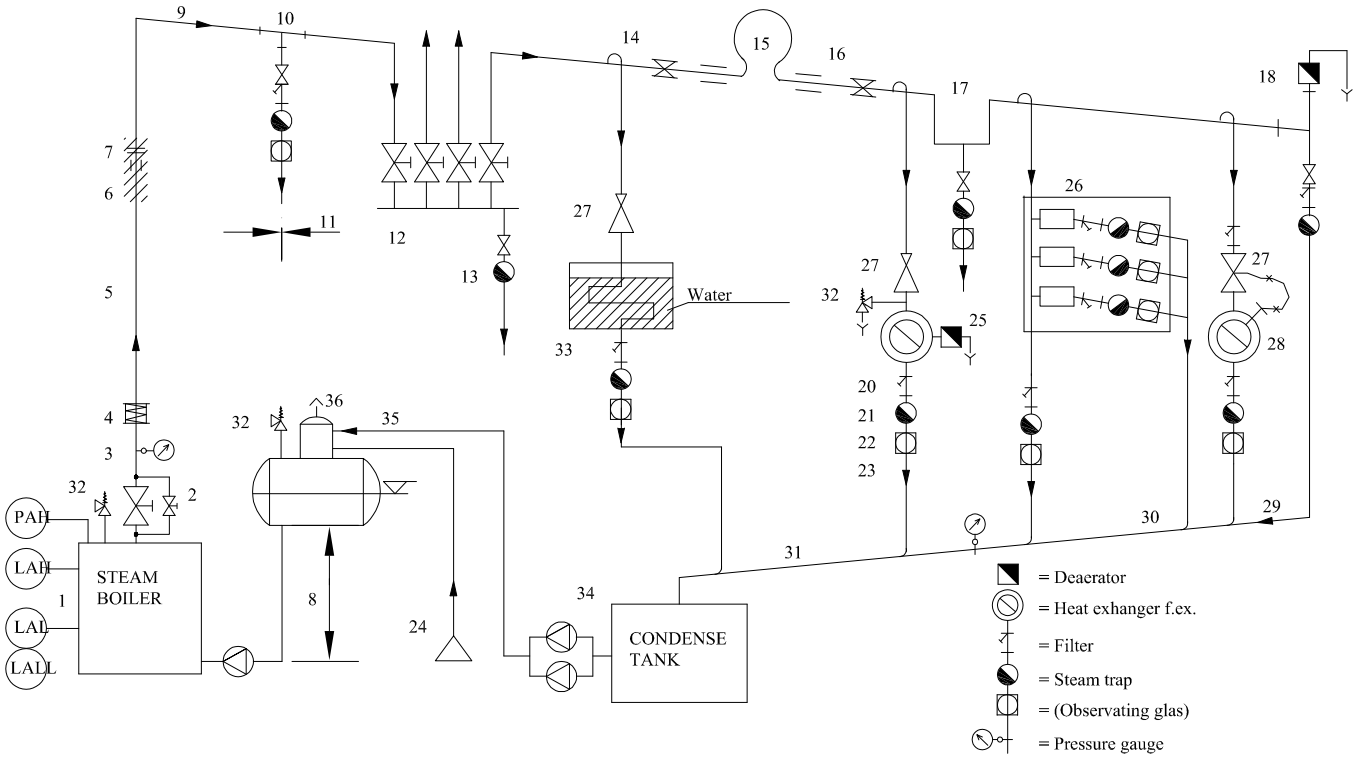
GENERAL REQUIREMENTS FOR STEAM PIPING INSTALLATIONS



STEAM DISTRIBUTION PIPES

1. Safety circumtanses are important
2. Heating valve for smooth heating
3. Saturated steam: the ratio between pressure and temperature is fixed
4. AIOy's equipment are not affected by any external mass or thermal force
5. Steam pipe: speed of saturated steam should be 15-25 m/s
6. Insulation = saves thermal losses
7. Pipe clamps and fixtures must be insulated
8. Suction height has to be sufficient for hot water pumps, according NPSHr
9. Downslope in steam pipes must be 1 - 0,5 % (1 - 0,5 cm/m)
10. Drain pipes must be taken from full-size T-branches
11. Max. distance between drain pipes is about 25m
12. Steam header has to be big enough
13. Steam header must be provided with drain valves
14.Steam branch must be taken above the pipe
15. Thermal expansion has to be compensated
16. Pipe clamping and guiding considerately
17. All pockets must be equipped with traps
18. Pipe ends must be equipped with steam trap / air trap

STEAM OPERATION AND CONDENSE PIPES

20. Condense has to be removed without any delay
21. Effective removing of condense is important
22. After the steam trap the condense pipe should not go upwards
23. Choosing the type of steam trap has to be done considerately
24. Make-up water supply line
25. Good deaeration = more capasity from the system
26. Each steam device must be trapped separately
27. Control valve is normally smaller than the pipe line
28. Temperature adjusting: pressure inside of equipment is variable and also vacuum is possible
29. Downslope in condense pipes must be 1 - 0,5% (1 - 0,5cm/m)
30. Condense branch must lead above the pipe
31. Size of condense pipe must be big enough
32. Safety valve protects people / equipment
33. The heat from heat exhanger should be recovered when possible
34. Condense tank and pumps are located lower than the steam system
35. Condense back to the feed water tank through deaerator
36. Gas removing from feed water