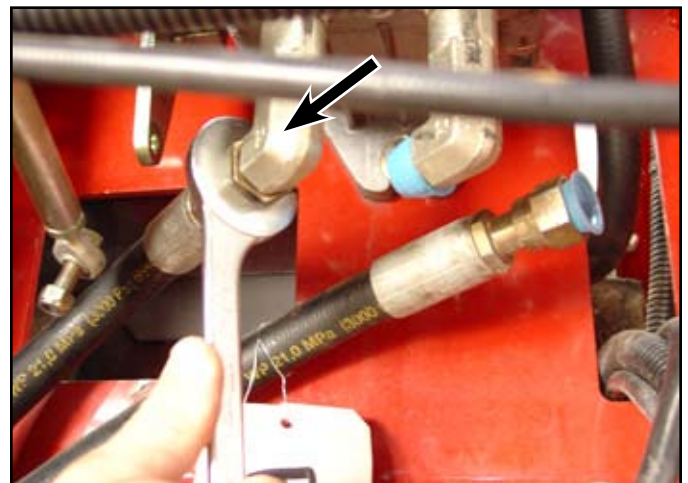


Fig 1510

DSC-0878

DRIVE SYSTEM

14. Remove the hydraulic line from the right side of the hydrostatic pump using 15/16" 15°/60° offset open end wrench (Fig. 1511). Place a protective cap on the hydraulic line.

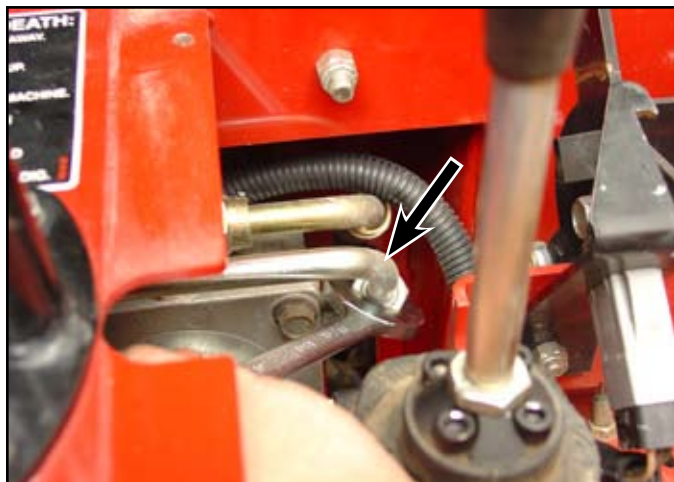


Fig 1511

DSC-0879

16. Loosen the metal hydraulic line at the T-fitting located on the right side of the left hydrostatic pump using a 15/16" open end wrench (Fig. 1513). Do Not remove, just loosen. This is to allow you to swivel the other end of the metal line out of the way when removing and installing the right hydrostatic pump.

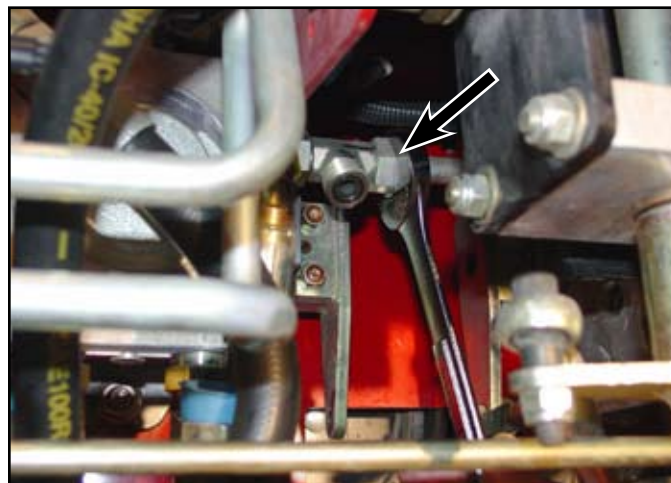


Fig 1513

CLR DSC-0842

15. Remove the hydraulic hose from the T-fitting located on the right side of the hydrostatic pump using a 15/16" open end wrench (Fig. 1512). Place a protective cap on the hydraulic hose.

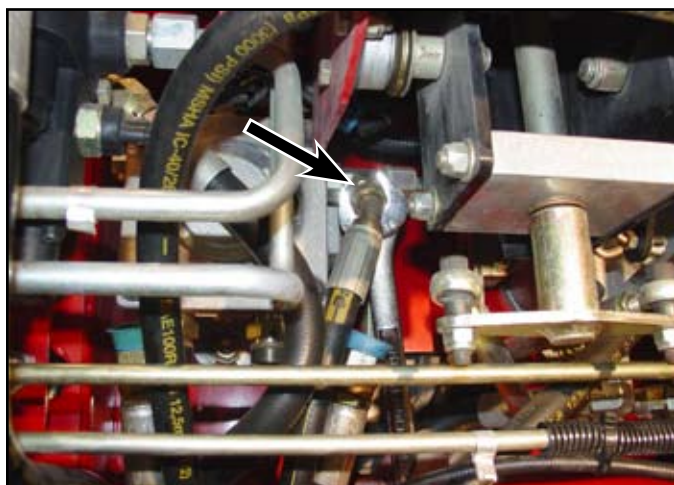


Fig 1512

CLR DSC-0841

17. Remove the right hydraulic line, located at the tee fitting on the top of the hydrostatic pump using a 15/16" 15°/60° offset open end wrench (Fig. 1514). Install a protective cap on the hydraulic line and on the hydraulic fitting.



Fig 1514

DSC-0882

DRIVE SYSTEM

18. Remove the left hydraulic line, located at the tee fitting on top of the hydrostatic pump using a 15/16" 15°/60° offset open end wrench (Fig. 1515). Install a protective cap on the hydraulic line and on the hydraulic fitting.

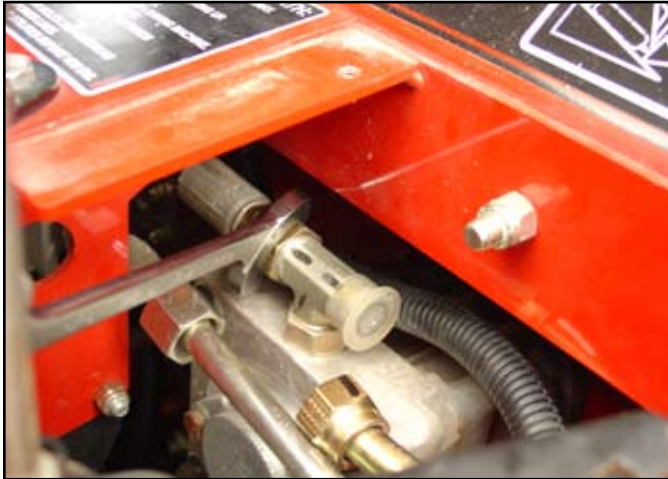


Fig 1515

DSC-0883

19. Remove the hydraulic hose on the front hydraulic fitting of the loader valve (Fig. 1516). Install a protective cap on the hydraulic line and on the hydraulic fitting.



Fig 1516

DSC-0885

20. Remove the two mounting bolts and nuts. Use a socket swivel on the top nut to get around the tee fitting on the top of the hydrostatic pump (Fig. 1517).



Fig 1517

DSC-0884

21. Carefully remove the hydrostatic pump by lowering it toward the battery compartment area and out of the unit (Fig. 1518).



Fig 1518

DSC-0887

22. To service the hydrostatic pump, refer to the "Hydro-Gear BDP-10A / 16A / 21L Service and Repair Manual" (Toro form no. 492-4789) or the "Hydro-Gear P Series Pumps Service and Repair Manual" (Form no. BLN 52503).

DRIVE SYSTEM

Hydrostatic Pump (Right Side) Installation

As a reminder, prior to connecting the hydraulic lines, the o-rings should be replaced with new ones and lightly lubricated with oil.

1. When installing a new hydrostatic pump, make sure all the fittings are installed properly (Fig. 1519).

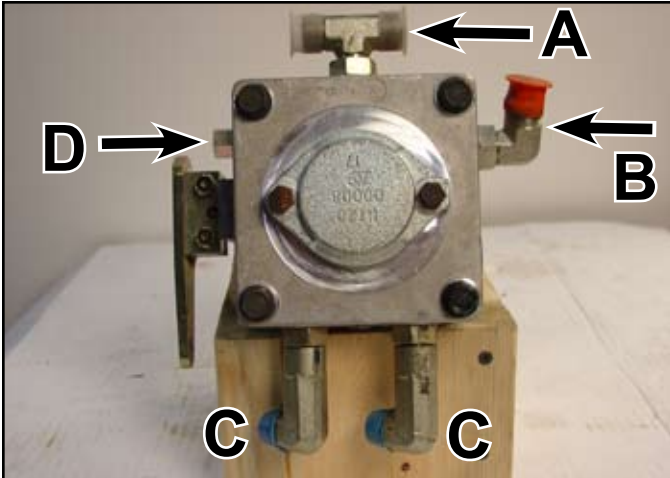


Fig 1519

DSC-0888

- | | |
|---------------|--------------------|
| A. Oil inlet | C. Wheel motor (2) |
| B. Case Drain | D. Pump bypass |

2. Maneuver the right side hydrostatic pump up into the loader tower assembly. Loosely install, using 2 bolts and nuts to the tower assembly. DO NOT tighten the bolts and nuts at this time (Fig. 1520).



Fig 1520

DSC-0889

Note: Remove the protective caps prior to each line being connected.

3. Connect the two hydraulic lines to the tee fitting located on top of the hydrostatic pump and tighten using a 15/16" 15°/60° offset open end wrench (Fig. 1521).



Fig 1521

DSC-0882

DRIVE SYSTEM

4. Install and tighten the metal line leading to the right side of hydrostatic pump using a 15/16" 15°/60° offset open end wrench (Fig. 1522).



Fig 1522

DSC-0879

6. Connect the hydraulic hose to the left hydraulic fitting located on the bottom of the hydrostatic pump. Tighten with a 15/16" 15°/60° offset open end wrench (Fig. 1524).

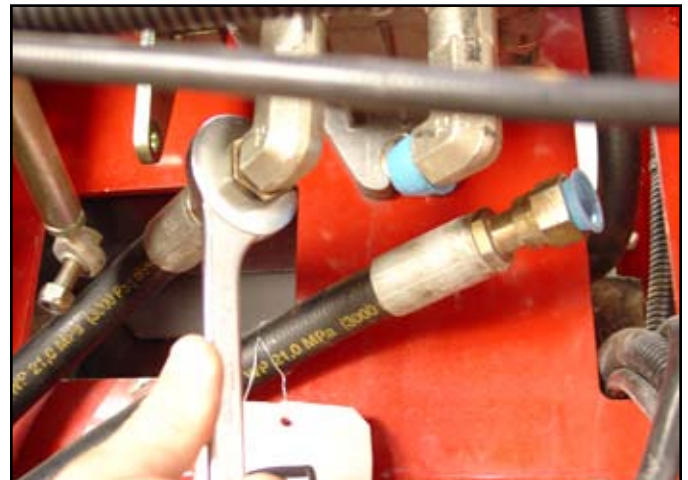


Fig 1524

DSC-0878

5. Tighten the hydraulic line and hydraulic hose leading to the T-fitting located on the right side of the left hydrostatic pump using a 15/16" 15°/60° offset open end wrench (Fig. 1523).



Fig 1523

DSC-0881

7. Connect the hydraulic hose (this should be the line that is marked) to the right hydraulic fitting located on the bottom, right side of the hydrostatic pump. Tighten with a 15/16" 15°/60° offset open end wrench (Fig. 1525).

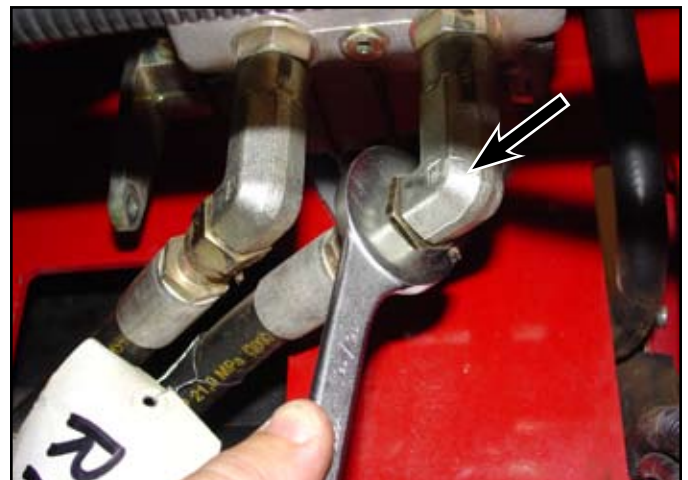


Fig 1525

DSC-0870

DRIVE SYSTEM

8. Tighten the two pump mounting bolts and nuts to the tower assembly (Fig. 1526).



Fig 1526

DSC-0884

9. Connect the hydraulic hose to the front hydraulic fitting on the loader valve. Tighten with a 15/16" 15°/60° offset open end wrench (Fig. 1527).

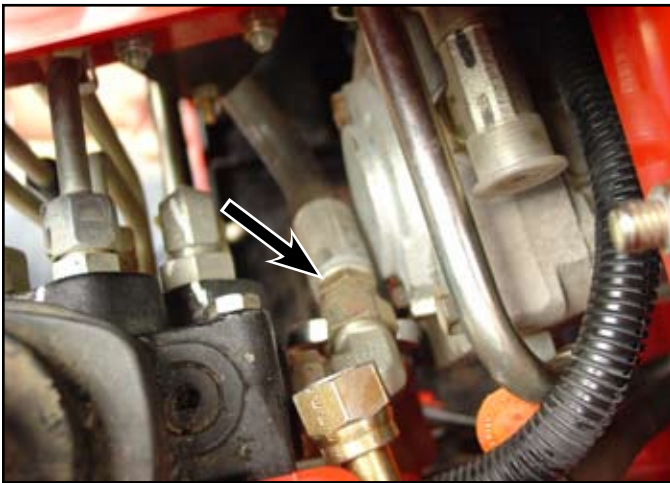


Fig 1527

DSC-0885

10. Install and tighten the bolt and nut retaining the control linkage to the pump lever assembly (Fig. 1528).

Note: Bolt should go into pump bracket first then through the control rod.

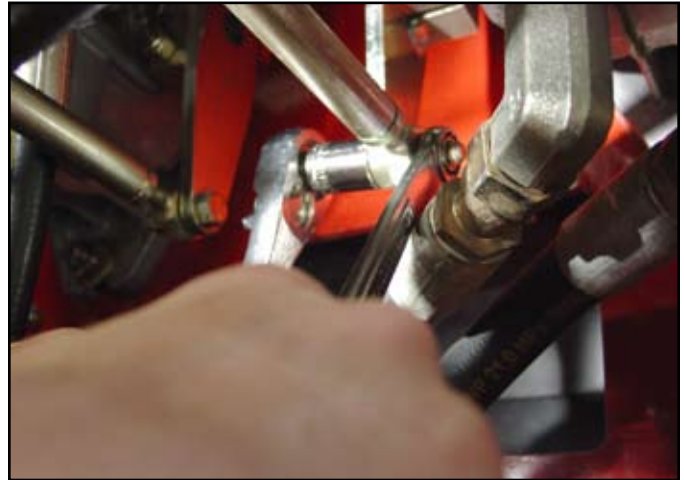


Fig 1528

CLR DSC-0868

11. Install the pulley key in the hydrostatic pump shaft and apply anti-seize compound to the shaft (Fig. 1529).



Fig 1529

DSC-0890

DRIVE SYSTEM

12. The drive pulley assembly consists of the following parts (Fig. 1530):

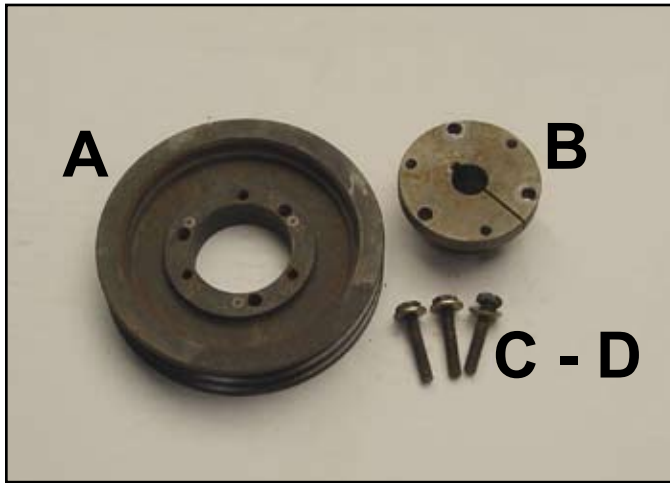


Fig 1530 CLR DSC-0858

- A. Pulley
- B. Hub
- C. Screws
- D. Washers

13. Assemble the pulley and hub with the 3 screws and washers. Just start the screws in the threaded holes of the pulley (Fig. 1531).



Fig 1531 CLR DSC-0860

14. Install the pulley on the hydrostatic pump shaft, aligning the key into the slot in the hub (Fig. 1532). Turn the screws further into the pulley so the hub still slides on the pump shaft, Do Not tighten the screws at this time.



Fig 1532 DSC-0893

15. With a straight edge, align the hydrostatic pulley to the crankshaft pulley (Fig. 1533). Once aligned, tighten the 3 screws evenly into the pulley.



Fig 1533 DSC-0891

DRIVE SYSTEM

16. Install the drive belt around the hydrostatic pulley.
Recheck and tighten the 3 pulley screws (Fig. 1534).



Fig 1534 CLR DSC-0864

17. Install the idler arm spring on the idler arm and onto the stud located on the loader tower (Fig. 1535).

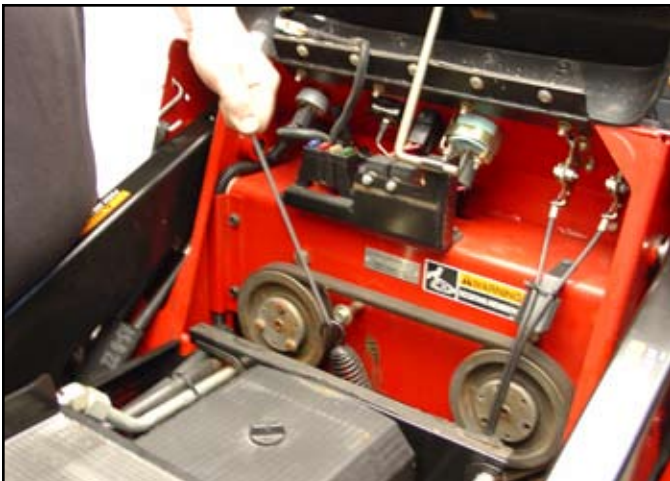


Fig 1535 DSC-0825

18. Install the battery in the unit and install the battery clamp. Connect the positive and then the negative battery cable.

19. Start the engine and purge the hydraulic system.
Refer to "Purging Air Procedures" on page 12-27.

20. Check all the hydraulic line connections for any leaks.

21. Install the right hand panel and retain with 4 screws (Fig. 1536).



Fig 1536 CLR DSC-0843

22. Install the left hand panel and retain with 4 screws (Fig. 1537).

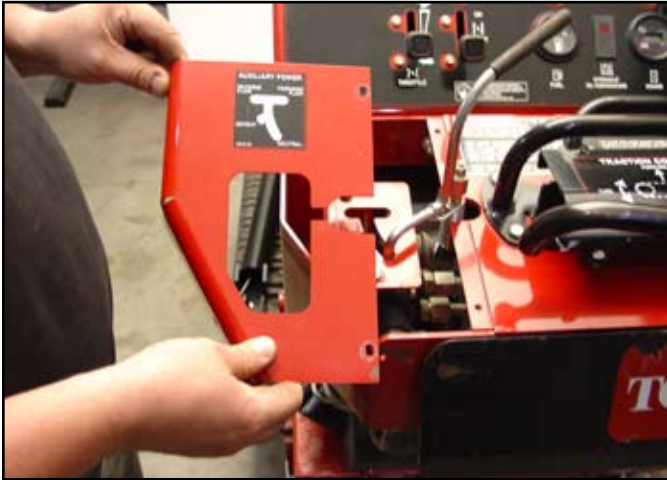


Fig 1537

DSC-0829

23. Check the traction control for neutral. Refer to "Traction Control Tracking Adjustment, Full Forward Position" on page 12-26 and "Traction Control Neutral Adjustment" on page 12-27.
24. Check and if needed fill the hydraulic tank.
25. Close the rear back cover and the hood.
26. Lower the unit to the ground.

Road Wheel Bearing Replacement

Check and grease the road wheels every 250 operating hours, or yearly.

Note: It is usually not necessary to remove the track guide when replacing any of the road wheel bearings. They can also be removed by raising the unit off the ground. For safety reasons, make sure the frame of the unit is securely supported.

1. Remove the snap ring from the inner hub of the road wheel (Fig. 1538).



Fig 1538

CLR DSC-0821

DRIVE SYSTEM

2. Remove wheel bearing cap with seal (Fig. 1539).



Fig 1539

CLR DSC-0822

4. Remove the road wheel from the track guide (Fig. 1541).



Fig 1541

CLR DSC-0824

3. With a ratchet and socket, remove bolt retaining the road wheel (Fig. 1540).



Fig 1540

CLR DSC-0823

5. Press bearing out from the seal side, pressing on the inner race of the bearing (Fig. 1542).



Fig 1542

CLR DSC-0827

DRIVE SYSTEM

- Using a drift punch and hammer, tap out the seal (Fig. 1543).



Fig 1543

CLR DSC-0828

- Pressing on the outer race, press bearing in until it seats against the inner shoulder of the road wheel (Fig. 1545).



Fig 1545

CLR DSC-0830

Road Wheel Bearing and Road Wheel Assembly Installation

- The raised portion of the bearing should be installed toward the seal side (Fig. 1544).



Fig 1544

CLR DSC-0829

- Apply grease around the bearing before installing the seal (Fig. 1546).



Fig 1546

CLR DSC-0831

DRIVE SYSTEM

4. Align seal so the lip is facing the bearing (Fig. 1547).



Fig 1547

CLR DSC-0832

6. Install the road wheel on the track guide and torque bolt to 150 ft-lbs. (203 Nm) (Fig. 1549).



Fig 1549

CLR DSC-0824

5. Press seal in until it is flush with the inner hub of the road wheel (Fig. 1548).



Fig 1548

CLR DSC-0833

7. Fill the cap with grease and install the wheel gasket (Fig. 1550).



Fig 1550

CLR DSC-0835

- Secure the road wheel cap with the snap ring (Fig. 1551).



Fig 1551

CLR DSC-0821

Alignment Tool (Toro P/N: 110-0069) (Fig. 1552):



Fig 1552

CLR DSC-0624

Track Guide Alignment

To align the track guide, the machine must be raised off the ground and the tracks removed from the machine. Refer to:

- "Lifting Unit for Service" on page 8-2
- "Track Removal" on page 8-4 (TX420), or on page 8-13 (TX425)

TX420

- Ensure the 4 track guide mounting bolts are loose (Fig. 1553).



Fig 1553

DSC-0617

DRIVE SYSTEM

2. Insert the notched end of the alignment tool into the drive wheel spacer (Fig. 1554).



Fig 1554

DSC-0625

4. Rotate the alignment tool and move the track guide as necessary until the alignment tool fits into the track guide channel. Secure the end of the alignment tool with a strap (Fig. 1556).



Fig 1556

DSC-0629

3. Secure the end of the alignment tool with the alignment tool pin (Fig. 1555).



Fig 1555

DSC-0628

5. Tighten and torque the 4 track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1557).



Fig 1557

DSC-0631

DRIVE SYSTEM

6. Remove the alignment tool.
7. Install the track. Refer to “Track Installation” on page 8-4 (TX420).

TX425

Note: The TX425 220000100 – 220000400 has 5 track guide mounting bolts and the TX425 22000401 & higher has 4 track guide mounting bolts.

1. Install a washer and then the outer tension wheel. Install a washer and a nut securing the tension wheel to the tensioner arm wheel shaft (Fig. 1558).



Fig 1558

DSC-0648

2. Ensure the 4, or 5 track guide mounting bolts are loose (Fig. 1559).



Fig 1559

DSC-0643a

3. Insert the notched end of the alignment tool into the drive wheel spacer (Fig. 1560).

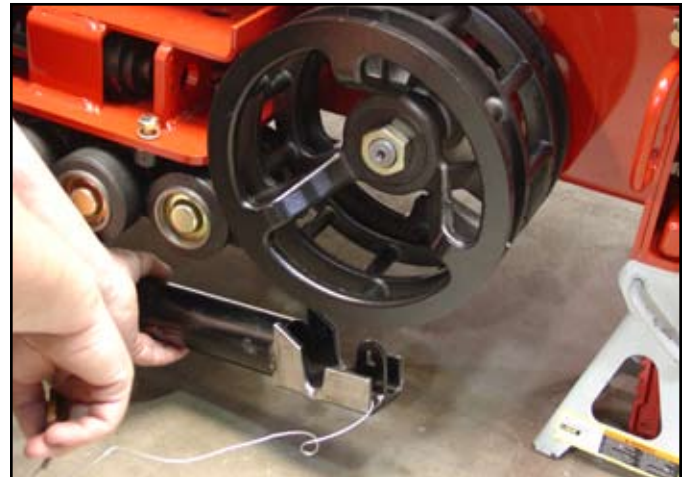


Fig 1560

DSC-0650

DRIVE SYSTEM

- Secure the end of the alignment tool with the alignment tool pin (Fig. 1561).



Fig 1561

DSC-0651

- Tighten and torque the 4 track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1563).



Fig 1563

DSC-0654

- Rotate the alignment tool and move the track guide as necessary until the alignment tool fits into the track guide channel. Secure the end of the alignment tool with a strap (Fig. 1562).



Fig 1562

DSC-0653

- Remove the alignment tool.
- Install the track. Refer to "Track Installation"
 - TX425 (with cast drive wheel) page 8-13
 - TX425 (with drive sprocket wheel) page 8-29