Clean & Dry Mating Surfaces
Apply High-Strength Epoxy
to both surfaces prior to assembly

Align keyway with front

Clean away excess epoxy and allow piece to cure completely

Recessed Ring Facing Up

Bottom of Pivot Tube
flush with bottom of Pivot Top Plate after assembly - Tube perpendicular to Plate

After curing epoxy, if necessary drill clear the 3x 0.136" holes 7/64" dp (using #29 drill bit) on seam and tap 8-32 x 3/8" min depth

Align keyway with front

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Assembly from Sheet 1

3x 8-32 x 5/8" Setscrews w/ Red Loctite

Face of Setscrews not to extend beyond surface

Pivot Assembly Drawings
Assembly Sequence

DRAWN: 11/27/2009

TITLE: Pivot Assembly Drawings

DWG NO: Pivot Asm

SCALE: 1:1

SHEET 2 OF 18
Assembly from Sheet 2

\( \frac{3}{16} \)" Open Needle Bearings
McMaster-Carr Part # 5905K22
(2 req'd per Pivot)
Press Fitted top & bottom of Pivot Tube

Insert Flush Top & Bottom

**Pivot Assembly Drawings**

**Assembly Sequence**

- Assembly from Sheet 2
- \( \frac{3}{16} \)" Open Needle Bearings
- McMaster-Carr Part # 5905K22
- (2 req'd per Pivot)
- Press Fitted top & bottom of Pivot Tube
- Insert Flush Top & Bottom
Coaxial Drive Shaft

Miter Gear - 20° Pressure Angle - Diametral Pitch = 16 - 16T
McMaster-Carr Part # 6843K11 - or
Boston Gear Catalog # HLK110Y (Item Code 12326)
Boston Gear part has hardened teeth

3/8" Shaft Thrust Bearing
McMaster-Carr Part # 6655K35
(1) washer removed
Pre-grease
Take extra care to keep clean and to avoid losing balls

Mount Shaft Face flush with Miter Gear Face

Key needed (not shown)

Coaxial Drive Assembly

Lock Setscrew

Pivot Assembly Drawings
Assembly Sequence

11/27/2009

Pivot Asm
Prelubricate (grease) Needle Bearings & Drive Shaft
Insert Shaft carefully to avoid damage to Needle Bearings

Assembly from Sheet 3
Assembly from Sheet 4 - Coaxial Drive Assembly

Clean off excess exterior grease after assembly
Press bearing into Pivot Side Plate

$\frac{3}{8}$" ID x $\frac{3}{8}$" OD Flanged Bearing (protected)
AndyMark Part # am-0028

Pivot Assembly Drawings
Assembly Sequence

Pivot Side Plate Assembly
(2 req'd per Pivot)
Assembly from Sheet 6
Pivot Side Plate Assembly
(1 per Pivot req'd for this purpose)

Transfer Shaft

Shaft Face flush with Plate Exterior

1x assembly needed per Pivot
Assembly from Sheet 7

Transfer Shaft Spacer

¾" Shaft Thrust Bearing
McMaster-Carr Part # 6655-35
Pre-lubricated

Miter Gear - 20° Pressure Angle - Diametral Pitch = 16 - 16T
McMaster-Carr Part # 6843K11 - or
Boston Gear Catalog # HLK110Y (Item Code 12326)
Boston Gear part has hardened teeth

1x assembly needed per Pivot

Pivot Assembly Drawings
Assembly Sequence

DAD 11/27/2009

Title: Pivot Assembly Drawings

Sequence:

1. ¾" Shaft Thrust Bearing
   - McMaster-Carr Part # 6655-35
   - Pre-lubricated

2. Miter Gear
   - 20° Pressure Angle
   - Diametral Pitch = 16 - 16T
   - McMaster-Carr Part # 6843K11
   - Alternatively, Boston Gear Catalog # HLK110Y (Item Code 12326)
   - Boston Gear part has hardened teeth

3. Assembly from Sheet 7

4. 1x assembly needed per Pivot

Drawing Title: Pivot Asm

Rev: B

Scale: 1:1

Sheet 8 of 18
Rotate Coaxial Drive Shaft to check gear rotation and mesh. Should turn smoothly and easily.

Remove this side after successful test.

Assembly from Sheet 5:
10-32 x 0.5 BHCS (3x req'd each side)

Assembly from Sheet 6:
temporarily installed to check gear alignment & performance

Assembly from Sheet B:

Use Loctite on screws this side only after verifying gear performance

10-32 x 0.5 BHCS (3x req'd each side)

Assembly from Sheet 8:

Assembly from Sheet 5:

Assembly from Sheet 6:

temporarily installed to check gear alignment & performance

lubricate gears

Assembly from Sheet B:

Use Loctite on screws this side only after verifying gear performance

Assembly from Sheet B:

Assembly from Sheet 5:

Assembly from Sheet 6:

temporarily installed to check gear alignment & performance

Assembly from Sheet B:

Use Loctite on screws this side only after verifying gear performance

Assembly from Sheet B:

Assembly from Sheet 5:

Assembly from Sheet 6:

temporarily installed to check gear alignment & performance

Assembly from Sheet B:

Use Loctite on screws this side only after verifying gear performance

Assembly from Sheet B:

Assembly from Sheet 5:

Assembly from Sheet 6:

temporarily installed to check gear alignment & performance

Assembly from Sheet B:
Assembly from Sheet 9

10-32 x 0.375" BHCS (1x req'd) - use Loctite

6-32 x 0.375" BHCS (1x req'd) use Loctite

Pivot Assembly Drawings
Assembly Sequence

Pivot Brace

Title: Pivot Assembly Drawings
Assembly Sequence

Drawn: 11/27/2009

Dwg No: Pivot Asm

Scale: B

Approved:
Key Needed (not shown)

Drive Sprocket - type 35 chain - 9T
McMaster-Carr Part # 2500T11 (Hardened Teeth)
(Part # 6280K311 w/out hardened teeth)

Assembly from Sheet 10

lock position later
Assembly from Sheet 11

4" Plaction Wheel / Axle Assembly (documented elsewhere)

Pivot Assembly Drawings
Assembly Sequence

4" Plaction Wheel / Axle Assembly (documented elsewhere)
Assembly from Sheet 12

6-32 x 0.375" BHCS (1x)

10-32 x 0.50" BHCS (3x)

Assembly from Sheet 6

Lock Sprocket Position with minimum gap between Sprocket & non-rotating Bearing faces (Sprocket may contact inner, rotating face).
Assembly from Sheet 13

- 32-link type 35 Steel Chain with master link clip facing outboard
- 6-32 x 0.375" BHCS (2x) - use Loctite
- 10-32 x 0.375" BHCS (1x) - use Loctite

Pivot Brace

**Pivot Assembly Drawings**
**Assembly Sequence**

- Assembly from Sheet 13
- 32-link type 35 Steel Chain with master link clip facing outboard
- 6-32 x 0.375" BHCS (2x) - use Loctite
- 10-32 x 0.375" BHCS (1x) - use Loctite
Tighten Axle Hex Jam Nuts to:
1) Center Wheel in Pivot
2) Lock Axle securely
3) Avoid distorting side plates

Assembly from Sheet 14—

\( \frac{3}{8}" \) - 16 Hex Jam Nuts (2x)
McMaster-Carr Part # 91255AS48

Pivot Assembly Drawings
Assembly Sequence

<table>
<thead>
<tr>
<th>DRAWN</th>
<th>CHECKED</th>
<th>TITLE</th>
<th>MFG</th>
<th>APPROVED</th>
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<td>11/27/09</td>
<td>Pivot Asm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DWG NO

B

Pivot Asm

SCALE

1 : 1.5

SHEET 15 OF 18
Assembly from Sheet 15

1½" Thrust Washer
McMaster-Carr Part # 6655K25
(1) washer removed
pre-lubricated

1" Flanged Bearing
McMaster-Carr Part # 6383K257

Type 35 - 15 T Drive Sprocket
1" Bore
McMaster-Carr Part # 6280K375

Note:
If Pivot is not being immediately installed on a Chassis, the 15T Drive Sprocket may be installed in direct contact with the 1" Flanged Bearing. In this way, the Bearing package is held together. The Sprocket must be adjusted to 3/8" gap before installing the Pivot.

Key Needed (not shown)
Coaxial Drive Sprocket Assembly, comprising:
- (1x) 535-28L Sprocket AndyMark am-0219
- (1x) 375 Key Hub AndyMark am-0134
- (6x) 10-32 x 0.50\" BHCS
- (6x) 10-32 Nylok Nuts

Retaining Ring (E-Style) - 1\"
McMaster-Carr Part # 97431A380

Retaining Ring and Coaxial Drive Sprocket must be removed to install or remove Pivot Unit to/from Chassis
Pivot Assembly Drawings
Section thru Full Assembly

SECTION A-A
SCALE 1: 1.5

DETAIL B
SCALE 1.33 : 1

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