

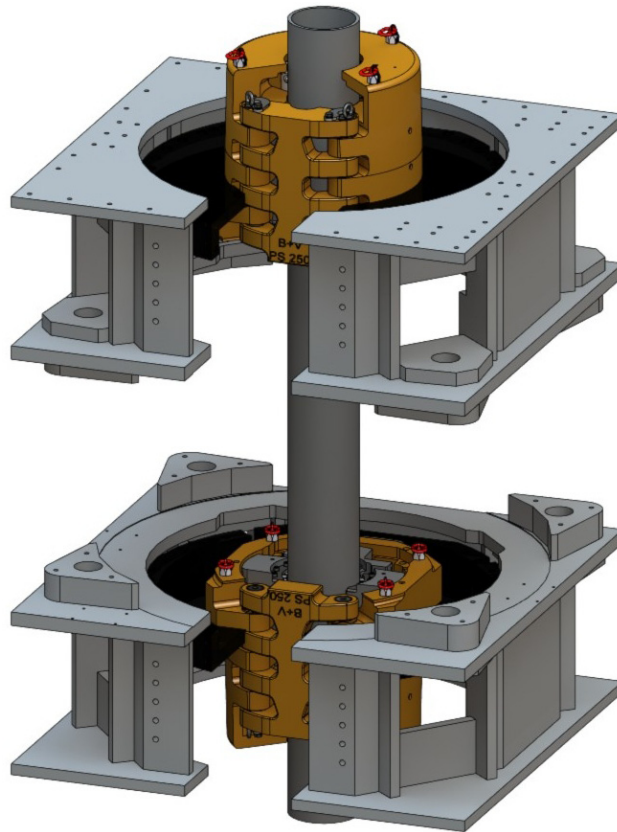
Blohm + Voss Pipe Handling Equipment

PS 250 Tubefuse

Hydraulic Operated Power Slip

Technical Documentation

Original Instructions



Manual PN 727000-H-TU-D Rev 001, July 2013

Blohm + Voss Oil Tools



GENERAL INFORMATION

Warnings and Note

WARNING: A “WARNING” INDICATES A DEFINITE RISK OF EQUIPMENT DAMAGE OR DANGER TO PERSONNEL. FAILURE TO OBSERVE AND FOLLOW PROPER PROCEDURES COULD RESULT IN SERIOUS OR FATAL INJURY TO PERSONNEL, SIGNIFICANT PROPERTY LOSS, OR SIGNIFICANT EQUIPMENT DAMAGE.

NOTE: A “note” indicates that additional information is provided about the current topics.

WARNING: THIS TECHNICAL DOCUMENTATION CONTAINS INSTRUCTIONS ON SAFETY, INSTALLATION, OPERATION AND MAINTENANCE FOR THE BLOHM + VOSS OIL TOOLS TOOL .

Improper / Unsafe Use

The tool must only be used for the designated purpose.
When using the tool, the rated load must never be exceeded.

IT MUST BE STUDIED BEFORE WORKING WITH THE TOOL.

Intended use of this manual

This manual is intended for use by field service, engineering, installation, operation, and repair personnel. Every effort has been made to ensure the accuracy of the information contained herein. Blohm + Voss Oil Tools, will not be held liable for errors in this material, or for consequences arising from misuse of this material. Anyone using service procedures or tools, whether or not recommended by Blohm + Voss Oil Tools, must be thoroughly satisfied that

neither personal safety nor equipment safety will be jeopardized.

Intellectual property

All rights retained. No part of this document may be reproduced in any form (print, photocopy, microfilm or any other procedure) or be processed using an electronic system without written approval of Blohm + Voss Oil Tools.

All information contained in this manual is based upon the latest product information available at any time of printing. Dependent on ongoing technical improvements (ISO 9001) “Blohm + Voss Oil Tools” reserves the right to change the design and specifications without announcement.

The values specified in this manual represent the nominal values of a unit produced in series. Slight deviations in the case of the individual devices are possible.

NOTE: In the event of problems that cannot be solved with the aid of this manual, please contact one of the addresses listed below.

CE Marking

The tool complies with the Machinery Directive 98/37/EC and 2006/42/EC.

For machines containing any hydraulic or pneumatic powered parts, the Directive 2014/34/EU “Equipment and protective systems in potentially explosive atmospheres” applies.

The marking is as follows: CE Ex II 2G T5 (hydraulic tools) or CE Ex II 2G T6 (pneumatic tools).

Limited Warranty

The warranty provided will be void if the tool is either:

1. Repaired or serviced by a service facility which was not authorised by Blohm + Voss Oil Tools.
2. Replacement parts not manufactured by Blohm+Voss Oil Tools are used.
3. Modifications were made to the tool which were not approved by Blohm+Voss Oil Tools.

Manufacturer & Agents World wide

Blohm + Voss Oil Tools
Hermann-Blohm-Straße 2
20457 Hamburg
Germany

Phone: +49 40/3119-1826/1162
Fax: +49 40/3119-8194
oiltools@blohmvooss.com
www.blohmvooss-oiltools.com

Blohm + Voss Oil Tools,
LLC
7670 Woodway, Suite 266
Houston,
Texas 77063
United States of America

Phone: +1-713-952 0266
Fax: +1-713-952 2807
bvot@blohmvooss.com
www.blohmvooss-oiltools.com

Premier Sea & Land Pte. Ltd.
1, Scotts Road
#19-12 Shaw Centre
Singapore 228208
Republic of Singapore

Phone: +65-6734-7177
Fax: +65-6734-9115
enquiries@mtqpremier.com.sg

General safety issues

WARNING: ONE SHOULD AVOID CREATING IGNITION SOURCES, LIKE HEAT, AS A RESULT OF THE USE OF THE TOOL WITH OTHER TOOLS OR EQUIPMENT.

WARNING: DO NOT USE THE TOOL FOR ANY OTHER PURPOSE THAN GIVEN IN THIS DOCUMENT WITHIN IT'S SPECIFICATION.

WARNING: FAILURE TO CONDUCT ROUTINE MAINTENANCE COULD RESULT IN EQUIPMENT DAMAGE OR INJURY TO PERSONNEL.

WARNING: WEAR PERSONAL PROTECTION EQUIPMENT WHILE WORKING WITH THE EQUIPMENT.

WARNING: 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.

WARNING: ALL WARNING PLATES, SIGNS AND LABELS ATTACHED TO THE EQUIPMENT MUST BE OBSERVED. THE WARNING PLATES, SIGNS AND LABELS MUST BE PRESENT ON THE TOOL. DO NOT REMOVE THE LABELS. IF THEY ARE MISSING, REPLACING IS MANDATORY.

WARNING: ANY MODIFICATION TO THE TOOL CARRIED OUT WITHOUT THE APPROVAL OF BLOHM + VOSS OIL TOOLS WILL VOID ANY WARRANTY.

WARNING: USING THE TOOL WITH DAMAGED OR WORN PARTS CAN CREATE SERIOUS INCIDENTS.

WARNING: IT IS NOT ALLOWED TO USE ANY COMPONENTS WHICH ARE OF „NON-B+V“ ORIGINE, OR USE „NON-OEM“ PARTS WHICH ARE NOT APPROVED BY B+V. IT WILL VOID ANY WARRANTY AND MAY EFFECT THE CORRECT FUNCTIONING OF THE TOOL AND IT'S SAFETY FEATURES.

WARNING: THE COMPANY OPERATING THE TOOL IS RESPONSIBLE FOR EVALUATING SAFE AND PROPER USE OF THE TOOL IN A HAZARD ANALYSIS.

WARNING: THE OPERATING COMPANY IS OBLIGATED TO ISSUE WORKING INSTRUCTIONS FOR SAFE USE AND SUPERVISE OBSERVANCE OF THESE WORKING INSTRUCTIONS.

WARNING: EVERY EMPLOYEE, WHICH OPERATES, SERVICES, INSPECTS OR OTHERWISE INVOLVED WITH THE USE OF THE TOOL IN OTHER AREAS HAS TO ENSURE, THAT THESE ACTIONS ARE DONE BY TRAINED AND BY AN BLOHM + VOSS OIL TOOLS AUTHORIZED PERSONNEL, AND SHOULD COMPLETE REGULAR COURSES OF TRAINING, TO ENSURE PROPER USE AS WELL AS SAFE OPERATION, CORRECT MAINTAINANCE AND INSPECTION.

WARNING: IF NECESSARY, A REASONABLE, ADDITIONAL SUPERVISOR SHOULD BE APPOINTED DURING OPERATION.

WARNING: STAY AWAY FROM THE TOOL DURING OPERATION. IN CASE IT IS REMOTE OPERATED IT MAY MAKE MOVEMENTS WITHOUT WARNING.



Warning sign PN 671638
General warning



Warning sign PN 671642
Pay attention: Apply grease at least once a day.



Warning sign PN 611524
Danger: Do not touch.



Warning sign PN 671640-1
Pay attention: Do not place your hands between moving parts.



Warning sign PN 671641
Pay attention: Risk of crushing.

Safety issues Power Slips

WARNING: ALWAYS ENSURE THE SLIP SEGMENTS ARE LABELLED WITH THE SAME SERIAL NUMBER. NEVER USE SEGMENTS WITH DIFFERENT NUMBERS AS THEY MAY CAUSE THE PIPE TO DROP DUE TO DIFFERENT WEAR PATTERNS.

WARNING: UNDER NO CIRCUMSTANCES SHOULD THE SLIP ASSEMBLY BE RAISED WHILE SUPPORTING LOAD. IF THE SLIP ASSEMBLY IS LOWERED IN PLACE, THE TOOL CAN BEAR THE LOAD OF THE TUBULAR.

BEFORE RAISING THE SLIP ASSEMBLY, MAKE SURE THAT THE TUBULAR LOAD IS SUPPORTED. THE SLIP ASSEMBLY MUST BE RELEASED FROM ANY LOAD BEFORE RAISING IT.

WARNING: YOU MUST NEITHER ASSEMBLE NOR DISASSEMBLE SLIPS, GUIDES, INSERTS, ETC. WHEN THE TOOL IS PLACED IN THE ROTARY TABLE.

WARNING: NEVER USE THE POWER SLIP WITHOUT GUIDE PLATES. THIS CAN CAUSE DAMAGE TO THE SLIPS AND LEAD TO LOSS OF PIPES/ TUBULAR.

WARNING: IT MUST BE ENSURED AND CONTROLLED REGULARLY THAT THE BACK SIDE OF THE SLIPS ARE LUBRICATED WITH ENOUGH GREASE. THE QUANTITY OF GREASE MUST BE RELATED TO THE TYPE OF OPERATION AND TYPE OF MUD. FAILURE TO GREASE PROPERLY MAY LEAD TO STICKING SLIPS.

WARNING: DO NEVER UNLATCH/OPEN THE TOOL WHILE A PIPE IS SUSPENDED IN THE TOOL; THE PIPE WILL BE LOST!

WARNING: MAKE SURE ALL SLIP SEGMENTS ARE FREE IN THE UP POSITION WHEN LATCHING THE ELEVATOR. IF ANY OF THE SEGMENTS ARE STUCK IN THE DOWN POSITION, THE ELEVATOR MAY NOT CLOSE PROPERLY.

Safety issues automatic Power Slips

WARNING: ENSURE THE CONNECTORS ARE FROM A MALE AND FEMALE TYPE TO PREVENT FAULTY CONNECTIONS.

WARNING: HYDRAULIC ONLY BEFORE ANY MAINTENANCE WORK IS CARRIED OUT, MAKE SURE THAT NO PRESSURE IS APPLIED TO THE EQUIPMENT AND THAT THE CONNECTING LINES ARE DISCONNECTED (IF APPLICABLE).

WARNING: YOU MUST NEITHER ASSEMBLE NOR DISASSEMBLE SLIPS, GUIDES, INSERTS, ETC. WHEN THE TOOL IS PLACED ABOVE THE WELL CENTER.

EG-KONFORMITÄTSERKLÄRUNG

EC DECLARATION OF CONFORMITY



(gemäß Richtlinie des Europäischen Parlaments und des Rates 2006/42/EG über Maschinen; Anhang II, 1. A
und der Richtlinie des Europäischen Parlaments und des Rates 94/9/EG über Geräte zur Verwendung in explosionsgefährdeten Bereichen)
(Directive of the European Parliament and Council 2006/42/EC on machinery; Annex II, 1. A
And the Directive of the European Parliament and Council Directive 94/9/EC on equipment for use potentially explosive atmospheres)

Hiermit erklären wir:
We hereby declare:

Blohm + Voss Oil Tools GmbH
Hermann-Blohm-Straße 2
20457 Hamburg

dass die Maschine:
that the machine:

Bezeichnung:
Designation:

B+V Power Slip 250 Tubefuse

Typ:
Typ:

PS 250-H-TU hydraulisch betätigt (deu.)
PS 250-H-TU hydraulic operated (eng.)

 **II 2G c IIC T3**

Seriennummer / Herstellungs-Nr.:
Series number / manufacturing no.:

727000-H-TU

Verwendungsbeschreibung/Funktion:
Description of use / function:

Der PS-250-H-TU für Tubefuse ist für das Klemmen von Rohren vorgesehen, um diese mit einem maximalem Druck von 270 tn. sh. aufeinander zu pressen. Weitere Angaben zur bestimmungsgemäßen Verwendung mit den Einsatzbedingungen, Beschreibung, die Funktion und weiterführende technische Daten sind in der Betriebsanleitung enthalten.
The PS-250-H-TU for Tubefuse is provided for the clamping of tubes in order to press them together with a maximum pressure of 270 tn. sh. on proper use, including the conditions of use, the description, the function and further technical data are contained in the operating instructions.

In dem ausgeliefertem Zustand und mit dem vertraglich vereinbarten Lieferumfang, unter Einhaltung der nachfolgend aufgeführten Richtlinien und harmonisierten Normen in Verkehr gebracht wird.
In the delivered status and as per the contracted scope of supply is marketed in accordance with the following directives and harmonized market standards.

Der PS 250 Tubefuse entspricht allen einschlägigen und zutreffenden Bestimmungen der

- Richtlinie des Rates 2006/42/EG über Maschinen,
- Richtlinie des Rates 94/9/EG über Geräte zur Verwendung in explosionsgefährdeten Bereichen,
- NORSOK Standard R-002 für Hebegeräte

The PS 250 Tubefuse complies with all relevant and applicable provisions of

- *Council Directive 2006/42/EG on machinery,*
- *Council Directive 94/9/EG of equipment for use in hazardous areas,*
- *NORSOK Standard R-002 for Lifting equipment*

Die technischen Unterlagen nach Anhang VII A wurden erstellt und liegen im Verantwortungsbereich des Leiter Konstruktion bei
The technical documentation as referred to in Annex VII A has been generated and is the Head of Design's responsibility of

Blohm + Voss Oil Tools GmbH
Hermann-Blohm-Straße 2
20457 Hamburg

Das Unternehmen wird vertreten durch Herrn Jens Luthhöft Managing Director.
The company is represented by Mr. Jens Luthhöft, Managing Director.

Gemeldete Stelle, bei der die Unterlagen hinterlegt sind:
The documents are lodged at the following reporting office:

IBExU
Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
D- 09559 Freiberg

Nummer der Prüfbescheinigung: 0637
Identification number of the relevant authority: 0637

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DESCRIPTION

DESCRIPTION

1. DESCRIPTION

General

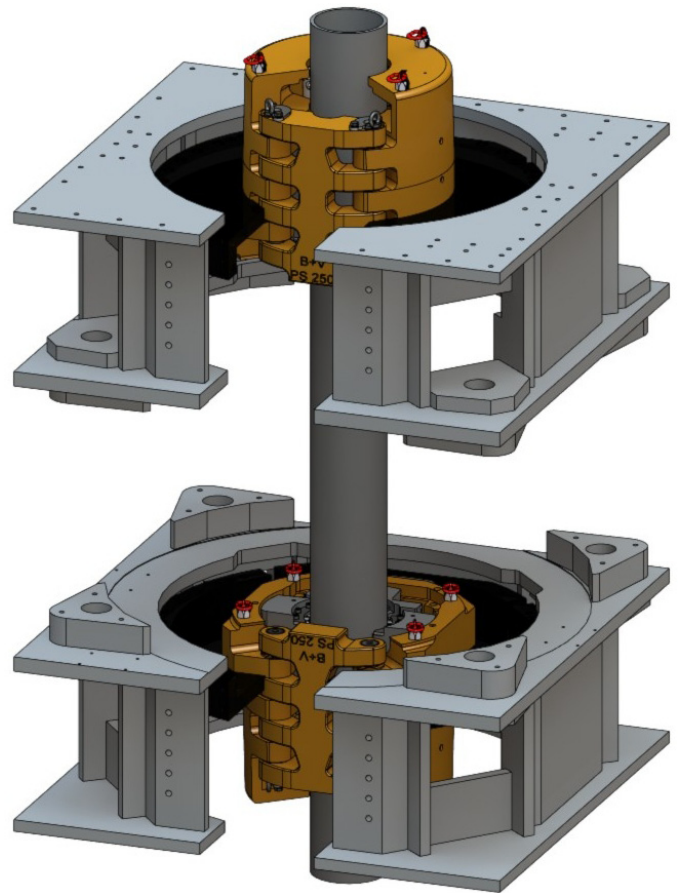
The Blohm+Voss Powerslip PS 250 727000-H-TU (use the same Powerslip for upper and lower position) is rated for 250 short tons. The PS 250 is designed to be installed into the tubefuse fabrication.

Intend of Use

The PS-250 for Tube Fuse is provided for the clamping of tubes in order to press them together with a maximum pressure of 250 sh.

Features

- Rapid changing of pipe sizes by means of Slip Assemblies.
- Material and manufacturing standard in acc. to API 7K
- Central Slip Grease System.
- Hydraulic system is completely integrated into the PS 250 body.
- A hydraulic feedback signal is integrated, which shows that the Slip Assembly has been set.

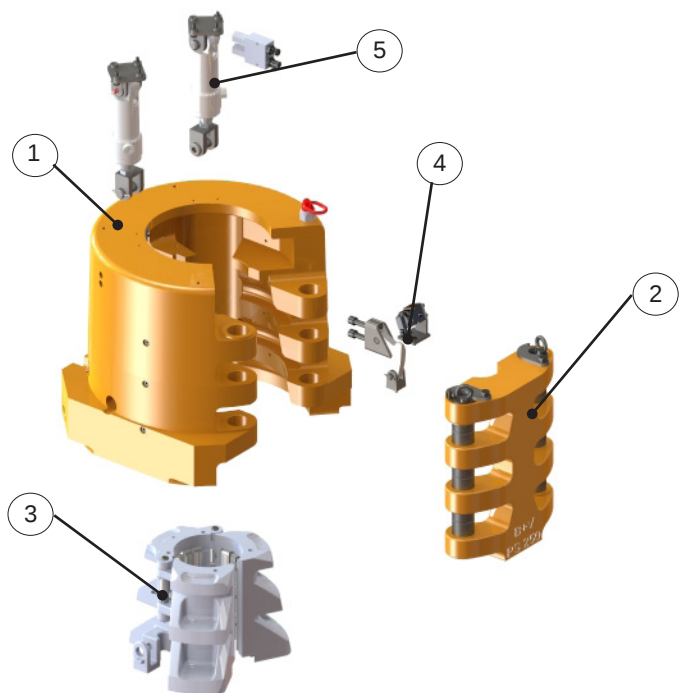


PS 250-H-TU - installed in working position

Main assemblies

The power slips consist of the following main assemblies:

1. Body
2. Door
3. Slip Assembly
4. Connection Assembly
5. Hydraulic Assembly



PS 250-H-TU - Main assemblies

Improper / Unsafe Use

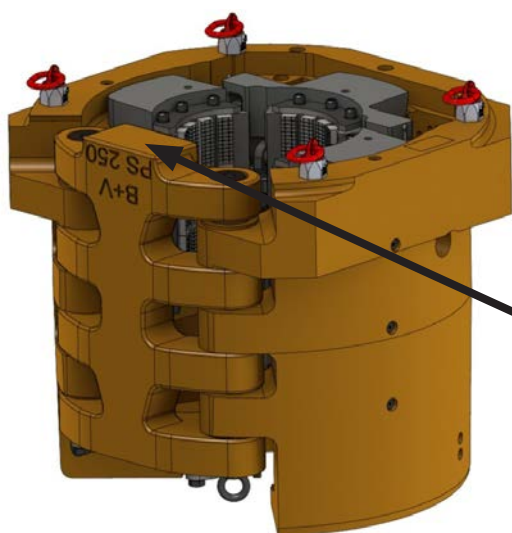
The PS 250 must only be used for the designated purpose.

When using the PS 250, the load of 250 sh tons must never be exceeded.

Limited Warranty

The warranty provided will be void if the Powerslip is either:

1. repaired or serviced by a service facility which was not authorised by Blohm+Voss Oil Tools GmbH.
2. replacement parts not manufactured by Blohm+Voss Oil Tools GmbH are used.
3. modifications were made to the Powerslip which were not approved by Blohm+Voss Oil Tools GmbH.



PS 250-H-TU in lower position

Serial No.	S W L 250 SH Tons	Safe working load
API License No.	P/N: 727000-H-TU	Part No.
	PS 250	
	S/N: XXXXX	
	7K 0039	
	2.3/8" - 7.5/8"	
	06/13	Date of manufacture
	B+V	Manufacturer
	Size	

Identification

The identification area clearly identifies the Powerslip area (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.

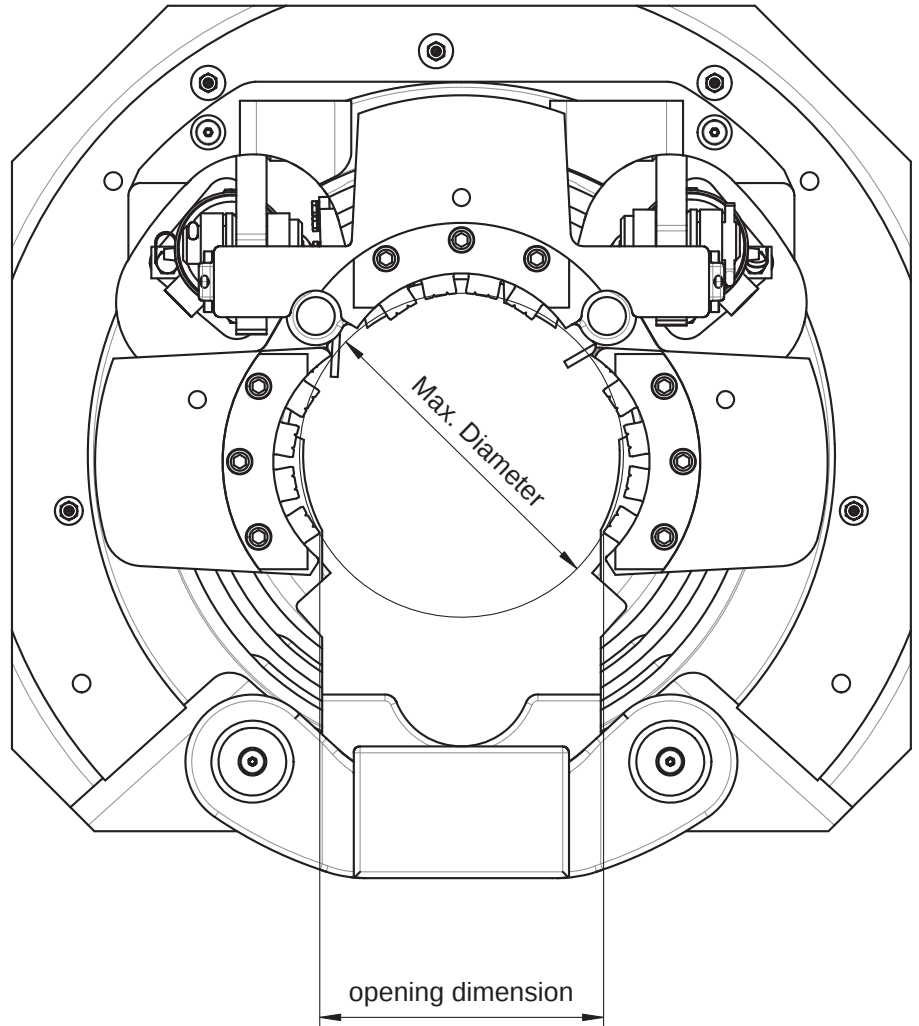
Technical Data

Maximum allowable working load	250 sh tons
Pipe size range (i.e. Casing and Tubing)	2.3/8" to 7.5/8"
Weight PS-250-H-TU w/o Carrier and Slips	1,566 kg / 3452 Lb
Weight Slips for Power Slip	130 kg / 287 Lb
Working pressure	Min 110 bar (1,600 Psi), max 210 bar (3,050 Psi)
Maximum allowed pressure	300 bar (4,350 Psi)
Hydraulic Flow rate	Min 10 l/m (2.5 Gpm), max 20 l/m (9 GPM)
Hydraulic lines for operation	A + B
Hydraulic line for feedback	C
Grease line	G
Minimum required clearness of hydraulic fluid	NAS 9
Temperature working range ambient	- 20° C to + 60° C * - 4° F to 140° F * (on request: -40°C to +60°C / -40°F to 140°F)
Max temp hydraulic fluid	+ 60° C + 140° F

Hook up kit pn 727000-TU-HUK (special for Tube Fuse)

	Available for PS 250
Lift beam traverse	775002-2
3 point Sling for Slip Assembly	755661
1 point Sling Gear	755662
Hose Assembly for Power Slip connection	727008-TU
Service Box for Hook Up Kit	775008
Set of tools	675162
Wire Rotator Tong	675163
Crossbeam Assembly	727049
Tool kit for PS	775820
Grease pump	775810

Opening dimensions



Pipe Size	Slip Assembly	Max. diameter mm / inch	Opening Dimension mm / inch
2.3/8"	3.1/2"	133,2 / 5,24	120,8 / 4,75
2.7/8"	3.1/2"	149,7 / 5,89	135,1 / 5,32
3.1/2"	3.1/2"	161,3 / 6,35	140,5 / 5,53
3.1/2"	4.1/2"	155,5 / 6,12	135,3 / 5,32
4"	4.1/2"	168,8 / 6,64	146,0 / 5,75
4.1/2"	4.1/2"	181,1 / 7,13	151,4 / 5,96
4.1/2"	5.1/2"	182,7 / 7,19	157,0 / 6,2
5"	5.1/2"	195,6 / 7,7	167,1 / 6,58
5.1/2"	5.1/2"	208,8 / 8,2	167,1 / 6,58
6.5/8"	6.5/8"	231,5 / 9,11	177,8 / 7
6.5/8"	7.5/8"	238,1 / 9,37	202,4 / 7,97
7"	7.5/8"	246,8 / 9,72	202,4 / 7,97
7.5/8"	7.5/8"	259,8 / 10,23	202,4 / 7,97

COMMISSIONING

2. COMMISSIONING

Commissioning PS 250-H-TU

Blohm + Voss strongly recommends to accomplish the Power Slip commissioning with the Blohm + Voss Commissioning Service.

Read manual before first use !

OK	☐	Operating personnel is aware of all danger that depends on handling the B+V tool (see manual first) !
----	--------------------------	---

Prior to use of the Blohm+Voss Power Slip following checks must be carried out :

Scope of supply

OK	☐	Cross check of all delivered parts
----	--------------------------	------------------------------------

Hydraulic Characteristics

OK	☐	Operating pressure	110...210 bar (1600...3050 PSI)
----	--------------------------	--------------------	---------------------------------

OK	☐	Volumetric flow	10...20 l/min (2.5...9 GPM)
----	--------------------------	-----------------	-----------------------------

OK	☐	Minimum required hydraulic oil clearness	NAS 9
----	--------------------------	--	-------

Check and Lubrication

OK	☐	Check for correct seating of Door Hinge Pins
----	--------------------------	--

OK	☐	Apply grease to all greasing Points (see manual) until grease is visibly coming out of the bores
----	--------------------------	---

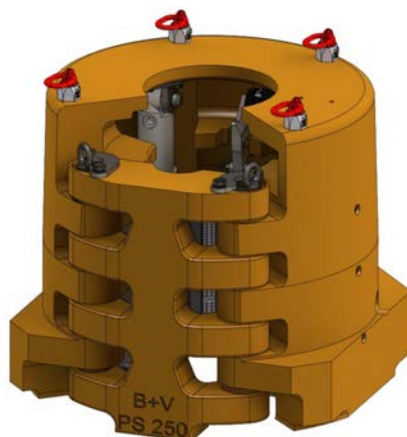
INSTALLATION

3. INSTALLATION

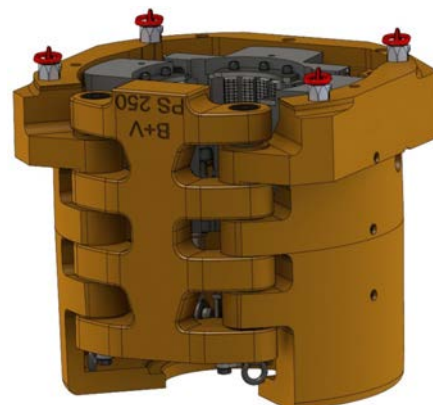
Lifting and transport

Lift the PS with Lifting Eyes and Traverse (see Hook Up Kit)

Additional Sling Gears are available (See Hook Up Kit P/N 727000-TU-HUK).



Lifting Eyes
PS 250-H-TU in upper position



Lifting Eyes
PS 250-H-TU in lower position

Hydraulic System

WARNING: BEFORE START OF WORK WEAR YOUR PERSONAL PROTECTION EQUIPMENT. ESPECIALLY LEAK OIL UNDER PRESSURE CAN CAUSE SEVERE PERSONAL INJURY TO THE EYES.

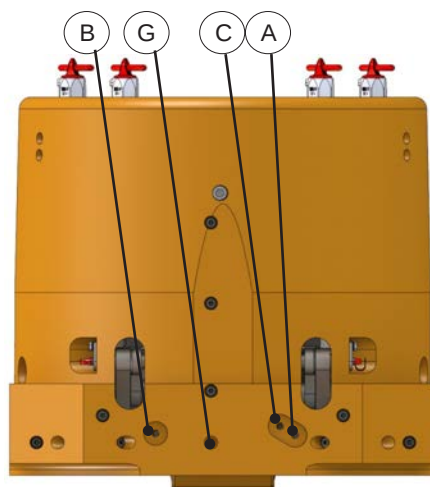
Hydraulic connections

Purging air

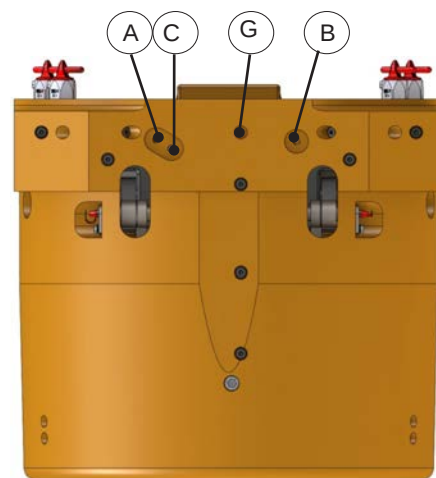
The air in the hydraulic system of a new Power Slip is shop-purged. Be aware that the hydraulic connection hoses (slips up, slips down and feed back signal) should be purged before connecting it to the power slip.

Aligning the Hydraulic Connection

The position of the hydraulic connection must be selected in such a way that no damage can occur to the connecting hoses/tubes due to external influence.



Hydraulic Connections
PS 250-H-TU in upper position



Hydraulic connections
PS 250-H-TU in lower position

Interface Drawing

Pressure

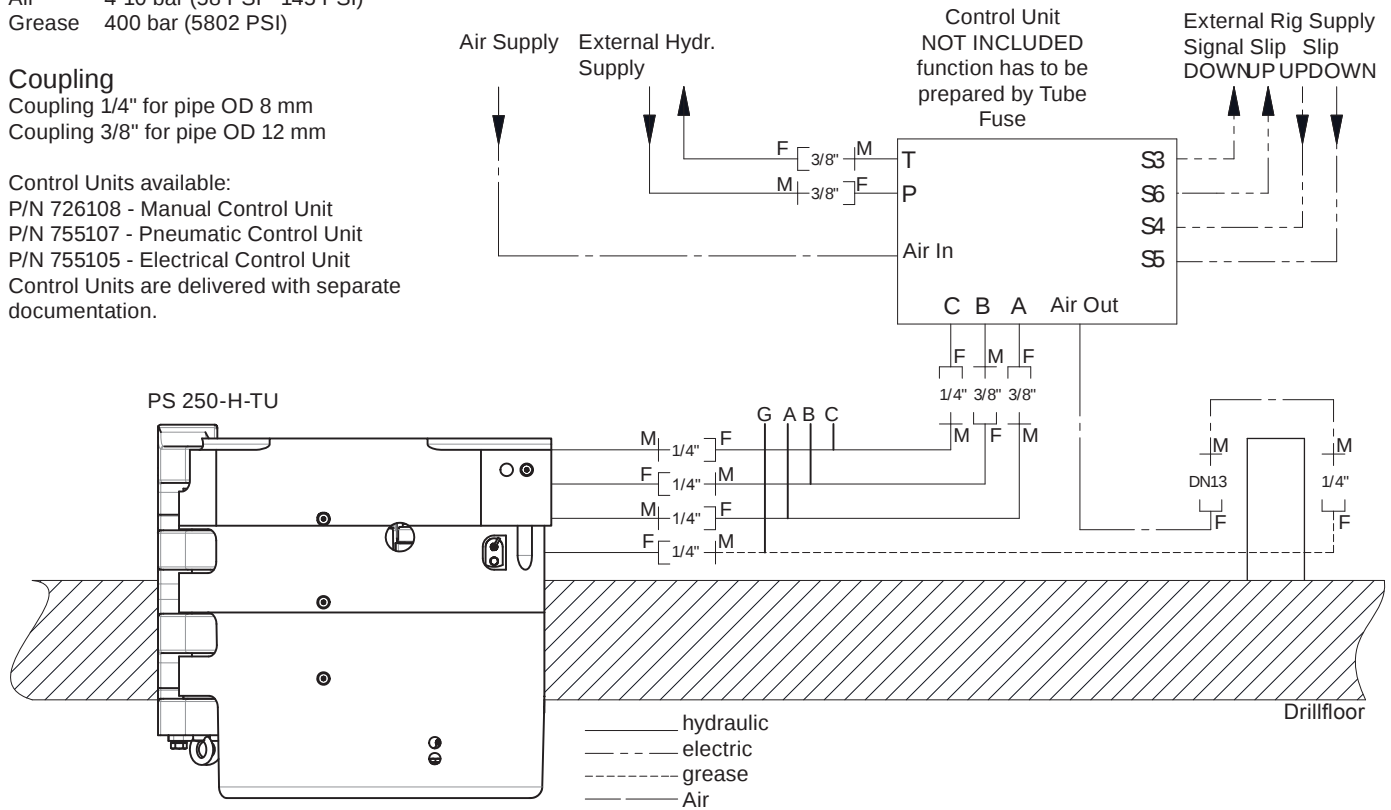
Hydraulic 110-210 bar (1600 PSI - 3050 PSI)
 Air 4-10 bar (58 PSI - 145 PSI)
 Grease 400 bar (5802 PSI)

Coupling

Coupling 1/4" for pipe OD 8 mm
 Coupling 3/8" for pipe OD 12 mm

Control Units available:

P/N 726108 - Manual Control Unit
 P/N 755107 - Pneumatic Control Unit
 P/N 755105 - Electrical Control Unit
 Control Units are delivered with separate documentation.



Legend

A:Hydraulic connection Slip down
 B:Hydraulic connection Slip up
 C:Hydraulic connection Slip Feedback signal
 Slip is down or up
 F:Female coupling
 G:Grease connection
 M:Male coupling
 P:Hydraulic pressure
 T:Hydraulic return
 S3: Electrical Output signal from the pressure switch
 Slip is down
 S6: Electrical Output signal from the pressure switch
 Slip is up
 S4: Electric Input signal for the solenoid valve
 Slip up
 S5: Electric Input signal for the solenoid valve
 Slip down

Functional description of hydraulic system

See hydraulic schematic below.

Set slips

To set the slips the hydraulic connection A is pressurised. Then the slip assembly will be set and can take the load of the pipe. When the slips are fully set a banana sheet (attached to the slip assembly) is actuated. The sheet release an hydraulic signal C to the driller as an indication that the slips are set.

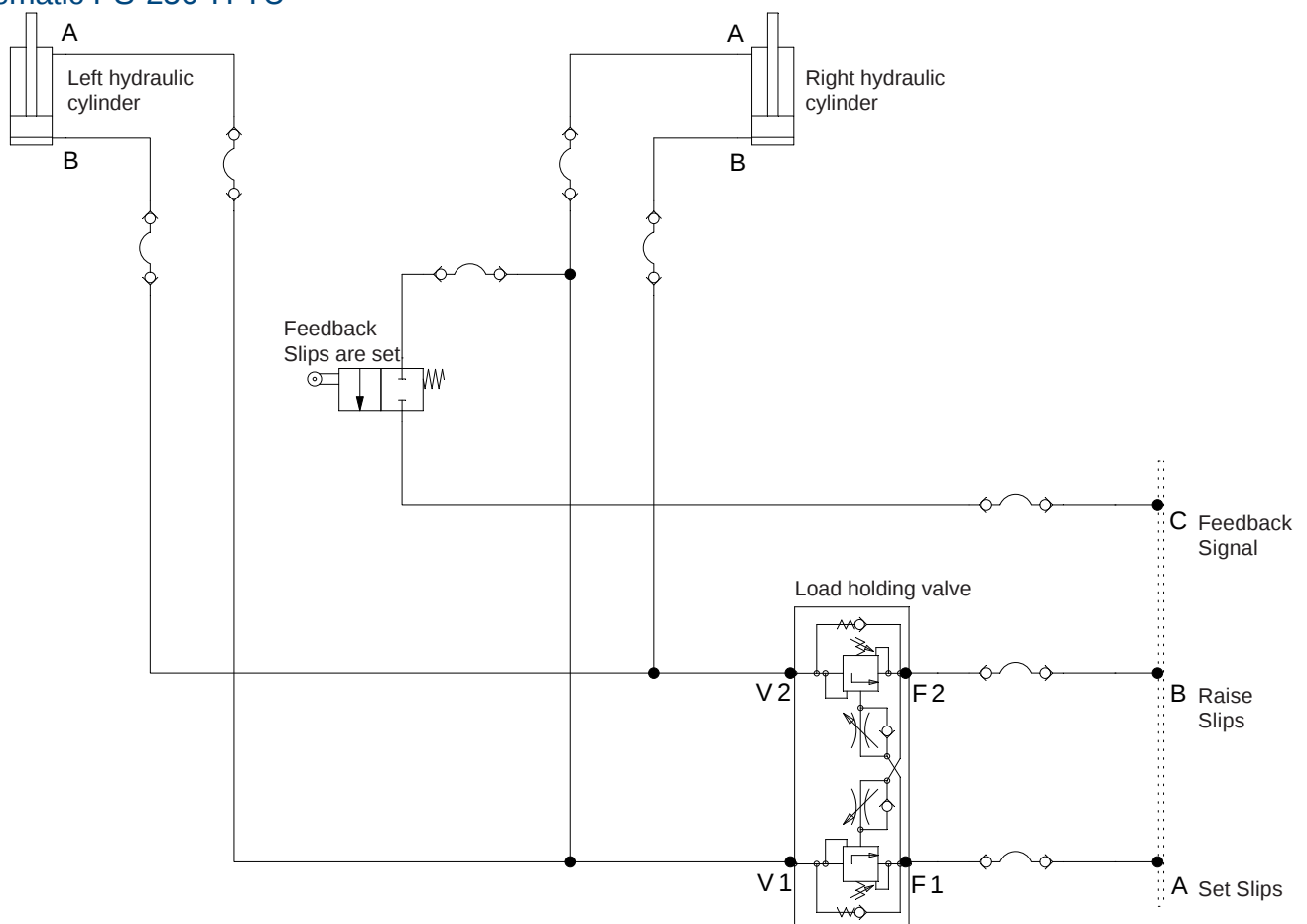
Raise slips

To raise the slips the hydraulic connection B is pressurised. The Slip Assembly raises and releases the pipe.

Feedback

The feedback signal shall only occur when both line A and B are pressurised.

Schematic PS-250-H-TU

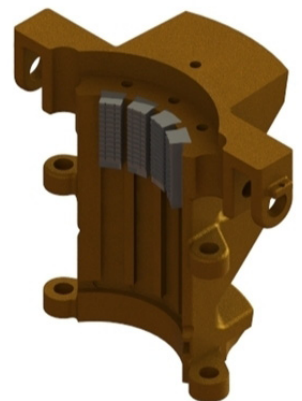
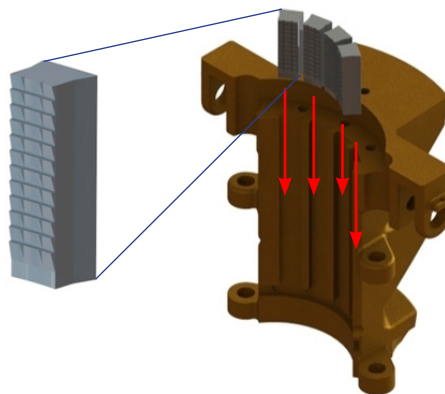


Accurate Position of the insert dies

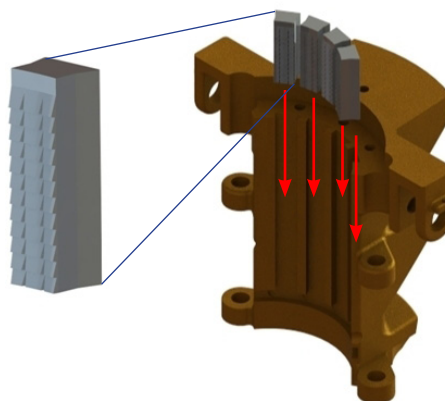
WARNING: DURING THE PROPER HEATTREATMENT OF DIES, THEY BECOME VERY HARD AND SOMEWHAT BRITTLE. WHEN ASSEMBLING SLIPS, ALWAYS WEAR EYE PROTECTION AND NEVER STRIKE THE DIES WITH A HAMMER OR OTHER HARD OBJECT. FAILURE TO OBSERVE THESE SAFETY PRECAUTIONS COULD RESULT IN SERIOUS INJURY TO PERSONNEL.

WARNING: WHEN THE POWER SLIP IS IN THE UPPER POSITION, THE INSERTS MUST BE PLACED THE OTHER WAY ROUND. OTHERWISE THERE WILL NOT BE ANY GRIPFORCE AT ALL AND THE PIPE COULD FALL DOWN.

Lower Power Slip - 727000-H-TU



Upper Power Slip - 727000-H-TU-UP

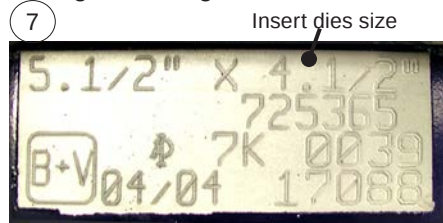
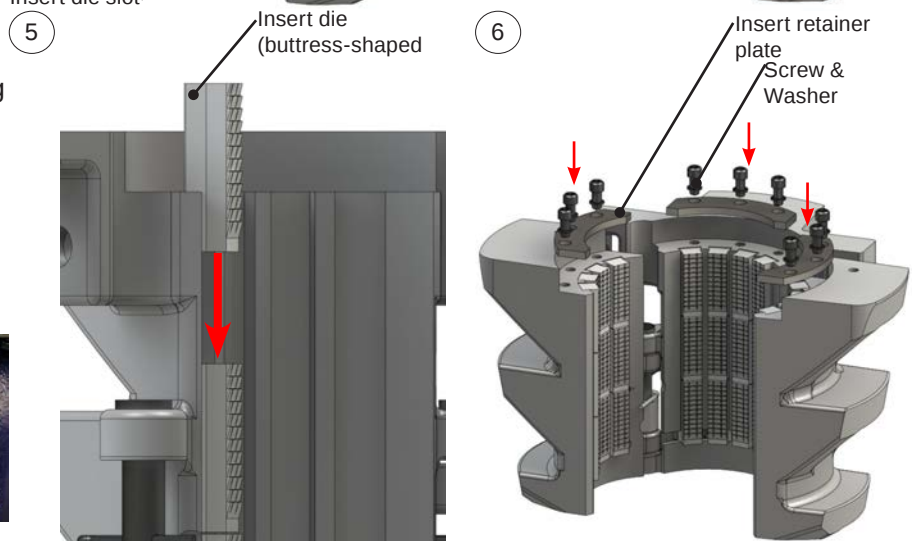
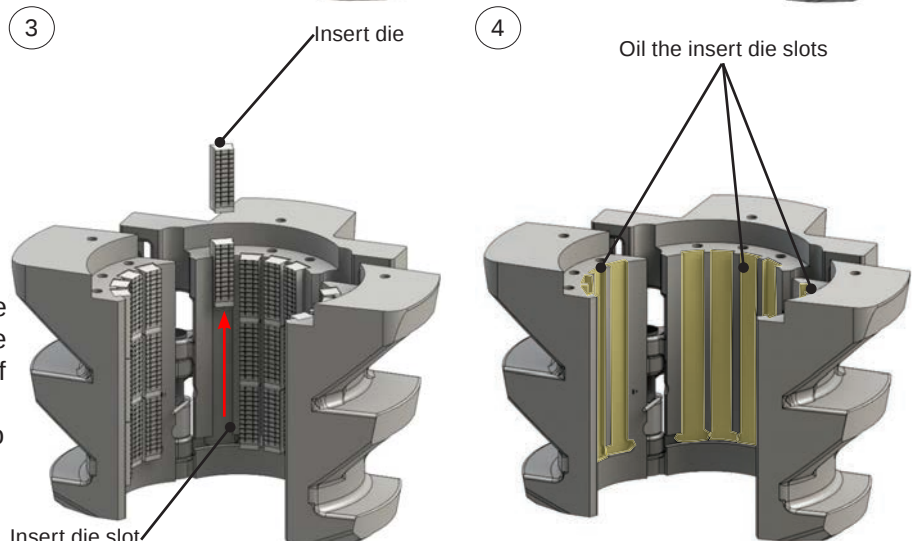
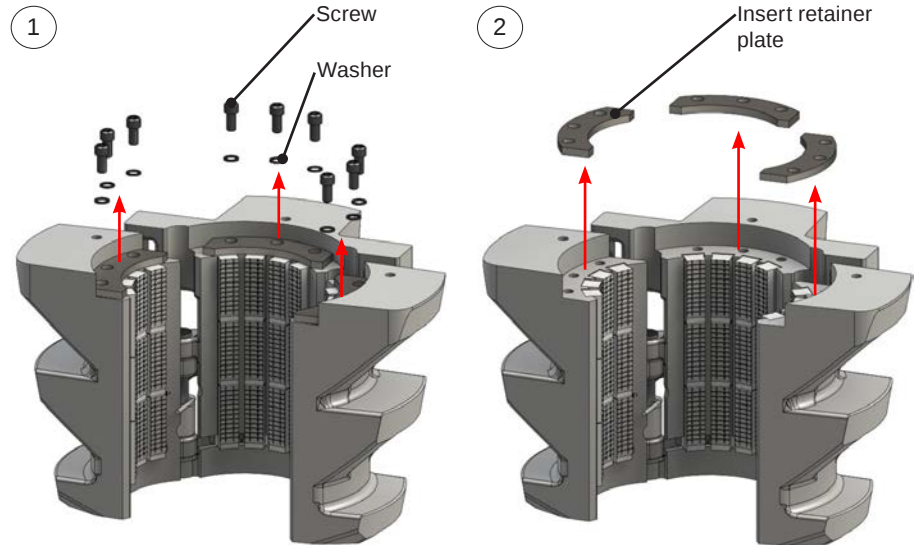


Changing the insert dies

WARNING: DURING THE PROPER HEATTREATMENT 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.

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

1. Unlock and remove the screws and washers.
2. Remove the insert retainer plate.
3. Remove the insert dies.
4. Oil the insert die slots with light machine oil only.
5. Slide the new insert dies into the slots. Take care that the dies are oriented properly (see picture). 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 insert.
6. Install the retainer plate by using the screws and washers.
7. Change the Designation of the slip assembly. The slip assembly must always have the right markings for the inserts.



Slip assembly marking

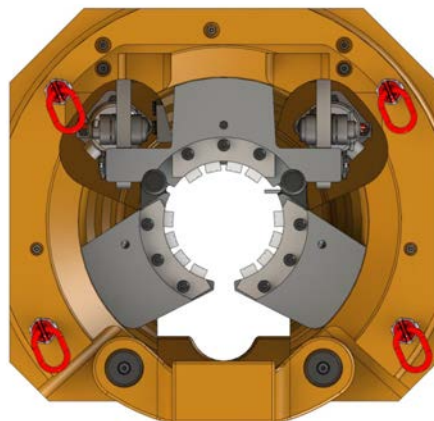
Changing the Slip Assembly PS 250-H-TU in lower Position

WARNING: The POWER SLIP MUST NOT BE INSTALLED INTO THE TUBEFUSE FABRICATION.

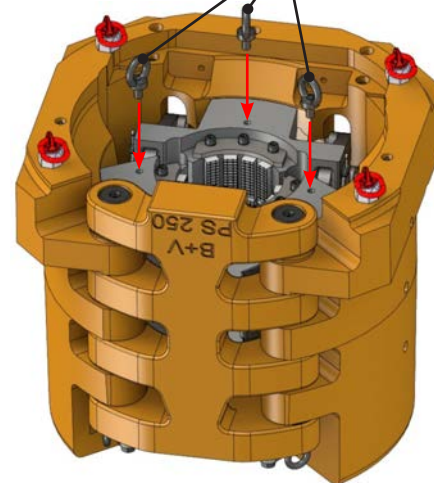
The three slip segments must be removed / installed in one unit. The left and the right segment are connected with the center-segment by means of two bolts.

1. Set the Slip Assembly in closed position.
2. Install three ring bolts (P/N 755402) into the slips. The ring bolts are inside the Tool kit Box (P/N 775820).
3. Attach the lifting device to the ringbolts and set the Slip Assembly to opened position.
4. Lift the Slip Assembly clear by attaching an overhead lifting device.

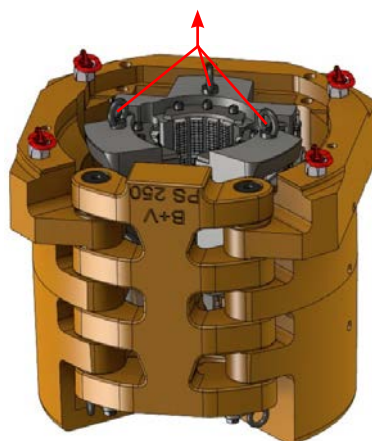
① Slip Assembly is shown in closed position



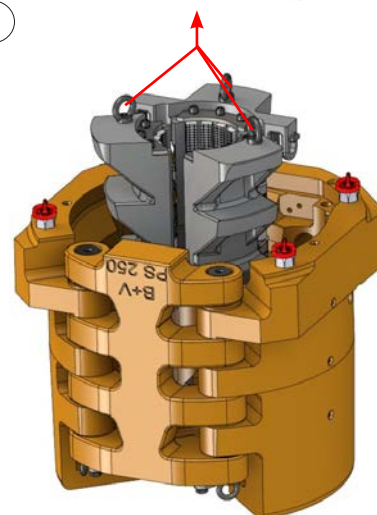
② Ring bolts



③



④



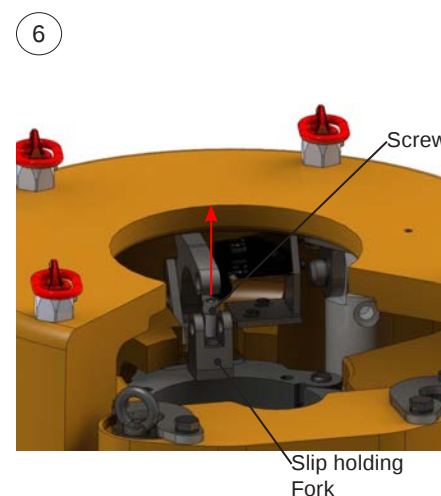
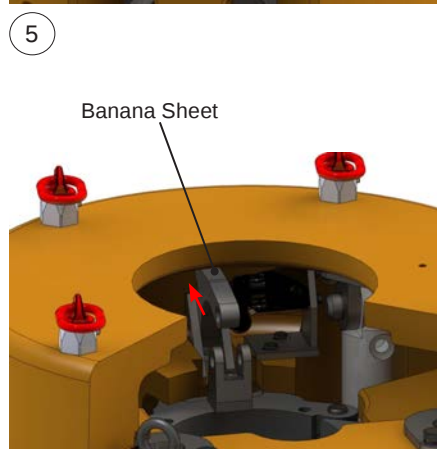
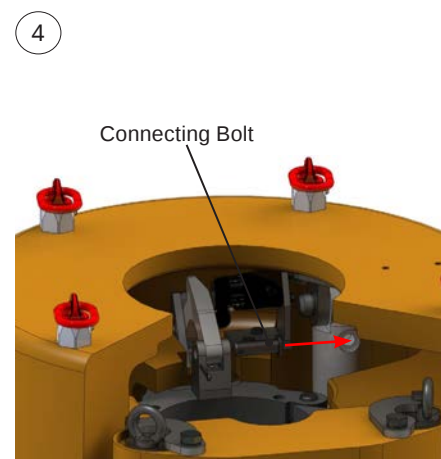
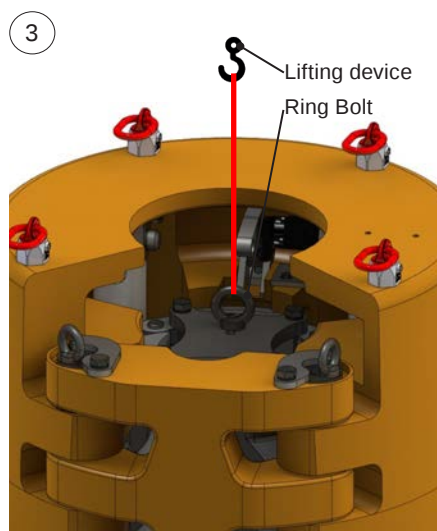
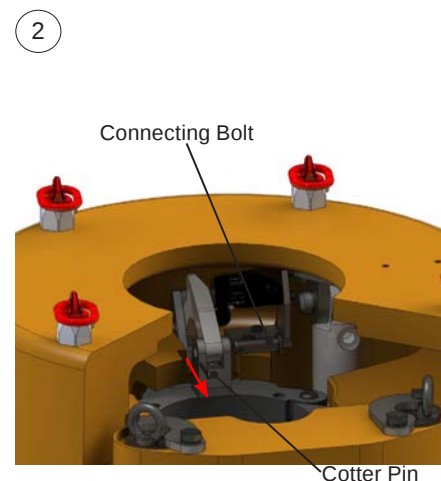
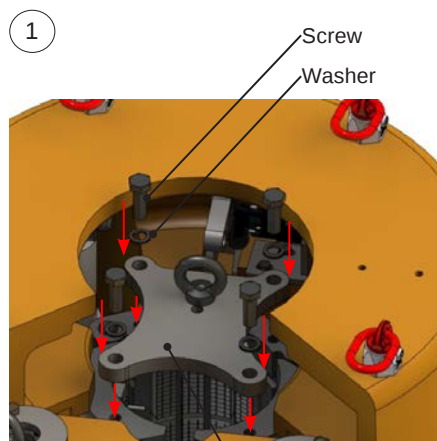
Changing the Slip Assembly PS 250-H-TU in upper Position

WARNING: THE POWER SLIP MUST NOT BE INSTALLED INTO THE TUBEFUSE FABRICATION. TO BE ABLE TO CHANGE OR REMOVE THE SLIPS SAFELY, THIS TASK MUST BE DONE BY TWO OPERATORS.

The three slip segments must be removed / installed in one unit by using the crossbeam (P/N 727048). The left and the right segment are connected with the center-segment by means of two bolts.

Set the slips in closed position.

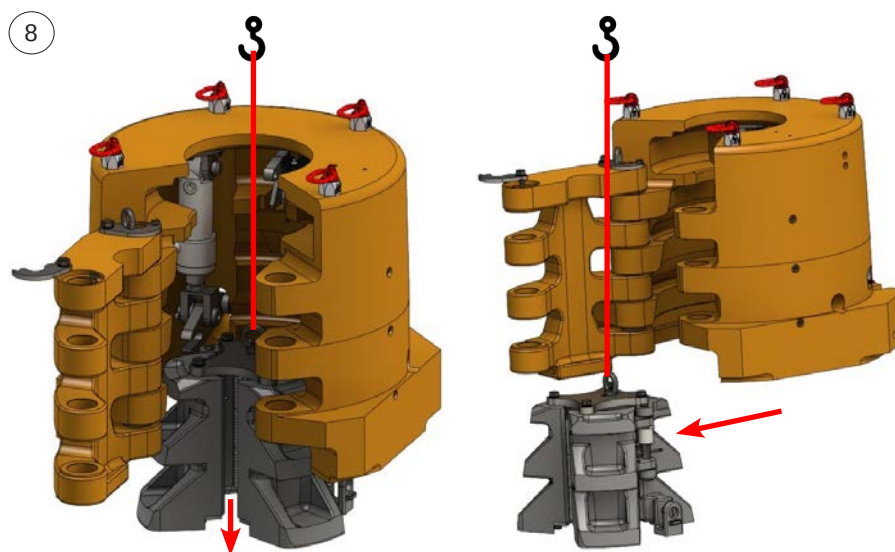
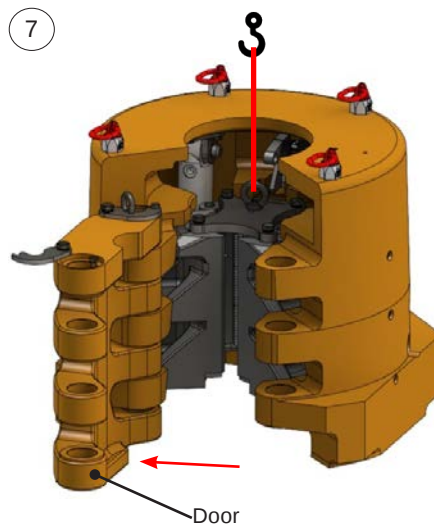
1. Mount the crossbeam assembly to the slip assembly and set the four screws in the boreholes of the slips.
2. Remove the cotter pin (P/N 752314) from the connecting bolt (P/N 727045) of the connecting assembly.
3. In order to remove the connecting bolt, attach an overhead lifting device (crane) on the ring bolt from the crossbeam assembly. Using the crane lift up the crossbeam connected to the slips up to max. 10mm.
4. Remove the connecting bolt.
5. Now move the banana sheet backwards. Make sure the lifting device is holding the slips assembly load.
6. Demount the slip holding fork by removing the screw.



7. Remove the hinge pin (P/N 726702) and open the door.

After opening the door set the slips assembly to the opened position.

8. Lift up carefully the slip assembly down and move it forwards using the lifting device.



Installation PS 250-H-TU

Basically the PS 250 has to be installed as shown in the manual
Before installation into the production line, check if all hoses are in such a position, that none of them will be damaged during installation.

OK	☐	Make sure the required inserts and slip assembly are installed before first use
OK	☐	Door is closed
OK	☐	Make sure the inserts are placed in the right position (see Page no. 19)

Hydraulic Connections

OK	☐	PS 250 is installed into tubefuse fabrication
OK	☐	Control Unit connected to Hydraulic Power Unit (HPU)
OK	☐	PS 250 connected to Control Box
OK	☐	All Hydraulic Lines are connected

Function test

There are two possibilities to carry out the function test:

1. PS 250 standing on the floor

WARNING: Do NOT CARRY OUT THE FUNCTION TEST WITH THE DOOR OPEN

2. PS 250 installed into the tubefuse fabrication

OK	☐	Slip down
OK	☐	Feedback signal: Slips are Set
OK	☐	Slip up

OPERATIONS

4. OPERATIONS

WARNING: Do NOT TOUCH THE PS DURING OPERATION.

WARNING: NEVER RAISE THE SLIPS WHEN THE PIPE LOAD IS STILL SUSPENDED BY THE SLIPS.

Safety

1. Make sure that ALL hydraulic lines are isolated before any work is carried out in the PS.

Operation

1. Check slips are set on correct section of the pipe. Set the PS before releasing the elevator. The PS is set when the slips down feedback signal comes on.
2. Place the PS in the rotary table/tubefuse using all 4 lifting eyes and the lifting bracket.
3. Connect all hydraulic equipment and check correct functioning of the tool.
4. With the pipe string being suspended by the PS slips, make up or break the upper stand or joint, and handle it.
5. Set the slips of the PS and then release the elevator.

Removing the PS when pipe is in the hole

WARNING: LIFT THE PS OUT OF THE ROTARY TABLE/TUBEUSE ONLY WITH THE 4 WAY LIFTING SLING WITH THE LIFTING BRACKET.

Removing the PS from drill pipe (in rotary)

1. Take the load from the slips
2. Raise the slips
3. Depressurize the PS hook up hoses
4. Depending on the pipe size, if needed. remove the insert carrier
5. Remove the removable hinge pin from the PS door
6. Lift the PS from the rotary table by using the four way lifting bracket
7. Open the PS door
8. Move the PS away from the pipe / well center

Connecting and disconnecting of the hydraulic hoses

WARNING: BE CAREFUL WHEN DISCONNECTING HYDRAULIC HOSES. MAKE SURE PRESSURE IS OFF THE HOSES AND THE WEIGHT OF THE STRING CANNOT GENERATE PRESSURE

Dis-connection hoses in slips up position

1. Set PS in neutral position
2. Disconnect Quick Disconnects.

Handling the slip assembly during operation

WARNING: THE SLIP ASSEMBLY SHOULD NEVER BE RAISED UNDER LOAD.

WARNING: IF THE SLIP ASSEMBLY IS SET THE PS CAN BEAR THE LOAD OF THE PIPE.

WARNING: BEFORE RAISING THE SLIP ASSEMBLY, MAKE SURE THAT THE ELEVATOR IS CLOSED AND SUSPENDS THE WEIGHT OF THE PIPE.

WARNING: NEVER OPERATE THE SLIP ASSEMBLY WITH THE DOOR OPEN.

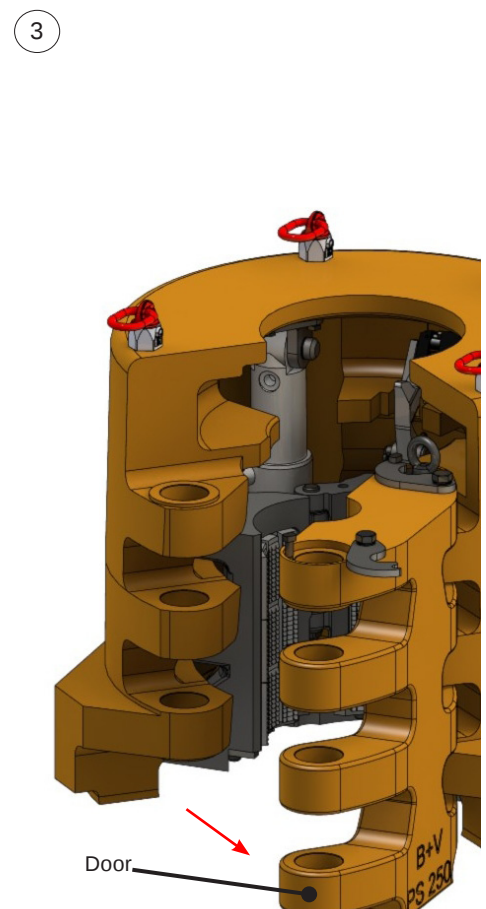
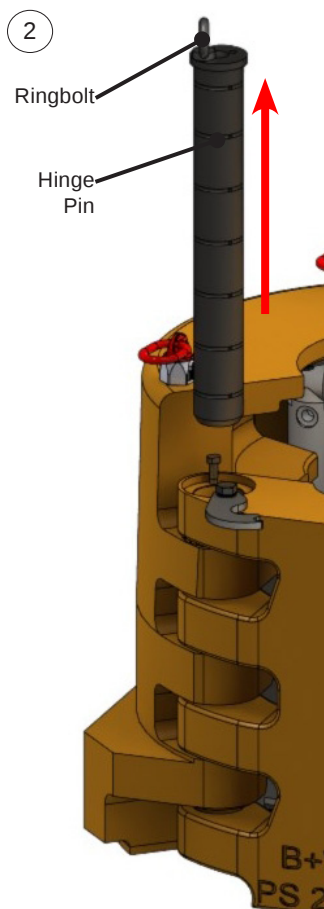
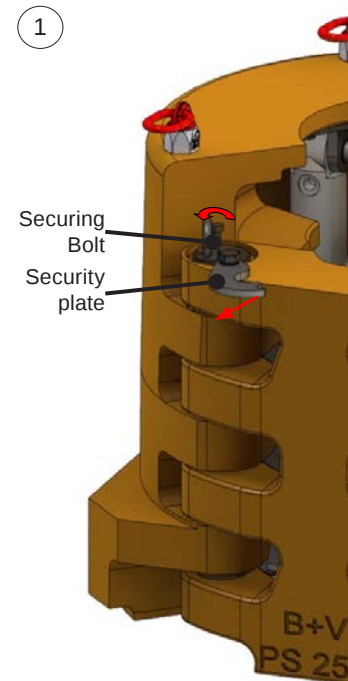
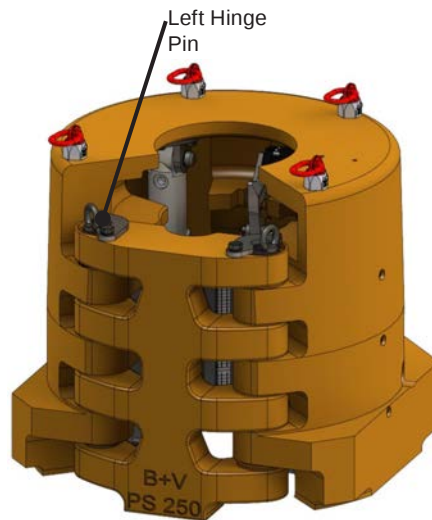
WARNING: NEVER SET THE SLIPS AS LONG AS THE ELEVATOR/TOP DRIVE IS STILL LIFTING OR LOWERING THE PIPE.

(Emergency) opening the door

Unlock the left (or the right) Hinge Pin

1. Unfasten the Securing Bolt and swing the Security Plate out.
2. The Door Hinge Pin must be lifted (use a crane with the ringbolt) completely out of the Power slip.
3. Open the Door.

To close the Door do the same operating steps in reverse order.



MAINTENANCE & INSPECTION

5. MAINTENANCE AND INSPECTION

General

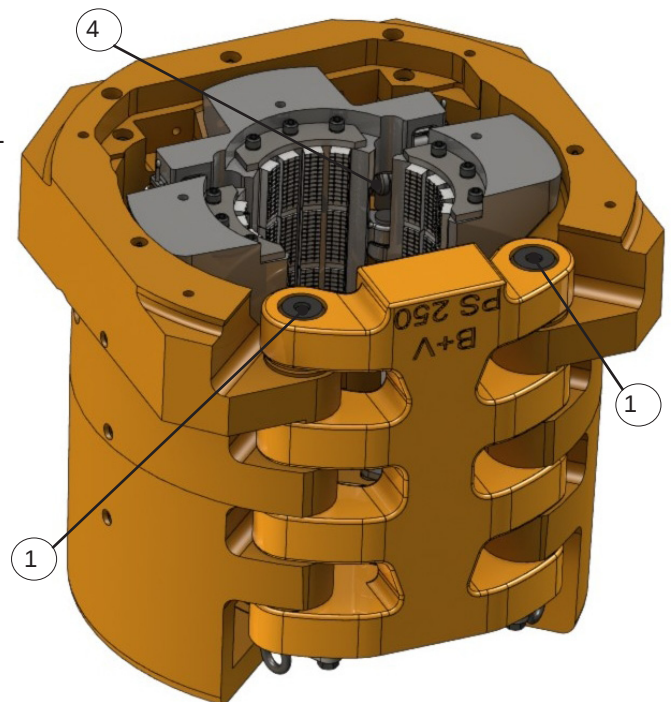
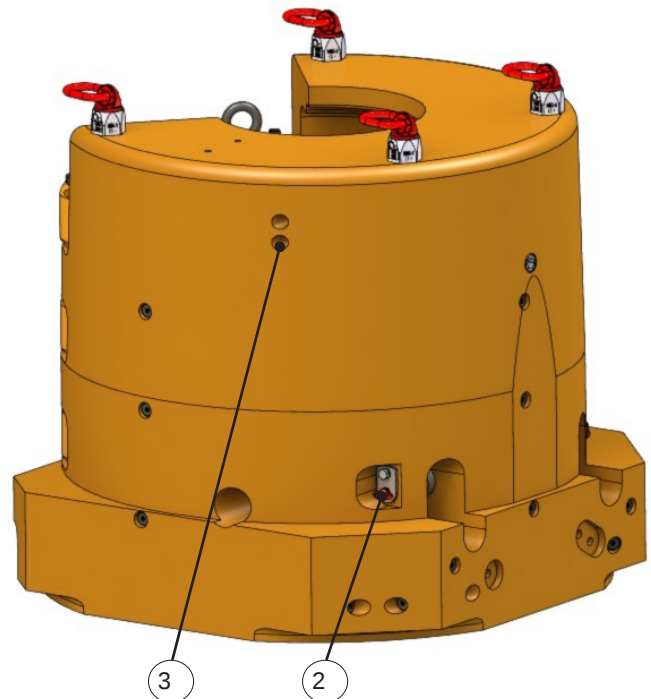
If cracks, excessive wear etc. is recognised, contact Blohm + Voss Repair GmbH or an authorised service company. Weldings of the castings should be done only by Blohm + Voss Repair GmbH or an authorised service company in according to Blohm + Voss welding procedure.

A regular preventative maintenance program should be established for the Power Slip PS 250-H-TU. These written maintenance procedures should be given to the crew or maintenance personnel. Care should be taken, that instruction plates and warning labels are not missing, damaged or illegible.

WARNING: ALWAYS TURN OFF THE HYDRAULIC POWER UNIT, DISCONNECT THE HYDRAULIC LINES AND BLEED OUT ALL PRESSURE BEFORE LUBRICATING THE POWER SLIP. FAILURE TO DO SO MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO THE EQUIPMENT.

Lubrication and Central-Grease-System

The PS 250-H-TU includes a central grease system. The slip assembly and the bolts for the feedback signal are supplied with grese by a nozzle system. For the correct central greasing a separate grease line is required to be connected to the PS according to the connection schematic (see chapter "installation").



Manual lubrication

The PS should be greased for a minimum of 15 seconds after a maximum of 30 cycles. Additional lubrication is needed also for every time the pipe is suspended for over 1 hour and when cementing.

Grease the following areas:

- (1) Lubricate the door hinge pins on both sides
- (2) Lubricate the Yoke bolts on both sides.
- (3) Lubricate the Lower cylinder bolts for the hydraulic cylinders on both sides.
- (4) Lubricate the Upper cylinder pin on both sides.

Do not apply grease to the following areas:

- back side of inserts
- Inside of slips (contact area of the insert carrier)

Greasing Points PS 250-H-TU

GREASE DAILY



Grease Pump (Part No. 775810)

Grease daily

All greasing points, which are labelled "Grease Daily", must be greased at least once a day. It can be necessary to carry this out more often depending on use.

Grease quality

In order to achieve efficient greasing even at different environmental temperatures, we recommend the following grease types should be used (obtainable from Blohm + Voss Repair GmbH): Low-Viscosity grease

Type AVIATICON Grease XRF
NLGI 0

Alternatively; use 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

For higher ambient temperature up to 30° Celsius / 86° Fahrenheit we recommend to use NLGI 2

The use of of other grease as described may lead to malfunctioning and damage.

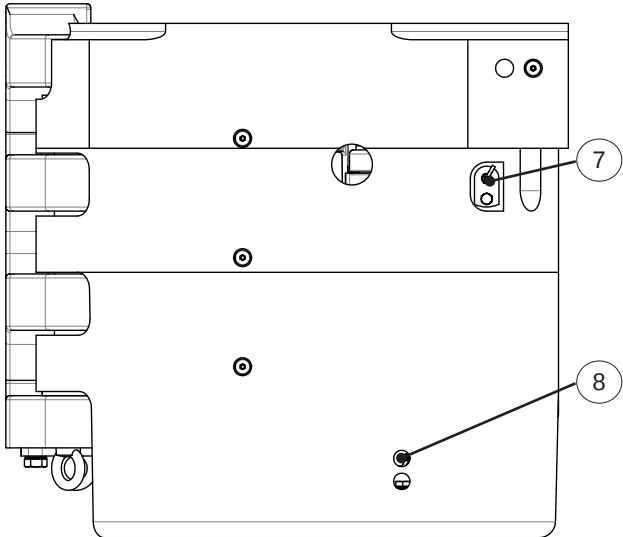
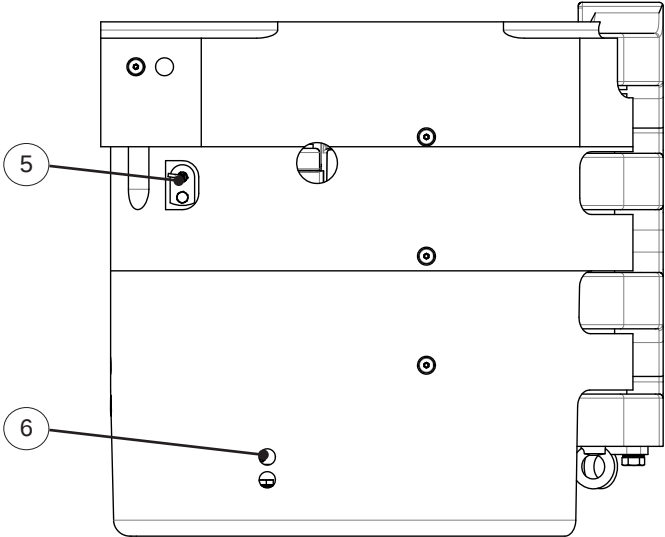
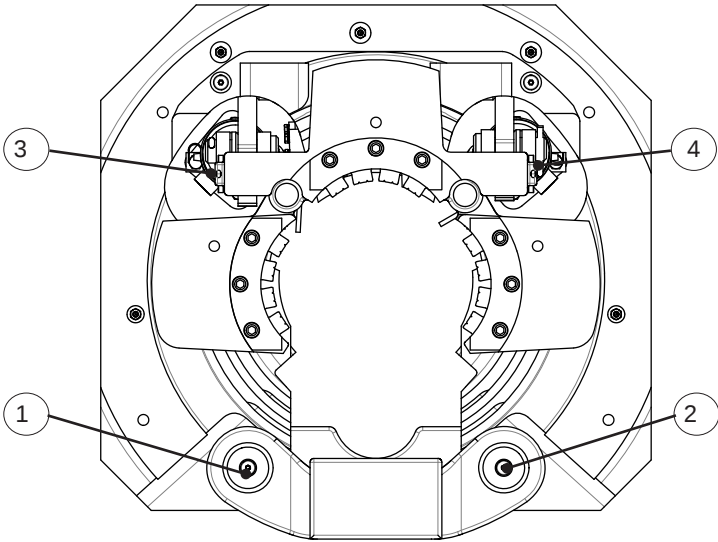
WARNING: Do NOT USE ANTI-SEIZE COMPOUND FOR LUBRICATION OF THE POWER SLIP.

Lubrication check list PS-250-H-TU

Greasing Points:

Pos.	Greased	Location
1	☐	Door
2	☐	

Pos.	Greased	Location
3	☐	Left and Right Hand Cylinder Bolts
4	☐	
5	☐	
6	☐	
7	☐	
8	☐	



Inspection categories acc. to API RP 8B

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 of part, 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.

Category II

This is Category I inspection plus further inspection for corrosion, deformation, loose or missing components, deterioration, proper lubrication, visible external cracks, and adjustment.

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

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)

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.

Procedure

- 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)

Frequency

Periodic inspection

The recommended schedule for inspection of Power Slips:

Daily:	I
Weekly:	II
6 Monthly:	III
2 Year:	IV

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
- re manufacture

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 on stuck pipes and/or operating at extreme low temperatures) <-20° C (<-4° F)

Inspection

A thorough inspection should be carried out periodically (every 3 months) or as special circumstances may require. Before starting an inspection disconnect hydraulic system and remove all foreign materials (dirt, paint, grease Oil, scale, etc.) from surface by a suitable method. After a field inspection, it is advisable to record the extent of testing and testing results. Conduct the periodic or critical load inspection in the field by the crew with the supervisor. If cracks, excessive wear etc. is recognized, contact Blohm + Voss Repair GmbH or an authorized service company.

Inspection of Hydraulic System

Check for leakage every day. Should internal or external leakage reach an unacceptable high level, contact Blohm + Voss Repair GmbH or an authorized service company.

Critical Load Inspection

Critical loads may occur. For example: impact loads such as jarring, pulling on stuck pipe, etc. If critical loads occurred unexpectedly, conduct the inspection immediately.

Dismantling Inspection

Generally, when the equipment returns to base, warehouse, etc. Carry out the tool inspection, immediately. Furthermore, control it prior to its being sent on the next job.

- The tool should be dismantled and inspected in a suitably equipped facility for excessive wear, cracks, flaws or deformations.
- Corrections should be made in accordance with recommendations which can be obtained from Blohm + Voss Repair GmbH.
- Weldings at the castings should be done only by Blohm + Voss Repair GmbH or an authorized service company in accordance to Blohm+Voss welding procedure.
- When need is shown in a field inspection, dismantle the tool and arrange an inspection in a suitably equipped facility.
- Springs should be carefully visually inspected for excessive wear and obvious weakness.

Inspection check lists

CHECK LIST FRONT PAGE

TYPE OF EQUIPMENT

SERIAL NUMBER

PART NUMBER

SUPERVISOR

DATE OF INSPECTION

INSPECTION CATEGORY

PLACE OF INSPECTION

Check List Category I

(During operation - Power Slip is placed in the Tubefuse fabrication)

GENERAL

DESCRIPTION	CHECKED	SIGNATURE
1 Complete front page of check list for the records	OK	
2 Check for correct size of slips and inserts	OK	
3 Check correct function of Slips	OK	
4 Check function of feedback signal (slips set / raised)	OK	
5 Check function of grease system	OK	
Remarks		

CHECK FOR LOOSE ITEMS, ESPECIALLY FOR:

DESCRIPTION	CHECKED	SIGNATURE
1 Insert retainer screws	OK	
2 Lifting eyes for Power Slip	OK	
3 Blind screws in the Body	OK	
Remarks		

CHECK FOR CRACKS, ELONGATION, DAMAGE AND CORROSION, ESPECIALLY FOR:

DESCRIPTION	CHECKED	SIGNATURE
1 Power Slip Body	OK	
2 Lifting eyes for Power Slip	OK	
Remarks		

HYDRAULIC

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

SUPERVISOR

DATE

Check List Category II

(Power Slip is out of Tubefuse fabrication)

GENERAL

DESCRIPTION	CHECKED SIGNATURE
1 Complete front page of check list for the records	OK
2 Check for correct size of slips, inserts	OK
Check correct function of Slips:	
3 Set Slips cycle:	OK
1. Set Slips	
3. Release Slips	
4 Check function of feedback signals (slips set / raised)	OK
Remarks	

CHECK FOR LOOSE ITEMS, ESPECIALLY FOR:

DESCRIPTION	CHECKED SIGNATURE
2 Lifting eyes for Power Slip	OK
3 Crossbeam assembly	OK
4 Securing of Door Assembly	OK
5 Fixation of Hydraulic Cylinder	OK
6 Fixation of Hydraulic Hoses below Cover Assembly	OK
Remarks	

CHECK FOR CRACKS, ELONGATION, DAMAGE AND CORROSION, ESPECIALLY FOR:

DESCRIPTION	CHECKED SIGNATURE
1 Power Slip Body – Hinges of Hydraulic Cylinder	OK
2 Power Slip Body – Outside Body surface / contact areas to rotary table	OK
3 Lifting eyes for Power Slip	OK
4 Crossbeam assembly	OK
5 Slip Assembly – Check condition of Insert Retainer Plates and Screws	OK
6 Slip Assembly – Check teeth of insert dies	OK
7 Slip Assembly – Check load recess at bottom	OK
8 Slip Assembly – Hinges for Hydraulic Cylinder	OK
9 Slip Assembly – Hinges and bolts between Center/Left/Right-segments	OK
10 Slip Assembly – Load recess at bottom (Insert dies are removed)	OK
Remarks	

GREASING

DESCRIPTION	CHECKED SIGNATURE
1 Check that grease system and grease points get grease to all needed areas (as far as observable) - especially for:	OK
2 Slip Assembly – Upper, lower and yoke bolts	OK
3 Slip Assembly - back side	OK
4 Door Assembly – Hinges at Door and Body	OK
Remarks	

HYDRAULIC

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

REMARKS

SUPERVISOR

DATE

Check List Category III

(Power Slip is out of Tubefuse fabrication, Slip Assembly is disassembled)

USE CHECK LIST OF CATEGORY II WITH FOLLOWING ADDITIONAL ITEMS:

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

NDT - INSPECTION		
1	NDT all critical areas with die penetrant	OK

REMARKS

SUPERVISOR

DATE _____

Check List Category IV

(Power Slip is out of Tubefuse fabrication, Slip Assembly is disassembled)

USE CHECK LIST OF CATEGORY III WITH FOLLOWING ADDITIONAL ITEMS:

HYDRAULICS			CHECKED	SIGNATURE
1	Change all hydraulic hoses and fittings	OK		
2	Check condition of hydraulic valves and replace if necessary	OK		
3	Check condition of hydraulic pipes and replace if necessary	OK		

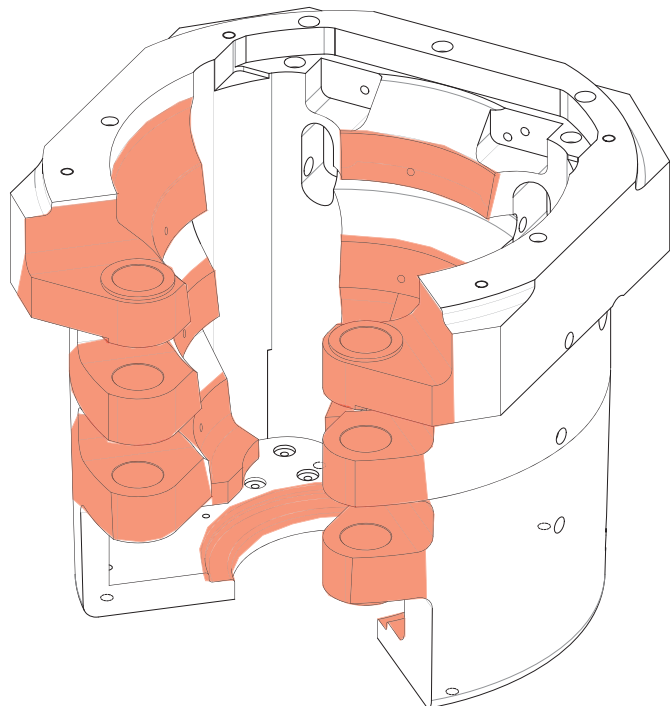
REMARKS

SUPERVISOR

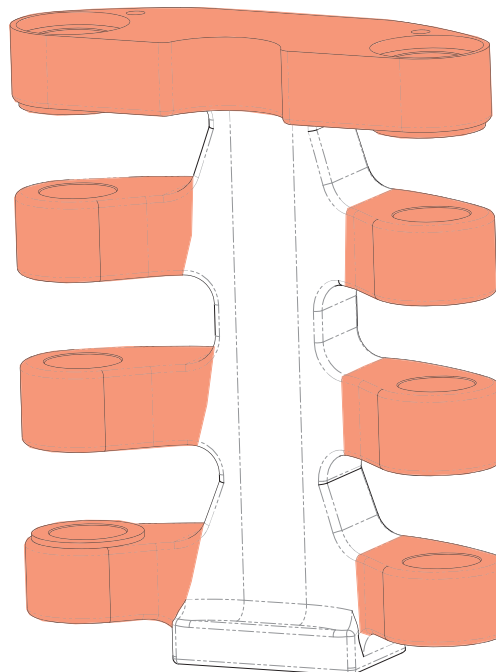
DATE

Critical Areas PS-250-H-TU

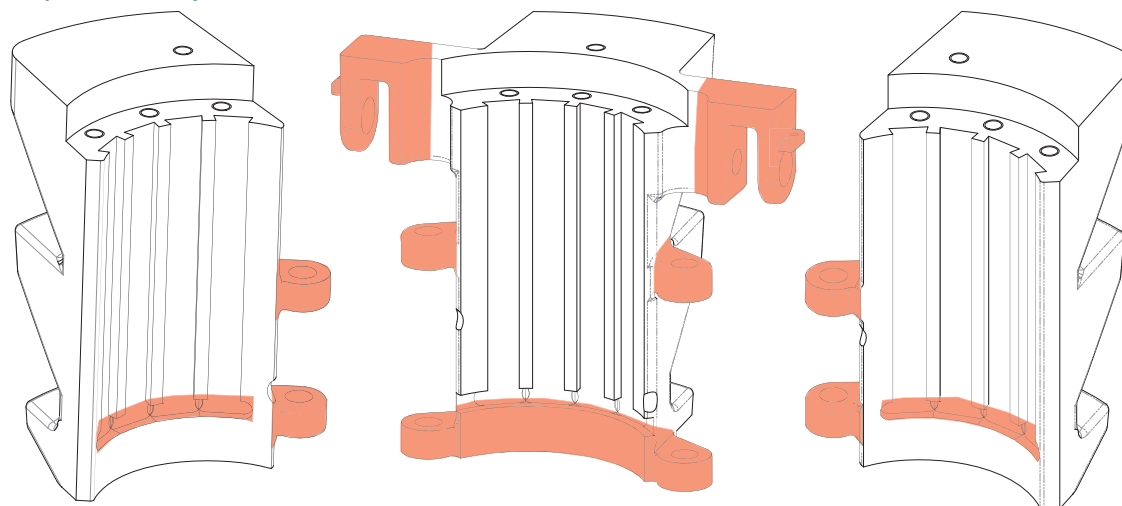
Body PS 250-H-TU



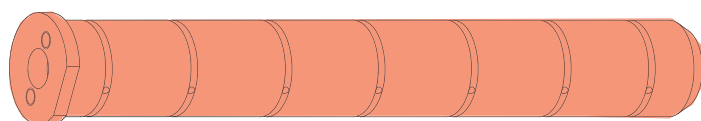
Door PS 50-H-TU



Slip Assembly PS 250-H-TU



Hinge Pin



Lifting Eye



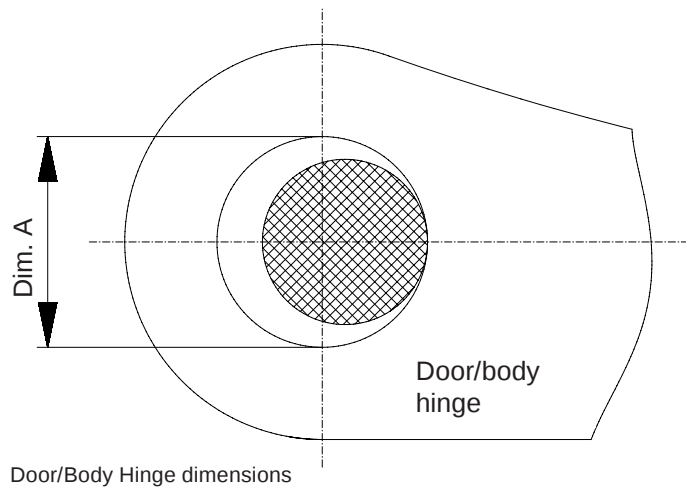
Wear data criteria

Bore of Door and Body Hinges PS 250

	Dim. A
Dimension worn max:	66,120 mm
Dimension new max:	65,106 mm

Door Hinge Pin

Hinge pin min dia new:	64,804 mm
Hinge pin min dia worn min:	64,804 mm

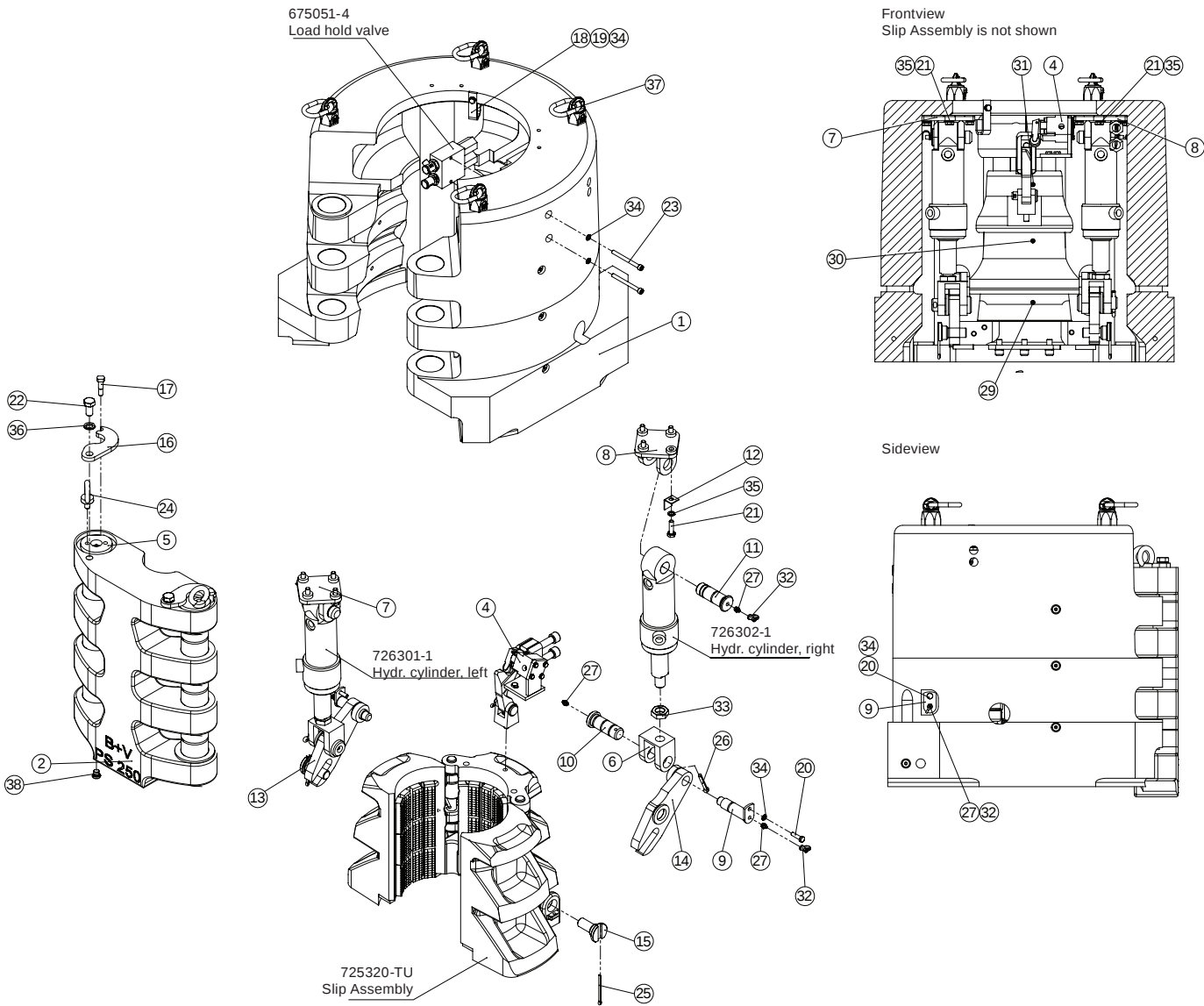


DRAWINGS & SPARE PARTS

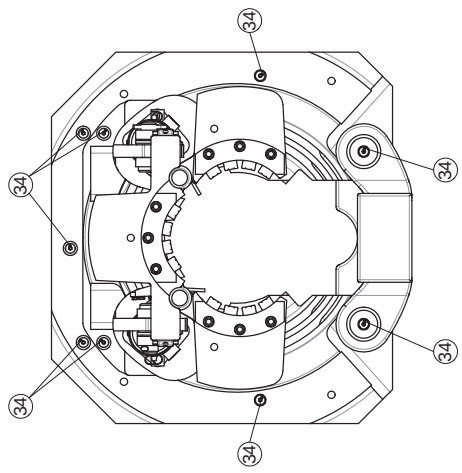
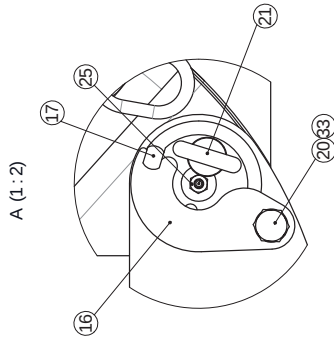
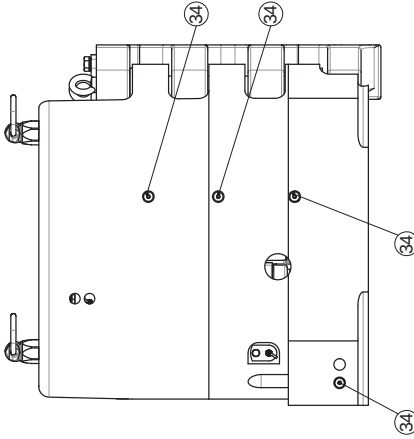
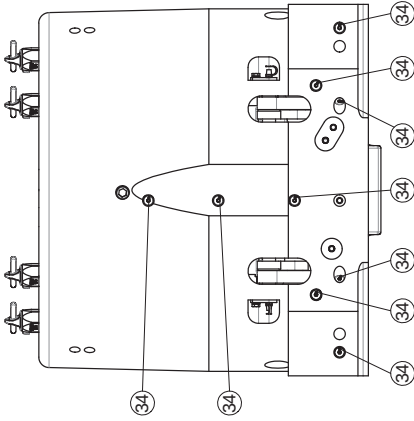
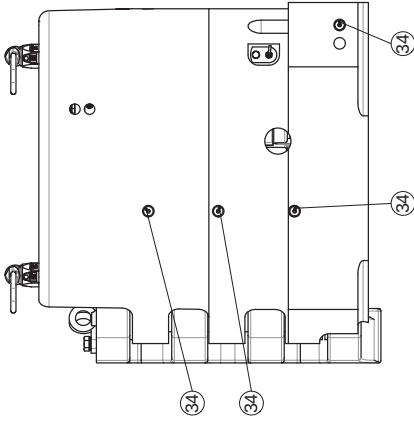
DRAWINGS

6. DRAWINGS AND SPARE PARTS PS 250-H-

727000-H-TU PS 250 for Tubefuse



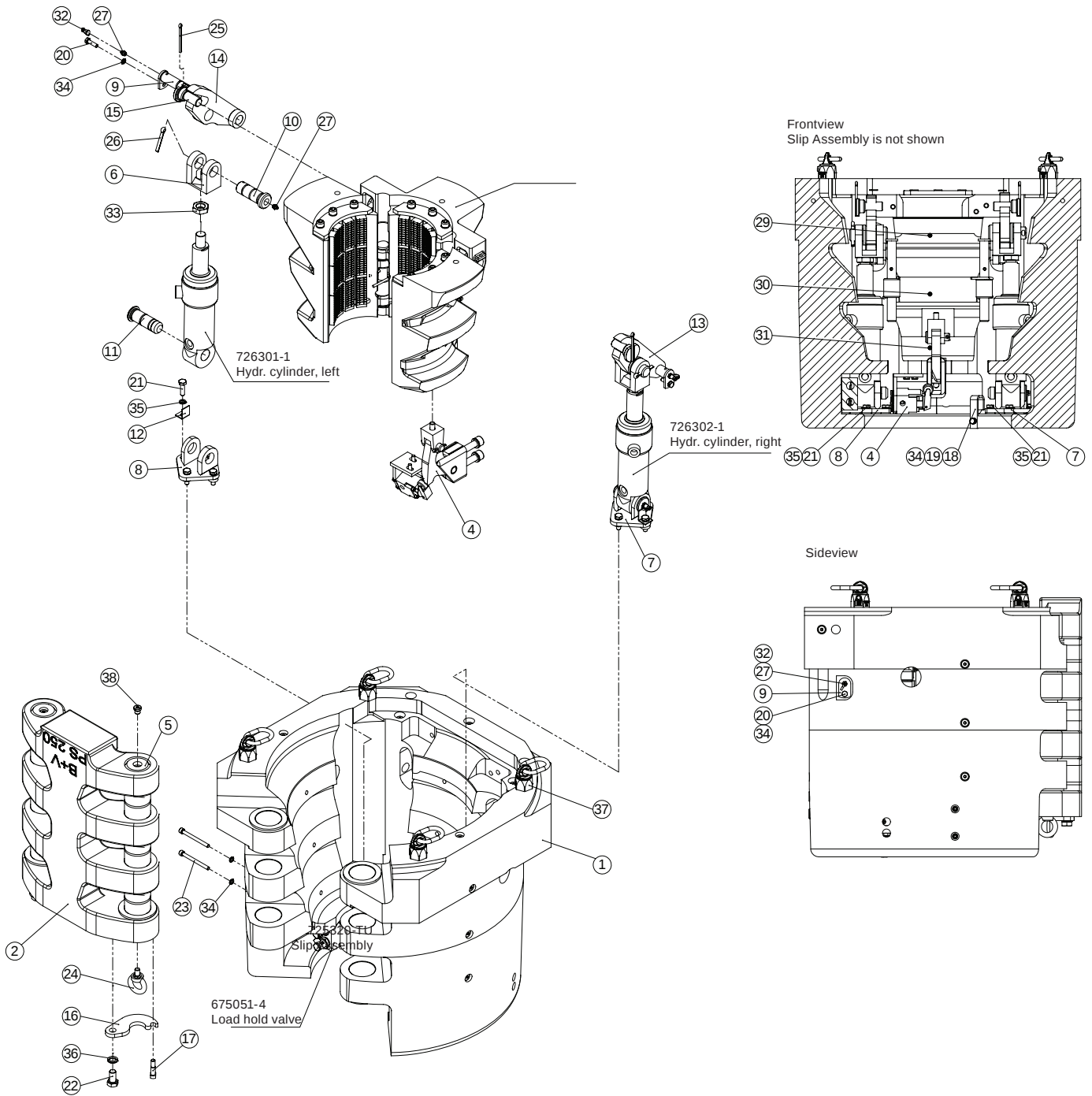
727000-H-TU PS 250 for Tubefuse



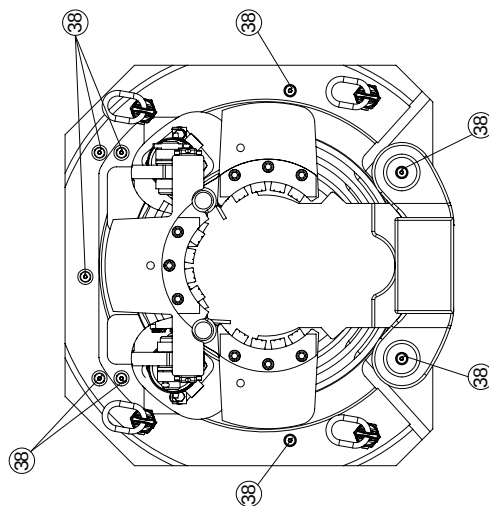
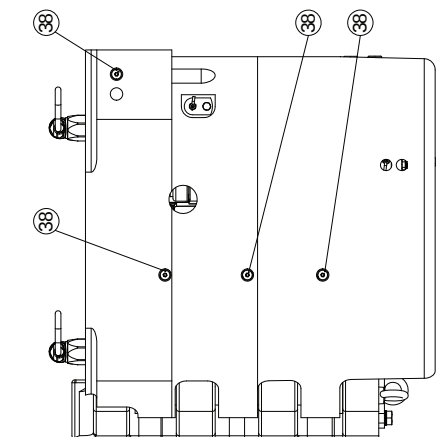
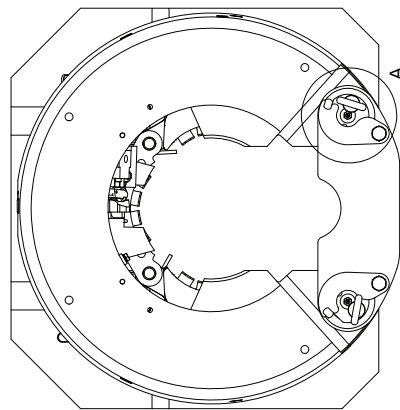
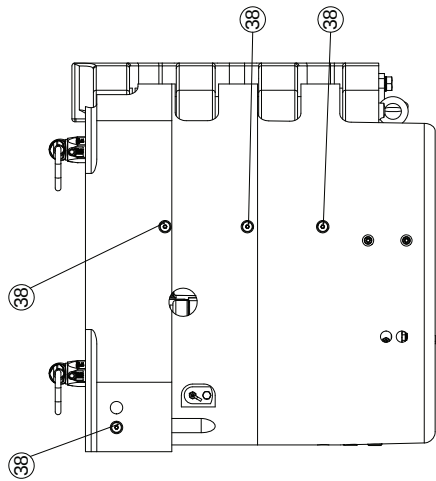
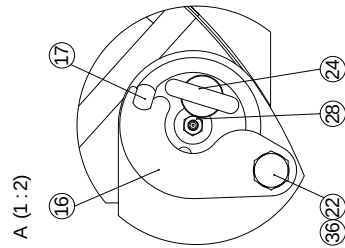
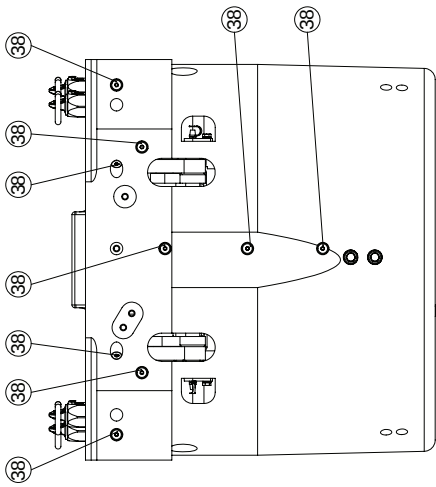
727000-H-TU Parts list

Pos.	Qty.	Part no.	Description
1	1	726100-TU-BF	Body
2	1	726700-TU-BF	Door
3	1	727300-H-TU	Hydraulic Assembly
4	1	727040	Connecting Assembly
5	2	726702	Hinge Pin
6	2	726205	Clevis Hydraulic
7	1	726206	Pedestal right hydraulic
8	1	726207	Pedestal left hydraulic
9	2	726209	Yoke Bolt
10	2	726211	Upper Cylinder Bolt
11	2	726213	Lower Cylinder Bolt hydraulic
12	2	726217	Securing Bracket
13	1	726224-1	Lower yoke, right
14	1	726224-2	Lower yoke, left
15	2	726225	Pin
16	2	725117	Hinge Pin Securing Plate
17	2	726705	Securing Bolt
18	1	727050	Cable retainer
19	1	755249	Screw
20	2	645671	Screw
21	8	87724	Screw
22	2	617519	Screw
23	2	755328	Screw
24	2	755719	Ring Screw
25	2	726215	Cotter Pin
26	2	710347	Cotter Pin
27	6	70064	Grease Nipple
28	2	612515	Grease Nipple
29	3	775048-1.1	Grease nozzle
30	3	775048-1.5	Grease nozzle
31	3	775048-2.0	Grease nozzle
32	4	612518	Protection Cap
33	2	726216	Nut
34	5	792112	Washer
35	8	792103	Washer
36	2	792106	Washer
37	26	612929	Blind screw
38	4	753005-1	Lifting Eye

727000-H-TU-UP PS 250 for Tubefuse



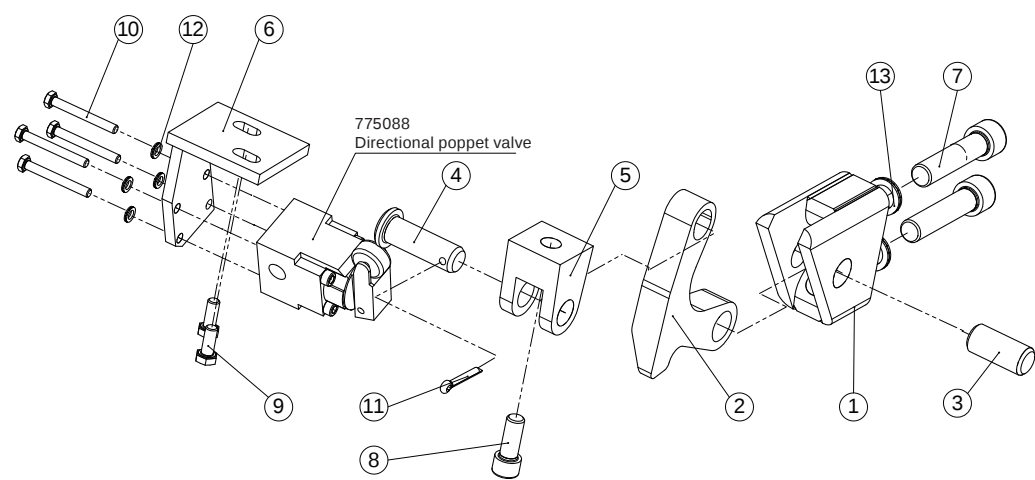
727000-H-TU-UP PS 250 for Tubefuse



727000-H-TU-UP Parts list

Pos.	Qty.	Part no.	Description
1	1	726100-TU-BF	Body
2	1	726700-TU-BF	Door
3	1	727300-H-TU	Hydraulic Assembly
4	1	727040	Connecting Assembly
5	2	726702	Hinge Pin
6	2	726205	Clevis Hydraulic
7	1	726206	Pedestal right hydraulic
8	1	726207	Pedestal left hydraulic
9	2	726209	Yoke Bolt
10	2	726211	Upper Cylinder Bolt
11	2	726213	Lower Cylinder Bolt hydraulic
12	2	726217	Securing Bracket
13	1	726224-3	Lower yoke, right
14	1	726224-4	Lower yoke, left
15	2	726225	Pin
16	2	725117	Hinge Pin Securing Plate
17	2	726705	Securing Bolt
18	1	727050	Cable retainer
19	1	755249	Screw
20	2	645671	Screw
21	8	87724	Screw
22	2	617519	Screw
23	2	755328	Screw
24	2	755719	Ring Screw
25	2	726215	Cotter Pin
26	2	710347	Cotter Pin
27	6	70064	Grease Nipple
28	2	612515	Grease Nipple
29	3	775048-1.1	Grease nozzle
30	3	775048-1.5	Grease nozzle
31	3	775048-1.5	Grease nozzle
32	4	612518	Protection Cap
33	2	726216	Nut
34	5	792112	Washer
35	8	792103	Washer
36	2	792106	Washer
37	26	612929	Blind screw
38	4	753005-1	Lifting Eye

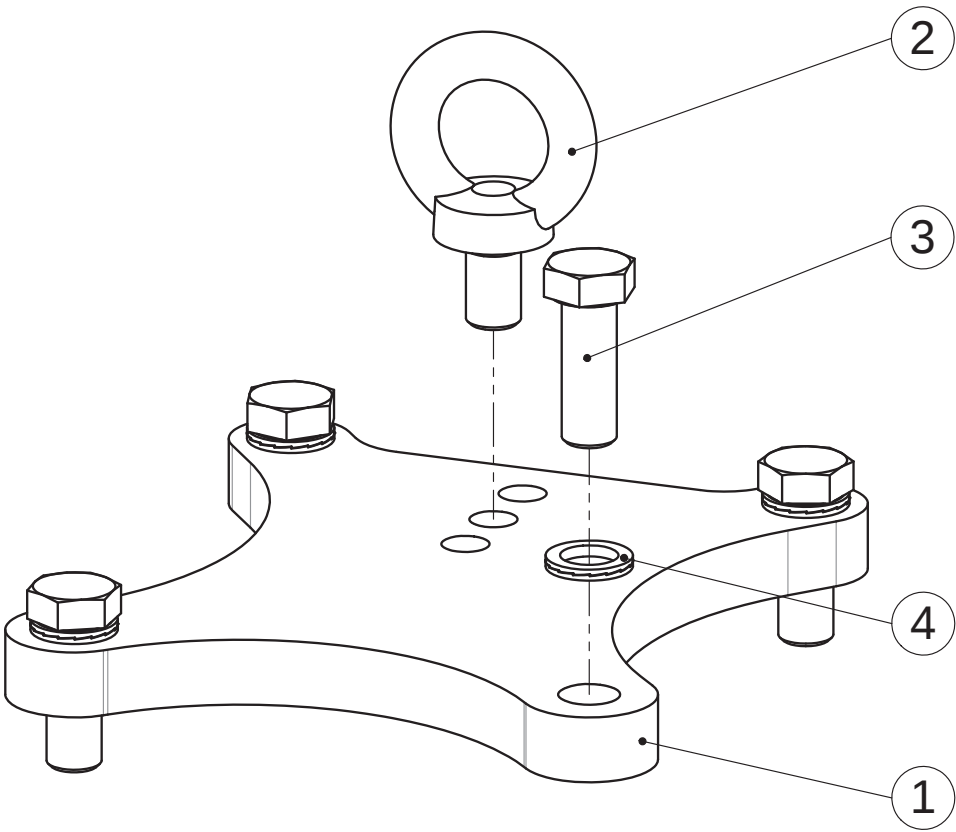
727040 Connecting Assembly



727040 Parts list

Pos.	Qty.	Part no.	Description
1	1	727041	Holding Plate
2	2	727043	Banana Sheet
3	1	727044	Connecting Bolt
4	1	727045	Removable Bolt
5	2	727046	Slip holding Fork
6	2	727047	Valve Holder
7	1	755167	Screw
8	1	725348	Screw
9	2	643779-1	Screw
10	4	726009	Screw
11	1	752314	Cotter Pin
12	4	792111	Washer
13	2	792106	Washer

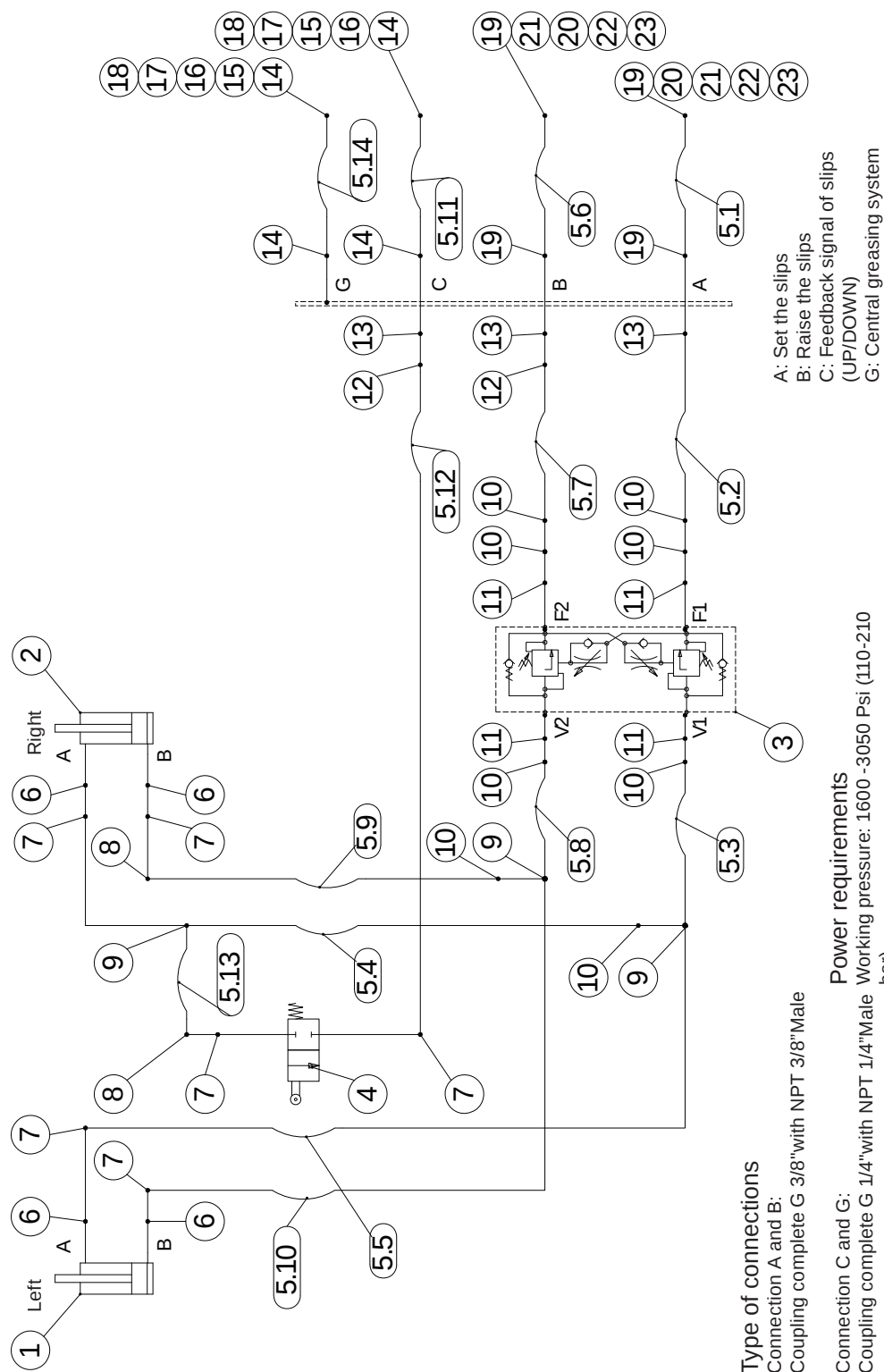
727049 Crossbeam Assembly



727049 Parts list

Pos.	Qty.	Part no.	Description
1	1	727048	Cross beam
2	1	755402	Ring bolt
3	4	755314	Screw
4	4	792106	Washer

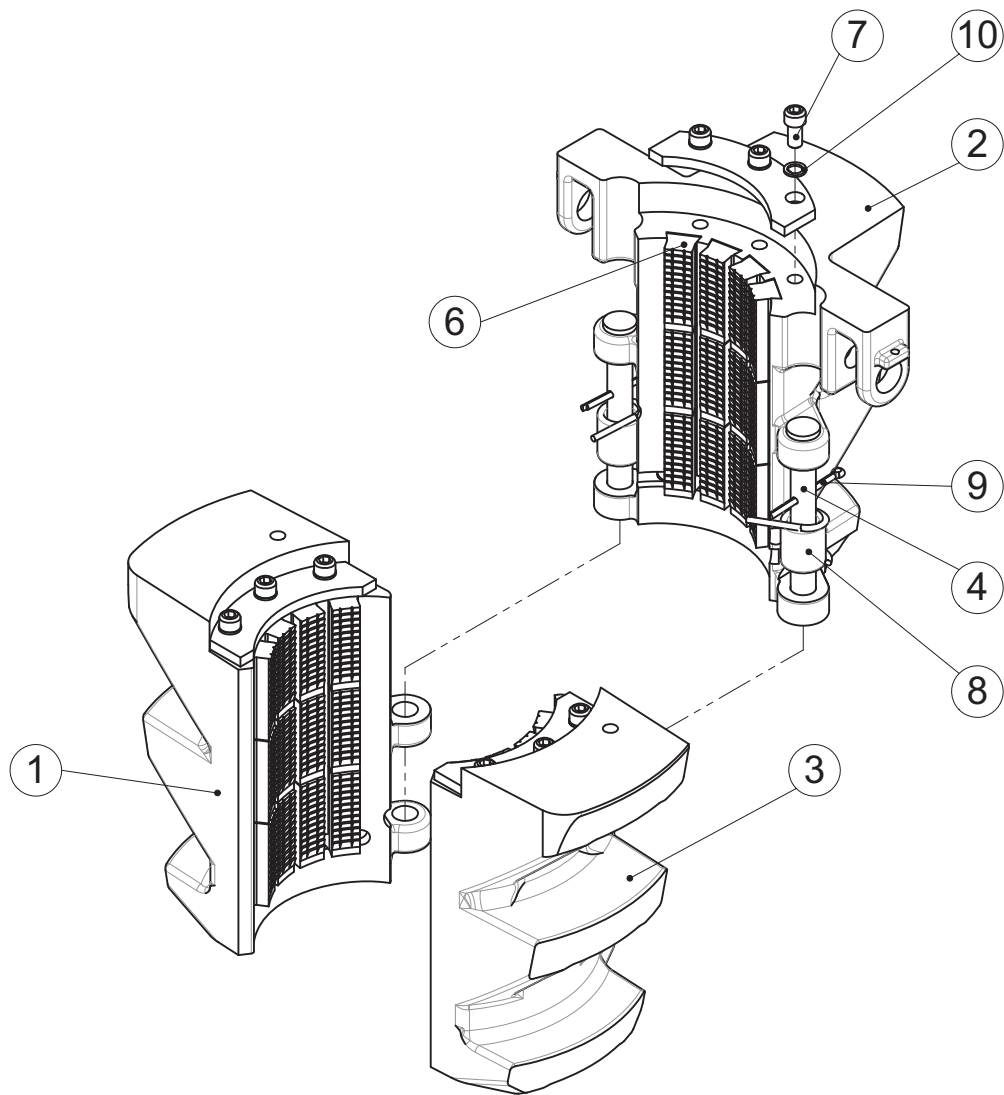
727300-H-TU Hydraulic Assembly for Tubefuse



727300-H-TU Parts List

Pos.	Qty.	Part No	Description
1	1	726301-1	Hydraulic cylinder, left
2	1	726302-1	Hydraulic cylinder, right
3	1	675051-4	Load hold valve
4	1	775088	Directional Poppet Valve
5	1	727300-40	Hydraulic Hose Assembly
5.1	1	727300-40-A	Hydraulic Hose Assembly "A"
5.2	1	727300-40-A1	Hydraulic Hose Assembly "A1"
5.3	1	727300-40-A2	Hydraulic Hose Assembly "A2"
5.4	1	727300-40-A3	Hydraulic Hose Assembly "A3"
5.5	1	727300-40-A4	Hydraulic Hose Assembly "A4"
5.6	1	727300-40-B	Hydraulic Hose Assembly "B"
5.7	1	727300-40-B1	Hydraulic Hose Assembly "B1"
5.8	1	727300-40-B2	Hydraulic Hose Assembly "B2"
5.9	1	727300-40-B3	Hydraulic Hose Assembly "B3"
5.10	1	727300-40-B4	Hydraulic Hose Assembly "B4"
5.11	1	727300-40-C	Hydraulic Hose Assembly "C"
5.12	1	727300-40-C1	Hydraulic Hose Assembly "C1"
5.13	1	727300-40-C2	Hydraulic Hose Assembly "C2"
5.14	1	727300-40-G	Hydraulic Hose Assembly "G"
6	4	615932	Adapter
7	6	613945	Swivelling Screw Fitting 90°
8	2	755738	90 degree Fitting
9	3	755737	Equal Tee
10	8	645096	L-Adapter
11	4	790171-1	Straight Connection
12	2	774510	L-Adapter
13	3	774525	Straight Connection
14	4	612944	Straight Connection
15	2	612966	Coupling, female
16	2	612965	Coupling, male
17	2	613946	straight connection
18	2	645117	Direct Pipe Fitting
19	4	613069	Male Stud connector
20	2	612936	Coupling, male
21	2	612937	Coupling, female
22	2	645109	Adjustable Adapter
23	2	645116	Direct Pipe Fitting

725320-TU Slip Assembly



725320-TU Parts lists

Part no.		725325-TU		725330-TU		725355-TU	
Size / Pipe diameter		3.1/2" x 2.3/8"		3.1/2" x 2.7/8"		3.1/2" x 3.1/2"	
Pos.	Description	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.
1	Centre Slip	1	725355-1	1	725355-1	1	725355-1
2	Left Slip	1	725355-2	1	725355-2	1	725355-2
3	Right Slip	1	725355-3	1	725355-3	1	725355-3
4	Hinge Pin	2	725204-1	2	725204-1	2	725204-1
5	Cotter Pin	2	735404	2	735404	2	735404
6	Spring	2	735415	2	735415	2	735415
7	Insert	18	351001	18	350602	18	350103
8	Plate for Slip Segment	3	725336	3	725336	3	725336
9	Screw	9	612554	9	612554	9	612554
10	Lock Washer	9	725102	9	725102	9	725102

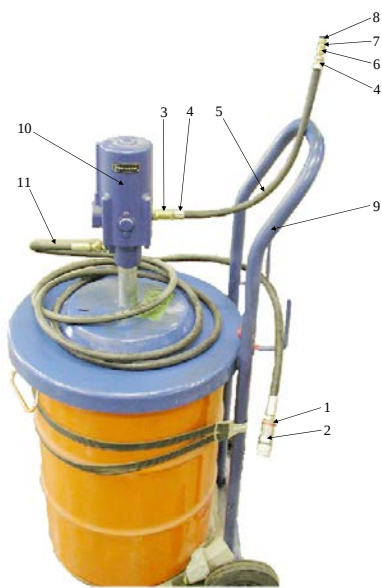
Part no.		725340-TU		725350-TU		725360-TU	
Size / Pipe diameter		4.1/2" x 3.1/2"		4.1/2" x 4"		4.1/2" x 4.1/2"	
Pos.	Description	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.
1	Centre Slip	1	725343-4.1/2	1	725343-4.1/2	1	725343-4.1/2
2	Left Slip	1	725344-4.1/2	1	725344-4.1/2	1	725344-4.1/2
3	Right Slip	1	725345-4.1/2	1	725345-4.1/2	1	725345-4.1/2
4	Hinge Pin	2	725204-1	2	725204-1	2	725204-1
5	Cotter Pin	2	735404	2	735404	2	735404
6	Spring	2	735415	2	735415	2	735415
7	Insert	27	350903	27	350504	27	350105
8	Plate for Slip Segment	3	725366	3	725366	3	725366
9	Screw	9	612554	9	612554	9	612554
10	Lock Washer	9	725102	9	725102	9	725102

Part no.		725375-TU		725385-TU		725365-TU	
Size / Pipe diameter		5.1/2" x 4.1/2"		5.1/2" x 5"		5.1/2" x 5.1/2"	
Pos.	Description	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.
1	Centre Slip	1	725343-5.1/2	1	725343-5.1/2	1	725343-5.1/2
2	Left Slip	1	725344-5.1/2	1	725344-5.1/2	1	725344-5.1/2
3	Right Slip	1	725345-5.1/2	1	725345-5.1/2	1	725345-5.1/2
4	Hinge Pin	2	725204-1	2	725204-1	2	725204-1
5	Cotter Pin	2	735404	2	735404	2	735404
6	Spring	2	735415	2	735415	2	735415
7	Insert	27	350905	27	350506	27	350107
8	Plate for Slip Segment	3	725346	3	725346	3	725346
9	Screw	9	612554	9	612554	9	612554
10	Lock Washer	9	725102	9	725102	9	725102

Part no.		725380-0-TU		725390-TU		725380-TU	
Size / Pipe diameter		6.5/8" x 6.5/8"		7.5/8" x 6.5/8"		7.5/8" x 7"	
Pos.	Description	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.
1	Centre Slip	1	725380-3	1	725353	1	725353
2	Left Slip	1	725380-2	1	725354	1	725354
3	Right Slip	1	725380-1	1	725352	1	725352
4	Hinge Pin	2	725204-1	2	725204-1	2	725204-1
5	Cotter Pin	2	735404	2	735404	2	735404
6	Spring	2	735415	2	735415	2	735415
7	Insert	36	350109	36	350909	36	350610
8	Plate for Slip Segment	3	725380-4	3	725356	3	725356
9	Screw	9	612554-1	9	612554-1	9	612554-1
10	Lock Washer	9	725141	9	725141	9	725141

Part no.		725370-TU		725395-TU	
Size / Pipe diameter		7.5/8" x 7.5/8"		7.5/8" x 7.3/4"	
Pos.	Description	Qty.	Part no.	Qty.	Part no.
1	Centre Slip	1	725353	1	725353
2	Left Slip	1	725354	1	725354
3	Right Slip	1	725352	1	725352
4	Hinge Pin	2	725204-1	2	725204-1
5	Cotter Pin	2	735404	2	735404
6	Spring	2	735415	2	735415
7	Insert	36	350111	36	350011
8	Plate for Slip Segment	3	725356	3	725356
9	Screw	9	612554-1	9	612554-1
10	Lock Washer	9	725141	9	725141

775810 Air Operated Greasing System



775810 Parts list

Pos.	Qty.	Part no.	Description
1	1	612957-1	U-Seal
2	1	1014-M	Quick Connect Coupling
3	1	612645	Straight-Flange R1/4"
4	2	612644-1	Straight-Connection
5	0,5	612677	Air-Hose
6	1	88229-8	Hose nipple
7	1	613811	Clutch Hose Coupling
8	1	612644	Straight Connection
9	1	775810-1	Trolley for 50kg Grease Barrel
10	1	775810-2	Grease Pump, air operated
11	1	775810-3	Hydraulic Hose
-	-	775811	Grease Barrel (50kg)

Instructions grease pump

Description:

The pump casing is manufactured from diecast zinc with a hardened stainless steel piston rod and high quality durable synthetic components. The polyurethane or Buna-N o-rings and washers are designed to meet the operating requirements of the pump.

Technical data:

Transmission ratio	50:1
Maximum air pressure:	10 bar
Minimum air pressure:	2 bar
Recommended air pressure:	8 bar
Stroke volume motor:	220 cm ³
Pump performance at 8 bar (free outlet):	1100 g/min
Pump pressure at 8 bar compressed air:	400 bar
Air consumption at 8 bar compressed air:	400l/min
Compressed air supply connection:	G1/4"female
Grease supply connection from the pressure side:	G1/4"male
Noise level at no load acc. to ISO 9614-2:	78 dB(A) 2m

Recommended application:

Designed to provide a trouble free performance with lubricants up to NLGI grade 2 and moderate length distribution lined. The delivery performance will vary dependent upon the viscosity and temperatures of the lubricant. The pump will also operate in non-vertical installations.

Operating requirements:

To avoid unnecessary damage and to prolong the life expectancy of the pump we recommend that an air line combination filter, regulator and lubricator is utilised to ensure that the compressed air supply is not contaminated and is regulated at the recommended pressure.

New installation lines should be cleaned regularly to avoid residual metal filings damaging individual components within the pump. When exchanging containers protect the suction tube to avoid dirt particles adhering to the suction tube and contaminating the lubricant in a new container.

Maintenance:

The muffler and air inlet filter should be cleaned regularly to maintain the trouble free performance of the pump. If an airline lubricator has not been installed, frequently lubricate the pump by inserting 2 to 3 drops of quality oil through the air inlet connector at regular intervals.

Warranty:

Only approved PRESSOL maintenance personnel should open or repair pumps within the warranty period.

Safety:

WARNING: THE COMPRESSED AIR LINE MUST BE DISCONNECTED AND THE GREASE CONTROL GUN ACTUATED TO ENSURE THAT THE GREASE PUMP IS DE-PRESSURISED BEFORE THE PUMP UNIT IS OPENED OR INSPECTED. FOR SAFETY REASONS THE COMPRESSED AIR LINE SHOULD BE DISCONNECTED WHEN THE PUMP IS NOT IN USE OR OTHERWISE THE PUMP WILL REMAIN PRESSURISED.

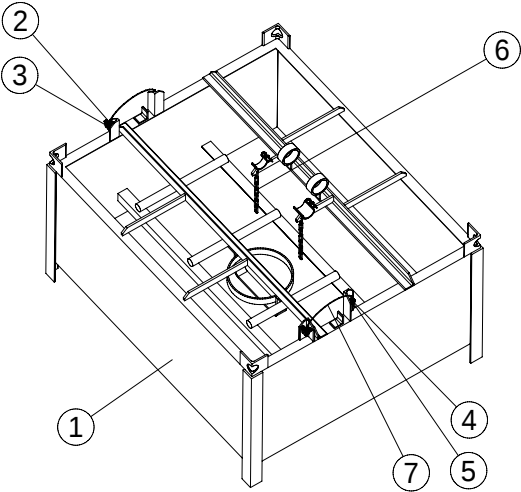
775820 Tool kit for PS



775820 Parts list

Pos.	Qty.	Part no.	Description
1	1	775814	Box
2	4	755719	Screw
3	3	755402	Ring Bolts
4	1	775813	Square Bore Wrench
5	1	775812	Turnscrew

775008 Service-Box for Hook Up Kit



775008 Parts list

Pos.	Qty.	Part no.	Description
1	1	775008-1	Box
2	6	70323	Die Retainer Pin
3	4	620415	Safety Spring
4	2	725443	Washer
5	2	70324	Cotter Pin
6	2	660414-4	Link Chain
7	2	645037	Rope
8	1	755667	Grease Filling Device Assembly incl. 20l Grease

727000-H-TU-RSP Spare parts PS 250 Tubefuse (2 years operational)

Pos.	Qty.	Part no.	Description
1	2	726702	Hinge Pin
2	2	726209	Yoke Bolt
3	2	726211	Upper Cylinder Bolt
4	2	726213	Lower Cylinder Bolt
5	1	726224-1	Lower yoke, right
6	1	726224-2	Lower yoke, left
7	2	726225	Pin
8	1	726301-1	Hydraulic cylinder, left
9	1	726302-1	Hydraulic cylinder, right

727040-RSP Spare parts Connecting Assembly (2 years operational)

Pos.	Qty.	Part no.	Description
1	1	727043	Banana Sheet
2	1	727044	Connecting Bolt
3	1	727045	Removable Bolt
4	1	727042	Screw

725320-TU-RSP Spare parts Slip Assembly (2 years operational)

Pos.	Qty.	Part no.	Description
1	1	725204-1	Hinge Pin
2	1	735404	Cotter Pin
3	1	735415	Spring

