



Softail Air Suspension Analysis Chart

This chart is an analysis of different softail air suspensions and their features affecting performance. A valuable tool for those researching softail air suspension for their motorcycles.

SOFTAIL AIR SUSPENSIONS	SHOTGUNSHOCK	PLATINIUM	HIGH/ LOW	AIR FX	SAS	PROGRESSIVE	LEGEND
RANGE OF ADJUSTMENT	FULL TRVEL OF SWINGARM, 5 INCHES 1 INCH HIGHER THAN STOCK AND DOWN TO THE FRAME IF FRME IS MODIFIED IT WILL GO LOWER	ABOUT THE SAME AS SHOTGUNSHOCK BUT WONT GO AS HIGH SO ABOUT 4 INCHES OF ADJUSTMENT	ABOUT THE SAME AS PLATINIUM 4 INCHES	4 INCHES	3INCHES	3INCHES WILL NOT LOWER TO FRAME BECAUSE OF STANDARD SPRING INSIDE SHOCK	4 INCHES
REBOUND CONTROL	THE REBOUND IS FULLY CONTOLES BY ADDING COMPRESSED AIR TO OPPOSING SIDE OF PISTON	SIMPLE SYSTEM HAS NO REBOUND CONTROL, DELUXE SYSTEM CONTROLS REBOUND WITH COMPRESSED AIR	NO REBOUND CONTROL	NO REBOUND CONTROL	NO REBOUND CONTROL	REBOUND IS CONTROLLED WITH STANDARD SHOCK	REBOUND IS CONTROLLED WITH A HYDRALIC PISTON
ADJUSTABILITY OF FIRMNESS AND REBOUND	FIRMNESS AND REBOUND ARE FULLY ADJUSTABLE BY RELEASING OR ADDING COMPRESSED AIR TO EITHER SIDE OF PISTON, REFFERED TO AS BLEED FEED	SIMPLE SYSTEM HAS NO ADJUSTABILITY WHILE THE DELUXE SYSTEM WORKS SIMILISAR TO THE SHOTGUNSHOCK	NO ADJUSTABILITY OF FIRMNESS OR REBOUND	NO ADJUSTABILITY OF FIRMNESS OR REBOUND	NO ADJUSTABILY OF FIRMNESS OR REBOUND	SOME ADJUSTMENT BUT LIMITED BY SPRING IN STANDARD SHOCK	NO ADJUSTABILITY OF FIRMNESS OR REBOUND
HEIGHT ADJUSTMENT	ON BOARD AIR COMPRESSOR WITH FOUR ELECTRO MECHANICAL SOLNOIDS DIRECTING AIR TO OPPOSING CHAMBERS OF SINGLE BODY AIR CYLINDER	ON BOARD AIR COMPRESSOR WITH FOUR ELEC-TRO MECHANICAL SOLNOIDS DIRECTING AIR TO OPPOSING CHAM-BERS OF TWO AIR CYLINDER,SIMPLE SYSTEM HAS ONLY ONE SOL-NOID	COMPRESSED AIR FLOWS INTO THE TWO AIR CYLANDERS RAISING THE BIKE AND THEN AIR CAN BE RELEASED TO LOWER THE BIKE	COMPRESSED AIR IS DIRECTED INTO A SINGLE AIR CYLANDED TO RAISE BIKE AND AIR IS RELEASED TO LOWER BIKE	COMPRESSOR IS BUILT INTO THE SHOCK, THE COMPRESSOR DIRECTS AIR INTO THE CHAMBER OF AIR CYLANDE RAISING BIKE A VALVE IS OPENED TO RELEASE AIR TO LOWER BIKE	AIR IS USED TO LOWER AND RAISE BIKE .WHEN LOWERING THE SPRING IS COMPRESSED	ON BOARD COMPRESSOR DIRECTS AIR INTO AN AIR BAG RAISING BIKE, AIR IS RELEASED TO LOWER BIKE

CONCLUSION FROM CHART

The design of the *Shotgunshock* results in greater performance, with improved handling and more controlled smother ride.

- As indicated in the chart, there are two basic systems used as softail air suspension, the air cylinder and the air bag, the air bag cannot be adjusted, only filled, and then emptied. The air cylinder allows for adjustability of the suspension because air can be feed and bleed to either side of the piston.
- The softail air suspensions, using cylinders with no rebound control, will have a bouncy ride resulting in a pogo effect.
- The only air cylinders that can adjust rebound are the *Shotgunshock*, platinum and progressive. The progressive system is limited in its adjustability, because one shock is adjustable and the other is a standard spring shock. The air is working against the spring pressure resulting in unreliable adjustments, so this leaves the *Shotgunshock* and the platinum as the systems with superior adjustability.
- The *Shotgunshock* is a unibody construction while the platinum has two separateshocks. The single body construction provides a more rigid fitment resulting in superior handling. The bike will track in corners and have a more stable feel with less wobbling.
- The design of the solenoids in the *Shotgunshock* also results in quicker and more responsive adjustment of the suspension. The solenoids common to both systems, is valved inside the *Shotgunshock* body, while the platinum has an outside manifold with numerous lines and fittings. These lines are prone to flex and can lead to a spongy ride.
- The *Shotgunshock* with its four internal valves shoots the air directly into the air chambers resulting in quick adjustment of height and firmness.