KAMYR DIGESTER & ASSOCIATED EQUIPMENT - SPECIFICATION

Available from mid 2015 a complete Kamyr Digester system for continuous cooking of pulp. (Manufacturer: Ahltrom/Varkaus).

Main equipment:

1) Digester tank: Manufacturer Ahlstrom/Varkaus, diameter 4.700 / 2.800 x 50.000 mtrs height, weight 220 tonnes, available volume 690 m³, cooking temperature: 200°C, cooking pressure: 10 kgf/cm², shield material SIS-1430, actual production capacity 1.300 ADt/d.

2) Top separator M6: Inclined feeder system with the chips and liquor being fed from the C-04 pump then being transported by a screw feeder into the top of the Digester vessel. The liquor returns to the top circulation system.

   Equipment data: capacity 12,8 m³; operation temperature 200°C; equipment weight 16.000 kg.

Installation and Rebuilds:

- 1973 Digest commissioned
- 1986/87: production increase from 550 to 800 ADt/d.
- 2002: installation of the Compact Feed Metso system, resulting in a production increased to 1.240 ADt/d.
- 2008: the feeder system was upgraded, the low pressure feeder was replaced, and the chip meter was increased to 1.300 ADt/d.
Schematic drawing of associated equipment:
Associated Equipment list with reference to the drawing above:

1. Plug Screw, dimensions 850 x 4000 mm
2. Chip bin, 130 m³.
3. Vibrabin 14”.
4. Chip meter, 700 lts./rpm
5. Low pressure feeder 700 lts.
6. Steam screw
7. Chip Tube, cap. 700 lts.
8. High pressure feeder 650 lts.
9. Chip tube level control pump C-2
10. Feed circulation top separator pump C-4
11. High pressure circulation pump C-3.
12. White liquor booster pump C-20/1
13. White liquor booster pump C-20/2 (spare of C-20/1)
14. Black liquor pump C-16
15. Black liquor pump C-09
16. Inferior wash pump C-08
17. Cooking liquor pump C-05
18. Superior wash pump C-07
19. Pump C-12 (to spill tank)
20. Black liquor Heater exchanger C-64
21. Cooler CDS-02
22. Black liquor heater exchanger TIC-05
23. Digester Screens heater exchanger circulation TIC-08.
24. Circulation heater exchanger of the screens digester C-46
25. Black liquor cooler C-36 A
26. Black liquor cooler C-36 B
27. Black liquor cooler C-36 C
28. CF200 Centerfilter Kvaerner
29. Primary Cyclone
30. Secondary Cyclone
31. Outlet device Hydraulic Unit

Description and key data for associated equipment:

1) Screw Plug: Gas and odour blocker to atmosphere.
   Equipment data: Dimension 850 x 4000 mm, capacity 557 m³/h
2) Chip Bin C22: Buffer tank of chips to reduce the impacts of interruptions at chip feed.
   Equipment data: dimensions 4.200 X 3.500 mm, total capacity 130 m³, effective retention time of 15 min.

3) Vibrabin C23: Equipment coupled to the chip bin, 14” model AL 304 L material, allows the continuous flow of chips to the chip meter. Contains a vibration device actuated by two motors and steam addition system. This can be: recovered steam from the secondary cyclone or low pressure steam.
4) Chip meter M2: Meter to control the volume and production of the digester. Equipment data: volume 700 lts/rpm

5) Low pressure feeder M3: Seals and transfers chips continuously to steam screw, equipment data: cap. 700 lts and five chambers.
6) Steam vessel M4: Operates with flash steam recovery from primary cyclone plus addition of low pressure steam. 
   Equipment data: Dimension 2000 x 8000 mm, 14 rpm.

7) Chip tube: Control through pumps C-03 and C-04, to keep the flow constant to high pressure feeder M5. 
   Equipment data: capacity 650 lts.
8) High pressure feeder M5: Rotary unit with four chambers and variable speed drive. This equipment isolates the low pressure system (1.2 bar) to high pressure system (8 bar). This allows the chips + liquor to be transferred to the digester top.

Equipment data: capacity 650 lts.

![High pressure feeder M5](image)

9) Feed circulation pump C04 of the top separator: Pumps the liquor + chips from the high pressure feeder to the top separator of the digester.

Process data: flow 28.800 l/min; H 30 mcw; 1185 rpm; 220 kW and 1400 rpm.

![Feed circulation pump C04](image)
10) Chip tube circulation pump C-03: Circulates material around the chip tube. Black liquor extracted from the high pressure feeder bottom is recirculated to the chip tube through the C3 pump.
Process data: flow 20.830 lts/min, H:10 mcw, 450 to 940 rpm, 75 kW.

11) Left control pump C-02: Controls the chip tube, by varying the rotor rotation speed and sends the excess liquor to the top circulation line.
Process data: 10.420 lts/min, H 45 mcw, rot. 1440 to 1505 rpm, 450 kW.

12) Cooking liquor pump C-05 and superior wash pump C-07
Process data C-05: Flow 3.300 lts/min/ H 22,5 mcw, Karula NEK12N type, 40 HP, 1760 rpm.
Process data C-07: Flow 3.300 lts/min/ H 22,5 mcw, Karula NEK12N type, 30 HP, 1740 rpm.
13) Inferior wash pump C-08

Process data C-08: Flow 240m³/h; H 22.5 m; Ahlston EPP41/150, Power 30 HP; 1770 rpm.

14) Black liquor to spill tank pump C-12

Process data C-12: Flow 306 m³/h, H 25 m, NA150 125 40, Power 50 HP and 1185 rpm.
15) High pressure cooking pumps C-16 and C-09:
Process data C-16 and C-19: Flow 6500 lts/min; 85 mcw; 185 kW; 1800 rpm.
16) Primary and secondary cyclone:

Equipment data: Manufacturer Confab, year 1972. PMTA 2,5 kgf/cm², pressure test 3,75 kgf/cm².

17) Centerfilter:

Equipment data: Manufacturer Kvaerner, year 2008.
18) Black liquor cooler C-36/A/B/C

Equipment data: C-36 A cooler, manufacturer GEA, year 1986; C-36C cooler, manufacturer GEA, year 2004.

19) Black liquor Heater exchanger TIC-05 and circulation heater exchanger of the screens TIC-08 and C-46:
20) Black liquor cooler CDS-02
21) Digester outlet actuated by hydraulic engine

Equipment data:

- Hydraulic engine Hagglunds: MB 1150; pressure 350 bar, rot. max. 45 rpm
- Hydraulic unit Electrical engine: 110 kW, rot. 1769 rpm.

Obs. More information about the historic of inspections/maintenance performed annually in the equipment, detailed drawings of pressure vessel, blow tank and other equipments will be available upon request.
General Information

FOR GENERAL INFORMATION WE HAVE TO INFORM YOU OF THE FOLLOWING:

This schedule has been prepared solely for the guidance of prospective purchasers and in no way constitutes, and at no time will it be deemed to constitute, an offer or contract or any part of an offer or contract. Additionally, no warranty is given to the accuracy of any measurement, specification or other details whatsoever given within this document.

Whilst every reasonable effort has been made to verify any statement, description or comment made within the document, for avoidance of doubt it is emphasised that the purchaser must make their own enquiries and satisfy themselves.

Please note that all offers are made as lying and subject to contract.

Further technical details, photographs and videos may be available on request.

If you have any specific requirements for paper making machinery or wish to sell your spare or redundant machinery then please contact us on john@linnmachinery.com