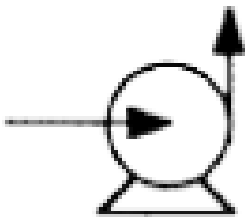
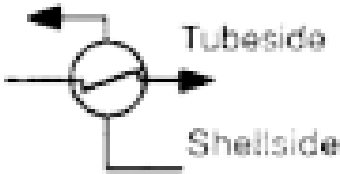
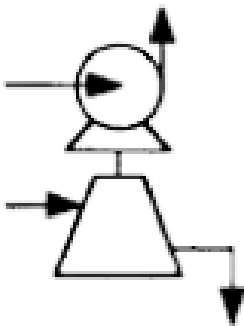
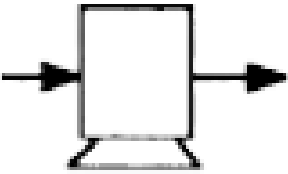
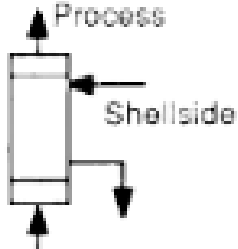
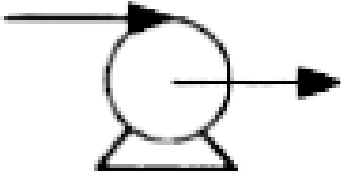
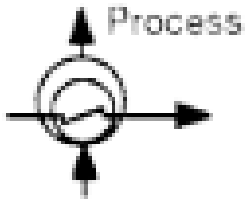
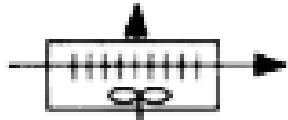
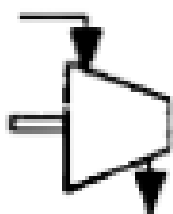


Complete P&ID Symbols

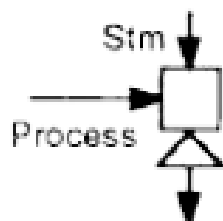
FLUID HANDLING	HEAT TRANSFER
Centrifugal pump or blower, motor driven. 	Shell-and-tube heat exchanger. 
Centrifugal pump or blower, turbine driven. 	Condenser. 
Rotary pump or blower. 	Reboiler. 
Reciprocating pump or compressor. 	Vertical thermosiphon reboiler. 
Centrifugal compressor. 	Kettle reboiler. 
	Air cooler with finned tubes. 

FLUID HANDLING

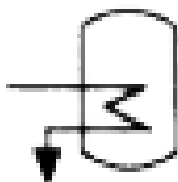
Centrifugal compressor,
alternate symbol.



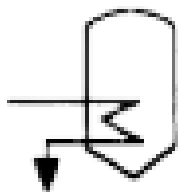
Steam ejector.



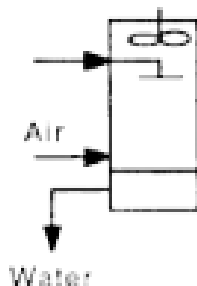
Coil in tank.



Evaporator.

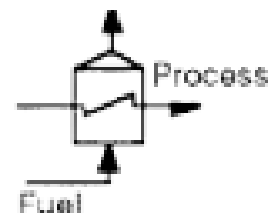


Cooling tower, forced draft.

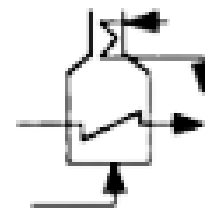


HEAT TRANSFER

Fired heater.



Fired heater with radiant
and convective coils.



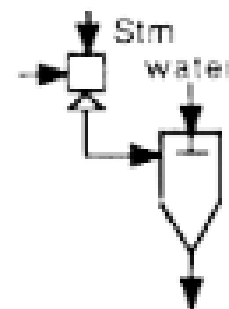
Rotary dryer or kiln.



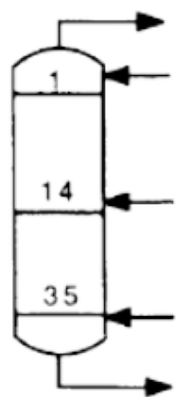
Tray dryer.



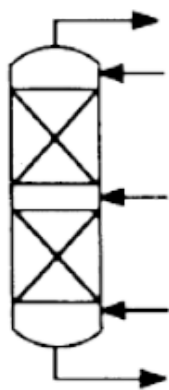
Spray condenser with
steam ejector.



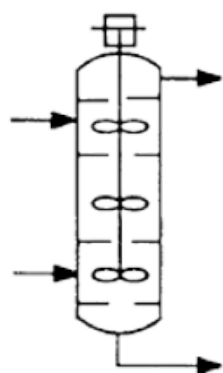
MASS TRANSFER



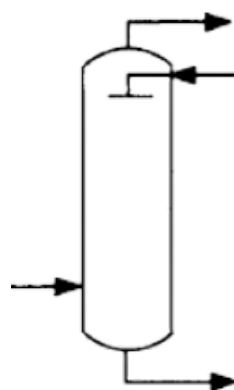
Tray column.



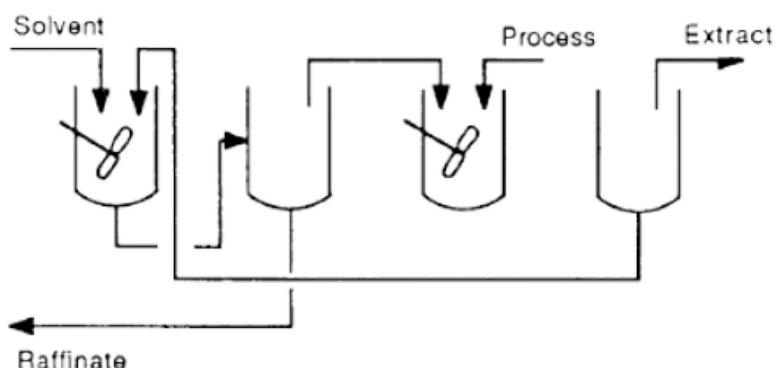
Packed column.



Multistage stirred column.



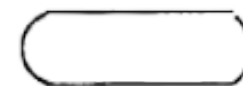
Spray column.



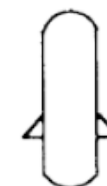
Mixer-settler extraction battery.

VESSELS

Drum or tank.



Drum or tank.



Storage tank.



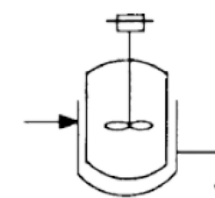
Open tank.



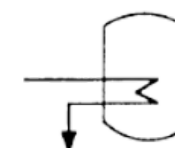
Gas holder.



Jacketed vessel with agitator.



Vessel with heat transfer coil.



Bin for solids.



INSTRUMENT LINE (SIGNAL) SYMBOLS

ITEM

SYMBOL

Pneumatic



Electrical



Capillary



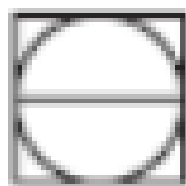
Process fluid filled



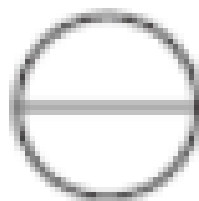
ITEM

SYMBOL

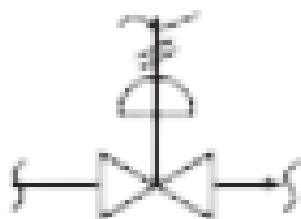
Computer-based algorithm.



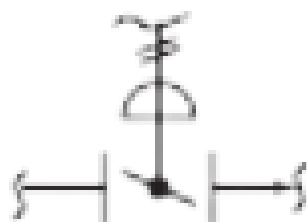
Analog instrument board mounted.



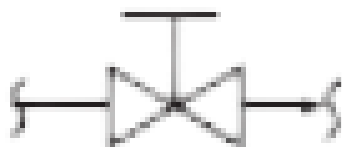
Pneumatic-operated globe valve.



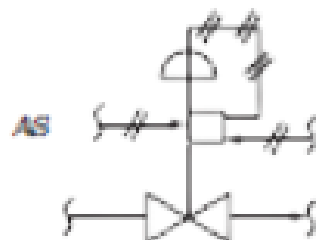
Pneumatic-operated butterfly valve, damper.



Hand-actuated control valve.



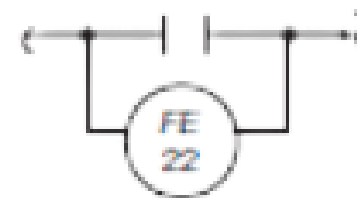
Control valve with positioner.



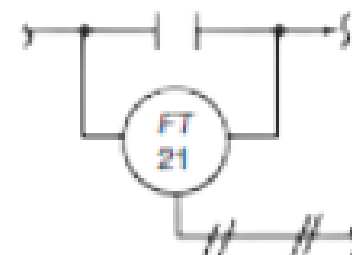
ITEM

SYMBOL

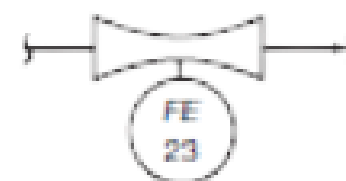
Orifice plate with vena contracta taps.



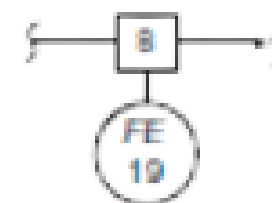
Orifice plate with vena contracta, radius or pipe taps connected to differential pressure transmitter.



Venturi tube or flow nozzle.



Turbine flowmeter



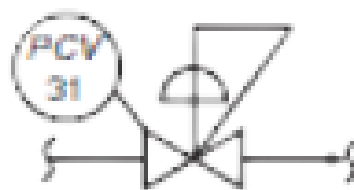
Magnetic flowmeter



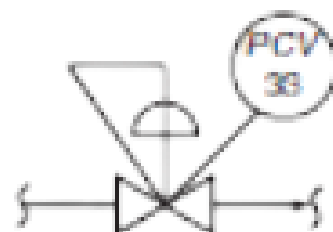
ITEM

SYMBOL

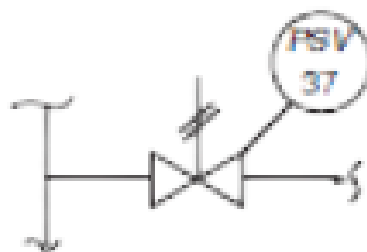
Pressure-reducing regulator, self contained.



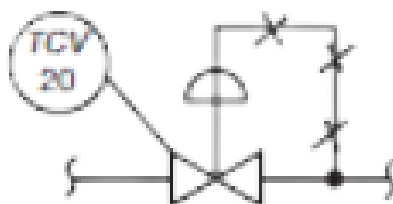
Back-pressure reducing regulator, self contained.



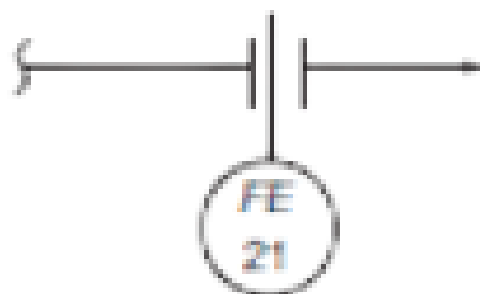
Pressure relief or safety valve.



Temperature regulator, filled system type.



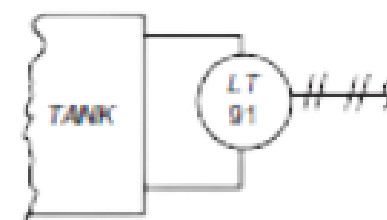
Orifice plate with flange or corner taps.



ITEM

SYMBOL

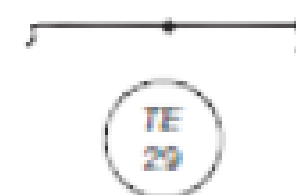
Level transmitter, external float or external type displacer element.



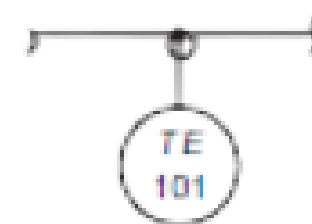
Level transmitter, differential pressure type element.



Temperature element without well.



Temperature element with well.

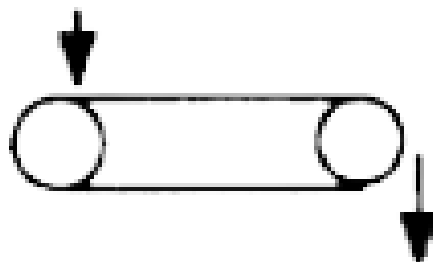


MASS TRANSFER

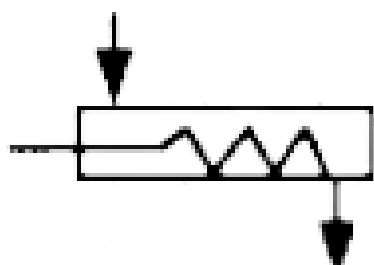
Conveyor



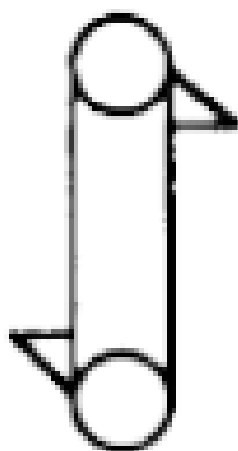
Belt conveyor



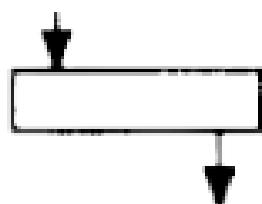
Screw conveyor



Elevator



Feeder

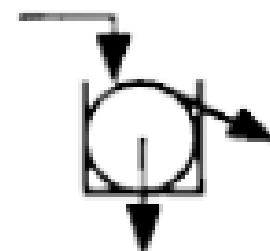


VESSELS

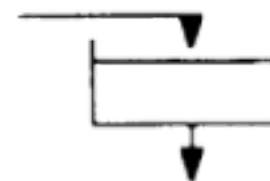
Plate-and-frame filter.



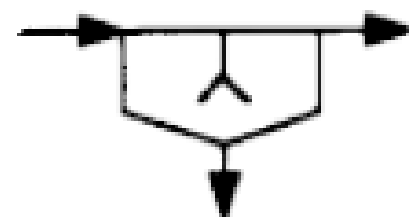
Rotary vacuum filter..



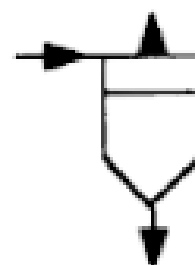
Sand filter..



Dust collector.



Cyclone separator.

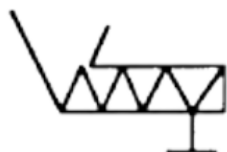


MASS TRANSFER

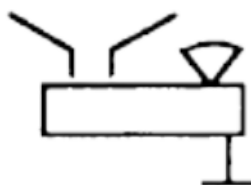
Star feeder



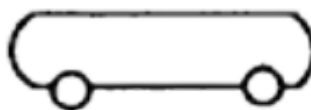
Screw feeder



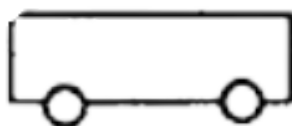
Weighing feeder



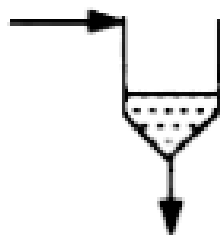
Tank car



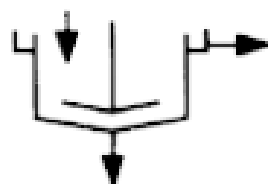
Freight car



Conical settling tank.

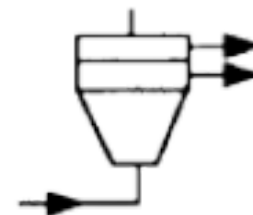


Raked thickener.

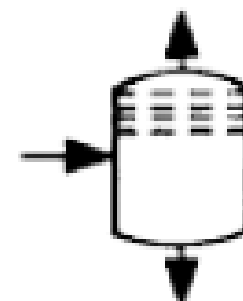


VESSELS

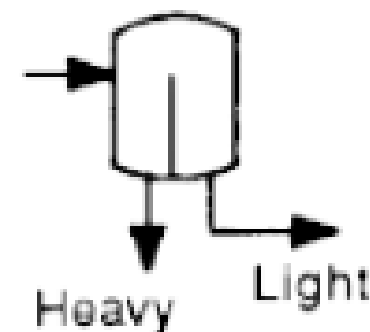
Centrifuge



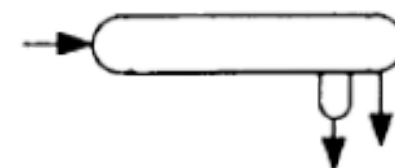
Mesh entrainment separator.



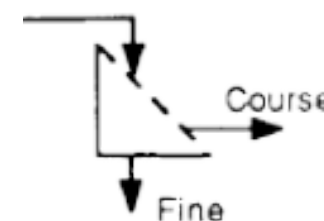
Liquid-liquid separator.



Drum with water settling pot.



Screen

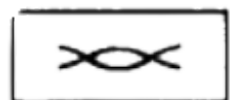


MIXING & COMMINUATION

Liquid mixing
impellers: basic,
propeller, turbine,
anchor.



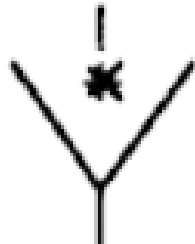
Ribbon blender



Double cone blender.



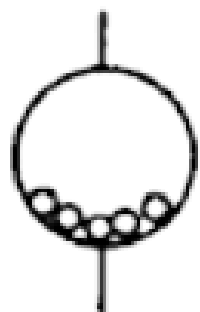
Crusher



Roll crusher

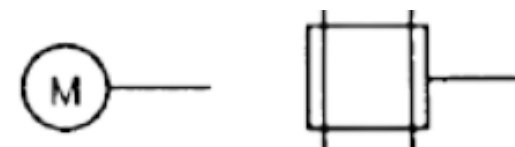


Pebble or rod mill.

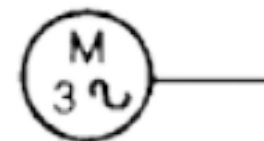
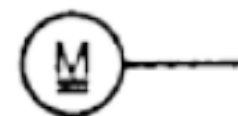


DRIVERS

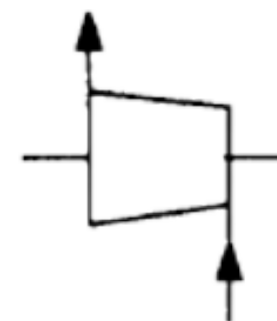
Motor



DC motor



AC motor, 3-phase.



Turbines:
steam,
hydraulic,
gas.

