Twin-Pack® Draft System

Maintenance Manual
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Product Information</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nomenclature – Type E</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Nomenclature – Type F</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Nomenclature – Type Rotary</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Support Plate – Type E</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Support Plate – Type F and Type rotary</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Support Plate Application – Type E</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Support Plate Application – Type F</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Support Plate Application – Type Rotary</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Contacting Amsted Rail</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Rear Gag</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Inspection Criteria</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Support Plate</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>AAR Rule 21 Applies</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Removing a Unit – normal condition</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Removing a Unit – abnormal condition</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Removal Tool</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>“L” Bracket</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Installing a Unit</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>
General Product Information

Twin-Pack® draft systems are offered in the following types:

- Type E (draft key)
- Type F (vertical pin)
- Rotary

Type E Application

Type E-325G
3.25” Buff Travel / 1.25” Draft Travel

Type E-425G
4.25” Buff Travel / 1.25” Draft Travel

currently not offered
Type F Application

Type F-325G
3.25” Buff Travel / 1.25” Draft Travel
Type Rotary Application

Type R-325G

3.25” Buff Travel / 1.25” Draft Travel
Nomenclature:

**E325-G TWIN-PACK**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>CAST YOKE 3250 TWIN PACK</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>FOLLOWER AAR Y 74</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>ASSEMBLY TWIN PACK FRONT PAD STACK</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>ASSEMBLY REAR PAD STACK</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>ASSY TWIN PACK REAR FOLLOWER</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>TWIN PACK REAR GAG</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>NUT 1 1/2 8</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>CENTER CUT O.D. ROD Ø1-1/2</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>TWIN PACK NUT RETAINER</td>
</tr>
</tbody>
</table>

Type E Nomenclature
Type F Nomenclature
R325-G TWIN-PACK

Type Rotary Nomenclature

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>CAST YOKE R 325C TWIN PACK</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>ROTARY FRONT FOLLOWER</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>ASSEMBLY TWIN PACK FRONT PAD STACK</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>ASSEMBLY REAR PAD STACK</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>ASSY TWIN PACK REAR FOLLOWER</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>TWIN PACK REAR CAG</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>NUT 1 1/2-8</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>CENTER GUID ROD Ø1-1/2</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>TWIN PACK NUT RETAINER</td>
</tr>
</tbody>
</table>
Support Plates:

Support Plate – Type E

Support Plate – Type F and Type Rotary
Support Plate Applications:

Support Plate Application – Type E

Support Plate Application – Type F

The 2 holes go towards the center plate

The 3 holes go towards the coupler
Support Plate Application – Type Rotary

The 2 holes go towards the center plate
The 3 holes go towards the coupler

Contacting Amsted Rail

To contact Amsted Rail regarding ordering new or replacement parts, or about information contained within this maintenance manual, please call 1-800-621-8442
Rear Gag

For ease of installation, all Twin-Pack® draft systems are preshortened at the factory. Rear gags will disengage after the first buff impact allowing the unit to expand against the draft gear pocket stops.

Inspection Criteria

General Criteria:

- All applicable AAR and FRA rules apply
- Coupler free slack:
  - Type E and Type F units - If free slack exceeds 1.0” (per AAR RP-101), the total draft system should be removed and the system evaluated.
- Type Rotary - If free slack exceeds 1.5”, the total draft system should be removed and the system evaluated.

- Support Plate:
  - If small support plate is installed, replace with large support plate. Contact Amsted Rail for large support plate details.

![Small Support Plate](image1)

![Large Support Plate](image2)

- **AAR Rule 21 Applies:**
  1. Condemnable at Any Time
     a. Draft Gear
        1. Broken or cracked yoke castings that are an integral part of the draft gear assembly.
        2. Obvious heat or fire damage to rubber or rubber friction draft gears.
        3. Draft gear with broken or missing external retaining bolt or rod only shall not be considered defective.
     b. Carriers
        1. Draft gear carrier cracked, broken, or worn more than 50% of the original thickness, wear plate missing or worn through.
        2. Wrong (not standard to car).
     c. Followers
        1. Broken, bent ½ inch or more, or missing.
        2. Worn more than 1/8 inch in any location.
2. Condemnable When Car is on Shop or Repair Track for Any Reason
   a. Draft Gear
      (1) When draft gear is removed in conjunction with other work, when
defective or missing retaining bolts or rods are discovered.

Lubrication Requirements

- If the rotary Twin Pack® is used, lubricate the system per the Amsted Rail
  FR304 rotary dump coupler maintenance manual
- Type E and Type F units do not require lubrication

Removing a Twin Pack® Unit

Procedures for removing a Twin Pack® unit from a car:

- **Normal condition (no damage to unit):**
  - If possible, remove the tack weld holding the “nut” to the “nut retainer” and
    bend the tabs of the “nut retainer” out of the way. If the tack welds are not
    accessible, you will need to use gags between the “nut” and the “rear
    follower”. Contact Amsted Rail for replacement parts or product details.
o Place a lift table or other suitable device under the draft gear pocket and Twin Pack® unit
o Raise the lift table or other suitable device until it almost contacts the support plate
o Remove the support plate fasteners and support plate
o Raise the lift table or other suitable device up against the bottom of the sill or Twin Pack® unit
o Using a standard draft gear removal tool (jack) such as the HydroJack II or Hydra-Tech, compress the Twin Pack® unit until it is loose in the pocket (same as with any standard draft gear)

o Either:
  ▪ Run the “nut” up against the rear follower and then back the “nut” off one (1) full turn
  ▪ Use gags between the “nut” and the “rear follower”

o The draft gear removal tool (jack) can now be removed (the “nut” or gag will hold the Twin Pack® unit compressed)
Lower the Twin Pack® unit out of the sill using the lift table or other suitable device

- **Abnormal condition (yoke is broken or damaged):**
  - If standard draft gear removal tool (jack) such as the HydroJack II or Hydra-Tech can not be used, or the guide rod is broken such that the “nut” will not function as a gag. Amsted Rail has developed 2 tools for removing a unit under these conditions:
  - **Removal tool:**
    - Can be used to remove a unit under either condition listed above
    - Eliminates overhead welding
    - Can be used multiple times
    - See instructions below
  - **“L” bracket:**
    - Can be used to remove a unit with a broken “guide rod”
    - Requires overhead welding
    - 1 time use bracket (bracket is shipped with unit)
    - See instructions below

- **Removal tool:**
  - This tool is used with a standard draft gear removal tool (with the “ears” removed). There are 2 different removal tool designs:
    - 1 for a type E Twin Pack® unit
    - 1 for either a type F Twin Pack® unit or a rotary Twin Pack® unit
Place a lift table or other suitable device under the draft gear pocket and Twin Pack® unit.

If a large support plate is installed:

- Raise the lift table or other suitable device until it almost contacts the support plate
- Remove the support plate fasteners and large support plate
- Remove the large support plate and replace it with a small support plate (minimum of 1 fastener hand tight on each side)
- Place the draft gear removal tool (jack), removal tool shim, and adaptor inside the coupler opening of the yoke

- Lower the lift table or other suitable device and place the removal tool onto it
- Raise the lift table or other suitable device until it almost contacts the small support plate
- Remove the small support plate
- Raise the lift table or other suitable device with the removal tool up against the bottom of the Twin Pack® unit
- Using the draft gear removal tool (jack), compress the Twin Pack® unit until it is loose in the pocket
- Following the operating instructions for the draft gear removal tool (jack), remove the hydraulic line while keeping the Twin Pack® unit compressed
- The Twin Pack® unit and removal tool may now be lowered out of the sill
- To remove the Twin Pack® unit from the removal tool, you may perform one of the following (with the Twin Pack® unit still compressed):
- Weld steel plates on each side and top (3 places) connecting the rear follower and the yoke

- Use a set of “picture frames” over the front follower and the rear follower (drawings available from Amsted Rail upon request)
With either the plates welded on or “picture frames” applied, release the draft gear removal tool (jack).

The Twin Pack® unit, draft gear removal tool (jack), shim, and adaptor can now be removed from the removal tool.

- “L” bracket:

- Place a lift table or other suitable device under the draft gear pocket and Twin Pack® unit
- Raise the lift table or other suitable device until it almost contacts the support plate
- Remove the support plate
- Lower the lift table or other suitable device enough to place the two (2) “L” brackets up against the bottom of the Twin Pack® unit
- Force the two (2) “L” brackets tight up against the “rear follower” on either side of the “guide rod” as follows
- Weld the two (2) “L” brackets securely to the “yoke” and “rear follower”. This will keep the “buff stack” from expanding while compressing the “draft stack”.

- Using a standard draft gear removal tool (jack) such as the HydroJack II or Hydra-Tech, compress the Twin Pack® unit until it is loose in the pocket (same as with any standard draft gear)
Following the operating instructions for the draft gear removal tool (jack), remove the hydraulic line while keeping the Twin Pack® unit compressed. The Twin Pack® unit with “L” brackets attached may now be lowered out of the sill.

The draft gear removal tool (jack) can now be removed.

### Installing a Twin Pack® Unit

Procedures for installing a Twin Pack® unit to a car:

- Inspect the Twin Pack® unit to ensure:
  - No visible handling damage is present that would affect operation
  - The “nut” and “nut retainer” are in place and tack welded together
- Place the support plate and Twin Pack® unit in their proper orientation on top of the lift table or other suitable device (see “support plate” and “support plate application” above)
- Lift the unit and support plate into place
- Apply fasteners to the support plate
- The “rear gags” will disengage after first buff impact allowing the unit to expand against unit stops