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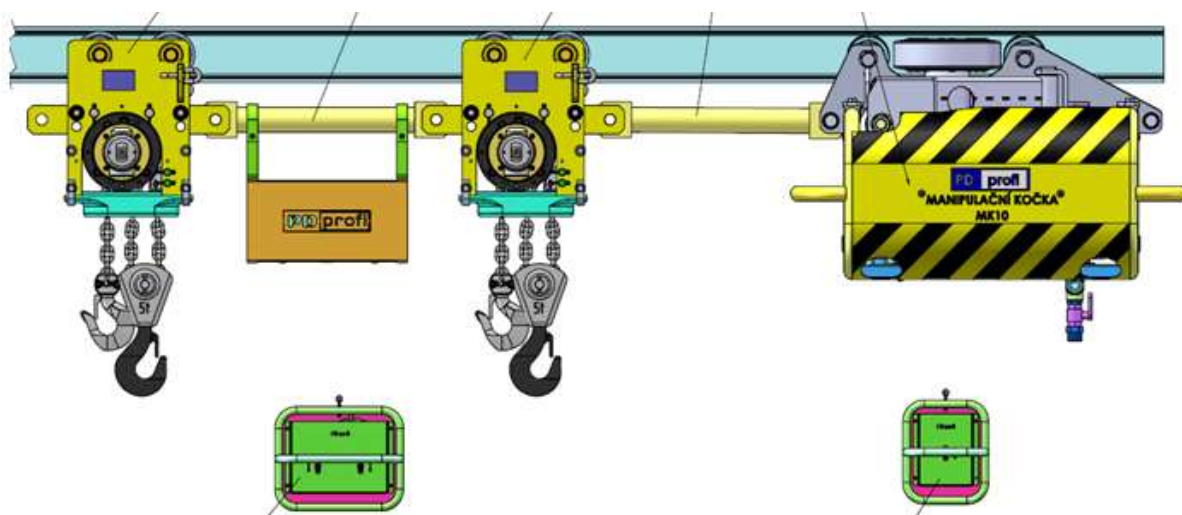
*Your supplier of mechanization*

## PNEUMATIC MANIPULATION SET SMP 1

### DESCRIPTION:

The **SMP 1** pneumatic manipulation set is used for transport of material in mining operations along the ZD 24 type hanging tracks.

The **SMP 1** pneumatic manipulation set consists of two pneumatic travelling manipulation units ZMPP 3.2t/5t or ZMPP 3.2t/6t that are controlled by the OP 2 pneumatic control. The units are connected by connecting rods and pulled by the MK P11 - 16 000N manipulation trolley. A brake cart is not a part of delivery.



### TECHNICAL PARAMETERS:

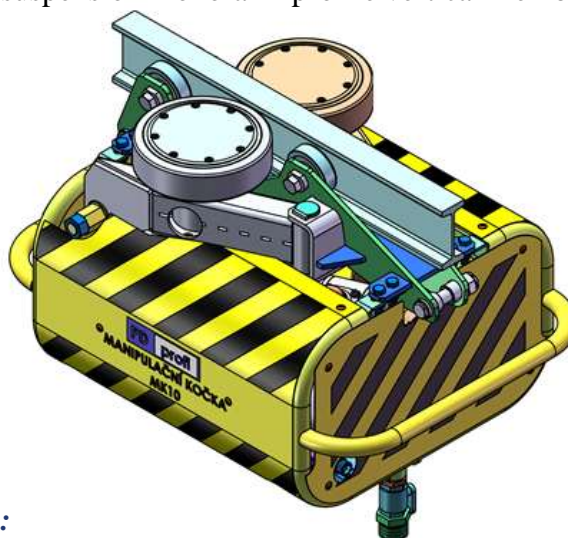
|                                    |         |                      |
|------------------------------------|---------|----------------------|
| Nominal traction force             | [ N ]   | 16 000               |
| Axis distance of hooks (hitches)   | [ mm ]  | as required          |
| Elevation of hooks (basic)         | [ mm ]  | 3000                 |
| Max. loading                       | [ t ]   | 2 x 3,2/5, 2 x 3,2/6 |
| Inside diameter of the supply hose | [ mm ]  | 32                   |
| Max. incline during lifting        | [ ° ]   | ±25                  |
| Working medium pressure            | [ MPa ] | 0,4-0,6              |
| Total weight                       | [ kg ]  | Approx. 710 kg       |

## MK P1X HANDLING TROLLEY

### DESCRIPTION:

The MK P1X handling trolley (“trolley”) is an air powered tool for manipulation with loads suspended on carts moving along the ZD 24 suspension monorail or its modifications for short distances.

The trolley is equipped with a lever or push control suspended on supply hoses. It works on the principle of movement transfer from the driving wheels which are pushed against both sides of the ZD 24 suspension monorail I profile vertical member.



### TECHNICAL PARAMETERS:

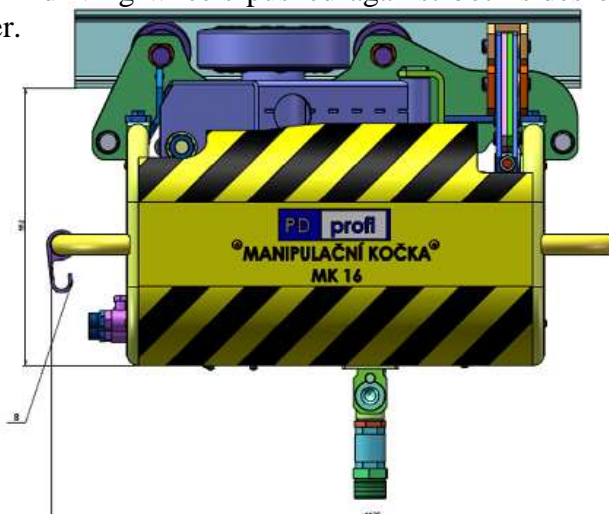
|   |                         |                         |                          |
|---|-------------------------|-------------------------|--------------------------|
| Nominal traction force  | [N]                     | P11 – 16 000            | P12 – 22 000             |
| Brake force   | [N]                     | 20 000                  | 20 000                   |
| Max. travel speed on ground plane                             | [m.min. <sup>-1</sup> ] | 24                      | 16                       |
| Installed power supply – 0,6MPa                               | [kW]                    | 2 x 4                   |                          |
| Maximum track incline   | [°]                     | ± 30°                   |                          |
| Working air pressure  | [MPa]                   | 0,4 – 0,6               |                          |
| Inside diameter of the supply hose                            | [mm]                    | 32                      |                          |
| Track type  |                         | ZD 24                   |                          |
| Basic dimensions (h x w x l)                                  | [mm]                    | 800 x 784 x 1.126       |                          |
| Weight  | [kg]                    | 390                     | 450                      |
| Max. weight of pulled load<br>(with friction coefficient 0.1) | [kg]                    | Incline 0° ..... 16.000 | Incline 0° ..... 22.000  |
|   |                         | Incline 5° ..... 11.799 | Incline 5° ..... 16 500  |
|   |                         | Incline 10° ..... 8.084 | Incline 10° ..... 12 100 |
|   |                         | Incline 15° ..... 6.190 | Incline 15° ..... 9 280  |
|   |                         | Incline 20° ..... 5.046 | Incline 20° ..... 7 500  |
|   |                         | Incline 25° ..... 4.286 | Incline 25° ..... 6 400  |

## MK P2X HANDLING TROLLEY

### DESCRIPTION:

The MK P2X handling trolley (further called only the trolley) is an air powered tool for manipulation with loads hanging on carts moving on the ZD 24 hanging track or its modifications for short distances. Compared to the previous type MK 10 has a separate brake jaw and increased braking force 25kN.

The trolley is equipped by a lever control hanging on supply hoses. It work on the principle of transfer of movement from driving wheels pushed against both sides of ZD 24 hanging track I profile vertical member.



### TECHNICAL PARAMETERS:

|   |                         |                         |                       |
|---|-------------------------|-------------------------|-----------------------|
| Nominal traction  | [N]                     | P 21 – 16 000           | P22 - 22 000          |
| Brake force   | [N]                     | 22 000                  | 30 000                |
| Max. travel speed on level surface                            | [m.min. <sup>-1</sup> ] | 24                      | 24                    |
| Installed power supply – 0,6MPa                               | [kW]                    | 2 x 4                   |                       |
| Maximum path incline  | [°]                     | ± 30°                   |                       |
| Operating pressure  | [MPa]                   | 0,4 – 0,6               |                       |
| Inside diameter of the supply hose                            | [mm]                    | 32                      |                       |
| Used track  |                         | ZD 24                   |                       |
| Basic dimensions  | [mm]                    | 800 x 784 x 1126        |                       |
| Weight  | [kg]                    | 410                     | 470                   |
| Max. weight of pulled load<br>(with friction coefficient 0.1) | [kg]                    | Incline 0°..... 16 000  | Incline 0°.... 22 000 |
|   |                         | Incline 5° ..... 11.799 | Incline 5° ... 16 500 |
|   |                         | Incline 10°..... 8.084  | Incline 10°...12 100  |
|   |                         | Incline 15° ..... 6.190 | Incline 15° .. 9 280  |
|   |                         | Incline 20° ..... 5.046 | Incline 20° ... 7 500 |
|   |                         | Incline 25° ..... 4.286 | Incline 25° ...6 400  |

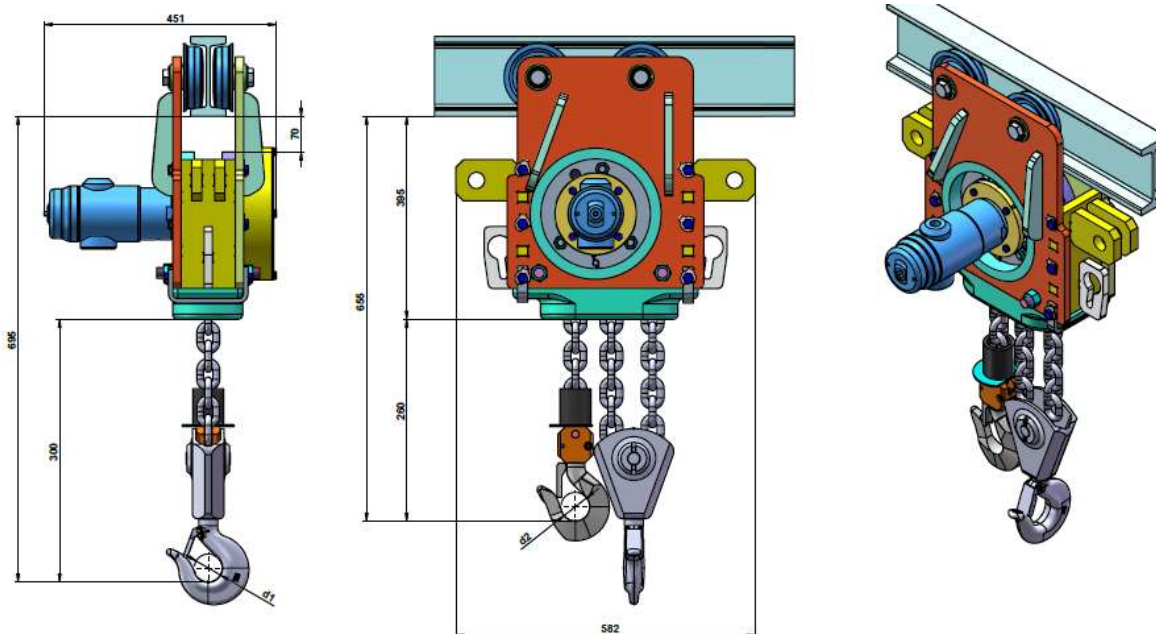
## ZMPP 3.2t/5t(6t) TRAVELLING PNEUMATIC MANIPULATION DEVICE

### DESCRIPTION:

The ZMPP 3.2t/5t(6t) travelling pneumatic manipulation device is used for vertical lifting and lowering of loads on the ZD 24 hanging track in places with pressure air supply.

The ZMPP 3.2t/5t(6t) travelling pneumatic manipulation device consists of the following basic parts:

- Pneumatic multi-plate motor MPL 3
- ZMPP 3.2t/5t(6t) load cart



### TECHNICAL PARAMETERS:

|                                    |                                   |           |       |
|------------------------------------|-----------------------------------|-----------|-------|
| Loading                            | [t]                               | 3,2       | 5 (6) |
| Load chain                         | [mm]                              | 13x36     |       |
| Operating pressure                 | [MPa]                             | 0,4 – 0,6 |       |
| Nominal motor output               | [kW]                              | 3         |       |
| Lifting speed                      | [m.mim <sup>-1</sup> ]            | 1         | 0,5   |
| Air consumption                    | [m <sup>3</sup> h <sup>-1</sup> ] | 144       |       |
| Filtration                         | [µm]                              | 50        |       |
| Weight                             | [kg]                              | 159       |       |
| Inside diameter of the supply hose | [mm]                              | ø 20      |       |



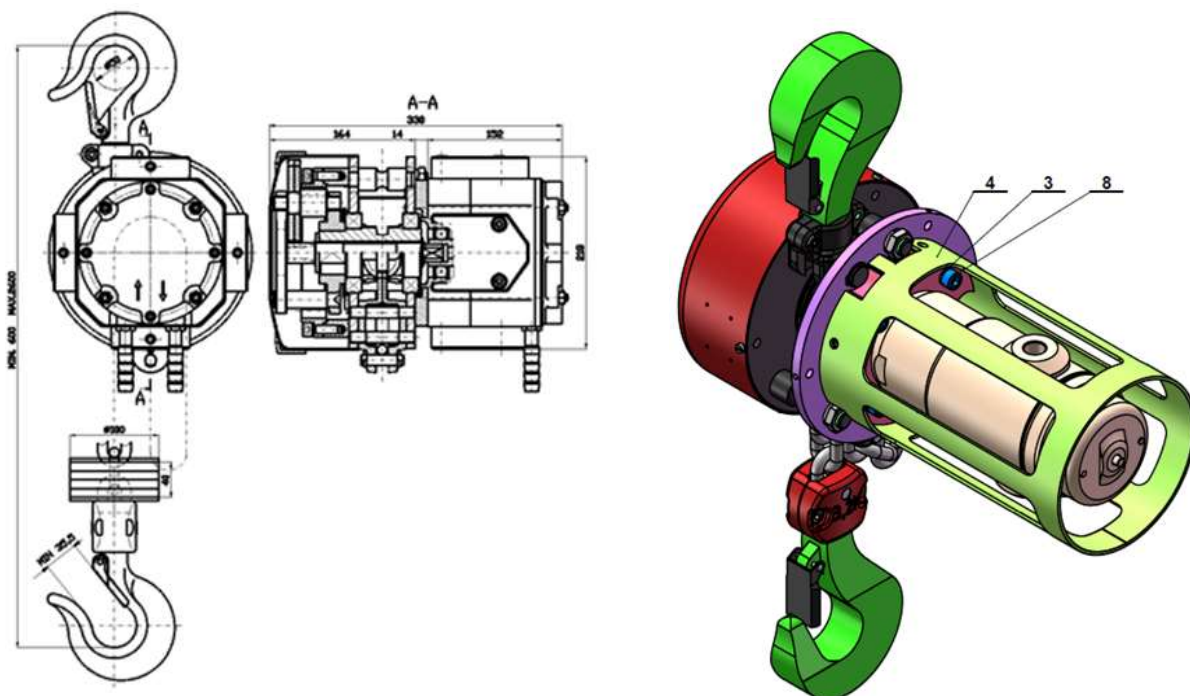
## Z 295 PNEUMATIC MANIPULATION DEVICE 1,6t, 3,2t, 5t

### DESCRIPTION:

The Z 295 pneumatic manipulation device is used for vertical lifting and lowering of loads in places with pressure air supply.

The Z 295 pneumatic manipulation device consists of the following basic parts:

- Body with the hook assembly 1,6t, 3,2t, 5t
- Pneumatic vane motor MPP2, MPL 3



### TECHNICAL PARAMETERS:

|                                    |                                   |          |         |     |
|------------------------------------|-----------------------------------|----------|---------|-----|
| Loading                            | [t]                               | 1,6      | 3,2     | 5   |
| Load chain                         | [mm]                              | 9 x 27   | 11 x 31 |     |
| Operating pressure                 | [MPa]                             | 0,45-0,6 |         |     |
| Nominal motor output               | [kW]                              | 2        | 3       |     |
| Lifting speed                      | [m.mim <sup>-1</sup> ]            | 1        |         | 0,5 |
| Air consumption                    | [m <sup>3</sup> h <sup>-1</sup> ] | 37       | 144     |     |
| Filtration                         | [µm]                              | 50       |         |     |
| Weight                             | [kg]                              | 48       | 65      | 70  |
| Inside diameter of the supply hose | [mm]                              | Ø 16     | Ø 20    |     |

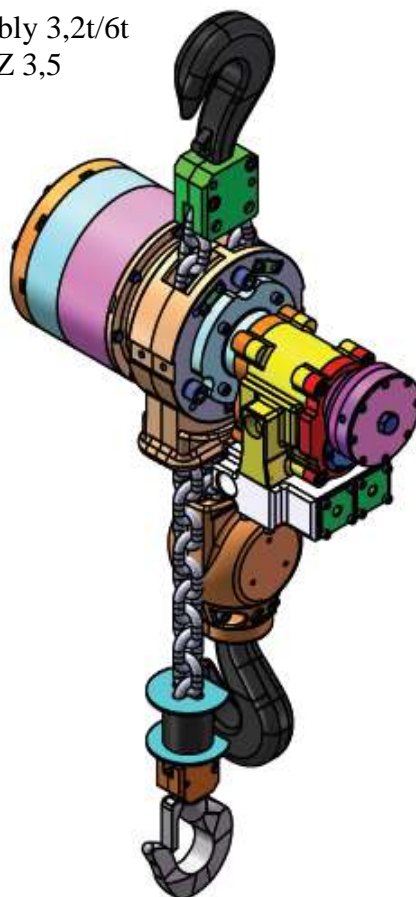
## THE ZMP 3,2t/6t PNEUMATIC MANIPULATION DEVICE

### DESCRIPTION:

The ZMP 3,2t/6t pneumatic manipulation device is used for vertical lifting and lowering of loads in places with pressure air supply.

The ZMP 3,2t/6t pneumatic manipulation device consists of the following basic parts:

- Body with the hook assembly 3,2t/6t
- Pneumatic gear motor MPZ 3,5



### TECHNICAL PARAMETERS:

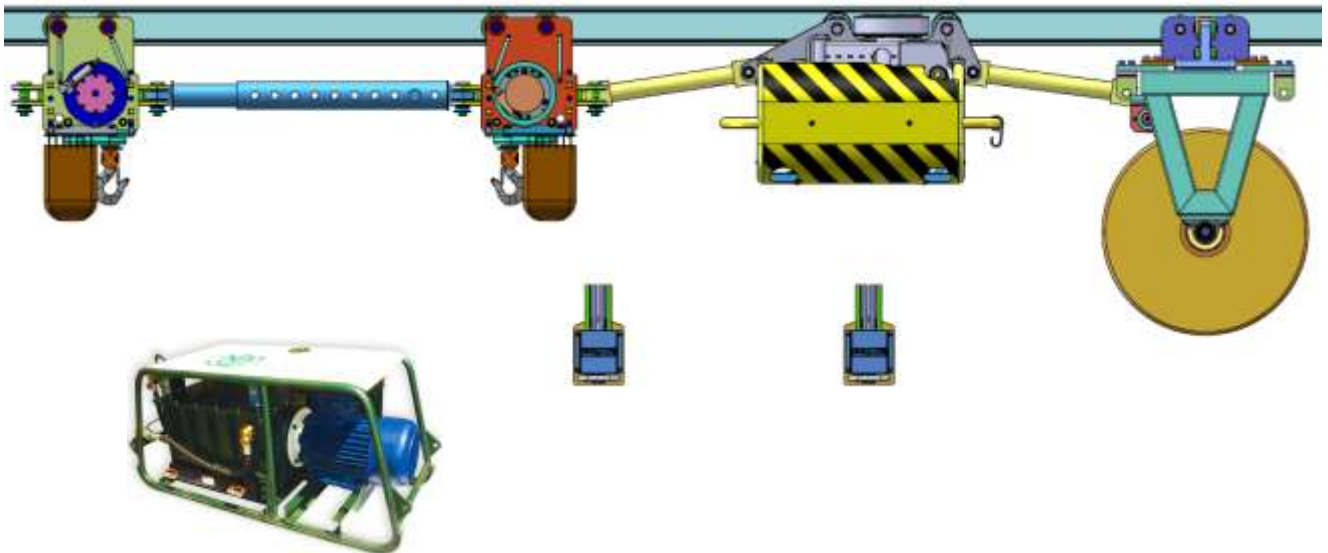
|                                    |                                   |         |     |
|------------------------------------|-----------------------------------|---------|-----|
| Loading                            | [t]                               | 3,2     | 6   |
| Load chain                         | [mm]                              | 13 x 36 |     |
| Operating pressure                 | [MPa]                             | 0,4     |     |
| Nominal motor output               | [kW]                              | 3,5     |     |
| Lifting speed                      | [m.mim <sup>-1</sup> ]            | 3       | 1,5 |
| Air consumption                    | [m <sup>3</sup> h <sup>-1</sup> ] | 350     |     |
| Filtration                         | [µm]                              | 50      |     |
| Weight                             | [kg]                              | 150     |     |
| Inside diameter of the supply hose | [mm]                              | Ø 25    |     |

## HYDRAULIC MANIPULATION SET SMH 1

### DESCRIPTION:

The **SMH 1** hydraulic manipulation set is used for transport of material in mining operations along the ZD 24 type hanging tracks.

The **SHP 1** hydraulic manipulation set consists of two pneumatic travelling manipulation units ZMHP 4t that are controlled by the hydraulic control. The units are connected by connecting rods and pulled by the MKH 16 000N manipulation trolley. A brake cart is not a part of delivery.



### TECHNICAL PARAMETERS:

|                                    |         |                |
|------------------------------------|---------|----------------|
| Nominal traction force             | [ N ]   | 16 000         |
| Axis distance of hooks (hitches)   | [ mm ]  | as required    |
| Elevation of hooks (basic)         | [ mm ]  | 3000           |
| Max. loading                       | [ t ]   | 2 x 4          |
| Inside diameter of the supply hose | [ mm ]  | 10             |
| Max. incline during lifting        | [ ° ]   | ±25            |
| Working medium pressure            | [ MPa ] | 15             |
| Total weight                       | [ kg ]  | Approx. 800 kg |

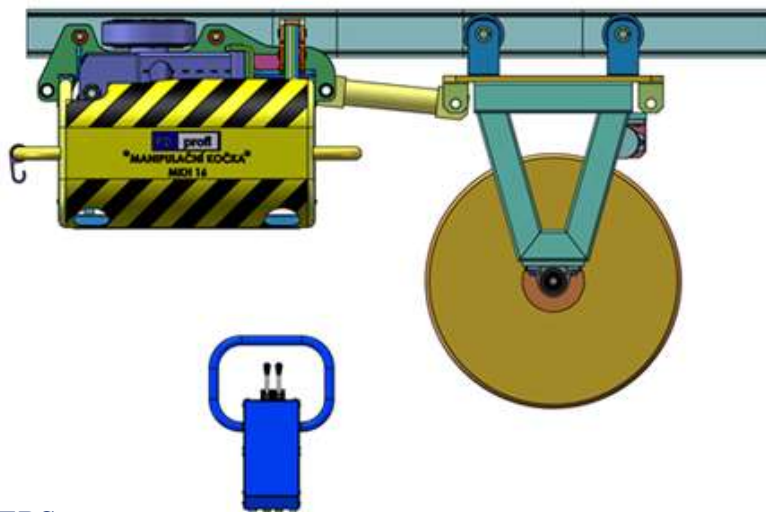


## MKH 16 – 16 000N HYDRAULIC HANDLING TROLLEY

### DESCRIPTION:

The MK 16 handling trolley (further called only the trolley) is an air powered tool for manipulation with loads hanging on carts moving on the ZD 24 hanging track or its modifications for short distances. The trolley is supplied through the winding drum by 5 m long hydraulic hoses from the AG-63/16Z hydraulic aggregate.

The trolley is equipped by a lever control hanging on supply hoses. It work on the principle of transfer of movement from driving wheels pushed against both sides of ZD 24 hanging track I profile vertical member.



### TECHNICAL PARAMETERS:

|   |                         |  |
|---|-------------------------|--|
| Nominal traction  | [N]                     | 16 000   |
| Brake force   | [N]                     | 20 000 + 20 000  |
| Max. travel speed on level surface                                | [m.min. <sup>-1</sup> ] | 24   |
| Pressure medium   |                         | Oil 46mm <sup>2</sup> /s   |
| Maximum path incline  | [°]                     | ± 25°  |
| Operational oil pressure  | [MPa]                   | 16   |
| Inside diameter of the supply hose                                | [mm]                    | 16   |
| Used track  |                         | ZD 24, ZD 24 A, ZD 24 B  |
| Dimensions – h x w x l  | [mm]                    | 800 x 800 x 950  |
| Weight  | [kg]                    | approx. 350 + 150  |
| Max. weight of pulled load<br>(with the friction coefficient 0.1) | [kg]                    | Incline 0° ..... 16 000<br>Incline 5° ..... 8 566<br>Incline 10° ..... 5 880<br>Incline 15° ..... 4 502<br>Incline 20° ..... 3 670 |

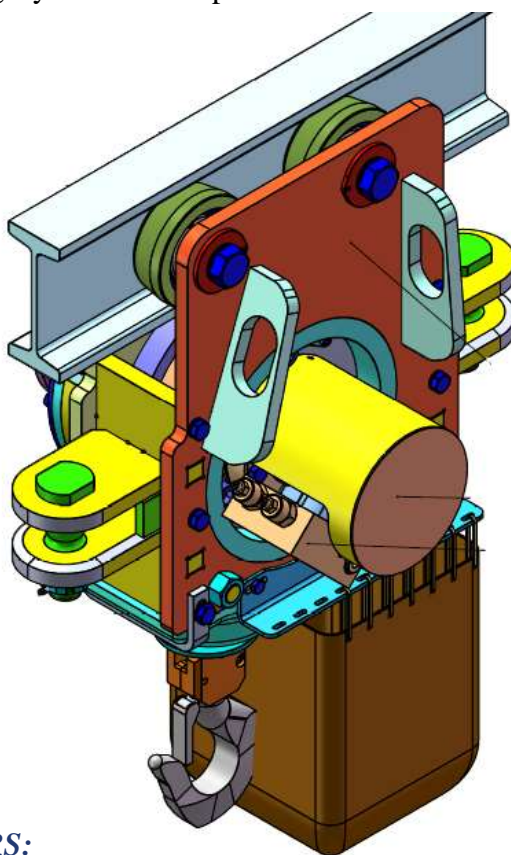
## ZMHP 4t TRAVELLING HYDRAULIC MANIPULATION DEVICE

### *DESCRIPTION:*

The ZMHP 4t travelling hydraulic manipulation device is used for vertical lifting and lowering of loads on the ZD 24 hanging track in places with pressure air supply.

The ZMPP 4t travelling hydraulic manipulation device consists of the following basic parts:

- Hydraulic motor
- ZMHP 4t load cart



### *TECHNICAL PARAMETERS:*

|                                    |                        |             |
|------------------------------------|------------------------|-------------|
| Loading                            | [t]                    | 4           |
| Load chain                         | [mm]                   | 13x36       |
| Operating pressure                 | [MPa]                  | 15          |
| Nominal motor output               | [kW]                   | 3           |
| Lifting speed                      | [m.min <sup>-1</sup> ] | 3           |
| Flow through amount of oil         | [l.min <sup>-1</sup> ] | 50          |
| Filtration                         | [µm]                   | 50          |
| Weight                             | [kg]                   | Approx. 190 |
| Inside diameter of the supply hose | [mm]                   | Ø 10        |

## ANTI-EXPLOSION VPN 42 PNEUMATIC DRILL

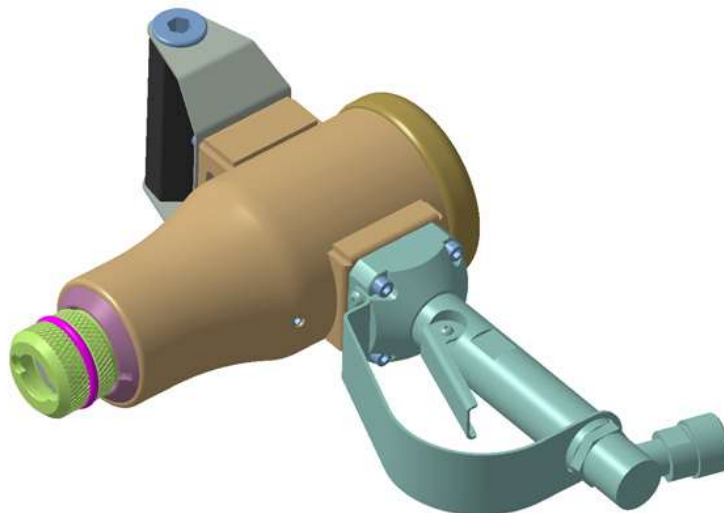
### *DESCRIPTION:*

The anti-explosion VPN 42 pneumatic drill is used to drill holes up to Ø42mm in soft and medium-hard rocks. The drill is equipped by water irrigation to reduce dust.

The anti-explosion VPN 42 pneumatic drill meets conditions for use in the I M2 explosive danger environment set by the EN 1127-2 standard.

The anti-explosion VPN 42 pneumatic drill consists of the following basic parts:

- Body with trigger                   0023 PD 1000
- Pneumatic motor                 0023 PD 2000
- Working part                       0023 PD 3000



### *TECHNICAL PARAMETERS:*

|                                    |                                     |           |
|------------------------------------|-------------------------------------|-----------|
| Operating pressure                 | [MPa]                               | 0,4 – 0,6 |
| Maximum water pressure             | [MPa]                               | 0,6       |
| Air consumption                    | [m <sup>3</sup> min <sup>-1</sup> ] | 3,8       |
| Max. output                        | [kW]                                | 3 ±10%    |
| Max. diameter of the bit           | [mm]                                | 42        |
| RPMs                               | [min <sup>-1</sup> ]                | 1100      |
| Kroutící moment                    | [Nm]                                | 28        |
| Filtration                         | [µm]                                | 50        |
| Basic dimensions (l x h)           | [mm]                                | 344 x 295 |
| Weight                             | [kg]                                | 9,6       |
| Inside diameter of the supply hose | [mm]                                | Js19/Js10 |

## PPP 300 PNEUMATIC DIRECT SAW

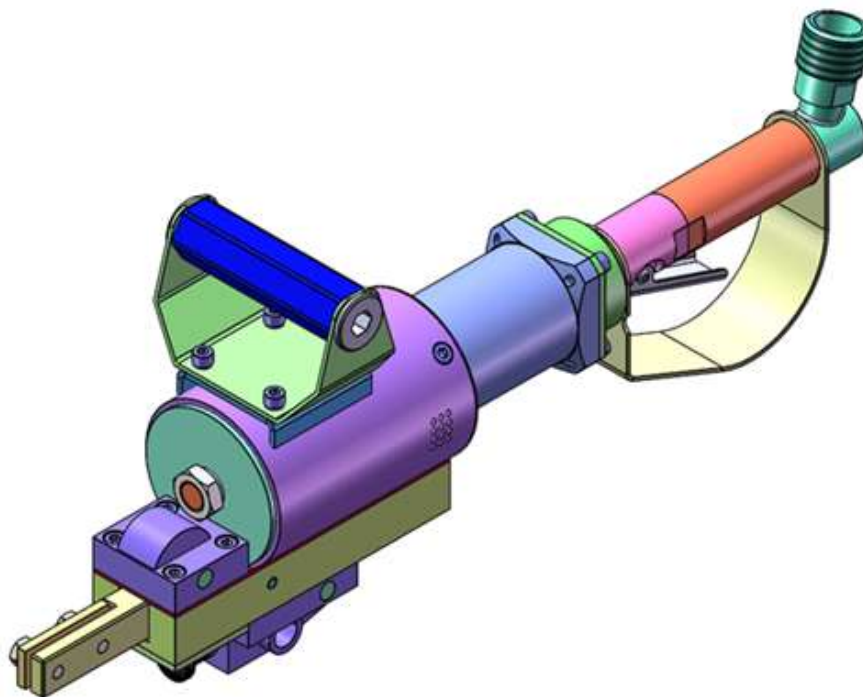
### *DESCRIPTION:*

The PPP 300 pneumatic direct saw is designed for cutting and dividing of materials in heavy duty operations. Saw blade oscillations are induced by a cam mechanism that is driven by a lamellar engine.

The PPP 300 pneumatic direct saw does not contain any light metal alloys; therefore it can be used in environment with risk of explosion.

The saw consists of the following basic parts:

- Body with a cam mechanism
- Pneumatic motor with a control



### *TECHNICAL PARAMETERS:*

|                                    |                                     |           |
|------------------------------------|-------------------------------------|-----------|
| Working pressure                   | [MPa]                               | 0,4 – 0,6 |
| Max. output                        | [kW]                                | 1,1       |
| Air consumption                    | [m <sup>3</sup> min <sup>-1</sup> ] | 1,2       |
| Saw blade travel                   | [mm]                                | 65        |
| Filtration                         | [µm]                                | 50        |
| Number of oscillations (off-load)  | [ min <sup>-1</sup> ]               | 380       |
| Weight                             | [kg]                                | 10,8      |
| Inside diameter of the supply hose | [mm]                                | Js 19     |

## PNEUMATIC BAND SAW PPP 80

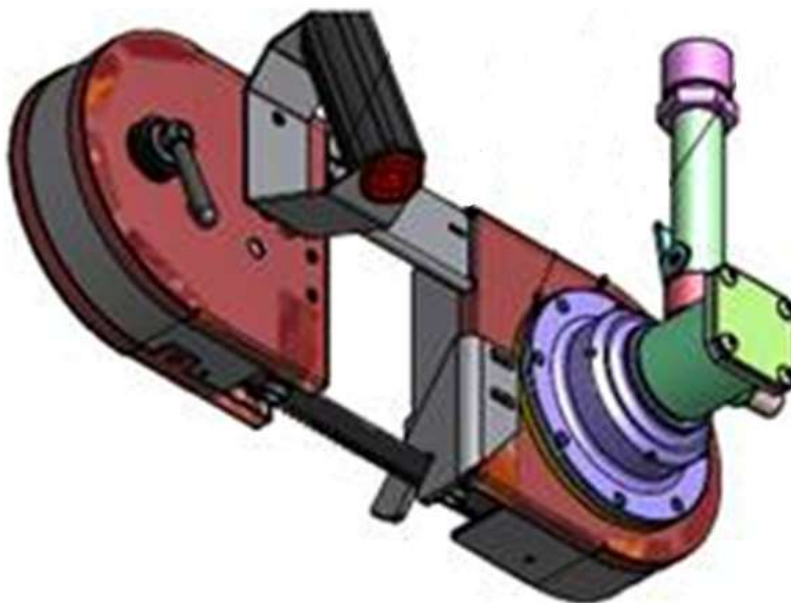
### *DESCRIPTION:*

The PPP 80 pneumatic band saw is used for cutting and dividing of materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The pneumatic band saw PPP 80 does not contain light metal alloys and therefore can be used in the explosive danger environment.

The saw consists of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



### *TECHNICAL PARAMETERS:*

|                                    |                                     |              |
|------------------------------------|-------------------------------------|--------------|
| Operating pressure                 | [MPa]                               | 0,4 – 0,6    |
| Max. output                        | [kW]                                | 0,7          |
| Air consumption                    | [m <sup>3</sup> min <sup>-1</sup> ] | 0,9          |
| Dimensions of cut material         | [mm]                                | 80 x 80      |
| Filtration                         | [µm]                                | 50           |
| Band speed                         | [ m/min <sup>-1</sup> ]             | 65           |
| Weight                             | [kg]                                | 8,2          |
| Saw chain attachment               |                                     | Not supplied |
| Inside diameter of the supply hose | [mm]                                | Js 10        |



## PNEUMATIC BAND SAW PPP 120

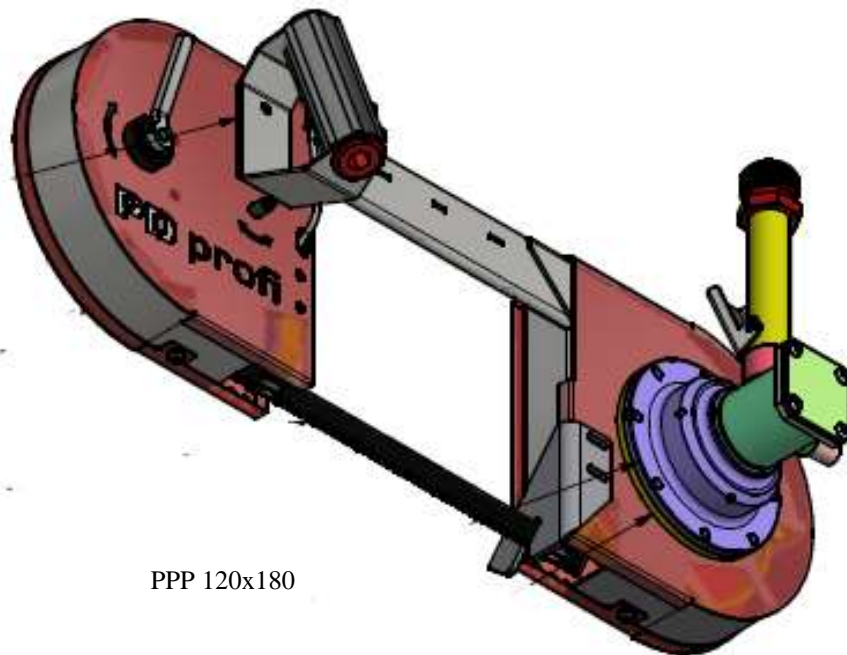
### *DESCRIPTION:*

The PPP 120 and PPP 180 pneumatic band saws are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The pneumatic band saws of PPP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



PPP 120x180

### *TECHNICAL PARAMETERS:*

|                                   |                         | 120x120   | 120x160   | 120x180   |
|-----------------------------------|-------------------------|-----------|-----------|-----------|
| Operating pressure                | [MPa]                   |           | 0,4 – 0,6 |           |
| Max. output                       | [kW]                    |           | 0,7       |           |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  |           | 9 - 18    |           |
| Dimensions of cut material        | [mm]                    | 120 x 127 | 160 x 127 | 180 x 127 |
| Filtration                        | [µm]                    |           | 50        |           |
| Band speed                        | [ m/min <sup>-1</sup> ] |           | 65        |           |
| Weight                            | [kg]                    | 9         | 9,5       | 11        |
| Connection of the hydraul. system | [mm]                    |           | 10        |           |

## PNEUMATIC BAND SAW PPP 140

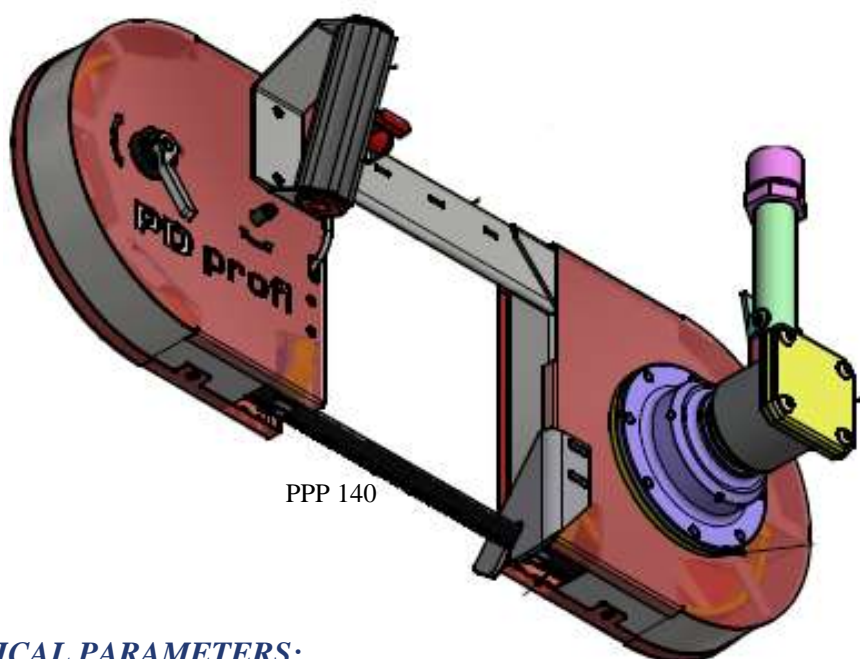
### DESCRIPTION:

The PPP 140 pneumatic band saw are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The pneumatic band saws of PPP 140 type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



### TECHNICAL PARAMETERS:

|                                   |                         | <b>PPP 140</b> |
|-----------------------------------|-------------------------|----------------|
| Operating pressure                | [MPa]                   | 0,4 – 0,6      |
| Max. output                       | [kW]                    | 0,8            |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18         |
| Dimensions of cut material        | [mm]                    | 140 x 180      |
| Filtration                        | [µm]                    | 50             |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65             |
| Weight                            | [kg]                    | 12             |
| Connection of the hydraul. system | [mm]                    | 10             |

## PNEUMATIC BAND SAW PPP 180

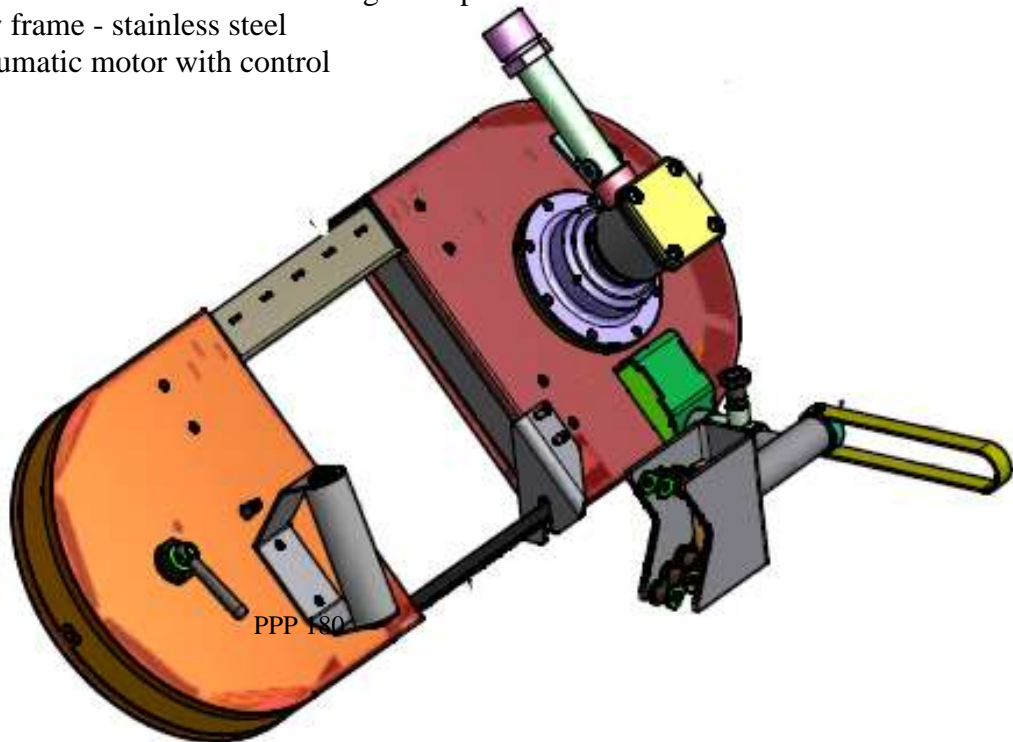
### DESCRIPTION:

The PPP 180 pneumatic band saw are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The pneumatic band saws of PPP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



### TECHNICAL PARAMETERS:

|                                   |                         | <b>PPP 180</b> |
|-----------------------------------|-------------------------|----------------|
| Operating pressure                | [MPa]                   | 0,4 – 0,6      |
| Max. output                       | [kW]                    | 0,8            |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18         |
| Dimensions of cut material        | [mm]                    | 180 x 180      |
| Filtration                        | [µm]                    | 50             |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65             |
| Weight                            | [kg]                    | 14,8 + 2,5     |
| Connection of the hydraul. system | [mm]                    | 10             |

## PNEUMATIC BAND SAW PPP 200, PPP 270

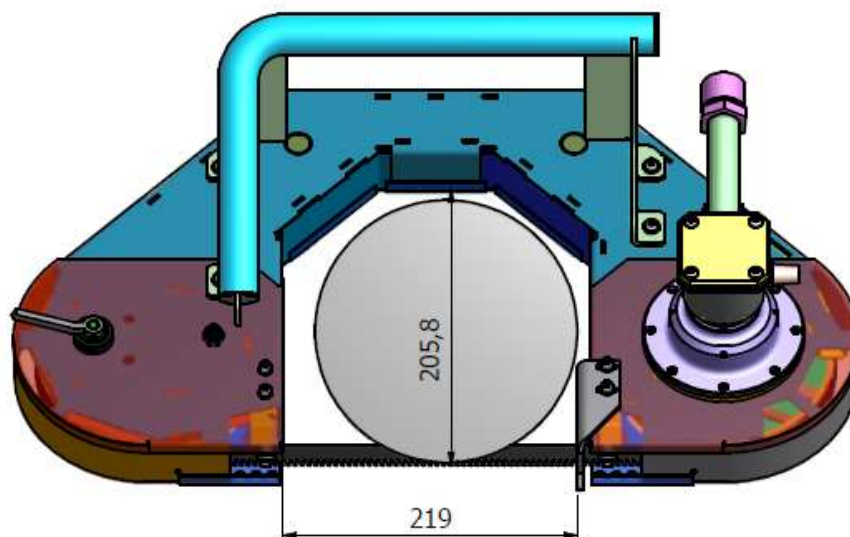
### DESCRIPTION:

The PPP 200, PPP 270 pneumatic band saw are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The pneumatic band saws of PPP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



PPP 200

### TECHNICAL PARAMETERS:

|                                   |                         | PPP 200   | PPP 270   |
|-----------------------------------|-------------------------|-----------|-----------|
| Operating pressure                | [MPa]                   | 0,4 - 0,6 |           |
| Max. output                       | [kW]                    | 2         |           |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18    | 9 - 18    |
| Dimensions of cut material        | [mm]                    | 200 x 190 | 280 x 270 |
| Filtration                        | [µm]                    | 50        |           |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65        |           |
| Weight                            | [kg]                    | 14        | 21        |
| Connection of the hydraul. system | [mm]                    | 10        |           |

## PNEUMATIC BAND SAWS PPPT 140, PPPT 180 - telescopic

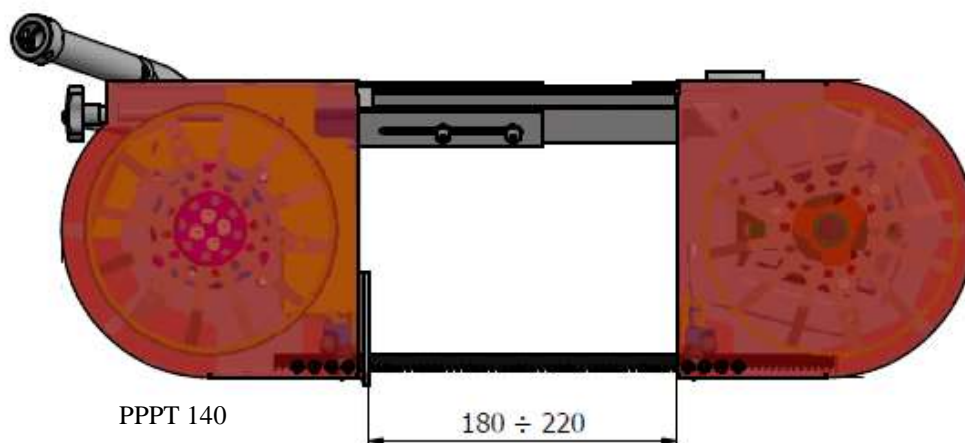
### DESCRIPTION:

The PPPT 140, PPPT 180 pneumatic band saws are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control. This type has a variable diameter of cut material.

The pneumatic band saws of PPPT type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Pneumatic motor with control



### TECHNICAL PARAMETERS:

|                                   |                         | PPPT 140      | PPPT 180      |
|-----------------------------------|-------------------------|---------------|---------------|
| Operating pressure                | [MPa]                   | 0,4 – 0,6     |               |
| Max. output                       | [kW]                    | 2             |               |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18        |               |
| Dimensions of cut material        | [mm]                    | 140 x 180-220 | 280 x 180-320 |
| Filtration                        | [µm]                    | 50            |               |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65            |               |
| Weight                            | [kg]                    | 13            | 15            |
| Connection of the hydraul. system | [mm]                    | 10            |               |

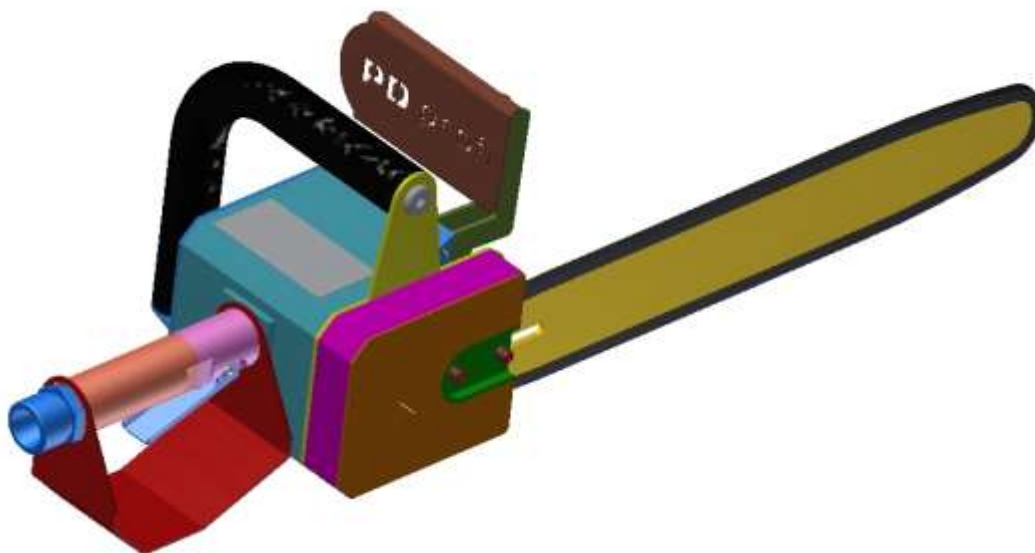


## PPR 40 PNEUMATIC CHAIN SAW

### *DESCRIPTION:*

The PPR 40 pneumatic chain saw is intended for manual cutting of wood only. The saw bar length is 400mm.

The PPR 40 pneumatic chain saw consists of a control handle, a body with a lamellar engine, a band brake, a lubricating device, a bar with a saw chain and a top handle with a cover. The saw design meets the requirements for use in mines (ATEX).



### *TECHNICAL PARAMETERS:*

|                                       |                                     |           |
|---------------------------------------|-------------------------------------|-----------|
| Working pressure                      | [MPa]                               | 0,4 – 0,6 |
| Max. output                           | [kW]                                | 2         |
| Air consumption                       | [m <sup>3</sup> min <sup>-1</sup> ] | 3,2       |
| Blade length                          | [mm]                                | 400       |
| Filtration                            | [μm]                                | 50        |
| Cutting speed                         | [ m/s <sup>-1</sup> ]               | 1,8       |
| Weight                                | [kg]                                | 10        |
| Inside diameter of the supply hose DN | [mm]                                | Js 19     |

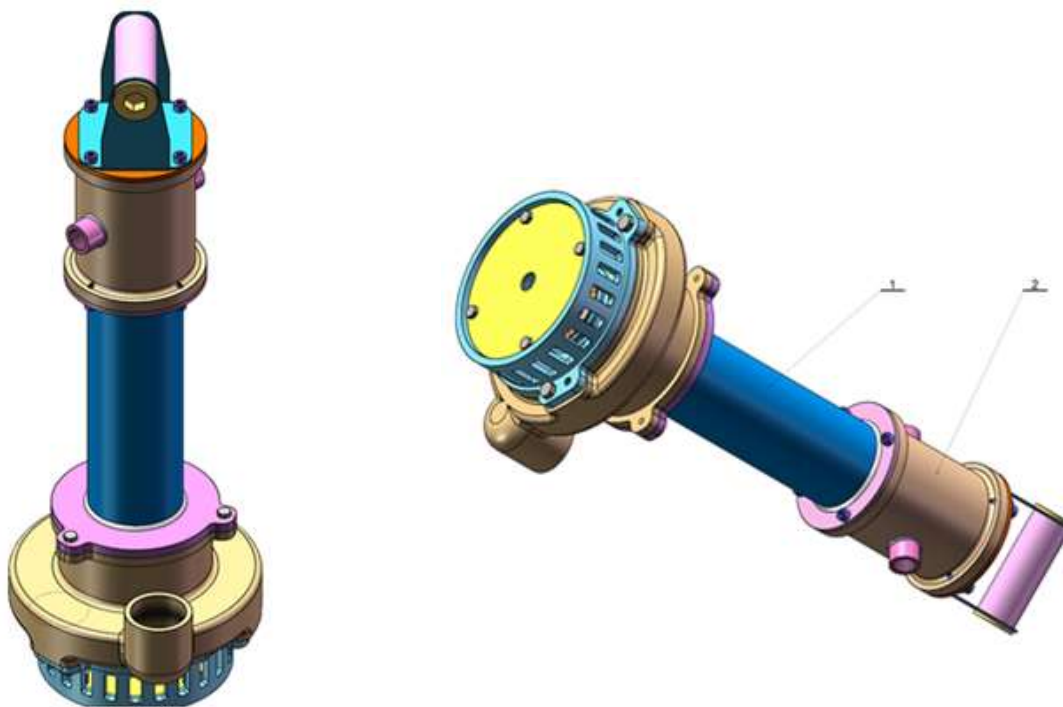
## CPO 40 CENTRIFUGAL PNEUMATIC PUMP

### *DESCRIPTION:*

The CPO 40 centrifugal pneumatic pump is used to pump clean or slightly polluted water with the particle size up to 5 mm. It is intended for explosion atmosphere danger environment, where pressure air is available as driving medium. This is primarily in underground parts and surface installations of deep mines with danger of methane and combustible dust. The pump is recommended to be used with the FVO 1“ lubricating filter.

The CPO 40 centrifugal pneumatic pump consists of:

- pneumatic multi-plate motor
- centrifugal pump with connecting pipe with shaft



### *TECHNICAL PARAMETERS:*

|                          |                        |                            |
|--------------------------|------------------------|----------------------------|
| Air pressure             | [MPa]                  | 0,4 - 0,6                  |
| Flow through rate - max. | [l.sec <sup>-1</sup> ] | 6                          |
| Delivery height - max.   | [m]                    | 40                         |
| Input                    | [kW]                   | 3                          |
| Filtration               | [µm]                   | 100                        |
| Air supply               | [ mm]                  | DN 20 (inside thread G 1“) |
| Discharge branch         | [ mm]                  | DN 50 (inside thread 2“)   |
| Weight                   | [kg]                   | 18                         |

## PHP 300 HYDRAULIC DIRECT SAW

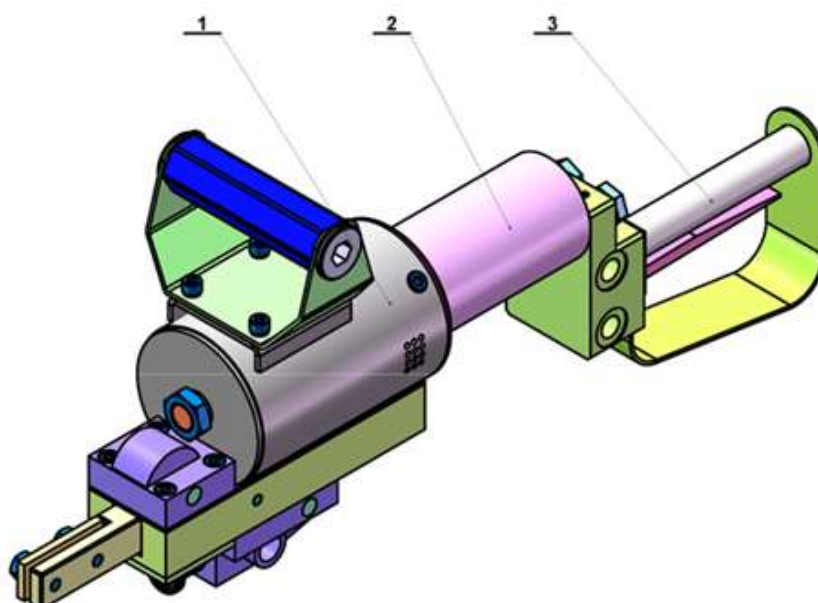
### *DESCRIPTION:*

The PHP 300 hydraulic direct saw is used for cutting and dividing of materials in heavy duty operations. Saw oscillations are caused by a cam mechanism that is driven by a multiple-plate motor.

The PHP 300 hydraulic direct saw does not contain any light metal alloys; therefore it can be used in the explosion danger environment.

The saw consists of the following basic parts:

- Body with the cam mechanism
- Hydraulic motor
- Handle with controls



### *TECHNICAL PARAMETERS:*

|                            |                        |        |
|----------------------------|------------------------|--------|
| Operating pressure         | [MPa]                  | 30     |
| Maximum output             | [kW]                   | 2      |
| Flow through amount of oil | [l/min <sup>-1</sup> ] | 9 - 18 |
| Dimensions of cut material | [mm]                   | 300    |
| Filtration                 | [µm]                   | 25     |
| Number of oscillations     | [ min-1]               | 250    |
| Weight (saw + attachment)  | [kg]                   | 12,5   |
| Saw blade travel           | [mm]                   | 65     |

## HYDRAULIC BAND SAW PHP 80

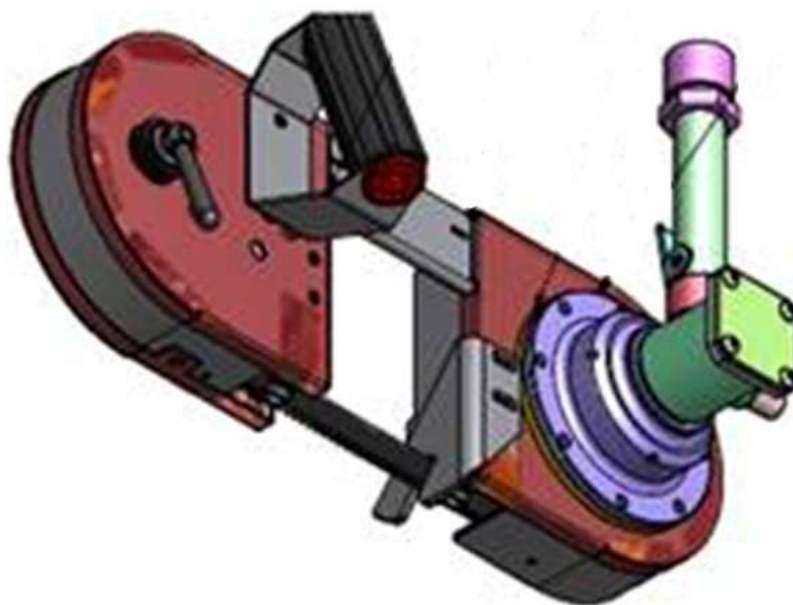
### *DESCRIPTION:*

The PHP 80 hydraulic band saw is used for cutting and dividing of materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The hydraulic band saw PHP 80 does not contain light metal alloys and therefore can be used in the explosive danger environment.

The saw consists of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



### *TECHNICAL PARAMETERS:*

|                                    |                         |         |
|------------------------------------|-------------------------|---------|
| Operating pressure                 | [MPa]                   | 30      |
| Maximum output                     | [kW]                    | 2       |
| Flow through amount of oil         | [l/min <sup>-1</sup> ]  | 9 - 18  |
| Dimensions of cut material         | [mm]                    | 80 x 80 |
| Filtration                         | [µm]                    | 25      |
| Band speed                         | [ m/min <sup>-1</sup> ] | 65      |
| Weight (saw + attachment)          | [kg]                    | 10      |
| Inside diameter of the supply hose | [mm]                    | 10      |

## HYDRAULIC BAND SAW PHP 120

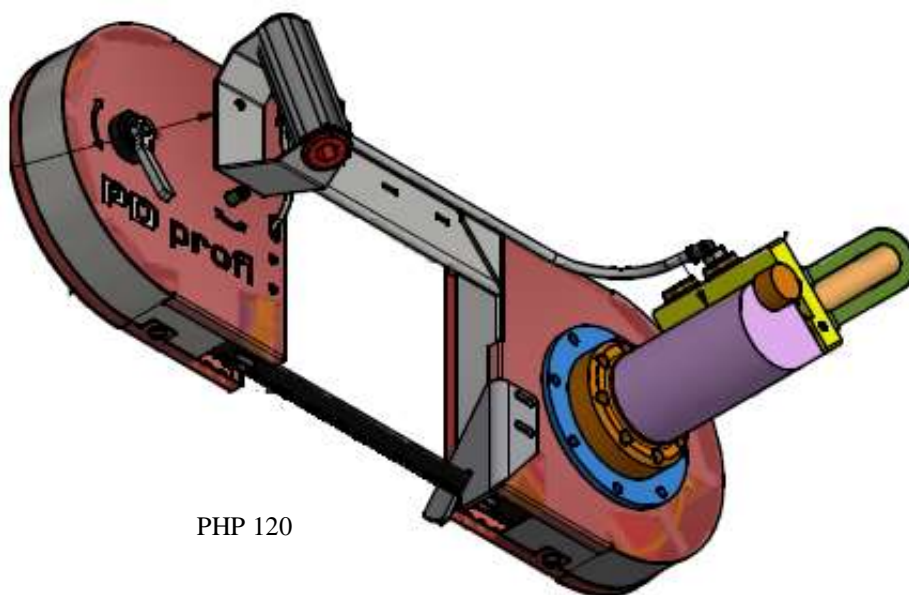
### DESCRIPTION:

The PHP 120 and PHP 180 hydraulic band saw are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The hydraulic band saws of PHP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



PHP 120

### TECHNICAL PARAMETERS:

|                                   |                         | 120x120   | 120x160   | 120x180   |
|-----------------------------------|-------------------------|-----------|-----------|-----------|
| Operating pressure                | [MPa]                   |           | 30        |           |
| Max. output                       | [kW]                    |           | 2         |           |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  |           | 9 - 18    |           |
| Dimensions of cut material        | [mm]                    | 120 x 127 | 160 x 127 | 180 x 127 |
| Filtration                        | [µm]                    |           | 25        |           |
| Band speed                        | [ m/min <sup>-1</sup> ] |           | 65        |           |
| Weight                            | [kg]                    | 12        | 12,5      | 13        |
| Connection of the hydraul. system | [mm]                    |           | 10        |           |



## HYDRAULIC BAND SAW PHP 140

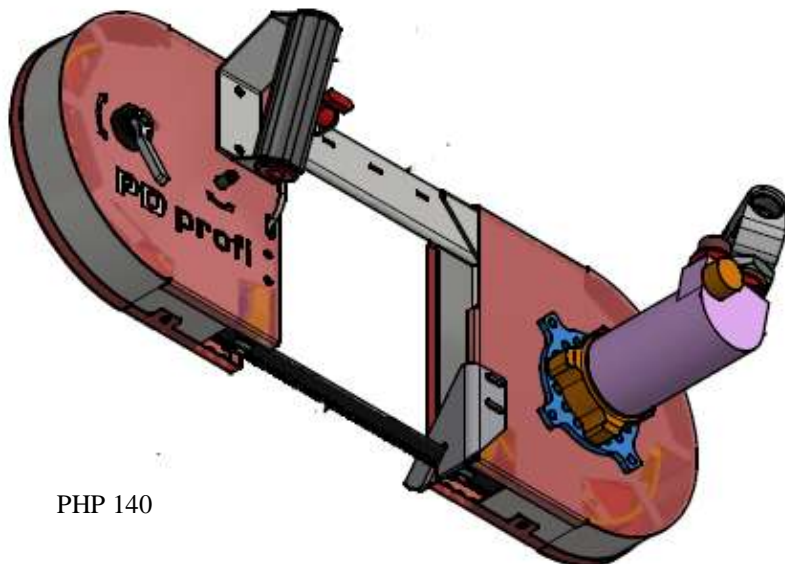
### *DESCRIPTION:*

The PHP 180 hydraulic band saw are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The hydraulic band saws of PHP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saw consist of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



PHP 140

### *TECHNICAL PARAMETERS:*

|                                   |                         | <b>PHP 140</b> |
|-----------------------------------|-------------------------|----------------|
| Operating pressure                | [MPa]                   | 30             |
| Max. output                       | [kW]                    | 2              |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18         |
| Dimensions of cut material        | [mm]                    | 140 x 180      |
| Filtration                        | [µm]                    | 25             |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65             |
| Weight                            | [kg]                    | 13,5           |
| Connection of the hydraul. system | [mm]                    | 10             |

## HYDRAULIC BAND SAWS PHP 180

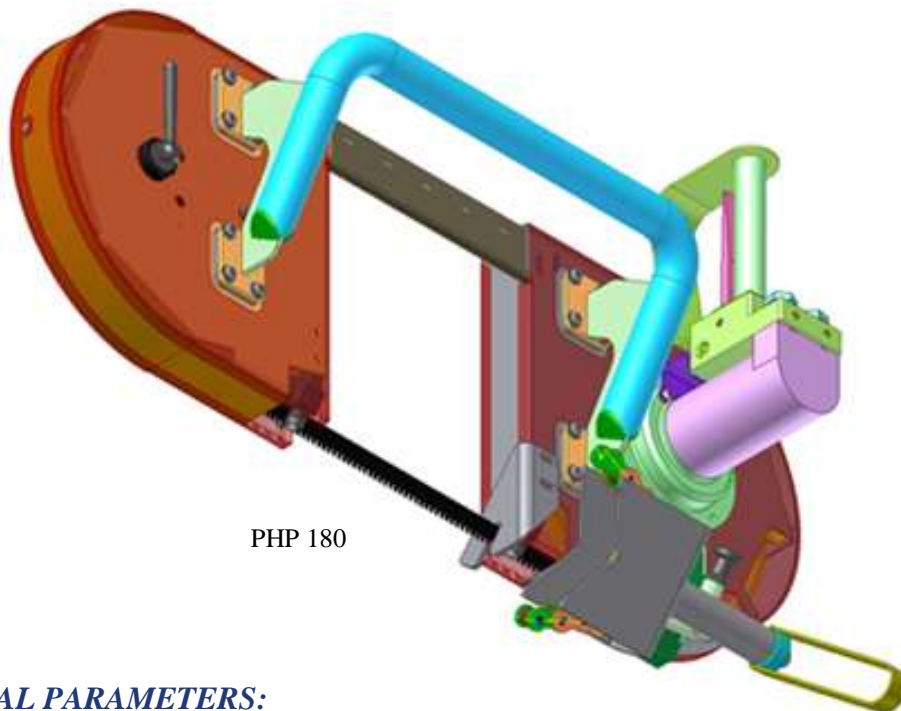
### *DESCRIPTION:*

The PHP 180 hydraulic band saws are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The hydraulic band saws of PHP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



PHP 180

### *TECHNICAL PARAMETERS:*

|                                   |                         | <b>PHP 180</b> |
|-----------------------------------|-------------------------|----------------|
| Operating pressure                | [MPa]                   | 30             |
| Max. output                       | [kW]                    | 2              |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18         |
| Dimensions of cut material        | [mm]                    | 180 x 180      |
| Filtration                        | [µm]                    | 25             |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65             |
| Weight                            | [kg]                    | 14,8 + 2,5     |
| Connection of the hydraul. system | [mm]                    | 10             |

## HYDRAULIC BAND SAW PHP 200, PHP 270

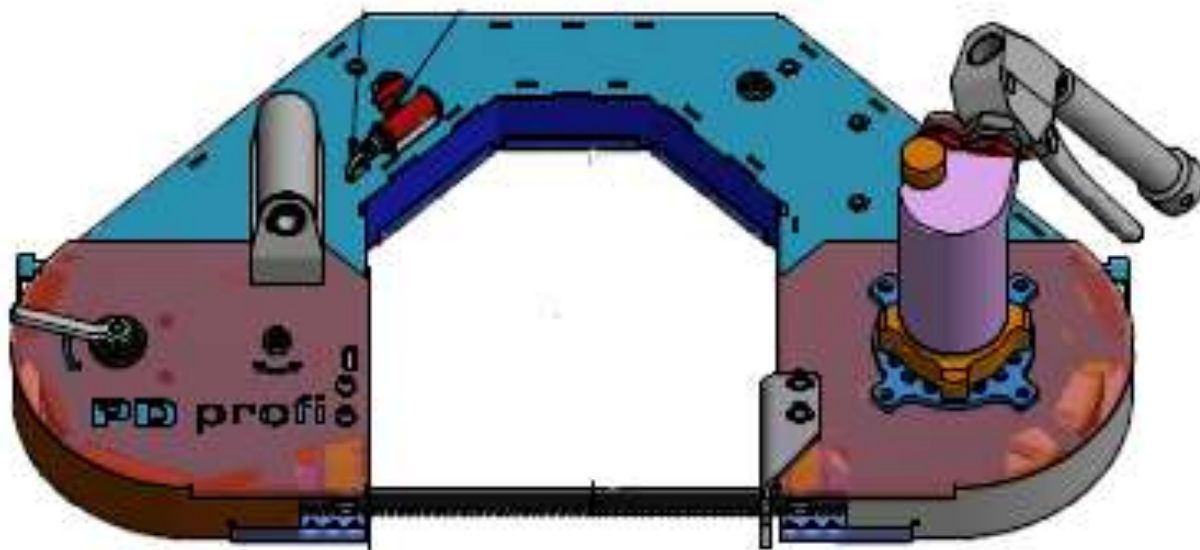
### DESCRIPTION:

The PHP 200, PHP 270 hydraulic band saws are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control.

The hydraulic band saws of PHP type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



PHP 200

### TECHNICAL PARAMETERS:

|                                   |                         | PHP 200   | PHP 270   |
|-----------------------------------|-------------------------|-----------|-----------|
| Operating pressure                | [MPa]                   |           | 30        |
| Max. output                       | [kW]                    |           | 2         |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18    | 9 - 18    |
| Dimensions of cut material        | [mm]                    | 200 x 190 | 280 x 270 |
| Filtration                        | [µm]                    |           | 25        |
| Band speed                        | [ m/min <sup>-1</sup> ] |           | 65        |
| Weight                            | [kg]                    | 15,5      | 17        |
| Connection of the hydraul. system | [mm]                    |           | 10        |

## HYDRAULIC BAND SAWS PHPT 140, PHPT 180 - telescopic

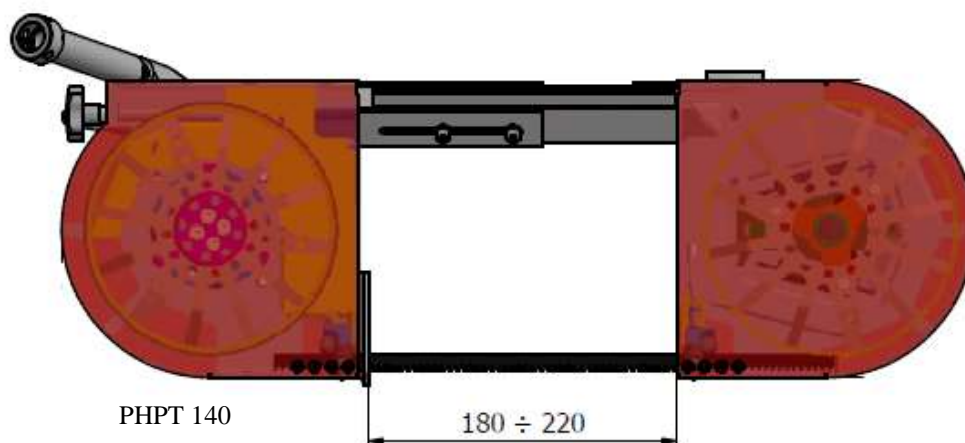
### DESCRIPTION:

The PHPT 140, PHPT 180 hydraulic band saws are used to saw and divide materials in heavy duty operations. The saw band or cut material do not need to be cooled while sawing. The saw band movement is transferred using two pulleys that are driven by a hydraulic motor with control. This type has a variable diameter of cut material

The hydraulic band saws of PHPT type do not contain light metal alloys and therefore can be used in the explosive danger environment.

The saws consist of the following basic parts:

- Saw frame - stainless steel
- Hydraulic motor with control



### TECHNICAL PARAMETERS:

|                                   |                         | PHPT 140      | PHPT 180      |
|-----------------------------------|-------------------------|---------------|---------------|
| Operating pressure                | [MPa]                   | 30            |               |
| Max. output                       | [kW]                    | 2             |               |
| Flow through amount of oil        | [l/min <sup>-1</sup> ]  | 9 - 18        |               |
| Dimensions of cut material        | [mm]                    | 140 x 180-220 | 280 x 180-320 |
| Filtration                        | [µm]                    | 25            |               |
| Band speed                        | [ m/min <sup>-1</sup> ] | 65            |               |
| Weight                            | [kg]                    | 14,5          | 16,5          |
| Connection of the hydraul. system | [mm]                    | 10            |               |

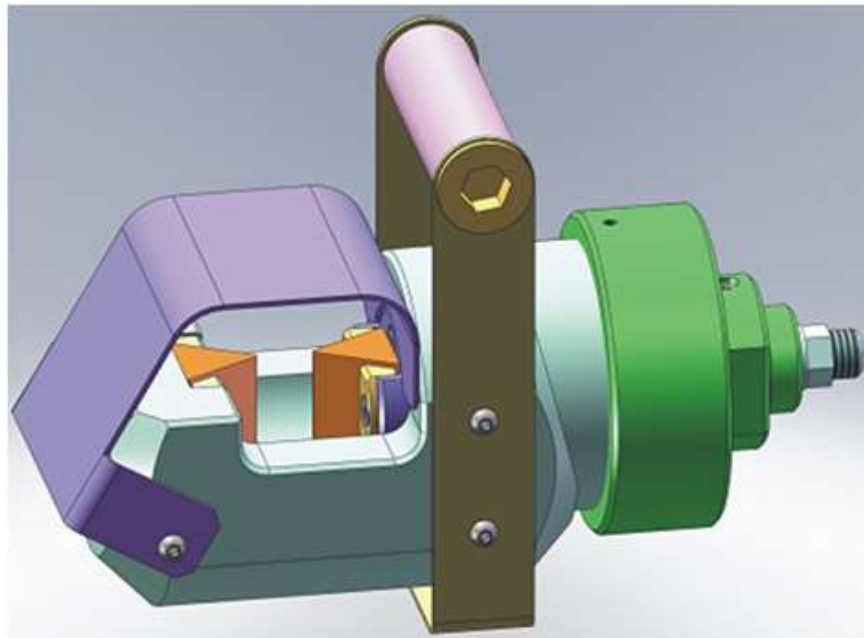
## SR 20 CHAIN CUTTER

### DESCRIPTION:

The SR 20 chain cutter is a device that is designed for cutting of high-strength chains up to the link diameter of 20mm with the maximum strength of used material of 1.100 MPa. The cutter is powered from its own pressure source (the AHR 70 manual/foot operated pump).

The SR 20 cutter consists of the following basic parts:

- Piston assembly
- Cutter body
- Back cover



### TECHNICAL PARAMETERS:

|  |            |           |
|--|------------|-----------|
| Max. working pressure of hydraulic fluid | [MPa]      | 70        |
| Maximum shear force                      | [kN]       | 335       |
| Maximum diameter of cut chain link       | [mm]       | 20        |
| Max. strength of cut chain link material | [MPa]      | 1.100     |
| Filtration                               | [ $\mu$ m] | 50        |
| Basic dimensions (w x l)                 | [mm]       | 120 x 309 |
| Weight                                   | [kg]       | 12        |
| Weight with the pump                     | [kg]       | 12 + 15   |
| Connecting sockets                       |            | M 18x1,5  |



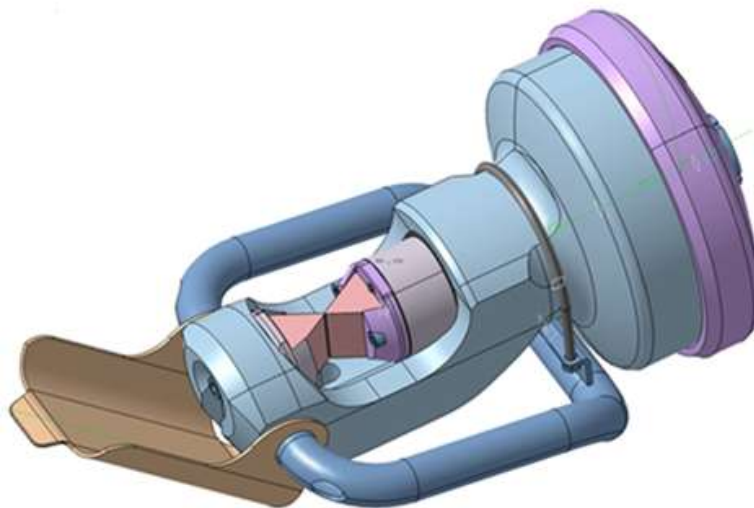
## SR 42 CHAIN CUTTER

### DESCRIPTION:

The SR 42 chain cutter is a device that is used for cutting of high-strength chains up to the link diameter of 42mm and 46mm flat chains with the maximum strength of used material 1.200 MPa. The cutter is powered either by water emulsion (central distribution 32MPa) or its own pressure source (the AHR 700 manual/foot operated pump). When it is powered from the central distribution, it is controlled by the control unit - three way valve that can be placed (for safety reasons) in any distance from the cutter.

The SR 42 cutter consists of the following basic parts:

- Piston assembly
- Cylinder with cover
- Shoe with cover
- Complete return mechanism



### TECHNICAL PARAMETERS:

|  |            |           |
|--|------------|-----------|
| Max. working pressure of hydraulic fluid | [MPa]      | 32        |
| Maximum shear force                      | [kN]       | 1.200     |
| Maximum diameter of cut chain link       | [mm]       | 42        |
| Maximum diameter of cut flat chain link  | [mm]       | 46        |
| Max. strength of cut chain link material | [MPa]      | 1.200     |
| Filtration                               | [ $\mu$ m] | 50        |
| Basic dimensions (w x l)                 | [mm]       | 290 x 595 |
| Weight                                   | [kg]       | 60        |
| Weight with the pump                     | [kg]       | 60 + 9    |
| Connecting sockets                       |            | M 18x1,5  |

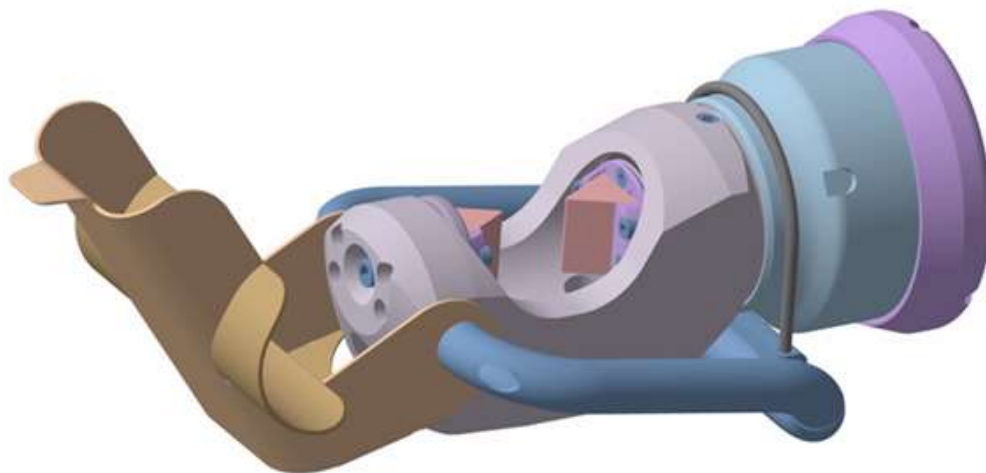
## HYDRAULIC CHAIN CUTTER SRH 42

### **DESCRIPTION:**

The SRH 42 chain cutter is a device that is used for cutting of high-strength chains up to the link diameter of 42mm and 46mm flat chains with the maximum strength of used material 1200 MPa. The cutter is powered by a hydraulic hand/foot AHR 700 pump. Movement of the piston to the basic position is performed by a reverse mechanism with spring

The SRH 42 cutter consists of the following basic parts:

- Piston assembly
- Cylinder with cover
- Shoe with cover
- Complete return mechanism



### **TECHNICAL PARAMETERS:**

|  |            |           |
|--|------------|-----------|
| Maximum operational pressure             | [MPa]      | 72        |
| Maximum shearing force                   | [kN]       | 1370      |
| Maximum diameter of cut chain link       | [mm]       | 42        |
| Maximum diameter of cut flat chain link  | [mm]       | 46        |
| Max. strength of cut chain link material | [MPa]      | 1200      |
| Filtration                               | [ $\mu$ m] | 50        |
| Basic dimensions (w x l)                 | [mm]       | 293 x 446 |
| Weight                                   | [kg]       | 45        |
| Weight with pump                         | [kg]       | 45 + 9    |
| Connection openings                      |            | M18x1.5   |

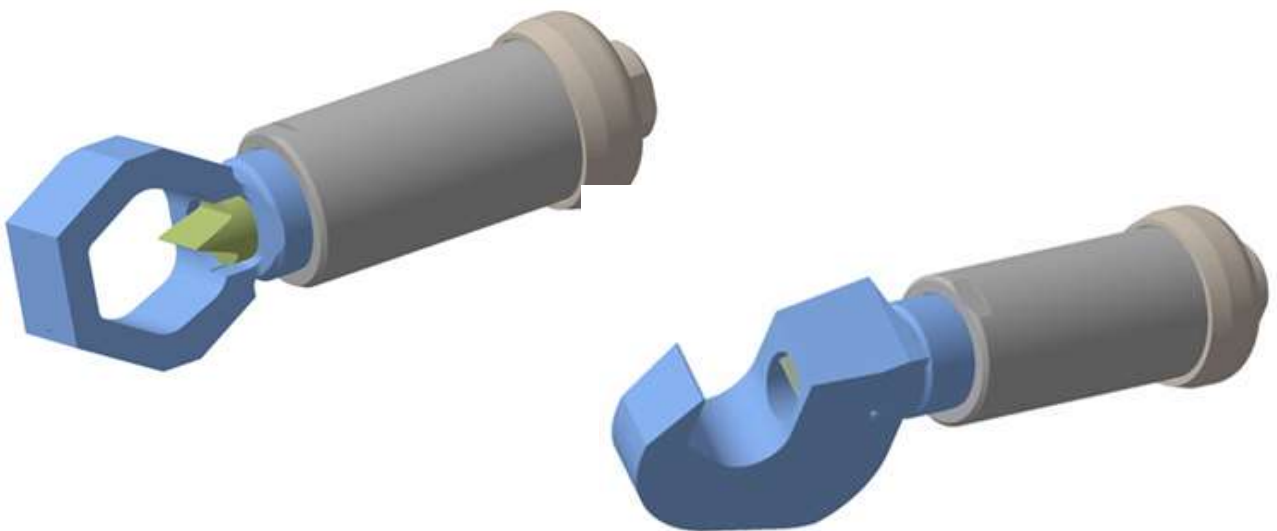
## RMH 30 AND RMR 30 NUT BREAKERS

### *DESCRIPTION:*

The RMH 30 and RMR 30 nut breakers are devices that are used for breaking – cutting of M16 to M30 nuts. The RMH 30 hydraulic nut breaker is powered by pressure from the AHR 70 manual hydraulic pump. The RMR 30 manual nut breaker is manually operated with the use of a ratchet wrench via manual-hydraulic transmission.

The RMH 30 and RMR 30 nut breakers consist of the following basic parts:

- Breaker body
- Breaking adapter with a knife (open, closed, ...)
- Ratchet wrench



### *TECHNICAL PARAMETERS:*

|  |       |             |
|--|-------|-------------|
| Max. working pressure of hydraulic fluid | [MPa] | 70          |
| Working range of cut bolts               | [mm]  | M 16 – M 30 |
| Max. strength of nuts                    | [MPa] | 600         |
| Filtration                               | [µm]  | 50          |
| Basic dimensions (w x l)                 | [mm]  | 90 x 300    |
| Weight                                   | [kg]  | approx. 5   |
| Weight with the pump                     | [kg]  | approx. 20  |
| Connecting sockets                       |       | M 18x1,5    |

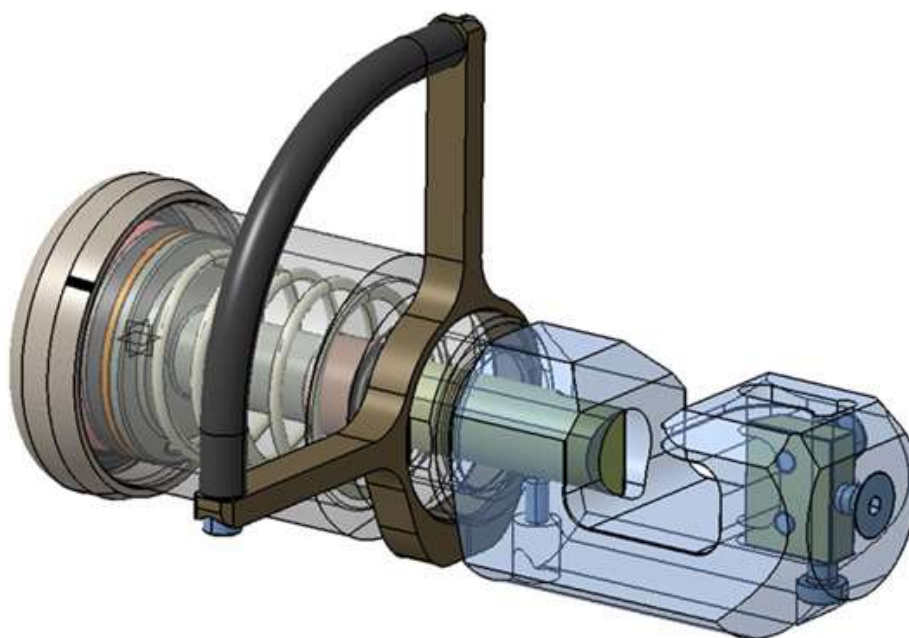
## HYDRAULIC STUD CUTTER SSH 25

### *DESCRIPTION:*

The hydraulic stud cutter SSH 25 is a device that is designed to cut rope studs of up to 25 mm diameter. The SSH 25 hydraulic stud cutter is driven by pressure from the AHR 70 manual hydraulic pump.

The SSH 25 hydraulic stud cutter consists of the following basic parts:

- Cutter body
- Cutting head with a knife



### *TECHNICAL PARAMETERS:*

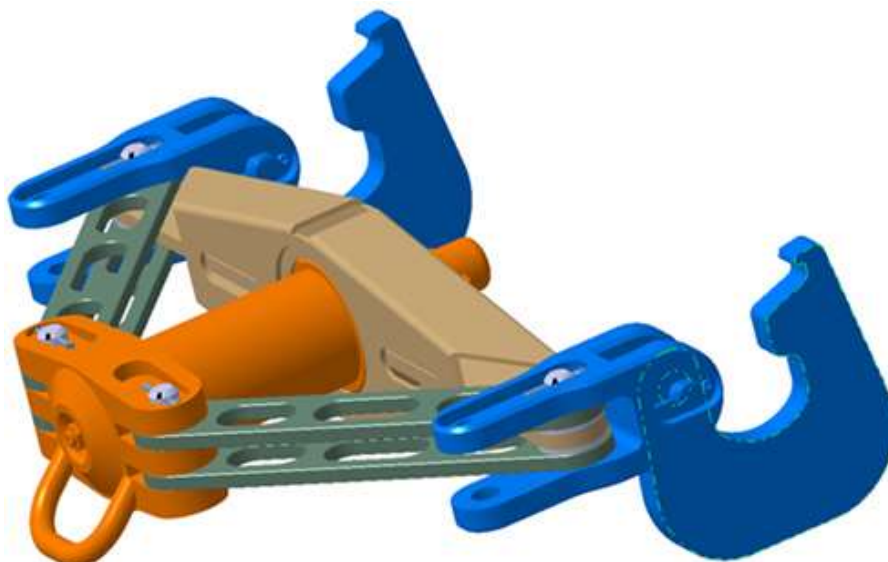
|                               |       |                 |
|-------------------------------|-------|-----------------|
| Maximum working pressure      | [MPa] | 70              |
| Maximum diameter of cut stud  | [mm]  | 25              |
| Maximum stud strength         | [MPa] | 1850            |
| Filtration                    | [µm]  | 50              |
| Basic dimensions (w x h x l)  | [mm]  | 180 x 190 x 345 |
| Weight                        | [kg]  | approx. 14      |
| Shear force at 70MPa pressure | [kN]  | 300             |
| Connection sockets            |       | M 18x1,5        |

## OKH1 HYDRAULIC RAIL BENDER

### DESCRIPTION:

The OKH1 hydraulic rail bender is a device designed for bending of rails to required angles of the Xa profile or bending of other profiles listed in the chart. Bending is conducted with the help of a hydraulic piston powered by a manual hydraulic pump AHR 70-1.

The bender consists of a single-acting hydraulic piston with a reversible spring and an exchangeable restraint, a frame with suspension shackles and exchangeable pulling clamps. The bender is connected to the AHR 70-1 pump with a 2m long hydraulic hose.



### TECHNICAL PARAMETERS:

|   |                    |                                    |
|---|--------------------|------------------------------------|
| Max. working pressure   | [MPa]              | 50                                 |
| Max. bending force  | [kN]               | 318                                |
| Working piston stroke   | [mm]               | 150                                |
| Max. bended sectional module at max. yield point of the bended material $R_{e} = 314$ MPa | [cm <sup>3</sup> ] | 32                                 |
| Bended profiles   |                    | rails: Xa; 115/24; 93/18           |
| Bended profiles   |                    | sections and U-profile to max. 160 |
| Filtration  | [µm]               | 50                                 |
| Basic dimensions  | [mm]               | 889 x 440 x 180                    |
| Weight without clamps   | [kg]               | 67,5                               |
| Weight with the pump  | [kg]               | 67,5 + 15                          |
| Connecting sockets  |                    | M 18x1,5                           |





ISO 9001:2009

