

**Blohm+Voss**

**BVE / BVS 250**

**2.3/8" – 7.5/8"**

**250 metric tons**



**Part-No. 725000**

**READ THESE INSTRUCTIONS BEFORE USE!**

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Dependent on ongoing technical improvements (ISO 9001) "B+V Oil Tools" reserves the right to be able to change the design and specifications without previous announcement. The values specified represent the nominal values of a unit produced in series production. Slight deviations in the case of the individual devices are possible.

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## 1 INTRODUCTION

The Blohm+Voss 250 tons Elevator / Spider is designed with strength and safety factors in accordance with API Section 8C - Regulations and will be used for handling long, heavy strings of casings. These tools are convertible for use as casing spiders or casing elevators, and can be operated easily by one man due to unitized slip assemblies and a positive locking mechanism.

The unitized design of the slip assemblies allows the tool to grip casing with uniform radial pressure, ensuring a safe hold while minimizing the possibility of damage to the pipe. This model is available for manual or air power slip operation and can handle pipes from 2 3/8" through 7 5/8" O.D.. On all slip body sizes, reducing inserts are installed simply and rapidly, permitting the handling of pipes with an O.D. up to 1" smaller than the slip body size without changing slips.

When dressed as an elevator, the tool includes a body guide plate, a door guide plate and a casing guide bell, which automatically centers the pipe for positive locking of the slips. Auxiliary equipment needed to use the tool as a spider includes a spider adapter plate, which sits on the rotary table to provide a secure platform for the tool, and an upper guard guide assembly, which functions as a pipe centering device.

Both models feature double-hinges and a swing-away door, which permits them to be rapidly installed on casing, or removed.



**Figure 1** dressed as elevator



**dressed as a spider**

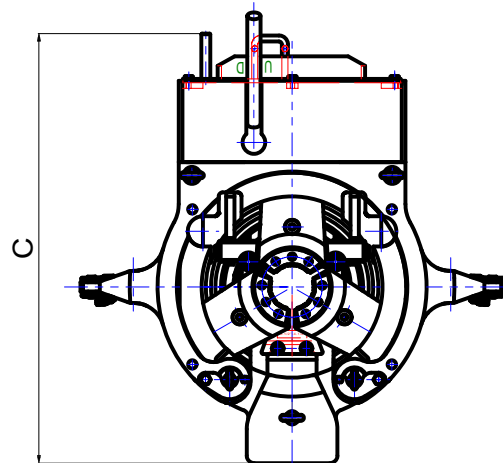
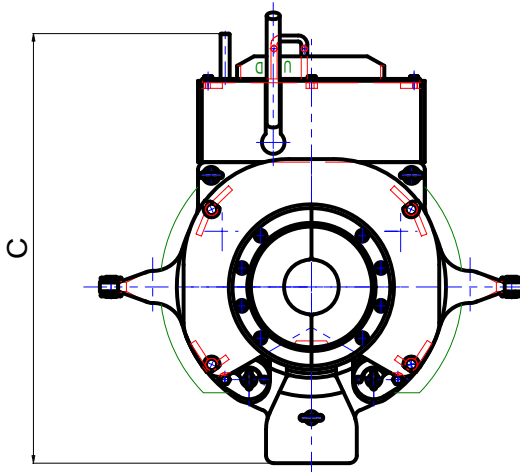
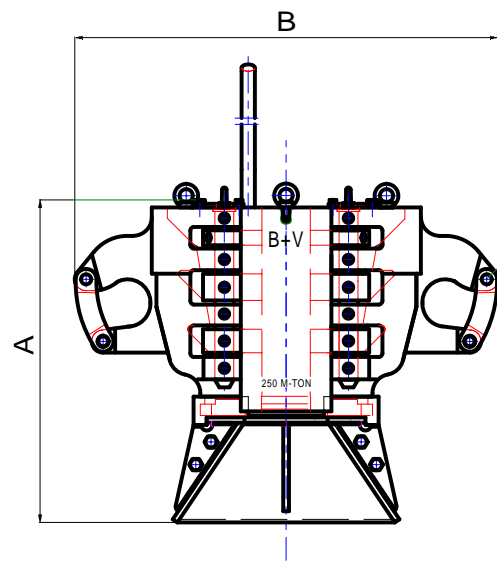
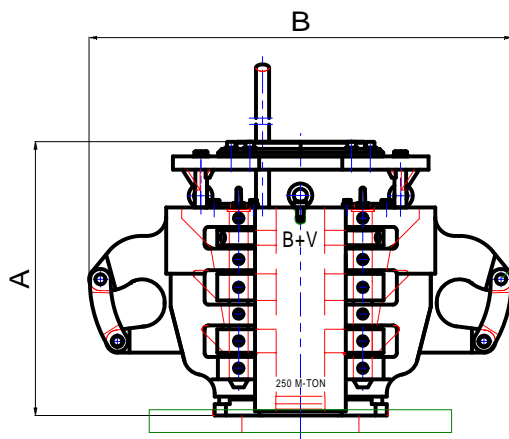
## 2 TECHNICAL DATA

### 2.1 Load Capacity

250 metric tons

### 2.2 Pipe Range Diameter

2 3/8" – 7 5/8"



### 2.3 Dimensions

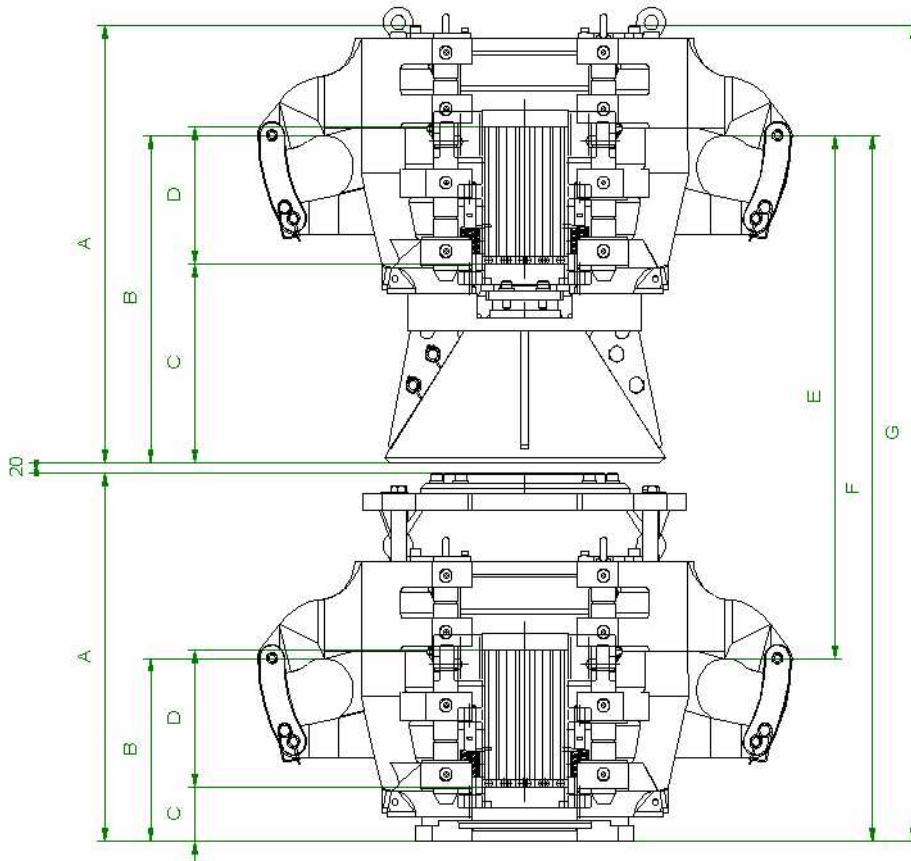
#### BVS

A = 760 mm  
 B = 1120 mm  
 C = 1136 mm

#### BVE

A=853 mm  
 B=1120 mm  
 C=1136

## 2.4 Height Dimensions



### BVS

A= 725 mm  
B= 360 mm  
C= 65 mm  
D= 267 mm

### BVE

A= 860 mm  
B= 643 mm  
C= 350 mm  
D= 267 mm

E= 1028 mm  
F= 1388 mm  
G= 1604 mm



**2.5 Elevator Links**

Fits for :      2 ¼"    250 t  
                   2 ¾"    350 t  
                   3 ½"    500 t

Elevator Links.

**2.6 Recommended air supply**

100...125 psi ( = 7... 8,5 bar)  
 6,8 m<sup>3</sup>/min Flow Rate

**2.7 Assembly of BVE 250 (Elevator)**

<b>Part-No.</b>	<b>Qty</b>	<b>Description</b>
725000-Y-A	1	Body Assembly less Slips, Guide Plates, Guide Bell (air / manually operated)
725270	1	Casing Guide Bell
752822	1	Air Hose Assembly
	1	Slip Assembly
	1	Guide Plate Assembly

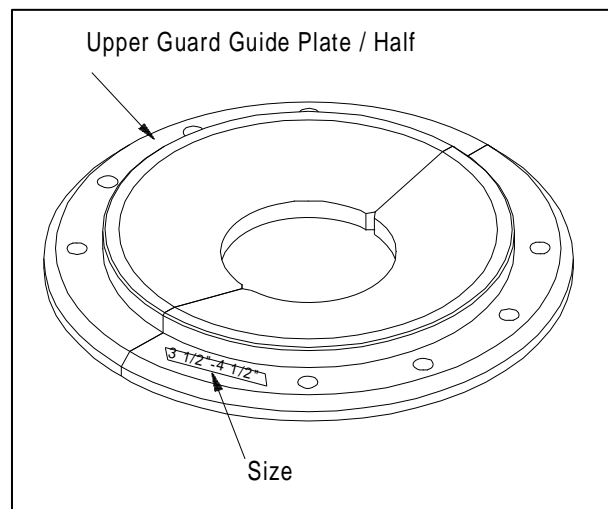
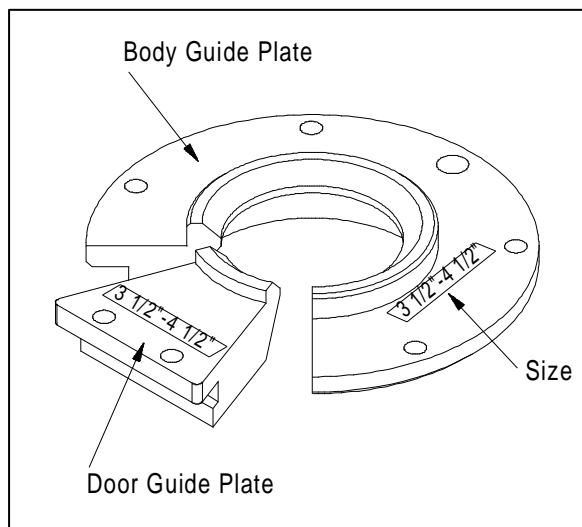
**2.8 Assembly of BVS 250 (Spider)**

<b>Part-No.</b>	<b>Qty</b>	<b>Description</b>
725001-Y-A	1	Body Assembly less Slips, Guide Plates, Guide Bell (air / manually operated)
725150	1	Upper Guard
725500	1	Spider Adapter Plate
752823	1	Air Hose Assembly
	1	Slip Assembly
	1	Guide Plate Assembly

### 3 INSTALLATION

#### 3.1 Checking Guide Plates

Prior to installation, inspect the body guide plate, door guide and guide bell on the elevator and the top guard and top guard guide plate on the spider, making sure they are tightly secured to tool bodies and are of the right size for the casings to be handled. Also ensure that the inserts are properly installed and that they are of the correct size for the slip bodies.



#### 3.2 Installing Elevators

To install elevator:

1. Remove the link block bolts and allow the link block assembly to swing open (Figure 2).
2. Place the links in the now open assembly and secure by replacing the bolt removed in the previous step. Raise the elevator in the derrick to a height sufficient to allow installation of the spider.



**Figure 2 Link Block Assembly**

### 3.3 Installing-Spider

To install spider:

1. Place the spider adapter plate (see Figure 1) on the rotary table.
2. Secure the spider to the adapter plate, aligning the opening through the spider body with the opening in the adapter plate.
3. For air-operated models, connect the rig air supply to the quick-connect coupling, which is located at the rear cover plate of the tool. Operating air pressure ranges from 100 - 125 psi equal to 7 - 8,8 kp/sqcm (Figure 3).



**Figure 3 Air supply quick-connect coupling**

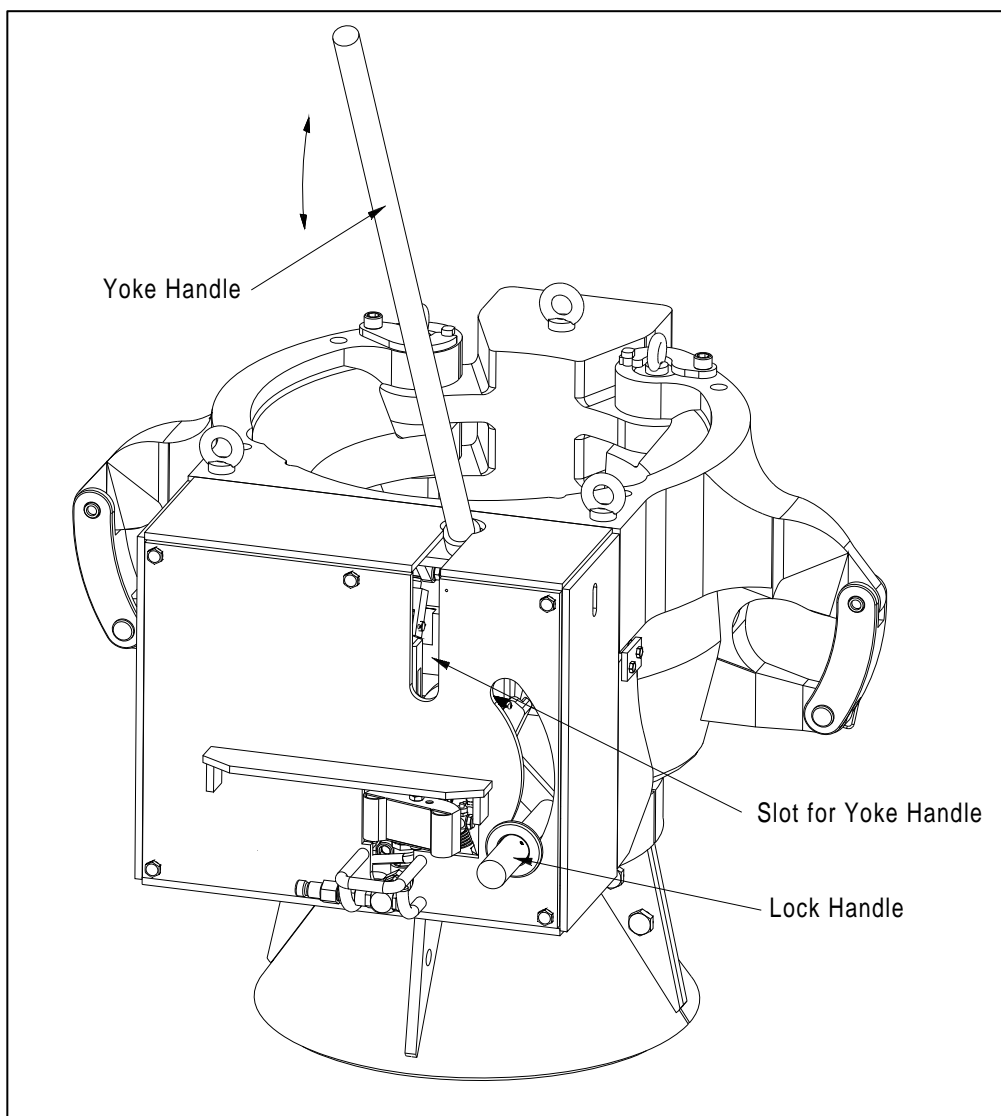
## 4 Manual Operation

### 4.1 Raising Slips

Push the lock handle, which is located in a curved slot at the rear of the tool (Figure 4) to the bottom of its slot. Then insert the yoke handle in the slot to the left of the lock handle and push down. As the handle reaches the end of its travel, listen for a click, which indicates that the slips are properly locked in the up position.

### 4.2 Setting Slips

Remove the yoke handle, then pull up on the lock handle. This unlocks the slips from the up position and permits them to fall and lock in the set position.



**Figure 4 Raising and setting of Slips**

## 5 PNEUMATIC OPERATION

The pneumatic slips are activated with the air control valve, which may be actuated by hand or foot depending on the elevation of the tool at the time of operation. For the derrickman, this will vary according to the length of each casing joint.

### 5.1 Raising slips

Push the lock handle to the bottom of its run, then depress the control marked "U" ("Up") to raise the slips.

### 5.2 Setting Slips

Pull up on the lock handle, then depress the control marked "D" ("Down") to lower slips.

#### Note:

To regulate the speed of the slips as they set, adjust the flow control valve (Figure 5). This valve is mounted under the cover plate above the air control valve.

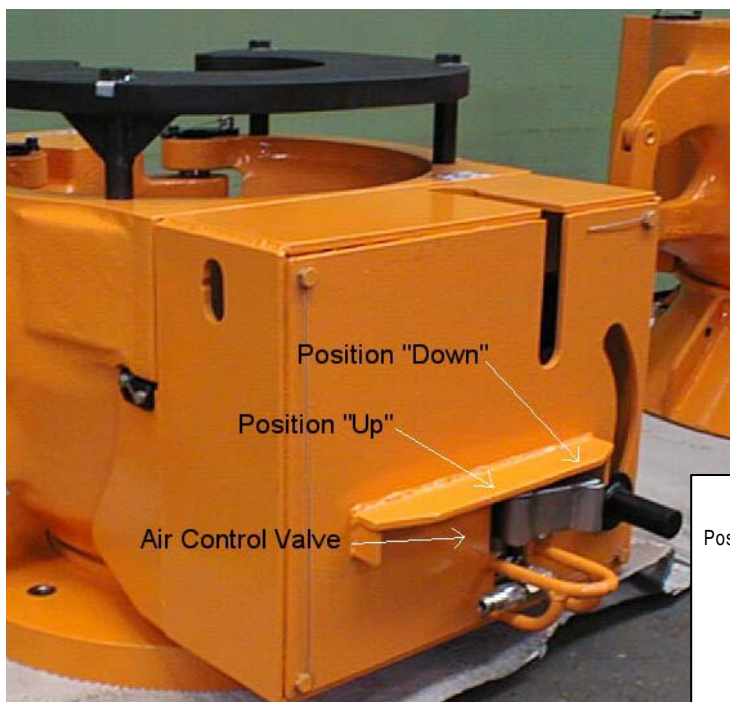
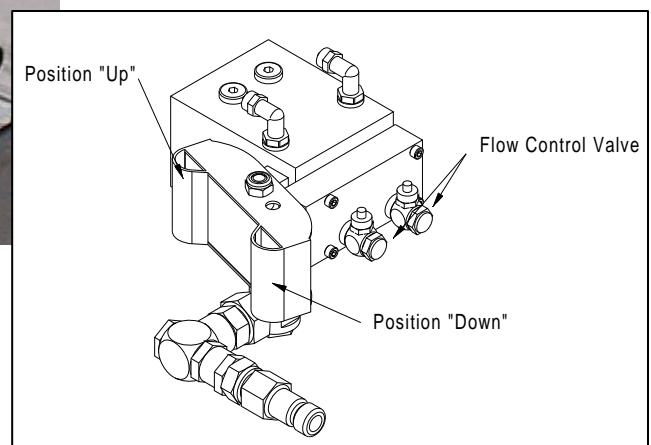


Figure 5 Air control valve



## **6 OPERATION OF ELEVATOR AND SPIDER**

The driller, derrickman and floorman must coordinate operation of the slips in the elevator and spider so one tool is engaged around the casing before the other is disengaged. Thus, the casing is continuously suspended by one or both tools during all stages of casing handling operations.

After the first joint has been set in the spider, follow this operating procedure:

1. The floorman attaches the top end of the casing pick-up line to the lower locking arm of the hook. The pick-up line must be long enough to attach to the next joint in the V-door when the elevator is lowered to the spider.
2. In lifting the casing joint into the V-door, the floorman can use the catline or an air-wrench, or a crewman can use a hydraulic pick-up machine, if available.
3. The floorman attaches a single-joint elevator to the bottom end of the pick-up line, then he attaches the single-joint elevator to the joint in the V-door so the joint can be maneuvered to the spider for make-up.
4. The power tong operator then makes up the joint.
5. The derrickman removes the single-joint elevator or pick-up line from the top of the joint.
6. With the elevator slips locked in the up position, the derrickman guides the elevator over the top end of the joint while the driller lowers the elevator into position approximately six inches below the joint collar.
7. The derrickman then sets the elevator slips. Note: Step 2 is repeated each time Steps 5 - 7 take place.
8. Simultaneously, the driller picks up the elevator while the floorman raises the spider slips.
9. The driller then lowers the joint through the spider stooping the elevator guide bell approximately six inches above the spider.

**IMPORTANT:** Be careful not to hit the spider top guard with the elevator guide bell. Doing so will create a hazard for personnel and could damage the equipment.

10. The floorman sets the spider slips.
11. The driller slacks off on the elevator so its slips can be released.
12. The floorman raises the elevator slips.
13. The driller picks up the elevator to clear the next joint of casing while the floorman repeats Step 3 for the next joint.

## 7 CHANGING SLIPS

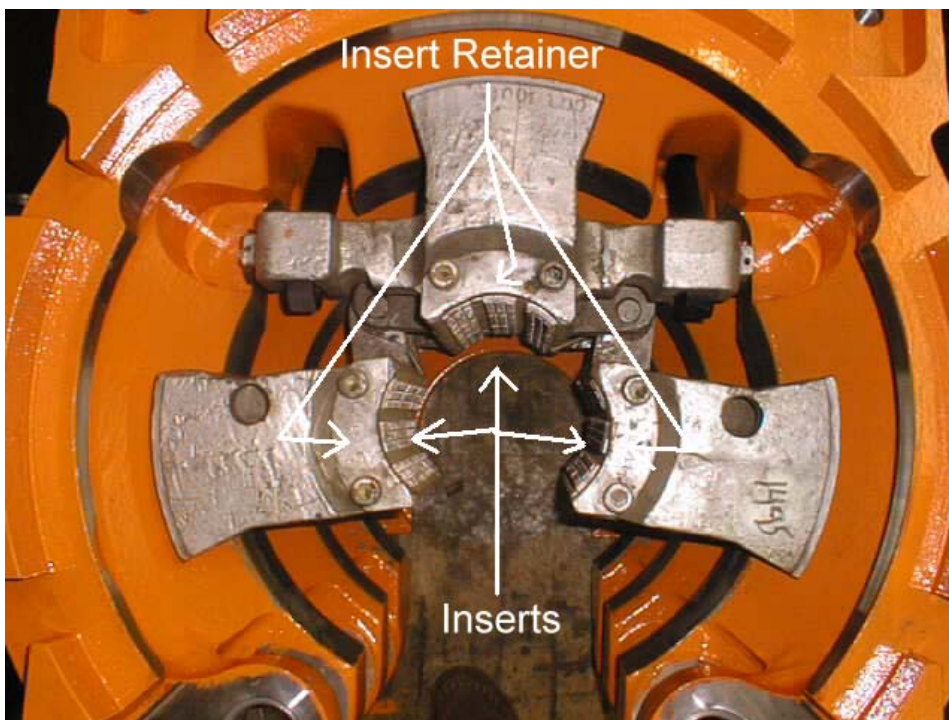
Raise the slips, suspend them from a line and pull out the two retainer pin assemblies. Install the slip size desired, then reinstall the retainer pin assemblies.



**Figure 6 Retainer pin is pulled out**

### 7.1 Changing Inserts

Remove the inserts retainer cap screws (Figure 7). Then pull the inserts and replace them with the size desired. When reinstalling inserts, make sure the insert slots are greased and the inserts teeth are pointing upward.



**Figure 7 Insert retainer and inserts**

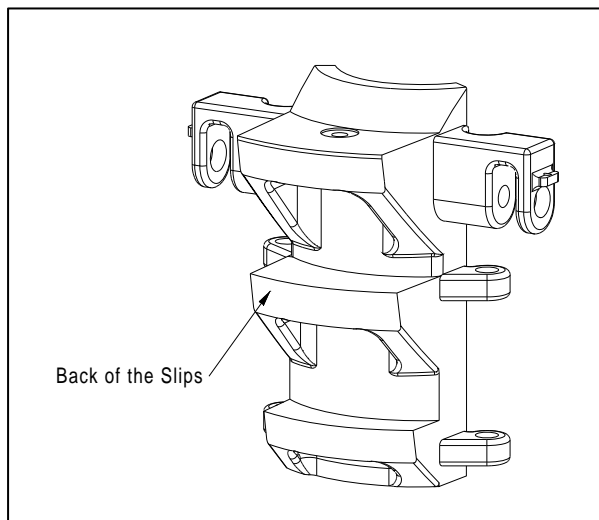


## 8 SERVICE AND MAINTENANCE

### 8.1 General Lubrication

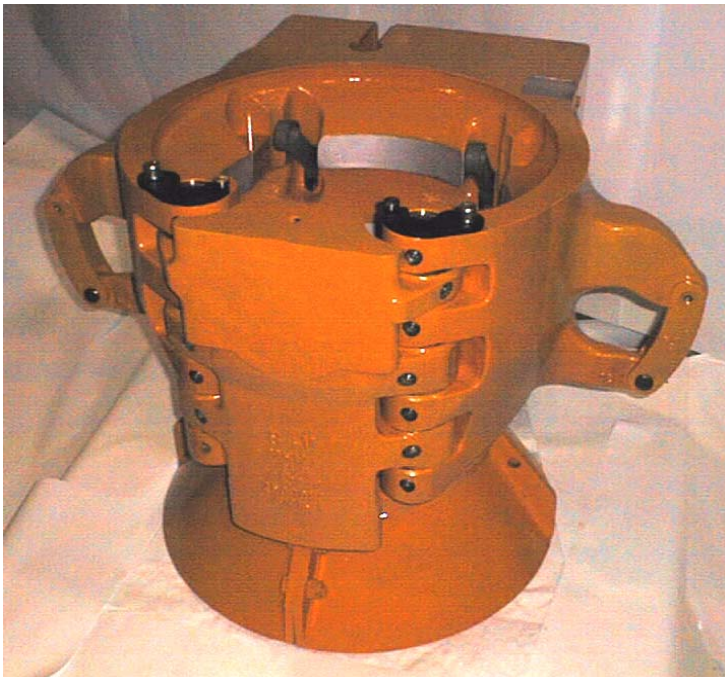
When the tool is in use, the following lubrication procedure should be performed daily, or as inspection indicates:

1. Lubricate the bowl and back of the slips with heavy grease (Figure 8).



**Figure 8**

2. Apply an extreme-pressure lubricant through the grease fittings on the door (Figure 9). Contact B+V or one of our Agents to purchase special high pressure grease.



**Figure 9 Grease fittings in the door and frame**

3. Apply lubricant through the three lubricant reservoirs at the top of the tool and lubricate the door hinge pins.

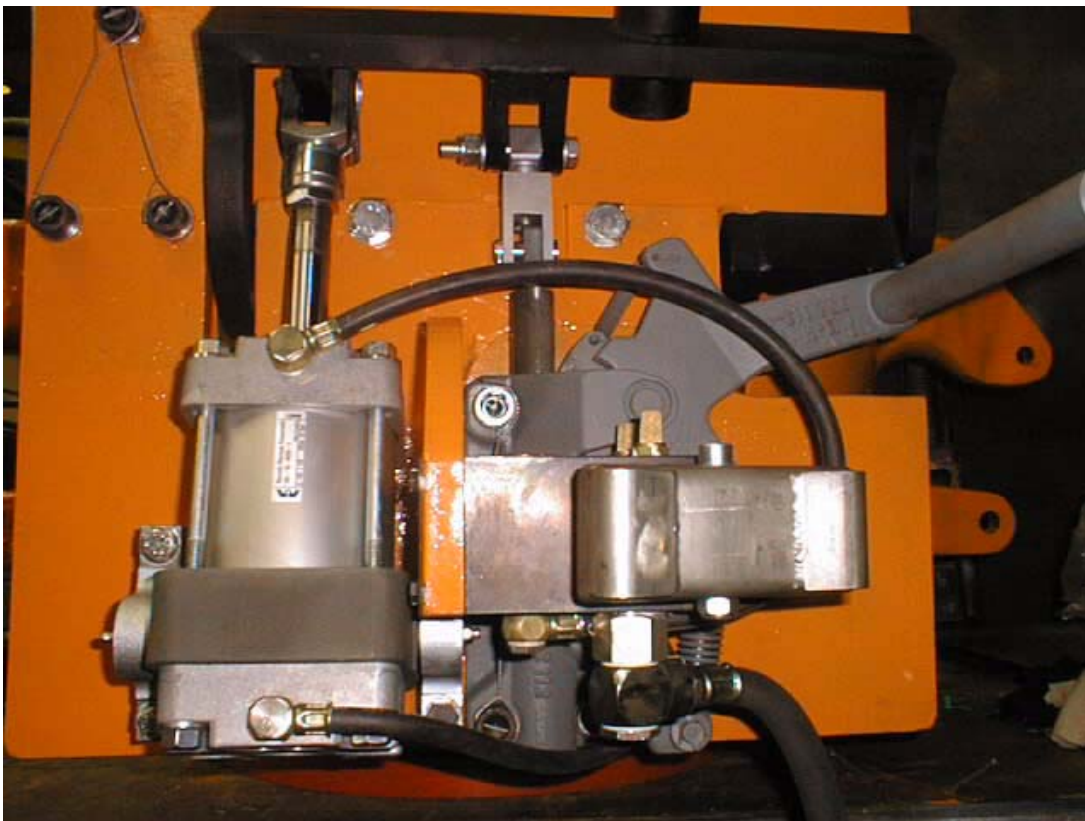
4. Inspect the inserts periodically and replace if necessary. Always grease the insert slots when installing inserts. Failure to routinely grease inserts slots will cause the inserts to stick.

## 8.2 Cylinders

If the cylinders (Figure 10) are leaking air, install a complete seal kit.

Inspect the yoke pivot pin and yoke bushings periodically, changing them when necessary. Replace the yoke if it exhibits free play.

**IMPORTANT:** Remember to use only genuine B+V Replacement Parts and Accessories. Otherwise, Blohm+Voss will not be responsible for the proper operation of B + V-Elevator/Spider.



**Figure 10 Air Cylinder**

## 9 REPAIR

### 9.1 Proper Repair

All kind of repairs 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 elevator, can be removed by grinding (see critical areas).

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

If the elevator is defective beyond repair, destroy it directly. If it should turn out necessary to secure the open elevator for repair work, inspection, etc., fix the trigger with the securing pin after opening of the elevator.

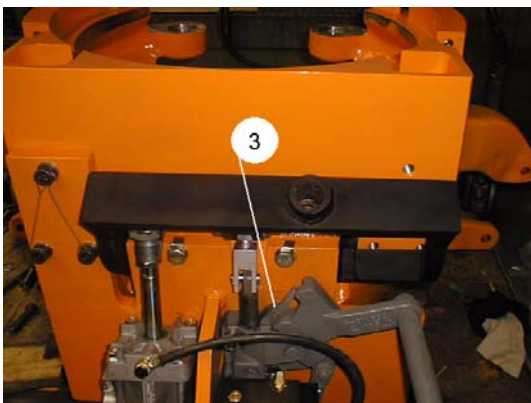
## 10 TROUBLESHOOTING

### 10.1 Slips fail to Lock in up or down position

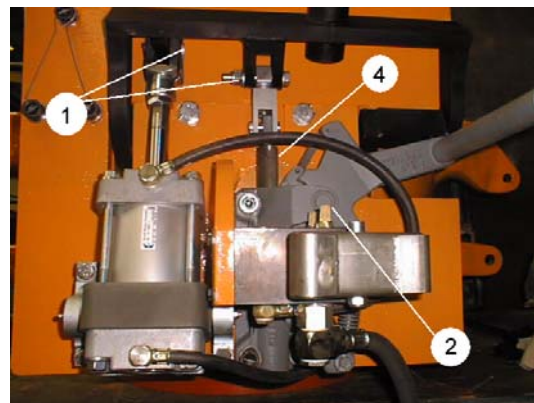
1. **Cause** - Improper locking mechanism adjustment or worn parts.

2. **Correction** -

- Adjust locking mechanism by first removing the yoke pin, then turning the yoke eyebolt (Figure 12).
- Check the overload plunger and spring, cam lock and lock rod (Figure 11), and replace if necessary. After replacement, adjust the length of the yoke eyebolt.



**Figure 11 Locking mechanism**



**Figure 12 Lock rod and locking Mechanism**

- 1) Yoke eyebolt
- 2) Overload plunger
- 3) Cam lock
- 4) Lock rod

## **10.2 Slip fail to unlock in down position**

1. **Cause** - Jammed locking mechanism (Figure 12).
2. **Correction** -  
Using a punch, drive up on the bottom of the lock rod to free the locking mechanism, or remove the locking assembly completely for repair.

**IMPORTANT:** The elevator/spider should never be slammed down on concrete during warehouse handling with the slips in the body. The resulting impact may jam the locking mechanism.

## **10.3 Slip fail to swing wide open when locked in up position**

1. **Cause** - Damaged hinge pin or damaged hinge pin spring (Figure 12).
2. **Correction** - Inspect hinge Pin and spring and replace if necessary.

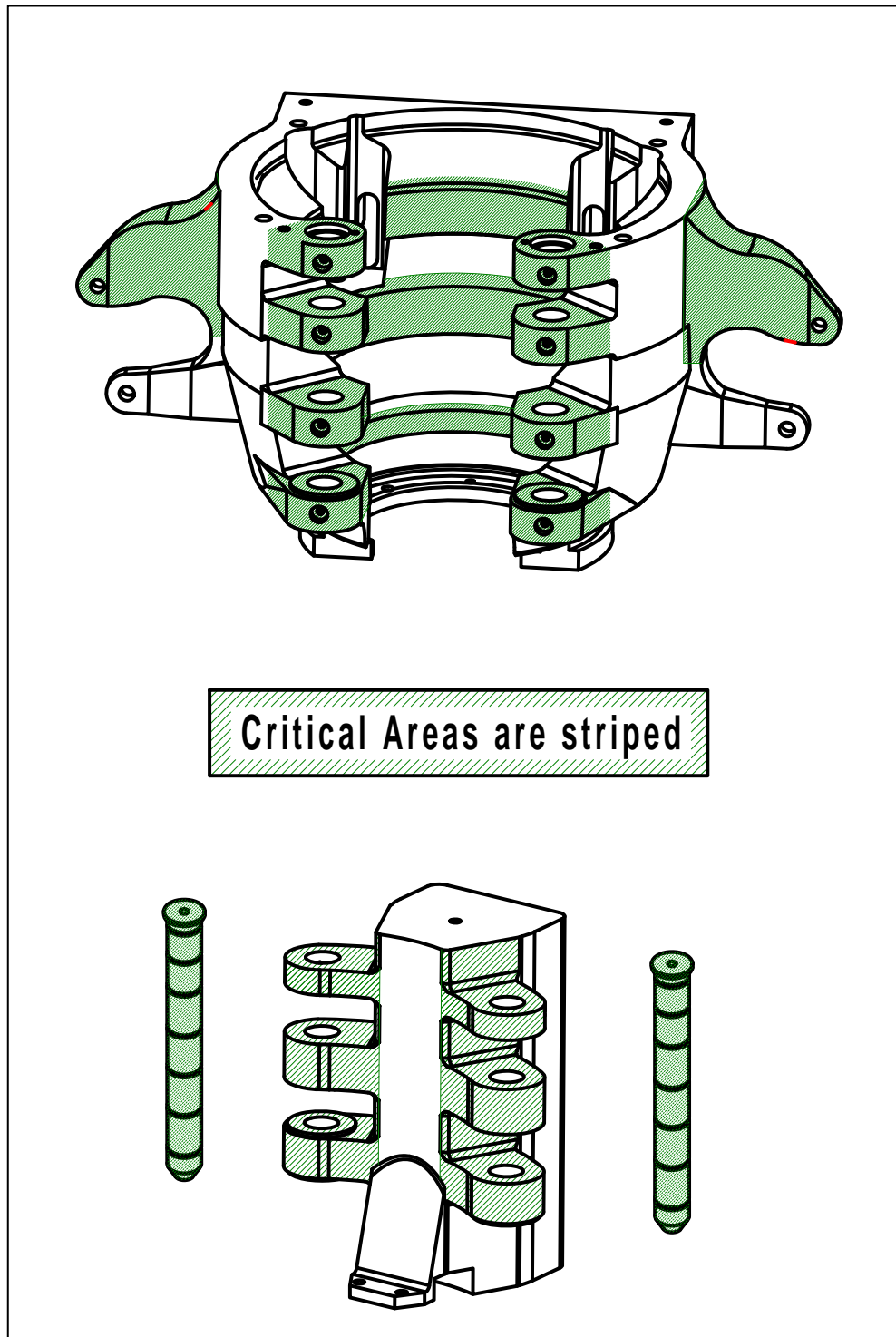
## **10.4 Slips hang unevenly in up position**

1. **Cause** - Bent yoke.
2. **Correction** - Repair or replace yoke.

**IMPORTANT:** A bent yoke may result when the guide plates are improperly matched to the O.D. of the casing being run. This can allow the casing coupling to hit the slips and damage the yoke.

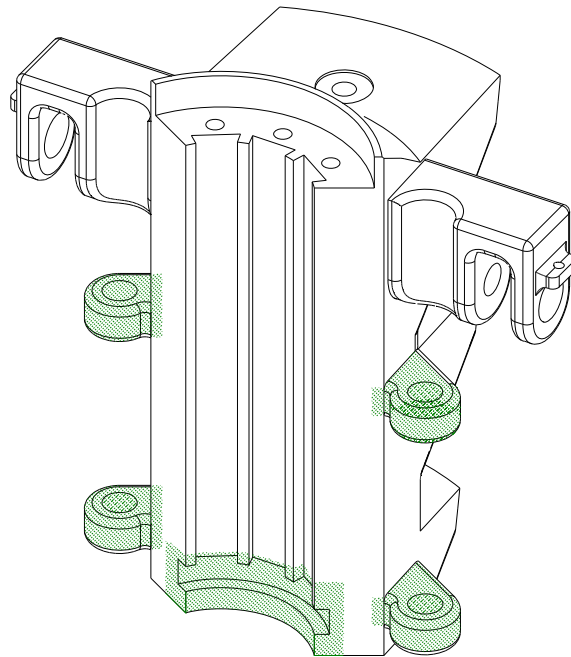
## 10.5 Critical areas

### 10.5.1 Critical Areas Frame, Door and Hinge Pin

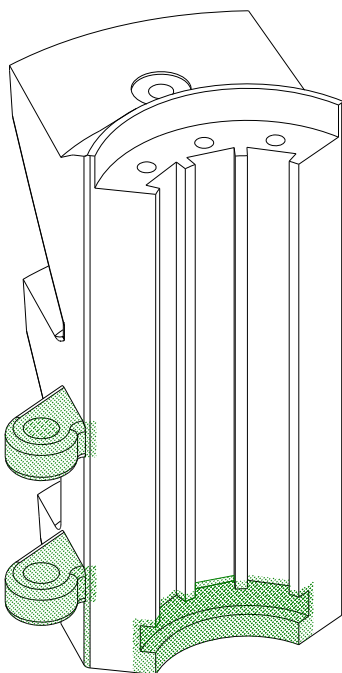


## 10.5.2 Critical Areas Slip

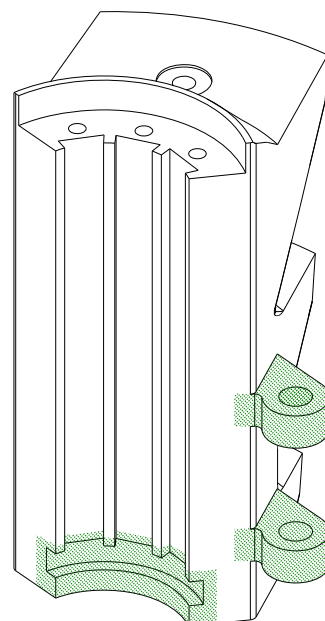
Center Slip



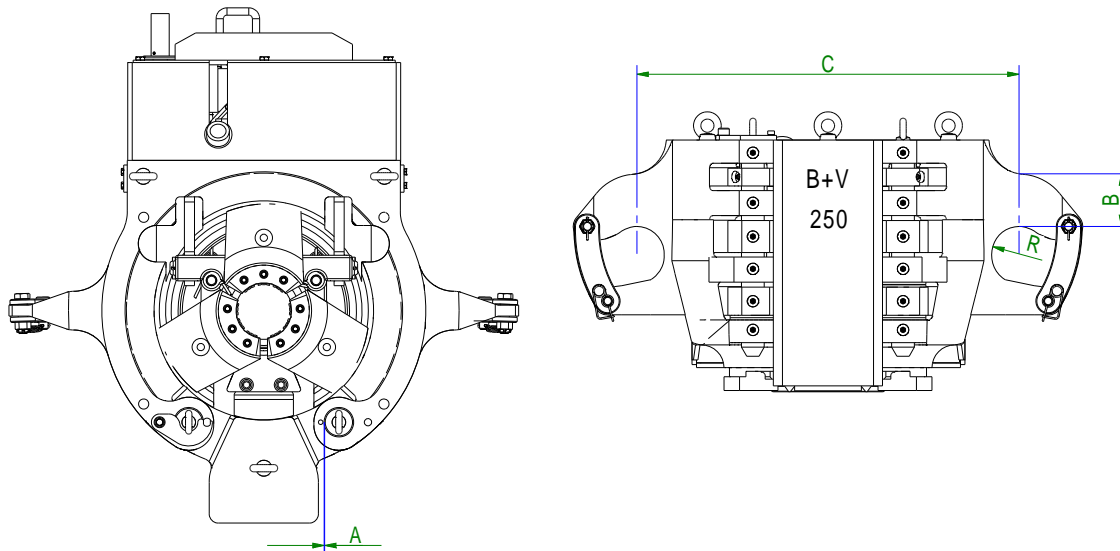
Right Slip



Left Slip



## 10.5.3 Wear data



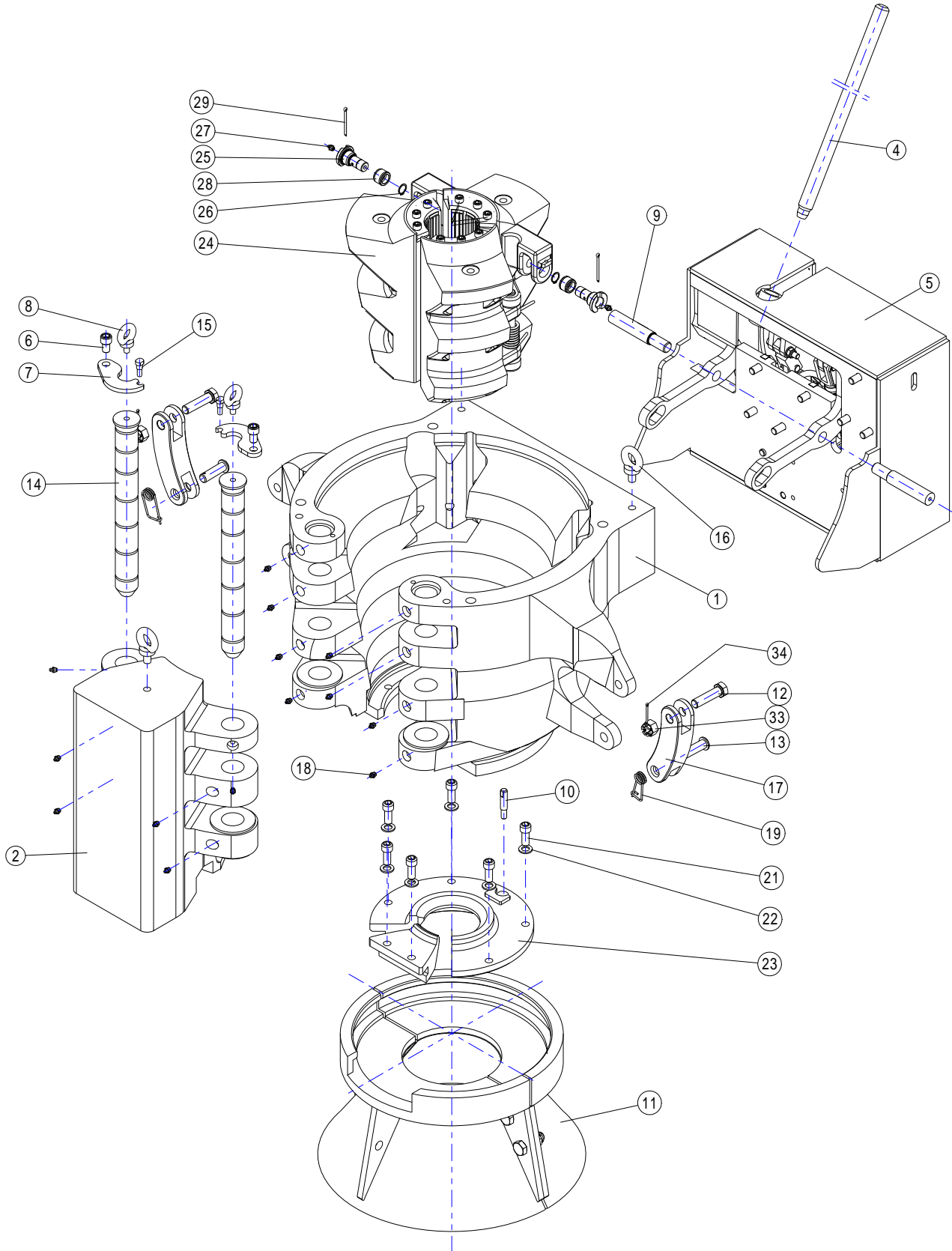
<b>Hinge Pin Body/Door</b>	
Hinge Pin Min. DIA new	49,75 mm / 1,959 inch
Bore Max. DIA new	50,089 mm / 1,972 inch
Bore Max. DIA worn	50,520 mm / 1,989 inch
Total clearance „A“	0,89 mm / 0,035
<b>Body</b>	
Dimensionen „B“	113 mm / 4,449 inch
Dimensionen „C“	840 mm / 33,070 inch
Radius „R“	60 mm / 2,362 inch

**11 DRAWINGS AND SPARE PARTS****11.1 Elevator / Spider Body, air operated**

725000-Y-A	B+V Type BVE-250 Elevator Body, API8C-PSL1, air / manually operated complete less Slips, Guide Plates & Guide Bell ,
725001-Y-A	B+V Type BVE-250 Spider Body, API8C-PSL1, air / manually operated complete less Slips, Guide Plates & Guide Bell ,



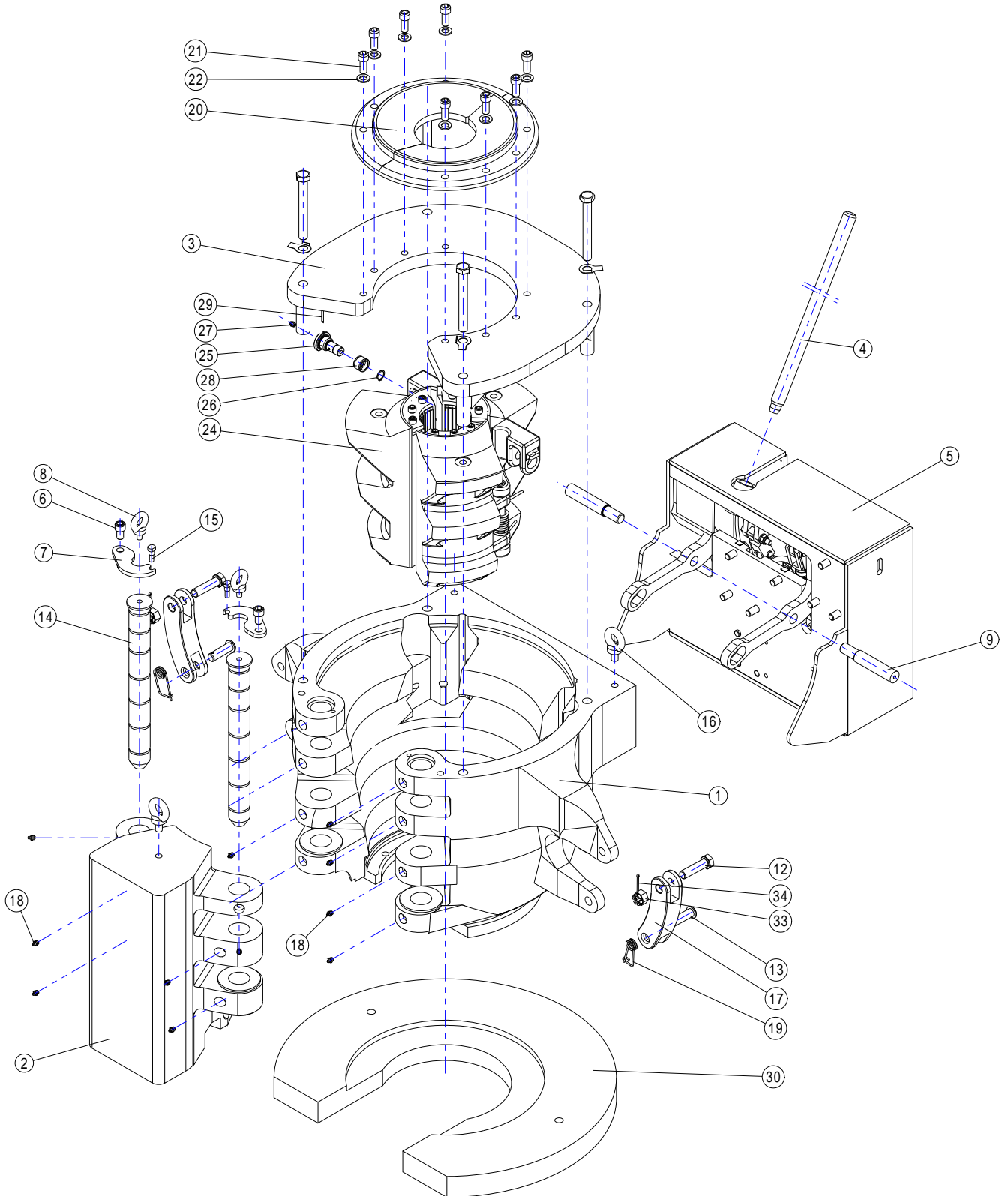
## 11.2 Elevator air operated comp. P/N 725000-Y-A



**Parts List Elevator air operated P/N 725000-Y-A**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725111-1	Body (manual Arrangement)
2	1	725101	Door
3	-	725150	Upper Guard Assembly (Spider)
4	1	735116	Hand Assembly
5	1	725400	Pneumatic Arrangement
6	2	643663	Screw
7	2	725117	Hinge Pin (Securing Plate)
8	2	755719	Screw
9	2	725431	Bolt of Yoke
10	1	725111-3	Bolt (Elevator)
11	1	725270	Casing Guide Bell Assembly (Elevator)
12	2	613623-1	Screw
13	2	622514	Clevis Pin with Head
14	2	725115	Hinge Pin
15	2	725118	Hinge Pin Securing Bolt
16	3	755402	Screw
17	2	612512	Link Block
18	14	70064	Grease Nipple
19	2	622515	Safety Spring
20	-	-	Upper Guard Guide Plate Half (Spider)
21	6	752324	Cap Screw (Elevator)
22	6	752325	Lock Washer (Elevator)
23	-	-	Bottom Guide Plate (Elevator)
24	1	-	Slip Assembly
25	2	752209	Pin
26	2	725416	Retaining Ring
27	2	70064	Grease Nipple
28	2	752210	Roller
29	2	752314	Cotter Pin
30	2	725442	Safety Plate
31	4	735852	Screw
32	-	-	Spider Adapter Plate
33	2	752338	Castle Nut
34	2	752339	Cotter Pin

## 11.3 Spider air operated complete P/N 725001-Y-A

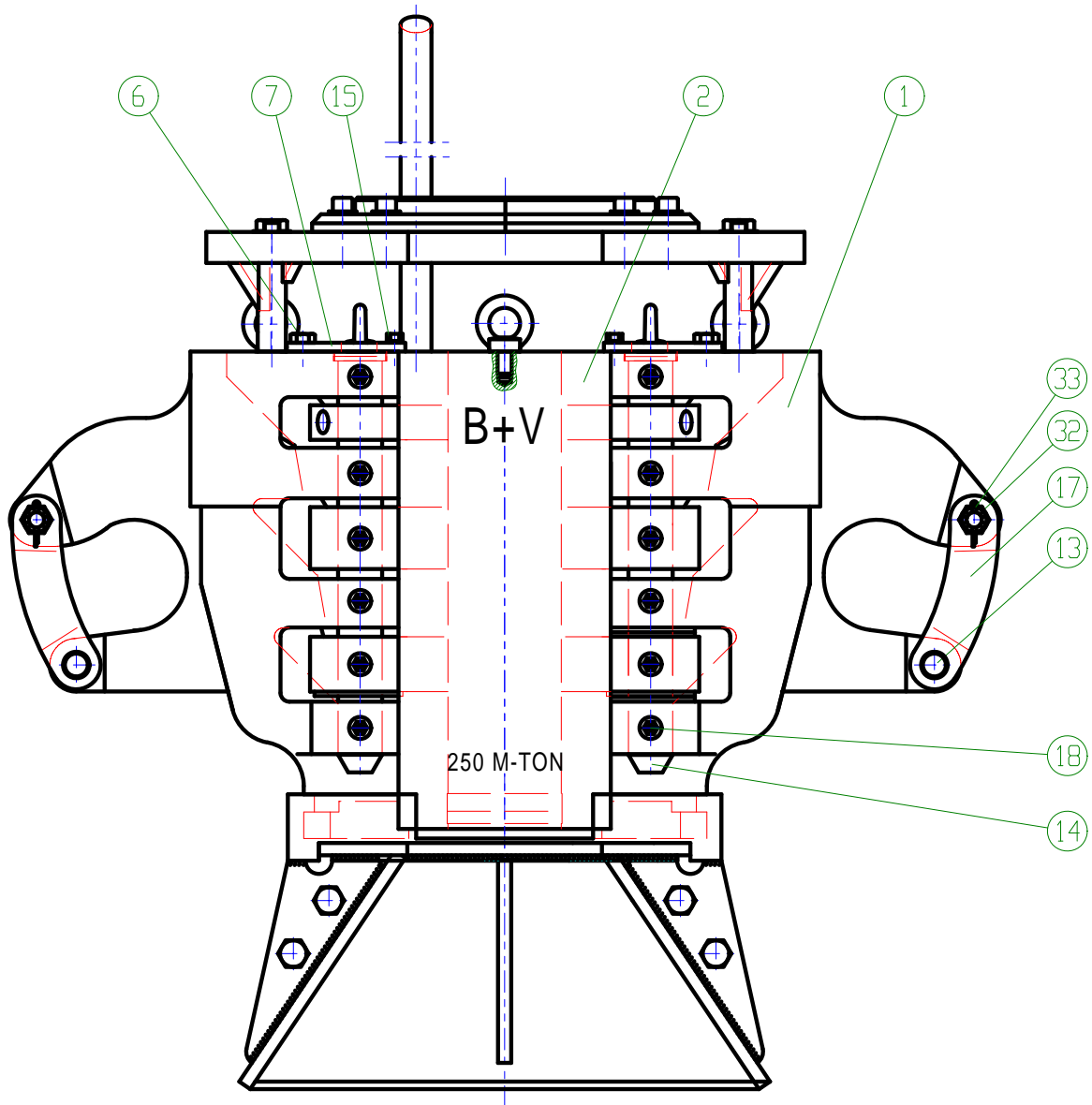


**Parts List Spider air operated P/N 725001-Y-A**

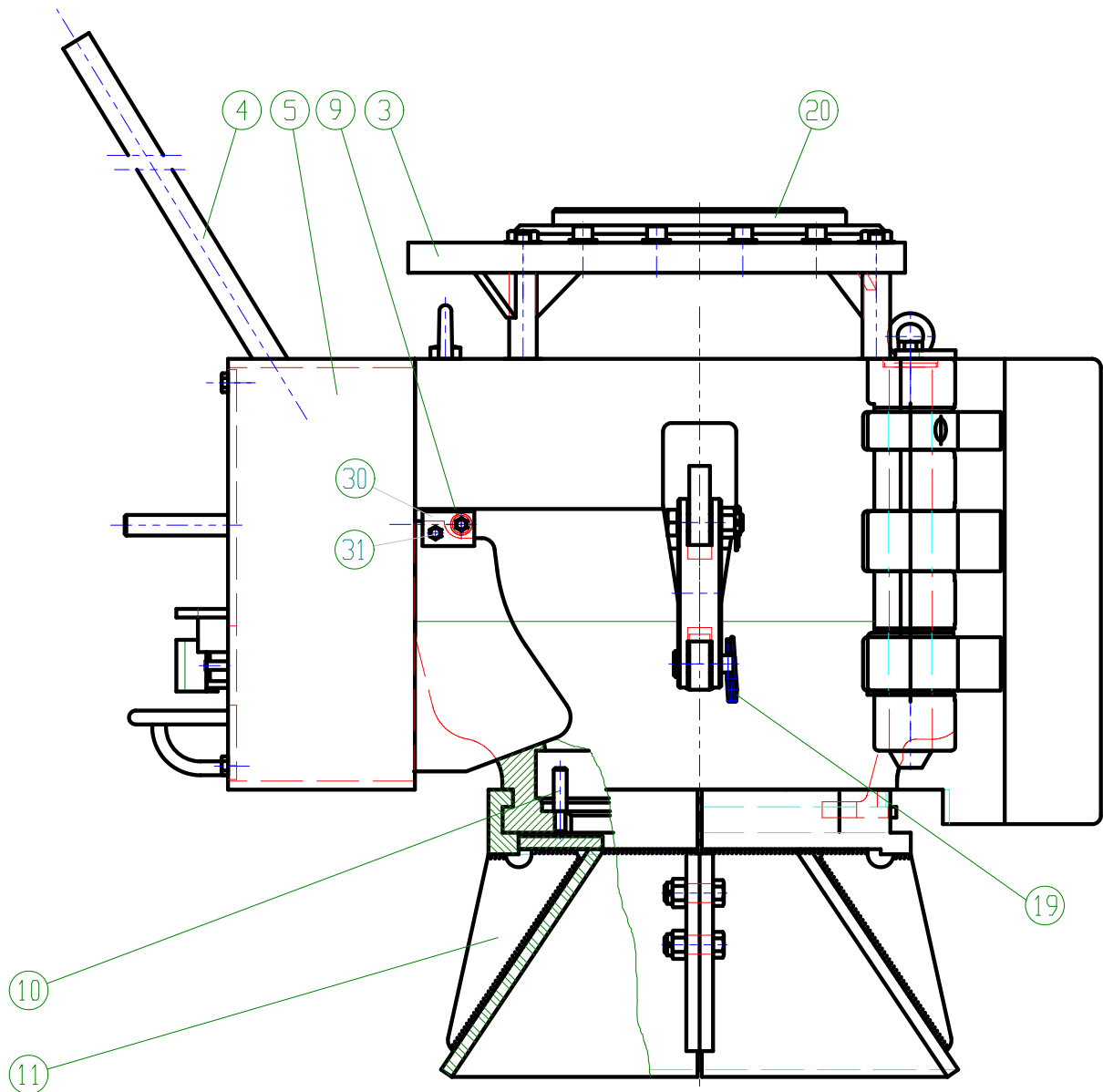
<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725111-1	Body (manual Arrangement)
2	1	725101	Door
3	1	725150	Upper Guard Assembly (Spider)
4	1	735116	Hand Assembly
5	1	725400	Pneumatic Arrangement
6	2	643663	Screw
7	2	725117	Hinge Pin (Securing Plate)
8	2	755719	Screw
9	2	725431	Bolt of Yoke
10	-	725111-3	Bolt (Elevator)
11	-	725270	Casing Guide Bell Assembly (Elevator)
12	2	613623-1	Screw
13	2	622514	Cleavis Pin with Head
14	2	725115	Hinge Pin
15	2	725118	Hinge Pin
16	3	755402	Screw
17	2	612512	Link Block
18	14	70064	Grease Nipple
19	2	622515	Safety Spring
20	1	-	Upper Guard Guide Plate Half (Spider) see Page 43
21	8	752324	Cap Screw (Spider)
22	8	752325	Lock Washer (Spider)
23	-	-	Bottom Guide Plate (Elevator) see Page 44
24	1	-	Slip Assembly see Page 48-53
25	2	752209	Pin
26	2	752316	Retaining Pin
27	2	70064	Grease Nipple
28	2	752210	Roller
29	2	752314	Cotter Pin
30	2	725442	Safety Plate
31	4	735852	Screw
32	1	725500	Spider Adapter Plate
33	2	752338	Castle Nut
34	2	752339	Cotter Pin

Drawing-No. 725000

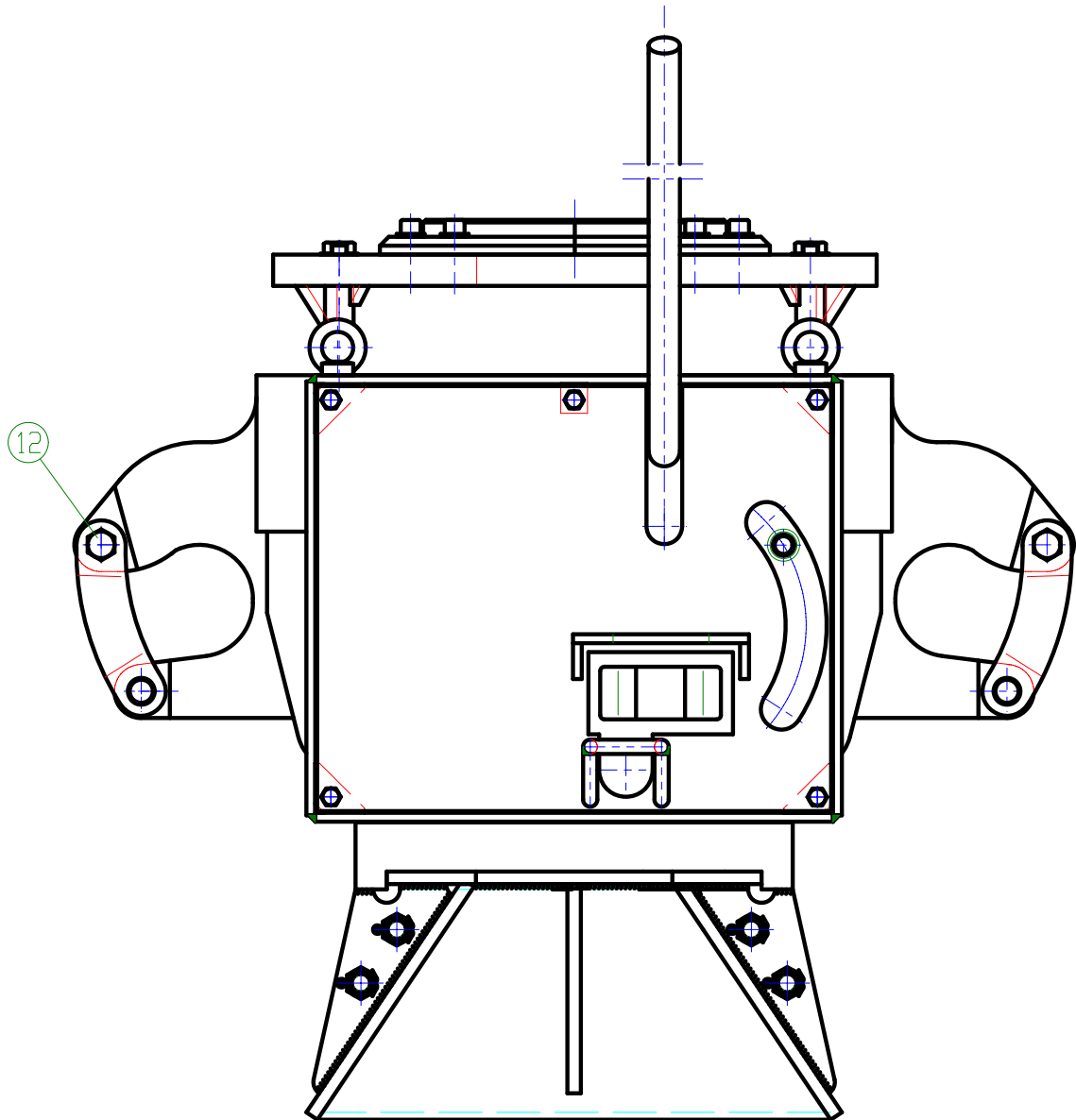
## Front View



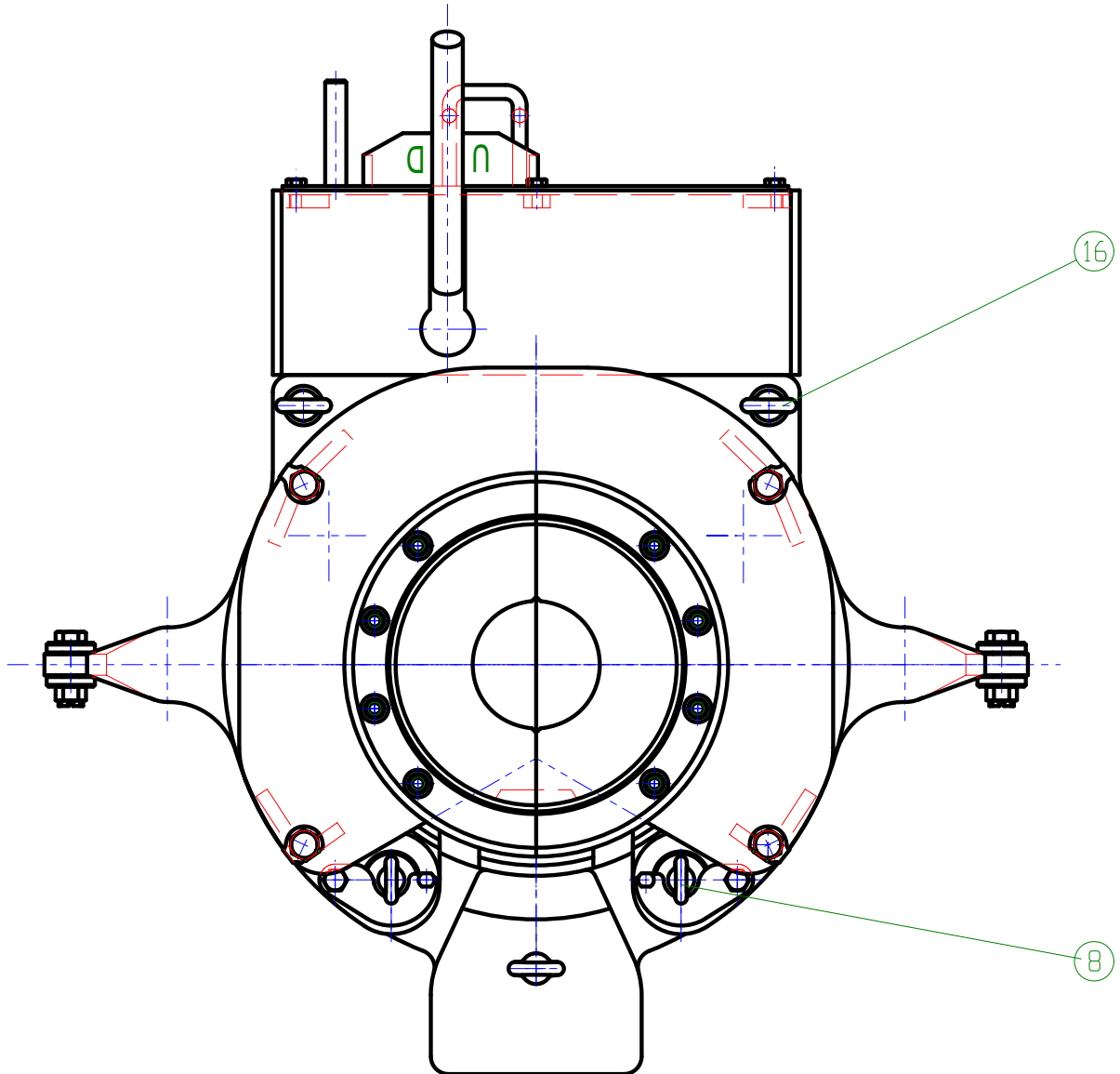
## Side View



Rear View

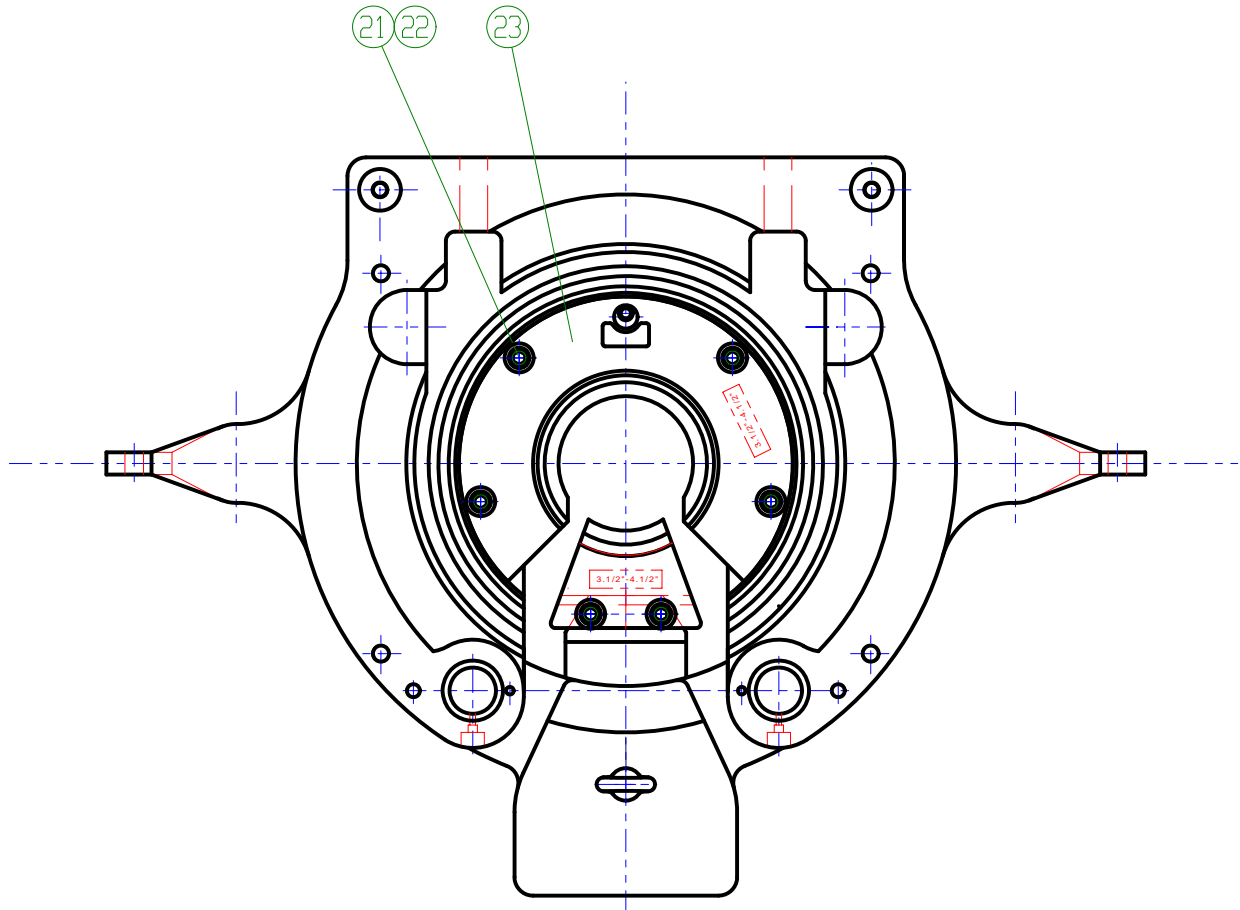


Top View

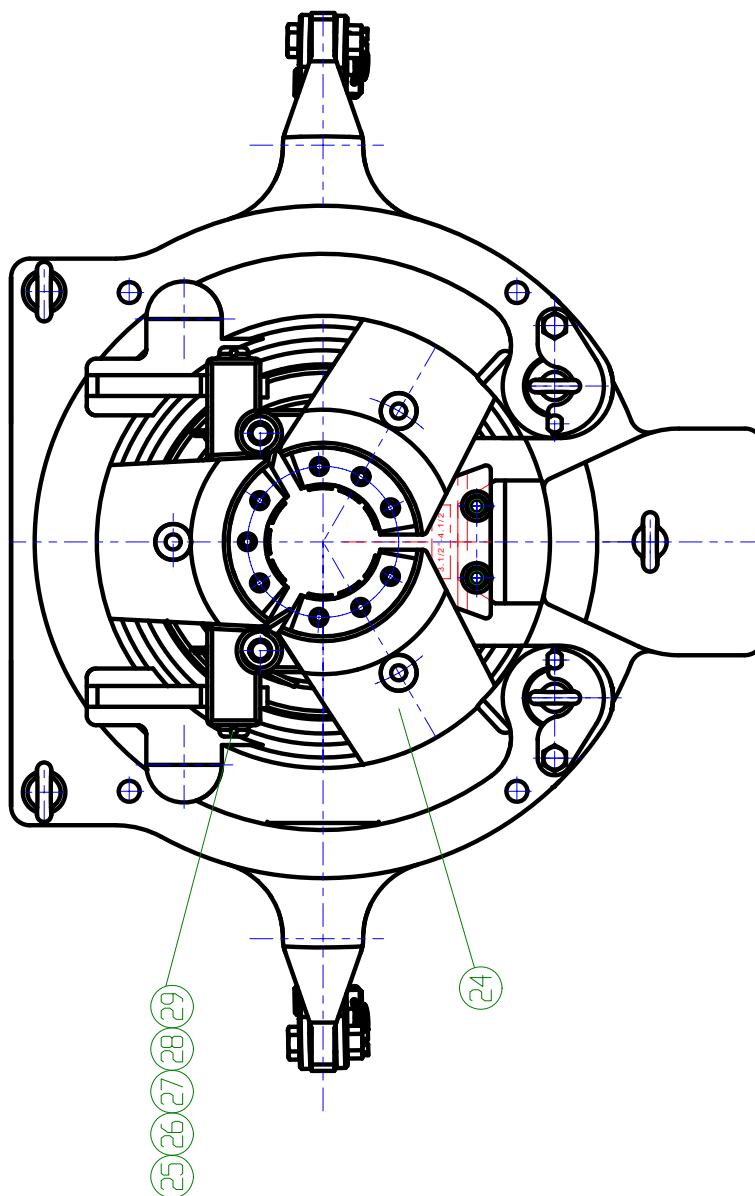




## Top View without Slip-Assembly

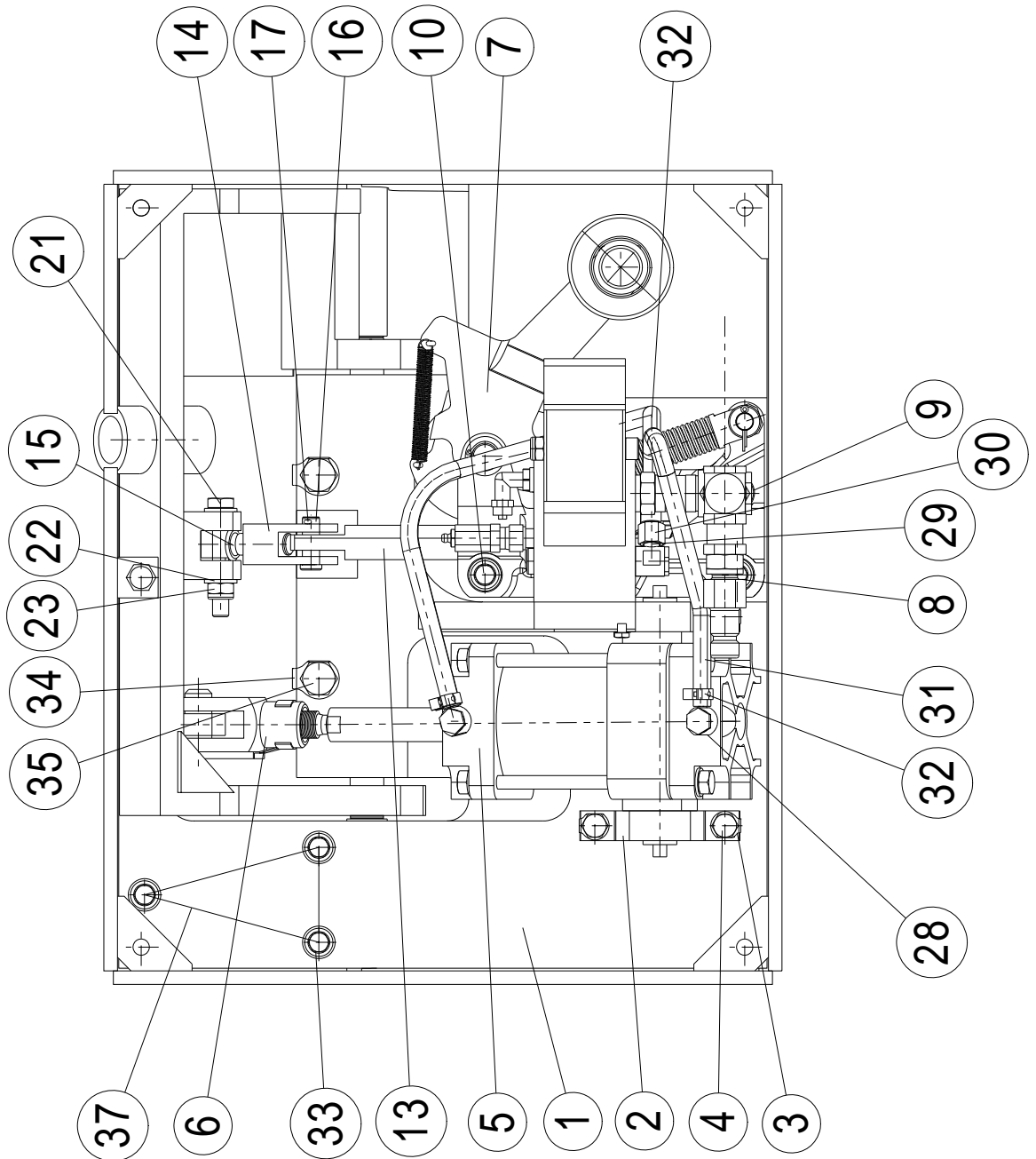


Top View without Upper Guard

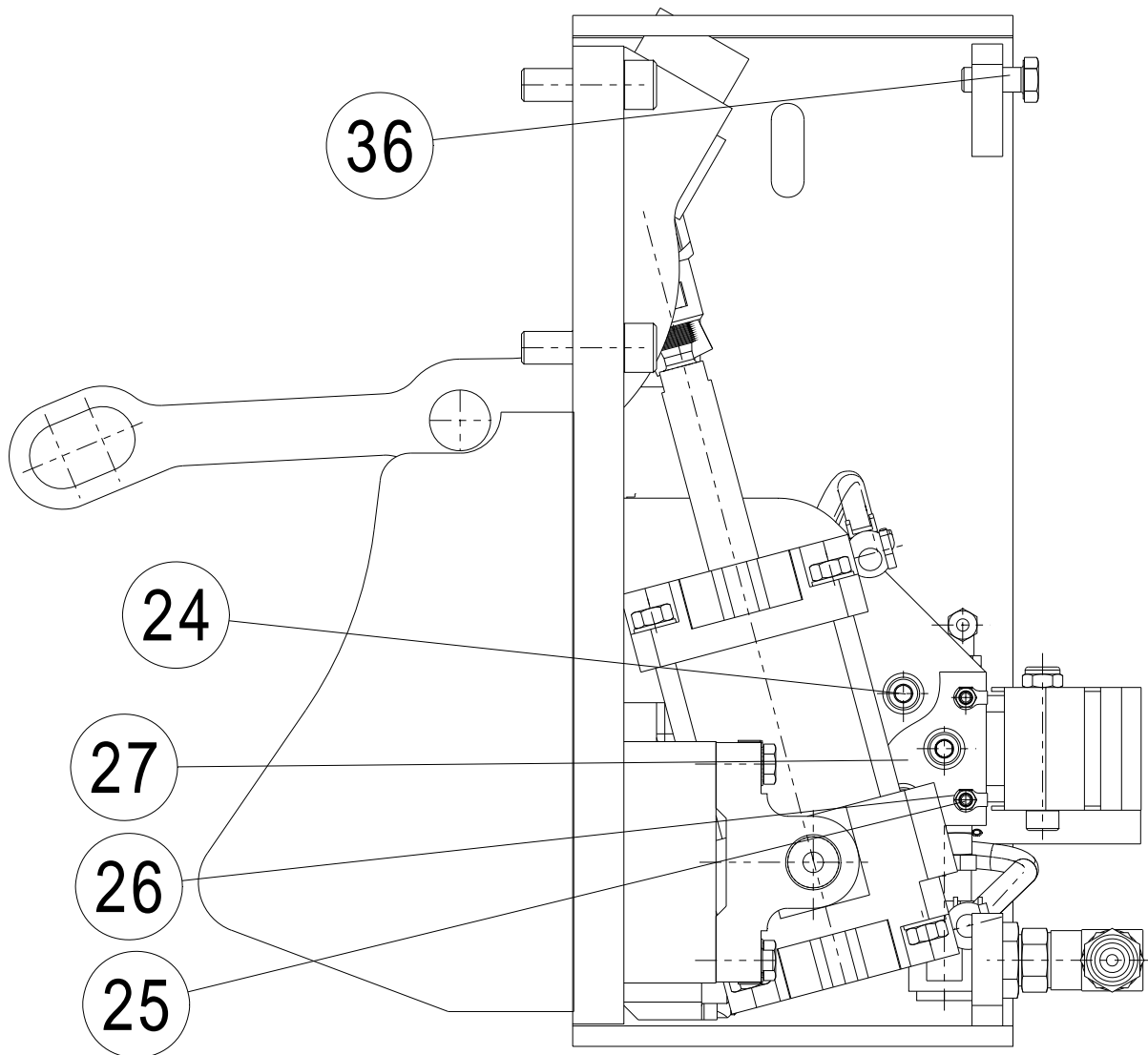


## 11.4 Pneumatic Arrangement Part-No.725400

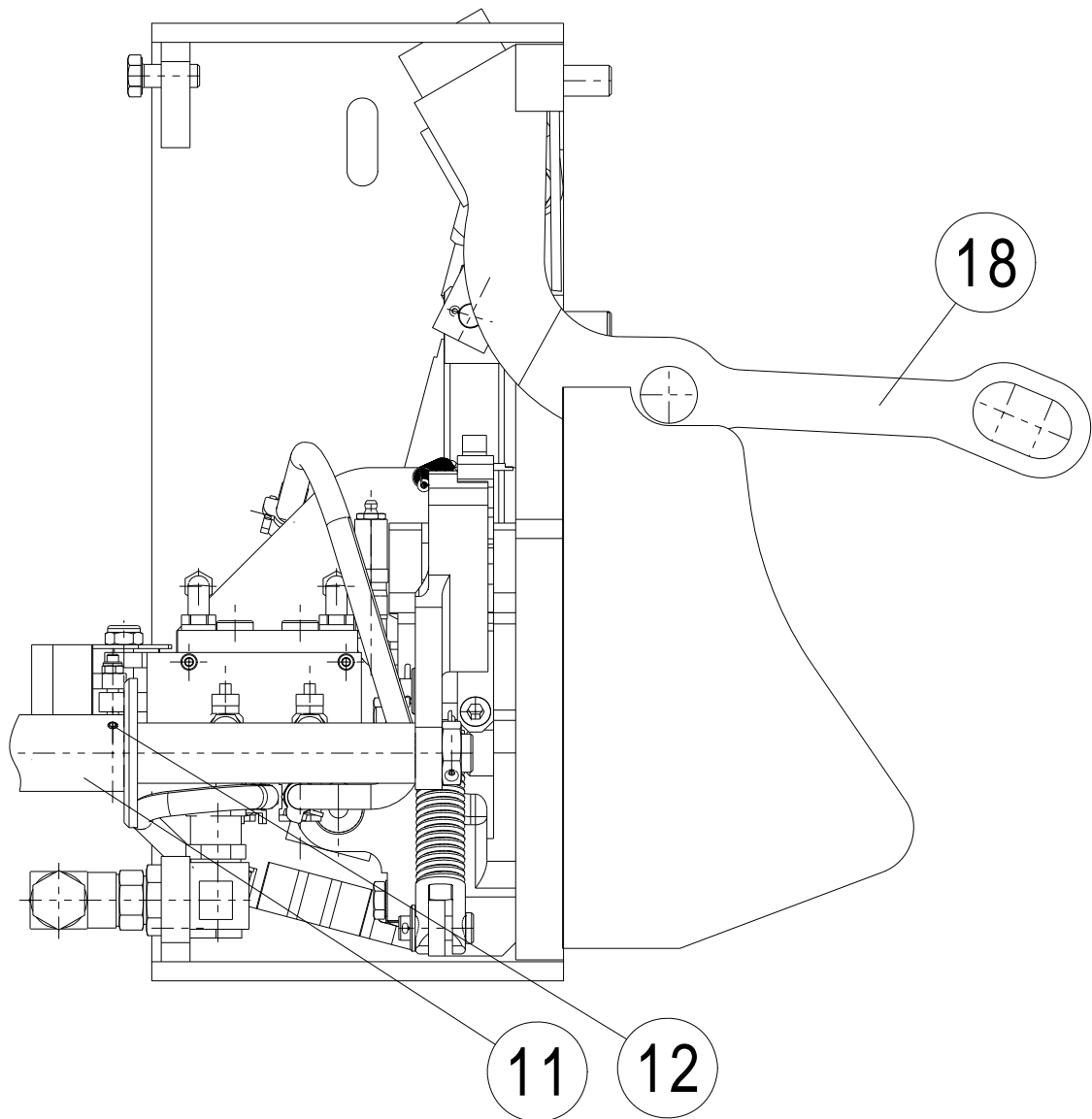
Rear View without Cover Plate



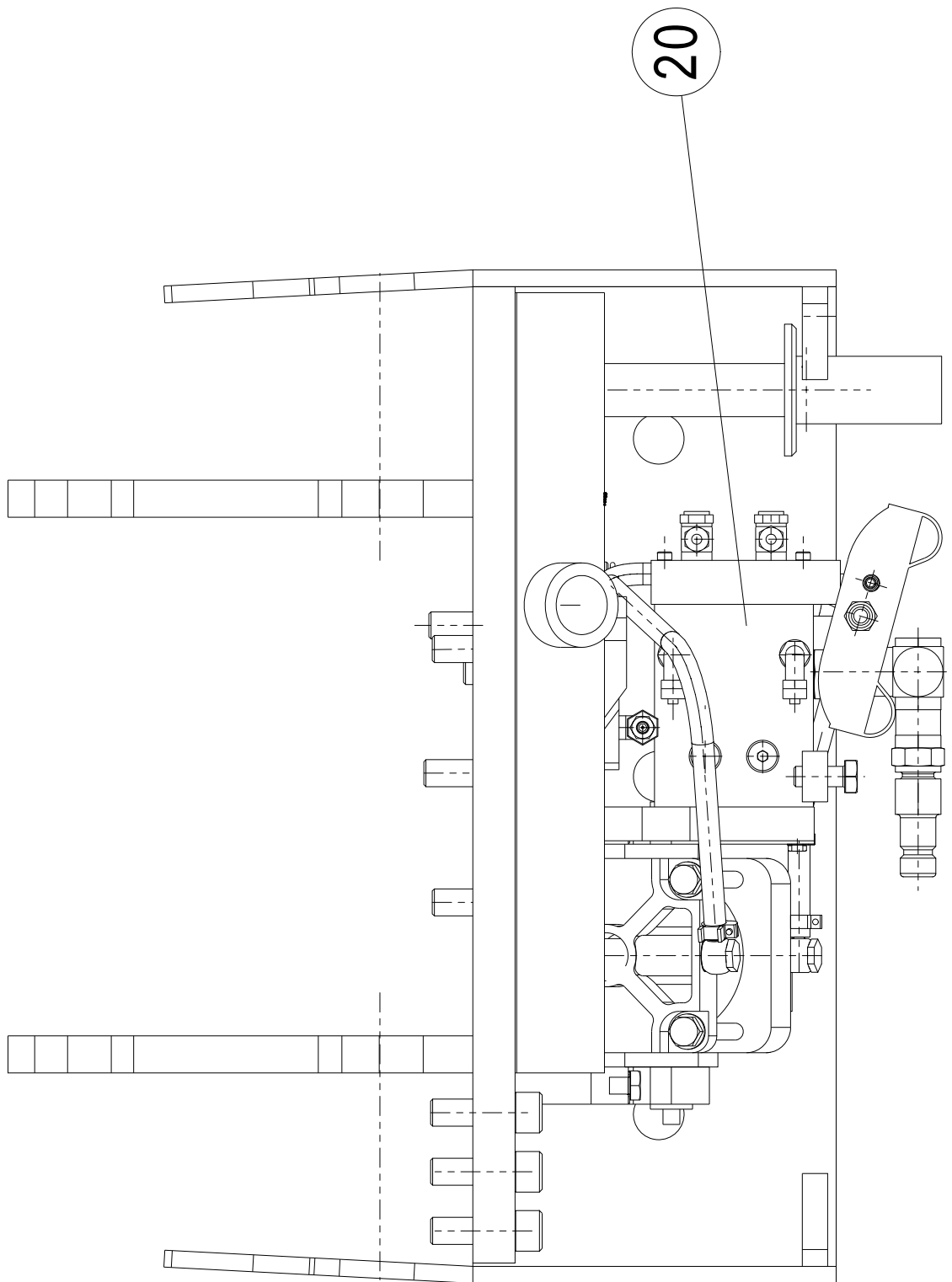
# Left View inside



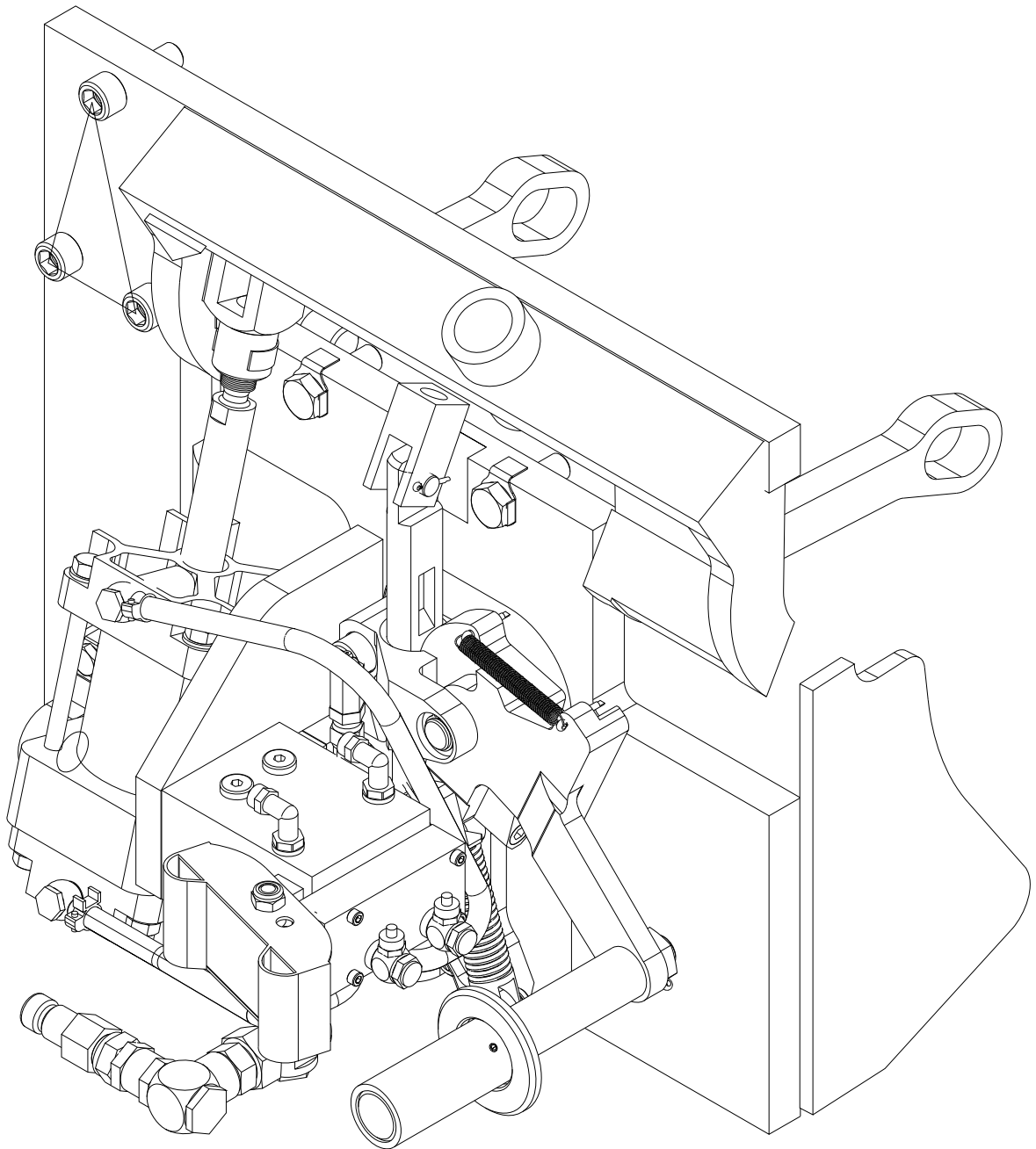
Right View inside



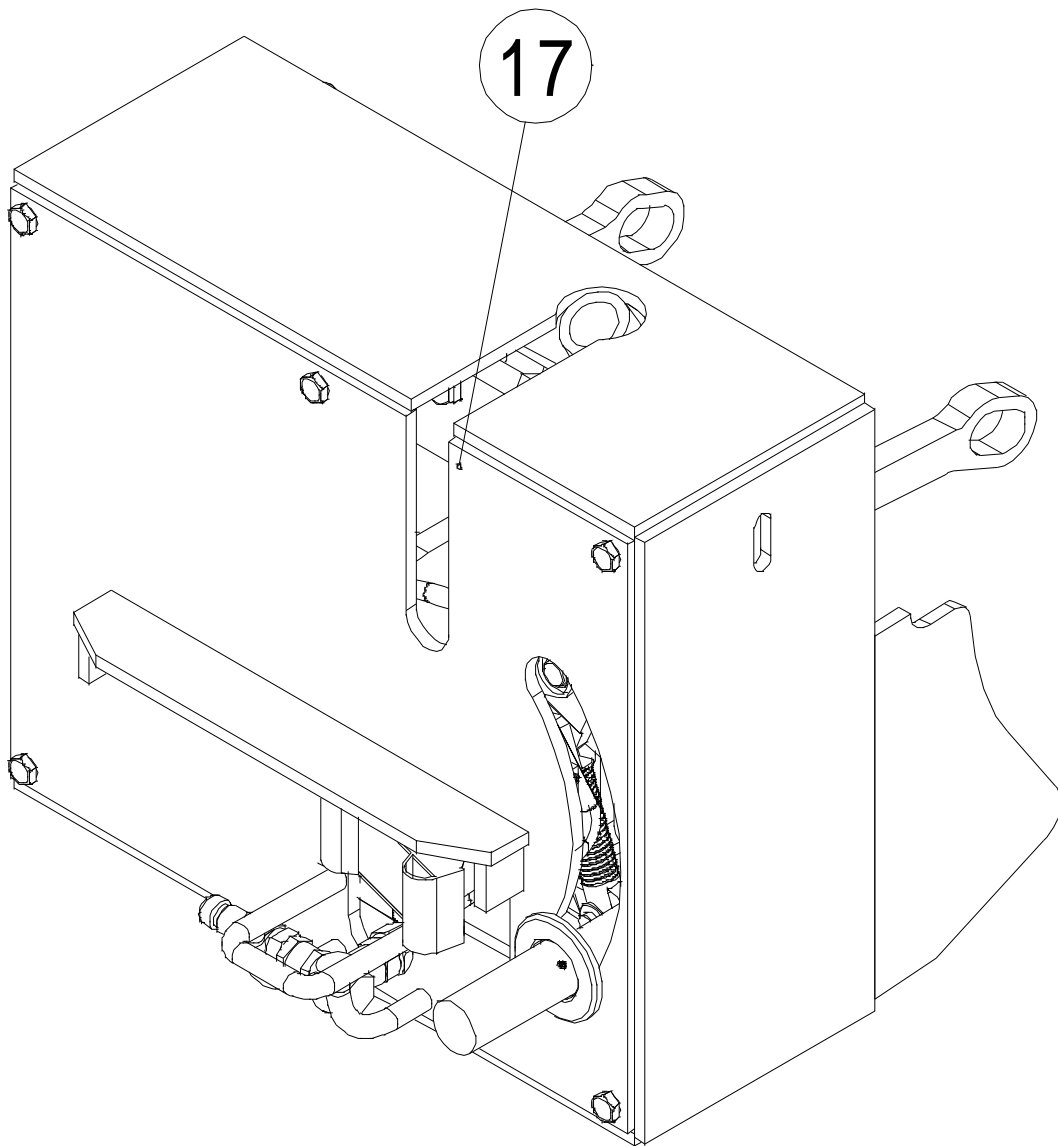
Top View inside



# View without Cover



View complete with Cover

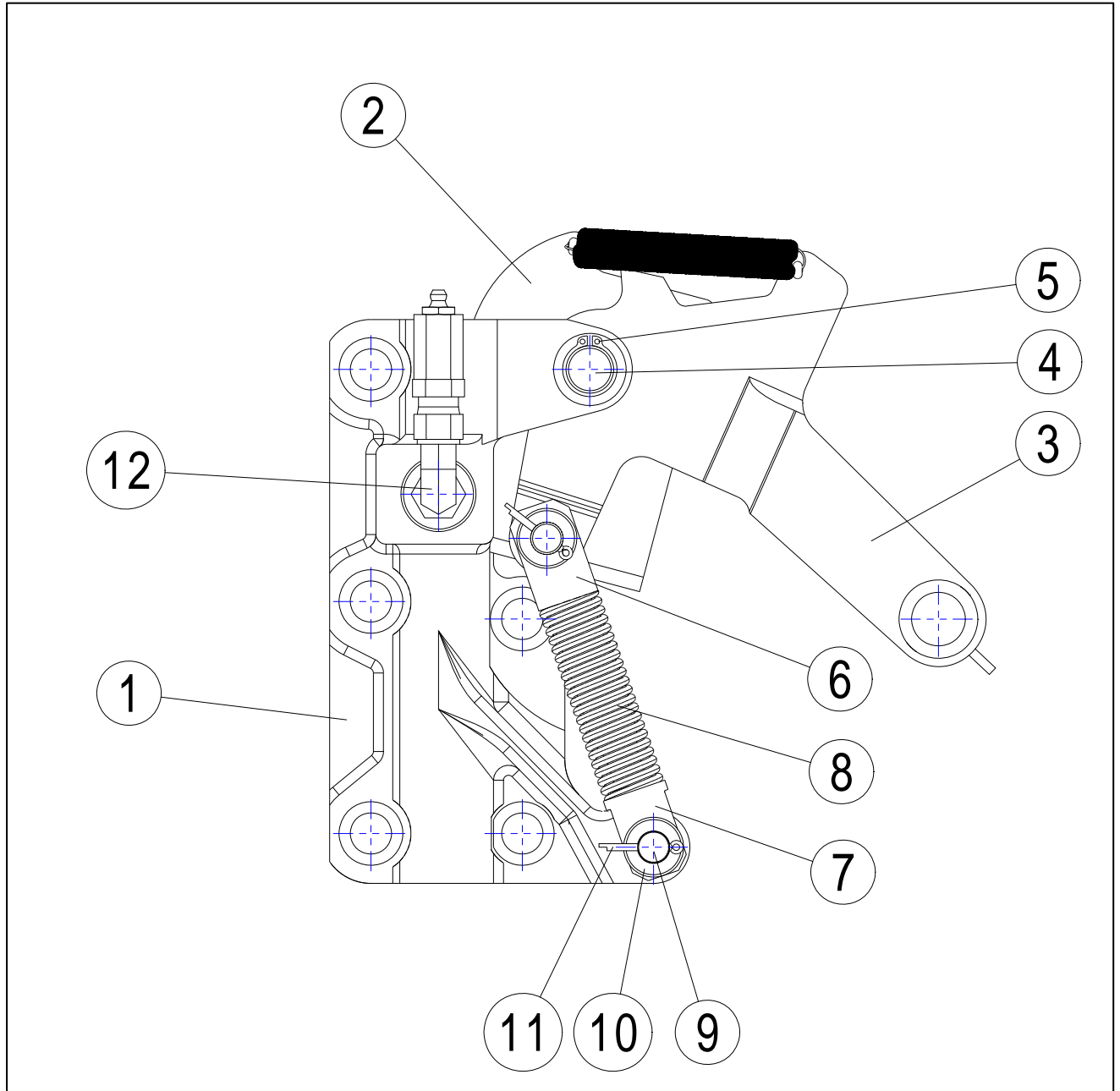




## Parts List Pneumatic Arrangement P/N 725400

<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
1	1	725410	Pneumatic Cover Assy.
2	2	725520-1	Cylinder Foundation
3	4	735854	Washer
4	4	725446	Screw
5	1	725520	Pneumatic Cylinder
6	1	725520-2	Cylinder Yoke
7	1	725413	Lock Assembly
8	2	725467	Screw
9	2	725466	Screw
10	1	725465	Screw
11	1	752113-3	Handle
12	1	612596	Spring Straight Pin
13	1	752214	Lock Rod
14	1	752208	Yoke Clevis
15	1	735207	Yoke Eye Bolt
16	1	752317	Lock Spring Pin
17	2	645196	Splint
18	1	725430	Yoke
19	-	-	-
20	1	725440	Control Valve Assembly
21	1	645029	Screw
22	2	735327	Washer
23	1	752312	Lock Nut
24	3	725463	Screw
25	2	725135	Screw
26	2	613783	Safety sheet
27	1	725417	Plate
28	2	612664-3	Swivel-Connection
29	2	612664-1	Hose Connection
30	2	612664-2	Nut
31	2	612956	Hydraulic Hose
32	4	613526	Straight-Connection I
33	3	735333	Screw
34	2	617520	Safety sheet
35	2	725464	Screw
36	5	735326	Cap Screw
37	1	612574	Rope

## 11.5 Lock Assembly Part-No. 725413

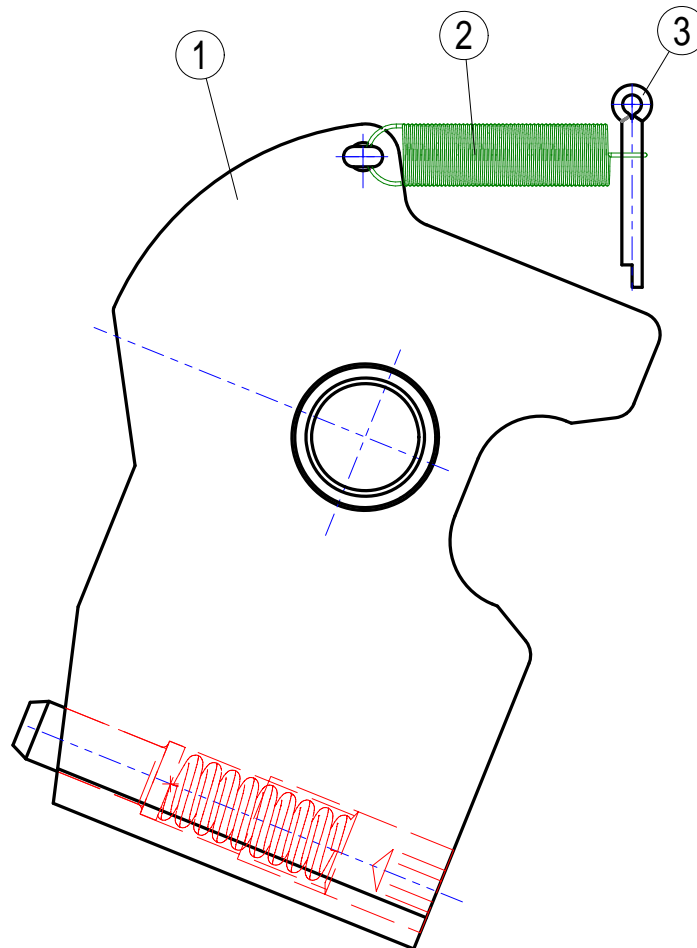


**Parts List Lock Assembly P/N 725413**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	752112	Lock Bracket
2	1	752110	Slip Lock
3	1	725414	Lock Handle Assembly
4	1	752213	Bracket Pin
5	2	725416	Retaining Ring
6	1	752216	Lock Spring Plunger Guide
7	1	752215	Lock Spring Plunger
8	1	752217	Lock Spring
9	1	752317	Lock Spring Pin
10	2	752318	Lock Spring Washer
11	1	80340-1	Cotter Pin
12	1	725412	Greasing

### 11.5.1 Slip Lock Assembly

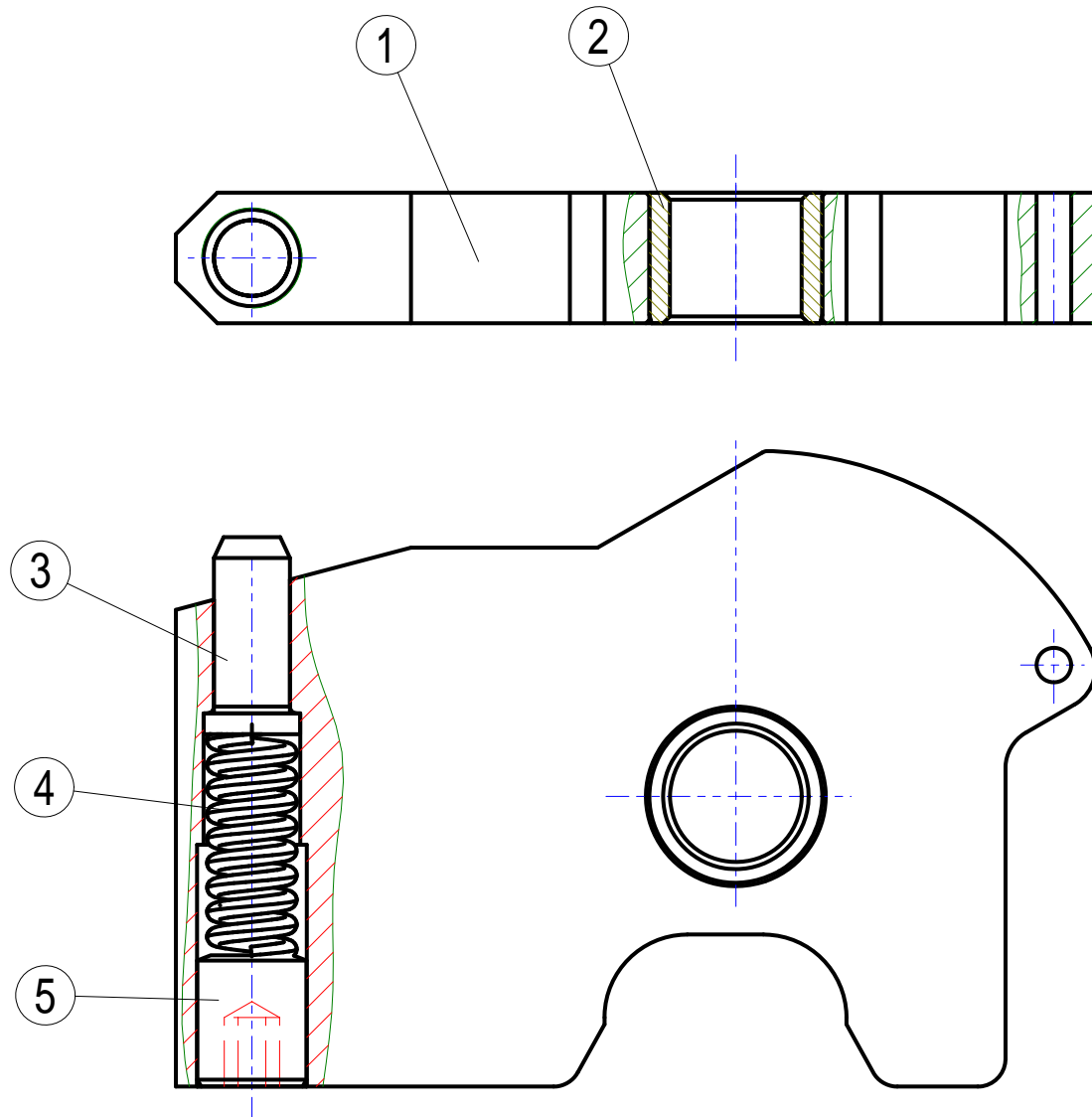
Part-No.752110



<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
1	1	752211	Lock and Cam
2	1	752212	Cam Spring
3	1	70814	Cotter Pin

## 11.5.1.1 Slip Lock and Cam

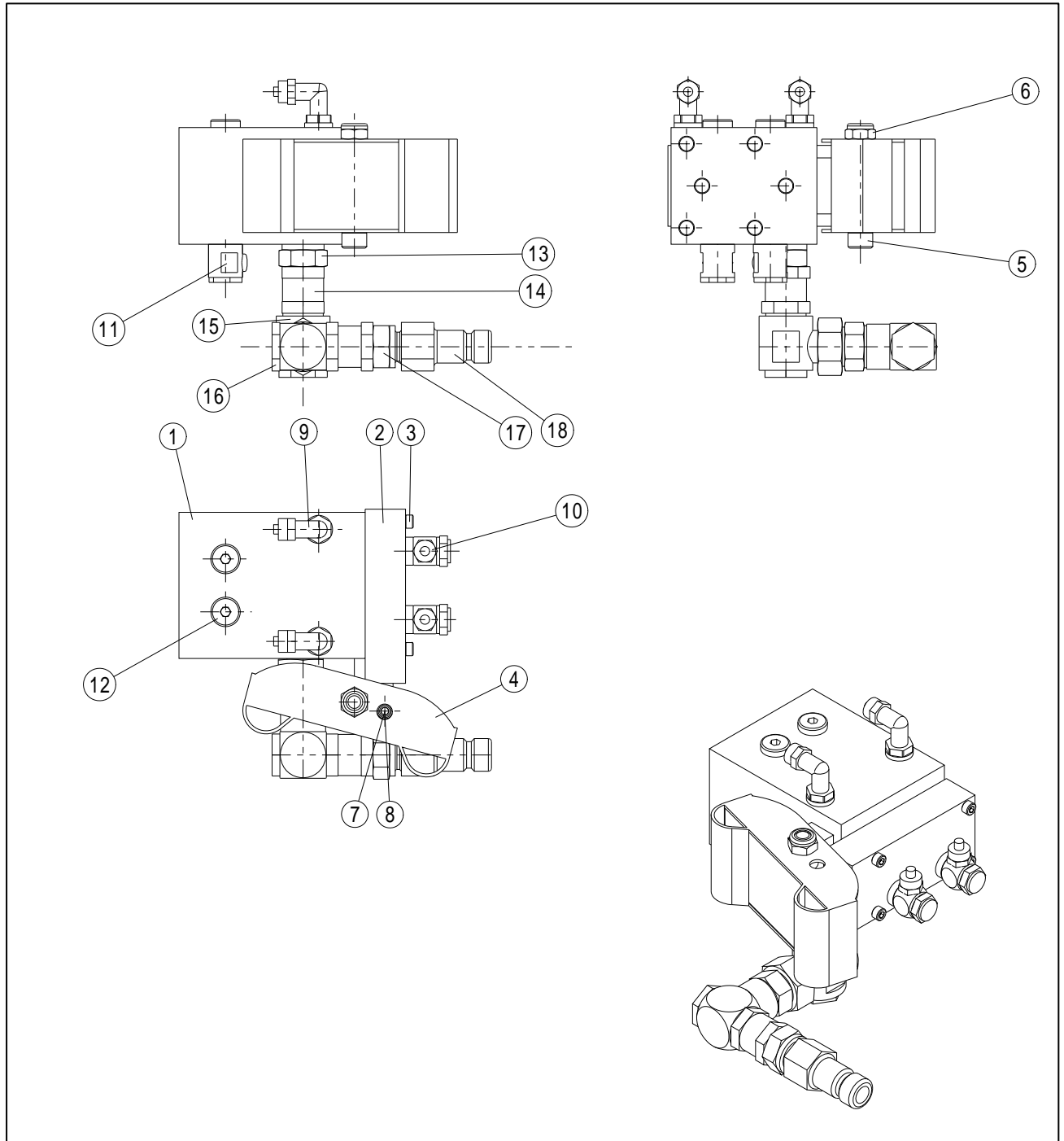
Part-No.752211



<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
1	1	752222	Lock and Cam
2	1	752223	Bush
3	1	752218	Overload Plunger
4	1	752219	Overload Spring
5	1	752320	Overload Spring Retainer Screw

## 11.6 Control Valve Assembly

Part-No. 725440

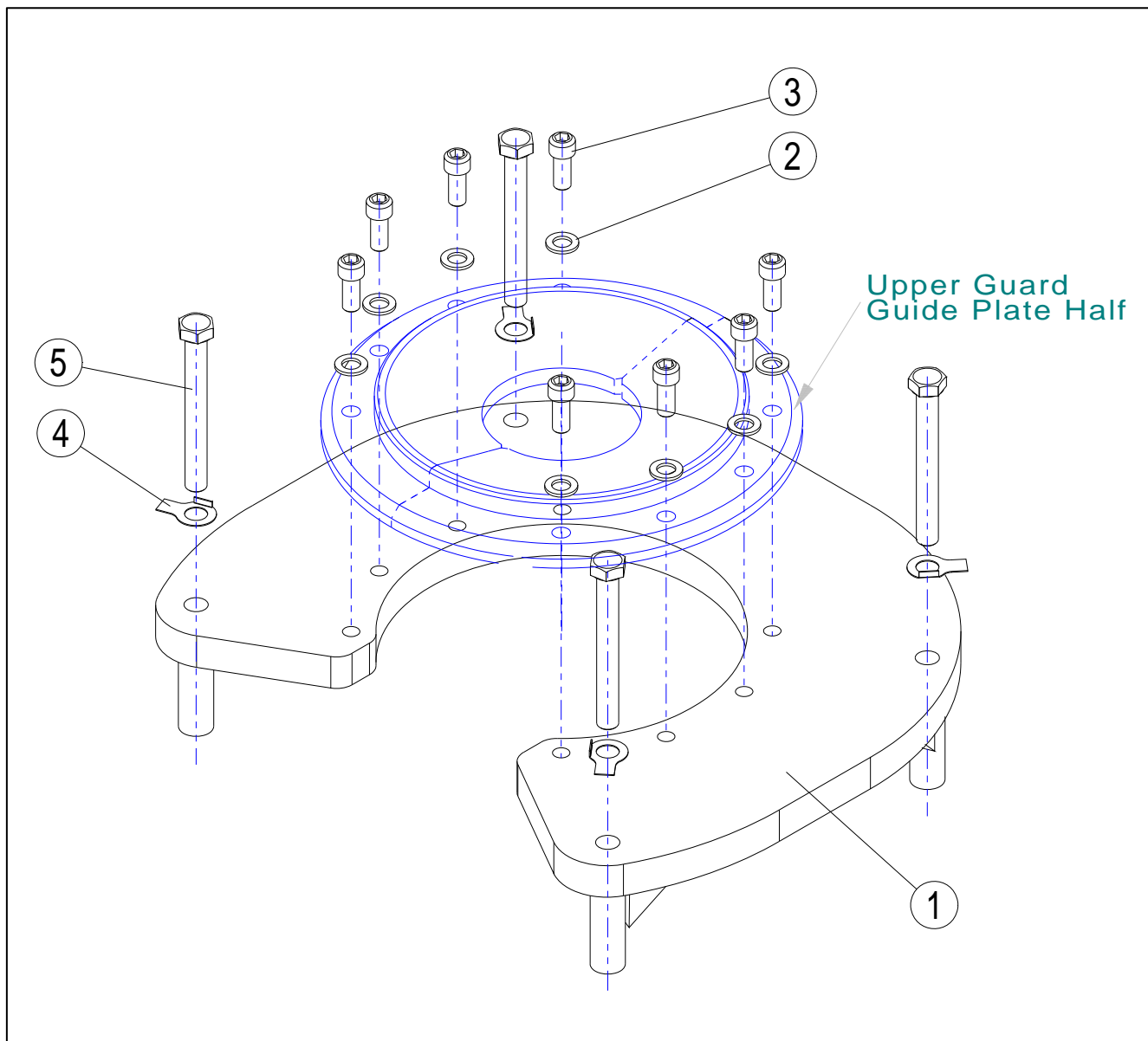


**Parts List Control Valve Assembly P/N 725440**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	752802-1	Control Valve Block
2	1	735857	Valve
3	4	725441	Screw
4	1	89001	Treadle for Valve
5	1	735858	Screw
6	1	89125	Nut
7	1	612672	Screw
8	1	660414-2	Nut
9	2	752803	Defender
10	2	612661-1	Absorber III
11	2	613945	90 degree Fitting
12	2	612929	Blind screw
13	1	613943	Fitting
14	2	615703	Coupling 1/2"
15	1	612647-1	Swivel Connection
16	1	752821	Screw-Socket
17	1	613943	Fitting
18	1	752828	Air Coupling

## 11.7 Upper Guard Guide Assembly / Spider

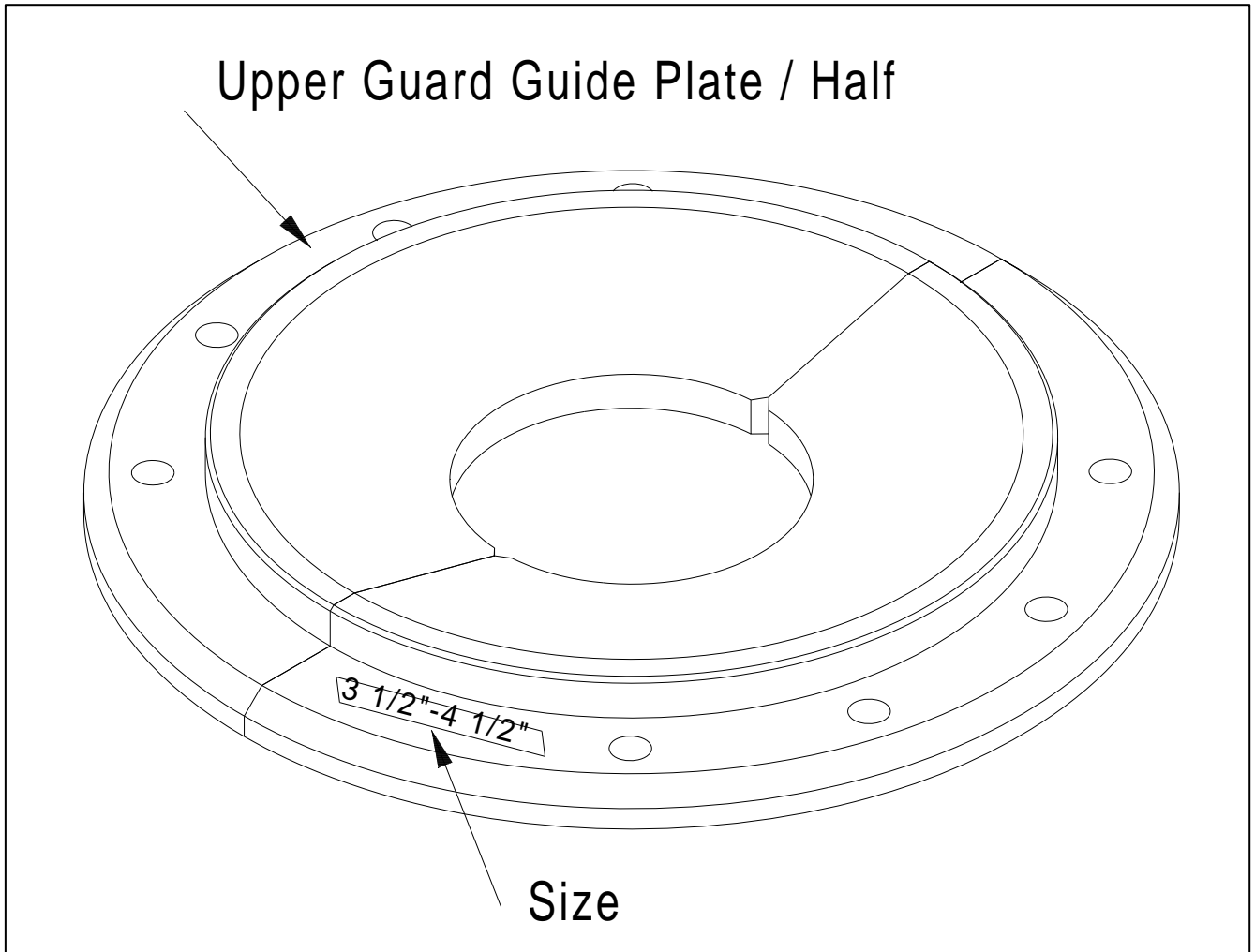
Part-No. 725150



<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
1	1	725151	Upper Guard
2	8	755125	Washer
3	8	752328	Retainer Cap Screw
4	4	725139	Safety Sheet
5	4	725138	Screw

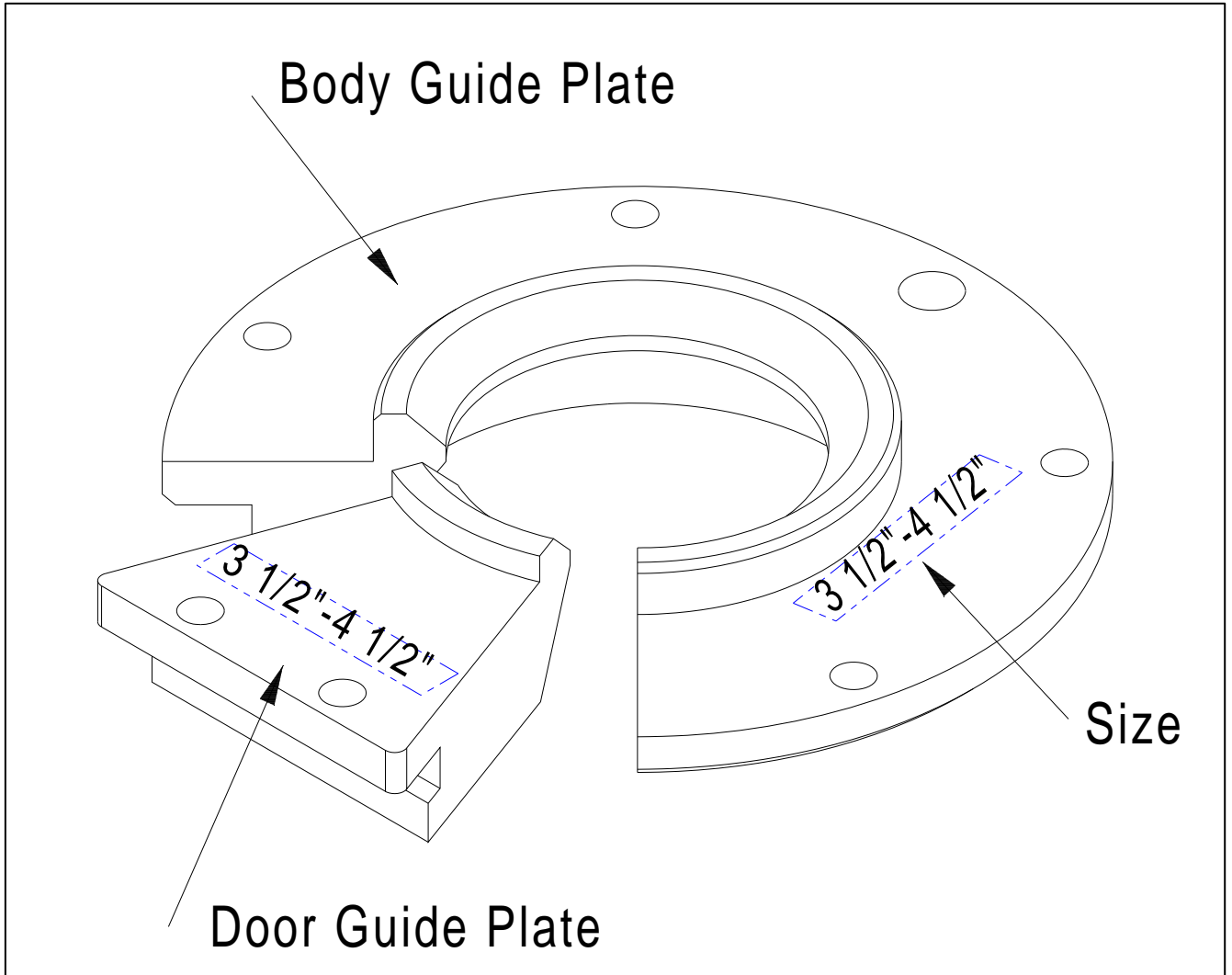


## 11.8 Upper Guard Guide Plate / Spider

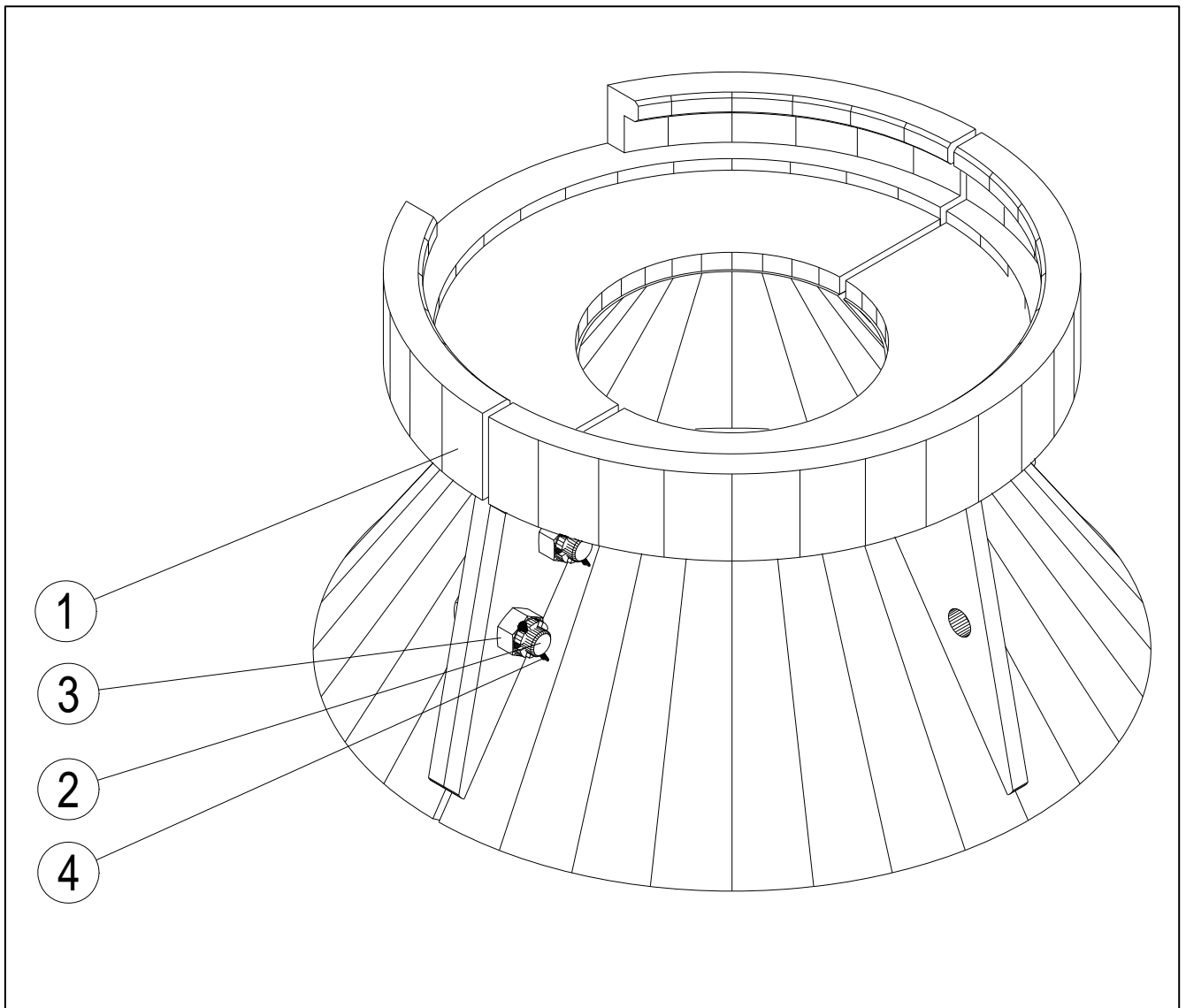


<u>Part-No.</u>	<u>Pipe Size</u>
725901	2.3/8"-3.1/2"
725903	3.1/2"-4.1/2"
725905	4.1/2"-5.1/2"
725907	6.5/8"-7.5/8"

## 11.9 Guide Plate Assembly / Elevator (Body Guide Plate and Door Guide Plate)

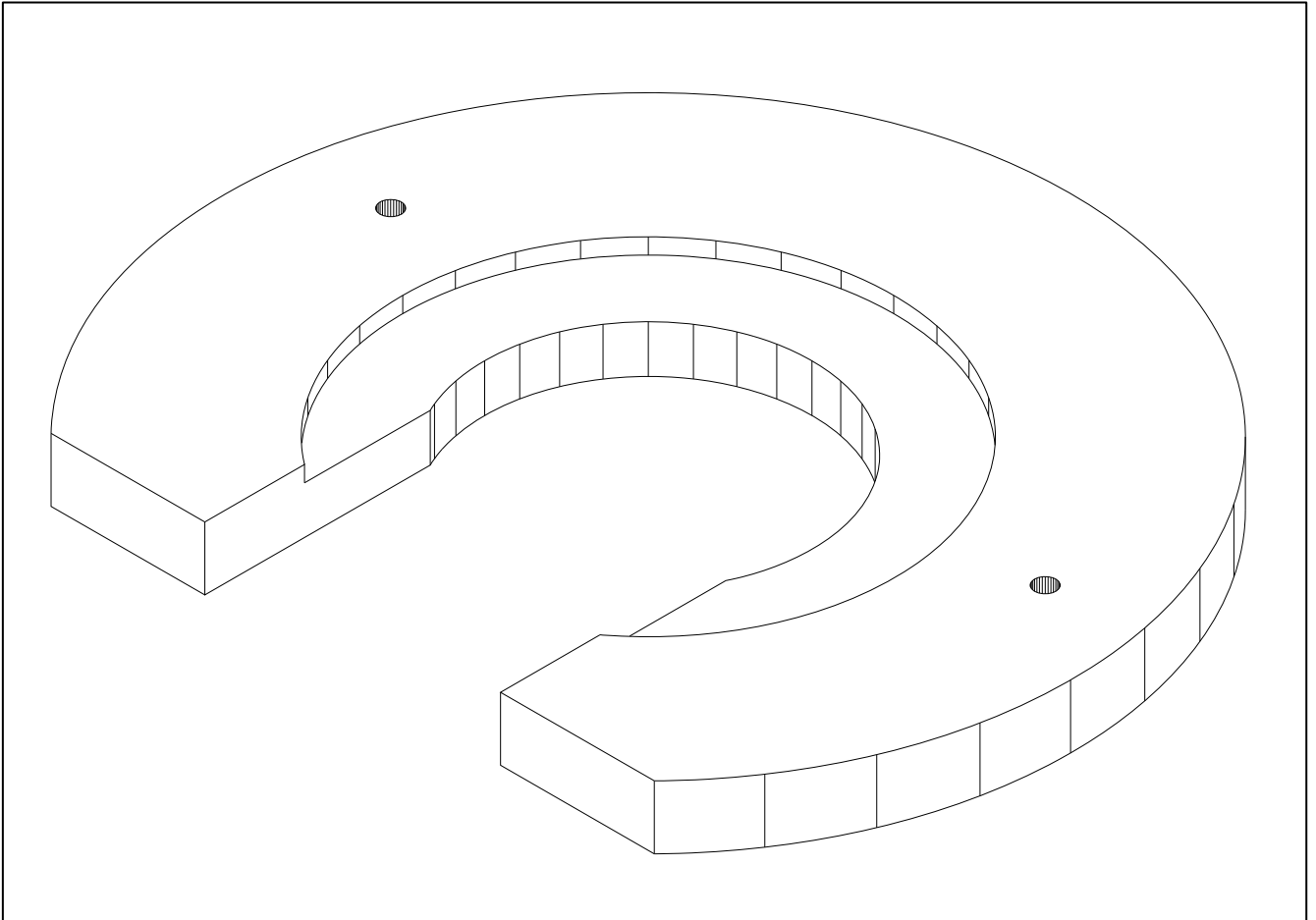


<b>Part-No.</b>	<b>Description</b>	<b>Pipe Size</b>
725902	Guide Plate Ass.	2.3/8"-3.1/2"
725902-1	Body Guide Plate	2.3/8"-3.1/2"
725902-2	Door Guide Plate	2.3/8"-3.1/2"
725904	Guide Plate Ass.	3.1/2"-4.1/2"
725904-1	Body Guide Plate	3.1/2"-4.1/2"
725904-2	Door Guide Plate	3.1/2"-4.1/2"
725906	Guide Plate Ass.	4.1/2"-5.1/2"
725906-1	Body Guide Plate	4.1/2"-5.1/2"
725906-2	Door Guide Plate	4.1/2"-5.1/2"
725908	Guide Plate Ass.	6.5/8"-7.5/8"
725908-1	Body Guide Plate	6.5/8"-7.5/8"
725908-2	Door Guide Plate	6.5/8"-7.5/8"

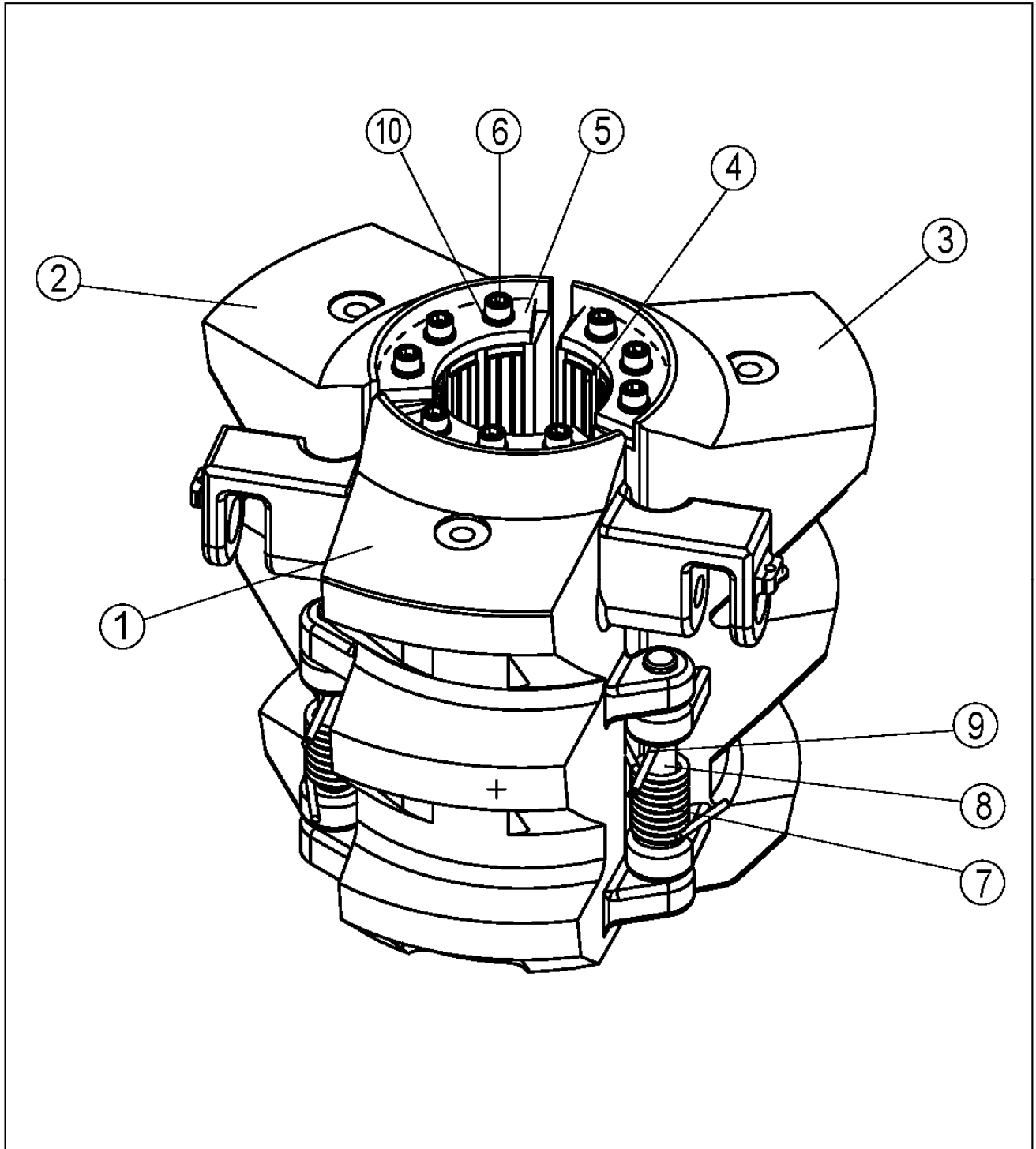
**11.10 Casing Guide Bell Assembly /Elevator**  
Part-No. 725270

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725271	Bell
2	4	725272	Screw
3	4	725273	Nut
4	4	725274	Cotter Pin

## 11.11 Spider Adapter Plate for Rotary Table



## 11.12 Slip Assembly



**11.12.1 Slip Assembly 3.1/2"x2.3/8"****Part-No. 725325**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725355-1	Center Slip Segment 2.3/8"-3.1/2"
2	1	725355-2	Left Slip Segment 2.3/8"-3.1/2"
3	1	725355-3	Right Slip Segment 2.3/8"-3.1/2"
4	18	351001	Reducing insert 3.1/2" x 2.3/8"
5	3	725336	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	752404	Cotter Pin
10	9	725102	Lock Washer

**11.12.2 Slip Assembly 3.1/2"x2.7/8"****Part-No. 725330**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725355-1	Center Slip Segment 2.3/8"-3.1/2"
2	1	725355-2	Left Slip Segment 2.3/8"-3.1/2"
3	1	725355-3	Right Slip Segment 2.3/8"-3.1/2"
4	18	350602	Reducing insert 3.1/2" x 2.7/8"
5	3	725336	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	752404	Cotter Pin
10	9	725102	Lock Washer

**11.12.3 Slip Assembly 3.1/2"x3.1/2"****Part-No. 725355**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725355-1	Center Slip Segment 2.3/8"-3.1/2"
2	1	725355-2	Left Slip Segment 2.3/8"-3.1/2"
3	1	725355-3	Right Slip Segment 2.3/8"-3.1/2"
4	18	350103	Basic insert 3.1/2"
5	3	725336	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	752404	Cotter Pin
10	9	725102	Lock Washer

**11.12.4 Slip Assembly 4.1/2"x3.1/2"****Part-No. 725340**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 4.1/2"
2	1	725344	Left Slip Segment 4.1/2"
3	1	725345	Right Slip Segment 4.1/2"
4	36	350903	Reducing insert 4.1/2" x 3.1/2"
5	3	725366	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	752404	Cotter Pin
10	9	725102	Lock Washer

**11.12.5 Slip Assembly 4.1/2"x4"****Part-No. 725350**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 4.1/2"
2	1	725344	Left Slip Segment 4.1/2"
3	1	725345	Right Slip Segment 4.1/2"
4	27	350504	Reducing insert 4.1/2" x 4"
5	3	725366	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725102	Lock Washer

**11.12.6 Slip Assembly 4.1/2"x4.1/2"****Part-No. 725360**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 4.1/2"
2	1	725344	Left Slip Segment 4.1/2"
3	1	725345	Right Slip Segment 4.1/2"
4	27	350105	Basic insert 4.1/2"
5	3	725366	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725102	Lock Washer



**11.12.7 Slip Assembly 5.1/2"x4.1/2"****Part-No. 725375**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 5.1/2"
2	1	725344	Left Slip Segment 5.1/2"
3	1	725345	Right Slip Segment 5.1/2"
4	27	350905	Reducing insert 5.1/2" x 4.1/2"
5	3	725346	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725102	Lock Washer

**11.12.8 Slip Assembly 5.1/2"x5"****Part-No. 725385**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 5.1/2"
2	1	725344	Left Slip Segment 5.1/2"
3	1	725345	Right Slip Segment 5.1/2"
4	27	350506	Reducing insert 5.1/2" x 5"
5	3	725346	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725102	Lock Washer

**11.12.9 Slip Assembly 5.1/2"x5.1/2"****Part-No. 725365**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725343	Center Slip Segment 5.1/2"
2	1	725344	Left Slip Segment 5.1/2"
3	1	725345	Right Slip Segment 5.1/2"
4	27	350107	Basic insert 5.1/2"
5	3	725346	Securing Plate
6	9	612554	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725102	Lock Washer

**11.12.10 Slip Assembly 7.5/8"x6.5/8"****Part-No. 725390**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725353	Center Slip Segment 7.5/8"
2	1	725354	Left Slip Segment 7.5/8"
3	1	725352	Right Slip Segment 7.5/8"
4	36	350909	Reducing insert 7.5/8" x 6.5/8"
5	3	725356	Securing Plate
6	9	612554-1	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725141	Lock Washer

**11.12.11 Slip Assembly 7.5/8"x7"****Part-No. 725380**

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725353	Center Slip Segment 7.5/8"
2	1	725354	Left Slip Segment 7.5/8"
3	1	725352	Right Slip Segment 7.5/8"
4	36	350610	Reducing insert 7.5/8" x 7"
5	3	725356	Securing Plate
6	9	612554-1	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725141	Lock Washer

**11.12.12 Slip Assembly 7.5/8"x7.5/8"****Part-No. 725370**

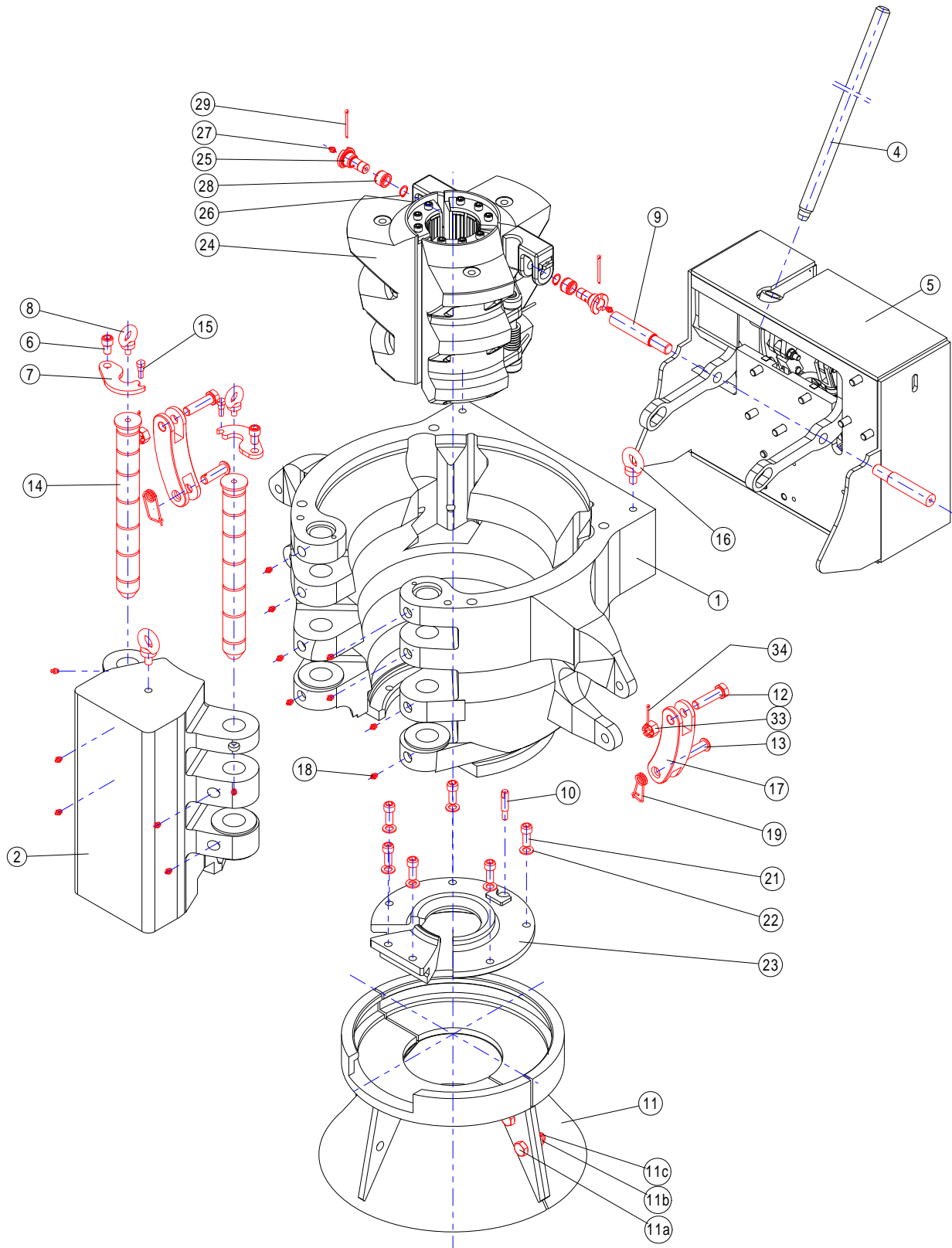
<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	1	725353	Center Slip Segment 7.5/8"
2	1	725354	Left Slip Segment 7.5/8"
3	1	725352	Right Slip Segment 7.5/8"
4	36	350111	Basic insert 7.5/8"
5	3	725356	Securing Plate
6	9	612554-1	Screw
7	2	735415	Left & Right Hand Spring
8	2	725204-1	Hinge Pin
9	2	735404	Cotter Pin
10	9	725141	Lock Washer

## 11.13 Spare Parts

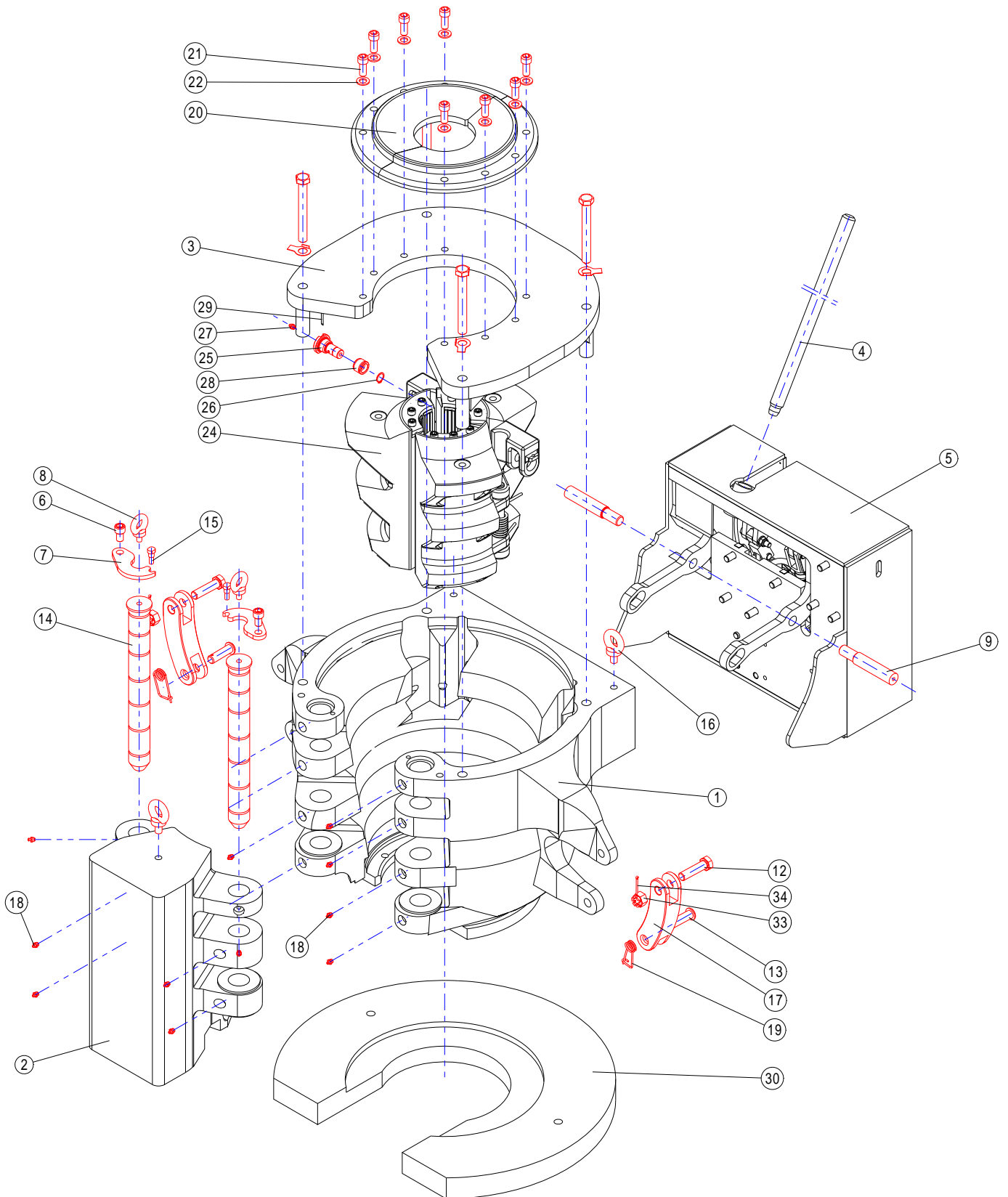
### Parts List

<b>Pos.</b>	<b>Qty</b>	<b>Part-No.</b>	<b>Description</b>
1	-	725111-1	Body (manual Arrangement)
2	-	725101	Door
3	-	725150	Upper Guard Assembly (Spider)
4	-	735116	Hand Assembly
5	-	725400	Pneumatic Arrangement
6	2	643663	Screw
7	2	725117	Hinge Pin (Securing Plate)
8	2	755719	Screw
9	2	725431	Bolt of Yoke
10	1	725111-3	Bolt (Elevator)
11	1	725270	Casing Guide Bell Assembly (Elevator)
11a	4	725272	Screw
11b	4	725723	Nut
11c	4	725724	Cotter Pin
12	2	613623-1	Screw
13	2	622514	Cleavis Pin with Head
14	2	725115	Hinge Pin
15	2	725118	Hinge Pin
16	3	755402	Screw
17	2	612512	Link Block
18	14	70064	Grease Nipple
19	2	622515	Safety Spring
20	-	-	Upper Guard Guide Plate Half (Spider)
21	6	752324	Cap Screw (Elevator)
21	8	752324	Cap Screw (Spider)
22	6	752325	Lock Washer (Elevator)
22	8	752325	Lock Washer (Spider)
23	-	-	Bottom Guide Plate (Elevator)
24	-	-	Slip Assembly
25	2	752209	Pin
26	2	752316	Retaining Ring
27	2	70064	Grease Nipple
28	2	752210	Roller
29	2	752314	Cotter Pin
30	-	725442	Safety Plate
31	-	735852	Screw
32	-	725500	Spider Adapter Plate
33	2	752338	Castle Nut
34	2	752339	Cotter Pin

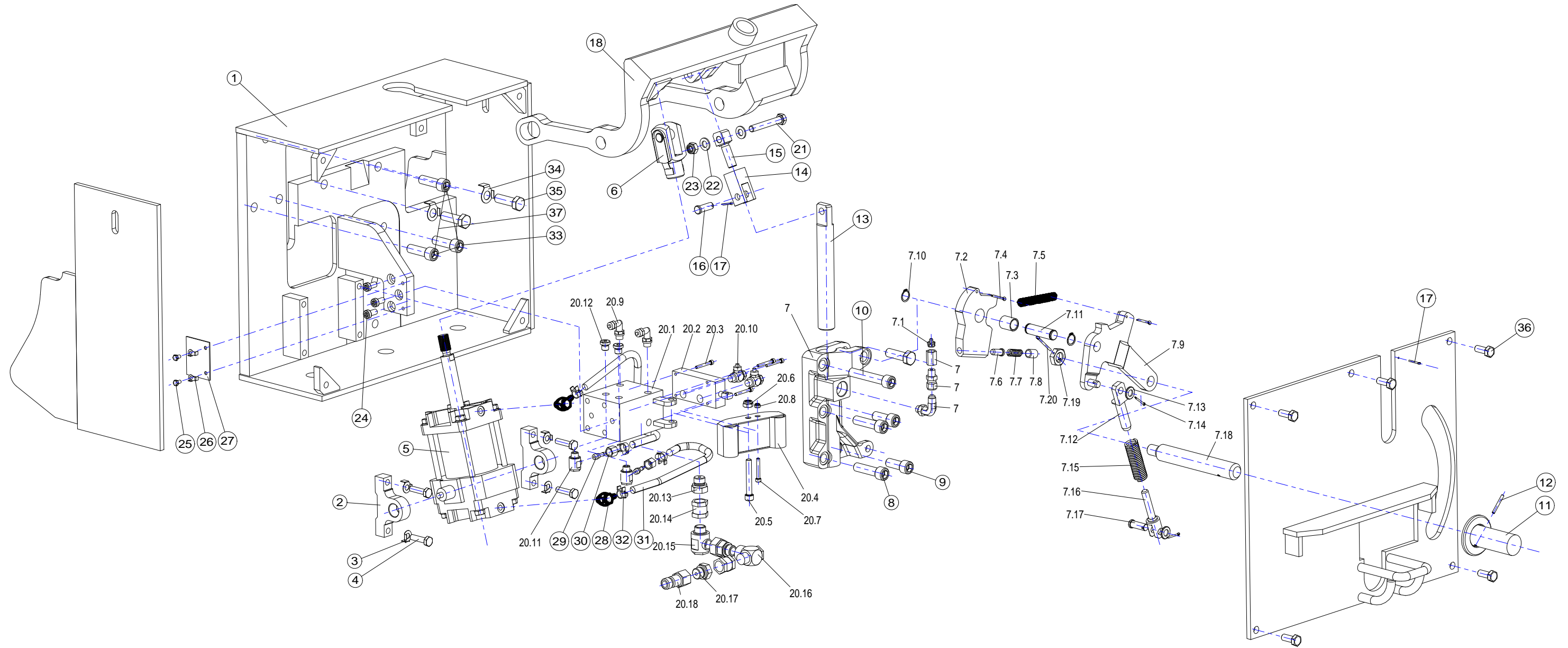
## 11.13.1 Elevator, Exploded Drawing



## 11.13.2 Spider, Exploded Drawing



## 11.13.3 Exploded Parts of Pneumatic Arrangement



## Parts List 725400 Exploded

<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
1	1	725410	Pneumatic Cover Assy.
2	2	725520-1	Cylinder Foundation
3	4	735854	Washer
4	4	725446	Screw
5	1	725520	Pneumatic Cylinder
6	1	725520-2	Cylinder Yoke
7.1	1	752112	Lock Bracket
7.2	1	752222	Lock and Cam
7.3	1	752223	Bushing
7.4	2	752315	Cotter Pin
7.5	1	752212	Spring
7.6	1	752218	Pin
7.7	1	752219	Spring
7.8	1	752320	PIN
7.9	1	752113	Lock Handle
7.10	2	752318	Washer
7.11	1	752213	Bracket Pin
7.12	1	752216	Lock Spring Plunger Guide
7.13	2	752318	Washer
7.14	2	80340-1	Cotter Pin
7.15	1	752217	Lock Spring
7.16	1	752215	Lock Spring Plunger
7.17	1	752317	Lock Spring Pin
7.18	1	725437	Handle
7.19	1	725415	Nut
7.20	1	612699	Cotter Pin
7.21	1	612942	Fitting
7.22	1	612941	Adapter
7.23	1	612663	Socket
7.24	1	612515	Grease Nipple
8	2	725467	Screw
9	2	725466	Screw
10	1	725465	Screw
11	1	752113-3	Handle
12	1	612596	Spring Straight Pin
13	1	752214	Lock Rod
14	1	752208	Yoke Clevis
15	1	735207	Yoke Eye Bolt
16	1	752317	Lock Spring Pin
17	2	645196	Splint
18	1	725430	Yoke
19	-	-	-



<u>Pos.</u>	<u>Qty</u>	<u>Part-No.</u>	<u>Description</u>
20.1	1	752802-1	Control Valve Block
20.2	1	735857	Valve
20.3	4	725441	Screw
20.4	1	89001	Treadle for Valve
20.5	1	735858	Screw
20.6	1	89125	Nut
20.7	1	612672	Screw
20.7	1	660414-2	Nut
20.8	2	752803	Defender
20.9	2	612661-1	Absorber III
20.10	2	613945	90 degree Fitting
20.11	2	612929	Blind screw
20.12	1	613943	Fitting
20.13	2	615703	Coupling 1/2"
20.14	1	612647-1	Swivel Connection
20.15	1	752821	Screw-Socket
20.16	1	613943	Fitting
20.17	1	752828	Air Coupling
21	1	645029	Screw
22	2	735327	Washer
23	1	752312	Lock Nut
24	3	725463	Screw
25	2	725135	Screw
26	2	613783	Safety sheet
27	1	725417	Plate
28	2	612664-3	Swivel-Connection
29	2	612664-1	Hose Connection
30	2	612664-2	Nut
31	2	612956	Hydraulic Hose
32	4	613526	Straight-Connection I
33	3	735333	Screw
34	2	617520	Safety sheet
35	2	725464	Screw
36	5	735326	Cap Screw
37	1	612574	Rope

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