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GL&V
CELLECO, INC.

OPERATIONS &
MAINTENANCE
MANUALS

ALLIANCE FORET PRODUCTS U.S CORP.

COOSA PINES, ALABAMA

RECYCLE SYSTEM

CLEANPAC CLEANER SYSTEM

MODEL: 700

Customer Purchase Order #: 445001

GL&V/CELLECO, INC. Sales Order #: 102123

ISSUED DATE: SEPTEMBER, 2000

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Celleco™ Cleanpac™ 700

The CLEANPAC 700 is a high-efficiency, 6 inch diameter cleaner, featuring an innovative system design based on satellite assemblies.

The innovative satellite design concept permits installation in virtually any available space, for any range of current and future capacity. Isolation valves can be easily installed in the system at any time.

Key Benefits

1. **High Cleaning Efficiency**
2. **Lower Reject Rates**
3. **Better Runnability**
4. **Single-Satellite Isolation**
5. **Easy Maintenance**

High Cleaning Efficiency

The CLEANPAC 700 cleaner is designed for highly efficient removal of sand, bark and shives. Despite its large diameter, the CLEANPAC 700 can outperform the cleaning efficiency of many cleaners with smaller diameters, in certain applications. This has been achieved with a totally new inlet head design, a long cone and a new reject outlet.

The feed flows into the upper cone through two inlets 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. Mounting of the cleaner directly to the feed pipe also facilitates a smooth and balanced flow. This design ensures a minimum loss of energy in the piping. As a result, input energy is applied effectively for the separation of fiber and contaminants. The established flow and pressure drop are constantly maintained. The design also ensures that no air pockets are created in the feed pipe.

Lower Reject Rates

Due to the high separation efficiency and reject outlet design, the CLEANPAC 700 cleaner can be operated at a significantly lower reject rate than comparable large diameter cleaners.

As a result of the low volumetric reject rate, subsequent cleaner stages can be equipped with fewer cleaners, or a stage can be eliminated, with no loss in plant efficiency. This advantage can significantly reduce investment costs in a new cleaning plant.

Better Runnability

The 6 inch CLEANPAC 700 cleaner offers the same cleaning efficiency as smaller cleaners, with the added advantage of better runnability and exceptionally low clogging. Smooth runnability is also ensured by the specially designed rejects chamber which permits use of a large outlet. The large reject outlet also minimizes the risk of clogging caused by oversized particles.

Single-Satellite Isolation

The cleaners are mounted to satellite units that fit 2, 4, 6, or 8 cleaner units,.

The satellites connect to a main header assembly that can be equipped with a cutoff valve to isolate the satellites from the cleaner plant. This offers the flexibility to adapt capacity to changes in production, as well as permitting cleaner replacement and service during operations. Standby satellites can be easily installed.

Celleco™ Cleanpac™ 700

Easy to Maintain

The CLEANPAC 700 is based on the proven Celleco twin-wall design. The upper and lower inner cones can be easily replaced. Leakage caused by excessive wear from highly abrasive contaminants are detected through the vent on the upper or lower shell. The vents can be sealed to prevent further leakage and the cones can later be replaced during a scheduled shutdown.

Cleaner replacement can be accomplished quickly and easily. All that is required is a screwdriver to loosen the rejects hose. The cleaner is removed from the bank by loosening the mounting flange lever nut.

Each cleaner is equipped with a large cleanout plug for troublefree removal of oversized particles.

High Flow Capacity Version

The CLEANPAC 700 HQ is the high capacity version in the family. The higher capacity means the retention time inside the cleaner is down, thus the overall efficiency is slightly lower compared to the standard CLEANPAC 700. The HQ alternative can be seen as a low investment alternative to upgrade the capacity of an existing installation.

Efficient Light Weight Removal Version

In addition to the heavy reject cleaner, the CLEANPAC 700 can be supplied for efficient removal of free air and light rejects from the stock. In this modified version - CLEANPAC 700 LD - a second treatment of the accept stream is made in a parallel flow type cleaner located in the extended vortex finder, for efficient removal of such light rejects as plastics, stickies, waxes and hot melts as well as free air.

Technical Specifications

Type	Pressure Drop		Feed Capacity	
	KPa	Psi	1/min	US gpm
700	150	21	620	163
700 HQ	120	17	700	186
700 LD	150	21	630	167

Min. accept counter-pressure:

35 kPa / 5 psi

Max. permissible feed pressure:

350 kPa / 51 psi

Material:

Cleaner Unit: High Grade Plastics

Structure: Stainless Steel

Available Auxiliary Equipment:

Ceramic lower cone

Ceramic reject chamber

Valves

Instrumentation

Patent:

The design is protected by patents and patent pendings.

For more information please contact your local representative or regional office below.

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CLEANPAC CLEANER PLANT

INSTALLATION MANUAL

FEATURES:

- Cleaner Plant Installation Guidelines
- CLEANPAC Safety Guidelines
- System Flushout
- Cleaner Plant Operations
- Customer Assistance

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I CLEANER PLANT INSTALLATION

ENGINEERING SERVICES

Part of the service supplied with each cleaner order is extensive technical aid. The basis for this information is experience with more than 500 cleaner installations. GL&V/Celleco, Inc.'s engineering staff supplies recommended pipe sizes, valve sizes and design direction for the cleaner installation. This data is given in this manual, in dimensional drawings, and a P & I diagram.

GL&V/Celleco, Inc. also requests face to face meetings with the engineers doing the design. This is normally done after the engineer reviews the dimensional drawings, P & I diagram, and technical instructions. GL&V/Celleco, Inc. is not responsible for system performance if the recommendations are not followed. GL&V/Celleco, Inc. must also review the detailed piping design drawings before installation of the equipment and piping.

CLEANER PLANT INSTALLATION

The cleaner plant may be located at any elevation in relation to the system white water level. However, the cleaner bank preceding the RCC unit and the RCC unit must be located above the white water level. This is necessary because the final rejects from the RCC unit discharges to the atmosphere. If an RCC unit is not a part of the system, position the final stage at any elevation.

Locate the cleaner plant within the process so back pressure from down stream equipment, (screens, valves, head boxes, etc) does not exceed the maximum accept pressure. Design the system so the accept pressure is between 5 PSI and 7 PSI to get the maximum cleaner efficiency. If the cleaner bank precedes an RCC unit, design the accept pressure to be as close to 10 PSI as possible. Because the preceding bank directly feeds the RCC unit without an intermediate pump, the RCC unit requires a higher pressure.

Cleaners are constant volume, constant pressure, variable consistency equipment. Each cleaner processes a fixed amount of flow at a set pressure drop. If the flow varies, recirculate part of the accept flow back to the feed pump. Control the stock tonnage through the process by varying the consistency. The cleaner system consistency should be within the range of 0.3% to 1.0%.

STANDPIPES

One of the parts of the reject stream of a cleaner is air. For this reason, GL&V/Celleco, Inc. recommends the installation of standpipes on all cleaner stages, which will provide a method for air removal. Standpipes provide a method of opening each cleaner stage to the atmosphere. Air must be removed so that it can not cause process problems such as pump cavitation or cleaner overload.

If space limitations do not allow all stages to have standpipes, install one between the primary and secondary stages. The primary stage removes the largest amount of air from the stock, discharging it in the reject stream. Since the primary rejects feed into the secondary cleaners, a standpipe in this position will help eliminate air in the latter stages.

GL&V/Celleco, Inc. provides detailed design criteria for standpipes as a part of the engineering services for each cleaner order.

- All reject streams should enter tangentially at a minimum of 2 feet below the normal water level. Position multiple streams so they are opposite each other and at different elevations. Any accept flows returning to the same standpipe should enter 2 feet below the reject line.
- Size the standpipe diameter using a downward velocity of 0.5 feet/second. The maximum downward velocity is 1 foot/second. Calculate the downward velocity using only the tangentially introduced flows (i.e. accept and reject flows)
- To reduce air entrainment caused by an excessive vortex, install a vortex breaker just above the pump suction piping.
- Locate standpipes so the dilution water is gravity fed. Standpipe installations requiring level control and pressurized make up water are difficult to operate properly.
- GL&V/Celleco, Inc. recommends designing standpipes with a full diameter from the top to the bottom. Alternate standpipe designs may not be as efficient. Contact GL&V/Celleco, Inc. for any special criteria when using this design.

PIPING

Based on many prior successful installations, GL&V/Celleco, Inc. uses the following design velocities for recommended pipe sizes for the cleaner system design. However, there are no specific rules for sizing cleaner plant piping.

PIPING	VELOCITY RANGE
Feed piping	8 to 12 feet/second
Accept piping	6 to 10 feet/second
Reject piping	5 to 7 feet/second
Pump suction piping	4 to 6 feet/second
Gravity flow dilution piping	4 to 6 feet/second
Pressurized dilution water	8 to 12 feet/second

- Size all dilution piping and valves for the maximum flow condition. The cleaner system will require 100% dilution water during the initial flush and start-up.
- Support all piping so there is no excessive vibration or forces sent to the banks. Support the process piping so that no loads transfer to the bank when using a horizontal header with support legs. Provide the necessary pipe bracing and supports to prevent sending axial and lateral forces to the banks. Design the piping to support the cantilevered load of a satellite when using it for a cleaner bank.
- Install air bleed valves in all high points of the piping to remove trapped air bubbles.
- Install drain valves in the low point of all piping.
- Flush and clean the piping in the entire system before start-up.
- **Never install check valves in any piping in the cleaner system.** Check valves cause pulsations in the process and affect quality. Additionally, stock will dewater on top of check valves in horizontal lines and cause the cleaner to plug at start-up.

Before start-up, the entire system including pumps and dilution chests should be flushed out and cleaned. Construction debris can plug or damage the cleaner units, resulting in poor system performance. During the water flush, all accept, reject, and dump valves should be fully opened. The feed valve should initially be opened 30% and then fully opened when it is determined that the maximum feed pressure has not been exceeded.

PUMPS

The selected pump should deliver the required maximum flow at the required feed and accept pressures. If the bank contains isolation valves or blank off units, be careful when selecting the feed pump. Make sure it has a wide variation in flow with a small change in pressure. If necessary, install a bypass loop to recirculate part of the flow.

- Size all feed pumps to deliver the flow for the maximum number of cleaners in the bank.
- Oversize all pumps 10% to 25% to allow for normal pump wear and set the recommended design pressures by throttling the pump discharge valve. Debris will concentrate in the final stages of a cleaner system, sometimes accelerating normal pump wear.

PRESSURE CONTROL VALVES

GL&V/Celleco, Inc. will show the recommended valve sizes for each cleaner stage on the supplied P & I diagram for your system. The basis for these sizes are the Cv values for DeZurik vee-port knife gate valves . Compare the Cv values for the two valves when using another brand of valve. Do not use oversized valves as they may result in plugging at the valve.

NOTE: Elevations are not always known and therefore the valve sizes and piping designs should always be reviewed carefully.

- GL&V/Celleco, Inc. recommends vee-port knife gate valves for all cleaner control valves.
- Locate all accept and reject control valves **below** the white water level. Submerging the valves below the white water level reduces the possibility for air entrainment. Locating the valves above the white water level allows a "downleg effect" which causes pressure swings. It is also possible that the flow will jet across a partially closed valve and entrain air into the system.
- Position the feed valves anywhere between the pump and 10 pipe diameters from the cleaner bank.
- GL&V/Celleco, Inc. recommends using a hand operated control valve (manual or HIC) for the primary feed control valve. Equip the valve with a slow opening actuator (20 to 30 seconds) to reduce the risk of water hammer. Install a positive mechanical stop on the actuator to hold the valve 10% open when the valve is in the closed position.

INSTRUMENTATION

All cleaner units should be equipped with pressure transmitters on the feed, accept and reject headers. An accurate measurement of feed, accept, and reject pressures is critical to the optimum performance of each cleaner stage. For this reason, pressure gauges and transmitters need to be properly installed and calibrated on a regular basis. Locally mounted pressure gauges should not be relied upon because they are subject to plugging, air padding, or damage due to vibration.

Connect the pressure transmitters to a remote gauge panel located close to each cleaner bank. This aids in adjusting the control valves to the correct operating pressures. Obtain signals for a Distributed Control System (DCS) from these transmitters for automated control systems. If another type or brand of transmitter is used, GL&V/Celleco, Inc. will substitute it for the PMC nipple for an additional cost.

- The pressure transmitters are specifically located on the equipment to provide accurate pressure indication. Never move the transmitters to the process piping and correct for elevation. This leads to confusion and instrument error.
- GL&V/Celleco, Inc. provides Paper Machine Components (PMC) nipples for 1:1 pneumatic pressure transmitters on the feed, accept and reject headers for each cleaner bank. All transmitters and gauges are supplied by the customer.
- Each PMC transmitter should have a clean dry regulated air supply set at 5 PSI above the calibrated range of the transmitter.
- GL&V/Celleco, Inc. also supplies a 1" NPT half coupling adjacent to each pressure transmitter nipple for pressure verification. A ball valve should be installed by the customer at these connections. A test gauge can be moved throughout the system to verify the pressure transmitters.
- GL&V/Celleco, Inc. recommends the use of externally mounted diaphragm stock gauges for process control. Most pipe mounted gauges lose accuracy due to vibration and are not temperature compensated.
- Always supply a local gauge panel, even when a Distributed Control Systems is used.

PRESSURE GAUGES

The pressure gauges should be remote panel mounted, and located close to their respective banks. The pressure range for gauges is as follows:

- Feed 0 to 60 PSI
- Accept 0 to 30 PSI
- Reject 0 to 15 PSI*

* If the system design requires the accept pressure to be greater than 15 PSI, use a 0-30 PSI pressure gauge for the rejects.

SAMPLE VALVES

To evaluate system performance during operation, a sample valve should be installed on the feed, accept and reject lines for each stage. The sample valve should be a minimum of 1 inch diameter. Provide enough clearance around the sample valves for easy operation and direct the flow toward the floor. Provide a wash up hose and floor drain in the sampling area.

- Always locate the sample point on the pressure side of control valves, in a straight pipe 5-6 pipe diameters away from any elbows or valves.
- Locate the valve in a vertical line whenever possible. When a vertical line is not accessible, locate the sample valve on the centerline of a horizontal line.
- GL&V/Celleco, Inc. recommends using sample valves manufactured by the "STRAHMAM VALVE COMPANY" or equal.
- The rejects from the final stage to sewer need to be available for bucket checking . Do not hard pipe the final stage rejects to sewer.

II CLEANPAC SAFETY GUIDELINES

The GL&V/CELLECO, INC., CLEANPAC model cleaners are designed with your safety in mind. Before operating your cleaner system, please review the following of recommended safety guidelines:

- Always lock out all pumps associated with your cleaner system before removing any cleaners for maintenance. Do NOT attempt to disassemble any portion of the cleaner during operation.
- Do NOT operate the bank beyond the Maximum Pressures listed in your CLEANPAC Operations Manual.
- All personnel involved with the operation of the cleaner system should be informed of these safety guidelines and be familiar with the material discussed in the CLEANPAC Operations Manual.
- Exercise extreme caution when working around a cleaner system operating above 120 °F.
- **All Cleaners Are To Be Properly Mounted and Secure.**

  [ ] All bank cleaners must be secured to the feed and accept headers with pressure plates. The wing nut or bar nut that secures the pressure plate to the bank must be firmly tightened.

  [ ] All canister cleaners must be accurately locked into position before operating. Please refer to the cleaner operation manual for complete instructions.

  [ ] All o-rings which seal the inlet head to the feed and accept headers must be in good condition and correctly installed to prevent any major leaks in this area.

  [ ] All reject hoses must be periodically inspected for abnormalities caused by chemical attack or age. Replace all questionable hoses to prevent rupture during operation.

  [ ] All hose clamps which secure the reject hose to the cleaner and reject header must be firmly tightened. Always confirm that all hose clamps have been tightened after maintenance.

  [ ] Always use genuine GL&V/CELLECO, INC. replacement parts. Pirated imitations do not offer the twin-wall design that is the safety trademark of the CLEANPAC model cleaners. The blue outer shell protects against leakage of hot stock in the event that the inner cone becomes damaged, preventing personnel injury or lost production.

III SYSTEM FLUSHOUT

SYSTEM CHECKLIST

Before flushing the system, check the following:

[ ] The installation of the equipment, piping, valves and instrumentation should correspond to GL&V/Celleco, Inc.'s drawings and recommendations. All pressure control valves should be located below the white water level.

[ ] Trace and label all of the cleaner piping. Compare valve and line sizes to those on GL&V/Celleco, Inc.'s P&ID. Any discrepancies between the recommended and actual piping should be discussed with GL&V/Celleco, Inc. before start-up.

[ ] All pumps and motors should be operational and checked for proper rotation.

[ ] All pressure transmitters should be installed on the cleaner header and calibrated. Pressure verification taps should also be installed next to the transmitter connections.

[ ] All piping, chests, and standpipes should be flushed and clean.

[ ] Isolation valves in the pump suction should be fully open.

[ ] All manual feed valves on pump discharges should be a maximum 30% open during the initial start up. When using automatic feed valves, test the slow opening feature to insure at least 20 seconds opening time. This prevents water hammering the cleaner bank or canister during start-up.

[ ] All accept and reject throttling valves should be fully open on the initial start up. ***NEVER operate the cleaner system with either of these valves fully closed***. Completely open the reject valve on the final stage that discharges to sewer to prevent plugging. Whenever possible, bypass the RCC II during flushing.

[ ] The cleaner system should have operable sample points on all feed, accept and reject lines.

[ ] Any high points in the piping should have air bleeds. The bleeds should be 2" line piped back to the silo or to one of the standpipes. Any low points in the piping should have drains.

SYSTEM FLUSHOUT

Once the piping, chests and standpipes have been flushed and cleaned, each cleaner stage also has to be flushed before continuous operation of your cleaner system can occur. Flushing of the primary stage of cleaners should coincide with the flushing of the primary screen and/or headbox.

NOTE: No parts of the cleaner may be disassembled during operation, except for the cleanout plug in the lower part of the cleaner.

1. Review and understand all of the safety and start-up guidelines. In addition, review and understand the start-up and balance material presented in your CLEANPAC Operations Manual before proceeding.
2. Fill the white water chest with water.
3. Start up the cleaner system from the final stage toward the primary stage.
4. Inspect the operating system for leaks in the piping and at the cleaners. Inspect the individual cleaners for plugging or large debris that is orbiting inside the cleaner.
   - Any leaking flanges should be fixed while the system is being flushed.
   - Tag any leaking or plugged cleaners for inspection when the system is shut down.
5. After sufficient flushing, shut down and lock out the equipment. Separate the cleaner at the lower cone to inspect for debris. It is also beneficial to completely remove the cleaners located farthest from the feed flange to inspect the inlet opening for large debris.
6. After flushing, refer to the next section for start-up and balancing instructions. Do not use isolation valves at the headers to balance the cleaners.

IV CLEANER PLANT OPERATIONS

SYSTEM START-UP PROCEDURES

Before start-up, check the following:

1. The installation of the equipment, piping, valves and instrumentation corresponds to GL&V/Celleco, Inc.'s drawings and recommendations. All valves should be located below white water level.
2. All pressure transmitters should be installed and calibrated. All stock lines should have pressure verification taps at the same elevation as the headers.
3. All cleaners are properly mounted and secure. Verify that all pressure plates and hose clamps are firmly tightened.
4. All piping, chests, and standpipes are flushed and clean.
5. All manual cleaner feed valves are a maximum of 30% open. When using automatic valves, test the slow opening feature to insure at least 20 seconds opening time.
6. All accept and reject valves are fully opened on the initial start up or in their normal operating position. Completely open the reject valve on the final stage that discharges to the sewer to prevent plugging.
7. Isolation valves in the pump suction lines are open.
8. The white water chest is full.

System Start-up

Start up the cleaner system on white water, from the final stage toward the primary stage. Because of air in the system, it may take several minutes until the operation is stable. Apply stock only after the cleaner system has been balanced on white water, verifying that the feed, accept, and reject pressures match recommendations and the operation is stable on all stages. After introducing stock to the system, all pressures may need minor adjustments.

BALANCING THE CLEANER SYSTEM

Before attempting to balance your cleaner system, determine the targeted feed, accept, and reject pressures required to balance the entire system to design. Valves on all stages may need to be adjusted for the system to balance.

1. Verify the calibration of all pressure transmitters or gauges in your cleaner system using pressure gauges mounted on the header.
2. Make all pressure adjustments beginning in the final stage, proceeding towards the primary stage. Adjust the feed valve until the targeted pressure drop between the feed and accept header has been achieved. Close the accept valve until the minimum accept pressure has been achieved. Adjust the reject valve until the targeted differential between the accept and reject header has been achieved.

   Be sure that no pressures exceed the Maximum Pressures for the cleaner bank while balancing your cleaner system.

3. Check the clear reject sightglasses on each cleaner stage, making sure that the rejects are flowing in the proper direction (from the cleaner toward the reject header).
4. Reverse flow in the reject sightglass shows improper valve settings. If this occurs, increase the pressure differential between the accept and reject headers. This is done by opening the reject valve or closing the accept valve. After adjusting the accept valve, reset the feed valve for the proper pressure drop between the feed and accept headers.
5. Take samples and determine the consistency of the feed, accept and reject streams for each cleaner stage. Compare to previously collected data. Minor valve adjustments may be necessary to fine tune the cleaner system.

Operating Pressure Adjustments

Do not adjust the operating pressures of the cleaner system on a day-to-day basis. Once the system has been balanced, it will operate with few required adjustments. The only pressure adjustments required will be due to normal wear in the cleaner system. Sudden pressure changes will usually indicates a faulty gauge or a pump problem.

SYSTEM SHUT DOWN PROCEDURES

Make every effort to operate the cleaner system on white water for a minimum of 15 minutes before shutting the system down.

Short Term Shut Down

A shut down, where the pumps operate and white water continues to circulate throughout the cleaner system, is defined as a short term shut down. Short term stock interruption to the downstream process is the normal reason for a short term shut down.

1. While running stock or white water through the cleaner system, inspect all reject sightglasses for flow. If no flow is observed in the clear reject sightglass, mark the cleaner for further maintenance.
2. Verify all pressure transmitters or gauges using locally mounted pressure gauges installed on the header adjacent to the transmitter connection.

Long Term Shut Down

A long term shut down requires stopping all pumps in the cleaner system. Make every effort during this type of shutdown to unplug all cleaners and replace or repair all leaking cleaners.

> **Before performing any maintenance on your cleaner system, follow all mill safety practices, including locking out all equipment and wearing safety gear.**

1. Before the shut down, perform steps 1 & 2 described in the Short Term Shutdown. Mark all cleaners that will need maintenance during the Long Term Shutdown.
2. Operate the cleaner system on white water for a minimum of 15 minutes. This will allow the system to purge itself of stock and prevents stock from settling in the lines and the cleaners. Shut down the cleaner pumps in sequence starting with the primary feed pump.
3. Perform all necessary preventative maintenance on auxiliary components associated with your cleaner system (pumps, piping, valves). Inspect all chests and standpipes for damage and foreign materials.
4. See Cleaner Inspection. Inspect all cleaners for wear or damaged o-rings. Perform all necessary maintenance on the cleaners.

V SERVICE

CUSTOMER ASSISTANCE

A GL&V/Celleco, Inc. representative will always be available to provide assistance. Many problems may be handled over the telephone. For assistance by telephone, please provide the following data and any other appropriate information:

1. Provide the mill name, system location (i.e. #2PM), and type of cleaner system. Include the number of stages and the number of operating cleaners in each stage.
2. Type of furnish and debris to be removed by cleaner system.
3. Several sets of consistencies and pressure recordings throughout the entire cleaner system. Include cleaner dilution consistency.

If convenient, please fax this information to the attention of the technical service department at (770) 339-6132. This will allow us to review the information prior to discussing your situation with you. To reach a cleaner service representative, please contact the technical service department at (770) 963-2100.

GL&V/CELLECO, INC. SERVICE CONTRACT

A trip to your mill may be necessary to properly evaluate your cleaner system and make recommendations. GL&V/Celleco, Inc. recommends regular visits to your mill to keep the cleaner system in top working condition. A nominal service fee per day plus traveling expenses will be charged for all service trips.

Please contact your local sales person or the technical service department in Atlanta for service arrangements and current pricing. GL&V/Celleco, Inc. will make every effort to respond to service requests within 24 hours. A service visit to your mill may include, but is not limited to, the following options:

1. Inspect and balance the operation of your cleaner system for optimum performance. Evaluate and discuss with mill personnel the proper maintenance schedules appropriate for your system.
2. Physically inspect your entire cleaner system, including piping, valve location, and capacity requirements.
3. Training sessions for mill personnel to include basic operation and maintenance of your cleaner system. The mill should indicate any specific areas for discussion in these sessions.

4. Review any concerns that your parts department may have, and recommend the proper inventory to keep on hand. Discuss any improved parts appropriate for your system.

To effectively prepare to service your cleaner system, the operational data discussed in the previous section should be provided to GL&V/Celleco, Inc.. In addition, all pressure transmitters or gauges should be calibrated prior to our arrival. The mill should also be prepared to provide lab assistance, sample containers, and other support necessary to evaluate your system. This will ensure an accurate evaluation of your cleaner system.

SPARE PARTS

Our staff will be willing to review any spare parts questions with you, either over the telephone, by telefax, or while at the mill. GL&V/Celleco, Inc. is continually striving to improve our cleaner parts to better serve your needs. Please contact us with any questions or concerns.

When contacting GL&V/Celleco, Inc. regarding spare part questions or concerns, please have the following information available:

1. The type of equipment.
2. When available, record the Part Number(s) of the component(s) needed. This is usually located on the part.
3. There are various materials available for o-rings, reject hoses, and most other cleaner components. It may be necessary to know the process temperature and pH when recommending the appropriate material composition to be used in your system.

GL&V/Celleco, Inc. recommends having sufficient amounts of spare parts on hand for routine maintenance. Please contact your area salesperson or GL&V/Celleco, Inc. for recommended spare parts inventory.

GL&V
CELLECO AB

OPERATIONS & MAINTENANCE MANUAL

CLEANPAC 700 SATELLITE SYSTEM

Contents

TO THE OWNER

This instruction Manual is your guide when dealing with your GL&V/Celleco equipment.

GL&V/Celleco recommend you to study it carefully, and ensure its availability to those who install, maintain and operate the equipment on a daily basis. This document will be of no value to you if it is locked away when your personnel need it!

Furthermore it is important that you:

* Keep this instruction manual and other documentation for the life of the equipment,
* Incorporate any amendments in the text,
* Pass the documentation on to any subsequent holder or user of the equipment.

GL&V/Celleco will not be responsible for any breakdown of the equipment caused by the owner's failure to follow the instructions in this document.

This Instruction Manual describes the authorized way to use the equipment. GL&V/Celleco will take no responsibility for injury or damage if the equipment is used in any other way.

PRECAUTIONS

Before attempting to unpack, install and operate this unit, please read through the relevant parts of the manual. Pay particular attention to all dangers, warnings, cautions and notes. Failure to do so could result in serious injury to personnel or damage to the equipment.

Use of Danger, Warning, Caution and Notes:

Danger, Warning, Caution and Notes used in this manual have the following significance:

Danger

Failure to observe this information could result in immediate danger to life

Warning

Failure to observe this information can result in major personal injury or loss of life

Caution

Failure to observe this information can result in minor injury or damage to equipment

Note:

Information that requires special emphasis.

NOTICE ON SAFETY

1 Order Specification

Customer:

Order No:

Product:

Application:

Main Spec.:

Dimension Drawing:

Foundation Drawing:

Flow Sheet:

Motor Voltage:

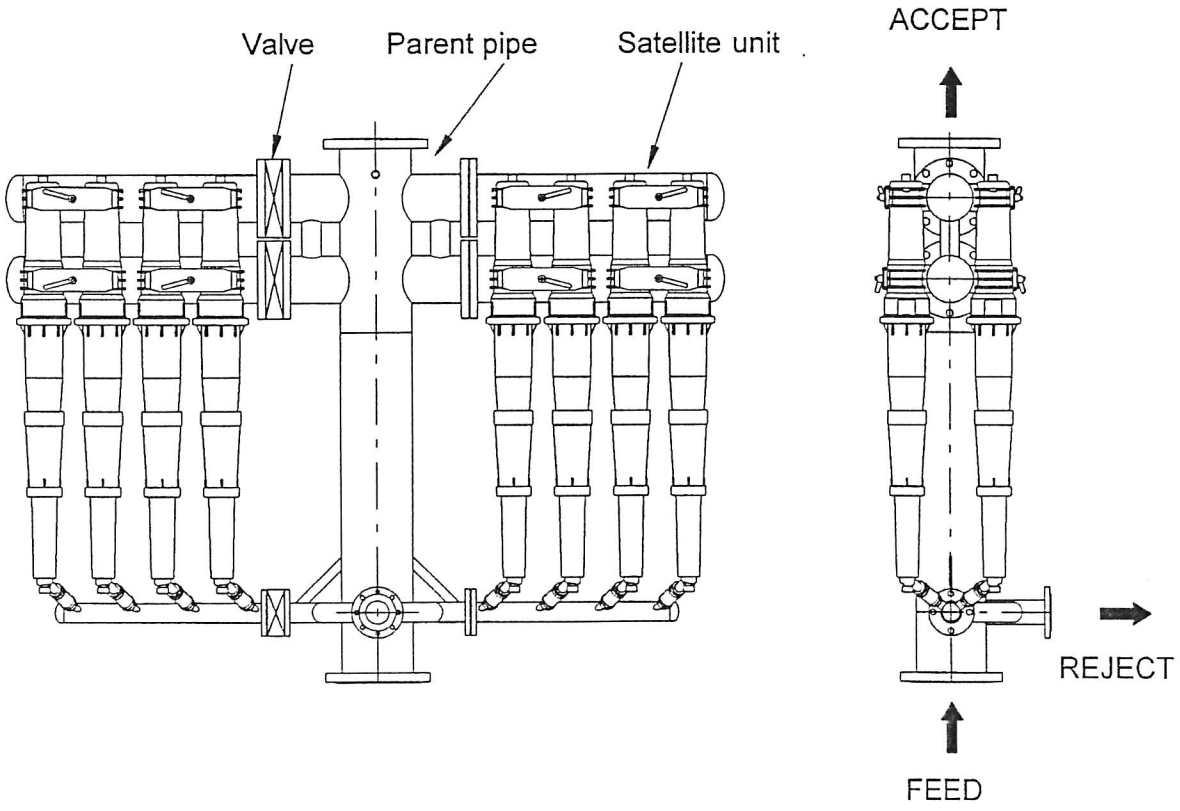
Other Notes:

2 Description

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

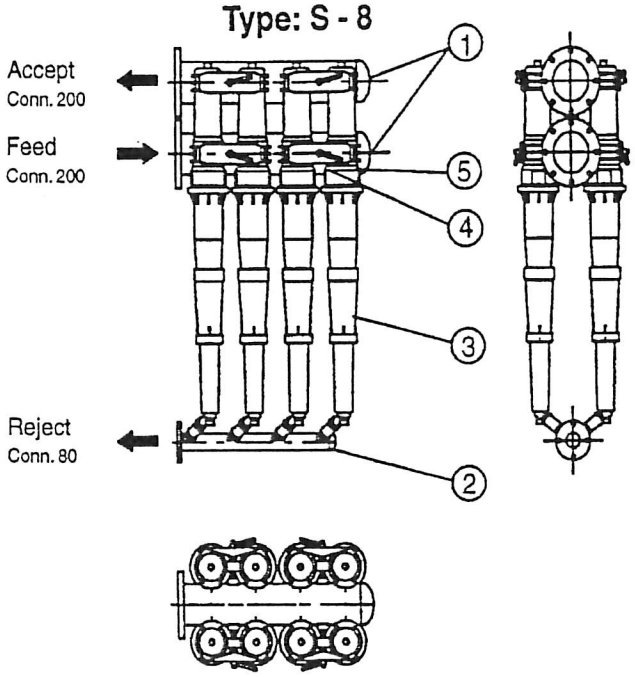
- The cleaners are pressed against the feed and accept pipes of the satellite by means of a pressure plate and a lever nut. The connection area between the cleaner and the feed and accept pipes is tightened with o-rings.
- The reject ends of the cleaners are equipped with transparent reject chambers, where the reject flow can be observed. The reject chambers are connected to the reject pipes of the satellite with hoses and hose clamps.

The satellite system is built by satellite units of three main sizes: S-8, S-4 and S-2. The satellite units can be used separately or be connected to a parent unit. 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 isolating valves between satellite unit and parent unit.



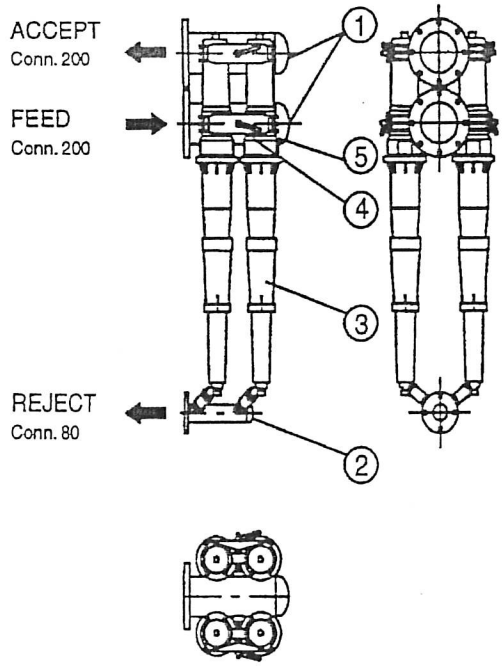
Satellite Units

Type: S - 8

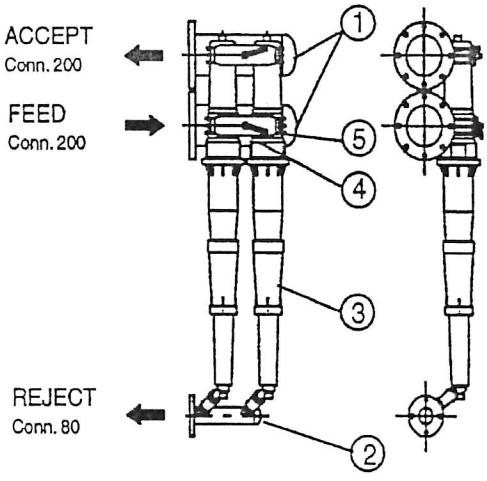


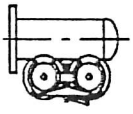
1. Feed/Accept Pipe Unit
2. Reject Pipe
3. Cleaner
4. Lever Nut
5. Pressure Plate

Type: S - 4

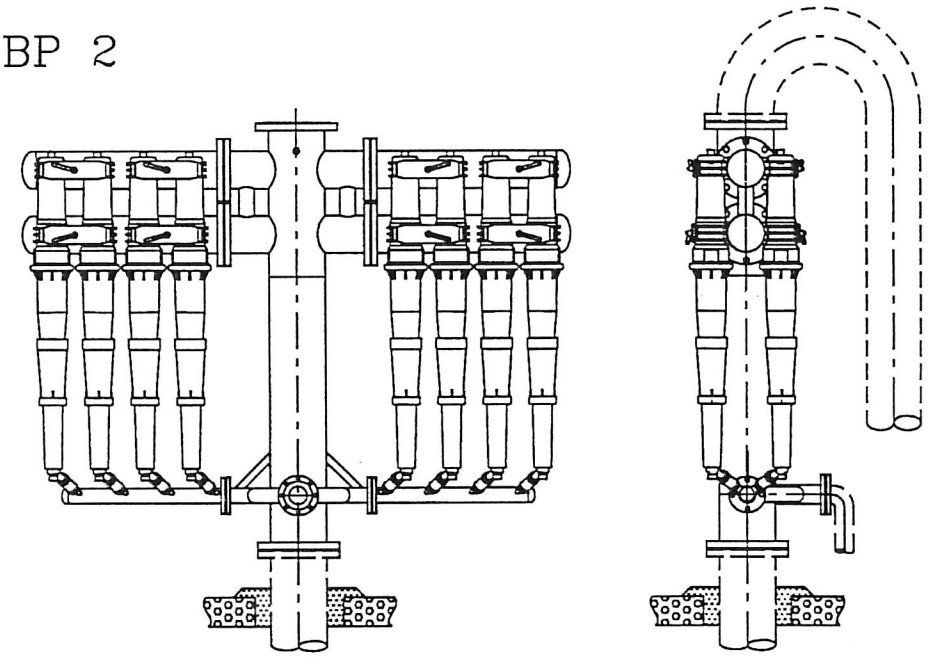


Type: S - 2

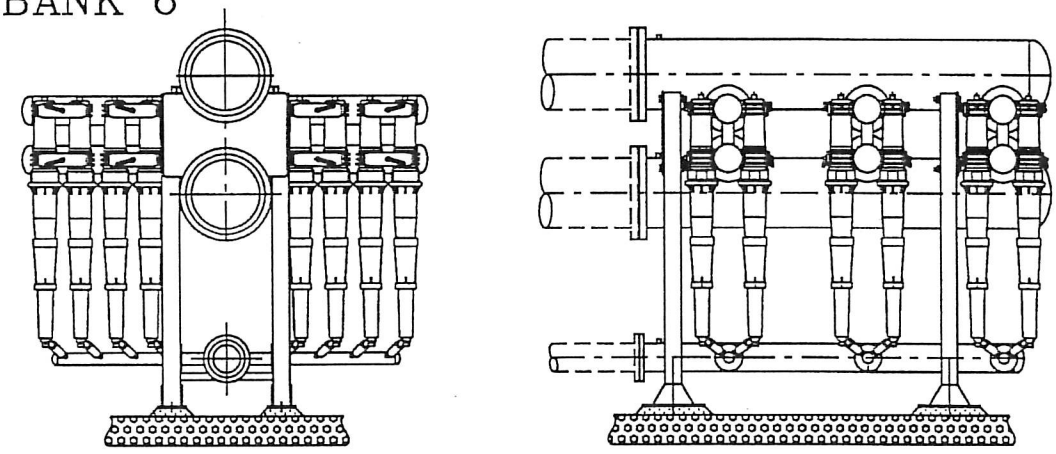




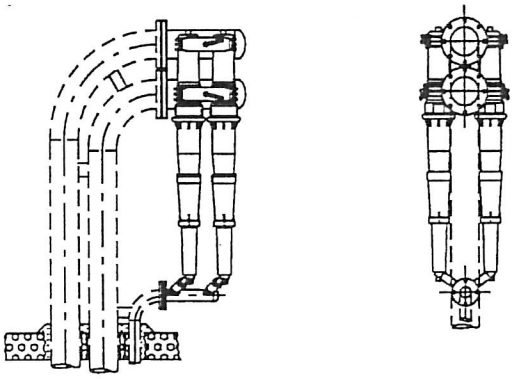
BP 2

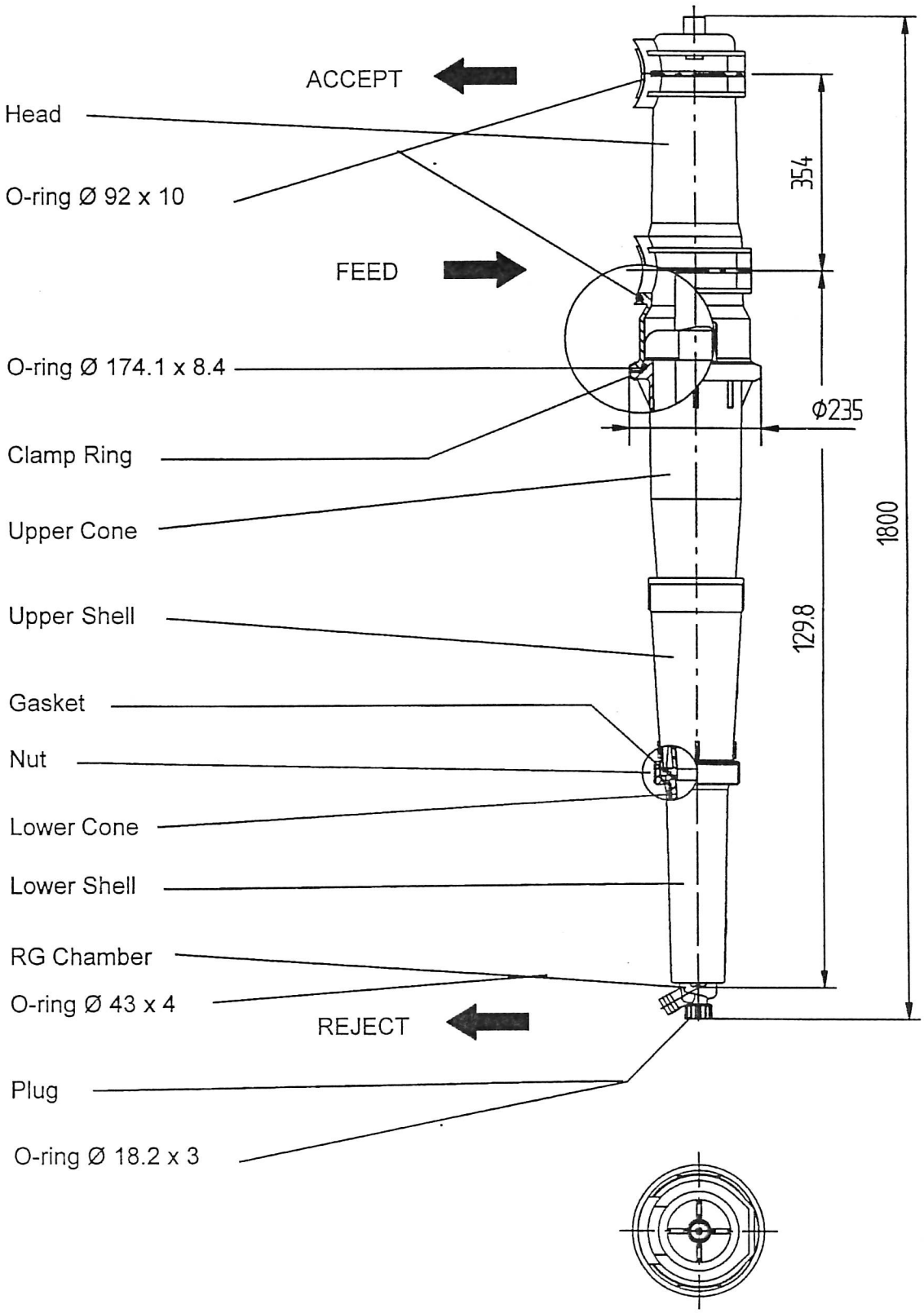


BANK 6



S – 4




ACCEPT
Head
O-ring Ø 92 x 10
FEED
O-ring Ø 174.1 x 8.4
Clamp Ring
Upper Cone
Upper Shell
Gasket
Nut
Lower Cone
Lower Shell
RG Chamber
O-ring Ø 43 x 4
REJECT
Plug
O-ring Ø 18.2 x 3
354
Ø235
1800
129.8

Maximum Pressures

The maximum pressures for operating the cleaner system safely are listed in the chart below. The pressures that cause excessive leakage between the cleaner and the header are the basis for these maximum values. The burst pressure for the cleaners and headers is above these values. Operating pressures above those listed below may damage the unit as well as expose safety hazards to operation personnel.

Temp. 20-50°C (68-122°F)

Max feed pressure	450 kPa (65.2 psi)
Max accept pressure	300 kPa (43.5 psi)
Max reject pressure	300 kPa (43.5 psi)

Temp. 50-85°C (122-185°F)

Max feed pressure	350 kPa (50 psi)
Max accept pressure	200 kPa (29 psi)
Max reject pressure	200 kPa (29 psi)

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. Other factors that have a minor effect on the capacity are freeness, air content and temperature. The following chart describes the capacities for temperatures between 40 and 60°C (100 and 140 F).

Capacity in litres/minute per cleaner at a *) pressure drop (Δp) of:

Cleanpac 700 Standard
Feed pressure - accept pressure

Consistency	1 %	0,7%	<0.5%
120 kPa (17.4 psi)	555	565	575
150 kPa (21.7 psi)	620	630	640
175 kPa (25.4 psi)	670	680	690

Cleanpac 700 HQ

Consistency	1 %	0,7%	<0.5%
120 kPa (17.4 psi)	700	710	715
150 kPa (21.7 psi)	780	790	800
175 kPa (25.4 psi)	830	840	855

Cleanpac 700 LD

Consistency	1 %	0,7%	<0.5%
120 kPa (17.4 psi)	550	560	570
150 kPa (21.7 psi)	615	620	630
175 kPa (25.4 psi)	665	675	680

Minimum accept pressures

Min. accept pressure at reject of 10% by volume

At pressure drop of 120 kPa	35 kPa
At pressure drop of 150 kPa	40 kPa
At pressure drop of 175 kPa	50 kPa

The following ranges are recommended for CLP 700 cleaner operation.

	Cleanpac 700 std	**Cleanpac 700 LD**	**Cleanpac 700 HQ**
Pressure drop	150 kPa	150 kPa	120 kPa
Accept pressure (minimum)	40 kPa	60 - 100 kPa (when 60 - 80 vacuum pump is required)	50 - 80 kPa
Heavy reject pressure	30 - 50 kPa less than accept pressure	20 - 40 kPa less than accept pressure	30 - 50 kPa less than accept pressure
Light reject pressure	-	80 - 100 kPa less than accept pressure	-
Volumetric reject rate heavy	7 - 9 %	7 - 9 %	7 - 9 %
Volumetric reject rate light	-	10 - 12 %	-

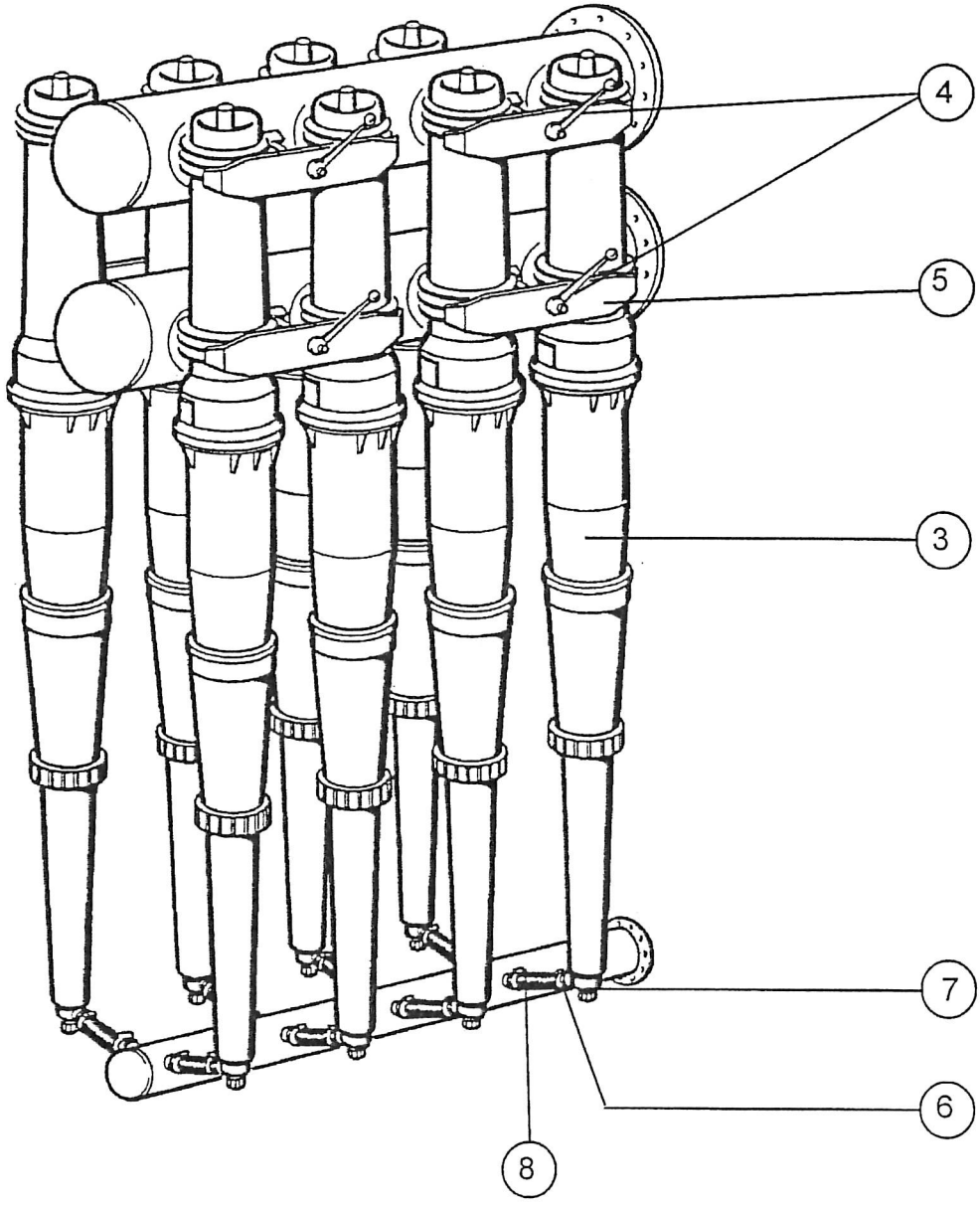
4 Installation Instructions

The erection at site is carried out according to our general instructions (see separate instruction). Please note that several banks, having common collecting and distributing pipes, should be equipped with a control valve, common for all the banks, apart from the shut-off valves, if any, at each bank.

5 Dismounting the Whole Cleaner

- Loosen both the lever nuts (4), which by means of the pressure plates (5) are holding the cleaners (3) (2 per pressure plate) against the feed and accept pipes of the satellites.
- Remove the pressure plates.
- Loosen the hose clamp (6) next to the RG chamber (7) on the reject hose (8).
- Lift out the cleaner.
- Remount the lever nut onto the tie rod end to avoid getting stabbed.

Please note! The lever nuts are not to be loosened during operation or with the system under pressure.

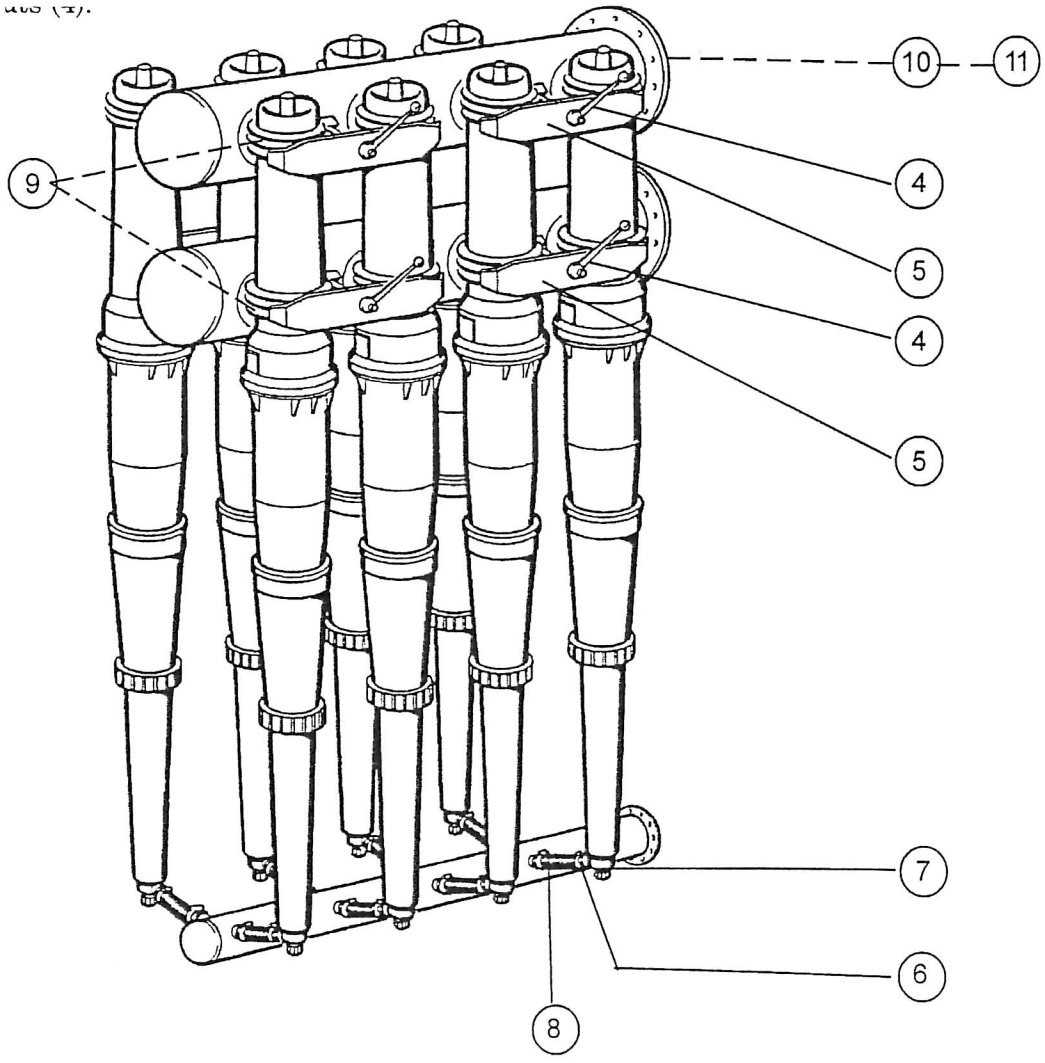


6 Mounting the Whole Cleaner

- Check that o-rings (9) are mounted in the curved grooves of the feed and accept connection pieces of the cleaner.
- Lift up and push in the cleaner and see to it that the glide bar (10) of the upper tie rod of the satellite is sliding in behind the hook (11) on the uppermost stabling flange of the cleaner head (the cleaner will now keep hanging by its own).
- Push in the connection of the RG-chamber (7) into the reject hose (8).
- Remount pressure plates (5) and lever nuts (4).
- Before tightening, check that the inner parts of the feed and accept pipes of the cleaner have entered into the holes of the satellite pipes (for example by gently shaking the cleaner) and tighten the lever nuts as far as possible by hand power.

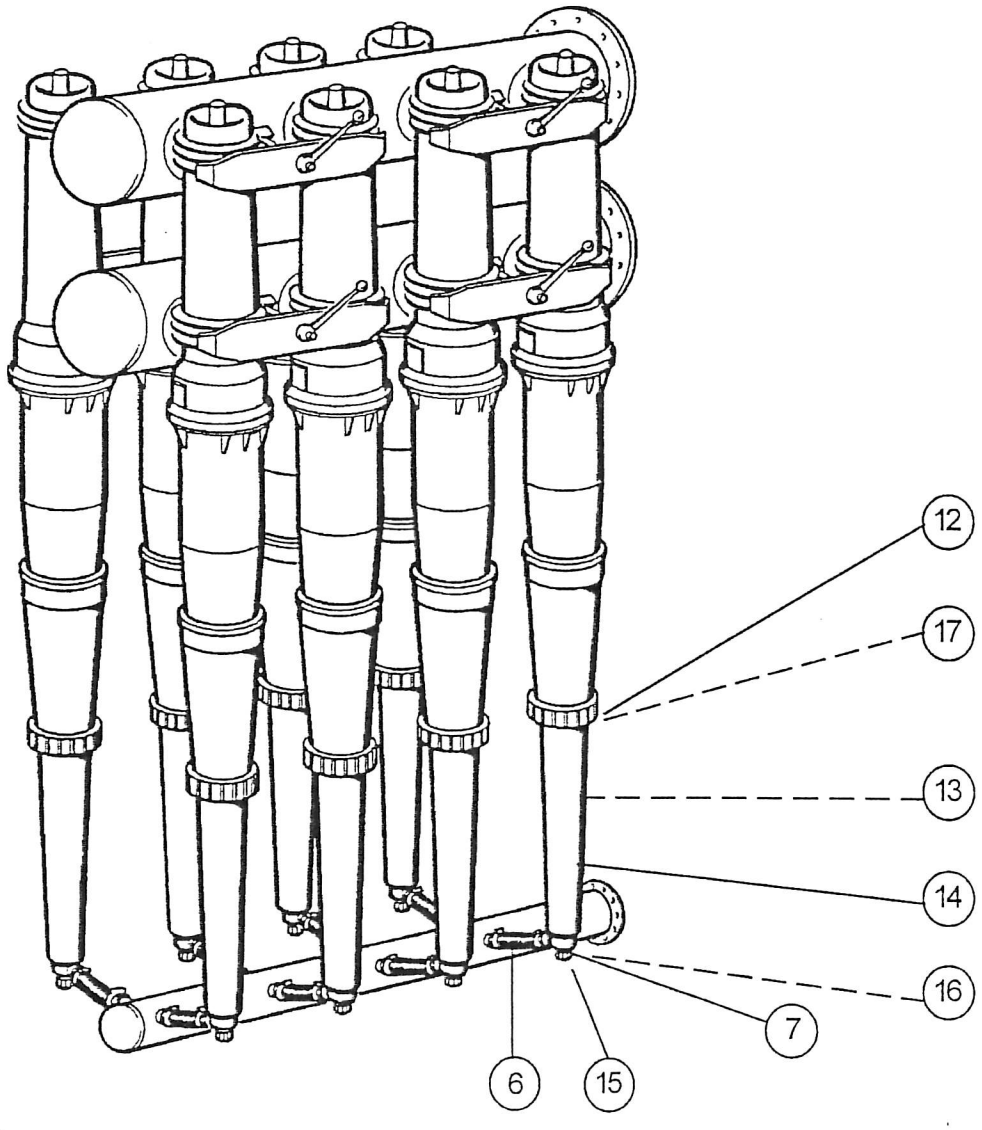
Note! If pipe lengthened is used for the lever nuts, this may not exceed a length of 0.3 m.

- Tighten the hose clamp (6) at the RG-chamber.



7 Replacing the Lower cone and/or the RG-Chamber

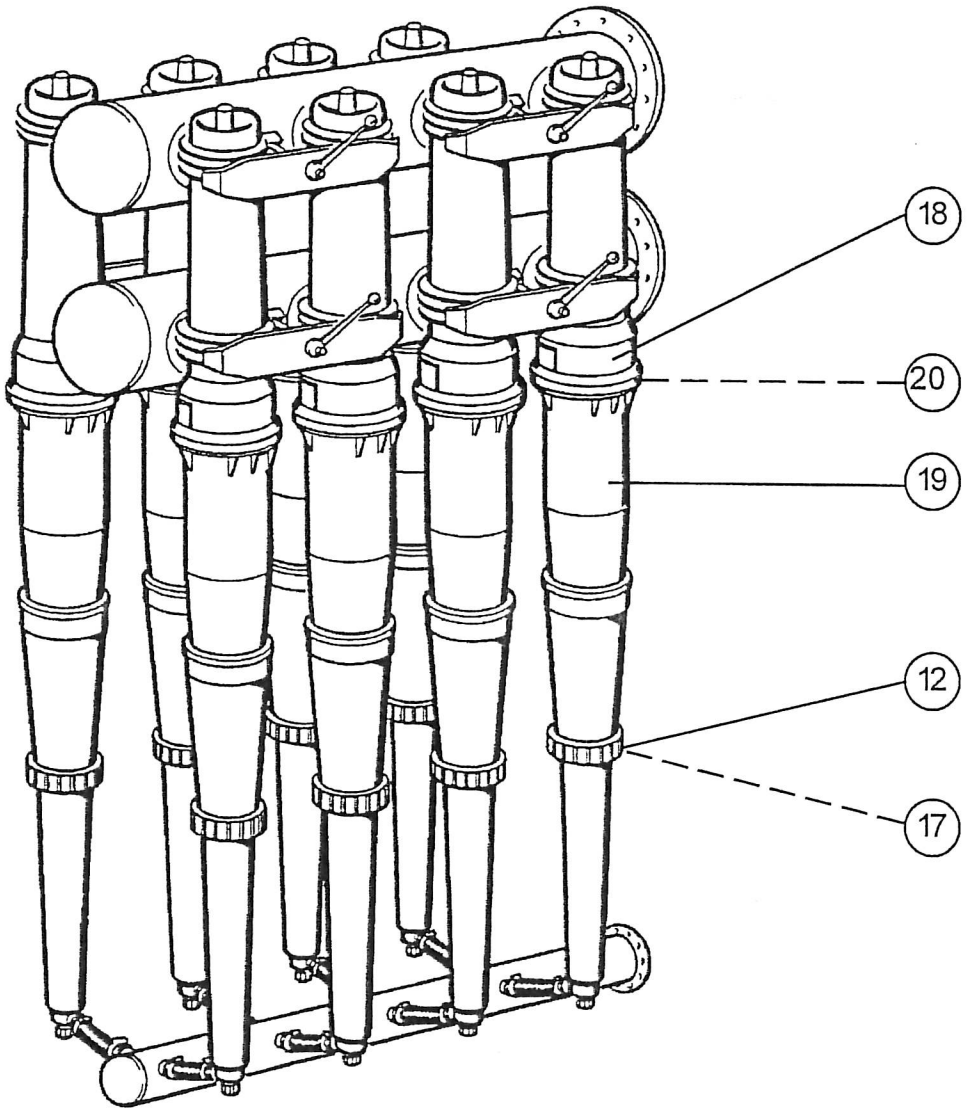
- Loosen the nut (12) of the lower part of the cleaner.
- Loosen the hose clamp (6) at the RG-chamber.
- Lift out the lower part of the cleaner.
- Take out the cone (13) and the RG-chamber (7) of the lower shell (14).
  Note! In order to be able to take out the RG-chamber, the cleaning plug (15) (red) has to be dismounted.
- Replace faulty parts.
- Mount the RG-chamber by letting it down into the lower shell, with the hose connection end kept downwards, and without having mounted the cleaning plug.
- Check that the lower cone is equipped with an o-ring (16) in the lower sealing position. Bring the cone down into the lower shell and press it down into the RG-chamber.
- Equip the upper sealing position of the lower cone with a sealing (17). Mount the cleaning plug into the RG- chamber and remount the lower part of the clean



8 Replacing the Upper Cone

- Loosen the nut (12) of the lower part of the cleaner.
- Loosen the steel clamp (18) between the inlet/accept part of the cleaner and the upper part of the cone.
- Pull down and lift out the upper part of the cone (19).
- Mount a new upper cone part with a new o-ring (20) in reverse order.
- Check the lower sealing (17), and if necessary, replace this one too.

Note! If the sealing positions are jambing when mounting, oil the sealings and the sealing positions with soap solution or silicone grease. No other lubricants are to be used, as otherwise this can harm the sealings.



9 Maintenance

The cleaner installation is to be inspected regularly each working shift.

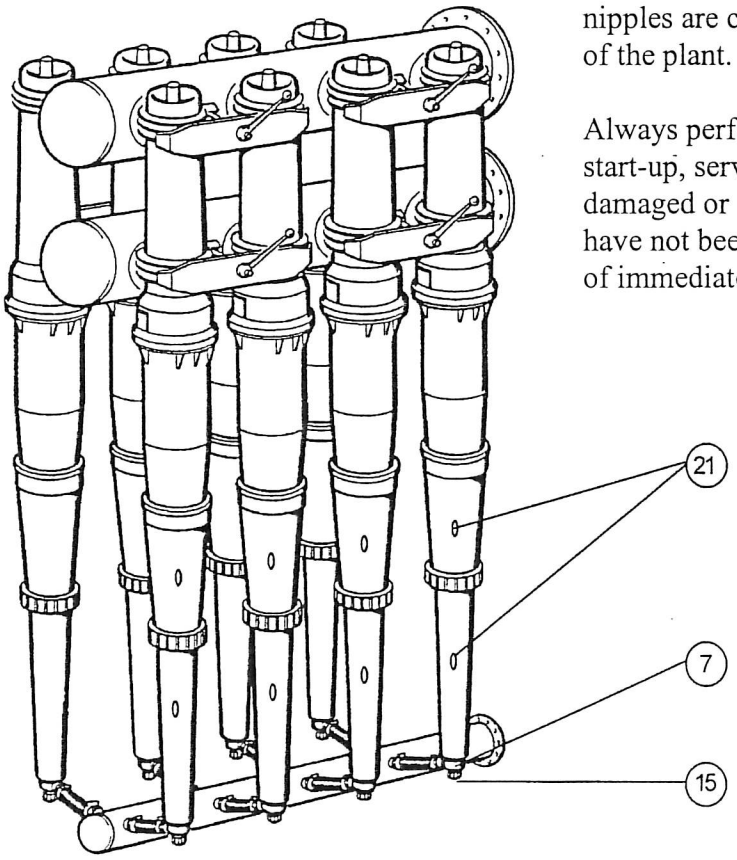
- In the event of plugging in the reject outlet of the cleaner, this can be solved during operation. Dismount the cleaning plug (15) in the bottom of the RG-chamber (7). (Bayonet socket, turn a quarter of a lap counter-clockwise.) Flush with water up into the cone until the plugging is resolved. Remount the cleaning plug.

- The upper and the lower cones have an indication hole (21) in their shells. When the cone has been subject to wear, thus causing a hole in the wall of the cone, this will be seen as a leakage from the indication hole. This hole can then be sealed with the red sealing plug aimed for this situation. The sealing plug will then serve as an indication that this cone is to be replaced at the next suitable stop.

- Leakage occurring down by the chamber can indicate wearing of the RG Chamber and should then be exchanged soonest. See "Exchange of Lower Cone and/or RG Chamber".

Make sure that all the nuts, clamps and nipples are correctly tightened before start up of the plant.

Always perform a visual density control after start-up, service or reparations. Leaking, damaged or left out gaskets, or nipples that have not been tightened, are to be taken care of immediately.



10 Safety Instructions

CAUTION!

No parts of the cleaner may be dismounted during operation, except for the cleaning plug in the lower part of the cleaner.

At temp. above 45°C (113°F), be aware of the burning danger.

Do always use safety gloves when cleaning during operation.

Considering that o-rings and gaskets get aged, especially at high working temperatures, leakage can arise. Therefore the plant should not be placed close to any busy passage in the factory.

There is an injury risk due to uncovered tie rods on dismounted cleaners. Therefore, always be sure to put back the nut on the tie rod end.

Never stand on or step up onto the reject pipes, especially not on the reject pipes of the satellites, as this could cause breaking and loosening of the reject pipe connections, this in turn causing leakage and possible burning danger.

Please note! GL&V/Celleco AB cannot guarantee the safety, if parts not delivered by GL&V/Celleco are being used in the plants.

Also check that correct part numbers of the spare parts have been used, i.e. correct number of detail and quality of material.

LUNCH RELIEF

8/7 Roxanne	8/8 Linda B.	8/9 Mary	8/10 Sandra	8/11 Salina
8/14 Michelle	8/15 Deborah	8/16 Margie	8/17 Chris	8/18 Sheila
8/21 Tenise	8/22 Gigi	8/23 Veronica	8/24 Marilyn	8/25 Linda
8/28 Roxanne	8/29 Carole	8/30 Doreen	8/31 Sandra	9/1 Salina
9/4 Holiday	9/5 Deborah	9/6 Mary	9/7 Chris	9/8 Sheila
9/11 Michelle	9/12 Gigi	9/13 Margie	9/14 Marilyn	9/15 Linda
9/18 Tenise	9/19 Carole	9/20 Veronica	9/21 Sandra	9/22 Salina
9/25 Roxanne	9/26 Deborah	9/27 Doreen	9/28 Chris	9/29 Sheila

10/2 Michelle	10/3 Gigi	10/4 Mary	10/5 Marilyn	10/6 Linda
10/9 Tenise	10/10 Carole	10/11 Margie	10/12 Sandra	10/13 Salina
10/16 Roxanne	10/17 Deborah	10/18 Veronica	10/19 Chris	10/20 Sheila
10/23 Michelle	10/24 Gigi	10/25 Doreen	10/26 Marilyn	10/27 Linda
10/30 Tenise	10/31 Carole			

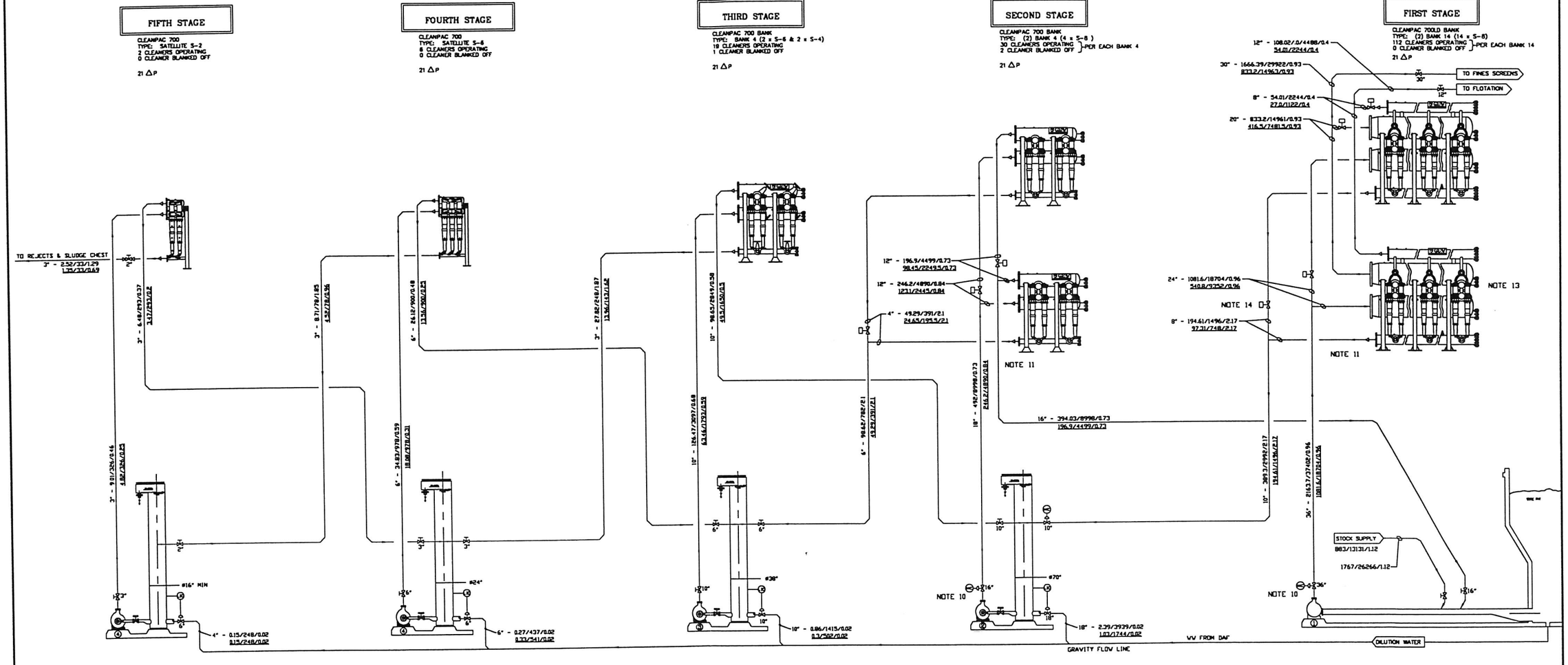
GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products US Corp**	Order No. **102123**	
	Coosa Pines, AL	Date 9/28/00	Sheet No. 1
	EQUIPMENT	Initials SL	No of sheets 1

Item	Qty	Name	Article No.	Notes
		STAGE 1		
	1	CLEANPAC 700LD Bank 14 with 2 x 8 Satellites	**102123-01-CLP-003**	
		STAGE 2		
	1	CLEANPAC 700 Bank 4 with 4 x 8 Satellities	**102123-01-CLP-004**	
		STAGE 3		
	1	CLEANPAC 700 Bank 4 with 2 x 6 & 2 x 4 Satellities	**102743-CLP-01-004**	
		STAGE 4		
	1	CLEANPAC 700 with 6 Cleaners	**102123-01-CLP-005**	
		STAGE 5		
	1	CLEANPAC 700 with 2 Cleaners	**102123-01-CLP-006**	

Rev.	Revision	Date	Revised	Approved
0	MANUFACTURES RECOMMENDED DESIGN	8/16/00	DAB	RMS

RECOMMENDED DESIGN DRAWING

THIS DRAWING DESCRIBES GL&V/CELLECO'S RECOMMENDED DESIGN FOR OPTIMAL SYSTEM PERFORMANCE. THIS DRAWING SHOULD BE USED AS A GUIDELINE WHEN DEFINING THE INSTALLATION OF A NEW SYSTEM. GL&V WILL GLADLY REVIEW AND PROVIDE INPUT ON CUSTOMER'S DETAILED INSTALLATION DRAWINGS; HOWEVER, THIS DRAWING WILL NOT BE MODIFIED TO REFLECT ACTUAL PIPING/STANDPIPE DESIGN.



LEGEND

STOCK FLOWS: BDT per DAY - USGPM - % CONSISTENCY

- NEW EQUIPMENT
- EXISTING EQUIPMENT
- PROPOSED, ALTERNATE, OR FUTURE EQUIPMENT
- MAJOR FLOW LINE
- RECYCLE, SECONDARY FLOW LINE
- PNEUMATIC SIGNAL
- CAPILLARY TUBE
- ELECTRICAL SIGNAL
- GATE VALVE
- BALL, GLOBE VALVE
- CHECK VALVE
- NORMALLY CLOSED VALVES
- 3-WAY VALVE
- 4-WAY VALVE
- MANUALLY OPERATED VALVE
- CONTROL VALVE (THROTTLING)
- CONTROL VALVE (ON-OFF)
- PRESSURE RELIEF VALVE
- VENT TO ATMOSPHERE
- TRAP
- SHOWER, SPRAY
- SAMPLE PORT
- TRANSMITTER
- TRANSDUCER
- FLOW THRU INSTRUMENT
- DRAIN TO SEWER
- REDUCER
- ORIFICE
- STRAINER
- PUMP
- ELECTRIC MOTOR, HORSEPOWER STATED
- PANEL MOUNTED INSTRUMENT
- PRESSURE VERIFICATION TAP
- TEST BLANK

NOTES:

1. ALL STAGES ARE TO HAVE A MIN. OF 5 PSI BACK PRESSURE ON ACCEPT HEADER.
2. VALVE SIZES ARE GIVEN IN NOMINAL DIAMETERS FOR VEE-PORT KNIFE GATE VALVES. VALVE SIZES SHOWN ARE BASED ON THE APPROXIMATE ELEVATIONS SHOWN, NEGLECTING PIPE AND FITTING FRICTIONAL LOSSES. ALL VALVES MUST BE SIZED TO ENSURE 3 PSIG AT THE REJECTS AND 5 PSIG AT THE ACCEPTS WITH VALVES 50-60% OPEN. FINAL VALVE SIZING TO BE COMPLETED BY CUSTOMER BASED ON ACTUAL INSTALLATION DETAILS.
3. VALVES WITH ACTUATORS SHOULD FAIL LAST POSITION.
4. ALL VALVES ARE TO BE LOCATED BELOW WHITE WATER LEVEL.
5. PRESSURE TRANSMITTER RANGE ARE TO COINCIDE WITH GAUGE RANGES.
6. INACCURATE PRESSURE READING WILL OCCUR IF PRESSURE GAUGE AND DIAPHRAGM SEALS ARE NOT TEMPERATURE CALIBRATED FOR EACH APPLICATION.
7. STANDPIPES ARE USED FOR EXCESS AIR REMOVAL.
8. SAMPLE VALVES ON ALL LINES ON PRESSURE SIDE "UPSTREAM OF VALVE".
9. IF ACCEPT PRESSURE IS NOT CONSTANT, A DIFFERENTIAL PRESSURE CONTROLLER IS REQUIRED ON STAGE 1 REJECT VALVE.
10. VALVE TO BE SLOW OPENING TO PREVENT WATER HAMMER. VALVE TO FAIL CLOSED. VALVE TO HAVE POSITIVE STOP TO KEEP VALVE 10% OPEN WHEN VALVE IS CLOSED.
11. PIPING AROUND FIRST AND SECOND STAGES MUST BE SYMMETRICAL FOR PROPER OPERATION OR BALANCING VALVES WILL BE REQUIRED.
12. PIPE AND VALVE SIZING DONE FOR BOTH MAX & HALF-PRODUCTION. TO ENSURE PROPER OPERATION THE SIZING RECOMMENDATIONS FOR MAX SHOULD BE USED. STANDPIPES WERE SIZED USING ONLY MAX FLOWS. MAX FLOW / HALF-PRODUCTION
13. CLEANOUT FLANGES ARE LOCATED ON STAGES 1"-3" FEED, ACCEPT, REJECT AND LIGHT WEIGHT REJECT HEADERS.
14. LOCATE ISOLATION VALVES AS CLOSE TO TEE AS POSSIBLE TO PREVENT DEAD ZONES.
15. STANDPIPES ARE LEVEL CONTROLLED SO THAT INK FROTH FLOWS INTO OVERFLOW.

ALLIANCE FOREST PRODUCTS U.S. CORP. COOSA PINES, AL RECYCLE SYSTEM

ONP/OMG — PUBLICATION GRADES

Drawn	Scale	Size	Qty. Ordered
DAB	NONE	D	1
Checked	Date		FILE
RMS	7/31/00		102123

Title: P&I DIAGRAM FOR CELLECO CLP 700 CLEANER SYSTEM

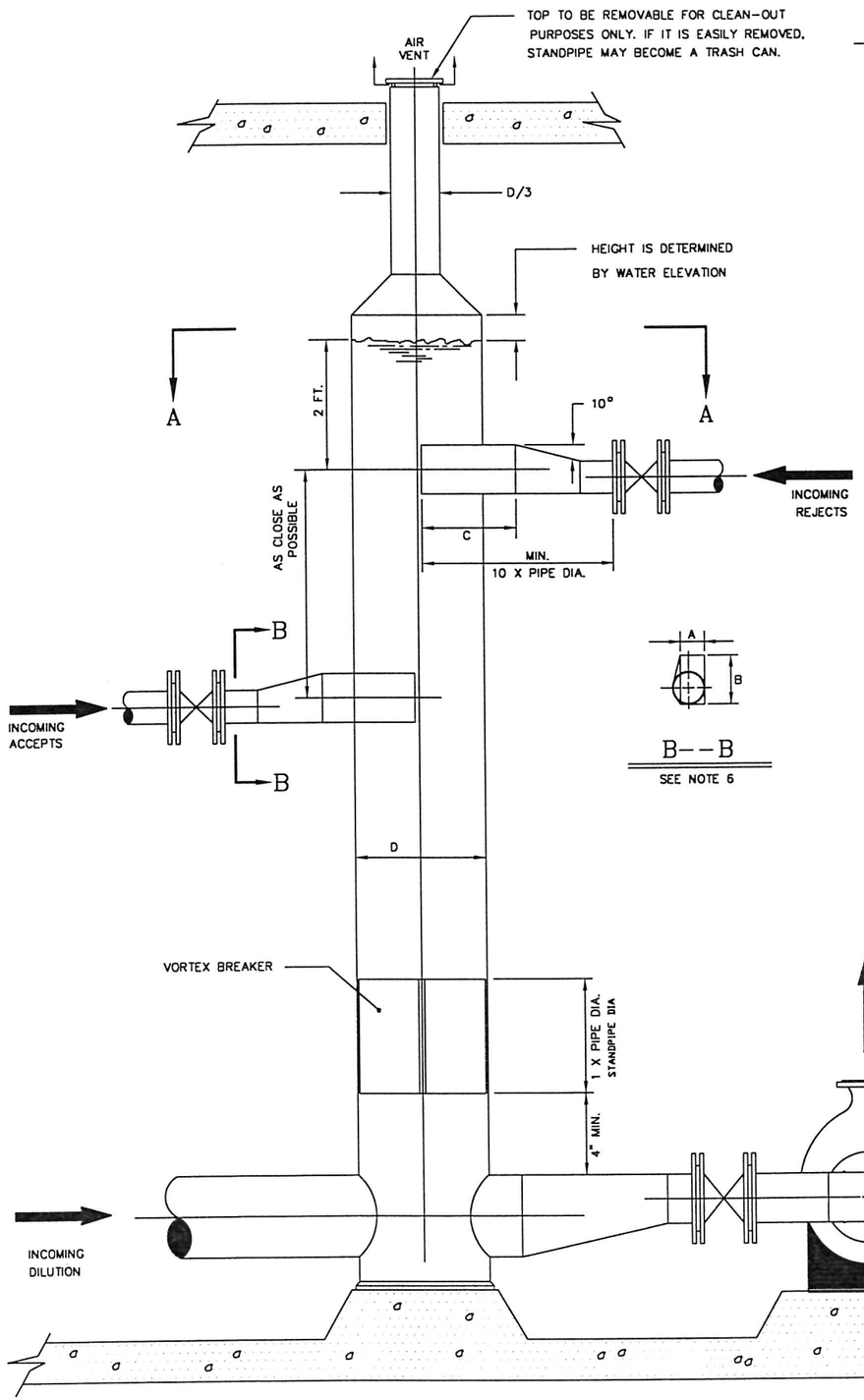
GL&V

FILE #:

Customer P.O. No. W 445001

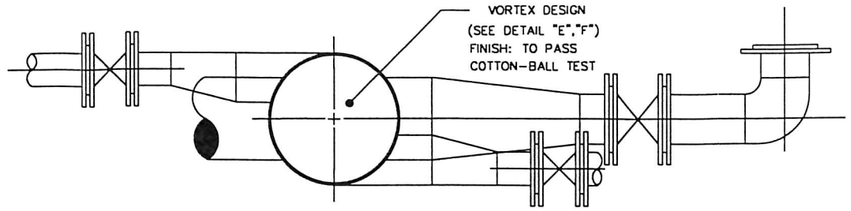
Drawing No. 102123-01-PID-001 REV. 0

Rev.	Revision	Date	Revised	Approved
0	MANUFACTURES RECOMMENDED DESIGN	8/16/00	DAB	RMS
1	MANUFACTURES RECOMMENDED DESIGN	9/22/00	DAB	RMS

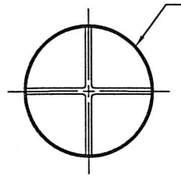


B--B

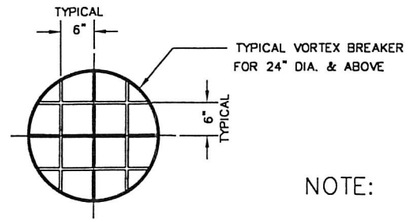
SEE NOTE 6



A--A



DETAIL "F"



DETAIL "E"

NOTE:

1.) 1/2 FT. PER SECOND DOWN VELOCITY "V" FOR SIZING STANDPIPE DIAMETER.

2.) 5 FT. PER SECOND VELOCITY "V" FOR SIZING PUMP SUCTION.

3.) ALL INCOMING REJECT LINES ARE TO ENTER BELOW WHITE WATER LEVEL, WITH TANGENTIAL ENTRIES TO CREATE A VORTEX. THIS VORTEX WILL AID IN REMOVING AIR.

4.) NEVER LOCATE VALVES RIGHT NEXT TO ENTRIES.

5.) IF UNABLE TO COMPLY WITH DESIGN CRITERIA, YOUR DESIGN MUST BE APPROVED BY GL&V CELLECO.

6.) THE LONG AXIS OF THE RECTANGLE A-B SHOULD BE VERTICAL. IF A IS GREATER THAN B, ROTATE THE RECTANGLE 90 DEGREES.

DIMENSIONAL DATA

$A\ (\text{INCH}) = (.25)\ (D)$

$$B\ (\text{INCH}) = \frac{(\text{GPM})\ (144\ \frac{\text{IN.}^2}{\text{FT.}^2})}{(7.48\ \frac{\text{GPM}}{\text{FT.}^3})\ (60\ \frac{\text{SEC.}}{\text{MIN.}})\ (5\ \frac{\text{FT.}}{\text{SEC.}})\ (\text{A INCH})}$$

$C\ (\text{INCH}) = (1)\ (D)$

$$D\ (\text{INCH}) = \sqrt{\frac{\text{GPMT}\ (144\ \frac{\text{IN.}^2}{\text{FT.}^2})\ (4)}{(7.48\ \frac{\text{GPM}}{\text{FT.}^3})\ (60\ \frac{\text{SEC.}}{\text{MIN.}})\ (1/2\ \frac{\text{FT.}}{\text{SEC.}})\ (\pi)}}$$

LEGEND

GPM= MAX. FLOW IN PIPE
V= DESIGN VELOCITY (FT./SEC.)
D= STANDPIPE MINIMUM INSIDE DIA. (INCHES)
GPMT= SUM OF FLOWS INTO STANDPIPE ABOVE THE VORTEX BREAKER

RECOMMENDED DESIGN DRAWING

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ALLIANCE FOREST PRODUCTS
US CORP.
COOSA PINES, AL.

Drawn	Scale	Size	Qty. Ordered
DAB	-	D	-
Checked	Date	File	
RMS	8/16/00	102123	

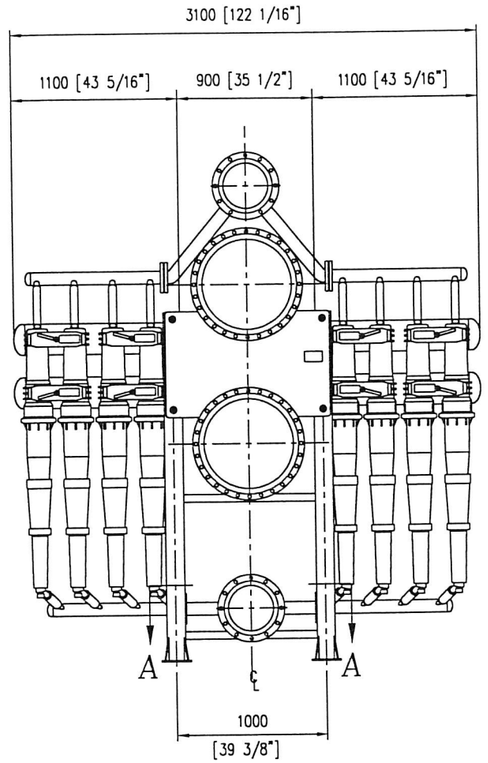
Title
STANDPIPE DETAIL FOR CELLECO
CLP 700LD / 700 CLEANER SYSTEM
-

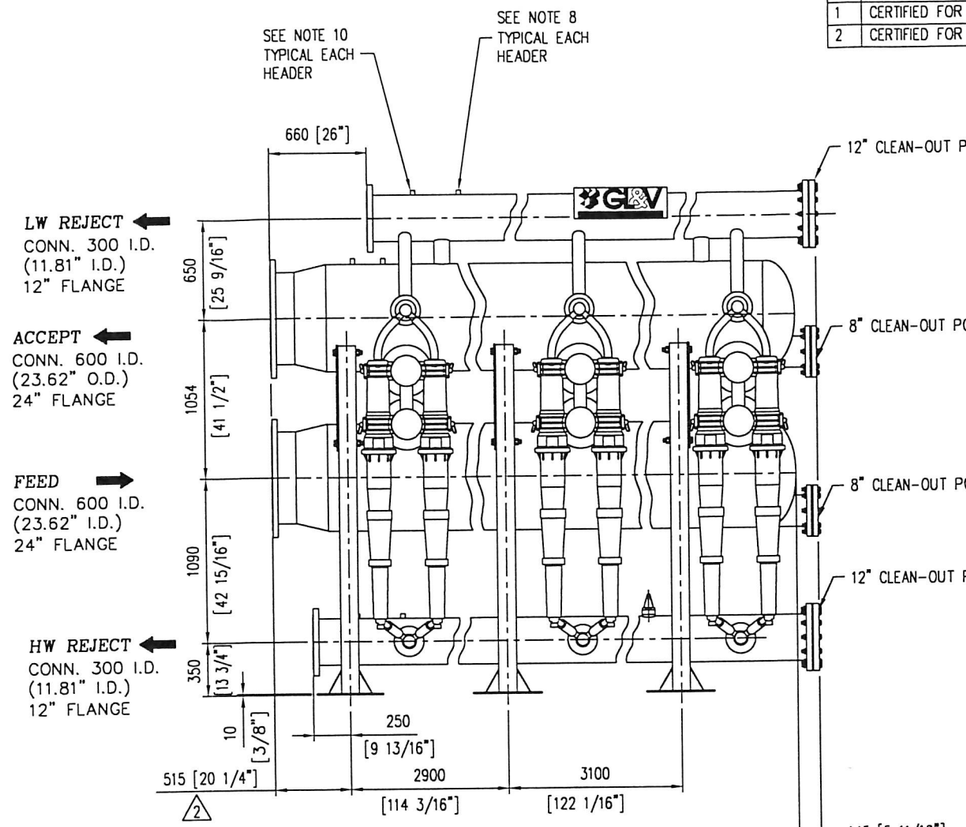
GL&V

Customer P.O. No.
445001

Drawing No. 102123-01-DET-002 REV. 1

Rev.	Revision	Date	Revised	Approved
0	ISSUED FOR APPROVAL	6/16/00	DAB	RMS
1	CERTIFIED FOR CONSTRUCTION	7/24/00	JS	RMS
2	CERTIFIED FOR CONSTRUCTION	8/25/00	KCN	RMS



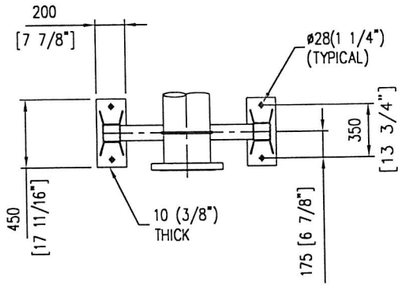


1. Flanges ref. to: ANSI 150 Vanstone
2. Dimensions in mm/inches
3. Weights in: lbs
4. Surface treatment: Mini glassball blasted
5. Headers material: SS 2343 (ASTM 316)
6. Structures material SS 2333 (ASTM 304)
7. Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")
8. 1" NPT half coupling with plug for test gauge on Feed, Accepts, and Reject headers. Test gauge by customer.
9. 112 cleaners operating
   0 cleaners blanked off
10. Electronic pressure transmitter (2) conn. M44 X 1.25 nipple (2.12" O.D.) for Rosemount model 2090P transmitter in feed, accept and rejects. Weld per spec 1004 0957. Transmitter by customers.
11. Weight is evenly distributed on six (6) support legs. 5647 lbs per leg.

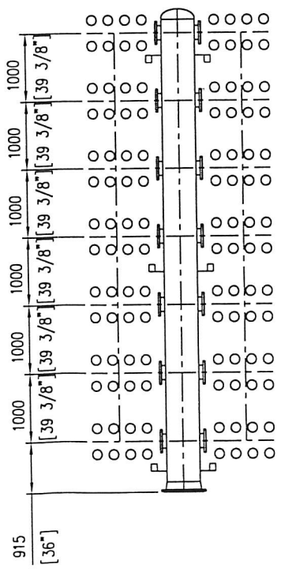
EQUIPMENT LIST	
EQUIP. No.	DESCRIPTION
M94222	A-LINE PRIMARY CLEANERS
M94227	B-LINE PRIMARY CLEANERS

ALLIANCE DRAWING NUMBER
CR-94-M-0135

6093 7975



SECTION A-A



OPERATING CLEANER ⊗ BLANKED OFF UNIT

ALLIANCE FOREST PRODUCTS U.S. CORP.

COOSA PINES, AL

STAGE 1

ONP/OMG — PUBLICATIONS GRADES

102123	112	11600 LBS	33880 LBS
Order number	Number of units	Net weight	Operating weight

Drawn	Scale	Qty. Ordered
DAB	NONE	2
Checked	Date	FILE
RMS	6/13	102123

Title
CLEANPAC 700LD
BANK 14 (14 X S-8)
2 UNITS IN 1ST STAGE

GL&V CELLECO INC.

Customer P.O. No.
445001

Drawing No. 102123-01-CLP-003 — REV. 2

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 1
6093 2904	**Stage 1**	Initials DAB	No of sheets 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
	2	**CLEANPAC 700LD Bank14 With (14) S-8 Satellites**	**102123-01-CLP-003**	**1**	**Certified Customer Drawing**	**LWAB**
1	1	Parent Pipe Feed-Acc Moderrör Inj.-Acc.	1001 1116-21	0		
		Parent Pipe Feed- Moderrör	1001 1117-21	0		
		Parent Pipe Blank Moderrör ämne	6092 2307-02	1		
		Parent Pipe Rejekt Moderrör LD, Rejekt	1001 1118-21	0		
		Distance Plate w. saddle Distansplåt m. sadel	6093 2816-01	2		
		Satellite Connection Satellitanslutning	6092 1825-04	1		
		Distance Pipe Distansrör	6093 1625-01	3		
		Guide Plate Styrplåt	6092 1826-01	B		
2	3	Stand Stativ 12	6093 1820-05	2		**LWAB**
		Stand Leg Stativben	6093 1821-03	1		
		Cross Bar Tvärbalk	6093 1822-05	2		
		Base Plate Fotplatta	1003 0746-01	0		
		Support Stöd	6093 1823-01	1		
		Clamp Bygel	6094 1380-54	0		
3	1	Parent Rej. Moderrör Rej.	1001 1133-21	0		**LWAB**
		Connection Piece Stuts	6093 1819-03	1		

Rev 0		Spec.No. **PS-102123-01-003**

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 2
6093 2904	**Stage 1**	Initials DAB	No of sheets 3

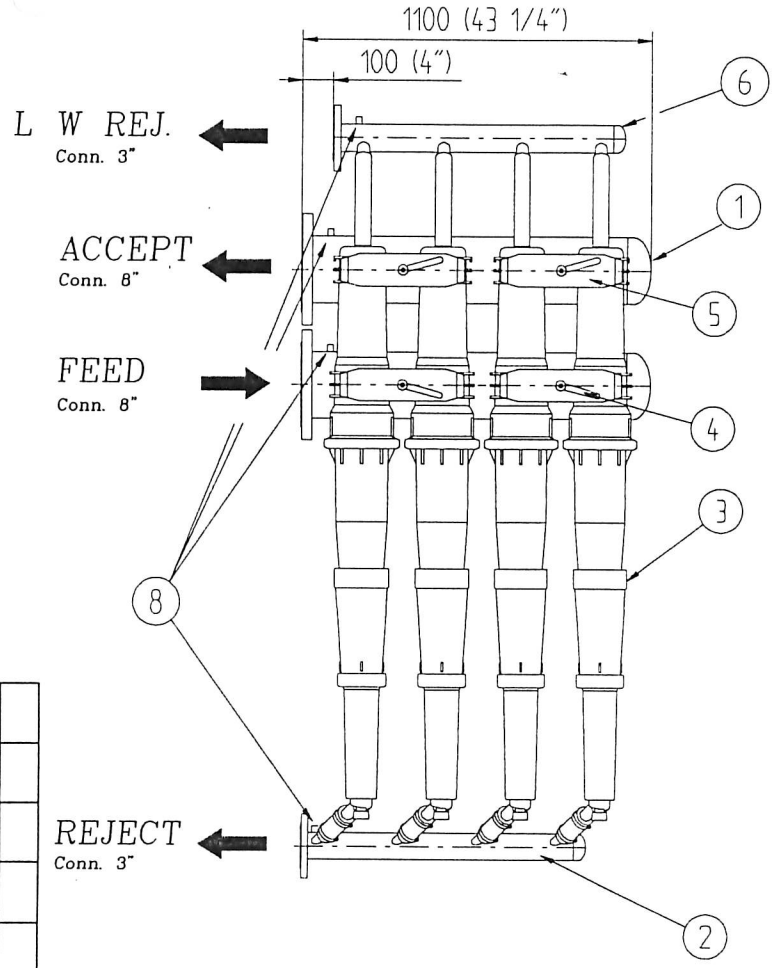
Item	Qty	Name	Article No.	Rev.	Notes	Vendor
4	12	Screw Skruv	1004 1031-10	0		**LWAB**
5	24	Washer Bricka	1004 1060-08	0		**LWAB**
6	12	Nut Mutter	1004 0072-10	0		**LWAB**
7	14	Satellite S-8 LD Satellit	6093 2568	0	See Spec	**LWAB**
8	28	Gasket Packning	6085 2990-08	0		**LWAB**
9	224	Screw Skruv	1004 0998-06	0		**LWAB**
10	448	Washer Bricka	1004 1060-07	0		**LWAB**
11	224	Nut Mutter	1004 0072-09	0		**LWAB**
12	28	Gasket Packning	6085 2990-04	0		**LWAB**
13	112	Screw Skruv	1004 0997-06	0		**LWAB**
14	224	Washer Bricka	1004 1060-06	0		**LWAB**
15	112	Nut Mutter	1004 0072-08	0		**LWAB**
16	4	1" NPT Half-Coupling with Pipe Plug	1004 1268-07 1004 1420-06	0 0		**LWAB**
17	112	Cleaner Virvelrenare	6094 2957	1		**LWAB**
18	0	Dummy Unit Blindningsenhet	6093 7868-31	0		**LWAB**
19	2	Product Sign Produktskylt	6092 3168-02	4		**LWAB**
20	1	Machine Sign Maskinskylt	6093 4248-01	4		**LWAB**
						LWAB

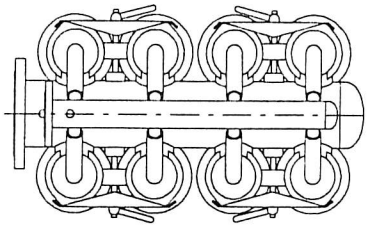
Rev 0		Spec.No. **PS-102123-01-003**

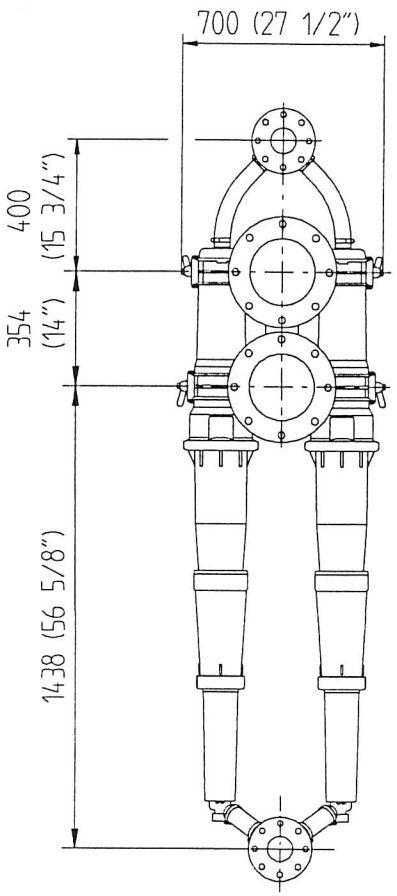
GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 3
6093 2904	**Stage 1**	Initials DAB	No of sheets 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
21	1	Vaccum Valve Vakuumventil	6088 5288-01			**LWAB**
22		Safety Sticker Säkerhetsdekal	6096 1002-01		Part of item 7	**LWAB**
23	2	Sign Bracket	6096 2398-01	0		**LWAB**
24		Pressure Plate Tryckplatta	6091 4676-01	1	Part of item 7	**LWAB**
25	4	1½" NPT Half-Coupling with Pipe Plug	1004 1268-10 1004 1420-08	0 0		**LWAB**
		INC = Celleco, Lawrenceville **LWAB = Lingweld**				

Rev 0	Rev 0 Original issue DAB 7/27/00	Spec.No.	**PS-102123-01-003**







Item number correspond to specification no: _____

Flanges ref. to: ANSI 150

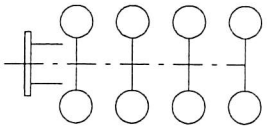
Dimensions in mm/inches

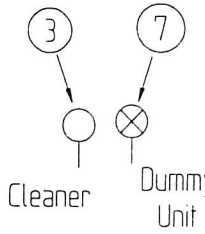
Weights in: lbs

Surface treatment:
Mini glassball blasted

Headers material:
SS 2343 (AISI 316)

Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")





Rev. No.	Revision	Date	Rev.	Check	Appr.

GENERAL DWG
XXXX
XXXX

	8	440 lbs	925 lbs
Order No	Number of units	Net. weight	Oper. weight

Drawn 91-11-19 CL
Approved
Scale 1:15
Customer Ref No

ALFA-LAVAL CELLECO HEDEMORA

Title
CLEANPAC 700 LD, SLD
SATELLITE S-8

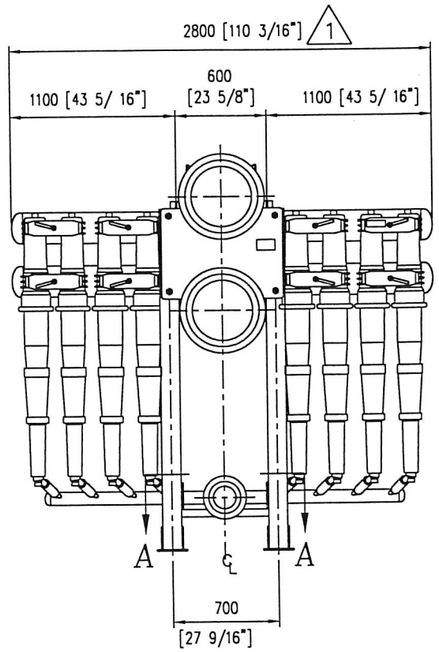
Drawing No 6093 2568 Rev.

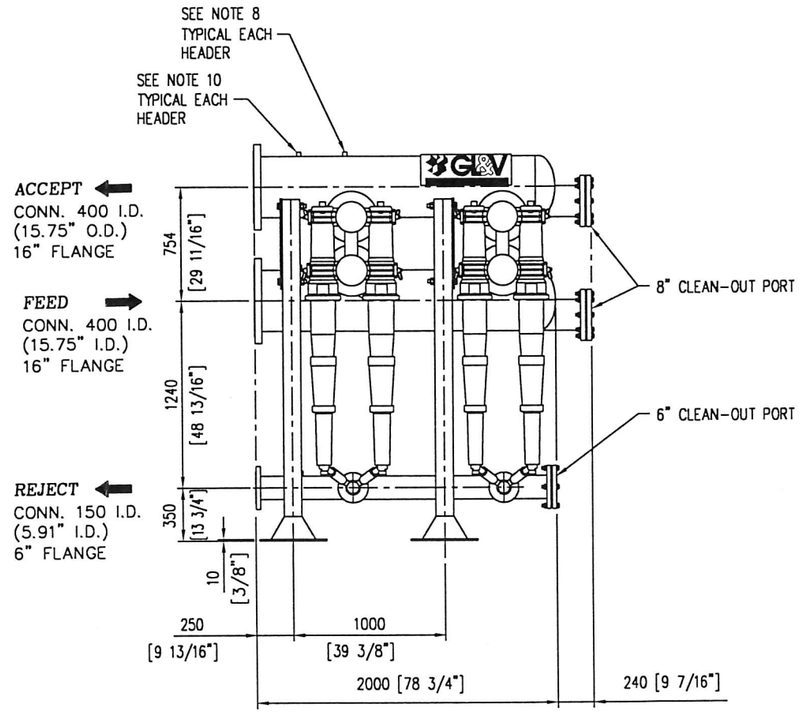
CELLECO, INC. 6093 2568	SPECIFICATION	Order No.	
		Date 9/28/00	Sheet No. 1
		Initials	No of sheets 1

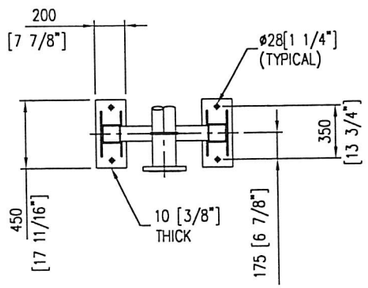
Item	Qty	Name	Article No.	Notes
		CLEANPAC 700 LD, SLD Satellite S-8		
1	1	Feed, Acc. pipe, Satellite Inj. acc. rör, satellit	6091 4671-01	
		Satellite Pipe Satellitrör	6092 1785-01	
		Distance Pipe Distansrör	6093 1625-01	
		Tie Rod Dragstag	6093 1626	
2	1	Reject Pipe Rejektrör	6091 4696-01	
		Connection Stuts	6088 5576-18	
3		Cleaner Virvelrenare	(SEE ASSEMBLY DWG)	
4	8	Bar Nut Spakmutter	6088 8927-05	
5	8	Pressure Plate Tryckplatta	6091 4676-01	
6	1	Reject Pipe Rejektrör LD, SLD	6092 2163-01	
		Reject Pipe Stuts	6088 5576-17	
7		Dummy Unit Blindningsenhet	6093 7867-31	
8		Pressure Gauge Conn. Manometeranslutning	6086 3387-05	PMC
9		Safety Sticker Säkerhetsdekal		

	Spec.No. 6093 2568

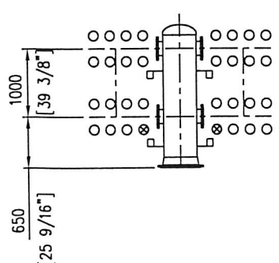
Rev.	Revision	Date	Revised	Approved
0	ISSUED FOR APPROVAL	6/15/00	DAB	RMS
1	VALVES REMOVED, CERTIFIED FOR CONSTRUCTION	7/24/00	JS	RMS
2	CERTIFIED FOR CONSTRUCTION	8/25/00	KCN	RMS







SECTION A–A



OPERATING CLEANER ⚲ ⊗ BLANKED OFF UNIT

1. Flanges ref. to: 150 lb Vanstone
2. Dimensions in mm/inches
3. Weights in: lbs
4. Surface treatment:
   Mini glassball blasted
5. Headers material:
   SS 2343 (ASTM 316)
6. Structures material
   SS 2333 (ASTM 304)
7. Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")
8. 1" NPT half coupling with plug for test gauge on Feed, Accepts, and Reject headers. Test gauge by customer.
9. 30 cleaners operating
   2 cleaners blanked off
10. Electronic pressure transmitter (2) conn. M44 X 1.25 nipple (2.12" O.D.) for Rosemount model 2090P transmitter in feed, accept and rejects. Weld per spec 1004 0957. Transmitter by customers.
11. Weight is distributed as follows:
    37.5% of load on Legs nearest process Flanges.
    2,232 lbs total/ 1116 per Leg.

    62.5% of load on Legs furthest from process Flanges.
    3,722 lbs total/ 1,861 per Leg.

EQUIPMENT LIST	
EQUIP. No.	DESCRIPTION
M94237	A–LINE SECONDARY CLEANERS
M94243	B–LINE SECONDARY CLEANERS

ALLIANCE DRAWING NUMBER
CR–94–M–0136

6093 1761

ALLIANCE FOREST PRODUCTS U.S. CORP.

COOSA PINES, AL

STAGE 2

ONP/OMG PUBLICATIONS GRADES

102123	30	2870 LBS	5955 LBS
Order number	Number of units	Net weight	Operating weight

Drawn	Scale	Qty. Ordered
DAB	NONE	2
Checked	Date	FILE
RMS	6/14/00	102123

Title
CLEANPAC 700
BANK 4 (4 x S- 8)
2 UNITS IN 2ND STAGE

GL&V
CELLECO INC.
Customer P.O. No.
445001

Drawing No. 102123-01-CLP-004 REV. 2

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Product U.S. Corp.**	Order No. **102123/2000155**	
	Coosa Pines, AL.	Date 9/27/00	Sheet No. 1
60931761.EN	**Stage 2**	Initials DAB	No of sheets 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
	2	**CLEANPAC 700 Bank 4 With (4) S-8 Satellites**	**102123-01-CLP-004**	**1**	**Certified Customer Drawing**	**LWAB**
1	1	Parent Pipe Feed - Acc. Moderrör Inj. -Acc.	1001 1134-21	0		
		Parent Pipe Blank Moderrör ämne	6092 1828	3		
		Distance Plate Distansplåt	6093 1812-01	3		
		Satellite Connection Satellitanslutning	6092 1825-01	1		
		Distance Pipe Distansrör	6093 1625-01	3		
		Guide Plate Styrplåt	6092 1826	B		
2	2	Stand Stativ	6093 1820-01	2	Material: Black alt. stainless Svart alt rostfritt	**LWAB**
		Stand Leg Stativben	6093 1821-01	1		
		Cross Bar Tvärbalk	6093 1822-01	2		
		Base Plate Fotplatta	1003 0746-01	0		
		Support Stöd	6093 1823	1		
		Clamp Bygel	6094 1379-52	0		
3	1	Parent Pipe Rej. Moderrör Rej.	1001 1135-21	0		**LWAB**
		Connection Piece Stuts	6093 1819-01	1		
4	8	Screw Skruv	1004 1031-10	0		**LWAB**
5	16	Washer Bricka	1004 1060-08	0		**LWAB**

Rev 0		Spec.No. **PS-102123-01-004**

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Product U.S. Corp.**	Order No. **102123/2000155**	
	Coosa Pines, AL.	Date 9/27/00	Sheet No. 2
60931761.EN	**Stage 2**	Initials DAB	No of sheets 3

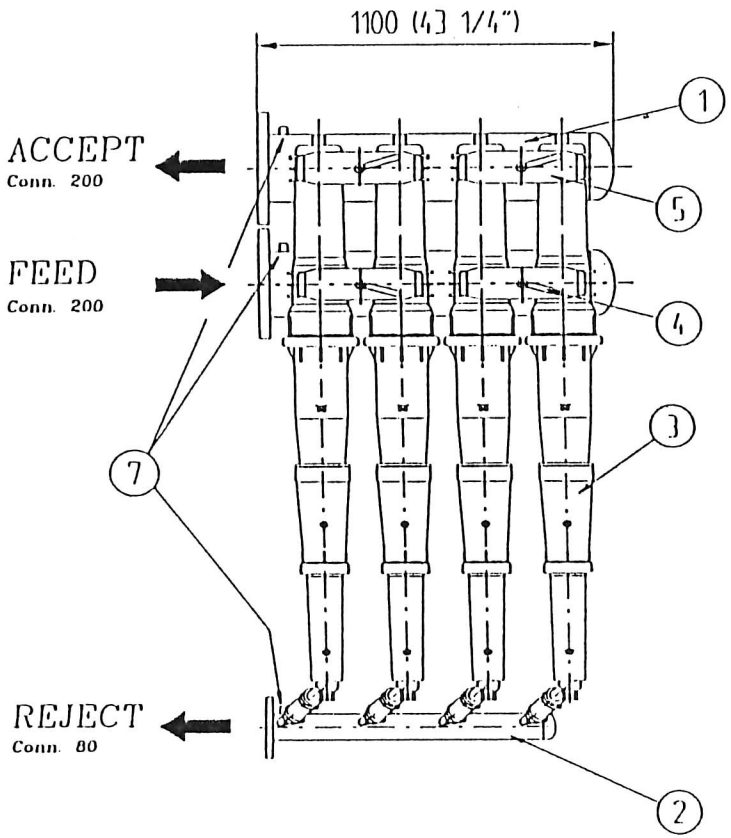
Item	Qty	Name	Article No.	Rev.	Notes	Vendor
6	8	Nut Mutter	1004 0072-10	0		**LWAB**
7	4	Satellite S-8 Satellit	6093 1701		Drawing & spec	**LWAB**
8	8	Gasket Packning	6085 2990-08	0		**LWAB**
9	64	Screw Skruv	1004 0998-06	0		**LWAB**
10	128	Washer Bricka	1004 1060-07	0		**LWAB**
11	64	Nut Mutter	1004 0072-09	0		**LWAB**
12	4	Gasket Packning	6085 2990-04	0		**LWAB**
13	16	Screw Skruv	1004 0997-06	0		**LWAB**
14	32	Washer Bricka	1004 1060-06	0		**LWAB**
15	16	Nut Mutter	1004 0072-08	0		**LWAB**
16	3	1 ½" NPT Half-Coupling with Pipe Plug	1004 1268-10 1004 1420-08	0 0	316 SS	**LWAB**
17	30	Cleaner Virvelrenare	6094 2478	1		**LWAB**
18	2	Dummy Unit Blindningsenhet	6093 7867-31	0		**LWAB**
19	2	Product Sign Produktskylt	6092 3168-02	4		**LWAB**
20	1	Machine Sign Maskinskylt	6093 4248-01	4		**LWAB**
21		Safety Sticker Säkerhetsventil	6096 1002-01		Part of item 7	**LWAB**
22	3	1" NPT Half-Coupling with Pipe Plug	1004 1268-07 1004 1420-06	0 0	316 SS	**LWAB**

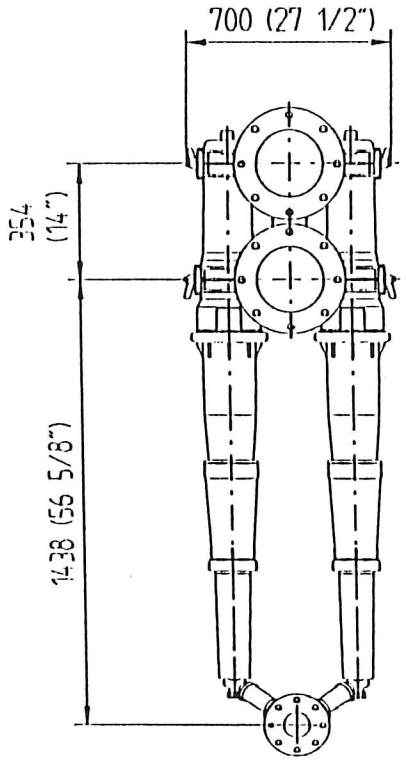
GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Product U.S. Corp.**	Order No. **102123/2000155**	
	Coosa Pines, AL.	Date 9/27/00	Sheet No. 2
60931761.EN	**Stage 2**	Initials DAB	No of sheets 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
23	2	Sign Bracket	6096 2398	0		**LWAB**
24		Pressure Plate	6091 4676-01	1	Part of item 7	

INC = Celleco, Lawrenceville
LWAB = Lingweld

Rev 0	Rev 0 Original issue DAB 7/27/00	Spec.No.	**PS-102123-01-004**





Item number correspond to specification no: XXX

Flanges ref. to: See General Drwg.

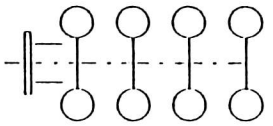
Dimensions in mm/inches

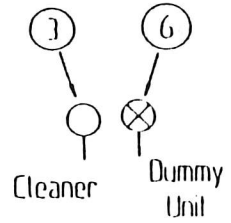
Weights in: kg

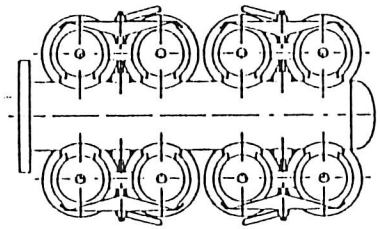
Surface treatment:
Mini glassball blasted

Headers material:
SS 2343 (AISI 316)

Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")





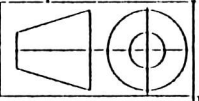


Rev. No.	Revision	Date	Rev	Check	Appr

MELLANORIGINAL
XXXX
XXXX

Order No	Number of units	190 kg Net. weight	390 kg Oper. weight

Drawn 92-01-27 CL
Approved
Scale 1:5
Customer Ref No



ALFA-LAVAL
CELLECO HEDEMORA

Title
CLEANPAC 700
SATELLITE S-8

Drawing No 6093 1701

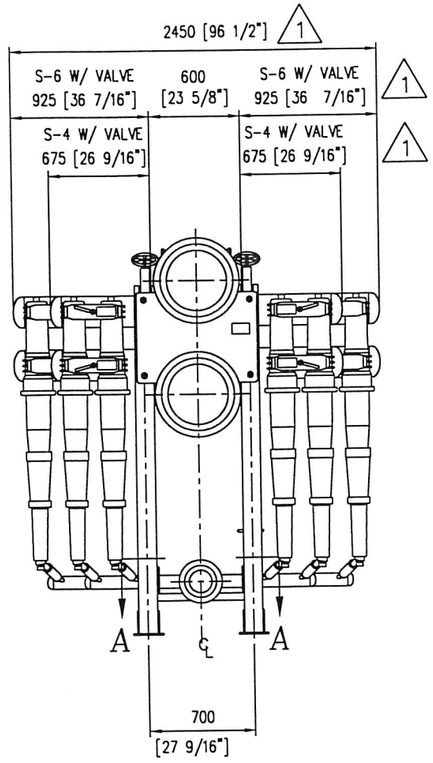
Rev

GL&V CELLECO, INC. 6093 1701	SPECIFICATION	Order No.	
		Date 10/14/99	Sheet No 1
		Initials	No of sheets 1

Item	Qty	Name	Article No.	Notes
		CLEANPAC 700, 700 S Satellite S-8	6093	
1	1	Feed, Acc. pipe, Satellite Inj. acc.rör, satellit	6091 4671	
		Satellite Pipe Satellitrör	6092 1785	
		Distance Pipe Distansrör	6093 1625	
		Tie Rod Dragstag	6093 1626	
2	1	Reject Pipe Rejektrör	6091 4696	
		Connection Stuts	6088 5576-18	
3		Cleaner Virvelrenare		See Assembly Drwg.
4	8	Bar Nut Spakmutter	6088 8927-05	
5	8	Pressure Plate Tryckplatta	6091 4676	
6		Dummy Unit Blindningsenhet	6093 7867-31	
7		Pressure Gauge Connection Manometeranslutning	6086 3387-05	

	Spec.No.

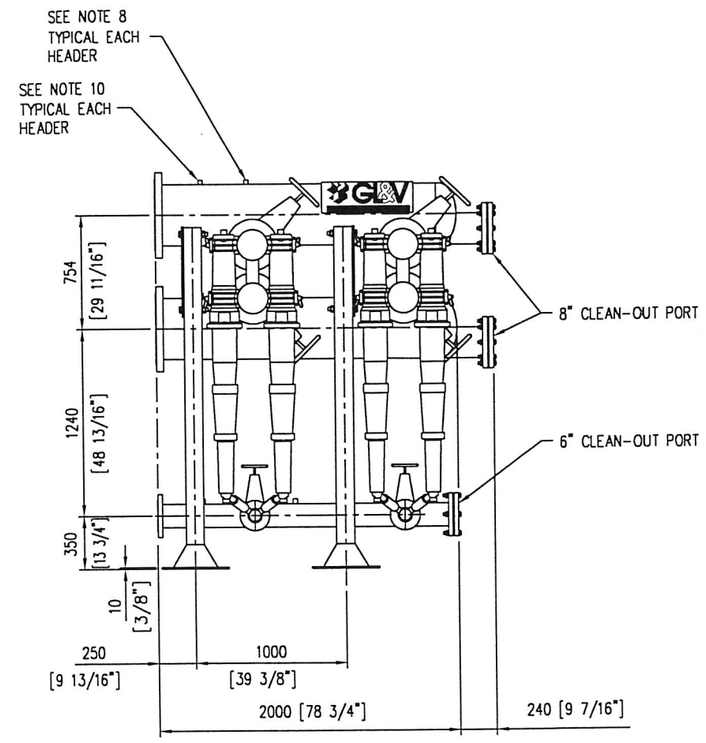
Rev.	Revision	Date	Revised	Approved
0	ISSUED FOR APPROVAL	6/16/00	DAB	RMS
1	VALVES ADDED, CERTIFIED FOR CONSTRUCTION	7/24/00	JS	RMS
2	CERTIFIED FOR CONSTRUCTION	8/25/00	KCN	RMS

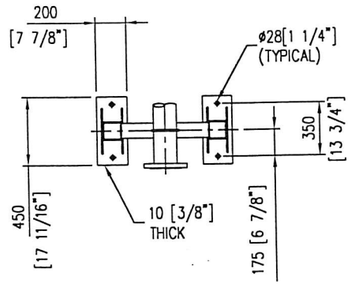


ACCEPT
CONN. 400 I.D.
(15.75" O.D.)
16" FLANGE

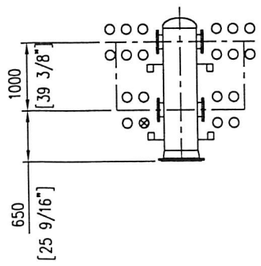
FEED
CONN. 400 I.D.
(15.75" I.D.)
16" FLANGE

REJECT
CONN. 150 I.D.
(5.91" I.D.)
6" FLANGE





SECTION A–A



OPERATING CLEANER

BLANKED OFF UNIT

1. Flanges ref. to: 150 lb Vanstone
2. Dimensions in mm/inches
3. Weights in: lbs
4. Surface treatment:
   Mini glassball blasted
5. Headers material:
   SS 2343 (ASTM 316)
6. Structures material
   SS 2333 (ASTM 304)
7. Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")
8. 1" NPT half coupling with plug for test gauge on Feed, Accepts, and Reject headers. Test gauge by customer.
9. 19 cleaners operating
   1 cleaners blanked off
10. Electronic pressure transmitter (2) conn. M44 X 1.25 nipple (2.12" O.D.) for Rosemount model 2090P transmitter in feed, accept and rejects. Weld per spec 1004 0957. Transmitter by customers.
11. Weight is distributed as follows:
    37.5% of load on Legs nearest process Flanges.
    2,289 lbs total/ 1144 per Leg.

    62.5% of load on Legs furthest from process Flanges.
    3,816 lbs total/ 1,908 per Leg.

EQUIPMENT LIST	
EQUIP. No.	DESCRIPTION
M94252	TERTIARY CLEANERS

ALLIANCE DRAWING NUMBER
CR-94-M-0137

6093 1761

ALLIANCE FOREST PRODUCTS U.S. CORP.

COOSA PINES, AL

STAGE 3

ONP/OMG — PUBLICATIONS GRADES

102123	19	3020 LBS	6105 LBS
Order number	Number of units	Net weight	Operating weight

Drawn	Scale	Qty. Ordered
DAB	NONE	1
Checked	Date	FILE
RMS	6/14/00	102123

Title
CLEANPAC 700 BANK 4
(2 x S-4 & 2 x S-6)
1 UNIT IN 3RD STAGE

GL&V
CELLECO INC.

Customer P.O. No.
445001

Drawing No. 102123-01-CLP-005 — REV. 2

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp.**	Order No. **102123/2000155**
	Coosa Pines, AL	Date: 9/27/00 — Sheet No.: 1
60931761.EN	**Stage 3**	Initials: DAB — No of sheets: 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
	1	**CLEANPAC 700 Bank 4 With (2) S-6 & (2) S-4 Satellites**	**102123-01-CLP-004**	**1**	**Certified Customer Drawing**	**LWAB**
1	1	Parent Pipe Feed - Acc. Moderrör Inj. -Acc.	1001 1134-21	0		**LWAB**
		Parent Pipe Blank Moderrör ämne	6092 1828	3		
		Distance Plate Distansplåt	6093 1812-01	3		
		Satellite Connection Satellitanslutning	6092 1825-01	1		
		Distance Pipe Distansrör	6093 1625-01	3		
		Guide Plate Styrplåt	6092 1826	B		
2	2	Stand Stativ	6093 1820-01	2	Material: Black alt. stainless Svart alt rostfritt	**LWAB**
		Stand Leg Stativben	6093 1821-01	1		
		Cross Bar Tvärbalk	6093 1822-01	2		
		Base Plate Fotplatta	1003 0746-01	0		
		Support Stöd	6093 1823	1		
		Clamp Bygel	6094 1379-52	0		
3	1	Parent Pipe Rej. Moderrör Rej.	1001 1135-21	0		**LWAB**
		Connection Piece Stuts	6093 1819-01	1		
4	8	Screw Skruv	1004 1031-10	0		**LWAB**
5	16	Washer Bricka	1004 1060-08	0		**LWAB**

Rev 0		Spec.No. **PS-102123-01-005**

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp.**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 2
60931761.EN	**Stage 3**	Initials DAB	No of sheets 3

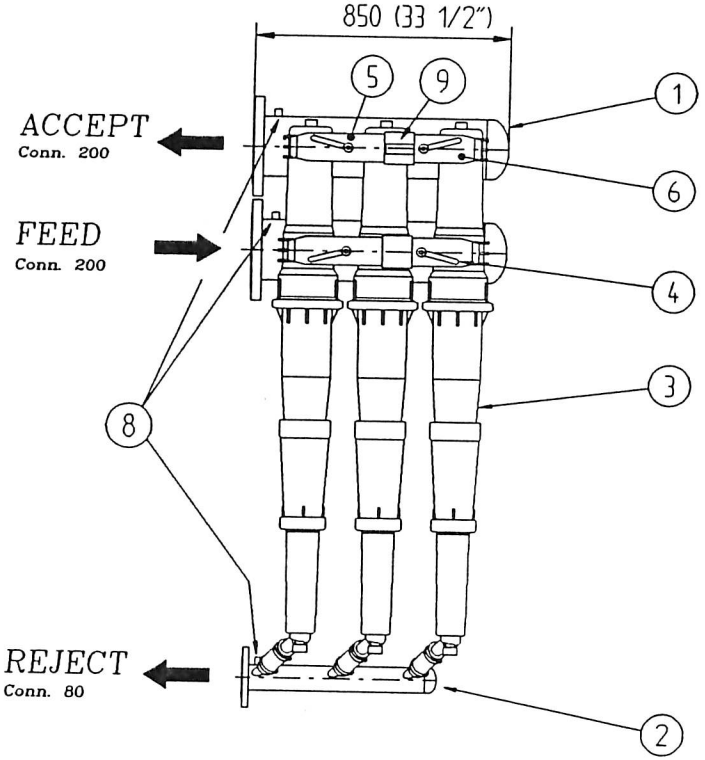
Item	Qty	Name	Article No.	Rev.	Notes	Vendor
6	8	Nut Mutter	1004 0072-10	0		**LWAB**
7	2	Satellite S-6 Satellit	6093 4677		See Spec	**LWAB**
8	2	Satellite S-4 Satellit	6093 1700		See Spec	**LWAB**
9	4	Gasket Packning	6085 2990-08	0		**LWAB**
10	32	Screw Skruv	1004 0998-06	0		**LWAB**
11	64	Washer Bricka	1004 1060-07	0		**LWAB**
12	32	Nut Mutter	1004 0072-09	0		**LWAB**
13	2	Gasket Packning	6085 2990-04	0		**LWAB**
14	8	Screw Skruv	1004 0997-06	0		**LWAB**
15	16	Washer Bricka	1004 1060-06	0		**LWAB**
16	8	Nut Mutter	1004 0072-08	0		**LWAB**
17	3	1 ½" NPT Half-Coupling with Pipe Plug	1004 1268-10 1004 1420-08	0 0		**LWAB**
18	19	Cleaner Virvelrenare	6094 2478	1		**LWAB**
19	1	Dummy Unit Blindningsenhet	6093 7867-31	0		**LWAB**
20	2	Product Sign Produktskylt	6092 3168-02	4		**LWAB**
21	1	Machine Sign Maskinskylt	6093 4248-01	4		**LWAB**

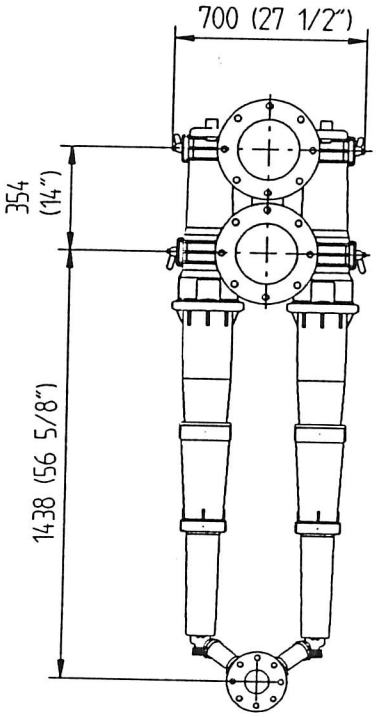
Rev 0		Spec.No. **PS-102123-01-005**

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products U.S. Corp.**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 3
60931761.EN	**Stage 3**	Initials DAB	No of sheets 3

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
22		Safety Sticker Säkerhetsventil	6096 1002-01		Part of items 7 & 8	**LWAB**
23	3	1" NPT Half-Coupling with Pipe Plug	1004 1268-07 1004 1420-06	0 0	316 SS	**LWAB**
24		Pressure Plate Tryckplatta	6091 4676-01	1	Part of items 7 & 8	**LWAB**
25		Pressure Plate Tryckplatta	6092 3350-01	1	Part of items 7	**LWAB**
26	2	Sign Bracket	6096 2398	0		**LWAB**
27	2	Satellite Isolation Kit	1002 0173	0		**INC**
		INC = Celleco, Lawrenceville **LWAB = Lingweld**				

Rev 0	Rev 0 Original issue DAB 6/22/00	Spec.No. **PS-102123-01-005**





Item number correspond to specification no: XXX

Flanges ref. to: See General Drwg.

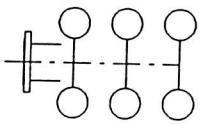
Dimensions in mm/inches

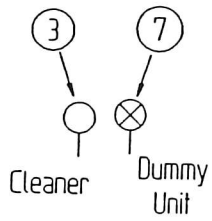
Weights in: kg

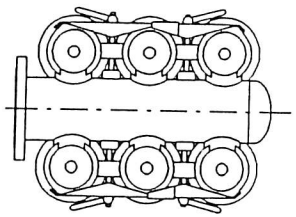
Surface treatment: Mini glassball blasted

Headers material: SS 2343 (AISI 316)

Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")







Rev. No.	Revision	Date	Rev.	Check	Appr.

MELLANORIGINAL
XXXX
XXXX

Order No	Number of units	Net. weight	Oper. weight
		145 kg	295 kg

Drawn 94-04-18 CL
Approved
Scale 1:15
Customer Ref No

ALFA-LAVAL
CELLECO HEDEMORA

Title
CLEANPAC 700
SATELLITE S-6

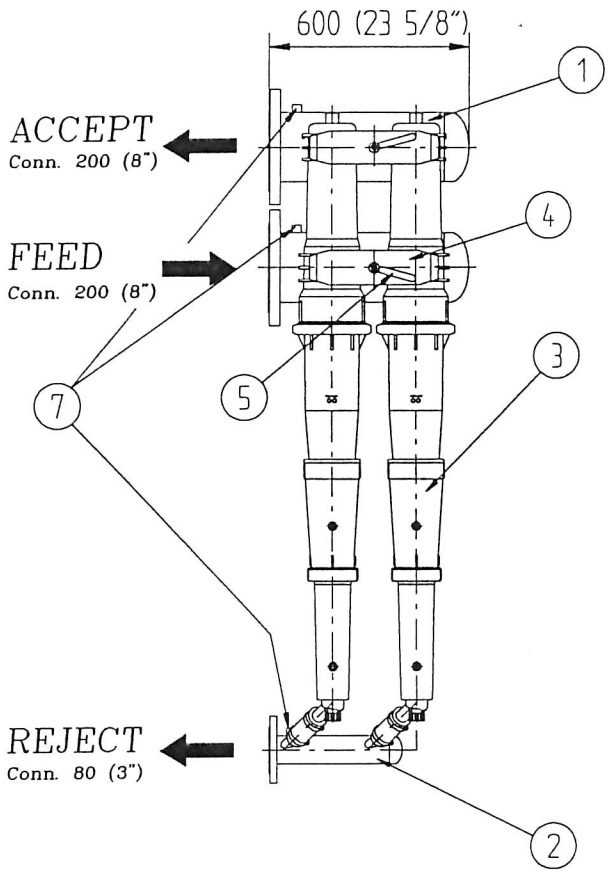
Drawing No 6093 4677

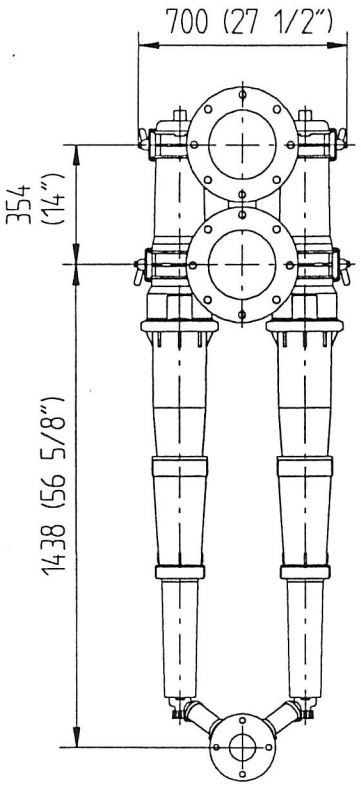
Rev.

GL&V CELLECO, INC. 6093 4677	SPECIFICATION	Order No.	
		Date 10/14/99	Sheet No 1
		Initials	No of sheets 1

Item	Qty	Name	Article No.	Notes
		CLEANPAC 700 Satellite S-6		
1	1	Feed, Accept Pipe, Satellite Injekt, acceptrör, satellit	6091 6562-01	
		Satellite Pipe Satellitrör	6092 3343-01	
		Distance Pipe Distansrör	6093 1625	
		Tie Rod Dragstag	6093 1626	
2	1	Reject Pipe Rejektrör	6091 6564-01	
		Connection Stuts	6088 5576-18	
3		Cleaner Virvelrenare		See Assembly Drwg.
4	8	Bar Nut Spakmutter	6088 8927-05	
5	4	Pressure Plate Tryckplatta	6091 4676-01	
6	4	Pressure Plate Tryckplatta	6092 3350-01	
7		Dummy Unit Blindningsenhet	6093 7867-31	
8		Pressure Gauge Connection Manometeranslutning	6086 3387-05	
9		Safety Sticker Säkerhetsdekal	6096 1002	(01)

	Spec.No.





Item number correspond to specification no: 6093 1700-01

Flanges ref. to: ANSI 150

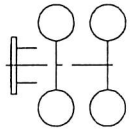
Dimensions in mm/inches

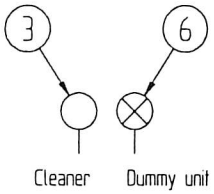
Weights in: lbs

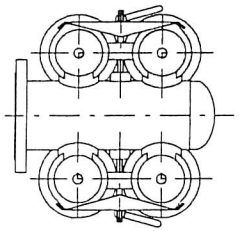
Surface treatment: Mini glassball blasted

Headers material: SS 2343 (AISI 316)

Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")







Rev. No.	Revision	Date	Rev.	Check.	Appr.

GENERAL DWG
XXXX
XXXX

		245 lbs	555 lbs
Order No	Number of units	Net. weight	Oper. weight

Drawn	Scale
92-01-27 CL	1:15
Approved	Customer Ref No

ALFA-LAVAL
CELLECO HEDEMORA

Title
CLEANPAC 700
SATELLITE S-4

Drawing No
6093 1700

Rev.

GL&V

CELLECO, INC.

6093 1700

SPECIFICATION

Order No.

Date 10/14/99

Sheet No 1

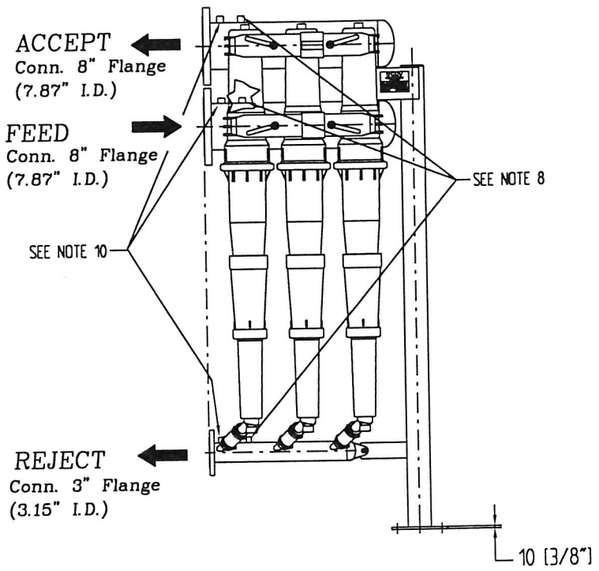
Initials

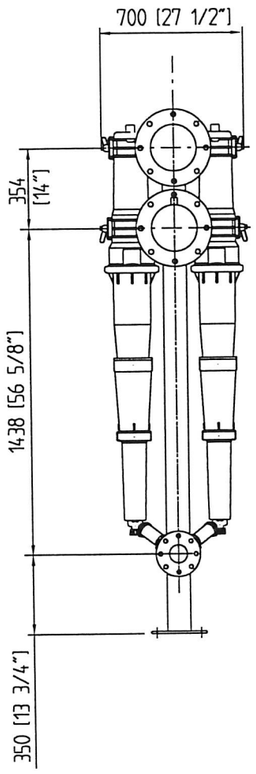
No of sheets 1

Item	Qty	Name	Article No.	Notes
		CLEANPAC 700, 700 S Satellite S-4		
1	1	Feed, Acc. pipe, Satellite Inj. acc.rör, satellit	6091 4672	
		Satellite Pipe Satellitrör	6092 1787	
		Distance Pipe Distansrör	6093 1625	
		Tie Rod Dragstag	6093 1626	
2	1	Reject Pipe Rejektrör	6091 4695	
		Connection Stuts	6088 5576-18	
3		Cleaner Virvelrenare		See Assembly Drwg.
4	4	Pressure Plate Tryckplatta	6091 4676	
5	4	Bar Nut Spakmutter	6088 8927-05	
6		Dummy Unit Blindningsenhet	6093 7867-31	
7	3	Pressure Gauge Connection Manometeranslutning	6086 3387-05	
8	3	1" NPT Half Coupling with Pipe Plug		316 Stainless Steel

Spec.No.

Rev.	Revision	Date	Revised	Approved
0	ISSUED FOR APPROVAL	6/16/00	DAB	RMS
1	CERTIFIED FOR CONSTRUCTION	7/25/00	JS	RMS
2	CERTIFIED FOR CONSTRUCTION	8/25/00	KCN	RMS



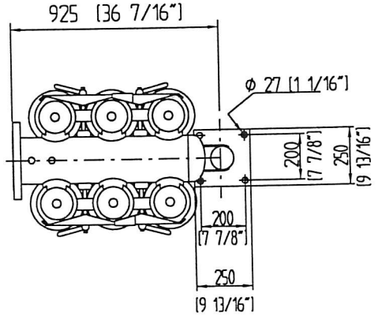


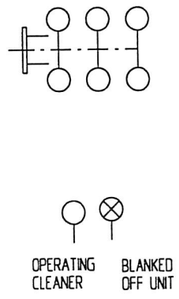
1. Flanges ref. to: 150 lb Vanstone
2. Dimensions in mm/inches
3. Weights in: lbs
4. Surface treatment: Mini glassball blasted
5. Headers material: SS 2343 (ASTM 316)
6. Structures material SS 2333 (ASTM 304)
7. Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")
8. 1" NPT half coupling with plug for test gauge on Feed, Accepts, and Reject headers. Test gauge by customer.
9. 6 cleaners operating
   0 cleaners blanked off
10. Electronic pressure transmitter conn. M44 X 1.25 nipple (2.12" O.D.) for Rosemount model 2090P transmitter in feed, accept and rejects. Weld per spec 1004 0957. Transmitter by customers.
11. Customer piping to be designed to support half of satellite weight. Satellite leg supports 325 lbs.

EQUIPMENT LIST	
EQUIP. No.	DESCRIPTION
M94257	QUATERNARY CLEANERS

ALLIANCE DRAWING NUMBER
CR-94-M-0138

6093 4677





ALLIANCE FOREST PRODUCTS U.S. CORP.
COOSA PINES, AL

STAGE 4
ONP/OMG
PUBLICATIONS GRADES

102123	6	320 LBS	650 LBS
Order number	Number of units	Net weight	Operating weight

Drawn	Scale	Qty. Ordered
DAB	NONE	1
Checked	Date	FILE
RMS	6/14/00	102123

Title
CLEANPAC 700
SATELITTE S-6

GL&V
CELLECO INC.
Customer P.O. No.
445001

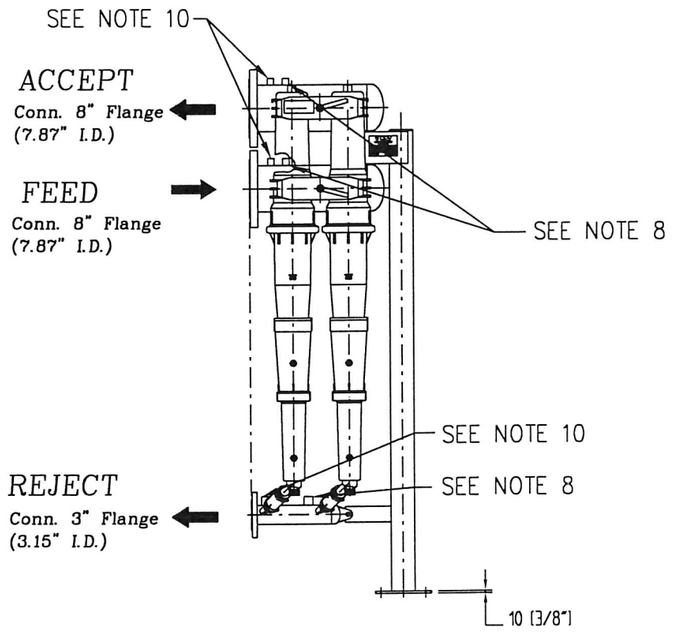
Drawing No. 102123-01-CLP-006 REV. 2

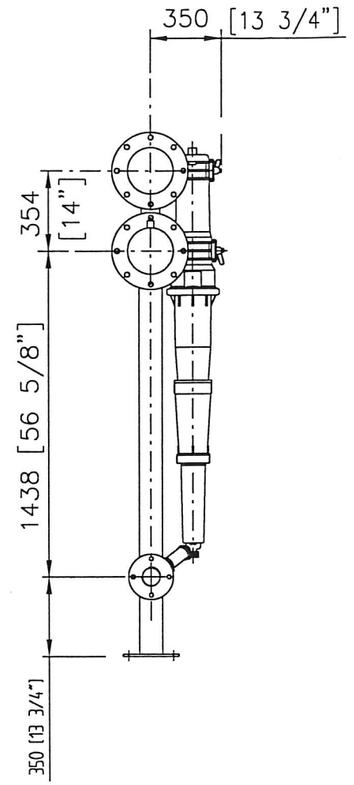
GL&V CELLECO, INC. 6093 4677	SPECIFICATION **Alliance Forest Products U.S. Corp**	Order No. **102123**
	Coosa Pines, AL	Date 9/27/00 / Sheet No. 1
	Stage 4	Initials DAB / No of sheets 1

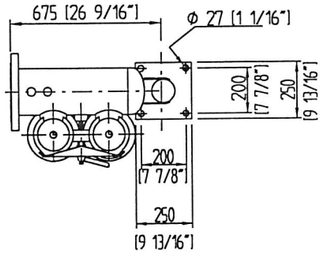
Item	Qty	Name	Article No.	Rev.	Notes	Vendor
	1	**CLEANPAC 700 Satellite S-6**	**102123-01-CLP-006**	**1**	**Certified Customer Drawing**	**LWAB**
1	1	Feed, Accept Pipe, Satellite Injekt, acceptrör, satellit	6091 6562-01	1		**LWAB**
		Satellite Pipe Satellitrör	6092 3343-01	0		
		Distance Pipe Distansrör	6093 1625-02	3		
		Tie Rod Dragstag	6093 1626-01	3		
		Tie Rod Dragstag	6093 1626-02	3		
2	1	Reject Pipe Rejektrör	6091 6564-01	2		**LWAB**
		Connection Stuts	6088 5576-18	0		
3	6	Cleaner Virvelrenare	6094 2478	1	See Assembly Drwg.	**LWAB**
4	8	Bar Nut Spakmutter	6088 8927-05			**LWAB**
5	4	Pressure Plate Tryckplatta	6091 4676-01	1		**LWAB**
6	4	Pressure Plate Tryckplatta	6092 3350-01	0		**LWAB**
7	0	Dummy Unit Blindningsenhet	6093 7867-31	0		
8	3	1" NPT Half-Coupling with Pipe Plug	1004 1268-08 1004 1420-06	0 0		**LWAB**
9	4	Safety Sticker Säkerhetsdekal	6096 1002-01			**LWAB**
10	1	Stand	6093 3333-34	7		**LWAB**
11	1	Name Plate	6093 4248-01	4		**LWAB**
12	3	1½" NPT Half-Coupling with Pipe Plug	1004 1268-10 1004 1420-08	0 0		**LWAB**
		INC = Celleco, Lawrenceville LWAB = Lingweld				

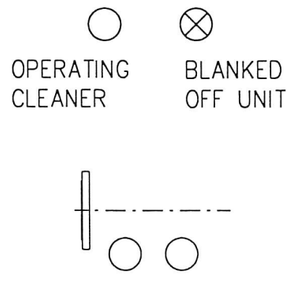
Rev 0	Rev 0 Original issue DAB 7/27/00	Spec.No. **PS-102123-01-006**

Rev.	Revision	Date	Revised	Approved
0	ISSUED FOR APPROVAL	6/16/00	DAB	RMS
1	CERTIFIED FOR CONSTRUCTION	7/25/00	JS	RMS
2	CERTIFIED FOR CONSTRUCTION	8/25/00	KCN	RMS









1. Flanges ref. to: 150 lb Vanstone
2. Dimensions in mm/inches
3. Weights in: lbs
4. Surface treatment: Mini glassball blasted
5. Headers material: SS 2343 (ASTM 316)
6. Structures material SS 2333 (ASTM 304)
7. Except where indicated otherwise, dimensional tolerance shall be ±10mm (±3/8")
8. 1" NPT half coupling with plug for test gauge on Feed, Accepts, and Reject headers. Test gauge by customer.
9. 2 cleaners operating
   0 cleaners blanked off
10. Electronic pressure transmitter conn. M44 X 1.25 nipple (2.12" O.D.) for Rosemount model 2090P transmitter in feed, accept and rejects. Weld per spec 1004 0957. Transmitter by customers.
11. Customer piping to be designed to support half of satellite weight. Satellite leg supports 188 lbs.

EQUIPMENT LIST	
EQUIP. No.	DESCRIPTION
M94262	QUINTERNARY CLEANERS

ALLIANCE DRAWING NUMBER
CR-94-M-0139

6093 1699

ALLIANCE FOREST PRODUCTS U.S. CORP.

COOSA PINES, AL

STAGE 5

ONP/OMG — PUBLICATIONS GRADES

102123	2	175 LBS	375 LBS
Order number	Number of units	Net weight	Operating weight

Drawn	Scale	Qty. Ordered
DAB	NONE	1
Checked	Date	FILE
RMS	6/15/00	102123

Title
CLEANPAC 700
SATELLITE S-2
I UNIT IN 5TH STAGE

GL&V
CELLECO INC.

Customer P.O. No.
445001

Drawing No. 102123-01-CLP-007 — REV. 2

GL&V CELLECO, INC.	SPECIFICATION **Alliance Forest Products**	Order No. **102123/2000155**	
	Coosa Pines, AL	Date 9/27/00	Sheet No. 1
60931699	**Stage 5**	Initials DAB	No of sheets 1

Item	Qty	Name	Article No.	Rev.	Notes	Vendor
	1	**CLEANPAC 700 Satellite S-2**	**102123-01-CLP-007**	**1**	**Certified Customer Drawing**	**LWAB**
1	1	Feed, Accept Pipe, Satellite Injekt, acceptrör, satellit	6091 4673-01	1		**LWAB**
		Satellite Pipe Satellitrör	6092 1788-01	0		
		Distance Pipe Distansrör	6093 1625-02	3		
		Tie Rod Dragstag	6093 1626-01	3		
		Tie Rod Dragstag	6093 1626-02	3		
2	1	Reject Pipe Rejektrör	6091 4694-01	3		**LWAB**
		Connection Stuts	6088 5576-18	0		
3	2	Cleaner Virvelrenare	6094 2478	1		**LWAB**
4	2	Pressure Plate Tryckplatta	6091 4676-01	1		**LWAB**
5	2	Bar Nut Spakmutter	6088 8927-05			**LWAB**
6	0	Dummy Unit Blindningsenhet	6093 7867-01	0		
7	3	1" NPT Half-Coupling with Pipe Plug	1004 1268-08 1004 1420-06	0 0		**LWAB**
8	2	Safety Sticker Säkerhetsdekal	6096 1002-01			**LWAB**
9	1	Stand	6093 3333-34	7		**LWAB**
10	1	Name Plate	6093 4248-01	4		**LWAB**
11	3	1½" NPT Half-Coupling with Pipe Plug	1004 1268-10 1004 1420-08	0 0		**LWAB**
		INC = Celleco, Lawrenceville LWAB = Lingweld				

Rev 0	Rev 0 Original issue DAB 7/27/00	Spec.No. **PS-102123-01-007**

SPARE PARTS & SERVICE

SOUTHEAST OFFICE
(24 HOUR CUSTOMER SERVICE)

GL&V/Celleco, Inc.
1000 Laval Blvd., Lawrenceville, GA 30043
Spare Parts: (770) 277-5017 • Technical Service: (770) 277-5052
Fax: (770) 963-4099

After Business Hours Phone No.: (770) 963-2100

WEST COAST OFFICE

GL&V/Celleco, Inc.
7600 N.E. 47th Ave., Vancouver, WA 98661
Office: (360) 696-2588 • Fax: (360) 695-9638

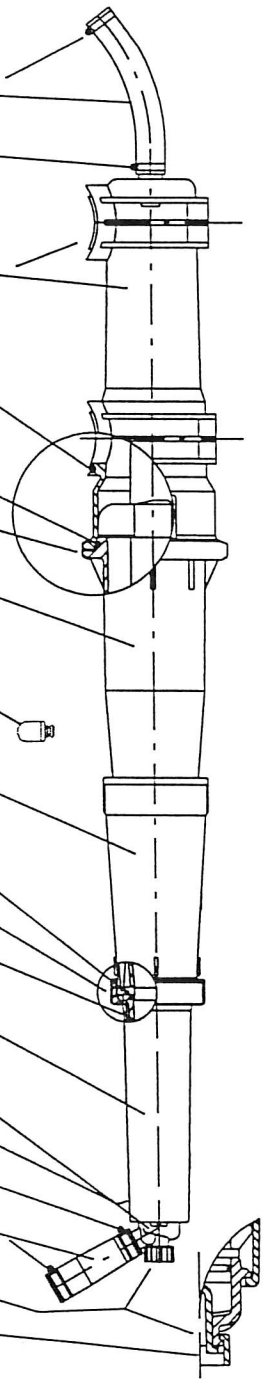
Contact Person: George Reynold
Corinn Wagner

CANADA OFFICE

GL&V/Celleco, Inc.
3544 Innes Road, Orleans, ON K1C 1T1
(613) 837-8571 • Fax: (613) 837-9618

Contact Person: Raymond Burelle
Nancy Sigouin

CLEANPAC 700 LD



HOSE 6094 5978-01

HOSE CLAMP 6088 8905-06

HEAD COMP. 6091 4079-02

O-RING ø92*10 6094 0870-82 EPDM

O-RING ø174.1x8.4 6094 0870-83 EPDM

CLAMP RING 6088 8927-04

UPPER CONE 6091 4081-01

PROTECTION PLUG 6088 5426-02
(NOT INCL. IN 6094 2957)

UPPER SHELL 6092 0175-01

GASKET 6088 5648-01 EPDM

NUT 6088 5300-01

LOWER CONE 6091 4129-01

LOWER SHELL 6091 4130-01

O-RING ø43*4 6094 0870-37 EPDM

RG-CHAMBER 6091 4264-01

HOSE CLAMP 6088 8905-06

RUBBER PIPE 6088 5289-01 EPDM

PLUG 6093 1220-01

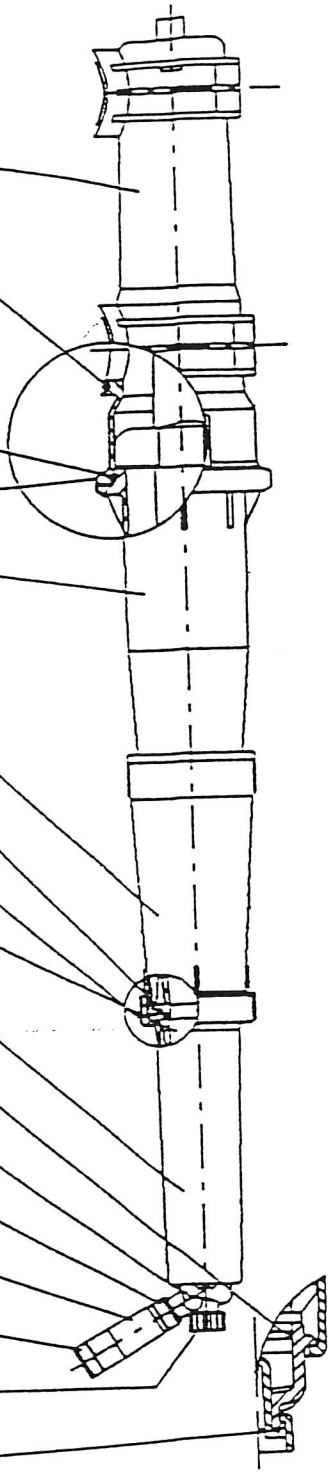
O-RING ø18.2*3 6088 8891-93 EPDM

CLEANER COMPLETE

ARTICLE NO: 6094 2957
TYPE NO: HE2C10011
DATE: 2 OCT 1997

6094 2957

CLEANPAC 700



HEAD COMPLETE 6091 4079-01 PP

O-RING ø92*10 6094 0870-82 EPDM

O-RING ø174,1*8,7 6094 0870-83 EPDM

CLAMP RING 6088 8927-04

UPPER CONE 6091 4081-01

UPPER SHELL 6092 0175-01

SEAL RING 6088 5648-01 EPDM

NUT 6088 5300-01

LOWER CONE 6091 4129-01

LOWER SHELL 6091 4130-01

O-RING ø43,0*4,0 6094 0870-37 EPDM

RG-CHAMBER 6091 4264-01 TR-55

HOSE CLAMP 6088 8905-17

HOSE 6088 5289-01 EPDM

HOSE CLAMP 6088 8905-17

PLUG 6093 1220-01

O-RING ø18,2*3,0 6088 8891-93 EPDM

CLEANER COMPLETE

ARTICLE NO: 6094 2478
TYPE NO: HA2C10011

3 JULY 94

6094 2478

6088 5289-01 WAS 6088 7648-01 940222