



What are your real costs of operating with Sapphire versus Diamond orifices?

Don't be fooled by the lower capital cost investment required to use Sapphires.....

Use this spreadsheet to work out the true costs in your facility.

High Pressure Sapphire Orifice costs		
Sapphires typically last 60-80 hours		
Material Cost (MC)	Single Waterjet Robot Example	Customer Actual
Total number of orifices used in 12 months	50	
Approximate orifice cost each	\$12	
Total cost for orifices per year (# orifices x cost)	\$600	
Production Downtime Cost (PDC)		
Average downtime for orifice change, in hours	0.25	
Orifice changes per year	50	
Total Downtime in hours (Avg downtime x changes)	12.5	
Line Rate per hour (value of line uptime)	\$400	
Total Production Downtime Cost (total downtime x rate)	\$5,000	
Total Operating Cost For Sapphires (MC + PDC)	\$5,600	
High Pressure Diamond Orifice costs		
Diamonds typically last 4000-6000 hours		
Material Cost (MC)	Single Waterjet Robot Example	Customer Actual
Total number of orifices used in 12 months	1	
Approximate orifice + short stop filter cost	\$750	
Total cost for orifices and filter assemblies per year (# orifices x cost)	\$750	
Production Downtime Cost (PDC)		
Average downtime for correcting plugged orifice, in hours	0.25	
Plugged orifice events per year (say every 600 hours)	10	
Total Downtime in hours (Avg downtime x events)	2.50	
Line Rate per hour (value of line uptime)	\$400	
Total Production Downtime Cost (total downtime x rate)	\$1,000	
Total Operating Cost For Diamonds (MC + PDC)	\$1,750	
TOTAL COST SAVINGS FOR FIRST YEAR	\$3,850	