

Blohm+Voss

POWER SLIP

PS-250

2.3/8" - 7.5/8"
for
27.1/2" Rotary Table



Part No. 727000-A for control line application

pneumatic version

READ THESE INSTRUCTIONS BEFORE USE!



TECHNICAL DOCUMENTATION PS-250

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1 General Warnings

You must neither assemble nor disassemble Slips, Guides, Inserts, etc. with the Power Slip placed in the rotary table.

All warning and safety labelling attached to the equipment must be observed.

Keep distance from the Power Slip during operation and trials

The Power Slip must only be serviced by trained, authorised personnel

For any work or maintenance at the Power Slip wear your personal protection equipment. Especially leak oil under pressure can cause severe personal injury to the eyes.

If any safety elements (like safety ropes, safety sheets, plates or washers) were disassembled due to maintenance work, do NOT re-use them. Always replace them with new safety elements

Under no circumstances should the slip assembly be lifted under load.

If the slip assembly is put in place, the PS-250 can bear the load of the drill pipe.

Before raising the slip assembly, make sure that the elevator used is closed and that the elevator bears the load. The slip assembly must be released from any load when raising it.



Fig. 1: Warning plate

1.1 Slip Assembly

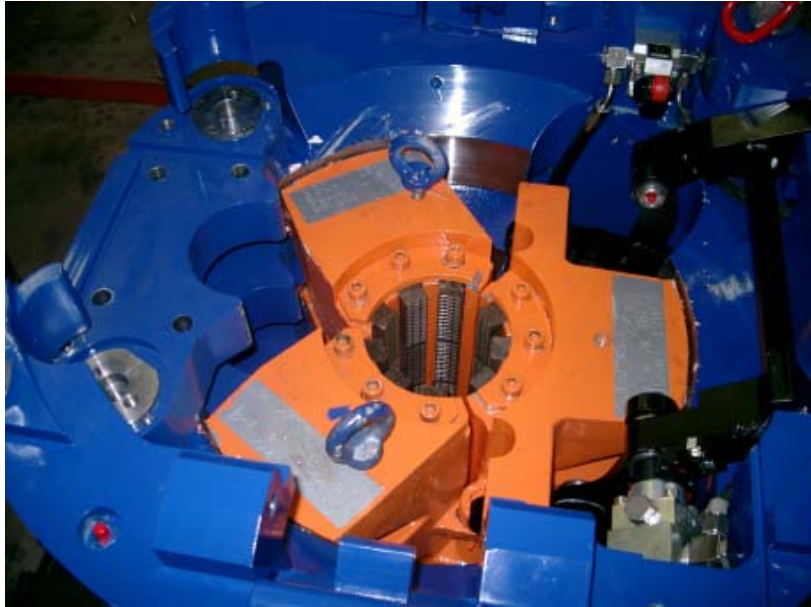


Fig. 2: Slip assembly

The PS-250 can be adjusted for different pipe diameters by exchanging the dies of the slip or by exchanging the complete slip set and the guide plates on top of the cover. Make sure that the slips, the dies in the slips as well as the guide plates match the pipe size.

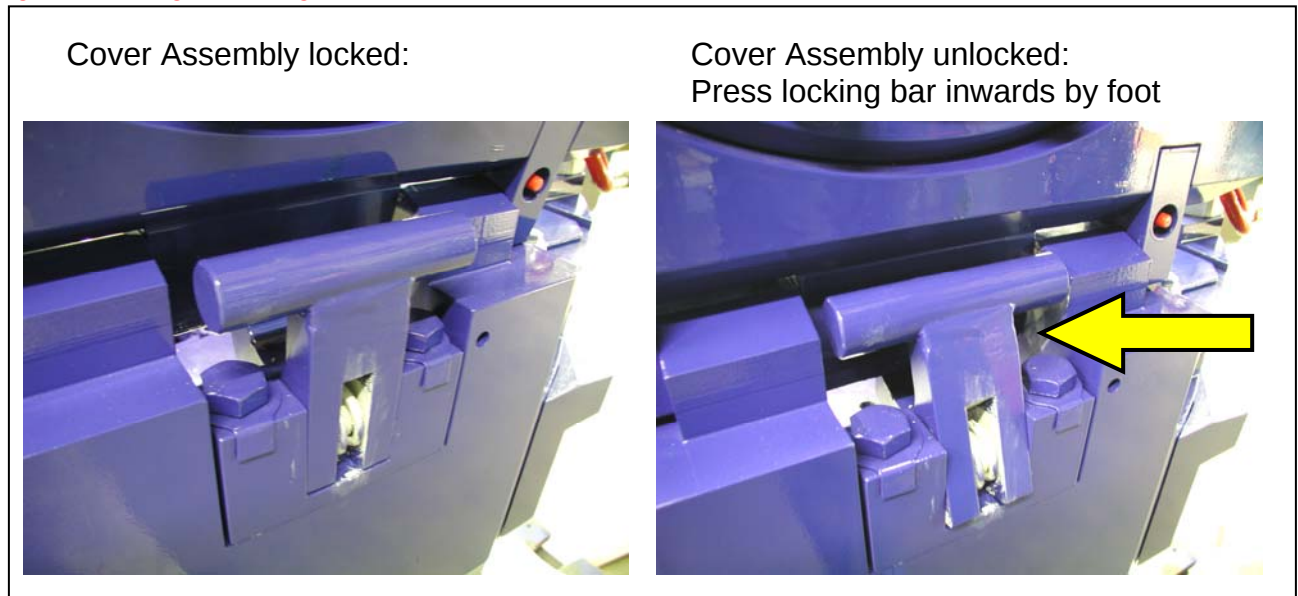
1.2 Lifting and Transport

The PS 250 must be lifted by using all four Lifting Eyes at the same time.

1.3 Cover Lock

First unlock and then close

Fig. 3: Releasing the locking bar

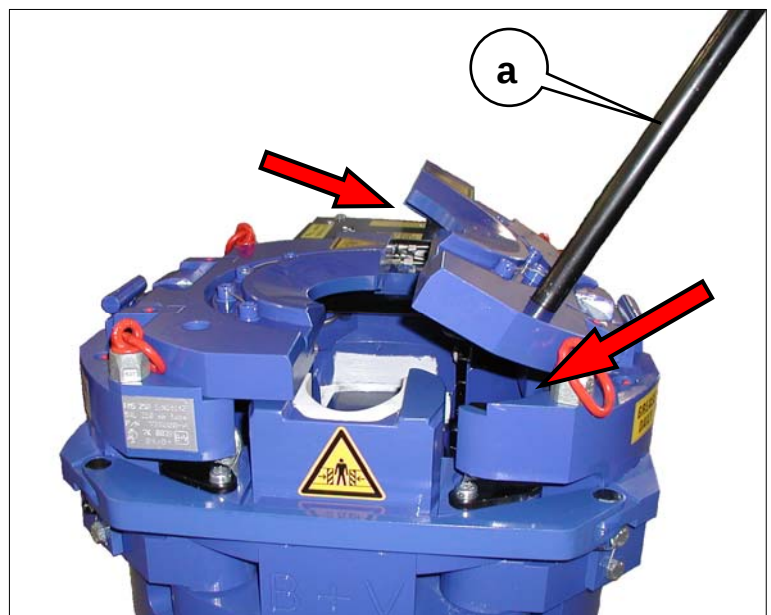


1.4 Cover

Closing/opening of the cover assembly must not be by hand. Only with the hand-lever (a) (see Tool Box Assembly on page 51).

Otherwise there is an extreme risk of injury to the operator as well as risk of damage to the PS 250.

When closing / shutting the cover, there is a danger of being jammed between the PS 250 and the cover.



ig. 4: Opening/closing of Cover Assembly

In the case of a built-in PS-250 without tubing there is the risk of small parts falling into the Power Slip or bore hole. There is also a risk of injury (danger of tripping) due to the open Power Slip.

The cover plate (see page **Fehler! Textmarke nicht definiert.**/40) must be used for covering / sealing the PS-250.

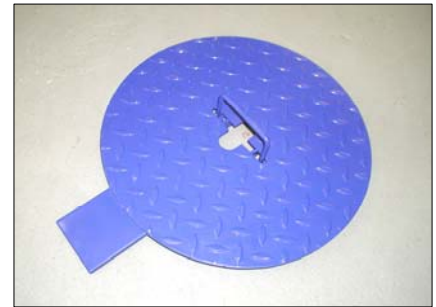


Fig. 5: Cover

2 Description

2.1 The PS-250

The Blohm+Voss Power Slip PS-250 is a hydraulically operated Power Slip designed to be installed into 27. 1/2" and 37.1/2"(with Adapter rings) rotary tables almost in height of the level of the rig floor. It lowers the pipe connection for easier operation and eliminates the need for additional work platforms. This model is rated for 250 sh. tons. Body and Slip are produced according to API 7K latest edition.

The unitised design of the slip assemblies allows it to grip pipe with uniform radial pressure, ensuring a safe hold while minimising the risk of damage to the pipe. This Power Slip model is hydraulic pressure operated and can handle pipe diameters from 2.3/8" to 7.5/8" with different slip assemblies. However with each slip assembly three different pipe diameters can be handled. This is achieved by different die sets which can be changed easily.

The PS-250 is also to be used for applications with control Line / Cable.

The Power Slip is permitted for operations with cables /control Lines (**a**) with an outer diameter up to 3,7".

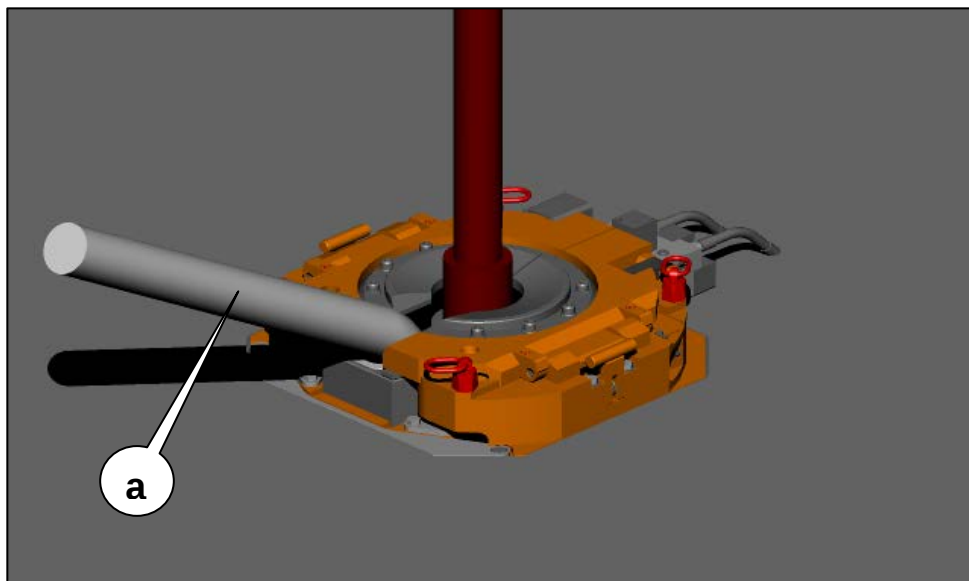


Fig. 6: PS-250 for standard drilling operations installed into Rotary Table

To protect the cable it will be led over an Teflon-gliding Block **(b)** into the PS-250.

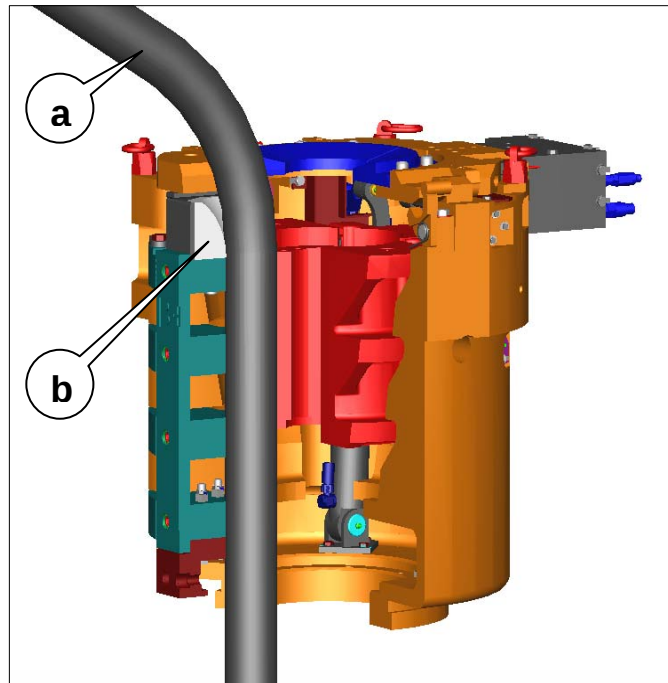


Fig. 1: PS-250 for control line applications

The greasing of the slips from central point.

The feedback signal for slips set/raised optional item.

2.2 General Information

2.2.1 Allowed use

The PS-250 must only be used for the designated purpose.
When using the PS-250, the load of 250 sh. tons must never be exceeded

2.2.2 Limited Warranty

The warranty provided will be void if the Power Slip is either:

- a) repaired or serviced by a service facility which is not authorized by Blohm+Voss Oil Tools
- b) replacement parts not manufactured by Blohm+Voss Oil Tools are used
- c) modifications were made to the spider which were not approved by Blohm+Voss Oil Tools

2.2.3 Unit Identification

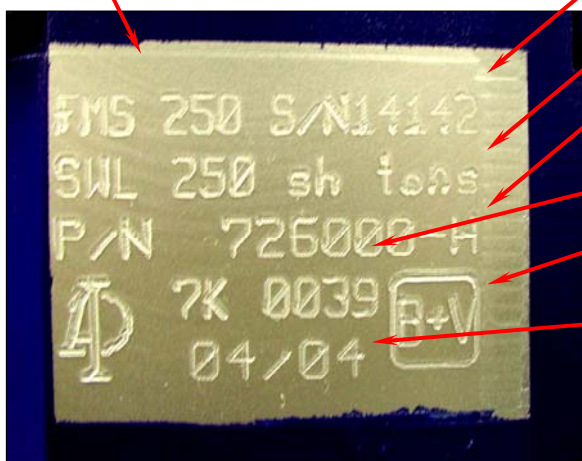
Identification plate



Fig. 7: Stamping field unit

The identification plate clearly identifies the Power Slip (manufacturer, type, material, part number, serial number, date of manufacture). It is important to keep this information ready for the purpose of servicing and repair work.

Designation



Serial-No.

Safe working load

Part-No.

API-License No.

Manufacturer

Date of manufacture

Fig. 8: Unit identification

2.2.4 Slip Identification



Manufacturer

Date of Manufacture

Fig. 9: Slip identification



Fig. 10: Stamping field slips

2.2.5 Summary

This technical documentation contains instructions of safety, installation, operation and maintenance for the PS-250.

This technical documentation must be studied before working with the PS-250.

In the event of problems which cannot be solved with the aid of this manual, please contact one of the addresses listed at the end of this documentation.

3 Technical Data

3.1 Characteristics

- Standard design: suitable for 27.1/2" rotary Table
- Safe working load: 250 sh tons
- Pipe size range from 2.3/8" –4.1/2" Tubing and 4.1/2"-7.5/8" Casing
- Material and manufacturing standard in acc. to API 7K
- Torque Back up 18.000 Nm (13.300 ft/lbs)
- Gross weight including slip approx. 1.230,00 kg

3.2 Specifications of the pneumatic System

System Requirements:

- working pressure: 7... 10 bar
- Flow Rate at least: min. 50 SCFM (1416 l/min)
- Two pneumatic lines for operation needed

3.3 Main dimensions

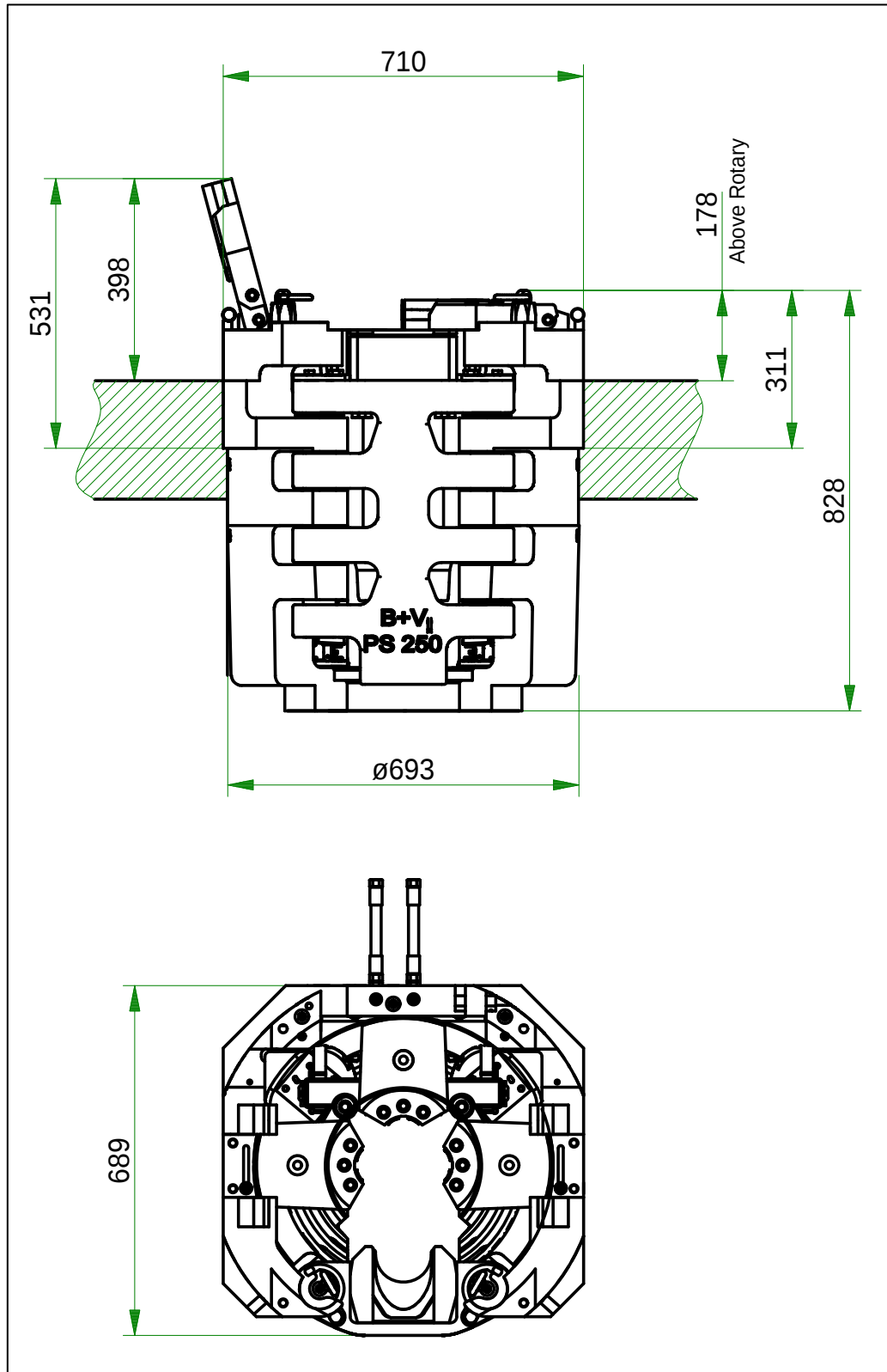
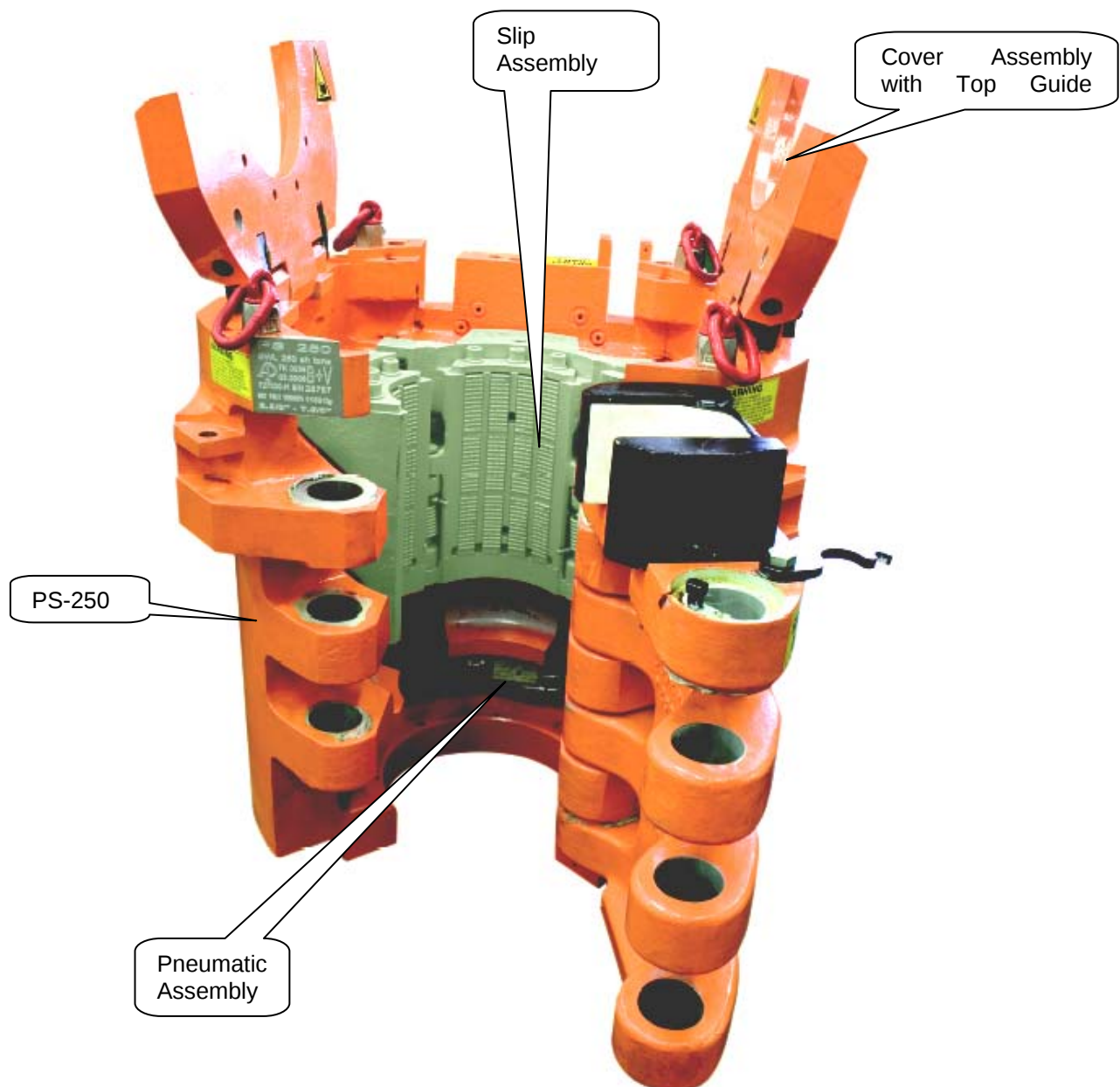


Fig. 11: Main dimensions

3.4 Main assemblies

Fig. 12: Main components PS –250



3.5 Opening Dimensions

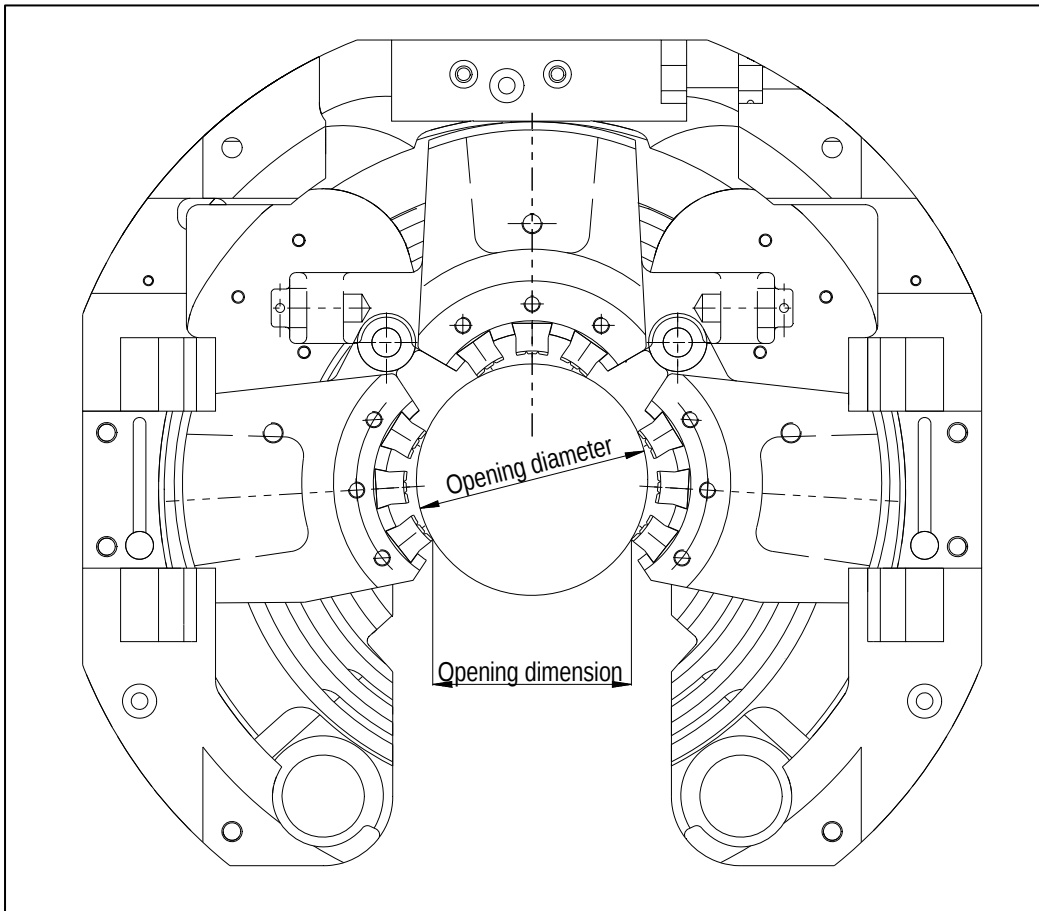


Fig. 13: Opening dimensions slip assembly, raised

Pipe Size	Slip Assembly	Top Guide I.D. mm / inch	Opening diameter mm / inch	Opening Dimension mm / inch
2 3/8"	3 1/2"	133,35 / 5 1/4	133,2 / 5,24	120,8 / 4,75
2 7/8"	3 1/2"	133,35 / 5 1/4	149,7 / 5,89	135,1 / 5,32
3 1/2"	3 1/2"	133,35 / 5 1/4	161,3 / 6,35	140,5 / 5,53
3 1/2"	4 1/2"	133,35 / 5 1/4	155,5 / 6,12	135,3 / 5,32
4"	4 1/2"	133,35 / 5 1/4	168,8 / 6,64	146 / 5,75
4 1/2"	4 1/2"	170 / 6 3/4	181,1 / 7,13	151,4 / 5,96
4 1/2"	5 1/2"	170 / 6 3/4	182,7 / 7,19	157 / 6,2
5"	5 1/2"	170 / 6 3/4	195,6 / 7,7	167,1 / 6,58
5 1/2"	5 1/2"	170 / 6 3/4	208,8 / 8,2	167,1 / 6,58
6 5/8"	6 5/8"	228,6 / 9	231,5 / 9,11	177,8 / 7
6 5/8"	7 5/8"	228,6 / 9	238,1 / 9,37	202,4 / 7,97
7"	7 5/8"	228,6 / 9	246,8 / 9,72	202,4 / 7,97
7 5/8"	7 5/8"	228,6 / 9	259,8 / 10,23	202,4 / 7,97

4 Installation and operating of the PS-250

4.1 Connecting the PS-250

In following illustration the connection of the PS-250 is represented as a block diagram.
The feedback signal for slips set/ raised optional item

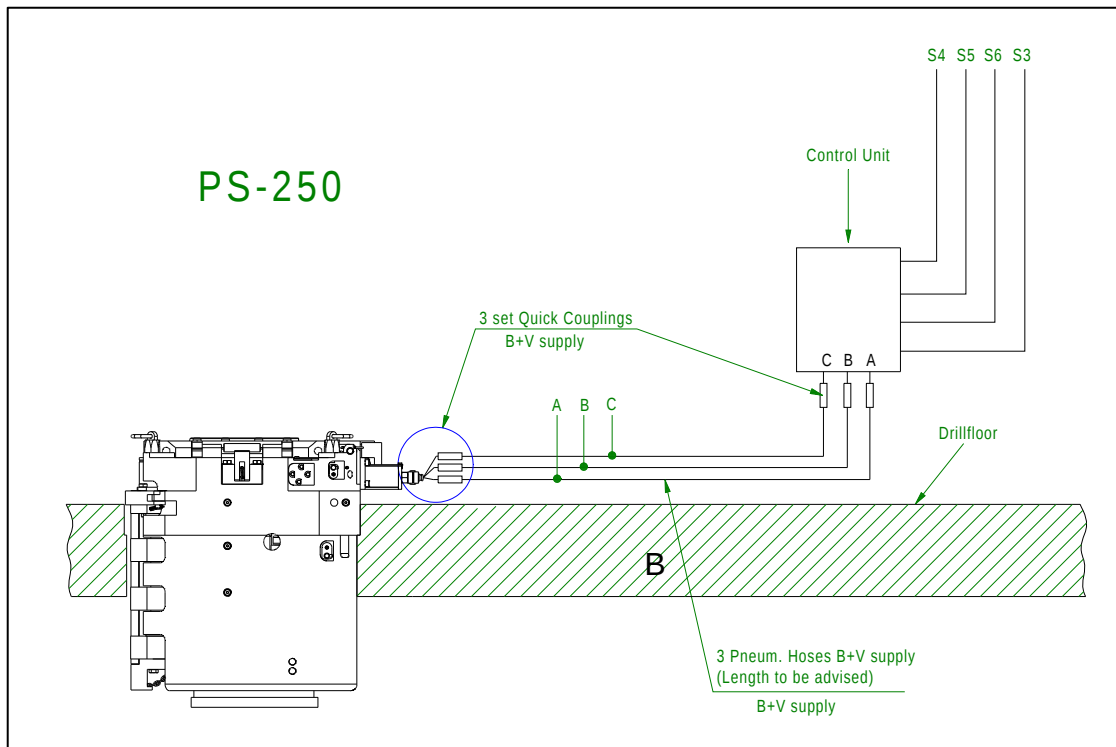


Fig. 14: Block diagram, Power Slip connection

- A: set the slips
- B: raise the slips
- C: signal if the slips are raised or set
Available optional

Generally the position of the pneumatic connection must be selected in such a way that no damage can occur to the connecting hoses due to external influences.

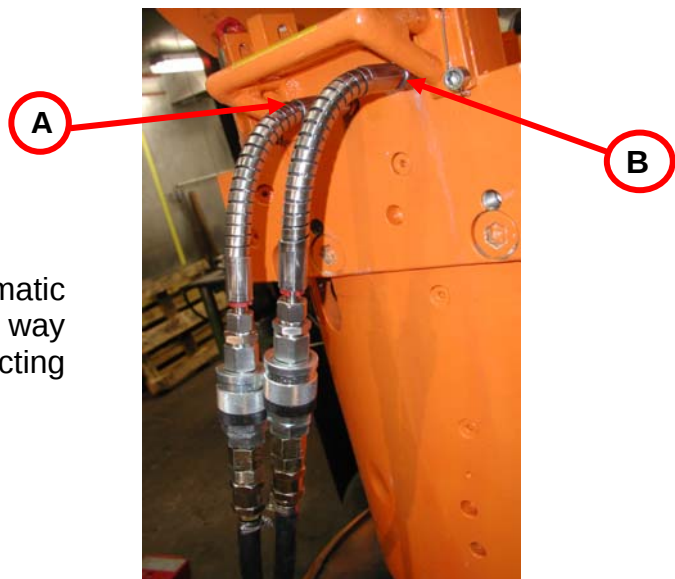


Fig. 15: Pneumatic connections



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For the PS-250 are different Control Units available

- Manual Control Unit
- Pneumatic Control Unit
- Electrical Control Unit (PN 755105)

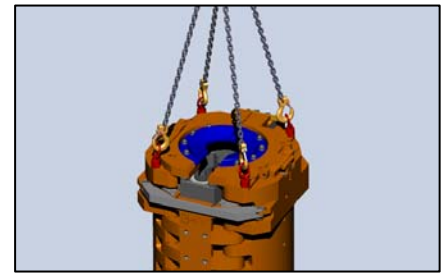
These Control Units are delivered with separate documentation.

4.2 Checks before operating

Prior to installation into the rotary table make sure that the door is correctly mounted and secured. Prior to operation make sure that the correct slip bodies with the correct dies are properly mounted and secured. This is valid also for the guide plates on top cover. All mentioned components must have the correct size for the pipes being handled. Raise and lower the slip several times with open cover to confirm correct function. Close cover after this test.

4.3 Lifting and transport

Lift the PS -250 only by using all four lifting eyes. The Power Slip must be handled with care. Do not drop the unit on to the floor. Impact may damage the PS-250.



ig. 16: Lifting the PS-250

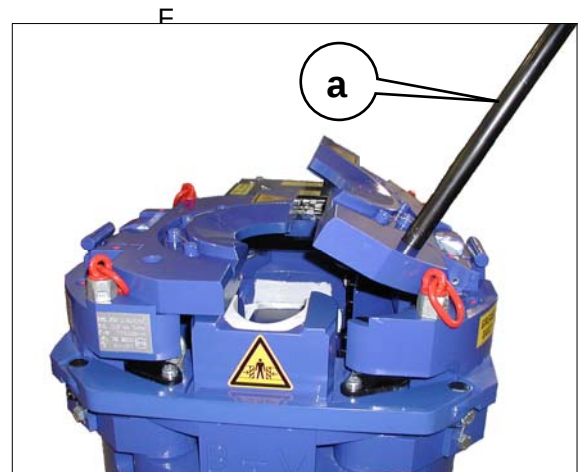
4.4 Opening the cover

The cover consists of two sections and must be opened with the hand-lever **(a)** see Tool Box Assembly on page 51.

For this purpose the hand-lever is to be inserted into the corresponding hole of the cover section and pulled downwards until the cover half locks automatically.

To unlock the cover the locking hook must be pushed inwards.

See pictures below.



Cover Assembly locked:



Cover Assembly unlocked:
Press locking bar inwards by foot

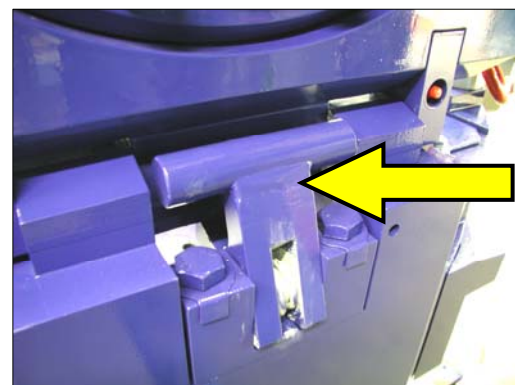


Fig. 17: Unlocking the cover

Fig.17: Opening the cover

Door Opening

4.5 Door Opening

Procedure:

1. Open the Cover (see page18)
2. Unlock the left Hinge Pin
Unfasten the Screw **(a)** and swing the Securing Plate **(b)** out.
3. Lifting the left Door Pin
The Door Hinge PIN **(c)** must be lifted with a suitable Lifting device with an eye bolt **(d)**.
4. Open the Door
5. For closing the door the steps are to be accomplished in reverse order.

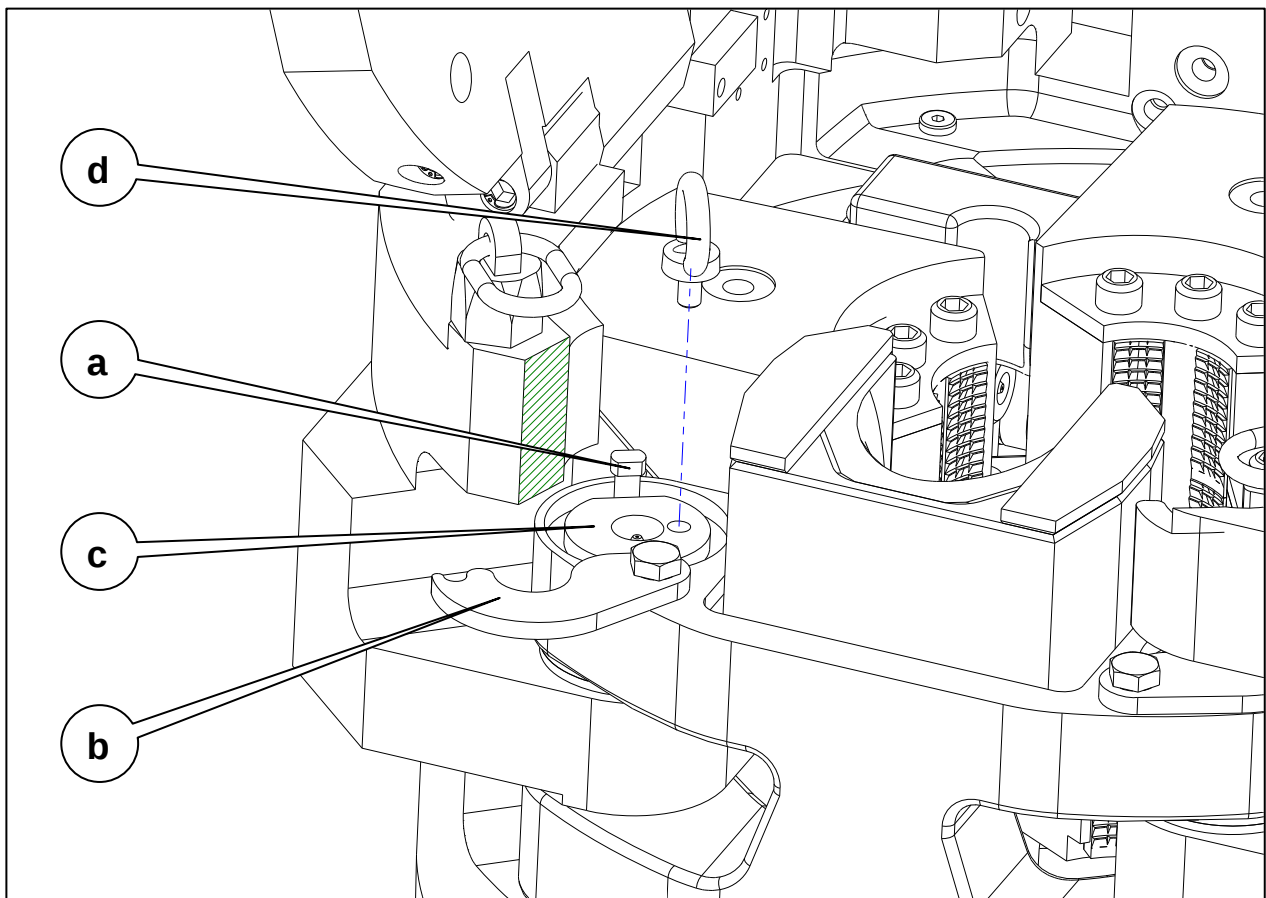


Fig. 2: Unlocking the Hinge Pin

4.6 Changing the dies

Generally:

Use separate Slip-Assemblies for each pipe-size, so all Slips can be installed and changed faster.

Also the risk of using wrong Slip-Assembly for the handled pipe size will be minimized.

Procedure:

1. Open the Cover (page 18) and remove the Slip-Assembly (page 22) out of the PS-250.

Warning:

For changing the insert dies, the slip-assembly must be removed of the PS-250.

2. Unlock and remove the screws **(a)** then take off the Plate for Slip Segment **(b)**.
3. Remove the dies **(c)**.

Warning:

During the proper heat-treatment of dies, they become very hard and somewhat brittle. When assembling slips, always wear eye protection and never strike the dies with a hammer or other hard object. Failure to observe these safety precautions could result in serious injury to personnel.

4. Grease the die slots with a lithium based grease.
5. Slide the new dies **(c)** into the dovetail-shaped die slots, taking care to ensure that the dies are oriented properly (That is, that the buttress-shaped tooth form is oriented upwardly). If the dies do not slide readily into the slots, it may be necessary to lightly tap them in using a brass or non-metallic rod. If more than a light force is required, do not use the die.

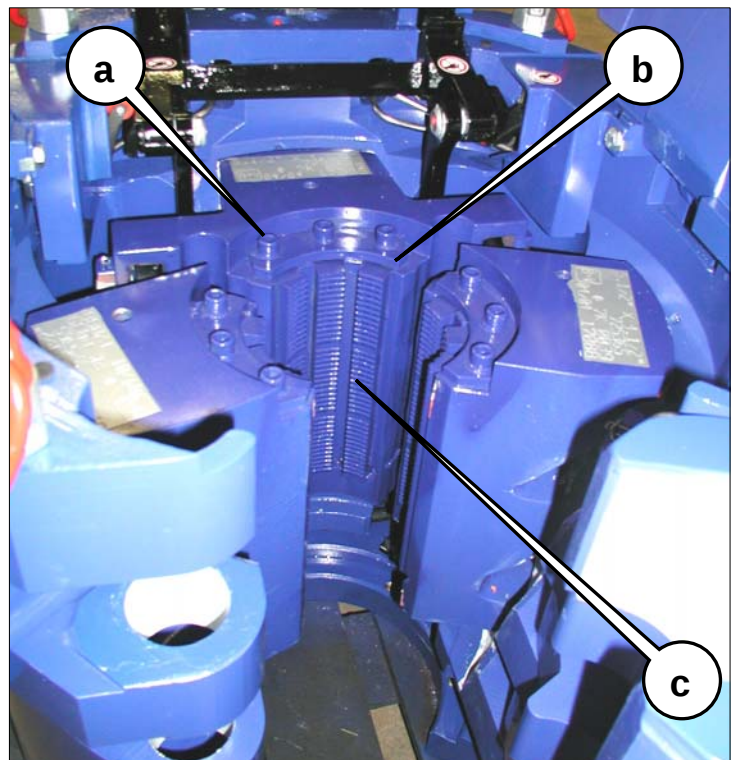


Fig. 18: Changing the dies

6. Install the Plate for Slip Segment **(b)** by using the three **(a)** screws.
7. Change the Designation of the Slip Assembly. The Slip Assembly must always have the right Markings for the installed Dies.



Marking of the Slip Assembly

Fig. 19: Marking of the Slip-Assembly

4.7 Removing the Slip-Assembly

The three slip segments must be removed / installed in one unit. The left and the right segment are connected with the center-segment by means of two bolts. See Slip assembly on page **Fehler! Textmarke nicht definiert..**

Procedure:

Warning:

The Power Slip must not be installed into the rotary table

1. Sink the slips in to lower position
2. Open the cover
3. Install three lifting eyes into the slips **(a)**
4. Remove both Cotter Pins **(b)**
5. Pull the Yoke-Slip-Bolts **(c)** out his bearing
6. Lift the Slip-Assembly clear by attaching an overhead lifting device

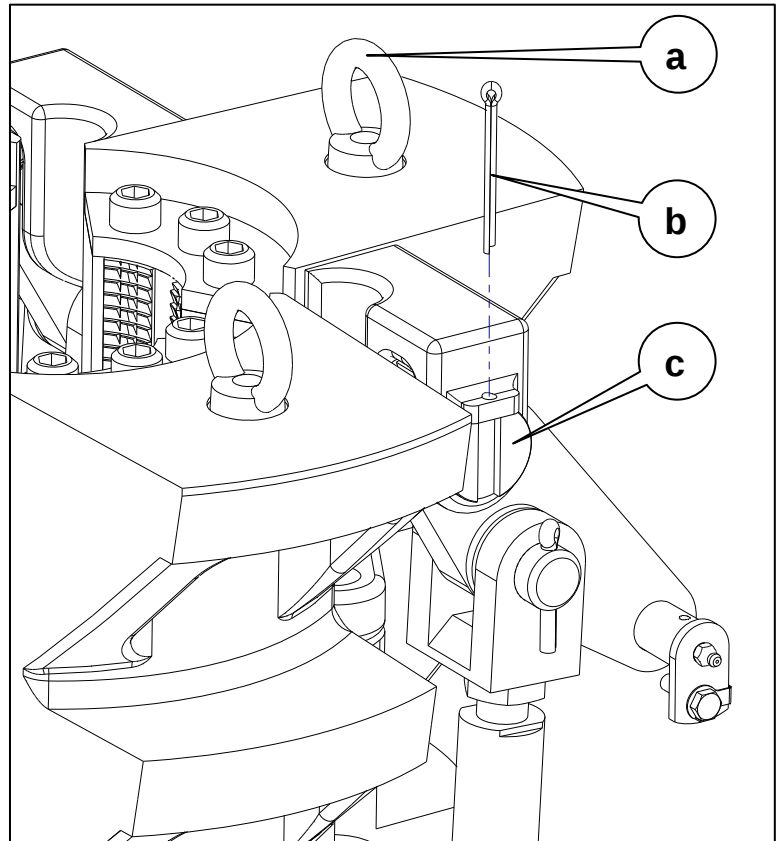


Fig. 3: Pull the Yoke-Slip Bolt

Before installing the slips, clean all contact surfaces between PS-bowl and slips, then accomplish the steps in reverse order.

5 Inspection, Maintenance, Repair

5.1 Periodic inspection

The recommended schedule for inspection of all Elevators, Spiders, Power Slips and Slips is as follows:

Daily:	Inspection category I
Weekly:	Inspection category II
Every two months:	Inspection category III
Every year:	Inspection category IV

The detailed Description of all Inspections are shown on page 29 and following pages.

The recommended frequencies apply for equipment in use during the specified period.

The inspection frequencies are only recommendations. The schedule of inspection heavily depends on the following factors:

- environment
- load cycles
- regulatory requirements
- operating time
- testing
- repairs
- remanufacture

5.2 Non-periodic inspection

A complete, on-job, shut-down inspection equivalent to the periodical Category III or Category IV should be made before (if anticipated) and after critical jobs (e.g., running heavy casing / drill strings, jarring, pulling of stuck pipes and/or operating at extreme low temperatures).

5.3 Inspection categories – General description

5.3.1 Inspection Category I

This category involves observing the equipment during operation for indications of inadequate performance.

When in use, equipment shall be visually inspected on a daily basis for cracks, loose fits or connections, elongation, and other signs of wear, corrosion or overloading. Any parts found to show cracks, excessive wear, etc., shall be removed from service for further examination.

The equipment shall be visually inspected by a person knowledgeable in that equipment and its function.

5.3.2 Inspection Category II

This is Category I inspection plus further inspection for corrosion, deformation, loose or missing components, deterioration, improper lubrication (see page 25), visible external cracks, and adjustment.

Category II may involve some disassembly to access specific components and to identify wear that exceeds the allowable tolerances.

5.3.3 Inspection Category III

This is Category II inspection plus further inspection, which should include NDT of critical areas and may involve some disassembly to access specific components and to identify wear that exceeds the allowable tolerances.

Prior to inspection, all foreign material such as dirt, paint, grease, oil, scale, etc. shall be removed from the concerned parts by a suitable method (e.g. paint-stripping, steam-cleaning, grit-blasting)

5.3.4 Inspection Category IV

This is Category III inspection plus further inspection for which the equipment is disassembled to the extent necessary to conduct NDT of all primary-load-carrying components.

Equipment shall be:

- disassembled in a suitable-equipped facility to the extent necessary to permit full inspection of all primary-load-carrying components and other components that are critical to the equipment.
- inspected for excessive wear, cracks, flaws and deformation.

Corrections shall be made in accordance with the manufacturer's recommendations.

Prior to inspection, all foreign material such as dirt, paint, grease, oil, scale, etc. shall be removed from the concerned parts by a suitable method (e.g. paint-stripping, steam-cleaning, grit-blasting)

5.4 General Lubrication

When the tool is in use, the following lubrication procedure should be performed weekly, or as inspection indicates:

1. Grease the Yoke-Bolts through the grease fittings **(a)**
2. Grease the greasing point **(b)** on the top of the PS-250 through which the slip assembly is supplied with grease via a nozzle system.
3. Apply an extreme-pressure lubricant through the grease fittings on the two Hinge Pins **(c)** (2 greasing points)
4. Grease the four Cover Hinge Pins through the grease fittings **(d)** (4 greasing points)
5. Grease each hydraulic cylinder bolt and the other bolts at Yoke Assembly **(e)** (4 greasing points)
6. Grease sliding Areas of the Sliding-Blocks and Yoke-Slip-Bolts **(f)**
7. Inspect the insert dies periodically and replace them if necessary. Always grease the die slots when installing dies. Failure to routinely grease insert dies slots may cause the insert dies to stick.

All Greasing Points are shown at on page 26.

In order to achieve efficient greasing even at different environmental temperatures, only the following grease types should be used:

- **EP gear lubricating grease for greasing "non-oil tight gear trains"**
- **NESSOS SF0**
- **NLGI 0**
- **DIN 51 826 GPOF-25**
- **DIN 51 502 GPOF-25**

obtainable from Blohm + Voss Oil Tools.



Fig. 4: Hand-Grease-Pump

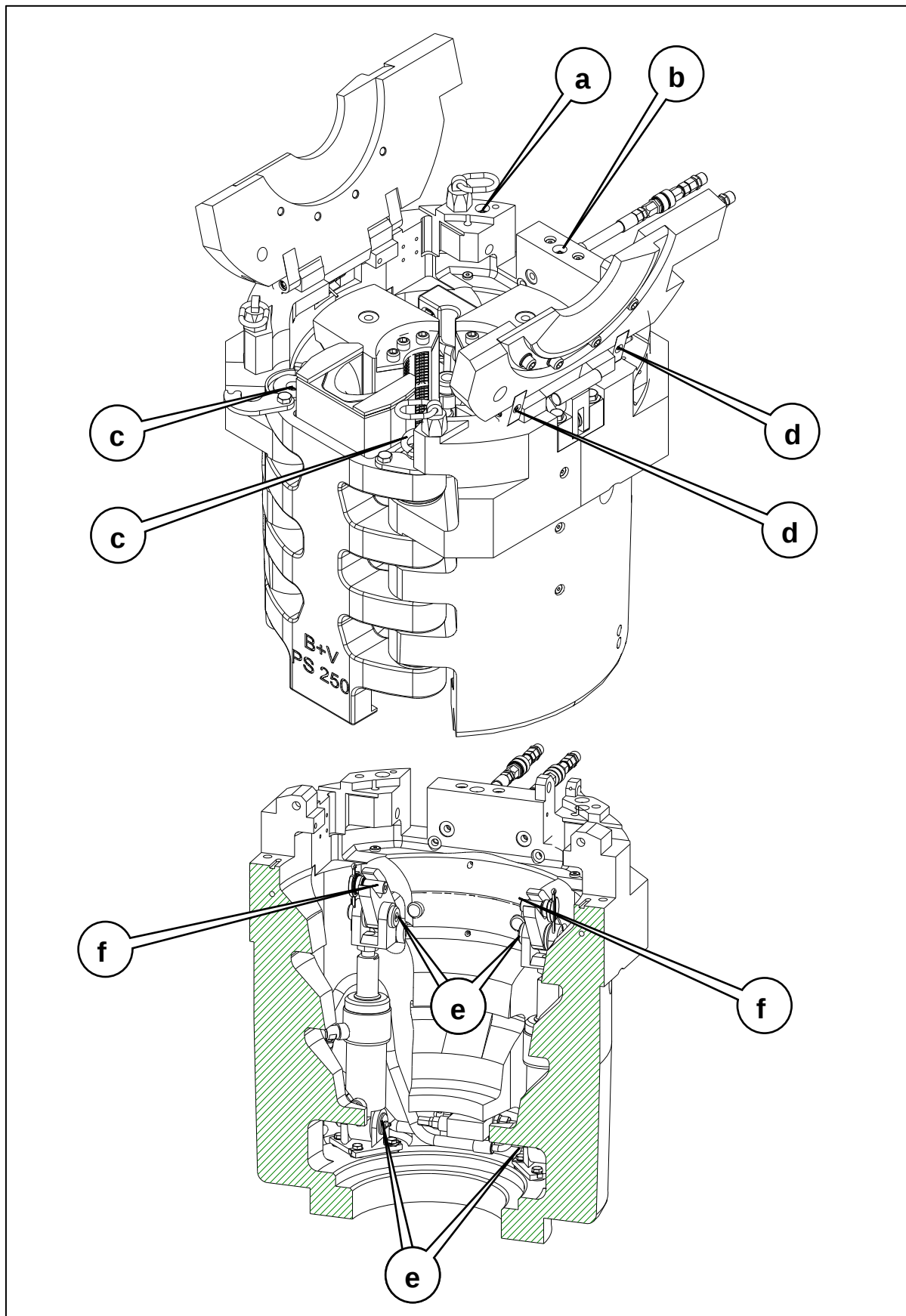


Fig. 20: Greasing points



5.5 Repairs

Any repair not performed by Blohm+Voss Oil Tools, should nevertheless be done in accordance with their methods and procedures or with their agents.

Minor cracks or defects, which may be removed without reducing safety or operation of the Power Slip, can be removed by grinding (see critical areas).

Welding on the castings should be done only by Blohm+Voss Oil Tools or an authorized service company in accordance with Blohm+Voss Oil Tools welding procedures.

Following the repair, the parts should again be inspected by an appropriate method to ensure that the defect has been completely removed.

If the Power Slip is defective beyond repair, destroy it directly.

IMPORTANT:

Remember to use only genuine B+V Replacement Parts and Accessories. Otherwise, Blohm+Voss will not responsible for the proper operation of B+V Equipment.

6 Critical areas

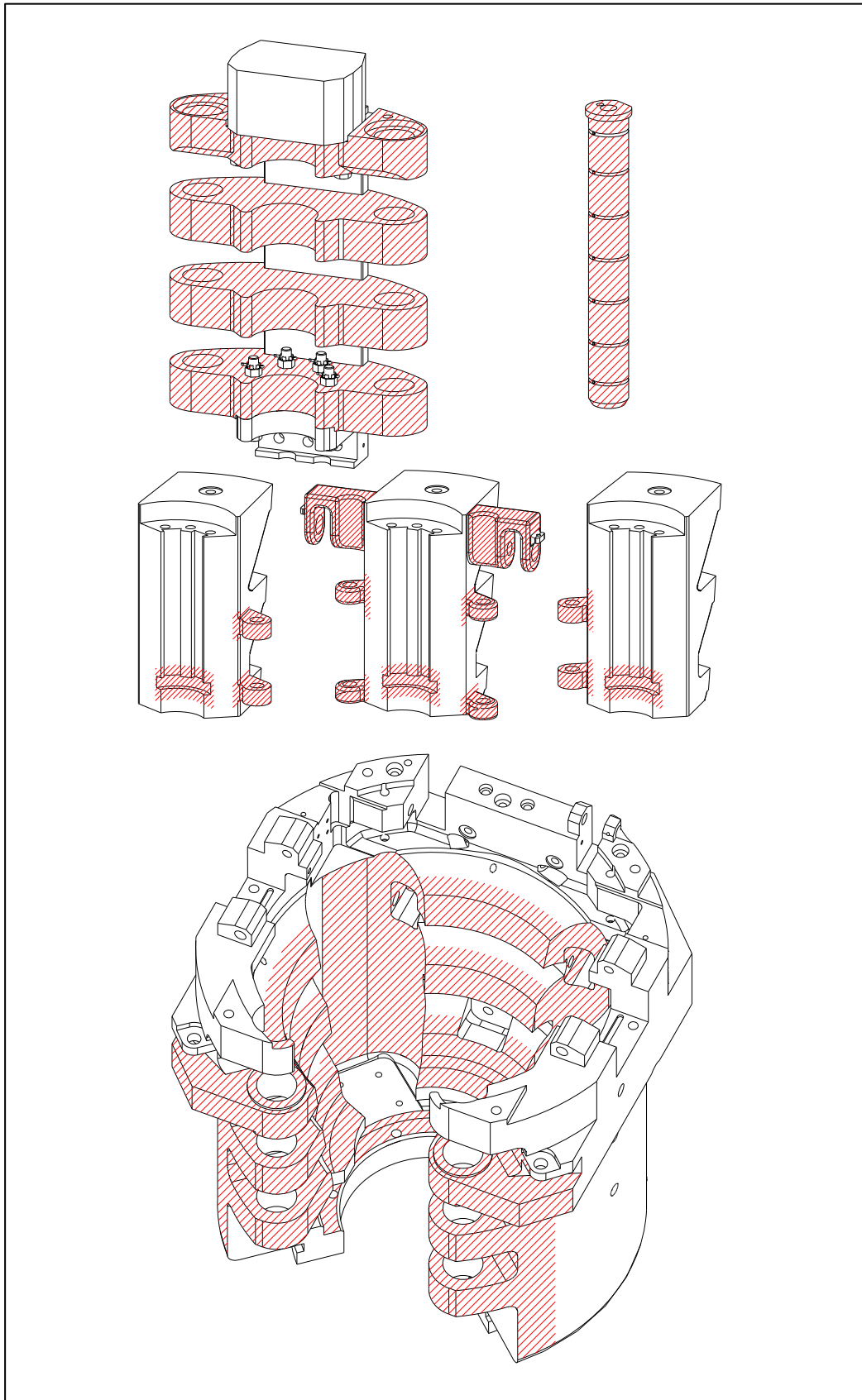


Fig. 21: Critical areas



7 Inspection Categories Check List

CHECK LIST FRONT PAGE

TYPE OF EQUIPMENT _____

SERIAL NUMBER _____

PARTNUMBER _____

SUPERVISOR _____

DATE OF INSPECTION _____

INSPECTION CATEGORY _____

PLACE OF INSPECTION _____

Check List Category I

(During operation – PS-250 is placed in Rotary Table, Cover is closed)

GENERAL			
DESCRIPTION		CHECKED	MONOGRAM
1	Complete front page of check list for the records	☐ OK	
2	Check for correct size of slips, dies and guide plates	☐ OK	
3	Check correct function of Slips	☐ OK	
4	Check function of feedback signal (slips set / raised)	☐ OK	
	Remarks		

CHECK FOR LOOSE ITEMS, ESPECIALLY FOR:			
DESCRIPTION		CHECKED	MONOGRAM
1	Hinges and bolts of cover assembly	☐ OK	
2	Cover Locking device	☐ OK	
3	Fixation of guide plates	☐ OK	
4	Top cover screws	☐ OK	
5	Lifting eyes for PS-250	☐ OK	
	Remarks		

CHECK FOR CRACKS, ELONGATION, DAMAGE AND CORROSION, ESPECIALLY FOR:			
DESCRIPTION		CHECKED	MONOGRAM
1	PS-250 Body – Hinges of Cover Assembly	☐ OK	
2	Hinges and bolts of cover assembly	☐ OK	
3	Cover Locking device	☐ OK	
4	Guide plates	☐ OK	
5	Lifting eyes for PS-250	☐ OK	



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	Remarks		
CHECK FOR WEAR , ESPECIALLY FOR:			
	DESCRIPTION	CHECKED	MONOGRAM
1	Manual guide plates: Check wear on inside surface Replace the guide if wear is more than 10mm at the bevel inside the guide plate	☐ OK	
	Remarks		

PNEUMATIC			
	DESCRIPTION	CHECKED	MONOGRAM
1	Check for loose fittings, pipes, valves	☐ OK	
2	Check for pneumatic leaks (hoses, valves and cylinders)	☐ OK	
3	Check condition of pneumatic couplings and connection hoses	☐ OK	
	Remarks		

REMARKS

SUPERVISOR

DATE



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Check List Category II

(PS-250 is out of Rotary Table, Cover is open, Slip Assembly is disassembled)

GENERAL			
DESCRIPTION		CHECKED	MONOGRAM
1	Complete front page of check list for the records	☐ OK	
2	Check for correct size of slips, insert dies and guide plates	☐ OK	
3	Check correct function of Slips	☐ OK	
4	Check function of feedback signals (slips set / raised)	☐ OK	
	Remarks		

CHECK FOR LOOSE ITEMS, ESPECIALLY FOR:			
DESCRIPTION		CHECKED	MONOGRAM
1	Hinges and bolts of cover assembly	☐ OK	
2	Bolts, Levers, Sliding Blocks and Screws of Yoke Assembly	☐ OK	
3	Cover Locking device	☐ OK	
4	Fixation of guide plates	☐ OK	
5	Top cover screws	☐ OK	
6	Lifting eyes for PS-250	☐ OK	
7	Securing of Door Assembly	☐ OK	
	Remarks		

CHECK FOR CRACKS, ELONGATION, DAMAGE AND CORROSION, ESPECIALLY FOR:			
DESCRIPTION		CHECKED	MONOGRAM
1	PS-250 Body – Hinges of Pneumatic Cylinder	☐ OK	
2	PS-250 Body – Hinges of Cover Assembly	☐ OK	
3	PS-250 Body – Outside Body surface / contact areas to	☐ OK	

	rotary table		
4	Hinges and bolts of cover assembly	☐ OK	
5	Cover Locking device	☐ OK	
6	Guide plates	☐ OK	
7	Lifting eyes for Cover Assembly	☐ OK	
8	Lifting eyes for PS-250	☐ OK	
9	Bolts, Levers and Sliding Blocks of Yoke Assembly	☐ OK	
10	Slip Assembly – Check condition of Insert Retainer Plates and Screws	☐ OK	
11	Slip Assembly – Check teeth of insert dies	☐ OK	
12	Slip Assembly – Check load recess at bottom	☐ OK	
13	Slip Assembly – Hinges for Yoke Assembly	☐ OK	
14	Slip Assembly – Hinges and bolts between Center / Left / Right-segments	☐ OK	
	Remarks		

CHECK FOR WEAR , ESPECIALLY FOR:

DESCRIPTION		CHECKED	MONOGRAM
1	Manual guide plates: Check wear on inside surface Replace the guide if wear is more than 10mm at the bevel inside the guide plate	☐ OK	
2	Bolts, Levers and Sliding Blocks of Yoke Assembly	☐ OK	
3	Door Assembly – Hinges at Door and Body	☐ OK	
4	Check wear of insert dies	☐ OK	
	Remarks		



TECHNICAL DOCUMENTATION PS-250

Fig 21 on page 26)			
DESCRIPTION		CHECKED	MONOGRAM
1	Yoke Assembly – Yoke-Bolts – 2 points (a)	☐ OK	
2	Slip Assembly – Gliding Area – 1 point (b)	☐ OK	
3	Door Assembly – Hinges at Door – 2 points (c)	☐ OK	
3	Cover Assembly – Hinges – 4 points (d)	☐ OK	
4	Yoke Assembly – Bolts – 4 points (e)	☐ OK	
5	Yoke Assembly – Sliding Block Yoke-Slip-Bolts – 2 points (f)	☐ OK	
	Remarks		

PNEUMATIC			
DESCRIPTION		CHECKED	MONOGRAM
1	Check for loose fittings, pipes, valves	☐ OK	
2	Check for pneumatic leaks of all hoses, valves and cylinders	☐ OK	
3	Check condition of pneumatic couplings and connection hoses	☐ OK	
4	Check pneumatic fittings and hoses in rotary table	☐ OK	
	Remarks		

REMARKS

SUPERVISOR

DATE



TECHNICAL DOCUMENTATION PS-250

Check List Category III

(PS-250 is out of Rotary Table, Cover is open, Slip Assembly is disassembled)

USE CHECK LIST OF CATEGORY II WITH FOLLOWING ADDITIONAL ITEMS:

GENERAL			
DESCRIPTION		CHECKED	MONOGRAM
1	Check completeness and condition of warning plates and labels	☐ OK	
2	Check condition of identification plate (serial number, partnumber, date of manufacture etc.)	☐ OK	
3	Clean tool thoroughly	☐ OK	
	Remarks		

NDT – INSPECTION (all Critical Areas are shown at Fig. 21 on page 28)			
DESCRIPTION		CHECKED	MONOGRAM
1	NDT all critical areas with die penitent	☐ OK	
	Remarks		

REMARKS

SUPERVISOR

DATE



TECHNICAL DOCUMENTATION PS-250

Check List Category IV

(PS-250 is out of Rotary Table, Cover is open, Slip Assembly is disassembled)

USE CHECK LIST OF CATEGORY III WITH FOLLOWING ADDITIONAL ITEMS:

HYDRAULICS			
DESCRIPTION		CHECKED	MONOGRAM
1	Change all pneumatic hoses and fittings	☐ OK	
2	Check condition of pneumatic valves and replace if necessary	☐ OK	
3	Check condition of pneumatic pipes and replace if necessary	☐ OK	
	Remarks		

REMARKS

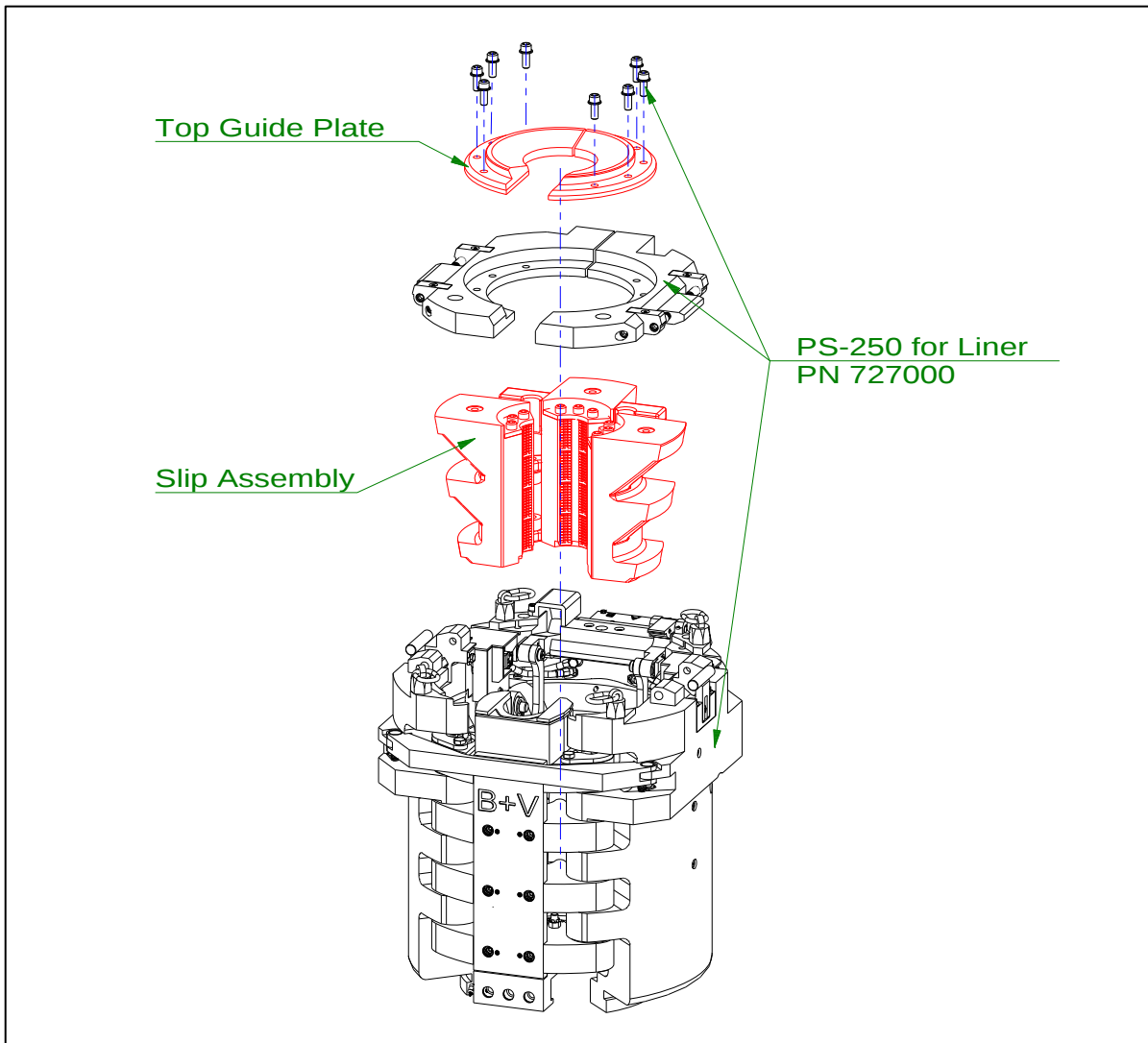
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DATE

8 Drawings and Spare Parts

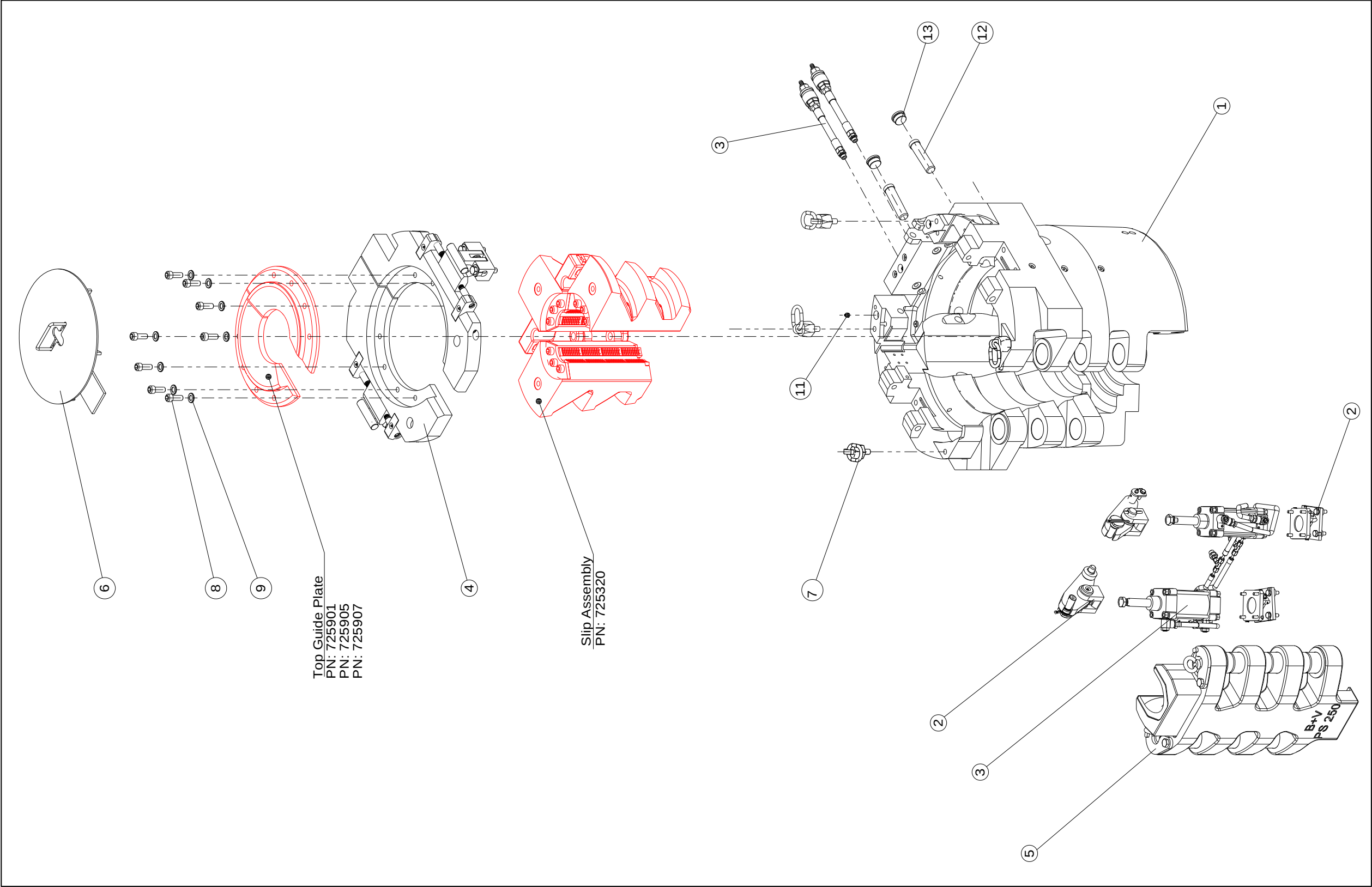
PS-250 pneumatic without Control Line / Cable.....	Fehler! Textmarke nicht definiert.
PS-250 pneumatic for Control Line / Cable.....	38
726000-A PS-250 pneumatic.....	Fehler! Textmarke nicht definiert.
727000-A PS-250 pneumatic for Control Line / Cable	39
725320 Slip Assembly	Fehler! Textmarke nicht definiert.
726200-A Yoke assembly pneumatic.....	43
726203 Lower Yoke Assembly right.....	Fehler! Textmarke nicht definiert.
726204 Lower Yoke Assembly left.....	Fehler! Textmarke nicht definiert.
726340 Pneumatic Box Assembly	Fehler! Textmarke nicht definiert.
726400 Cover assembly without Control Line / Cable	Fehler! Textmarke nicht definiert.
727400 Cover assembly for Control Line / Cable.....	47
726700 Door assembly without Control Line / Cable	Fehler! Textmarke nicht definiert.
727700 Door assembly for Control Line / Cable	48
726900 Greasing Assembly Body.....	50
726800 Toolbox Assembly	Fehler! Textmarke nicht definiert.
Spare Parts	52

PS-250 pneumatic for Control Line / Cable



Pipe Size	Slip Assembly Size	Slip Assembly PN	Top Guide Plate PN
2 3/8"	3 1/2"	725325	727901
2 7/8"	3 1/2"	725330	727901
3 1/2"	3 1/2"	725355	727901
3 1/2"	4 1/2"	725340	727901
4"	4 1/2"	725350	727901
4 1/2"	4 1/2"	725360	727905
4 1/2"	5 1/2"	725375	727905
5"	5 1/2"	725385	727905
5 1/2"	5 1/2"	725365	727905
6 5/8"	6 5/8"	725380-0	727905
6 5/8"	7 5/8"	725390	727907
7"	7 5/8"	275380	727907
7 5/8"	7 5/8"	725370	727907

727000-A PS-250 pneumatic for Control Line / Cable





TECHNICAL DOCUMENTATION PS-250

Parts List PS-250-pneumatic for Line / Cable PN 727000-A

<u>Pos.</u>	<u>Quantity</u>	<u>Part-No.</u>	<u>Description</u>
1	1	726100	Body
2	1	726200-A	Yoke Assembly pneumatic
3	1	726300-A	Pneumatic Assembly
4	1	727400	Cover Assembly
5	1	727700	Door Assembly
6	1	726010	Cover Plate for PS-250
7	4	753005-1	Lifting Eye
8	8	725466	Screw
10	1	726800	Tool Box Assembly
11	1	726900	Greasing Assembly Body
12	2	726051	Stop
13	2	726052	Blind Screw

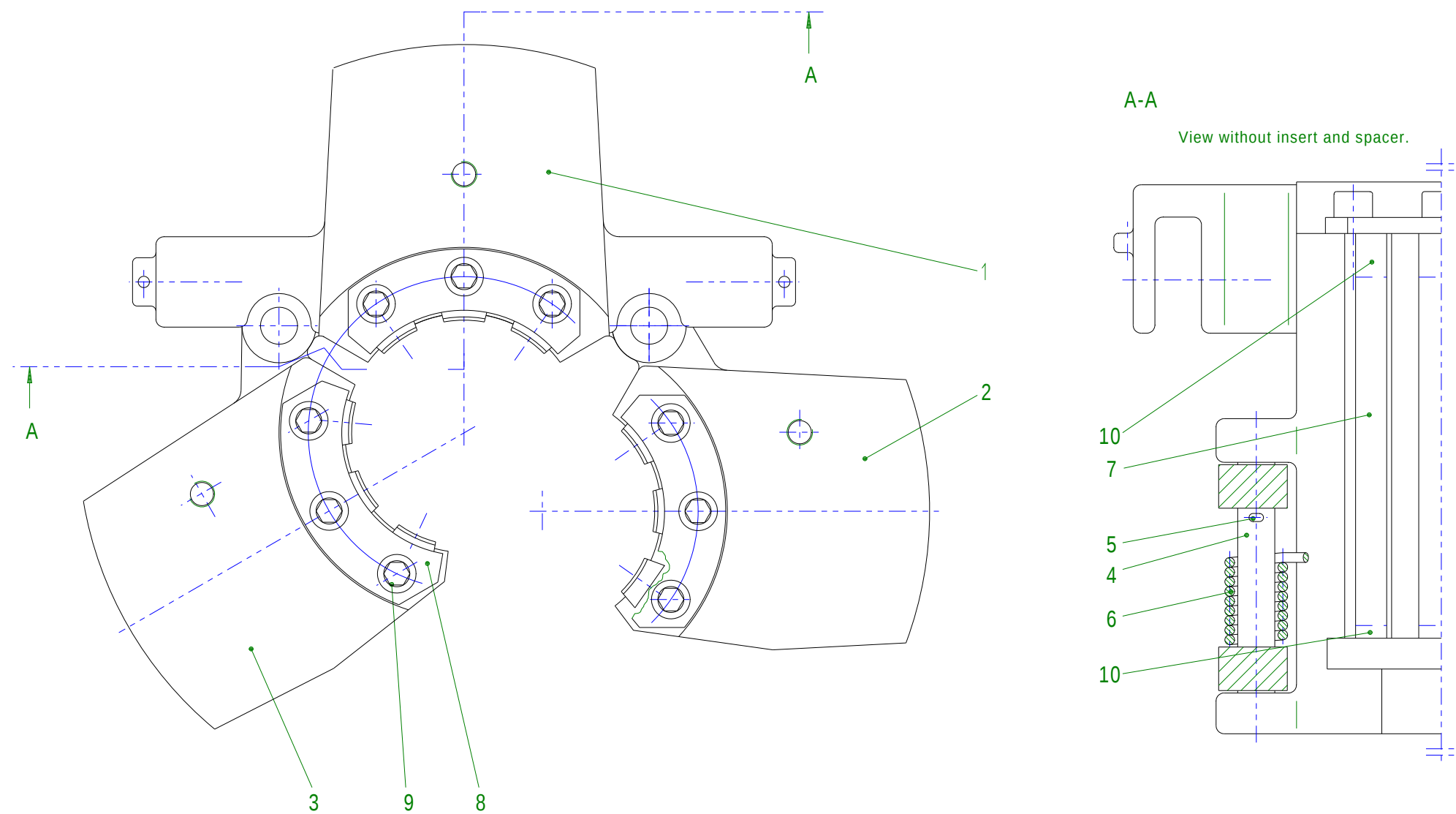


TECHNICAL DOCUMENTATION PS-250

Continuation Parts List PS-250-pneumatic for Line / Cable PN 727000-A

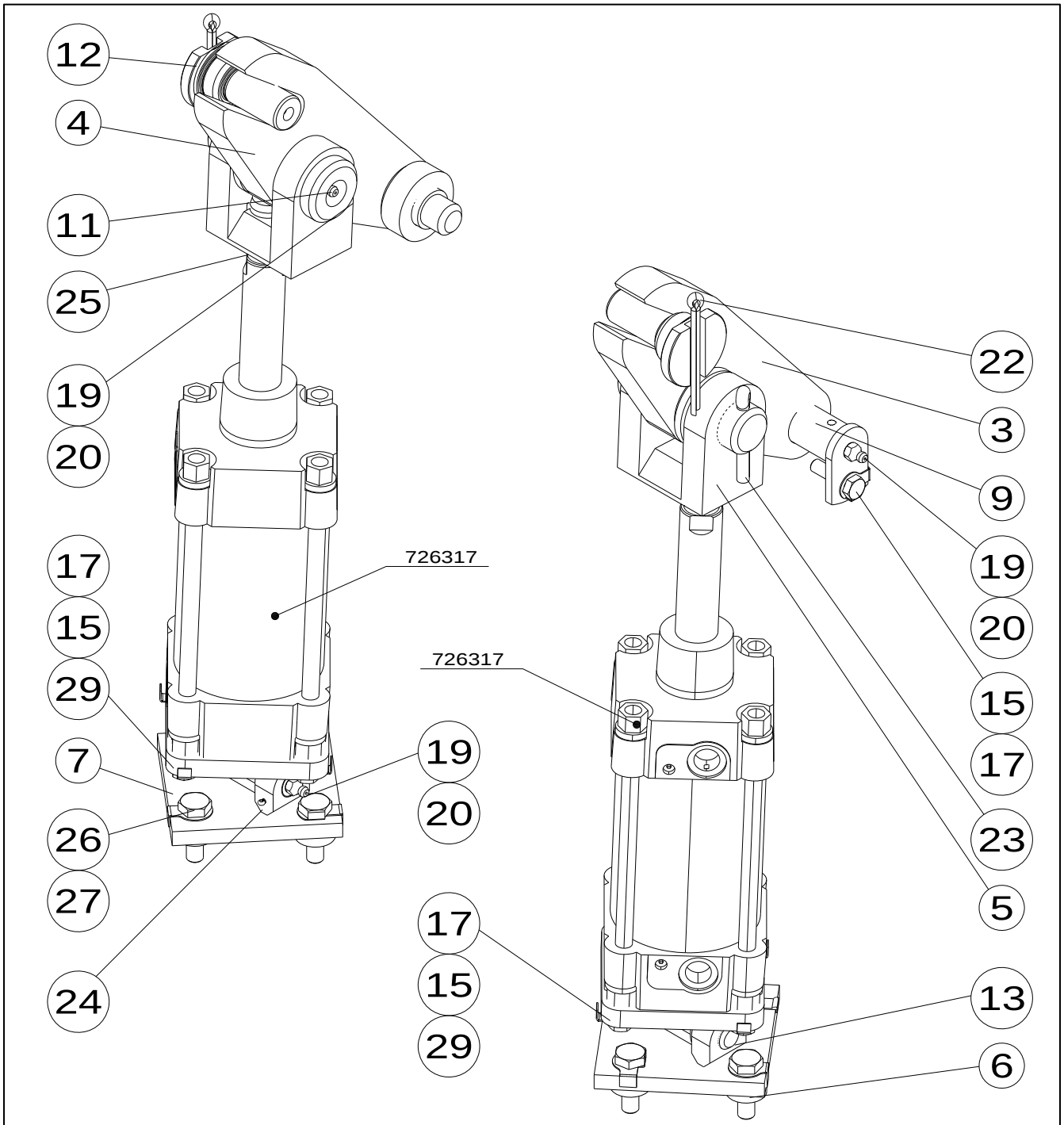
<u>Pos.</u>	<u>Quantity</u>	<u>Part-No.</u>	<u>Description</u>
34	4	726043	Nut
35	4	726044	Washer
36	4	726045	Cotter Pin

725320 Slip Assembly



				725325 3.1/2" x 2.3/8"	725330 3.1/2" x 2.7/8"	725355 3.1/2" x 3.1/2"	725340 4.1/2" x 3.1/2"	725350 4.1/2" x 4"	725360 4.1/2" x 4.1/2"	725375 5.1/2" x 4.1/2"	725385 5.1/2" x 5"	725365 5.1/2" x 5.1/2"	725380-0 6 5/8" x 6 5/8"	725390 7 5/8" x 6 5/8"	725380 7 5/8" x 7"	725370 7 5/8" x 7 5/8"
10	-	Stk	Spacer	6 x	6 x	6 x 671141	-	-	-	-	-	-	-	-	-	-
9	9	Stk	Screw	725348	725348	725348	612554	612554	612554	612554	612554	612554	612554-1	612554-1	612554-1	612554-1
8	3	Stk	Plate for Slip Segment	725336	725336	725336	725366	725366	725366	725346	725346	725346	725380-4	725356	725356	725356
7	-	Stk	Insert	18 x	18 x	18 x 671027	27 x 671128	27 x 671129	27 x 671130	27x 752951	27 x 671131	27 x 671132	36 x 671132	36 x 752952	36 x 752953	36 x 671132
6	2	Stk	Spring	735415	735415	735415	735415	735415	735415	735415	735415	735415	735415	735415	735415	735415
5	2	Stk	Cotter Pin	735404	735404	735404	735404	735404	735404	735404	735404	735404	735404	735404	735404	735404
4	2	Stk	Hinge Pin	725204	725204	725204	725204	725204	725204	725204	725204	725204	725204	725204	725204	725204
3	1	Stk	Right Slip	725355-3	725355-3	725355-3	725345 - 4 1/2	725345 - 4 1/2	725345 - 4 1/2	725345 - 5 1/2	725345 - 5 1/2	725345 - 5 1/2	725380-1	725352	725352	725352
2	1	Stk	Left Slip	725355-2	725355-2	725355-2	725344 - 4 1/2	725344 - 4 1/2	725344 - 4 1/2	725344 - 5 1/2	725344 - 5 1/2	725344 - 5 1/2	725380-2	725354	725354	725354
1	1	Stk	Centre Slip	725355-1	725355-1	725355-1	725343 - 4 1/2	725343 - 4 1/2	725343 - 4 1/2	725343 - 5 1/2	725343 - 5 1/2	725343 - 5 1/2	725380-3	725353	725353	725353
Pos.	Quantity	Unit	Description	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.

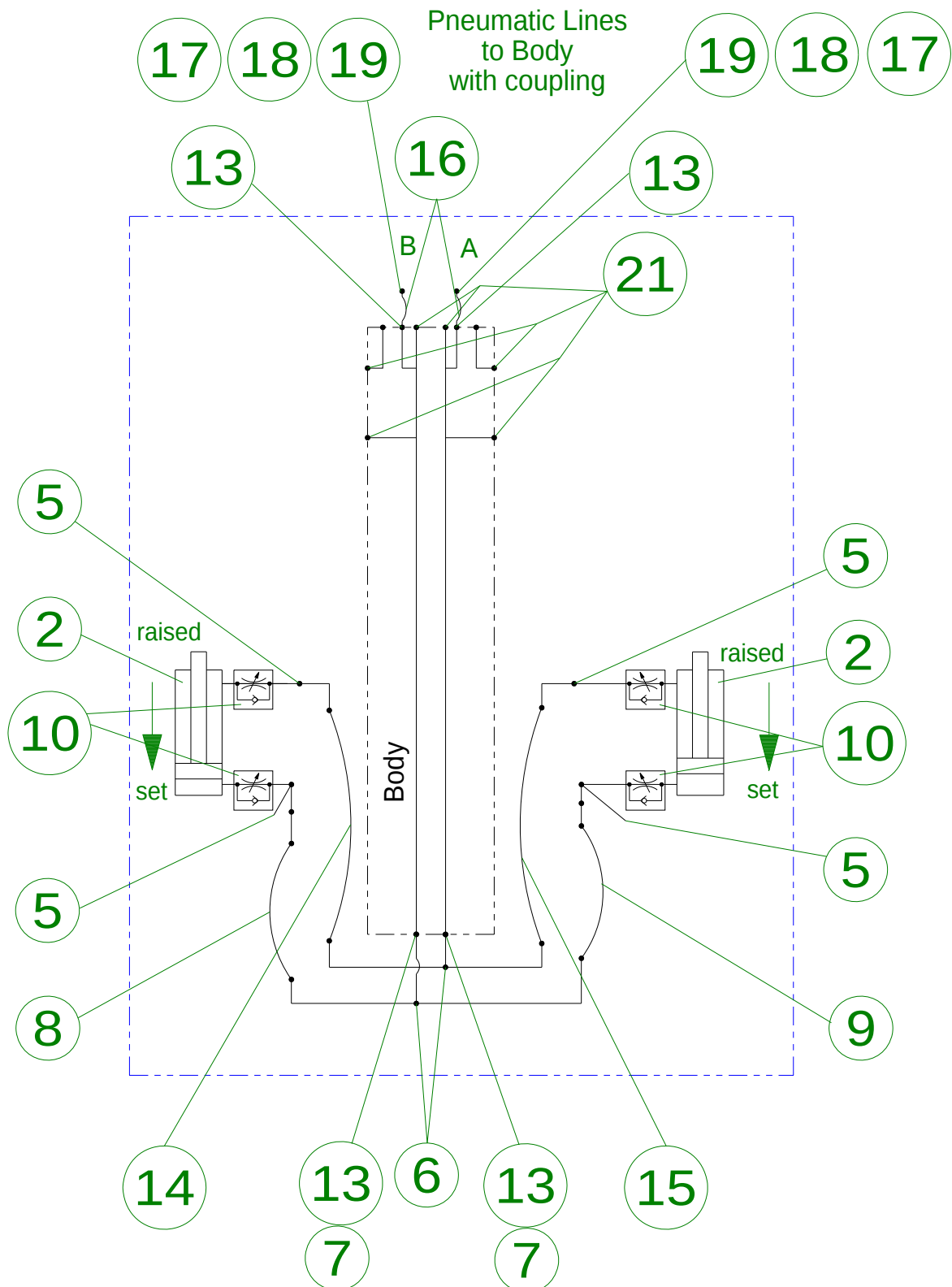
726200-A Yoke assembly pneumatic



Parts List Yoke assembly pneumatic PN 726200-A

Pos.	Quantity	Part-No.	Description
3	1	726224-1	Lower Yoke Assembly right
4	1	726224-2	Lower Yoke Assembly left
5	2	726219	Clevis pneumatic
6	1	726220	Pedestal right for body pneumatic
7	1	726221	Pedestal left for body pneumatic
9	2	726209	Yoke Bolt
11	2	726211	Upper Cylinder Bolt
12	2	726212	Yoke Slip Bolt
13	2	726223	Lower Cylinder Bolt pneumatic
15	10	645671	Hexagon Bolt
17	10	645059	Washer with 2 taps
19	6	70064	Grease nipple
20	6	612518	Protective cap for grease nipple
22	2	726215	Split Pin
23	2	613556-35	Split Pin
24	2	726046	Split Pin
25	2	726047	Hexagon thin Nut
26	8	726026	Hexagon Screw
27	8	735854	Washer with 2 taps
29	2	726222	Pedestal for cylinder pneumatic

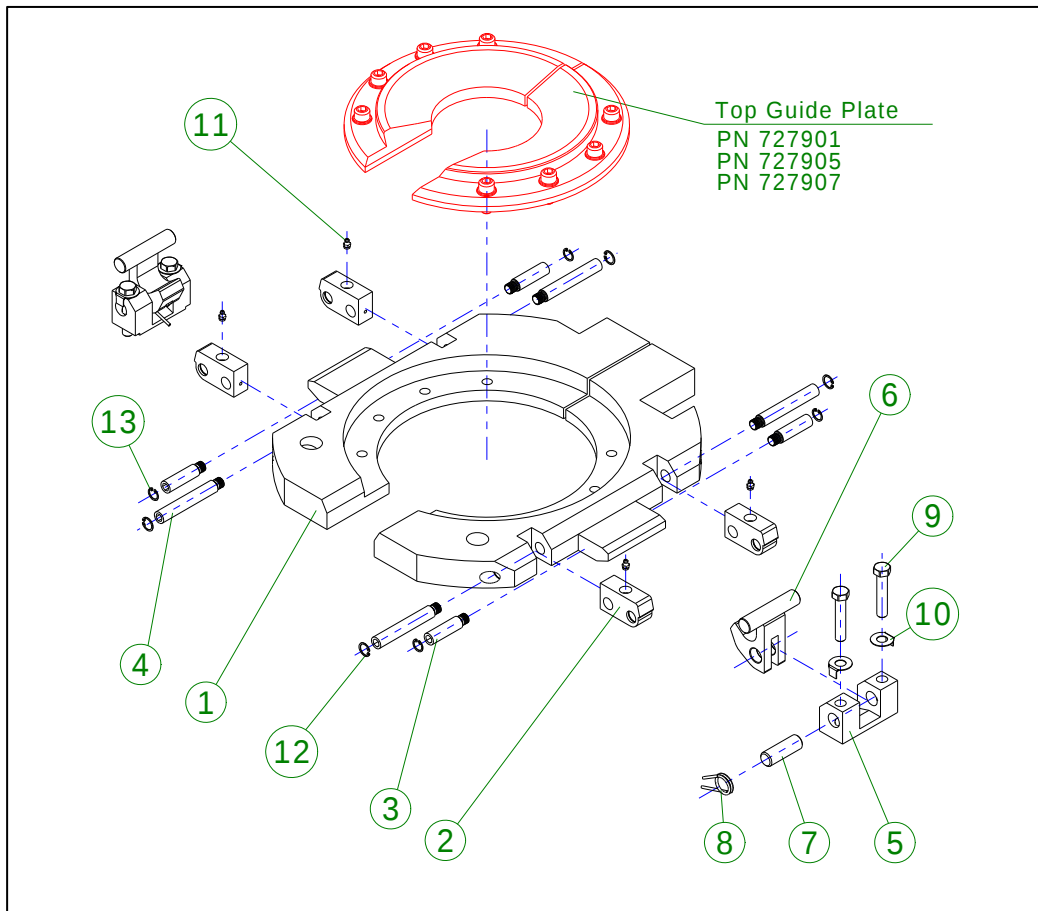
726300-A Pneumatic Assembly



Parts List Pneumatic Assembly PN 726300-A

Pos.	Quantity	Part-No.	Description
2	2	726317	Pneumatic cylinder
5	6	726308	Reducing Nipple
6	2	726309	Adjustable Stud Branch Tee
7	4	775094-4	Swage Nipple
8	1	726300-A-5	Hose Assembly
9	1	726300-A-2	Hose Assembly
10	4	726344	Throttlet check valve
13	2	755373	Straight Male Stud Coupling
14	1	726300-A-4	Hose Assembly
15	1	726300-A-3	Hose Assembly
16	2	726300-A-1	Hose Assembly
17	2	752827	Clutch-Coupling
18	2	752828	Plug Nipple
19	2	612658	Pipe Socket
21	6	612929	Blind Screw

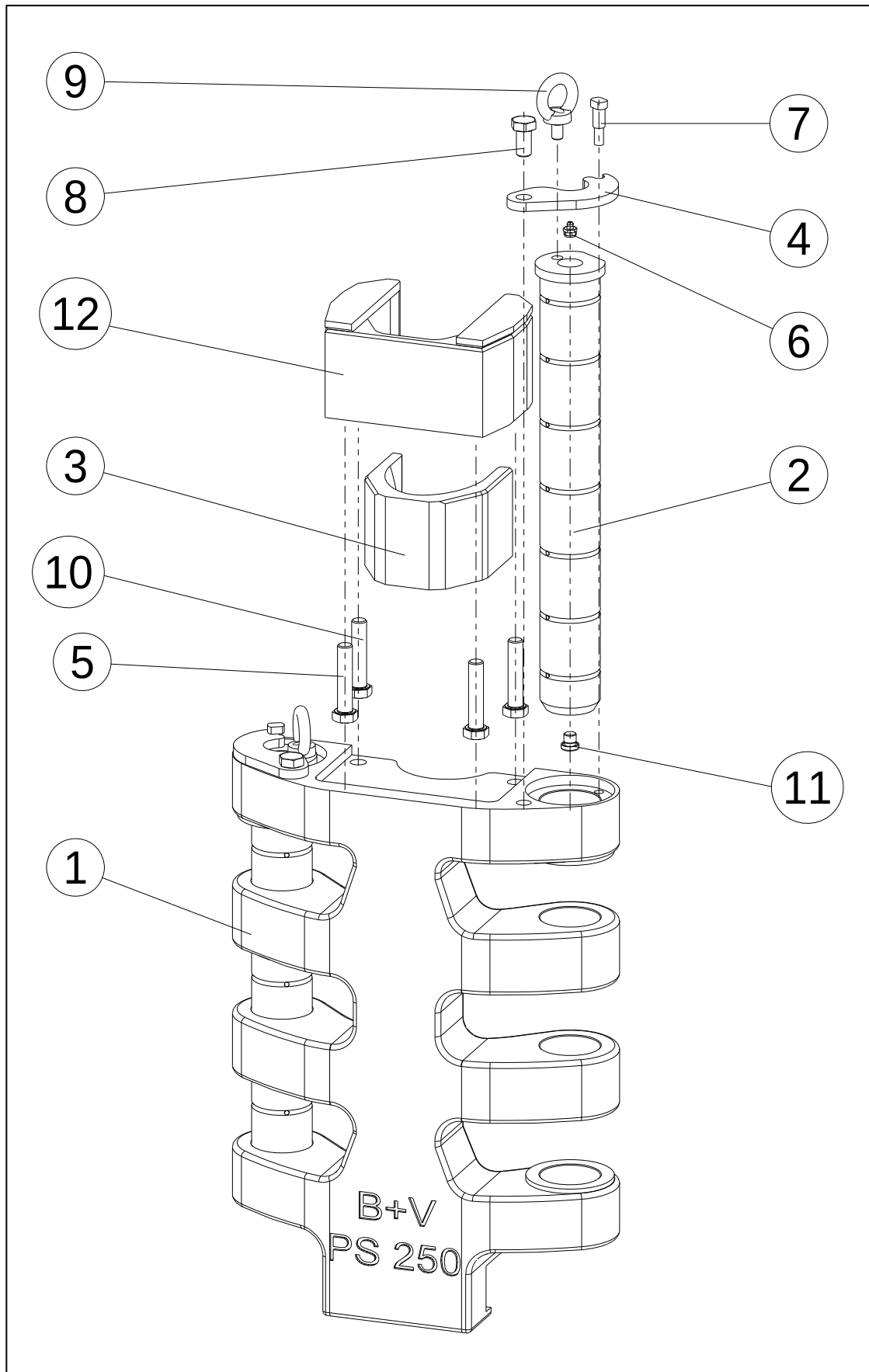
727400 Cover assembly for Control Line / Cable



Parts List Cover assembly for Control Line / Cable PN 727400

Pos.	Quantity	Part-No.	Description
1	1	727408	Cover
2	4	726402	Hinge
3	4	726403	Bolt 1
4	4	726404	Bolt 2
5	2	726405	Stopper Seating
6	2	726406	Cover Stopper
7	2	775064	Pin for Stopper
8	2	775065	Spring
9	4	645672	Hex. Screw
10	4	775068	Washer
11	4	70064	Grease Nipple
12	4	726407	Securing Ring
13	4	645026	SecuringRing

727700 Door assembly for Control Line / Cable

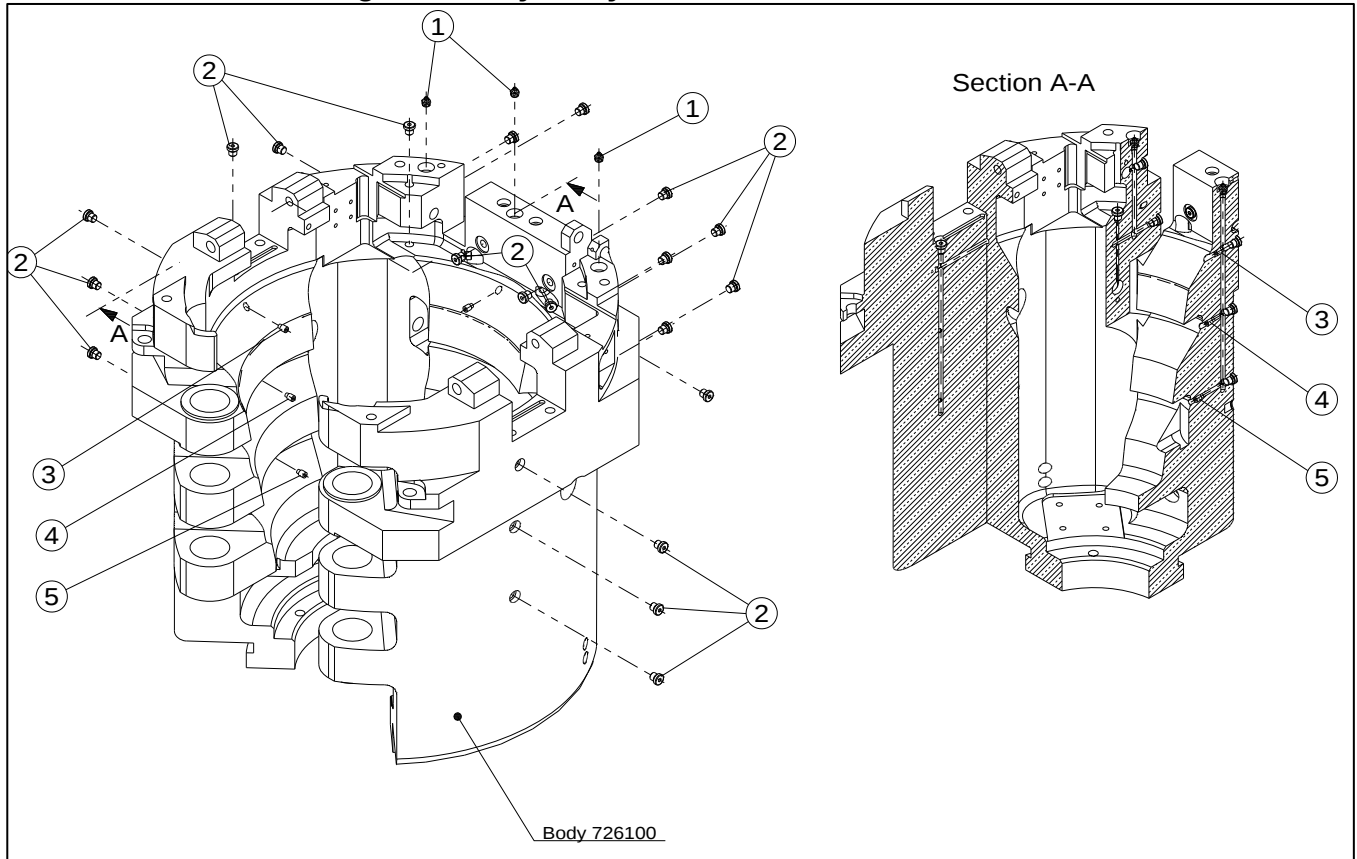


Parts List Door assembly for Control Line / Cable PN 727700

Pos.	Quantity	Part-No.	Description
1	1	726701	Door
2	2	726702	Hinge Pin
3	1	727703	Baffle
4	2	725117	Hinge Pin securing Plate
5	4	726717	Hexagon Screw
6	2	612515	Grease Nipple
7	2	726705	Securing Bolt
8	2	617519	Hex. Screw
9	2	755719	Eye Screw
10	2	645672	Hex. Screw
11	2	612929	Blind Screw
12	1	727715	Holder for Baffle

726900 Greasing Assembly Body

Parts List Greasing Assembly Body PN 726900



<u>Pos.</u>	<u>Quantity</u>	<u>Part-No.</u>	<u>Description</u>
1	3	612515	Grease Nipple
2	27	612929	Blind Screw
3	3	775048-1.0	grubscrew with hole 1.0mm
4	3	775048-1.5	grubscrew with hole 1.5mm
5	3	775048-2.0	grubscrew with hole 2.0mm

726800 Toolbox Assembly

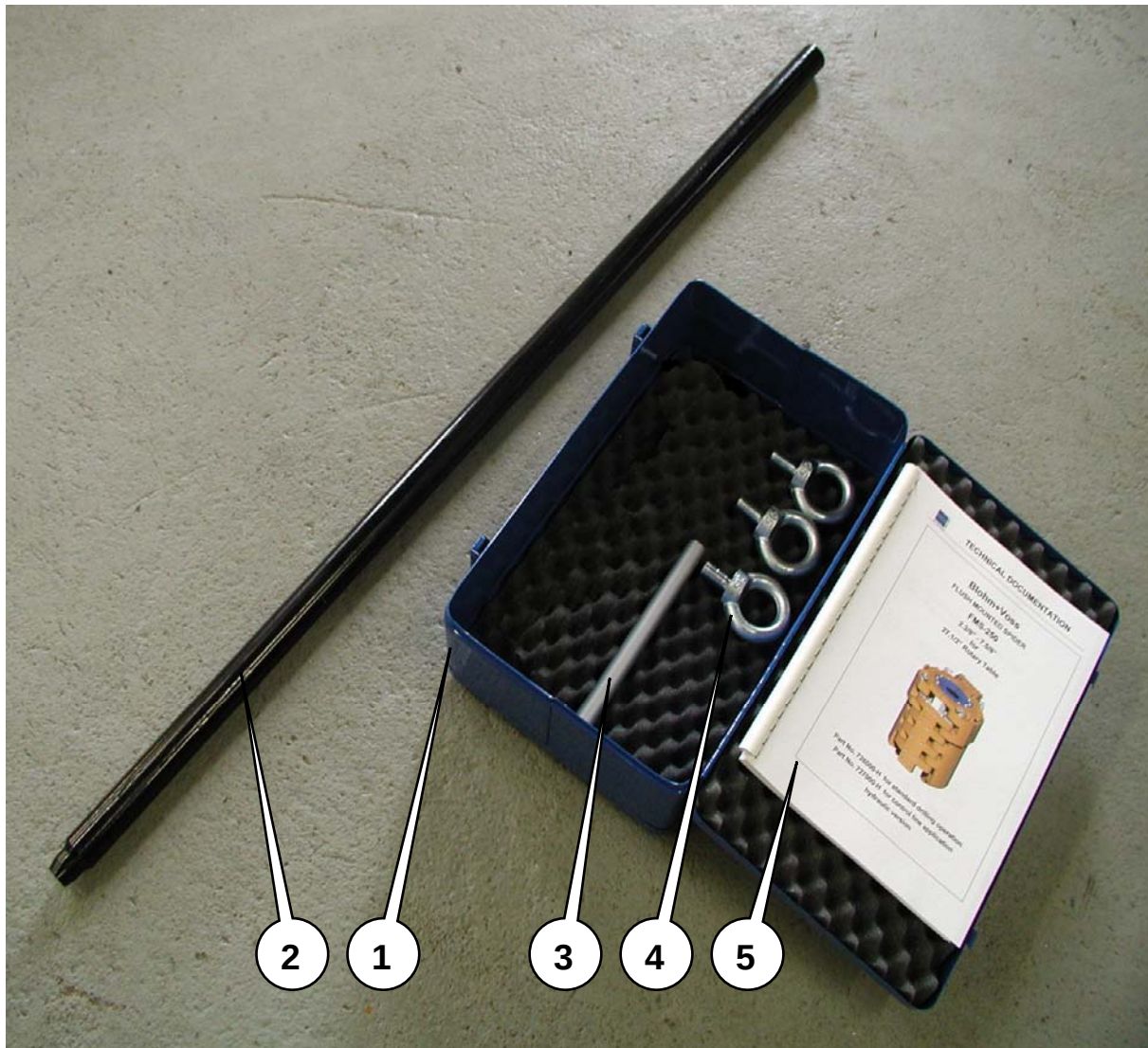


Fig. 5: Toolbox Assembly

<u>Pos.</u>	<u>Quantity</u>	<u>Part-No.</u>	<u>Description</u>
1	1	775814	Box
2	1	752116	Hand Assembly
3	1	775813	Square Bore Wrench
4	3	726810	Lifting Eye Bolt
5	1	-	Technical Documentation

Spare Parts

Spare Partlist for PS 250 (2 years operation)

<u>Pos.</u>	<u>Quantity</u>	<u>Part-No.</u>	<u>Description</u>
1	2	726702	Hinge Pin
2	1	726703	Baffle
3	2	726209	Yoke Bolt
4	2	726211	Upper Cylinder Bolt
5	2	726225	Yoke Slip Bolt
6	2	726223	Lower Cylinder Bolt Pneumatic
7	1	726317	Pneumatic Cylinder
9	1	726224-1	Lower Yoke right
10	1	726224-2	Lower Yoke left
11	2	726344	Throttlet check valve



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