

MACHINING FLUIDS ARE PRIMARILY SOLUBLE OILS (EMULSIONS), SEMI-SYNTHETICS OR SYNTHETICS. WHILE THERE ARE SPECIFIC PROBLEMS THAT CAN OCCUR THAT ARE PARTICULAR TO EACH OF THE THREE TYPES OF MACHINING FLUIDS, THE FOLLOWING PROBLEMS AND THEIR SOLUTIONS ARE COMMON TO ALL TYPES OF MACHINING PRODUCTS.

TROUBLE SHOOTING CHECKLIST:

CONDITION	LIKELY CAUSE	CORRECTIVE ACTION
Poor/Reduced Tool Life and Part Quality/Finish Concerns	Improper fluid concentration	Check concentration and adjust as necessary.
	Inadequate fluid applied to parts causing heat build-up on tool and parts	Check and adjust direction and flow rate of nozzles.
	Filtration system not working properly and not allowing removal of metal fines and chips	Insure that filtration system is sufficient and working properly whether it consist of straining, settling, skimming, centrifuging or bag/media filtration.
	Improper machining set-up	Review and insure that proper line speeds and feeds are being maintained.
Poor/Reduced Fluid Life	Machining Fluid in Poor Condition <ul style="list-style-type: none"> a) pH levels not in specified range (generally in 8.5 to 9.2 range). b) High bacteria levels (not to exceed 10^6 colonies/cc) c) Improper fluid concentration d) Excess tramp oil levels (not to exceed 2%) e) High particulate content (should be at or below 50 ppm) 	Test fluid for pH, bacteria, concentration level, tramp oils and particulate content. Make additions or dump and recharge machining fluid as appropriate. <ul style="list-style-type: none"> • Establish necessary fluid system parameters • Maintain regular system checks, additions and dumps/recharges. • Clean machines regularly • Maintain good housekeeping around machining systems to prevent fluid contamination
Rusty Parts	Parts rusty prior to machining	Check up-stream operations and correct as appropriate.
	<ul style="list-style-type: none"> • Ferrous – red/brown rust 	Machining Fluid in Poor Condition

CONDITION	LIKELY CAUSE	CORRECTIVE ACTION
<ul style="list-style-type: none"> Non-ferrous – white rust 	Metal fines being deposited on parts causing flash rust	Check filtration system to insure that metal fines and chips are being removed (e.g. skimming, centrifuging, filtration, etc.)
	Overuse of biocides	Review biocide additions and consult with manufacturer as necessary to prevent over additions
Health & Safety Problems	Excess contact with machining fluids	Insure operators use proper personal protection including aprons, gloves (rubber/PVC), etc.
	Excessive fluid concentrations	Maintain proper fluid concentrations. Over use can cause dermatitis.
	Poor personal hygiene	Insure clothing is cleaned regularly
	Inadequate machine protection	Insure correct fluid flow and use of splash guards
	Poor ventilation	Ventilation necessary to minimize airborne fluids/mists
	Poor machining area housekeeping	Maintain adequate housekeeping (e.g. use of drip pans) to prevent migration of fluids to other areas.