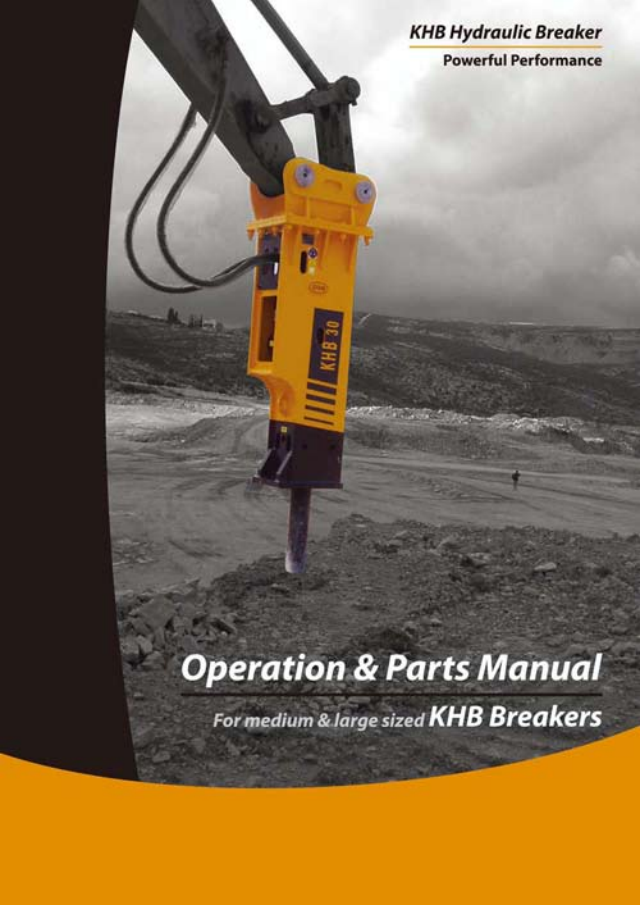




KHB Hydraulic Breaker

Powerful Performance

Operation & Parts Manual

For medium & large sized KHB Breakers

EC DECLARATION OF CONFORMITY

According to EC Machinery Directive 98/37/EC

Daesan Materials Co.,Ltd.

2F, Kyungil Bldg., 257-5, Yangae-dong, Seocho-ku, Seoul, Korea,

We hereby declare the listed product complies with the principal protection requirements of the directive.

Product : Hydraulic Breaker
Model(s) : KHB20, KHB30, KHB40
Serial No. :

Tested according to : EN 292-1:1991
EN 292-2/A-1:1995
EN 414 : 2000
EN 954-1:1996
EN 982:1996
EN 13778:1999

EC-Attestation of Conformity No. M8 04 07 53511 001

Date/Authorized Signature :



Title of Signatory :

Y. K. Kim / President

PREFACE

Our Breaker has been designed and built to provide durable operation. In order, however to obtain the best performance of the breaker under any working conditions you need to do proper handling, regular inspection and maintenance.

This operating instructions and list of spare parts provide you with all the information you need to correctly use for maintenance. Please read carefully this publication prior to installation and operation in order to prevent any possible mishandling of the breaker and minimize the down time of the equipment.

We guarantee that a faithful compliance of the instruction will contribute to the best operational conditions. Customers are, therefore, required to keep in mind that we are not responsible for troubles caused by not following our instructions or not using the genuine parts.

Note!

This manual contains safety, installation, operation and maintenance information. For more detailed information you need, please contact DSM or its dealer near you.

Some photographs or illustrations in this manual may differ from the breaker due to some changes and improvement or upgrading.

Specification presented in this manual is subject to change without prior notice.

IMPORTANT NOTICE

READ AND UNDERSTAND THIS MANUAL PRIOR TO INSTALLING, OPERATING OR MAINTAINING THE BREAKER.

OPERATE THE BREAKER IN ACCORDANCE WITH ALL LAWS AND REGULATIONS WHICH AFFECT YOU, YOUR EQUIPMENT AND WORKSITE.

KEEP IN MIND THAT SERIOUS INJURY MAY HAPPEN DUE TO NEGLIGENCE OF SAFETY REGULATION, PRECAUTIONS OF THIS MANUAL.

CONTENTS

1. Safety Precautions
2. Specification
3. Installation
4. Operation
5. Maintenance
6. Trouble Shooting
7. Disassembly and Assembly of Components
8. Delivery & Installation Reports
9. Parts List (Saperated)

1. SAFETY PRECAUTIONS

1.1. GENERAL PRECAUTIONS

The KHB Hydraulic Breaker will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual, any decals and tags attached to the breaker before operation. Failure to do so could result in personal injury or equipment damage.

Ⓐ Operate the breaker in accordance with all laws and regulations which affect you, your equipment, and the worksite.

Ⓑ Do not operate the breaker until you have read this manual and thoroughly understood all safety operation and maintenance instructions.

Ⓒ Do not operate the breaker until you have read the carrier equipment manual and thoroughly understood backhoe or excavator or similar equipment used to operate the breaker. The word "carrier", as used in this manual, means a backhoe or excavator or similar equipment used to operate the breaker.

Ⓓ Ensure that all maintenance procedures recommended in this manual are completed before using the equipment.

Ⓔ The operator must not operate the breaker or carrier if any people are within the area where they may be injured by flying debris or movement of the equipment.

Ⓘ Know the limits of your equipment.

Ⓙ make sure all controls (levers and pedals) are in the neutral position before starting the carrier.

Ⓚ Before leaving the carrier, always lower the boom and insure the carrier is stable. Never leave the machine with the engine running. Always engage the parking brake.

Ⓛ Stop the engine before attempting to make any repairs, adjustments or servicing to either the carrier or the breaker.

- ① Do not operate the breaker at oil temperature above 175°F/80°C. Operation at high temperature can damage the internal components of the breaker and carrier and will result in reduced breaker performance.
- Ⓚ Do not operate a damaged, leaking, improperly adjusted, or incompletely assembled breaker.
- ① Do not modify this breaker in any manner.
- Ⓜ Keep this manual with the breaker.



WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS BREAKER. REPAIRS AND / OR SERVICE TO THIS BREAKER MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

1.2. LABELS AND STICKERS

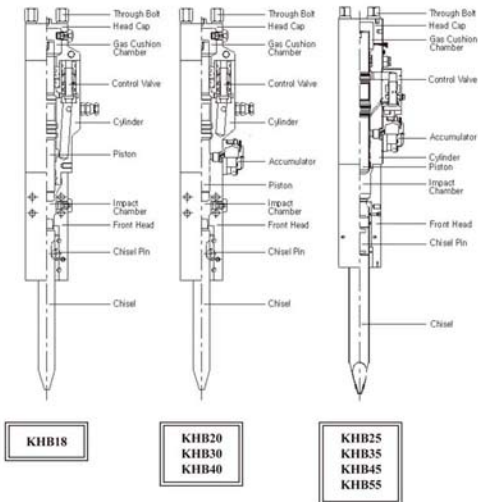
Stickers and decals placed on the breaker at time of manufacturing are shown to the below and decals have been placed on the breaker to aid the operator with safety and general maintenance. The information listed on these stickers and decals must be legible at all times. Always replace any sticker or decal that has become worn or damaged.

	
High noise level warning label	Flying debris warning label
	
Accumulator high pressure warning label	Consult manual warning label
	
Greasing label	Discharge warning label for back head
	
Back head not charged warning label	Accumulator not charged warning label

2. SPECIFICATIONS

2.1. STRUCTURE

(KHB18 ~ KHB55)



2.2. STANDARD SPECIFICATIONS (KHB18 ~ KHB55)

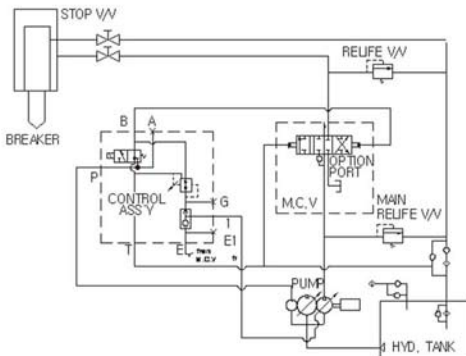
			KHB18	KHB20	KHB25	KHB30	KHB35	KHB40	KHB45	KHB55
Body weight	Including rod	kg	754	750	911	1919	1283	1400	1443	1924
		lb	1523	1515	1840	2500	2592	2828	2915	3886
Operating weight	Top type	kg	1450	1740	1780	2420	2700	3020	2995	4100
		lb	3190	3828	3916	5324	5953	6658	6603	9039
Operating weight	Box type	kg	1500	1840	1825	2540	2635	3110	2850	3990
		lb	3306	4056	4023	5600	5809	6834	6283	8796
Operating weight	Side type	kg	1350	1800	1770	2530	2440	2900	2501	3788
		lb	2727	3636	3575	5111	4929	5858	5052	7652
Required oil flow		l/min	100–150	130–150	120–180	150–190	180–240	190–250	200–260	210–290
		gal/min	26.5–39.6	33.4–39.6	31.7–47.6	39.7–50.1	45.9–63.4	50.2–66.0	50.8–68.7	55.5–76.6
Operating pressure		kgf/cm2	160–180	160–180	160–180	160–180	160–180	160–180	160–180	160–180
		psi	2276–2610	2276–2610	2276–2610	2276–2610	2276–2610	2276–2610	2276–2610	2276–2610
Impact rate		bpm	350–600	400–800	350–500	300–750	300–450	250–500	250–400	200–350
Impact energy		joule	3555	3588	4200	7000	6500	9900	9000	12000
		kg/m	363	366	429	714	663	1010	918	1224
Hose diameter		inch	1	1	1	1	1	1 1/4	1 1/4	1 1/4
Rod diameter		mm	135	135	140	150	155	160	165	175
		inch	5.3	5.3	5.5	5.9	6.1	6.3	6.5	6.9
Relief pressure		kgf/cm2	210	210	210	210	210	210	210	210
N2 Gas pressure – Backhead		kgf/cm2	16	6	16	6	16	6	16	16
N2 Gas pressure – Accumulator		kgf/cm2	N/A	55–61	50–61	55–61	52–60	55–61	62–70	65–75
Carrier weight		ton	18–21	18–24	18–26	27–35	28–35	35–45	30–40	40–55

* The above specifications are subject to change without prior notice for quality enhancement.

3. INSTALLATION

3.1. HYDRAULIC CIRCUIT & SETTING PRESSURE

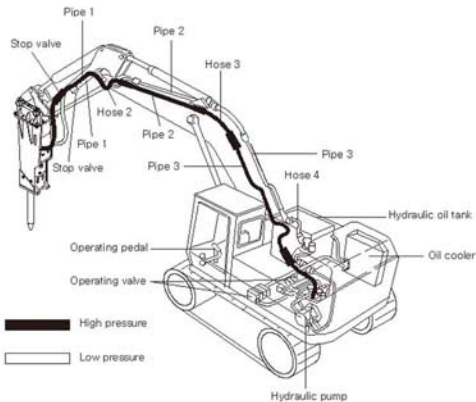
- Hydraulic Circuit



- Recommended circuit relief setting pressure and back pressure

	Unit	KHB18	KHB20	KHB25	KHB30	KHB35	KHB40	KHB45	KHB55
Relief Setting pressure	kgf/cm ²	210	210	210	210	210	210	210	210
Back pressure	kgf/cm ²	16	6	16	6	16	6	16	16

3.2. INSTALLATION



BE SURE THE FLUID IN THE HYDRAULIC SYSTEM IS CLEAN.

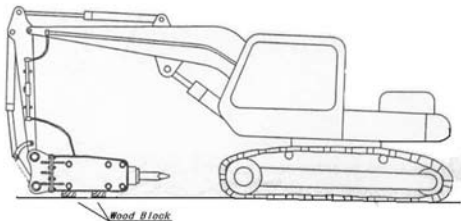
CHECK THE HYDRAULIC FILTER, REPLACE THE FILTER IF DIRTY OR DETERIORATED.

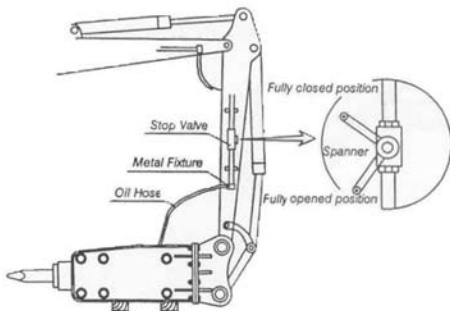
CHECK THE GAS PRESSURE OF ACCUMULATOR AND BACK HEAD.

CHECK FLEX OF HOSE AND PIPING

3.3. INSTALLATION PROCEDURE

- a Put the breaker on wooden square bars laid on flat surface ground,
- b Set the N2 gas pressure in back head of breaker in accordance with the specific value of breaker, Please refer to the value shown on 2-1.
- c Adjust relief valve in order to control the setting pressure of breaker under the condition of closing stop valve of carrier,
- d **If carrier does not have a relief valve for breaker, please attach it to equipment and control the setting pressure,**
- e Stick to carrier with two breaker pin, fasten bolt and nut together with stop ring, During installation, be careful to keep both pin bush and hole of carrier straight using hand signals,
- f Open the union cap of stop valve and connect hoses of breaker, At this time, the remaining oil in pipes is subject to flow out, so prepare to capture the oil,





- ⑤ Open stop valve and operate breaker after warming up enough.
- ⑥ Check the operating pressure and number of blow. If less blow, check the flow rate.
- ⑦ Check oil leakage from connecting area such as pipes, hoses and fittings. If there is any leakage, please retighten or replace seals.
- ⑧ Pay attention to grease injection into tool. If needed, inject again.
- ⑨ If the carrier has quick link system, please put a breaker to carrier in accordance with installation method of quick link maker.
- ⑩ When dismantling, the procedures are reversal to method of assembly.

4. OPERATION

4.1. PRECAUTION

- Warm-up of machine prior to operation.

- Do not operate the machine right after starting the engine. Idle the machine for warm-up. Warm the hydraulic oil sufficiently especially in winter or in the cold place.
- Especially in winter, the carrier's engine should be warmed up for 5 to 10 minutes before breaker operation.
- When operating the hydraulic breaker, idle the engine and operate the hydraulic breaker slowly with a light load.

- Operate the breaker at proper engine speed.

Break rocks at the specified engine speed. Raising engine speed more than necessary does not strengthen hammering force but increase oil temperature to the detriment of piston and valve.

- When operating the breaker you must wear a eye protection, ear protection and breathing protection.

- Do not continue hammering for over 30 seconds.

When rocks are hard, do not hammer the same place for such a long time to exceed 30 seconds but change the point to be hammered. The long time hammering raises the oil temperature resulting in damage of accumulator and causes excessively wear of tools.

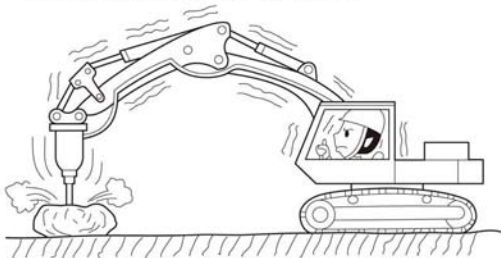


WARNING

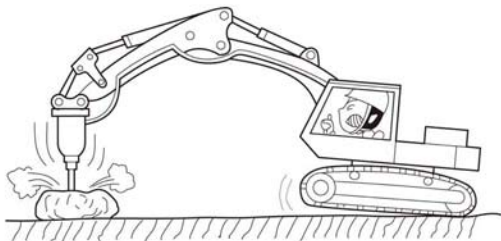
DO NOT OPERATE WHILE UNDER THE INFLUENCE OF ANY DRUGS AND ALCOHOL

4.2. OPERATING GUIDELINE

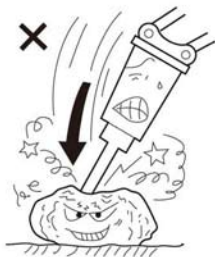
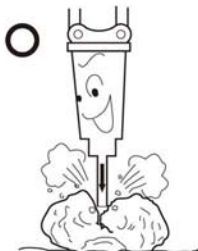
- Do not break continuously in one place,
Continuous penetration in the same area for lengthy period will create excessive temperatures at the tip of rod resulting in loss of temper (hardness) of the rod and causing mushrooming of the tip of the rod. And it may lead to failure of the rod.
- Avoid blank hammering.
Blank hammering accelerates wear and tear on breaker and carrier components and may result in failure of one or more components. Excessive blank hammering may be considered equipment abuse and may result in voiding warranties. In case of blank hammering, hammering sound changes.
- Stop operation when hoses are vibrating abnormally.
Check the hoses between carrier and breaker for abnormal vibration. If they are vibrating abnormally, contact the nearest **KHB** dealer.
- Proper position must be applied for an effective usage of breaking force. When position is incorrect, hammering energy of the piston is too weak to break rocks. Instead, hammering force applies shocks to breaker body, arm and boom of the base machine, thereby resulting in damage to those parts.



- On the contrary, when position is excessive enough to break rocks with front of the base machine raised, the machine may suddenly tilt forward at the moment rocks are broken. Then, the breaker body or the end of bracket may violently hit against rocks and result in damage.

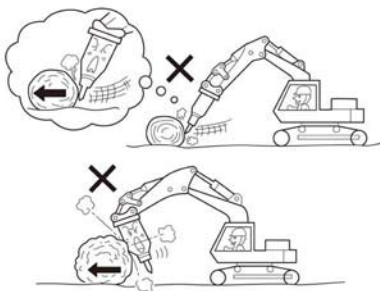


- Apply same direction of boom force in line with the rod and place the rod in the rock with hammering surface as vertical as possible. If hammering surface is oblique, the rod may slip during hammering. This causes the rod to seize and to be broken and piston to be damaged. When breaking, fully stabilize the rod first and then select the point of a rock on which hammering can be performed in a stable condition



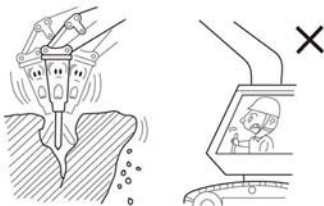
- Do not move rock,

Rolling or falling a rock with the rod end or bracket side by using the boom or arm of the carrier as shown in the figure will result in breakage of the breaker mounting bolt or bracket, breakage of rod, and damage to the arm and boom. Do not move rock. It is strictly prohibited to travel when the breaker is in contact with rock,

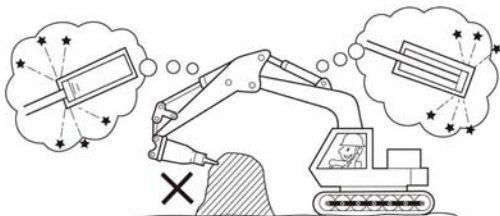


- Do not use the tool as a lever,

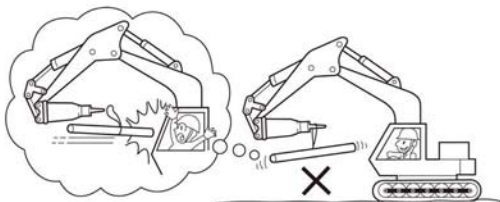
When a rock is broken by using the tool as a lever as showed, the bolts and tool may be broken or the bracket will be damaged,



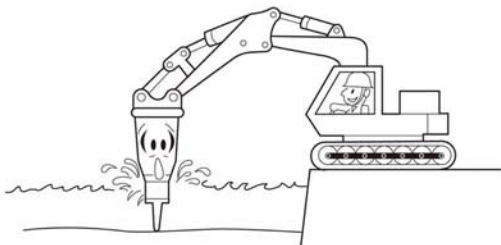
- Do not do breaking operation at the stroke end of the carrier cylinder. Breaking operation conducted at the stroke end (when the cylinder is extended or retracted to a maximum extent) of respective hydraulic cylinders of the carrier will lead to damage to the cylinders and other parts of the carrier.



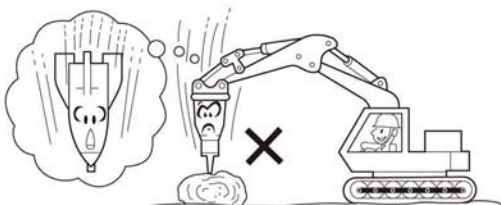
- Do not lift things with the breaker. Lifting things by hanging wire in the bracket or rod not only causes damage to the breaker but also is very dangerous.



- Do not operate the breaker in water and mud.
Do not operate the breaker in water and mud. If not, the piston or the similar components may be rusted to result in the permanently damaged breaker. In case of operation under the water, it is necessary to equip under water operation kit or consult us,

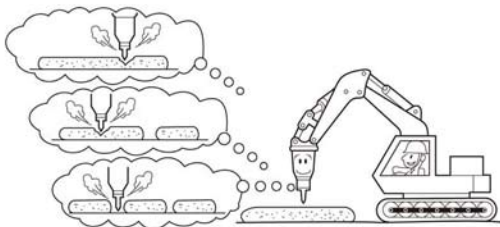


- Do not allow the breaker to fall to a rock.
Falling down the breaker will apply excessive force to the breaker or the carrier, causing damage to the parts of the breaker and carrier.



- Start breaking at the end point.

Beginning to hammer at the crack or the end will enable even a big rock to be broken comparatively easily.



5. MAINTENANCE

5.1. MAINTENANCE CHECK SCHEDULE

During the shift	Daily	Weekly	Every 2 weeks	As required
Lubricate the chisel every 2 hours	Tighten screw connections (during first 50 operating hour)	Tighten screw connections	Check chisel for wear	Replace any damaged hoses, bent and squashed pipes
Check lubricating nipple is OK	Check hydraulic lines for leak	Check adapter pins for wear	Check bushes for wear	
	Check pipe clamps still fit correctly	Check locking bolts on retaining bars for tight fit	Check bracket for wear	
	Check adapter and bracket	Check impact surface of chisel		
	Check gas pressure	Check sealing plugs		
		Check retaining bars		
		Check impact surface of piston.		



WARNING

- Check for loose bolts and nuts

The bolts and nuts can easily become loosened, which is the cause of severe damage to several component parts. Thus, check torque periodically on the basis of the table shown in 5-2.

Note : It is essential to check all bolts and nuts after the first 10-15 hours of actual operation.

- Check oil quantity in tank and keep hydraulic oil clean.

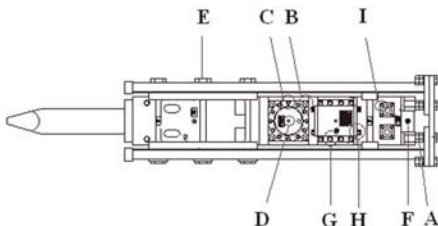
Make sure there is a sufficient amount of oil in the tank at all times. If the hydraulic oil is dirty, the valve and piston will be operated improperly.

Period of changing Hydraulic Oil : every 500hrs.

Line Oil Filter : every 100hrs.

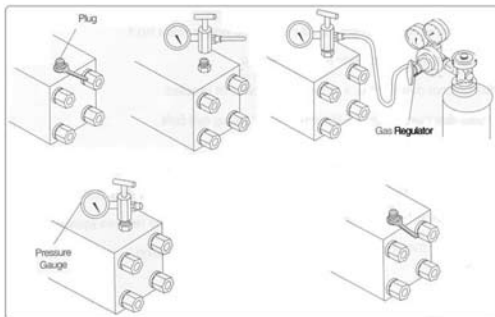
5.2. TIGHTENING TORQUE & GAS PRESSURE

Item	Model Position	UNIT	KHB18	KHB20	KHB25	KHB30	KHB35	KHB40	KHB45	KHB55
Through Bolt	A	kg-m	250	250	250	250	250	250	250	250
Accumulator Socket Bolt	B	kg-m	60	60	60	60	60	60	60	60
Accumulator Cover Socket Bolt	C	kg-m	50	50	50	50	50	50	50	50
Accumulator Gas Pressure	D	kgf/cm ²	NIL	55-61	50-56	55-61	52-60	55-61	62-70	65-75
Bracket fixing Bolt	E	kg-m	250	250	250	300	300	300	300	350
Back Head Gas Pressure	F	kgf/cm ²	16-17	6-7	16-17	6-7	16-17	9-10	16-17	16-17
Charging Valve	F	kg-m	35	35	35	35	35	35	35	35
Valve Socket Bolt	G	kg-m	NIL	50	NIL	50	NIL	50	NIL	NIL
Valve Cover Bolt	H	kg-m	NIL	50	NIL	50	NIL	50	NIL	NIL
Adapter Bolt	I	kg-m	20	20	20	20	20	20	20	20



5.3. CHARGING N₂ GAS

- Ⓐ Remove gas valve plug.
- Ⓑ Insert 3-way valve with pressure gauge assembled.
- Ⓒ If gas is insufficient, adjust to specified valve as shown in the 5-2.
- Ⓓ Adjust the pressure slowly decreasing by using the pressure gauge.
- Ⓔ Tighten gas valve plug. Do not cut the o-ring.
- N₂ Gas Charging method into gas chamber
 - Remove charging valve cap.
 - Set recharging valve with 3-way into charging valve.
 - Turn handle clockwise in order to check gas.
 - After fastening the recharging valve, put together with hose of N₂ gas barrel.
 - As turning the handle clockwise, N₂ gas goes into chamber.
 - On checking, the needle of gauge indicates specific values alleged, turn the handle counter clockwise to stop.
 - Put off the recharging valve and assemble the cap of the cap of charging valve.

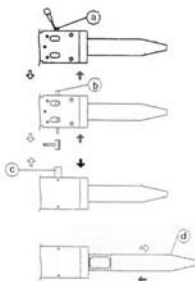


5.4. REMOVAL AND INSTALLATION OF TOOLS

• Removal

- A) Place the hammer on level ground
- B) Make sure that the carrier's transmission is in neutral and the parking brake is engaged.
- C) Stop the engine.
- D) Remove rubber plug ①, using screw driver.
- E) Remove the locking pin ②.
- F) Remove tool pin ③.
- G) Remove the tool ④.

⇨ REMOVAL ⇨ INSTALL



• Installation

- A) Clean and lubricate the tool and the tool pin.
- B) Install the tool ④, tool pin ③ and locking pin ②.
- C) Check that the tool pin ③ is secured by the locking pin ②
- D) Install the rubber plug ①.



WARNING

Do not attempt to disassemble and assemble this equipment before reading through this chapter of the manual first.

5.5. WEAR TOLERANCE

Wear tolerance of each kind expendable parts come to decide. The usage of exceeding the wear tolerance causes fatal damage to breaker. Prevent the damage through the regular inspection and exchange of expendable parts including seals and all kinds of bushes. Here is a guide-line for expendable parts.

● SEAL and O-RING

Quality Guaranteed Period : 3 months

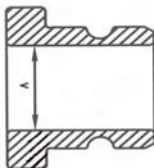
Since hydraulic breaker operates at high-pressure and high-temperature, leakage or scratch could be occurred by friction, wear and breakage of seals. Considering pressure, temperature, viscosity of oil, a little leakage is accepted as normal. But in case of abnormal leakage, replace with a new one. To prevent fatal defect, periodical replacement is recommended to be carried out every 3 months without external leakage of breaker.

Although the breaker is not operated in a long time, replace seals periodically to prevent rust, corrosion of oil and transformation of seals.

● FRONT COVER

Unit(mm)

MODEL	NEW Inside Dia (A)	LIMIT Inside Dia (A)
KHB18	135	141
KHB20	135	141
KHB25	140	146
KHB30	150	158
KHB35	155	163
KHB40	160	168
KHB45	165	173
KHB55	175	183

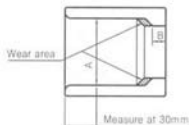


FRONT COVER

● RING BUSH

Unit (mm)

MODEL	NEW Inside Dia (A)	LIMIT Inside Dia (A)	NEW Inside Dia (B)	LIMIT Inside Dia (B)
KHB18	135	141.3	5	28
KHB20	135	141	35	28
KHB25	140	146	35	28
KHB30	150	158	35	28
KHB35	155	163	37	30
KHB40	160	168	37	30
KHB45	165	173	37	30
KHB55	175	183	37	30



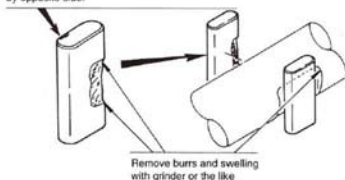
● ROD PIN

When each tool pin is excessively deformed, it is difficult to replace the tool, therefore, after operate the hydraulic breaker every 100 to 150 hours, change the face of each pin which comes in contact with the tool (the faces of each pin can be used),

When replacing each tool pin, check each parts for wear, breakage, scores, etc., especially, and remove burrs and swelling on tool pins,

Replace tool after grinding the worn parts of front covers and tool pins,

When changing tool pins direction, place tool pins by opposite side.



5.6. HYDRAULIC OIL

• Selection Oil

Selection of hydraulic oil determines the efficiency of hydraulic breaker performance. Please consult with our service station under following conditions.

- (1) When used in special regions where climate is severe (extremely cold or hot weather)
- (2) When recommended brands of hydraulic oil are not available
- (3) When hydraulic oil supplied for the base machine differs from the recommended one.

• Hydraulic Oil and Grease

Recommended Oil and Grease for Hydraulic Breaker

LUBE&SPEC MANUFACTURER	HYDRAULIC OIL			GREASE
	SUMMER W	INTER A	LL SEASON	(MOS2)
	ISO VG 46 I	SO VG 32 I	SO VG 46 N	LGI No2
MOBIL	MOBIL DTE 25	MOBIL DTE 24	MOBIL DTE 15M	MOBIL GREASE SPECIAL
	MOBIL SHC 525 ¹⁾			MOBIL SHC 220
	MOBIL EAL SYNDRAURIC 46 ²⁾			
BP	ENERGOL HP46	ENERGOL HP32	ENERGOL HP46	-

- 1) Synthetic Lubricant
- 2) Environmentally Friendly Synthetic Lubricant

※ Replacement of filter : after first 50 hours and every 100 hours thereafter

※ Replacement of hydraulic oil : every 500 hours

- Criteria of Oil Contamination and Malfunction
(General Analysis)

Analysis Item	Criteria	Cause and Effects when exceed the criteria
Adhesiveness	Within $\pm 10\%$ (40°C est)	Entry of different kinds of oil may reduce the adhesiveness which contributes to raising oil temperature, wear and scratch of piston, cylinder,
Oxidizing Level	Less than 0,3 (mg KOH/g)	Oxidizing level rises mainly due to high temperature (above 60°C) or Oil ageing. Sludge will be produced during the process and it leads to malfunction, corrosion and ageing of components,
Moisture	Less than 0,1 (%)	Moisture causes rust, wear and scratch, Considerable rust may start at 0,3% level and Direct damage of component may happen over the level of 0,5%,

- Criteria of Malfunction of Hydraulic Oil Color
(Simple discrimination by ASTM color)

Hydraulic oil turns black as the breaker fails to display best performance,

The old oil is assumed to be contaminated when there is a visual difference between the old and

new oil color, Functions begin to deteriorate when hydraulic oil turns darker than the new oil color (ASTM number) by more than two,

6. TROUBLE SHOOTING

6.1 BREAKER DOES NOT START

Cause	Required Action
1. Pressure and return lines have been mixed up	Connect them correctly
2. Shut-off valve	Open shut-off valve
3. Gas pressure in back head too high	Readjust nitrogen gas pressure
4. Damaged screw couplings are blocking pressure or return lines	Replace with new one
5. Defective screw couplings are blocking Pressure or return lines	Call authorized service man,
6. Defective magnet of valve switch	Replace magnet
7. Operating pressure too low	Inspect the engine speed of carrier and adjust the operating pressure
8. Lack of hydraulic oil	Fill hydraulic oil

6.2. HIGH FREQUENCY AND LOW BLOW POWER

Cause	Required Action
1. No gas in back head : Defective ring of the upper set,	Replace seal ring
2. O-ring is damaged	Replace o-ring

6.3. WORKING FREQUENCY AND LOW BLOW POWER

Cause	Required Action
1. Oil is not sufficient	Replace seal ring
2. Oil flow of the carrier to the breaker is excessive	Reduce the speed of the engine Adjust the oil pump
3. Temperature is high, but breaker is not connected to oil cooler	Connect to oil cooler
4. Defective relief valve	Replace with new relief valve,

6.4. LOW BLOW FREQUENCY

Cause	Required Action
1, Oil flow insufficient,	Adjust the speed of engine
2, Coupling of hydraulic pipe lines are loose,	Re-tighten,
3, Shut-off valve is partially closed,	Open it fully,
4, Pressure in back head is low,	Charge the gas and adjust the pressure,
5, Tool shank is seizing or tool does not work smoothly,	Check the surface of the tool and round bush, If the tool is seizing, repair it with grinder,
6, Oil temperature exceeds 80°C	Check and refill the hydraulic oil,
7, Flow resistance of oil filter and oil cooler is high,	Wash or replace oil filter and cooler,
8, Inner diameter of return line is small,	Replace return line
9, Return pressure is high,	Check the pressure,
10, Return line connects to control valve,	Return line must be connected directly to the oil tank or filter,
11, Defective diaphragm of accumulator	Replace the diaphragm
12, Hydraulic oil pressure is low,	Check the pressure and replace with new pressure relief valve, if necessary,

6.5. OIL LEAKAGE

Cause	Required Action
1, Loose screw connection, Defective O-Ring	Tighten screw connection, Replace with new one,
2, Loose bolt of accumulator,	Replace O-ring and Back-up ring, Tighten bolt,
3, Seals are worn out,	Replace seal and grease the tool every 2 or 3 hours during operation,

6.6. REDUCED BLOW POWER AND FREQUENCY

Cause	Required Action
1, Shut-off valve is not open completely,	Open shut-off valve
2, Defective couplings of hydraulic pipe lines	Replace couplings defected,
3, Poor main pump performance,	Call authorized service man,

7. DISASSEMBLY AND ASSEMBLY OF COMPONENTS

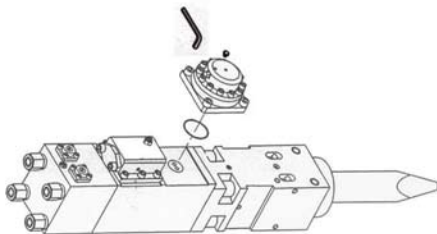
7.1. DISASSEMBLY AND ASSEMBLY OF THE ACCUMULATOR ASS'Y

• Disassembly

- First, remove accumulator cap
- Remove N₂ gas
- Lay accumulator assembly as shown in Fig.
- Separate Accumulator assembly, using L-Wrench
- Remove O-ring

• Assembly

- Install O-ring
- Tighten each bolt toward diagonal direction with torque wrench (60kg-m)



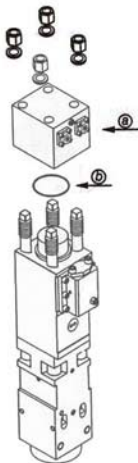
7.2. DISASSEMBLY AND ASSEMBLY OF THE BACK HEAD

• Disassembly

- Separate back head in use of hoist chain block – (a)
- Take out O-ring – (b)

• Assembly

- Put O-ring to back head, fit O-ring to the top of cylinder and apply grease to it, (b).
- Insert joint ring into the top of back head connecting in with cylinder, using hoist or chain block (a).



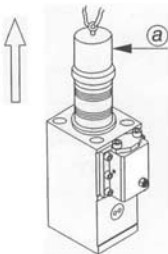
7.3. DISASSEMBLY AND ASSEMBLY OF PISTON & SEAL HOUSING

• Disassembly

- Lift it up vertically with hoist - ㉓
- It can be laid according to job site condition,
- Stand Piston removed, and separate Seal housing from Piston topping in use of rubber hammer,

• Assembly

- Strike seal housing by rubber hammer into Piston,
- Put piston into cylinder slowly, using hoist or chain block - ㉓-



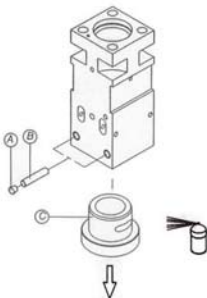
7.4. DISASSEMBLY AND ASSEMBLY OF THRUST RING & BUSH

• Disassembly

- Remove rubber plug A
- Remove front head pin B
- Remove thrust ring & bush C
- If thrust ring is too tight, warm under-part of the front head,

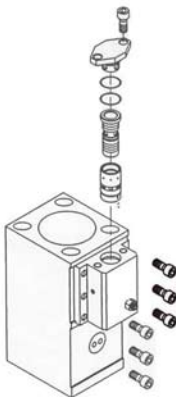
• Assembly

- Clean all parts,
- Apply MoS2 spray to the contact surface of thrust ring/bush and front head,
- Install thrust ring & bush C,
- Install front head pin B,
- Install rubber plug A,



7.5. DISASSEMBLY AND ASSEMBLY OF VALVE ASS' Y (KHB 20, 30, 40 only)

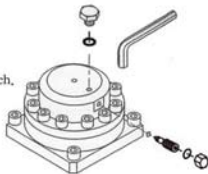
- Disassembly
 - Remove the bolt
 - Remove the cover from valve housing
 - Remove the o-ring from valve cover
 - Remove the valve plug and valve
- Assembly
 - Brush hydraulic oil toward valve cover and insert valve.
 - Put O-ring to cover and apply grease.
 - Assembly valve cover bolt with L-wrench.



7.6. DISASSEMBLY AND ASSEMBLY OF THE ACCUMULATOR

• Disassembly

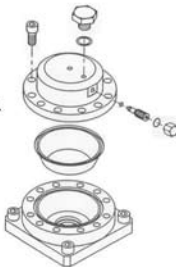
- Put accumulator assembly at work table.
- Remove charging valve with socket & ratchet handle.
- Disassemble accumulator cover by L-wrench.
- Remove diaphragm



- * When Accumulator is disassembled,
N₂ gas should be completely discharged.

• Assembly

- Set accumulator body at worktable and put diaphragm.
- Adhere closely the rim of diaphragm with fingers.
- Assemble accumulator cover by L-Wrench
- Tighten bolts to diagonal direction at exact torque with torque wrench,



DELIVERY & INSTALLATION REPORT

DATE :

REF. NO. :

CUSTOMER : NAME

TYPE OF JOB SITE

BASE CARRIER

MAKER / MODEL :

OPERATING WEIGHT :

OPERATING HOURS :

BREAKER

MODEL : S/NO. :

MAJOR CHECK POINTS	BREAKER LINE FLUSHING	
	CHANGE OF OIL FILTER	
	RELIEF VALVE SETTING	
	CONNECTION RETURN LINE TO OIL COOLER	
	MEASURING BREAKER OPERATING PRESSURE & FLOW	(kgf/cm ² Lpm)
	MEASURING BACK PRESSURE	(kgf/cm ²)
	MEASURING N ₂ GAS PRESSURE (BACK HEAD & ACCUMULATOR)	(kgf/cm ² kgf/cm ²)
OTHER JOBS IN INSTALLATION		
PERFORMANCE RESULTS		
COMMENTS (If Any)		
Installed by and date	By	Date & Signature
Approved By and date (Customer)	By	Date & Signature
DSM USE ONLY		

Daesan Materials Co., Ltd.

KHB Hydraulic Breaker

PARTS LIST

Inner Valve Type

KHB18 KHB25 KHB35

KHB45 KHB55

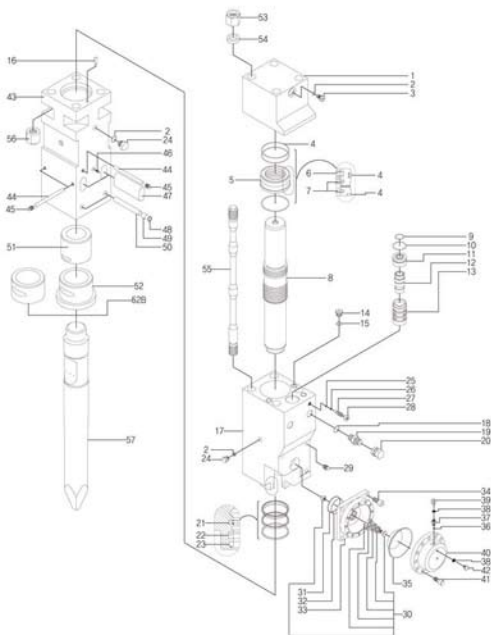
Outer Valve Type

KHB20 KHB30 KHB40



Dansan Materials Co., Ltd.

KHB18 - MAIN BODY



KHB18 - Main Body Parts List

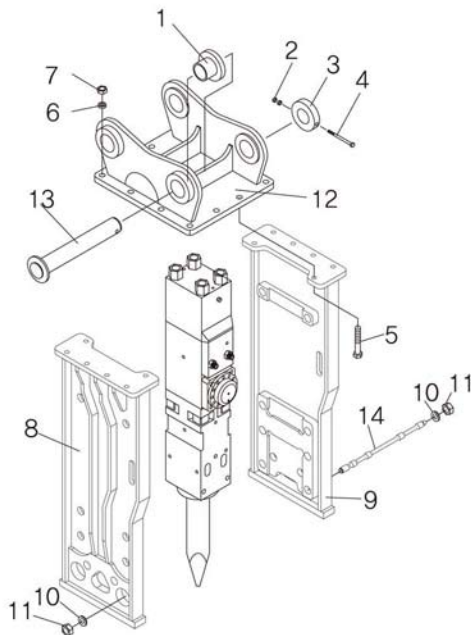
Item	Part Name	Part No.	Q'ty	Remarks
Main Body Assembly		K180-0000	1set	
Back Head Assembly		K183-1000	1set	
1	K183-1001	Back Head	1	
2	9111-22018	O-Ring	3	
3	K203-1005A	Back Head Charging Valve Assembly	1	
Cylinder & Valve Assembly		K181-1000	1set	
4	180A566	O-Ring	3	
5	K181-1004	Seal Retainer	1	
6	K181-1150R	Gas Seal	1	
7	K181-1150PO	Step Seal	2	
8	K181-1050	Piston	1	
9	180A568	O-Ring	1	
10	180A514	O-Ring	1	
11	K181-2010	Valve Cap	1	
12	K181-2011	Valve	1	
13	K181-2012	Valve Sleeve	1	
14	K181-1013	Socket Plug	3	
15	180A570	O-Ring	3	
16	K181-1005	Knock Pin	1	
17	K181-1001	Cylinder	1	
18	180A571	O-Ring	2	
19	K181-1015	Adapter	2	
20	K181-1016	Union Cap	2	
21	K181-1135B	Buffer Seal	1	
22	K181-1135U	U-Packing	1	
23	K181-1135D	Dust Seal	1	
24	B10A046	Air Check Valve	2	
25	180A503	O-Ring	1	
26	180A707	Back-up Ring	2	
27	B70A023	Valve Adjuster	1	
28	120A309	Valve Adjuster Nut	1	
29	K201-1003	Heli-Sert Coil	4	
Accumulator Assembly		K182-1000	1set	
30	K182-1004S	Poppet Assembly	1	
31	180A546	O-Ring	1	
32	180A706	Back-up Ring	1	
33	K182-1002	Accumulator Body	1	
34	120A204	Socket Bolt	4	
35	K202-1003	Diaphragm	1	
36	9111-12005	O-Ring	1	
37	K202-1005	Acc. Charging Valve	1	
38	9111-12014	O-Ring	2	
39	K202-1006	Acc. Charging Valve Cap	1	
40	K182-1001	Accumulator Cover	1	
41	K202-1009	Socket Bolt	12	
42	K182-1007	Acc. Hex. Plug	1	

Front Head Assembly		K184-1000	1set	
43	K184-1001	Front Head	1	
44	K204-1010	Stop Pin	3	
45	K184-1011	Rubber Plug	3	
46	K204-1004	Grease Nipple	1	
47	K184-1012	Rod Pin	2	
48	K204-1009	Snap Ring	2	
49	K204-1008	Rubber Plug	2	
50	K184-1007	Front Head Pin	2	
51	K184-1002S	Ring Bush	1	
52	K184-1006	Lower Bush (Front Cover)	1	
52B	K184-1006B	Lower Bush (Front Cover) - Box Type	1	

Through Bolt Assembly		K185-1000	1set	
55	K185-1001	Through Bolt	4	
56	K185-1002	Through Bolt Tri. Nut	4	
53	K185-1004	Through Bolt Hex. Nut	4	
54	K185-1003	Through Bolt Washer	4	

57	K189-0001	Chisel - Moil point		
57	K189-0002	Chisel - Wedge point		
57	K189-0003	Chisel - Blunt (Flat)		
57	K189-0004	Chisel - Ball point		

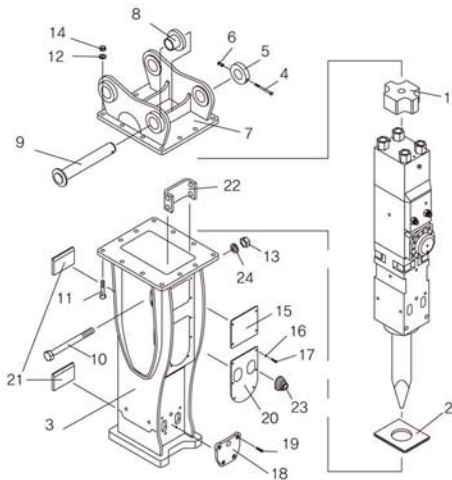
KHB18 TOP Type Frame & Bracket



KHB18 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-1000	1set	
1	K186-1001	T-Bush	4	
2	K206-1002	Stop Ring Nut	4	
3	K186-1003	Stop Ring	2	
4	K186-1004	Stop Ring Bolt	2	
5	K206-1005	Mount Cap Bolt	12	
6	K206-1006	Mount Cap Washer	24	
7	K206-1008	Mount Cap Nut	12	
8	K186-1009	Frame (Left)	1	
9	K186-1010	Frame (Right)	1	
10	K206-1011	Side Washer	16	
11	K206-1012	Side Nut	16	
12	K186-1013	Mount Cap	1	
13	K186-1014	Bracket Pin	2	
14	K186-1015	Side Bolt	8	

KHB18 BOX Type Frame & Bracket

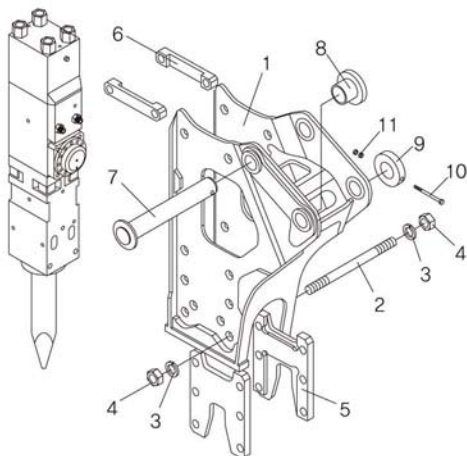


KHB18 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-1000	1set	
1	K186-3001	Upper Damper	1	
2	K186-3003	Lower Damper	1	
3	K186-3004	Frame	1	
4	K206-1004	Stop Ring Bolt	2	
5	K186-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K186-3008	Mount Cap	1	
8	K186-1001	T-Bush	4	
9	K186-1014	Bracket Pin	2	
10	K186-3011	Side Bolt	2	
11	K206-3012	Mount Cap Bolt	12	
12	K206-3013	Mount Cap Washer	12	
13	K186-3014	Side Bolt Nut	2	
14	K206-3015	Mount Cap Nut	12	
15	K186-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K186-3019	Lower Cover	1	
19	K206-1020	Socket Bolt	4	
20	K186-3021	Middle Cover	1	
21	K186-3022	Side Damper	2	
22	K186-3024	Bracket	1	
23	K206-3025	Hose Guide	2	
24	K186-3026	Side Washer	2	

KHB18

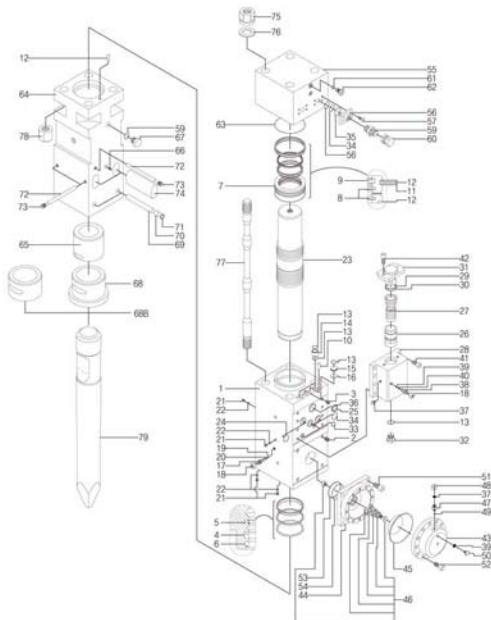
Side Type Frame & Bracket



KHB18 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-2000	1set	
1	K186-2001	Frame	1	
2	K186-2002	Side Bolt	8	
3	K206-2003	Side Washer	16	
4	K206-2004	Side Nut	16	
5	K186-2005	Set Plate	2	
6	K186-2006	Guide Plate	2	
7	K186-2007	Bracket Pin	2	
8	K186-2008	T-Bush	4	
9	K186-2009	Stop Ring	2	
10	K186-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB20 - MAIN BODY



KHB20 - Main Body Parts List

Item	Part Name	Part No.	Q'ty	Remarks
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Main Body Assembly		K200-0000	1set	
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Cylinder Assembly		K201-1000	1set	
1	K201-1001	Cylinder	1	
2	K201-1002	Heli-Sert Coil	4	
3	K201-1003	Heli-Sert Coil	8	
4	K201-1140U	U-Packing	1	
5	K201-1140B	Buffer Ring	1	
6	K201-1140D	Dust Seal	1	
7	K201-1004	Seal Retainer	1	
8	K201-1135PO	Slide Packing	2	
9	K201-1135R	Seal Ring	1	
10	9111-22165	O-Ring	2	
11	9333-21165	Back-up Ring	3	
12	K201-1005	Knock Pin	1	
13	9111-12029	O-Ring	6	
14	K201-1006	Teflon Bush	2	
15	K201-1007	Teflon Plug	1	
16	K201-1008	Cover Plate	1	
17	K201-1009	Cylinder Adjuster	1	
18	8111-00022	Adjuster Nut	2	
19	9111-12012	O-Ring	2	
20	9333-11012	Back-up Ring	2	
21	K201-1010	Socket Plug	4	
22	9111-12011	O-Ring	4	
23	K201-1050	Piston	1	
24	9111-22045	O-Ring	1	
25	180A716	Back-up Ring	1	

Valve Assembly		K201-2000	1set	
26	K201-2001	Valve	1	
27	K201-2002	Valve Plug	1	
28	K201-2003	Valve Hosing	1	
29	9111-22060	O-Ring	1	
30	9333-21060	Back-up Ring	1	
31	K201-2004	Valve Housing Cover	1	
32	9111-12029	O-Ring	1	
33	K201-2005	Box Plug	1	
34	9111-22030	O-Ring	2	
35	9111-22040	O-Ring	4	
36	180A568	O-Ring	1	
37	9111-22045	O-Ring	1	
38	K201-2006	ED Plug(각형)	1	
39	K201-2007	Valve Adjuster	1	
40	9111-12014	O-Ring	3	
41	9333-11014	Back-up Ring	2	
42	K201-2008	Socket Bolt	8	
43	K201-2009	Socket Bolt	2	

Accumulator Assembly		K202-1000	1set	
43	K202-1001	Accumulator Cover	1	
44	K202-1002	Accumulator Body	1	
45	K202-1003	Diaphragm	1	
46	K202-1004S	Poppet Assembly	1	
47	K202-1005	Acc. Charging Valve	1	
48	K202-1006	Acc. Charging Valve Cap	1	
49	9111-12005	O-Ring	1	
50	K202-1007	Acc. Hex. Plug	1	
51	K202-1008	Socket Bolt	4	
52	K202-1009	Socket Bolt	12	
53	180A521	O-Ring	1	
54	180A705	Back-up Ring	1	

Back Head Assembly		K203-1000	1set	
55	K203-1001	Back Head	1	
56	K203-1002	Flange Adapter	2	
57	K203-1003	Socket Bolt	8	
58	9333-21040	Back-up Ring	2	
59	140A232	Adapter	2	
60	140A353	Union Cap	2	
61	9111-22018	O-Ring	3	
62	K203-1005A	Back Head Charging Valve Assembly	1	
63	9111-22200	O-Ring	1	

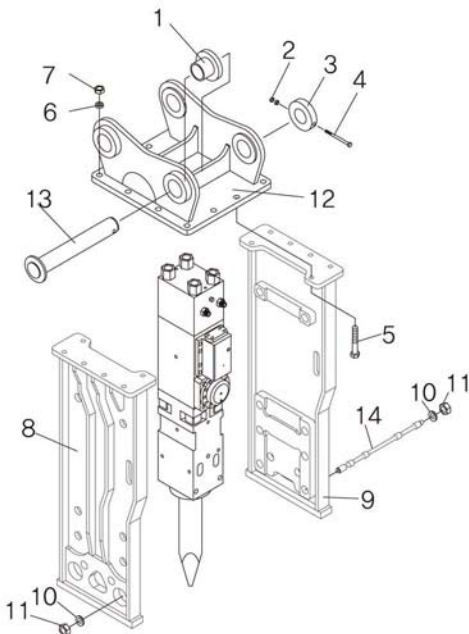
Front Head Assembly		K204-1000	1set	
64	K204-1001	Front Head	1	
65	K204-1002S	Ring Bush	1	
66	K204-1004	Grease Nipple	1	
67	B10A046	Air Check Valve	1	
68	K204-1006	Front Cover	1	
68B	K204-1006B	Front Cover (Box Type)	1	
69	K204-1007	Front Head Pin	2	
70	K204-1008	Rubber Plug	2	
71	K204-1009	Snap Ring	2	
72	K204-1010	Stop Pin	3	
73	K204-1011	Rubber Plug	3	
74	K204-1012	Rod Pin	2	

Through Bolt Assembly		K205-1000	1set	
75	K205-1004	Through Bolt Upper Nut	4	
76	K205-1003	Through Bolt Washer	4	
77	K205-1001	Through Bolt	4	
78	K205-1002	Through Bolt Bottom Nut	4	

79	K209-0001	Chisel - Moil point		
79	K209-0002	Chisel - Wedge point		
79	K209-0003	Chisel - Blunt (Flat)		
79	K209-0004	Chisel - Ball point		

KHB20

TOP Type Frame & Bracket

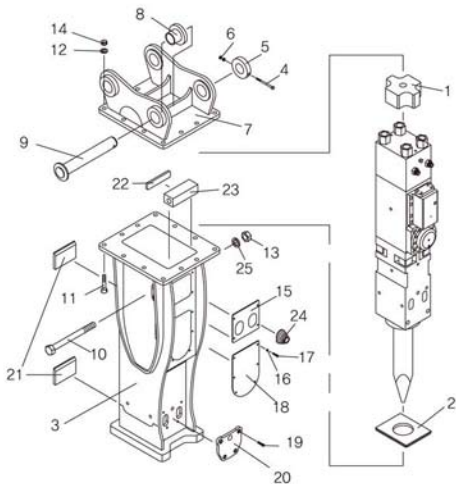


KHB20 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K206-1000	1set	
1	K206-1001	T-Bush	4	
2	K206-1003	Stop Ring Nut	4	
3	K206-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K206-1005	Mount Cap Bolt	12	
6	K206-1006	Mount Cap Washer	24	
7	K206-1008	Mount Cap Nut	12	
8	K206-1009	Frame (Left)	1	
9	K206-1010	Frame (Right)	1	
10	K206-1011	Side Washer	16	
11	K206-1012	Side Nut	16	
12	K206-1013	Mount Cap	1	
13	K206-1014	Bracket Pin	2	
14	K206-1015	Side Bolt	8	

KHB20

BOX Type Frame & Bracket

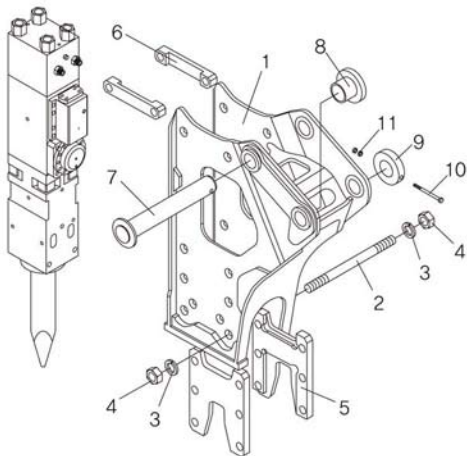


KHB20 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K206-1000	1set	
1	K206-3001	Upper Damper	1	
2	K206-3003	Lower Damper	1	
3	K206-3004	Frame	1	
4	K206-1004	Stop Ring Bolt	2	
5	K206-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K206-3008	Mount Cap	1	
8	K206-1001	T-Bush	4	
9	K206-1014	Bracket Pin	2	
10	K206-3011	Side Bolt	1	
11	K206-3012	Mount Cap Bolt	12	
12	K206-3013	Mount Cap Washer	12	
13	K206-3014	Side Bolt Nut	2	
14	K206-3015	Mount Cap Nut	12	
15	K206-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K206-3019	Lower Cover	1	
19	K206-3020	Socket Bolt	4	
20	K206-3021	Middle Cover	1	
21	K206-3022	Side Damper	2	
22	K206-3023	Bracket Damper	1	
23	K206-3024	Bracket	1	
24	K206-3025	Hose Guide	2	
25	K206-3026	Side Washer	2	

KHB20

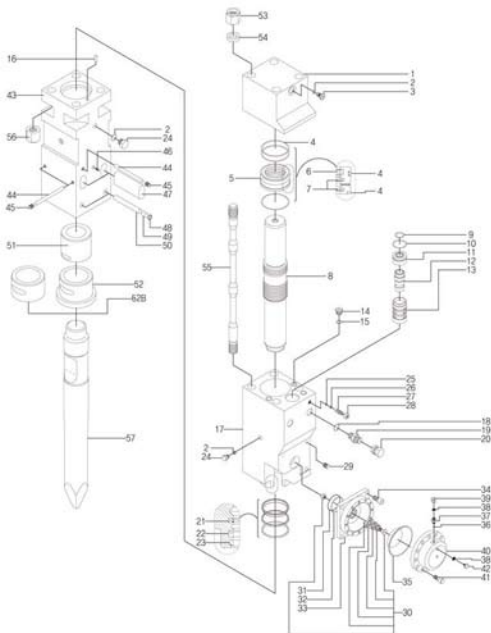
Side Type Frame & Bracket



KHB20 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-2000	1set	
1	K206-2001	Frame	1	
2	K206-2002	Side Bolt	8	
3	K206-2003	Side Washer	16	
4	K206-2004	Side Nut	16	
5	K206-2005	Set Plate	2	
6	K206-2006	Guide Plate	2	
7	K206-2007	Bracket Pin	2	
8	K206-2008	T-Bush	4	
9	K206-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB25 - MAIN BODY



KHB25 - Main Body Parts List

Item	Part Name	Part No.	Q'ty	Remarks
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Main Body Assembly		K250-0000	1set	
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Back Head Assembly		K253-1000	1set	
1	K253-1001	Back Head	1	
2	9111-22018	O-Ring	3	
3	K203-1005A	Back Head Charging Valve Assembly	1	

Cylinder & Valve Assembly		K251-1000	1set	
4	180A566	O-Ring	3	
5	K251-1004	Seal Retainer	1	
6	K251-1150R	Gas Seal	1	
7	K251-1150PO	Step Seal	2	
8	K251-1050	Piston	1	
9	180A568	O-Ring	1	
10	180A514	O-Ring	1	
11	K251-2010	Valve Cap	1	
12	K251-2011	Valve 1		
13	K251-2012	Valve Sleeve	1	
14	K251-1013	Socket Plug	3	
15	180A570	O-Ring	3	
16	K251-1005	Knock Pin	1	
17	K251-1001	Cylinder	1	
18	180A571	O-Ring	2	
19	K181-1015	Adapter	2	
20	K181-1016	Union Cap	2	
21	K251-1136B	Buffer Seal	1	
22	K251-1136U	U-Packing	1	
23	K251-1136D	Dust Seal	1	
24	B10A046	Air Check Valve	2	
25	180A503	O-Ring	1	
26	180A707	Back-up Ring	2	
27	B70A023	Valve Adjuster	1	
28	120A309	Valve Adjuster Nut	1	
29	K201-1003	Helix-Sert Coil	4	

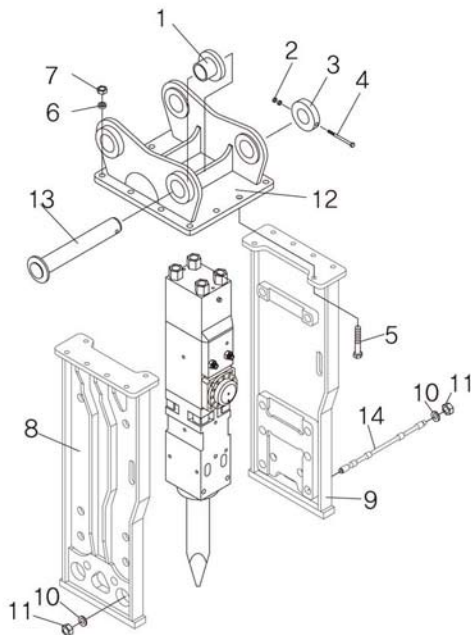
Accumulator Assembly		K252-1000	1set	
30	K252-1004S	Poppet Assembly	1	
31	180A546	O-Ring	1	
32	180A706	Back-up Ring	1	
33	K252-1002	Accumulator Body	1	
34	120A204	Socket Bolt	4	
35	K202-1003	Diaphragm	1	
36	9111-12005	O-Ring	1	
37	K202-1005	Acc. Charging Valve	1	
38	9111-12014	O-Ring	2	
39	K202-1006	Acc. Charging Valve Cap	1	
40	K252-1001	Accumulator Cover	1	
41	K202-1009	Socket Bolt	12	
42	K252-1007	Acc. Hex. Plug	1	

Front Head Assembly		K254-1000	1set	
43	K254-1001	Front Head	1	
44	K204-1010	Stop Pin	3	
45	K254-1011	Rubber Plug	3	
46	K204-1004	Grease Nipple	1	
47	K254-1012	Rod Pin	2	
48	K204-1009	Snap Ring	2	
49	K204-1008	Rubber Plug	2	
50	K254-1007	Front Head Pin	2	
51	K254-1002S	Ring Bush	1	
52	K254-1006	Lower Bush (Front Cover)	1	
52B	K254-1006B	Lower Bush (Front Cover) - Box Type	1	

Through Bolt Assembly		K255-1000	1set	
55	K255-1001	Through Bolt	4	
56	K255-1002	Through Bolt Tri. Nut	4	
53	K255-1004	Through Bolt Hex. Nut	4	
54	K255-1003	Through Bolt Washer	4	

57	K259-0001	Chisel - Moil point		
57	K259-0002	Chisel - Wedge point		
57	K259-0003	Chisel - Blunt (Flat)		
57	K259-0004	Chisel - Ball point		

KHB25 TOP Type Frame & Bracket

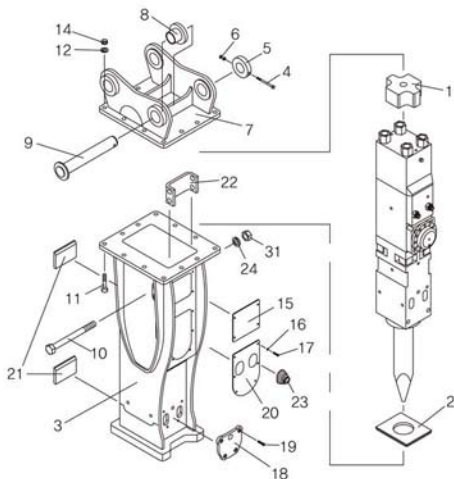


KHB25 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K256-1000	1set	
1	K256-1001	T-Bush	4	
2	K206-1002	Stop Ring Nut	4	
3	K256-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K256-1005	Mount Cap Bolt	12	
6	K256-1006	Mount Cap Washer	12	
7	K256-1008	Mount Cap Nut	12	
8	K256-1009	Frame (Left)	1	
9	K256-1010	Frame (Right)	1	
10	K256-1011	Side Washer	16	
11	K256-1012	Side Nut	16	
12	K256-1013	Mount Cap	1	
13	K256-1014	Bracket Pin	2	
14	K256-1015	Side Bolt	8	

KHB25

BOX Type Frame & Bracket

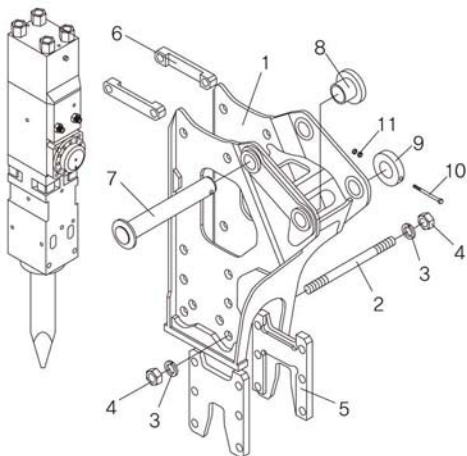


KHB25 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K256-1000	1set	
1	K256-3001	Upper Damper	1	
2	K256-3003	Lower Damper	1	
3	K256-3004	Frame	1	
4	K256-1004	Stop Ring Bolt	2	
5	K256-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K256-3008	Mount Cap	1	
8	K256-1001	T-Bush	4	
9	K256-1014	Bracket Pin	2	
10	K256-3011	Side Bolt	2	
11	K256-3012	Mount Cap Bolt	12	
12	K256-3013	Mount Cap Washer	12	
13	K256-3014	Side Bolt Nut	2	
14	K256-3015	Mount Cap Nut	12	
15	K256-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K256-3019	Lower Cover	1	
19	K206-1020	Socket Bolt	4	
20	K256-3021	Middle Cover	1	
21	K256-3022	Side Damper	2	
22	K256-3024	Bracket	1	
23	K206-3025	Hose Guide	2	
24	K256-3026	Side Washer	2	

KHB25

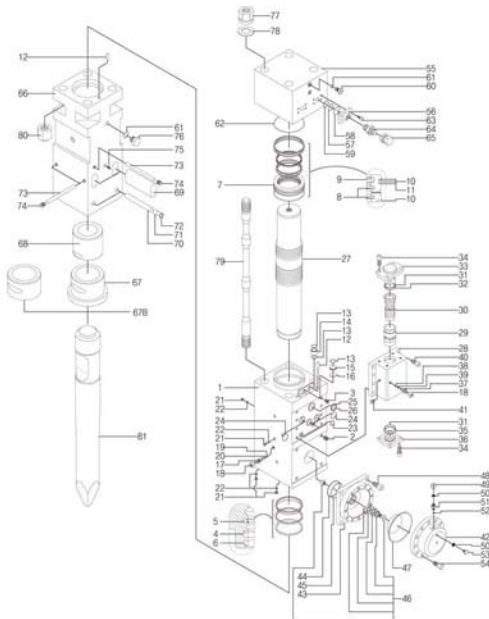
Side Type Frame & Bracket



KHB25 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K256-2000	1set	
1	K256-2001	Frame	1	
2	K256-2002	Side Bolt	8	
3	K256-2003	Side Washer	16	
4	K256-2004	Side Nut	16	
5	K256-2005	Set Plate	2	
6	K256-2006	Guide Plate	2	
7	K256-2007	Bracket Pin	2	
8	K256-2008	T-Bush	4	
9	K256-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB30 - MAIN BODY



KHB30 - Main Body Parts List

Item	Part Name	Part No.	Q'ty	Remarks
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Main Body Assembly		K300-0000	1set	
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Cylinder Assembly		K301-1000	1set	
1	K301-1001	Cylinder	1	
2	K201-1002	Helix-Sert Coil	4	
3	K201-1003	Helix-Sert Coil	8	
4	K301-1156U	U-Packing	1	
5	K301-1156B	Buffer Seal	1	
6	K301-1156D	Dust Seal	1	
7	K301-1004	Seal Retainer	1	
8	K301-1156PO	Stop Seal	2	
9	K301-1156R	Seal Ring	1	
10	9111-22180	O-Ring	2	
11	9033-21180	Back-up Ring	3	
12	K201-1005	Knock Pin	1	
13	9111-12032	O-Ring	5	
14	K301-1006	Teflon Bush	2	
15	180A456	Teflon Plug	1	
16	K301-1007	Cover Plate	1	
17	K201-1009	Cylinder Adjuster	1	
18	8111-00022	Adjuster Nut	2	
19	9111-12012	O-Ring	2	
20	9033-11012	Back-up Ring	2	
21	K201-10010	Socket Plug	4	
22	9111-12011	O-Ring	4	
23	9111-22039	O-Ring	2	
24	9111-22045	O-Ring	3	
25	9111-22065	O-Ring	1	
26	9033-22065	Back-up Ring	1	
27	K301-1050	Piston	1	

Valve Assembly		K301-2000	1set	
28	K301-2003	Valve Housing	1	
29	K301-2001	Valve	1	
30	K301-2002	Valve Plug	1	
31	9111-22065	O-Ring	2	
32	9033-22065	Back-up Ring	1	
33	K301-2004A	Valve Cover (A)	1	
34	K201-2010	Socket Bolt	8	
35	9033-21065	Back-up Ring	1	
36	K301-2004B	Valve Cover (B)	1	
37	K301-2007	Valve Adjuster	1	
38	9111-12014	O-Ring	1	
39	9033-11014	Back-up Ring	2	
40	K201-2008	Socket Bolt	8	
41	K301-2006	ED Plug(각형)	1	

Accumulator Assembly		K302-1000	1set	
42	K302-1001	Accumulator Cover	1	
43	K302-1002	Accumulator Body	1	
44	9111-12005	O-Ring	1	
45	9333-12005	Back-up Ring	1	
46	K202-1004S	Poppet Assembly	1	
47	K302-1003	Diaphragm	1	
48	K202-1008	Socket Bolt	4	
49	K202-1006	Acc. Charging Valve Cap	1	
50	180A575	O-Ring	2	
51	K202-1005	Acc. Charging Valve	1	
52	9111-12005	O-Ring	1	
53	K202-1007	Acc. Hex. Plug	1	
54	120A203	Socket Bolt	12	

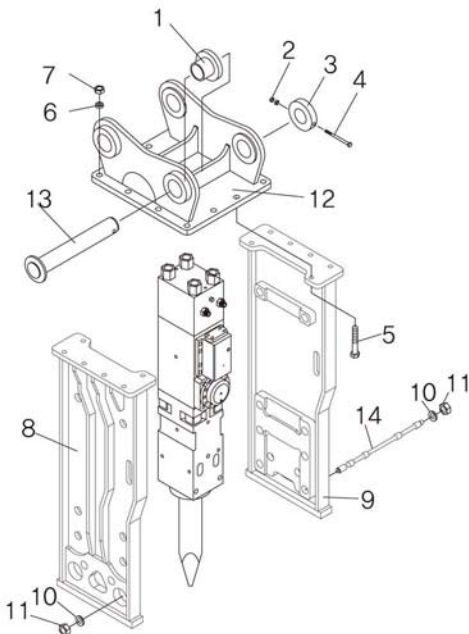
Back Head Assembly		K303-1000	1set	
55	K303-1001	Back Head	1	
56	K303-1002	Flange Adapter	2	
57	9111-21040	O-Ring	2	
58	9111-22040	O-Ring	1	
59	9333-21040	Back-up Ring	2	
60	K203-1005A	Back Head Charging Valve Assembly	1	
61	9111-22018	O-Ring	3	
62	9111-21215	O-Ring	1	
63	K203-1003	Socket Bolt	8	
64	140A232	Adapter	2	
65	140A353	Union Cap	2	

Front Head Assembly		K304-1000	1set	
66	K304-1001	Front Head	1	
67	K304-1006	Front Cover	1	
678	K304-1006B	Front Cover - Box Type	1	
68	K304-1002S	Ring Bush	1	
69	K304-1012	Rod Pin	2	
70	K204-1007	Front Head Pin	2	
71	K204-1008	Rubber Plug	2	
72	K204-1009	Snap Ring	2	
73	K304-1010	Stop Pin	3	
74	180A352	Rubber Plug	3	
75	K204-1004	Grease Nipple	1	
76	B10A046	Air Check Valve	1	

Through Bolt Assembly		K305-1000	1set	
77	K305-1004	Through Bolt Hex. Nut	4	
78	K305-1003	Through Bolt Washer	4	
79	K305-1001	Through Bolt	4	
80	K305-1002	Through Bolt Tri. Nut	4	

81	K309-0001	Chisel - Moil point		
81	K309-0002	Chisel - Wedge point		
81	K309-0003	Chisel - Blunt (Flat)		
81	K309-0004	Chisel - Ball point		

KHB30 TOP Type Frame & Bracket

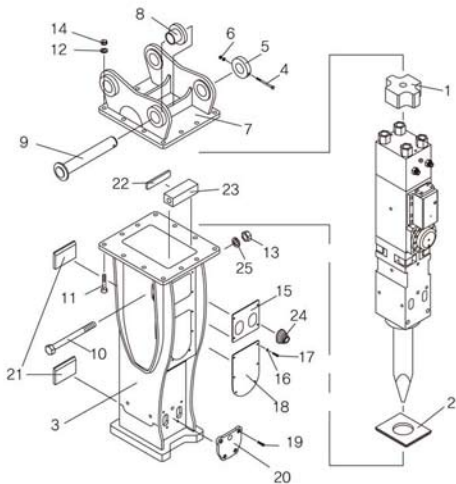


KHB30 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K306-1000	1set	
1	K306-1001	T-Bush	4	
2	K206-1003	Stop Ring Nut	4	
3	K306-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K306-1005	Mount Cap Bolt	12	
6	K306-1006	Mount Cap Washer	12	
7	K306-1008	Mount Cap Nut	12	
8	K306-1009	Frame (Left)	1	
9	K306-1010	Frame (Right)	1	
10	K206-1011	Side Washer	16	
11	K206-1012	Side Nut	16	
12	K306-1013	Mount Cap	1	
13	K306-1014	Bracket Pin	2	
14	K306-1015	Side Bolt	8	

KHB30

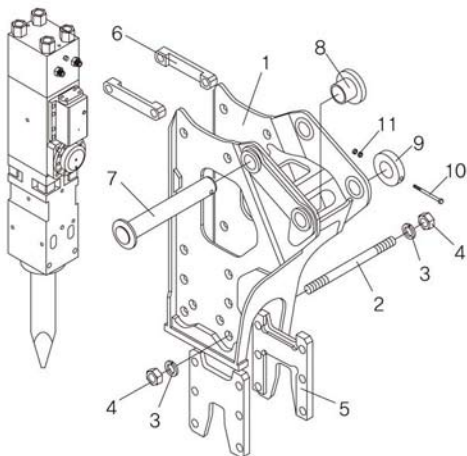
BOX Type Frame & Bracket



KHB30 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K306-1000	1set	
1	K306-3001	Upper Damper	1	
2	K306-3003	Lower Damper	1	
3	K306-3004	Frame	1	
4	K206-1004	Stop Ring Bolt	2	
5	K306-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K306-3008	Mount Cap	1	
8	K306-1001	T-Bush	4	
9	K306-1014	Bracket Pin	2	
10	K306-3011	Side Bolt	1	
11	K306-3012	Mount Cap Bolt	12	
12	K306-3013	Mount Cap Washer	12	
13	K306-3014	Side Bolt Nut	2	
14	K306-3015	Mount Cap Nut	12	
15	K306-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K306-3019	Lower Cover	1	
19	K206-3020	Socket Bolt	4	
20	K306-3021	Middle Cover	1	
21	K306-3022	Side Damper	2	
22	K306-3023	Bracket Damper	1	
23	K306-3024	Bracket	1	
24	K206-3025	Hose Guide	2	
25	K306-3026	Side Washer	2	

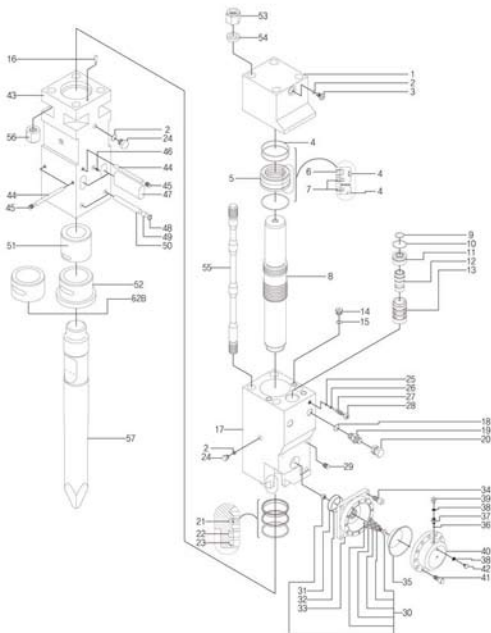
KHB30 Side Type Frame & Bracket



KHB30 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-2000	1set	
1	K306-2001	Frame	1	
2	K306-2002	Side Bolt	8	
3	K206-2003	Side Washer	16	
4	K206-2004	Side Nut	16	
5	K306-2005	Set Plate	2	
6	K306-2006	Guide Plate	2	
7	K306-2007	Bracket Pin	2	
8	K306-2008	T-Bush	4	
9	K306-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB35 - MAIN BODY



KHB35 - Main Body Parts List

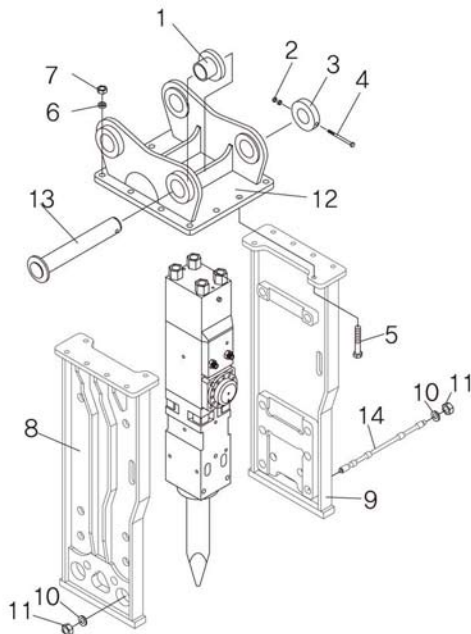
Item	Part Name	Part No.	Q'ty	Remarks
Main Body Assembly		K350-0000	1set	
Back Head Assembly		K353-1000	1set	
1	K353-1001	Back Head	1	
2	9111-22018	O-Ring	3	
3	K203-1005A	Back Head Charging Valve Assembly	1	
Cylinder & Valve Assembly		K351-1000	1set	
4	180A595	O-Ring	4	
5	K351-1004	Seal Retainer	1	
6	K351-1150F	Gas Seal	1	
7	K351-1150PO	Step Seal	2	
8	K351-1050	Piston	1	
9	180A598	O-Ring	1	
10	180A594	O-Ring	1	
11	K351-2010	Valve Cap	1	
12	K351-2011	Valve	1	
13	K351-2012	Valve Sleeve	1	
14	K351-1013	Socket Plug	3	
15	180A592	O-Ring	3	
16	K351-1005	Knock Pin	1	
17	K351-1001	Cylinder	1	
18	180A596	O-Ring	2	
19	K351-1015	Adapter	2	
20	K351-1016	Union Cap	2	
21	K351-1136B	Buffer Seal	1	
22	K351-1136U	U-Packing	1	
23	K351-1136D	Dust Seal	1	
24	B10A046	Air Check Valve	2	
25	180A503	O-Ring	1	
26	180A707	Back-up Ring	2	
27	B121A023	Valve Adjuster	1	
28	120A307	Valve Adjuster Nut	1	
29	K201-1003	Helix-Sert Coil	4	
Accumulator Assembly		K352-1000	1set	
30	K252-1004S	Poppet Assembly	1	
31	180A546	O-Ring	1	
32	180A706	Back-up Ring	1	
33	K352-1002	Accumulator Body	1	
34	120A204	Socket Bolt	4	
35	K352-1003	Diaphragm	1	
36	9111-12005	O-Ring	1	
37	K202-1005	Acc. Charging Valve	1	
38	9111-12014	O-Ring	2	
39	K202-1006	Acc. Charging Valve Cap	1	
40	K352-1001	Accumulator Cover	1	
41	K202-1009	Socket Bolt	12	
42	K252-1007	Acc. Hex. Plug	1	

Front Head Assembly		K354-1000	1set	
43	K354-1001	Front Head	1	
44	K354-1010	Stop Pin	3	
45	K354-1011	Rubber Plug	3	
46	K204-1004	Grease Nipple	1	
47	K354-1012	Rod Pin	2	
48	K354-1009	Snap Ring	2	
49	K354-1008	Rubber Plug	2	
50	K354-1007	Front Head Pin	2	
51	K354-1002S	Ring Bush	1	
52	K354-1006	Lower Bush (Front Cover)	1	
52B	K354-1006B	Lower Bush (Front Cover) – Box Type	1	

Through Bolt Assembly		K355-1000	1set	
53	K355-1004	Through Bolt Hex. Nut	4	
54	K355-1003	Through Bolt Washer	4	
55	K355-1001	Through Bolt	4	
56	K355-1002	Through Bolt Tri. Nut	4	

57	K359-0001	Chisel - Moil point	1	
57	K359-0002	Chisel - Wedge point	1	
57	K359-0003	Chisel - Blunt (Flat)	1	
57	K359-0004	Chisel - Ball point	1	

KHB35 TOP Type Frame & Bracket

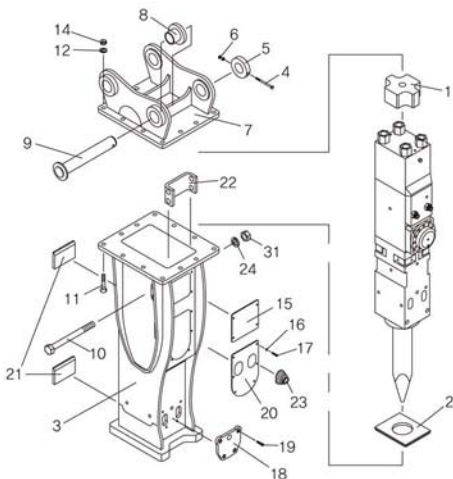


KHB35 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K356-1000	1set	
1	K356-1001	T-Bush	4	
2	K206-1002	Stop Ring Nut	4	
3	K356-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K256-1005	Mount Cap Bolt	12	
6	K256-1006	Mount Cap Washer	12	
7	K256-1008	Mount Cap Nut	12	
8	K356-1009	Frame (Left)	1	
9	K356-1010	Frame (Right)	1	
10	K356-1011	Side Washer	16	
11	K356-1012	Side Nut	16	
12	K356-1013	Mount Cap	1	
13	K356-1014	Bracket Pin	2	
14	K356-1015	Side Bolt	8	

KHB35

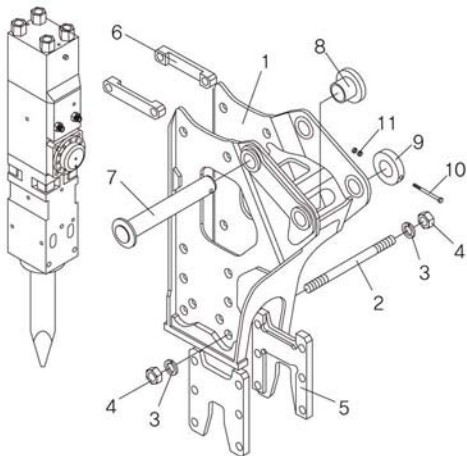
BOX Type Frame & Bracket



KHB35 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K356-1000	1set	
1	K356-3001	Upper Damper	1	
2	K356-3003	Lower Damper	1	
3	K356-3004	Frame	1	
4	K256-1004	Stop Ring Bolt	2	
5	K356-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K356-3008	Mount Cap	1	
8	K356-1001	T-Bush	4	
9	K356-1014	Bracket Pin	2	
10	K356-3011	Side Bolt	2	
11	K256-3012	Mount Cap Bolt	12	
12	K256-3013	Mount Cap Washer	12	
13	K256-3014	Side Bolt Nut	2	
14	K256-3015	Mount Cap Nut	12	
15	K356-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K356-3019	Lower Cover	1	
19	K206-1020	Socket Bolt	4	
20	K356-3021	Middle Cover	1	
21	K356-3022	Side Damper	2	
22	K356-3024	Bracket	1	
23	K356-3025	Hose Guide	2	
24	K256-3026	Side Washer	2	

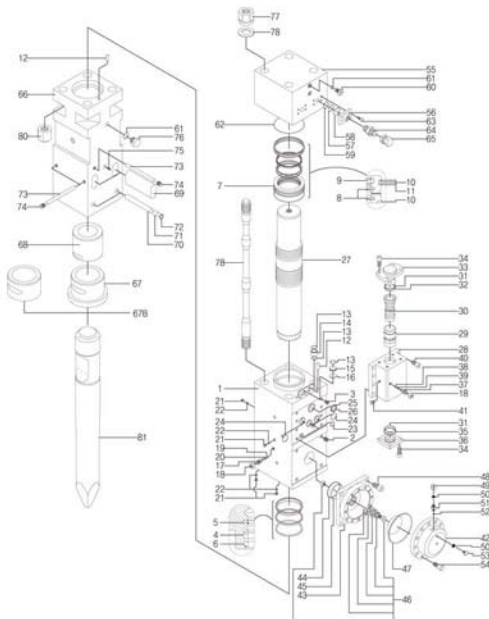
KHB35 Side Type Frame & Bracket



KHB35 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K256-2000	1set	
1	K356-2001	Frame	1	
2	K356-2002	Side Bolt	8	
3	K406-2003	Side Washer	16	
4	K406-2004	Side Nut	16	
5	K356-2005	Set Plate	2	
6	K356-2006	Guide Plate	2	
7	K356-2007	Bracket Pin	2	
8	K356-2008	T-Bush	4	
9	K356-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB40 - MAIN BODY



KHB40 - Main Body Parts List

Item	Part Name	Part No.	Qty	Remarks
Main Body Assembly		K400-0000	1set	
Cylinder Assembly		K401-1000	1set	
1	K401-1001	Cylinder	1	
2	K201-1002	Helix-Sert Coil	4	
3	K201-1003	Helix-Sert Coil	8	
4	K401-1170J	U-Packing	1	
5	K401-1170B	Buffer Seal	1	
6	K401-1170D	Dust Seal	1	
7	K401-1004	Seal Retainer	1	
8	K401-1166PO	Stop Seal	2	
9	K401-1166R	Gas Seal	1	
10	9111-22195	O-Ring	2	
11	9333-21195	Back-up Ring	3	
12	K401-1005	Knock Pin	1	
13	9111-12006	O-Ring	5	
14	K401-1006	Teflon Bush	2	
15	K401-1007	Teflon Plug	1	
16	K401-1008	Cover Plate	1	
17	K201-1009	Cylinder Adjuster	1	
18	8111-10022	Adjuster Nut	2	
19	9111-12012	O-Ring	2	
20	9333-11012	Back-up Ring	2	
21	K201-1010	Socket Plug	4	
22	9111-12011	O-Ring	4	
23	9111-22025	O-Ring	2	
24	9111-22045	O-Ring	3	
25	9111-22055	O-Ring	1	
26	9333-22055	Back-up Ring	1	
27	K401-1050	Piston	1	
Valve Assembly		K401-2000	1set	
28	K401-2003	Valve Housing	1	
29	K401-2001	Valve	1	
30	K401-2002	Valve Plug	1	
31	9111-22070	O-Ring	2	
32	9333-22070	Back-up Ring	1	
33	K401-2004A	Valve Cover (A)	1	
34	K201-2008	Socket Bolt	8	
35	9333-21070	Back-up Ring	1	
36	K401-2004B	Valve Cover (B)	1	
37	K401-2007	Valve Adjuster	1	
38	180A611	O-Ring	1	
39	9333-11016	Back-up Ring	2	
40	K201-2008	Socket Bolt	8	
41	K301-2006	ED Plug(각형)	1	

Accumulator Assembly		K402-1000	1set	
42	K402-1001	Accumulator Cover	1	
43	K402-1002	Accumulator Body	1	
44	9111-12005	O-Ring	1	
45	9333-12005	Back-up Ring	1	
46	K402-1004S	Poppet Assembly	1	
47	K402-1003	Diaphragm	1	
48	K202-1006	Socket Bolt	4	
49	B20GA030	Acc. Charging Valve Cap	1	
50	180A575	O-Ring	2	
51	K202-1005	Acc. Charging Valve	1	
52	9111-12005	O-Ring	1	
53	K203-1006	Acc. Htx. Plug	1	
54	K202-1009	Socket Bolt	12	

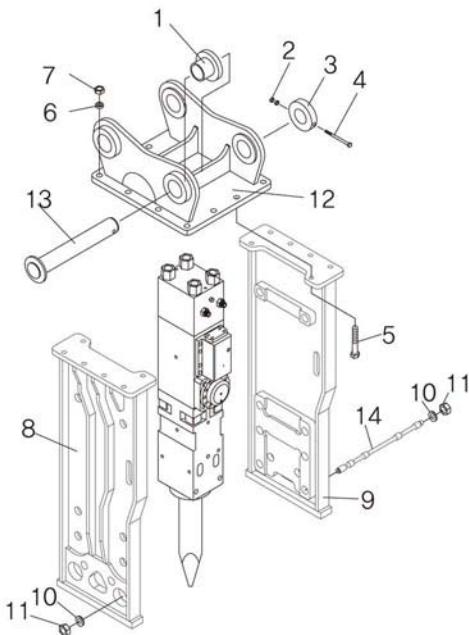
Back Head Assembly		K403-1000	1set	
55	K403-1001	Back Head	1	
56	K403-1002	Flange Adapter	2	
57	180A540	O-Ring	2	
58	180A508	O-Ring	1	
59	9333-21045	Back-up Ring	2	
60	K203-1005A	Back Head Charging Valve Assembly	1	
61	9111-22018	O-Ring	3	
62	9111-21235	O-Ring	1	
63	K203-1003	Socket Bolt	8	
64	140A234	Adapter	2	
65	140A354	Union Cap	2	

Front Head Assembly		K404-1000	1set	
66	K404-1001	Front Head	1	
67	K404-1006	Lower Bush (Front Cover)	1	
67B	K404-1006B	Lower Bush (Front Cover) - Box Type	1	
68	K404-1002S	Ring Bush	1	
69	K404-1012	Rod Pin	2	
70	K404-1007	Front Head Pin	2	
71	K404-1008	Rubber Plug	2	
72	K204-1009	Snap Ring	2	
73	K404-1010	Stop Pin	3	
74	K404-1011	Rubber Plug	3	
75	K204-1004	Grease Nipple	1	
76	B10A046	Air Check Valve	1	

Through Bolt Assembly		K405-1000	1set	
77	K405-1004	Through Bolt Htx. Nut	4	
78	K405-1003	Through Bolt Washer	4	
79	K405-1001	Through Bolt	4	
80	K405-1002	Through Bolt Tri. Nut	4	

81	K409-0001	Chisel - Moil point		
81	K409-0002	Chisel - Wedge point		
81	K409-0003	Chisel - Blunt (Flat)		
81	K409-0004	Chisel - Ball point		

KHB40 TOP Type Frame & Bracket

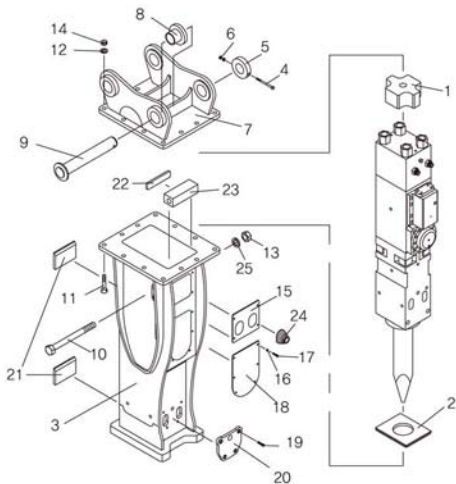


KHB40 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K406-1000	1set	
1	K406-1001	T-Bush	4	
2	K206-1003	Stop Ring Nut	4	
3	K406-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K306-1005	Mount Cap Bolt	12	
6	K306-1006	Mount Cap Washer	12	
7	K306-1008	Mount Cap Nut	12	
8	K406-1009	Frame (Left)	1	
9	K406-1010	Frame (Right)	1	
10	K406-1011	Side Washer	16	
11	K406-1012	Side Nut	16	
12	K406-1013	Mount Cap	1	
13	K406-1014	Bracket Pin	2	
14	K406-1015	Side Bolt	8	

KHB40

BOX Type Frame & Bracket

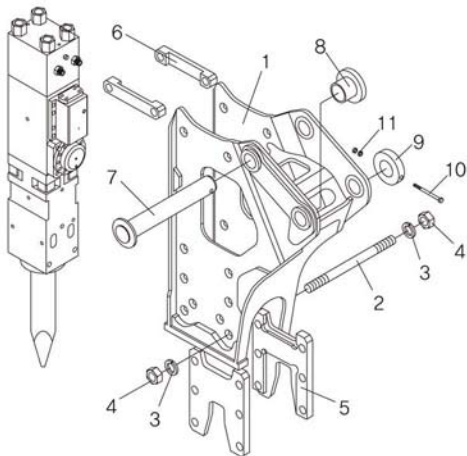


KHB40 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K406-1000	1set	
1	K406-3001	Upper Damper	1	
2	K406-3003	Lower Damper	1	
3	K406-3004	Frame	1	
4	K206-1004	Stop Ring Bolt	2	
5	K406-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K406-3008	Mount Cap	1	
8	K406-1001	T-Bush	4	
9	K406-1014	Bracket Pin	2	
10	K406-3011	Side Bolt	1	
11	K406-3012	Mount Cap Bolt	12	
12	K406-3013	Mount Cap Washer	12	
13	K406-3014	Side Bolt Nut	2	
14	K406-3015	Mount Cap Nut	12	
15	K406-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K406-3019	Lower Cover	1	
19	K206-3020	Socket Bolt	4	
20	K406-3021	Middle Cover	1	
21	K406-3022	Side Damper	2	
22	K406-3023	Bracket Damper	1	
23	K406-3024	Bracket	1	
24	K406-3025	Hose Guide	2	
25	K406-3026	Side Washer	2	

KHB40

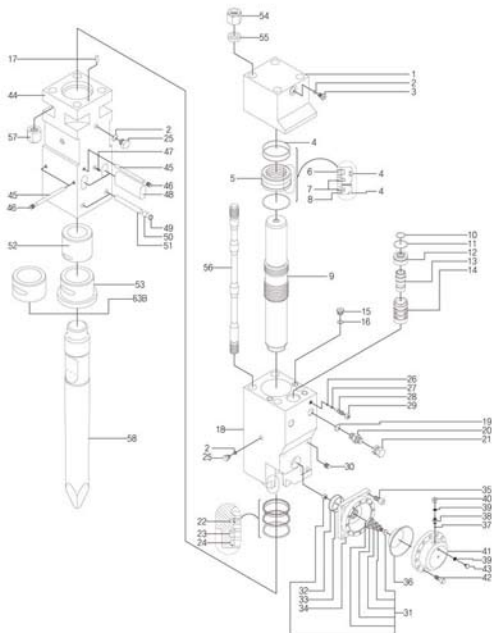
Side Type Frame & Bracket



KHB40 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K186-2000	1set	
1	K406-2001	Frame	1	
2	K406-2002	Side Bolt	8	
3	K406-2003	Side Washer	16	
4	K406-2004	Side Nut	16	
5	K406-2005	Set Plate	2	
6	K406-2006	Guide Plate	2	
7	K406-2007	Bracket Pin	2	
8	K406-2008	T-Bush	4	
9	K406-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB45 - MAIN BODY



KHB45 - Main Body Parts List

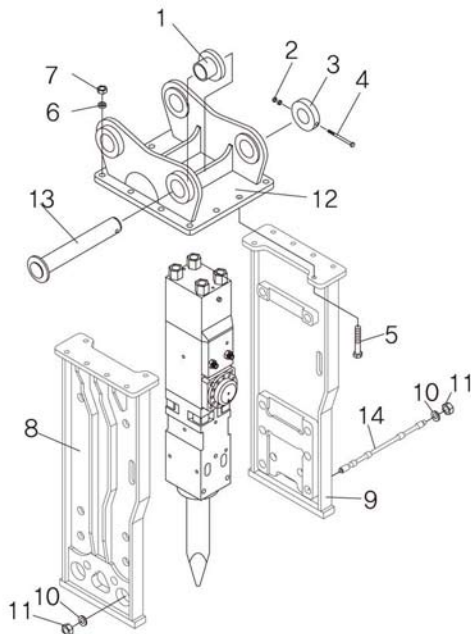
Item	Part Name	Part No.	Q'ty	Remarks
Main Body Assembly		K450-0000	1set	
Back Head Assembly		K453-1000	1set	
1	K453-1001	Back Head	1	
2	9111-22018	O-Ring	3	
3	K203-1005A	Back Head Charging Valve Assembly	1	
Cylinder & Valve Assembly		K451-1000	1set	
4	180A604	O-Ring	3	
5	K451-1004	Seal Retainer	1	
6	K451-1150R	Gas Seal	1	
7	K451-1150PO	Stop Seal	2	
8	180A213	Buffer Seal	1	
9	K451-1050	Piston	1	
10	180A568	O-Ring	1	
11	180A521	O-Ring	1	
12	K451-2010	Valve Cap	1	
13	K451-2011	Valve	1	
14	K451-2012	Valve Sleeve	1	
15	K451-1013	Socket Plug	3	
16	180A502	O-Ring	3	
17	K451-1005	Knock Pin	1	
18	K451-1001	Cylinder	1	
19	180A596	O-Ring	2	
20	K351-1015	Adapter	2	
21	K351-1016	Union Cap	2	
22	K451-1135B	Buffer Seal	1	
23	K451-1135J	U-Packing	1	
24	K451-1135D	Dust Seal	1	
25	B10A046	Air Check Valve	2	
26	180A548	O-Ring	1	
27	180A712	Back-up Ring	2	
28	B121A023	Valve Adjuster	1	
29	120A307	Valve Adjuster Nut	1	
30	K201-1003	Helix-Bert Coil	4	
Accumulator Assembly		K452-1000	1set	
31	K252-1004S	Poppet Assembly	1	
32	180A546	O-Ring	1	
33	180A706	Back-up Ring	1	
34	K352-1002	Accumulator Body	1	
35	120A204	Socket Bolt	4	
36	K352-1003	Diaphragm	1	
37	9111-12005	O-Ring	1	
38	K202-1005	Acc. Charging Valve	1	
39	9111-12014	O-Ring	2	
40	K202-1006	Acc. Charging Valve Cap	1	
41	K352-1001	Accumulator Cover	1	
42	K202-1009	Socket Bolt	12	
43	K252-1007	Acc. Hex. Plug	1	

Front Head Assembly		K454-1000	1set	
44	K454-1001	Front Head	1	
45	K354-1011	Rubber Plug	3	
46	K354-1010	Stop Pin	3	
47	K204-1004	Grease Nipple	1	
48	K354-1012	Rod Pin	1	
49	K354-1009	Snap Ring	2	
50	K354-1008	Rubber Plug	2	
51	K354-1007	Front Head Pin	2	
52	K354-1002S	Ring Bush	1	
53	K354-1006	Lower Bush (Front Cover)	1	
53B	K354-1006B	Lower Bush (Front Cover) - Box Type	1	

Through Bolt Assembly		K455-1000	1set	
54	K355-1004	Through Bolt Hex. Nut	4	
55	K355-1003	Through Bolt Washer	4	
56	K355-1001	Through Bolt	4	
57	K355-1002	Through Bolt Tri. Nut	4	

58	K359-0001	Chisel - Moil point	1	
58	K359-0002	Chisel - Wedge point	1	
58	K359-0003	Chisel - Blunt (Flat)	1	
58	K359-0004	Chisel - Ball point	1	

KHB45 TOP Type Frame & Bracket

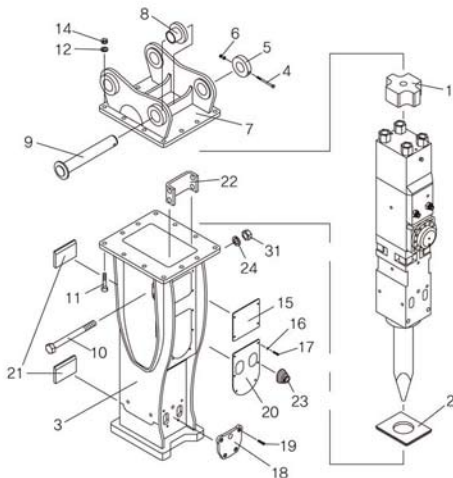


KHB45 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K456-1000	1set	
1	K456-1001	T-Bush	4	
2	K206-1002	Stop Ring Nut	4	
3	K456-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K256-1005	Mount Cap Bolt	12	
6	K256-1006	Mount Cap Washer	12	
7	K256-1008	Mount Cap Nut	12	
8	K456-1009	Frame (Left)	1	
9	K456-1010	Frame (Right)	1	
10	K456-1011	Side Washer	16	
11	K456-1012	Side Nut	16	
12	K456-1013	Mount Cap	1	
13	K456-1014	Bracket Pin	2	
14	K456-1015	Side Bolt	8	

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BOX Type Frame & Bracket

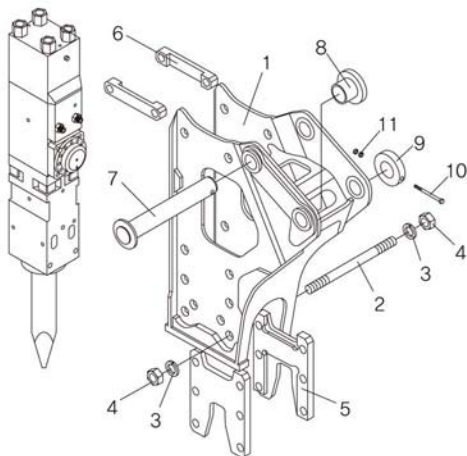


KHB45 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K456-1000	1set	
1	K356-3001	Upper Damper	1	
2	K456-3003	Lower Damper	1	
3	K456-3004	Frame	1	
4	K256-1004	Stop Ring Bolt	2	
5	K456-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K456-3008	Mount Cap	1	
8	K456-1001	T-Bush	4	
9	K456-1014	Bracket Pin	2	
10	K456-3011	Side Bolt	2	
11	K256-3012	Mount Cap Bolt	12	
12	K256-3013	Mount Cap Washer	12	
13	K256-3014	Side Bolt Nut	2	
14	K456-3015	Mount Cap Nut	12	
15	K456-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K456-3019	Lower Cover	1	
19	K206-1020	Socket Bolt	4	
20	K456-3021	Middle Cover	1	
21	K456-3022	Side Damper	2	
22	K456-3024	Bracket	1	
23	K356-3025	Hose Guide	2	
24	K256-3026	Side Washer	2	

KHB45

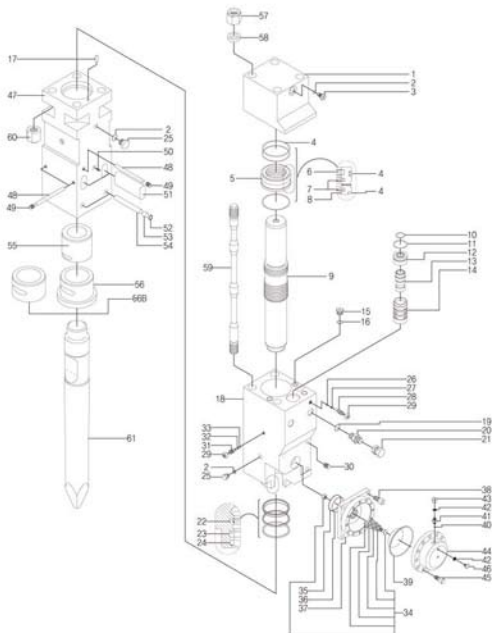
Side Type Frame & Bracket



KHB45 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K456-2000	1set	
1	K456-2001	Frame	1	
2	K406-2002	Side Bolt	8	
3	K406-2003	Side Washer	16	
4	K406-2004	Side Nut	16	
5	K456-2005	Set Plate	2	
6	K456-2006	Guide Plate	2	
7	K456-2007	Bracket Pin	2	
8	K456-2008	T-Bush	4	
9	K456-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	

KHB55 - MAIN BODY



KHB55 - Main Body Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Main Body Assembly		K550-0000	1set	
Back Head Assembly		K553-1000	1set	
1	K553-1001	Back Head	1	
2	9111-22018	O-Ring	3	
3	K203-1005A	Back Head Charging Valve Assembly	1	
Cylinder & Valve Assembly		K551-1000	1set	
4	180A604	O-Ring	4	
5	K551-1004	Seal Retainer	1	
6	K551-1150R	Gas Seal	1	
7	K551-1150PO	Step Seal	2	
8	180A215	Buffer Ring	1	
9	K551-1050	Piston	1	
10	180A521	O-Ring	1	
11	180A617	O-Ring	1	
12	K551-2010	Valve Cap	1	
13	K551-2011	Valve	1	
14	K551-2012	Valve Sleeve	1	
15	K551-1013	Socket Plug	3	
16	180A613	O-Ring	3	
17	K551-1005	Knock Pin	1	
18	K551-1001	Cylinder	1	
19	180A596	O-Ring	2	
20	K351-1015	Adapter	2	
21	K351-1016	Union Cap	2	
22	K551-1135B	Buffer Seal	1	
23	K551-1135U	U-Packing	1	
24	K551-1135D	Dust Seal	1	
25	B10A046	Air Check Valve	2	
26	180A611	O-Ring	1	
27	180A715	Back-up Ring	2	
28	B151A023	Valve Adjuster	1	
29	120A307	Adjuster Nut	2	
30	K201-1002	Heli-Sert Coil	4	
31	K201-1009	Cylinder Adjuster	1	
32	9333-11012	Back-up Ring	2	
33	9111-12012	O-Ring	2	
Accumulator Assembly		K552-1000	1set	
34	K552-1004S	Poppet Assembly	1	
35	180A521	O-Ring	1	
36	180A705	Back-up Ring	1	
37	K552-1002	Accumulator Body	1	
38	120A212	Socket Bolt	4	
39	K552-1003	Diaphragm	1	
40	9111-12005	O-Ring	1	
41	K202-1005	Acc. Charging Valve	1	
42	9111-12014	O-Ring	2	

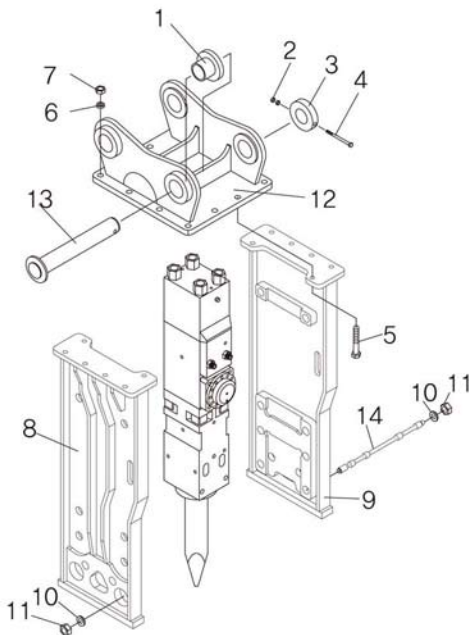
43	K202-1006	Acc. Charging Valve Cap	1	
44	K552-1001	Accumulator Cover	1	
45	K202-1009	Socket Bolt	12	
46	K202-1007	Acc. Hex. Plug	1	

Front Head Assembly		K554-1000	1set	
47	K554-1001	Front Head	1	
48	K554-1011	Rubber Plug	3	
49	K554-1010	Stop Pin	3	
50	K204-1004	Grease Nipple	1	
51	K554-1012	Rod Pin	2	
52	K554-1009	Snap Ring	2	
53	K554-1008	Rubber Plug	2	
54	K554-1007	Front Head Pin	2	
55	K554-1002S	Ring Bush	1	
56	K554-1006	Lower Bush (Front Cover)	1	
568	K554-1006	Lower Bush (Front Cover) - Box Type	1	

Through Bolt Assembly		K555-1000	1set	
57	K555-1004	Through Bolt Hex. Nut	4	
58	K555-1003	Through Bolt Washer	4	
59	K555-1001	Through Bolt	4	
60	K555-1002	Through Bolt Tri. Nut	4	

61	K559-0001	Chisel - Moil point	1	
61	K559-0002	Chisel - Wedge point	1	
61	K559-0003	Chisel - Blunt (Flat)	1	
61	K559-0004	Chisel - Ball point	1	

KHB55 TOP Type Frame & Bracket

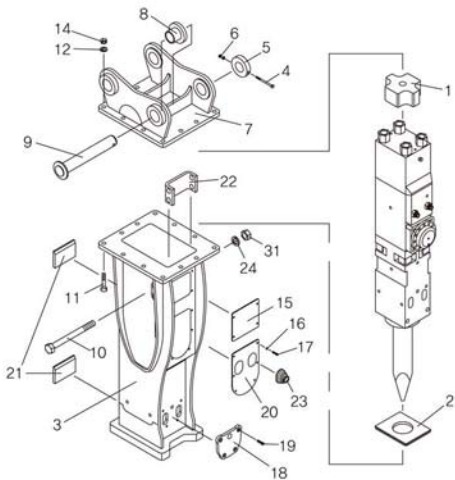


KHB55 - Top Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K556-1000	1set	
1	K556-1001	T-Bush	4	
2	K206-1002	Stop Ring Nut	4	
3	K556-1003	Stop Ring	2	
4	K206-1004	Stop Ring Bolt	2	
5	K556-1005	Mount Cap Bolt	12	
6	K556-1006	Mount Cap Washer	12	
7	K556-1008	Mount Cap Nut	12	
8	K556-1009	Frame (Left)	1	
9	K556-1010	Frame (Right)	1	
10	K556-1011	Side Washer	16	
11	K556-1012	Side Nut	16	
12	K556-1013	Mount Cap	1	
13	K556-1014	Bracket Pin	2	
14	K556-1015	Side Bolt	8	

KHB55

BOX Type Frame & Bracket

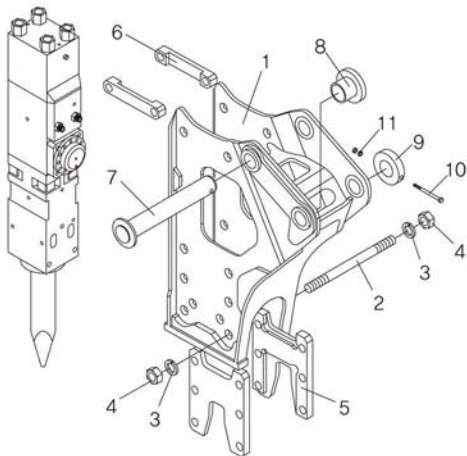


KHB55 - Box Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K556-1000	1set	
1	K556-3001	Upper Damper	1	
2	K556-3003	Lower Damper	1	
3	K556-3004	Frame	1	
4	K256-1004	Stop Ring Bolt	2	
5	K556-3006	Stop Ring	2	
6	K206-1002	Stop Ring Nut	4	
7	K556-3008	Mount Cap	1	
8	K556-1001	T-Bush	4	
9	K556-1014	Bracket Pin	2	
10	K556-3011	Side Bolt	2	
11	K556-3012	Mount Cap Bolt	12	
12	K556-3013	Mount Cap Washer	12	
13	K256-3014	Side Bolt Nut	2	
14	K456-3015	Mount Cap Nut	12	
15	K556-3016	Upper Cover	1	
16	K206-3017	Spring Washer	10	
17	K206-3018	Socket Bolt	10	
18	K556-3019	Lower Cover	1	
19	K206-1020	Socket Bolt	4	
20	K556-3021	Middle Cover	1	
21	K556-3022	Side Damper	2	
22	K556-3024	Bracket	1	
23	K356-3025	Hose Guide	2	
24	K256-3026	Side Washer	2	

KHB55

BOX Type Frame & Bracket



KHB55 - Side Type Frame & Bracket Parts List

Item	Part Name	Part No.	Q'ty	Remarks
Frame & Bracket Assembly		K556-2000	1set	
1	K556-2001	Frame	1	
2	K556-2002	Side Bolt	8	
3	K556-2003	Side Washer	16	
4	K556-2004	Side Nut	16	
5	K556-2005	Set Plate	2	
6	K556-2006	Guide Plate	2	
7	K556-2007	Bracket Pin	2	
8	K556-2008	T-Bush	4	
9	K556-2009	Stop Ring	2	
10	K206-1004	Stop Ring Bolt	2	
11	K206-1003	Stop Ring Nut	4	



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