1.0 MANUFACTURING SPECIFICATIONS

General Machine Technical Data

Overall Length with Headbox	250" (6.35 m)
Overall Width	179"
Overall Height	50"
Overall Belt Width	126" (10.5 ft, 3.2 m)
Actual Belt Working Width	121" (10.1 ft,
Dry Weight	12,000 lbs

Effective Filtration Areas

Gravity	153 sq. ft.

Utilities

Total Connected Load	5.0 HP
Washwater Requirements	60 gpm @ 120 psi
Air Requirements	1.0 cfm @ 60 psi

MAJOR COMPONENTS

Main Frame W8X40 wide flange beam of welded construction; 'hot-dip' galvanized coating with surface density of 2.4 ounces of zinc per square foot of metal surface. Moment of inertia is 146 in^4 in the major load-bearing axis.

Rolls A-106 B pipe or A-519 steel tubing with 1045 steel double end-plate journals; Buna-N or Rilsan covered.

Bearing Spherical roller type, L-10 rated for a minimum 700,000 operating hours.

Belt Tracking and Tensioning Pneumatically controlled for automatic operations.

Belt Seamed design; chosen for the application.

Belt Shower Pipe with recessed nozzles manually cleaned with handwheel operated wire brush.

Belt Doctor Blade UHMW polyethylene; rubber tensioned holding mechanism.

Motor/Drive Type AC Variable speed type.

Control Panels NEMA 4X

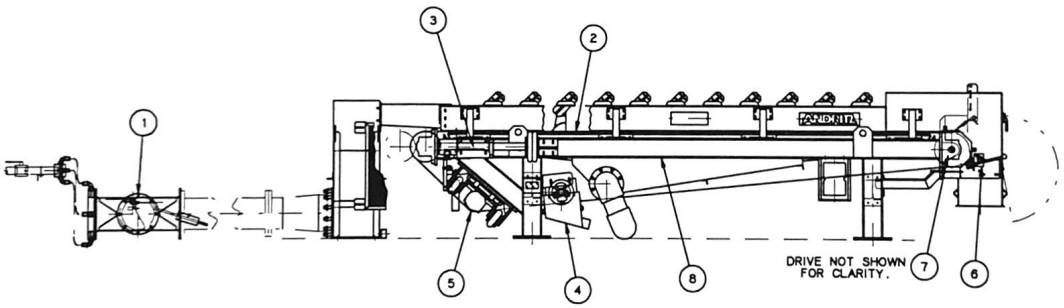
STAINLESS STEEL COMPONENTS

Headbox Assembly
Inline Mixer
Filtrate Pan
Thrust Rods, Pinion & Gear Assembly
Shower housing, Pipe, Nozzle and Wire Brush
All nuts, bolts and fasteners

2.1 PROCESS OVERVIEW

The ***ANDRITZ*** Gravity Belt Thickener (GBT) is used to thicken any sludge or slurry as preparation for subsequent processing or for disposal. It utilizes simple gravity action to drain away "free" water, while the solids remain on a filter fabric. The following components of the GBT are described in this section:

1. Sludge/Polymer Mixer
2. Gravity Dewatering Zone
3. Belt Tensioning System
4. Belt Cleaning Device
5. Belt Tracking System
6. Doctor Blade Assembly
7. Machine Drive
8. Machine Frame
9. Belt Limit Switches
10. Emergency Stops



The process normally begins with the injection of polymer into the sludge to cause "flocculation," that is the gathering of suspended solids particles into larger masses. These "clumps" remain on the surface of the belt while the water drains through. Polymer is injected either upstream of, or directly into the sludge/polymer mixer.

The flocculated sludge is introduced to the dewatering zone via a rectangular bottom-fed retention tank. This tank provides for an evenly-distributed flow to the clean belt, and allows the sludge the optimum time to "mature" before entering the filtration area.

The sludge is then carried along the length of the dewatering zone by the movement of the belt, being turned gently by the unique ***ANDRITZ*** "plow-like" chicanes. These chicanes rest lightly on the belt to wipe it clean, and actually turn the sludge over to expose the free water to the clean belt.

A primary doctor at the end of the dewatering zone creates a reversed rolling action on the sludge for additional drainage, and permits an even flow to the discharge area. A secondary doctor blade assembly assists in removing the thickened sludge from the belt.