

SPARK



MAXIMUM
ATTRACTION

26 & 29

NEW FRAME
Integrated
design

TWINLOC SYSTEM

NEW NUDE2 SHOCK
NEW FORK DNA3

SPARK



SPECIFICATIONS

26 & 29



SPARK



SPECIFICATIONS

26



29



Travel

120mm / 85 / 0

100mm / 70 / 0

Weight

(frame + shock)

1830g

1850g

Shock

Nude2
(50mm stroke)

Nude2
(37mm stroke)

Frame

IMP5
Revised geometry

IMP5

Fork

120mm / 85 / 0
Rock Shox DNA3

100mm / 70 / 0
Rock Shox DNA3

SPARK

SCOTT

SPECIFICATIONS

26



S



29



S



SPARK

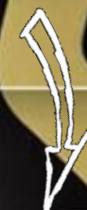


SPECIFICATIONS

26



29



		Small		medium		Large		X Large	
		low	high	low	high	low	high	low	high
fork rake	mm	39.0	39.0	39.0	39.0	39.0	39.0	39.0	38.0
A/ head angle	°	68.0	68.7	68.0	68.7	68.0	68.7	68.0	68.7
fork length	mm	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0
headset length	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
B/ head tube	mm	110.0	110.0	120.0	120.0	140.0	140.0	160.0	160.0
C/ top tube horizontal	mm	555.0	553.0	590.0	589.0	620.0	618.0	650.0	648.0
D/ actual top tube	mm	508.5	508.5	540.0	540.0	570.0	570.0	601.5	601.5
E/ seat angle	°	73.5	74.2	73.5	74.2	73.5	74.2	73.5	74.2
F/ BB center to top of seattube	mm	400.0	400.0	450.0	450.0	490.0	490.0	540.0	540.0
G/ BB center to toptube center	mm	331.0	331.0	347.0	347.0	395.0	395.0	434.5	434.5
H/ chainstay	mm	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
I/ BB offset	mm	-8.0	2.0	-8.0	2.0	-8.0	2.0	-8.0	2.0
J/ BB height	mm	332.0	342.0	332.0	342.0	332.0	342.0	332.0	342.0
G/ standover height	mm	753.0	756.5	762.5	767.0	799.5	804.0	830.0	834.5
L/ wheel base	mm	1073.0	1072.0	1109.0	1108.0	1141.0	1140.0	1173.0	1172.0
wheel OD (tire:xxx)	mm	680.0	680.0	680.0	680.0	680.0	680.0	680.0	680.0
M/ reach	mm	391.0	397.0	423.4	429.0	448.0	453.0	472.5	477.5
N/ stack	mm	555.5	551.5	565.0	560.5	583.0	579.0	602.0	598.0

		Small		medium		Large		X Large	
		low	high	low	high	low	high	low	high
fork rake	mm	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0
A/ head angle	°	69.5	70.1	69.5	70.1	69.5	70.1	69.5	70.1
fork length	mm	506.0	506.0	506.0	506.0	506.0	506.0	506.0	506.0
headset length	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
B/ head tube	mm	105.0	105.0	105.0	105.0	115.0	115.0	125.0	125.0
C/ top tube horizontal	mm	570.0	568.0	600.0	598.0	630.0	628.0	650.0	649.0
D/ actual top tube	mm	518.0	518.0	539.0	539.0	566.0	566.0	588.0	588.0
E/ seat angle	°	72.5	73.1	72.5	73.1	72.5	73.1	72.5	73.1
F/ BB center to top of seattube	mm	400.0	400.0	440.0	440.0	481.0	481.0	540.5	540.5
G/ BB center to toptube center	mm	335.0	335.0	350.0	350.0	403.0	403.0	447.5	447.5
H/ chainstay	mm	448.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0
I/ BB offset	mm	-48.0	-41.0	-48.0	-41.0	-48.0	-41.0	-48.0	-41.0
J/ BB height	mm	317.0	324.0	317.0	324.0	317.0	324.0	317.0	324.0
G/ standover height	mm	758.0	761.5	764.0	767.5	802.0	806.0	833.0	836.0
L/ wheel base	mm	1082.0	1082.0	1112.0	1112.0	1142.5	1142.5	1163.0	1163.0
wheel OD (tire:xxx)	mm	730.0	730.0	730.0	730.0	730.0	730.0	730.0	730.0
M/ reach	mm	379.0	386.0	409.0	415.5	436.0	442.0	453.0	456.0
N/ stack	mm	606.0	602.0	606.0	602.0	615.0	611.0	625.0	623.0

SPARK

SCOTT

DAMPING
Static
Analysis



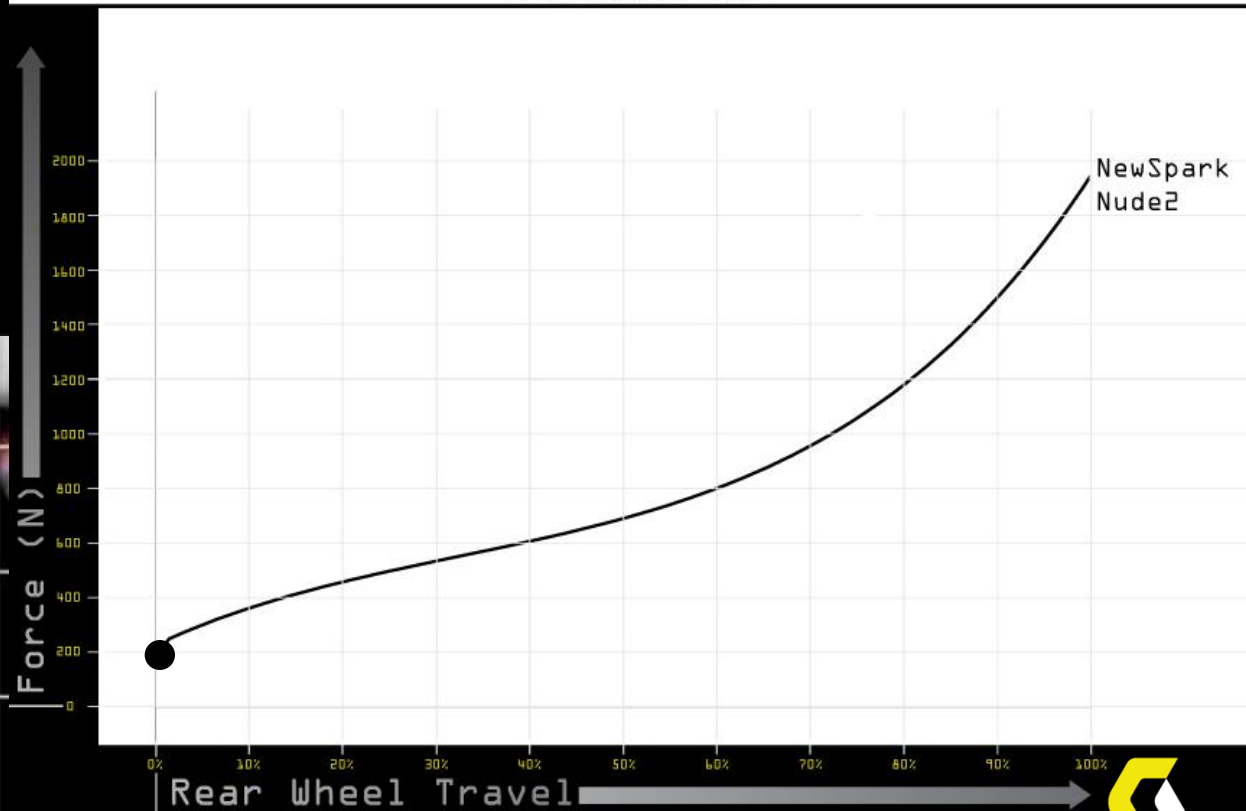
SPARK



DAMPING: static



Full Travel Mode
SPARK 2012 Nude2



SPARK

SCOTT

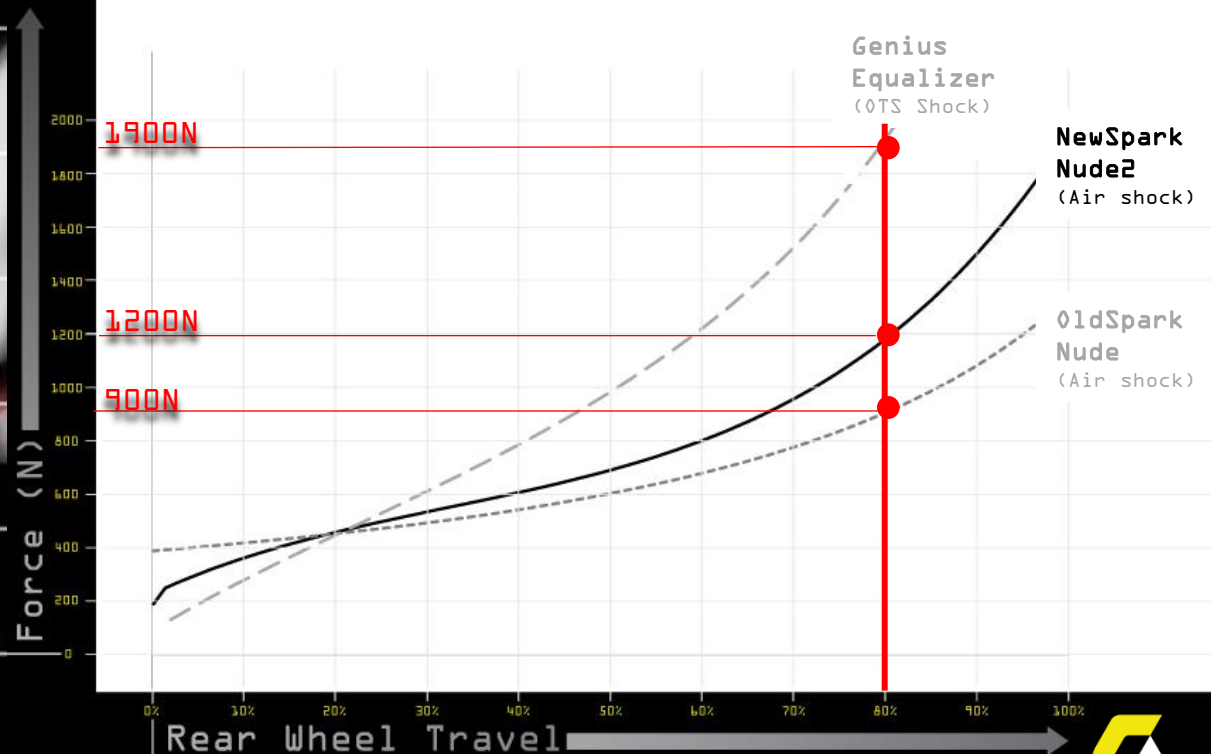
DAMPING: static



New Spark is
more progressive than
the old Spark

Progressive end of travel
(Full Mode)

Full Travel Mode
Curve Comparison



SPARK

SCOTT

DAMPING: static

NUDE2 shock

By DT-Swiss

Nude (old Spark) : 230g



Old SPARK 26

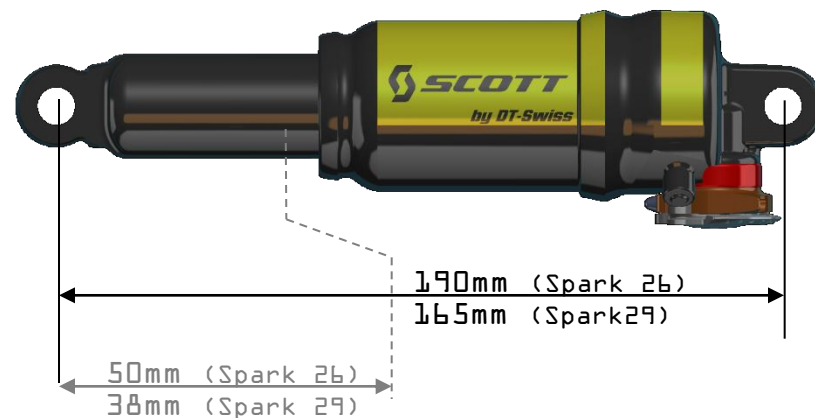
Travel: 110mm

Shock stroke: 38mm

Ratio = 110 / 38

Ratio = 2.9

Nude2 (new Spark): 220g



SPARK 26

Travel: 120mm

Shock stroke: 50mm

Ratio = 120 / 50

Ratio = 2.4

SPARK 29

Travel: 100mm

Shock stroke: 38mm

Ratio = 100 / 38

Ratio = 2.6

Lower RATIO = better DAMPING

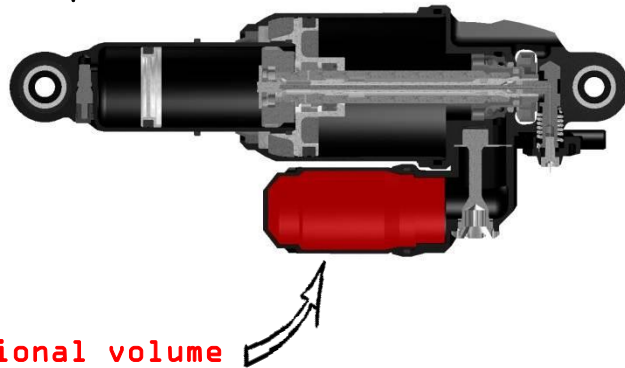
SPARK

SCOTT

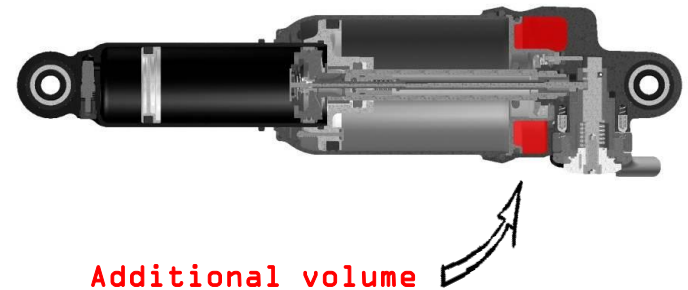
DAMPING: static

Full & Traction Mode

Nude (old Spark)

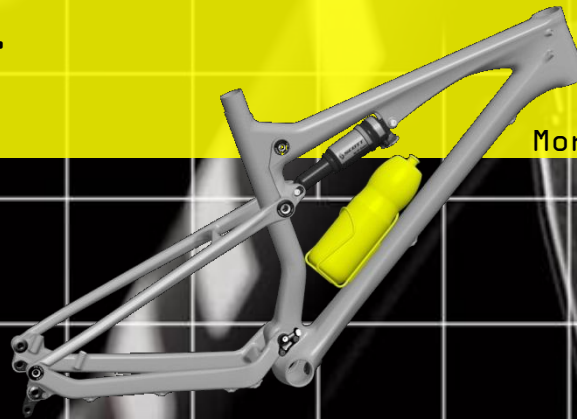


Nude2 (new Spark)



Integrated 2nd chamber.

More clearance for water bottle.



SPARK

SCOTT

DAMPING: static

Full & Traction Mode



SPARK



DAMPING: static



Full & Traction Mode

The air volume adjustments between Full and Traction Mode bring more progressivity.



SPARK



DAMPING
Dynamic
Analysis



SPARK

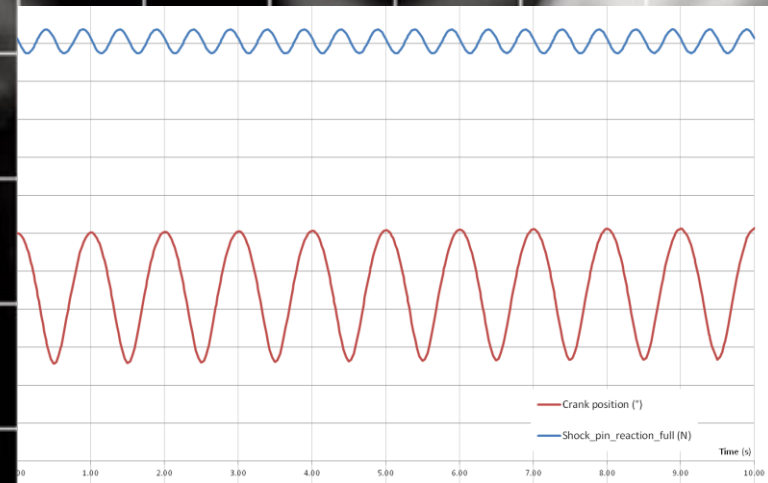


DAMPING: **dynamic**

Body masses (legs) and forces are oscillating between left and right side.

The average delivered power is stable, but the masses induce some oscillations

Traction Mode
&
Pedalling effects analysis



SPARK

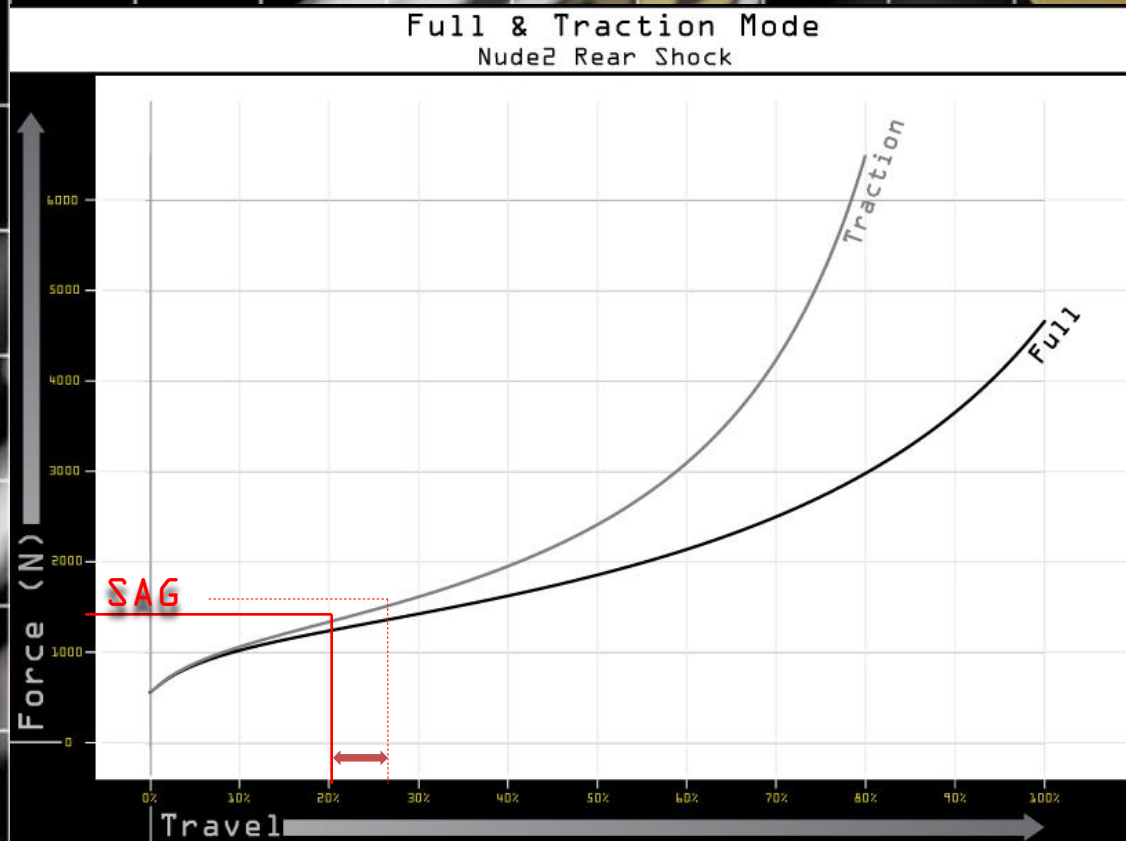
SCOTT

DAMPING: **dynamic**

Traction Mode
&
Pedalling effects analysis

SAG area:

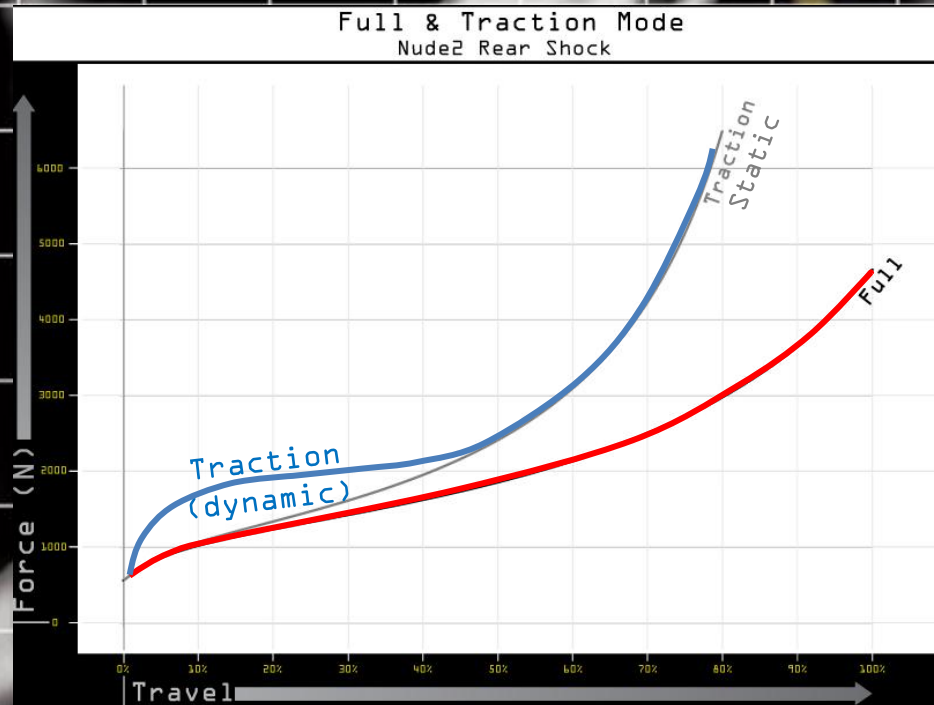
The static shock compression shows a small difference between full and traction modes.



DAMPING: **dynamic**

Traction Mode
&
Pedalling effects analysis

By adjusting the shock compression in traction mode, the small oscillations are absorbed.



SPARK

SCOTT

DAMPING: Inside Nude2

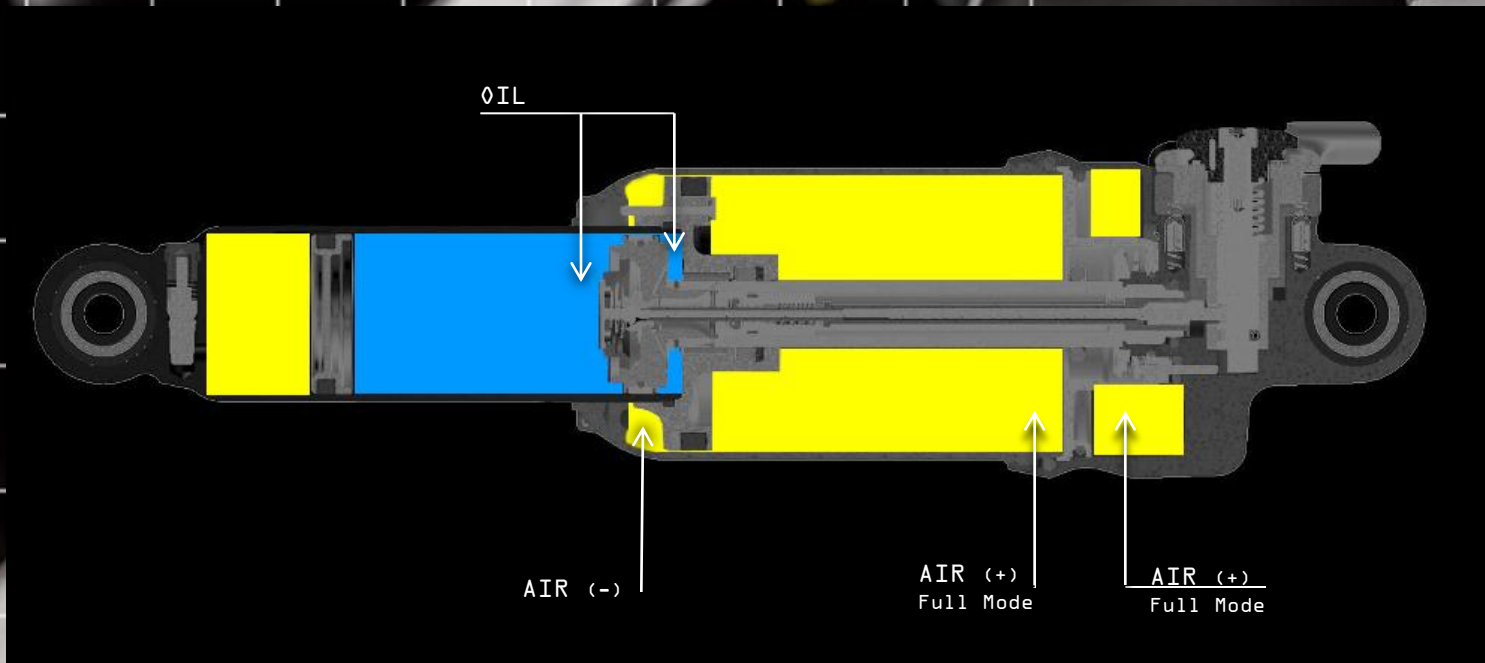
DT SWISS

SPARK

SCOTT

DAMPING: Inside Nude2

Nude2 structure



SPARK

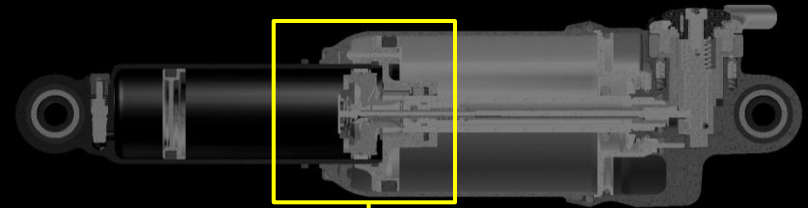
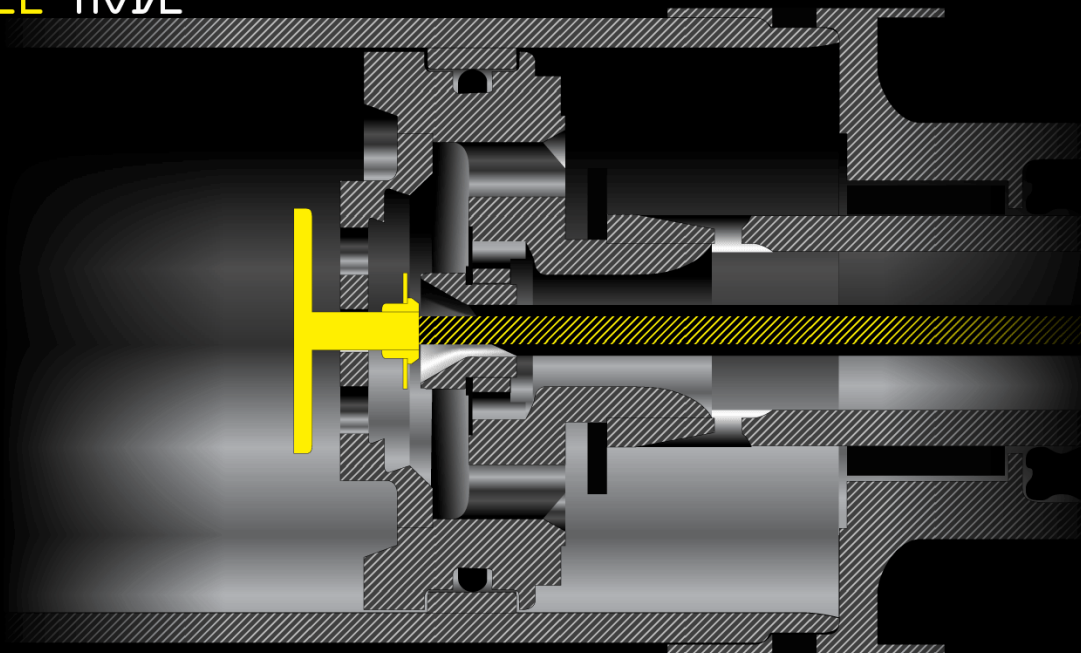
DT SWISS

SCOTT

DAMPING: Inside Nude2

Full - Traction - Lockout.

FULL MODE



SPARK

DT SWISS

SCOTT

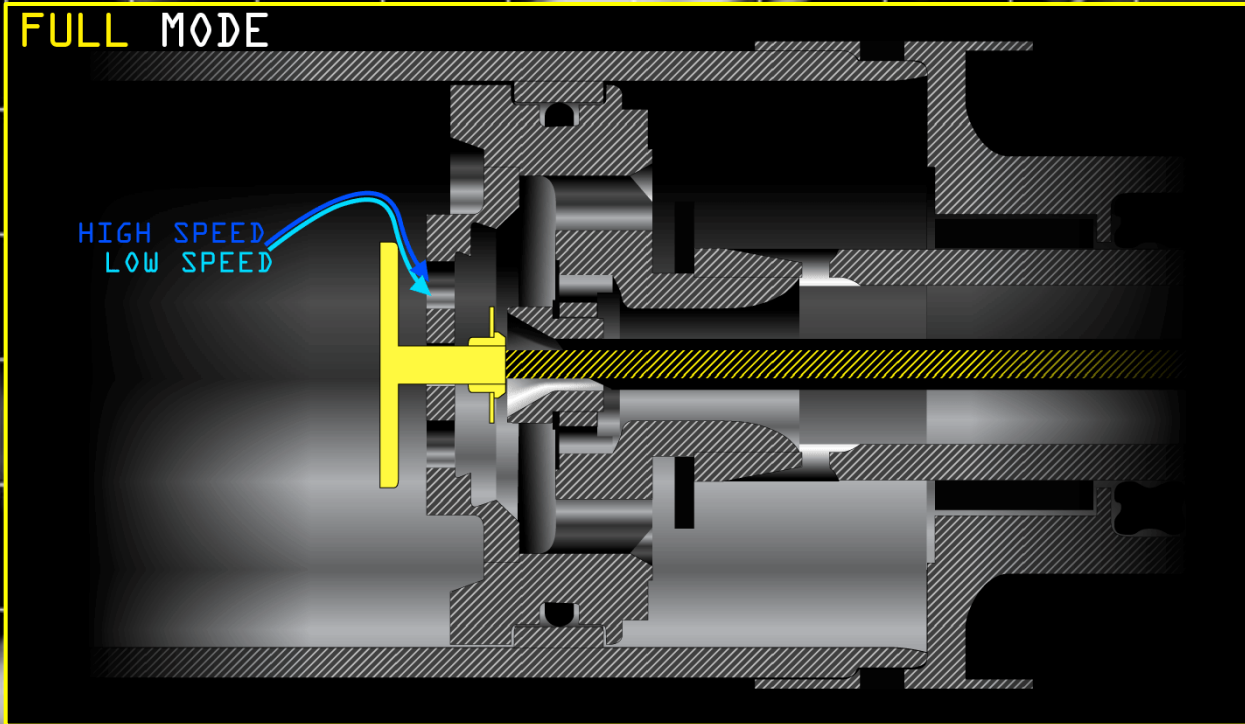
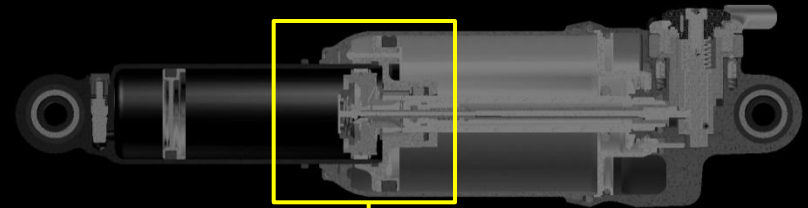
DAMPING: Inside Nude2

Full - Traction - Lockout

Compression

FULL MODE

HIGH SPEED
LOW SPEED



SPARK

DT SWISS

SCOTT

DAMPING: Inside Nude2

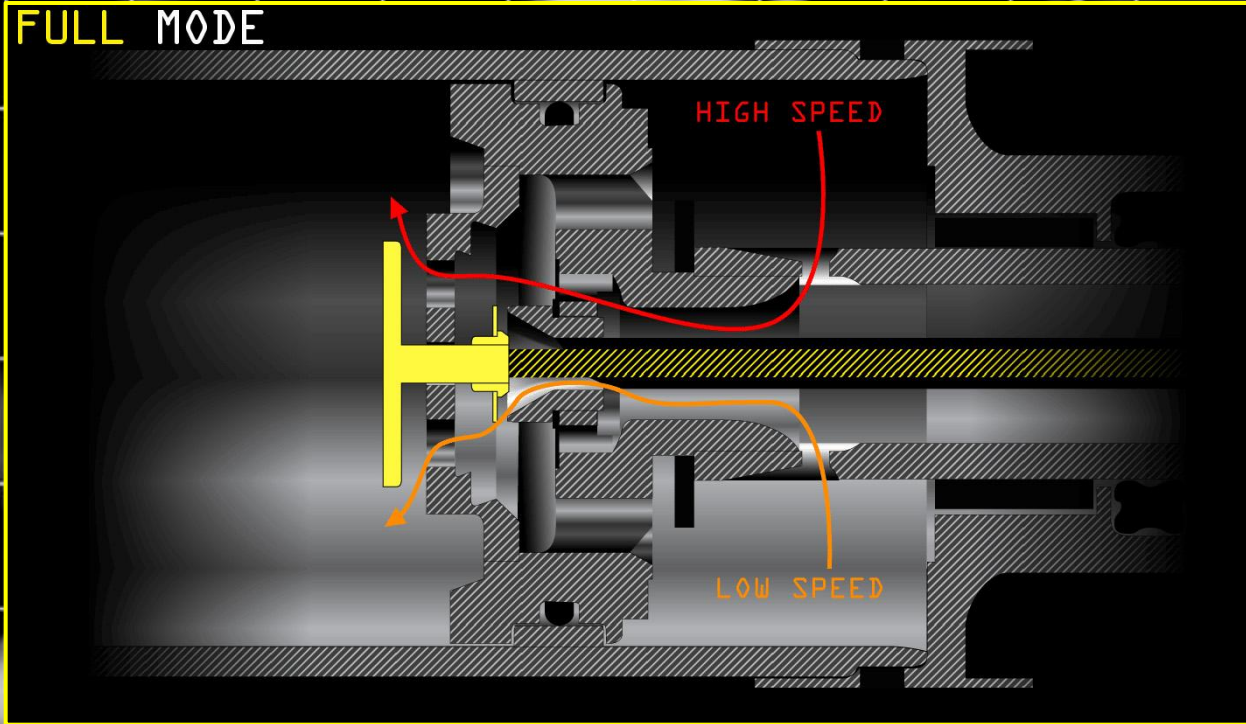
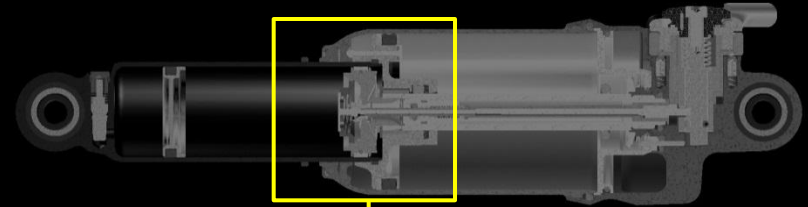
Full - Traction - Lockout

Rebound

FULL MODE

HIGH SPEED

LOW SPEED



SPARK

DT SWISS

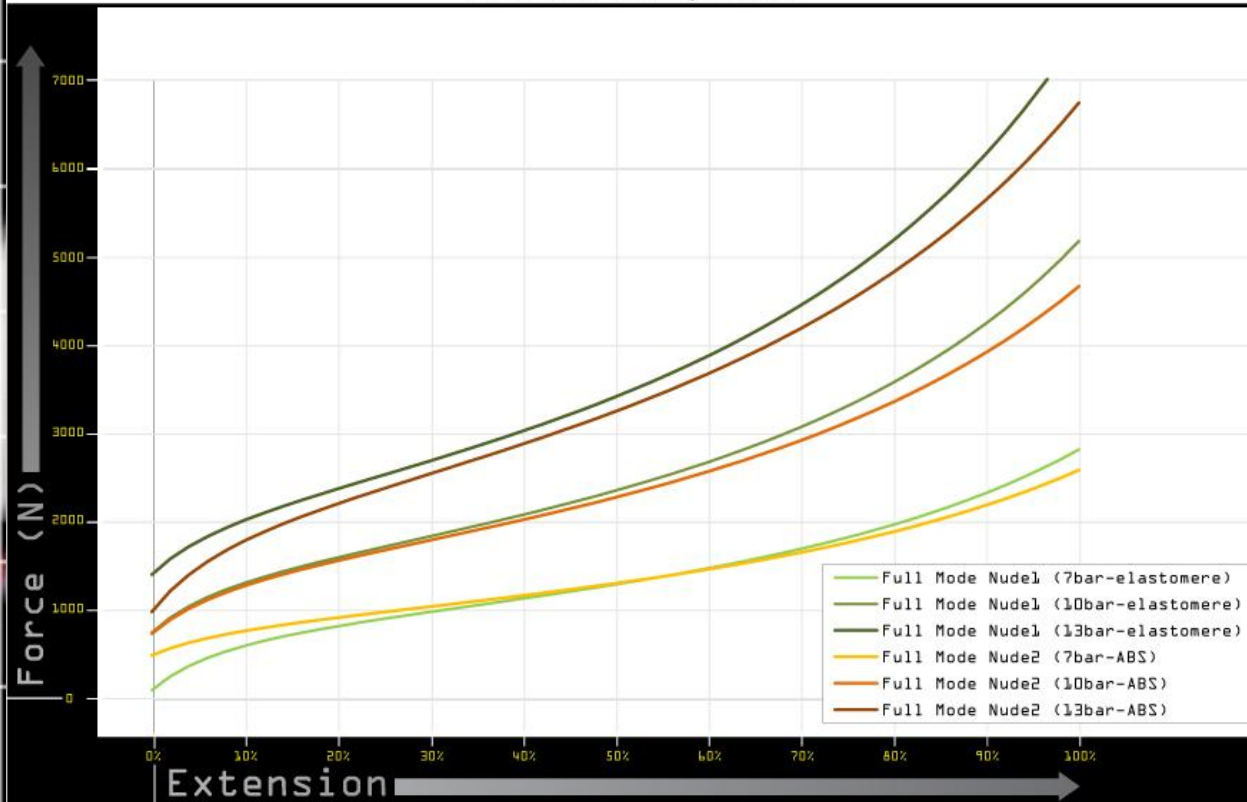
SCOTT

DAMPING: Inside Nude2

Negative spring:

Nude2 ABS
vs
Nude elastomere

Comparison ABS/ELASTOMERE
Full Mode Nude1/Nude2



DAMPING: **dynamic**

Inside Nude2
DT Swiss

Nude2 & M210.



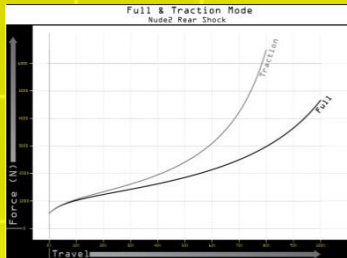
SPARK

SCOTT

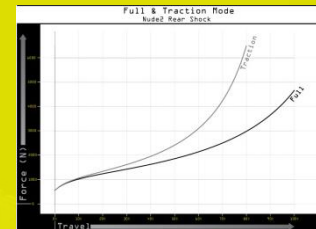
DAMPING: fork

Twinloc
Shock + Fork

Nude2
Traction & Full modes



Rock Shox DNA3
Traction & Full modes



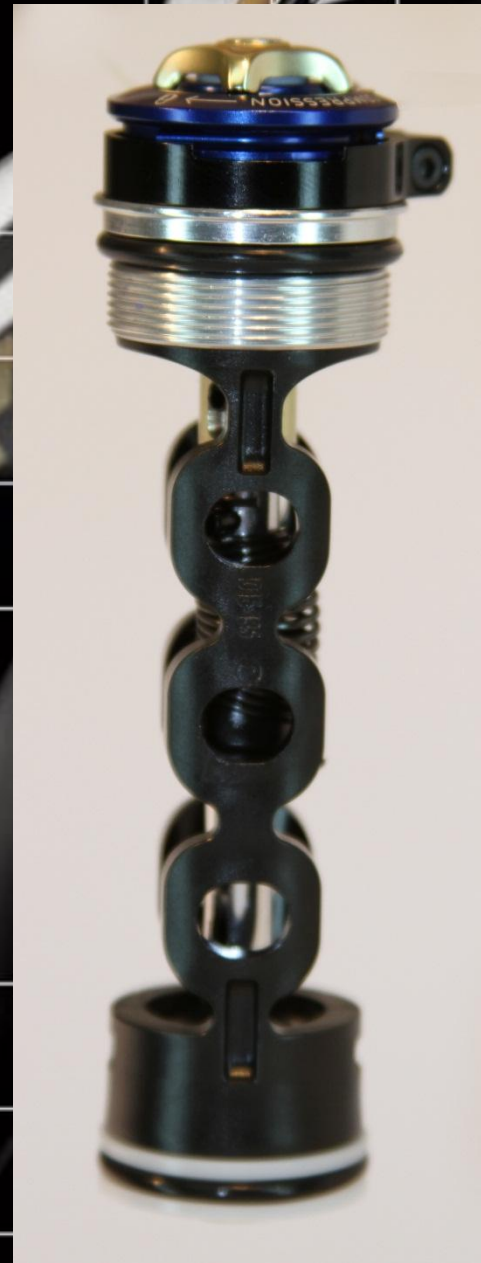
SPARK

SCOTT

ROCKSHOX: Motion Control DNA



The new evolution of RockShox damping technology is built on the fundamental building blocks of Motion Control - great adjustability, superior damping performance, low maintainance and easy service. Highlighted by a new lighter weight spring tube inspired by a double helix.



SPARK



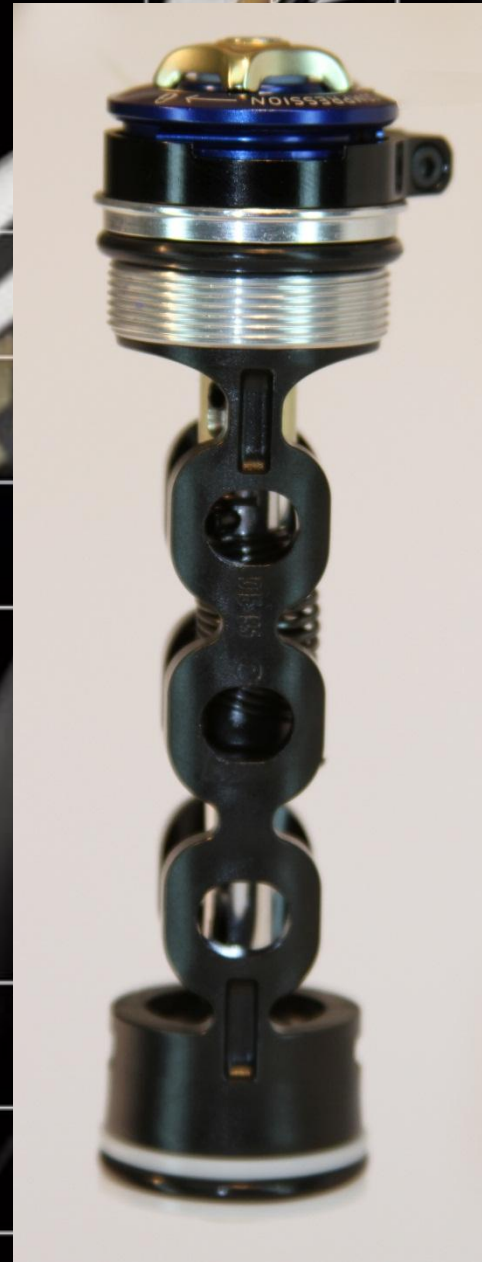
SCOTT

ROCKSHOX: Motion Control DNA3



Motion Control DNA3 is an exclusive development between RockShox and Scott to produce a 3 position fork damper that perfectly matches with the Twin-Loc system to provide three distinct modes:

Open
Platform
Lock



SPARK

SCOTT

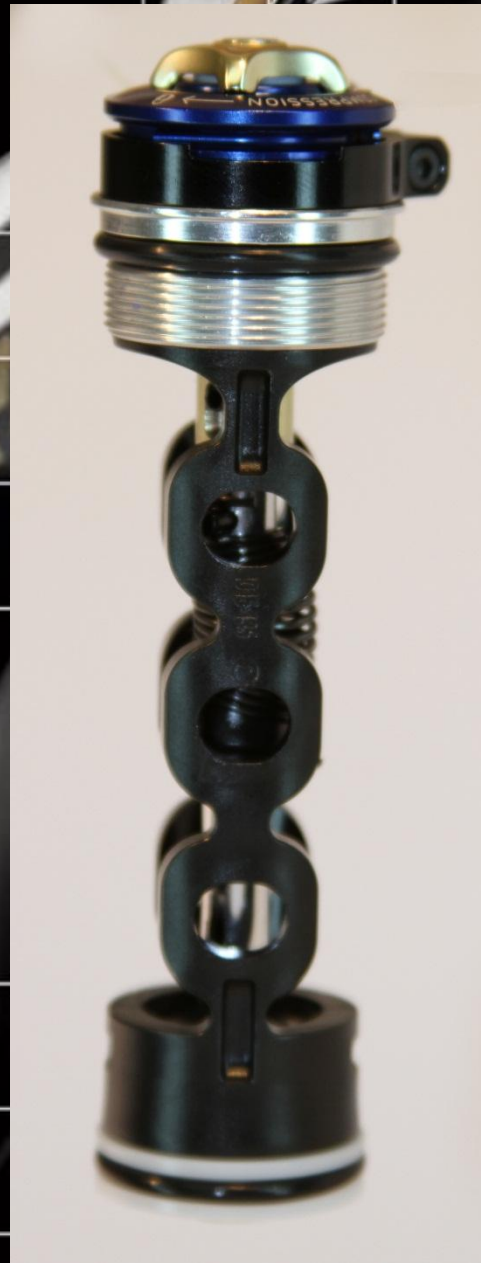
ROCKSHOX: Motion Control DNA3



Two Versions:

RLT3 - rebound, lockout,
threshold, 3 positions

RL3 - rebound, lockout,
3 positions



SPARK

SCOTT

ROCKSHOX: Motion Control DNA3



How it works:
Three distinct modes are
acheived with a custom
designed valve and valve
body.



SPARK

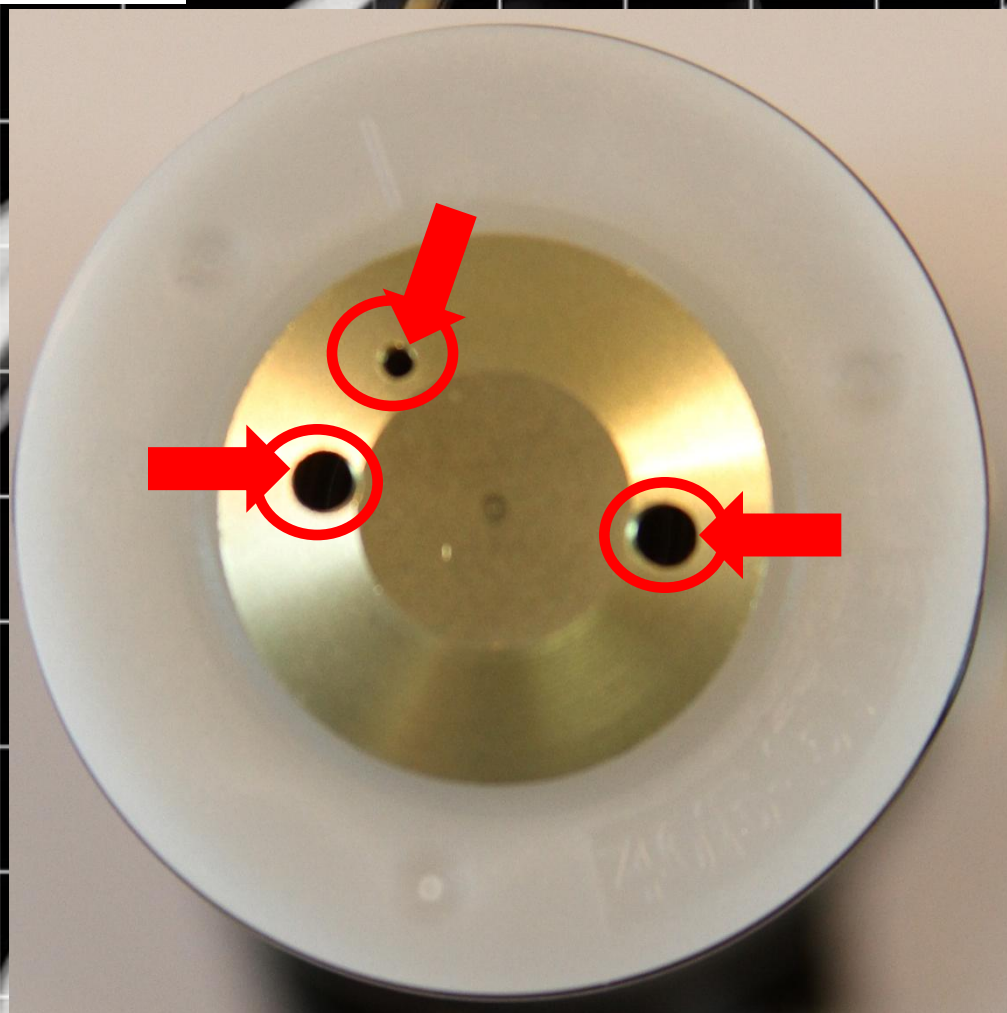


ROCKSHOX: Motion Control DNA3



How it works:
A custom designed valve
and valve body

Open - All three ports
flow oil



SPARK



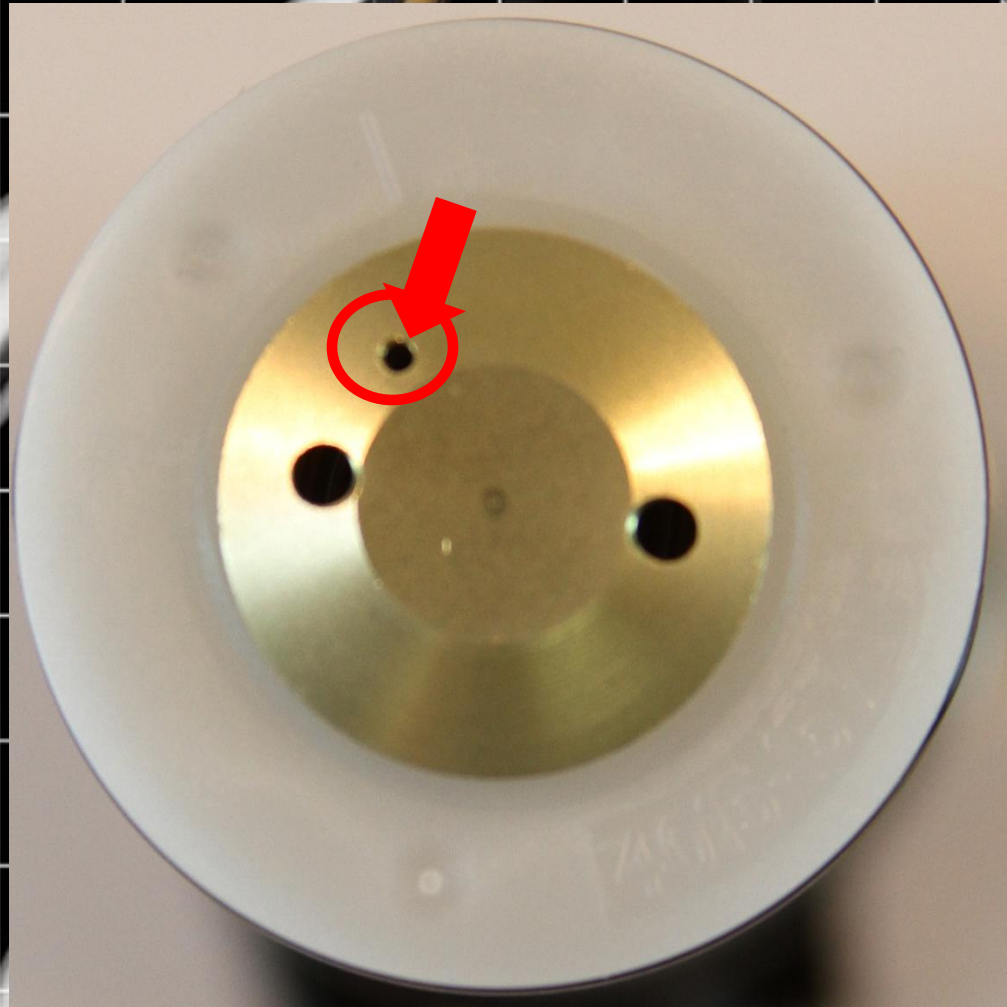
SCOTT

ROCKSHOX: Motion Control DNA3



How it works:
A custom designed valve
and valve body

Platform - only the
small port flows to
create a firm, platform
feel



SPARK



ROCKSHOX: Motion Control DNA3



How it works:
A custom designed valve
and valve body

Lock -All three ports
are shut off, blow-off
is controled by the
spring tube and poker
height (adjustable blow-
off on RL3 model)



SPARK



SCOTT

ROCKSHOX: Motion Control DNA



Available in:

26» SID World Cup

26» SID RL T3

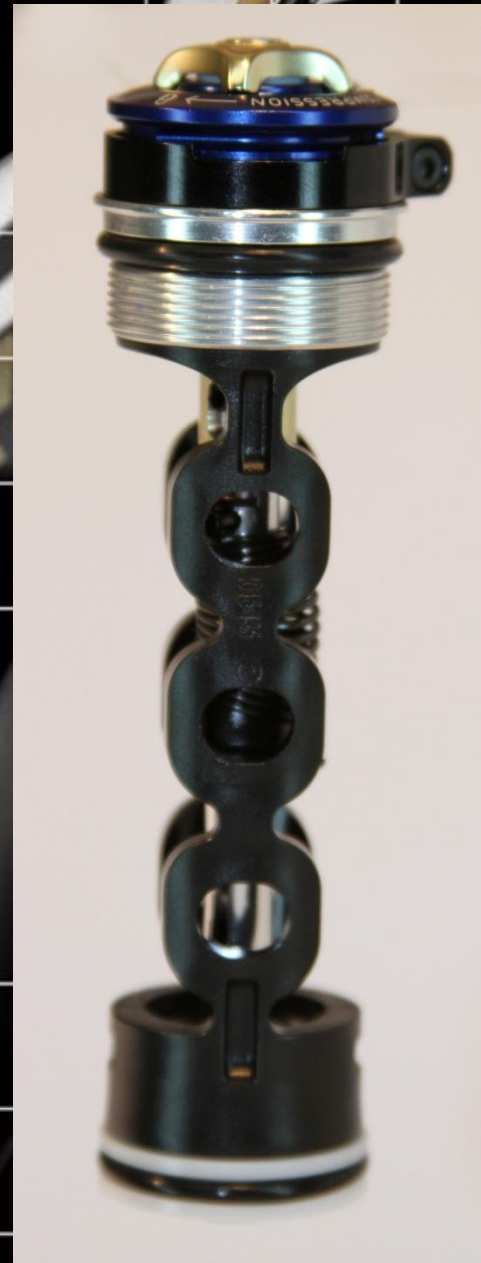
26» SID RL3

29» SID RL T3

29» SID RL3

26» Reba RL3

29» Reba RL3



SPARK



DAMPING

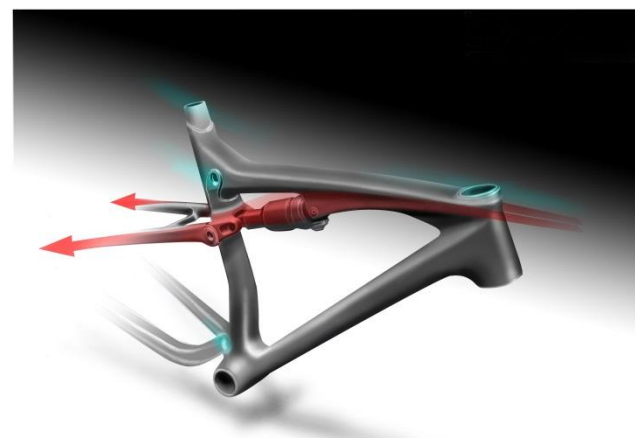
Lower ratio
More progressive
New traction mode damping
Shock + fork



SPARK



FRAME
Integrated
Design



SPARK

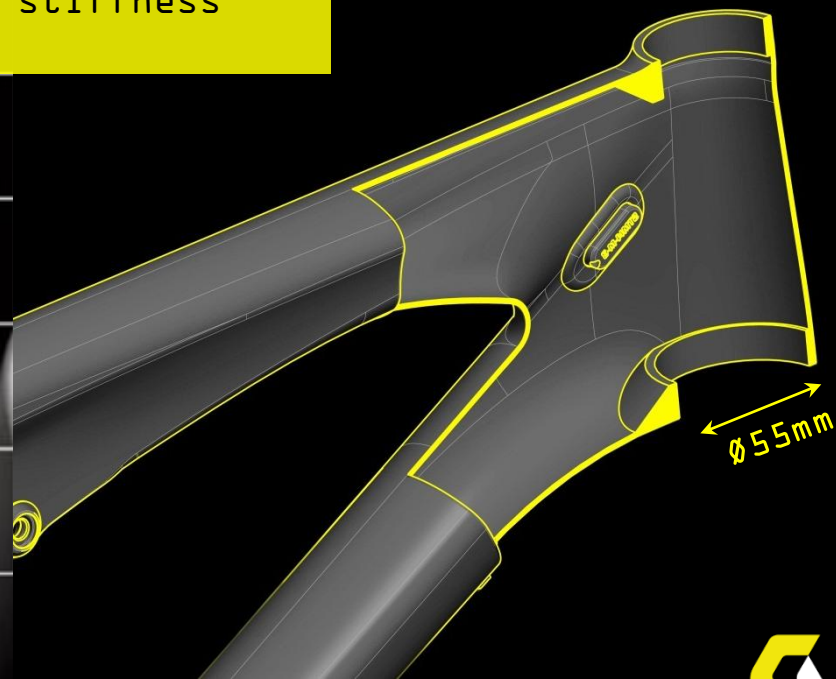
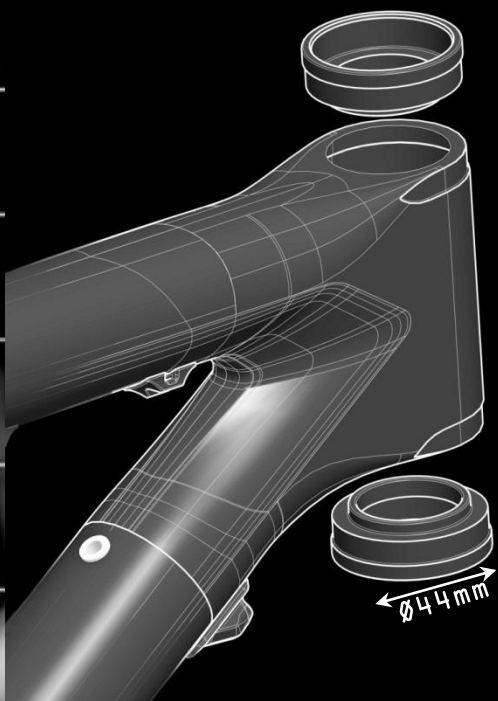


FRAME: headtube

Old SPARK

New SPARK

Tapered headtube
Full IMP construction
Increased stiffness



SPARK

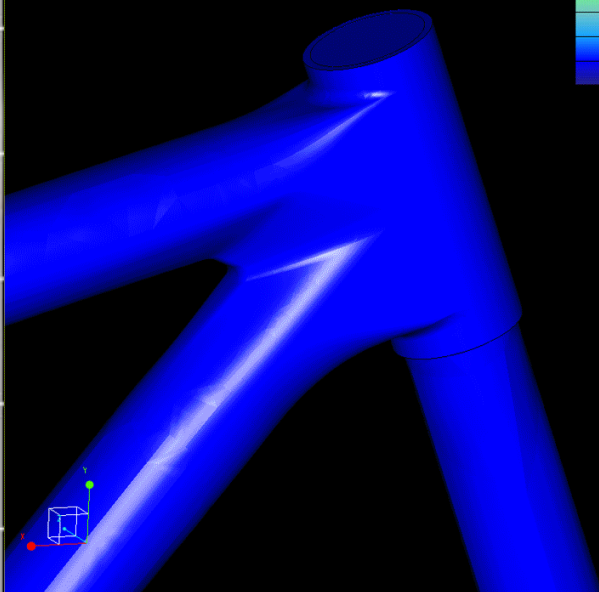
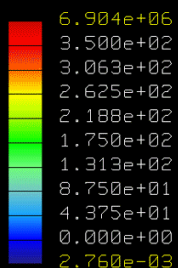
SCOTT

FRAME: headtube

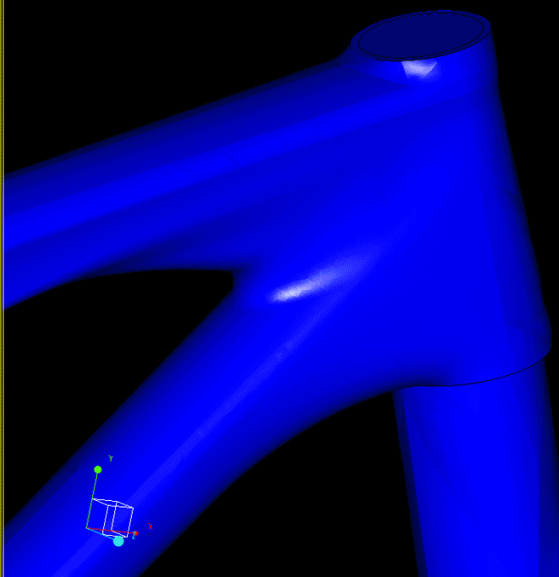
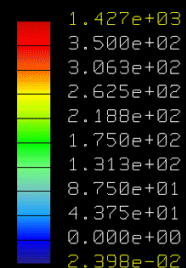
Old SPARK

New SPARK

Frame 1 of 8
Stress von Mises (WCS)
Maximum of shell top/bottom
(MPa)
Deformed
Scale 1.6666E+00
Loadset:LoadSet1 : FEA-SPARK-07-HT



Frame 1 of 8
Stress von Mises (WCS)
Maximum of shell top/bottom
(MPa)
Deformed
Scale 2.7985E+00
Loadset:LoadSet1 : FEA-SPARK-12-HT



Optimized structure:
Stress distribution
analysis

SPARK

SCOTT

FRAME: BB

Old SPARK

New SPARK

Wider BB structure
Increased stiffness

Full carbon
structure

BBPF92

SPARK

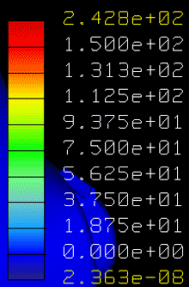
SCOTT

FRAME: BB

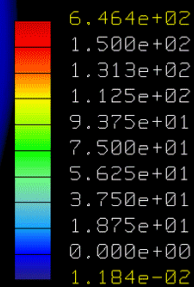
Old SPARK

New SPARK

Frame 1 of 8
Stress von Mises (WCS)
Maximum of shell top/bottom
(MPa)
Deformed
Scale 5.5519E+00
Loadset:LoadSet1 : FEA-SPARK-07-BB



Frame 1 of 8
Stress von Mises (WCS)
Maximum of shell top/bottom
(MPa)
Deformed
Scale 2.0744E+01
Loadset:LoadSet1 : FEA-SPARK-12-BB



Optimized structure:
Stress distribution
analysis

SPARK

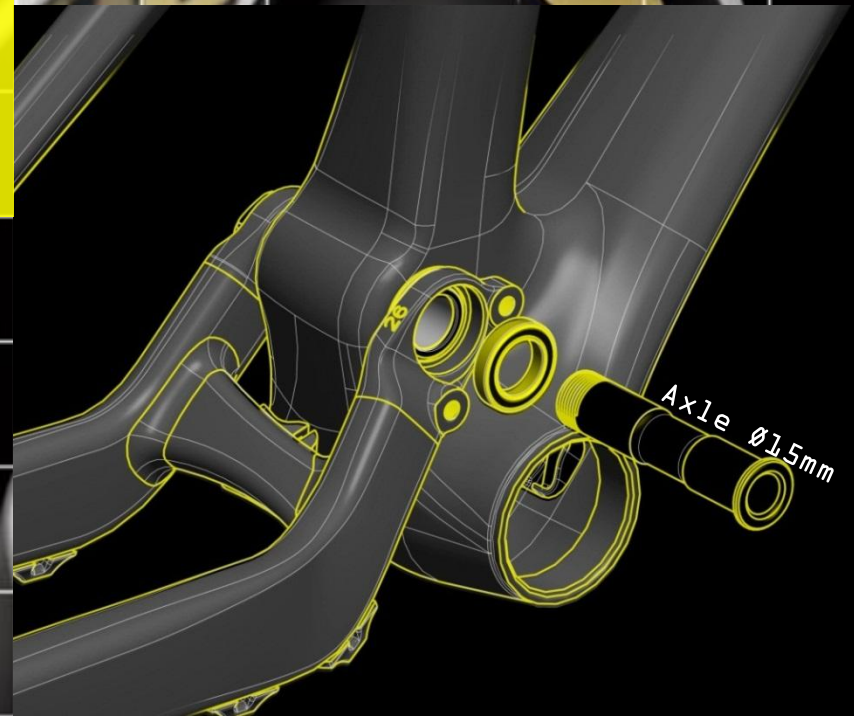
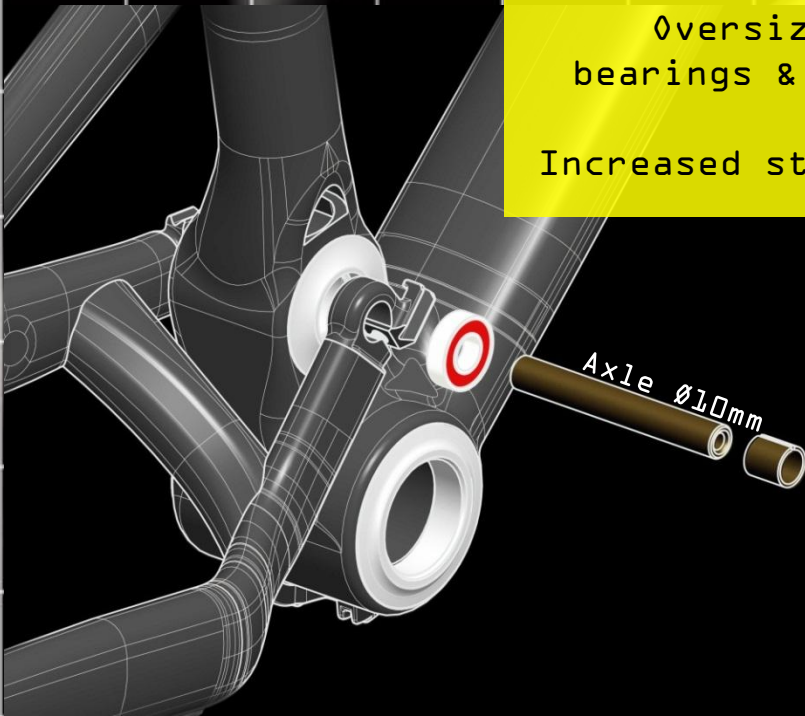
SCOTT

FRAME: hardware

Old SPARK

New SPARK

Oversized
bearings & axles
Increased stiffness

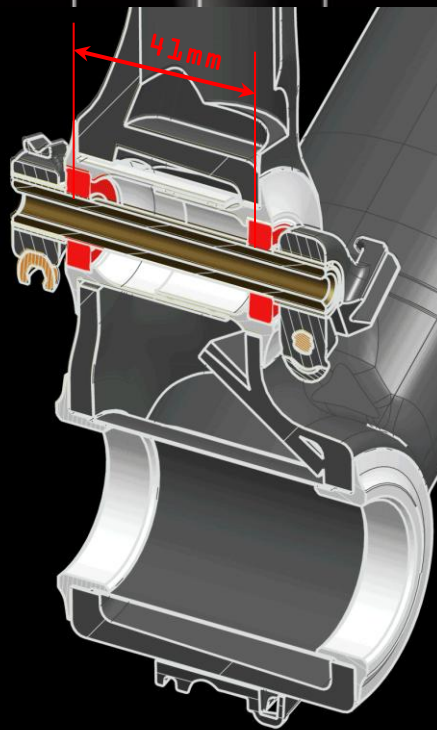


SPARK

SCOTT

FRAME: hardware

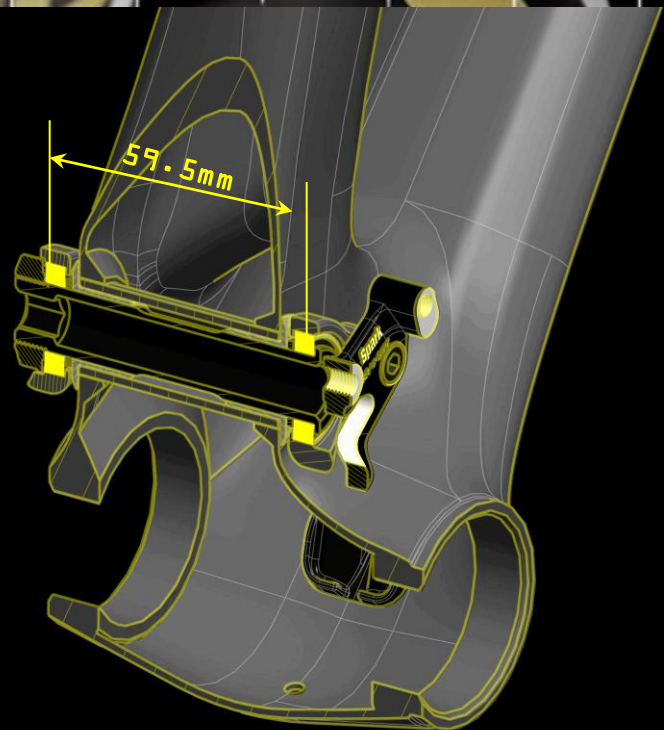
Old SPARK



Outside bearings
position

Increased stiffness

New SPARK



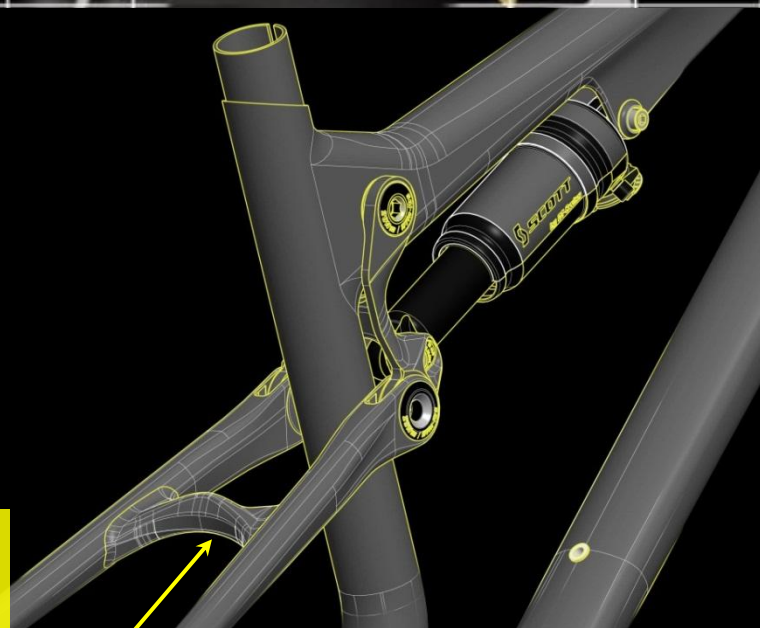
SPARK

SCOTT

FRAME: seatstays

Old SPARK

New SPARK



Additional bridge

Increased stiffness

SPARK



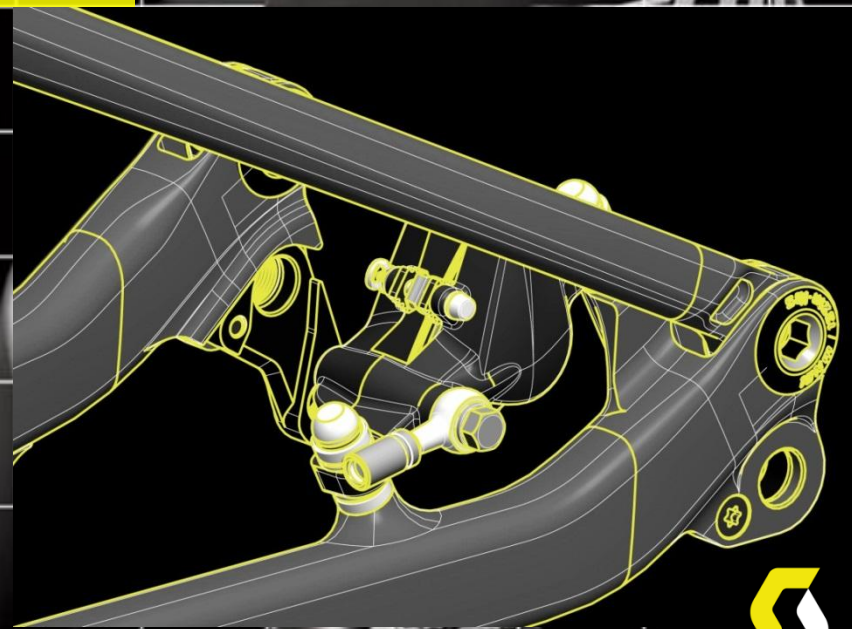
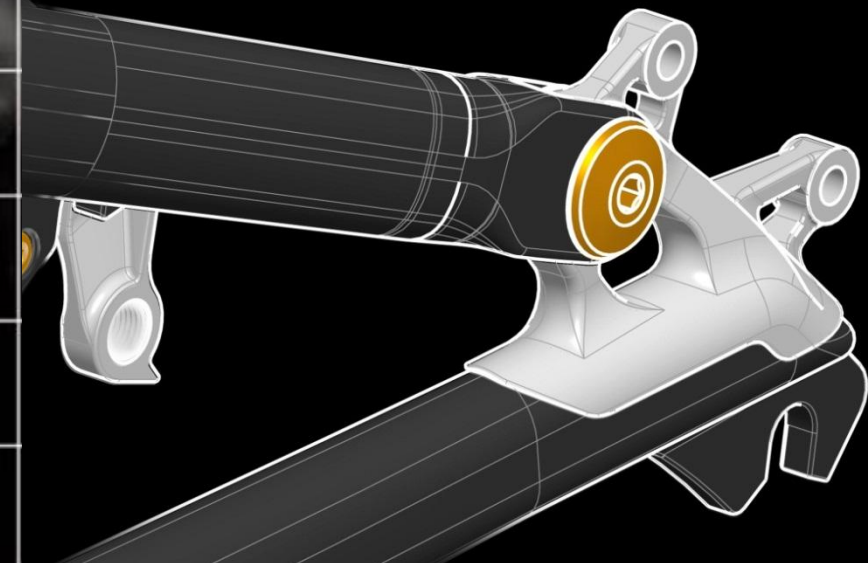
FRAME: **discmount**

Old SPARK

New SPARK

Postmount (160 to 185mm)
Full carbon structure

Weight optimization
Integrated design

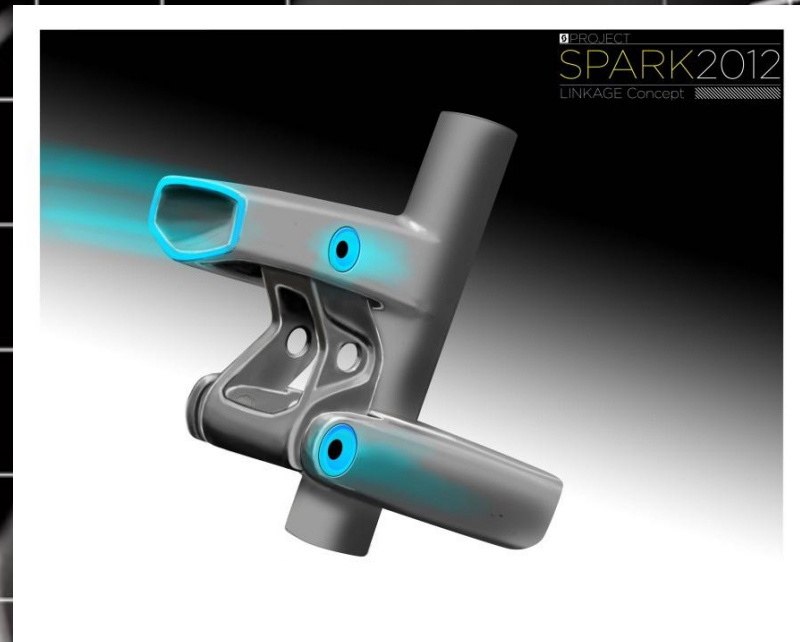
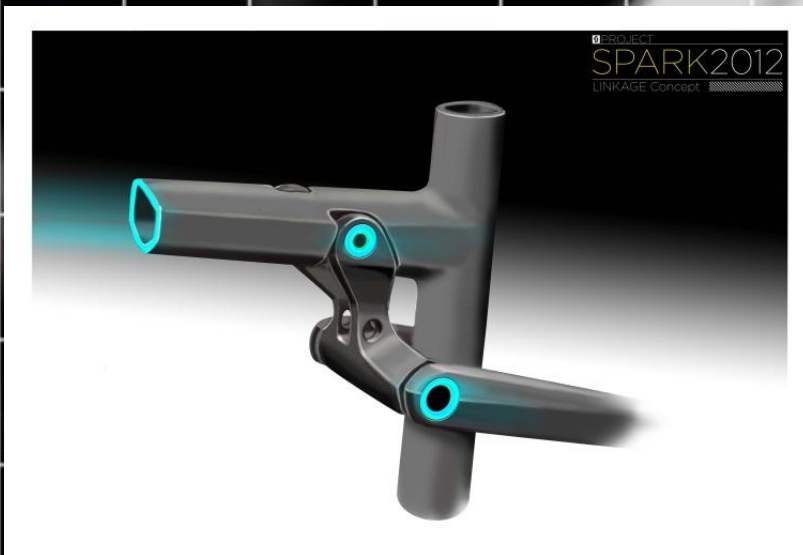
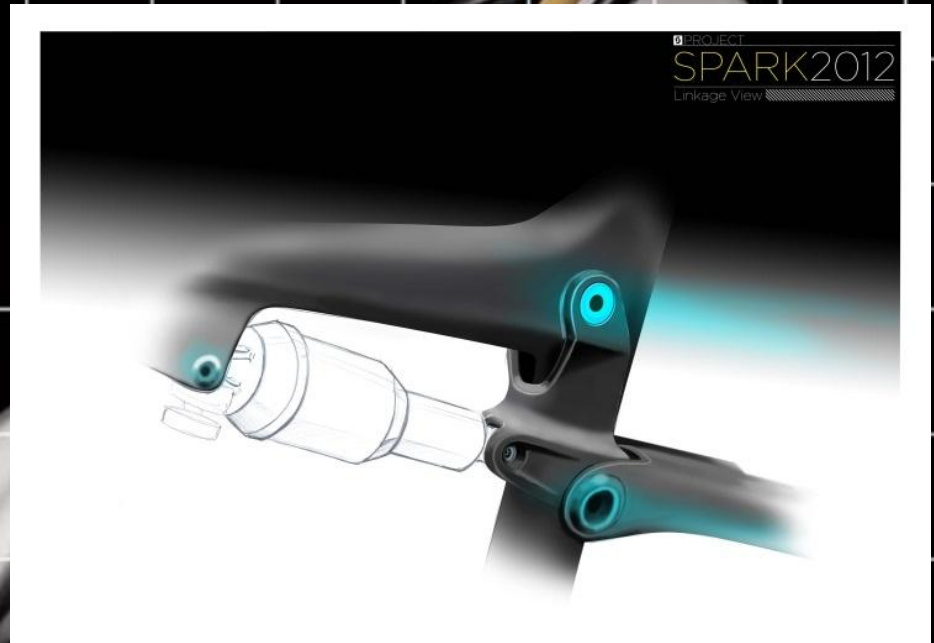


SPARK

SCOTT

FRAME: linkage

Integrated design
study

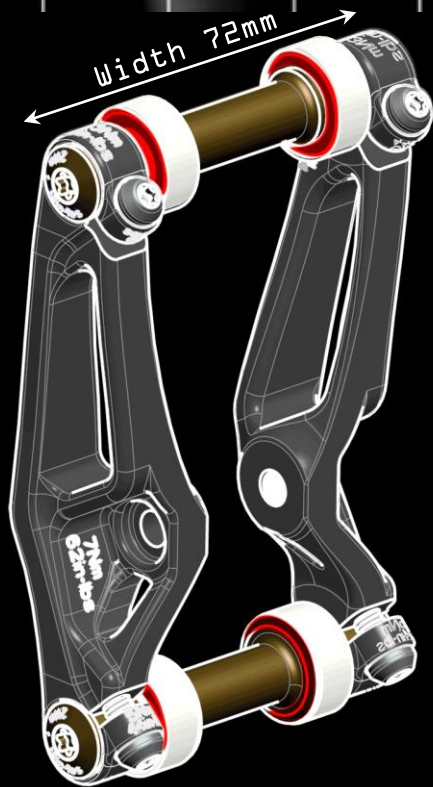


SPARK

SCOTT

FRAME: linkage

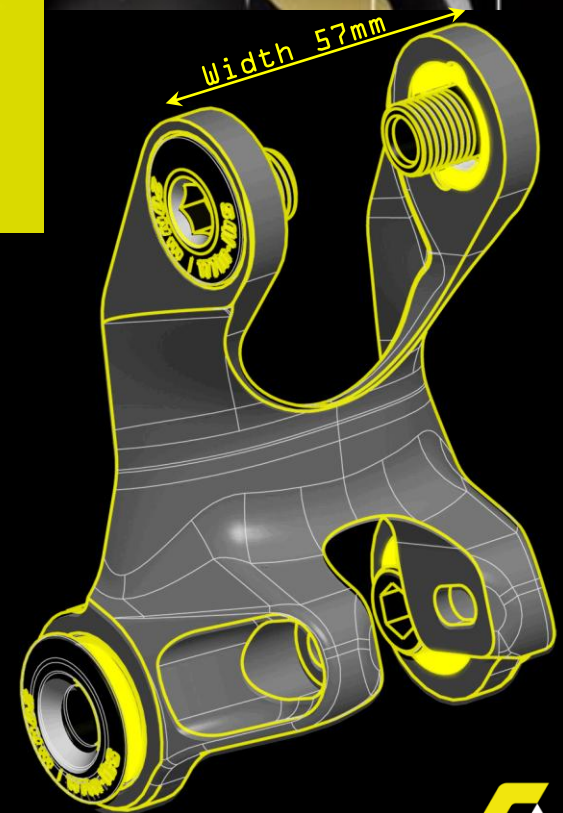
Old SPARK



New SPARK

Oversized bearings & axles
Outside bearings
Increased stiffness

Narrow linkage
Integrated design



SPARK

SCOTT

FRAME: adjustments

BB-height adjustment (8mm)

Spark26:

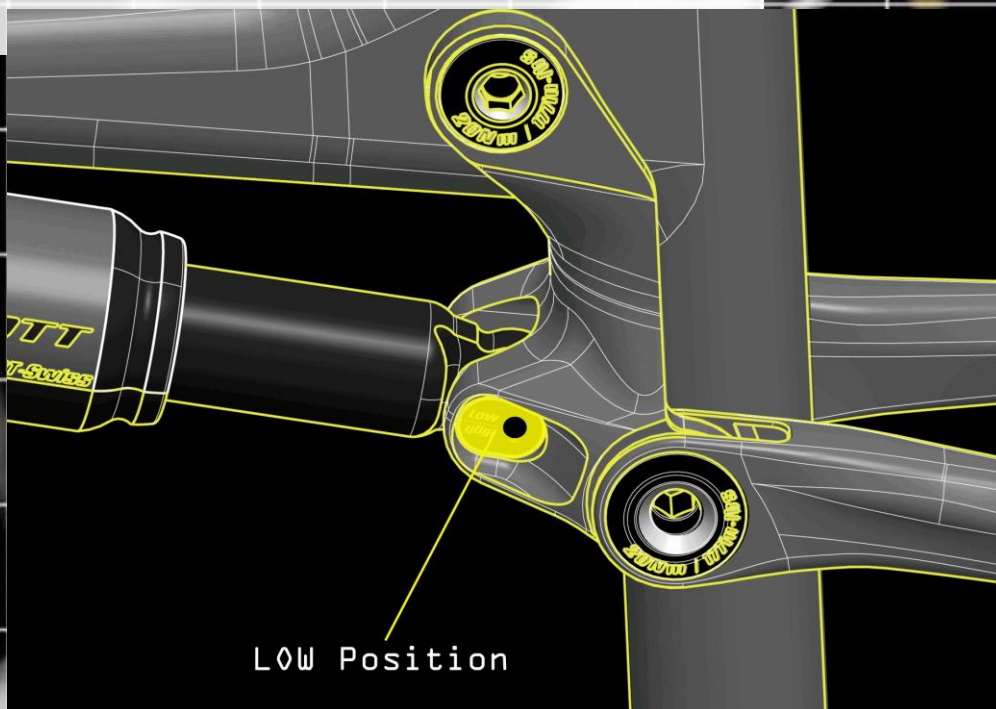
LOW: 330mm

HIGH: 338mm

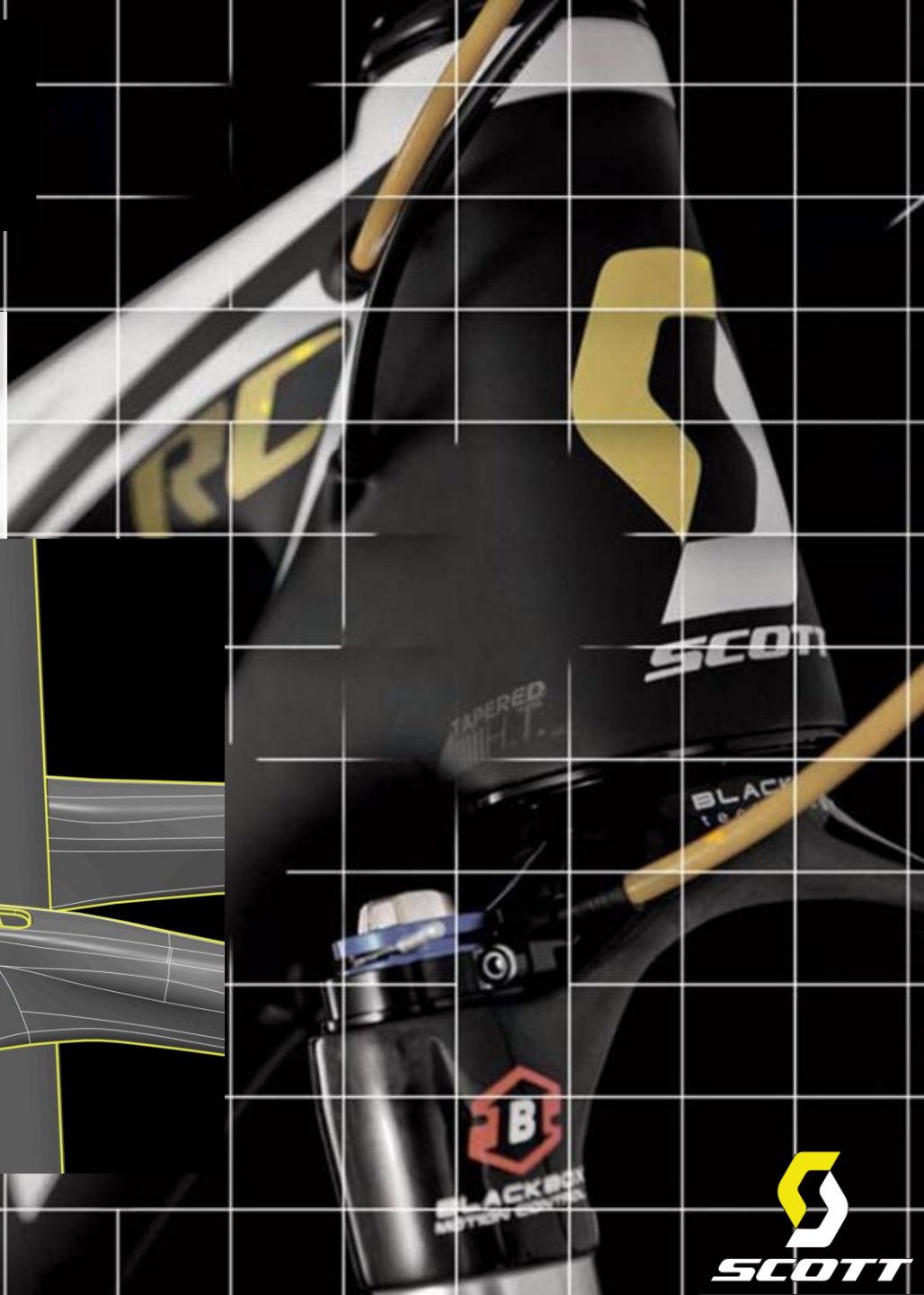
Spark29

LOW: 322mm

HIGH: 330mm



SPARK



SCOTT

FRAME: adjustments

BB-height adjustment (8mm)

Spark26:

LOW: 330mm

HIGH: 338mm

Spark29

LOW: 322mm

HIGH: 330mm



SPARK



FRAME: adjustments

IDS-SL : 19g

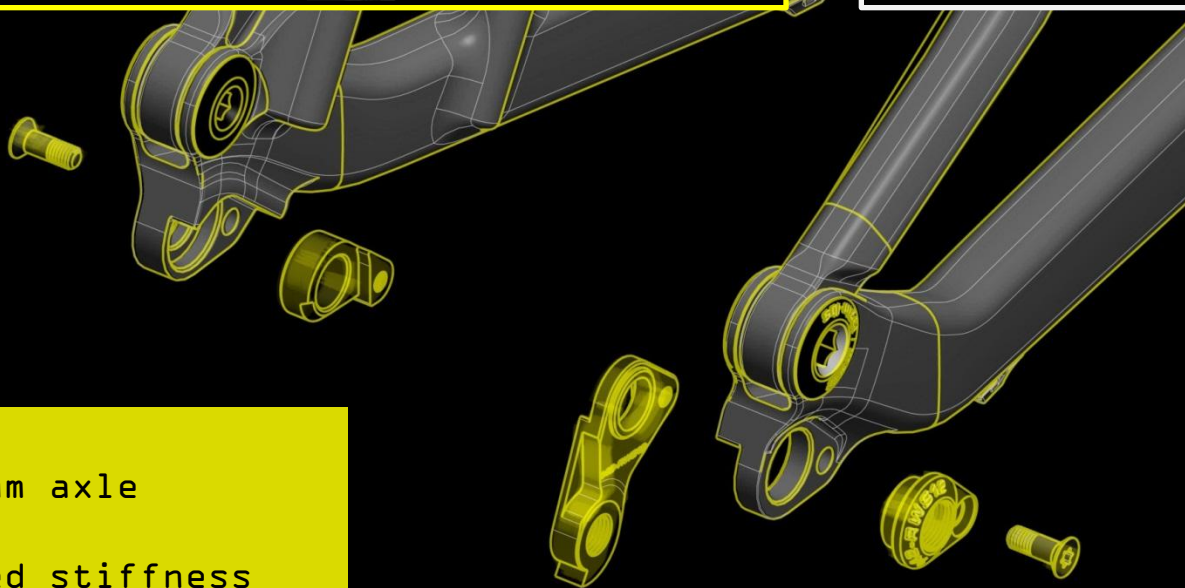


Old Spark : 16g



12mm axle

Increased stiffness



SPARK

SCOTT

More Travel
More Traction
More Stiffness
More Adjustments
Integrated design

1790g 26 / M / frame + Nude2 shock

1890g 29 / M / frame + Nude2 shock

