

# CIMCOOL<sup>®</sup>

## Technical Report

Milacron Marketing Co. | Consumable Products Division | Cincinnati, Ohio 45209

## CLEANOUT PROCEDURE FOR CONVERTING FROM OIL TO A WATER SOLUBLE METALWORKING FLUID

When converting from a straight oil to a water soluble metalworking fluid, a cleanout of the tank is essential so that the fresh charge of metalworking fluid can perform with maximum efficiency.

If not removed, accumulated shop waste, metal swarf, oil, mold growth, and pockets of bacteria cause deterioration of the fresh mix. In a new system, construction debris in the trenches and tanks, the chemical waste such as welding flux, must be removed from the assembly of steel trenches. If the trenches are constructed of cement, a good cleaning helps to season them.

The cleanout, therefore, is an essential first step. It insures that your metalworking fluid has an "even chance" to give maximum performance with a minimum number of problems.

The following are some things to keep in mind when converting from a straight oil to a water soluble metalworking fluid:

1. Check to be sure that the filter system can handle a water soluble fluid.
2. Sliding members, in a machine that previously used a straight oil, may be dependent upon the cutting fluid to provide lubrication. The sliding members may need separate lubrication.
3. Make sure that the seals in the machine are in good condition and are made of either Viton<sup>®</sup> or "Oil Resistant" Buna N.
4. Make sure that all switches that will come in contact with the fluid are water proofed.
5. There is possibility of skin irritation problems. Operators that are accustomed to working in a straight oil may have to adjust for a water based product.
6. Make sure that a good clean out of the machine, tank(s) and fluid delivery system is performed. Use CIMCLEAN<sup>®</sup> 30 cleaner at 1:50 or stronger. Also add Cleaning Agent 4 (1:1,000) to the initial charge of the metalworking fluid to remove additional sludge and dirt from the system.
7. Check to be sure that the positive lubrication system is working in the machine to prevent contamination of the lube system with the water soluble product.
8. After switching to the water soluble product it may be necessary to change wheels and/or wheel grades.
9. The finish may "look" different, even though the surface finish remains the same.
10. May be necessary to change dressing cycles
11. Contact Milacron Technical Services before using a diatomaceous earth filter system with water soluble cutting fluids.

The following cleanout procedures should be used when ever possible, while no operators are producing parts.

### Procedure

1. Drain the entire central system or individual tank.
  2. Remove all metal swarf and other debris from sumps, return trenches, oil pans, and filtration units.
  3. Fill the system or tank with water sufficient to circulate through all lines and machines. Warm water is desirable, but is not absolutely necessary.
  - \*4. Add CIMCLEAN<sup>®</sup> 30 cleaner at 1:50 or stronger and circulate from 2 to 8 hours. During this period of circulation, brush all trenches and filter elements; scrub machines and oil pans.
- \* **WARNING ! Protective gloves must be worn by maintenance personnel during this operation because CIMCLEAN<sup>®</sup> 30 is highly alkaline and prolonged contact with the skin may cause irritation.**
5. If possible, steam clean areas where suspected accumulation of swarf, oil, or both may not have been removed by the cleaner.

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6. When the physical cleaning is complete, drain the machine cleaning mix from the system.
7. Refill with enough fresh water to circulate throughout the system or tank(s) so that all traces of cleaner and swarf are removed. Drain all lines and sumps. If the rinse water is exceptionally dirty, rinse a second time.
8. Charge the system or individual tank(s) with the required amount of water.
9. Add CIMCOOL<sup>®</sup> product at the recommended concentration.
10. Add CLEANING AGENT 4 at 1:1,000 in the fresh charge.
11. Circulate through the system to insure proper mixing before production starts. In precision grinding systems, circulate the fresh charge until it reaches room temperature. Otherwise, size control problems may be encountered by the first production shift.

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