Air Suspension Valves

Electronic Products
Pressure Transducers
Mechanical Pressure Products
Valves & Regulators
Temperature Products
Level Products
Air Suspension Valves
At Barksdale, our goal is to help our customers “Control Every Move”. For us, this isn’t simply a motto, but rather a vision that guides the way we do business with our valued customers. At every stage in the process from needs assessment, design and manufacturing to customer support, we provide peace of mind by delivering a total controls solution tailored to meet the specific needs of each customer. We accomplish this by leveraging the following:

**A Highly Experienced Team** of engineers that work closely with customers to meet, exceed and even anticipate their every control need.

**A Diverse Product Portfolio** of quality standard and custom-tailored product solutions that help control Pressure, Temperature, Level and Flow in the most demanding applications in the industry.

Our **Global Reach and Support** via our:
- Worldwide direct sales force of experts
- Manufacturing facilities in North America and Europe
- Team of highly capable and friendly customer support staff that make it easy to do business with Barksdale anywhere in the world

**Dedicated Tools & Processes**
- Production Part Approval Process (PPAP) to satisfy the most stringent quality control requirements
- Compliance with ISO 9001:2000 standards
- ATEX / IECx compliant facilities
- 6 Sigma culture / Process Capability
## Table of Contents

**Air Suspension Valve**

- 52321 Series - Air Suspension Valve ........................................... 4
- 55521 Series - Cab Air Suspension Valve .................................... 7
- 52341 Series - Air Suspension Valve with Integral Dump .............. 10
- 52462 Series - Pressure Protection Valve ................................... 14
- Height Control Valve Linkages .................................................... 17
52321 Series
Air Suspension Valve

- Shear-Seal® Technology
- Accurate Ride Height
- Low Air Consumption
The 52321 Air Suspension Valve utilizes Barksdale’s patented Shear-Seal® technology to accurately control suspension height in commercial and recreational vehicle applications. Shear-Seal® has become the industry leader through superior performance and long life, even under the most demanding conditions.

Barksdale height control valves feature proportional response and are available in both low flow and high flow configurations. These features combine to minimize air consumption without the use of inaccurate and failure prone time delay elements found in competing products.

Available push-to-connect fittings and single or dual bag ports allow for easy and fast installation. The Barksdale valve’s compact design and Barksdale’s ability to customize the product make it a perfect fit on any suspension.

### Features
- Shear-Seal® Technology provides superior performance and durability
- Precise dead band optimizes ride height control
- Proportional flow reduces vehicle air consumption
- 120 or 350 l/min (4.2 to 12.4 CFM) peak flow balances suspension response and air use
- Dual outlet ports for simplified hose routings
- Optional push-to-connect fittings ease installation
- Compact size and flexible design fits any application

### Applications
- Tractor
  - Primary Suspension
  - Cab Suspension
  - Front Suspension
- Trailer
- Bus
- RV

<table>
<thead>
<tr>
<th>Operating Media</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal Type</td>
<td>Shear-Seal®</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>130 PSI (9 bar) Maximum</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°F to +150°F (-40°C to +65°C)</td>
</tr>
<tr>
<td>Flow Curve</td>
<td>Proportional response</td>
</tr>
<tr>
<td>Maximum Flow Rate</td>
<td>Low flow: 120 L/Min (4.2 cfm) Standard flow: 350 L/Min (12.4 cfm)</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/4” NPT (Standard) 1/4” Push in tube* 6mm Push in tube*  *DOT approved</td>
</tr>
<tr>
<td>Delivery Ports (Bag Ports)</td>
<td>Dual delivery ports</td>
</tr>
<tr>
<td>Mounting Studs</td>
<td>1/4-20 UNF or M6</td>
</tr>
<tr>
<td>Linkage Mounting Hole</td>
<td>0.25” (6.3 mm) or 0.38” (9.5 mm)</td>
</tr>
<tr>
<td>Maximum Handle Movement</td>
<td>+/- 75° For fill or exhaust</td>
</tr>
</tbody>
</table>

### Materials Of Construction
- **Body:** Anodize aluminum
- **Housing:** Engineered plastics
- **Arm:** Zinc plated steel
- **Internal Elements:** Stainless steel and hard anodized aluminum
- **Seals:** Buna-N

### Weight (typical)
- 0.6 lb (272g)

### Additional Options Available
- Arm length
- Port locations
- Arm orientation
- Mounting stud location
- Air fittings
- Mounting brackets
Barksdale specializes in engineered solutions that exceed customer expectations.

The Barksdale height control valve is highly adaptable, including customized:

- Actuating arm length, offset, attachment points
- Mounting stud length, and location, and threads
- Threaded SAE & metric ports and push to connect fittings
- Ready to bolt on sub-assemblies with brackets, linkages and fasteners

Barksdale has a solution for every application. Let us find one for you.
55521 Series
Cab Air Suspension Valve

- Shear-Seal® Technology
- Accurate Ride Height
- Push-To-Connect Fittings
The 55521 Air Suspension Valve utilizes Barksdale’s patented Shear-Seal® technology to accurately control suspension height in commercial and recreational vehicle applications. Shear-Seal® has become the industry leader through superior performance and long life, even under the most demanding conditions.

Barksdale height control valves feature proportional response and are available in both low flow and high flow configurations. These features combine to minimize air consumption without the use of inaccurate and failure prone time delay elements found in competing products.

Available push-to-connect fittings and single or dual bag ports allow for easy and fast installation. The Barksdale valve’s compact design and Barksdale’s ability to customize the product make it a perfect fit on any suspension.

### Features
- Shear-Seal® Technology provides superior performance and durability
- Precise dead band optimizes ride height control
- Proportional flow reduces vehicle air consumption
- Standard push-to-connect fittings ease installation
- 120 or 350 l/min (4.2 to 12.4 CFM) peak flow balances suspension response and air use
- Single or Dual outlet ports simplify hose routings
- Compact size and flexible design fits any application

### Operating Media
- Air

### Seal Type
- Shear-Seal®

### Operating Pressure
- 130 PSI (9 bar) Maximum

### Operating Temperature
- -40°F to +150°F
  
  (-40°C to +65°C)

### Flow Curve
- Proportional response

### Maximum Flow Rate
- Low flow: 120 L/Min (4.2 cfm)
- Standard flow: 350 L/Min (12.4 cfm)

### Port Size
- 1/4” Push in tube*
- 6mm Push in tube*
  
  *DOT approved

### Delivery Ports (Bag ports)
- Single or dual delivery ports

### Mounting Studs
- 1/4-20 UNF or M6

### Linkage Mounting Hole
- 0.25” (6.3 mm) or 0.38” (9.5 mm)

### Maximum Handle Movement
- +/- 75° For fill or exhaust

### Materials Of Construction

<table>
<thead>
<tr>
<th>Body &amp; Housing:</th>
<th>Engineered plastics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm:</td>
<td>Zinc plated steel</td>
</tr>
<tr>
<td>Internal Elements:</td>
<td>Stainless steel and hard anodized aluminum</td>
</tr>
<tr>
<td>Seals:</td>
<td>Buna-N</td>
</tr>
</tbody>
</table>

### Weight (typical)
- 0.5 lb (227g)

### Applications
- Tractor
  - Single Valve Cab Suspension
  - Dual Valve Cab Suspension
  - Front Suspension
- Trailer
- RV

### Additional Options Available
- Arm length
- Arm Orientation
- Mounting stud location
- Mounting stud length
- Mounting brackets
NOTE A: Valve arm length, position and linkage attachment hole size can be designed for most OEM applications.

NOTE B: Mounting stud length and location can be specified for specific OEM applications.

Barksdale specializes in engineered solutions that exceed customer expectations. The Barksdale height control valve is highly adaptable, including customized:

- Actuating arm length, offset, attachment points
- Mounting stud length, and location, and threads
- Threaded SAE & metric ports and push to connect fittings
- Ready to bolt on sub-assemblies with brackets, linkages and fasteners

Barksdale has a solution for every application. Let us find one for you.
52341 Series

Air Suspension Valve with Integral Dump

- Shear-Seal® Technology
- Accurate Ride Height
- Integral Dump
The 52341 Air Suspension Valve utilizes Barksdale’s patented Shear-Seal® technology to accurately control suspension height in commercial and recreational vehicle applications. Shear-Seal® has become the industry leader through superior performance and long life, even under the most demanding conditions.

The integral dump feature in the Barksdale 52341 valve brings the ability to quickly exhaust the air bags into one compact package eliminating components and installation labor.

Barksdale height control valves feature proportional response and are available in both low flow and high flow configurations. These features combine to minimize air consumption without the use of inaccurate and failure prone time delay elements found in competing products.

Features
- Shear-Seal® Technology provides superior performance and durability
- High Flow Integral Dump for simplified installation
- Proportional flow reduces vehicle air consumption
- Precise dead band optimizes ride height control
- Dual outlet ports with bag cross talk control limits side to side interaction
- Optional push-to-connect fittings ease installation
- Compact size and flexible design fits any application

Applications
- Tractor
  - Single Valve Rear Suspension
  - Dual Valve Rear Suspension
- Trailer
  - Positive and Negative Dump
- Bus
- RV

### Operating Media
- Air

### Seal Type
- Shear-Seal®

### Operating Pressure
- 130 PSI (9 bar) Maximum

### Operating Temperature
- -40°F to +150°F (-40°C to +65°C)

### Flow Curve
- Proportional response

### Maximum Flow Rate
- Low flow: 120 L/Min (4.2 cfm)
- Standard flow: 350 L/Min (14.2 cfm)

### Port Size
- Standard 1/4” NPT
- 1/4” Push in tube*
- 6mm Push in tube*
- 3/8” Push in tube*
- *DOT approved

### Delivery Ports (Bag Ports)
- Dual delivery ports

### Mounting Studs
- 1/4-20 UNF

### Linkage Mounting Hole
- 0.25” (6.3 mm) or 0.38” (9.5 mm)

### Maximum Handle Movement
- +/- 75° For fill or exhaust

### Materials Of Construction
- Body: Anodize aluminum
- Housing: Engineered plastics
- Arm: Zinc plated steel
- Internal Elements: Stainless steel and hard anodized aluminum
- Seals: Buna-N

### Weight (typical)
- 1.1 lb (500g)

### Dump Flow Rate
- 875 L/min (31 cfm)

### Dump Port Activation
- 70 psi (4.8 bar) minimum

### Dump Port Configuration
- Normally closed
Barksdale Valve Flow Curve

Barksdale’s patented proportional air flow design optimizes air usage within the vehicle air suspension system. The Barksdale height control valve reacts instantly to large suspension movement, providing maximum rated flow to rapidly restore vehicle ride height. Smaller changes in ride height result in proportional reductions in the volume of air flow to or from the air springs. Air is conserved and ride height overshoot and undershoot are virtually eliminated.

Barksdale’s precise and highly repeatable deadband results in exact control of vehicle and cab ride height. This maintains critical driveline geometry while yielding a smooth ride and ensuring years of reliable service.

Engineered Solutions

Barksdale specializes in engineered solutions that exceed customer expectations.

The Barksdale height control valve is highly adaptable, including customized:

- Actuating arm length, offset, attachment points
- Mounting stud length, and location, and threads
- Threaded SAE & metric ports and push to connect fittings
- Ready to bolt on sub-assemblies with brackets, linkages and fasteners

Barksdale has a solution for every application. Let us find one for you.
Air Suspension Valve with Reverse Integrated Dump

**Benefits:**
- Automatically exhaust trailer air springs when parking brake system is engaged
- High-flow design for rapid fill and exhaust
- Integrated dump feature reduces installation parts and costs while minimizing potential leakage points

**Features:**
- Shear-Seal® technology
- Proportional flow reduces vehicle air consumption
- Automatic exhaust when pilot pressure falls below 20 psi

**Applications:**
- Trailer air suspension systems
- Replaces:
  - Hadley: H00500CA w/ HPB500-7
  - Haldex: 90554648 or 90054007 w/90554902

**Dump Function: 52341 vs. 54341**

The 52341 Series relies on positive air pressure to actuate the dump feature. The dump valve state is "normally closed."

The 54341 Series relies on negative air pressure to actuate the dump feature. This feature allows the seamless integration of the reverse dump valve into the trailer parking brake system. When parking brakes are set, the negative pressure that allows the brakes to lock will also allow the dump feature to be actuated. The negative air pressure allows the dump valve to return to its "normally open" state and exhaust the trailer air suspension.
52462 Series
Pressure Protection Valve

- Direct Tank Mounting
- Single or Dual Outlet
- Compact Design
The 52462 Pressure Protection Valve (PPV) is designed to protect primary air systems when utilized with auxiliary air components. With a male threaded inlet port this PPV can be threaded directly into the air tank without the need for additional fittings. Single or dual outlet ports and factory calibration of opening or closing pressure allow our valve to be configured for your exact specifications. Its compact and lightweight design will fit into almost any air system application.

**Features**
- Male inlet port for direct tank mounting, no fittings required
- Single or Dual outlet ports for system needs
- Factory calibrated and 100% tested for desired opening or closing pressure
- Compact size and lightweight to fit in any application
- Durable and corrosion resistant aluminum and engineered plastics

**Applications**
- Tractor
- Trailer
- Bus
- RV

<table>
<thead>
<tr>
<th>Operating Media</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal Type</td>
<td>Reinforced Diaphragm</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>145 PSI (10 bar) maximum</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°F to +185°F (-40°C to +85°C)</td>
</tr>
<tr>
<td>Inlet Port</td>
<td>3/8 NPT Male or 1/4 NPT Female</td>
</tr>
<tr>
<td>Outlet Ports</td>
<td>1/4 NPT Female Single or Dual Outlet</td>
</tr>
<tr>
<td>Opening or Closing Pressure</td>
<td>Factory Calibrated as specified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials of Construction</th>
<th>Anodize Aluminum Engineered Plastics Buna-N Seals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.17 lb (76 g)</td>
</tr>
</tbody>
</table>
**Pressure Protection Valve**

### Technical Drawings

![Technical Drawings Image]

### Part Numbers/Options

<table>
<thead>
<tr>
<th>Example</th>
<th>Valve Series</th>
<th>Calibration Pressure</th>
<th>Calibration Point (Choose one)</th>
<th>Outlet Porting</th>
</tr>
</thead>
<tbody>
<tr>
<td>52462 M1 R 65</td>
<td>52462</td>
<td>XX (5psi increments)</td>
<td>C Calibrate to Cracking (opening) Pressure, R Calibrate to Reseat (closing) Pressure</td>
<td>1 One 1/4&quot; NPT Female Outlet Port (Outlet Port #1), 2 Two 1/4&quot; NPT Female Outlet Port (Outlet Ports #1 &amp; #2), B One 1/4&quot; NPT Female Outlet Port (Outlet Port #2)</td>
</tr>
</tbody>
</table>
Height Control Valve Linkages
The Height Control Valve Linkage is the critical connection between the vehicle suspension and the height control valve. Barksdale offers several linkage options for use with air suspension leveling valves.

**Fixed Length Linkages**
- Allow for easy installation
- Reduces tampering with ride height in the field
- Built to exact OEM needs

**Adjustable Linkages**
- Easily adjustable for variety of applications
- One part can be offered for many uses

**Standard or Custom**
- Standard adjustable linkage and hardware kits are available
- All linkage types can be configured with links and hardware to meet exact OEM specifications

**Reliable by Design**
- Plating provides corrosion resistance
- Rubber components designed for use in all temperature extremes
Fixed Length Linkage
Designed for OEM applications. Fixed length limits suspension adjustments. Easy to install over push-on mounting studs.

- Lengths from 4" to 21" (100mm – 500mm)
- Kits configured to OEM requirements

Adjustable Linkage
Easily adjustable linkage kits to fit a variety of applications. Use standard hardware kits or specify exact OEM needs. Replaces many common linkages.

- Standard Lengths from 6.9” to 19” (175mm – 482mm)
- Knurled rod end for superior clamping force

Linkage Hardware
Standard hardware packs for use with adjustable or fixed length linkages

<table>
<thead>
<tr>
<th>Universal Hardware Kit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD2370</td>
<td>Mounting Hardware / 5/16-18 Thread</td>
</tr>
<tr>
<td>KD2371</td>
<td>Mounting Hardware / 1/4-20 Thread</td>
</tr>
<tr>
<td>KD2372</td>
<td>Mounting Hardware / 8 mm Coarse Thread</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Universal Linkage Kit</th>
<th>Dimension “A” Adjustment Range (inch/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>320138</td>
<td>6.9 - 9.6 / 175 - 244</td>
</tr>
<tr>
<td>320139</td>
<td>9.8 - 11.5 / 250 - 292</td>
</tr>
<tr>
<td>320140</td>
<td>10.9 - 13.6 / 277 - 345</td>
</tr>
<tr>
<td>320141</td>
<td>12.8 - 19.0 / 325 - 482</td>
</tr>
</tbody>
</table>

Multi-Hole Linkage
Robust linkage for many suspension applications. Adjusts to fit many common applications.

- Adjustable from 8 ¾” to 14 ½” (220-370mm)
- Includes all hardware - ¼” mounting studs
- Linkage Kit 320113