

JKS[®]

User Guide

Product: **SwitchBlade™ Swaybar System**

Part Number: **PN 9100**

Application: **Jeep Wrangler TJ, 1997-06 (front)**

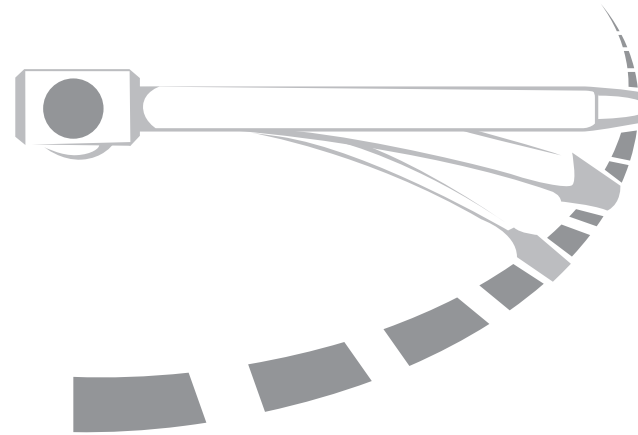
Welcome

CONGRATULATIONS on purchasing a SwitchBlade™ Swaybar System from JKS Manufacturing. We are committed to providing you with the best products available and your satisfaction is our first priority.

PLEASE READ this User Guide carefully to learn how to operate and get the best performance from your SwitchBlade Swaybar. Be sure to save this guide for future reference.

SWITCHBLADE™

ADJUSTABLE SWAYBAR SYSTEM



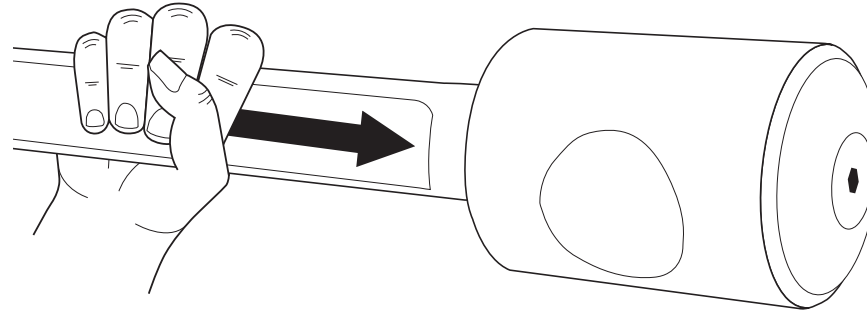
Contents

Blade Arm Adjustments	2
Blade Arm Positions	3
Recommended Configurations	4
Configurations to Avoid	5
SwitchFast Strategies	6
FAQs	7

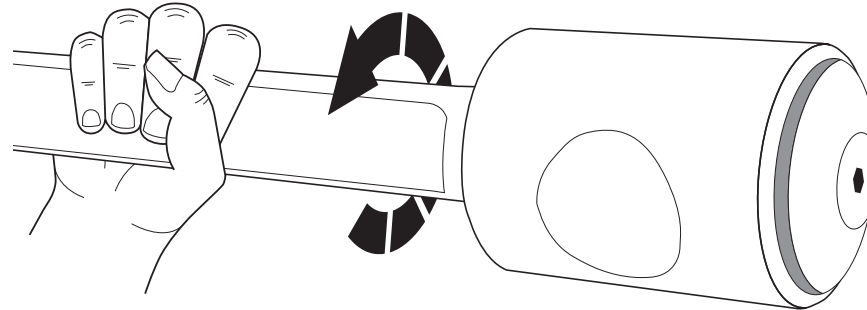
Blade Arm Adjustments

Adjusting the blade arm position on your SwitchBlade Swaybar couldn't be easier. Simply follow these steps using only your hand – no tools are required.

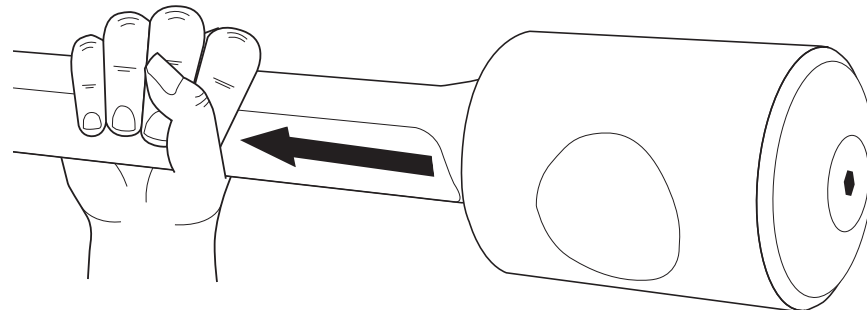
1. **Pull or push the blade arm into the indexing head.**
Only a small amount of pressure is needed to overcome the internal engagement springs.



2. **Rotate the blade arm to the desired position.**
Locking detents are located at 45 degree increments for proper engagement.



3. **Release pressure from the blade arm to engage the locking position.** Always make sure blade arm is in the locked position before driving.



Blade Arm Positions

To get the best performance from your SwitchBlade Swaybar, it is important to understand how the blade arm behaves in each position.

HORIZONTAL



VERTICAL



DIAGONAL



In the vertical position, the blade arm is completely rigid and unable to flex. Suspension forces are transferred directly to the torsion bar.



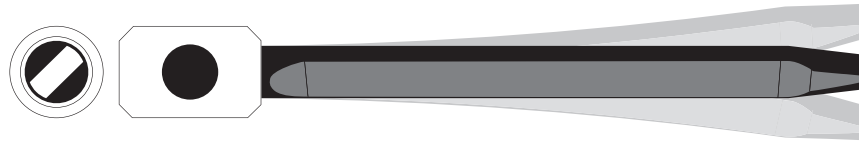
In the horizontal position, the blade arm can flex up and down with the suspension, much like a leaf spring.



In the diagonal positions, the blade arm deflects minor suspension forces, while greater forces are transferred to the torsion bar...



DS



PS

...To ensure proper blade arm deflection on each side of the vehicle, two diagonal positions are available. Always choose the position that causes the blade arms to deflect **outward** (away from the chassis) **as the suspension compresses**.

Recommended Configurations

There are five (5) recommended performance configurations from which you can select by setting the blade positions as shown on the right.

HORIZONTAL



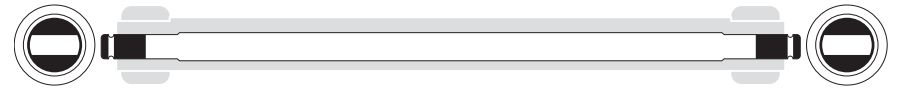
VERTICAL



DIAGONAL



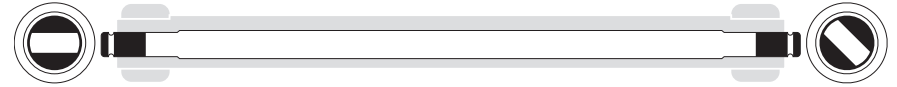
c1 Low Resistance



With both arms horizontal, the SwitchBlade is at the SOFTEST setting.

Suspension forces are shared equally between both blade arms which flex up-and-down to accommodate articulation. Very little or no force is transferred to the torsion bar. In this configuration, the swaybar provides just enough resistance to balance the rear swaybar on lightweight vehicles when driving in very slow off-road conditions. Suspension articulation is comparable to a disconnected swaybar, but more effective because unloaded tires get increased traction. **Recommended for OFF-ROAD use only:** Extreme rockcrawling, maximum articulation, very low speeds.

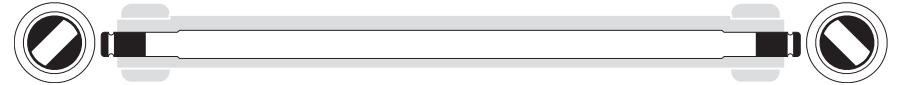
c2 Low - Medium Resistance



With one arm horizontal and the other diagonal, the SwitchBlade is at the SOFT setting.

Suspension forces are shared between both blade arms and the torsion bar. The horizontal arm accommodates light forces, the diagonal arm accommodates medium forces, and heavy forces are transferred to the torsion bar. In this configuration, the swaybar provides enough resistance to balance the rear swaybar on heavy vehicles when driving in slow-speed off-road conditions. Suspension articulation is limited slightly to provide a greater sense of control and stability on technical terrain. **Recommended for OFF-ROAD use only:** Moderate rockcrawling, difficult trails, good articulation, low speeds.

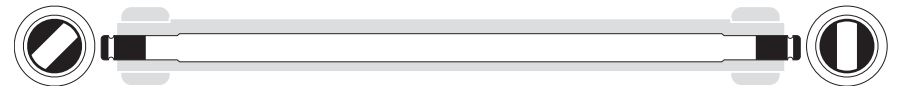
c3 Medium Resistance



With both arms diagonal, the SwitchBlade is at the MEDIUM setting.

Medium suspension forces are shared equally between both blade arms and heavy forces are transferred to the torsion bar. In this configuration, the swaybar provides enough resistance to reduce body roll at moderate speeds on paved and unpaved roads. Vehicle stability is emphasized over suspension articulation, making this a good choice for off-camber terrain. **Recommended for:** Easy-to-moderate trails, sand dunes, minor articulation, side-hill stability, moderate speeds.

c4 Medium - High Resistance



With one arm diagonal and the other vertical, the SwitchBlade is at the FIRM setting.

Suspension forces are shared between the diagonal blade arm and the torsion bar. The diagonal arm accommodates medium forces, and heavy forces are transferred to the torsion bar. In this configuration, the swaybar provides increased resistance to body roll for improved handling at moderate-to-high speeds. Ride quality is controlled yet comfortable over road imperfections. **Recommended for:** Non- or poorly-paved roads, washboard surfaces, side-hill stability, moderate speeds.

c5 High Resistance



With both arms vertical, the SwitchBlade is at the FIRMEST setting.

Suspension forces are transferred through the rigid blade arms to the torsion bar. In this configuration, the swaybar provides maximum resistance to body roll and is best suited for highway speeds. Handling and responsiveness are comparable to the factory swaybar. **Recommended for ON-ROAD use only:** Paved roads, highway speeds.

Configurations to Avoid

In addition to the configurations we have recommended, there are also a few that you should avoid. None of the configurations on the right offer any performance benefits, and all of them are capable of voiding your warranty. So we strongly encourage you to steer clear of these configurations completely.

HORIZONTAL



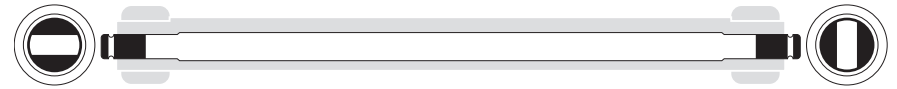
VERTICAL



DIAGONAL



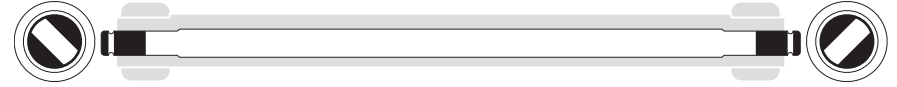
cX Do NOT use as Medium



Never operate the SwitchBlade with one arm horizontal and the other vertical.

This can flex the horizontal blade beyond its working limits. Remember... Softest + Firmest ≠ Medium

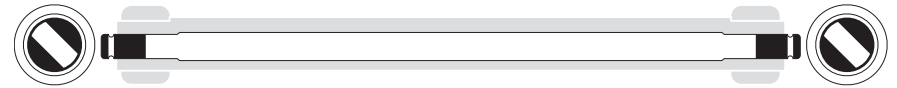
cY Do NOT use as Medium



Never operate the SwitchBlade with arms deflecting inboard (toward chassis).

The configuration above shows both blade arms in the diagonal position, which is fine. The problem is that the blade arms will deflect inboard during suspension compression. This will cause blade-to-chassis and/or blade-to-tire interference on most vehicle applications. When using the blade arms in the diagonal position, always make sure they deflect outboard (away from chassis) during suspension compression.

cZ Do NOT use as Medium



Never operate the SwitchBlade with both arms diagonal and in the same plane.

The configuration above shows both blade arms in the diagonal position and set to deflect in the same direction. To use the SwitchBlade with both blade arms in the diagonal position, they should both deflect outboard (away from chassis) during suspension compression.

SwitchFast Strategies

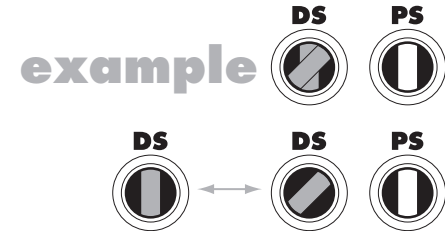
The purpose of a SwitchFast strategy is to make performance adjustments in certain driving environments as fast and efficient as possible.

Use the SwitchFast strategies on the right to make efficient performance adjustments on your vehicle.



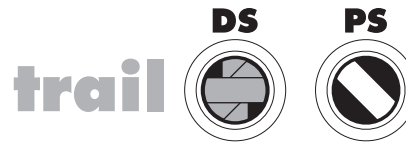
As you spend more time using the SwitchBlade on your Jeep, you may find that you rely on the same series of blade arm positions in similar driving environments. For instance, when driving on paved roads you may rely exclusively on configurations 4 and 5. By setting the passenger-side blade arm in the “common” position, you can make all adjustments to the more convenient driver-side arm.

Using the example above, at least one blade arm is in the vertical position in configurations 4 and 5. By assigning the “common” blade arm position (vertical) to the passenger-side, the driver can conveniently switch between configurations 4 and 5 with a quick 45-degree adjustment to the driver-side arm.



Use “street” mode for optimum vehicle handling and responsiveness on paved roads. To employ, set both blade arms to the vertical position.

SwitchFast: You can now switch between configurations 4 and 5 by rotating the driver-side blade arm only.



Use “trail” mode for off-road versatility and balanced suspension performance on unpaved roads. Employ trail mode as soon as you leave the pavement by setting both blade arms to the diagonal (outboard) position.

SwitchFast: You can now switch between configurations 2, 3 and 4 by rotating the driver-side blade arm only.



Use “crawl” mode when maximum suspension travel is required for sustained periods. To employ, set both blade arms to the horizontal position.

SwitchFast: You can now switch between configurations 1 and 2 by rotating the driver-side blade arm only.

FAQs

Frequently Asked Questions

How does it work? What makes the SwitchBlade Swaybar so unique are the flexible blade type swing arms located on each side of the vehicle. The blade arms are connected to opposite ends of a high performance torsion bar which is mounted to the vehicle chassis. At the base of each blade arm are adjustable indexing heads that allow easy performance adjustments without any tools. Each blade arm can be configured in three positions – vertical, horizontal or diagonal.

In the vertical position, the blade arms are completely rigid. Suspension forces are transferred directly to the torsion bar for optimum vehicle handling and passenger safety at highway speeds. In the horizontal position, the blade arms are able to flex, much like a leaf spring. In fact, the blade arms are manufactured from tempered spring steel, so they are engineered to cycle up and down as the suspension articulates. In the diagonal position, suspension forces are shared between the torsion bar and blade arms. As a result, the suspension can still absorb smaller obstacles, while stability and handling at intermediate speeds is greatly improved.

How does rotating the blade arms make a torsional difference? The concept is really quite simple when you visualize the blade arms as a pair of leaf springs that are connected in series to a torsion bar. Just like a leaf spring, each blade arm can flex up and down when configured in the horizontal position. But if you turn a leaf spring on its side, it's rigid and unable to flex. That's exactly what happens to each blade arm in the vertical position. It functions as a rigid lever instead of a flexible spring.

How do I rotate the blade arms? The indexing heads located at the base of each blade arm are spring-loaded, allowing easy performance adjustments by the user. To select the desired configuration, simply pull the blade arm toward the indexing head and rotate in 45-degree increments. The spring-loaded indexing head locks the blade arm in the selected position. A smooth action and positive engagement indicate the superior quality design and construction. Adjustments only require one hand and gentle pressure. No tools whatsoever!

How does the indexing head affect torsional resistance? The indexing heads do not contain any type of torsion spring. They simply provide an adjustable connection between the blade arms and torsion bar. Resistance is provided by the torsion bar and blade arms. The indexing heads allow easy adjustment of the blade arms and lock them securely in the vertical, diagonal or horizontal position.

Does the vehicle need to be on level ground in order to adjust the blade arms?

The surface does not need to be perfectly level, but it should be reasonably flat. You can tell when there is too much load on the swaybar because the blade arm will resist adjustment. Simply move the vehicle to a flatter surface and the blade arm will adjust easily.

Will I gain or lose articulation compared to a completely disconnected swaybar?

The truth is, a front swaybar that is completely disconnected from the axle will always allow more suspension articulation. However, there is a point of diminishing return that must be considered. Without a swaybar to distribute vehicle weight to each tire, the effectiveness of the suspension begins to decrease as it reaches maximum articulation.

To make traction effectively, the suspension must load each tire with enough weight to resist spinning. A suspension that allows the unloaded coil spring to unseat from the chassis may produce a respectable RTI (ramp travel index) score, but it is not transferring vehicle weight effectively.

Unlike a disconnected swaybar, the SwitchBlade works harmoniously with the factory rear swaybar to apply constant pressure to all four tires. With the SwitchBlade adjusted to its softest setting, you can expect a slight reduction in maximum articulation. The actual amount will depend on a number of variables, but on most applications it will be less than 5%. The important thing to remember is that the additional traction, control and stability provided by the SwitchBlade more than makes up for any decrease in articulation.

What is the purpose of the red button? Actually, the red composite circle with the embossed JKS logo is not a button at all. It is simply a plug that conceals an access hole required for machining purposes. It also identifies the SwitchBlade Swaybar as a genuine JKS product.

How is the indexing head protected from water, mud or debris contamination?

A durable o-ring seal is built in to each end cap to prevent moisture and debris from entering the indexing head assembly.