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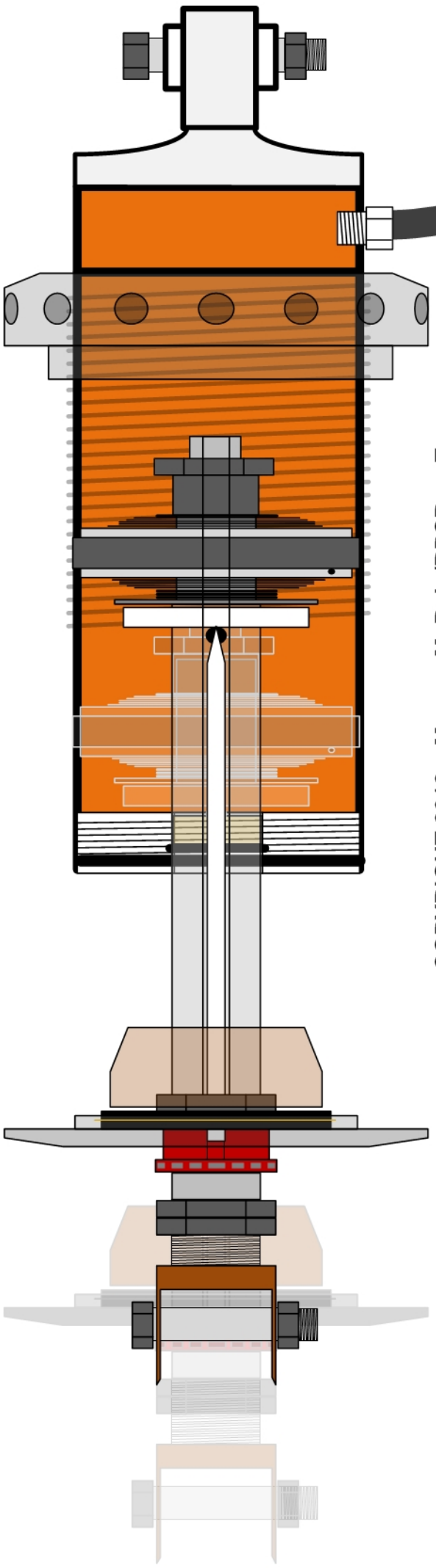
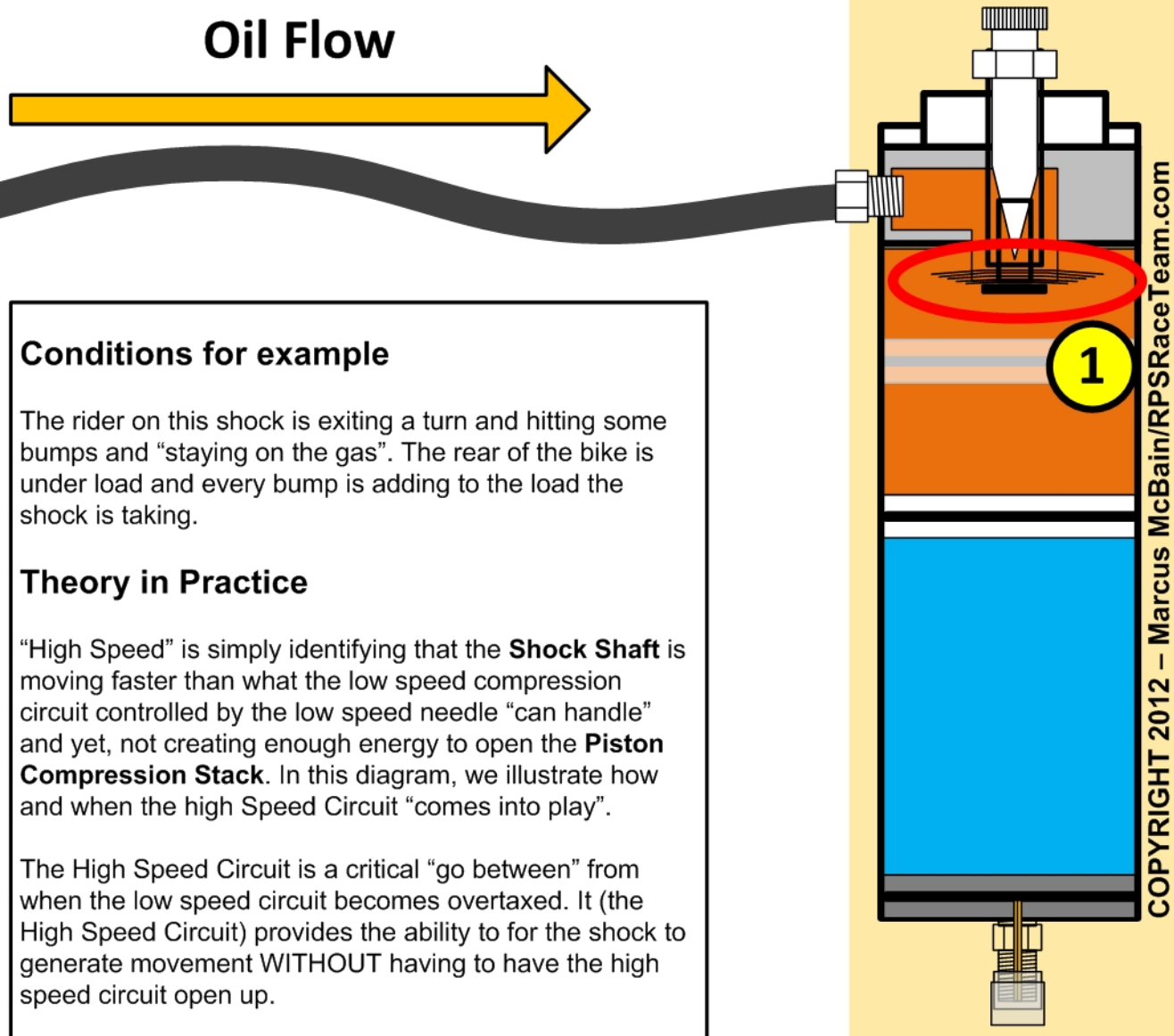
Technical Article Series - Anatomy of how a shock works

Document 3 – "High Speed" compression operation





Conditions for example

The rider on this shock is exiting a turn and hitting some bumps and "staying on the gas". The rear of the bike is under load and every bump is adding to the load the shock is taking.

Theory in Practice

"High Speed" is simply identifying that the **Shock Shaft** is moving faster than what the low speed compression circuit controlled by the low speed needle "can handle" and yet, not creating enough energy to open the **Piston Compression Stack**. In this diagram, we illustrate how and when the high Speed Circuit "comes into play".

The High Speed Circuit is a critical "go between" from when the low speed circuit becomes overtaxed. It (the High Speed Circuit) provides the ability to for the shock to generate movement WITHOUT having to have the high speed circuit open up.

By the "Numbers"

1) The **High Speed Compression Stack** has opened due to the low speed circuit being overwhelmed with the amount of oil pushed into the reservoir. The Floating piston is no longer "moving freely" as the low speed circuit is already taxed. When the shims of the **High Speed Compression Stack** open, it allows more oil allow to enter into the reservoir and thus generate enough pressure for the floating piston to continue to move freely and the **Shock Shaft** can move freely again.

At this point the velocities created by the **Shock Shaft** are significant. Any higher acceleration in **Shock Shaft** velocity and the **Piston Compression Shaft** will have to open due to the forces created.