



ZIJTVELD

CE Operating and maintenance manual

Tree Grab
S450-B 7-TINES

Dear User,

The Tree grab is a piece of equipment for excavators. The Tree grab is available in various weights, capacities and versions and is always a fast and purpose-built selector and demolition device.

It is imperative you read this manual and follow all the instructions given when working with our machinery in accordance with our recommendations.

The Tree grabs are provided with a CE marking, thereby complying with all the necessary European regulatory safety regulations.

It is essential to follow the safety regulations at all times.

These safety regulations refer to those laid out in this manual, including both the operating instructions for excavators and the safety regulations that apply to the vicinity in which the Tree grab product is being used, maintained and repaired.

Modifications made to the Tree Grab may only be implemented with the written consent of the manufacturer. Only under these circumstances do the warranty conditions and CE liabilities remain applicable.

Warning

- The excavator with a Tree Grab may only be operated by a qualified person.
- Maintenance and/or repairs may only be carried out by appropriately trained and competent personnel.
- Prevent dangerous work situations. Stay at a safe distance from moving parts.
- Ensure that whilst operating the machinery no other people are within the working vicinity of the excavator with tree grab.
- Maintenance or repair work must only be carried out when the engine is turned off.
- Refer to the safety regulations before starting on any maintenance or repair work.
- Replace defective parts only with original parts from the manufacturer.
- Failure to replace defective parts with original parts from the manufacturer will result in cessation of the entire warranty and CE liability.

Content	Page
EU declaration of compliance	04
Safety regulations	05
Conditions of guarantee	07
Operation	08
Daily maintenance	09
Lubrication schedule	10
Exploded view	11
Part list 1	12
Part list 2	13
Partslist + exploded view Cylinder	14
Partslist + exploded view C.O.D.	15
Tightening Torques	16
Technical Specifications	17

® Zijtveld Grippers is een geregistreerde merknaam van Zijtveld Grippers BV te 's-Graveland, Nederland. Niets uit deze uitgave mag worden overgenomen zonder uitdrukkelijke toestemming vooraf van Zijtveld Grippers BV. Alle rechten en wijzigingen voorbehouden.

EU declaration of compliance



(Guideline 2006/42/EC)



Manufacturer Zijtveld Grippers B.V.
Address De Boomgaard 1
 's Graveland

Hereby declares that Zijtveld Gripper®

Type	S450-B 7-TINES
Serial number	

meets all the required machine guidelines (Guideline 2006/42/EC, as most recently updated) as well as national legislative implementation of this directive.

Attention: Any adjustment that is made to this product without written consent on the manufacturer, makes this declaration void and invalid.

We should draw your attention to the fact that the selector grab product is designed to be assembled with another machine, and that the product, on the grounds of the machine Guide Line, can only be used once the whole machine is in accordance to the conditions laid down by European regulations.

Date

.....

(signed)

The Selector Grab should always be attached to an excavator of the correct weight, class and capacity of machine. Refer to the data information plate on the grab and consult the technical specifications in this manual. When in doubt contact the supplier.

The weight of the grab, increased by the weight of the load being picked up, must never exceed the maximum allowance of lifting power. For further information consult the excavator manual.

It is prohibited for people to be within the rotation range of the machine and grab. Keep in mind that material being lifted that extrude from the grab will enlarge the rotation range.

It is always possible that material can fall out of the excavator's grab. For this reason, never rotate the machinery above people, machines nor vehicles.

Always pick up a long load at its centre of gravity, to prevent the excavator from either rotating or tipping over. It is not permissible to use the grab to hit or pound.

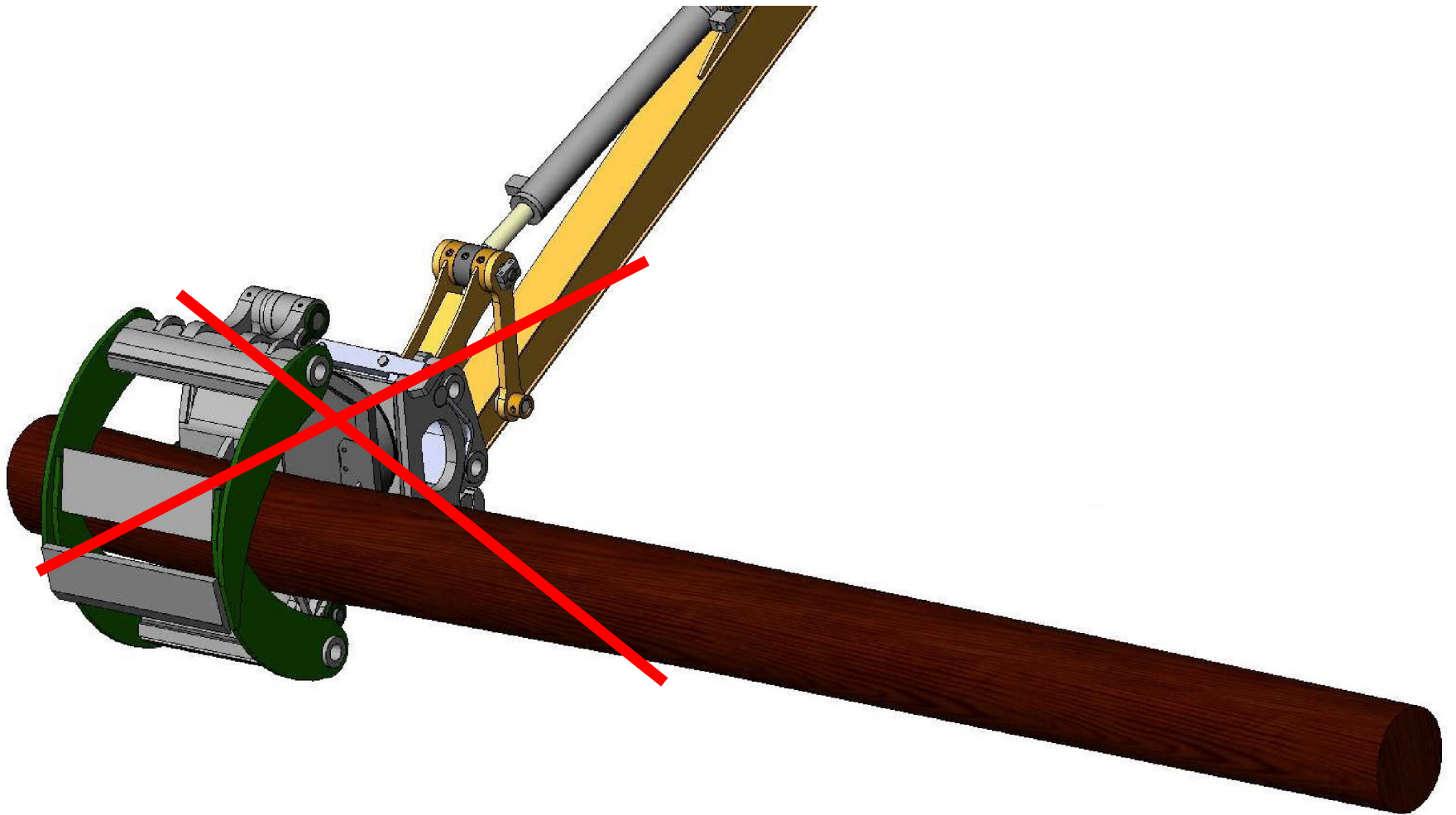
Whilst connecting or disconnecting, lubricating or other maintenance work, the grab must be stable and on a flat surface. Before performing lubricating or other maintenance work the engine should always be shut down.

Warning

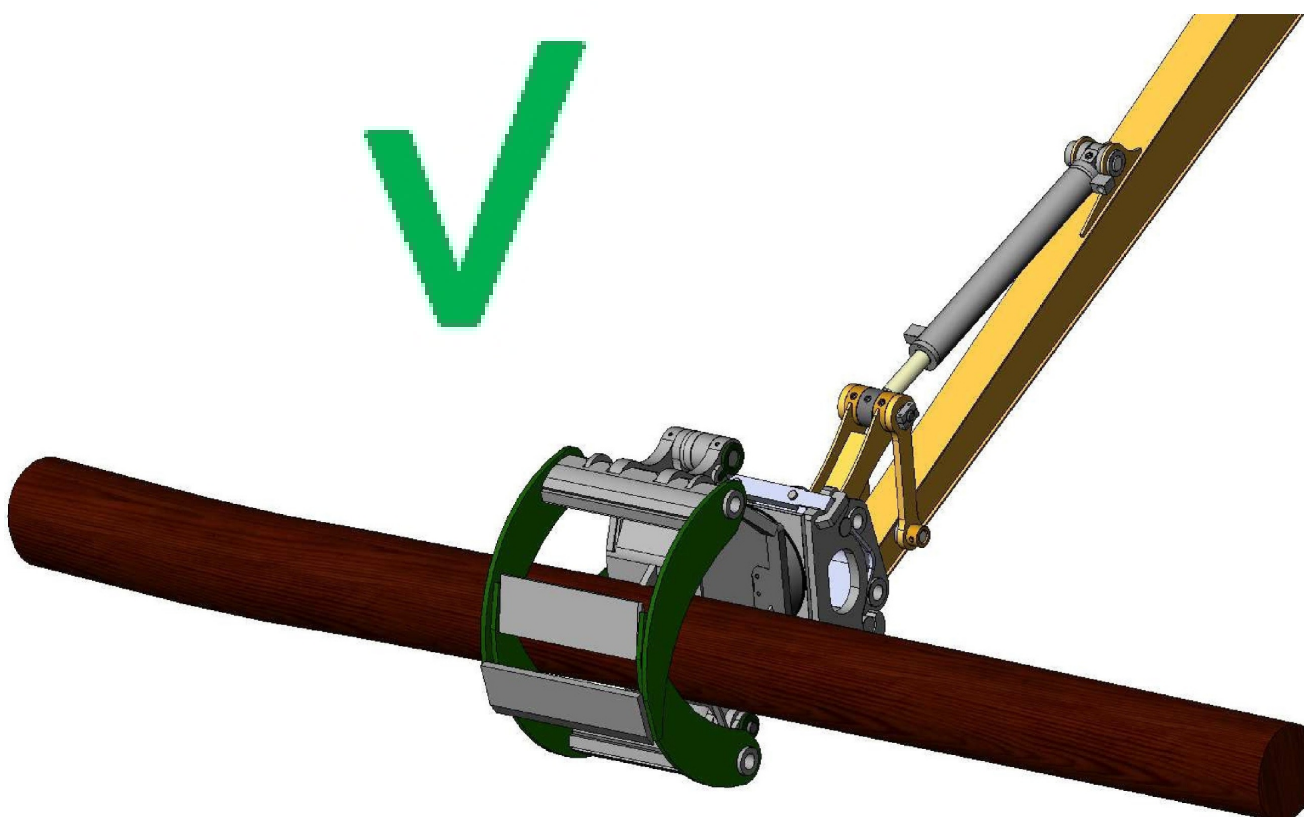
Never work on the hydraulic system if the system is still under pressure! Keep hands away from moving parts at all times.

The manufacturer cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication are, therefore, not all-inclusive. If a tool, procedure, work method or operating technique that is not specifically recommended by the manufacturer is used, then you must assure yourself that it is safe for you and others.

You should also ensure that the product will not be damaged or made unsafe by the operation, lubrication, maintenance or repair procedures that you choose.



Warning: To avoid danger lift a long load only in the center of cravity.



Terms of guarantee



The manufacturer provides a warranty of 12 months from the date of delivery.

All defective parts proven to be caused by faults in either manufacture, production or material are covered by the warranty.

Defective parts that are replaced and fall under guarantee become property of the manufacturer. They must be kept available and returned immediately, in complete and unaltered condition, upon the first request from the manufacturer.

Any claim made under guarantee will only be taken into consideration once a written appeal is made to the dealer or manufacturer. This must be done directly after the damage or fault occurs and at least within 24 hours of any irregularities and problems arising.

All claims under conditions of the warranty must contain the following data; the type of machine the product has been mounted on, the serial number of the grab, the record of the defective part(s) and a description of the fault, photographs, copy of the delivery papers and invoice and a copy of the invoice of the piece of equipment concerned. Minor repairs can be carried out in consultation with the dealer; the necessary parts which fall under the warrantee, will be delivered without charge. For larger repairs the grab should be sent to your dealer or manufacturer for repairs or modifications. The work and necessary parts are free of charge. However, transport costs and call-out charges to and from your dealer or manufacturer are not covered.

The manufacturer is not liable for consequential loss caused by a defective Selector Grab (consequential loss to excavators, consequential loss due to a stationary excavator or the suspending of work activity).

EXCLUDED FROM GUARANTEE:

- Damage caused by faulty assembly of a machine and or the hydraulic system, improper maintenance without expertise and transport damage.
- Defects resulting from improper repairs and/or maintenance including that carried out by an unauthorised third party.
- Defects arising from neglect or improper execution of preventive maintenance procedures e.g. regular lubrication or greasing.
- Defects to parts which are subject to normal wear like blades.
- Consequential loss caused by failure to replace normal wearing parts in time.

N.B. If defective or worn down parts are replaced by non-original parts, the entire warranty and liability will cease to apply.

Procedures to follow before initial use



Before taking the machine into operation and to ensure the good functioning of the apparatus, it is important that the following points are checked and correspond to the technical specifications as shown on the information plate and in the manual.

- The type and weight of the sorting grab must conform to weight and machine class of the intended excavator.
- The oil flow and the pressure for rotating the selector grab should be checked and adjusted.
- Beware: the return pressure of the rotating oil at a continuous level may be at a maximum of 25 bar, and only briefly (maximum of 10% of the working time) at 100 bar.
- The oil flow and pressure of the pinching (opening and closing) of the sorting grab needs to be controlled and adjusted.
- Check if the hydraulic quick release hitch is in good order and screwed on firmly.
- Check if the ball valves and valves are in the correct position.
- Check if the connecting pins between the excavator and the sorting grab are well secured, as well as the wedge and the security pin of the quick release hitch system.
- Ensures that the hoses have the correct length and are at no risk of interfering with any of the moving parts. Also make sure they cannot wear or damage because of contact with the grab or material that is moved by the grab.

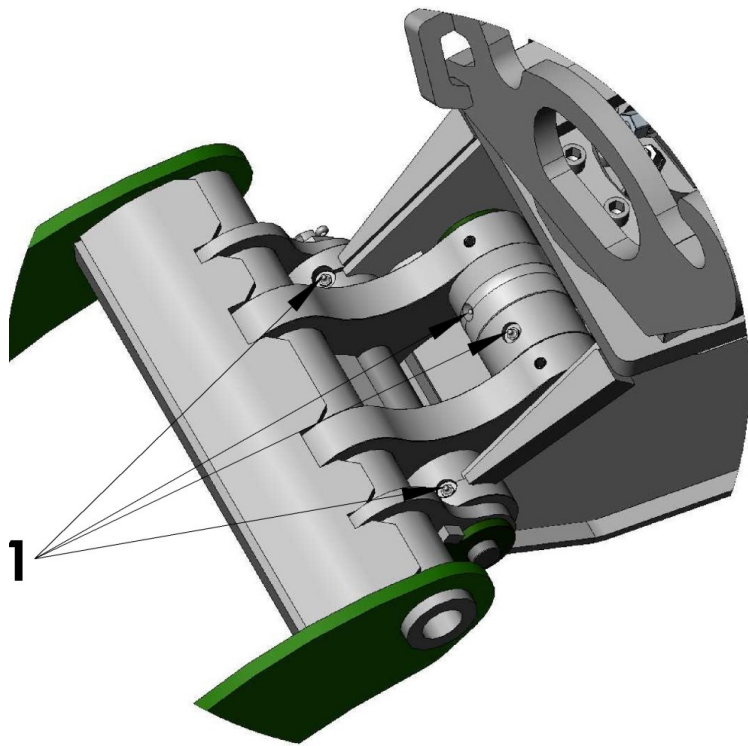
Daily Maintenance



For maintenance work, always place the grab in open position on a flat and stable surface and ensure the excavator cannot move.

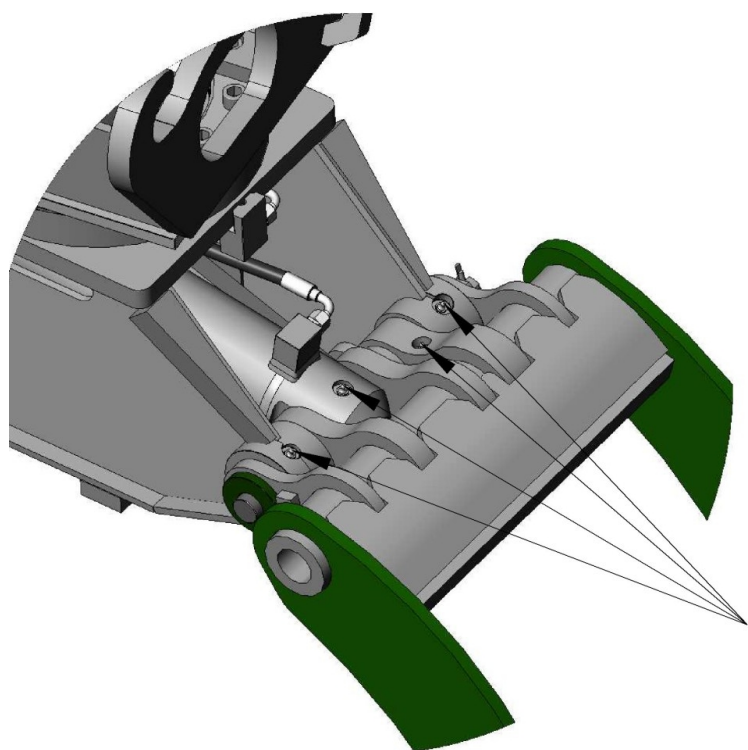
During maintenance on the hydraulic system the hydraulic hoses need to be disconnected. Before disconnecting ensure there is no pressure on the hoses. Consult the manual for the excavator.

The grab must be lubricated once every 8 operating hours with the same lubricant recommended for the excavator. For the position of the grease nipples and frequency of lubrication, see the schedule on page 10.



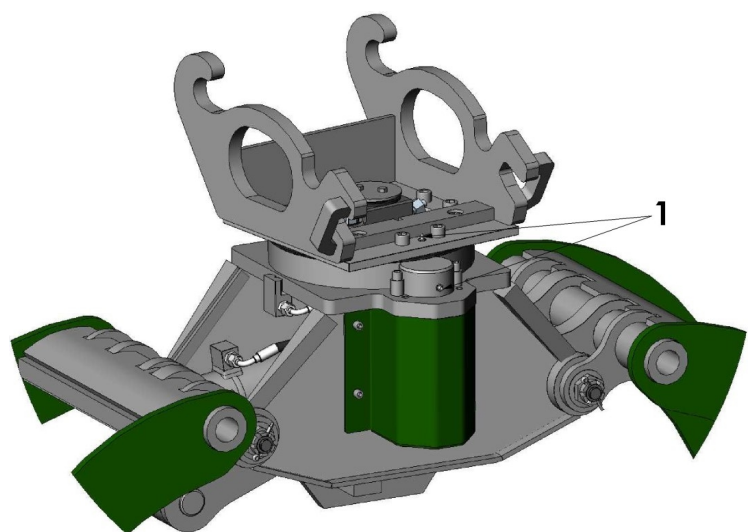
Picture 3: Lubricating cylinder bearing

1 = Lubricate 1 x per 8 operating hours.



Picture 4: Lubricating pivoting points

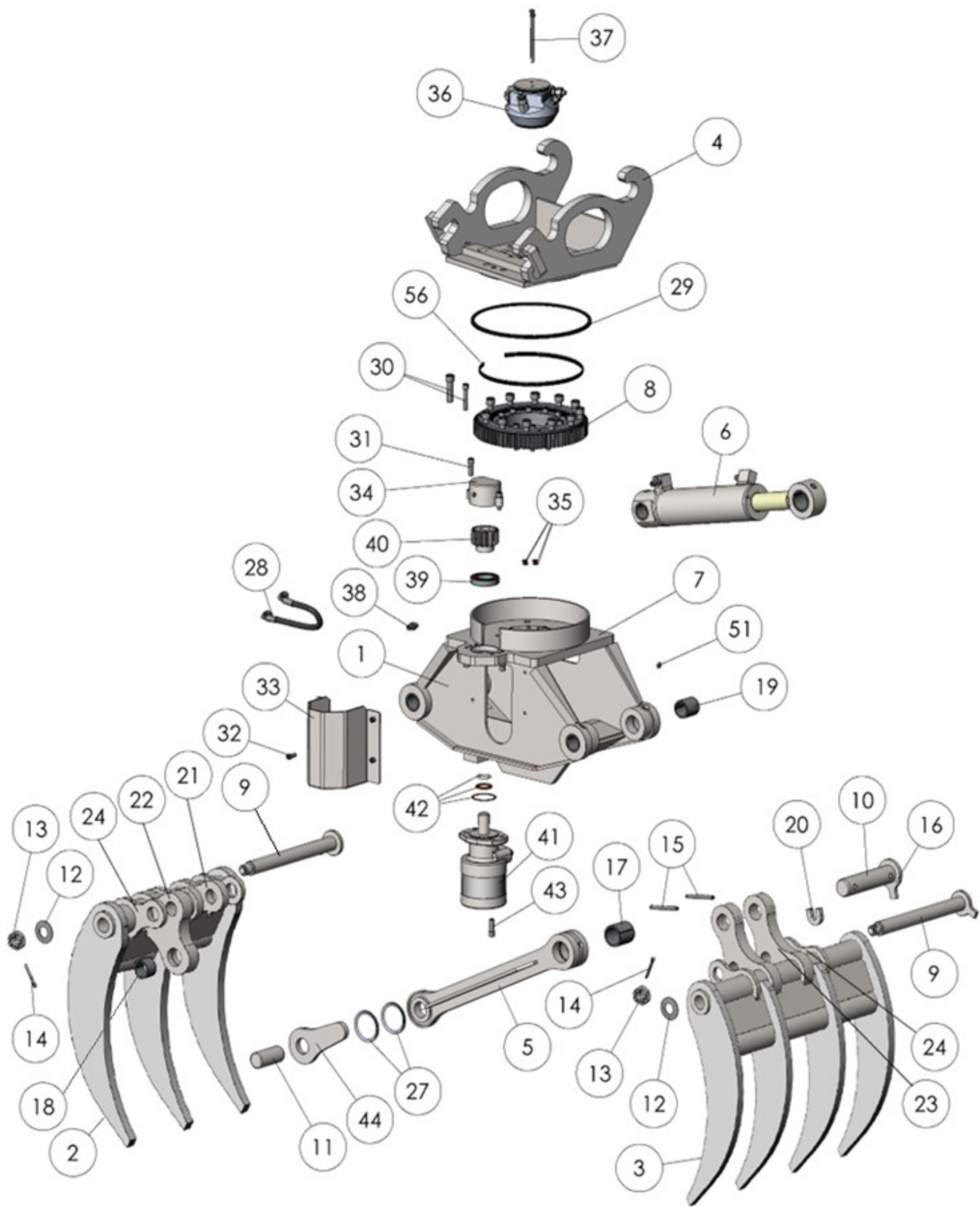
1 = Lubricate 1 x per 8 operating hours.



Picture 5: Lubricating rotator

1 = Lubricate 1 x per 8 operating hours.

Exploded view S450-B 7-TINES



Parts list S450-B 7-TINES



Part No.	Qty	Description	Order part No.
		Tree grab S450-B 7-TINES	
1	1	Welded main frame construction	S450B.001
2	1	Left shell 7T (short lever / small bucket)	S450B7T.002
3	1	Right shell 7T (long lever / wide bucket)	S450B7T.003
4	1	Welded rotator frame construction	S450B.004
5	1	Welded linkage construction	S450B.005
6	1	Hydraulic cylinder	S450B.006
7	1	Main plate (head plate)	S450B.007
8	1	Slewing ring	S450B.008
9	2	Main hinge pin	S450B.009
10	1	Linkage axis (top / long)	S450B.010
11	1	Linkage axis (bottom / short)	S450B.011
12	2	Disk spring	S450B.012
13	2	Castellated nut	S450B.013
14	3	Split pin	S450B.014
15	2	Locking pin	S450B.015
16	1	Locker plate linkage pin	S450B.016
17	2	Bearing linkage upper	S450B.017
18	1	Bearing linkage lower	S450B.018
19	4	Bearings main frame	S450B.019
20	1 set	Locker U	S450B.020
21	2	Shell hinge support	S450B.021
22	2	Shell hinge short	S450B.022
23	2	Shell hinge long	S450B.023
24	1	Shell hinge support	S450B.024
27	2	Metal seal	S450B.027
28	1 set	Hose set lower frame (4 pieces)	S450B.028
29	1	V-ring	S450B.029

Parts list S450-B 7-TINES

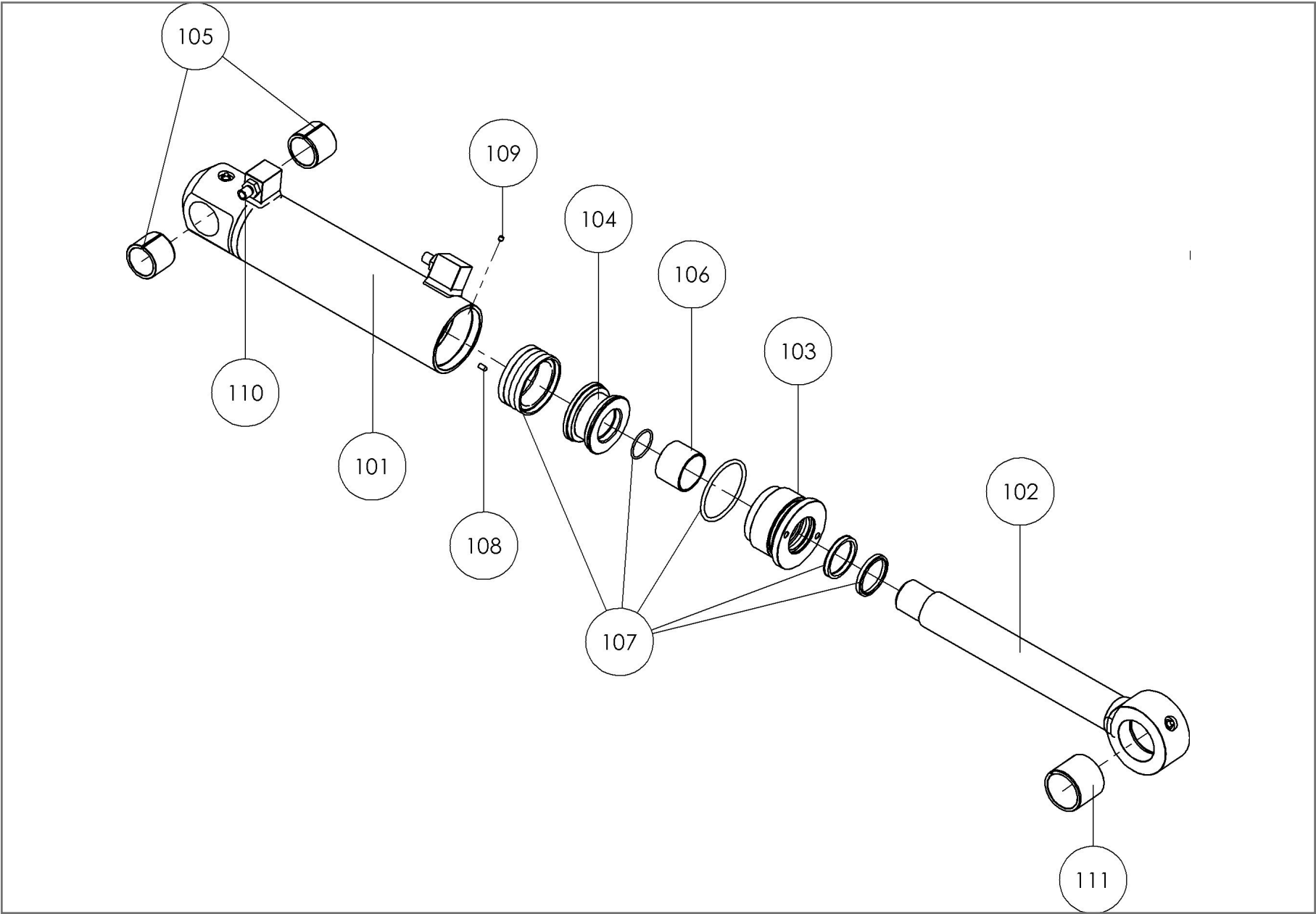


Part No.	Qty	Description	Order part No.
30	1 set	Bolt set slewing ring	S450B.030
31	1 set	Bolt set gear plate (2 pieces)	S450B.031
32	1 set	Bolt set protection plate (4 pieces)	S450B.032
33	1	Protection cover hydraulic motor	S450B.033
34	1	Gear plate	S450B.034
35	1 set	O-ring C.O.D. (4 pieces)	S450B.035
36	1	C.O.D. complete	S450B.036
37	1 set	Bolt set connection block (2 pieces)	S450B.037
38	1 set	Nipples main plate (4 pieces)	S450B.038
39	1	Bearing gear	S450B.039
40	1	Gear	S450B.040
41	1	Hydraulic motor	S450B.041
42	1 set	Seal kit hydraulic motor	S450B.042
43	1 set	Bolt set hydraulic motor (4 pieces)	S450B.043
51	1	Locking set (linkage axis lower/short)	S450B.051
56	1	Slewing ring seal	S450B.056

Parts list cylinder S450-B 7-TINES

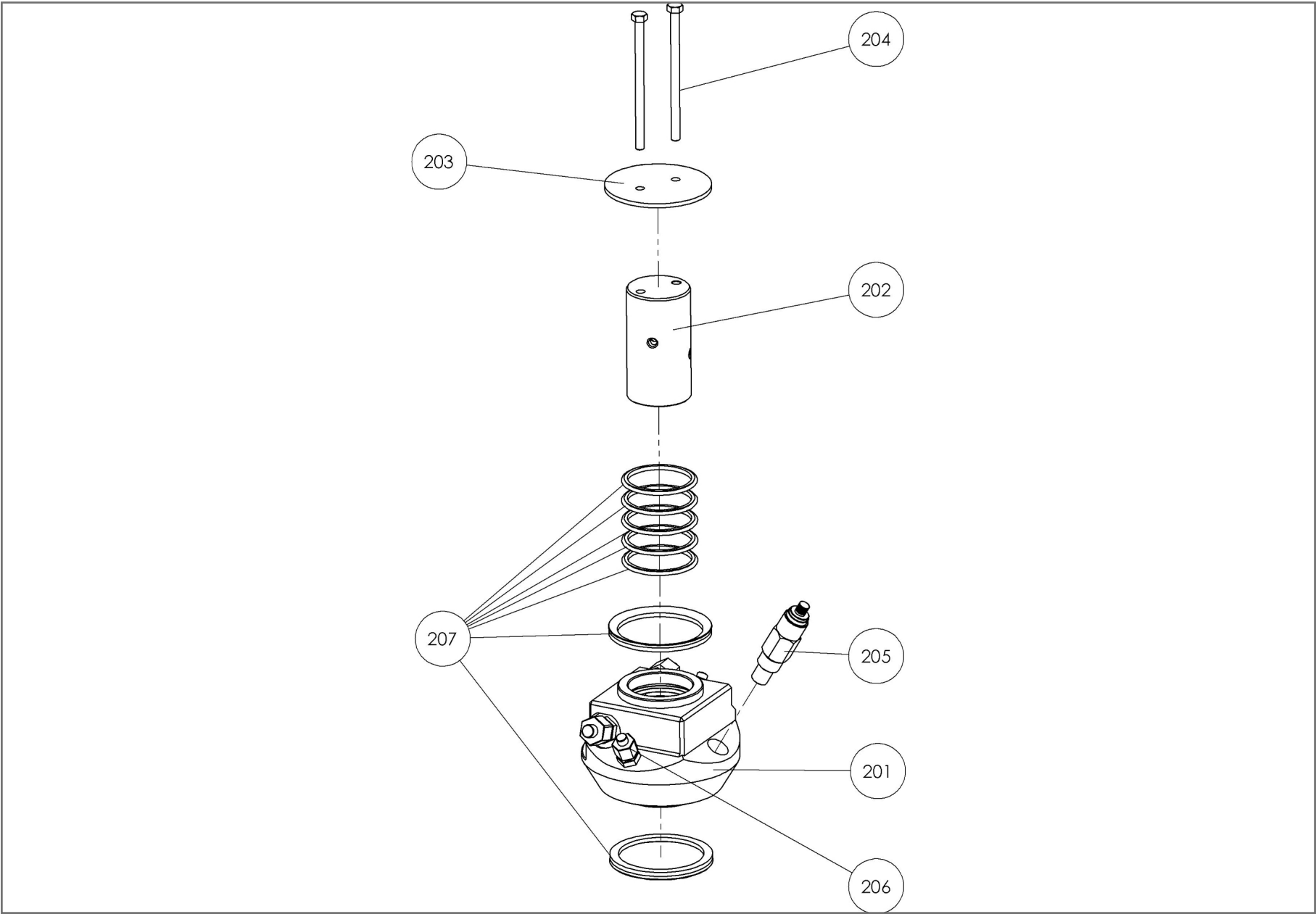
Part No.	Qty	Description	Order part No.
101	1	Cylinder housing	S450B.101
102	1	Piston rod	S450B.102
103	1	Cylinder head	S450B.103
104	1	Piston	S450B.104
105	2	Bearing cylinder housing	S450B.105
106	1	Plain bearing cylinder nut	S450B.106
107	1 set	Cylinder seal kit	S450B.107
108	1	Secure bolt	S450B.108
109	1	Secure bolt	S450B.109
110	1 set	Cylinder nipple set (2 pieces)	S450B.110
111	1	Bearing cylinder piston	S450B.111

Exploded view cylinder S450-B 7-TINES



Part No.	Qty	Description	Order part No.
201	1	C.O.D. housing	S450B.201
202	1	C.O.D. rotor Ø60 mm	S450B.202
203	1	C.O.D. cover	S450B.203
204	1 set	Bolt set C.O.D. (2 pieces)	S450B.204
205	1	Cross-over relief valve	S450B.205
206	1 set	Connection nipples C.O.D. housing (4 pieces)	S450B.206
207	1 set	C.O.D. seal kit	S450B.207

Exploded view C.O.D. S450-B 7-TINES



Torques specification



Maximum torque specified to bolts on the cutting blades and rotator of the demolition and sorting grab.

Please consult this listing on diameter, pitch and metric size and maximum torque specified prior to fastening.

Bolt size	Torque (Nm)	Torque (Kg/m)
	Bout 10,9	Bout 10,9
M8	40 Nm	4 Kgm
M10	80 Nm	8 Kgm
M12	130 Nm	13 Kgm
M12x1,25	110 Nm	11 Kgm
M14	200 Nm	20 Kgm
M16	300 Nm	30 Kgm
M20	600 Nm	60 Kgm
M24	1000 Nm	100 Kgm
M27	1500 Nm	150 Kgm
M30	2000 Nm	200 Kgm
M36	3600 Nm	360 Kgm
M39	4600 Nm	460 Kgm

Note ,fine pitch.

Technical specifications:

S450-B 7-TINES



		S450-B 7-TINES
Weight class excavator	ton	5-8
Weight	kg	400
Operating pressure max.	bar	300
Operating pressure rotation min.	bar	190
Operating pressure rotation max.	bar	210
Oil flow max.	l/min.	50
Oil flow rotation max.	l/min.	12
Shell width	mm	735
Width opened	mm	1540
Height opened	mm	755
Closing force	Kn	24