Continental Apron Feeders consist of an endless series of overlapping pans, mounted on strands of chain, driven and tensioned by head and tail terminals, supported by intermediate rollers all mounted on a rugged structural frame. They are designed for feeding and conveying heavy, lumpy or abrasive materials under severe conditions. These conditions can range from receiving large sharp lumps falling distances that result in extreme impact loading to feeding or conveying very abrasive, hot or otherwise difficult materials that would damage other types of feeders.

In feeding applications we evaluate: material characteristics, hopper configuration, loading and operating cycles in order to correctly design the pans and select the appropriate size of chain and type of drive to suit the application. Particular attention is paid to starting conditions and requirements where our experience in handling a wide range of materials is an important factor in ensuring a suitable apron feeder for the application.

In conveying applications we carefully consider material abrasiveness, temperature, and particle size to arrive at the best combination of pan speed, pan configuration and material bed depth in order to provide minimum leakage and maximum component life.

In feeding applications, containers are designed specifically for each application based on required capacity, hopper configuration and loading cycle, material lump size and density, can be lined with manganese or AR alloy steel wear liners.

1. Drive Sprockets; manufactured by Continental, they feature a segmental rim of hardened steel or manganese alloy mounted on a precision machined alloy steel hub.

2. Pillow Block Bearings; over sized to provide long life, with ductile iron housing, self aligning double row spherical bearings and triple labyrinth or contact seals, mounted on 1" thick side plates with jacking screws for accurate shaft positioning.

3. Drive and Tail Shafts; accurately machined from SAE-1045 or 4140 alloy steel, range from 5" to 12" in diameter depending on the torque and tension requirements of each application.

4. Take-up Frames; manufactured by Continental, use standard pillow block bearings and individual hydraulic jacks for ease of aligning the tail shaft and tensioning feeder chains.

5. Floor, Intersecting design, fabricated of abrasion resistant steel plate or cast from manganese alloy, appropriately designed for each application with integral side flanges, “Grouser” bars and stiffening ribs.

6. Feed Drive; hydraulic type for applications requiring very high starting torque, can consist of either a higher speed motor driving a traditional speed reducer or low speed high Torque shaft mounted radial piston motor. Electromechanical type drives usually consist of traditional parallel shaft or planetary type speed reducers and an electric motor properly selected for starting torque requirements.

7. Chains; usually sealed and lubricated tractor (S.A.L.T) type chains are used so that sagging is prevented on the carrying run. Chains are supplied with split master connecting links and pans are bolted directly to chain links using hardened track bolts and lock nuts.

8. Rollers; single flange tractor type rollers are mounted on support members in groups of 2 to 4 units to make disassembly and replacement easier.

9. Tail wheels; manufactured by Continental, they feature a segmental rim of hardened steel or manganese alloy mounted on a precision machined alloy steel hub.

### Dimensions

<table>
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<tr>
<th>Pan Width</th>
<th>A</th>
<th>B</th>
<th>Linear Weight</th>
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<tbody>
<tr>
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<td>126</td>
<td>3206</td>
<td>16</td>
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</tbody>
</table>

### Structural

10. Main frame; oversized wide flange main sill beams with extensive cross-bracing provide a very rigid structure able to withstand high loads and span greater lengths. Good access to return rollers is possible through access panels. Dribble chutes can be installed to collect spillage from the return side.

11. Inlet chute; designed specifically for each application based on required capacity, hopper configuration and loading cycle, material lump size and density, can be lined with manganese or AR alloy steel wear liners.

12. Shear Gate; extra heavy construction, adjustable for varying bed depth, can be hydraulically actuated to relieve oversized lumps.

13. Cross members; wide flange construction to support chain roller frames and full length impact rails.

14. Roller frames; short segmental channel frames supporting groups of 2 - 4 rollers help to improve ease of removal of rollers.

15. Head chute; split design for ease of access to drive shaft and sprockets, has inspection door and can be lined with manganese or AR alloy steel wear liners.

16. Side skirts; fabricated of heavy plate with manganese or AR alloy steel wear liners, are supported by vertical columns on the main sill beams and can have cover plates to enclose conveyed material (as shown).

17. Maintenance rollers on the inside of the main frame.
Chain and Rollers
The rugged design and popularity of crawler tractor chain makes it particularly well suited for the severe environment of the apron feeder application. The various available standard pitches and tensile strength ratings of this chain allow a suitable selection for all widths and lengths of apron feeder applications. Carrying and return rollers have hardened wheels and pins for long wear life. The large lubricant reservoir is factory sealed for life. Rollers have a single flange for positive tracking of the chain. Carrying and return runs use the same roller in order to minimize spare parts requirements.

Sprockets and Traction Wheels
Sprockets and traction wheels with segmental rims are a standard feature on Continental heavy duty apron feeders. The segmental rims are machined and jig-drilled to fit on the mounting hubs, which are keyed to the shafts. Sprocket segments are easily removed for replacement and can be reversible for double life. It is possible they are "hunting tooth design" to achieve full contact of all the teeth in two revolutions of the sprocket thereby promoting even loading and wearing of all teeth.

Cast Manganese or Fabricated Pans
Cast manganese is a work hardening steel alloy that is the best material for high impact or abrasive applications. Impact ribs cast into the pan longitudinally, combined with the impact rail on the feeder structure, reduce material leakage between the pans by limiting excessive deflection. Raised pads cast laterally into the pans provide a smooth mounting surface for the chain.

For most average conveying and feeding applications where high impact and abrasion is not present, double beaded overlapping formed steel pans fabricated from mild steel or abrasion resistant plates are suitable. When combined with an impact rail to limit deflection, they are also suitable for applications with a moderate level of impact.

Production is rationalized between 2 modern plants located in Thetford Mines, Quebec and Napanee, Ontario. Production facilities include 40,000 square feet in Thetford Mines and 26,000 square feet in Napanee. Each plant is well equipped with the necessary fabrication equipment such as plate shears, press brakes, plate bending rolls, pantographs, and numerous welding stations and positioners of a variety of types. Each plant has a machine shop that is able to perform most of the turning, milling and boring that is required for the equipment being manufactured. Both plants have their own indoor facilities for shot-blast cleaning and painting.

Our total staff includes: 80 plant employees, 16 mechanical designers using AutoCAD, 3 professional engineers (2 mechanical & 1 structural), 3 project managers, 10 sales and approximately 10 support and administrative staff. Of the design and project management staff, 6 have extensive experience in supervising the installation and starting-up/commissioning of all the types of equipment that we supply. Together they have a wide range of problem solving skills gained from projects in many different industries and locations.

Our product range includes:
- belt conveyors
- screw conveyors
- conveyor pulleys and idlers
- belt conveyor scrapers
- en-masse chain conveyors
- bucket elevators
- screw reclaimers
- stoker reclaimers
- vibrating feeders and conveyors
- conveyors and bin activators
- apron feeders

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