becker WARKOP
SYSTEMY DLA GÓRNICTWA

A PART OF THE BECKER MINING SYSTEMS GROUP OF COMPANIES



FACE EQUIPMENT MECHANIZED SETS

- powered roof supports
- armoured face conveyors
- beam stage loaders
- crushers
- pushing devices
- electrical equipment

walltech

POWERED ROOF SUPPORTS



Shearer and Armoured Face Conveyor cooperate together as the elements of the Face Equipment Set. Roof Supports are usually equipped with two or four legs with the lemniscate arrangement of the canopies' movement. Roof Supports can operate with the IFS or with Non-IFS mode of operation. In seams being inclined more than 12 deg Powered Roof Supports is usually suitable to cooperate with AFC, canopies and bases' stabilization arrangements.

Individual Roof Supports steel structures are in each case manufactured in accordance with a Customer's requirements, experience and habits. Roof Supports' shields technical parameters, such as: supports capacity, floor and roof ground pressure are designed to suit mining- geological conditions of the specific mine.

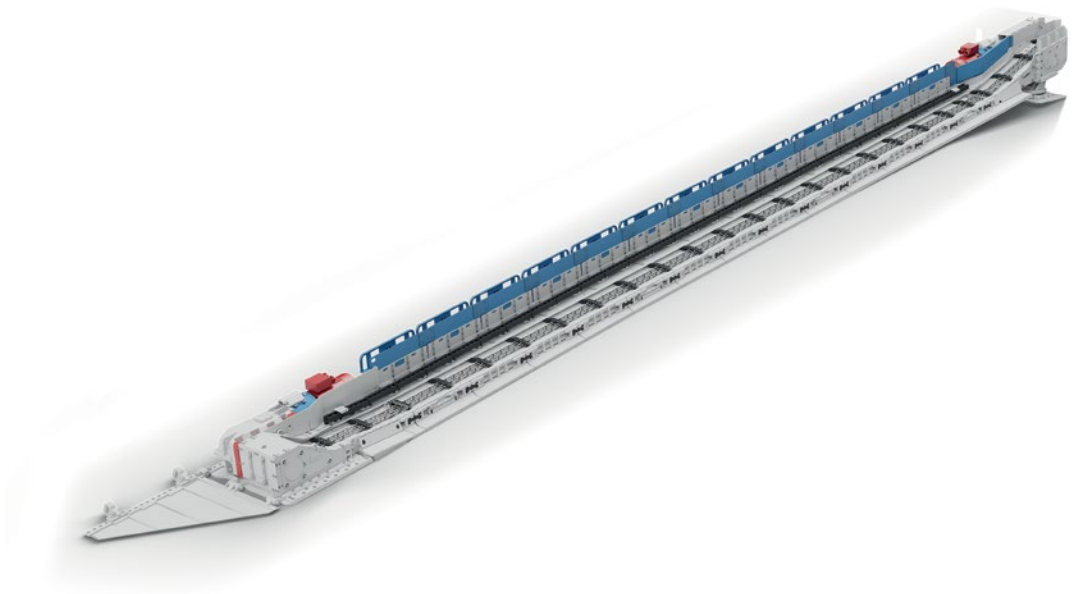
Examples of the Powered Roof Supports that have been designed, manufactured and delivered by Becker Warkop:

- BW 10/24 POz
- BW 10/25 POz
- BW 11/24 POz
- BW 12/28 POz
- BW 13/29 POz
- BW 15/36 POz
- BW 16/37 POz
- BW 18/34 POz
- BW 19/35 POz
- BW 20/41 POz
- BW 22/41 POz
- BW 24/46 POz
- BW 25/36 POz





ARMOURED FACE CONVEYORS



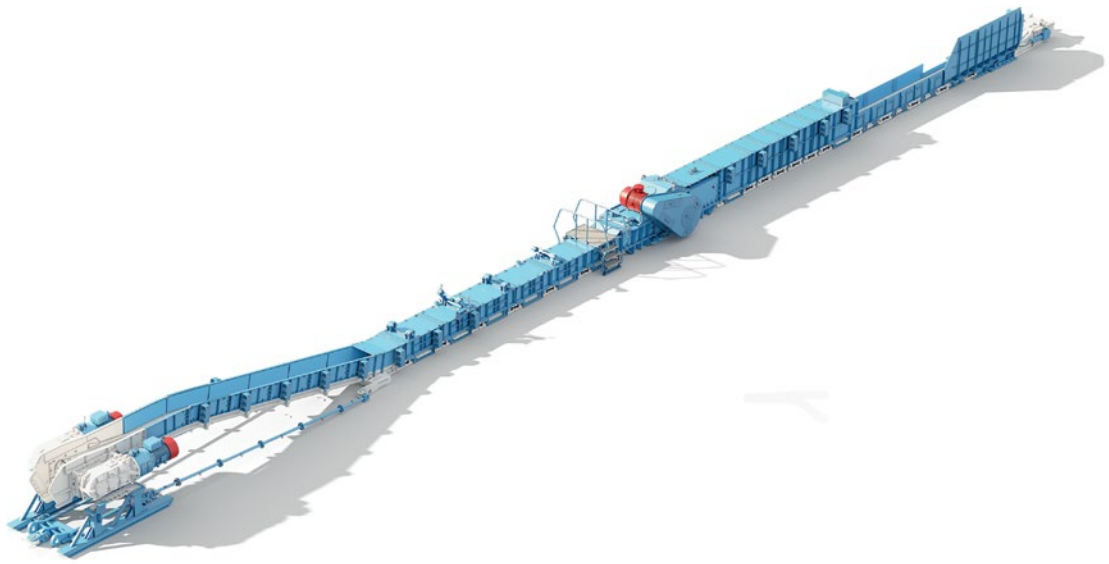
Armoured Face Conveyors type PZS BW are intended to take the extracted material out of the headings that are inclined up to 35 deg. Conveyors are designed equipped with such features that enable them to cooperate with coal shearers that can move cooperating with chainless haulage systems type Eickotrack, Megatrack or Jumbotrack as well as with Powered Roof Supports of 1,5m, 1,75m or 2,0 centres.

Profile	Width								Chain								
	350	450	650	750	850	950	1100	1250	18x64	26x92	30x108	34x126	38x126	38x137	42x146	48x152	52x170
180 Rolled																	
190 Rolled																	
208 Rolled																	
230 Rolled																	
230 Cast																	
235 Cast																	
260 Cast																	
260 Cast																	
270 Cast																	
295 Cast																	
320 Cast																	
350 Cast																	

Max. capacity t/h	50	400	1000	1200	1700	2200	3000	4000
Max power kW	3x22	3x55	3x55	3x400	3x500	3x630	3x1000	3x1600
Delivery End								
Straight								
Side discharge								
Cross								
Return drive								
Low profile – classic								
Telescopic								



BEAM STAGE LOADERS



Beam Stage Loader type PZP BW are intended to take the extracted material that is coming from the Armoured Face Conveyor and to transfer it to another transporting unit (eg. co-axial belt conveyor). Beam Stage Loaders type PZP BW are suitable to cooperate with the face conveyors equipped with front, side or cross type of discharge as well as with Becker – Warkop's Push-over devices type UPP-3, UP-1. In addition a part of the Stage Loader's in-line pans enable - belt or gear driven - Crushers to be installed on the top of them (other types of crushers are acceptable also).

Profile	Width									Chain					
	350	450	650	750	850	950	1100	1250	1400	18x64	26x92	30x108	34x126	38x126	38x137
180 Rolled															
190 Rolled															
208 Cast															
230 Cast															
230 Cast															
235 Cast															
260 Cast															
260 Cast															
270 Cast															
320 Cast															
Max. capacity t/h	70	500	1200	1500	2000	2600	3200	4500	5000						
Max . power kW	2x22	2x55	2x55	2x400	2x500	2x630	2x630	2x630	2x1000						
Bridge															
Rigid															
Flexible															
Tensioning															
Return drive															
Attachable unit															



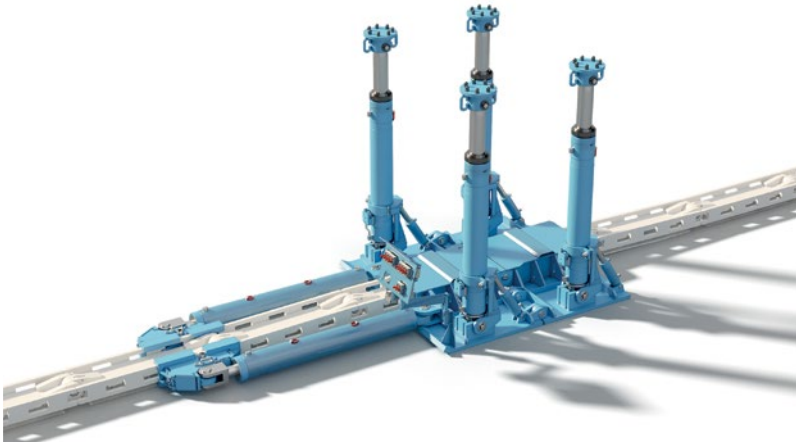
CRUSHERS



Dynamic crushers type KD BW are intended to crush coal and stone in order to make the extracted material's transport easier. Crushers - allocated in a roadway - are built on the top of the Stage Loader's in-line pans of width from 620 mm up to 1250 mm.



PUSH-OVER DEVICES



Push- over Devices are intended to push Armoured Face Conveyors drives simultaneously with the face advance , to push the whole Stage Loader as well as to move forward sets of heavy units (eg. sets of compact stations and transformers allocated on the top plate of Stage Loader). Push-over devices can operate in the roadway with longitudinal inclination up to +/- 35 deg.



CONTROL SYSTEMS AND ELECTRICAL EQUIPMENT





Automatic and communications systems covered by our range of production are intended for the controlling and steering, voice communication and supervision of the mining equipment such as cutting machines, conveyors, pumps and other.

The offered energy distribution systems enable - in mining conditions - safe 6 kV energy supply to mining equipment including Heavy Duty equipment installed in long faces and headings.



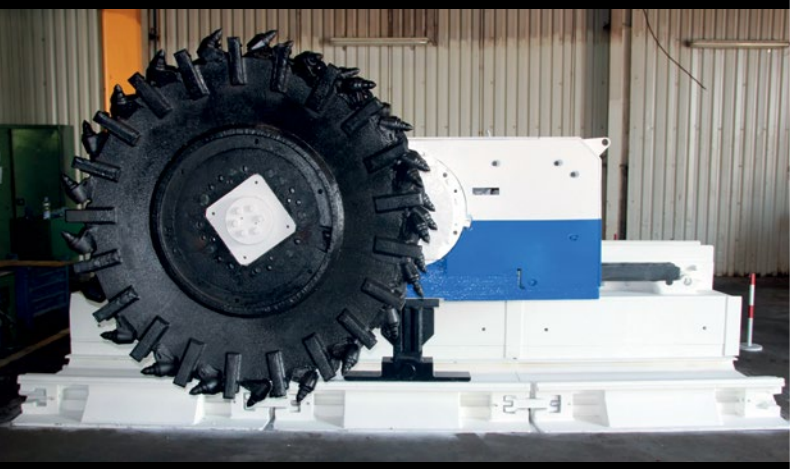
SHORTWALL SYSTEMS





Longwall systems of coal extraction and difficult mining - geological underground conditions (complicated tectonics and badly inclined seams) created the circumstances that significant parts of such seams have been un-extracted and left as the remaining coal seams.

In order to increase a deposit that could be taken and to improve economic results it is justified to develop and extract the remaining parts of the seams using the method called shortwall. Such faces are much shorter than the traditional faces and their lengths can be changed at the time of the faces' run.



Mining equipment installed in such faces can be described as simple and rigid and is usually lighter comparing to the traditional sets installed in longwall systems. It has to be easy to assembly and its dismantling make the "face-to-face" much simpler and faster. In results the investment costs are becoming much lower.

Becker Warkop's range of products covers Single Drum Face Shearers type BESA-60 and BESA-150 and Roller Curve Face Conveyor type BW PZK that can be dedicated for such shortwalls.

Our Company has also got suitable experience and competences in the installing and current operation of the faces in question.



FACE EQUIPMENT MECHANIZED SETS

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Becker-Warkop Sp. z o.o.
ul. Przemysłowa 11
44-266 Świerklany
Poland
tel. +48 32 432 99 00
fax +48 32 432 99 01

www.becker-mining.com.pl

walltech