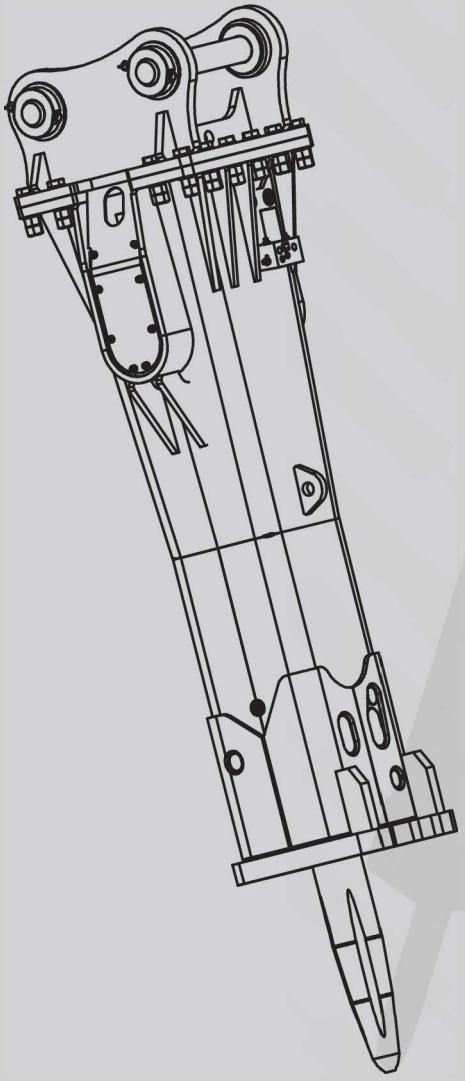
Hydraulic Breaker

User Manual



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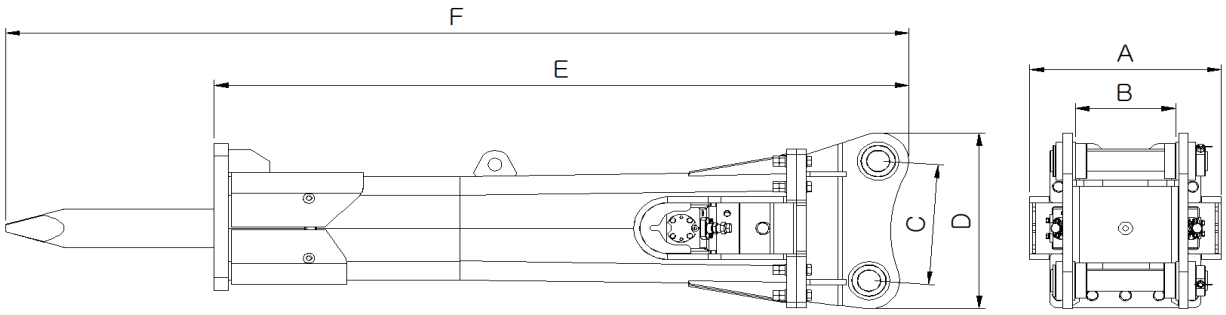
Specification

Form 1

ModeL		D100H	D120H	D150H	D150Y	D160H	D170H	D190H
Body Weight	kg lbs	460 1012	705 1551	1012 2226	1157 2545	1438 3164	1830 4026	2646 5821
Total Weight (Box)	kg	920	1420	2032	2270	3052	3710	5246
Length (Box)	mm	2227	2786	3010	3262	3597	3720	4068
Width (Box)	mm	510	676	702	702	774	794	914
Height (Box)	mm	596	692	690	760	870	870	928
Operating Pressure	kg/cm² psi bar	120-140 1704-1988 118-138	135-145 1704-1988 118-138	160-180 2272-2556 157-177	160-180 2272-2556 157-177	160-180 2272-2556 157-177	160-180 2272-2556 157-177	160-180 2272-2556 157-177
Hydraulic Flow Range	l/min gal/min	70-100 19-27	100-170 27-45	120-180 32-48	160-230 43-62	180-270 48-72	250-350 67-94	280-380 75-102
Impact Frequency	bpm	350-660	350-610	370-560	370-560	370-540	Long Distance Strike: 370-520 Short Distance Strike: 480-670	Long Distance Strike: 320-430 Short Distance Strike: 410-570
Diameter of Hose	mm inch	19.05 3/4	25.4 1	25.4 1	25.4 1	31.75 1 ¼	31.75 1 ¼	31.75 1 ¼
Diameter of Tool	mm inch	100 3.94	120 4.72	135 5.3	150 5.91	160 6.3	170 6.7	190 7.48
Weight of Tool	kg	50	87	116	156	172	238	341
Suitable Carrier	m³	0.4-0.6	0.6-0.8	0.7-1.2	0.9-1.6	1.2-3	1.4-3.5	3-6
Suitable Carrier	ton	10-15	14-26	20-30	25-40	30-50	36-55	45-80
Accumulator Exists		YES	YES	YES	YES	YES	YES	YES
Acc.Nitrogen Pressure	kg/cm²	40	40	40	40	40	40	40
Relief Valve Setting	kg/cm²	160-180	160-180	220-230	220-230	220-230	220-230	220-230

Specification

External Dimensions



Form 2 Unit:mm

	D100H	D120H	D135H	D150H	D160H	D170H	D190H
A	510	676	702	702	774	794	914
B	290	360	360	430	500	500	500
C	390	465	470	520	570	570	620
D	596	692	690	760	870	870	928
E	1703	2136	2275	2514	2814	2887	3240
F	2227	2786	3010	3262	3597	3720	4068

Security Information

Most of accidents happen due to overlooking security while operating, checking and repairing.
It is very important to operate hydraulic breaker in correct way while working, because it can directly cause accident and machine breakdown due to wrong operation.

Please follow this manual's requirements to operate while hydraulic breaker working. We will not take responsibility for any accident or machine breakdown which is caused by incorrect operation or incorrect maintenance. Please note these areas marked with ⚠ Danger, Warning, Attention, Indication,  which shall be paid much more attention during working.

*** If you have any inquiry on this manual, please contact the local distributor.**

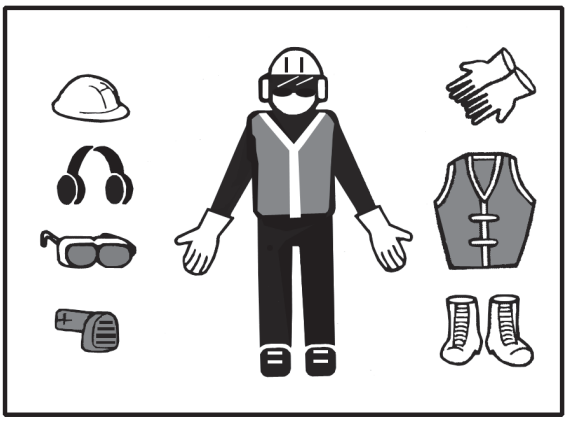
Our company can't foresee all the potential dangers during the whole process of hydraulic breaker's operation, inspection and reparation, so if you adopt different ways and methods during the process of operating the hydraulic breaker, you must ensure security and no mistake so as to avoid machine breakdown.

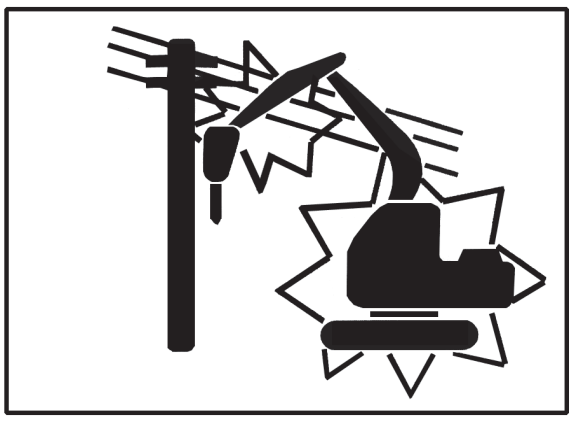
Safety Clothing

Please put on safety cap, shoes, clothing and other safety devices (glasses, gloves, earplugs, etc.) when operating or repairing the machine.

Attention to Obstacles

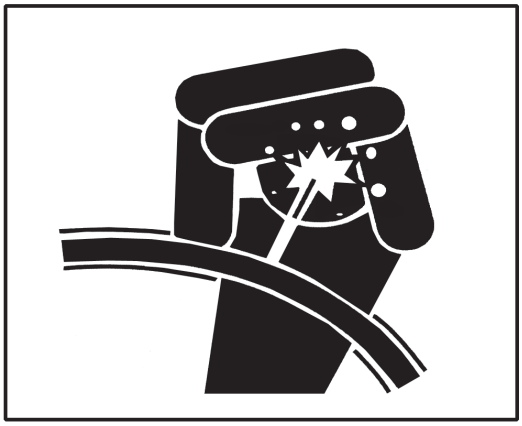
Attention to obstacles when working close to power line.
Keep the shortest safety distance to power line.
To contact the power company in advance when you have to work close to power line.





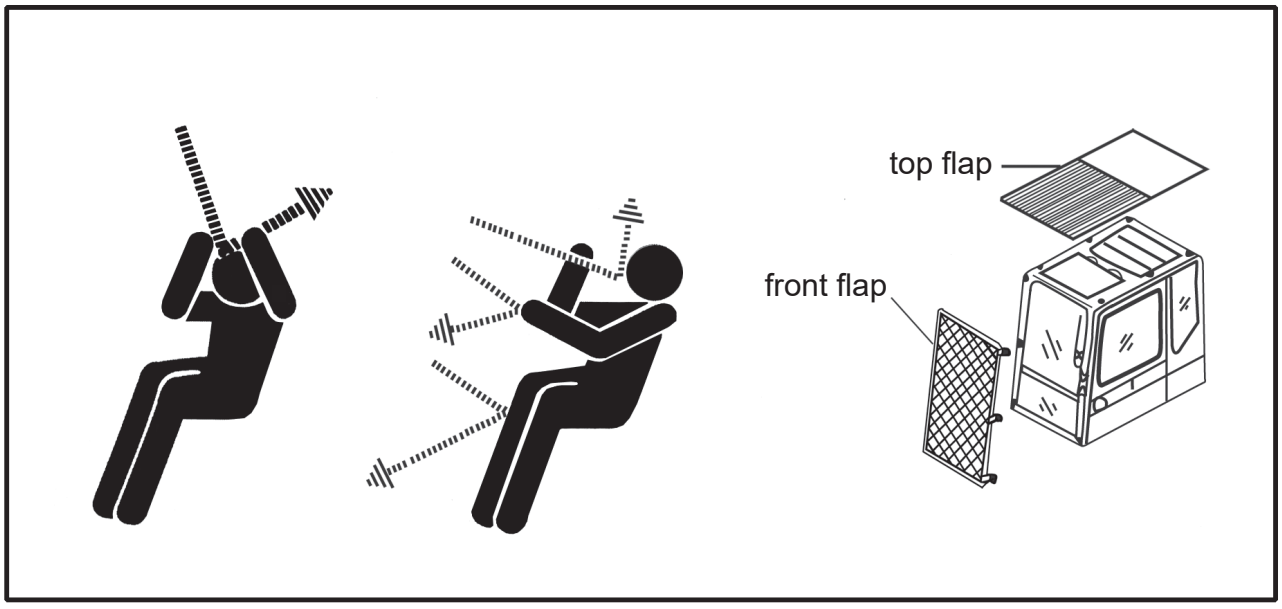
Notice for Removal Hydraulic Breaker

The hydraulic oil after operation is in high temperature and high pressure condition,If you disassemble nut,hose pipe,piping kit and other parts at this moment, it will cause the hydraulic oil to squirt out.So when you disassemble those parts,you must reduce the pressure and temperature of the hydraulic oil in the tank first.



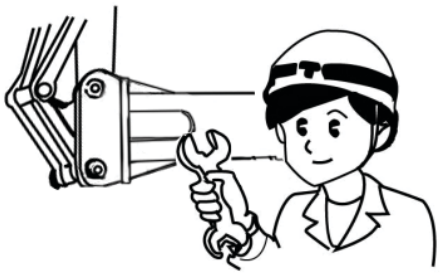
Pay Attention to Falling Broken Objects

The staff should pay attention to the scattered dangerous objects after striking during the work, and select the suitable location according to the on-site operation.Prepare necessary protective measures.



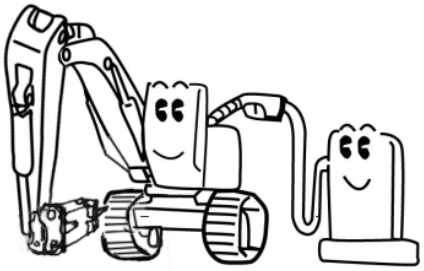
Correct Operation

Bolts and Nuts



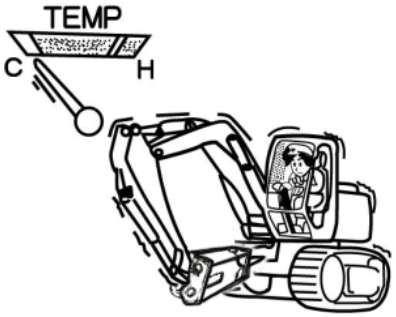
Please check whether all the bolts and nuts are tightened well. If any of them loosens, please tighten it immediately.

Hydraulic Oil



Please check whether the hydraulic oil is enough. If it is very inferior, please change the oil immediately.

Warming up the Wachine Blank Operation



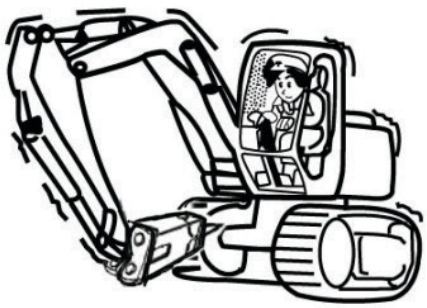
Please do not leave the excavator during the warming up of the machine. It will be normal if the needle of the water thermometer is moving.

Greasing



Please inject the grease into the front head of the breaker. (For more details please see Page 31-33)

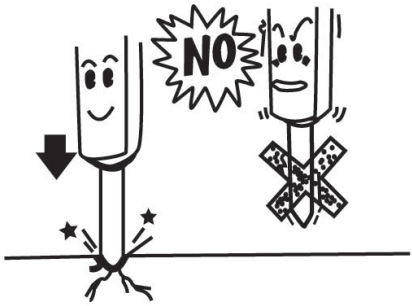
Running-in Operation



Before the first time using the new hydraulic breaker, the Running-in operation should be done for an hour. Everyday before working this operation should be done for 10 minutes, during the running-in operation, the hydraulic oil is 70% of normal working flow. During this operation the impact of the breaker should be perpendicularly, slant impact is forbidden. Full-load working immediately after just starting the machine may cause the damage of the Accumulator Assys or other important parts.

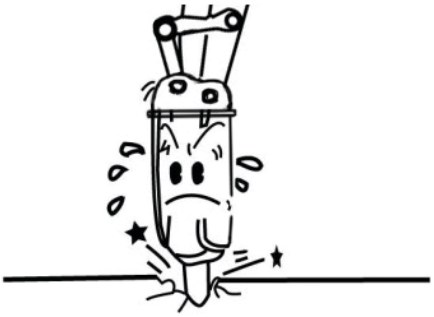
Blank-fire is Forbidden

The operation while the chisel has not got touch with the breaking object or they are not contacting tightly is called “Blank fire”.Blank fire will cause the damage of the parts, or the broken or loosen of the bolts and nuts.



Continuous impact is Forbidden

Please do not impact the same point of the breaking object continuously. It will cause the abnormal abrasion of the chisel or the damage of the other parts. Please move the chisel to the other impact point of the object if the current point can not be broken within 15 seconds.



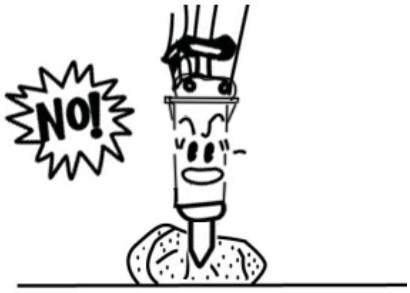
Shaking the Chisel is Forbidden

Please do not shake the chisel, it will cause the damage of the through bolts, chisel and the seal retainer.



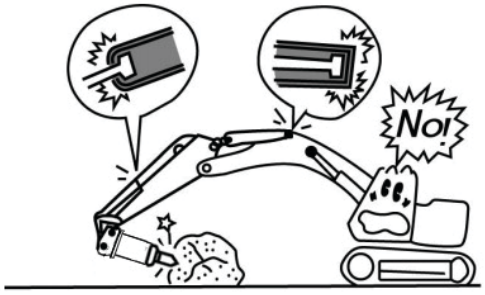
The Sudden Severe Impact to the Breaking Object is Forbidden

Comparing with the bucket, hydraulic breaker is much heavier, so please operate the excavator slowly. Please do not contact the breaking object fiercely. Otherwise it may cause the damage of the front area of the excavator and the swing parts.



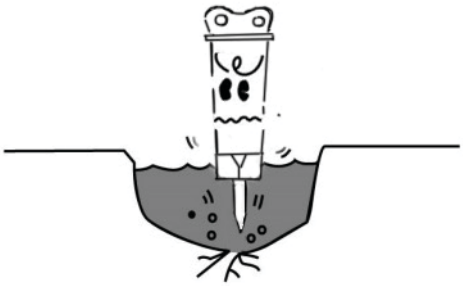
Please do not operate hydraulic breaker with boom or arm cylinders fully extended

Please do not operate hydraulic breaker with boom or arm cylinders fully extended, Please keep 100 mm cylinder stroke of base machine at least, otherwise, it may cause the damage of the cylinder and the front part area.



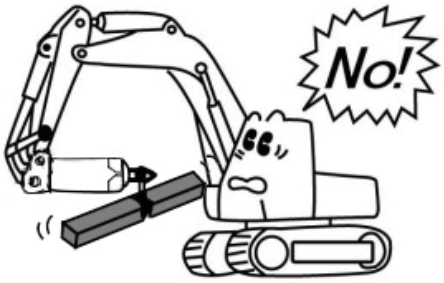
Operation under water is forbidden

Please do not use the hydraulic breaker under the water, otherwise, it will damage it.
Please install our under-water kit for breaker in case it needs to work under water.



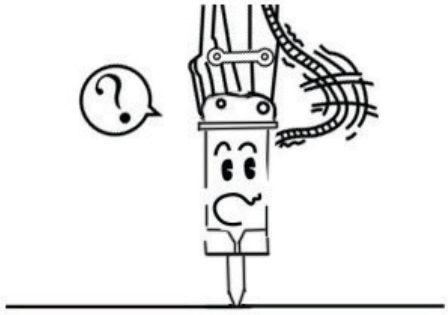
Hoisting is forbidden

Please do not hoist weights by using the hydraulic breaker or its tool, it may damage the breaker and the arm of the excavator.



Operation during the hydraulic hoses vibrating excessively is forbidden

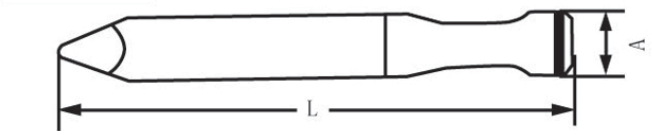
If the hydraulic hoses are vibrating excessively, It indicates gas leaking from the accumulator of the hydraulic breaker. In this case, please check the nitrogen gas pressure, and charge the gas with specified pressure(For more details please see Page 16).



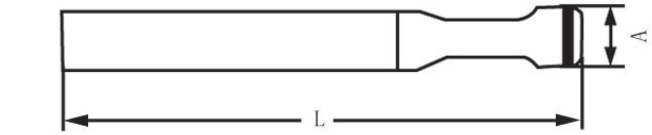
Tool

Please use original D tools only.

Moil, Conical type



Flat type

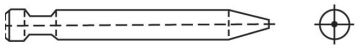
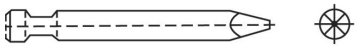
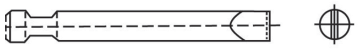
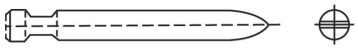
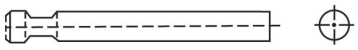
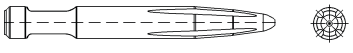
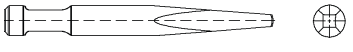


Tool Dimension

Unit: mm

	D100H	EFDIE120Y	D135H	D150H	D160H	D170H	D190H
Diameter(A)	100	120	135	150	160	170	190
Length(L)	920	1100	1200	1300	1400	1500	1600

Tool Type and Application

Sketch Map	Type	Application
	Conical Point (C)	Concrete
	Moil Point (M)	Rock
	H-Wedge (H)	Trenching
	V-Wedge (V)	Finshing
	Blunt (B)	Rock
	Conical Slotted (CS)	Rock, Concrete
	Forged Moil Point (MF)	Rock, Concrete

※ We're not responsible for the failures of hydraulic breakers caused by non original D tools.

Replacement of Tool

1.Set the breaker on clean and level ground, and clean the hole of Stop Pin, and remove the Stop Pin with pin bar in the opposite side of Rubber Plug.

Note: When removing Stop Pin, Rod Pin may fall down. Take care not to get injury.

2. Remove the Rod Pin with pin bar from underneath, and take Tool out of breaker.

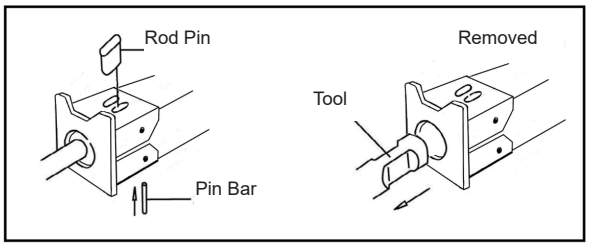
3.Before installing Tool, apply heat-resisting grease onto groove of Tool. And then install the Tool in reverse order of removal.

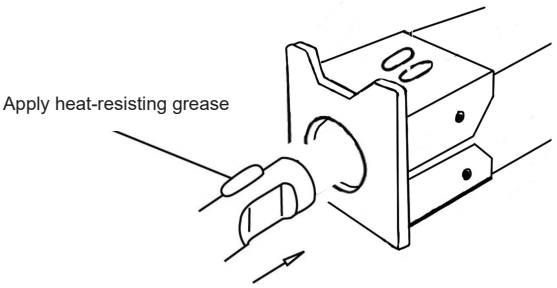
4.Change the face of Rod Pin regularly to avoid excessive deformation.

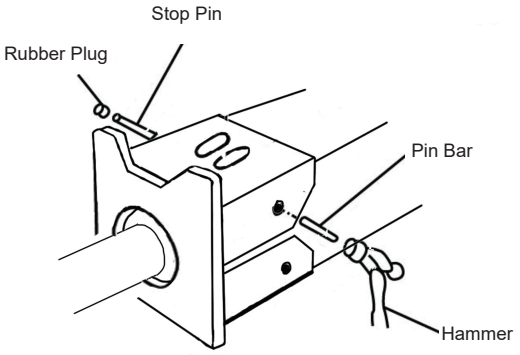
Note: Check the Rod Pin if there's any broken or wear regularly.

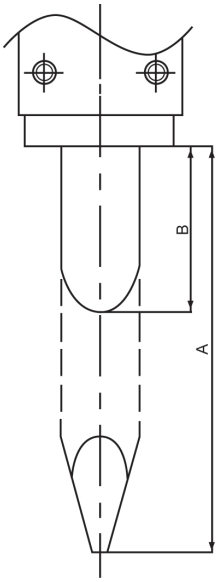
5. The Tool should be replaced after wearing.Please refer to the reject dimensions as per below.

- When remove or install Tool, please pay attention to its weight.
- Knocking the tips of Tool is forbidden.
- Inserting hands into Main Body is forbidden.
- Do not stand near to the Tool when connecting hydraulic hoses or charging gas into Back Head, as the Tool may come out suddenly.
- Do not touch Tool with hands after breaker stops working as the temperature of Tool may be very high.









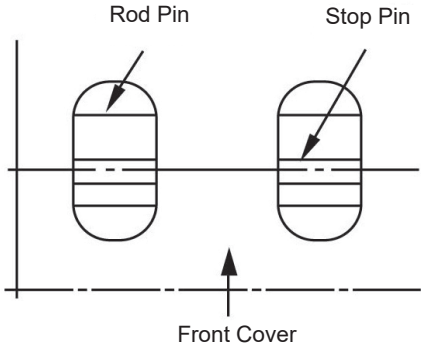
Unit: mm

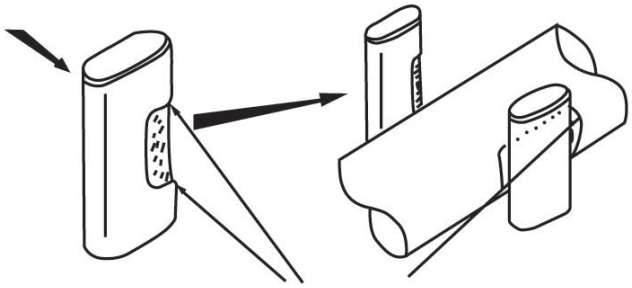
NO.	Model	Original Length (A)	Reject Length (B)
1	D100H	567	250
2	D120H	680	300
3	D135H	765	400
4	D150H	777	400
5	D160H	808	450
6	D170H	903	500
7	D190H	880	500

B is the outer length when the Tool is fully pushed back into Main Body.

Replacement of Rod Pin

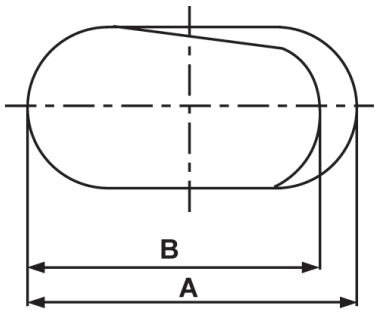
1) If Rod Pin is excessively deformed, it will be difficult to replace Tool. Therefore, after operating the breaker every 100 to 150 hours, change the face of Rod Pin which comes in contact with Tool. Each face of Rod Pin can be used.
2) When repairing Rod Pin, check if there's any bend or deformation.
3) After grinding the worn area of Front Cover and Rod Pin, replace Tool.
When changing the face of Rod Pin, put the Rod Pin into the groove of Tool and lock it with Stop Pin.
4) The Rod Pin should be replaced after wearing.Please refer to the reject dimensions as below:





If there's any wear or bend, firstly grind it with grinder or the like.

Unit: mm

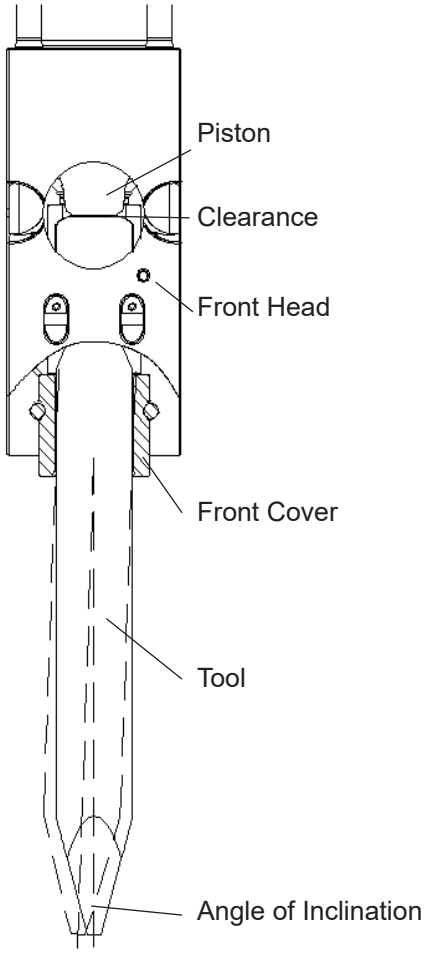


B is the minimum width after worn.

No.	Model	Original Width(A)	Reject Width(B)
1	D100H	48	45
2	D120H	60	57
3	D135H	80	77
4	D150H	89.5	85.5
5	D160H	100	94
6	D170H	99.5	94
7	D190H	109	104

Replacement of Front Cover

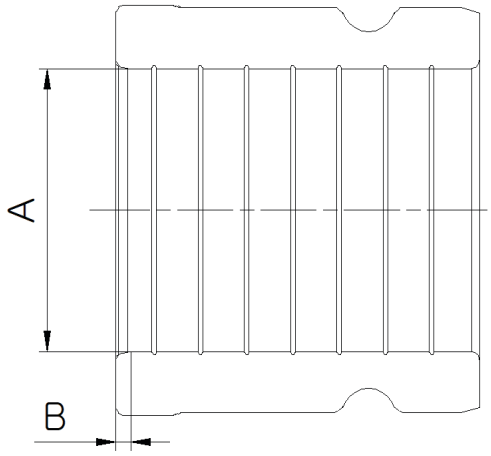
1) If the clearance between Tool and Front Cover is too big, it could shorten the life of Piston and Tool, even causes the breakage of Tool and Piston.



If the clearance between Tool and Front Cover is too big, it could cause following problems,

1. It could cause irregular impact between Piston and Tool, it will shorten the life of Piston.
2. It could cause angle of inclination, and it may lead to breakage of Tool.

The Front Cover should be replaced after wearing.Please refer to the reject dimensions as below:

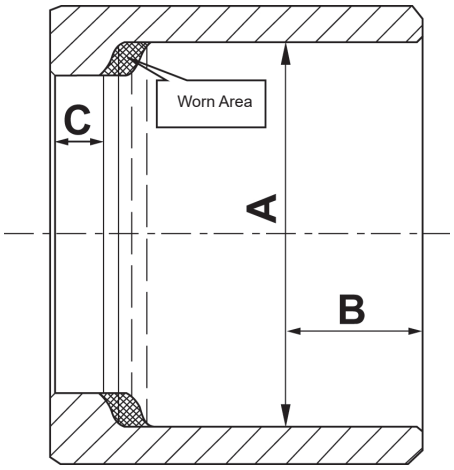


Unit: mm

No.	Model	Measure at B	Original Dia. -A	Rejected Dia. -A
1	D100H	10	100	105
2	D120H	10	120	125
3	D135H	10	135	140
4	D150H	10	150	156
5	D160H	10	160	166
6	D170H	10	170	177
7	D190H	10	190	197

Replacement of Ring Bush

1.If the clearance between Tool and Ring Bush is too big, it could shorten the life of Piston and Tool, even causes the breakage of Tool and Piston.



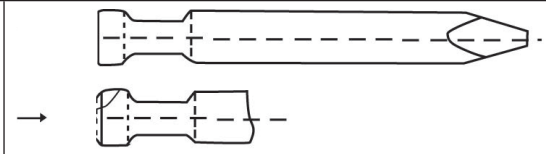
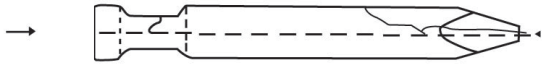
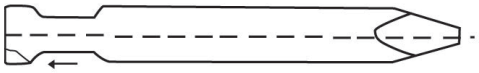
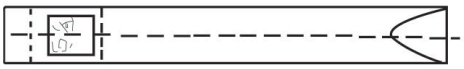
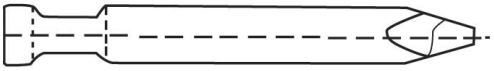
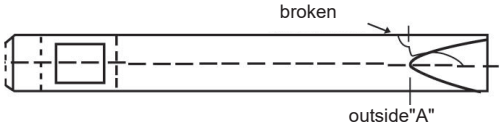
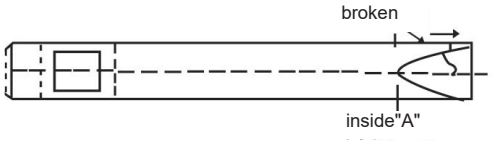
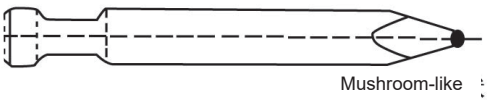
Once A or C meets the Rejected Dimension in below form, the Ring Bush must be replaced immediately.

Unit: mm

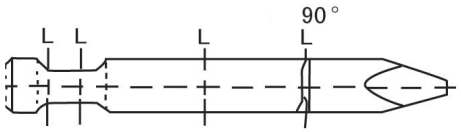
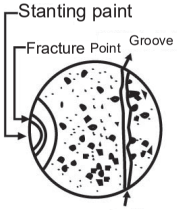
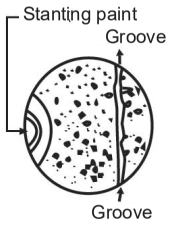
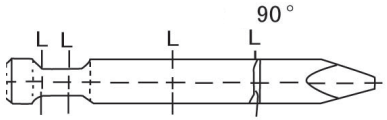
No.	Model	Measure at B	Original Dia. -A	Rejected Dia. -A	Original Height -C	Rejected Height -C
1	D100H	15	100	104	17.5	14.5
2	D120H	15	120	124	19.8	16.8
3	D135H	15	135	140	24.5	21.5
4	D150H	15	150	155	25	22
5	D160H	15	160	166	25	22
6	D170H	20	170	176	28	24
7	D190H	20	190	196	27	23

Warranty of Tool

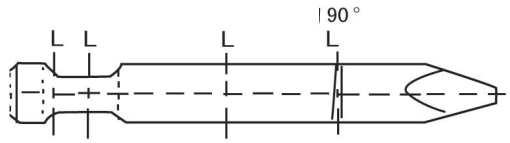
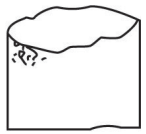
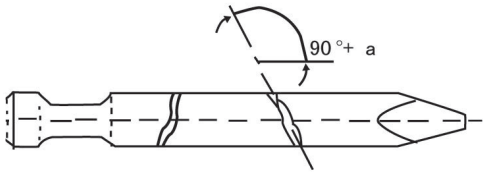
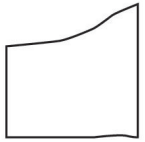
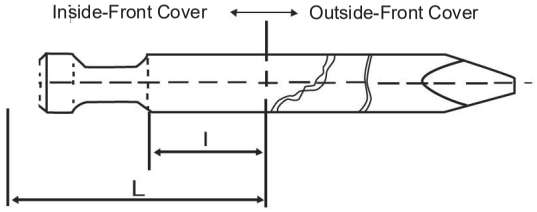
(1) Warranty Standard of Tool

No.	Damage State	Warranty	Damage Reason & Contents
a		Free for compensation	Bad heat treatment: fracture from outside of tool centerline.
b		Free for compensation	Bad material: fracture from tool centerline.
c		Chargeable (not compensable)	Damage and wear caused by blank firing.
d		Chargeable (not compensable)	Inner parts wear off for continuous blank firing (eg. rod pin); Wear occurrs when strike force reaches rod pin during blank firing.
e		Chargeable (not compensable)	Wrong operating method: waging from side to side when plugged into object, leveraged operating or not vertical tool operating
f		Free for compensation	Bad material or heat treatment; Damage reach into line A.
g		Chargeable (not compensable)	Bad choice of tool and operating method; Damage reach into line A.
h		Chargeable (not compensable)	Wrong operating method; Heat produced from prolonged strike(more than one minute) of unbreakable ground makes tool material soft and tool mushroom-like.

(2) Warranty Assurance Standard Based on Fracture Face

NO.	Damage State	Fracture Face of Tool		Warranty	Reason of Fracture
a				Chargeable (not compensable)	● wrong operating method: waging from side to side when plugged into object or leveraged operating method ● overbending of tool etc.
				Chargeable (not compensable)	● improper maintenance and operating method ● insufficient lubrication ● trace of deep scratch occurrs where fracture begins
				Chargeable (not compensable)	● wrong operating method: waging from side to side when plugged into object or leveraged operating methodconcave ● occurrs at the fracture part and round mark occurrs where fracture begins
b				Free for compensation	● bad material ● fracture occurrs from the centre of tool
				Free for compensation	● bad material ● bad heat treatment

(3) Warranty Standard Based on Fracture Face

NO.	Damage State	Fracture Face of Tool		Warranty	Reason of Fracture
c				Chargeable (not compensable)	● tool wags from side to side when plugged into object or leveraged operating method or foreign matter sinks in or insufficient oil injection ● defect or scratch from tool surface develops into inner fracture of tool
d				Chargeable (not compensable)	● improper operating method: waging from side to side when plugged into object or leveraged operating ● fracture occurrs by way of tilting from centerline(90+a)
e				Chargeable (not compensable)	● improper operating method: waging from side to side when plugged into object or leveraged operating
				Free for compensation	● bad material and bad heat treatment
				Chargeable (not compensable)	● improper maintenance and operating ● method ● surface defect develops into deep of tool fracture caused by serious surface defect of tool (eg. Scratch)

Charging of Accumulator

1.Install the accumulator charging plug into the accumulator cover.
2.Then install the gas charging device to the corresponding thread.
3.Figure 3 is a top view of the accumulator device. According to the mark in the figure, the clockwise direction is to open the inflation, and the counterclockwise direction is to close the inflation.First, gently tighten the knob counterclockwise to the closed state, and then turn it counterclockwise 3-4 turns.
4.Gently turn the gas cylinder valve to adjust the air flow to the minimum state.
5.Attention! Charging device do not have a relief valve. When the gauge shows the correct charging pressure, close the gas cylinder valve.
6.Close the inflatable valve when charging to 2-3 bar above the specified pressure. Observe the pressure gauge reading.
7.Close the gas cylinder valve.
8.Remove the device and tighten the protective plug of the accumulator cover to the specified torque.

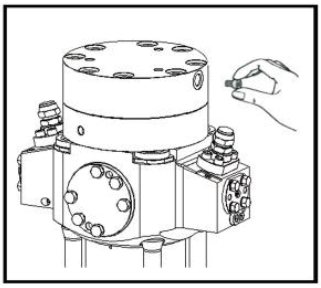


Figure 1

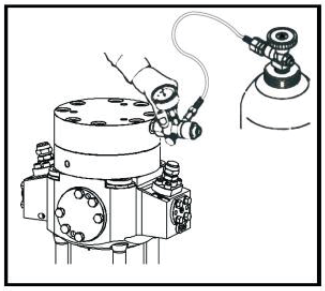


Figure 2

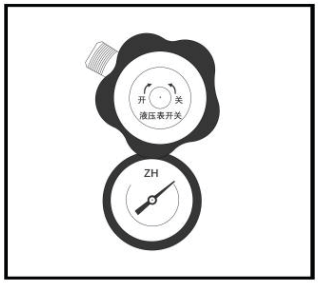


Figure 3

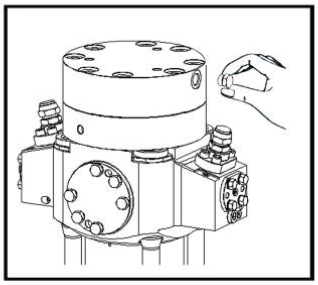


Figure 4

Set the Pressure Range of the Accumulator Safety Valve

Unit: kg/cm²

Item	D100H	D120H	D135H	D150H	D160H	D170H	D190H
The pressure of the accumulator	40	40	40	40	40	40	40

Hydraulic oil	
Winter	Summer
46#	68#
Please use well-known brand oil	

Hydraulic oil

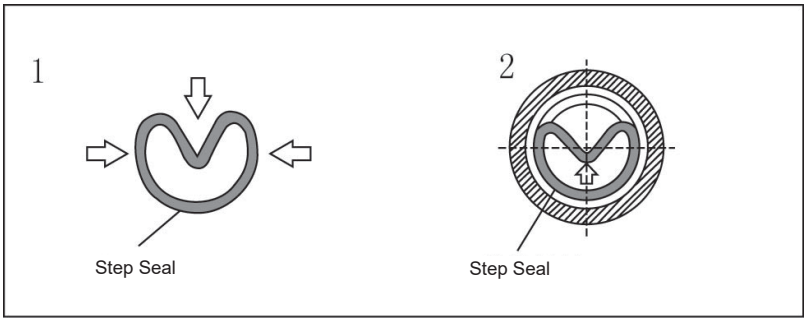
Check the hydraulic oil capacity in oil tank timely, Please replenish the oil in time if it is insufficient.
Please keep the hydraulic oil clean.
If the hydraulic oil is polluted, it will cause the impeded working of valve and do harm to the breaker.


Warning

Please use the same hydraulic oil produced by one company, if different oil is mixed, chemical reaction may be set off.

Oil leakage

Check the main body of breaker, accumulator and pipe kits of hydraulic oil to find whether there's any leakage or not.
It is normal that oil leak slightly at the connecting parts between front head and chisel, it lubricates chisel.
If the breaker leak oil, please replace the O-ring and/or oil seal on the leaking parts.
Please replace oil seal(s) by following procedures below:
1.Apply lubricating oil on seal retainer, oil seal and other needed parts.
2.Put O-ring in the groove inside seal retainer.
3.Fold oil seal by hand (as shown in the figure 1), please note not to fold too much to break the oil seal.
4.Put the oil seal in the groove inside the seal retainer. Push the folded part from inside to make it recover (as shown in the figure 2).



- If oil seals is broken, please check carefully whether there are scratches on surface of cylinder and/or piston.
- Check carefully to make sure no chips of broken oil seal remain inside of cylinder.

Trouble-shooting

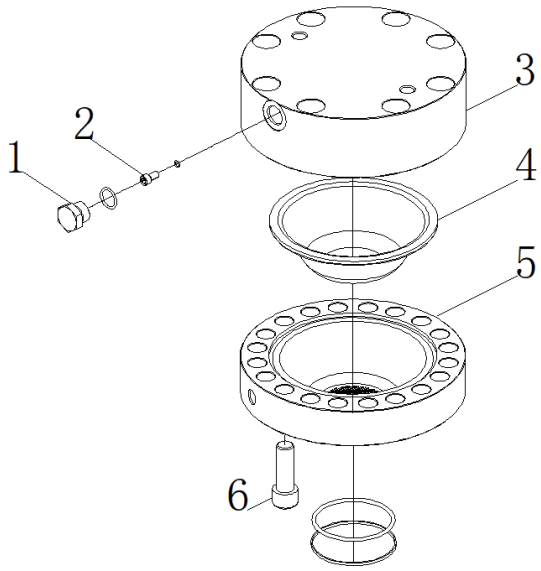
Please check again before the breaker is sent to be serviced.

Symptom	Cause	Required action
Low impact power	1.Low engine speed. 2.Low nitrogen gas pressure of accumulator. 3.Wrong pressure setting or adjustment of relief valve. 4.Failure of chisel.	1.Re-adjust engine speed controller. 2.Check nitrogen gas pressure, re-fil gas if it is released. 3.Re-set or re-adjust pressure of relief valve. 4.Smoothen the scored parts of chisel, front cover and ring bush by using abrasive paper or grinder.
No blow out	1.Wrong pressure adjustment of relief valve. 2.Hydraulic oil in back head infection. 3.Scoring of piston, cylinder or valves. 4.Faulty hydraulic hose connection. 5.Stop valve(s) closed. 6.Lack of hydraulic oil.	1.Re-adjust valve adjuster. (see attached form 4) 2. Replace Gas Seal. 3.In case of a slight scratch, smoothen the scored surface by using abrasive paper or grinder. Replace the damaged part(s) if needed. 4.Reconnect hydraulic hose. 5.Open stop valve(s). 6.Fill hydraulic oil.
Irregular impact	1.Low hydraulic oil pressure. 2.Scoring of chisel and/or front cover. 3.Scoring of piston, cylinder or valve(s). 4.Excessive pressure of hydraulic oil returning hose. 5.Excessive temperature of hydraulic oil. 6.Low pressure of relief valve. 7.Lack of hydraulic oil.	1.Re-adjust pressure of relief valve. 2. In case of a slight scratch, smoothen the scored parts of chisel and front cover by using abrasive paper or grinder. Replace the damaged part(s) if needed. 3. In case of a slight scratch, smoothen the scored surface by using abrasive paper or grinder. Replace the damaged part(s) if needed. 4.Check filter element and cooler, clean or replace the unit. 5.Clean or replace cooler, or replace hydraulic oil in higher viscosity. 6.Re-adjust pressure of relief valve till standard pressure. 7.Fill hydraulic oil.
Gas leakage (rapidly leaking is abnormal) 1.Gas leaking from gas charging valve. 2.Gas leaking from adjuster valve. 3.Gas leaking from the connecting surface between cylinder and seal retainer. 4.Gas leaking from gas seal.	1.O-ring from plugs is damaged. 2.O-ring from cylinder and valve body is damaged. 3.O-ring from cylinder is damaged. 4.Seal is damaged.	1.Replace. 2.Replace. 3.Tighten. 4.Replace

Assembly of Main Body

Assembly of accumulator assy

Models	Part Name	Torque（Nm）	Specification
D100H	Socket bolt	400	M16X1.5
D120H		500	M22X1.5
D135H-D170H		700	M27X2.0
D190H		1000	M33X2.0



1. Place the diaphragm (4) in the correct direction on the accumulator body (5),and secure the the accumulator cover (3) to the accumulator body (5) using the socket bolt (6).

2. Install O-rings of different specifications in the designated positions.

3. After filling with the specified nitrogen pressure,tighten the acc.shield plug (1) and acc.filling plug (2).

⚠ Warning!!!Release accumulator pressure before disassembling.

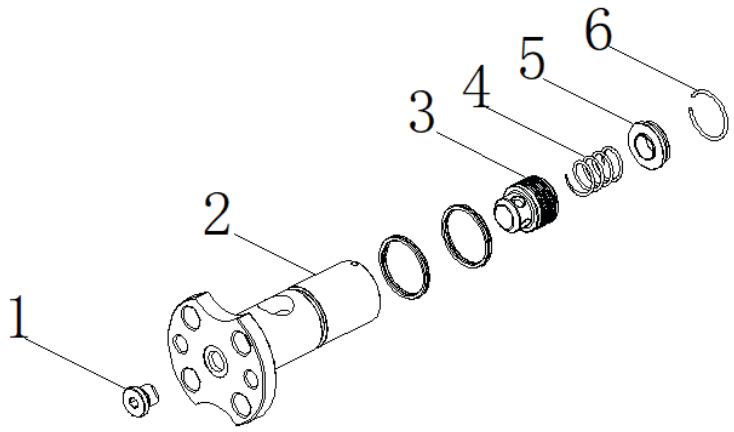
Valve assy installation steps

Check valve assy installation steps

D120H-D190H

1. Install the socket plug (1) according to the specified torque on the inlet check valve cover (2),and install the rectangular ring in the oil seal groove of the inlet check valve cap (2).

2. Install the inlet check valve (3), the inlet check spring (4), the inlet check valve spring guide (5), and the snap ring (6) into the inlet check valve cap (2) in sequence.

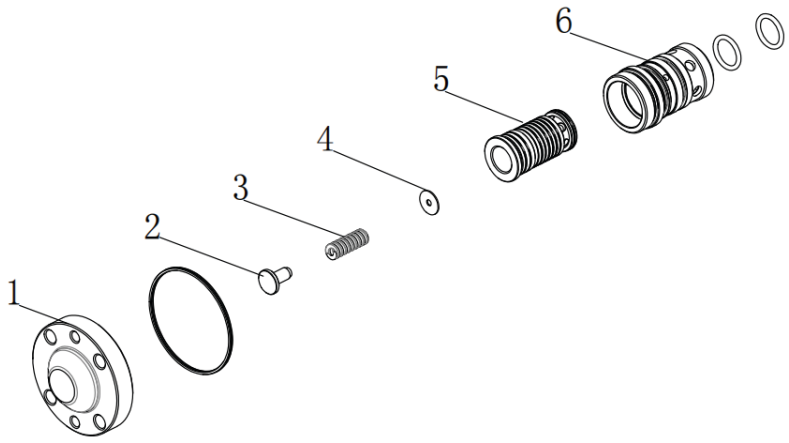


Pressure control valve assy installation steps

D100H

1.Install the O-rings in the oil seal grooves of the pressure control valve cap （1） and the pressure control valve sleeve （6） respectively. Assemble the pressure control valve spring guide（2）, pressure control valve spring （3）, pressure control valve wahser （4）, pressure control valve sleeve（5）, and pressure control valve sleeve（6）in the order shown in the figure.

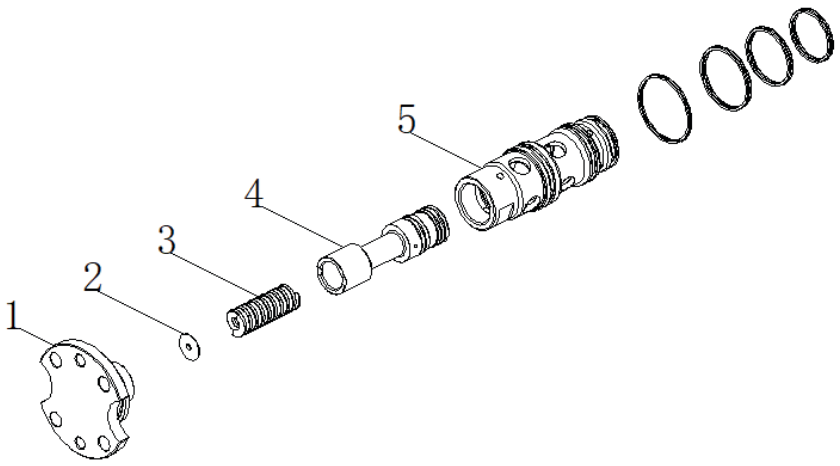
Note: The spring washer（4）of the pressure control valve is installed according to the working pressure. If the pressure cannot reach the working pressure set in the instruction manual,the washer（4）can be installed for adjustment.



D120H/D135H/D150H

1. Install the O-rings in the oil seal grooves of the pressure control valve cap（1） and the pressure control valve sleeve （5） respectively. Assemble the oil pressure control valve spring washer （2）, pressure control valve spring （3）, pressure control valve （4）,an pressure control valve sleeve （5） in the order shown in the figure.

Note: The spring washer （2) of the pressure control valve is installed according to the working pressure. If the pressure cannot reach the working pressure set in the instruction manual,the washer （2) can be installed for adjustment.

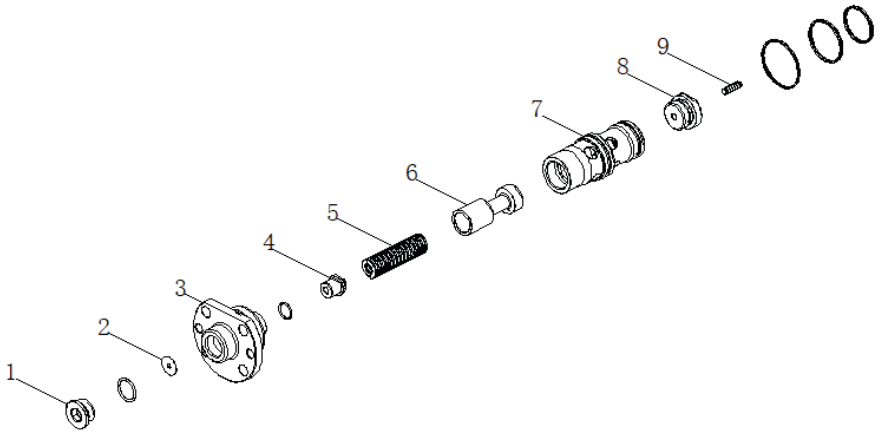


D160H/D170H/D190H

1. Install the O-rings in the oil seal grooves of return pressure control valve cap plug （1,）oil return pressure control valve cap （3 ） and oil return pressure control valve sleeve （7） respectively.

2. Assemble the pressure control valve cap plug （1）, pressure control valve spring washer （2）, pressure control valve cap （3）,and pressure control valve spring guide（4）, pressure control valve spring （5）, pressure control valve （6）, pressure control valve sleeve （7）, pressure control valve spool guide sleeve （8）, and pressure control valve spool （9） in the order shown in the drawing.

Note: The spring washer （2） of the pressure control valve is installed according to the working pressure. If the pressure cannot reach the working pressure set in the instruction manual, the washer（2）can be installed for adjustment.

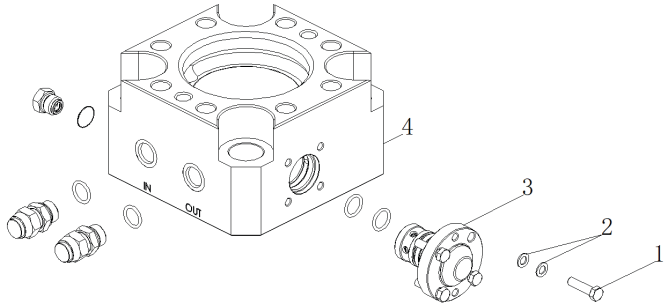


Valve body assy installation steps

D100H

Model	Name	Torque（Nm）	Specification
D100H	Hexagonal bolt（1）	75	M10

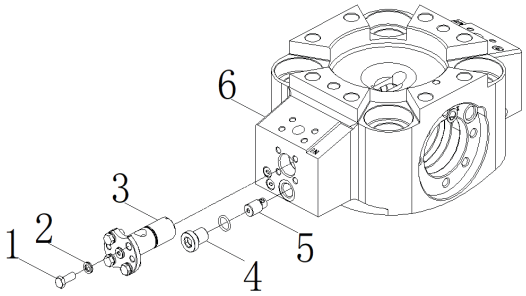
1.Install the pressure control valve assy (3) into the valve body (4). Install the hexagonal bolts (1) and lock washers (2), and tighten them according to the specified torque.



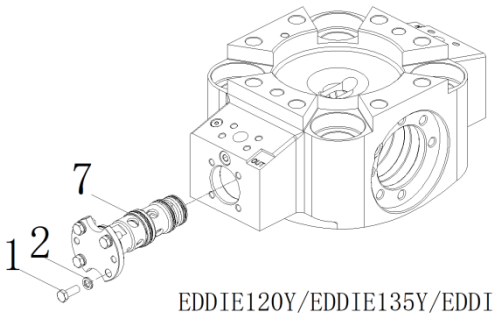
D120H-D190H

Model	Name	Torque（Nm）	Specification
D120H/D135H/D150H	Hexagonal bolt（1）	110	M12
D160H/D170H/D190H		300	M16
D120H	Hexagonal bolt（8）	110	M12
D135H/D150H		300	M16
D160H/D170H/D190H		500	M20
D120H/D135H/D150H	Socket bolt（11）	110	M12
D160H/D170H/D190H		300	M16

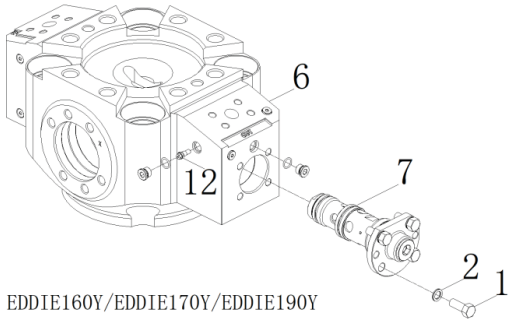
1.Install the check valve assy (3) into the valve body (6). Install the hexagonal bolts (1)and lock washers (2), and tighten them according to the specified torque.



2. Install the pressure control valve assy (7) into the valve body (6). Install the hexagonal bolts (1) and lock washers (2), and tighten them according to the specified torque. (For D120H/D135H/ D150H, please refer to the picture on the left. For D160H/D170H/D190H, please refer to the picture on the right).

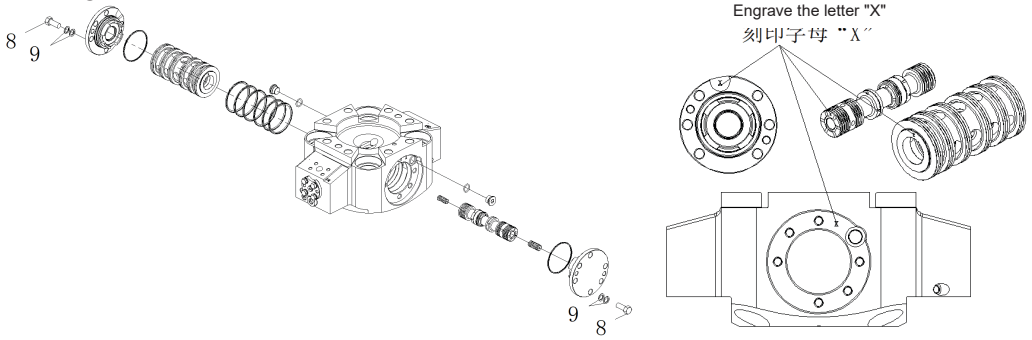


EDDIE120Y/EDDIE135Y/EDDIE150Y

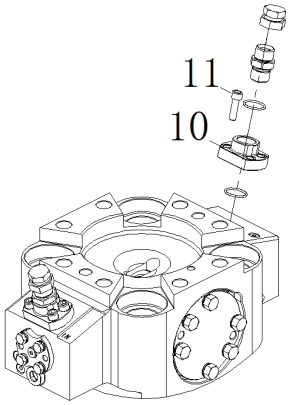


EDDIE160Y/EDDIE170Y/EDDIE190Y

3. As shown in the figure, install each component on the valve body (6) in order, with the engraved letter "X" pointing in the same direction.



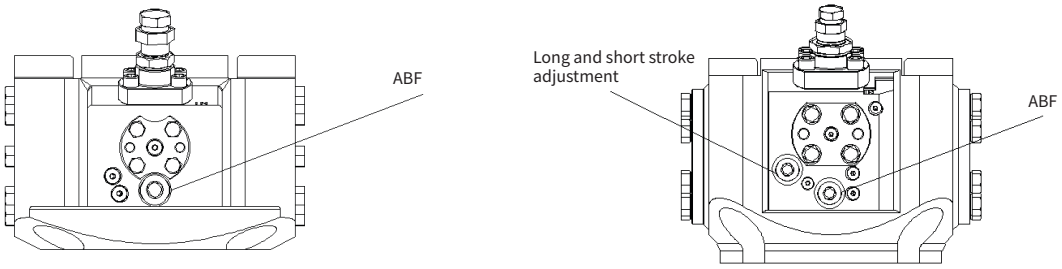
4.Install the inlet and outlet flanges (10), socket bolt (11) and O-ring in sequence.



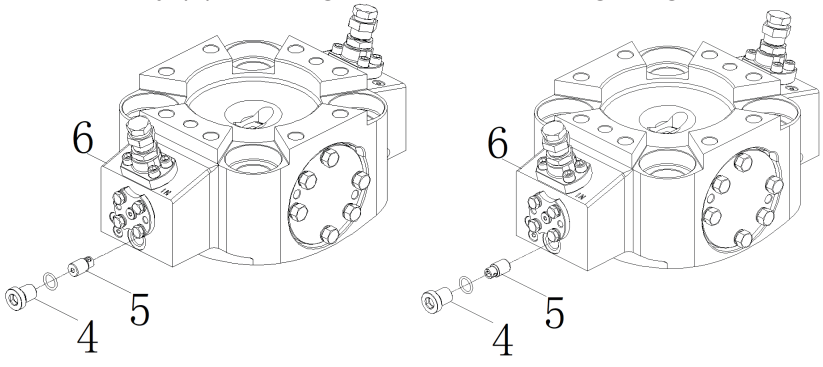
Idle blow protection operation instruction

D120H-D190H

1.As shown in the figure, Left one is suitable for D135H/150Y/160Y, and Right one is suitable for D170H/190Y.



2.If the IBP function is turned on or the short-stroke function is enabled, please install the stroke adjuster (5) into the valve body (6) following to the direction in left figure.
If the IBP function is turned off or the long-stroke function is enabled, please install the stroke adjuster (5) into the valve body (6) following to the direction in right figure.

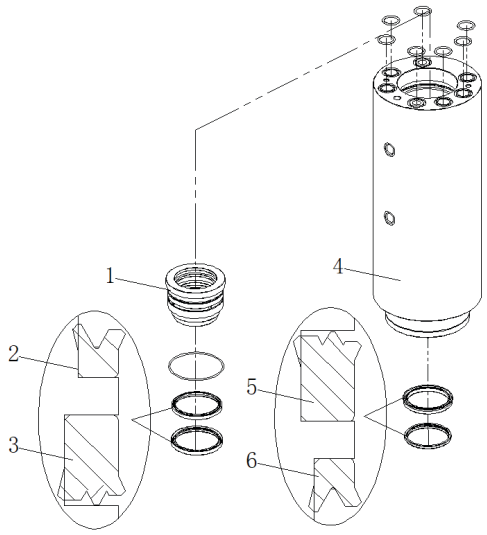


Cylinder assy installation steps

D100H

1. Install the dust seal (2), U packing (3), into the seal retainer（1）. (the oil seal is oriented according to the legend), and install other O-rings, and knock pins at the same time.

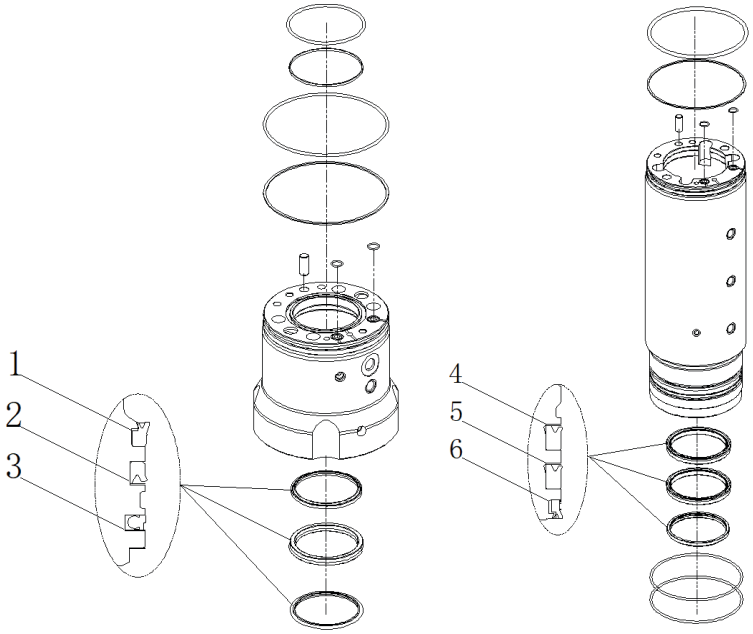
2. Install the dust seal (6), U packing (5), into the cylinder（4）. (the oil seal is oriented according to the legend), and install other O-rings.



D120H/D135H/D150H/D160H/D170H/D190H

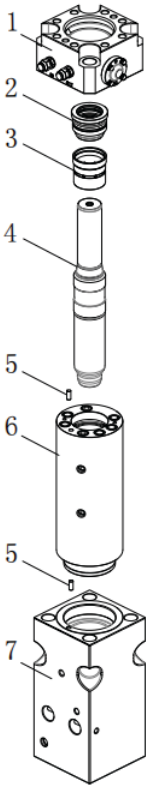
1. Install the dust seal (1), U packing (2), and step seal (3) into the seal retainer in order (the oil seal is oriented according to the legend), and install other O-rings, plugs, and knock pins at the same time.

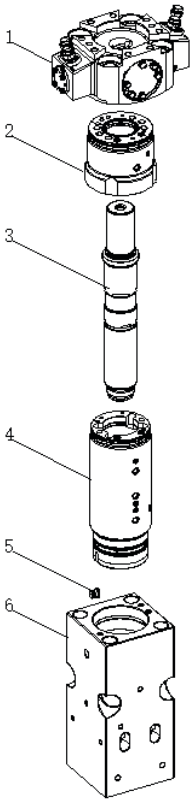
2. Install the step seal（4）, U-packing（5）, and the dust seal（6）into the cylinder in sequence (the oil seals are oriented according to the legend), and at the same time install other O-rings, plugs and knock pins.



Installation steps of Assy

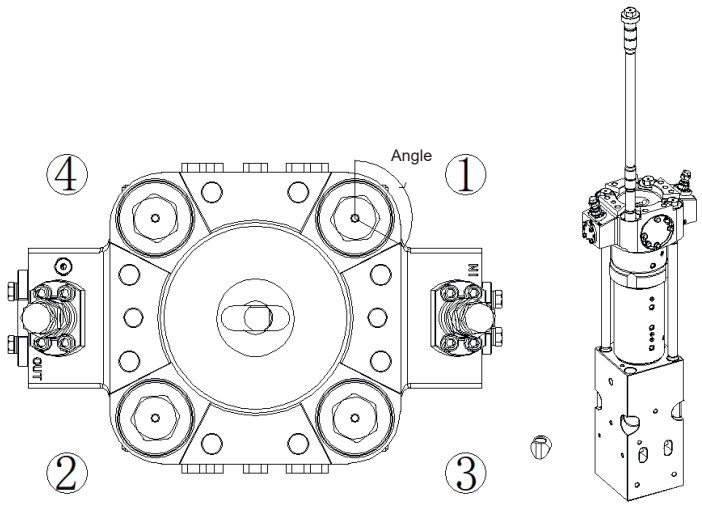
1.According to the order in the figure, install the valve Assy（1）, seal retainer （2）, piston （3）, cylinder （4）, wedge （5）, and front head （6）.According to the order in the figure, install the valve Assy（1）, seal retainer （2）, piston （3）, cylinder （4）, wedge （5）, and front head （6）.



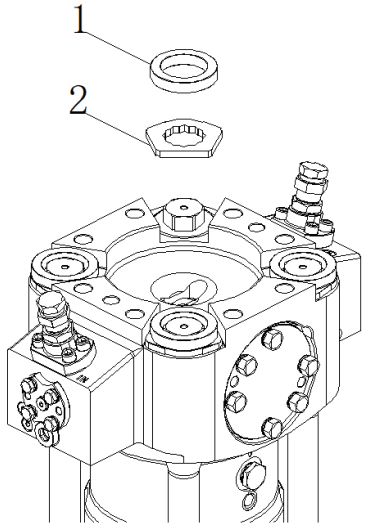


Name	Tightening method	Model
Through bolt	1200Nm/1500Nm	D100H
	100Nm/300Nm/500Nm/heated rotation 120°	D120H/D135H/D150H/D160H
	100Nm/300Nm/700Nm/heated rotation 90°	D170H/D190H

2. Install the through bolts and nuts into the corresponding positions on the drawing, and then tighten them in the required order. Note: When heating, use a propane grill to heat the exposed part of the bolt until it can be loosened by a wrench. Avoid heating at just one point, and the surface temperature should not exceed 300° C. Make sure that the flame only heats the through bolts and does not damage the breaker body.

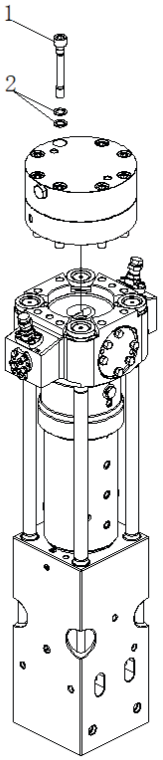


3. After the through bolts are assembled according to the steps, install the rubber ring （1） and the through bolt lock plate (2） on the through bolts in sequence.



4. Install the accumulator and bolts, and tighten them according to the specified torque.

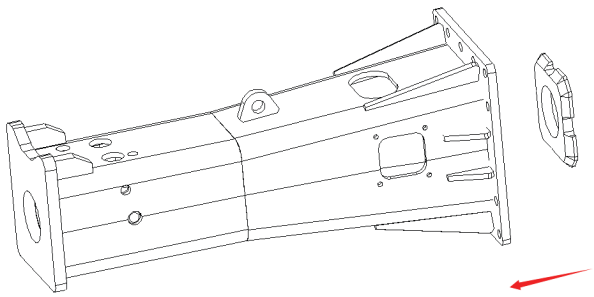
Models	Part Name	Torque（Nm）	Specification
D100H	Socket bolt（1）	900	M24X2
D120H		1100	M24X3
D135H/D150H		1300	M27X3
D160H/D170H		1500	M33X3.5
D190H		1800	M36X4



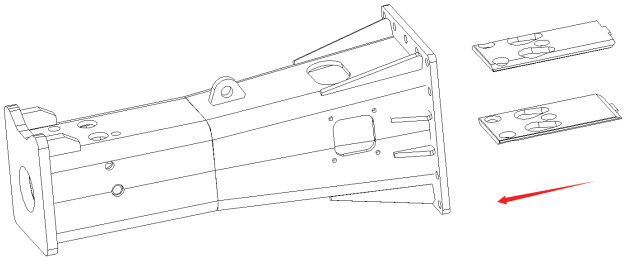
Housing Installation Steps

D100H

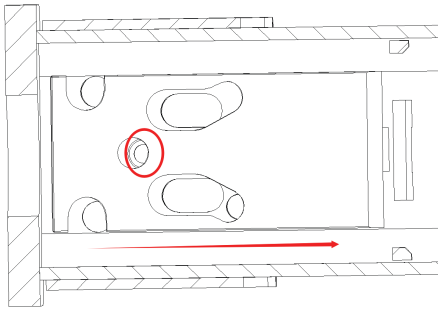
1. Position below dampers into the housing along the direction illustrated.



2.Position two side dampers A into the housing along the direction illustrated.

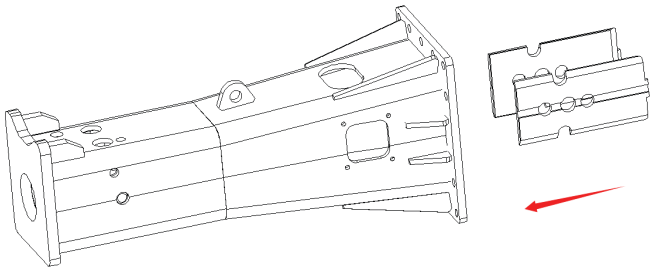


3.As indicated in the figure, engage the protrusion of damper A (inserted into the housing) with the mating slot of the housing, then engage the central portion of the damper onto the locating dowel.

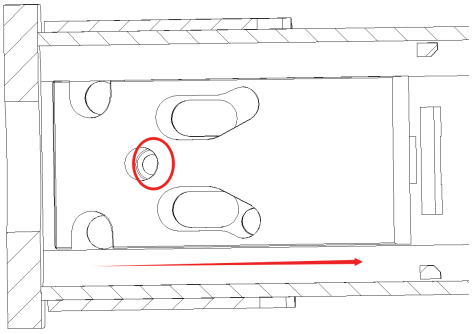


Note: Orient the damper with its chamfer facing inward.

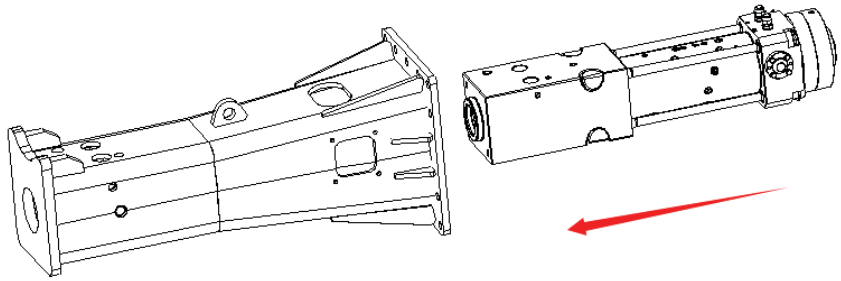
4.Position two side dampers B into the housing along the direction illustrated.



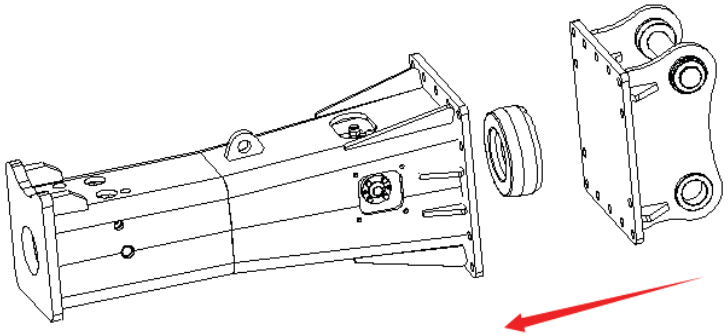
5.As indicated in the figure, engage the protrusion of damper B (inserted into the housing) with the mating slot of the housing, then engage the central portion of the damper onto the locating dowel.



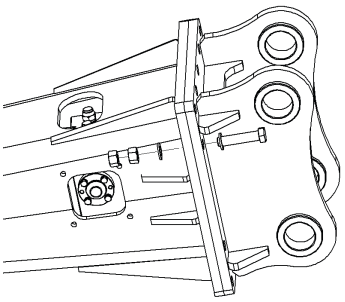
Note: Orient the damper with its chamfer facing inward.
6.Insert the main body of the breaker into the housing in the direction of the arrow.

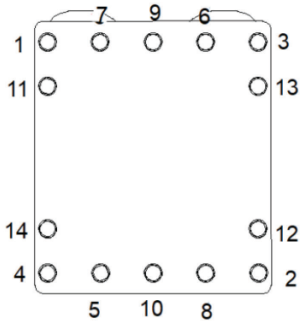


7.Install the cross damper and mounting plate onto the housing in the direction of the arrow.



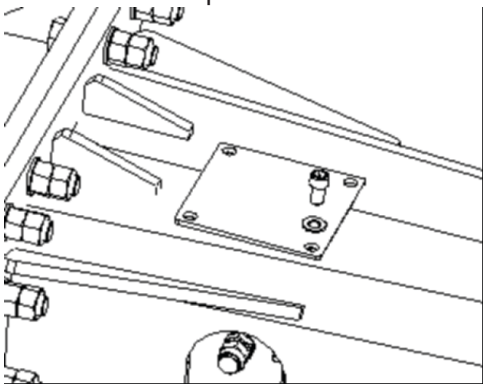
8.Tighten the bolts of the mounting plate with the following sequence as per torque standard.





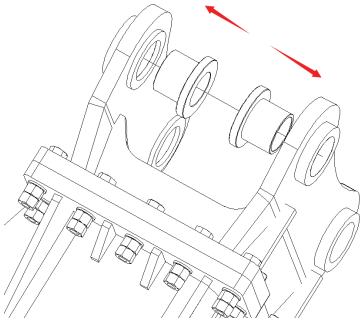
Type	Bolts and Nuts Type	Hex.size(mm)	First locking torque （NM）	Second locking （NM）
D100H	M24	36	900	1200

9.Install the cover plate as illustrated and secure with four bolts.

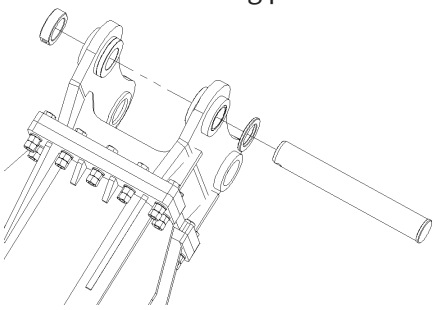


Bolts and Nuts Type	Hex. size(mm)	First locking torque （NM）	Second locking （NM）
M14	12L	75	100

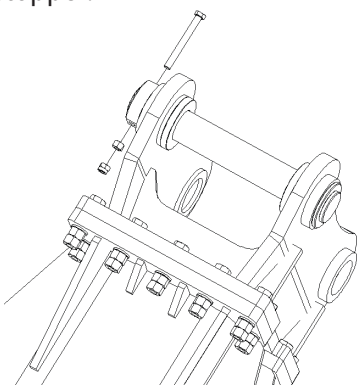
10.Install the two bushings into the mounting plate.



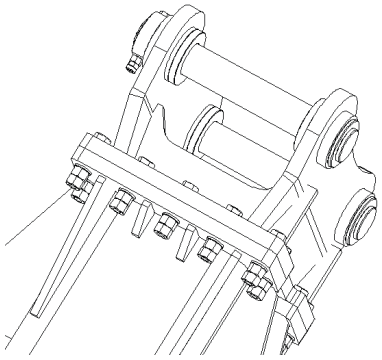
11.Install the pins, washer, stoppers onto the mounting plate.



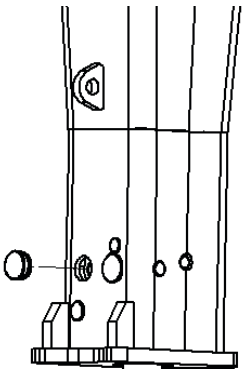
12.Install the stopper-bolts onto the stopper.



13.Repeat steps 10~12, install the second pin onto the mounting plate.

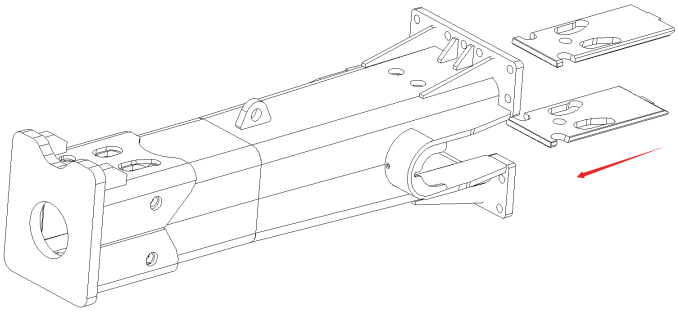


14.Install the plug into the housing.

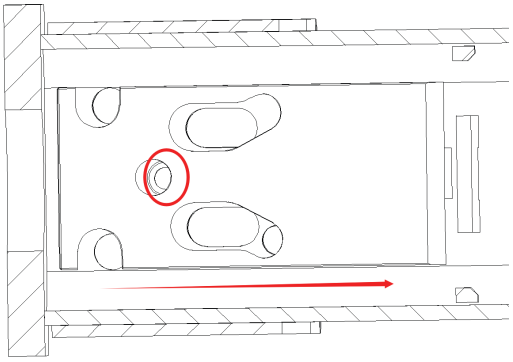


D120H/D135H/D150H/D160H/D170H/D190H

1.Insert the two side dampers A into the housing in the direction of the arrow.

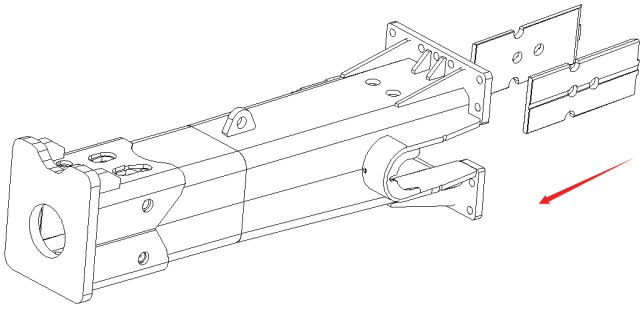


2.Insert the protruding part of the side dampers A into the slot of the housing.Engage the central portion of the damper onto the locating dowel.

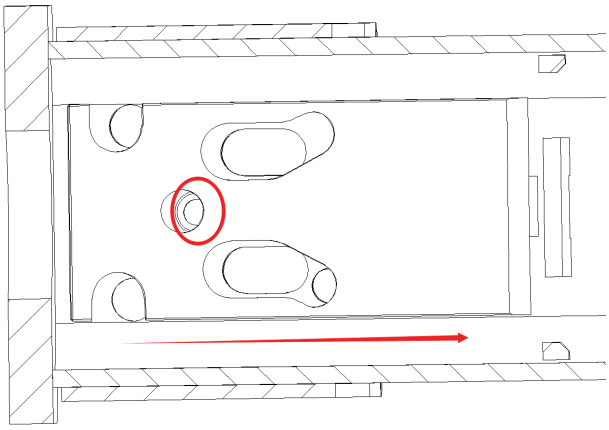


Note: The chamfer of the dampers should be placed inward.

3.Insert the two side dampers B into the housing in the direction of the arrow.

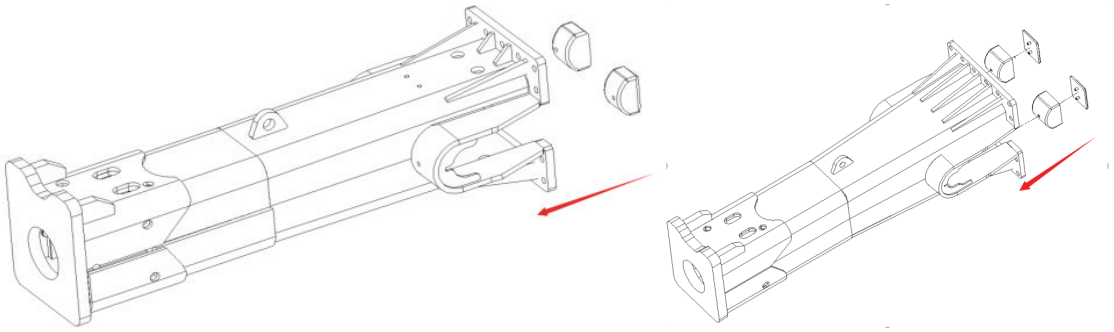


4.As shown in the picture, insert the protruding part of the side damper B into the slot of the housing.Engage the central portion of the damper onto the locating dowel.



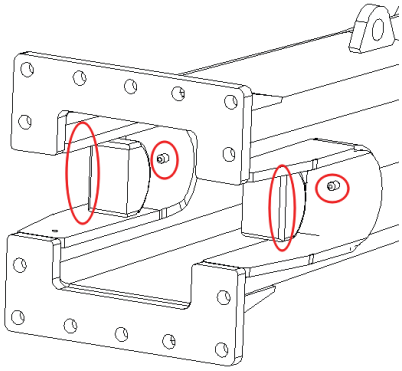
Note: The chamfer of the dampers should be placed inward.

5.Place the two shoulder shock absorbers onto the shell in the direction shown in the diagram.(For 160Y/170Y/190Y, a pad needs to be installed above the shock-absorbing pad.)

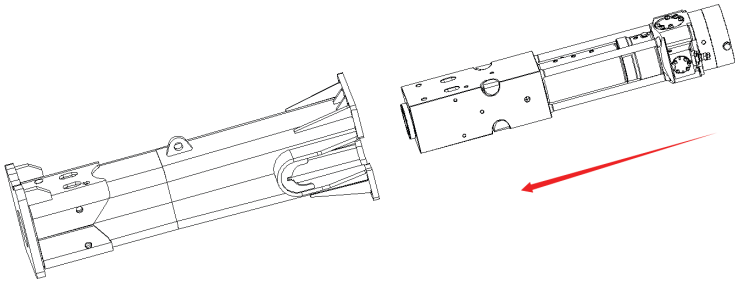


D120H/D135H/D150H D160H/D170H/D190H

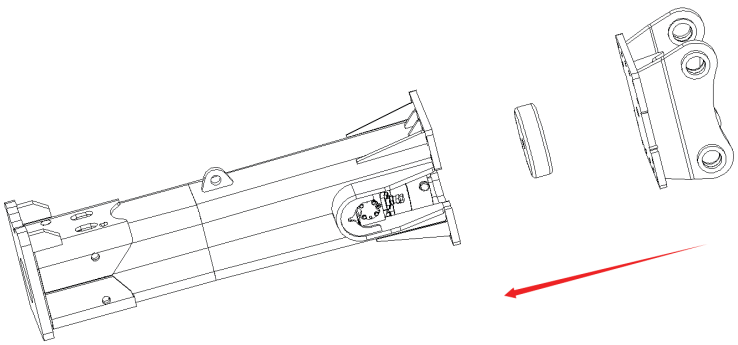
Note:Insert the fixing blocks on the housing into the fixing hole of the below dampers. For D120H/D135H/D150H, orient the damping pad with chamfered edge facing outward



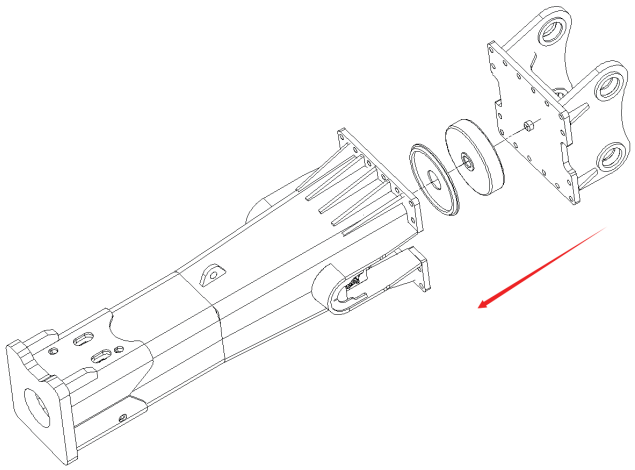
6.Insert the main body of the breaker into the housing in the direction of the arrow.



7.Nstall the cross damper and mounting plate onto the housing in the direction of the arrow.
(D190H
Requires Shim Plate Ir

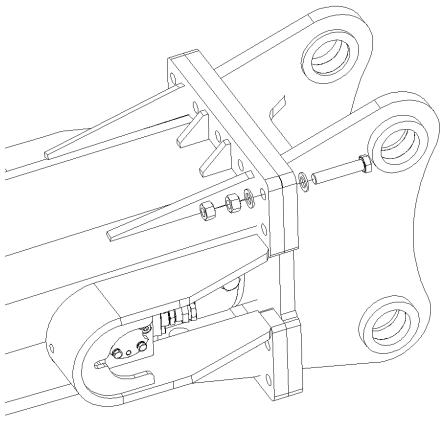


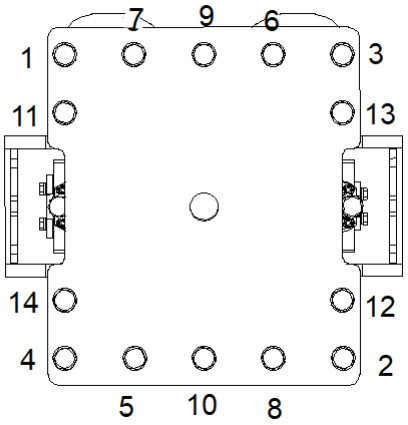
D120H/D135H/D150H/D160H/D170H



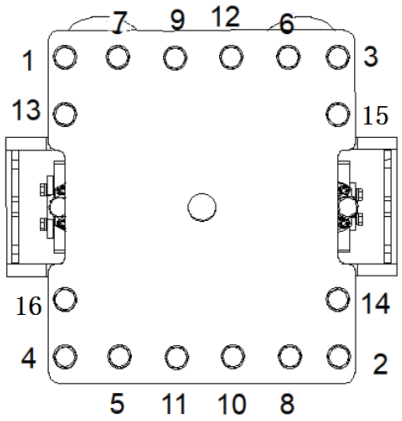
D190H

8.Tighten the bolts of the mounting plate with the following sequence as per torque standard.





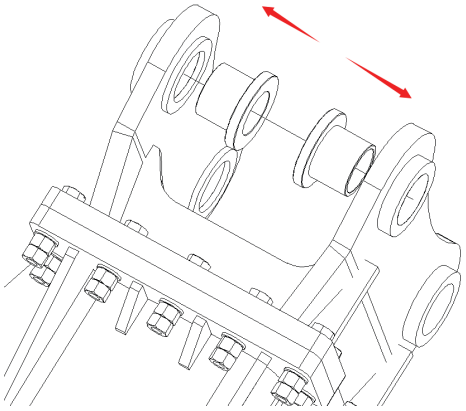
D120H/D135H/ D150H/ D160H/D170H



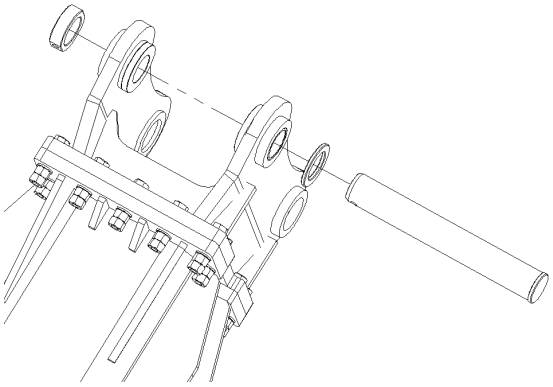
D190H

Type	Bolts and Nuts type	Hex.size (mm)	First locking torque (NM)	Second locking torque（NM）
D120H D135H D150H	M24	36	900	1200
D160H D170H D190H	M36	55	2325	3100

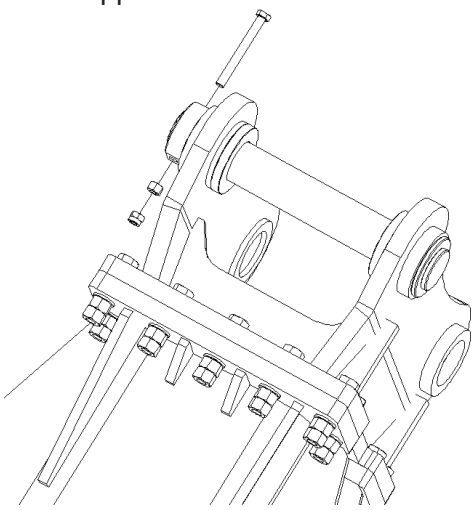
9.Install the two bushings into the mounting plate.



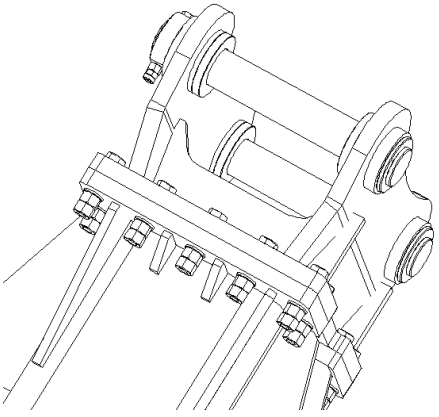
10.Install the pins, washer, stoppers onto the mounting plate.



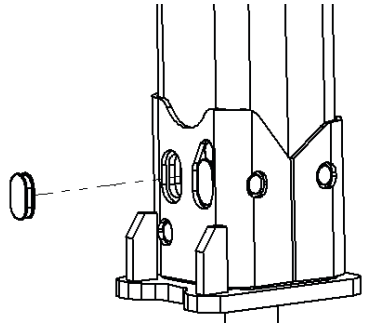
11.Install the stopper-bolts onto the stopper.



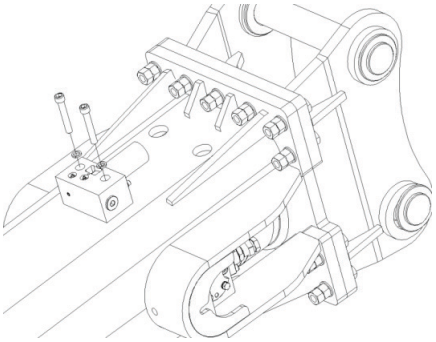
12.Repeat steps 9-11, install the second pin onto the mounting plate.



13.Install the plug into the housing.

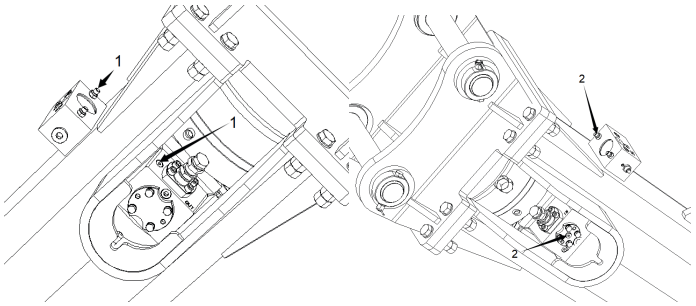


14.Install the automatic grease device onto the position shown in the picture, and tighten the bolts .

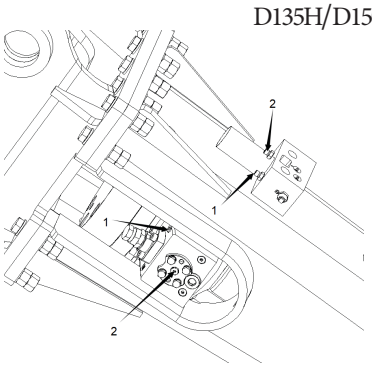


15.Connect the two hoses to the two connectors of the automatic grease device and connect another end to the main body through the wiring port of the housing.

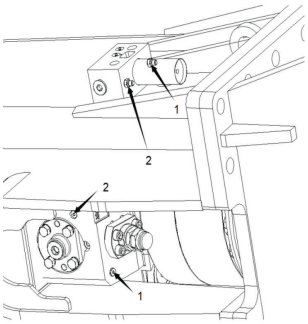
Note: Connect Port 1 of the Automatic Grease Device to Port 1 of the main body, and Connect Port 2 of the Automatic Grease Device to Port 2 of the main body.



D135H/D150H/D160H

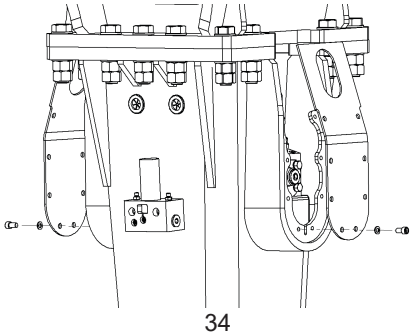


D120H



D170H/D190H

16.Install the cover plate as illustrated and secure with bolts.

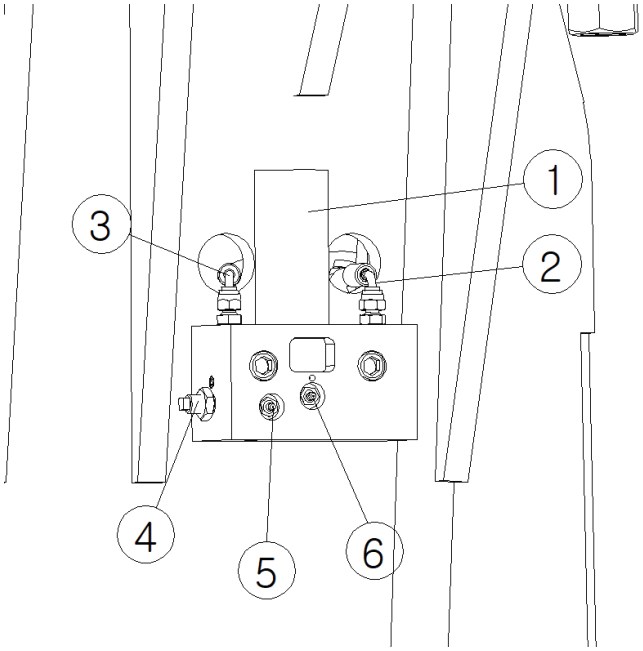


Automatic Grease Device

Automatic grease device lubrication

Note: Even if the breaker is equipped with automatic grease device, manual lubrication can still be used.When the breaker is first used, stored for a long time, or when the automatic grease device cannot lubricate the breaker properly, manual lubrication must be used.

Component description of the automatic grease device



① Grease cartridge（Part number:AGD-HP5-OC）

② Oil hose

③ Grease hose

④ Grease flow regulator

⑤ Manual lubrication oil inlet for the breaker(First use and long-term non-use require grease to be added from this port.)

⑥ Lubricating grease refill port of the grease cartridge(If the grease cartridge is in good condition, grease can be added to the grease cartridge from this port. It's important to note that air shouldn't be mixed in during filling process.)

Recommended lubricating grease

The automatic grease device can only use the original lubricating grease or the lubricating grease that meets the following standard:

① Lubricating grease consistency: If the ambient temperature is below 5 ℃ , it is recommended to use 1 # (NLGI). If the ambient temperature is not below 5 ℃ , it is recommended to use 2 # (NLGI)

② Additive: MoS_2 or equivalent

③ Drip point: over 250 ℃

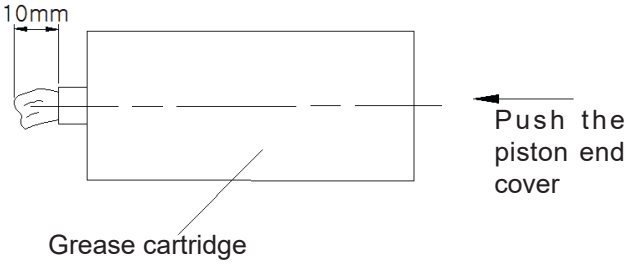
④ Maximum operating temperature: above 150 ℃

⑤ Minimum operating temperature: below the ambient temperature.

⑥ Other characteristic: good water resistance, no reaction with hydraulic oil, good adhesion to steel parts.

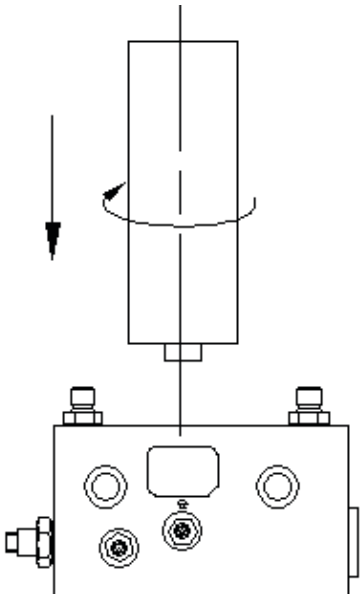
Grease cartridge replacement and usage method

① Squeeze the lubricating grease out of the cartridge by about 10mm (especially important).



② Install it into the grease cartridge and tighten it.

Note: Before installation,it's necessary to confirm the O ring is intact.



Lubrication grease flow regulation

Please note that the specific amount of lubricating grease required for the operation of the breaker needs to be determined based on the following conditions:

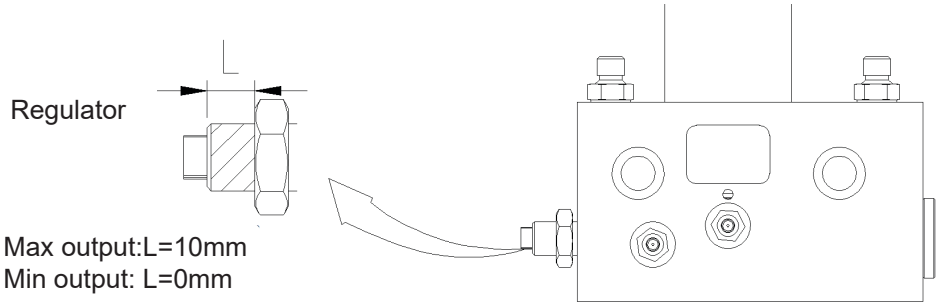
① Breaker size(The bigger the breaker, the greater the amount of the lubricating grease required.)

② The duration of consecutive strikes at the same location(The longer the time, the greater the amount of lubricating grease required.)

③ The quality of the lubricating grease

④ The degree of wear between tool and bushing

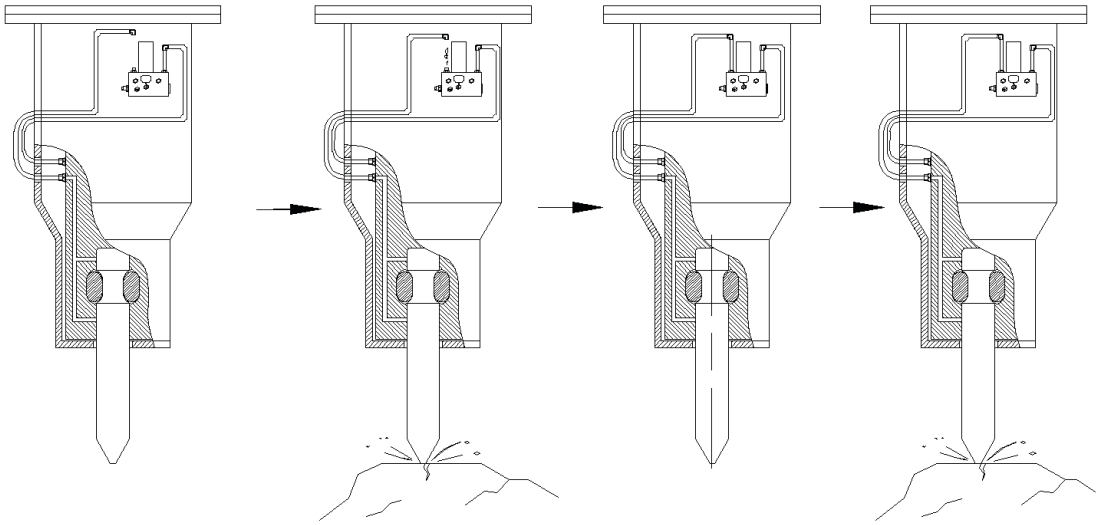
⑤ Driver's operational skills



Output speed:0.2ml-1.0ml/impact

Clockwise rotation can reduce the output speed, while counterclockwise rotation can increase the output speed(After adjustment , the spare nut needs to be tightened.)

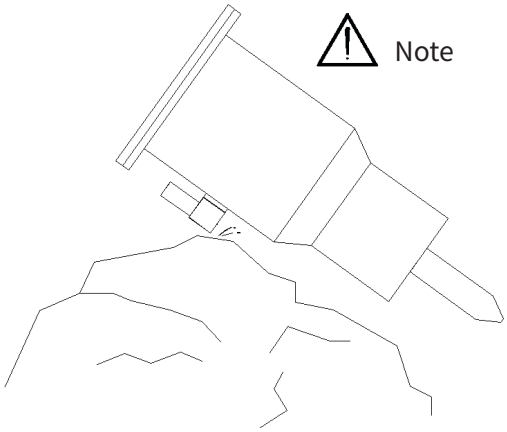
Method for checking whether the grease device is working properly before operating the breaker and after changing grease cartridge.



① Please operate the breaker without connecting the grease hose.

② Strike for 30S, lift the breaker and stop for 30S (repeat 5 times) to check if the grease flows out(If not, repeat the installation steps of the grease cartridge).

③ Operate the breaker after connecting the hose.

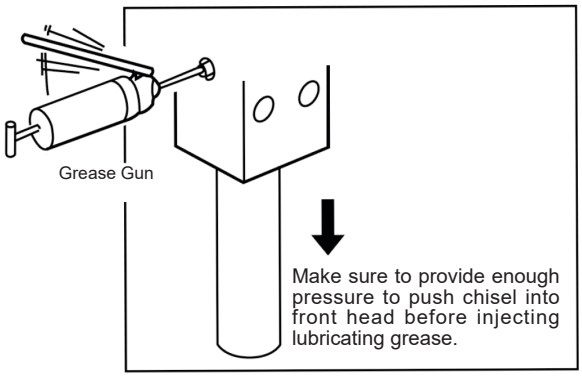


Do not hit the device with external objects, otherwise it may lead to internal malfunctions and impact failure.

Injecting Lubricating Grease

Before working or every two hours: Push chisel into front head. Inject lubricating grease from the grease nipple. Refered injection is 5-20 times. The bigger model, the more injection.

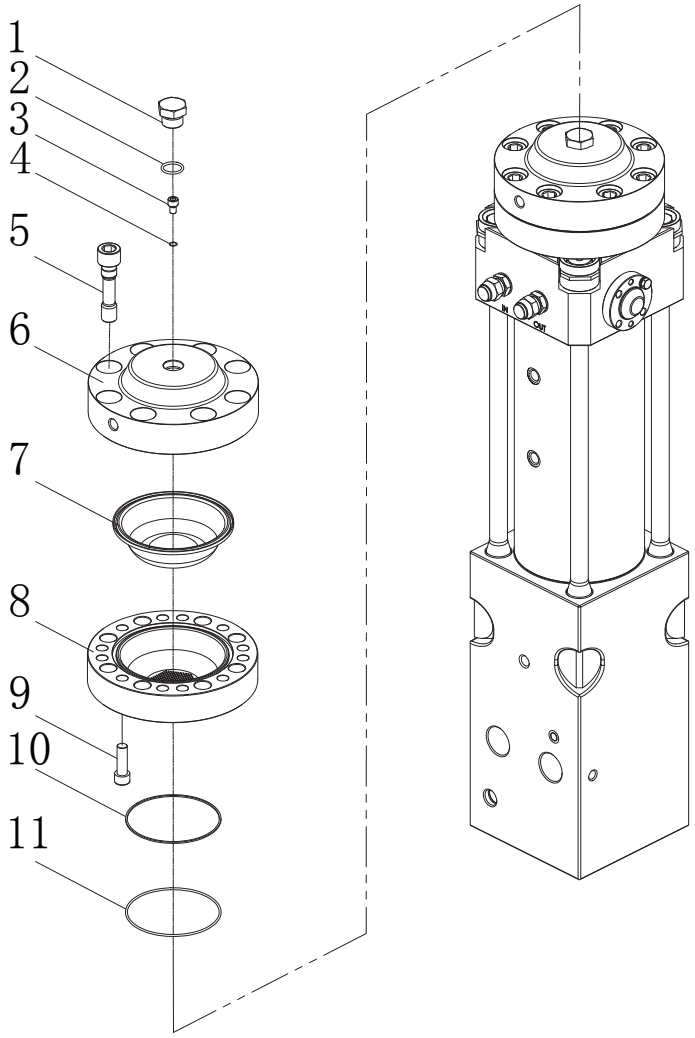
Be sure to make hydraulic breaker standing, and push chisel into front head before injecting lubricating grease to prevent the grease to enter the piston impact chamber.



D100H

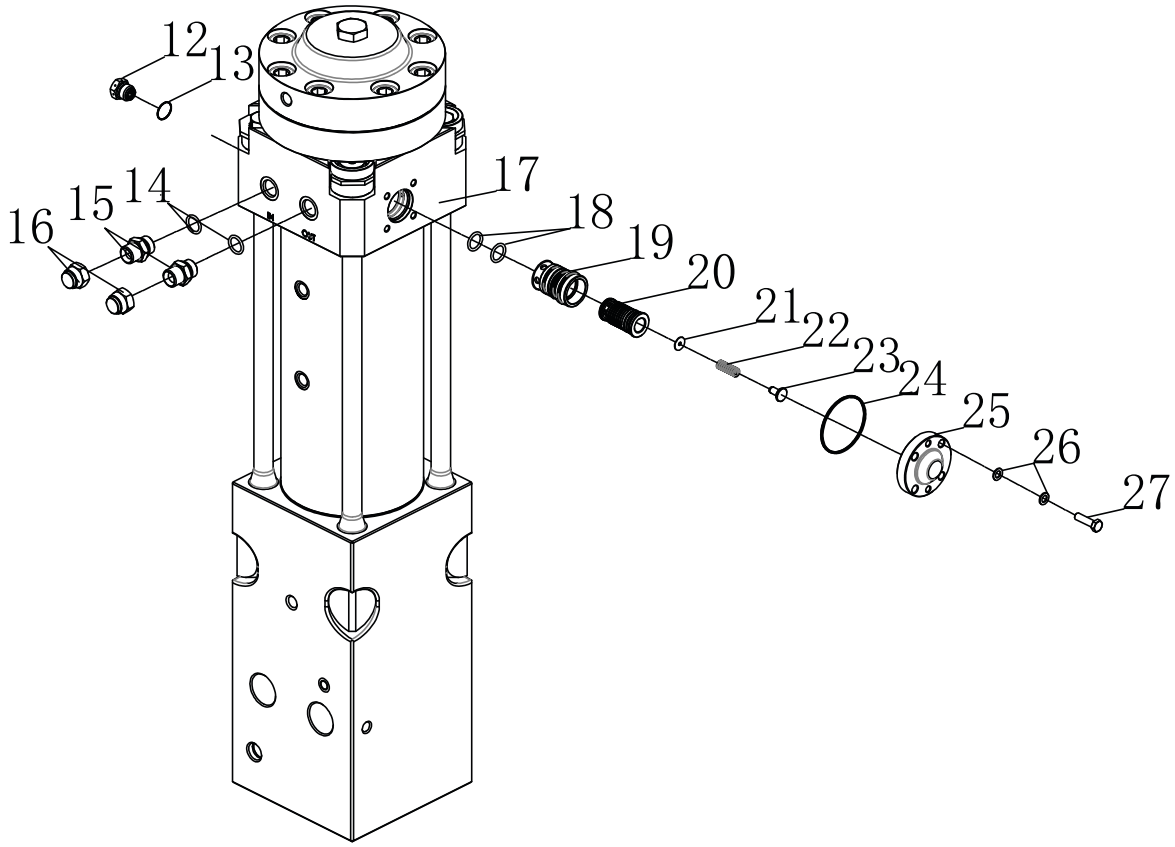
Main Body and Parts List

1.Accumulator Assy



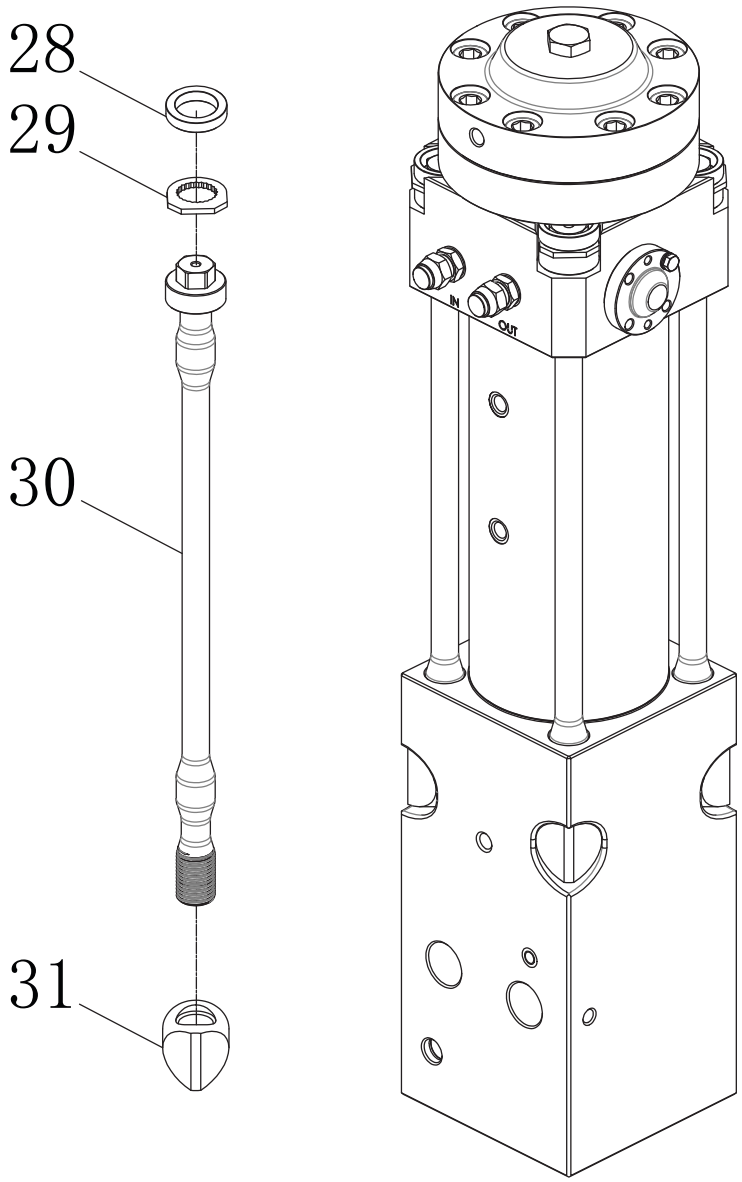
No.	Part.No	Parts Name	Quantity	Remarks
1	E100YSP	D100H ACC.SHIELD PLUG	1	
2	SBP029	O-RING	1	NSS
3	E100YAFP	D100H ACC.FILLING PLUG	1	
4	SBP008	O-RING	1	NSS
5	E100YAMS	D100H ACC MOUNTING SCREW	8	
6	E100YAC-1	D100H ACC.COVER	1	
7	03000AD	E3000 DIAPHRAGM	1	
8	E100YAB	D100H ACC.BODY	1	
9	SBM2245F112	SOCKET BOLT	12	
10	SOR144.4	O-RING	1	NSS
11	T3G145	BACK UP RING	1	NSS

2.Valve Assy



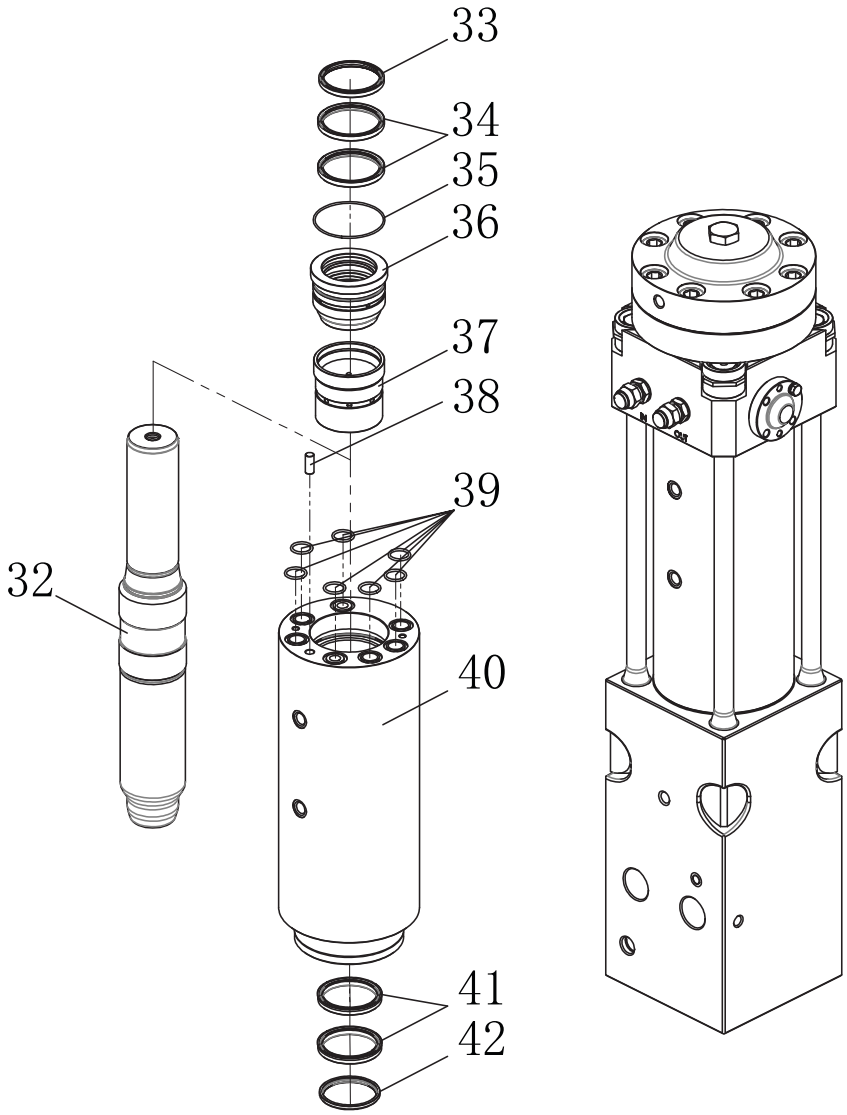
No.	Part.No	Parts Name	Quantity	Remarks
12	ACVBF08-2	AIR CHECK VALVE	1	
13	SAP018	O Ring	1	NSS
14	SBP22.4	O Ring	2	NSS
15	SABFF12	Screwed Adapter	2	
16	ACBF12	Adapter Cap	2	
17	E100YVB	D100H VALVLE BODY	1	
18	SBG040	O Ring	2	NSS
19	E100YPCVH	D100H PRES CONTROL VALVE HOUSING	1	
20	E100YPCV	D100H PRES CONTROL VALVE	1	
21	E100YPCVSW	D100H PRES CONTROL VALVE SPRING WASER		
22	E100YPCVS	D100H PRES CONTROL VALVE SPRING	1	
23	E100YPCVSG	D100H PRES CONTROL VALVE SPRING GUIDE	1	
24	SBG055	O-RING	2	NSS
25	E100YPCVC	D100H PRES CONTROL VALVE COVER	1	
26	LW10	LOCK WASHER 10	8	
27	HBM104012	HEX. BOLT	4	

3.Through Bolt Assy



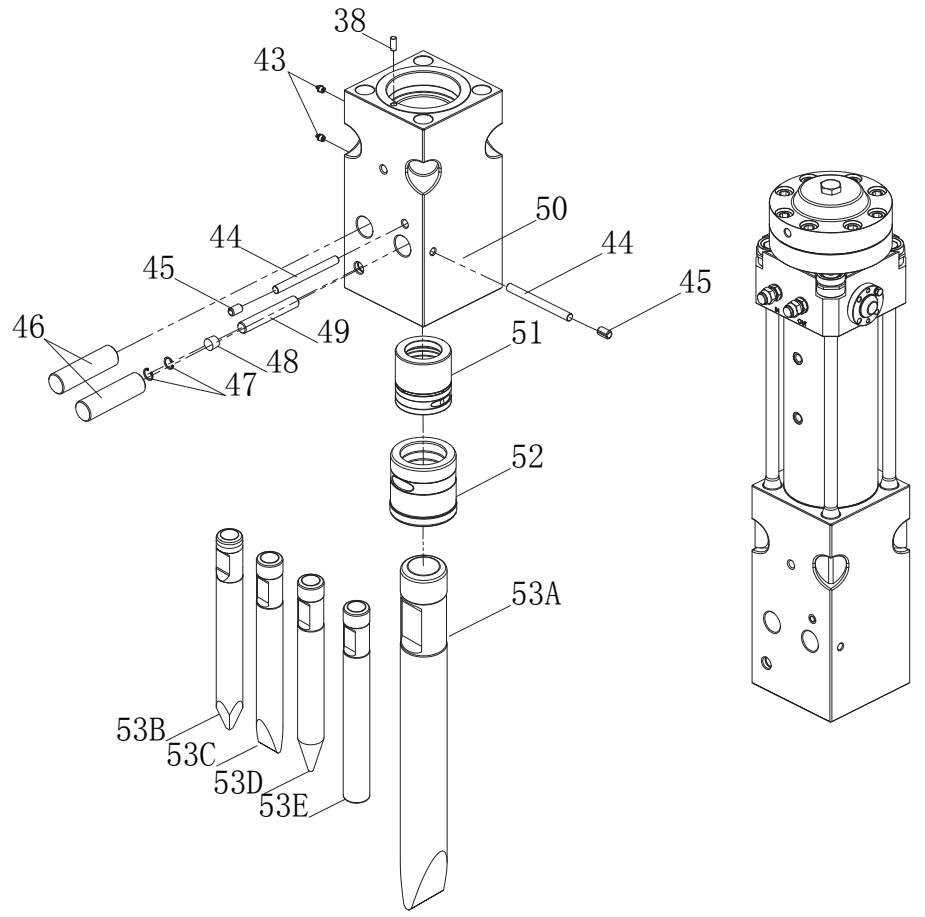
No.	Part.No	Parts Name	Quantity	Remarks
28	E120YRR	D120H RUBBER RING	4	
29	E100YLP	D100H LOCK PLATE	4	
30	E100YTR	D100H TIE ROD	4	
31	E100YTRN	D100H TIE ROD RD. NUT	4	

4.Cylinder Assy



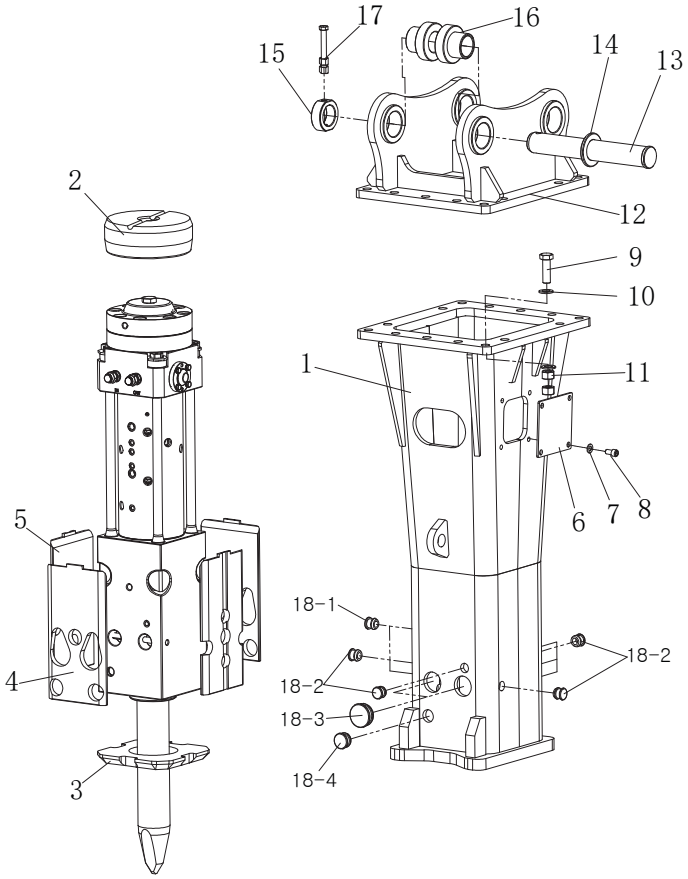
No.	Part.No	Parts Name	Quantity	Remarks
32	E100YP	D100H PISTON	1	
33	SCD075	DUST SEAL	1	
34	SCU075	U-PACKING	2	NSS
35	SOR99.4	O-RING	1	NSS
36	E100YSC-1	D100H SEAL CARRIER	1	
37	E100YVS	MAIN VALVE SLEEVE	1	
38	00435KP	KNOCK PIN	2	
39	SOR29.4	O-RING	7	NSS
40	E100YCY-1	D100H CYLINDER	1	
41	SCU095	U-PACKING	2	NSS
42	SCD095	DUST SEAL	1	NSS

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
43	GNBT04	GREASE NAPPLE	2	
44	JSB60	JSB60 STOP PIN	2	
45	SP1830	SPRING PIN	2	
46	E100YRP	D100H	2	
47	SRH26	SNAP RING	2	
48	RP26	RUBBER PLUG	1	
49	JSB60FCP	JSB60 FRONT COVER STOP PIN	1	
50	E100YFH	D100H FRONT HEAD	1	
51	E100YRB	D100H RING BUSH	1	
52	E100YFC	D100H FRONT COVER	1	
53A	E100YT-H	TOOL-H TYPE	1	
53B	E100YT-M	TOOL-M TYPE	1	
53C	E100YT-V	TOOL-V TYPE	1	
53D	E100YT-C	TOOL-C TYPE	1	
53E	E100YT-B	TOOL-B TYPE	1	

Frame and Parts List

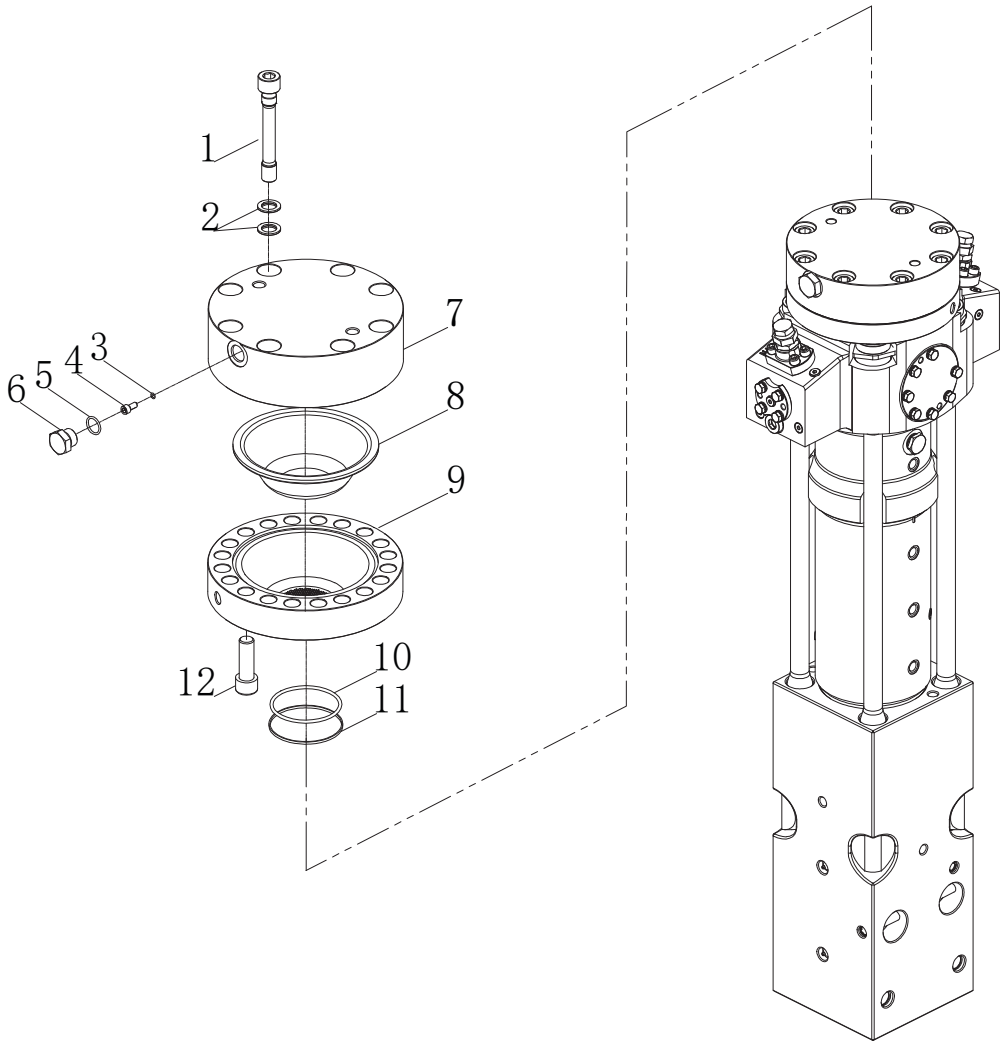


No.	Part.No	Parts Name	Quantity	Remarks
1	E100YF-B21	Frame	1	
2	E100YTPD	Top Damper	1	
3	E100YBLD	Below Damper	1	
4	E100YSDA	Side Damper A	2	
5	E100YSDB	Side Damper B	2	
6	E100YCV	Cover Plate	1	
7	F14	Washer	4	
8	SBM1425	Socket Bolt	4	
9	HBM24110	Hex.Bolt	14	
10	W24	Washer	28	
11	HNM24	Hex.Nut	28	
12	E100YMC-B21	Mount Cap	1	
13	E100YMP	Mount Pin	2	
14	E100YMPR	Mount Pin Ring	2	
15	E100YMPS	Mount Pin Stopper	2	
16	E100YMPB	Mount Pin Bush	4	
17	HBWH100Y-AY	Hex.Bolt With Hole Assy	2	
18	E100YRP-AY	Rubber Plug Assy	1	18-1/18-2/18-3/18-4
18-1	E100YRPG	Grease Fitting Plug	2	
18-2	E100YRPA	Rubber Plug A	7	
18-3	E100YRPB	Rubber Plug B	2	
18-4	E100YRPC	Rubber Plug C	1	

D120H

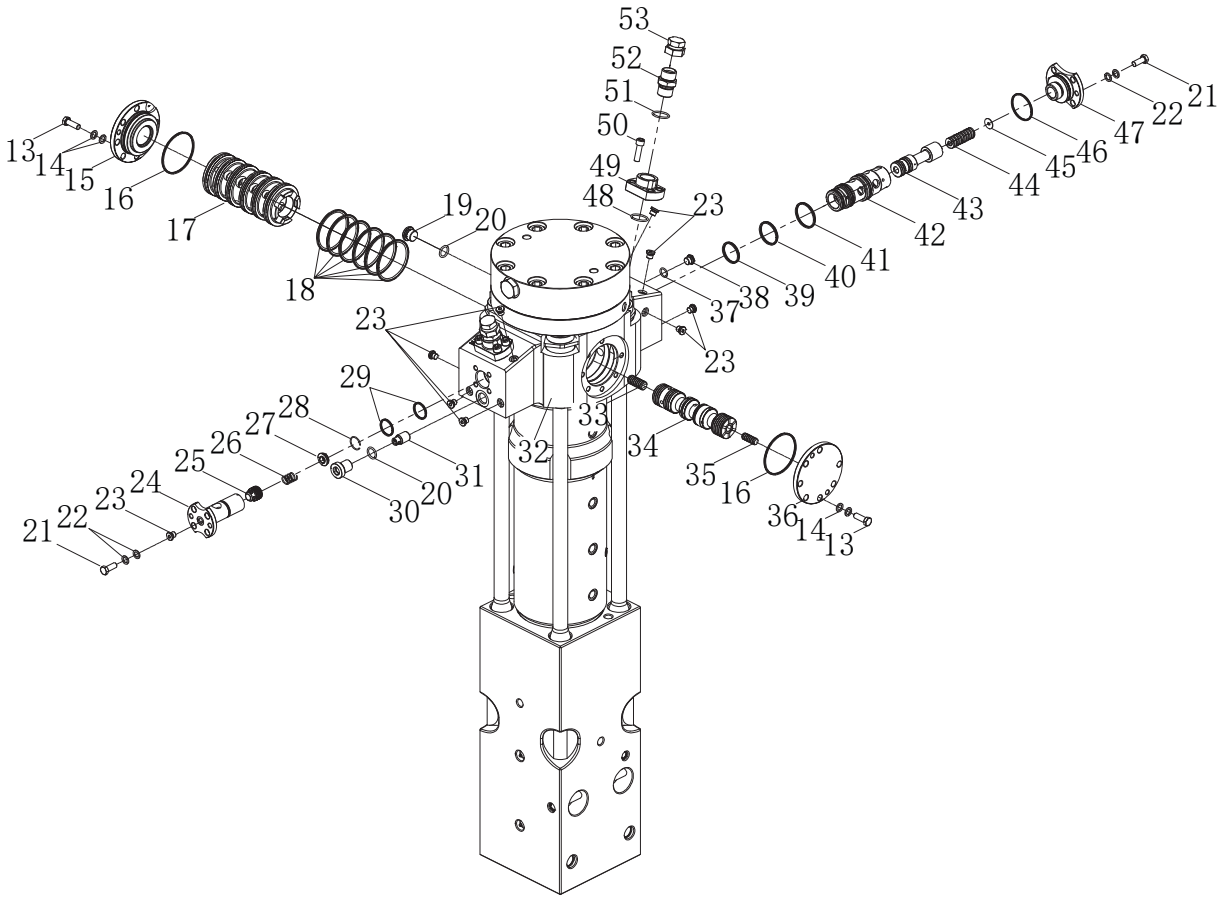
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E120YAMS	ACC.MOUNTING SCREWS	8	
2	LW24	LOCK WASHER	16	
3	SBP008	O RING	1	NSS
4	E170YAFP	ACC.FILLING PLUG	1	
5	SBP029	O RING	1	NSS
6	E170YSP	ACC.SHIELD PLUG	1	
7	E120YAC	ACC.COVER	1	
8	08000AD	DIAPHRAGM	1	
9	E120YAB	ACC.BODY	1	
10	SBP120	O RING	1	NSS
11	S4BP120	BACK-UP RING	1	NSS
12	SBM2245F112	SOCKET BOLT	16	

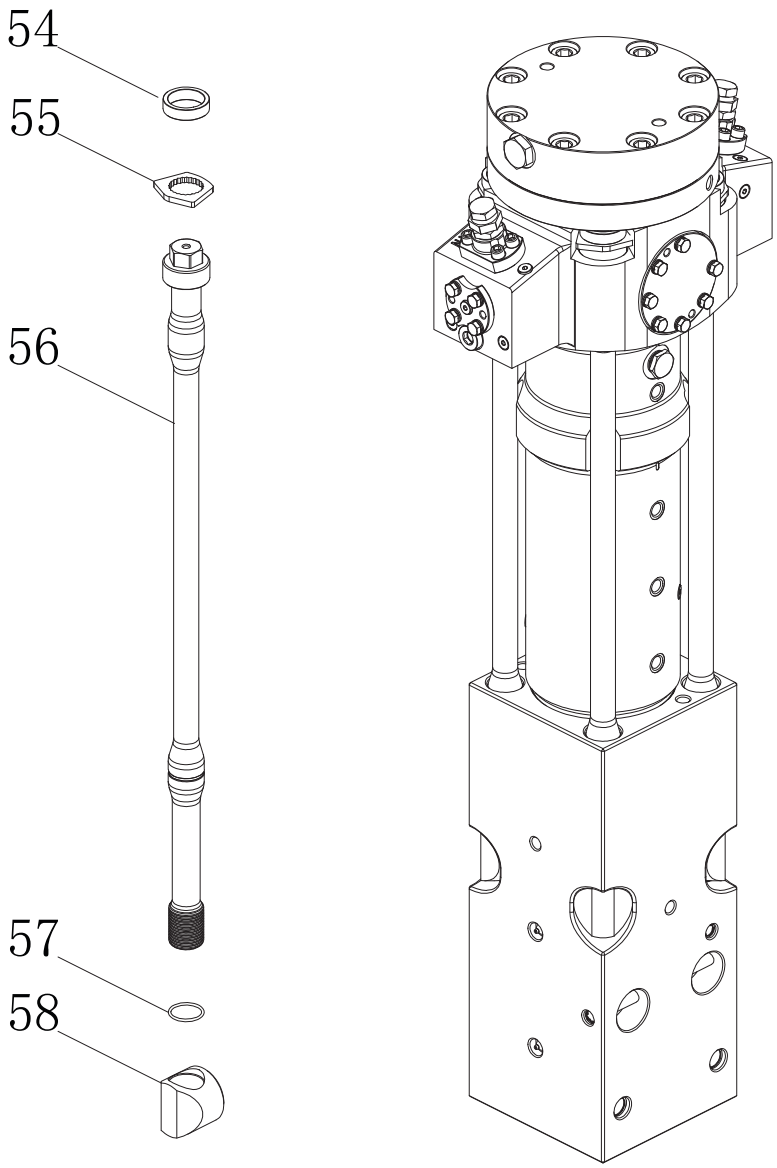
2.Valve Assy



No.	Part.No	Parts Name	Quantity	Remarks
13	HBM124012	HEX. BOLT	14	
14	LW12	LOCK WASHER	28	
15	E120YMVCB	MAIN VAVLE COVER B	1	
16	SYR95.2	SQURE RING	2	NSS
17	E120YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC90	GLYD RING	6	NSS
19	SPBF12	SOCKET PLUG	1	
20	SBP22.4	O RING	2	NSS
21	HBM123012	HEX. BOLT	8	
22	LW12	LOCK WASHER	16	
23	SPBF04	SOCKET PLUG	15	
24	E135YCVC	CHECK VALVE COVER	1	

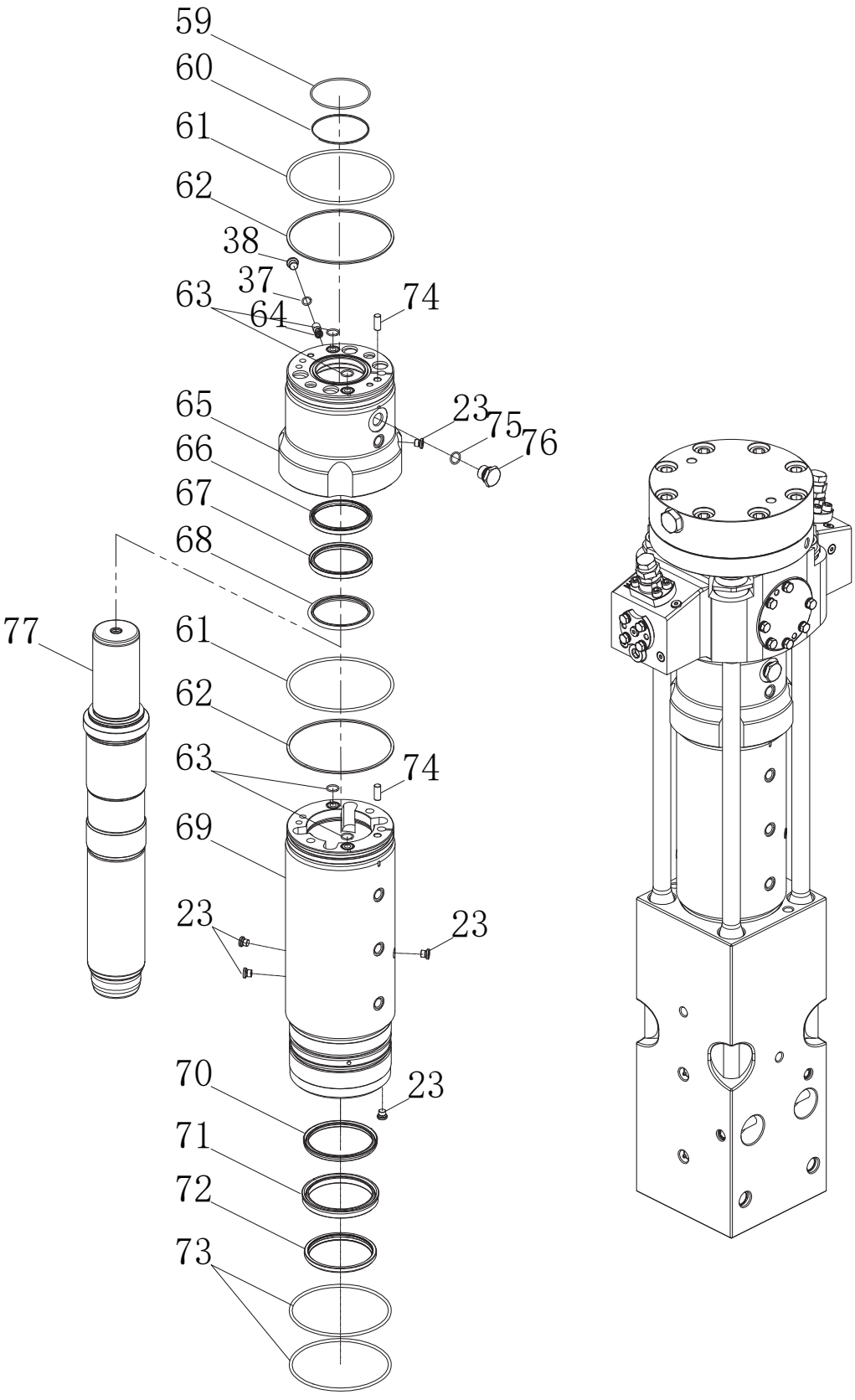
No.	Part.No	Parts Name	Quantity	Remarks
25	E135YCV	CHECK SPOOL	1	
26	E135YCVS	CHECK VALVE SPRING	1	
27	E135YCVSG	CHECK VALVE SPRING GUIDE	1	
28	HSPR38	SPRING RING	1	
29	SYR35.2	SQURE RING	2	NSS
30	E190YSASP	STROKE ADJUSTER SOCKET PLUG	1	
31	E190YSA	STROKE ADJUSTER	1	
32	E135YVB	VALVLE BODY	1	
33	E135YSL20	Φ20 SPOOL	1	
34	E120YMV	MAIN VAVLE	1	
35	E120YSL15	Φ15 SPOOL	1	
36	E120YMVCA	MAIN VAVLE COVER A	1	
37	SBP014	O RING	2	NSS
38	SPBF06	SOCKET PLUG	2	
39	SYR45.2	SQURE RING	1	NSS
40	SYR50.2	SQURE RING	1	NSS
41	SYR55.2	SQURE RING	1	NSS
42	E135YPCVH	PRES CONTROL VALVE HOUSING	1	
43	E135YPCV	PRES CONTROL VALVE	1	
44	E135YPCVS	PRES CONTROL VALVE SPRING	1	
45	E135YPCVSW	PRES CONTROL VALVE SPRING WASER		
46	SYR60.2	SQURE RING	1	NSS
47	E120YPCVC	PRES CONTROL VALVE COVER	1	
48	SBG035	O RING	2	NSS
49	E135YFA	FLANGE ADAPTER	2	
50	SBM124012	SOCKET BOLT	8	
51	SBP029	O RING	1	NSS
52	SABFF16	SCREWED ADAPTER	2	
53	ACBF16	ADAPTER CAP	2	

3.Through Bolt Assy



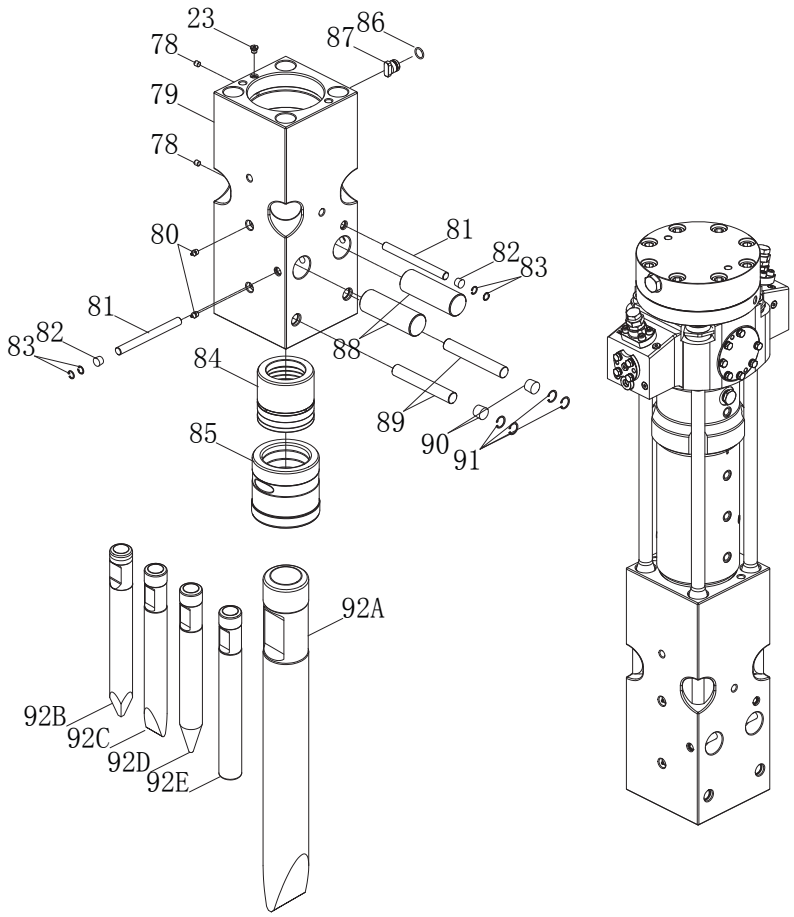
No.	Part.No	Parts Name	Quantity	Remarks
54	E120YRR	RUBBER RING	4	
55	E120YLP	LOCK PLATE	4	
56	E120YTR	TIE ROD	4	
57	SBP042	O RING	4	NSS
58	E120YTRN	TIE ROD RD. NUT	4	

4.Cylinder Assy



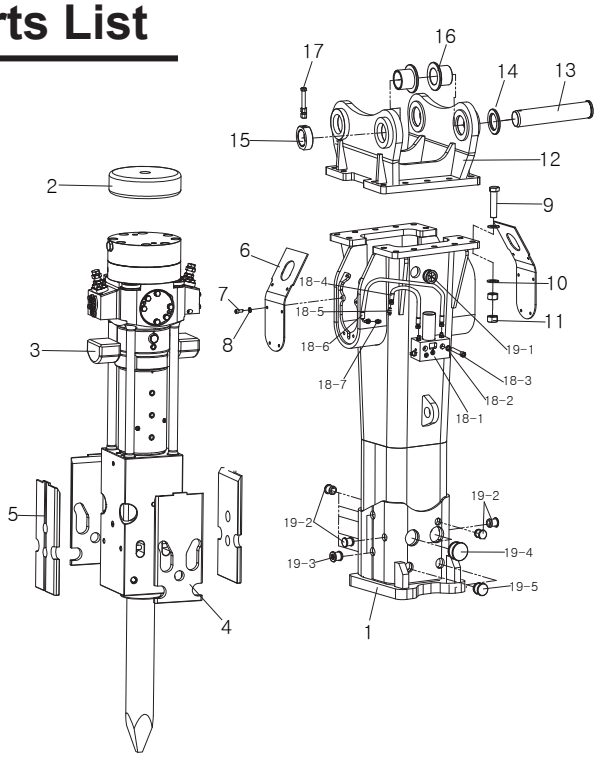
No.	Part.No	Parts Name	Quantity	Remarks
59	SBG110	O RING	1	NSS
60	S4BG106	BACK UP RING	1	NSS
61	SOR194.3	O RING	2	NSS
62	SDQ195.2	BACK UP RING	2	NSS
63	SOR19.8	O RING	4	NSS
64	E170YSCAP	SEAL CARRIER AIR PLUG	1	
65	E120YSC	SEAL CARRIER	1	
66	SCD90	DUST SEAL	1	NSS
67	SCU90	U-PACKING	1	NSS
68	SCS90	STEP SEAL	1	NSS
69	E120YCY	CYLINDER	1	
70	SCU110	U-PACKING	1	NSS
71	SCU110-1	U-PACKING	1	NSS
72	SCD110	DUST SEAL	1	NSS
73	SBG185	O RING	2	NSS
74	00435KP	KNOCK PIN	2	
75	SBP028	O RING	1	NSS
76	E190YACV	AIR CHECK VALVE	1	
77	E120YP	PISTON	1	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
78	SPBT04	SOCKET PLUG	2	
79	E120YFH	FRONT HEAD	1	
80	GNBT04	GREASE NAPPLE	2	
81	02000SP	STOP PIN	2	
82	RP20	RUBBER PLUG	2	
83	SRH20	SNAP RING	4	
84	E120YRB	RING BUSH	1	
85	E120YFC	FRONT COVER	1	
86	SBG025	O RING	1	NSS
87	E170YW	WEDGE	1	
88	E120YRP	ROD PIN	2	
89	02200FCP	STOP PIN	2	
90	RP30	RUBBER PLUG	2	
91	SRH30	SNAP RING	4	
92A	E120YT-H	TOOL-H TYPE	1	
92B	E120YT-M	TOOL-M TYPE	1	
92C	E120YT-V	TOOL-V TYPE	1	
92D	E120YT-C	TOOL-C TYPE	1	
92E	E120YT-B	TOOL-B TYPE	1	

Frame and Parts List

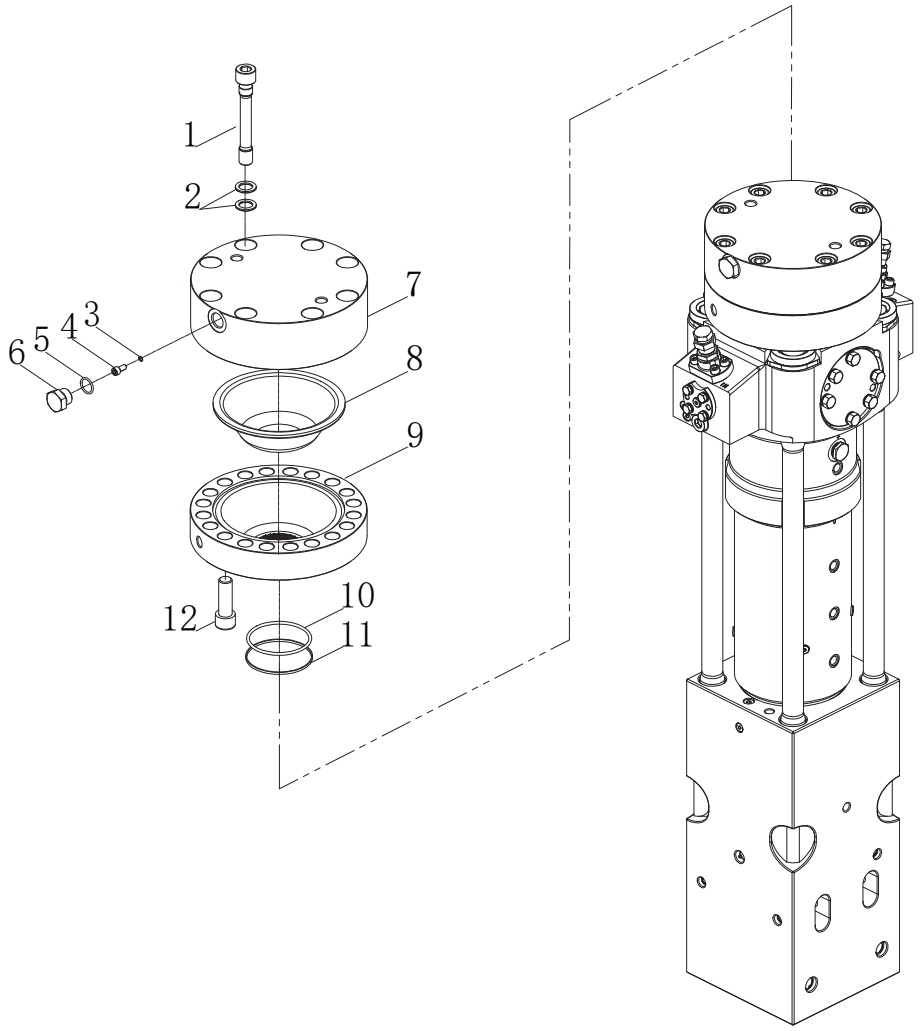


No.	Part.No	Parts Name	Quantity	Remarks
1	E120YF-B21	Frame	1	
2	E120YTPD	Top Damper	1	
3	E120YSHD	Shoulder Damper	2	
4	E120YSDA	Side Damper A	2	
5	E120YSDB	Side Damper B	2	
6	E120YCV	Cover Plate	2	
7	SBM1225	Socket Bolt	12	
8	W12	Washer	12	
9	HBM24110	Hex.Bolt	14	
10	W24	Washer	28	
11	HNM24	Hex.Nut	28	
12	E120YMC-B21	Mount Cap	1	
13	E120YMP	Mount Pin	2	
14	E120YMPR	Mount Pin Ring	2	
15	E120YMPS	Mount Pin Stopper	2	
16	E120YMPB	Mount Pin Bush	4	
17	HBWH120Y-AY	Hex.Bolt With Hole Assy	2	
18	AGD-HP-AY	Auto Greasing Device Assy	1	18-1/18-2/18-3/18-4/18-5 /18-6/18-7
18-1	AGD-HP	Auto Greasing Device	1	
18-2	SW16	Spring Washer	2	
18-3	SBM16100	Socket Bolt	2	
18-4	E120YGHH	Grease Hose	1	
18-5	E120YGTJ	Grease Transit Joint	1	
18-6	E120YPHH	Pressure Hose	1	
18-7	E120YPTJ	Pressure Transit Joint	1	
19	E120YRP-AY	Rubber Plug Assy	1	19-1/19-2/19-3/19-4/19-5
19-1	E120YRPH	Hose Plug	1	
19-2	E120YRPA	Rubber Plug A	8	
19-3	E120YRPG	Grease Fitting Plug	2	
19-4	E120YRPB	Rubber Plug B	2	
19-5	E120YRPC	Rubber Plug C	2	

D135H

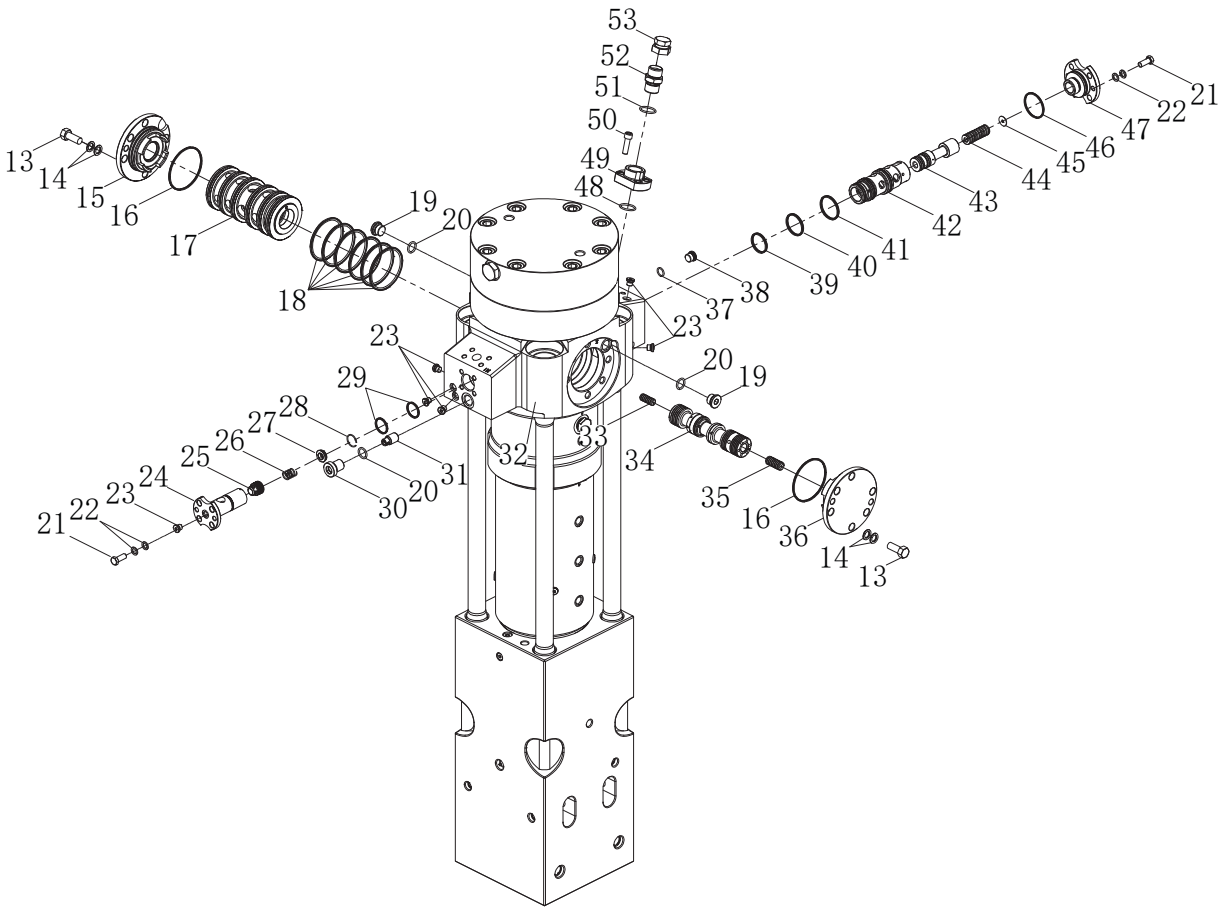
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E135YAMS	ACC.MOUNTING SCREWS	8	
2	LW27	LOCK WASHER	16	
3	SBP008	O RING	1	NSS
4	E170YAFP	ACC.FILLING PLUG	1	
5	SBP029	O RING	1	NSS
6	E170YSP	ACC.SHIELD PLUG	1	
7	E135YAC-1	ACC.COVER	1	
8	09000AD	DIAPHRAGM	1	
9	E135YAB-1	ACC.BODY	1	
10	SBP120	O RING	1	NSS
11	S4BP120	BACK-UP RING	1	NSS
12	SBM2760F212	SOCKET BOLT	12	

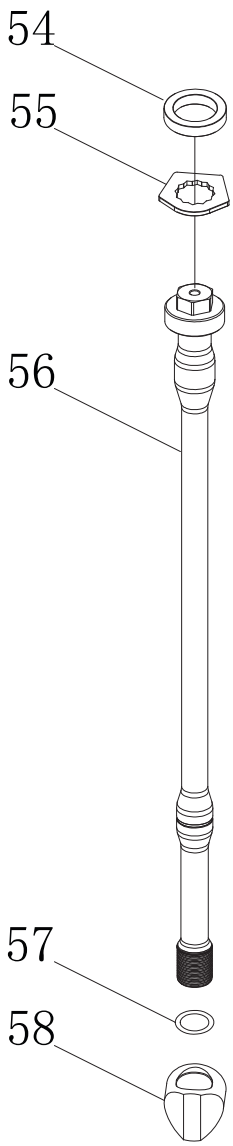
2.Valve Assy

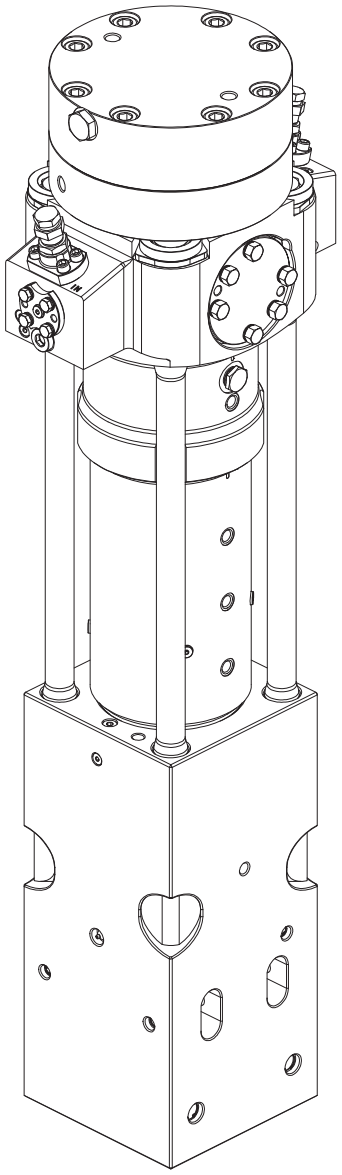


No.	Part.No	Parts Name	Quantity	Remarks
13	HBM164012	HEX. BOLT	12	
14	LW16	LOCK WASHER	24	
15	E135YMVCA	MAIN VAVLE COVER	1	
16	SYR105.2	SQURE RING	2	NSS
17	E135YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC100	GLYD RING	6	NSS
19	SPBF12	SOCKET PLUG	2	
20	SBP22.4	O RING	3	NSS
21	HBM123012	HEX. BOLT	8	
22	LW12	LOCK WASHER	16	
23	SPBF04	SOCKET PLUG	12	
24	E135YCVC	CHECK VALVE COVER	1	

No.	Part.No	Parts Name	Quantity	Remarks
25	E135YCV	CHECK SPOOL	1	
26	E135YCVS	CHECK VALVE SPRING	1	
27	E135YCVSG	CHECK VALVE SPRING GUIDE	1	
28	HSPR38	SPRING RING	1	
29	SYR35.2	SQURE RING	2	NSS
30	E190YSASP	STROKE ADJUSTER SOCKET PLUG	1	
31	E190YSA	STROKE ADJUSTER	1	
32	E135YVB	VALVLE BODY	1	
33	E135YSL16	Φ16 SPOOL	1	
34	E135YMV	MAIN VAVLE	1	
35	E135YSL20	Φ20 SPOOL	1	
36	E135YMVCB	MAIN VAVLE COVER	1	
37	SBP018	O RING	1	NSS
38	SPBF08	SOCKET PLUG	1	
39	SYR45.2	SQURE RING	1	NSS
40	SYR50.2	SQURE RING	1	NSS
41	SYR55.2	SQURE RING	1	NSS
42	E135YPCVH	PRES CONTROL VALVE HOUSING	1	
43	E135YPCV	PRES CONTROL VALVE	1	
44	E135YPCVS	PRES CONTROL VALVE SPRING	1	
45	E135YPCVSW	PRES CONTROL VALVE SPRING WASER	1	
46	SYR60.2	SQURE RING	1	NSS
47	E135YPCVC	PRES CONTROL VALVE COVER	1	
48	SBG035	O RING	2	NSS
49	E135YFA	FLANGE ADAPTER	2	
50	SBM124012	SOCKET BOLT	8	
51	SBP029	O RING	2	NSS
52	SABFF16	SCREWED ADAPTER	2	
53	ACBF16	ADAPTER CAP	2	

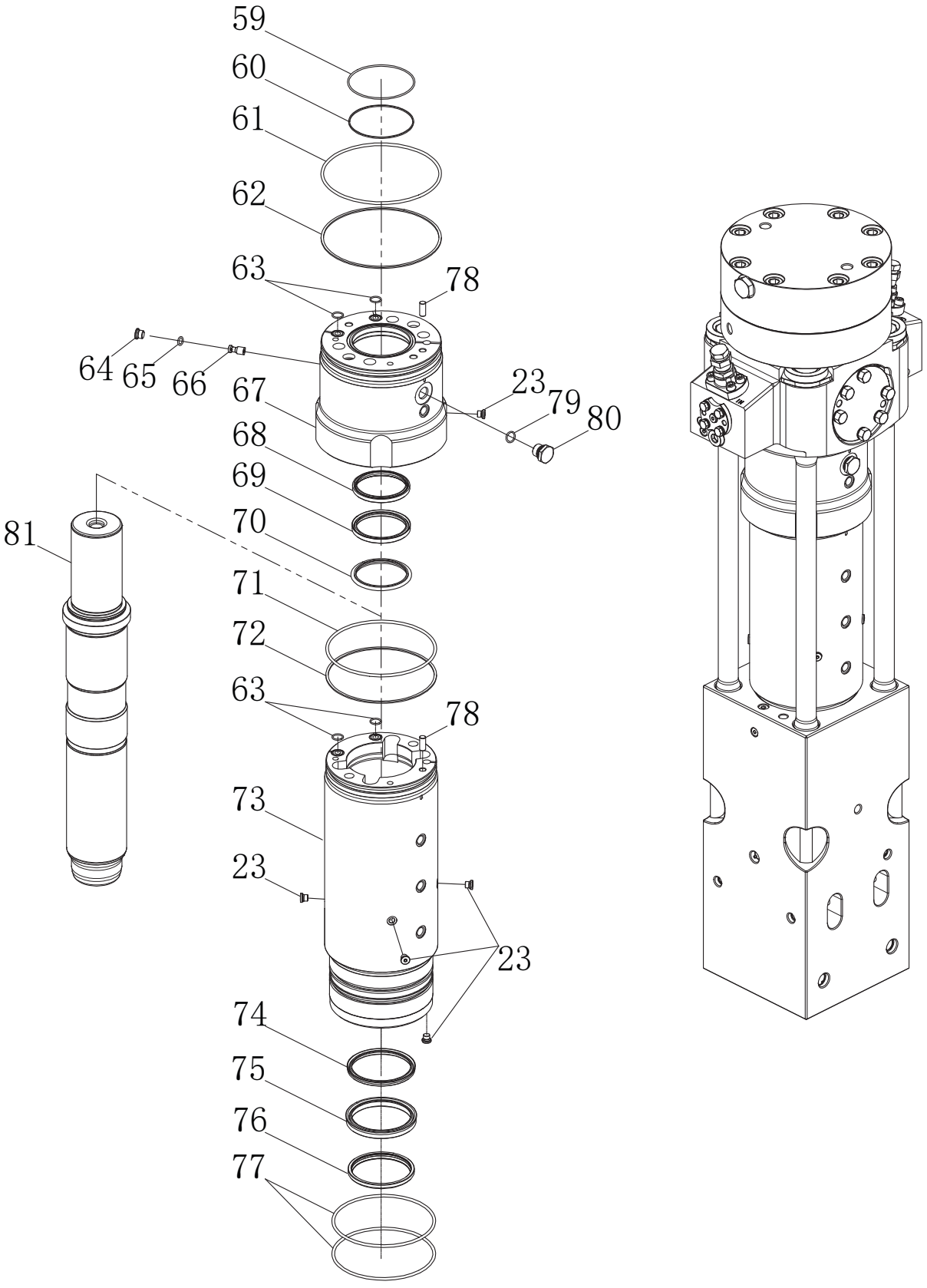
3.Through Bolt Assy





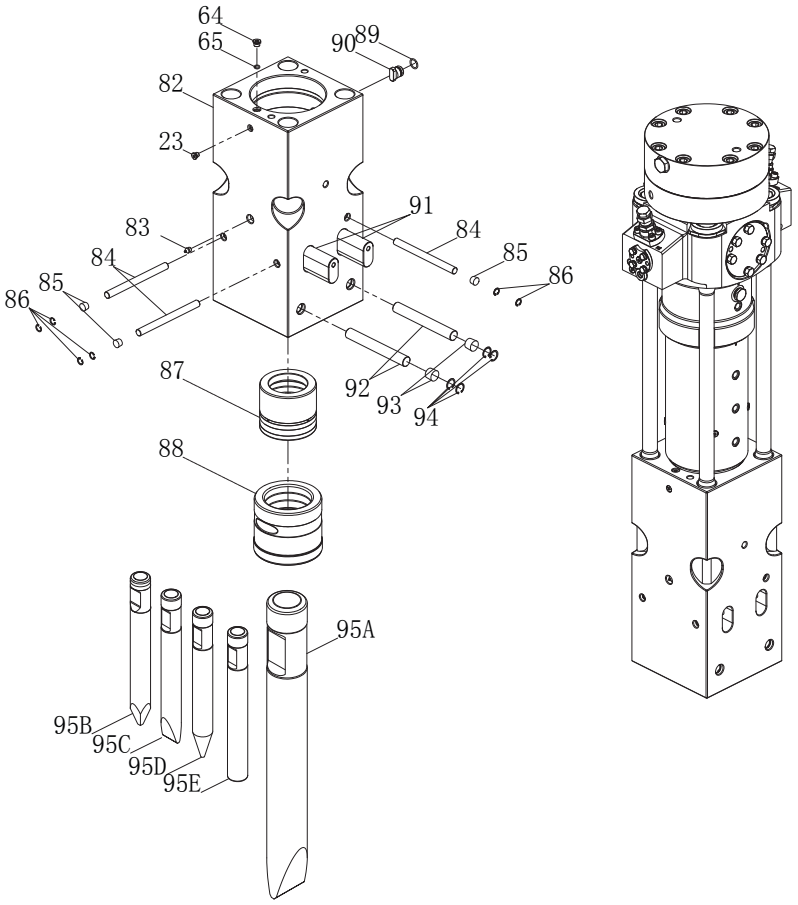
No.	Part.No	Parts Name	Quantity	Remarks
54	E170YRR	RUBBER RING	4	
55	E170YLP	LOCK PLATE	4	
56	E135YTR-2	TIE ROD	4	
57	SBP046	O RING	4	
58	E135YTRN-2	TIE ROD RD. NUT	4	

4.Cylinder Assy



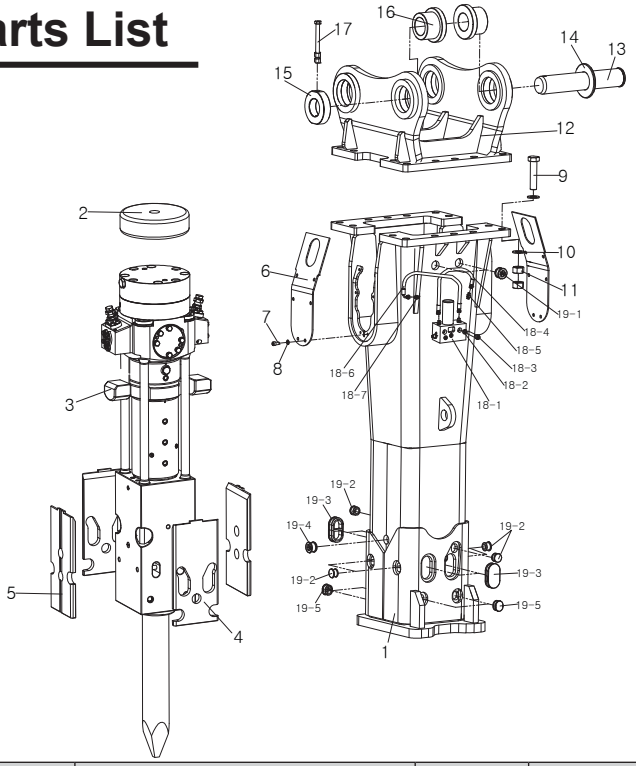
No.	Part.No	Parts Name	Quantity	Remarks
59	SBG135	O RING	1	NSS
60	S4BG131	BACK UP RING	1	NSS
61	SOR239.3	O RING	1	NSS
62	SDQ240.2	BACK UP RING	1	NSS
63	SOR19.8	O RING	4	NSS
64	SPBF06	SOCKET PLUG	2	
65	SBP014	O RING	2	NSS
66	E170YSCAP	SEAL CARRIER AIR PLUG	1	
67	E135YSC	SEAL CARRIER	1	
68	SCD106	DUST SEAL	1	NSS
69	SCU106	U-PACKING	1	NSS
70	SCS106	STEP SEAL	1	NSS
71	SOR 219.3	O RING	1	NSS
72	SDQ220.2	BACK-UP RING	1	NSS
73	E135YCY-1	CYLINDER	1	
74	SCU125	U-PACKING	1	NSS
75	SCU125-1	U-PACKING	1	NSS
76	SCD125	DUST SEAL	1	NSS
77	SBG205	O RING	2	NSS
78	00435KP	KNOCK PIN	2	
79	SBP028	O RING	1	NSS
80	E190YACV	AIR CHECK VALVE	1	
81	E135YP	PISTON	1	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
82	E135YFH	FRONT HEAD	1	
83	GNBT04	GREASE NAPPLE	1	
84	03000SP	STOP PIN	3	
85	RP20	RUBBER PLUG	3	
86	SRH20	SNAP RING	6	
87	E135YRB	RING BUSH	1	
88	E135YFC	FRONT COVER	1	
89	SBG025	O RING	1	NSS
90	E170YW	WEDGE	1	
91	02000RP	ROD PIN	2	
92	E210FCP	STOP PIN	2	
93	RP30	RUBBER PLUG	2	
94	SRH30	SNAP RING	4	
95A	E135YT-H	TOOL-H TYPE	1	
95B	E135YT-M	TOOL-M TYPE	1	
95C	E135YT-V	TOOL-V TYPE	1	
95D	E135YT-C	TOOL-C TYPE	1	
95E	E135YT-B	TOOL-B TYPE	1	

Frame and Parts List

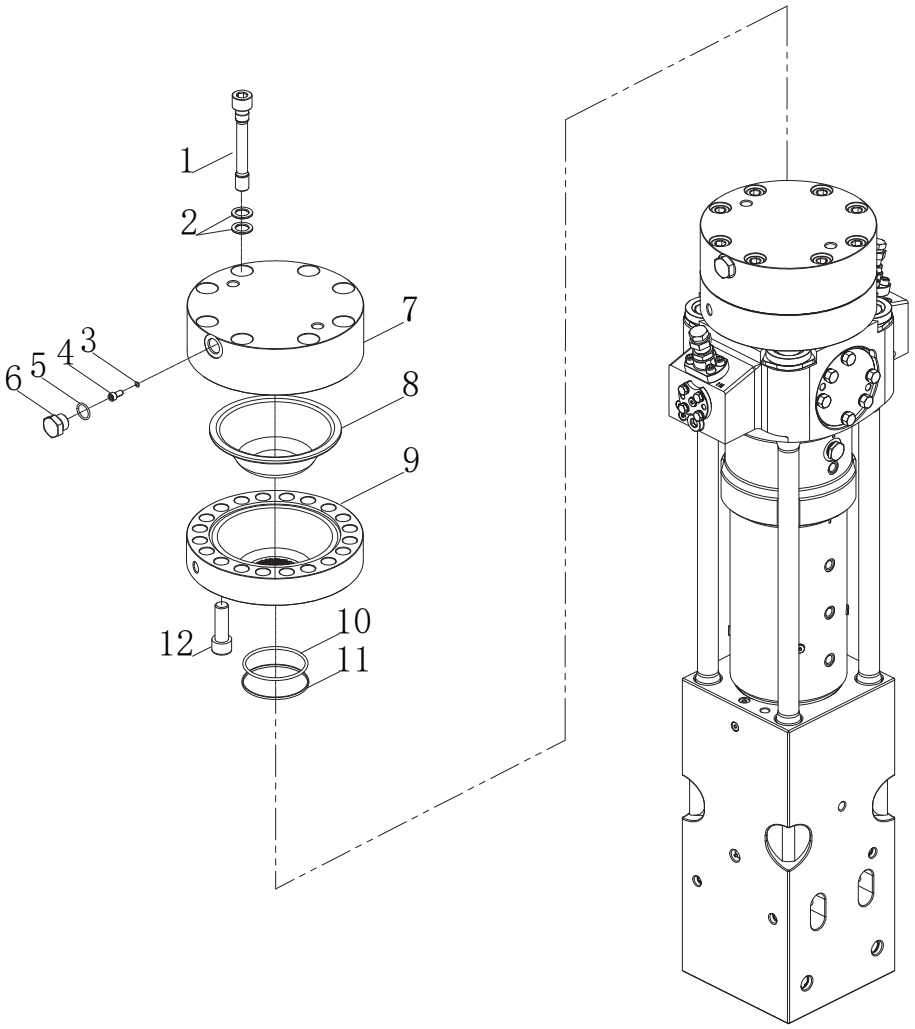


No.	Part.No	Parts Name	Quantity	Remarks
1	E135YF-B21	Frame	1	
2	E135YTPD	Top Damper	1	
3	E135YSHD	Shoulder Damper	2	
4	E135YSDA	Side Damper A	2	
5	E135YSDB	Side Damper B	2	
6	E135YCV	Cover Plate	2	
7	SBM1225	Socket Bolt	12	
8	W12	Washer	12	
9	HBM24120	Hex.Bolt	14	
10	W24	Washer	28	
11	HNM24	Hex.Nut	28	
12	E135YMC-B21	Mount Cap	1	
13	E135YMP	Mount Pin	2	
14	E135YMPR	Mount Pin Ring	2	
15	E135YMPS	Mount Pin Stopper	2	
16	E135YMPB	Mount Pin Bush	4	
17	HBWH135Y-AY	Hex.Bolt With Hole Assy	2	
18	AGD-HP-AY	Auto Greasing Device Assy	1	18-1/18-2/18-3/18-4/18-5/18-6/18-7
18-1	AGD-HP	Auto Greasing Device	1	
18-2	SW16	Spring Washer	2	
18-3	SBM16100	Socket Bolt	2	
18-4	E135YGHH	Grease Hose	1	
18-5	E135YGTJ	Grease Transit Joint	1	
18-6	E135YPHH	Pressure Hose	1	
18-7	E135YPTJ	Pressure Transit Joint	1	
19	E135YRP-AY	Rubber Plug Assy	1	19-1/19-2/19-3/19-4/19-5
19-1	E135YRPH	Hose Plug	2	
19-2	E135YRPA	Rubber Plug A	6	
19-3	E135YRPB	Rubber Plug B	4	
19-4	E135YRPG	Grease Fitting Plug	1	
19-5	E135YRPC	Rubber Plug C	4	

D150H

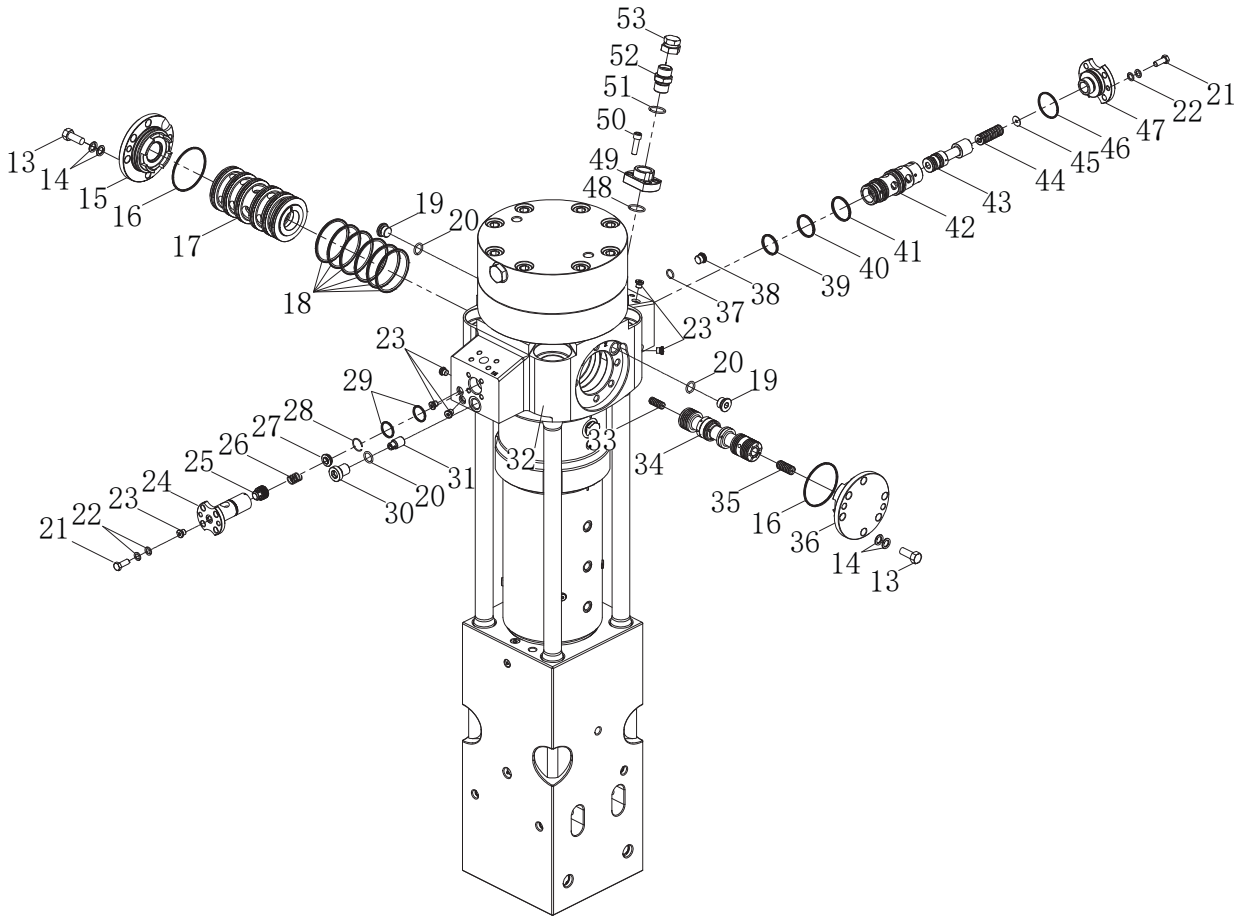
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E135YAMS	ACC.MOUNTING SCREWS	8	
2	LW27	LOCK WASHER	16	
3	SBP008	O RING	1	NSS
4	E170YAFP	ACC.FILLING PLUG	1	
5	SBP029	O RING	1	NSS
6	E170YSP	ACC.SHIELD PLUG	1	
7	E135YAC-1	ACC.COVER	1	
8	09000AD	DIAPHRAGM	1	
9	E135YAB-1	ACC.BODY	1	
10	SBP120	O RING	1	NSS
11	S4BP120	BACK-UP RING	1	NSS
12	SBM2760F212	SOCKET BOLT	12	

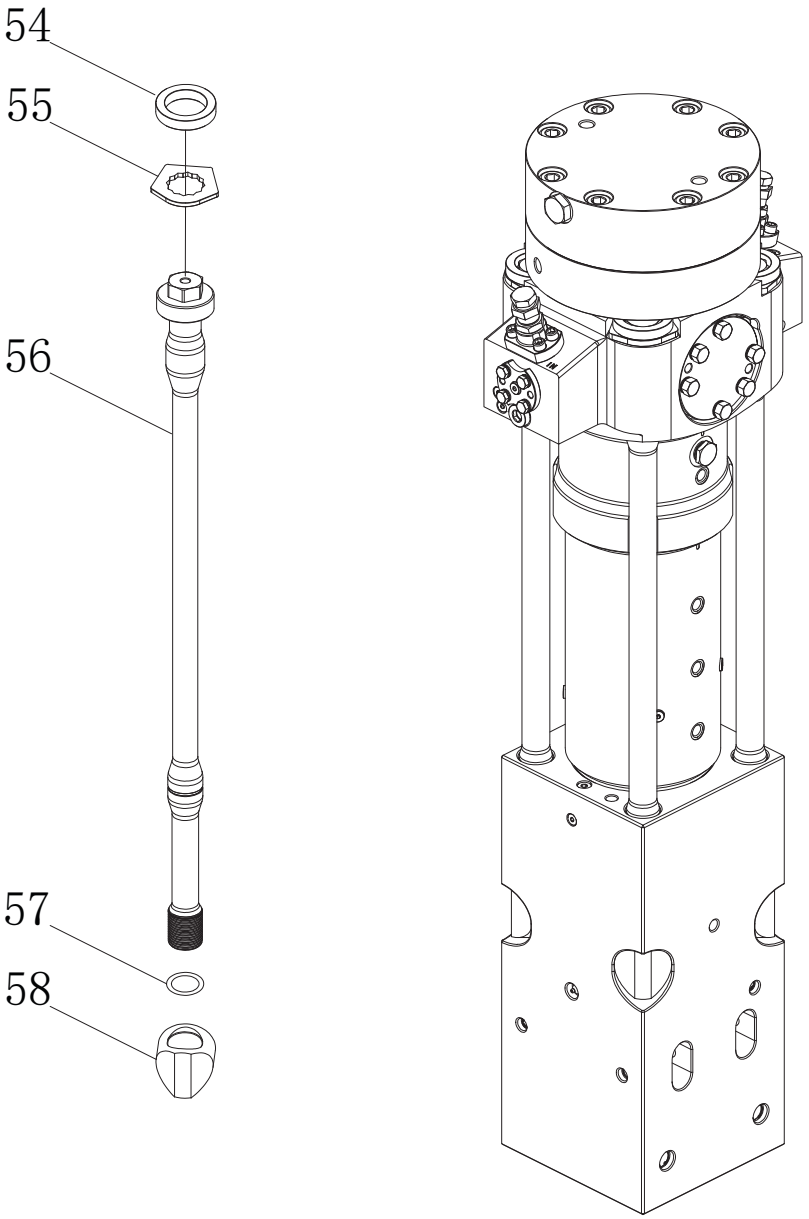
2.Valve Assy



No.	Part.No	Parts Name	Quantity	Remarks
13	HBM164012	HEX. BOLT	12	
14	LW16	LOCK WASHER	24	
15	E135YMVCA	MAIN VAVLE COVER	1	
16	SYR105.2	SQURE RING	1	NSS
17	E135YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC100	GLYD RING	6	NSS
19	SPBF12	SOCKET PLUG	2	
20	SBP22.4	O RING	3	NSS
21	HBM123012	HEX. BOLT	8	
22	LW12	LOCK WASHER	16	
23	SPBF04	SOCKET PLUG	12	
24	E135YCVC	CHECK VALVE COVER	1	

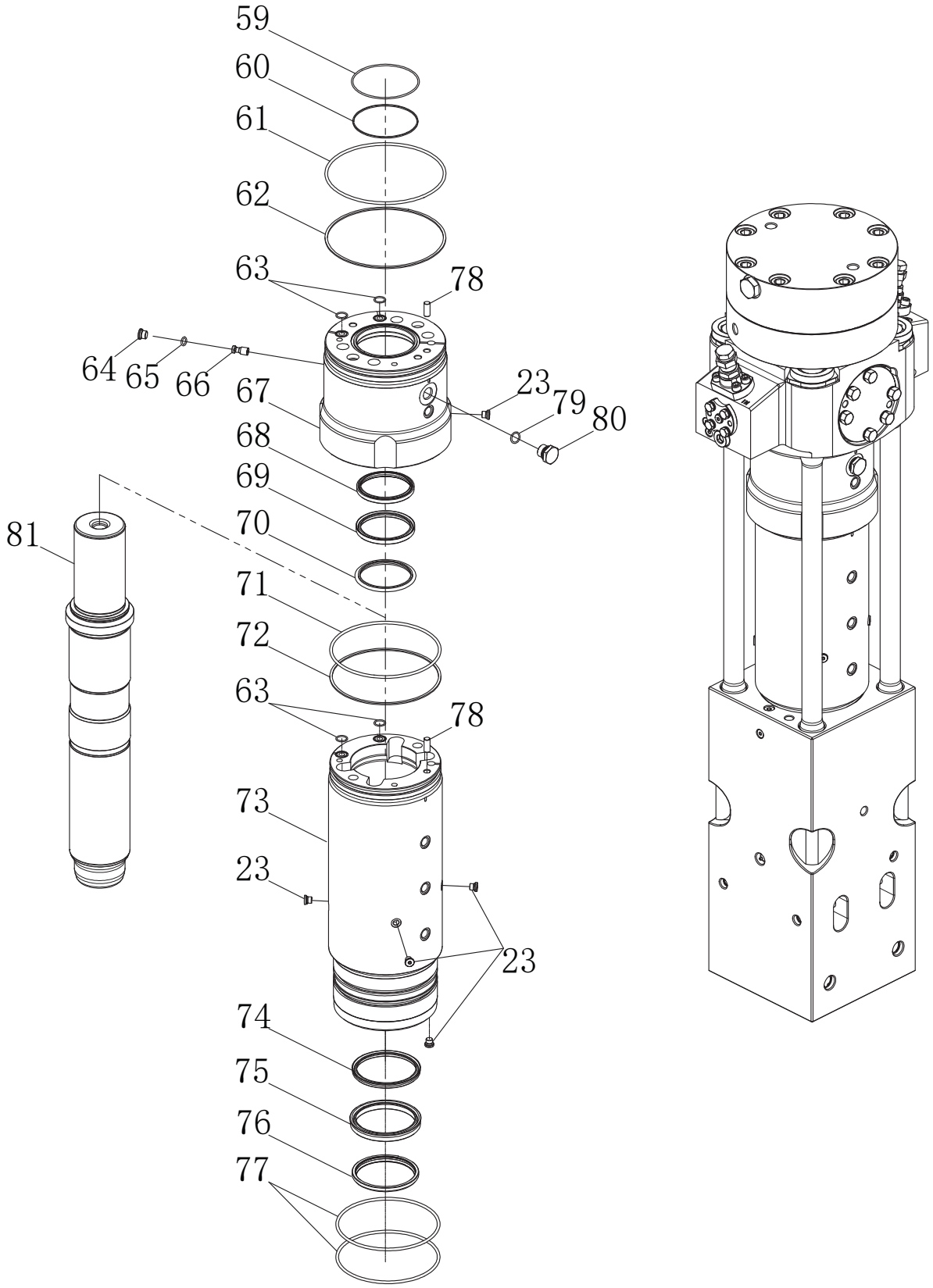
No.	Part.No	Parts Name	Quantity	Remarks
25	E135YCV	CHECK SPOOL	1	
26	E135YCVS	CHECK VALVE SPRING	1	
27	E135YCVSG	CHECK VALVE SPRING GUIDE	1	
28	HSPR38	SPRING RING	1	
29	SYR35.2	SQURE RING	2	NSS
30	E190YSASP	STROKE ADJUSTER SOCKET PLUG	1	
31	E190YSA	STROKE ADJUSTER	1	
32	E135YVB	VALVLE BODY	1	
33	E135YSL16	Φ16 SPOOL	1	
34	E135YMV	MAIN VAVLE	1	
35	E135YSL20	Φ20 SPOOL	1	
36	E135YMVCB	MAIN VAVLE COVER	1	
37	SBP018	O RING	1	NSS
38	SPBF08	SOCKET PLUG	1	
39	SYR45.2	SQURE RING	1	NSS
40	SYR50.2	SQURE RING	1	NSS
41	SYR55.2	SQURE RING	1	NSS
42	E135YPCVH	PRES CONTROL VALVE HOUSING	1	
43	E135YPCV	PRES CONTROL VALVE	1	
44	E135YPCVS	PRES CONTROL VALVE SPRING	1	
45	E135YPCVSW	PRES CONTROL VALVE SPRING WASER	1	
46	SYR60.2	SQURE RING	1	NSS
47	E135YPCVC	PRES CONTROL VALVE COVER	1	
48	SBG035	O RING	2	NSS
49	E135YFA	FLANGE ADAPTER	2	
50	SBM124012	SOCKET BOLT	8	
51	SBP029	O RING	1	NSS
52	SABFF16	SCREWED ADAPTER	2	
53	ACBF16	ADAPTER CAP	2	

3.Through Bolt Assy



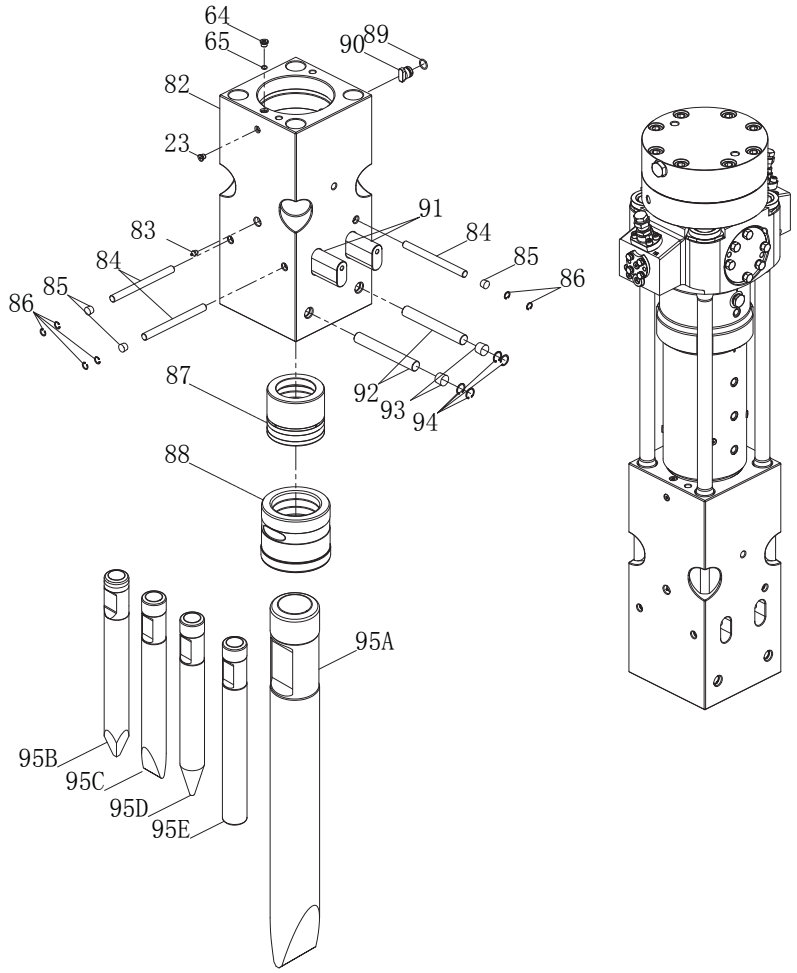
No.	Part.No	Parts Name	Quantity	Remarks
54	E170YRR	RUBBER RING	4	
55	E170YLP	LOCK PLATE	4	
56	E150YTR-2	TIE ROD	4	
57	SBP048	O RING	4	NSS
58	E150YTRN-2	TIE ROD RD. NUT	4	

4.Cylinder Assy



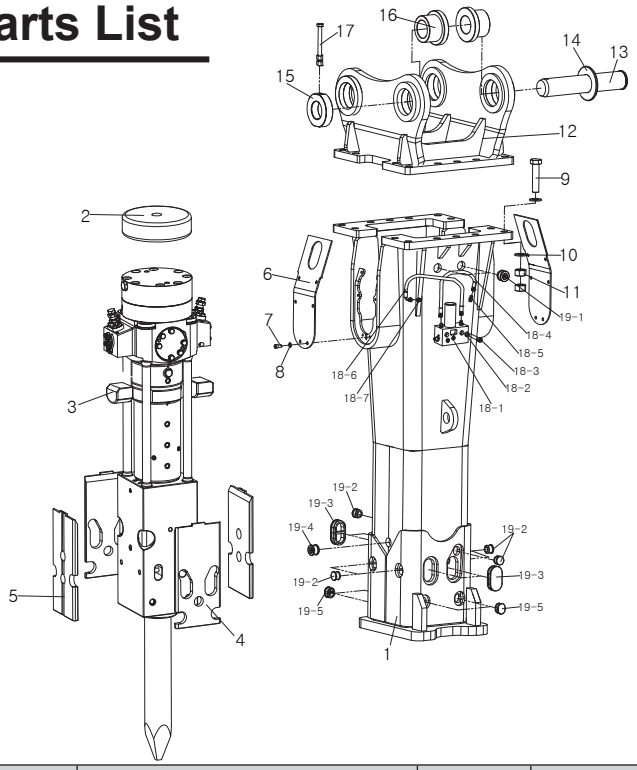
No.	Part.No	Parts Name	Quantity	Remarks
59	SBG135	O RING	1	NSS
60	S4BG131	BACK UP RING	1	NSS
61	SOR239.3	O RING	1	NSS
62	SDQ240.2	BACK UP RING	1	NSS
63	SOR19.8	O RING	4	NSS
64	SPBF06	SOCKET PLUG	2	
65	SBP014	O RING	2	NSS
66	E170YSCAP	SEAL CARRIER AIR PLUG	1	
67	E150YSC	SEAL CARRIER	1	
68	SCD117	DUST SEAL	1	NSS
69	SCU117	U-PACKING	1	NSS
70	SCS117	STEP SEAL	1	NSS
71	SOR224.3	O RING	1	NSS
72	SDQ225.2	BACK-UP RING	1	NSS
73	E150YCY-1	CYLINDER	1	
74	STEP SEAL	STEP SEAL	1	NSS
75	SCU135	U-PACKING	1	NSS
76	SCU135-1	U-PACKING	1	NSS
77	SBG215	O RING	2	NSS
78	E135KP	KNOCK PIN	2	
79	SBP028	O RING	1	NSS
80	E190YACV	AIR CHECK VALVE	1	
81	E150YP	PISTON	1	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
82	E150YFH	FRONT HEAD	1	
83	GNBT04	GREASE NAPPLE	1	
84	03000SP	STOP PIN	3	
85	RP20	RUBBER PLUG	3	
86	SRH20	SNAP RING	6	
87	E150YRB	RING BUSH	1	
88	E150YFC	FRONT COVER	1	
89	SBG025	O RING	1	NSS
90	E170YW	WEDGE	1	
91	03000RP	ROD PIN	2	
92	E210FCP	STOP PIN	2	
93	RP30	RUBBER PLUG	2	
94	SRH30	SNAP RING	4	
95A	E150YT-H	TOOL-H TYPE	1	
95B	E150YT-M	TOOL-M TYPE	1	
95C	E150YT-V	TOOL-V TYPE	1	
95D	E150YT-C	TOOL-C TYPE	1	
95E	E150YT-B	TOOL-B TYPE	1	

Frame and Parts List

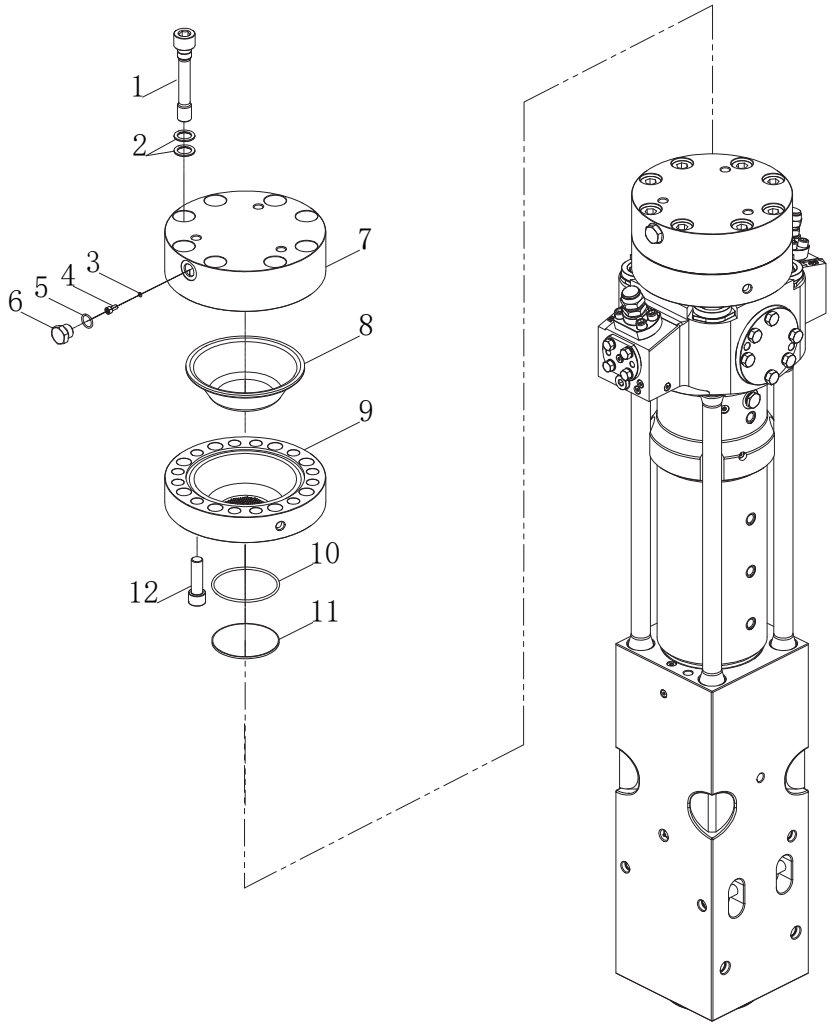


No.	Part.No	Parts Name	Quantity	Remarks
1	E150YF-B21	Frame	1	
2	E150YTPD	Top Damper	1	
3	E150YSHD	Shoulder Damper	2	
4	E150YSDA	Side Damper A	2	
5	E150YSDB	Side Damper B	2	
6	E150YCV	Cover Plate	2	
7	SBM1225	Socket Bolt	12	
8	W12	Washer	12	
9	HBM24120	Hex.Bolt	14	
10	W24	Washer	28	
11	HNM24	Hex.Nut	28	
12	E150YMC-B21	Mount Cap	1	
13	E150YMP	Mount Pin	2	
14	E150YMPR	Mount Pin Ring	2	
15	E150YMPS	Mount Pin Stopper	2	
16	E150YMPB	Mount Pin Bush	4	
17	HBWH150Y-AY	Hex.Bolt With Hole Assy	2	
18	AGD-HP-AY	Auto Greasing Device Assy	1	18-1/18-2/18-3/18-4/18-5 /18-6/18-7
18-1	AGD-HP	Auto Greasing Device	1	
18-2	SW16	Spring Washer	2	
18-3	SBM16100	Socket Bolt	2	
18-4	E150YGHH	Grease Hose	1	
18-5	E150YGTJ	Grease Transit Joint	1	
18-6	E150YPHH	Pressure Hose	1	
18-7	E150YPTJ	Pressure Transit Joint	1	
19	E150YRP-AY	Rubber Plug Assy	1	19-1/19-2/19-3/19-4/19-5
19-1	E150YRPH	Hose Plug	2	
19-2	E150YRPA	Rubber Plug A	6	
19-3	E150YRPB	Rubber Plug B	4	
19-4	E150YRPG	Grease Fitting Plug	1	
19-5	E150YRPC	Rubber Plug C	4	

D160H

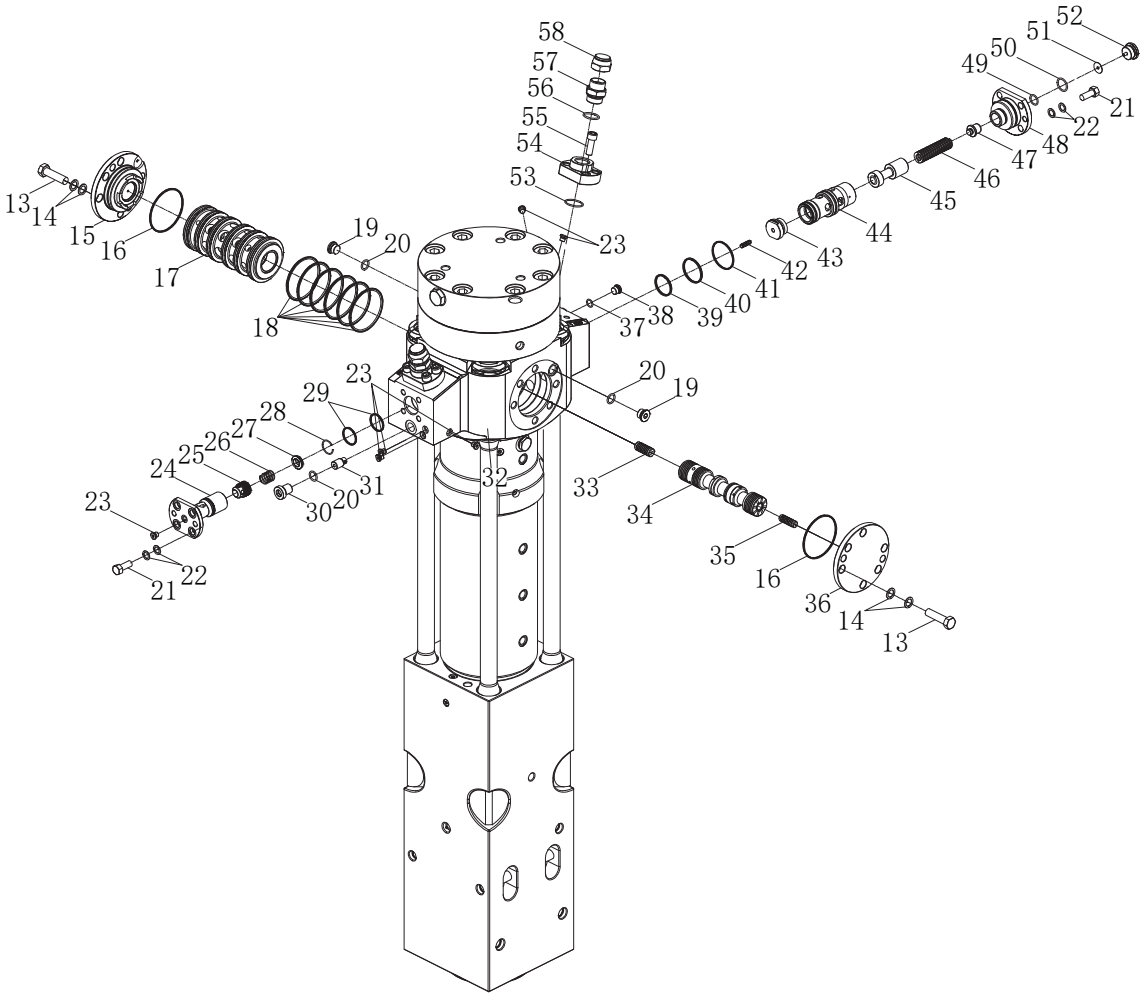
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E170YAMS	ACC.MOUNTING SCREWS	8	
2	LW33	LOCK WASHER	16	
3	SBP008	O RING	1	NSS
4	E170YAFP	ACC.FILLING PLUG	1	
5	SBP029	O RING	1	NSS
6	E170YSP	ACC.SHIELD PLUG	1	
7	E170YAC-1	ACC.COVER	1	
8	10000AD	DIAPHRAGM	1	
9	E170YAB-1	ACC.BODY	1	
10	SBG160	O RING	1	NSS
11	S4BG156	BACK-UP RING	1	NSS
12	SBM2770F212	SOCKET BOLT	12	

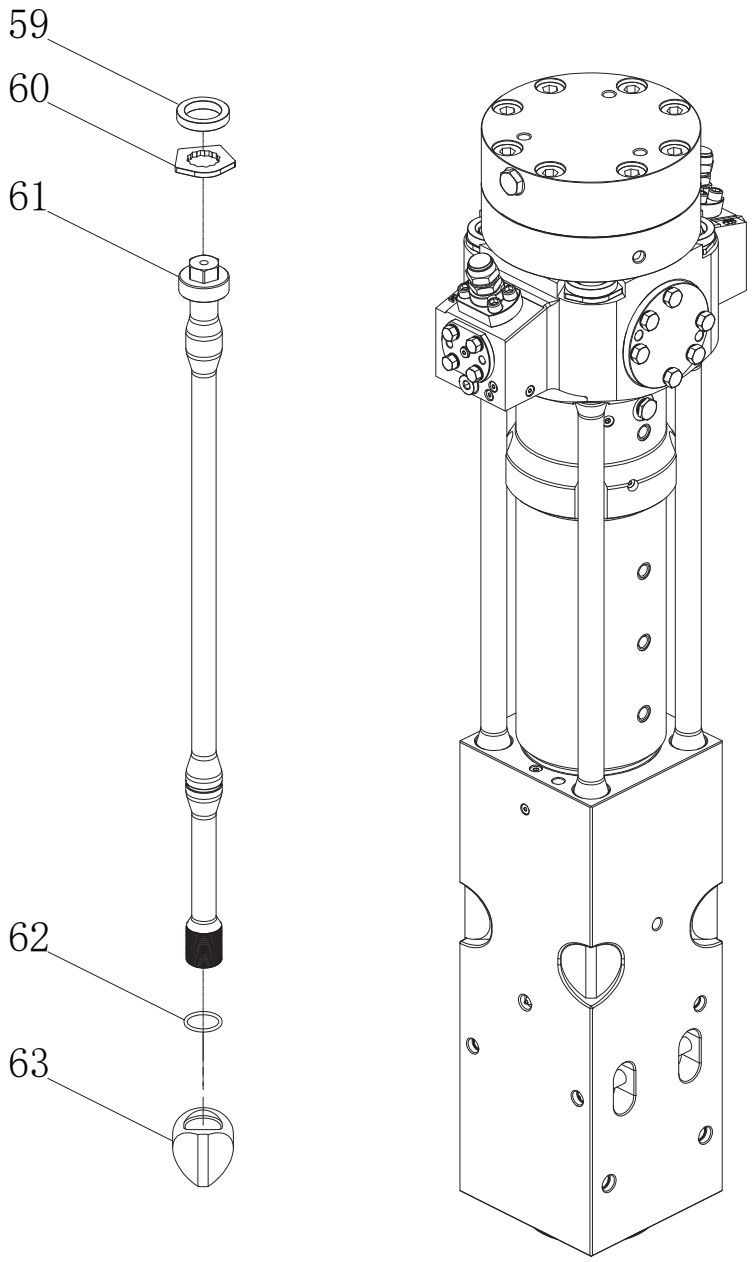
2.Valve Assy



No.	Part.No	Parts Name	Quantity	Remarks
13	HBM207512	HEX. BOLT	12	
14	LW20	LOCK WASHER	24	
15	E160YMVCA	MAIN VAVLE COVER A	1	
16	SYR120.2	SQURE RING	2	NSS
17	E160YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC109.6	GLYD RING	6	NSS
19	SPBF12	SOCKET PLUG	2	
20	SBP22.4	O RING	3	NSS
21	HBM164012	HEX. BOLT	8	
22	LW16	LOCK WASHER	16	
23	SPBF04	SOCKET PLUG	12	

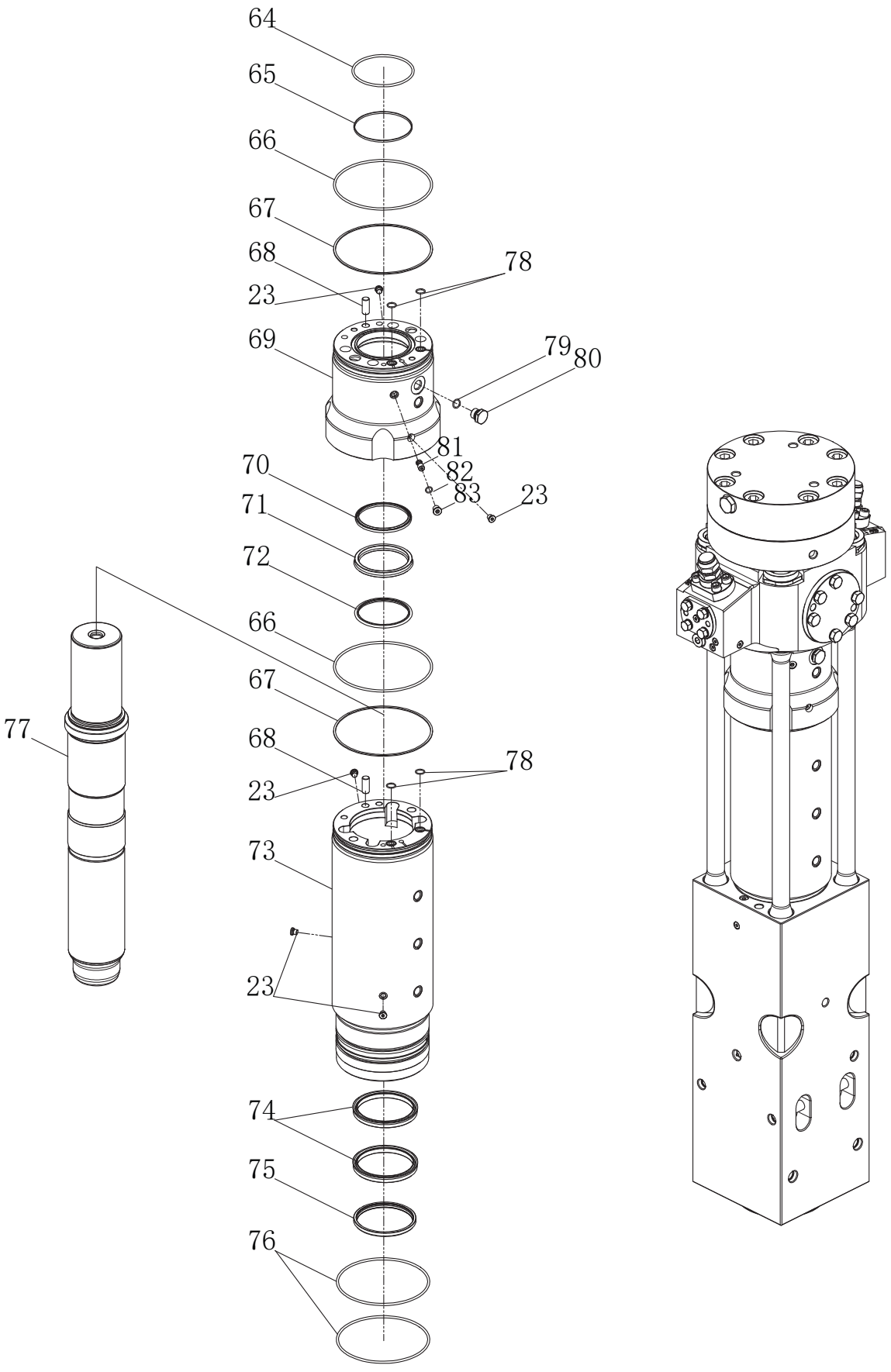
No.	Part.No	Parts Name	Quantity	Remarks
24	E170YCVC	CHECK VALVE COVER	1	
25	E170YCV	CHECK SPOOL	1	
26	E170YCVS	CHECK VALVE SPRING	1	
27	E170YCVSG	CHECK VALVE SPRING GUIDE	1	
28	HSPR38	SPRING RING	1	
29	SYR45.2	SQURE RING	2	NSS
30	E190YSA	STROKE ADJUSTER SOCKET PLUG	1	
31	E190YSASP	STROKE ADJUSTER	1	
32	E160YVB	VALVE BODY	1	
33	E160YSL23	Φ23SPOOL	1	
34	E160YMV	MAIN VAVLE	1	
35	E160YSL18	Φ18 SPOOL	1	
36	E160YMVCB	MAIN VALVE HOUSING PLUG	1	
37	SBP018	O RING	2	NSS
38	SPBF08	SOCKET PLUG	2	
39	SYR55.2	SQURE RING	1	NSS
40	SYR65.2	SQURE RING	1	NSS
41	SYR75.2	SQURE RING	1	NSS
42	E170YSL10	Φ10 SPOOL	1	
43	E170YPCVSLG	PRES CONTROL VALVE SPOOL GUIDE	1	
44	E170YPCVH	PRES CONTROL VALVE HOUSING	1	
45	E170YPCV	PRES CONTROL VALVE	1	
46	E170YPCVS	PRES CONTROL VALVE SPRING	1	
47	E170YPCVSG	PRES CONTROL VALVE SPRING GUIDE	1	
48	E170YPCVC	PRES CONTROL VALVE COVER	1	
49	SBG025	O RING	2	NSS
50	SBP032	O RING	1	NSS
51	E170YPCVSW	PRES CONTROL VALVE SPRING WASER		
52	E170YPCVCSP	PRES CONTROL VALVE COVER SOCKET PLUG	1	
53	SBG045	O RING	2	NSS
54	E190YFA	FLANGE ADAPTER	2	
55	SBM164512	SOCKET BOLT	8	
56	SBP038	O RING	2	NSS
57	SABFF20	SCREWED ADAPTER	2	
58	ACBF20	ADAPTER CAP	2	

3.Through Bolt Assy



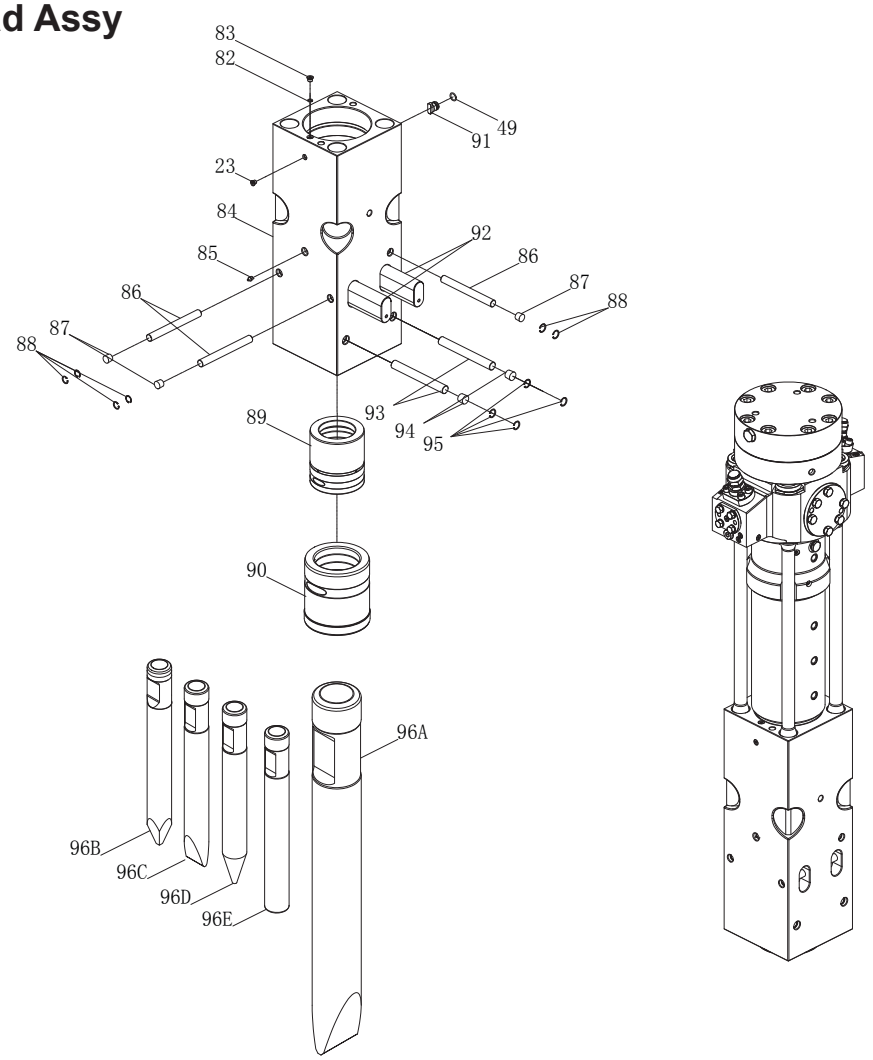
No.	Part.No	Parts Name	Quantity	Remarks
59	E170YRR	RUBBER RING	4	
60	E160YLP	LOCK PLATE	4	
61	E160YTR-2	TIE ROD	4	
62	SBP052	O RING	4	NSS
63	E160YTRN-2	TIE ROD RD. NUT	4	

4.Cylinder Assy



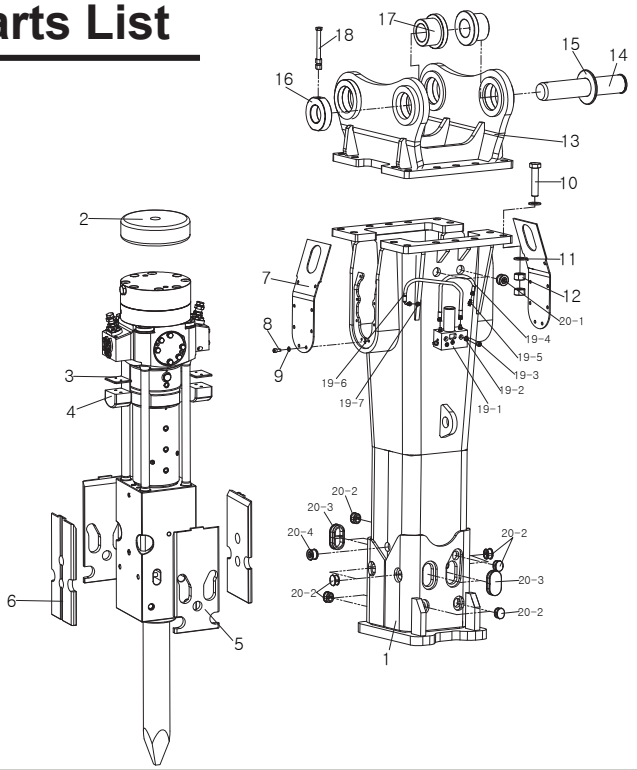
No.	Part.No	Parts Name	Quantity	Remarks
64	SBG150	O RING	1	NSS
65	S4BG146	BACK-UP RING	1	NSS
66	SOR224.3	O RING	2	NSS
67	SDQ245.2	BACK-UP RING	2	NSS
68	06000FKP	KNOCK PIN	2	
69	E160YSC	SEAL CARRIER	1	
70	SCD130	DUST SEAL	1	NSS
71	SCU130	U-PACKING	1	NSS
72	SCS130	STEP SEAL	1	NSS
73	E160YCY-1	CYLINDER	1	
74	SCU145	U-PACKING	2	
75	SCD145	DUST SEAL	1	
76	SBG230	O RING	2	
77	E160YP	PISTON	1	
78	SOR19.8	O RING	4	NSS
79	SBP028	O RING	1	NSS
80	E190YACV	AIR CHECK VALVE	1	
81	E170YSCAP	SEAL CARRIER AIR PLUG	1	
82	SBP014	O RING	2	NSS
83	SPBF06	SOCKET BOLT	2	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
84	E160YFH	FRONT HEAD	1	
85	GNBT04	GREASE NAPPLE	1	
86	3200YSP	STOP PIN	3	
87	RP26	RUBBER PLUG	3	
88	SRH26	SNAP RING	6	
89	E160YRB	RING BUSH	1	
90	E160YFC	FRONT COVER	1	
91	E170YW	WEDGE	1	
92	04000RP	RETAINING PIN	2	
93	10000PFCP	FRONT COVER STOP PIN	2	
94	RP36	RUBBER PLUG	2	
95	SRH36	SNAP RING	4	
96A	E160YT-H	TOOL-H TYPE	1	
96B	E160YT-M	TOOL-M TYPE	1	
96C	E160YT-V	TOOL-V TYPE	1	
96D	E160YT-C	TOOL-C TYPE	1	
96E	E160YT-B	TOOL-B TYPE	1	

Frame and Parts List

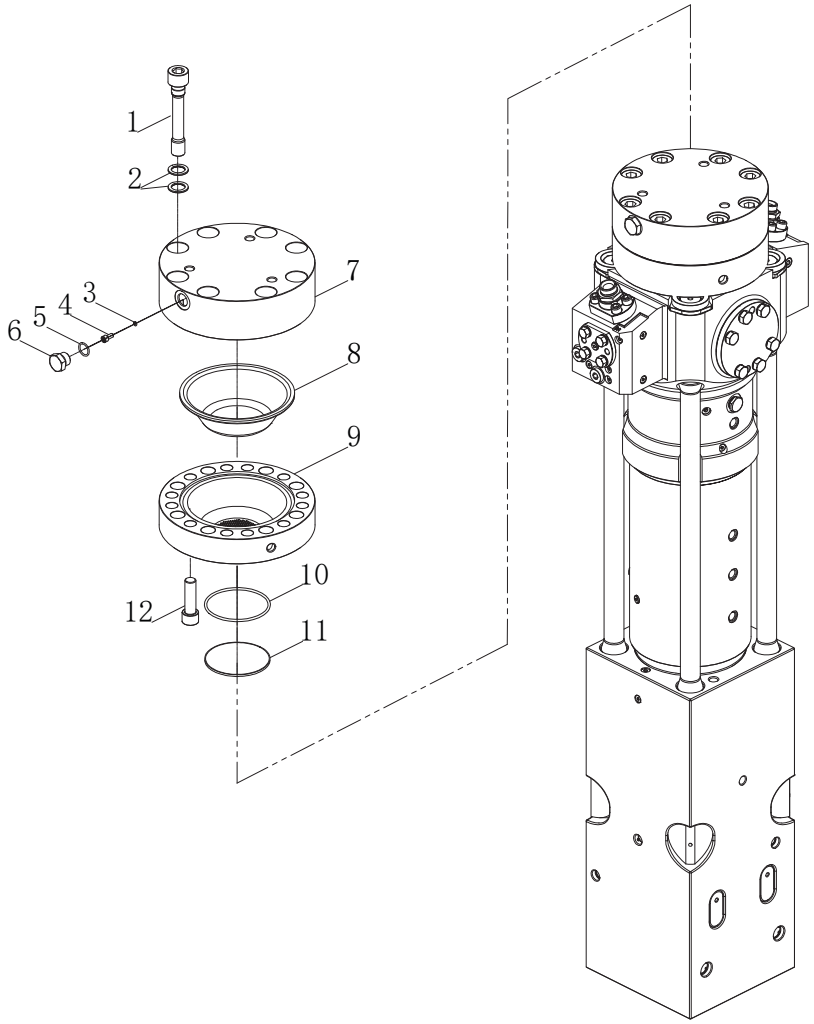


No.	Part.No	Parts Name	Quantity	Remarks
1	E160YF-B21	Frame	1	
2	E160YTPD	Top Damper	1	
3	E160YSHM	Top Support Plate	2	
4	E160YSHD	Shoulder Damper	2	
5	E160YSDA	Side Damper A	2	
6	E160YSDB	Side Damper B	2	
7	E160YCV	Cover Plate	2	
8	SBM1225	Socket Bolt	16	
9	W12	Washer	16	
10	HBM36160	Hex.Bolt	14	
11	W36	Washer	28	
12	HNM36	Hex.Nut	28	
13	E160YMC-B21	Mount Cap	1	
14	E160YMP	Mount Pin	2	
15	E160YMPR	Mount Pin Ring	2	
16	E160YMPS	Mount Pin Stopper	2	
17	E160YMPB	Mount Pin Bush	4	
18	HBWH160Y-AY	Hex.Bolt With Hole Assy	2	
19	AGD-HP-AY	Auto Greasing Device Assy	1	19-1/19-2/19-3/19-4/19-5/ 19-6/19-7
19-1	AGD-HP	Auto Greasing Device	1	
19-2	SW16	Spring Washer	2	
19-3	SBM16100	Socket Bolt	2	
19-4	E160YGHH	Grease Hose	1	
19-5	E160YGTJ	Grease Transit Joint	1	
19-6	E160YPHH	Pressure Hose	1	
19-7	E160YPTJ	Pressure Transit Joint	1	
20	E160YRP-AY	Rubber Plug Assy	1	20-1/20-2/20-3/20-4
20-1	E160YRPH	Hose Plug	2	
20-2	E160YRPA	Rubber Plug A	10	
20-3	E160YRPB	Rubber Plug B	4	
20-4	E160YRPG	Grease Fitting Plug	1	

D170H

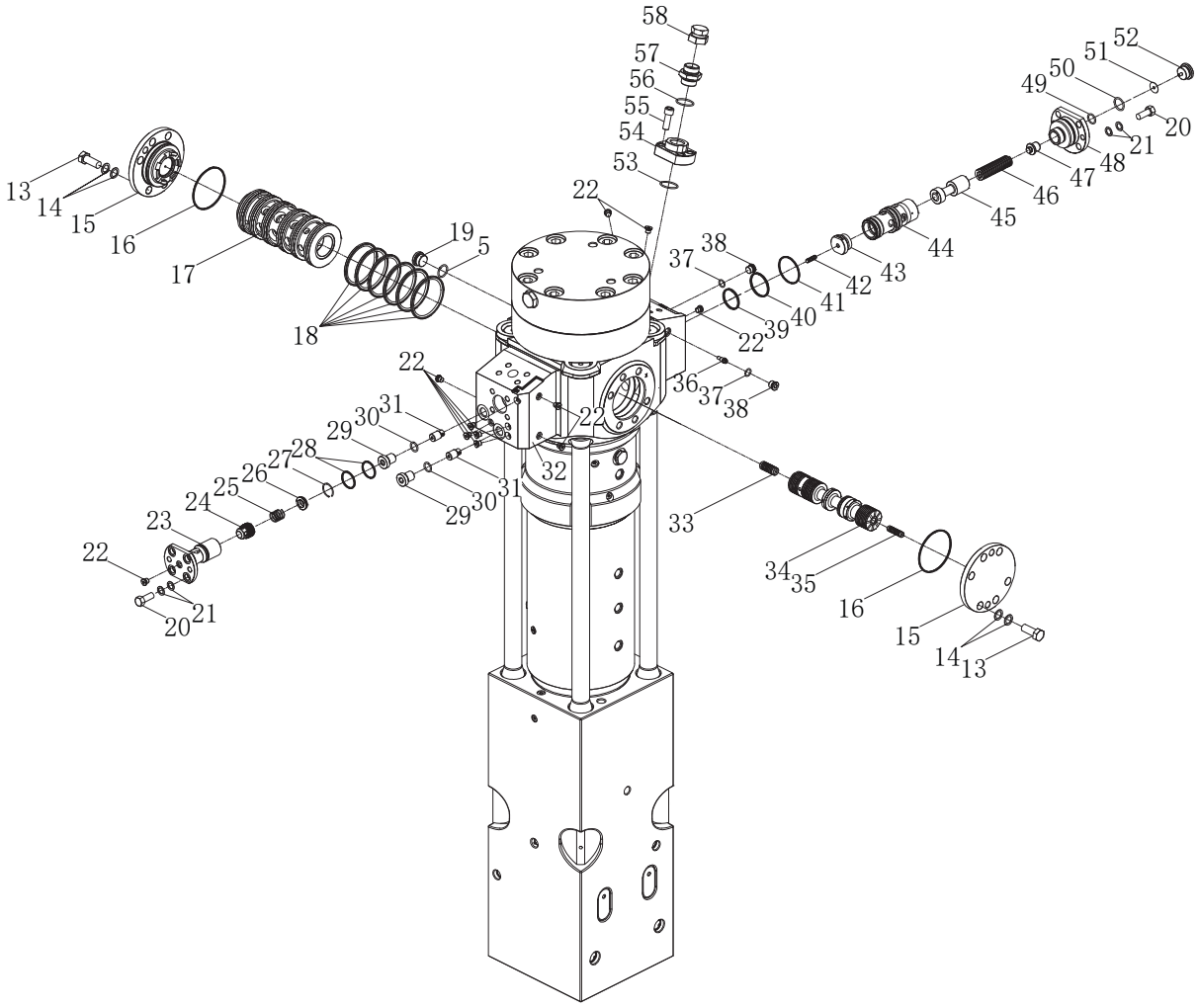
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E170YAMS	ACC.MOUNTING SCREWS	8	
2	LW33	LOCK WASHER	16	NSS
3	SBP008	O RING	1	NSS
4	E170YAFP	ACC.FILLING PLUG	1	
5	SBP029	O RING	2	NSS
6	E170YSP	ACC.SHIELD PLUG	1	
7	E170YAC-1	ACC.COVER	1	
8	10000AD	DIAPHRAGM	1	
9	E170YAB-1	ACC.BODY	1	
10	SBG160	O RING	1	NSS
11	S4BG156	BACK-UP RING	1	NSS
12	SBM2770F212	SOCKET BOLT	12	

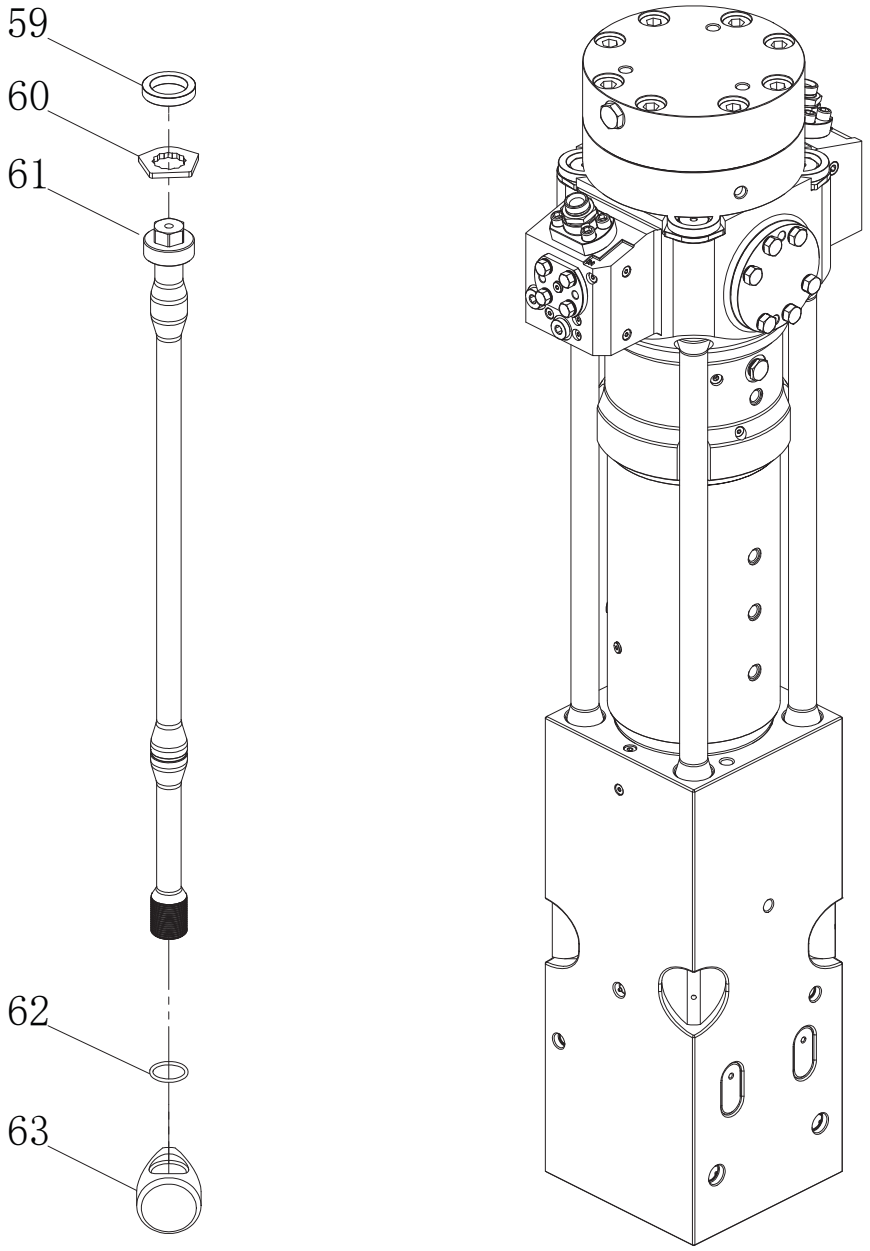
2.Valve Assy



No.	Part.No	Parts Name	Quantity	Remarks
13	HBM207512	HEX. BOLT	12	
14	LW20	LOCK WASHER	24	
15	E170YMVC	MAIN VAVLE COVER	2	
16	SYR120.2	SQURE RING	2	NSS
17	E170YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC109.6	GLYD RING	6	NSS
19	SPBF16	SOCKET PLUG	1	
20	HBM164012	HEX. BOLT	8	
21	LW16	LOCK WASHER	16	
22	SPBF04	SOCKET PLUG	18	
23	E170YCVC	CHECK VALVE COVER	1	
24	E170YCV	CHECK SPOOL	1	

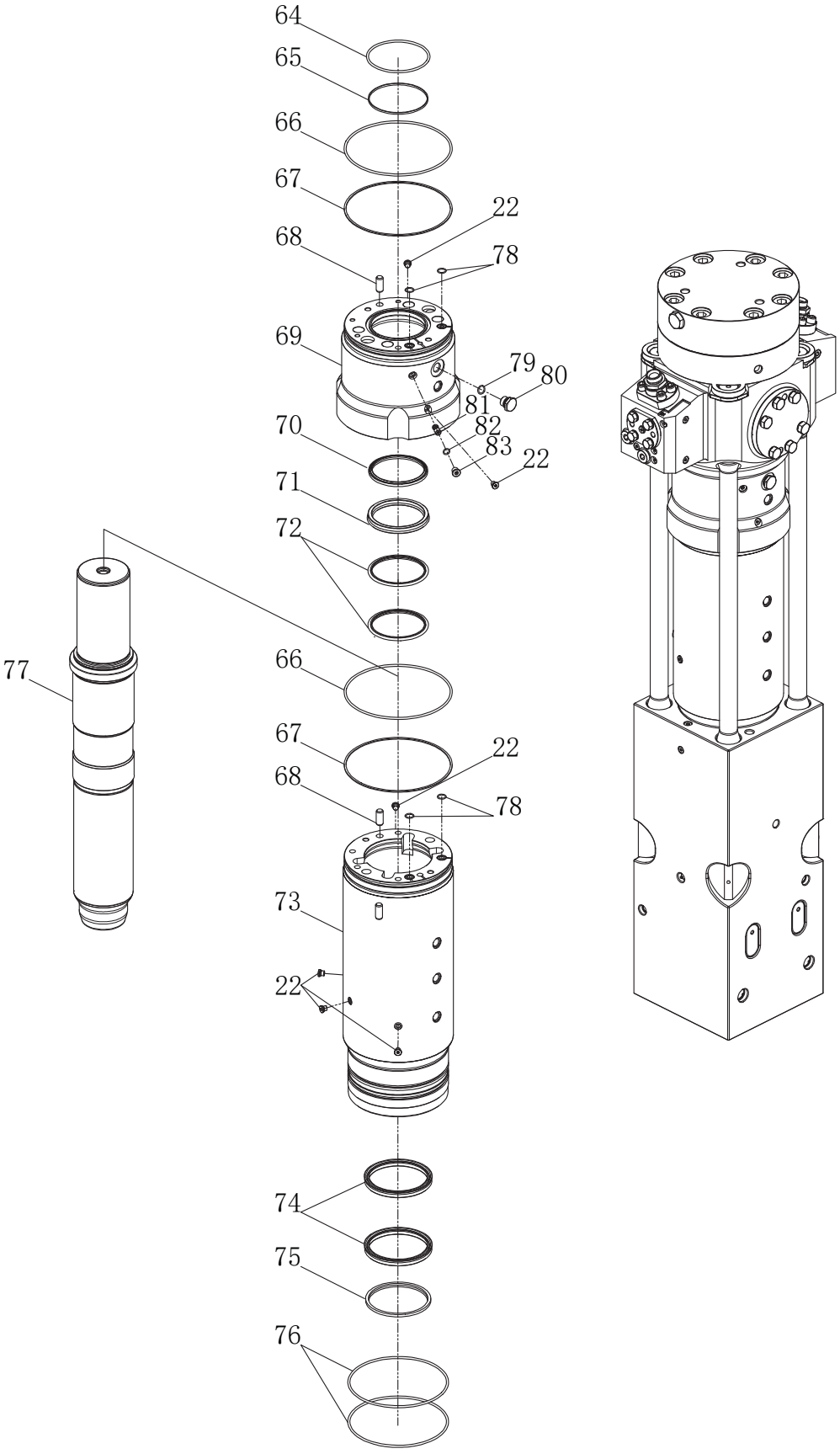
No.	Part.No	Parts Name	Quantity	Remarks
25	E170YCVS	CHECK VALVE SPRING	1	
26	E170YCVSG	CHECK VALVE SPRING GUIDE	1	
27	HSPR38	SPRING RING	1	
28	SYR45.2	SQURE RING	2	NSS
29	E190YSA	STROKE ADJUSTER SOCKET PLUG	2	
30	SBP22.4	O RING	2	NSS
31	E190YSASP	STROKE ADJUSTER	2	
32	E170YVB	VALVE BODY	1	
33	E170YSL22	Φ22SPOOL	1	
34	E170YMV	MAIN VAVLE	1	
35	E170YSL15	Φ16 SPOOL	1	
36	E170YMVH	MAIN VALVE HOUSING PLUG	1	
37	SBP018	O RING	2	NSS
38	SPBF08	SOCKET PLUG	2	
39	SYR55.2	SQURE RING	1	NSS
40	SYR65.2	SQURE RING	1	NSS
41	SYR75.2	SQURE RING	1	NSS
42	E170YSL10	Φ10 SPOOL	1	
43	E170YPCVSLG	PRES CONTROL VALVE SPOOL GUIDE	1	
44	E170YPCVH	PRES CONTROL VALVE HOUSING	1	
45	E170YPCV	PRES CONTROL VALVE	1	
46	E170YPCVS	PRES CONTROL VALVE SPRING	1	
47	E170YPCVSG	PRES CONTROL VALVE SPRING GUIDE	1	
48	E170YPCVC	PRES CONTROL VALVE COVER	1	
49	SBG025	O RING	2	NSS
50	SBP032	O RING	1	NSS
51	E170YPCVSW	PRES CONTROL VALVE SPRING WASER		
52	E170YPCVCSP	PRES CONTROL VALVE COVER SOCKET PLUG	1	
53	SBG045	O RING	2	NSS
54	E190YFA	FLANGE ADAPTER	2	
55	SBM144512	SOCKET BOLT	8	
56	SBP038	O RING	2	NSS
57	SABFF20	SCREWED ADAPTER	2	
58	ACBF20	ADAPTER CAP	2	

3.Through Bolt Assy



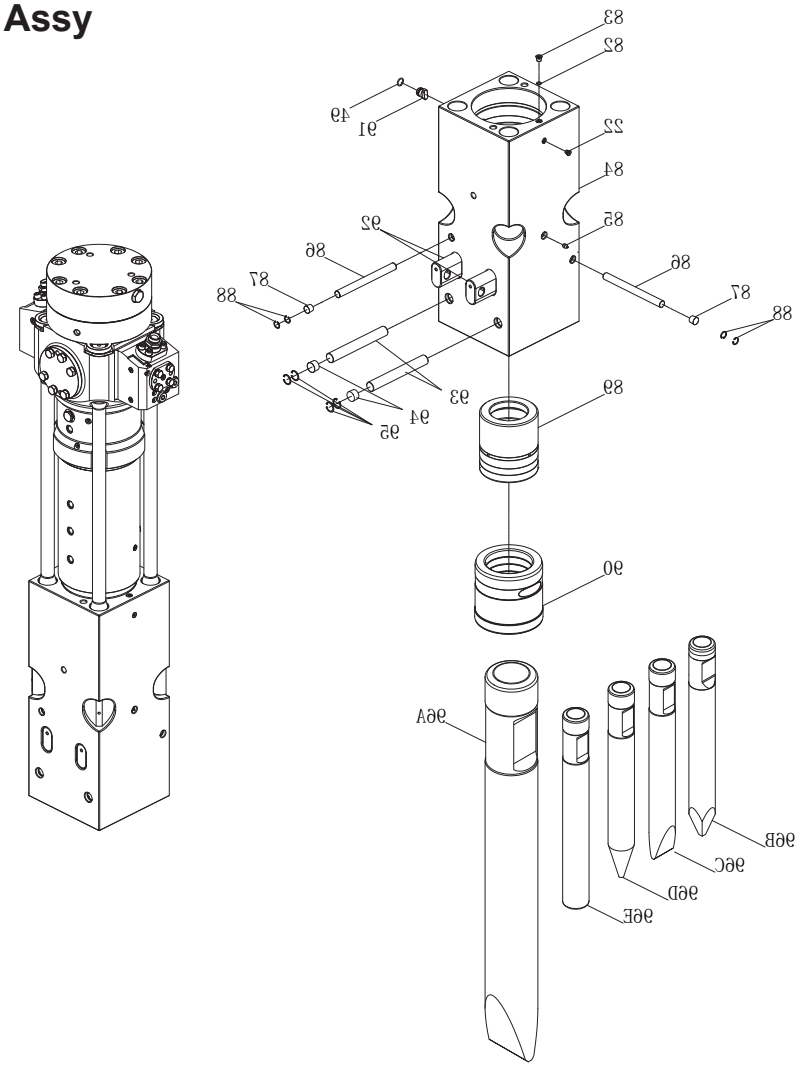
No.	Part.No	Parts Name	Quantity	Remarks
59	E170YRR	RUBBER RING	4	
60	E170YLP	LOCK PLATE	4	
61	E170YTR-2	TIE ROD	4	
62	SBP055	O RING	4	NSS
63	E170YTRN-2	TIE ROD RD. NUT	4	

4.Cylinder Assy



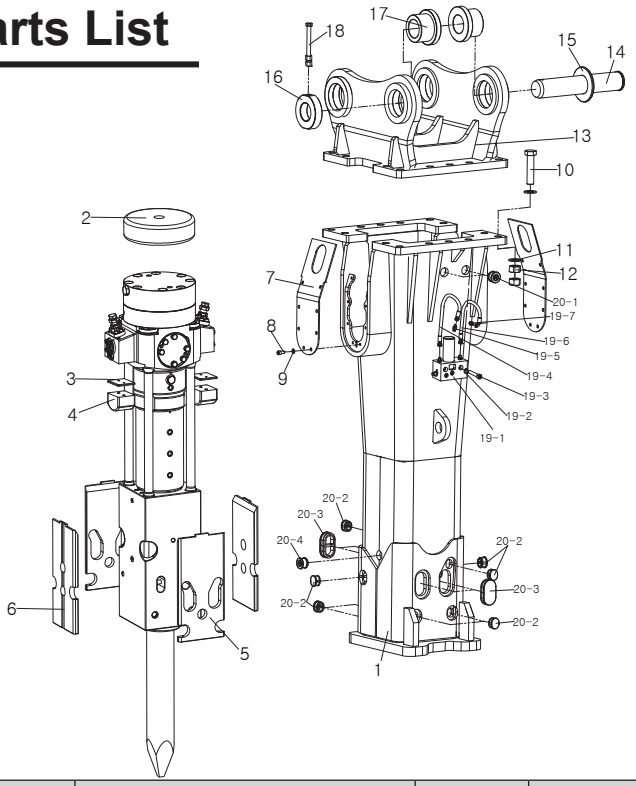
No.	Part.No	Parts Name	Quantity	Remarks
64	SBG160	O RING	1	NSS
65	S4BG156	BACK-UP RING	1	NSS
66	SOR279.3	O RING	2	NSS
67	SDQ280.2	BACK-UP RING	2	NSS
68	06000FKP	KNOCK PIN	2	
69	E170YSC	SEAL CARRIER	1	
70	SCD142	DUST SEAL	1	NSS
71	SCU142	U-PACKING	1	NSS
72	SCS142	STEP SEAL	2	NSS
73	E170YCY-1	CYLINDER	1	
74	SCU160	U-PACKING	2	NSS
75	SCD160	DUST SEAL	1	NSS
76	SBG260	O RING	2	NSS
77	E170YP	PISTON	1	
78	SOR19.8	O RING	4	NSS
79	SBP028	O RING	1	NSS
80	E190YACV	AIR CHECK VALVE	1	
81	E170YSCAP	SEAL CARRIER AIR PLUG	1	
82	SBP014	O RING	2	NSS
83	SPBF06	SOCKET BOLT	2	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
84	E170YFH	FRONT HEAD	1	
85	GNBT04	GREASE NAPPLE	1	
86	E170YSP	STOP PIN	2	
87	RP26	RUBBER PLUG	2	
88	SRH26	SNAP RING	4	
89	E170YRB	RING BUSH	1	
90	E170YFC	FRONT COVER	1	
91	E170YW	WEDGE	1	
92	E170YRP	RETAINING PIN	2	
93	E170YFCP	FRONT COVER STOP PIN	2	
94	RP36	RUBBER PLUG	2	
95	SRH36	SNAP RING	4	
96A	E170YT-H	TOOL-H TYPE	1	
96B	E170YT-M	TOOL-M TYPE	1	
96C	E170YT-V	TOOL-V TYPE	1	
96D	E170YT-C	TOOL-C TYPE	1	
96E	E170YT-B	TOOL-B TYPE	1	

Frame and Parts List

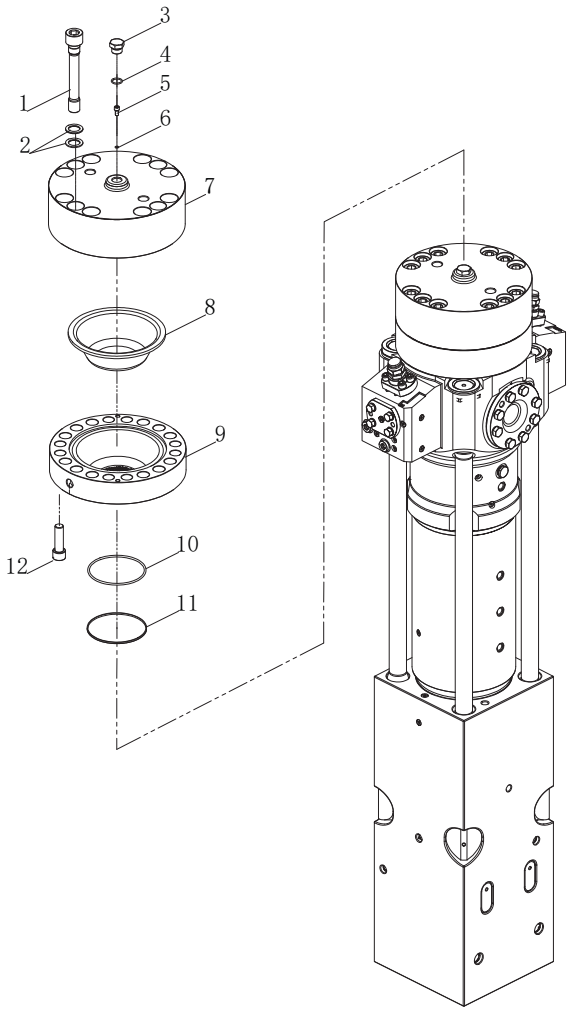


No.	Part.No	Parts Name	Quantity	Remarks
1	E170YF-B21	Frame	1	
2	E170YTPD	Top Damper	1	
3	E170YSHM	Top Support Plate	2	
4	E170YSHD	Shoulder Damper	2	
5	E170YSDA	Side Damper A	2	
6	E170YSDB	Side Damper B	2	
7	E170YCV	Cover Plate	2	
8	SBM1225	Socket Bolt	16	
9	W12	Washer	16	
10	HBM36160	Hex.Bolt	14	
11	W36	Washer	28	
12	HNM36	Hex.Nut	28	
13	E170YMC-B21	Mount Cap	1	
14	E170YMP	Mount Pin	2	
15	E170YMPR	Mount Pin Ring	2	
16	E170YMPS	Mount Pin Stopper	2	
17	E170YMPB	Mount Pin Bush	4	
18	HBWH170Y-AY	Hex.Bolt With Hole Assy	2	
19	AGD-HP-AY	Auto Greasing Device Assy	1	"19-1/19-2/19-3/19-4 /19-5/19-6/19-7"
19-1	AGD-HP	Auto Greasing Device	1	
19-2	SW16	Spring Washer	2	
19-3	SBM16100	Socket Bolt	2	
19-4	E170YGHH	Grease Hose	1	
19-5	E170YGTJ	Grease Transit Joint	1	
19-6	E170YPHH	Pressure Hose	1	
19-7	E170YPTJ	Pressure Transit Joint	1	
20	E170YRP-AY	Rubber Plug Assy	1	20-1/20-2/20-3/20-4
20-1	E170YRPH	Hose Plug	2	
20-2	E170YRPA	Rubber Plug A	8	
20-3	E170YRPB	Rubber Plug B	4	
20-4	E170YRPG	Grease Fitting Plug	1	

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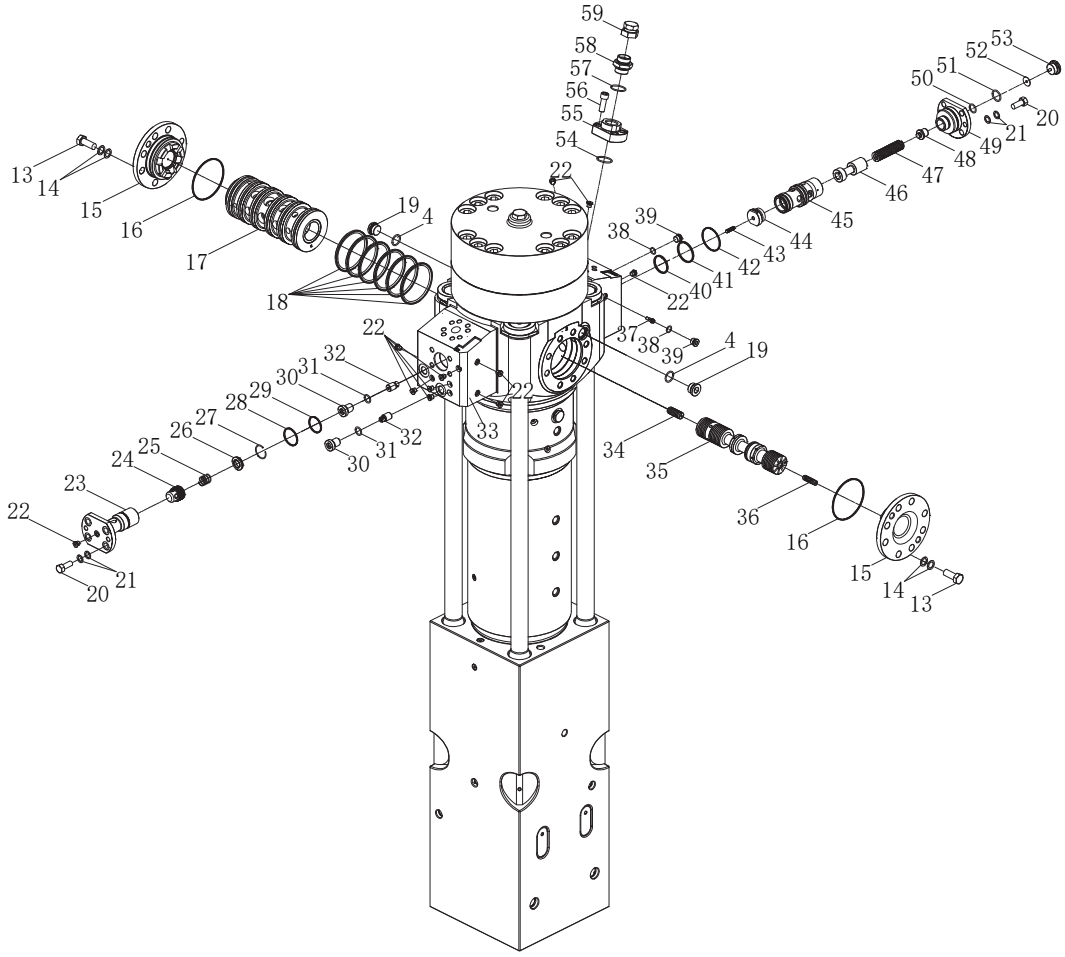
Main Body and Parts List

1.Accumulator Assy



No.	Part.No	Parts Name	Quantity	Remarks
1	E190YAMS	ACC.MOUNTING SCREWS	12	
2	LW36	LOCK WASHER	24	
3	E170YSP	ACC.SHIELD PLUG	1	
4	SBP029	O RING	3	NSS
5	E170YAFP	ACC.FILLING PLUG	1	
6	SBP008	O RING	1	NSS
7	E190YAC-1	ACC.COVER	1	
8	12000AD	DIAPHRAGM	1	
9	E190YAB-1	ACC.BODY	1	
10	SBG180	O RING	1	NSS
11	S4BG176	BACK-UP RING	1	NSS
12	SBM2780F212	SOCKET BOLT	8	

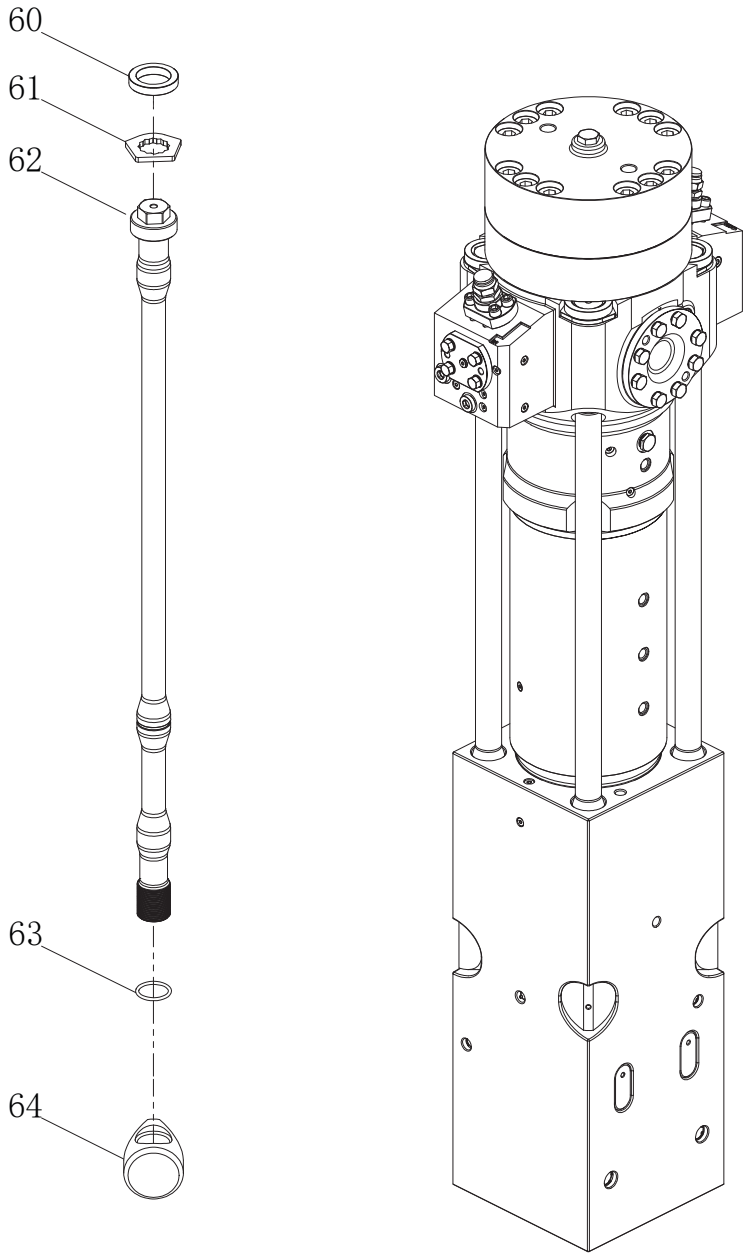
2.Valve Assy



No.	Part.No	Parts Name	Quantity	Remarks
13	HBM207512	HEX. BOLT	16	
14	LW20	LOCK WASHER	32	
15	E190YMVC	MAIN VAVLE COVER	2	
16	SYR135.2	SQURE RING	2	NSS
17	E190YMVS	MAIN VAVLE SLEEVE	1	
18	SHPC124.5	GLYD RING	6	NSS
19	SPBF16	SOCKET PLUG	1	
20	HBM164012	HEX. BOLT	8	
21	LW16	LOCK WASHER	16	
22	SPBF04	SOCKET PLUG	18	
23	E190YCVC	CHECK VALVE COVER	1	
24	E190YCV	CHECK SPOOL	1	
25	E190YCVS	CHECK VALVE SPRING	1	
26	E190YCVSG	CHECK VALVE SPRING GUIDE	1	

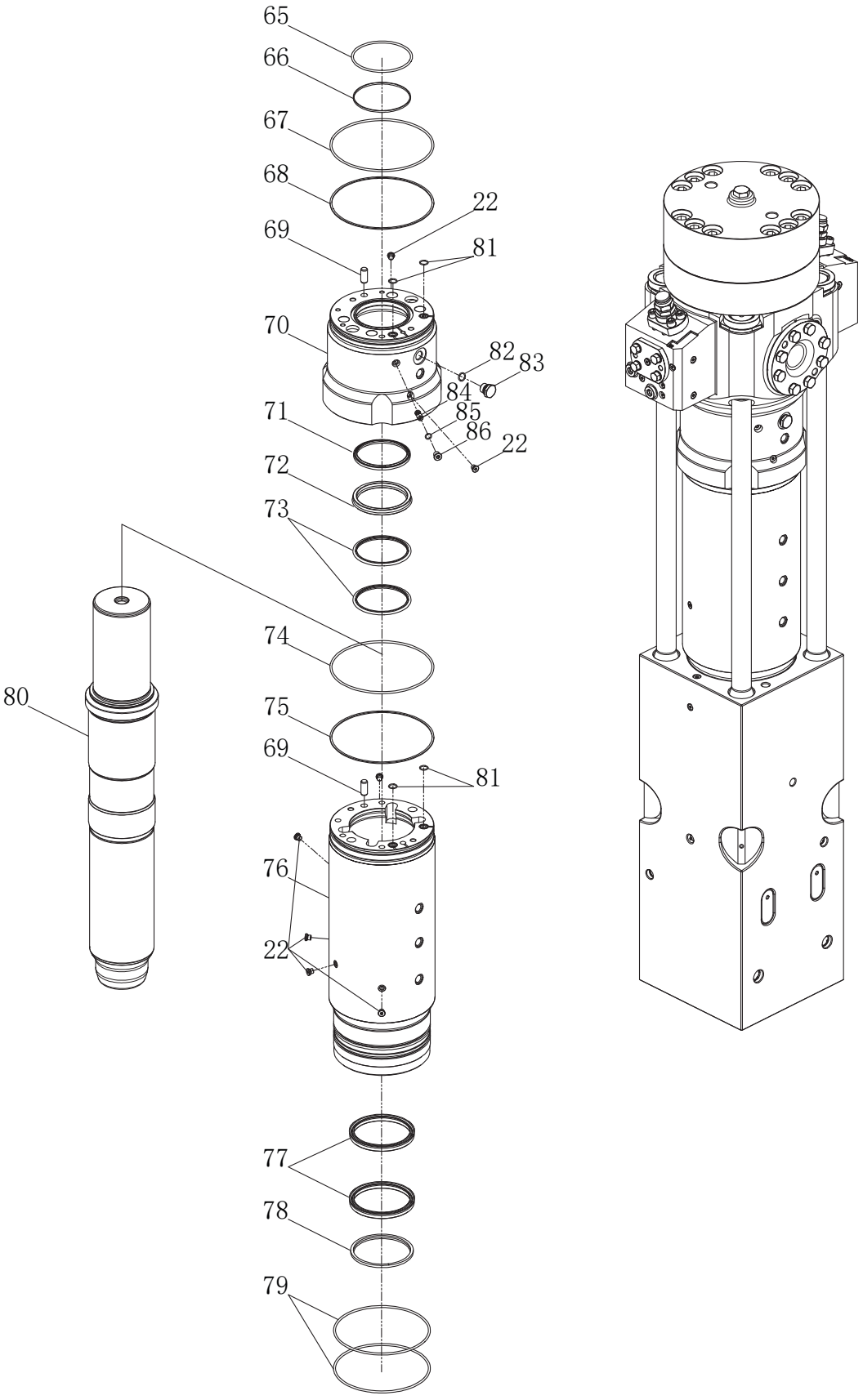
No.	Part.No	Parts Name	Quantity	Remarks
27	HSPR44	SPRING RING	1	
28	SYR55.2-2	SQURE RING	1	NSS
29	SYR50.2	SQURE RING	1	NSS
30	E190YSASP	STROKE ADJUSTER SOCKET PLUG	2	
31	SBP22.4	O RING	2	NSS
32	E190YSASP	STROKE ADJUSTER	2	
33	E190YVB	VALVE BODY	1	
34	E170YSL22	Φ22SPOOL	1	
35	E190YMV	MAIN VAVLE	1	
36	E170YSL15	Φ15 SPOOL	1	
37	E170YMVH	MAIN VALVE HOUSING PLUG	1	
38	SBP018	O RING	2	NSS
39	SPBF08	SOCKET PLUG	2	
40	SYR55.2	SQURE RING	1	NSS
41	SYR65.2	SQURE RING	1	NSS
42	SYR75.2	SQURE RING	1	NSS
43	E170YSL10	Φ10 SPOOL	1	
44	E170YPCVSLG	PRES CONTROL VALVE SPOOL GUIDE	1	
45	E170YPCVH	PRES CONTROL VALVE HOUSING	1	
46	E170YPCV	PRES CONTROL VALVE	1	
47	E170YPCVS	PRES CONTROL VALVE SPRING	1	
48	E170YPCVSG	PRES CONTROL VALVE SPRING GUIDE	1	
49	E170YPCVC	PRES CONTROL VALVE COVER	1	
50	SBG025	O RING	2	NSS
51	SBP032	O RING	1	NSS
52	E170YPCVSW	PRES CONTROL VALVE SPRING WASER		
53	E170YPCVCSP	PRES CONTROL VALVE COVER SOCKET PLUG	1	
54	SBG045	O RING	2	NSS
55	E190YFA	FLANGE ADAPTER	2	
56	SBM164512	SOCKET BOLT	8	
57	SBP038	O RING	2	NSS
58	SABFF20	SCREWED ADAPTER	2	
59	ACBF20	ADAPTER CAP	2	

3.Through Bolt Assy



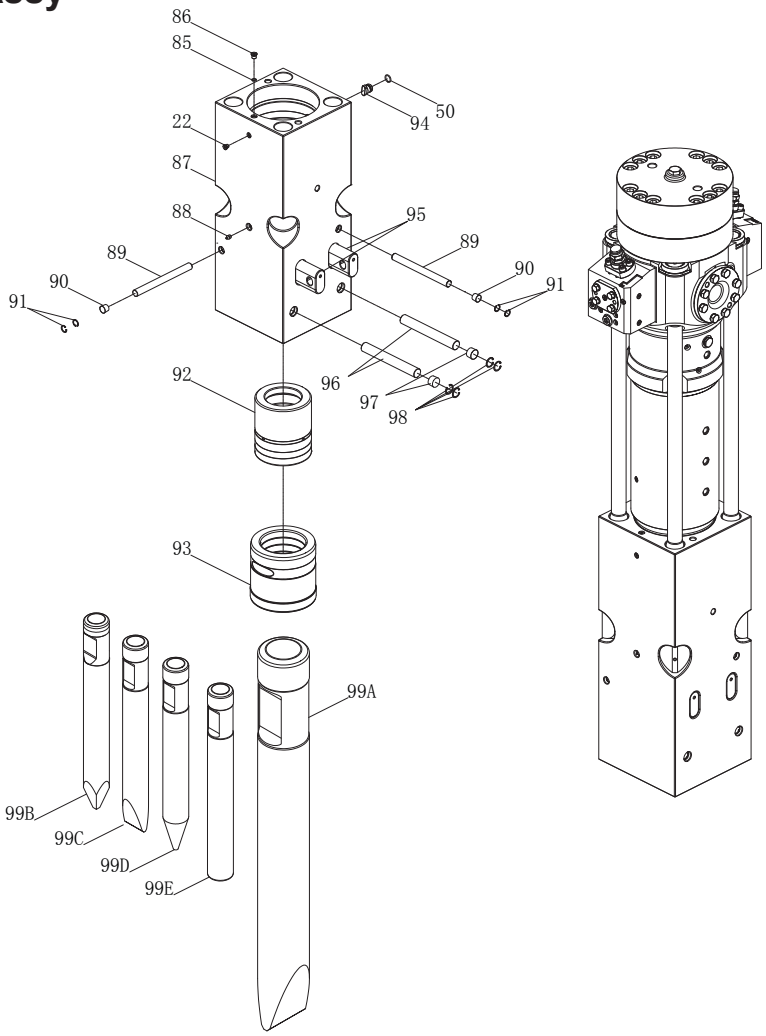
No.	Part.No	Parts Name	Quantity	Remarks
60	E190YRR	RUBBER RING	4	
61	E190YLP	LOCK PLATE	4	
62	E190YTR-2	TIE ROD	4	
63	SBP060	O RING	4	NSS
64	E190YTRN-2	TIE ROD RD. NUT	4	

4.Cylinder Assy



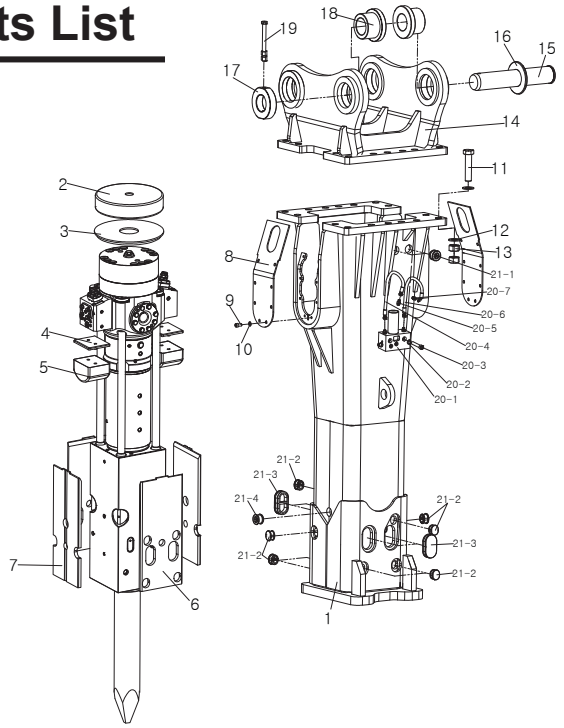
No.	Part.No	Parts Name	Quantity	Remarks
65	SBG180	O RING	1	NSS
66	S4BG176	BACK-UP RING	1	NSS
67	SOR309.3	O RING	1	NSS
68	SDQ310.2	BACK-UP RING	1	NSS
69	06000FKP	KNOCK PIN	2	
70	E190YSC	SEAL CARRIER	1	
71	SCD160	DUST SEAL	1	NSS
72	SCU160	U-PACKING	1	NSS
73	SCS160	STEP SEAL	2	NSS
74	SOR314.3	O RING	1	NSS
75	SDQ315.2	BACK-UP RING	1	NSS
76	E190YCY-1	CYLINDER	1	
77	SCU180	U-PACKING	2	
78	SCD180	DUST SEAL	1	
79	SBG295	O RING	2	
80	E190YP	PISTON	1	
81	SOR19.8	O RING	4	NSS
82	SBP028	O RING	1	NSS
83	E190YACV	AIR CHECK VALVE	1	
84	E170YSCAP	SEAL CARRIER AIR PLUG	1	
85	SBP014	O RING	2	NSS
86	SPBF06	SOCKET BOLT	2	

5.Front Head Assy



No.	Part.No	Parts Name	Quantity	Remarks
87	E190YFH	FRONT HEAD	1	
88	GNBT04	GREASE NAPPLE	1	
89	E190YSP	STOP PIN	2	
90	RP26	RUBBER PLUG	2	
91	SRH26	SNAP RING	4	
92	E190YRB	RING BUSH	1	
93	E190YFC	FRONT COVER	1	
94	E170YW	WEDGE	1	
95	E190YRP	RETAINING PIN	2	
96	E190YFCP	FRONT COVER STOP PIN	2	
97	RP30	RUBBER PLUG	2	
98	SRH30	SNAP RING	4	
99A	E190YT-H	TOOL-H TYPE	1	
99B	E190YT-M	TOOL-M TYPE	1	
99C	E190YT-V	TOOL-V TYPE	1	
99D	E190YT-C	TOOL-C TYPE	1	
99E	E190YT-B	TOOL-B TYPE	1	

Frame and Parts List



No.	Part.No	Parts Name	Quantity	Remarks
1	E190YF-B21	Frame	1	
2	E190YTPD	Top Damper	1	
3	E190YCRM	Top Support Plate	1	
4	E190YSHM	Shoulder Support Plate	2	
5	E190YSHD	Shoulder Damper	2	
6	E190YSDA	Side Damper A	2	
7	E190YSDB	Side Damper B	2	
8	E190YCV	Cover Plate	2	
9	SBM1225	Socket Bolt	16	
10	W12	Washer	16	
11	HBM36160	Hex.Bolt	16	
12	W36	Washer	32	
13	HNM36	Hex.Nut	32	
14	E190YMC-B21	Mount Cap	1	
15	E190YMP	Mount Pin	2	
16	E190YMPR	Mount Pin Ring	2	
17	E190YMPS	Mount Pin Stopper	2	
18	E190YMPB	Mount Pin Bush	4	
19	HBWH190Y-AY	Hex.Bolt With Hole Assy	2	
20	AGD-HP-AY	Auto Greasing Device Assy	1	20-1/20-2/20-3/20-4/20-5/20-6/20-7
20-1	AGD-HP	Auto Greasing Device	1	
20-2	SW16	Spring Washer	2	
20-3	SBM16100	Socket Bolt	2	
20-4	E190YGHH	Grease Hose	1	
20-5	E190YGTJ	Grease Transit Joint	1	
20-6	E190YPHH	Pressure Hose	1	
20-7	E190YPTJ	Pressure Transit Joint	1	
21	E190YRP-AY	Rubber Plug Assy	1	21-1/21-2/21-3/21-4
21-1	E190YRPH	Hose Plug	2	
21-2	E190YRPA	Rubber Plug A	8	
21-3	E190YRPB	Rubber Plug B	4	
21-4	E190YRPG	Grease Fitting Plug	1	

Toolbox Component List

MODEL	Bi-directional Wrench 	One-way Wrench 	Hex Key 	Wire Snap Ring for Hole	General Components	Lifting Lug 	Circlip Pliers for Hole	Hose Plug(2) 	Return oil pressure spring gasket	Elastic cylindrical pin 	Snap Ring	Rubber Plug 	Socket Head 	Bending Rod 
D100H	-	27 32 36	12 14 19			M10 M16 M20		3/4"	100Y (4)	ϕ18X100(2)	26# (2)	ϕ26 (2)	14# 16# 36#	
D120H			6 8 10 12 17 19	Φ30xΦ2 (2)		M8Long Hoisting Rin M12 M16 M20					30# (6) 20# (6)	ϕ30 (2) ϕ20 (2)	14# 18# 41#	
D135H		36 40						1"	135Y (4)					10-inch Bent Rod (1) 15-inch Bent Rod (1)
D150H			6 8 10 12 14 17 19			M8Long Hoisting Rin M10 M12 M16 M20 M24							14# 18# 24# 50#	
D160H			6 8 10 14 17 19 24	Φ38xΦ2.5 (2)		M8Long Hoisting Rin M16 M24					30# (6) 26# (6)	ϕ30 (2) ϕ26 (2)	14# 24# 30# 50#	
D170H	36*41	46 50 55			Φ14 Transverse Pin Punch Pure Hydraulic Hammer Nitrogen Charging Tool Assembly (D100H wants the latest model) ET-type #10 Socket Extension for D155Y-D190H Models		9-inch Circlip Pliers	1-1/4"	170Y (4)	-				
D190H			6 8 10 14 17 19 24 27	Φ44xΦ2.5 (2)		M8Long Hoisting Rin M16 M24 M33					36# (6) 26# (6)	ϕ36 (2) ϕ26 (2)		10-inch Bent Rod (1) 1-inch square head - 15-inch bent rod (1) 15-inch Bent Rod (1)

Note: Hose plug is installed on the side connecting the breaker hose to the excavator.When the order includes a breaker hose, corresponding hose plugs and wrenches must be provided.If the breaker hose is not included, the toolbox will not be equipped with hose plugs.