

## Drum Brake Air Chambers

Update #2400B, July 2020 (supersedes bulletins:  
#2351, #2356, #2383, #2400 & #2400A)

### Air Chamber Features

All Dayton Parts brand air chambers have the following features –

1. A crimped cap for the spring brake.
2. The mounting housing and spring brake cap have e-coat paint for corrosion resistance.
3. The service and parking brake diaphragms are reinforced with nylon cord.
4. The pushrods are threaded to within a ½" of the mounting housing when the parking brake is charged with air.
5. 5/8"-11 locknuts and washers for the mounting studs.
6. 5/8"-18 jam nut for clevis assembly.
7. 5/8"-18 x ½" manual clevis assembly included except where noted without clevis.
8. The service band clamp is rotated 45 degrees off the centerline of the mounting studs to accommodate close mounting applications.



The 3030CLE long stroke has square shaped ports to identify it is a long stroke air chamber.

### Double Diaphragm Combo Chambers

#### 2424CE

2.5" Standard stroke  
8.0" Pushrod length  
8.6" Body height  
1795 lbs force - 2.0" stroke @ 94 psi

#### 2430CE

2.5" Standard stroke  
8.0" Pushrod length  
8.6" Body height  
1795 lbs force - 2.0" stroke @ 94 PSI

#### 3030CE (shown)

2.5" Standard stroke  
11.8" Pushrod length  
9.2" Body height  
2470 lbs force – 2.0" stroke @ 94 psi

#### 3030CE18 (shown)

2.5" Standard stroke  
18.5" Pushrod length  
9.2" Body height  
2470 lbs force – 2.0" stroke @ 94 psi

#### 3036CE

2.5" Standard stroke  
12.0" Pushrod length  
10.6" Body height  
2470 lbs force – 2.0" stroke @ 94 psi

#### 3636CE

3.0" Standard stroke  
11.0" Pushrod length  
11.2" Body height  
2920 lbs force - 2.5" stroke @ 94 psi

#### 3030CLE (shown)

3.0" Long stroke  
14.0" Pushrod length  
10.4" Body height  
2470 lbs force – 2.5" stroke @ 94 psi

#### 3036CLE

3.0" Long stroke  
12.9" Pushrod length  
11.0" Body height  
2470 lbs force – 2.5" stroke @ 94 psi

Continued on page 2

Visit us on the World Wide Web at [www.daytonparts.com](http://www.daytonparts.com)

Call Center, USA • 800-233-0899

Call Center, Canada • 877-798-2931

**Air Chambers with Welded Clevis**

**3030CEW (shown)**

2.25" Standard stroke  
 1.3" Auto slack clevis pin spacing c-c  
 9.2" Body height  
 2470 lbs force – 2.0" stroke @ 94 psi

**3030CLEW (shown)**

2.85" Long stroke  
 1.3" Auto slack clevis pin spacing c-c  
 10.2" Body height  
 2470 lbs force – 2.0" stroke @ 94 psi

**3036CLEW**

2.85" Long stroke  
 1.3" Auto slack clevis pin spacing c-c  
 10.2" Body height  
 2470 lbs force – 2.0" stroke @ 94 psi



The 3030CLEW long stroke has square shaped ports to identify it is a long stroke air chamber.

**Air Chambers for Hendrickson Intraax Axles**

Direct replacement air chambers for Henderickson Intraax axles.

**3030CE-INT (shown)**

2.5" Standard stroke  
 12.3" Pushrod length  
 9.2" Body height  
 2470 lbs force – 2.0" stroke @ 94 psi

**3030CLE-INT (shown)**

3.0" Long stroke  
 12.8" Pushrod length  
 10.4" Body height  
 2470 lbs force – 2.5" stroke @ 94 psi

**Note:** Both of these chambers do not include a manual clevis assembly.



**Note:** Both of these chambers do not include a manual clevis assembly.

Continued on page 3

The 3030CLE-INT long stroke has square shaped ports to identify it is a long stroke air chamber.

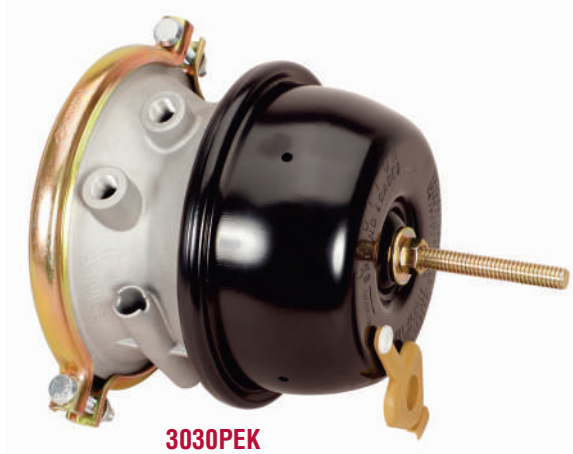
**Piggy Back Kits  
for Air Chambers**

**3030PEK**

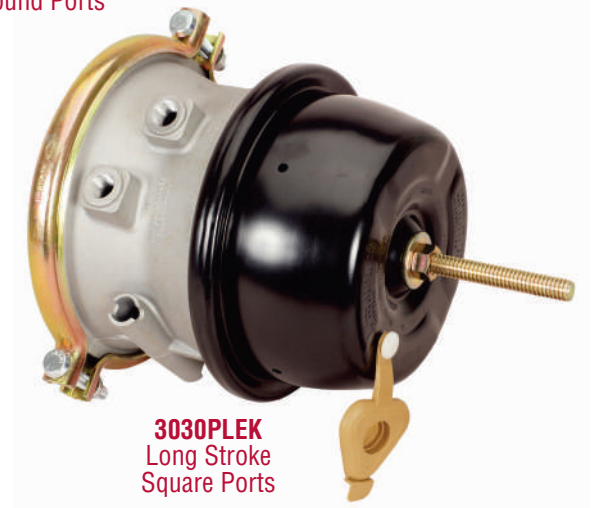
2.5" Standard stroke chambers  
Diaphragm and service band clamp included  
Power Spring pre-caged  
2200 lbs power spring

**3030PLEK**

3.0" Long stroke chambers  
Diaphragm and service band clamp included  
Power Spring pre-caged  
2200 lbs power spring



**3030PEK**  
Standard Stroke  
Round Ports



**3030PLEK**  
Long Stroke  
Square Ports

The 3030PLEK long stroke has square shaped ports to identify it is a long stroke air chamber.

**Service Chambers**

**05-116**

2.5" Standard stroke  
10.2" Pushrod length  
3.5" Body height  
1460 lbs force - 2.0" stroke @ 94 psi

**05-120**

2.5" Standard stroke  
10.2" Pushrod length  
3.6" Body height  
1685 lbs force - 2.0" stroke @ 94 psi

**05-124**

2.5" Standard stroke  
10.2" Pushrod length  
4.0" Body height  
1795 lbs force - 2.0" stroke @ 94 psi

**05-130 (shown)**

2.5" Standard stroke  
10.2" Pushrod length  
4.0" Body height  
2470 lbs force - 2.0" stroke @ 94 psi

**05-136**

3.0" Standard stroke  
10.2" Pushrod length  
4.0" Body height  
2920 lbs force - 2.5" stroke @ 94 psi



**05-130 (shown)**

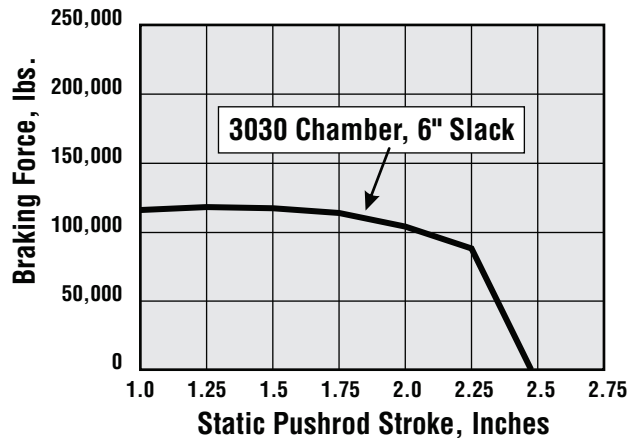
## The S-Cam Brake

The s-cam brake is a series of simple levers that takes the pushrod stroke and reduces that movement or distance traveled in order to multiply the force being applied. Here are the three levers used and their values for the common 16.5" drum brake:

1. Slack Adjuster – usually a 5.5" or 6.0" slack arm drilling
2. S-Cam Head – a total lift of 1/2" for a 16.5" s-cam head
3. Brake Shoe – 2 to 1 mechanical advantage

**Slack Adjuster** — A standard 3030 air chamber has 2.5" of pushrod stroke but only 80% of that can be used or 2.0" leaving the additional 0.5" of stroke as a safety margin.

See what happens in this graph for a 3030 chamber with a 6.0" slack when the stroke goes past 2.25".



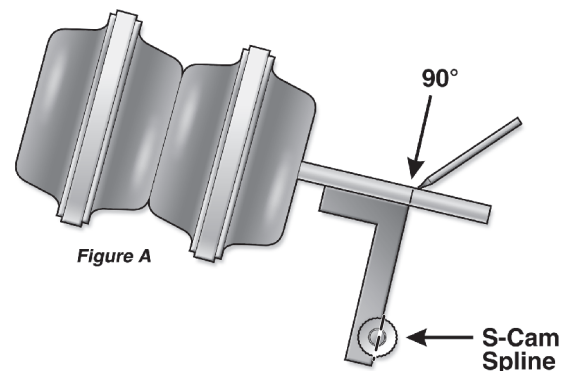
## Cutting the Pushrod

The amount of braking force begins to taper down slightly at 1.75" of stroke but it falls like a rock after 2.25" of stroke. Why is that? Because if this 16.5" brake assembly is set up correctly it should not take more than 2.0" of stroke to completely apply the brakes. After 2.25" of stroke the slack adjuster has gone well past 90° to the air chamber pushrod and therefore we just lost the mechanical advantage the slack adjuster was providing. By not cutting the air chamber pushrod correctly (which is the main reason for this happening) the effectiveness of the slack adjuster is eliminated basically removing the first of the three levers in the brake assembly.

### Cutting a Type 30 air chamber pushrod for a manual slack adjuster clevis.

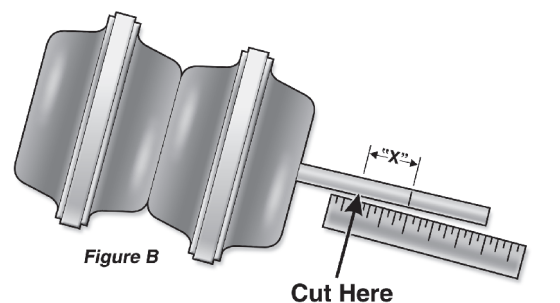
#### Figure A:

First, mount the air chamber in the axle bracket and connect the emergency air line to the spring brake inlet port. Next, charge the spring brake with air so the pushrod is in the released position. Make sure the pushrod is centered in the air chamber and not cocked to one side. Using a square, mark the pushrod at the 90 degree position with the short leg of the square flush along the pushrod and the long leg centered in the end of the s-cam as shown in the diagram to the right.



#### Figure B:

Next, measure from the 90 degree mark back towards the air chamber the "X" distance (see the chart in the second diagram to the right). Mark the pushrod at the "X" dimension and then cut the pushrod at this mark. The clevis for your manual slack adjuster is now ready to be installed on the pushrod.

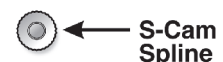


#### "X" Dimension

$$5" - 5 \frac{1}{2}" = 2 \frac{1}{4}"$$

$$6" - 7" = 2 \frac{1}{2}"$$

$$2 \frac{1}{2}" \text{ Standard Stroke}$$



For automatic slack adjusters, please refer to the slack manufacturers installation instructions.