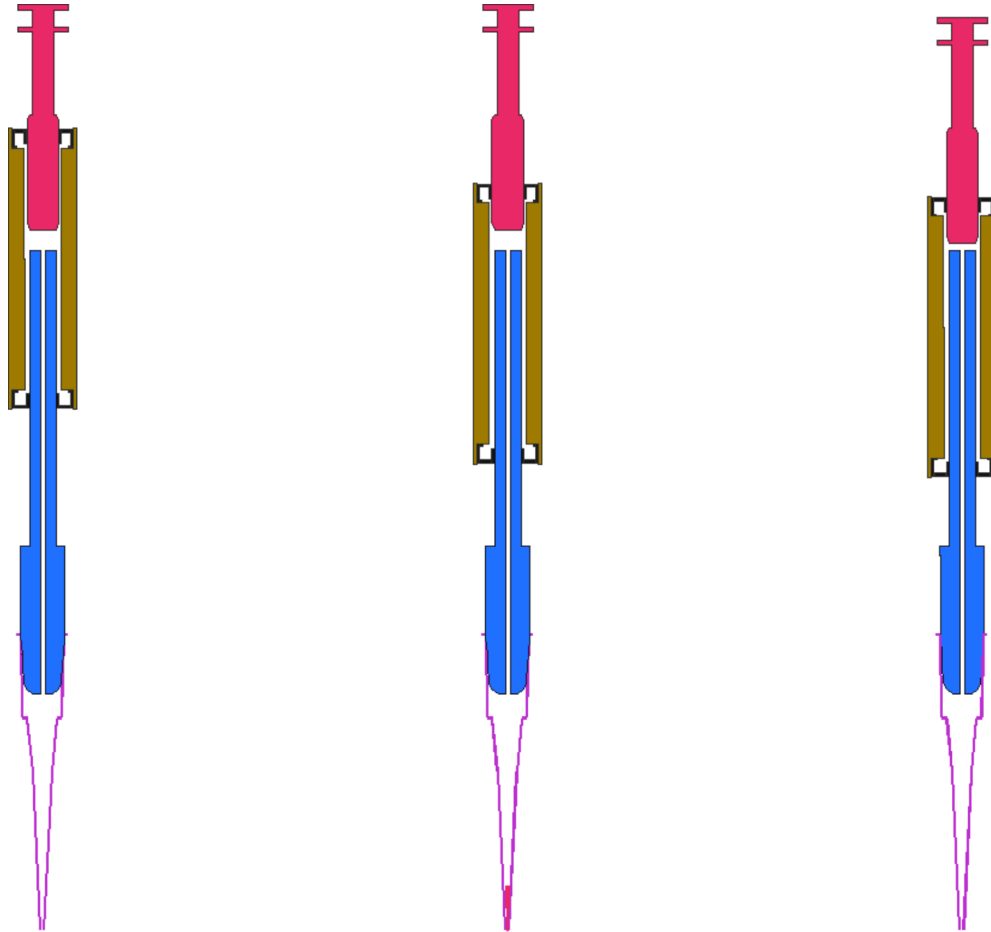


DRD NanoBlast™ Mechanism patents pending

Shown in cross section with the cylinder graphically narrowed so that the differential annular space can be seen



Aspiration
in fine resolution
Differential Mode

The Channel Block (brown) and its two Bal seals move down around the Piston and Cylinder. The channel block withdraws from the slightly wider Piston (red) while enveloping the slightly narrower Cylinder (blue), causing aspiration of the very small difference in cross sectional area between them. Resolution is as fine as a 50 uL syringe and can aspirate nanoliters accurately.

Blastoff™
in high flow
Single Mode

The Channel block continues to move down but now drags the Piston down with it. The Cylinder is further taken in by the channel, but without any offsetting piston withdrawel. This blows the sample completely out of the tip at a desired controlled flow rate as high as that of a 1 mL syringe.