Transport systems
TRANSPORT SYSTEMS

Transport systems by FAMUR Group intended for continuous haulage and transport of materials as well as for transporting people fully satisfy and rationalize logistic needs of underground and opencast mines, ports, transshipment terminals, power plants and all other companies where continuous transport is applied.

In this product group we offer:

- complete technological systems for continuous transport of bulk materials
- conveyors: belt conveyors (including man-riding conveyors), bucket conveyors, drag conveyors, screw conveyors
- complete material and man transport systems by means of suspended monorail or floor rail system with diesel-powered locomotives or rope winches, track locomotives
- complete rail routes for suspended monorail and floor rail systems for rope-driven or diesel-powered locomotives

Decades of experience gained over projects implemented worldwide, today allow us to offer and provide our customers with comprehensive solutions of transport systems even for the toughest location and operating conditions.

Upon Customer’s request our systems can be provided with control systems enabling on-line operation parameter tracking, global transport system management and process data export to the ERP systems.

Our transport systems can be delivered on a turnkey basis (EPC, EPCM): ranging from a thorough assessment of customer needs through desk studies and design work by our own R&D facilities and resources, production and delivery of the equipment up to the commissioning of the system, training of its service staff and put into operation.

SELECTED APPLICATIONS

- Mobile ship unloading system with loading hopper and belt conveyor system
- Belt conveyor in coal underground mine
- Monorail FM 80 KWK “Sobieski”
- Drive station B = 2250 mm, 4x1250 kW with PIOMA drive units

1 UNDERGROUND TRANSPORT SYSTEMS

BELT CONVEYORS

Comprehensive solutions for underground transport system have a significant impact on the efficient production and high economic result of the mine. Transport systems by FAMUR Group fully satisfy and rationalize logistic needs of mines. Nearly 50 years of experience gained from the mines worldwide, today allow us to select adequate constructions and structures according to determined operating conditions.

PIOMA belt conveyors operate in over one hundred underground mines around the world. Design solutions applied in the conveyors enable operation on strikes and dips (inclined drifts and dipheadings), horizontal curves and faults. The width of conveyor belts is 800 to 1600 mm.

TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk density</td>
<td>up to 4.0 t/m²</td>
</tr>
<tr>
<td>Belt width</td>
<td>800-1600 mm</td>
</tr>
<tr>
<td>Belt running speed</td>
<td>up to 4 m/s</td>
</tr>
<tr>
<td>Conveyor length</td>
<td>up to 3000 (10000)* m</td>
</tr>
<tr>
<td>Unit capacity</td>
<td>up to 3000 (4500)* t/h</td>
</tr>
<tr>
<td>Main drive power</td>
<td>2500 (6000)* kW</td>
</tr>
<tr>
<td>Drive unit power</td>
<td>up to 1250 kW</td>
</tr>
</tbody>
</table>

*upon special request

MAN-RIDING BELT CONVEYORS

Application of man-riding belt conveyors significantly increases the efficiency of working time and it reduces the number of accidents resulting from necessity to reach the heading. People may travel on inclined roads with gradient up to 18° upwards and 12° downwards, both on the upper and bottom belt.

Adaptation of conveyor belts to drive people requires equipping them with i.a.: boarding and alighting platforms (side platforms: along the conveyor or axial platforms: over the conveyor), emergency switches, brakes, relevant information and warning systems.

Also headings are equipped with loud speaking communication system installed at boarding and alighting platforms and along the route at distances not exceeding 100 m.

Man-riding belt conveyors ZG Janina
BELT CONVEYOR EQUIPMENT

- disc brakes with adjustable force and braking time
- drum brake
- electrohydraulic releases for supply voltage of 127 V to 1140 V
- back-stops
- helical, helical-bevel and worm gear units
- gear unit cooling systems
- belt cleaning devices
- belt conveyor power supply and control systems
- vibration measurement and analysis systems
- rollers/idlers
- pulleys
- winches
- tensioning systems:
  - winch tensioning system
  - fixed tension force systems: hydraulic, gravity tensioning systems
  - follow-up tensioning systems

TENSIONING SYSTEMS

- screw tensioning system
- gravity tensioning system
- winch tensioning system
- hydraulic tensioning system
- pneumatic tensioning system
- follow-up tensioning systems

LOOP BELT ACCUMULATORS

(ENABLING CONVEYOR EXTENSION/SHORTENING)

- two-layer loop take-up
- multi-layer loop take-up

CONVEYOR BELT WINDING MACHINES

(TO INSERT AND REMOVE THE BELT OF THE CONVEYOR)

- free-standing types
- suspended types
- self-bearing types
- to be installed in galleries on trestle bridges
- modular mobile type (on “pontoons”)

AUXILIARY EQUIPMENT

- man-driving dedicated equipment
- vulcanizing presses
- belt winding and unwinding machines
- mobile loading tables
- tripper cars
- overlap return stations (compatible with beam stage loaders)
- reverse loading-unloading conveyors
- scrap material conveyors

DRIVES SELECTED INDIVIDUALLY DEPENDING ON THE CONVEYOR LENGTH, MATERIAL LOAD AND INCLINATION GRADIENT

- single-pulley winding drives
- two-pulley winding drives
- winding compact drives
  (motor and gearbox integrated inside the pulley)
- intermediate winding drives
- intermediate “belt-belt” type drives

CONVEYOR ROUTES

- free-standing types
- suspended types
- self-bearing types
- to be installed in galleries on trestle bridges
- modular mobile type (on “pontoons”)

RETURN STATIONS AND CHUTES

- chute return stations
- angular chutes
- cross chutes

DISCHARGE STATIONS AND MODULAR OUTFRIGGERS

- head-discharge outriggers
- discharge heads
- multi-way transfers
- angular chutes

HEADSCRAPERS AND UNDER-PULLEY SCRAPERS

- upper and lower roller self-alignment sets

TENSIONING SYSTEMS

- screw tensioning system
- gravity tensioning system
- winch tensioning system
- hydraulic tensioning system
- pneumatic tensioning system
- follow-up tensioning systems

UNDER-PULLEY SCRAPER

- KPG WINCH
- LOOP TENSIONING
- SELF-ALIGNMENT
- HYDRAULIC STATION
### SELECTED PROJECTS

1. Drive of the underground belt conveyor designed for man-riding on upper and bottom belt and for coal transport - "Staszic" coal mine, Poland.

   - Belt width: 1400 mm
   - Route length: 1100 m
   - Main drive: N=4×500 kW
   - Intermediate drive: N=2×400 kW
   - Conveyor capacity: 2000 t/h
   - Conveyor speed: 0.5-3.5 m/s
   - Route inclination: $\alpha=12^\circ$
   - Scope of implementation: turnkey delivery

2. The longest underground belt conveyor in Poland - "Bogdanka" coal mine, Poland.

   - Belt width: 1400 mm
   - Route length: 2450 m
   - Main drive: N=2×160 kW
   - Intermediate drive type: B-B 1×100 kW
   - Conveyor capacity: 1000 t/h
   - Conveyor speed: 2.5 m/s
   - Follow-up tensioning station
   - Scope of implementation: turnkey delivery

3. Underground belt conveyor designed for man-riding and for coal transport - "Tichowa" coal mine, Poland.

   - Belt width: 1200 mm
   - Route length: 700 m
   - Main drive: N=2×50 kW
   - Conveyor capacity: 1300 t/h
   - Conveyor speed: 2.5 m/s
   - Follow-up tensioning station
   - Scope of implementation: turnkey delivery

4. Underground belt conveyor designed for man-riding on upper and bottom belt and for coal transport - "Staszic" coal mine, Poland.

   - Belt width: 1400 mm
   - Route length: 1862 m
   - Main drive: N=3×860 kW
   - Conveyor capacity: 1500 t/h
   - Conveyor speed: regulated up to 3.15 m/s
   - Route inclination: $\alpha=12^\circ$
   - Scope of implementation: turnkey delivery

5. Underground belt conveyor suspended by means of arch support slings - "Piekary" coal mine, Poland.

6. Underground belt conveyor designed for coal transport - "Marcel" coal mine, Poland.

   - Belt width: 1400 mm
   - Route length: 110 m
   - Main drive: N=2×160 kW
   - Conveyor capacity: 1000 t/h
   - Conveyor speed: 3.15 m/s
   - Route inclination: $\alpha=13.7^\circ$
   - Scope of implementation: turnkey delivery

7. Underground belt conveyor designed for coal transport - "Marcel" coal mine, Poland.

   - Belt width: 1200 mm
   - Route length: 700 m
   - Main drive: N=2×50 kW
   - Conveyor capacity: 1300 t/h
   - Conveyor speed: 2.5 m/s
   - Route inclination: $\alpha=10.5^\circ$
   - Scope of implementation: turnkey delivery
MAN AND MATERIAL TRANSPORT BY SUSPENDED MONORAIL SYSTEMS

Suspended monorail systems offered by FAMUR are comprehensive systems for people haulage and transporting materials in underground mines (coal or other mineral deposits). They are adapted to operate in methane and/or coal dust explosion hazard areas. Transport can be implemented on inclined roads with gradient up to 30°. Simple design and innovative technical solutions provide maximum level of safety and reliability at minimum operational costs and easy operation. Wide range rail routes, locomotives and transport sets allows to build optimum transport system under all conditions. We also provide substantive and technical assistance and support in designing transport systems, based on over 35 years of experience in cooperation with mines worldwide.

MAN TRANSPORT BENCH
> bench seats intended for transportation of eight people

DIESEL-POWERED SUSPENDED LOCOMOTIVE
> diesel motors with power of 81 to 148 kW
> 3 to 8 drive units
> pulling force of 63 to 160 kN
> driving speed up to 2.6 m/s
> friction or rack-and-pinion drive transmission
> drive wheel anti-slip system
> recording of operational parameters
> wide range of auxiliary equipment

MAN TRANSPORT CABIN
> typical cabins to transport 4, 6, 8 or 10 people
> special cabins to transport 16 people
> cabin to transport 4 people and materials weighing up to 300 kg
> cabin to transport injured people
> 8-man cabin adaptable to transport injured people

MAN TRANSPORT BENCH

MONORAIL ROUTES
> rail profile I 140E or PIOMA DT 175
> straight, curved, convex, concave, intermediate rails for diesel-powered and rope-driven systems
> slings for steel and anchored gallery supports
> route suspension and stabilization components
> allowable longitudinal load capacity of rail connecting element 32 to 160 kN
> allowable transverse load capacity of rail connecting element 50 to 90 kN
> wide range of auxiliary equipment

HEAVY TRANSPORT SETS
> transport set of maximum load 30 t
> modular set of maximum load up to 28 t
> adapted to transport powered roof support shields, shearer components and other heavy elements

LIGHT TRANSPORT SETS
> single winches of 4.0 t lifting capacity manually- or hydraulically-operated
> transport beams of 8.0 t capacity with adjustable hook spacing
> modular transport beams of 6.3 t to 28 t lifting capacity intended for haulage of pipes, timber, rings, bulk materials, containers, machinery and equipment components

FLOOR SYSTEMS

FIRST LOCOMOTIVE

SECOND LOCOMOTIVE

THIRD LOCOMOTIVE

LIGHT TRANSPORT SET

RAIL ROUTE AND TURNOUT

TURNOUTS
> right
> left
> symmetrical
> 3-position
> universal left-right
> with manual or pneumatic drive
> adapted to the pulling force of 160 kN

DIESEL-POWERED SUSPENDED LOCOMOTIVE

MAN CABIN

MAN BENCH

HEAVY TRANSPORT SET

LIGHT TRANSPORT SET

RAIL ROUTE AND TURNOUT
**BRAND NEW**

**DIESEL-POWERED SUSPENDED LOCOMOTIVE FMS**

FMS diesel-powered suspended locomotive is a self-propelled machine intended for driving suspended monorail transport sets. The modular design and a wide range of accessories enable optimal configuration of machines for all operating conditions and diverse transport tasks. The machine can be used both for transporting people and heavy materials and machine parts weighing more than 30 t.

**MAIN ADVANTAGES**

- Small overall dimensions and weight
- Simple design and structure
- Ability to create many variants optimized for user’s needs
- Independent braking systems
- Energy-saving double pump hydraulic system
- Wide range of auxiliary equipment such as: gear drive, operator assistance monitoring system, various options of auxiliary compartment, special couplers for transport set pushing

**OVERLAND CONTINUOUS BULK MATERIAL TRANSPORT SYSTEMS**

Overland belt conveyors are intended for continuous and rapid transport of bulk materials in open-pit mines, power plants, seaports, material handling (transshipment) areas and landfills as well as for in-plant transportations and large-scale earthworks.

**TECHNICAL PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk density</td>
<td>up to 4.0</td>
<td>t/m³</td>
</tr>
<tr>
<td>Belt width</td>
<td>400–2400*</td>
<td>mm</td>
</tr>
<tr>
<td>Belt running speed</td>
<td>up to 6.9*</td>
<td>m/s</td>
</tr>
<tr>
<td>Conveyor length</td>
<td>up to 10000*</td>
<td>m</td>
</tr>
<tr>
<td>Unit capacity</td>
<td>up to 20000*</td>
<td>t/h</td>
</tr>
<tr>
<td>Main drive power</td>
<td>up to 5000*</td>
<td>kW</td>
</tr>
<tr>
<td>Drive unit power</td>
<td>up to 1250*</td>
<td>kW</td>
</tr>
</tbody>
</table>

*Technical parameters are determined individually to the user’s needs and cannot exceed the values specified in the table.

**BELT CONVEYORS**

Overland belt conveyors of high capacities up to 20 000 t/h are applied in open-pit lignite mines, aggregate plants, ports and power plants. In this regard, we offer comprehensive haulage systems starting from mobile support conveyors (on “pontoons”) at raw material mining area up to power unit in-feed conveyors along with transfer points, galleries and supporting structures.

Depending on intended use, length and capacity belt conveyors are equipped with a main drive and intermediate drives with a total installed power of even dozen or so MW.

Conveyors of low and medium capacity are intended as systems for the transport of bulk materials in industrial plants, heating plants, aggregate plants and other factories. We select individual parameters and system configuration as well as auxiliary machines for each type of material to be handled and field conditions.

**BUCKET CONVEYORS**

Bucket conveyors are used for vertical or at an angle of nearly 90° transport of bulk materials up to 45 m of lifting height and in the wet processing plants for raw material dewatering. Drive transmission and fitting of buckets is made through a chain or a conveyor belt the buckets are screwed to.

**DRAG CONVEYORS**

Drag conveyors are intended to transport bulk materials such as cement, dewatered sludge, coal sludge or pulp. The conveyor can be operated in a horizontal position or at an angle of 0 to 30°. The diameter is 500 mm while the average length is up to about 20–25 m.

**SCREW CONVEYORS**

Screw conveyors are intended to transport bulk materials such as cement, dewatered sludge, coal sludge or pulp. The conveyor can be operated in a horizontal position or at an angle of 0 to 30°. The diameter is 500 mm while the average length is up to about 20–25 m.
SELECTED PROJECTS

1. Technological system of hard coal transportation by means of belt conveyors on coal pier - Świnoujście Port, Poland.
   - Belt width: 1600 mm
   - Route length: 26 m
   - Main drive: N=2×55 kW
   - Conveyor capacity: up to 2000 t/h
   - Conveyor speed: 0–2 m/s
   - Scope of implementation: turnkey delivery

2. Mobile conveyor (wheel-based) with hopper of 25 m³ capacity - Northern Port of Gdańsk, Poland.
   - Belt width: 2000 mm
   - Route length: 26 m
   - Main drive: N=3×1000 kW
   - Conveyor capacity: 7100 t/h
   - Conveyor speed: 5.24 m/s
   - Scope of implementation: turnkey delivery

3. Belt conveyor with tripper hauling coal from the conveyor to the storage yard - "Wesoła" coal mine, Poland.
   - Belt width: 1200 mm
   - Route length: 26 m
   - Main drive: N=3×1000 kW
   - Conveyor capacity: 7100 t/h
   - Conveyor speed: 5.24 m/s
   - Scope of implementation: turnkey delivery

SELECTED PROJECTS

1. Coal train loading station - Świnoujście Port, Poland.
   - Belt width: 1200 mm
   - Route length: 5 m
   - Main drive: N=7.5 kW
   - Conveyor capacity: 1000 t/h
   - Conveyor speed: 3.3 m/s
   - Scope of implementation: turnkey delivery

2. Belt conveyor in the "Turów" open pit mine, Poland
   - Belt width: 1600 mm
   - Route length: 1488 m
   - Main drive: N=3×1000 kW
   - Conveyor capacity: 7100 t/h
   - Conveyor speed: 5.24 m/s
   - Scope of implementation: turnkey delivery

3. Belt conveyor drive station in the "Turów" open pit mine, Poland.
   - Belt width: 1800 mm
   - Route length: 1488 m
   - Main drive: N=3×1000 kW
   - Conveyor capacity: 7100 t/h
   - Conveyor speed: 5.24 m/s
   - Scope of implementation: turnkey delivery

4. Belt conveyor drive station in the "Turów" open pit mine, Poland.
   - Belt width: 1800 mm
   - Route length: 1488 m
   - Main drive: N=3×1000 kW
   - Conveyor capacity: 7100 t/h
   - Conveyor speed: 5.24 m/s
   - Scope of implementation: turnkey delivery

Belt conveyor with tripper hauling coal from the conveyor to the storage yard - "Wesoła" coal mine, Poland.
   - Belt width: 1200 mm
**SELECTED PROJECTS**

1. Light belt conveyor for bulk material handling.
   - Belt width: 500 mm
   - Route length: 4 m
   - Main drive: N=1,1 kW
   - Conveyor capacity: 50 t/h
   - Scope of implementation: turnkey delivery

2. Fertilizer transportation system composed of bucket conveyor and belt conveyors - Baltic Bulk Terminal, Gdynia.
   - Belt width: 800, 1000 mm
   - Route length: 600 m
   - Total power: 468 kW
   - Conveyor capacity: 300/1000 t/h
   - Scope of implementation: turnkey delivery

3. Belt conveyor system on the coal terminal reloading area - Northern Port of Gdańsk, Poland.
   - Belt width: 1200 mm
   - Route length: 6×25 m
   - Main drive: N=2×30 kW
   - Conveyor capacity: 1000 t/h
   - Conveyor speed: 2,9 m/s
   - Scope of implementation: turnkey delivery

4. Ship unloading system composed of 6 mobile belt conveyors and hopper, Swinoujście Port, Poland.
   - Belt width: 1200 mm
   - Route length: 287,6 m
   - Total power: 420 kW
   - Conveyor capacity: 550 t/h
   - Conveyor speed: 0,8–1 m/s
   - Scope of implementation: turnkey delivery

5. Technological system of sugar beet transportation - Köpangelbro, Sweden.
   - Belt width: 1600/1800 mm
   - Route length: 15+26 m
   - Total power: 423 kW
   - Conveyor capacity: 50 t/h
   - Conveyor speed: 2,9 m/s
   - Scope of implementation: turnkey delivery

6. Ship unloading system composed of 6 mobile belt conveyors and hopper, Świnoujście Port, Poland.
   - Belt width: 1200/1000/1000/1000/1000 mm
   - Route length: 4982/670/444/360/252 m
   - Main drive: N= 2×315 kW + 1 x 160 kW/ 1 x 160 kW/ 1×37 kW/ 2×37 kW/ 2×37 kW
   - Conveyor capacity: 1200/1200/170/400/1200 t/h
   - Conveyor speed: 3,15/4,2/1,7/1,7/4,2 m/s
   - Scope of implementation: turnkey delivery

**SELECTED PROJECTS**

1. 2, 3. Technological system of sugar beet transportation - Köpangelbro, Sweden.
   - Belt width: 1200 mm
   - Route length: 387,6 m
   - Total power: 420 kW
   - Conveyor capacity: 550 t/h
   - Conveyor speed: 0,8–1 m/s
   - Scope of implementation: turnkey delivery

3. Belt conveyor system on the coal terminal reloading area - Northern Port of Gdańsk, Poland.
   - Belt width: 1200 mm
   - Route length: 287,6 m
   - Total power: 420 kW
   - Conveyor capacity: 550 t/h
   - Conveyor speed: 0,8–1 m/s
   - Scope of implementation: turnkey delivery

4. 5, 6. Coal transportation and size-sorting system in an open-pit mine, composed of belt conveyors, hopper and two towers with lignite screens - Indonesia.
   - Belt width: 1200/1200/1200/1200 mm
   - Route length: 4982/670/444/360/252 m
   - Main drive: N= 2×315 kW + 1 x 160 kW/ 1 x 160 kW/ 1×37 kW/ 2×37 kW/ 2×37 kW
   - Conveyor capacity: 1200/1200/170/400/1200 t/h
   - Conveyor speed: 3,15/4,2/1,7/1,7/4,2 m/s
   - Scope of implementation: turnkey delivery
SELECTED PROJECTS

1. Belt conveyor system designed for gypsum transportation in the flue gas desulphurisation unit - PAK Power Plant - Konin, Poland.
Scope of implementation: turnkey delivery

2. Belt conveyor installed in the gallery designed for gypsum loading in wagons - Belchatów Power Plant, Poland.
Scope of implementation: turnkey delivery

3. Belt conveyor system designed for limestone transportation in the flue gas desulphurisation unit - Belchatów Power Plant, Poland.
Scope of implementation: turnkey delivery

4. Complete system of building material recycling composed of 47 belt conveyors with accompanying steel structures - Majorca, Spain.
Belt width: 800–1200 mm
Total route length: 1015 m
Total power: 253 kW
Conveyor speed: 1–1.5 m/s
Scope of implementation: turnkey delivery

5. Belt conveyor system designed for gypsum transportation to the warehouse - part of desulphurisation unit - Bełchatów Power Plant, Poland.
Scope of implementation: turnkey delivery

6. Complete system of building material recycling composed of 47 belt conveyors with accompanying steel structures - Majorca, Spain.
Belt width: 1000 mm
Total route length: (8 pcs.) 1500 m
Scope of implementation: turnkey delivery

7. Belt conveyor system designed for limestone transportation in the flue gas desulphurisation unit - Belchatów Power Plant, Poland.
Scope of implementation: turnkey delivery

8. Belt conveyor system designed for cement transportation in the flue gas desulphurisation unit - Belchatów Power Plant, Poland.
Scope of implementation: turnkey delivery
SELECTED PROJECTS

1. Belt conveyor system removing snow from large-surface production hall’s roof, Japan Tobacco (Gostków Stary).
2. Belt conveyor system intended for limestone technological transportation - Gorazdze Cement Plant, Poland.
3. Overland coal handling belt conveyor system, Indonesia.

Scope of implementation: turnkey delivery

CONTROL AND MONITORING

- control systems integrated with superior control-and-supervision software
- monitoring/check of belt conveyor drive units condition by measuring and analyzing the vibration level and temperature of rotating elements, detection of damages of gearboxes and pulleys at a very early stage of propagation, repair actions planning, ensuring continuity of extraction
- system of identification and localization of transport machines, man and material transport management
- monitoring over key areas (e.g. transfer points, cross points), reliable operation of cameras in low light conditions and in complete darkness.

FLEXIBLE ARCHITECTURE

- data exchange in the Ethernet standard based on high capacity fiber-optic infrastructure (extensive conveyor systems) and wireless communication (mobile transport machines)
- compatibility and integration with systems of other providers
- access to real-time data, visualization of multiple locations
- software based on an OPC standard, very popular in industry
- easy extension, adaptation to individual customer’s needs

MAIN ADVANTAGES

- global management of transport processes, export of process data to the ERP systems
- on-line monitoring of machinery operation parameters, comprehensive diagnostics (troubleshooting) of the machinery condition
- reduction in the number of unplanned downtimes of the conveyor belt haulage, ensuring the operation continuity
- limitation of risk related to personnel involved in service or diagnostic (troubleshooting) activities, planning of repair operations
- provision of remote data analysis services and reports on machinery condition, service and diagnostics assistance 24/7 (24h per day, 7 days a week)
### FAMUR PROJECTS
### PROJECTS COMPLETED BEFORE 2005

<table>
<thead>
<tr>
<th>No.</th>
<th>CLIENT</th>
<th>LOCALIZATION</th>
<th>PROJECT</th>
<th>SCOPE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Kolubara&quot; opencast coal mine</td>
<td>Kolubara, Serbia</td>
<td>30 belt conveyors B=1400 mm, N=2×320, 4×320 kW, Q=5900 t/h, L=21.3 km</td>
<td>EPCM*</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Berzdorf&quot; opencast coal mine</td>
<td>Berzdorf, Germany</td>
<td>28 complete line of coal transport system B=1400 mm, 1 600 mm, 1 800 mm, N=4×630 kW, L=140 km</td>
<td>Conveyor delivery</td>
</tr>
<tr>
<td>3</td>
<td>Public Power Corporation S.A.</td>
<td>Ptolemaidas, Greece</td>
<td>L=1250 m, N=4×1250 kW, Q=18000 t/h</td>
<td>EPC*, Consortium leader</td>
</tr>
<tr>
<td>4</td>
<td>Harbor Świnoujście</td>
<td>Świnoujście, Poland</td>
<td>6 belt conveyor B=1600 mm, Q=3600t/h</td>
<td>EPCM*</td>
</tr>
<tr>
<td>5</td>
<td>coal mines</td>
<td>Russia</td>
<td>1020 belt conveyors (832 km) B=1000 mm, L=816 m, N=2×55 kW</td>
<td>EPCM*</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Bobov Dol&quot; coal mine</td>
<td>Bobov Dol, Bulgaria</td>
<td>18 belt conveyors (16 km), B=1000 mm, N=2×55 kW</td>
<td>EPCM*</td>
</tr>
<tr>
<td>7</td>
<td>coal mines</td>
<td>China</td>
<td>22 belt conveyors (16 km) B=1000 mm, L=738 m, N=2×55 kW</td>
<td>Conveyor delivery</td>
</tr>
<tr>
<td>8</td>
<td>Severstal-Resurs</td>
<td>Moscow, Russia</td>
<td>6 belt conveyors B=1000 mm, L=6.2 km, N=2×250 kW (1 pcs.), N=2×132 kW (3 pcs.), N=1×132+1×132 kW (1 pcs.); 4 belt conveyors B=1200 mm, L=5.25 km, N=3×250 kW (2 pcs.), N=2×250 kW (2 pcs.)</td>
<td>EPCM*</td>
</tr>
<tr>
<td>9</td>
<td>&quot;Bogdanka&quot; coal mine</td>
<td>Puchaczów, Poland</td>
<td>Belt conveyor B=1200 mm, L=2450 m, N=2×160 kW + 100 kW,</td>
<td>EPC*</td>
</tr>
</tbody>
</table>

*EPC – turnkey delivery
*EPCM – provision of engineering, machinery and assembly/installation supervision services

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### FAMUR PROJECTS
### PROJECTS COMPLETED AFTER 2005

<table>
<thead>
<tr>
<th>No.</th>
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<th>LOCALIZATION</th>
<th>PROJECT</th>
<th>SCOPE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EMCOR</td>
<td>Oviedo, Spain</td>
<td>Installation for recycling of building materials</td>
<td>EPCM*</td>
</tr>
<tr>
<td>2</td>
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**FAMUR PROJECTS**

**PROJECTS COMPLETED AFTER 2005**

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*EPC – turnkey delivery *

**BRAND NEW COMPACT DRIVE**

The main advantage of the compact drive is obtaining a high-functionality conveyor which combines functions of a high-efficiency haulage and great power equipment with a conveyor to be installed in small mine workings.

The conveyor with EB-315 compact drive ensures better utilization of the excavation within auxiliary transport operations.

**DETAILED DESIGN AND STRUCTURAL ADVANTAGES**

- Small dimensions of the drive (width smaller by 500 mm compared to the classic angular gear drive) allow for installation in excavations without need for extensions.
- Easy access to all components after removing the covers.
- Possibility of declutching the gear with the motor and replacing the brake disk without necessity of the motor dismantling.
- Insertion of larger diameter drive pulley Ø1250 instead of Ø1000 does not require modification of subassemblies except for the pulley shell and the side wall.
- Application of a drive for wider belt does not require modification of subassemblies except for the pulley shell and the side wall connectors.

Design and structure example – drive at discharge pulley.
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