

The Edward D. Newell Co

Manufactures' Representative

Founded in 1956

Cogeneration Support Equipment
For Engine Heat Recovery and Cooling

Presented By

Michael J Rutter

What is Cogeneration

- It is the utilization of 2 forms of energy from 1 source i.e.: hot water/heat and electricity from one gen-set.
- It is also the utilization of 2 forms of energy from 1 source i.e.: hot water/heat and BHP from one prime mover (Engine).

Cogeneration is also referred to as Combined Heat & Power (CHP)

- Cogeneration or CHP is not a new technology. This has been around a very long time.
- Anyone who drove here today, was in the most common Cogeneration/CHP machine used in the world today.

The Automobile



One source of fuel will give

- Horse power for the drive train
- Hot water for heat in the cold weather
- AC for cooling in the hot weather
- Electricity for lights, radio, HVAC blower motor, electric window motors, etc...
- The automobile is one of the oldest forms of Cogeneration/CHP

Cogeneration on Large Engines

- This is a lot like the automobile except the equipment and engines are larger.
- GE Jenbacher
- Caterpillar
- Waukesha
- All reciprocating type engines

System design

- It is a very good idea to work with an engineering firm that is familiar with engines and heat recovery equipment.
- Ballard Engineering, LaSalle Assoc, Middough Consulting, Stanley Consultants, O'Shea Environmental Assoc. These firms are all members of the MCA
- Newell company works with engineers and customers to help design their cogeneration systems.
- Since 1956 Newell company has been involved in over 80% of the cogeneration projects in Illinois

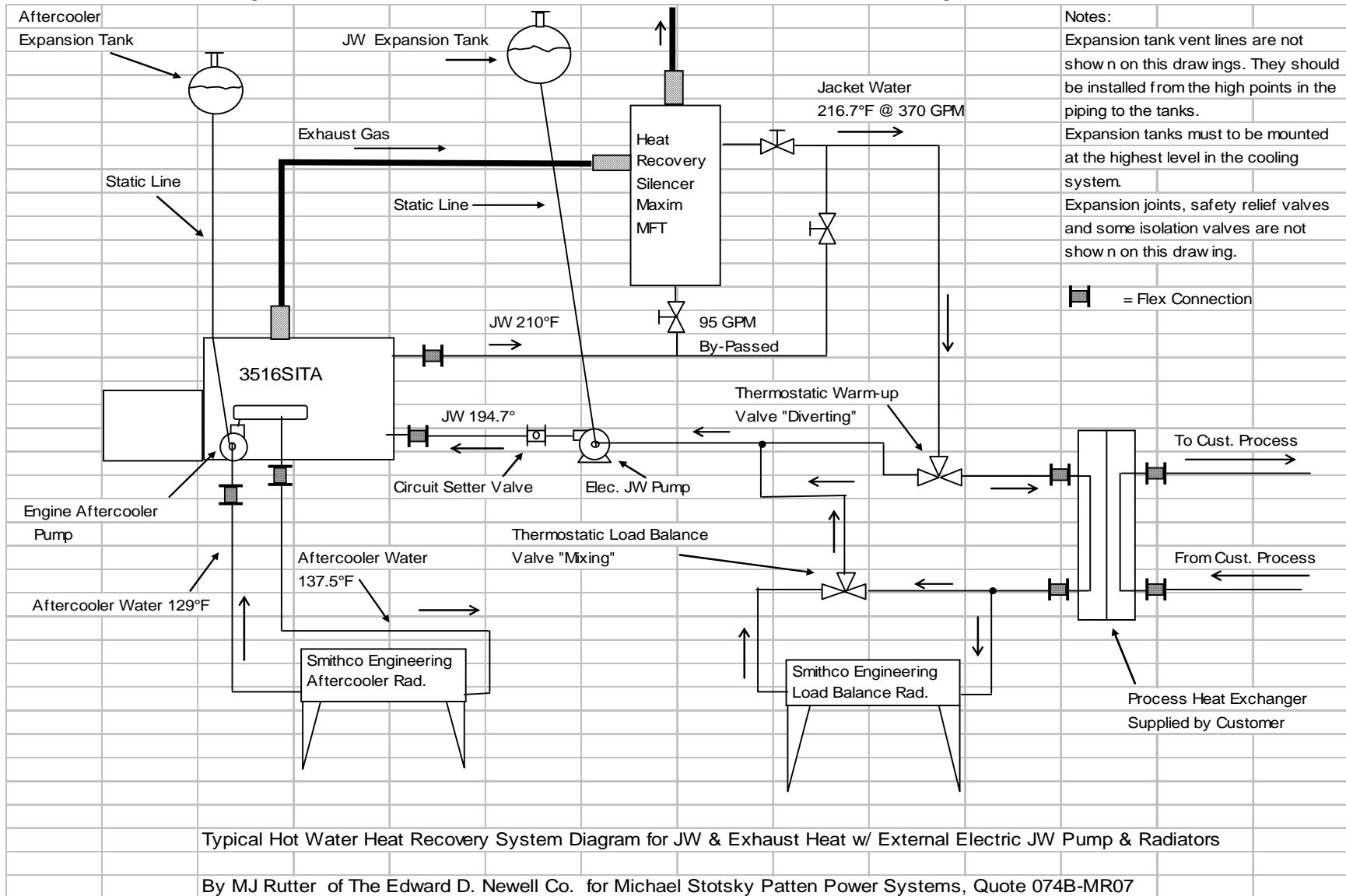
Support Equipment

- Heat recovery exhaust unit/silencer
- Load balance radiator or heat exchanger
- Thermostatic 3-way valve for engine warm-up temperature control
- Thermostatic 3-way valve for load balance temperature control
- Process heat exchanger (plate&frame) to transfer heat to the customer process

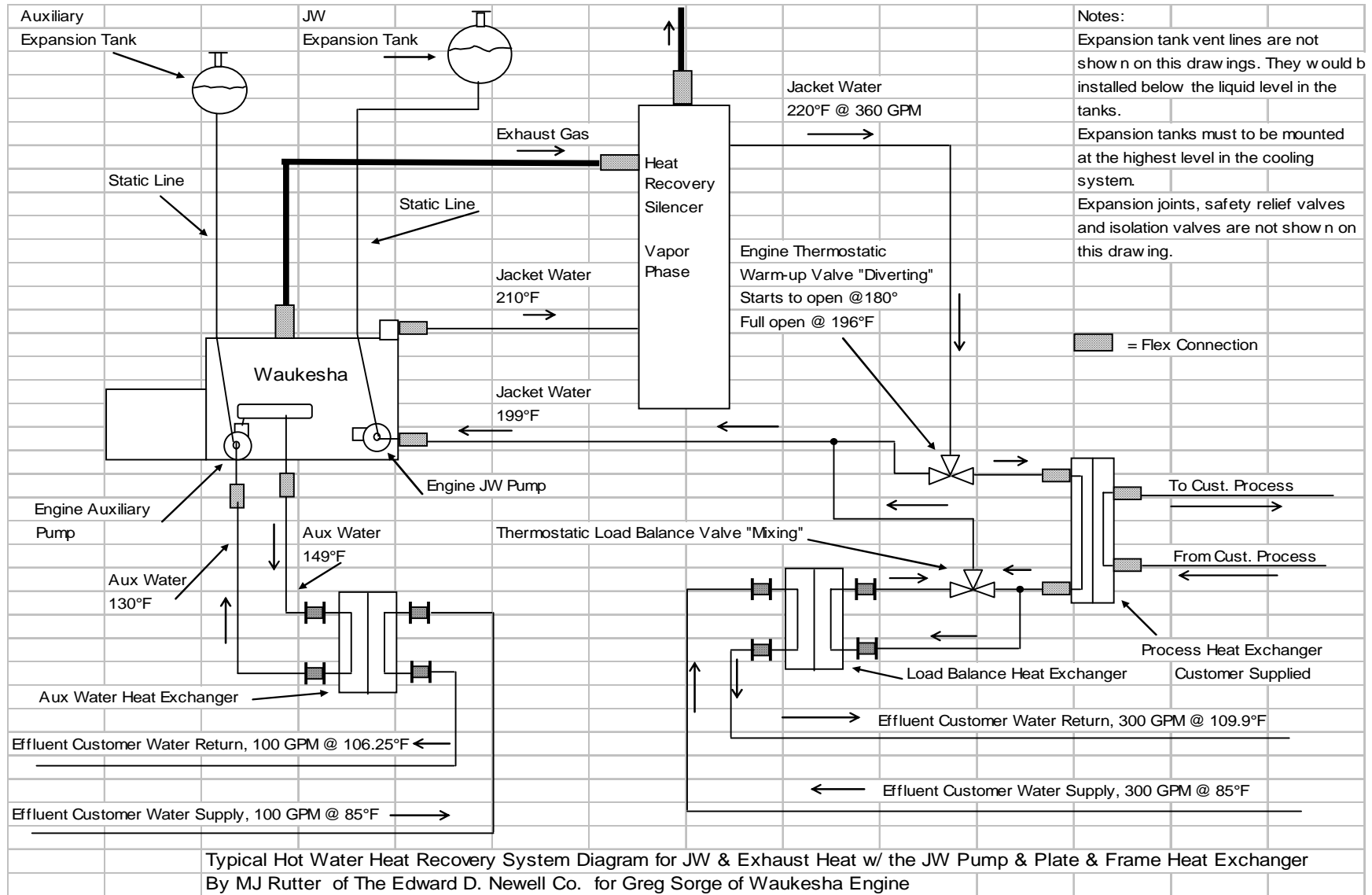
Support Equipment

- Aftercooler or Intercooler radiator or heat exchanger
- Exhaust gas silencer
- Electric driven booster pump for jacket water circuit
- Circuit setter valves
- Coolant expansion tanks for jacket water and aftercooler/intercooler circuits

Typical Caterpillar System



Typical Waukesha System



Hammond WWTP



Rock River WWTP



Thank you for your time

- Are there any questions ?