



DAV MX™

Multi-Cycle Circulation Sub

A Simple Cycling Sequence

Fast activation

Drop dart and pump into place.

Clear opening confirmation

At surface a clear pressure drop confirms bypass activation.

Application stability

Unique lock open and latch & seal features ensure valve position and complete fluid isolation integrity at any angle for the whole of the bypass cycle.

Faster, safer tripping

Lock-open also provides the additional option of tripping out dry or to self-fill when tripping in.

Rapid and efficient closing

The Universal Closing Dart rapidly shears the selected activating dart into the catcher in order to close the tool. This is confirmed by a pressure increase shown at surface. Darts are stored in a highly efficient catcher sub with negligible pressure loss.

Unique back-up closing

Not only does the DAV MX™ push the envelope further, it also provides a totally unique back-up closing system. Should the valve become damaged by any unexpected events users can deploy the Emergency Shut-Off Dart and save a trip.



Standard Diverter Dart

100% bypass. Latch & Seal, Nose-lock open features. Best for LCM spotting and dry tripping.



Split-Flow Dart

Provides flow to bit (10-15%). Nose-lock open feature. Use for Self-Filling & Hole Cleaning.



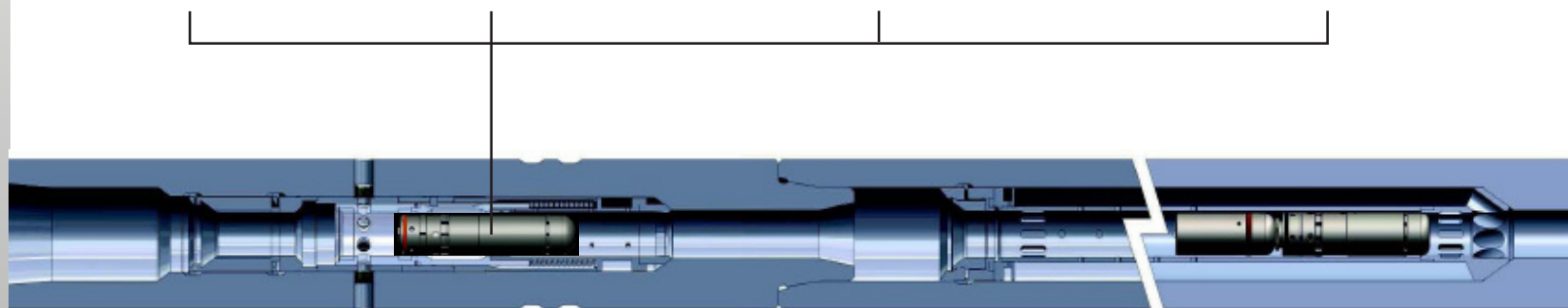
Alternative Diverter Dart

100% bypass. Pump to keep open. Best for nonreturn & non-u-tube.



Ultra Series Dart

High speed activation (400gpm) & low shear closing pressure. Best for ERD & fragile formations.



SPECIFICATIONS

Casing		Recommended Hole Size	Gauge OD	Differential Pressure
Size	Weight			
3½"	5.7-10.2#	2.867"-3.258"	2.75"	10,000 psi
4"	5.6-14.0#	3.340"-3.732"	3.12"	10,000 psi
4½"	9.5-16.6#	3.826"-4.090"	3.50"	10,000 psi
5"	11.5-18.0#	3.920"-4.560"	3.71"	10,000 psi
5½"	13.0-25.0#	4.580"-5.047"	4.24"	10,000 psi
5¾"	22.5-25.2#	4.580"-5.047"	4.24"	10,000 psi
6"	14.0-26.0#	5.140"-5.595"	4.75"	10,000 psi
7"	17.0-35.0#	5.989"-6.655"	5.61"	10,000 psi
	23.0-40.0#	5.595"-6.366"	5.34"	10,000 psi
7⅝"	20.0-39.0#	6.625"-7.263"	6.09"	10,000 psi
8⅝"	24.0-49.0#	7.511"-8.248"	6.96"	10,000 psi
9⅝"	29.3-53.5#	8.435"-9.063"	7.71"	8,000 psi
10¾"	54.0-81.0#	9.250"-9.784"	8.71"	8,000 psi
	32.7-51.0#	9.850"-11.150"	9.50"	5,000 psi
11¾"	38.0-60.0#	9.850"-11.150"	9.50"	5,000 psi
13⅜"	48.0-72.0#	12.347"-12.715"	12.00"	3,000 psi
	77.0-102.0#	11.633"-12.464"	11.56"	3,000 psi
16"	65.0-109.0#	14.688"-15.250"	14.25"	2,000 psi
18⅝"	76.0-96.5#	17.655"-18.730"	17.25"	2,000 psi
20"	133.0-169.0#	17.655"-18.730"	17.25"	2,000 psi