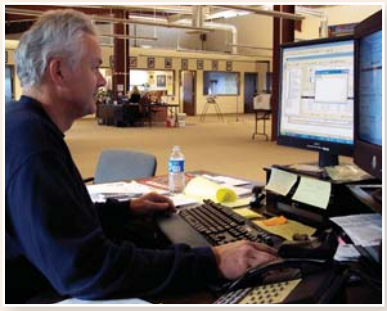
Tool Talk™ - Specialists Ready to Help You

Tool Talk™ Sections in this Catalog

Welcome to ***StoneAge®*** ***Tool Talk™***. We have introduced this section in our catalog to serve as a resource to help you better understand the many dynamics of waterblasting. You will find the ***StoneAge®*** ***Tool Talk™*** section at the beginning of each chapter describing each type of waterblasting application, plus a few others scattered around the catalog. Many of our ***Tool Talk™*** sections are a result of questions asked by waterblasters from around the world. If you have a question, please don't hesitate to ask us. That's why our technical specialists are here.



Important Factors for Surface Prep

The pressure selected for surface preparation is determined by the difficulty of the cleaning and the finished state of cleaning or preparation desired. If the cleaning is specified as removal of loose paint and scale, for example, pressures up to 20,000 psi are often sufficient. If coatings must be completely removed or the metal taken to a better finish, pressures of 36,000 or higher are typically required. The flow rate is determined by the tooling used and often by the capacity of the pump available. If the work will be done with handheld tooling, the flow rate is limited by the reaction force that an operator can sustain, typically 1/3 or less his body weight. If the equipment used is automated and has sufficient mechanical support, much higher flow rates can be used. Sometimes higher pressures are used in combination with lower flow rates to apply the same power to the surface but with less reaction force, as jet thrust increases directly with flow rate but only increases with the square root of the pressure.

Number of Jets

Other factors involved are the number of jets and the rotation speed. If a thick deposit must be removed, fewer, larger jets are more effective, while thin coatings can be effectively removed with more, smaller jets. The advantage of using more jets over fewer is the increased cleaning rate that can be achieved through the increased distribution of the power. Changing from two jets to four is like doubling the rotation speed, allowing faster feed rates (assuming the four smaller jets are capable of achieving the cleaning desired). In the use of larger diameter cleaning heads, it is desirable to use more, smaller jets to achieve more efficient power distribution and an even surface finish result. The rotation speed is dependent on the diameter of the head being used and the difficulty of the cleaning.

Controlled Rotation

A 14 inch diameter head spinning at 1000 rpm is equivalent to a 2 inch diameter head spinning at 5000 rpm. When the rotation speed gets too high, the jet loses power just as it does with increasing distance away from the surface. If the cleaning is easy, the rotation speed can be increased to allow faster feed rates, meaning more surface area can be cleaned faster. The combination of high rotation speeds and more smaller jets is the method used to prevent damage in applications such as paint stripe or rubber removal from concrete or asphalt surfaces that would otherwise be damaged by the waterjet.

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