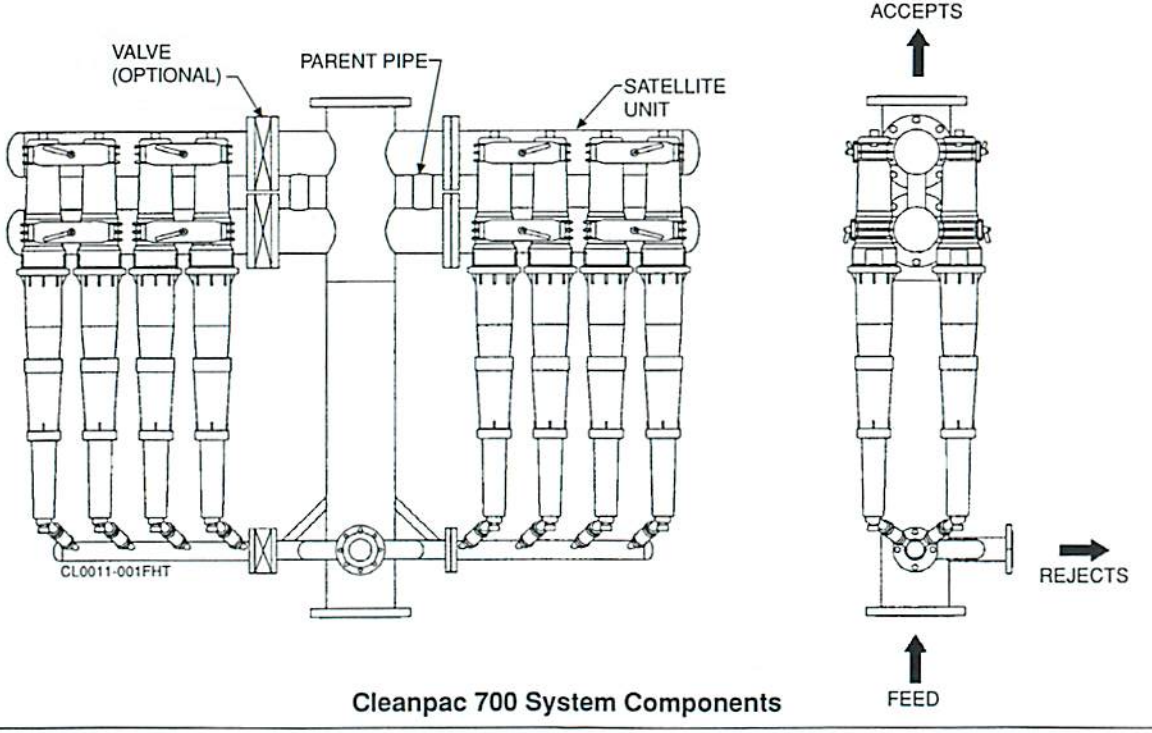
Description

The Cleanpac 700 System is available in a number of different designs. For all designs, the following is applicable:

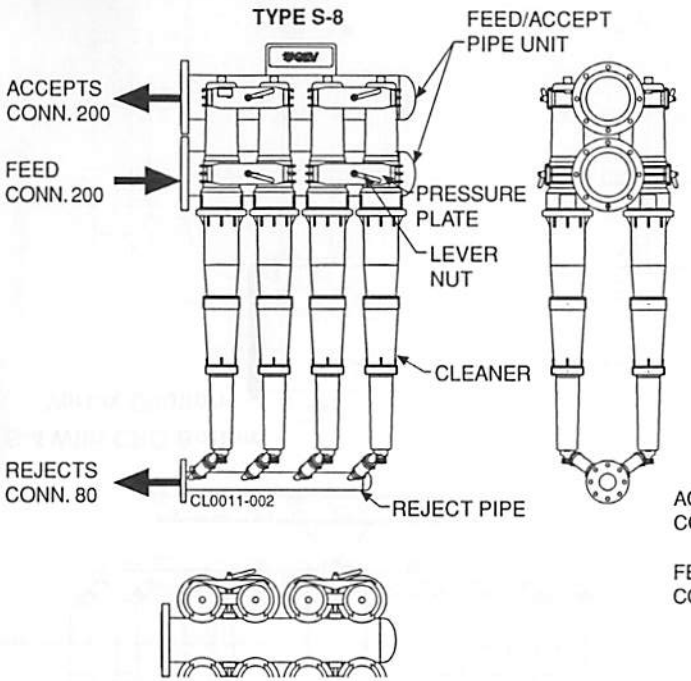
- The cleaners are pressed against the feed and accept pipes of the satellite by means of a pressure plate and a lever nut. The connection area between the cleaner and the feed and accept pipes is tightened with "O"-rings.
- The reject ends of the cleaners are equipped with transparent reject chambers, where the reject flow can be observed. The reject chambers are connected to the reject pipes of the satellite with hoses and hose clamps.
- Some installations are supplied with ceramic reject chambers. In these systems you can not see the reject flow so you can only tell if the cleaner is plugged by excessive vibration on the lower cone. In some cases the plugged cleaners also become cooler due to the block flow in the lower part of the cleaner.
- When isolation valves are used on satellites the feed valve should be closed first followed by the accept and reject valves. This should be done as quickly as possible and it is best to have two people involved if the valves are the manual type.

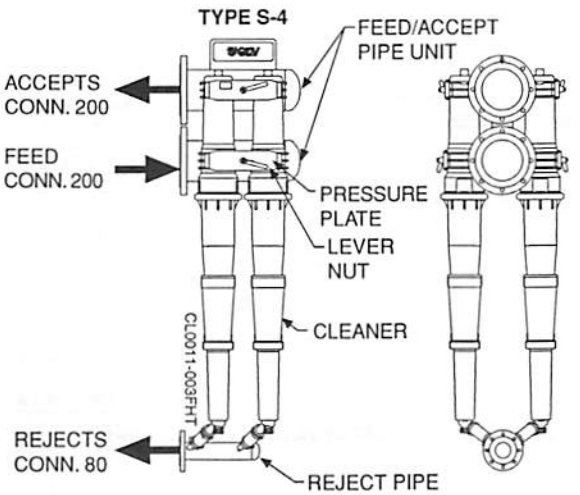
The satellite system is built by units of four main sizes: S-8, S-6, S-4 and S-2. The satellite units can be used separately or be connected to a parent pipe. The dimensions of the connections of the satellite units always stay unchanged regarding the various main sizes, thus giving full exchangeability. The connections are designed with flanges to make possible the insertion of isolation valves between each individual satellite unit and parent pipe.

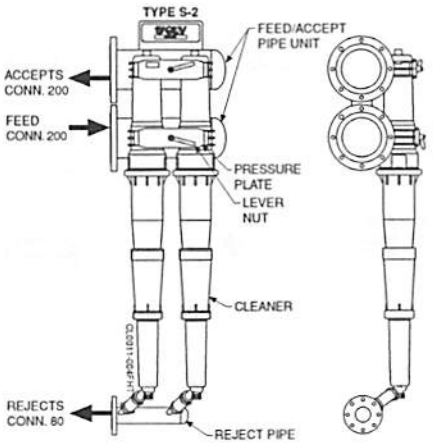


Cleanpac 700 System Components

DESCRIPTION (CONTINUED)



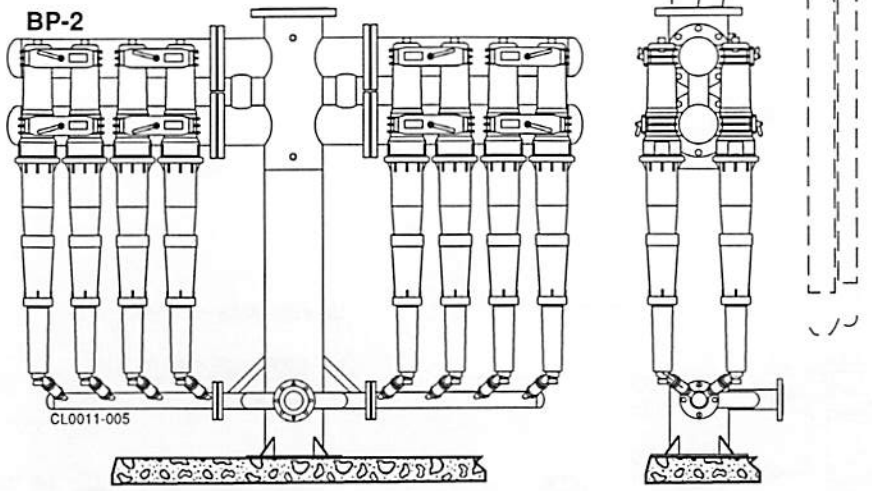




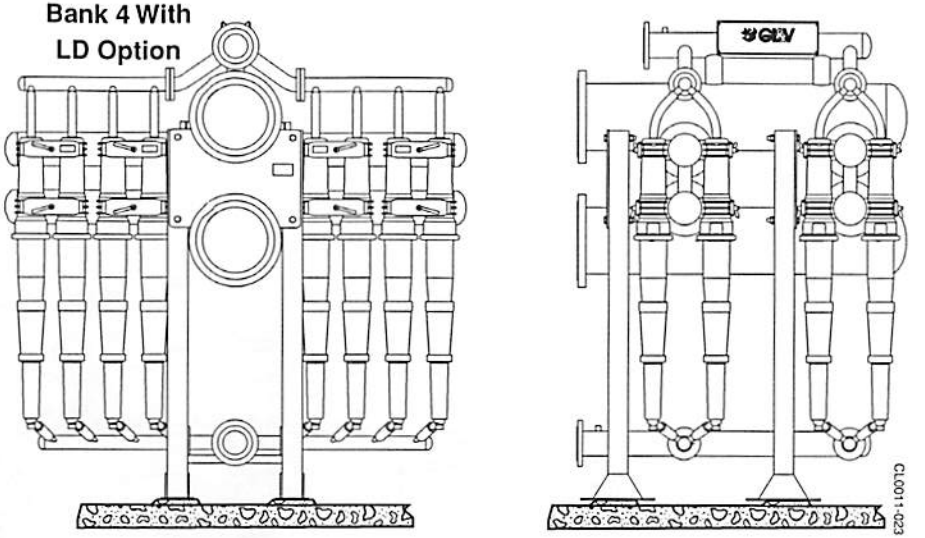
Satellite Units (S-6 Not Shown)

DESCRIPTION (CONTINUED)

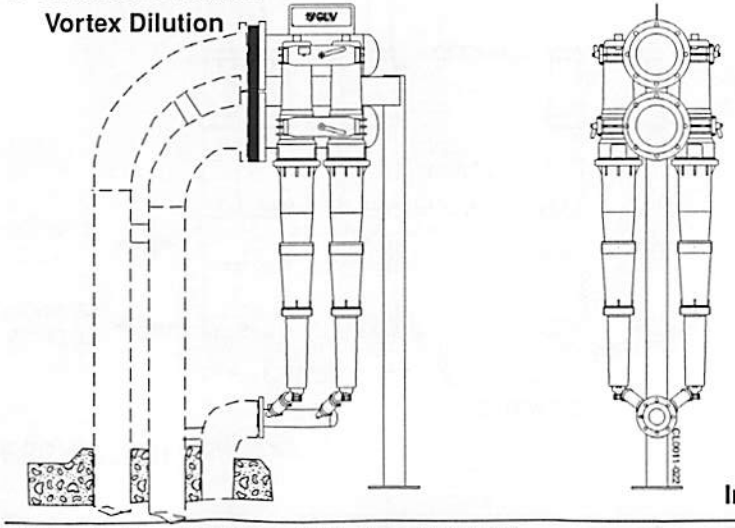
BP-2



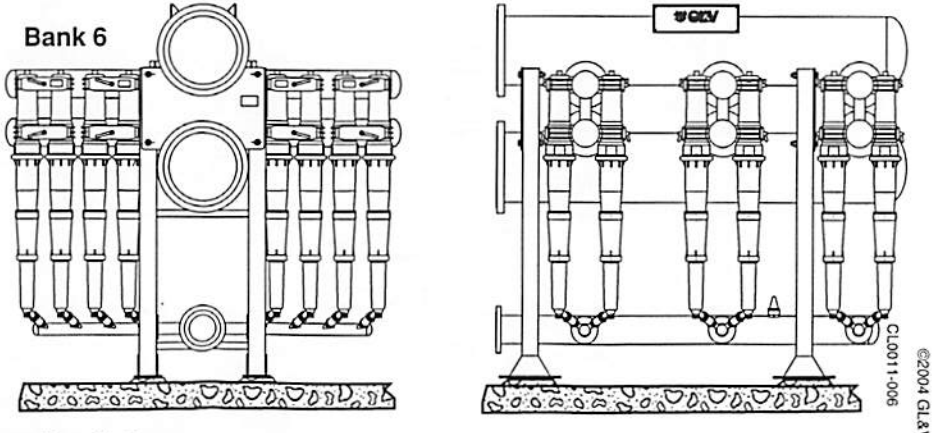
Bank 4 With
LD Option



S-4 With CRC Bottom
Vortex Dilution



Bank 6



Installation Configuration Options

DESCRIPTION (CONTINUED)

The standard Cleanpac 700 is a large diameter (150mm/6") cleaner designed for highly efficient removal of sand, bark and shives, with the added advantage of smooth operation and exceptionally low plugging. In addition to the removal of heavy contaminants, the CLP 700LD inlet head can be supplied for efficient removal of free air and light rejects from the pulp.

CLEANER HEAD

The cleaner head contains the inlet and accept compartments separated by an extended vortex finder. The feed flows tangentially into the upper cone through two inlet orifices in the cleaner head. This design feature, combined with an accelerated flow created in the head and a longer retention time, contributes to the development of a high separation effect.

LD OPTION

For removal of free air and lightweight contaminants, the CLP 700 cleaner head can be supplied with a lightweight deaeration (LD) opening located in the extended vortex finder to provide a second treatment before leaving the cleaner.

OUTER SHELL

A blue outer shell (mantle) partially covers the upper cone and the entire lower cone. This safety feature protects personnel from leakage of hot stock in the event that the cleaner cone become damaged.

DETECTION VENT

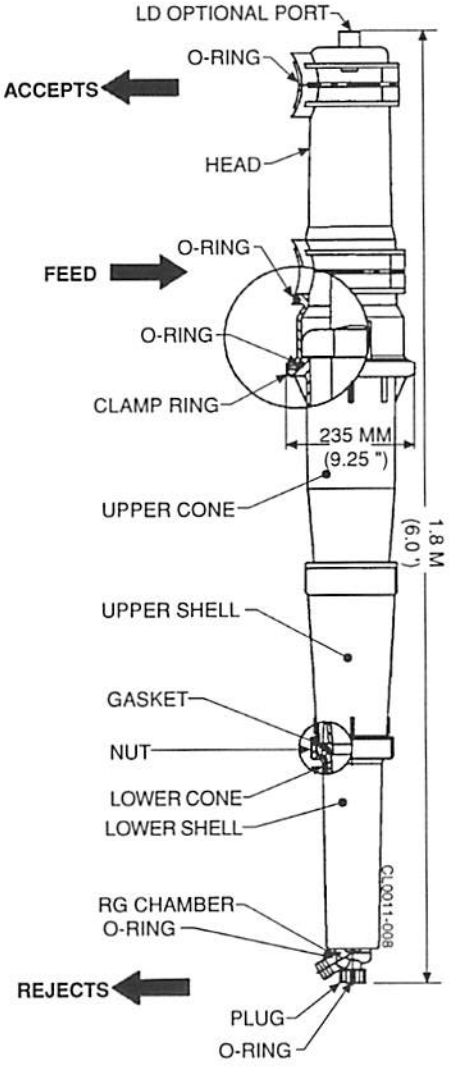
A detection vent is located in the sides of the outer shells to indicate whether any leakage is occurring. When a leak is detected, the vent is then sealed with a special red plug (part # 6088 5426-02) provided by GL&V to prevent further leakage of stock and permit the cleaner to continue in operation until next shutdown.

REJECT CHAMBER

Smooth operation is ensured by the specially designed reject chamber which permits the use of a large outlet. The reject outlet is at 45 degree angle.

ISOLATION VALVES

Each satellite unit can be equipped with isolation valves. If used, spacers on the rejects header are required.



Cleanpac 700

DESIGN DATA

Maximum Pressures

The maximum pressures for operating the cleaner system safely are listed in the following tables. The pressures that cause excessive leakage between the cleaner and header are the basis for these maximum pressures. The burst pressure for the cleaners and headers is above these values.

⚠ WARNING

Operating pressures above those listed may cause personal injury as well as cause damage to the unit.

Cleaner Capacity

The capacity of the Cleanpac 700 cleaner is primarily determined by the pressure drop between the feed and accept headers, and also by the consistency and the air content. Other factors that have a minor effect on the capacity are freeness, air content and temperature. Data tables for each cleaner model in both metric and English units are shown below.

DESIGN DATA (CONTINUED)

Cleanpac 700 Design Data - metric units									
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure *	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Maximum Pressures		
kPa	lpm	lpm	lpm	kPa	%	kPa	kPa	20-50°C	50-85°C
120	570	555	550	35	9-11	30-50 less than the accept	Feed	450	350
150	630	620	615	40	9-11	30-50 less than the accept	Accept	300	200
175	680	670	665	50	9-11	30-50 less than the accept	Reject	300	200
* Unless the stage is prior to a fiber recovery device type: RCC, FMZ or Fibermizer, then the Min accept pressure is 80 kPa.									

Cleanpac 700 Design Data - US units									
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure *	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Maximum Pressures		
psi	gpm	gpm	gpm	psi	%	psi	psi	65-120°F	120-185°F
17.5	150	149	145	5	9-11	4 to 7 less than the accept	Feed	65	50
21	166	163	162	6	9-11	4 to 7 less than the accept	Accept	43	29
25	180	178	175	7	9-11	4 to 7 less then the accept	Reject	43	29
* Unless the stage is prior a fiber recovery device type: RCC, FMZ or Fibermizer, then the Min accept pressure is 12 psi.									

DESIGN DATA (CONTINUED)

Cleanpac 700 HQ Design Data - metric units									
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure *	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Maximum Pressures		
kPa	lpm	lpm	lpm	kPa	%	kPa	kPa	20-50°C	50-85°C
120	715	710	700	50	9-11	40-70 less than the accept	Feed	450	350
150	800	790	780	55	9-11	40-70 less than the accept	Accept	300	200
* Unless the stage is prior a fiber recovery device type: RCC, FMZ or Fibermizer, then the Min accept pressure is 80 kPa									

Cleanpac 700 HQ Design Data - US units									
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure *	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Maximum Pressures		
psi	gpm	gpm	gpm	psi	%	psi	psi	65-120°F	120-185°F
17.5	189	187	184	7	9-11	6 to 10 less than the accept	Feed	65	50
21	211	208	206	8	9-11	6 to 10 less than the accept	Accept	43	29
* Unless the stage is prior a fiber recovery device type: RCC, FMZ or Fibermizer, then the Min accept pressure is 12 psi									

DESIGN DATA (CONTINUED)

Cleanpac 700 LD Design Data - metric units											
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Light weight volumetric reject rate	Light reject pressure, to obtain the design reject rate *	Maximum Pressures		
kPa	lpm	lpm	lpm	kPa	%	kPa	%	kPa	kPa	20-50°C	50-85°C
120	580	570	560	80	9-11	30-50 less than the accept	10-12	80-100 less than the accept	Feed	450	350
150	640	630	625	85	9-11	30-50 less than the accept	10-12	80-100 less than the accept	Accept	300	200
175	690	680	675	90	9-11	30-50 less than the accept	10-12	80-100 less than the accept	Reject	300	200
*If the light weight pressure is close to zero (0), a vacuum pump system might be required on the light weight stream											

Cleanpac 700 LD Design Data - US units											
Pressure drop	Flow capacity at 0.5%	Flow capacity at 0.7%	Flow capacity at 1.0%	Min accept pressure	Heavy volumetric reject rate	Heavy reject pressure, to obtain the design reject rate	Light weight volumetric reject rate	Light reject pressure, to obtain the design reject rate *	Maximum Pressures		
psi	gpm	gpm	gpm	psi	kPa	psi	%	psi	psi	65-120°F	120-185°F
17.5	153	150	147	11	9-11	4 to 7 less than the accept	10-12	12-14.5 less than the accept	Feed	65	50
21	169	166	165	12	9-11	4 to 7 less than the accept	10-12	12-14.5 less than the accept	Accept	43	29
25	182	179	178	13	9-11	4 to 7 less than the accept	10-12	12-14.5 less than the accept	Reject	43	29
*If the light weight pressure is close to zero (0), a vacuum pump system might be required on the light weight stream											

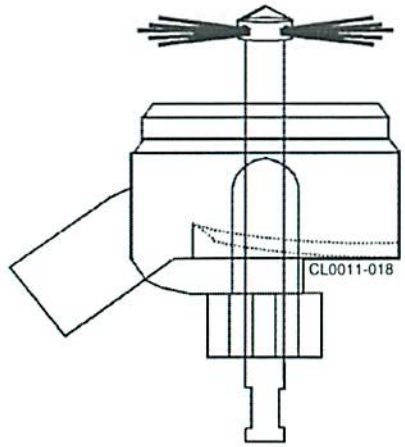
DESIGN DATA (CONTINUED)

CRC – Continuous Reject Control

If so equipped, the CRC dilution is used on certain cleaners to reduce the reject consistency. This is done by introducing a tangential dilution water through the bottom of the cleaner. Below is a guideline on how to operate the CRC dilution water although final data is very much mill dependant. The most important thing to remember is to run all cleaners in a stage with the same flow and pressure per cleaner. Thus the individual shut off valves (If equipped) located between the dilution header and the CRC dilution probe should not be used to throttle cleaners.

Dilution water pressure	Flow per cleaner
kPa (psig)	l/min (gpm)
200 – 250 (29 - 36)	20 (3)

Please note that CRC equipped cleaners will tend to plug more easily than cleaners not equipped with the CRC dilution probe. To avoid plugging during initial water tests, it is recommended that the CRC dilution probe is replaced by the red reject plug, and not operating with the dilution water.



CRC Bottom Vortex Dilution Probe