

## Recommended Cleaning Procedures

### HOSE

When hydraulic hose is cut with saws that use metal blades or abrasive wheels a tremendous amount of heat is generated. The heat from the cutting process will cause the rubber dust and metal particle contaminants to stick to the hose tube as they cool. It is vitally important to clean the hose immediately after the cutting process before the contaminants cool and stick to achieve the best results. An Ultra Clean projectile should be fired through the hose prior to the installation of end connections. Fire one projectile in each direction through the length of the hose. This will allow cleaning in the areas occupied by the insertion of the hose nozzle at either end during the cleaning process. After the crimping or swaging of fittings, an Ultra Clean projectile should be fired through the entire hose assembly. This projectile will remove the metal flash from the crimping or swaging process. It is also vitally important to tape or cap the end fittings immediately following the last projectile. Taping the hose ends will keep airborne contaminants from entering the hose.

### USED HOSE & TUBE ASSEMBLIES

Hydraulic hose and tube assemblies from systems that have experienced a failure need to have all of the contaminated oil removed. Disconnect each end of the assembly and secure one end into the Projectile Catcher (UC-PC). Fire air into the assembly without a projectile for several seconds to remove the excess contaminated hydraulic fluid. Fire 3 to 4 Ultra Clean Projectiles through assembly to remove contamination. Visibly check the last projectile for contamination. Repeat process until projectile has no signs of rubber or metallic particles on it. If the projectiles continue to show rubber particles the hose may need to be replaced. This is usually a sign of a rubber tube that is failing.

### TUBE

When tubing requires cutting, the ends should be thoroughly deburred prior to the use of the cleaning system. A tube nozzle and two Ultra Clean projectiles may then be implemented to clean the tube. If the tube appears to contain rust, weld slag or other corrosion on the inside surface, then an abrasive projectile should be used first, as many times as is necessary to remove the corrosion. Follow by using an Ultra Clean projectile to insure proper cleanliness. If flaring is required, this should also be done prior to cleaning. In this case, the use of a JIC nozzle will be necessary to mate properly with the flared end of the tubing. If special fittings are used that require crimping, then the use of an Ultra Clean projectile, in addition to the procedure described above, is also recommended after the assembly is completed. The Ultra Clean (Tube) Projectile should be used to remove mandrel lubricants, grease or oil if encountered.

### PIPE

We recommend the use of a grinding projectile when rust is present or an abrasive projectile for cleaning the inside of all types of carbon steel piping products. These projectiles may be used more than once, if necessary, or until they wear out. After several passes with the grinding or abrasive projectiles, an Ultra Clean projectile should be fired through the pipe, removing any debris left behind by the previous projectiles. This can only be accomplished if the pipe has a relatively smooth surface. Our Grinding projectiles will negotiate sweep elbows only. The Ultra Clean projectile can also be soaked in corrosion inhibiting chemicals that will in effect be applied to the entire 360 degree inside surface as it passes from one end to the other.