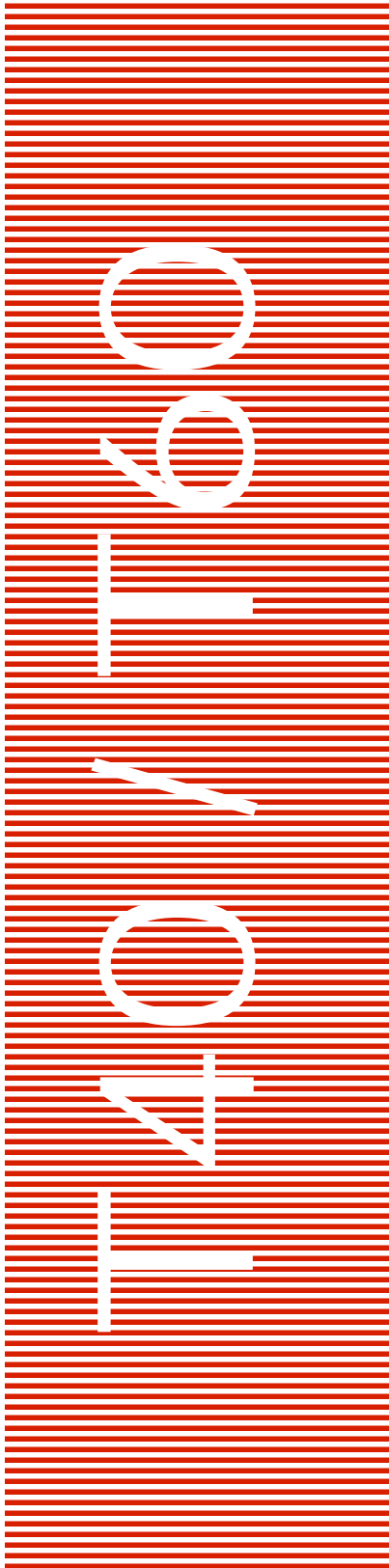# Turbo-Separator

Automatic Centrifugal Cleaning of Coolants, Oils and other Industrial Fluids without the use of filter media

Turbo Centrifuge Series T40/T60

Turbo Centrifuges T40 / T60
# Automatic Solids Discharge Machines with sludge Capacities to 6 gph

Operation:

Dirty liquid **1)** enters the dirty fluid tank **2)** of the cleaning unit. The feed pump **3)** delivers the liquid into the centrifuge rotor **4)**. The centrifugal force causes the solids to be spun out on the rotor's wall. The clean liquid exits the rotor via a skimmer tube **5)** under pressure. The pressure usually is sufficient to transport the liquid into a clean fluid tank **7)**.

The automatic sludge discharge is controlled via a timer. During the sludge discharge cycle the machine tool need not be stopped. The dirty liquid is accumulated in the dirty fluid tank **2).** The feed pump is switched off, and the rotor is braked until special rotor valves open. Excess process fluid leaves the rotor via these valves in the rotor wall and flows back to the dirty fluid tank.

After a quick dry spinning of the sludge, the rotor is completely stopped. A high torque gear drive scraping mechanism **6)** peels the sludge off the rotor wall. The sludge falls through the open rotor bottom into a container **8)**. After scraping, the feed pump **3)** is switched on briefly to rinse sludge remnants from the inside of the rotor. The rotor returns to its nominal speed, and the feed pump is switched on. The dirty fluid cleaning process begins again.
The feed pump's feed rate is slightly higher than the centrifuge's nominal capacity thus working down the accumulated dirty liquid within the next few minutes of the processing cycle.
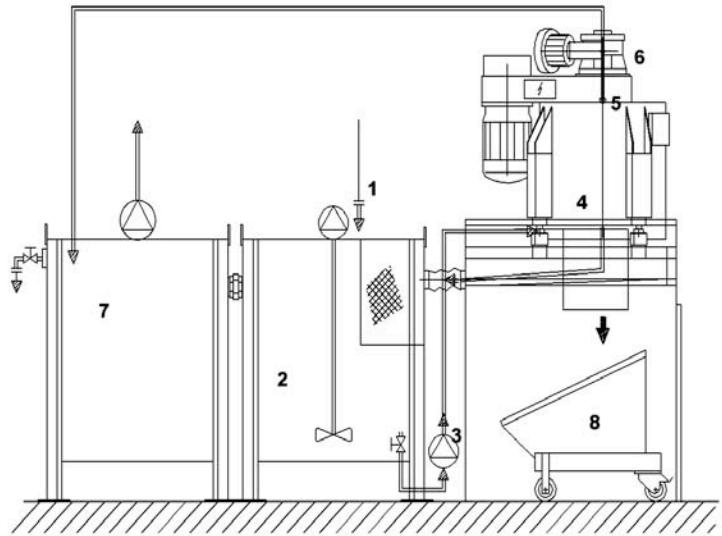
Options for 2 or 3 Phase Separation:
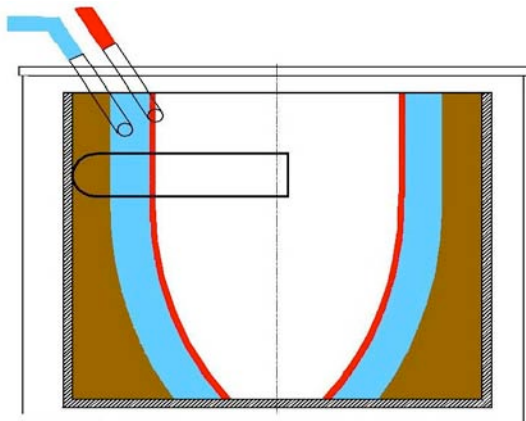
Solids built up at drum wall	
separated Oil (Optional)	
cleaned liquid	

Applications :

Separate any kind of fine particle with a specific gravity greater than 1.0, e.g. steel, grey cast, tungsten carbide, copper, glass, ceramic, aluminium, corundum, abrasive materials, coagulated paint particles, vibratory fines etc.

Coolant Recycling for the machine tool and automotive industry for optimum filtering of oil, coolant, water and many more industrial liquids. Applying the separators on grinding, honing and super finishing machines, lathes and polishing machines results in:
- Better surfaces
- Greater performance
- Extended coolant lifetime
- Aeration of the coolant
- Less wear on slides, ways and gaskets

Waste Minimization for Vibratory and Other Process Fluids
Recycling of aqueous washer solutions, vibratory compound, overspray from paint booths, etc. Liquids often can be reused, which means:
- Reduced water and chemicals consumption
- Less disposal costs for wastewater
- Less maintenance for cleaning settling tanks and pipes

Resource recovery
- Recovering oil and coolants for reuse
- Recovering valuable materials such as copper, selenium, carbide, brass, etc. (free of filter media)

Optional 3 phase separation of tramp oil and solids from coolant.

Central Coolant Systems where side-stream filtration of fines and tramp oil extend the coolant's life. Removing contaminants helps control biological activity.

Glass, Carbide and Ceramic are some of the variety of materials easily separated by Turbo-Separators. Fine particles are separated and solid sludge is discharged automatically.

Fully automatic grinding oil cleaning

- Separating steel and grinding abrasives from oil at gear grinding machine (full flow filtration)
- With immersion chiller for a constant oil temperature
- With magnetic prefilter to reduce sludge volume
- Separate cooling circles for machine's spindle and hydraulic oil
- Optional air cleaner to eliminate oil mist
- Variable frequency driven supply pumps
- Compact design

Special units for special applications

- Oil and coolant from turning applications and chip wringers
- Side-stream filtration and tramp oil separation at washing systems, phosphate bath and rinsing liquids
- Solids separation from parts cleaner
- Cleaning floculated/coagulated paint booth water
- Prefilter for wastewater applications
- Separating copper from brushing machines at printed circuits production facilities.

Recycling of vibratory process liquids

- Separating steel, aluminum, brass, and abrasive particles from process liquids at vibratory systems. Liquid compound to be reused.

Coolant treatment for ceramic and glass applications

- Separating particles from glass and ceramic grinding
- Full flow or side-stream filtration
- Automatic sludge discharge through central sludge drop or with optional conveyor

Central systems for grinding coolants

- Separating solids and fines, optional tramp oil
- Units available in stainless steel if required
- Modular design allows expansion

Coolants, Oils, Industrial Fluids
Filtration with Turbo-Separator Centrifuges and Filter Systems

Technical Data

Standard-Centrifuges T40/T60

Rotor	T40	T60	Controls/Drive
- Rotor Capacity:	10.5 gals	14.5 gals	- PLC controls
- Motor HP	10	15	- Variable Frequency Drive
- Sludge Capacity:	66 pph	66 pph	- Fault Sensors
- Rotor speed:	2150	2150	
Processing capacity:	1 – 40 GPM	1-60 GPM	
- Accelaration : min.- max.	950-1300 g	950-1300	
- pH Range : Standard Aluminum Rotor : 6.5 – 9.0, Stainless Steel Rotor : 4.0 – 14.0			
- Operating Temp Max : 180 deg F			

Specification	T40-2	T40-2 Separate tanks	T40-2-264	T60-2
Configuration:	Free Standing	Independent tanks	Complete Filter System	Free Standing
Dimensions (in) (LxWxH):	47x32x102	126x58x102	110x63x102	47x32x102
Inflow height min (in):	51	60	3	51
Clean Fluid Tank (gals):	Not Applicable	200	264	Not Applicable
Dirty Collection Tank (gals):	Not Applicable	200	40	Not Applicable
Connection (in):	1.25 in//1.00 out	3 in /1.25 out	3 in/1.25 out	1.25 in /1.25 out

Turbo-Separators – The Right Choice

- Centrifuges with manual sludge removal for processing rates of up to 40 gpm
- Fully automatic Centrifuges to process up to 150 gallons of sludge per day
- Central filtration systems for extensive and complex filtration tasks
- From the free-standing T14 to an integrated T40-2-264 with automatic discharge, tanks, chiller and supply pump, we have a design to meet your needs.