

FAMUR

► 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

SELECTED APPLICATIONS



Mobile ship unloading system with loading hopper and belt conveyor system



Monorail FM 80 KWK "Sobieski"

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.



Belt conveyor in coal underground mine



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 60 years of experience gained from the mines worldwide, today allow us 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

Bulk density	up to 4,0	t/m ³
Belt width	800-1600	mm
Belt running speed	up to 4	m/s
Conveyor length	up to 3000 (10000)*	m
Unit capacity	up to 3000 (4500)*	t/h
Main drive power	2500 (6000)*	kW
Drive unit power	up to 1250	kW

*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 system. 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
 - fix 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 (ENALBLING 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)

UPPER AND LOWER BELT SELF-ALIGNMENT SETS

UPPER AND LOWER ROLLERS

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

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

DISCHARGE STATIONS AND MODULAR OUTRIGGERS

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

HEAD SCRAPERS AND UNDER-PULLEY SCRAPERS

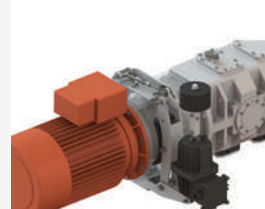
AUXILIARY EQUIPMENT

- > 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

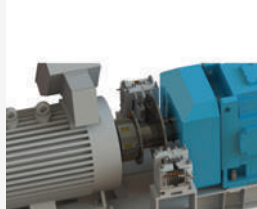
BRAKE HYDRAULIC POWER UNIT



DRUM BRAKE



DISC BRAKE



CRAWLWAY BETWEEN BELTS



SCRAP MATERIAL CONVEYOR



UNDER-PULLEY SCRAPER



KPG WINCH



LOOP TENSIONING



SELF- ALIGNMENT



TENSIONING 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: α=12°
Scope of implementation: turnkey delivery



1.

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

Belt width: 1200 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



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> 3, 4. Underground belt conveyor designed for man-riding and for coal transport - "Tichowa" coal mine, Poland.

Belt width: 1400 mm
Route length: 1800 m
Main drive: N=2×630 kW + 1×630 kW
Conveyor capacity: 1400 t/h
Conveyor speed: 2,5 m/s
Route inclination: α=10,5°
Scope of implementation: turnkey delivery



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SELECTED PROJECTS

> 1. Drive of the underground belt installed in the dipheading - "Marcel" 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: α=12°
Scope of implementation: turnkey delivery



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> 2. 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: 1500 t/h
Conveyor speed: 3,15 m/s
Route inclination: α=13,7°
Scope of implementation: turnkey delivery



2.

> 3. Underground belt conveyor suspended by means of arch support slings - "Piekary" 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
Scope of implementation: turnkey delivery



3.

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.

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

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

TURNOUTS

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

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



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 use both for transporting people and heavy materials and machine parts weighing more than 30 t.

FMS Diesel locomotive is characterized by extremely small dimensions and weight, which makes it easy to operate even in a very narrow mine working/heading. Locomotive diagnostic system informs the driver in advance about approaching the values of the critical parameters of its operation. All operating parameters and generated warning messages are registered in the machine memory.

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



2 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

Bulk density	up to 4,0	t/m ³
Belt width	400–2400*	mm
Belt running speed	up to 6,9*	m/s
Conveyor length	up to 10000*	m
Unit capacity	up to 20000*	t/h
Main drive power	up to 5000*	kW
Drive unit power	up to 1250*	kW

*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 form 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 used to transport bulk materials in power plants, artificial fertilizer production plants, cement plants. The length and width of the drag conveyor is adapted to the client's individual needs.

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, 2. 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
- 3. Belt conveyor 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



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SELECTED PROJECTS

- 1. Technological system of hard coal transportation by means of belt conveyors on coal pier - Świnoujście Port, Poland.

Belt width: 1600 mm
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=2×55 kW
Conveyor capacity: up to 2000 t/h
Conveyor speed: 0–2 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



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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
Conveyor speed: 0,75 m/s
Scope of implementation: turnkey delivery
- 2, 3. 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
- 4. Ship unloading system composed of 6 mobile belt conveyors and hopper, Świnoujście Port, 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



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SELECTED PROJECTS

- 1, 2. Technological system of sugar beet transportation - Köpingsbro, Sweden.

Belt width: 1600/1800 mm
Total 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
- 3. Belt conveyor system on the coal terminal reloading area - Northern Port of Gdańsk, Poland.

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: 1200/1000/1000/1000/1000 mm
Route length: 4982/670/444/360/252 m
Main drive: N= 2×315 kW + 1 x 160 kW/ 1×160 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



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SELECTED PROJECTS

- > 1, 2. Belt conveyor system designed for gypsum transportation in the flue gas desulphurisation unit - PAK Power Plant - Konin, Poland.

Scope of implementation: turnkey delivery
- > 3, 4. Belt conveyor system designed for gypsum transportation in the flue gas desulphurisation unit - Ostrołęka Power Plant, Poland.

Scope of implementation: turnkey delivery
- > 5, 6. 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



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SELECTED PROJECTS

- > 1. Belt conveyor system designed for gypsum transportation to the warehouse - part of desulphurisation unit - Bełchatów Power Plant, Poland.

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

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

Belt width: 1000 mm
Total route length: (8 pcs.) 1500 m
Scope of implementation: turnkey delivery



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SELECTED PROJECTS

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1. Belt conveyor system removing snow from large-surface production hall's roof, Japan Tobacco (Gostków Stry).
- >

2. Belt conveyor system intended for limestone technological transportation - Gorazdze Cement Plant, Poland.
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3. Overland coal handling belt conveyor system, Indonesia.

Scope of implementation: turnkey delivery



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E-TRANSPORT

CONTROL AND MONITORING

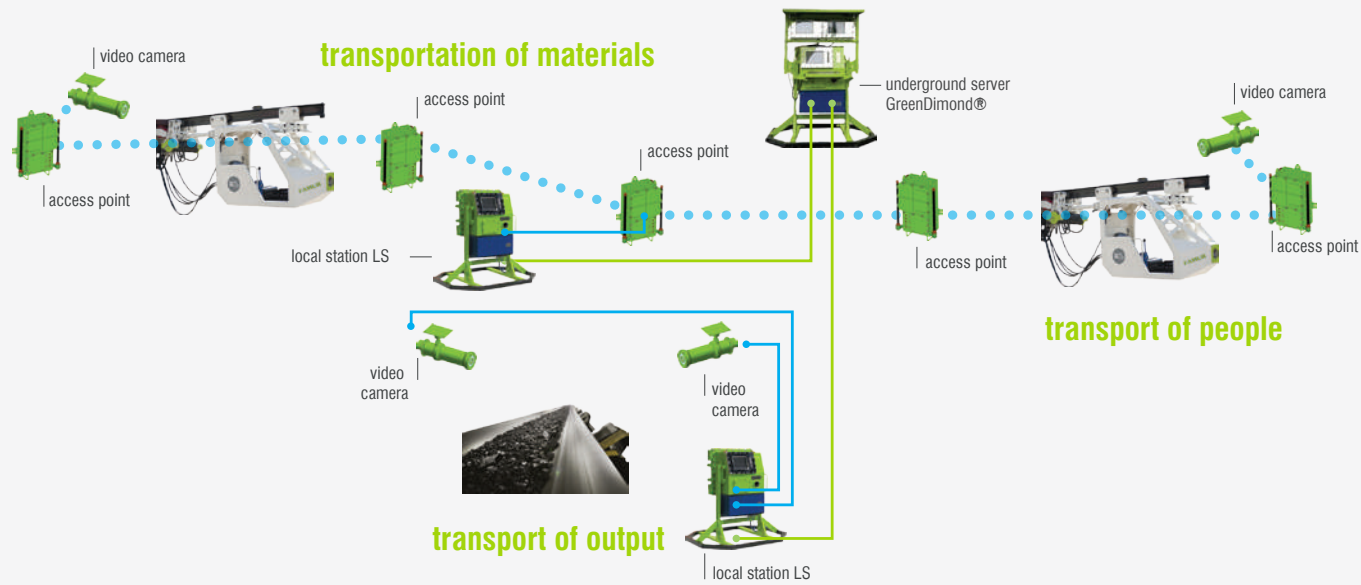
- > control systems integrated with superior control-and-supervision software
- > monitoring/check of belt conveyor drive units condition by measuring and analyzing the vibration level and temperature of rotating elements, detection of damages of gearboxes and pulleys at a very early stage of propagation, 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

No.	CLIENT	LOCALIZATION	PROJECT	SCOPE OF IMPLEMENTATION
1	“Kolubara” opencast coal mine	Kolubara, Serbia	30 belt conveyors B=1400 mm, N=2×320, 4×320 kW, Q=5900 t/h, L=21,3 km	EPCM*
2	“Berzdorf” opencast coal mine	Berzdorf, Germany	28 complete line of coal transport system B=1400 mm, 1 600 mm,1 800 mm, N=4×630 kW, L=140 km	Conveyor delivery
3	Public Power Corporation S.A.	Ptolemaidas, Greece	L=1250 m, N=4×1250 kW, Q=18000 t/h	EPC*, Consortium leader
4	Harbor Świnoujście	Świnoujście, Poland	6 belt conveyor B=1600 mm, Q=3600t/h	EPCM*
5	coal mines	Russia	1020 belt conveyors (832 km) B=1000 mm, L=816 m, N=2×55 kW	EPCM*
6	“Bobov Dol” coal mine	Bobov Dol, Bulgaria	18 belt conveyors (16 km), B=1000 mm, N=2×55 kW	EPCM*
7	coal mines	China	22 belt conveyors (16 km) B=1000 mm, L=738 m, N=2×55 kW	Conveyor delivery
8	Severstal-Resurs	Moscow, Russia	6 belt conveyors B=1000 mm, L=6,2 km, N=2×250 kW (1 pcs), N=2×132 kW (3 pcs.), N=2×132+1×132 kW (1 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.)	EPCM*
9	“Bogdanka” coal mine	Puchaczów, Poland	Belt conveyor B=1200 mm, L=2450 m N=2×160 kW + 100 kW,	EPC*

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

FAMUR PROJECTS

PROJECTS COMPLETED AFTER 2005

No.	CLIENT	LOCALIZATION	PROJECT	SCOPE OF IMPLEMENTATION
1	EMCOR	Oviedo, Spain	Installation for recycling of building materials	EPCM*
2	Technolizing	Moscow, Russia	11 belt conveyors B=1000 mm	EPCM*
3	“Kirova” coal mine	Kiemierovo, Russia	Belt conveyors B=1200 mm	EPCM*
4	“Konin” power plant	Konin, Poland	Coal supply system	EPCM* (coopration with SNC Lavallin)
5	“Konin” power plant	Konin, Poland	System of belt conveyors to transport the gypsum	EPCM*
6	“Marcel” coal mine	Radlin, Poland	Belt conveyor B=1400 mm, N= 3 × 860 kW	EPCM*
7	Open cast “Turów” lignite mine	Turów, Poland	Surface belt conveyor B=2000 mm, N=4 × 630 kW	EPCM*
8	PT Churchill Mining PLC	Jakarta, Indonesia	Delivery system of coal from mine to harbor, (storage yard at the mine – 160 km belt conveyors – storage yard at harbor), Q= 40 mln t/year	Technical study
9	Energy Corporation	Prisztina, Kosovo	The drive station conveyor and charge of belt conveyor	EPC*
10	PT Berau Coal	Jakarta, Indonesia	42 km of output system between opencast mine and loading harbor	Technical -commercial offer
11	PT Sorikmas Mining	Jakarta, Indonesia	Output system	Technical consultations
12	ERKOM	Ankara, Turkey	Belt conveyor B=1200 mm L=900 m with drive 2×315 kW, Q=1000 t/h, (2 pcs.) Belt conveyor B=1200 mm, L=1273 m, N=2×315 kW; Q=1600 t/h, Belt conveyor B=1200 mm, L=1967 m, N=2×630+2×630 kW, Q=2000 t/h	EPCM*

FAMUR PROJECTS

PROJECTS COMPLETED AFTER 2005

13	PT Indominco Mandiri	Bontang, Indonesia	20 km system of belt conveyors	Technical consultations
14	"Tichowa" coal mine	Kiemierovo, Russia	Belt conveyor B=1400 mm, L=1,8 km, N=2×630+1×630 kW; Q=1400 t/h	EPCM*
15	PT Pesona Khatulistiwa Nusantara	Jakarta, Indonesia	7 km long belt conveyor system for coal transportation & classification	EPCM*
16	Open cast brown coal mine "Turów"	Turów, Poland	Surface belt conveyor B=1800 mm, L=1041 m with drive 1×1000 kW	EPC*
17	Open cast brown coal mine "Turów"	Turów, Poland	Surface belt conveyor B=1800 mm, L=1421 m with drive 3×1000 kW	EPC*

*EPC – turnkey delivery

*EPCM – provision of engineering, machinery and assembly&installation supervision services



Overland belt conveyors open cast brown coal mine “Bełchatów”

BRAND NEW

COMPACT DRIVE

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

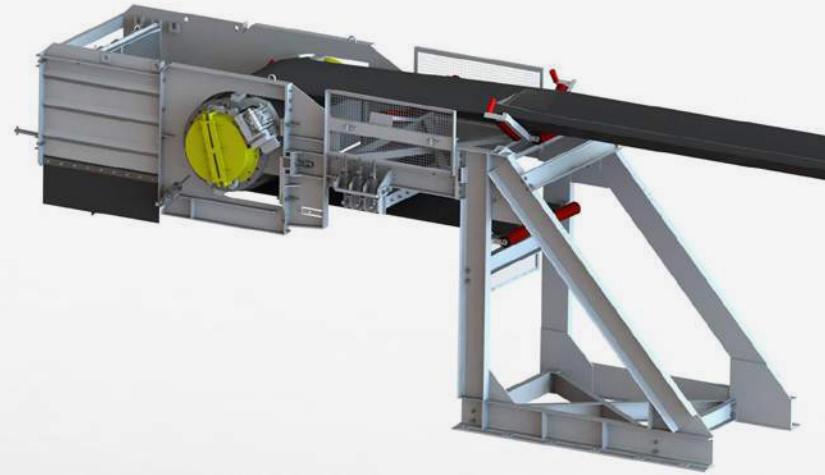
The conveyor with EB-315 compact drive ensures better utilization of the excavation within auxiliary transport operations.

The drive does not differ from other conveyor components and assemblies.

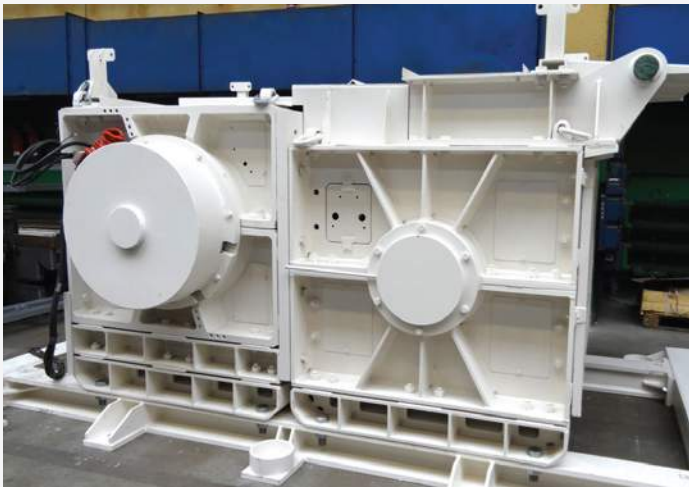
The EB315 drive compact – $\Phi 1030$, B = 1200 consists of singlemotor power units with planetary gear. The entire drive unit is integrated inside the drive pulley of the conveyor, forming a compact structure.

DESIGN AND STRUCTURAL ADVANTAGES

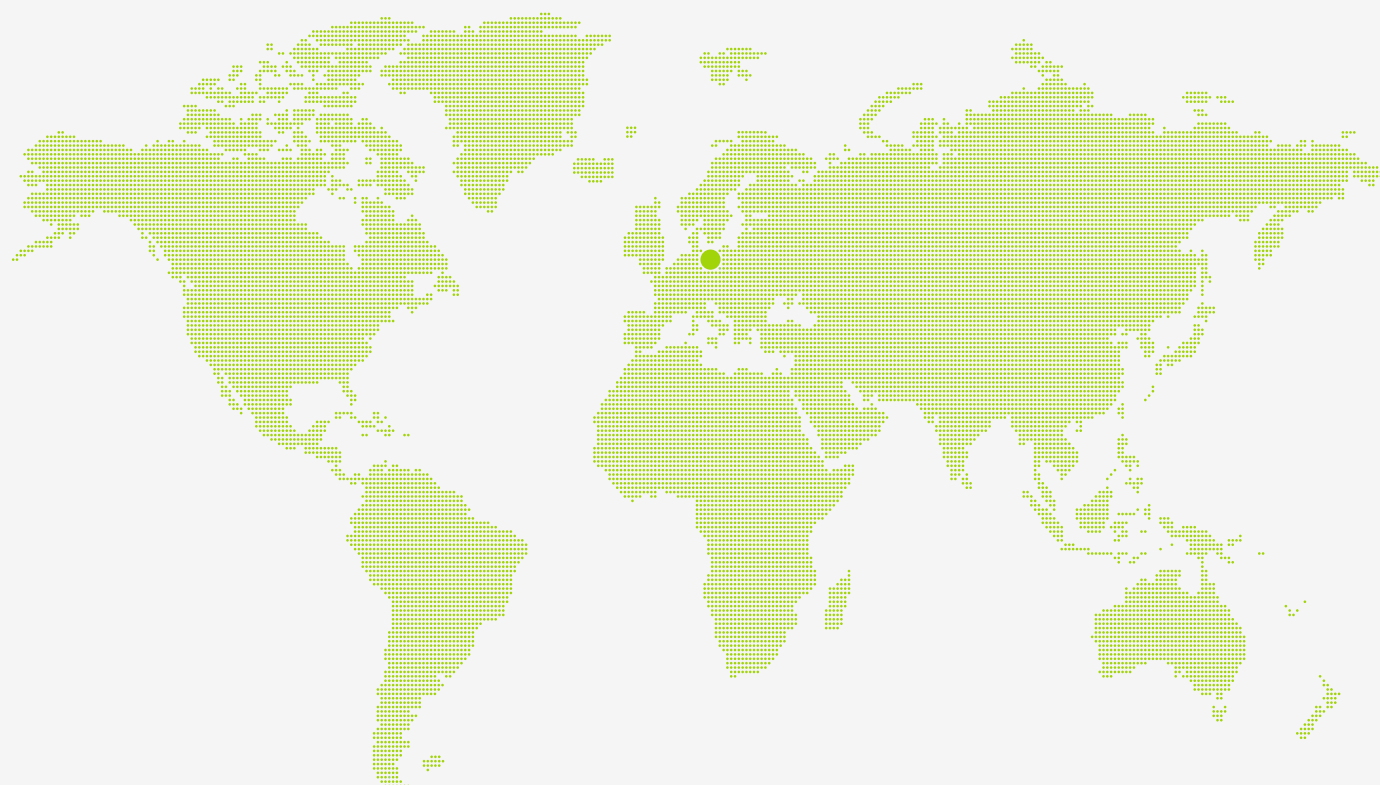
- small dimensions of the drive (width smaller by 500 mm compared to the classic angular gear drive) allow for installation in excavations without need for extensions
- easy access to all components after removing the covers
- possibility of declutching the gear with the motor and replacing the brake disk without necessity of the motor dismantling
- insertion of larger diameter drive pulley $\Phi 1250$ instead of $\Phi 1000$ 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



EB-315 compact drive of 315 kW with non-drive pulley for ZG Janina



FAMUR

Armii Krajowej 51
40-698 Katowice, Poland

T +48 695 181 017, +48 781 660 226

transportsystems@famur.com

www.famur.com

