

# Air Suspension Valve



- ▶ **Pressure**
  - Electronic Pressure Switches
  - Mechanical Pressure Switches
  - Pressure Transducer
- ▶ **Valves & Regulators**
- ▶ **Temperature**
- ▶ **Level**
- ▶ **Flow**
- ▶ **Air Suspension Valves**

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# 55581 Series

Linkless Cabin Air  
Suspension Leveling Valve



- ▶ Engineered for high temperature environments
- ▶ Precise dead band optimizes cabin height control

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CONTROL PRODUCTS

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# Linkless Cabin Air Suspension leveling Valve

## 55581 Series

The Barksdale 55581 Linkless Cab Valve (LCV) is the latest generation of cabin air suspension leveling solutions from North America's leading heavy vehicle air suspension valve supplier. The LCV combines valve and linkage into a compact, lightweight unit. High temperature, engineered polymer construction stands up to the extreme operating environments generated by emission controls. Compact linear design minimizes the valve footprint, allowing greater cabin suspension design freedom. Nitrile seals provide years of reliable service.

Press on mounting points and push to connect DOT/SAE fittings minimize installation time. The LCV is permanently sealed, eliminating maintenance and unauthorized adjustment.

The LCV is available in multiple port configurations with 1/4" or 6mm push to connect fittings and standard or micro-adjust bushings.

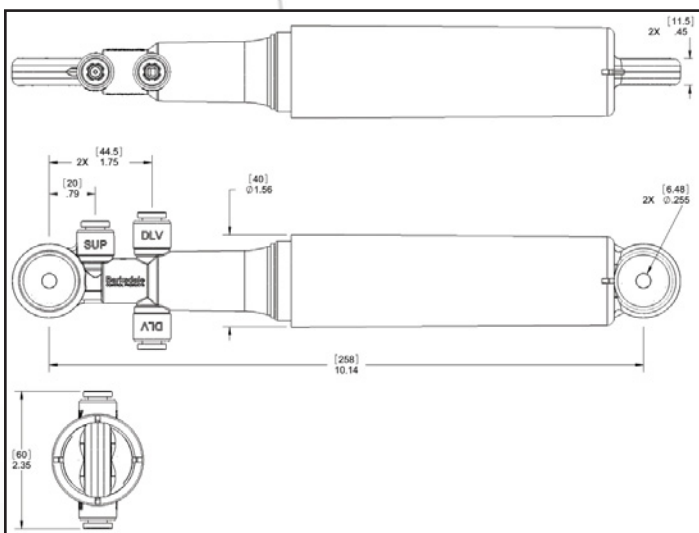
### Features

- ▶ Value
  - Combined valve and link design
  - Engineered plastic construction
- ▶ Performance
  - Engineered for extreme temperatures
  - Precise deadband optimizes cabin height control
  - Corrosion resistant
- ▶ Reduced installation cost
  - Press on mounting points
  - Push to connect tubing connections
  - Fixed length / no adjustment required

### Applications

- ▶ Semi tractor cabin air suspension

### Technical Drawings



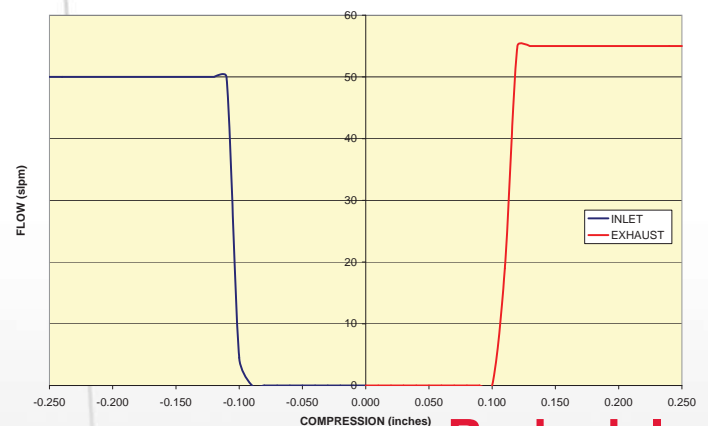
### General Specifications

<b>Operating Media:</b>	Air
<b>Seal Type:</b>	Poppet
<b>Operating Pressure:</b>	150 PSI (10 bar) maximum
<b>Operating Temperature:</b>	-40°F to +230°F (-40°C to +110°C)
<b>Maximum Flow Rate:</b>	50 SLPM (standard liters per minute)
<b>Port Size:</b>	1/4" Push-to-connect* 6 mm Push-to-connect* * DOT FMVSS 571.106 and SAE J2494-3 compliant
<b>Port Configuration:</b>	Single supply port Single or dual delivery ports 0 and 180 degree port alignment
<b>Materials of Construction:</b>	Structural components: Internally lubricated high temperature polymer Sealing surfaces: Thermoset nitrile
<b>Weight:</b>	.39 lbs. (180 grams)

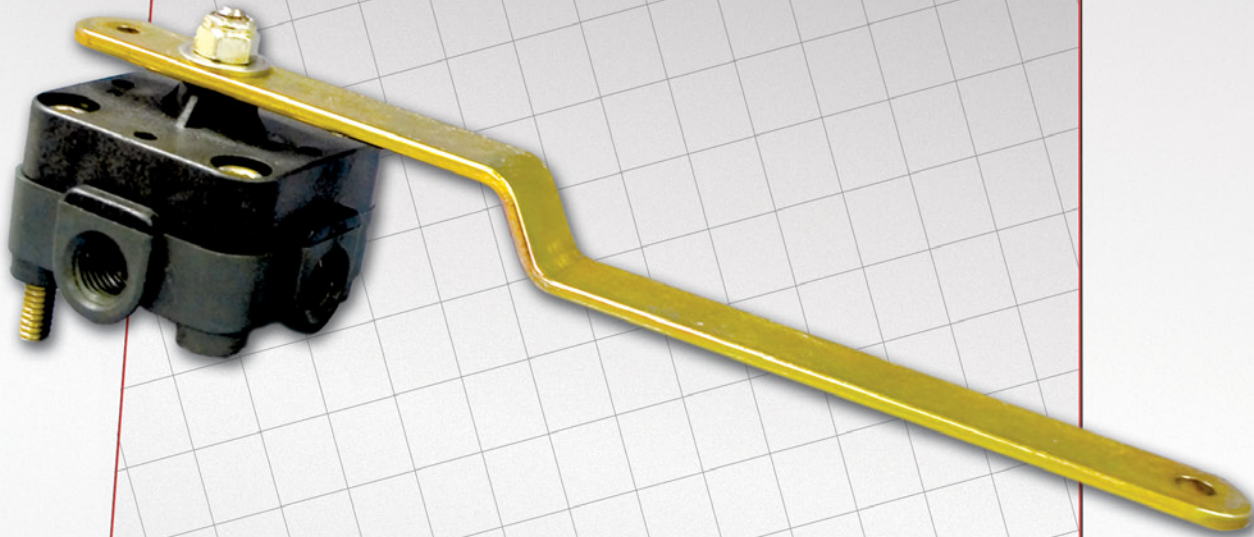
### Flow Curve

#### LINEAR CAB VALVE FLOW

Pressure @ 135 psi



52321 Series  
**52321 Series**  
Air Suspension Valve



- ▶ **Shear-Seal® Technology**
- ▶ **Accurate Ride Height**
- ▶ **Low Air Consumption**

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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

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" NPT (Standard) 1/4" Push in tube* 6mm Push in tube* *DOT approved
Delivery Ports (Bag Ports)	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



## Applications

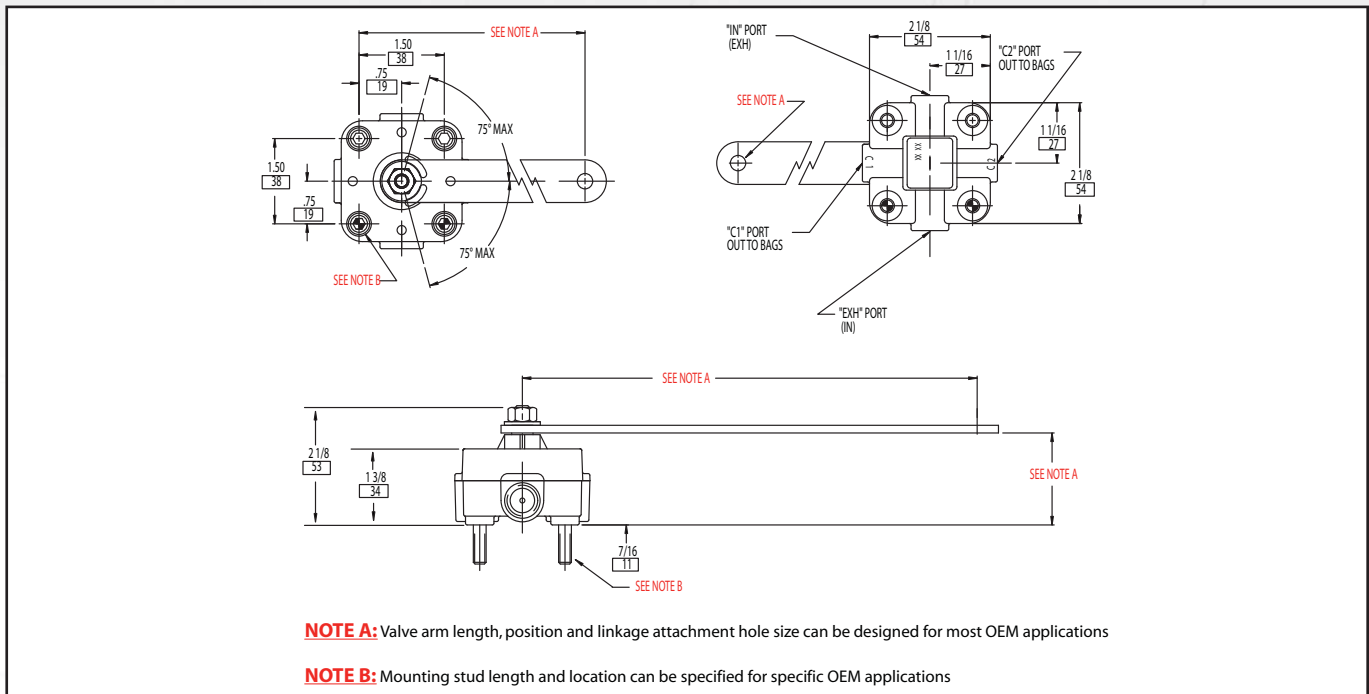
- ▶ Tractor
  - Primary Suspension
  - Cab Suspension
  - Front Suspension
- ▶ Trailer
- ▶ Bus
- ▶ RV

Materials Of Construction	<b>Body:</b> Anodize aluminum <b>Housing:</b> Engineered plastics <b>Arm:</b> Zinc plated steel <b>Internal Elements:</b> Stainless steel and hard anodized aluminum <b>Seals:</b> Buna-N
Weight (typical)	0.6 lb (272g)

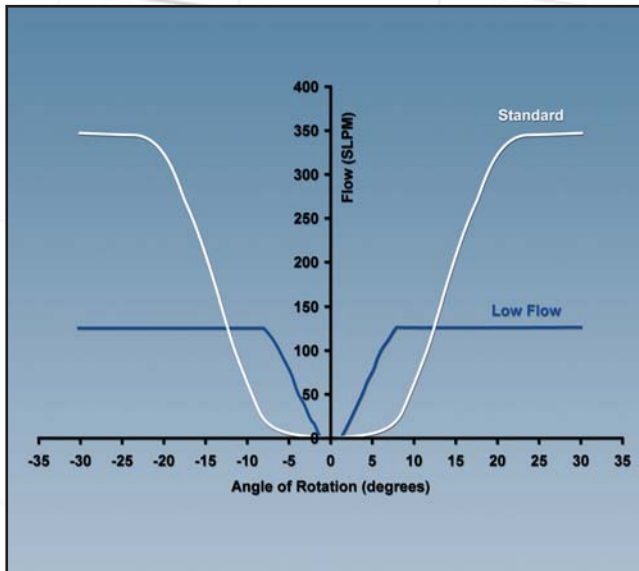
## Additional Options Available

- ▶ Arm length
- ▶ Port locations
- ▶ Arm orientation
- ▶ Mounting stud location
- ▶ Air fittings
- ▶ Mounting brackets

## Technical Drawings



## 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



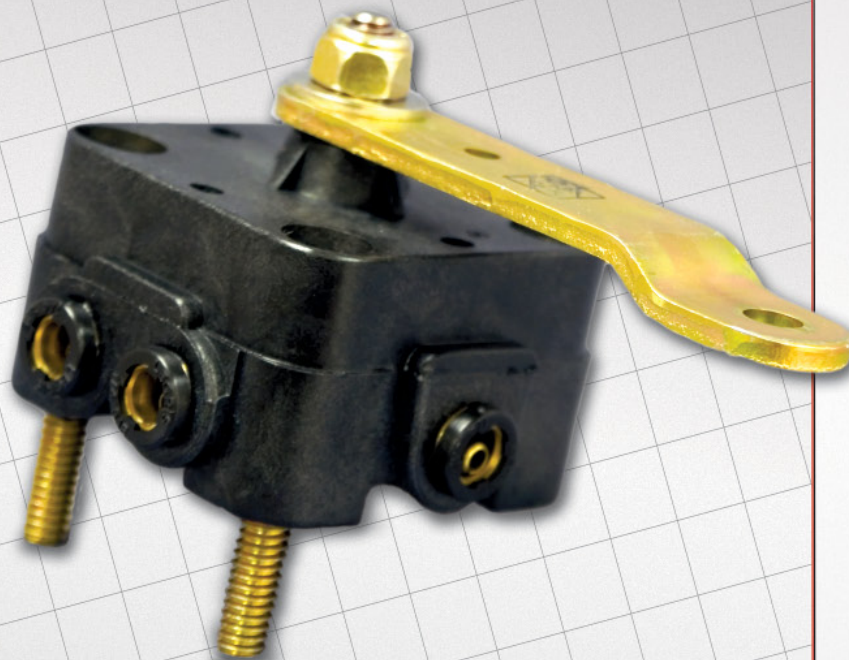
Barksdale specializes in engineered solutions that exceed customer expectations.

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.

55521 Series  
**55521 Series**  
Cab Air Suspension Valve



- ▶ Shear-Seal® Technology
- ▶ Accurate Ride Height
- ▶ Push-To-Connect Fittings

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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



## Applications

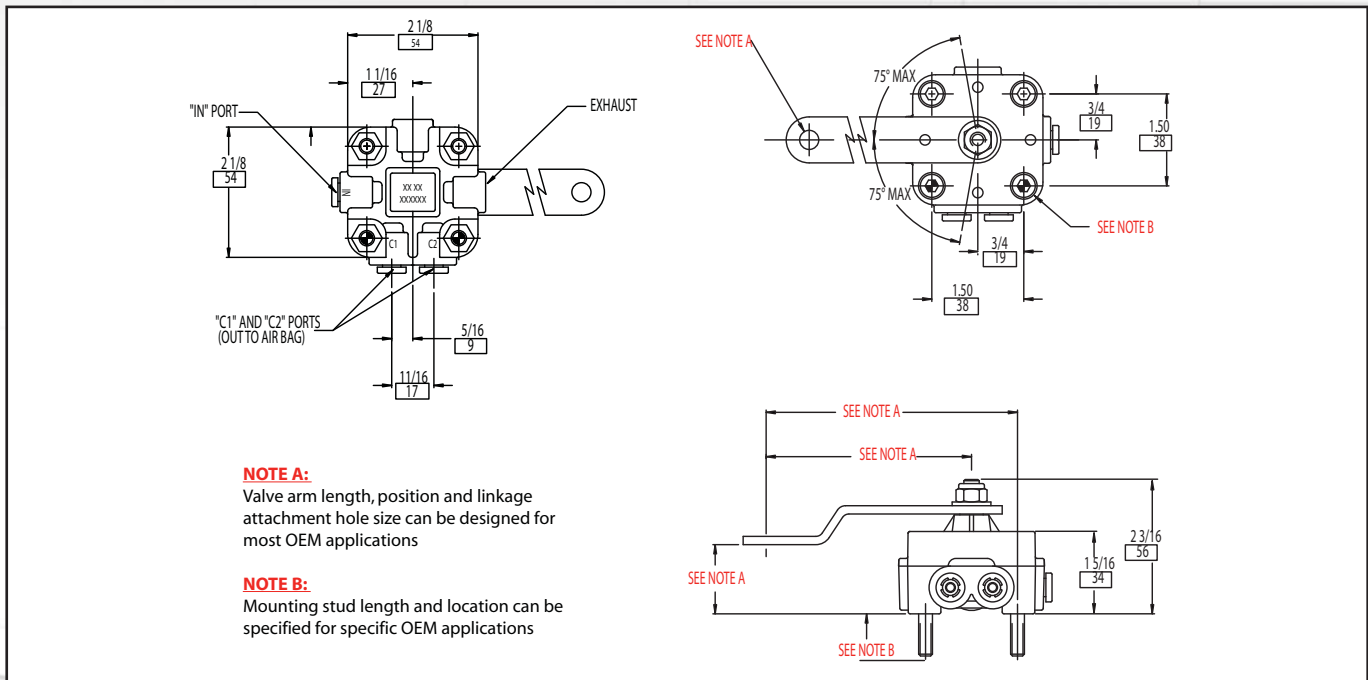
- ▶ Tractor
  - Single Valve Cab Suspension
  - Dual Valve Cab Suspension
  - Front Suspension
- ▶ Trailer
- ▶ RV

Materials Of Construction	<b>Body &amp; Housing:</b> Engineered plastics
	<b>Arm:</b> Zinc plated steel <b>Internal Elements:</b> Stainless steel and hard anodized aluminum <b>Seals:</b> Buna-N
Weight (typical)	0.5 lb (227g)

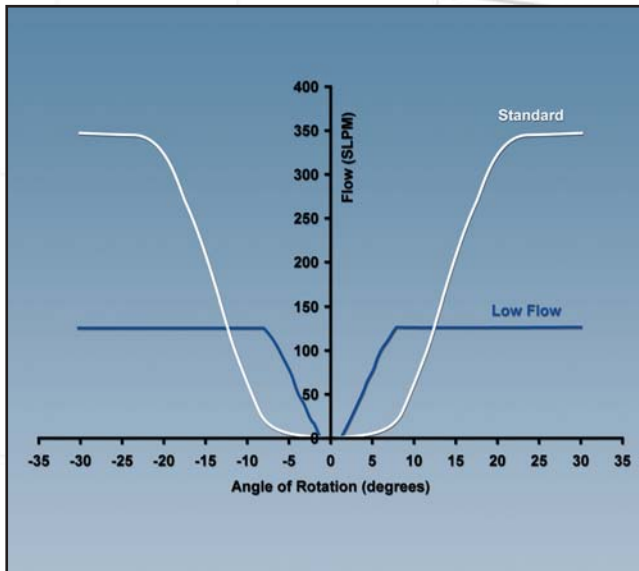
## Additional Options Available

- ▶ Arm length
- ▶ Arm Orientation
- ▶ Mounting stud location
- ▶ Mounting stud length
- ▶ Mounting brackets

## Technical Drawings



## 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.

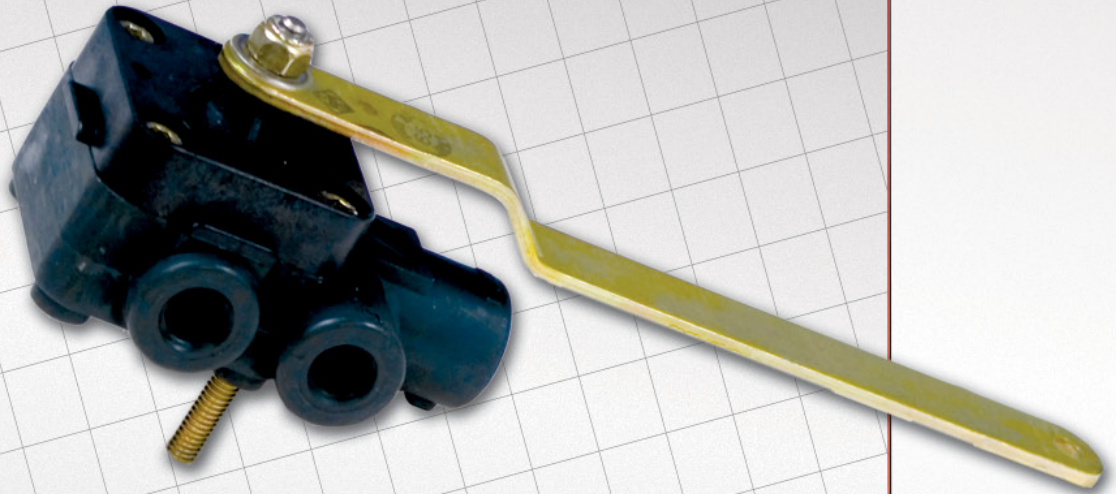
The Barksdale height control valve is highly adaptable, including customized:

- ▶ 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.

# 52341 Series

Air Suspension Valve  
with Integral Dump



- ▶ Shear-Seal® Technology
- ▶ Accurate Ride Height
- ▶ Integral Dump

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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 (4.2 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

Dump Flow Rate	875 L/min (31 cfm)
Dump Port Activation	70 psi (4.8 bar) minimum
Dump Port Configuration	Normally open or normally closed

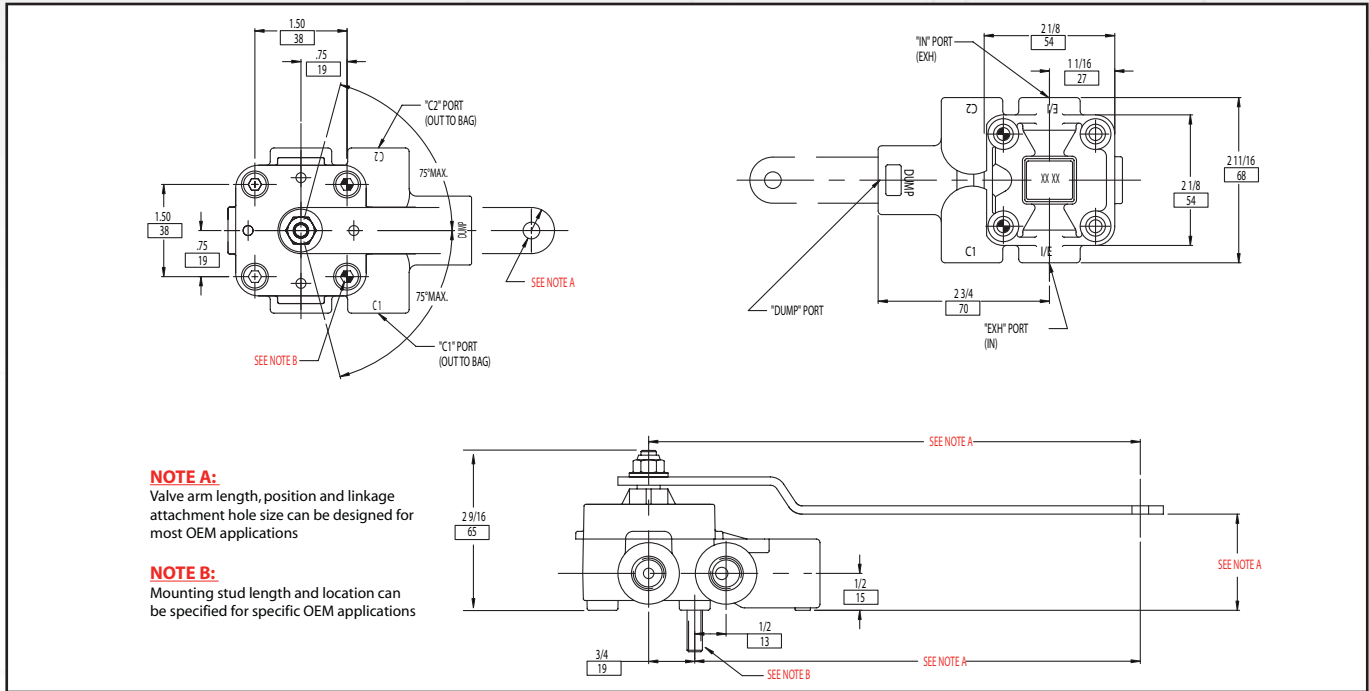
Materials Of Construction	<b>Body:</b> Anodize aluminum <b>Housing:</b> Engineered plastics <b>Arm:</b> Zinc plated steel <b>Internal Elements:</b> Stainless steel and hard anodized aluminum <b>Seals:</b> Buna-N
Weight (typical)	1.1 lb (500g)

## Additional Options Available

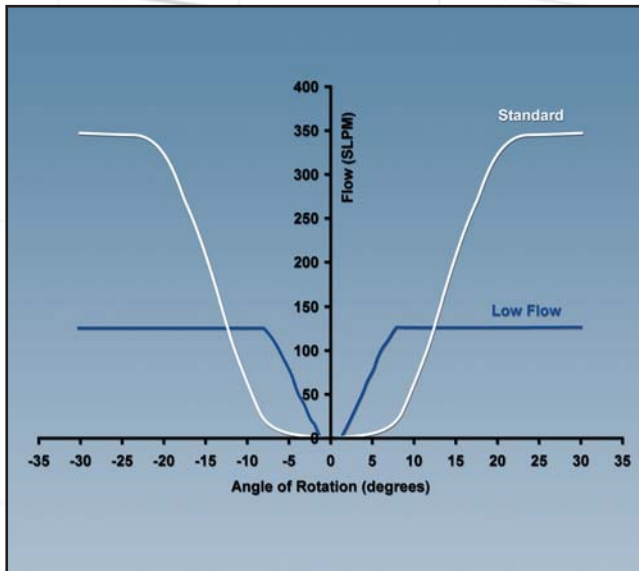
- ▶ Arm length
- ▶ Port locations
- ▶ Arm orientation
- ▶ Mounting stud location
- ▶ Mounting stud length
- ▶ Air fittings
- ▶ Mounting brackets



### Technical Drawings



### 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



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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

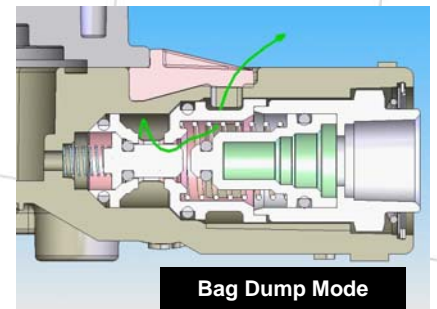
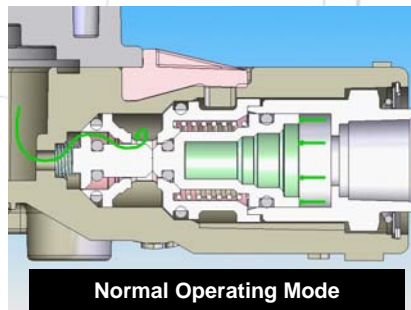


### Dump Function: 52321 vs. 54341

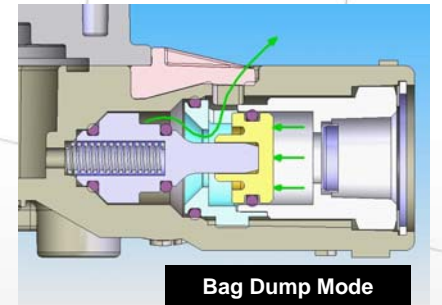
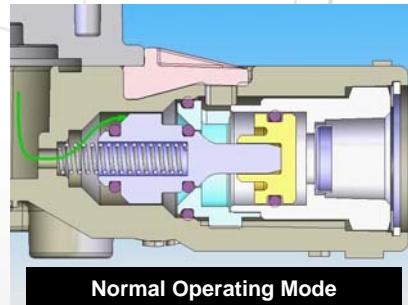
The 52321 Series relies on positive air pressure to actuate the dump feature. The dump valve state is “normally closed.”

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.

#### Reverse Dump Valve



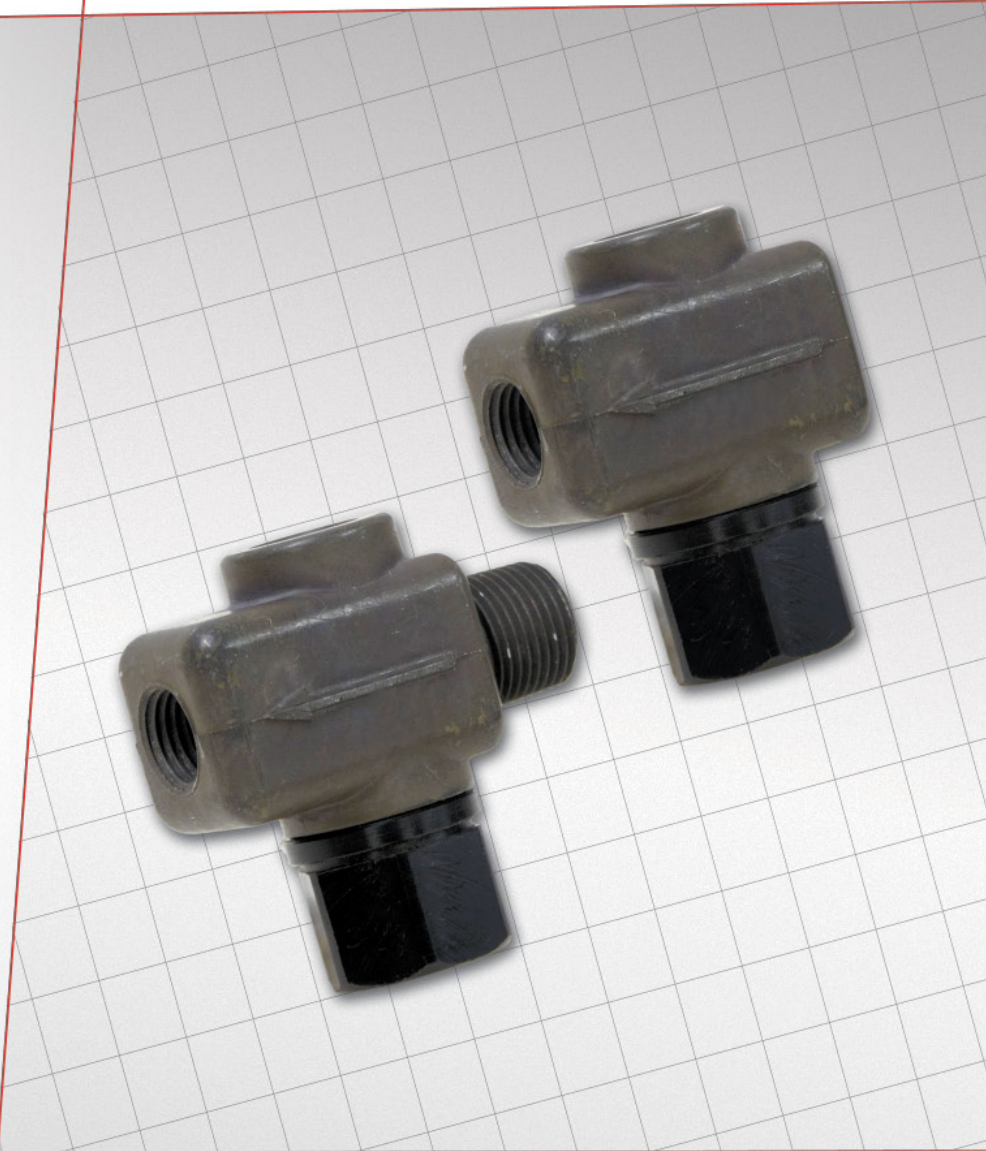
#### Positive Dump Valve



# 52462 Series

## 52462 Series

Pressure Protection Valve



- ▶ Direct Tank Mounting
- ▶ Single or Dual Outlet
- ▶ Compact Design

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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

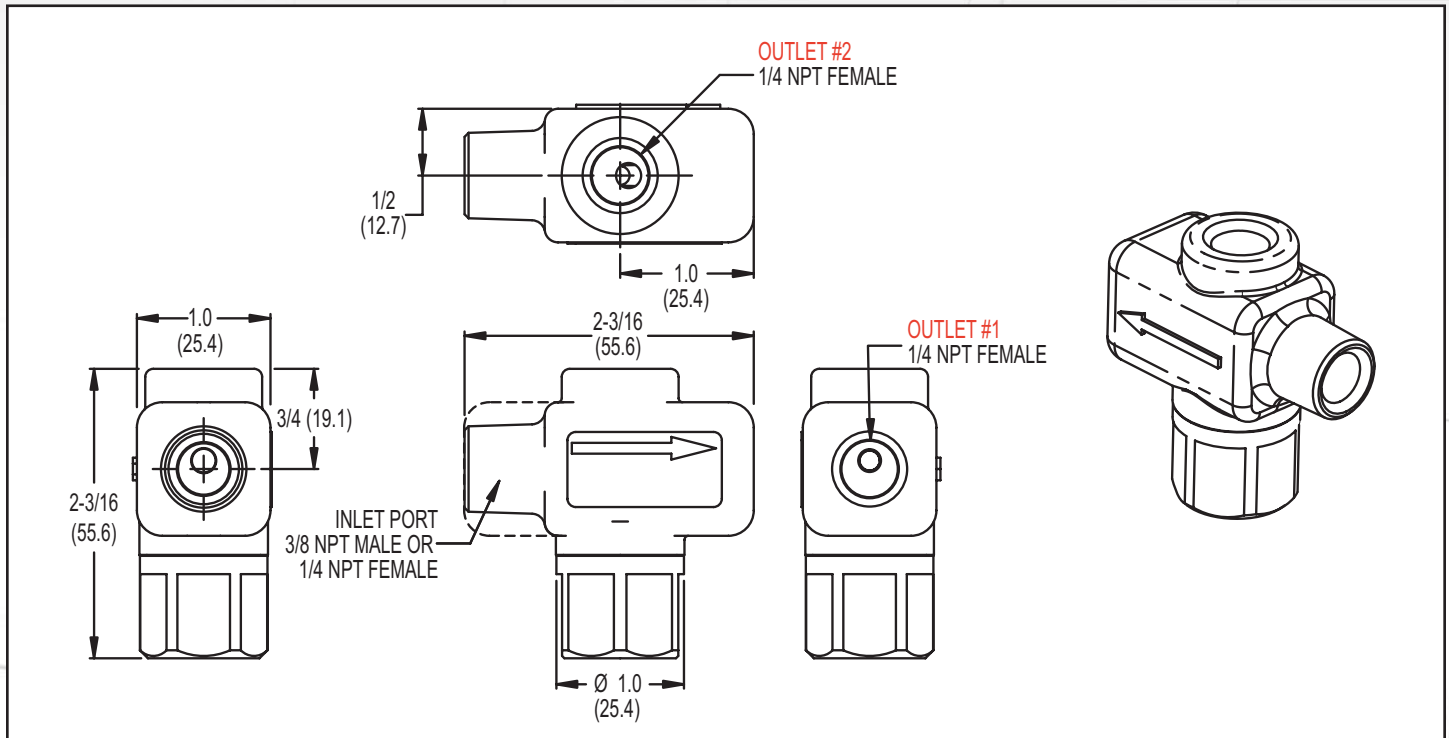


Operating Media	Air
Seal Type	Reinforced Diaphragm
Operating Pressure	145 PSI (10 bar) maximum
Operating Temperature	-40°F to +185°F (-40°C to +85°C)
Inlet Port	3/8 NPT Male or 1/4 NPT Female
Outlet Ports	1/4 NPT Female Single or Dual Outlet
Opening or Closing Pressure	Factory Calibrated as specified

Materials of Construction	Anodize Aluminum Engineered Plastics Buna-N Seals
Weight	0.17 lb (76 g)



## Technical Drawings



## Part Numbers/Options

<b>Example</b>	<b>52462</b>	<b>M</b>	<b>1</b>	<b>R</b>	<b>65</b>
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<b>Valve Series</b>		<b>Calibration Pressure</b>			
<table border="1" style="width: 100%;"><tr><td style="text-align: center;"><b>52462</b></td></tr></table>	<b>52462</b>		<table border="1" style="width: 100%;"><tr><td style="text-align: center;"><b>XX</b></td></tr></table>	<b>XX</b>	Calibration Pressure in psig (5psi increments)
<b>52462</b>					
<b>XX</b>					

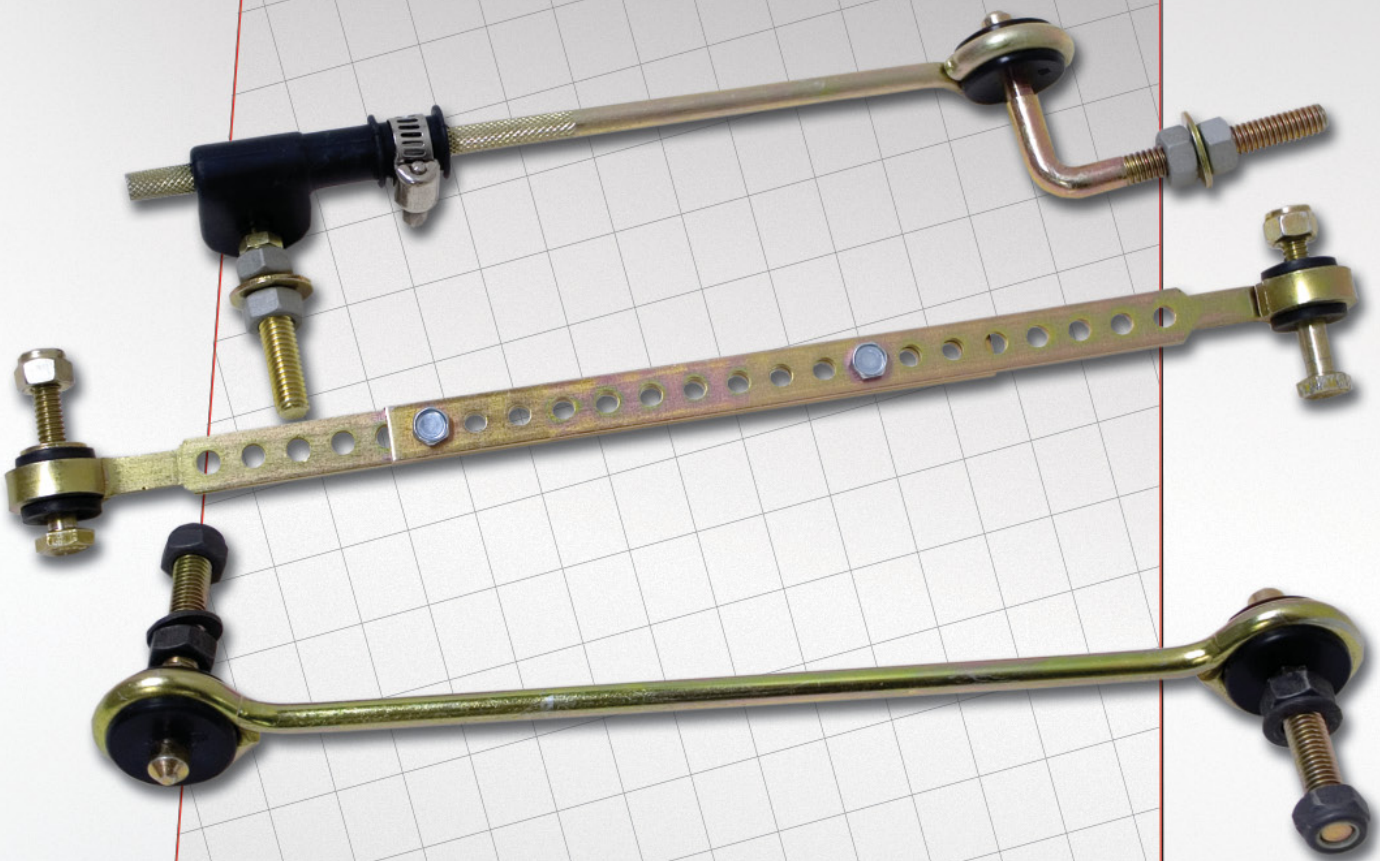
<b>Valve Series</b>		<b>Calibration Point (Choose one)</b>									
<table border="1" style="width: 100%;"><tr><td style="text-align: center;"><b>M</b></td><td>3/8" PT Male Inlet Port</td></tr><tr><td style="text-align: center;"><b>F</b></td><td>1/4" PT Female Inlet Port</td></tr></table>	<b>M</b>	3/8" PT Male Inlet Port	<b>F</b>	1/4" PT Female Inlet Port		<table border="1" style="width: 100%;"><tr><td style="text-align: center;"><b>C</b></td><td>Calibrate to Cracking (opening) Pressure</td></tr><tr><td style="text-align: center;"><b>R</b></td><td>Calibrate to Reseat (closing) Pressure</td></tr></table>	<b>C</b>	Calibrate to Cracking (opening) Pressure	<b>R</b>	Calibrate to Reseat (closing) Pressure	
<b>M</b>	3/8" PT Male Inlet Port										
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<b>Outlet Porting</b>							
<table border="1" style="width: 100%;"><tr><td style="text-align: center;"><b>1</b></td><td>One 1/4" NPT Female Outlet Port (Outlet Port #1)</td></tr><tr><td style="text-align: center;"><b>2</b></td><td>Two 1/4" NPT Female Outlet Port (Outlet Ports #1 &amp; #2)</td></tr><tr><td style="text-align: center;"><b>B</b></td><td>One 1/4" NPT Female Outlet Port (Outlet Port #2)</td></tr></table>	<b>1</b>	One 1/4" NPT Female Outlet Port (Outlet Port #1)	<b>2</b>	Two 1/4" NPT Female Outlet Port (Outlet Ports #1 & #2)	<b>B</b>	One 1/4" NPT Female Outlet Port (Outlet Port #2)	
<b>1</b>	One 1/4" NPT Female Outlet Port (Outlet Port #1)						
<b>2</b>	Two 1/4" NPT Female Outlet Port (Outlet Ports #1 & #2)						
<b>B</b>	One 1/4" NPT Female Outlet Port (Outlet Port #2)						

Valve Linkages

# Height Control Valve Linkages



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## 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

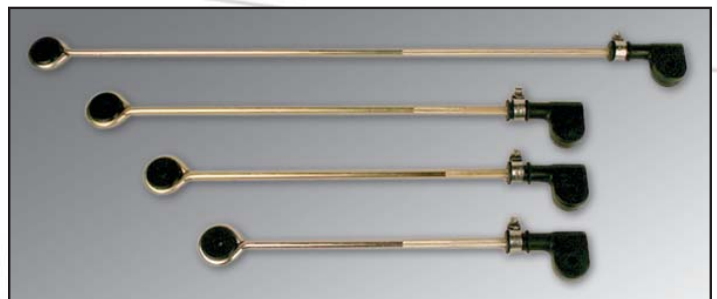
- ▶ Standard adjustable linkage and hardware kits are available
- ▶ All linkage types can be configured with links and hardware to meet exact OEM specifications

### Reliable by Design

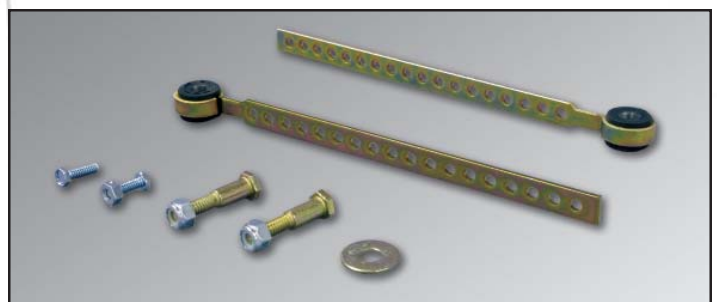
- ▶ Plating provides corrosion resistance
- ▶ Rubber components designed for use in all temperature extremes



Fixed Length Linkage



Adjustable Linkage



Multi-Hole Linkage

# Height Control Valve Linkages

## 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

Universal Linkage Kit	Dimension "A" Adjustment Range (inch/mm)
320138	6.9 - 9.6 / 175 - 244
320139	9.8 - 11.5 / 250 - 292
320140	10.9 - 13.6 / 277 - 345
320141	12.8 - 19.0 / 325 - 482



## Multi-Hole Linkage

Robust linkage for many suspension applications. Adjusts to fit many common applications.

- ▶ Adjustable from 8 3/4" to 14 1/2" (220-370mm)
- ▶ Includes all hardware - 1/4" mounting studs
- ▶ Linkage Kit 320113



## Linkage Hardware

Standard hardware packs for use with adjustable or fixed length linkages

Universal Hardware Kit	Description
KD2370	Mounting Hardware / 5/16-18 Thread
KD2371	Mounting Hardware / 1/4-20 Thread
KD2372	Mounting Hardware / 8 mm Coarse Thread





## Global Presence

Global Presence

### **Barksdale Inc.**

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