

## Annular Velocity Multipliers

Pipe Size (mm)	Bit Size (mm)																
	136	143	152	156	159	171	194	200	219	222	229	251	279	311	349	381	445
73	84.7	77.9	71.1	67.5	64.2	52.5	39.7	36.8	29.9	29.0	27.2						
76	87.0	82.0	73.4	68.6	65.3	54.3	40.0	37.2	30.2	29.3	27.4	22.3					
89	120.4	101.6	83.9	77.6	73.3	59.7	42.8	39.7	31.8	30.8	28.6	23.1	18.2	14.3			
102	157.3	125.7	99.6	90.9	85.1	67.3	46.5	42.9	33.8	32.7	30.2	24.2	18.9	14.7	11.4	9.4	6.8
114					103.6	78.4	51.7	47.2	36.4	35.1	32.3	25.5	19.6	15.2	11.7	9.6	6.9
127									39.9	38.4	35.1	27.2	20.6	15.8	12.0	9.6	7.0
140										42.8	38.9	29.3	21.9	16.5	12.5	10.2	7.1
152										48.5	43.4	31.9	23.3	17.3	12.9	10.4	7.3
165										57.7	50.5	35.6	25.2	18.3	13.5	10.8	7.2

**To obtain the annular velocity in metres per min. (m/min), multiply the appropriate number from the bit and pipe size combination, by the pump output in cubic metres per min (m<sup>3</sup>/min).**

**Formula:**

$$\text{Annular Velocity (m/min)} = \frac{\text{Pump Output (m}^3\text{/min)} \times (1.273 \times 10^6)}{(\text{Dh})^2 - (\text{Dp})^2}$$

**Where:**

**Dh = Hole Diameter, mm**

**Dp = Pipe Diameter, mm**