POCKETLIFT®
The innovation in highend vertical conveying.

ContiTech
POCKETLIFT®

The new solution for underground mining and continuous shaft conveying.

ContiTech Conveyor Belt Group

We are a leading manufacturer of conveyor belts, integrated in the ContiTech AG organization and thus part of Continental AG and the Continental Corporation. We offer complete solutions - from textile and steel cable conveyor belts to special products and service materials. With our locations close to our customers, we are able to provide comprehensive support for your conveyor belts and systems - worldwide. With high-end conveyor belt technology from ContiTech, materials handling systems run reliably and cost effectively and are environmentally friendly. As a leading development partner with innovative conveyor belt technologies, we support the mining, machinery and equipment construction industries, as well as a host of other industries.

The most recent innovation in the field of vertical conveying for the bulk materials handling industry is the Pocketlift. Based on the Flexowell technology and the high capacity bucket elevator, the Pocketlift system was developed for deep shaft underground applications in mining and tunneling industry with a lifting height up to 700 m in one flight.

Since September 1996, when the vertical Pocketlift S-Shape Conveyor was installed for the New York water tunnel project, the system has established itself in many other projects, mainly in the coal and gypsum underground mining industry. Due to the outstanding features Pocketlift has many advantages in comparison to the traditional skip hoist or slope system.

**Easy choice for continuous conveying**

Pocketlift technology is giving mining engineers and operators the opportunity for a continuous mass flow over several hundred meters lift height, providing additional benefits as:

- Low energy consumption
- Small shaft diameter
- Quick installation
- Low maintenance cost
- No underground bunker system
- Light steel structure for feeding section and headframe
- Environmentally friendly
- No mechanical parts in the vertical shaft
POCKETLIFT®
Technical Details

With Pocketlift the function of power transfer is achieved by two narrow steel cord belts which are connected with rigid triangular cross bars. The material to be conveyed is fed into the fabric reinforced rubber pockets, which are bolted at the center of the cross bars. These bars also have a guiding function. All three elements are connected detachable and allow separate shipment and easy installation on site.

Being a further development of the Flexowell technology the standard Pocketlift Type III reaches capacities up to 1500 m³/h and lift heights up to 700 m while new generation Pocketlift type II was developed for high capacities even up to 4000 m³/h. Different pocket widths for both systems allow a tailor made design exactly to customers requirements.

As the main application fields are underground mining and tunneling it is mandatory that we hold the quality approval from all major mine inspectorates like MSHA or ISO 340/EN 20340. For high capacity silo feeding in the food and cement industry oil- and fat resistant and heat resistant rubber compounds are available.
POCKETLIFT® Type III
Installation at Knauf Gips, Novomskovsk/Russia

Project Details:

Base belt: ST 4500 Y
Base belt stripe width: 2 x 400 mm
Total system width: 1800 mm
Pocket width: 800 mm
Pocket pitch: 500 mm
Material density: 1.4 t/m³, gypsum
Capacity: 643 m³/h ~ 900 t/h
Max. lump size: 150 mm
Speed: 2.09 m/sec
Lifting height: 138 m
Req. power: 2 x 176 KW
Specific belt weight: 110 kg/m

POCKETLIFT® Type II
White County Coal, LLC, Pattiki Mine, Carmi/Illinois, USA

Project Details:

Base belt: ST 6300 MSHA
Base belt stripe width: 2 x 710 mm
Total system width: 2420 mm
Pocket width: 800 mm
Pocket pitch: 500 mm
Material density: 0.90 t/m³, ROM Coal
Capacity: 2000 m³/h ~ 1815 t/h
Max. lump size: 200 mm
Speed: 3.75 m/sec
Lifting height: 276 m
Req. power: 4 x 500 KW
POCKETLIFT® Type III and Type II
Technical Information

All forces resulting from dead weight and carried material are transmitted by high tensile strength steel cord belts with nominal rates up to 10,000 N/mm. Although an increase in belt speed allows a decrease in belt width and tension, high belt speeds may result in excessive wear and will reduce the overall lifetime of the components. According to the type of material to be conveyed ContiTech engineers will select the most efficient speed for each application. All Pocketlifts are calculated with a minimum safety factor of 10.

<table>
<thead>
<tr>
<th>System</th>
<th>Type III</th>
<th></th>
<th>Type II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pocket width</td>
<td>500</td>
<td>600</td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td>lv (m³/h) v=1m/s; f=100%</td>
<td>252</td>
<td>302</td>
<td>418</td>
<td>533</td>
</tr>
<tr>
<td>triangular bar width</td>
<td>900</td>
<td>1000</td>
<td>1200</td>
<td>1400</td>
</tr>
<tr>
<td>pitch longitudinal</td>
<td></td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>min. pulley diameter</td>
<td></td>
<td>2000</td>
<td></td>
<td>3000</td>
</tr>
<tr>
<td>lump size</td>
<td></td>
<td></td>
<td>150 mm max. 10% up to 200 mm</td>
<td>200 mm max. 10% up to 250 mm</td>
</tr>
</tbody>
</table>

System details

Crossbar, POCKETLIFT® Type III
Pocket, POCKETLIFT® Type III
Crossbar, POCKETLIFT® Type II
Pocket, POCKETLIFT® Type II
**Challenge of the future**

In our latest feasibility study ContiTech shows that by placing one Pocketlift on top of the other it is possible to reach a vertical lift of 1000 m with a capacity of 1500 t/h. Additional excavation for the material transfer point can be minimized to standard bunker size.

**Belt Monitoring Systems**

Besides other monitoring systems the “Splice Elongation System” is one of the latest developments which allow operators real time monitoring of the splice, which is the most sensitive part of the belt. The system can be easily integrated in an existing PLC.
The ContiTech division of the Continental Corporation is a development partner and original equipment supplier to numerous industries for high-quality functional parts, components and systems. With its know-how in rubber and plastics technology, ContiTech contributes significantly to industrial progress and mobility that is safe, comfortable and eco-friendly.

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