



OFFERING CATALOG OF MINING EQUIPMENTS

OSTRAVA, CZECH REPUBLIC

YEAR: 2020

1. ASSORTMENT FOR THE MINING INDUSTRY

- Gall Chains
- Plain Link Chains
- Bolted Joints for TH 21, TH29, TH32, TH34, TH36 and TH44
- Stirrup Joints for profile K24 and TH21-TH44 inversely bent.
- Adjustable pipe sprags for TH21, TH29, TH32, TH34 a TH36
- Anchors
- Suspended Railways
- Means of mining mechanization
- Impact Overflow Stools
- Hook bolts
- Support feet for TH profile
- Flanged pipes and pressure pipes Ø108 a Ø156
- Special forged bolts and nuts

Types of Chains



Roller Chain



Bush Chain



Pin Chain



Link Chain

Bolted Joints



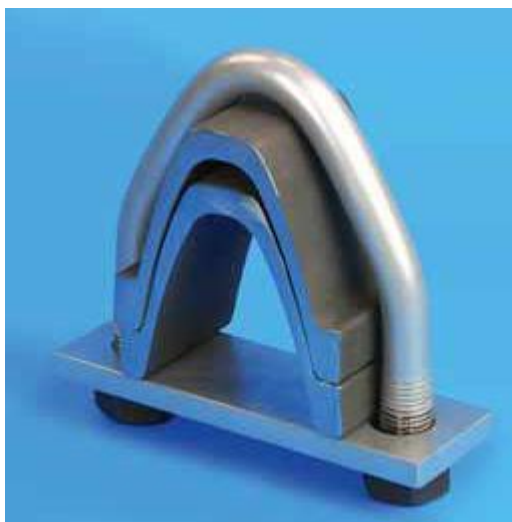
Bolted Joints with lower carrier and Bolted Joints with upper carrier type SDD and SDG for TH25, TH29, TH32, TH34, TH36, TH40, TH44



Lightend Bolted Joints with lower carrier and Bolted Joints with upper carrier type SDOD and SDOG for TH25, TH29, TH32, TH34, TH36, TH44



Support Feet



Stirrup Joint for TH21 reverse bented



Pipe sprag and adjustable pipe sprag for TH21,TH25,TH29,TH32,TH34 and TH36



**Glued Anchors type KZW 20, KZW 22 and KZW 24
Expanding Anchors type KZW-R**



WM hook bolts



Flanged Pipes Ø 108 and Ø 156



Special bolts and nuts for mining industry and railroad engineering



Self-locking hexagon nut



Cutting drums for mining and heading machines

The production range consists of cutting drums for mining machines used most frequently used in the Ostrava-Karvina mining territory.

They are produced in diameters from 1400 mm to 2200 mm according to specific customer requirements. (A basic representative is shown above)

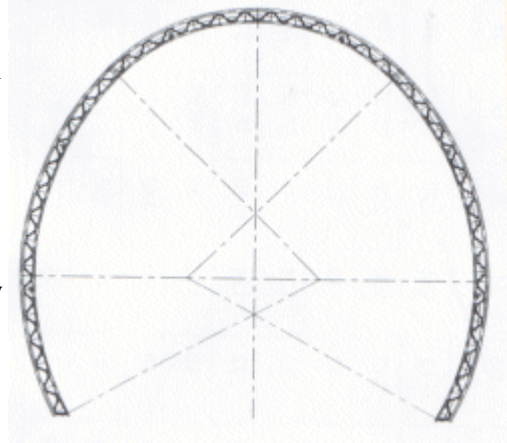
Lattice Girders

Lattice Girders reinforcement assemblies ASTA (meets regulations SZ No.214 Ostrava-Radvanice) and ANKRA GT (meets regulations Deutsche Bundesbahn DS853) are intended for reinforcement of driven spaces during construction of underground and mining works.

The ASTA is made of three steel rods of reinforcing steel, assembled in a triangular shape with transversely connected reinforcement elements. Individual assembly parts are produced in any shape according to customer requirements.

The number and distribution of joints is also arbitrary.

The bending strength of a truss joint is guaranteed to be at least equal or higher than joint-free sections. The assembly's construction enables its perfect spraying with concrete mixture including joints.

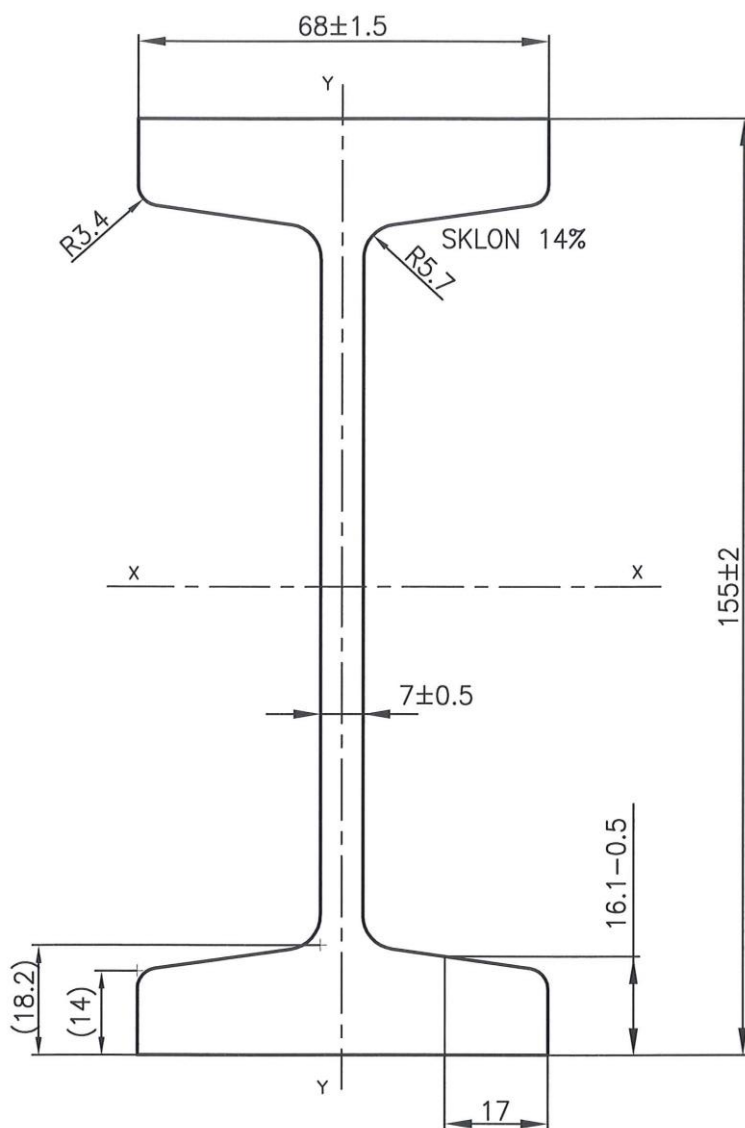


SUSPENDED RAILWAY ZD 24

Suspended railways are intended for transport of material as well as personnel in mining workings with inclination up to $\pm 30^\circ$. An electric or pneumatic hoist can be used as tractional mean for them. The utilization of a suspended locomotive is also very useful. Manual transport is allowed up to the inclination of 35mm/m. The railway assembly is very fast and its operation is economic and reliable. The railway line has a modular design and it can be elongated step by step. Load weight can be placed in the necessary amount of carrying carriages connected in the train unit. Maximum weight of the train unit is determined by the used braking carriage and the inclination of the railway line.

Type of suspended railway	ZD 24
Railway line	Bar I 155 KN 425564
Useful load of carriage	Max 2700 kg
Maximum inclination of the railway line	30°
Maximum haul of tractional mean	63 kN (80kN)
Maximum transport speed	2m/s
Uncoupling speed of braking carriage	3,2 m/s
Minimum diameter of curves	4m (horizontal) 8m (vertical)

Dimensions of load-bearing profile of the suspended railway line ZD24



ČSN 425564/1974
SOUVISÍCÍ NORMA: ČSN 420135

G	S	J_x	J_y	W_x	W_y
kg/m	cm ²	cm ⁴	cm ⁴	cm ³	cm ³
23,84	30,37	1164	84	150	24

COMPONENTS OF TRANSPORTATION BY SUSPENDED RAILWAYS

TILTING CABIN



Set of cabins TDS is designed for removal of workers on suspended railway type ZD 24 A, ZD 24 B, ZD 24 C, or other types of certified suspended railways in mine work with minimal profiles 8 m² and to max. slope 35°. The set of cabins is possible to used only to max. slope that is allowed for used braking car and suspended locomotive. The set of cabins is allowed to use in mines with methan environment.

A set of cabins that is driven by suspended locomotive and equipped with braking car consists of :

- transportation truck TDS
- cabin TDS
- transportation pallets
- connection rods (ST 0,3 , ST 1,25 , ST 1,74)
- signalization

Transportation truck TDS – runs on suspended railways. The trucks are connected by connection rods with supporting pins and nuts that are ensured by split pins.

Cabin – is welded frame composed of upper and lower crossbeam and tubular cross member. The transported persons are protected against dropping by chains barriers. The tilting cabins hold some swinging upholstered seats that are tilted so that the transported persons sit always in vertical position. The maximal allowed slat by this cabin is 35° .

Transportation pallet – is welded frame that is hanging on two transportation trucks that are connected to each other by connection rod ST0,3. Transportation pallets are used for transportation of small material.

Connecting rod – is used for hook-up to each other transportation trucks.

- by connection of cabins – type ST 1,74
- by connection of cabin and braking car – type ST 1,25
- by connection of transportation pallet – type ST 0,3

Signalization – allows to give a signal from each seats of set to the place of a conductor in end cabins of set.

The signalization has always delivered by the set with five cabins or by customer requirement.

Technical parameters:

Max. quantity of cabins in set on inclined tracks	5
The quantity of cabins in set on horizontal tracks	must be stated by truck operator
Max. quantity of persons in set of five cabins	40
Max. speed of trafic	2 m s^{-1}
Max. slat of transportation track	35°
Max. thrust of traction	80 kN

Cabin:

Cabin length	3600 mm
Cabin width	1100 mm
Cabin hight	1050 mm
Payload of cabin (8 persons á 80 kg)	640 kg
Weight of cabin	485 kg
Total weight of cabin	1225 kg

Pallet:

Weight	300 kg
Length, width, hight	1224, 880, 1220 mm
Own weight	180 kg

Mobile Lifting Equipment (MLE)– 3,2 t



The MLE 3,2t is used for lifting , manipulation and removal of the combers on the suspended railway type 24A, B, C to inclination $\pm 30^{\circ}$. The carried burdens by TDS-4 must be ensured against release in upper position and stabilized by the chain with diameter 13mm. The handles on sides of the truck are determined for this ensure.

The trucks TDS4A are constructed for hanging of a chain hoist.

The MLE satisfies of standards ČSN EN ISO 12100-2, ČSN 294, ČSN EN 13463-1, ČSN 332030 and decree ČBÚ č. 22/1989 Sb..

Technical parameters:

Max. lifting capacity	3,2 t
Lift height	acc. to the type of chain hoist
Weight	80 kg

HINGES



The hanging „cubes“ are used for suspension and anchoring of a suspended railways, type ZD24, the crossovers and other mine devices on mine steel reinforcement, type TH 16,5, TH21, TH29 TH34. Fixing of hanging „cube“ on corridor steel reinforcement is self-locking. It is possible to hang of sections by similar hinge in the case that a joint of suspended railway is situated directly under the arch steel supports. If the joint of suspended railway is situated between support arches and a angle of chain deflection would be unfavorable it must be used hinge that is consists of two hinges in „V“.

It is necessary to use the chains type 18x64/B for hanging of suspended railway and the chains type 14x50/B for anchoring of this one.

Technical parameters:

Load capacity of hanging „cube“	64 kN
Type of corridor steel supports	K21, K24, K27, K28, P28, P32, TH21, TH29, TH34, TH40,
Weight of hanging „cube“	7,8 kg

TRANSPORTATION TRUCK TYPE TDS4A



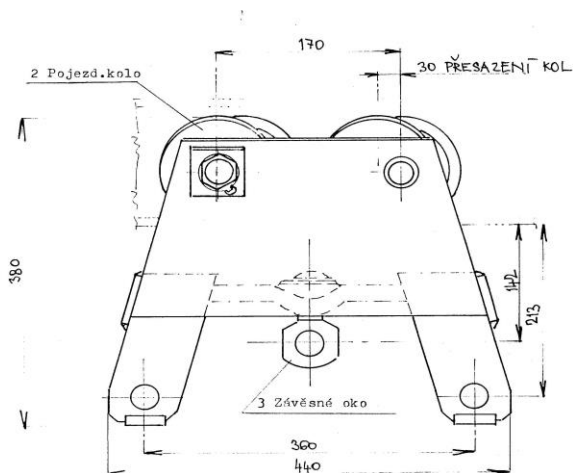
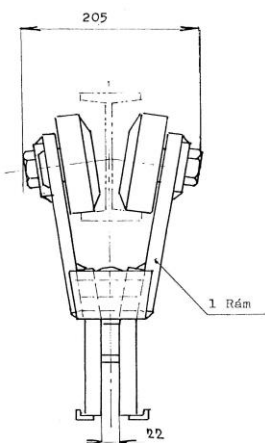
The transportation truck is used for transportation of mines material in transportation containers, pallets, for transportation of staff in special cabins. A transportation is realized on suspended fix lines (railway). The transportation truck moves on suspended railway by ropes or by suspended locomotive. There is permitted to load a maximum 4000kg of material per each truck.

Truck TDS4A can be driven or pushed. Transportation truck TDS4A correspond to standards ČSN EN ISO 12100-2, ČSN 294, ČSN EN 13463-1, ČSN 332030 and decree ČBÚ No. 22/1989 Sb.

The transportation truck TDS 120 is constructed for two-way trafic.

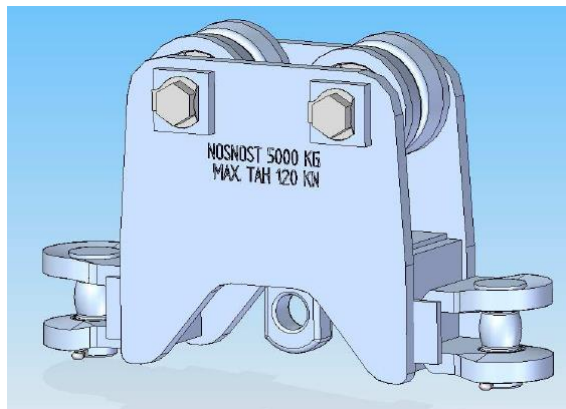
Technical parameters:

Max. load capacity	4000 kg
Max. premitted tensile load	80 kN
Total weight of truck	52 kg



Technical draft of truck

TRANSPORTATION TRUCK TDS 120



The transportation truck is used for transportation of a material in the transportation containers, pallets, for transportation of staff in special cabins. The transportation is realized on suspended fix lines (railway). The transportation truck moves on suspended railway by ropes or by suspended locomotive. The truck TDS 120 is possible to be used only on sets where a maximum traction is less than 120 kN. A connection of trucks TDS 120 is performed by the connecting rod ST 120.

There is permitted to load a maximum 5000 kg of material per each truck.

The truck TDS 120 can be driven or pushed. Transportation truck TDS 120 corresponds to standards ČSN EN ISO 12100-2, ČSN 294, ČSN EN 13463-1, ČSN 332030 and decree ČBÚ No. 22/1989 Sb.

The transportation truck TDS 120 is constructed for two-way traffic.

Technical parameters:

Max. load capacity	5000 kg
Max. permitted tensile load	120 kN
Total weight of truck	55 kg

CONNECTION ROD TYPE ST 0,3; ST 0,5-2,2



The connection rod (CR) connects the trucks on suspended railways type ZD24, ZD24A and ZD24B. CR is possible to be used on the traffic ways where the maximum of tractive or push force is not less than 80 kN. A connection of CR with truck is performed by sliding pin that is secured by wire and lock.

CR corresponds to standards ČSN EN ISO 12100-2, ČSN 294, ČSN EN 13463-1, ČSN 332030 and decree ČBÚ č. 22/1989 Sb.

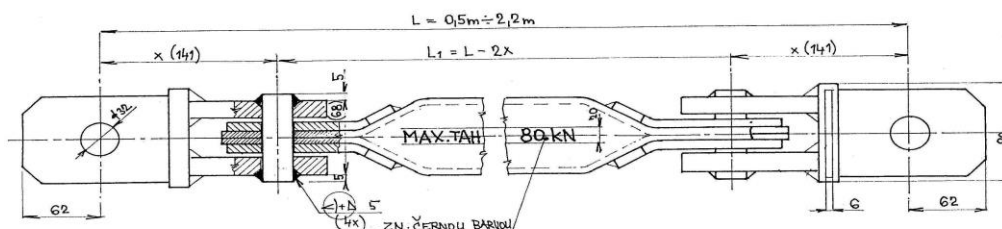
Technical parameters:

Permissible tensile (pressure)	80 kN
Total weight of ST 0,3	11 kg
ST 0,5 – 2,2	13-31 kg
Center distance of connection meshes	
ST 0,3	0,3 m
ST 0,5 – 2,2	0,5 – 2,2 m

Technical draft of connection rod 0,5 – 2,2

Drawing No. SAP 49299932020123 – 1,25m

49299932020125 – 1,74m



HYDRAULIC HANDLING EQUIPMENT TYPE HMZ 8 – DUO



Hydraulic handling equipment , type HMZ 8 – DUO is designed for lifting, manipulation and transport of loads on suspended railway type ZD 24A, ZD 24B a ZD24C, or other similar types of suspended railways (with support profile I 155) up to incline $\pm 30^0$. A hanging locomotive is recommended as a source of traction device and a source of pressurized oil.

The device can be used in potentially explosive atmospheres SNM2. The hydraulic hanging equipment type HMZ 8 – DUO is assembled from two hydraulic handling equipments connected by connecting rod. The equipment is suspended on carrier trucks.

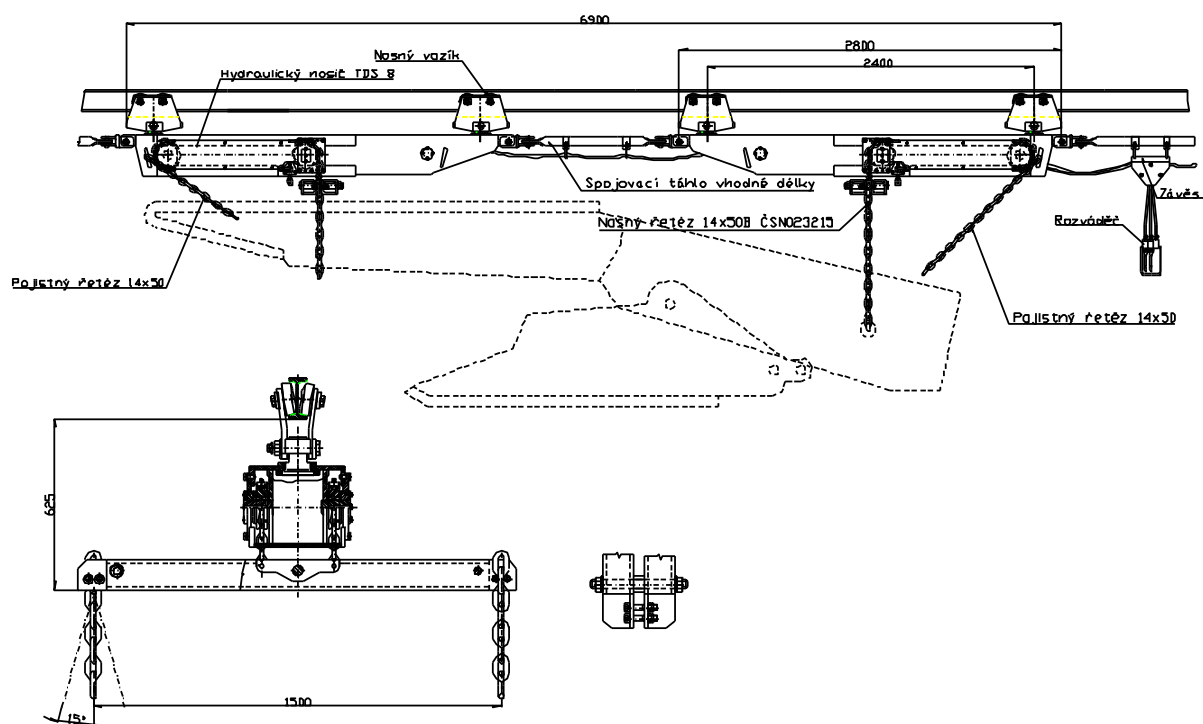
The hydraulic cylinder with a simple chain transmission provides drive of this equipment.

A pair of pull chains are connected at the load either directly or via rocker arms.

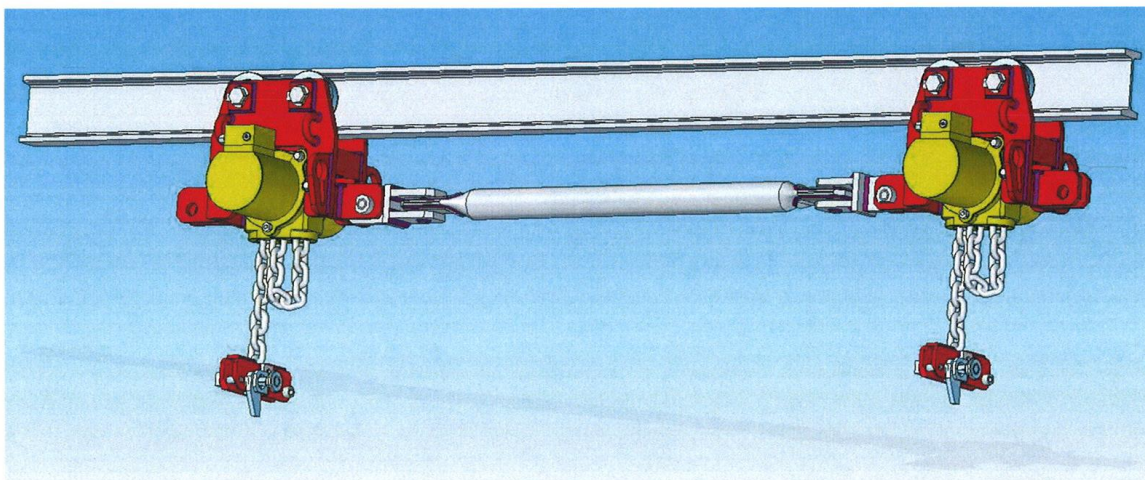
Technical parameters:

Maximum load capacity	2 x 8 t
Lifting height	1,1 m
Maximum pressure of oil	16 MPa
Time to lift up to 1 m	cca 40 s by 10 l.min ⁻¹
Weight of HMZ DUO	2 x 500 kg
Weight of carrier truck	50 kg

HYDRAULICKÉ MANIPULAČNÍ ZAŘÍZENÍ HMZ TDS 8-DDU



HYDRAULIC TRANSPORT TRUCK TYPE HPV TDS80, HPV TDS120



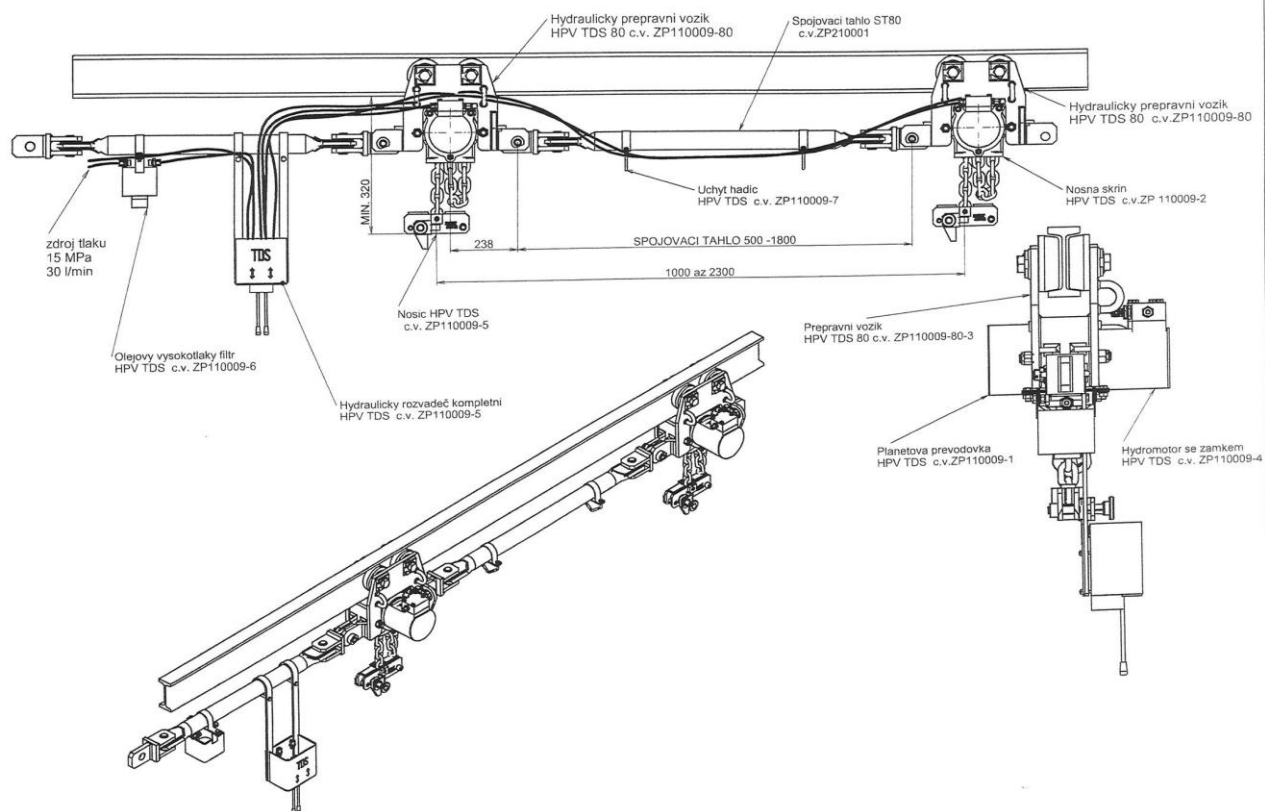
Hydraulic transport trucks model range HPV TDS 80 a HPV 120 are designed for manipulation of suspended loads on suspended railways with profile I 155 or other compactible profiles. These trucks are not designed for carriage of passengers. The device is powered by hydraulic pressure oil from suitable source (a hanging locomotive or independent hydraulic unit). The kit can be pulled or pushed by a traction device with independent drive (locomotive) or pulled by rope wound on a drum winch.

The kit of hydraulic transport trucks is delivered in two types HPV TDS 80 and HPV TDS 120 according to tensile force of traction vehicle.

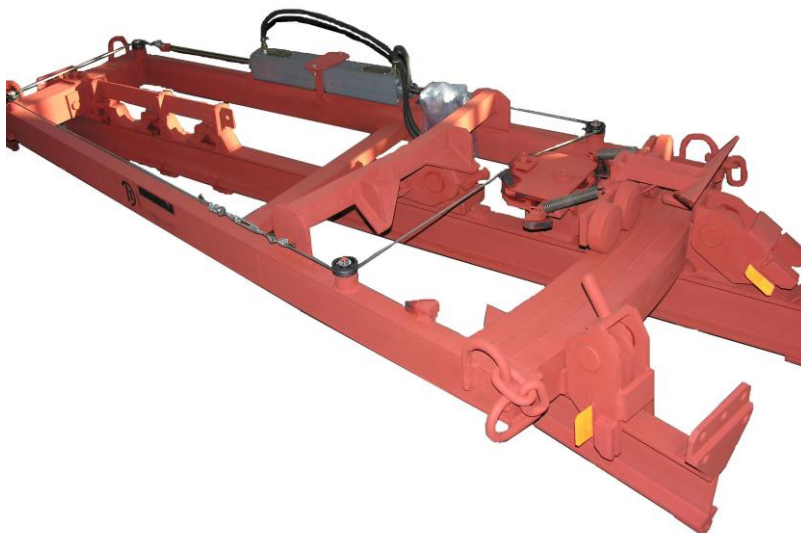
Technical parameters:

Bearing profile	I155 (I140E or other compactible one)
Minimal radius of horizontal curves	4 m
Minimal radius of vertical curves	8 m
Max. speed of set	2,5 m/s
Max. inclination of truck	$\pm 30^0$
Max. tensile force of traction vehicle for HPV TDS80	80 kN
HPV TDS 120	120 kN
Maximal load capacity	4000 kg
Load chain	13x36 T8 DIN 5684
Working travel, adjustable	standard 3m, max. 6m
Lifting speed at flow oil 30 dm ³ /min	0-3 m/min
Hydraulic unit	
Max. pressure	16 + 10% MPa
Medium	hydraulic oil
Minimum oil flow	25 dm ³ /min
Total weight of HPV TDS 80	113 kg
Total weight of HPV TDS 120	114 kg

Technical draft of HPV TDS 80 – dwg. No. ZP110009-S-80
No. SAP 49299932020145



SWITCH TYPE ZD 24 A, B, C – PNEUMATIC



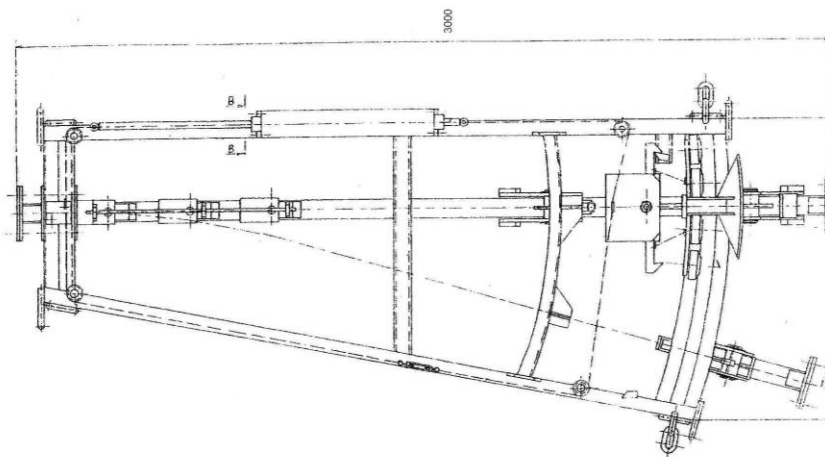
The switch type TDS ZD 24 A, B, C is designed for pneumatic change of direction of suspended railway with carrier profile I 155 in two directions. A transport of persons and loads is possible along this switch and subsequent sections of suspended railway. A blocking of impassable line branches is made by stops.

The switch complies with the standards EN ISO 12100-2, EN 294, EN 13463-1.

Technical parameters:

Max. allowable thrust of traction vehicle	80 kN
Max. allowable load of carrying truck	40 kN
Carrier profile	I 155
Max. diameter of driving pulleys of locomotive	350 mm
Max. allowed passable speed	0,5 m/s
Max. slant	12°
Air pressure	0,5 MPa
Dimensions	
length	3000mm
width	1680 mm
height	500 mm
Total weight	450 kg

Technical draft of pneumatic switch type TDS ZD24 A, B, C
SAP left 492999319030009
right 492999319030008



SWITCH TYPE TDS ZD 24 D/130-reinforced



This reinforced switch is part of the truck ZD 24 D/130 and is designed to transport of loads with max. load of truck 50 kN.

A maximum thrust of a traction vehicle is 170 kN. The switch type TDS ZD 24 D/130 is designed to manually change of direction of suspended railway with carrier profile I 155 in two or three directions. A transport of persons and loads is possible along this switch and subsequent sections of suspended railway. A blocking of impassable line branches is made by stops.

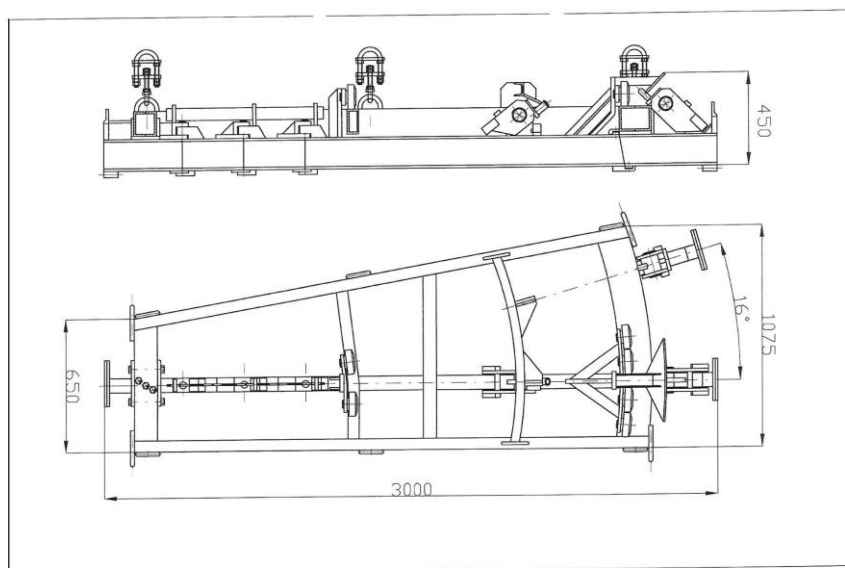
Type of switch according to change of traffic direction : - left

- right
- left-right
- three-way

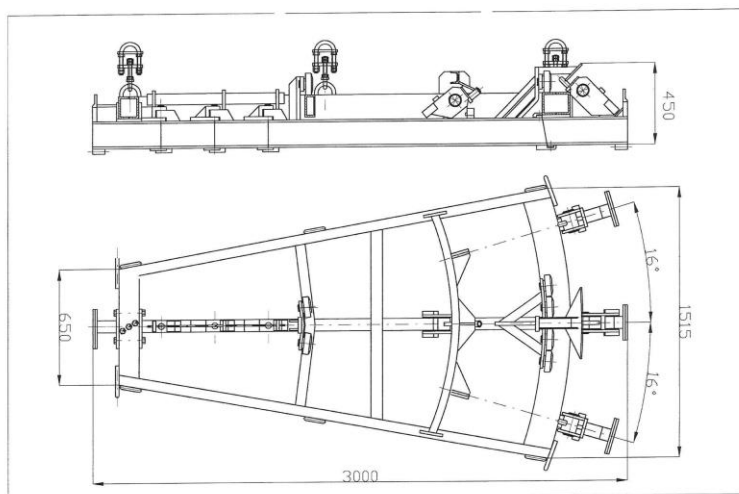
Technical parameters:

Max. allowable thrust of traction vehicle	170 kN
Max. allowable load of carrying truck	50 kN
Carrier profile	I 155
Max. diameter of driving pulleys of locomotive	350 mm
Max. allowed passable speed	0,5 m/s
Max. slant	12 ⁰
Dimensions	
length	3000mm
width	1680 mm
height	500 mm
Total weight	500-550 kg

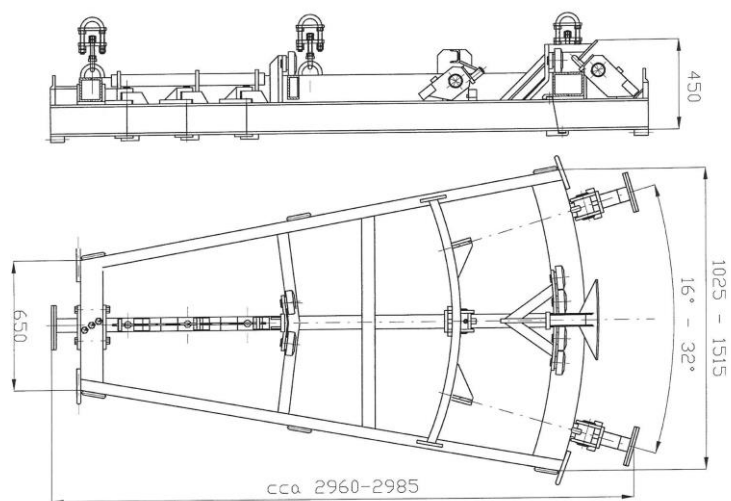
Dimensional draft of switch type TDS ZD24 D/130 – left



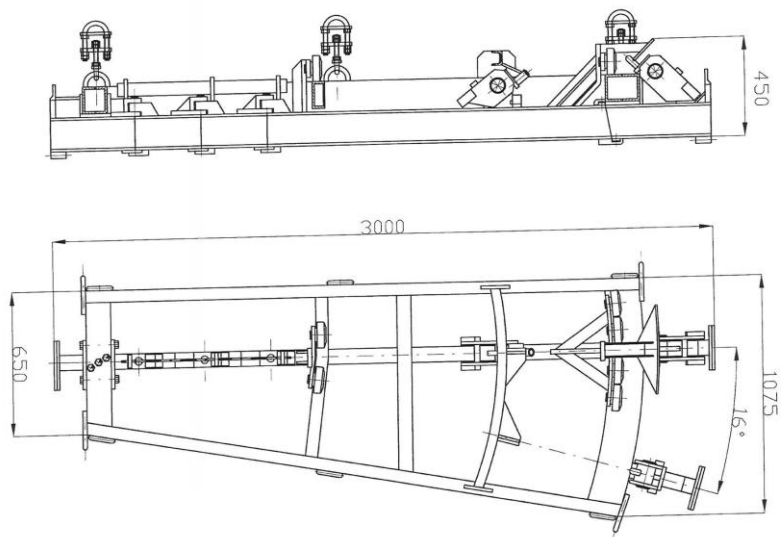
Dimensional draft of switch type TDS ZD24 D/130 – three-way



Dimensional draft of switch type TDS ZD24 D/130 –left-right



Dimensional draft of switch type TDS ZD24 D/130 – right



TUBULAR PROPS OF TYPE 'TR' AND 'ADJUSTABLE TR'



General Characteristics

'TR' and 'adjustable TR' tubular props are designed to stabilise the integrity of dog or chamber heading sets made of TH21, TH25, TH29, TH34 and TH36 section irons.

'TR' tubular props are available in sizes to match the set spacings 330 to 1500 mm.

'Adjustable TR' tubular props are used when there is necessity to maintain a variable set spacing on the left- or right-hand side of work, particularly when making:

- arched workings,
- branches and splits.

These products come in sizes to match the set spacings: 550 - 600mm, 600 - 800mm, 750 - 1000mm and 1000 - 1250mm.

KR25/29 TUBULAR PROPS

General Characteristics

The KR25/29 props are designed to stabilise the integrity of support sets made of TH25 and TH29, section irons. Due to the structure of the prop, there is ensured its rectilinearity during the installation. The KR25/29 props have their stability factor $W_{st} = 1$.

KR25, KR29, KR32/34/36 TUBULAR PROPS

General Characteristics

The KR25, KR29, KR32/34/36 props are used in dog and chamber headings to stabilise the integrity of support sets spaced at up to 1000mm and made of TH25 to TH36, section irons.

Due to the structure of the prop, it matches exactly the roof support components thereby ensuring a high stability factor $W_{st} = 1$ for the sets spaced at 1.2m.

These props are designed to match the set spacings 330 to 1500 mm.

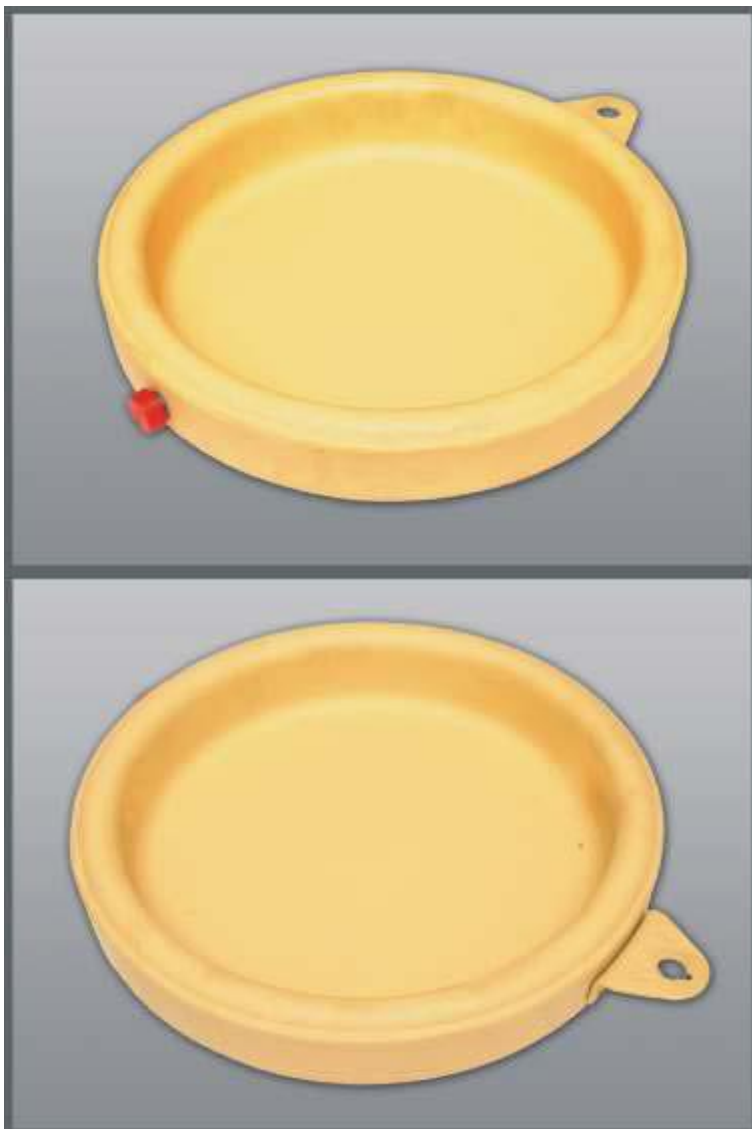


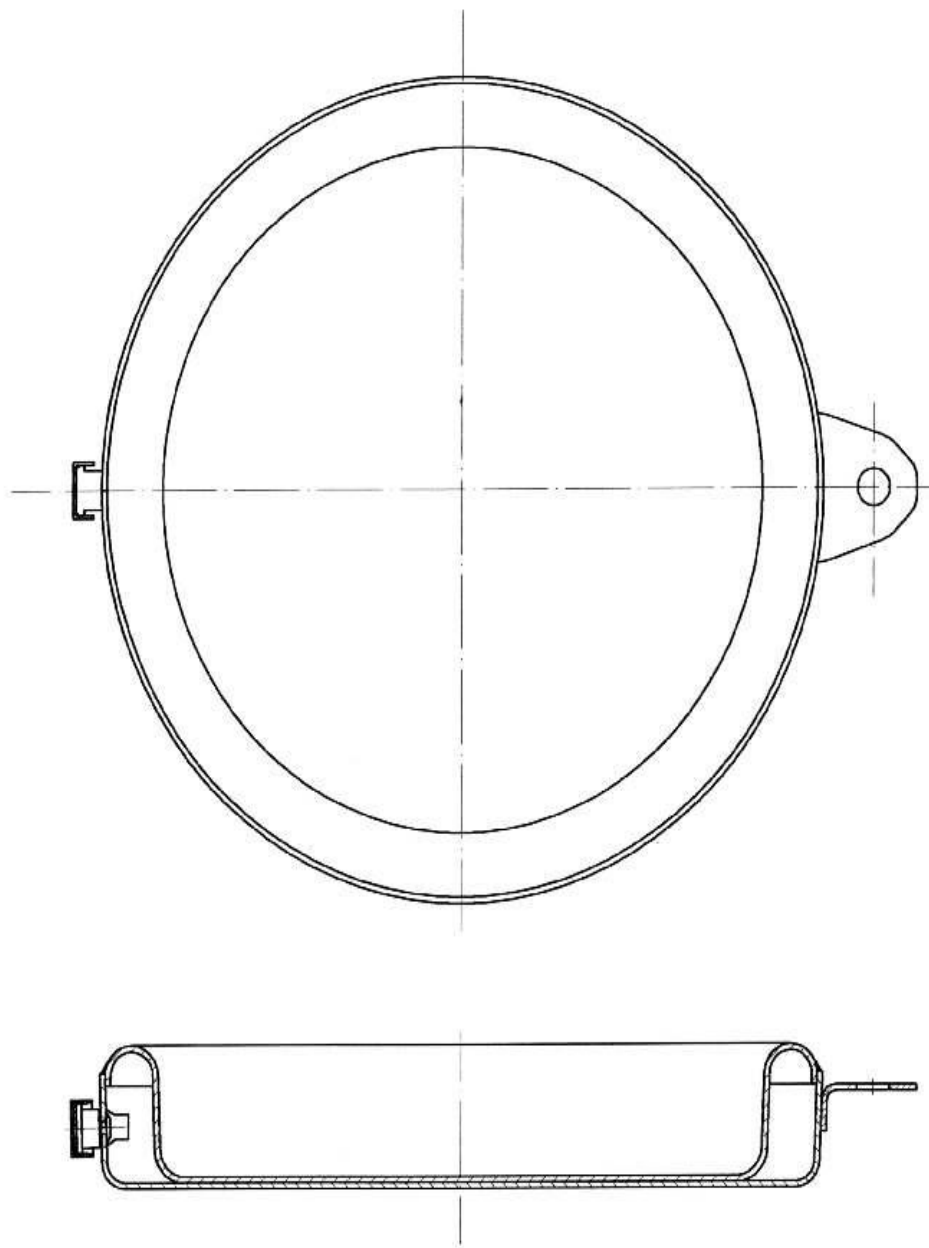
POINT JACK, Types 266 and 302

General Characteristics

Point jacks types 266 and 302 are intended for setting of wooden props in the mine headings. Their operation consists in filling the jacks with hydraulic medium which results in the upper jack part being raised this leading to the sprag of the prop against the ceiling which ensures the preliminary supporting capacity of approx. 450 kN.

The use of the a.m. jacks allows the improvement of the mine heading stability, prevents the separation of rock layers and improves the safety of mine workers.

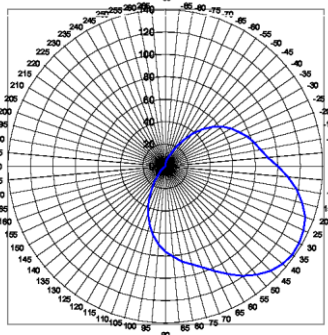
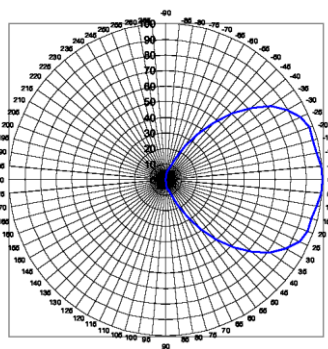
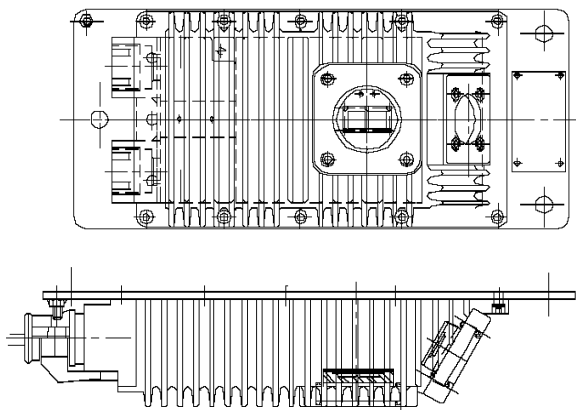


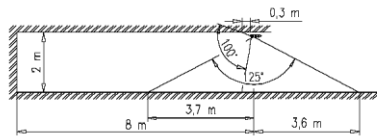


EXPLOSION-PROOF HEADLAMP Ex 01/NI

The Ex 01/NI headlamps is used for the illumination of industrial areas and in the mining of minerals for chemical, gas, oil and military facilities (can be supplemented with VN connecting box - IP 68). Several versions of the Ex 01/NI headlamp have been successfully produced and sold for a number of years; these differ in their supply voltage, light source used (new-generation 10 W, 20 W (2x10 W, 2x20 W) LED diodes) and dimensions according to the customers's requirements and desired type of protection.

The Ex 01/NI headlamp fulfils the requirements for M2 category equipment and can be utilised even in the harshest subterranean mining conditions, where there is a risk of methane and coal dust explosions.













LED headlamps have the following advantages:

Revolutionary design, option of optical signalling of section consolidation

- Exceptionally resistant iron structure using reinforced glass
- High coverage value - IP 68, can be used up to depths of 1 m underwater
- High resistance to vibration/tremors, impacts and cold
- Extremely long lifespan of light source – **up to 100,000 hrs**
- Minimal energy needs – **up to 20 x savings**
- Zero maintenance
- Frequent switching option

Parameters	Ex 01/NI-2
Headlamp power supply Wattage	90-230V + 10 % AC/DC LED 2x10W - 20VA LED 2x20W - 40VA
Power factor Fuse	cos-φ 0,9-1 0.63 A moulded fuse + thermal fuse in hermetic section
Device designation (type of protection)	 I M2 Ex d I Mb; IP54  I M2 Ex e mb I Mb; IP68  II 2G Ex e mb II T4 Gb; IP68  II 2D Ex t IIIIC T85° Db; IP68 „mb“, „e“, „t“, „d“
Coverage Dimensions (variability of assembly openings) Range	IP68, IP54 180x400x90 mm (b x l x h) - 20 to + 40°C
of working temperatures (T _a)	2x10W, 2x20W LED diode
Bushing, sealing	W20 Ex d I/IB, ZW20 Ex d I/IB
Light intensity Light dispersion angle Mass Temperature of light source	4000 lm min 160 ° (± 5 %) 16,5 kg 9000° K

-  **I M2 Ex d I Mb, IP54**
-  **I M2 Ex e mb I Mb, IP68**
-  **II 2G Ex e mb II T4 Gb, IP68**
-  **II 2D Ex t IIIIC T85° Db, IP68**
„mb“, „e“, „t“, „d“



EXPLOSION-PROOF PHONE SETS

Explosion-proof telephone set		4FP 153 32, 33
 <p>4FP 153 32</p>	<p>Explosion - proof telephones (4FP 153 32, 4FP 153 33) are intended for ambients with possible gas or dust explosion atmosphere according to specification: II2G Ex emb[ib] IIC T6 Gb, II2D Ex t IIIIC T80°C IP66 Db, I M2 Ex emb[ib] I Mb - $-25^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$. They are connected to analog plug of telephone central with parameters 24 V DC to 66 V DC. The covers of phones are from special materials avoiding the accumulation of electrostatic charge on phone cover.</p> <p>Ambient temperature: - -25°C to $+60^{\circ}\text{C}$</p> <p>Protection: IP 66</p> <p>Dimensions: 245 x 225 x 129 mm (h x w x d)</p> <p>Weight: cca 3,2 kg</p> <ul style="list-style-type: none"> • 3 direct memories (M1, M2, M3) • ring loudness 90 dB (3 various loudness levels) • pulse and tone dialling • FLASH (adjustable to 100 ms or 200 ms) • optical signalization by LED diode • supply from analog telephone line • 5 various ring tones • pause (adjustable to 1 sec or 3 sec) • electronic key lock • possibility to connect additional secondary earphone 4FN 615 09.2 	
 <p>4FP 153 33</p>		

Electrical explosion-proof horns

4FE 601 03 - 05



Electrical explosion-proof horns for AC current are used as acoustic signaling devices in ambient with explosion danger (gas, vapour, combustible) like mines, chemical and wood factories etc. Explosion level (class) of ambient: I, IIB, temperature level T5.

Technical parameters:

- maximum input: 40 VA
- loudness level (5m from horn axle) 68 dB
- signal tone frequency 100 Hz
- working time max. 60 min.
- cross-section of connecting lines 6 mm²
- temperature ambient - 10°C to + 40°C (263K to 313K)
- relative humidity 100 %
- dimensions (w x d x h) 129x204x167 mm
- weight: 7 kg

Drawing number	Supply voltage (V)	Frequency (Hz)	Explosion level (class)	Reliable function in voltage scope (V)
4FE 601 03	24	50	IM2EEExdI IIBGEEExdIIBT5	21,6 - 26,4
4FE 601 04	120	50	IM2EEExdI IIBGEEExdIIBT5	108 - 132
4FE 601 05	230	50	IM2EEExdI IIBGEEExdIIBT5	207 - 253

Mining telephone sets

4FP 153 42 - 46
4FP 153 52 - 54

Autligyphone is intended for heavy-duty industrial conditions in underground mines and surface installations of the mines, with risk of endangering by methane or combustible dust (e.g. coal dust, rock dust etc.). The telephone can work with any public or private telephone central. The phone allows hands-free connection with dispatching centre, so called lityphone operation. You can use additional earphone if required. The phone bodies are produced from zinc alloy and the complete unit is designed as explosion-proof hard lock with cover protection. The surface of the phones is covered by powder paint. The electrical circuits of the microphone, additional earphone and dial buttons are designed as intrinsically safe circuits.

Explosion-proof autligyphone



Explosion-proof automatic phone



Basic technical parameters:

Application: Underground mines SNM 2, ZONE 1 and 2
Working environment: IM2 Ex d [ib] I, or. IM2 Ex d I for 4FP 153 46
Protection: IP 54
Supply: from telephone Exchange 60 or 48V, 60 mA DC
Protection against dangerous contact: device supply meets the requirements for PELV circuits in accordance with STN EN 60950-1 as communication equipment with voltage between wires in insulated system up to 85 V DC

Transmitting base absorption: 0 to + 5 dB
Receiving base absorption: 0 to - 5 dB
(user can regulate the volume - only on versions 4FP 153 42,43,44)
Base absorption of side-tone: + 7 to + 17 dB
Acoustic stability: stable at load 60 V, 2x500 Ω

Resistance at DC current 25 mA: up to 320 Ω
Input impedance: 600 Ohm \pm 20 %, at 1 000 Hz
Insulation resistance: 100 M Ω at 30 % a 3 M Ω at 90 % humidity

Loudness level: min. 70 dB at distance 1 m
Ligyphone loudness: min. 70 dB
Temperature of environment: -20°C to +40°C
Relative humidity of working environment: 30 to 90%
Dimensions: 393x325x220 mm (h x w x d)
Weight: 17 kg

Dialling: impulse, DTMF, buttons from fine steel
Dialling parameters: 3 direct memories, re-dialling
Ringing: single-pan bell, loudness level min. 70 dB, lityphone loudness min. 70 dB
Optical signalization: LED diode

name	type	button keypad	talkback button	call button	optical signalization	secondary earphone	regulation of call loudness	memory programming from keypad
AUTLIGYPHONE	4FP 153 42							
AUT. PHONE	4FP 153 43							
AUT. PHONE	4FP 153 44							
CB PHONE	4FP 153 45							
LIGYPHONE	4FP 153 46							
AUTLIGYPHONE	4FP 153 52							
AUT. PHONE	4FP 153 53							
AUT. PHONE	4FP 153 54							



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