ZedlingDashpot

ATV Suspension Design Software

First of its kind in ATV suspension Design & Analysis by

Zedling Suspension
The Specialist Advantage

www.zedlingsuspension/zedlingdashpot

Develop the right suspension for ATV

Zedling suspension specialists support ATV development teams to design the right suspension & achieve their target performance. Zedling Suspension team has worked extensively with various ATV development teams on challenging projects & realized the need of a software resource for an effective & efficient ATV development.
Zedling Suspension has developed ZedlingDashpot a software program to help ATV designers & teams develop the right suspension for their ATV in a shortest time.

ZedlingDashpot
ATV Suspension Design Software

ZedlingDashpot A specialized software program to aid ATV suspension design & analysis. The software delivers practical parameters of ATV shock absorber which are critical to achieve the optimum suspension performance.
ATV suspension development work involves complex linkages, its kinematics & dynamics. Achieving the optimum vibration isolation & right suspension dynamic travel is critical in order to complete the track & in short time. Zedling Dashpot is developed by Zedling Suspension team after extensive interaction with various ATV development teams asking tricky questions, facing challenges on suspension design & achieving the right solution.
Zedling Dashpot addresses the need of a software resource which can provide practical specifications of suspension components like spring stiffness, damping ratio, low & high-speed damping etc. For ATV development teams it is important to achieve the specifications of suspension components first time right in order to avoid expensive modifications & the need to buy additional components.
Zedling Dashpot is built with classical suspension theory as well as calculations developed by our team working with numerous ATV development projects achieving the target performance.

Zedling Dashpot Key Features

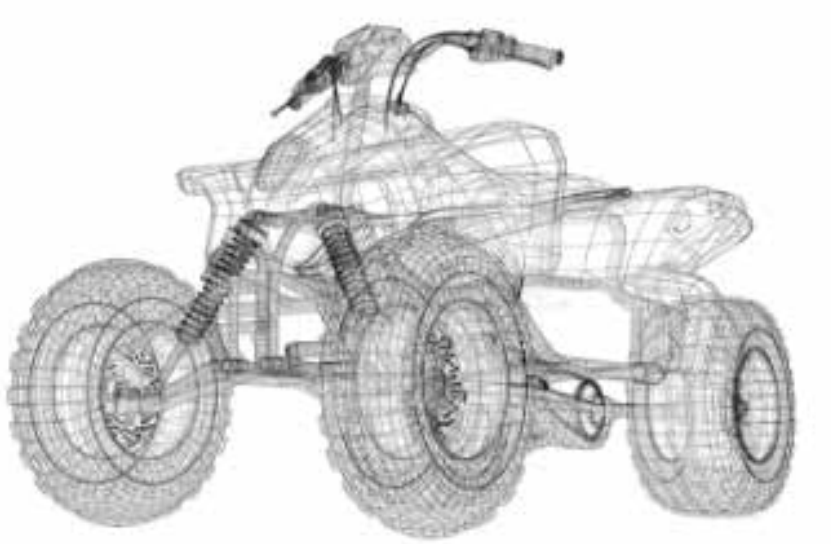
Here are even more ways Zedling Dashpot can help ATV suspension design & analysis.

User Friendly:

User friendly interface which makes the process of computer aided ATV suspension design & analysis faster & convenient

Input Parameters		
1	Wheel base (mm)	1450
2	Wheel track front (mm)	1321
3	Wheel track rear (mm)	1270
4	Total weight with driver(Kg)	187
5	Wt. distribution front(in %)	46
6	Unsprung mass front (Kg)	38
7	Unsprung mass rear (Kg)	43
8	C.G ht. (mm)	470
9	Front unsprung mass CG ht. (mm)	310
10	Rear unsprung mass CG ht. (mm)	300

Input Parameters		
11	Front suspension motion ratio (Wheel travel/ Shock travel)	2.2
12	Rear suspension motion ratio (Wheel travel/ Shock travel)	2.06
13	Front roll centre height (mm)	150
14	Rear roll centre height (mm)	215
15	Cornering acc (g)	1
16	Braking acc (g)	1.2
17	Bump acc (g)	3
18	Tyre rate (N/mm)	40
19	Allowable front full wheel travel (mm)	266
20	Allowable rear full wheel travel (mm)	237



Quality of input:

Considers the ATV dimensions, suspension linkage geometry, weight transfer, motion ratio, Tire stiffness, roll center height & parameters which have an effect on specifications on suspension components.

Accuracy of output:

Provides output for ride rate, wheel rate, suspension rate, wheel travel, damping ratio, damping co-efficient etc to perfect accuracy.

Practical output:

The output can be directly used for shock absorber ordering/manufacturing.

Suspension Characteristics		
1	Front wheel rate (N/mm)	**2.84**
2	Rear wheel rate (N/mm)	**3.48**
3	Front suspension rate (N/mm)	**13.76**
4	Rear suspension rate (N/mm)	**14.79**
5	Front suspension spring pre-compression (This is recommended for better tire adhesion however can be tuned)	**59.64**
6	Rear suspension spring pre-compression (This is recommended for better tire adhesion however can be tuned)	**58.80**
7	Front ride natural frequency, Hz	**1.73**
8	Rear ride natural frequency, Hz	**1.75**
9	Front suspension sag with rider seated. Negative value indicates no sag.	**-21.43**
10	Rear suspension compression in vehicle 1g condition with rider seated	**-19.71**

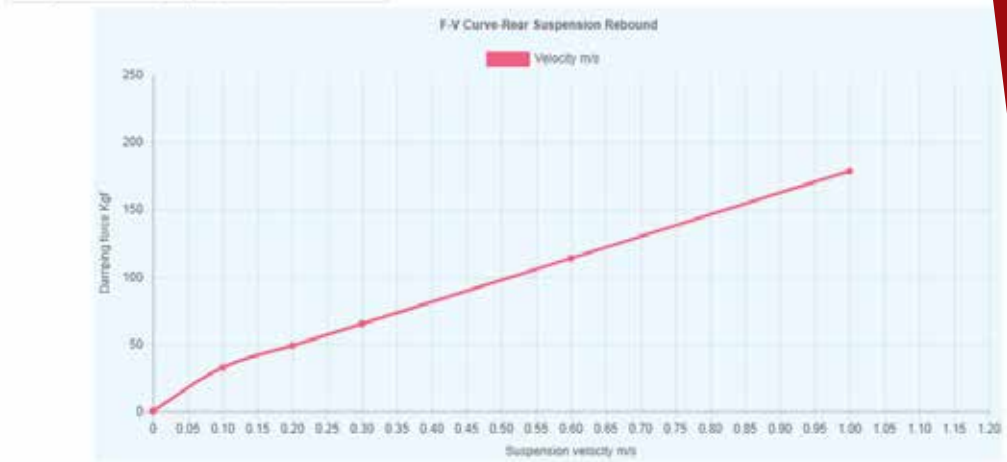
Ease of Analysis:

Generates spring stiffness graphs including the bump rubber properties. Generates damping force graphs for low, medium & high speed damping. Iterations can be conducted to optimize the results. Parameters can be plotted against each other or tabulated in a report. Compare results from multiple design iterations in terms of graphs & tables.

Combination of classical theory & experiential data:

Built over classical suspension theory of vibration isolation & road adhesion.
Calculations are built on empirical data gathered over years of ATV suspension development experience.

1	Critical Damping, Cc (N-s/m)	**635.309011**
2	Angular natural frequency, Wn (Rad/sec)	**10.962971**



First time right:

The software code is tested & successfully validated on ground level achieving the expected output. Direct application to ATV suspension design

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For pricing, please contact us at
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