

OPERATION MANUAL
& PARTS LIST

OPERATION MANUAL & PARTS LIST

Soosan Hydraulic Breaker

SQ Series

OPERATION MANUAL & PARTS LIST Soosan Hydraulic Breaker

／ SQ Series ／

SOOSAN
HEAVY INDUSTRIES

OPERATION MANUAL & PARTS LIST

Soosan Hydraulic Breaker

SQ Series



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OPERATION MANUAL

Soosan Hydraulic Breaker



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

Model	
Serial Number	
Year of Construction	



**EC Declaration of Incorporation
according to EC Machinery Directive 2006/42/EC**

We herewith declare, Soosan Heavy Ind. Co., Ltd.
of
260, Jeongmunsongsan-ro, Yanggam-Myeon,
Hwaseong-Si, Gyunggi-Do, Korea

that the following machine complies with the appropriate basic safety and health requirements of the EC Directive(2006/42/EC) based on its design and type, as brought into circulation by us. In case of alteration of the machine, not agreed upon by us, this declaration will lose its validity. The machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Technical documentation for the machinery is made by :

Place : Soosan Heavy Ind. Co., Ltd
260, Jeongmunsongsan-ro, Yanggam-Myeon, Hwaseong-Si, Gyunggi-Do, Korea
Position : Manager, R&D team

Name :



The technical documentation for the machinery is available from :

Name : SOOSAN HEAVY INDUSTRIES CO., LTD EUROPE
Adress : Ohmweg 18,3208 ke, Spijkenisse, Netherlands
Description : Construction Machinery (not appendix IV)
(Hydraulic Breaker)

Machine Type :

Serial Number :

Applicable EC Directive : EC Machinery Directive (2006/42/EC)

Applicable Harmonized

Standards : EN ISO 12100-2010
EN474-1:2006/A4:2013

Applicable National Technical Standards And Specifications :

Weight(kg) :
Length(mm) :
Oil flow(ℓ /min) :
Operation Pressure(kg/cm²):
Blows(bpm) :

Date/ Authorized Signature :

Title of Signatory :



DO NOT OPERATE THE HYDRAULIC BREAKER UNLESS THE FOLLOWING SAFETY INSTRUCTIONS HAVE BEEN THOROUGHLY READ AND UNDERSTOOD!

READ THIS MANUAL BEFORE INSTALLING, OPERATING OR MAINTAINING THIS EQUIPMENT.

- Flying debris from the hydraulic breaker or other material may cause serious or fatal injury to the operator. Personal protection equipment must be used.
- Flying debris hydraulic breaker or other materials may cause serious or fatal injury to bystanders. Never operate the grab when bystanders are in the working area.
- On machines/carriers, the hydraulic breaker can enter the operator's compartment under specific hydraulic breaker position. Make sure that suitable impact shields are used when operating the hydraulic breaker with this type of equipment.
- Do not operate the breaker unless all safety decals described in this manual are in place. The decals must be inspected periodically to ensure that all wording is legible. The decals must be replaced if illegible. Replacement decals can be obtained from your authorized Soosan Distributor.
- The hydraulic breaker will become very hot during operation. Allow time for hydraulic breaker to cool down before touching hydraulic breaker parts.
If this machine is transferred, be sure to attach this manual to the machine.
For safety, common items are described "SAFETY PRECATUIONS", and others are mentioned in the succeeding pages.

FOREWORD

We appreciate your purchasing a Soosan Hydraulic Breaker.

The Hydraulic Breaker, designed and built to provide durable operation under any working conditions, has been developed by Soosan's excellent engineering techniques with accumulated experiences for many years. Without proper handling, regular inspection and maintenance, however, the machine fails to display its full capacity, resulting in various troubles of machine parts.

This publication should be carefully read prior to installation and operation in order to prevent any mishandling of hydraulic breaker.

We guarantee that a faithful compliance of the instruction will contribute to the best operation condition.

Customers are, therefore, required to keep in mind that the company is not responsible for troubles caused by not following our guidelines or not using genuine parts.

Soosan Heavy Industries Co., Ltd.

01. Safety Precautions

1.1 Safety Precautions

This manual contains safety, operation, and routine maintenance instructions. It doesn't contain service disassembly and service assembly instructions. If needed, complete service disassembly and service assembly instructions are contained in manual which can be ordered from your Soosan Hydraulic Breaker authorized and certified dealer.

Please read the following warning.



Serious injury or death could result from the improper repair or service of this breaker.
Repairs or service to this breaker must only be done by an authorized and certified dealer.

Most of the accidents are caused by disregarding the basic rules of operation inspection or repair, or by neglecting the inspection before operation. Many accidents can often be avoided by recognizing potentially hazardous situations before an accident occurs. Before operating, inspecting or repairing this machine, be sure to read and fully understand the preventive methods and warnings described on the machine or in this manual. If not, never operate, inspect or repair this machine

Safety labels and messages are classified as follows so that the users can understand the warnings on the machine or in this manual.



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This signal word is to be limited to the most extreme situations

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury,

It may also be used to alert against unsafe practices.



Signs used to indicate a statement of company policy directly or indirectly related to the safety of personal or protection of property.

The safety messages including the preventive measures to avoid danger.

For safety, common items are described in "SAFETY PRECAUTIONS", and others are mentioned in the succeeding pages.

Soosan cannot anticipate every possible circumstance that might involve a potential hazard on operation, inspection or repair. Therefore the warnings in this manual are not all inclusive. If an operation, inspection or repair not described in this manual is used, you must take measures for safety by yourself.



Observe the cautions and take a preventive measure for safety

The Soosan 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

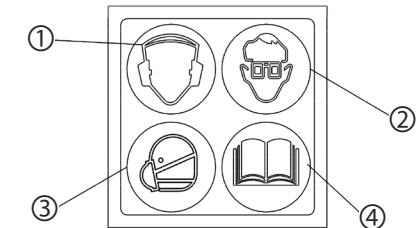
- Operate the breaker in accordance with all laws and regulations which affect you, your equipment, and the worksite.
- Do not operate the breaker until you have read this manual and thoroughly understood all safety, operation and maintenance instructions.
- Do not operate the breaker until you have 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.
- Before starting a work, Check the prohibitions, cautions and working processes in a working site with the field overseer, Observe all of them strictly.
- Wear such protective tools as a helmet, safety shoes, etc. to perform a work.
Make use of the protective glasses, earplugs, gloves and other protective tools if necessary.
- Establish a training program for all operators to ensure safe operation. Do not operate the breaker unless thoroughly trained or under the supervision of an instructor. Become familiar with the carrier controls before operating carrier and breaker. While learning operate the breaker and carrier, do so at a slow pace. If necessary, set the carrier to the slow position.
- 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.
- Do not operate the breaker at oil temperature above 175°F/80°C. Operation at higher 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.
- Do not modify this breaker in any manner.
- Use only breaker parts manufactured by Soosan. Usage of breaker rod produced by another manufacturer may damage the breaker and will void the warranty.
- To avoid personal injury or equipment damage, all breaker repair, maintenance and service must only be performed by authorized and properly trained personnel.

- If you do not understand how to operate safely your breaker, contact an authorized Soosan Dealer for assistance.
- Keep this manual with the breaker.
- Do not operate this equipment if you are taking medication which may affect your mental judgement or physical performance.
- Do not operate this equipment if you are under the influence of drug or alcohol.
- Remove breaker form carrier during transportation.

1.2 Stickers & Tags

- Warning sticker

- 1) Use ear protection
- 2) Use eye protection
- 3) Use breathing protection
- 4) Read the manual before use



- Greasing Sticker

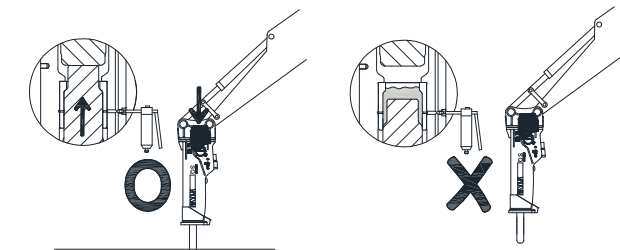


Correct Greasing

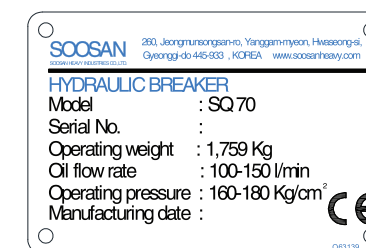
- 1) Position the Breaker standing upright resting on the rod on firm surface.
- 2) Stop carrier engine and wait 10 minutes for oil pressure to drop inside Breaker.
- 3) Apply Rod grease from grease gun to greasing points marked with the following sticker.

Note : The Breaker must stand upright resting on the tool to ensure that the grease will penetrate downwards between the tool and the bushing.

Do not fill the space between the piston and the rod with grease. A lower piston seal failure can result and the Breaker will subsequently leak oil.

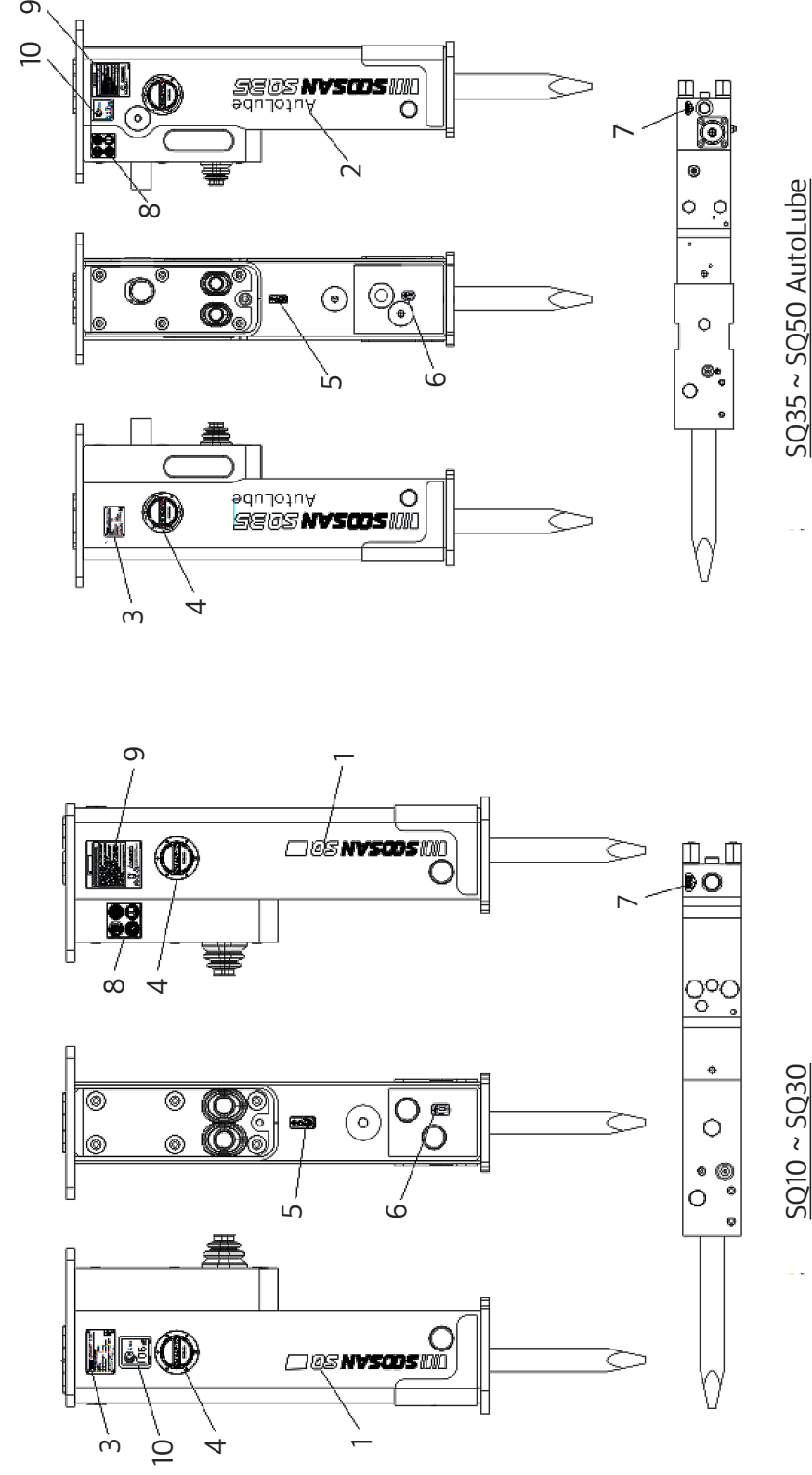


- Specification plate (For Example SQ70)



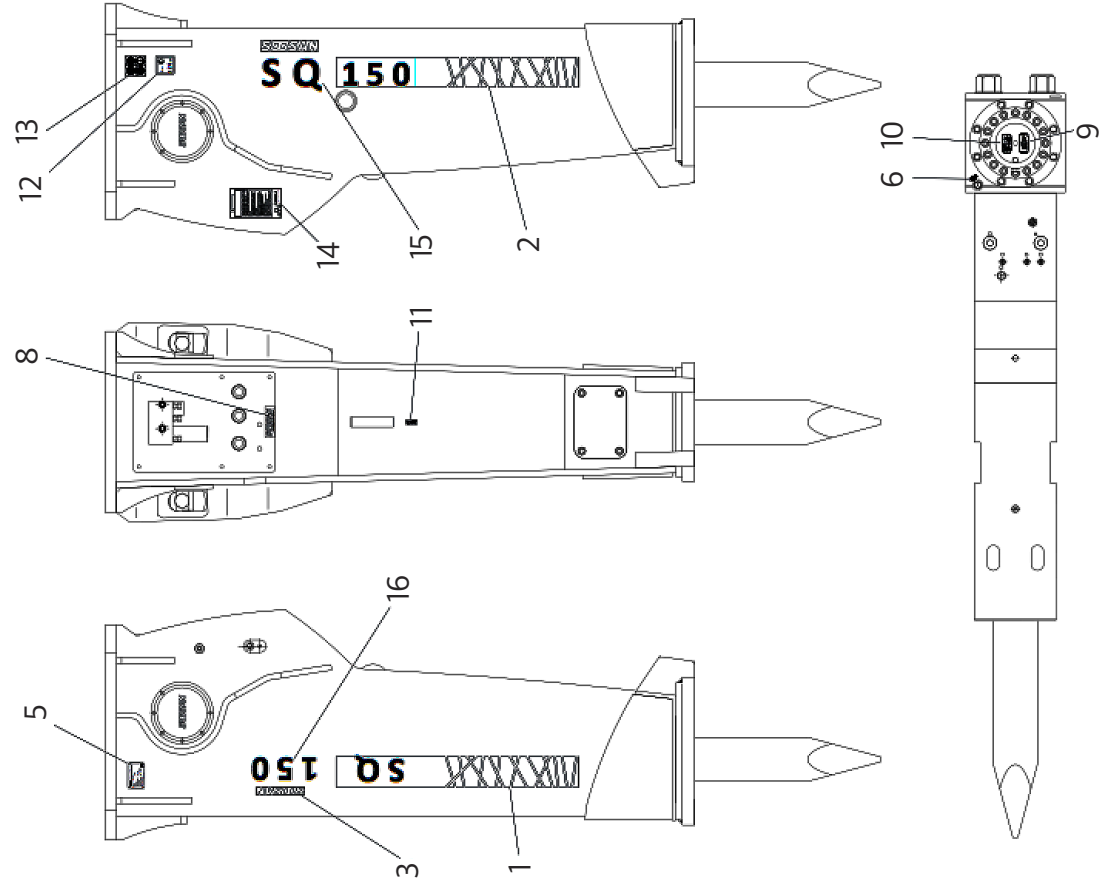
• SQ10 ~ SQ50AutoLube

NO. MODEL	Sticker Assy	1	2	3	4	5	6	7	8	9	10
		BI STICKER	AUTOLUBE STICKER	NAME PLATE	EMBLEM	LIFTING STICKER	GREASE STICKER	BACK HEAD STICKER	WARNING STICKER	DANGER STICKER	NOISE STICKER
SQ10	B0003557	B0003627	-	B0003635	B0003440	C23344	D83168	E83144	E83211	E83210	B0003643
SQ20	B0003558	B0003628	-	B0003636	B0003440	C23344	D83168	E83144	E83211	E83210	B0003644
SQ30	B0003559	B0003629	-	B0003637	B0003440	C23344	D83168	C02135	E83211	E83210	B0003645
SQ35 AutoLube	B0009854	B0003630	B0009645	B0003638	B0005617	C23344	D83168	C02135	E83211	E83210	B0003646
SQ40 AutoLube	B0009855	B0003631	B0009645	B0003639	B0005617	C23344	D83168	C02135	E83211	E83210	B0003647
SQ43 AutoLube	B0003562	B0003632	B0009646	B0003640	B0005617	C23344	D83168	C02135	E83211	E83210	B0003648
SQ45 AutoLube	B0003563	B0003633	B0009646	B0003641	B0005617	C23344	D83168	C02135	E83211	E83210	B0003649
SQ50 AutoLube	B0003564	B0003634	B0009646	B0003642	B0005617	C23344	D83168	C02135	E83211	E83210	B0003650



• SQ60 ~ SQ181

NO. MODEL	1 Sticker Assy	2 BI STICKER (L)	3 SOOSAN LOGO STICKER (R)	5 NAME STICKER	6 BACK HEAD STICKER	8 LOGO STICKER	9 ACC STICKER (A)	10 ACC STICKER (B)	11 LIFTING STICKER	12 NOISE STICKER	13 WARNING DANGER STICKER	14 WARNING DANGER STICKER	15 BI STICKER	16 BI STICKER
SQ60	Q53145	B0009287	B0009288	Q53148	Q53149	C02135	Q53150	C62212	C62213	C23344	Q53139	D83166	Q53134	Q53132
SQ70	Q63146	B0009287	B0009289	Q53148	Q63148	C02135	Q53150	C62212	C62213	C23344	Q63140	D83166	Q53134	Q63138
SQ80	Q23148	B0009287	B0009290	Q53148	Q23150	C02135	Q53150	C62212	C62213	C23344	Q23144	D83166	Q53134	Q23142
SQ100	Q73148	B0009291	B0009292	Q53148	Q73151	C02135	Q53150	C62212	C62213	C23344	Q73143	D83166	Q53134	Q73141
SQ120	Q83143	B0009291	B0009293	Q53148	Q83145	C02135	Q53150	C62212	C62213	C23344	Q83139	D83166	Q53134	Q83137
SQ130	Q43150	B0009294	B0009295	Q43153	Q43154	C02135	Q53150	C62212	C62213	C23344	Q43147	D83166	Q53134	Q43144
SQ140	Q03179	B0009294	B0009296	Q43153	Q03181	C02135	Q53150	C62212	C62213	C23344	Q03135	D83166	Q53134	Q03133
SQ150	Q33150	B0009298	Q33151	Q43153	Q33153	C02135	Q53150	C62212	C62213	C23344	Q33146	D83166	Q53134	Q33144
SQ181	Q13222	B0009299	B0009300	Q43153	Q13225	C02135	Q53150	C62212	C62213	C23344	Q13174	D83166	Q53134	Q13172



Local safety regulations.

Enter any local safety regulation here, keep these instructions in an area accessible to the operator and maintenance personnel.

02. Standard Specification(1/2)

DESCRIPTION	UNIT	MODEL								
		SQ10	SQ20	SQ30	SQ35 AutoLube	SQ40 AutoLube	SQ43 AutoLube	SQ45 AutoLube	SQ50 AutoLube	
Body Weight (Including rod)	kg	54	68	90	130	155	215	292	469	
	lbs	119	150	199	287	342	474	644	1035	
Operating Weight	kg	104	130	156	231	299	379	566	845	
	lbs	229	287	344	510	660	836	1249	1864	
Length	mm	1135	1237	1317	1472	1620	1899	2161	2348	
	in	45	49	52	58	64	75	85	92	
Width	mm	264	264	264	324	324	324	420	420	
	in	10	10	10	13	13	13	17	17	
Required Oil Flow	ℓ/min	15~35	20~45	25~55	30~65	40~75	50~90	60~110	80~120	
	gal/min	4~9	5.3~11.9	6.6~14.5	7.9~17.2	13.2~23.8	13.2~23.8	15.9~29.1	21.1~31.7	
Operating Pressure	kg/cm ² (≒bar)	90~120	90~120	90~120	100~130	110~140	120~150	130~160	150~170	
	psi	1280 ~1707	1280 ~1707	1280 ~1707	1422 ~1849	1565 ~1991	1707 ~2134	1849 ~2276	2134 ~2418	
Impact Rate	Low	BPM	-	-	-	960 ~1690	900 ~1650	800 ~1330	740 ~1195	650 ~1020
	Middle	BPM	-	-	-	800 ~1290	790 ~1220	700 ~1130	670 ~1030	590~880
	High	BPM	800 ~1530	700 ~1320	600 ~1250	620 ~1040	570 ~1020	540~800	525~850	455~730
Hose Diameter	in	3/8, 1/2	3/8, 1/2	1/2	1/2	1/2	1/2	3/4	3/4	
Rod Diameter	mm	40	45	53	60	68	75	85	100	
	in	1.6	1.8	2.1	2.4	2.7	3.0	3.3	3.9	
Applicable Carrier	m'	~0.07	0.03~0.1	0.06~0.2	0.1~0.25	0.15~0.3	0.2~0.35	0.25~0.5	0.4~0.6	
	ton	0.8~2.5	1.2~3.0	2.0~4.5	3.0~6.0	4.0~9.0	5~12	7~15	9~16	
	lbs	1760 ~5510	2645 ~6615	4410 ~9920	6615 ~13220	8820 ~19840	11020 ~26455	15430 ~33070	19840 ~35275	
Noise Level	dB(A)	105.5	106.8	108.5	116.9	108.7	114.5	112.0	113.5	

* Operating weight include Cap, Rod weight by AEM regulation.
(Except for pin, hose, fitting and tubing)

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

* Rod is long type standard.

02. Standard Specification(2/2)

DESCRIPTION	UNIT	MODEL								
		SQ60	SQ70	SQ80	SQ100	SQ120	SQ130	SQ140	SQ150	SQ181
Body Weight (Including rod)	kg	737	862	1084	1116	1425	1605	1806	1945	3096
	lbs	1625	1900	2389	2460	3142	3538	3982	4288	6825
Operating Weight	kg	1607	1759	2053	2185	2671	3033	3169	3950	5889
	lbs	3543	3878	4526	4817	5889	6687	6986	8708	12983
Length	mm	2561	2666	2806	2924	3168	3360	3441	3677	4112
	in	101	105	110	115	125	132	135	145	162
Width	mm	620	620	669	694	760	756	761	793	891
	in	24	24	26	27	30	30	30	31	35
Required Oil Flow	ℓ/min	90~120	100~150	120~180	150~210	180~240	200~260	200~260	210~290	350~450
	gal/min	23.8 ~31.7	26.4 ~39.6	31.7 ~47.6	39.6 ~55.5	47.6 ~63.4	52.8 ~68.7	52.8 ~68.7	55.5 ~76.6	93~ 119
Operating Pressure	kg/cm ² (≒ bar)	160~180	160~180	160~180	160~180	160~180	160~180	160~180	160~180	180~200
	psi	2276 ~2560	2276 ~2560	2276 ~2560	2276 ~2560	2276 ~2560	2276 ~2560	2276 ~2560	2276 ~2560	2560 ~2845
Impact Rate	Low	BPM	350~650	350~600	350~500	300~450	300~450	250~400	200~350	200~300
	High	BPM	600~850	500~850	500~700	430~580	430~580	380~550	300~500	320~470
Hose Diameter	in	1	1	1	1	1¼	1¼	1¼	1¼	1¼
Rod Diameter	mm	125	135	140	150	155	165	165	175	200
	in	4.9	5.3	5.5	5.9	6.1	6.5	6.5	6.9	7.9
Applicable Carrier	m ³	0.5~0.7	0.6~0.8	0.7~0.9	0.9~1.2	1.1~1.4	1.2~1.7	1.2~1.7	1.4~2.0	2.0~5.0
	ton	15~18	16~21	18~26	25~30	28~35	30~45	30~45	40~55	50~90
	lbs	33000~ 40000	40000~ 46000	40000~ 58000	55000~ 66000	62000~ 77000	66000~ 100000	71000~ 110000	88000~ 121000	110000~ 200000
Noise Level	dB(A)	115	120	118	120	123	124	124	125	125

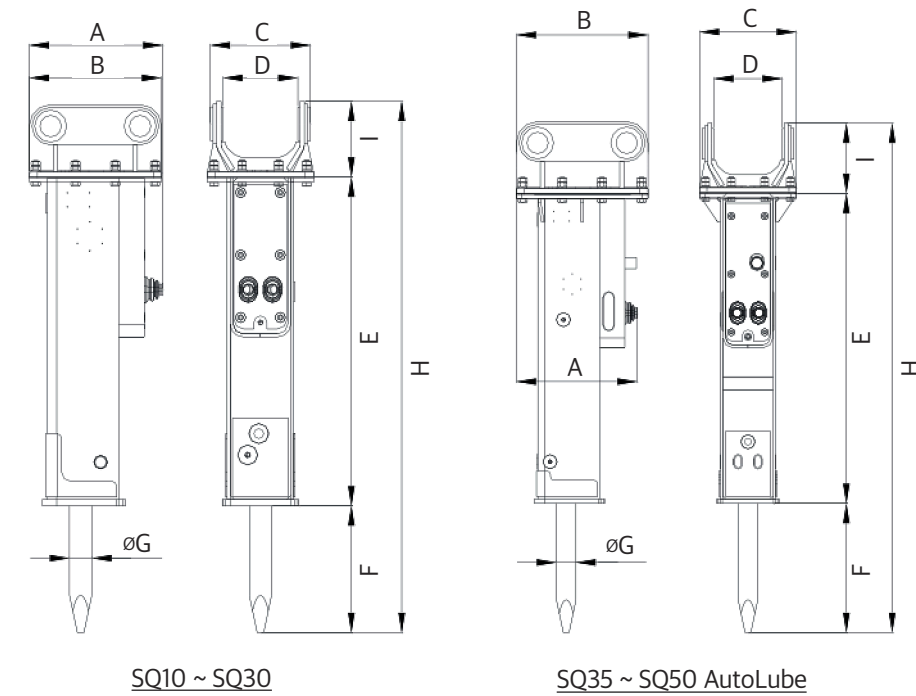
* Operating weight include Cap, Rod weight by AEM regulation.
(Except for pin, hose, fitting and tubing)

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

* Rod is long type standard.

03. External Dimensions

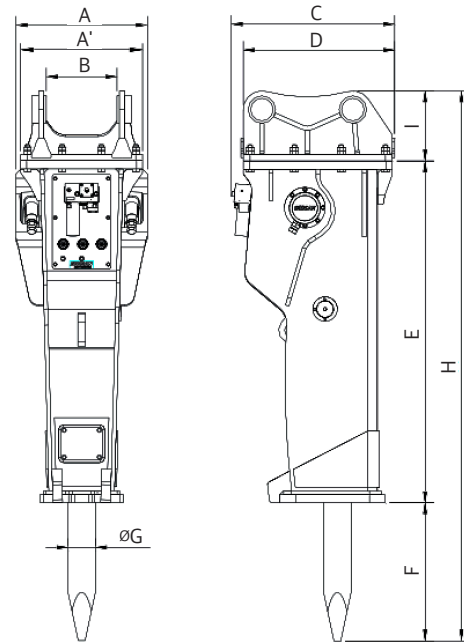
3.1 Small range (1/2)



MODEL	UNIT	A	B	C	D	E	F	G	H	I
SQ10	mm	307	272	264	152	724	267	40	1135	144
	in	12.1	10.7	10.4	6.0	28.5	10.5	1.6	44.7	5.7
SQ20	mm	314	272	264	162	797	286	45	1237	154
	in	12.4	10.7	10.4	6.4	31.4	11.3	1.8	48.7	6.1
SQ30	mm	327	272	264	162	868	295	53	1317	154
	in	12.8	10.7	10.3	6.3	34.1	11.6	2.0	51.8	6.0
SQ35 AutoLube	mm	418	404	324	165	933	339	60	1472	200
	in	16.5	15.9	12.7	6.4	36.7	13.3	2.3	57.9	7.8
SQ40 AutoLube	mm	417	404	324	220	1016	385	68	1620	219
	in	16.4	15.9	12.7	8.6	40.0	15.1	2.6	63.7	8.6
SQ43 AutoLube	mm	412	404	324	220	1203	467	75	1899	229
	in	16.2	10.7	10.3	6.3	34.1	11.6	2.0	51.8	6.0
SQ45 AutoLube	mm	570	570	420	267	1336	556	85	2161	269
	in	22.4	22.4	16.5	10.5	52.5	21.8	3.3	85.0	10.5
SQ50 AutoLube	mm	570	570	420	330	1476	540	100	2348	332
	in	22.4	22.4	16.5	12.9	58.1	21.2	3.9	92.4	13.0

** D, I, H : The dimension is for reference only and may vary depending on the required mounting bracket (Top Cap).

3.2 Medium & Heavy-duty range (2/2)

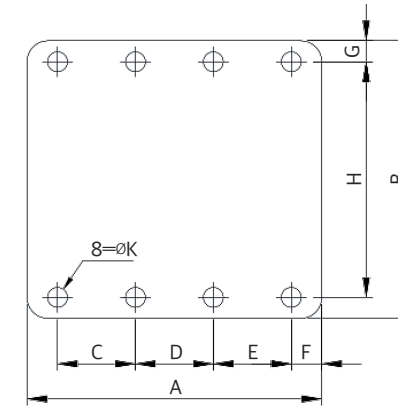


MODEL	UNIT	A' Upper Plate	A	B	C	D	E	F	G	H	I
SQ60	mm	620	620	360	766	700	1615	589	125	2561	357
	in	24.4	24.4	14.1	30.1	27.5	63.5	23.1	4.9	100.8	14.0
SQ70	mm	620	620	360	765	700	1659	650	135	2666	357
	in	24.4	24.4	14.1	30.1	27.5	65.3	25.5	5.3	104.9	14.0
SQ80	mm	620	669	360	833	760	1744	705	140	2806	357
	in	24.4	26.3	14.1	32.7	29.9	68.6	27.7	5.5	110.4	14.0
SQ100	mm	620	694	430	904	760	1849	692	150	2924	383
	in	24.4	27.3	16.9	35.5	29.9	72.7	27.2	5.9	115.1	15.0
SQ120	mm	720	760	450	948	856	1920	846	155	3168	402
	in	28.3	29.9	17.7	37.3	33.7	75.5	33.3	6.1	124.7	15.8
SQ130	mm	720	756	450	951	856	2086	872	165	3360	402
	in	28.3	29.7	17.7	37.4	33.7	82.1	34.3	6.4	132.2	15.8
SQ140	mm	720	761	450	965	856	2167	872	165	3441	402
	in	28.3	29.9	17.7	37.9	33.7	85.3	34.3	6.4	135.4	15.8
SQ150	mm	720	793	495	992	856	2343	839	175	3677	495
	in	28.3	31.2	19.4	39.0	33.7	92.2	33.0	6.8	144.7	19.4
SQ181	mm	850	891	675	1081	950	2671	912	200	4112	529
	in	33.4	35.0	26.5	42.5	37.4	105.1	35.9	7.8	161.8	20.8

** B, I, H : The dimension is for reference only and may vary depending on the required mounting plate (Top Cap).

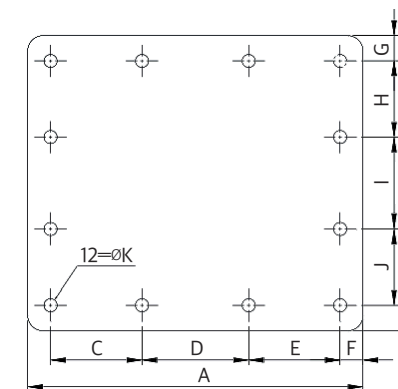
3.3 Cover Plate

- SQ10 ~ 30, SQ35 AutoLube ~ SQ43 AutoLube



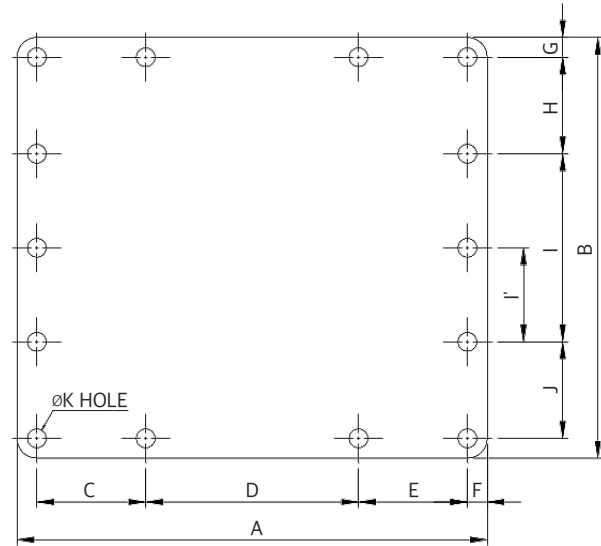
MODEL	HOLE (EA)	UNIT	A	B	C	D	E	F	G	H	K
SQ10 ~SQ30	8	mm	272	264	74	74	74	25	20	224	19
		in	10.70	10.39	2.91	2.91	2.91	0.98	0.78	8.81	0.74
SQ35 AutoLube ~SQ43 AutoLube	8	mm	404	324	115	124	115	25	25	274	21
		in	15.90	12.75	4.52	4.88	4.52	0.98	0.98	10.78	0.82

- SQ45 AutoLube ~SQ50 AutoLube



MODEL	HOLE (EA)	UNIT	A	B	C	D	E	F	G	H	I	J	K
SQ45 AutoLube ~SQ50 AutoLube	12	mm	570	420	170	180	170	25	25	120	130	120	21
		in	22.44	16.53	6.69	7.08	6.69	0.98	0.98	4.72	5.11	4.72	0.82

• SQ60~181



MODEL	HOLE (EA)	UNIT	A	B	C	D	E	F	G	H	I	I'	J	K
SQ60	12	mm	760	620	225	240	225	35	35	175	200	-	175	26
		in	29.92	24.40	8.85	9.44	8.85	1.37	1.37	6.88	7.87	-	6.88	1.02
SQ70	12	mm	760	620	225	240	225	35	35	175	200	-	175	26
		in	29.92	24.40	8.85	9.44	8.85	1.37	1.37	6.88	7.87	-	6.88	1.02
SQ80	12	mm	760	620	225	240	225	35	35	175	200	-	175	26
		in	29.92	24.40	8.85	9.44	8.85	1.37	1.37	6.88	7.87	-	6.88	1.02
SQ100	12	mm	760	620	225	240	225	35	35	175	200	-	175	26
		in	29.92	24.40	8.85	9.44	8.85	1.37	1.37	6.88	7.87	-	6.88	1.02
SQ120	12	mm	856	720	258	260	258	40	40	220	200	-	220	38
		in	33.70	28.34	10.15	10.23	10.15	1.57	1.57	8.66	7.87	-	8.66	1.49
SQ130	12	mm	856	720	258	260	258	40	40	220	200	-	220	38
		in	33.70	28.34	10.15	10.23	10.15	1.57	1.57	8.66	7.87	-	8.66	1.49
SQ140	12	mm	856	720	258	260	258	40	40	220	200	-	220	38
		in	33.70	28.34	10.15	10.23	10.15	1.57	1.57	8.66	7.87	-	8.66	1.49
SQ150	12	mm	856	720	258	260	258	40	40	220	200	-	220	38
		in	33.70	28.34	10.15	10.23	10.15	1.57	1.57	8.66	7.87	-	8.66	1.49
SQ181	14	mm	950	850	220	430	220	40	40	195	380	190	195	38
		in	37.40	33.46	8.66	16.92	8.66	1.57	1.57	7.67	14.96	7.48	7.67	1.49

04. Preparation for Installation and Operation

4.1 Checking before installation

CAUTION

CHECK THE "SPECIFICATIONS" SECTION OF THIS MANUAL TO DETERMINE CORRECT EXCAVATOR SIZES AND HYDRAULIC PRESSURE, AND HYDRAULIC FLOW IF HYDRAULIC PRESSURE, HYDRAULIC FLOW IS EXCEEDED, THE HYDRAULIC BREAKER WARRANTY IS VOID

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 IN ACCUMULATOR AND BACK HEAD.

SEE INSPECTION AND CHARGING OF NITROGEN GAS AT BACK HEAD, ACCUMULATOR, HOSE AND FLUSHING.

CONTAMINATED PARTS MUST BE CLEANED WITH NO DELAY.

HYDRAULIC OIL OR LIGHT OIL IS HIGHLY RECOMMENDABLE.

THE CIRCUIT RELIEF SETTING PRESSURE IS NOT FIXED

BUT IT WILL BE ADJUSTED BY PUMP CAPACITY.

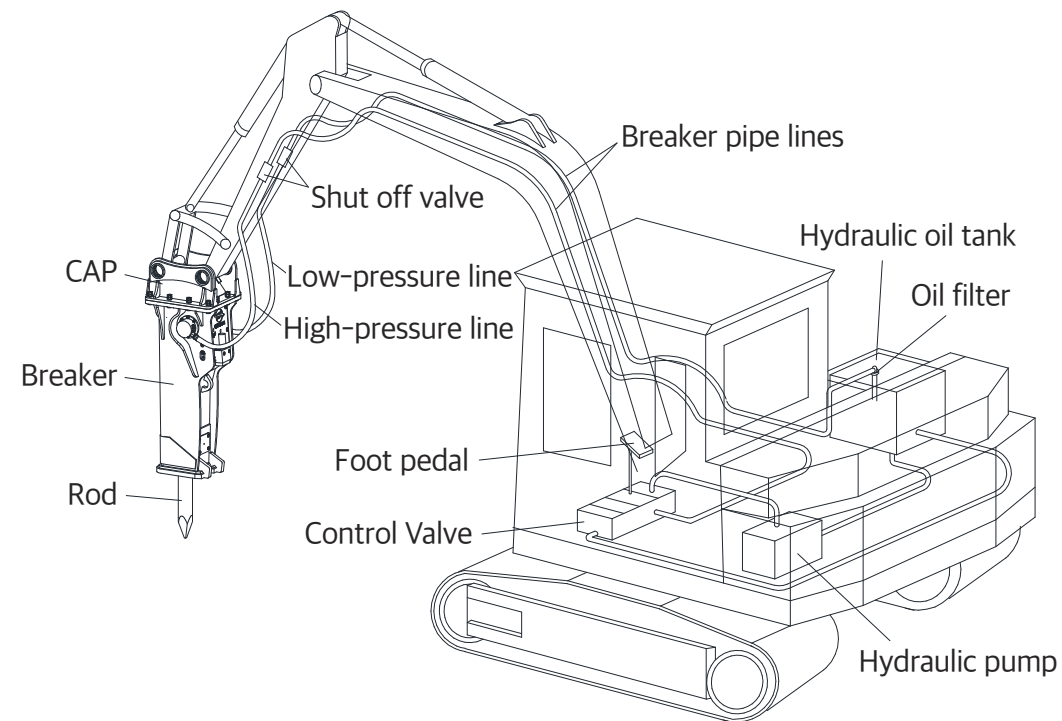
• Recommended circuit relief setting pressure and back pressure

MODEL	UNIT	SQ10	SQ20	SQ30	SQ35 AutoLube	SQ40 AutoLube	SQ43 AutoLube	SQ45 AutoLube	SQ50 AutoLube
Relief Setting Pressure	kg/cm ²	150	150	160	160	170	180	190	200
	psi	2134	2134	2276	2276	2418	2560	2702	2845
Back Pressure	kg/cm ²	10	10	10	10	10	10	10	10
	psi	142	142	142	142	142	142	142	142

MODEL	UNIT	SQ60	SQ70	SQ80	SQ100	SQ120	SQ130	SQ140	SQ150	SQ181
Relief Setting Pressure	kg/cm ²	200	210	210	210	210	210	210	210	230
	psi	2845	2987	2987	2987	2987	2987	2987	2987	3271
Back Pressure	kg/cm ²	10	10	10	10	10	10	10	10	10
	psi	142	142	142	142	142	142	142	142	142

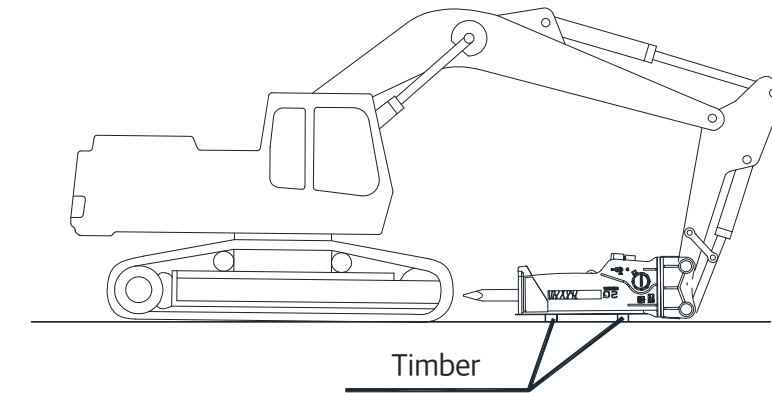
4.2 Installation and Removal

- Basic set up

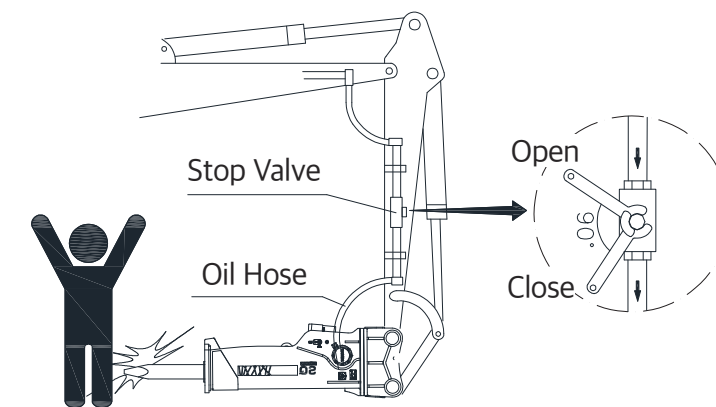


- Removal of the Hydraulic Breaker

When the bucket and breaker operate alternately, the bucket and breaker can be easily exchanged by the hydraulic hoses and two mounting pins. However, there is a risk of hydraulic contamination accordingly. Do installation and removal as follows.



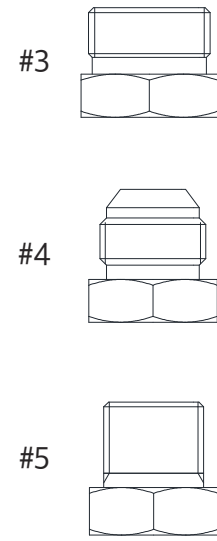
- (1) Move the carrier to stable ground, free from mud, dust and dirt.
- (2) Place the hydraulic breaker on timber.
- (3) Stop the engine, turn off the main switch and deflate air from oil tank if it is
- (4) Turn 90° the shut off valve installed to the end of arm to prevent hydraulic from flowing out.



- (5) Loosen the hose plug on the breaker arm. Collect a small amount of oil flowing out at this time and put into a container.
- (6) Be careful to prevent mud or dust from entering oil hoses and pipe lines. Plug oil hoses with hose plug and pipe lines with union caps. Bind high and low-pressure hoses with a wire to prevent them from getting on the ground.

• Oil hose plug

The oil hose plug is used to plug the hose attached to the hydraulic breaker. It prevents contamination of the hose when the hydraulic breaker is removed from the carrier for bucket operation.

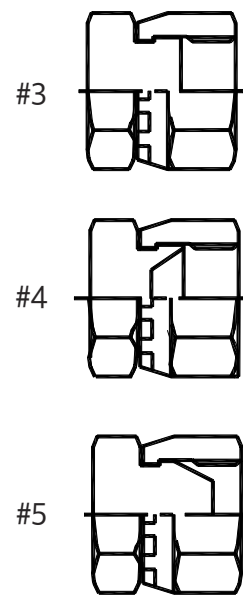


MODEL	TYPE	P/ N	TYPE	P/ N	TYPE	P/ N	O-RING (#3)
SQ10~SQ30	-	-	# 4	2715302	# 5	2715306	-
SQ35 AutoLube	-	-	# 4	2715302	# 5	2715306	-
SQ40 AutoLube	-	-	# 4	2715302	# 5	2715306	-
SQ43 AutoLube	-	-	# 4	2715302	# 5	2715306	-
SQ45 AutoLube	-	-	# 4	2715303	# 5	2715307	-
SQ50 AutoLube	-	-	# 4	2715303	# 5	2715307	-
SQ60	# 3	2715300	# 4	2715304	# 5	2715308	2856004
SQ70	# 3	2715300	# 4	2715304	# 5	2715308	2715308
SQ80	# 3	2715300	# 4	2715304	# 5	2715308	2715308
SQ100	# 3	2715300	# 4	2715304	# 5	2715308	2715308
SQ120	# 3	2715301	# 4	2715305	# 5	2715309	2715309
SQ130	# 3	2715301	# 4	2715305	# 5	2715309	2715309
SQ140	# 3	2715301	# 4	2715305	# 5	2715309	2715309
SQ150	# 3	2715301	# 4	2715305	# 5	2715309	2715309
SQ181	# 3	2715301	# 4	2715305	# 5	2715309	2715309

* O-Ring(#3) use only TYPE #3

• Union cap

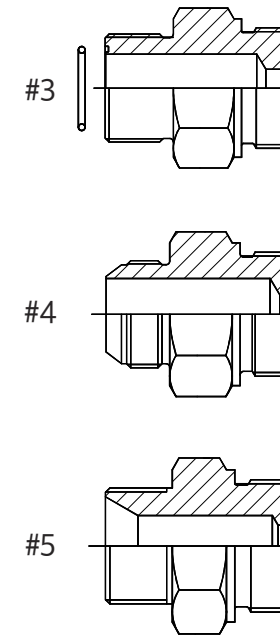
The union cap is used to cap the piping bracket attached to the carrier for prevention of the piping bracket from contamination during bucket operation.



MODEL	TYPE	P/ N	TYPE	P/ N	TYPE	P/ N
SQ10~SQ30	# 3	-	# 4	C01202	# 5	2715002
SQ35 AutoLube	# 3	-	# 4	C01202	# 5	2715002
SQ40 AutoLube	# 3	-	# 4	C01202	# 5	2715002
SQ43 AutoLube	# 3	-	# 4	C01202	# 5	2715002
SQ45 AutoLube	# 3	-	# 4	C11149	# 5	2715003
SQ50 AutoLube	# 3	-	# 4	C11149	# 5	2715003
SQ60	# 3	2715063	# 4	C21132	# 5	2715004
SQ70	# 3	2715063	# 4	C21132	# 5	2715004
SQ80	# 3	2715063	# 4	C21132	# 5	2715004
SQ100	# 3	2715063	# 4	C21132	# 5	2715004
SQ120	# 3	2715064	# 4	C31175	# 5	2715005
SQ130	# 3	2715064	# 4	C31175	# 5	2715005
SQ140	# 3	2715064	# 4	C31175	# 5	2715005
SQ150	# 3	2715064	# 4	C31175	# 5	2715005
SQ181	# 3	2715064	# 4	C31175	# 5	2715005

• Adapter

This parts connect to BREAKER IN/OUT port with hydraulic hose.



MODEL	TYPE	P / N	TYPE	P / N	TYPE	P / N	O-RING (#3)
SQ10 ~ SQ30	# 3	-	# 4	C01201	# 5	C91120	-
SQ35 AutoLube	# 3	-	# 4	C01201	# 5	C91120	-
SQ40 AutoLube	# 3	-	# 4	C01201	# 5	C91120	-
SQ43 AutoLube	# 3	-	# 4	C01201	# 5	C91120	-
SQ45 AutoLube	# 3	-	# 4	C11121	# 5	2710311	-
SQ50 AutoLube	# 3	-	# 4	C11121	# 5	2710311	-
SQ60	# 3	C21124	# 4	C21131	# 5	2710315	2856004
SQ70	# 3	C21124	# 4	C21131	# 5	2710315	2856004
SQ80	# 3	C21124	# 4	C21131	# 5	2710315	2856004
SQ100	# 3	C31115	# 4	C31201	# 5	C31193	2856004
SQ120	# 3	B0003996	# 4	C31117	# 5	2710318	2856005
SQ130	# 3	B0003996	# 4	C31117	# 5	2710318	2856005
SQ140	# 3	B0003996	# 4	C31117	# 5	2710318	2856005
SQ150	# 3	B0003996	# 4	C31117	# 5	2710318	2856005
SQ181	# 3	C61150	# 4	C61152	# 5	2710319	2856005

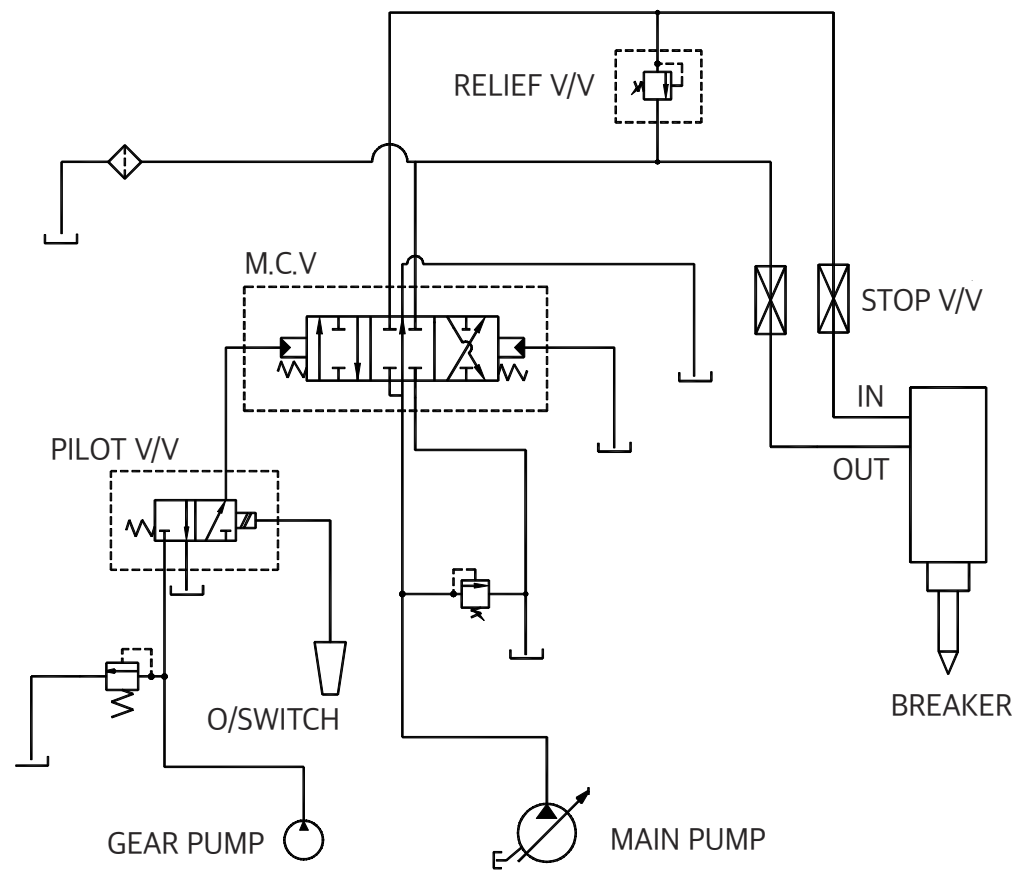
4.3 Hydraulic pipe lines for exclusive use

Operation of the hydraulic breaker requires installation of hydraulic pipe lines for exclusive use of the hydraulic breaker. As hydraulic pipe lines vary depending on base machines, our service engineer must first check hydraulic pressure, oil capacity, pressure loss and other conditions of the base machine before installing hydraulic pipe lines. Use only genuine parts in case of replacement because hydraulic pipe lines (hoses, pipes and fittings) are made of materials carefully selected in consideration of durability.

WARNING

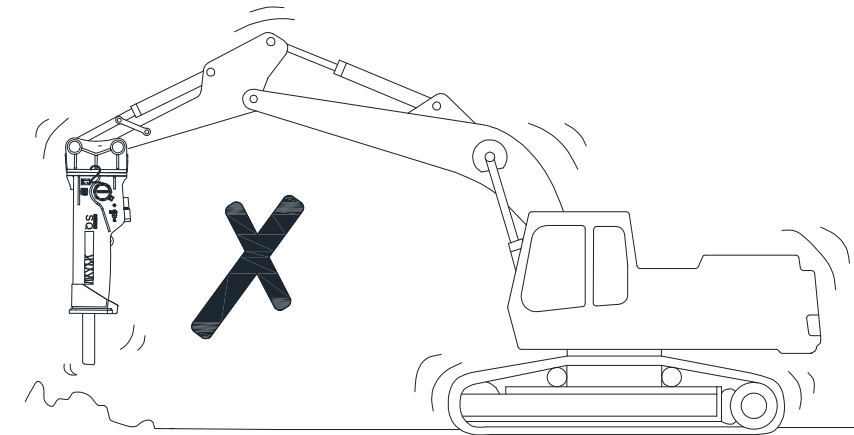
THE HYDRAULIC SYSTEM TO THE BASE MACHINE MUST BE CHECKED BY AN AUTHORIZED SOOSAN SERVICE ENGINEER BEFORE FIRST USE AND AFTER ANY MODIFICATIONS.

MAKE SURE THAT THE HYDRAULIC BREAKER VALVE OF HYDRAULIC SYSTEM IS PROPERLY SET.

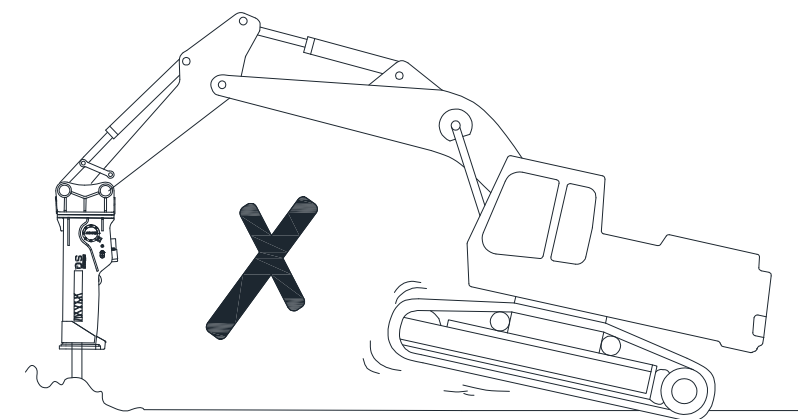


05. Precautions for safe operation.

- [1] 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,



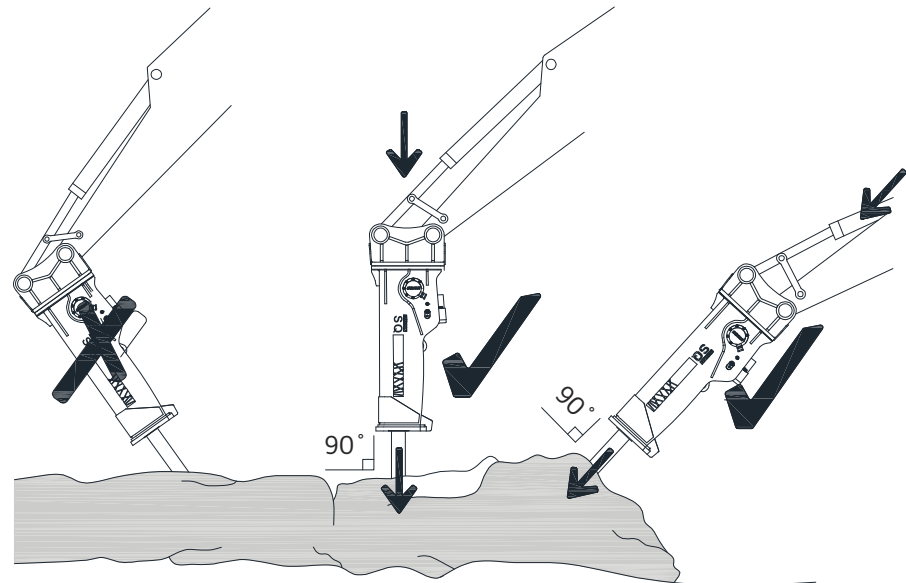
- [2] On the contrary, when position is excessive enough to break rocks with front of the base machine raised, the machine may suddenly tilt forward the moment rocks are broken. Then, the breaker body or the end of bracket may violently hit against rocks and result in damage.



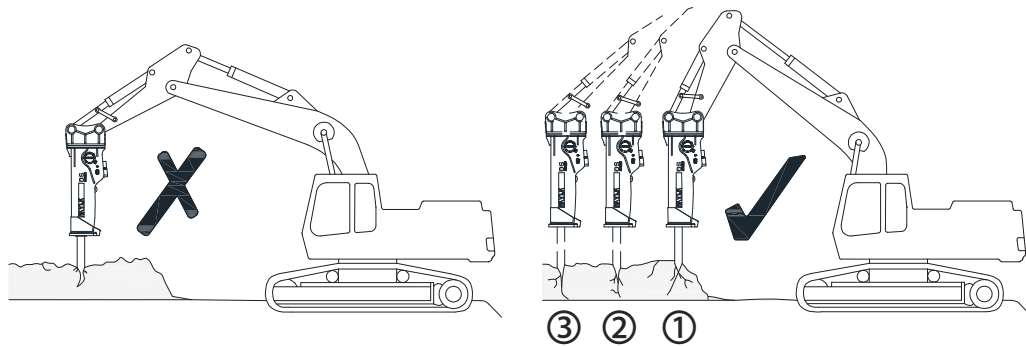
[3] It is undesirable to carry out hammering under the below condition, because vibrations during hammering may be transmitted to tracks of the base machine.

During hammering, however, proper position must be always applied to the breaker.

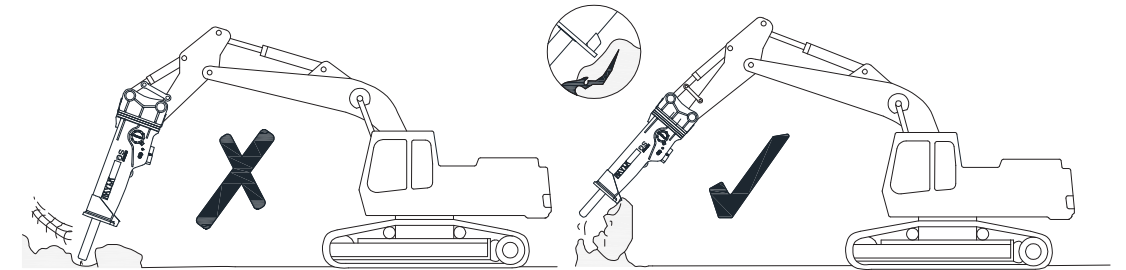
Special care must be taken not to hammer under abnormal condition.



[4] 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.

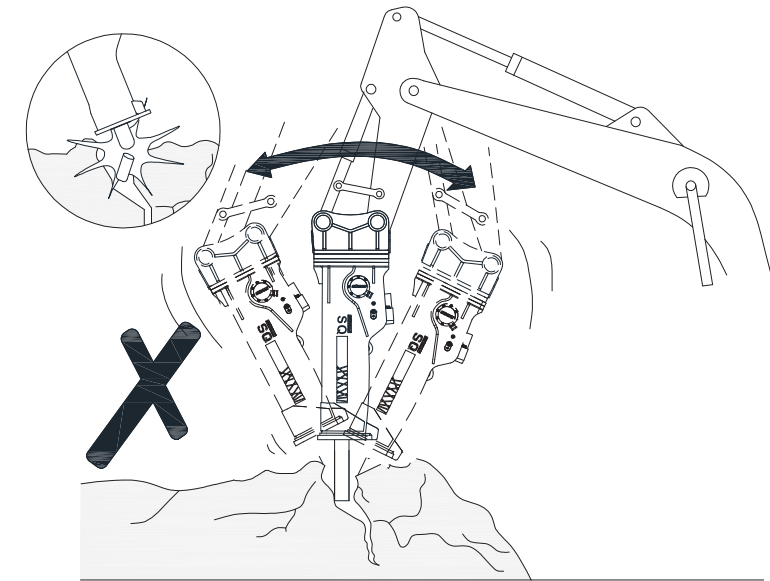


[5] Do not use the breaker rod to move rocks. The stone claws are designed for this purposes.

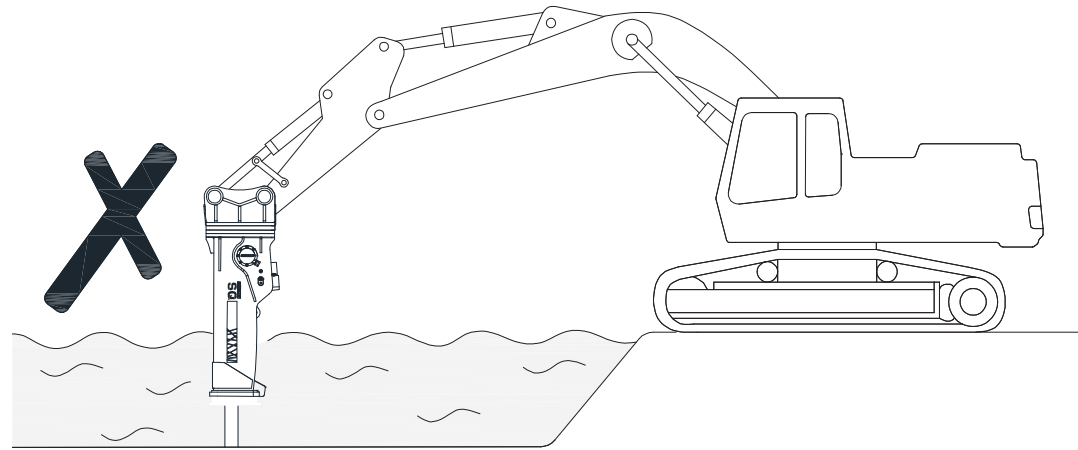


[6] Do not use the breaker to sweep the ground of debris.

This may damage the breaker and the housing will wear out more quickly

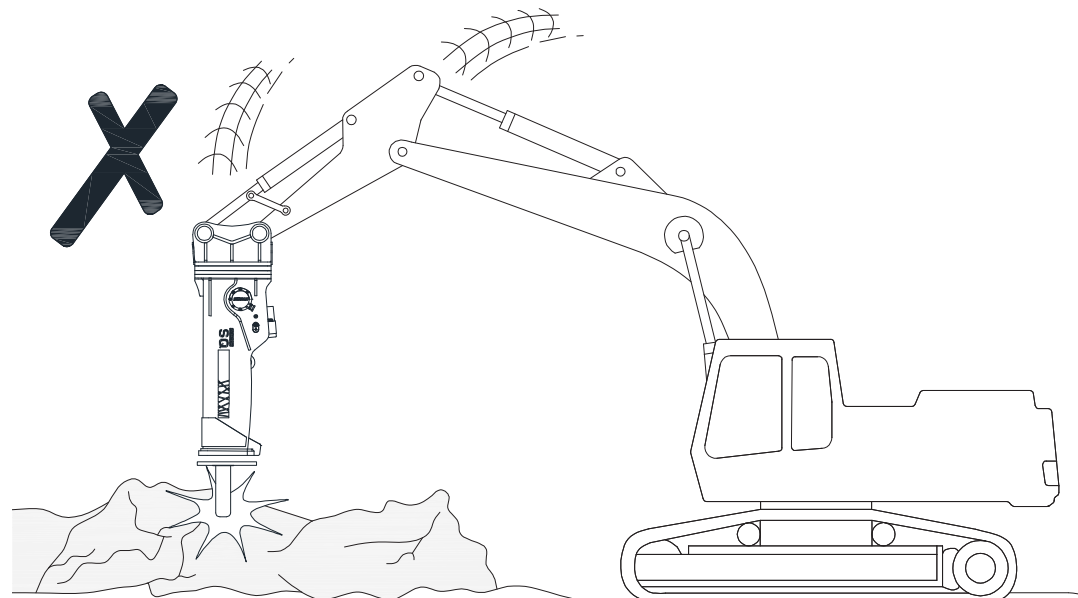


- [7] Do not operate breaker when all components except rod are immersed in water and mud.
Underwater usage of the breaker will cause internal damage to the breaker.
Consult Soosan for modifications if you have an underwater requirement.

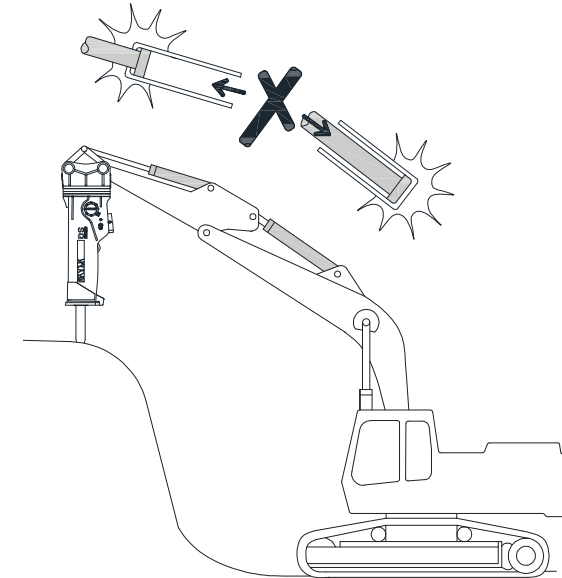


- [8] Do not allow the breaker to fall to a rock.

Falling down the breaker will apply excessive force to the breaker or the carrier, causing damage to the parts of the breaker and carrier.

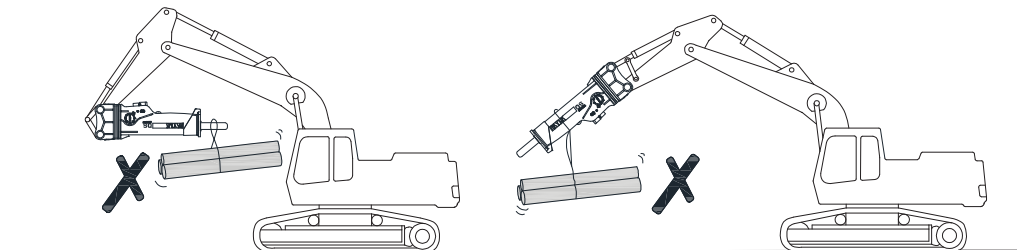


- [9] Do not operate the breaker with the carrier's boom, stick or bucket cylinders at the end of their stroke (either fully extended or fully retracted). Damage to the carrier may result



- [10] Do not use the breaker or breaker rods for lifting.

Lifting eyes on the breaker are for storage and maintenance purposes only.



- [11] 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 30~40°C(86~105°F) before breaker operation.
- When operating the hydraulic breaker, idle the engine and operate the hydraulic breaker with a light load.

- [12] Stop operation when hoses are vibrating abnormally.

Check the hoses on the high pressure and low pressure sides of the breaker for abnormal vibration. If they are vibrating abnormally, contact the nearest Soosan dealer.

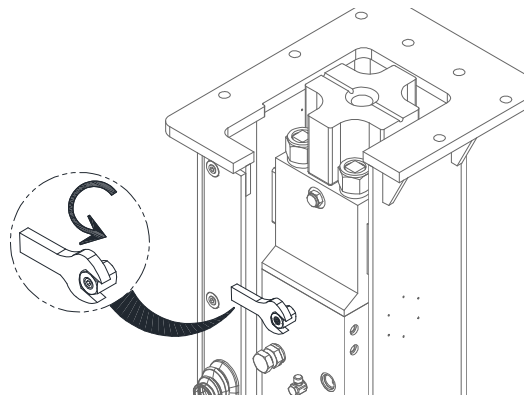
[13] Avoid blank hammering.

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.

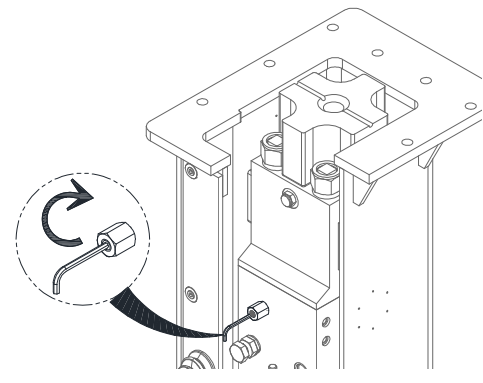
[14] Operate the breaker at proper engine speed.

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.

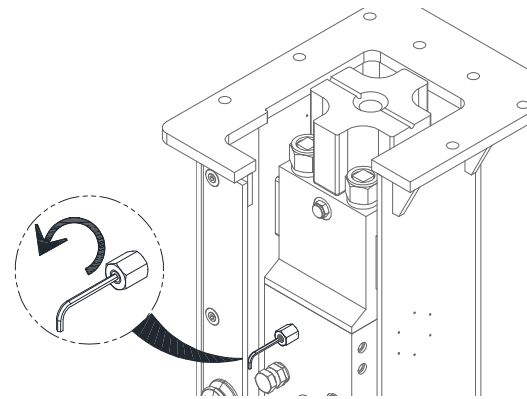
[15-1] Piston Stroke Adjuster (SQ35AutoLube~50AutoLube)



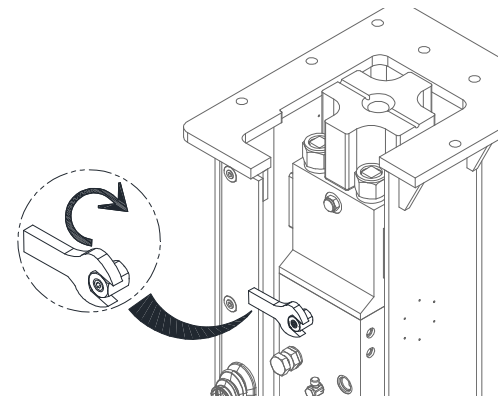
STEP1. Release the Nut using 24mm(0.9inch) Spanner



STEP2. Close the Adjuster using 5mm(0.2inch) L-Wrench



STEP3. Set the released turns using 5mm(0.2inch) L-Wrench

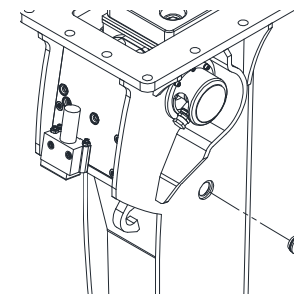


STEP4. Fasten the Nut using 24mm(0.9inch) Spanner

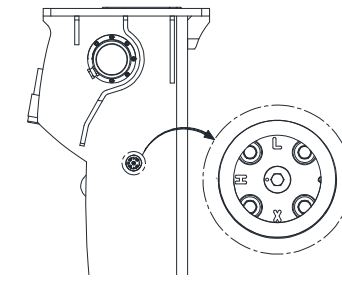
(Released turns setting)

Short Stroke	Release 3~3.5 turns from fully closed
Middle Stroke	Release 1-1/4~2 turns from fully closed
Standard Stroke	Fully closed (standard factory setting)

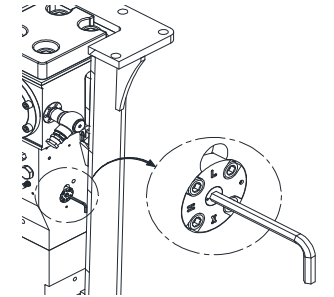
[15-2] IPC (Integrated Power Control) & ABH (Anti Blank Hammering) (SQ60~181)



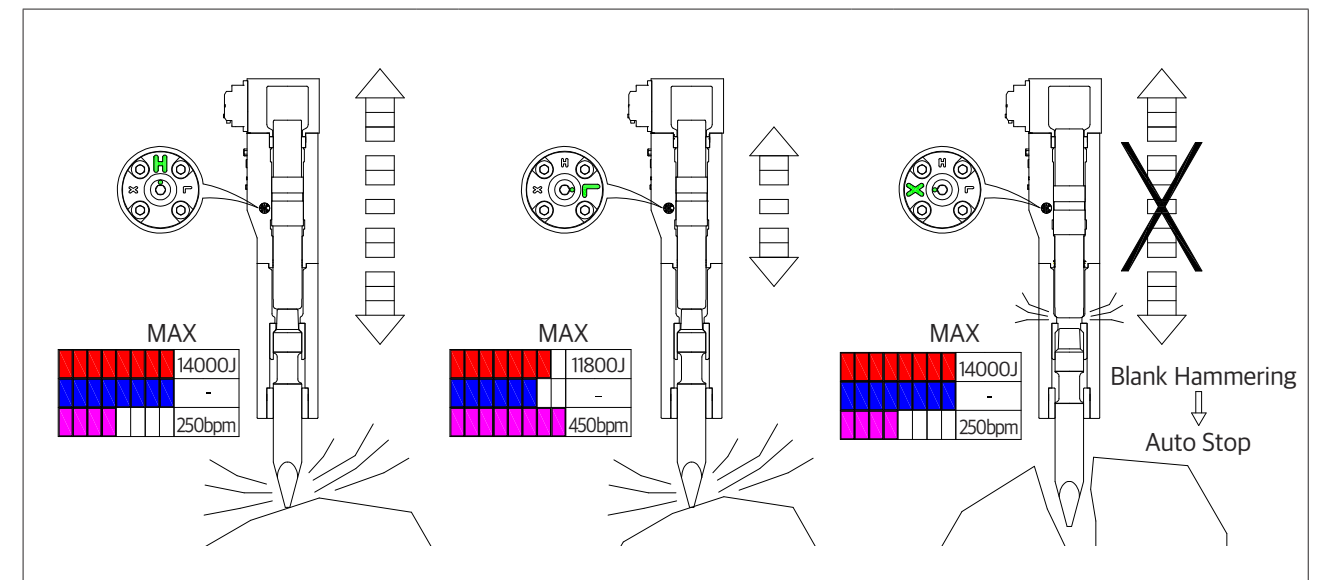
STEP1. Remove the Sound Plug



STEP2. Check the Selected Mode



STEP3. Change the Mode using 8mm(0.3inch) L-Wrench

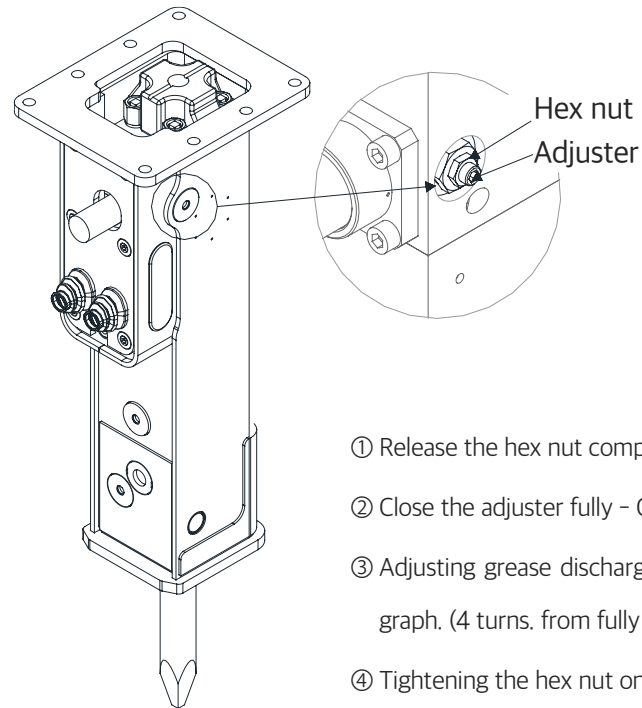


Long stroke & extra Power. ABH System is OFF.

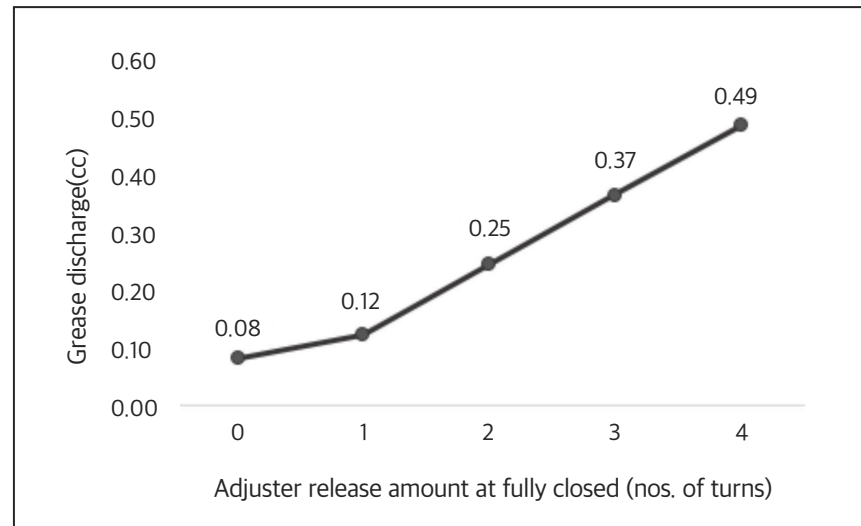
Short stroke & Normal Power. ABH System is OFF.

Long stroke & extra Power. ABH System is ON

[16] Grease discharge setting (SQ35AutoLube ~ SQ50AutoLube)



- ① Release the hex nut completely - CCW direction using 17mm spanner
- ② Close the adjuster fully - CW direction, using 6mm L-wrench
- ③ Adjusting grease discharge amount by releasing the adjuster, see the below graph. (4 turns. from fully closed is recommended)
- ④ Tightening the hex nut once setting done



06. Maintenance

- Regular Hydraulic breaker Inspection and Maintenance

CAUTION

Regular inspection is essential for keeping hydraulic breaker operating in the best condition consult with the Soosan service station for regular inspection and maintenance. Customers are recommended to contact the service station for inspection within six months after delivery.

- Maintenance of Hydraulic breaker

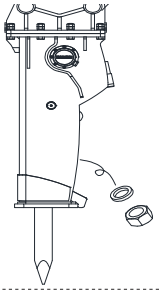
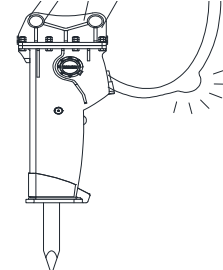
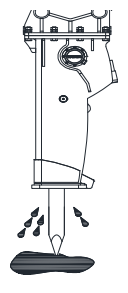
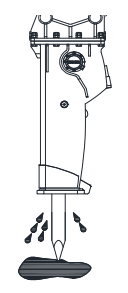
Check cycle	Check Item	Location
Ordinary check items before and after operating breaker	<ul style="list-style-type: none"> • Confirm the state of setting breaker and carrier * Damage and assembled state of bracket pin * Fastened state of pin assembled bolts * State of quick-clamp setting and bolts/pins assembled * State of cap mounting bolt 	
	<ul style="list-style-type: none"> • Assembling state of breaker and bracket * State of side-bolt and all kinds of bolt * Whether all kinds fixing part and anti-shock parts (cushion & wear plate) are damaged * State of bracket-crack, breakage, welded area 	
	<ul style="list-style-type: none"> • Fastening state of breaker main-body parts - Fastening and breakage state of pins, blocks, bolts * Fastened through bolt state * Front head pin and Rubber plugs * Stop pin and Rubber plugs * Air check valve * Back head charging valve * Valve adjuster * Accumulator mounting bolt * Accumulator cover fastening bolt * Accumulator charging valve * Hose adapter * Hex Head Plug 	
	<ul style="list-style-type: none"> • Damage of safety/warning sticker • Loss or fastening state of bracket assembled parts * Sound plug * Window cover 	
	<ul style="list-style-type: none"> • Leakage, interference and assembling state of carrier hoses and pipes * Interference and assembling state of hoses and pipes * Fixing state of control valve * Welding state of clamps * Leakage and fastening state of pipes/hoses connected * Whether hose are twisted/damaged/aged 	
	<ul style="list-style-type: none"> • Oil tank and working fluid quality * Quantity of working fluid * Contamination of working fluid 	
	<ul style="list-style-type: none"> • Breaker on/off switch and electric wire 	
	<ul style="list-style-type: none"> • Examine worsen state of consumable parts * Inside diameter of front cover * Worsen state of rod 	

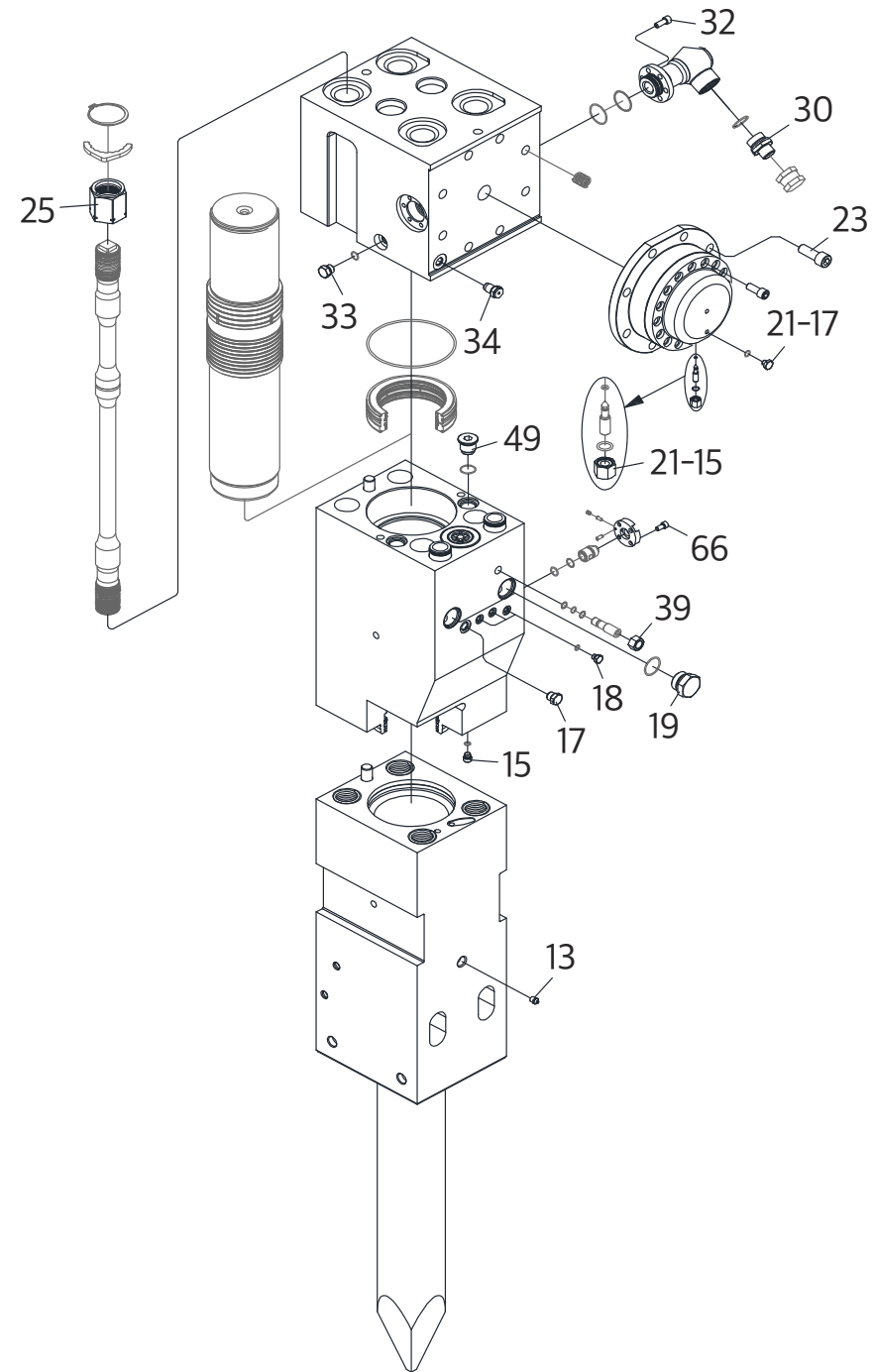
Check cycle	Check Item	Location
Any time check items during operating breaker	<ul style="list-style-type: none"> • Temperature of working fluid(below 80°C/176°F) • Loss and damage of parts • Leakage of breaker hoses <ul style="list-style-type: none"> - A little leakage could be run on the rod (as much as it does not affect operating, performance and efficiency) • Efficiency and abnormal working of breaker <ul style="list-style-type: none"> * Irregular blowing is occurred * Abnormal blowing sound is occurred * Pipes and hoses are shaken extremely 	
After 1Hr operating	<ul style="list-style-type: none"> • Grease pumping(about 20cc after 1hr operating) <ul style="list-style-type: none"> - About 5~10 times pumping with grease gun * Rod friction area : Ring bush, Front cover, Rod pin 	
Every week (Every 50hr operating)	<ul style="list-style-type: none"> • Quantity and contamination degree of working fluid(Refill or replace) <ul style="list-style-type: none"> * Contamination limit : 20~40cst • Examining wear of consumable parts (Grind the area deformed if necessary) <ul style="list-style-type: none"> * Rod pin * Ring bush * Front cover • Remove strange material inside of front head • Check the gas pressure and refill <ul style="list-style-type: none"> * Back head * Accumulator • Whether all kinds of bolts are fastened by regulated torque 	
Every month (Every 200 Hr operating)	<ul style="list-style-type: none"> • Operating pressure of breaker • Relief setting pressure of hydraulic circuit • Supply flow • Replace oil filter of carrier 	
Every 3month (Every 500 ~ 1000operating)	<ul style="list-style-type: none"> • Replace seal kit • Replace diaphragm of accumulator • Examine if piston is pressed or deformed • Examine if hydraulic parts are scratched if necessary grind and repair them 	
Hold breaker over 1month	<ul style="list-style-type: none"> • Sufficient greasing <ul style="list-style-type: none"> * Rod, Rod pin, Front cover, Ring bush • Lubricate piston surface • Remove N₂ Gas <ul style="list-style-type: none"> * Back head * Accumulator • Paint area fallen off 	
After under water operating	<ul style="list-style-type: none"> • Clean and grease after disassemble all parts of main body 	

* The maintenance related with carrier follows carrier manufacturer rule

- Daily Inspection before operating

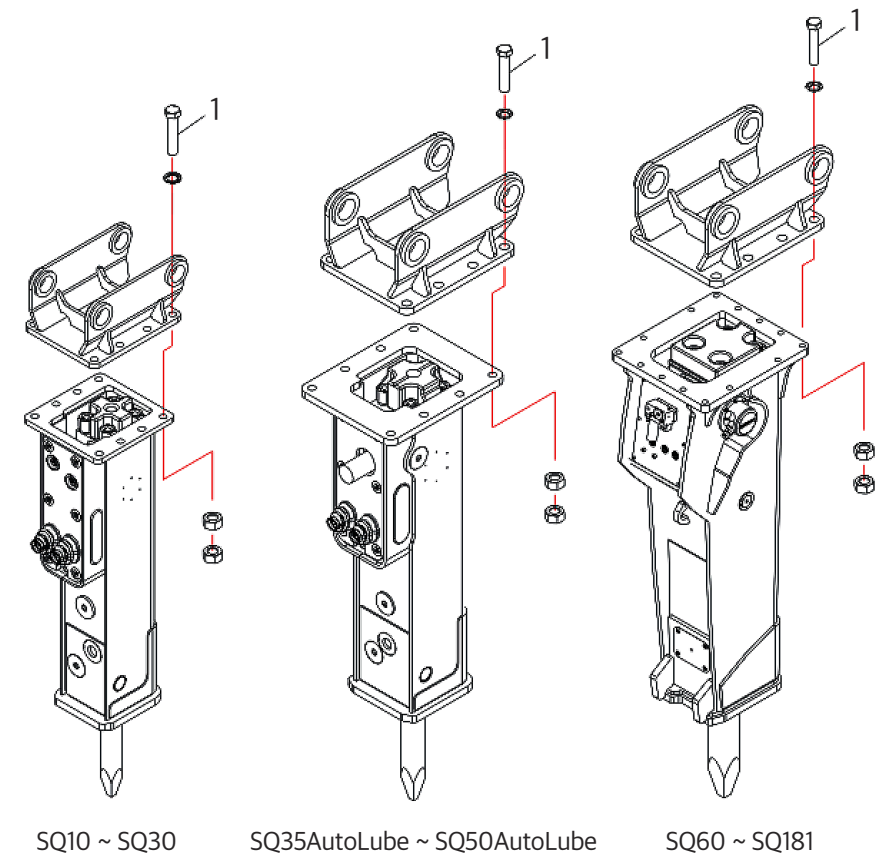
Be fore starting operation, be sure to inspect the breaker referring to the following table.

Inspection Item	Inspection Point	Remedy
<ul style="list-style-type: none"> - Looseness, missing and damage to bolts and nuts 	<ul style="list-style-type: none"> - Through bolt - Bracket mounting bolt 	<ul style="list-style-type: none"> - Check looseness. - Retighten to correct Tightening torque.
<ul style="list-style-type: none"> - Looseness of hose fittings, visible damage to hoses & oil leakage 	<ul style="list-style-type: none"> - Hydraulic piping for breaker - Oil hose 	<ul style="list-style-type: none"> - Retighten sufficiently. - Replace when damaged.
<ul style="list-style-type: none"> - Abnormal oil leakage 	<ul style="list-style-type: none"> - Connection of back head and cylinder - Gap between front head and rod ※ But small leakage is normal. 	<ul style="list-style-type: none"> - Consult with Soosan for further inspection.
<ul style="list-style-type: none"> - Abnormal wear and cracks rod. 	<ul style="list-style-type: none"> - rod 	<ul style="list-style-type: none"> - If the rod is deformed, burred and worn out, be repaired. - If the rod is excessively worn out, be replaced. - If the rod is cracked, be replaced.



• Tightening Torque (Cap Bolt)

MODEL	Part No	UNIT	SQ10~SQ30	SQ35 AutoLube	SQ40 AutoLube	SQ43 AutoLube	SQ45 AutoLube	SQ50 AutoLube	SQ60	SQ70	SQ80	SQ100	SQ120~SQ181
Hex Bolt	1	kg-m	30	45	45	45	45	45	90	90	90	90	250
		ft-lb	66	99	99	99	99	99	198	198	198	198	551



• Replacement & Breakage of Rod

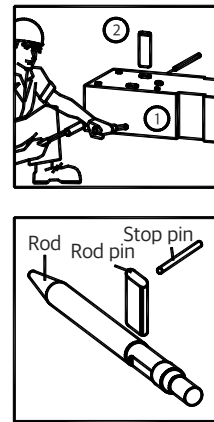
- Rod is deformed or burrs produced in a long term use.
- If the rod tip is worn out, rod is liable to slip. Grind the rod tip to sharpen the edge.
- If the rod tip is sharpened many times, the hardened surface layer will disappear and the rod will be worn out rapidly. In this case, replace with a new rod.
- If the gap between rod and front cover is large, the piston failure to fit in rod to cause damage to the piston or the rod.

• Replacement

- ① Put the breaker horizontally on the timber.
- ② Remove the spring pin(SQ43 and below models) or rubber plug (SQ45 AutoLube above models) using a pin bar.
- ③ Set round bar on the opposite side, and push the stop pin with a hammer.
- ④ Remove the rod pin. In removing the rod pin, be careful falling of rod and rod pin.
- ⑤ Wind rope or nylon sling around the rod and remove from the main body.
- ⑥ Before installing a new rod, check wear, breakage and score.

Remove burrs and swelling from the disassembled rod pin with a grinder. Excessively deformed rod pin will make replacement of rod difficult. Rod pin is required to be checked every 100 to 150 hours of operation

- ⑦ Grease sufficiently to inserting part of front head.

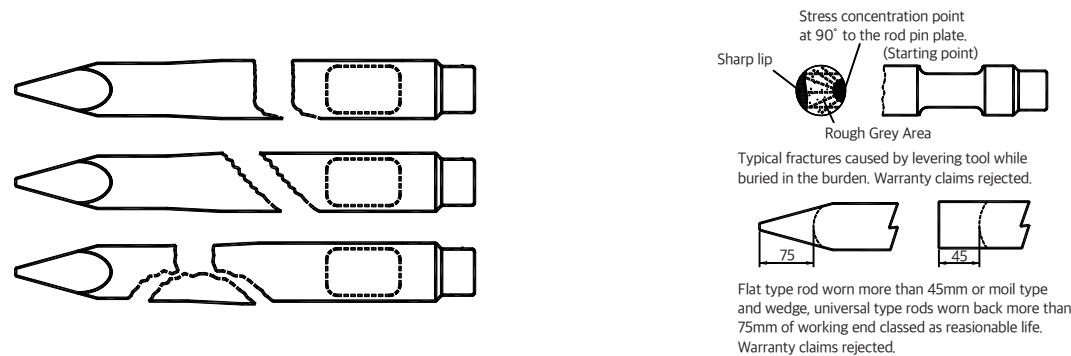


• Breakage of Rod

The service life of the rods depends on the manner of handling them. The rod can sufficiently withstand the vertically acting load, but is weak to the perpendicularly acting load. Especially, the rod is affected by the negative conditions such as force by craning operation, tilted blowing, wrenching and idle strokes etc.

There are several ways of breakage of the rod. Each cause of the breakage can be inferred by observing the breakage section. Further, the breakage case which is not caused by low quality materials or insufficient heat-treatment but by wrong way of handling which the manufacturer is not responsible for the breakage.

The breakage section has the origin on the outer surface, the narrow area of fatigue breakage and the wide area of rough grey area, and final breakage part has the share-lip form. Such as undulation on the breakage section and its inclination to the right and left witness that the breakage is caused by excessive force which exceeds the toughness of the rod. Such the breakage is supposed to occur owing to careless handling of the rod. To avoid such the breakage more carefulness and attention is required in handling the breaker.

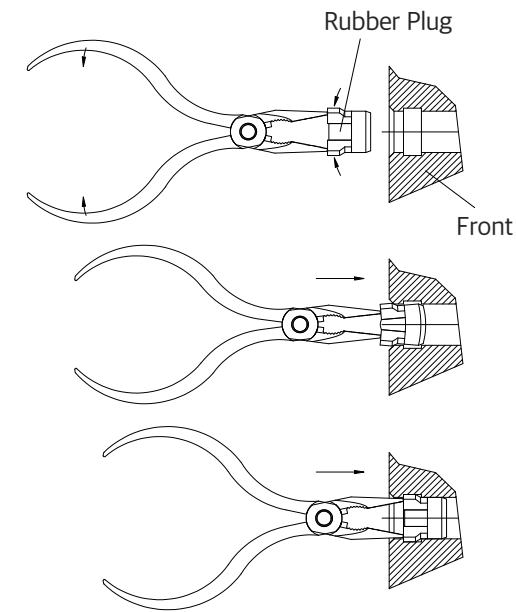


• Assembly and Disassembly of Rubber Plug

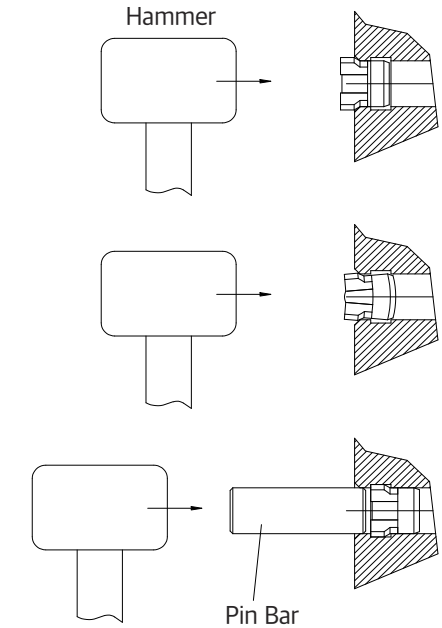
In disassembling the front head pin and stop pin, assemble or disassemble with following method.

1) Assembling the rubber

• Method #1

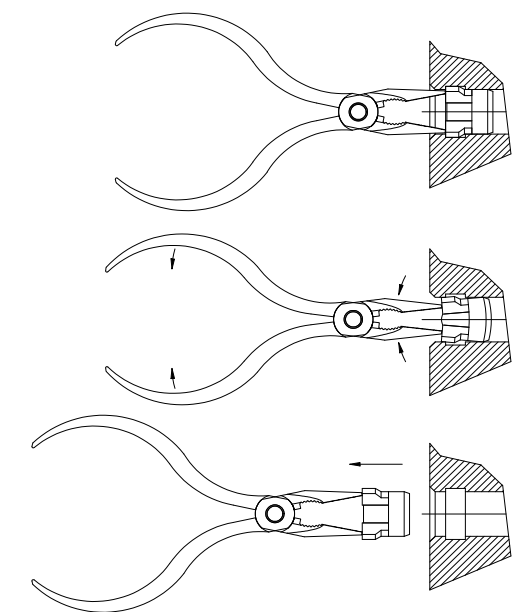


• Method #2

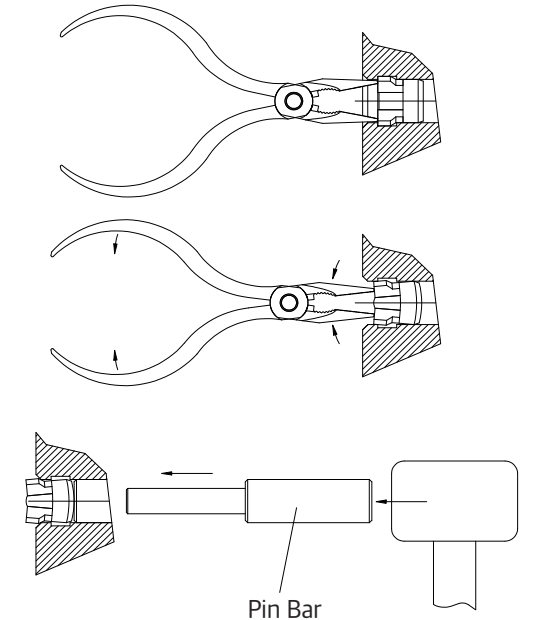


2) Disassembling the rubber plug

• Method #1



• Method #2



07. 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. Our company is not responsible for the flaw using in exceeding the wear tolerance of the expendable parts.

7.1 Seal & O-Ring

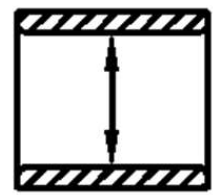
Quality Guaranteed Period : 6 months

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 to be normal. But in case of abnormal leakage, replace as a new ones. To prevent fatal defect periodical replacement is carried out every 6months without external leakage of breaker.

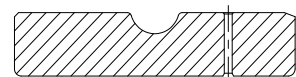
Although the breaker is not operated in a long time, replace seals periodically to prevent rust, corrosion of oil and transformation of seals.

7.2 THRUST BUSH & FRONT COVER

	MODEL	UNIT	New Inside Dia.	Reject Inside Dia.
THRUST BUSH	SQ10	mm in	40 1.6	42 1.7
	SQ20	mm in	45 1.8	47 1.9
	SQ30	mm in	53 2.1	55 2.2
	SQ35	mm	60	62
	AutoLube	in	2.4	2.4
	SQ40	mm in	68 2.7	71 2.8
	AutoLube	in	2.7	2.8
	SQ43	mm in	75 3.0	78 3.1
	AutoLube	in	3.0	3.1
	SQ45	mm	85	89
AutoLube	in	3.3	3.5	
FRONT COVER	SQ50	mm in	100 3.9	105 4.1
	AutoLube	in	3.9	4.1
	SQ60	mm in	125 4.9	130 5.1
	SQ70	mm in	135 5.3	140 5.5
	SQ80	mm in	140 5.5	146 5.7
	AutoLube	in	5.5	5.7
	SQ100	mm in	150 5.9	156 6.1
	AutoLube	in	5.9	6.1
	SQ120	mm in	155 6.1	161 6.3
	AutoLube	in	6.1	6.3
	SQ130	mm in	165 6.5	171 6.7
	AutoLube	in	6.5	6.7
	SQ140	mm in	165 6.5	171 6.7
	AutoLube	in	6.5	6.7
	SQ150	mm in	175 6.9	181 7.1
AutoLube	in	6.9	7.1	
SQ181	mm in	197 7.8	203 8.0	
AutoLube	in	7.8	8.0	



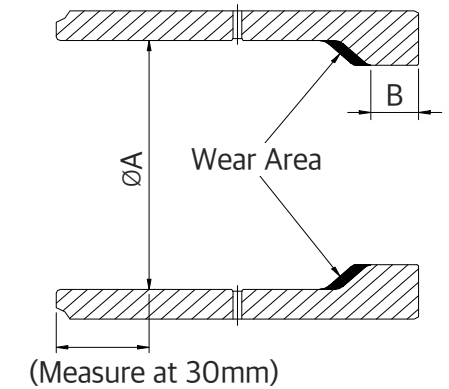
THRUST BUSH
(Measure at center)



(Measure at 10mm)

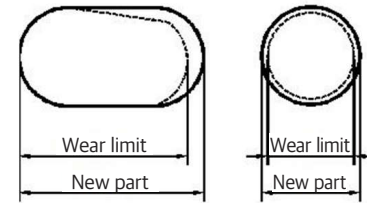
7.3 Ring bush

MODEL	UNIT	New Inside Dia.	Reject Inside Dia.	New B	Reject B
SQ10	mm	40	42	8.75	7
	in	1.6	1.7	0.3	0.3
SQ20	mm	45	47	10.25	8
	in	1.8	1.9	0.4	0.3
SQ30	mm	53	55	8.5	6
	in	2.1	2.2	0.3	0.2
SQ35	mm	60	62	10.5	7.5
	AutoLube	in	2.4	2.4	0.4
SQ40	mm	68	71	10.5	7.5
	AutoLube	in	2.7	2.8	0.4
SQ43	mm	75	78	15	12
	AutoLube	in	3.0	3.1	0.6
SQ45	mm	85	89	24	21
	AutoLube	in	3.3	3.5	0.9
SQ50	mm	100	105	17	14
	AutoLube	in	3.9	4.1	0.7
SQ60	mm	125	130	31	28
	in	4.9	5.1	1.2	1.1
SQ70	mm	135	140	32.5	29.5
	in	5.3	5.5	1.3	1.2
SQ80	mm	140	146	40	37
	in	5.5	5.7	1.6	1.5
SQ100	mm	150	156	38	35
	in	5.9	6.1	1.5	1.4
SQ120	mm	155	161	46	43
	in	6.1	6.3	1.8	1.7
SQ130	mm	165	171	41	38
	in	6.5	6.7	1.6	1.5
SQ140	mm	165	171	41	38
	in	6.5	6.7	1.6	1.5
SQ150	mm	175	181	53.5	50.5
	in	6.9	7.1	2.1	2.0
SQ181	mm	197	203	45	42
	in	7.8	8.0	1.8	1.7



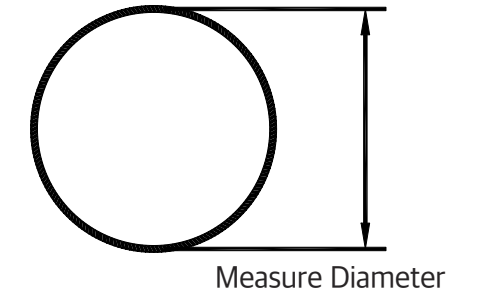
7.4 Rod pin

MODEL	UNIT	New Length	Reject Length
SQ10	mm	28	26
	in	1.1	1.0
SQ20	mm	28	26
	in	1.1	1.0
SQ30	mm	32	30
	in	1.3	1.2
SQ35 AutoLube	mm	36	34
	in	1.4	1.3
SQ40 AutoLube	mm	38	36
	in	1.5	1.4
SQ43 AutoLube	mm	42	40
	in	1.7	1.6
SQ45 AutoLube	mm	54	51
	in	2.1	2.0
SQ50 AutoLube	mm	60	57
	in	2.4	2.2
SQ60	mm	75	72
	in	3.0	2.8
SQ70	mm	82	79
	in	3.2	3.1
SQ80	mm	88.5	85.5
	in	3.5	3.4
SQ100	mm	94	91
	in	3.7	3.6
SQ120	mm	96	93
	in	3.8	3.7
SQ130	mm	96	93
	in	3.8	3.7
SQ140	mm	96	93
	in	3.8	3.7
SQ150	mm	99	95
	in	3.9	3.7
SQ181	mm	110	106
	in	4.3	4.2



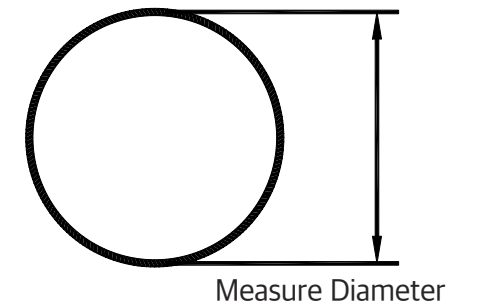
7.5 Stop pin

MODEL	UNIT	New Outside Dia	Reject Outside Dia
SQ10	mm	13	11
	in	0.5	0.4
SQ20	mm	13	10
	in	0.5	0.4
SQ30	mm	13	10
	in	0.5	0.4
SQ35 AutoLube	mm	13	10
	in	0.5	0.4
SQ40 AutoLube	mm	16	14
	in	0.6	0.6
SQ43 AutoLube	mm	16	14
	in	0.6	0.6
SQ45 AutoLube	mm	17.5	15.5
	in	0.7	0.6
SQ50 AutoLube	mm	17.5	15.5
	in	0.7	0.6



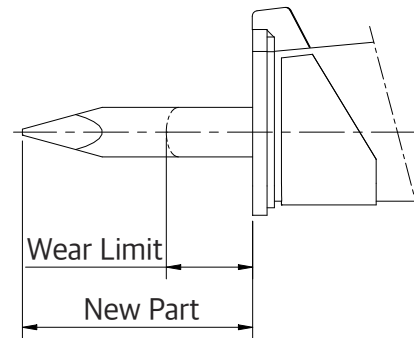
7.6 Front head pin

MODEL	UNIT	New Outside Dia	Reject Outside Dia
SQ45	mm	20	18
	in	0.8	0.7
SQ50	mm	26	24
	in	1.0	0.9
SQ60	mm	26	24
	in	1.0	0.9
SQ70	mm	26	24
	in	1.0	0.9
SQ80	mm	30	28
	in	1.2	1.1
SQ100	mm	26	24
	in	1.0	0.9
SQ120	mm	26	24
	in	1.0	0.9
SQ130	mm	26	24
	in	1.0	0.9
SQ140	mm	26	24
	in	1.0	0.9
SQ150	mm	36	34
	in	1.4	1.3
SQ181	mm	36	34
	in	1.4	1.3



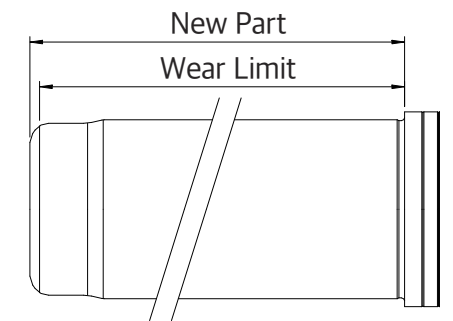
7.7 Rod

MODEL	UNIT	New Part (LONG Type)	New Part (SHORT Type)
SQ10	mm	272	222
	in	10.7	8.7
SQ20	mm	291	241
	in	11.5	9.5
SQ30	mm	295	245
	in	11.6	9.6
SQ35 AutoLube	mm	344	294
	in	13.5	11.6
SQ40 AutoLube	mm	390	290
	in	15.4	11.4
SQ43 AutoLube	mm	472	372
	in	18.6	14.6
SQ45 AutoLube	mm	561	461
	in	22.1	18.1
SQ50 AutoLube	mm	545	445
	in	21.5	17.5
SQ60	mm	589	489
	in	23.2	19.3
SQ70	mm	640	540
	in	25.2	21.3
SQ80	mm	705	605
	in	27.8	23.8
SQ100	mm	692	592
	in	27.2	23.3
SQ120	mm	846	746
	in	33.3	29.4
SQ130	mm	872	772
	in	34.3	30.4
SQ140	mm	872	772
	in	34.3	30.4
SQ150	mm	839	739
	in	33.0	29.1
SQ181	mm	912	812
	in	35.9	32



7.8 Piston

MODEL	UNIT	New Length	Wear Limit
SQ10	mm	159	158
	in	6.3	6.2
SQ20	mm	169	168
	in	6.7	6.6
SQ30	mm	168	167
	in	6.6	6.6
SQ35 AutoLube	mm	196	195
	in	7.7	7.7
SQ40 AutoLube	mm	189	188
	in	7.4	7.4
SQ43 AutoLube	mm	251	250
	in	9.9	9.8
SQ45 AutoLube	mm	285	284
	in	11.2	11.2
SQ50 AutoLube	mm	284	283
	in	11.2	11.1
SQ60	mm	340	338
	in	13.4	13.3
SQ70	mm	318	316
	in	12.5	12.4
SQ80	mm	324	322
	in	12.8	12.7
SQ100	mm	357	355
	in	14.1	14
SQ120	mm	385	383
	in	15.2	15.1
SQ130	mm	413	411
	in	16.3	16.2
SQ140	mm	433	431
	in	17	17
SQ150	mm	518	516
	in	20.4	20.3
SQ181	mm	620	618
	in	24.4	24.3



08. Inspection and Charging of N₂ Gas at Back head

! WARNING

- Charging gas pressure changes according to the rod condition.
- Lay down the hammer and let the rod extend fully to charge gas.
- Stay clear of the rod while charging the breaker with gas.
- The rod may be impacted by the piston and forced out abruptly, when the through bolts are changed or the breaker body is disassembled. Discharge N₂ gas before work.
- Take special care to handle and store the N₂ gas cylinder as it is high pressurized container.
- Use nitrogen gas only.
- Back head gas pressure 16.5kg/cm² (85.5psi) on the back head surface temperature at 20°C(68°F)
- See "CONVERSION TABLE FOR CHARGING N₂ GAS PRESSURE TO BACK HEAD"

• Inspection of N₂ Gas Back Head

- 1) Make sure if the cap and valve of the 3-way valve assembly ⑤ are fully tightened.
- 2) Screw the 3-way valve assembly ⑤ into the charging valve of the back head after removing the plug.
- 3) At this time the handle must stand up to prevent the gas from coming out.
- 4) Push the handle into the charging valve fully, so the gas pressure inside the back head is indicated on the pressure gauge.
- 5) When the gas pressure is normal, unscrew the 3-way valve assembly after discharging gas inside the 3-way valve assembly.
- 6) When the gas pressure is higher or lower, charge it as described below.

• Charging of N₂ gas into Back Head

- 1) Connect the charging hose ④ to N₂ gas cylinder ① after screwing the bombe adapter ③ onto adapter nut ② and installing them to the N₂ gas cylinder.
- 2) Connect the 3-way valve assembly ⑤ to the charging hose ④ after unscrewing the cap on the 3-way valve.
- 3) Install the 3-way valve assembly ⑤ to the charging valve of the Back Head. At this time the handle of the 3-way valve assembly must be up position to prevent the gas from coming out.
- 4) Push the handle of the 3-way valve assembly fully and turn the handle of the N₂ gas cylinder counterclockwise gradually to charge gas.
- 5) When the gas pressure exceeds 10% higher than the specified pressure, close the N₂ gas cylinder by turning the handle clockwise.
- 6) Leave the handle of 3-way valve assembly up. Generated pressure makes it return back to original position naturally.
- 7) In order to discharge N₂ gas in the charging hose ④ and the 3-way valve assembly turn the relief valve counterclockwise.
- 8) Remove the charging hose ④ from the N₂ gas cylinder ① and the 3-way valve assembly ⑤, and screw the cap into the 3-way valve assembly.

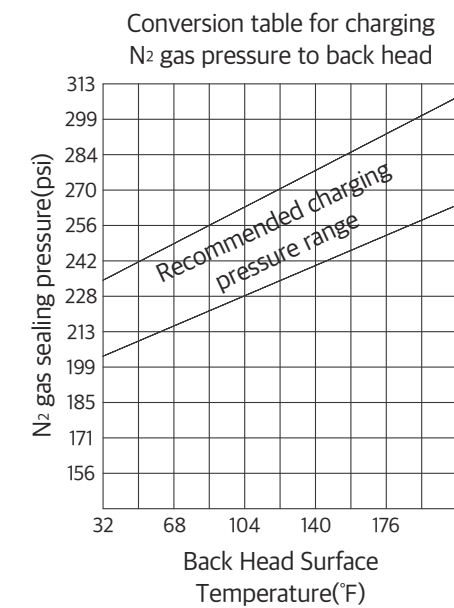
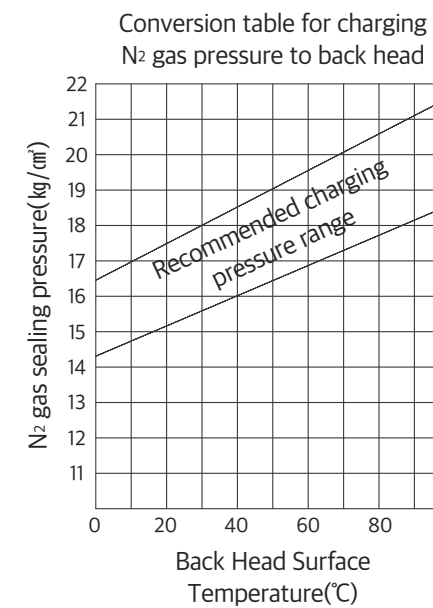
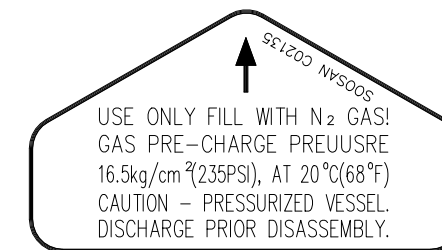
- 9) Push the handle of the 3-way valve assembly fully, and the gas pressure inside the Back Head is indicated on the pressure gauge. When the pressure is higher, discharge a small amount of gas from the Back Head by repeatedly opening and closing the valve and then gas pressure falls to the specified pressure.
- 10) When the gas pressure reaches to the specified pressure, close the valve and release the handle.
- 11) Open the valve completely and discharge gas inside the 3-way valve assembly.
Remove the 3-way valve assembly from the charging valve of Back Head and install the plug to the charging valve. At this time prevent contamination from entering the breaker.

- Conversion Table for charging nitrogen gas pressure to Back Head
(Depends on the temperature of Back Head surface)

Back Head Surface Temperature (°C / °F)	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104
Back Head Gas Pressure (kg/cm ² / psi)	15.5 / 220	16 / 228	16.5 / 235	17 / 242	17.5 / 249

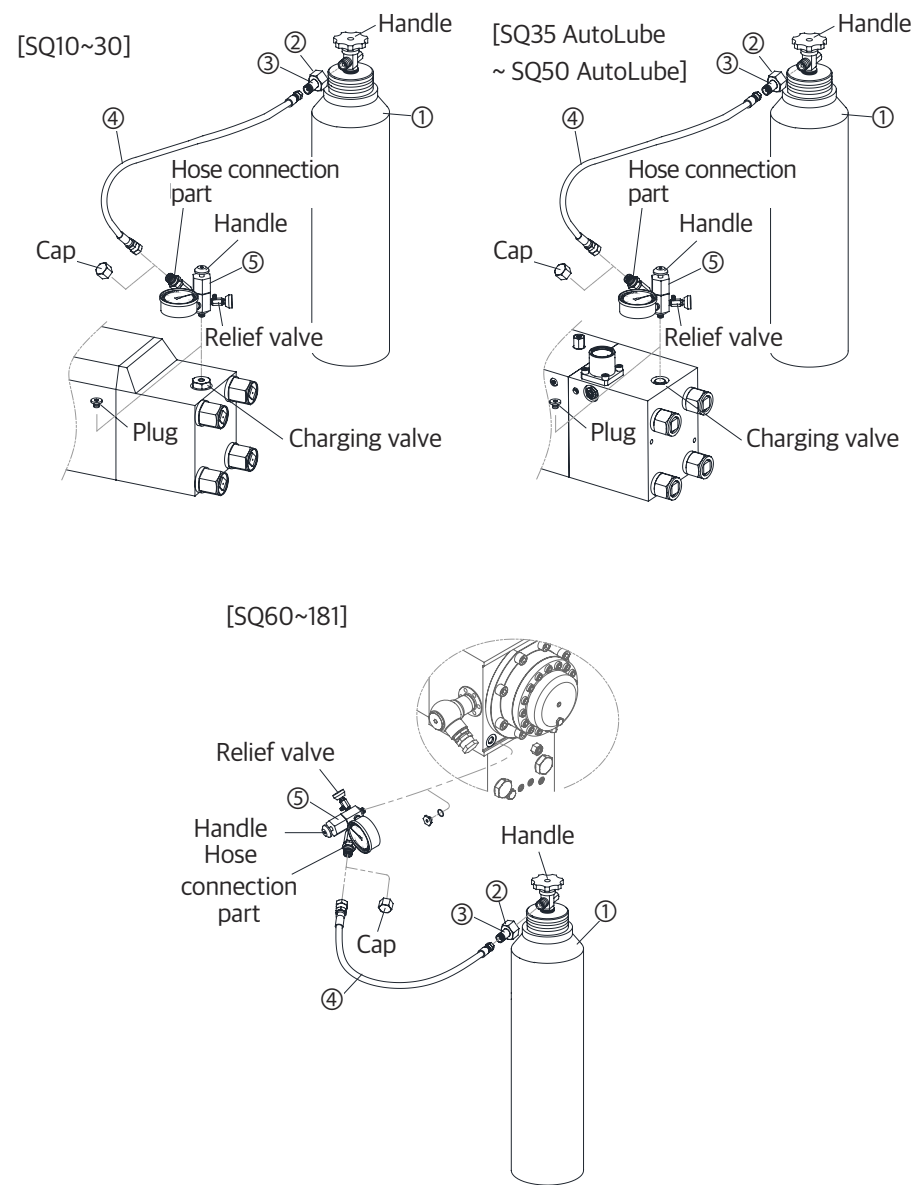
- Back Head Sticker (C02135)

(Appears on the Back Head charging valve)



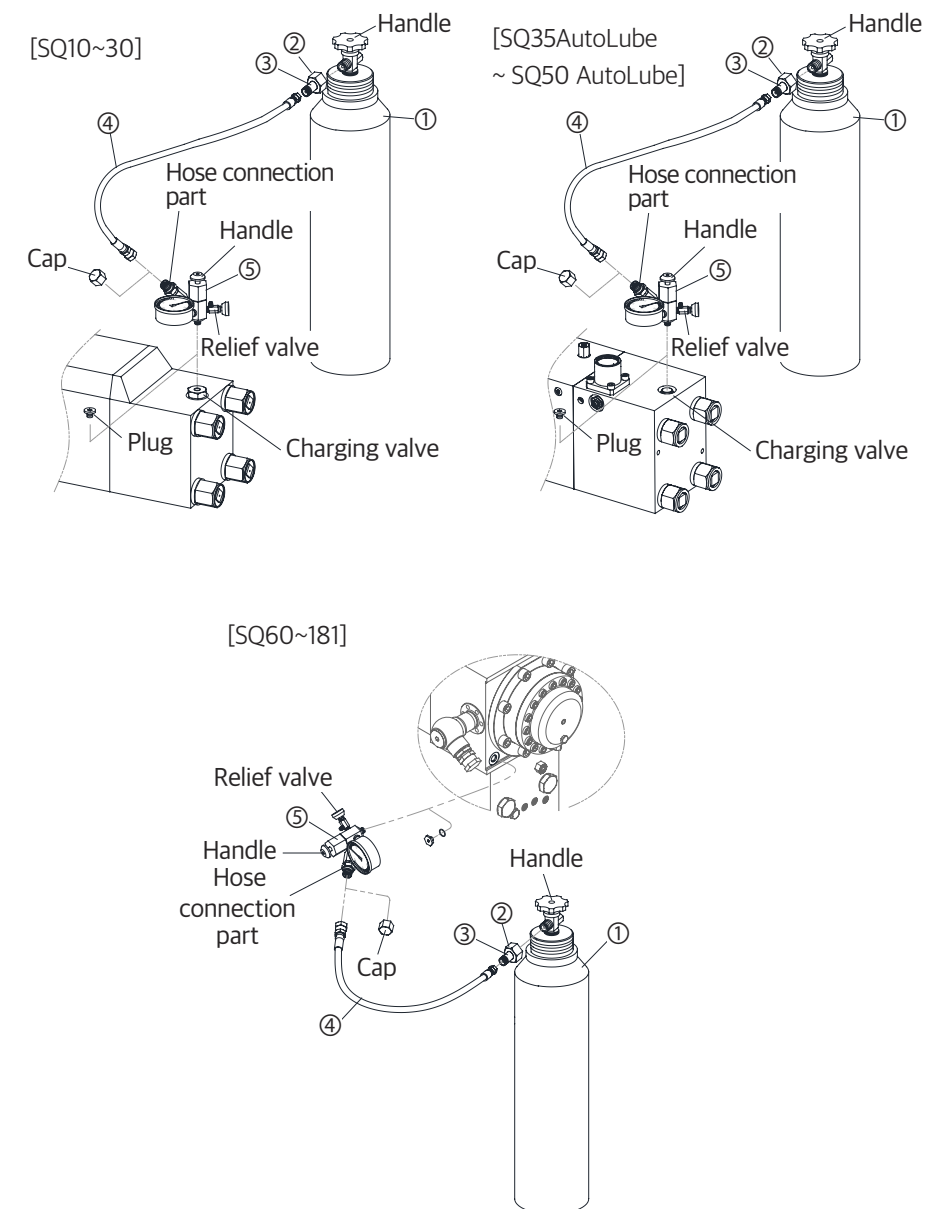
• N₂ Gas charging tools to Back Head

ITEM	PART No.	Q'ty	PART NAME
ASSY	C61204	1 SET	N ₂ Gas Charging Set
1	2900003	1	N ₂ Gas Cylinder
2	C91121	1	Bombe Adapter Nut
3	C91122	1	Bombe Adapter
4	2651001	1	Synflex Hose
5	C01244	1	B-3way Valve Assembly



• N₂ Gas charging tools to Back Head (Option - USA)

ITEM	PART No.	Q'ty	PART NAME
ASSY	B0006847	1 SET	N ₂ Gas Charging Set
1	2651001	1	Synflex Hose
2	C01244	1	B-3way Valve Assembly
3	B0006842	1	Bombe Adapter
4	B0006843	1	Bombe Adapter plug
5	B0006844	1	Bombe Adapter bushing



9. Inspection and Charging of N₂ gas in Accumulator

WARNING

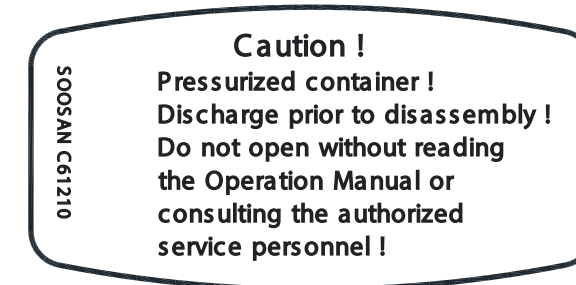
- Take special care to handle and store the N₂ gas cylinder as it is high pressurized
- Use nitrogen gas only.
- When disassemble the accumulator, must discharge N₂ gas before working.
- Do not touch on the accumulator surface when working.
- Be sure to use the 3 way valve assembly for charging the N₂ gas if charging gas leaks directly from the cylinder, diaphragm may be broken off.
- If charging for handling N₂ gas to only the accumulator, make sure that the accumulator body and cover are tightened fully.
- Standard accumulator gas pressure 55kg/cm² (783psi) on the accumulator surface temperature at 20°C(68°F)
- See "CONVERSION TABLE FOR CHARGING N₂ GAS PRESSURE TO BACK HEAD"

- Inspection of N₂ gas Accumulator.
 - 1) Make sure if the cap and valve of the 3-way valve assembly⑤ are fully tightened.
 - 2) Remove the cap ⑩ from the accumulator and tighten the charging valve ⑫ fully.
 - 3) Check if O-rings ⑩ ⑧ are installed to the bushing ⑦. Remove the plug ⑨ and screw the bushing.
 - 4) Install the bushing⑦ to the 3-way valve assembly⑤.
 - 5) Loosen the charging valve⑫ gradually. The charging pressure is indicated on the pressure gauge.
 - 6) lose the valve clockwise when the gas pressure is normal. If the gas pressure is higher, repeat loosening and tightening the relief valve of 3-way valve assembly. The pressure is lowered gradually.
 - 7) Loosen the relief valve of the 3-way valve assembly to discharge the N₂ gas in the 3-way valve assembly⑤.
 - 8) Remove the 3-way valve assembly⑤ and tighten the plug⑨ and cap.
- Charging of N₂ gas into Accumulator
 - 1) Connect the charging hose④ to N₂ gas cylinder ① after screwing the bombe adapter③ onto adapter, nut② and installing to the N₂ gas cylinder.
 - 2) Connect the 3-way valve assembly⑤ to the charging hose④ after unscrewing the cap on the 3-way valve assembly.
 - 3) Remove the cap⑩ form the accumulator and tighten the charging valve⑫ fully.
 - 4) Check if O-rings ⑥ ⑧ are installed to the bushing⑦. Remove the plug⑨ and screw the bushing.
 - 5) Loosen the accumulator charging valve ⑫ after checking if bushing ⑦ is installed to the 3-way valve assembly.
 - 6) Turn the handle of the N₂ gas cylinder counter clockwise slowly to charge gas.
 - 7) Charge gas in accordance with the conversion table for charging N₂ gas pressure to accumulator.
 - 8) Turn the handle of the N₂ gas cylinder clockwise to close the cock.
 - 9) Close the accumulator charging valve⑫.
 - 10) Loosen the relief valve of the 3-way valve assembly to discharge the N₂ gas remaining in the charging hose.
 - 11) Remove the charging hose, 3-way valve assembly and bushing and tighten the plug⑨ and cap⑩.

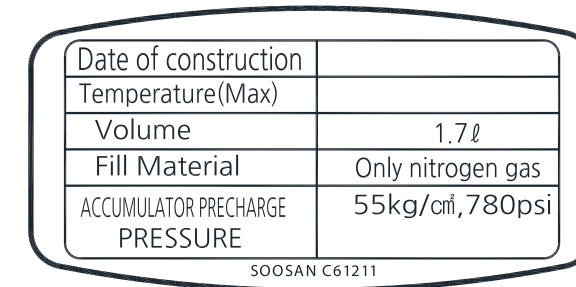
- Conversion Table for charging nitrogen gas pressure to Accumulator

Accumulator Surface Temperature (°C / °F)	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104
Accumulator Gas Pressure (kg/cm ² / psi)	51 / 730	53 / 755	55 / 780	57 / 815	59 / 830

- Accumulator(A) Sticker (C61210)
 - appears on the accumulator body



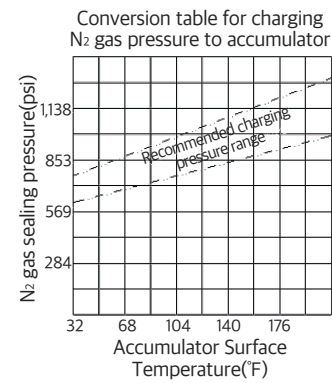
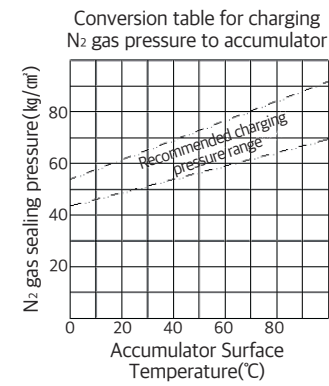
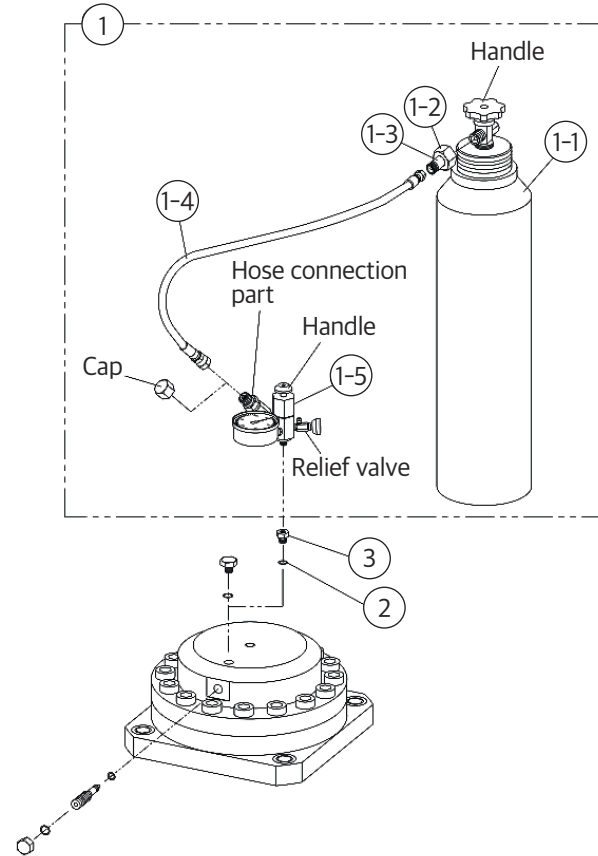
- Accumulator(B) Sticker (C61211)
 - appears on the accumulator body



• N₂ gas Charging Tools to Accumulator

ITEM	PART No.	Q'ty	Part Name
ASSY	C61205	1 SET	Accumulator Charging Set
1	C61204	1 SET	N ₂ Gas Charging Set
1-1	2900004	1	N ₂ Gas Cylinder
1-2	C91121	1	Bombe Adapter Nut
1-3	C91122	1	Bombe Adapter
1-4	2651001	1	Synflex Hose
1-5	C01244	1	B-3way Valve Assembly
2	2850014	1	O-Ring
3	U81414	1	Accumulator Charging Connector

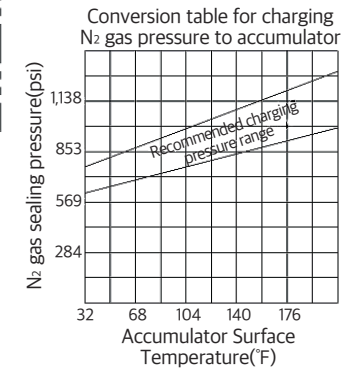
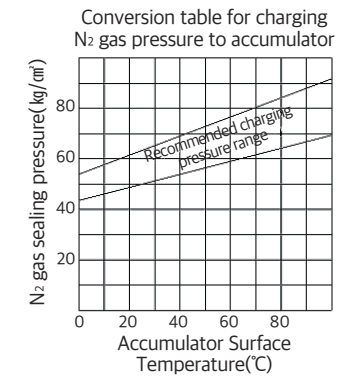
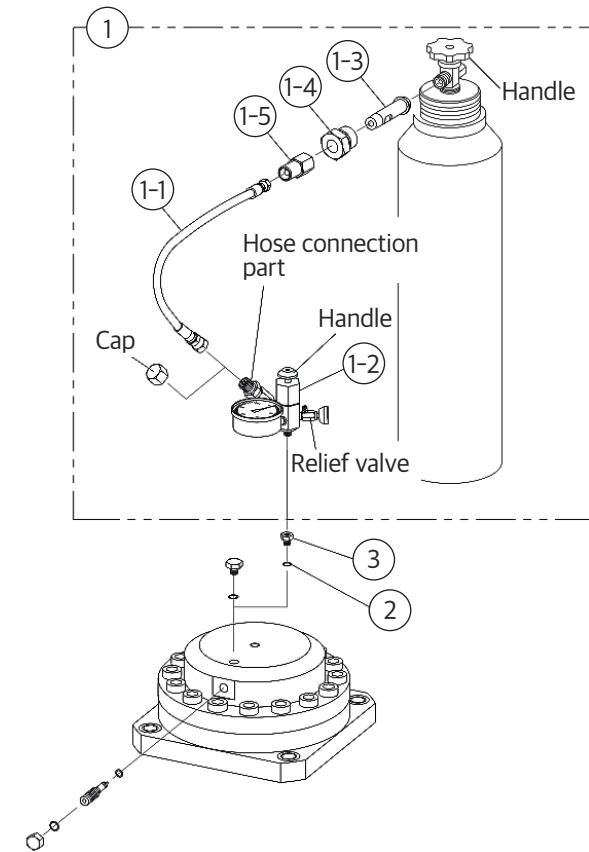
[SQ60~181]



• N₂ gas Charging Tools to Accumulator (Option - USA)

ITEM	PART No.	Q'ty	Part Name
ASSY	B0006879	1 SET	Accumulator Charging Set
1	B0006847	1 SET	N ₂ Gas Charging Set
1-1	2651001	1	Synflex Hose
1-2	C01244	1	B-3way Valve Assembly
1-3	B0006842	1	Bombe Adapter
1-4	B0006843	1	Bombe Adapter plug
1-5	B0006844	1	Bombe Adapter bushing
2	2850014	1	O-Ring
3	U81414	1	Accumulator Charging Connector

[SQ60~181]



10. Trouble Shooting

The trouble-shooting chart is prepared to help operators find out causes and remedies instantly when troubles occur. When a trouble is found, have a good grip of the problem and contact our service station.

When diagnosing faults in operation of the breaker, always check that hydraulic power source is supplying the correct hydraulic flow and pressure to the breaker as listed in the table.

Check the flow with the hydraulic oil temperature at least 176°F/80°C. An approved test procedure is available form Soosan.

TROUBLE	CAUSE	REMEDY
1. Breaker fails to hammer * Sufficient high pressure oil does not flow to breaker inlet. * Sufficient high pressure oil flows to breaker inlet.	* Defective hose or pipes * Clogged or damaged piping * Defective control valve and related parts * Insufficient hydraulic oil * Internal breaker defects	* Check, clean and repair piping or replace with new one. * Check and repair valve and its related parts or replace with new one. * Refill oil tank. * Consult with our service station.
2. Breaker hammers with hammering force reduced. * Sufficient high pressure oil does not flow to breaker inlet. * Sufficient high pressure oil flows to breaker inlet.	* Defective hose or pipes Clogged piping, Oil leakage * Defective control valve and related parts * Deformed pedal * Deformed control valve * Stuck control valve * Insufficient control valve stroke due to loose screws * Clogged filter in return line of base machine tank * Insufficient hydraulic oil * Contaminated or deteriorated hydraulic oil * Defective pump * Internal breaker defects * low N ₂ -gas pressure of back head	* Check, clean and repair piping or replace with new one. * Check control valve and related parts or replace with new one. * Clean or replace. * Refill. * After flushing tank, change oil entirely. * Ask service station for base machine service. * Consult with our service station. * Adjust the gas pressure referring to Chapter 10.
3. Hammering force weakens suddenly and high pressure hose vibrates excessively during operation.	* Defective Back Head Gas leakage	* Ask our service station for repair.
4. Excessive oil leakage from Front Head or Rod.	* Worn cylinder seals	* Ask our service station for repair.
5. Piston works but does not hammer.	* Stuck in rod	* Remove front parts and pull out rod. * Repair with a grindstone.

※ Ask base machine service station to repair defective base machine.

11. Hydraulic Oil and Grease

Selection of hydraulic oil determines the efficiency of the 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 differ from the recommended one.

• Hydraulic Oil and Grease

Recommended for Hydraulic Grab by Soosan

LUBE & SPEC Manufacturer	HYDRAULIC OIL			GREASE (MOS2)
	SUMMER ISO VG 46	WINTER ISO VG 32	ALL SEASON ISO VG 46	NLGI No2
MOBIL	MOBIL DTE 25	MOBIL DTE 24	MOBIL DTE 15M	MOBIL GREASE SPECIAL
	MOBIL SHC 525 *			MOBILITH SHC 220 *
	MOBIL EAL SYNDRAULIC 46 **			
LG-CALTEX	RANDOHD 46	RANDO HD 32	NEW RANDO HD CZ	MOLYTEX EP2
BP	ENERGOL HP46	ENERGOL HP32	ENERGOL HP46	-
SHELL	TELLUS 46	TELLUS 32	TELLUS T 46	RETINAX HDX-2

* : Synthetic Lubricant

** : Environmentally Friendly Synthetic Lubricant

• Oil Contamination

Contaminated oil results in malfunctions of the breaker as well as the base machine and causes damage to parts. Pay special attention to oil contamination.

Contaminated oil should be changed without delay. When changing oil, thoroughly wash oil tank, cylinder and pipes. Cleaning or replacing oil filter also requires check for oil contamination.

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

※ Replacement of hydraulic oil : every 500 hours

WARNING

Hydraulic oil Temperature and viscosity

Do operate the hydraulic breaker at oil temperatures from 20°C/68°F to 80°C/176°F.

Operation at higher temperatures can damage the internal components of the breaker and carrier there will result in reduced breaker performance.

• Criterion of Oil Contamination and Malfunction

(General Analysis)

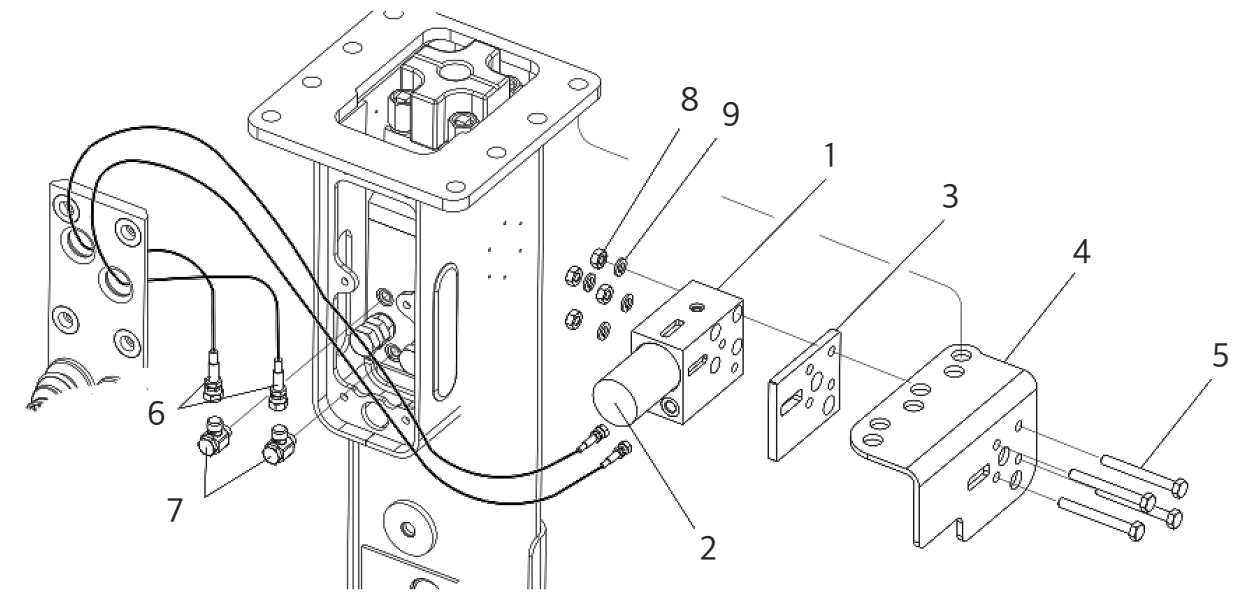
Analysis Item	Criterion	Causes and Effects when exceed the criterion
Adhesiveness	Within±10% (40°C cst)	Adhesiveness rarely decreases because of hydraulic oil. Entry of different kind of oil may reduce the adhesiveness which contributes to rising oil temperature , wear and scratch of bearing and gear and malfunction of hydraulic oil.
Oxidizing Level	Less than 0.3 (mg KOH/g)	Use of lubricating oil in a long period or in a high temperature (above 60°C) will oxidize it. Oxidizing level rises as oxidization proceeds. Sludge will be produced during the process and it leads to malfunction, corrosion and ageing.
Moisture	Less than 0.1 (%)	Moisture causes rust, wear and scratch. Moisture of 0.3% goes considerably rusty and moisture of 0.5% occurs the damage of machine.

• Criterion of Oil Malfunction by 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 it deteriorates when hydraulic oil turns darker than the new oil color (ASTM number) by more than two.

12. Auto Lubrication (Option)

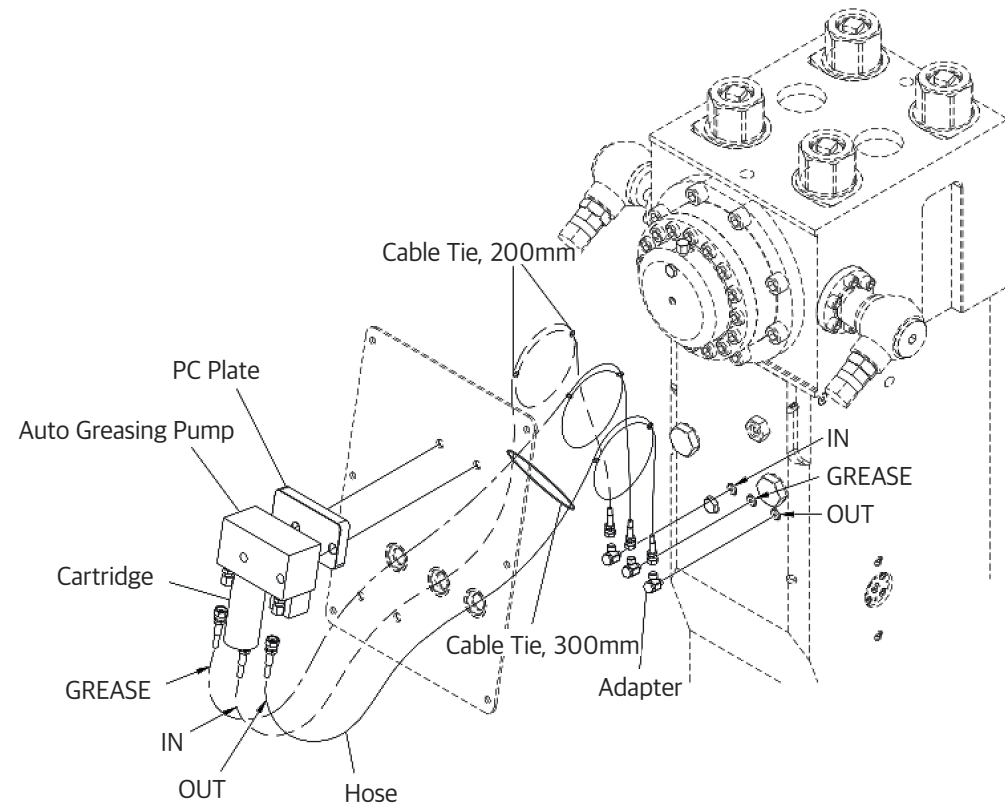
• SQ10 ~ SQ30



ITEM	PART No.	PART No.	Q'ty	PART NAME
ASSY	B0005890	B0005891	1 SET	Auto Greasing Set
1	B0003267	B0003267	1	Auto Greasing Pump
2	B0003268	B0003268	1	Auto Greasing Cartridge
3	B0005198	B0005198	1	Auto Greasing Spacer
4	B0005188	B0005188	1	Auto Greasing Plate
5	4002192	4002192	4	Hex Bolt, M10xP1.5xL90 10.9T
6	Q15023	Q15005	2	BEKA HAMAX2 Hose
7	B0006906	B0006906	2	Banjo Adapter
8	4101212	4101212	4	Hex Nut, M10xP1.5 10T
9	4210011	4210011	4	Spring Washer, M10

* Refer to the parts manual for a list of components of auto greasing system.

• SQ60 ~ SQ181



* Refer to the parts manual for a list of components of auto greasing system.

MAINTENANCE FOLLOW-UP

In order to follow the maintenance of a hydraulic breaker, a maintenance card presented below can be used



HYDRAULIC BREAKER SERVICE CARD NO. _____

Equipment _____ S/No. _____

Model type _____ S/No. _____

SERVICE INFORMATION

Purpose of the service		Serviceman	
Service Date		Engine working hours	

Replaced parts			Part inspection				
Qty	Description	Part No.	Description	S/No.	Repaired	Replaced	OK
			Cylinder		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Motor		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Percussion mechanism tested

Rotation mechanism tested

Remarks



PARTS LIST

Soosan Hydraulic Breaker

SQ10	SQ70
SQ20	SQ80
SQ30	SQ100
SQ35 AutoLube	SQ120
SQ40 AutoLube	SQ130
SQ43 AutoLube	SQ140
SQ45 AutoLube	SQ181
SQ50 AutoLube	
SQ60	



FOREWORD

This parts list is composed of all parts of SQ-Series breaker.

If you want to order parts, write down the followings and contact near service center.

a. Model Name :

b. Model Serial No. :

c. Parts No. and Parts Name :

d. Quantity :

e. Customer's Name and Address :

Please use genuine parts of SOOSAN to maintain the machine performance as a new one.

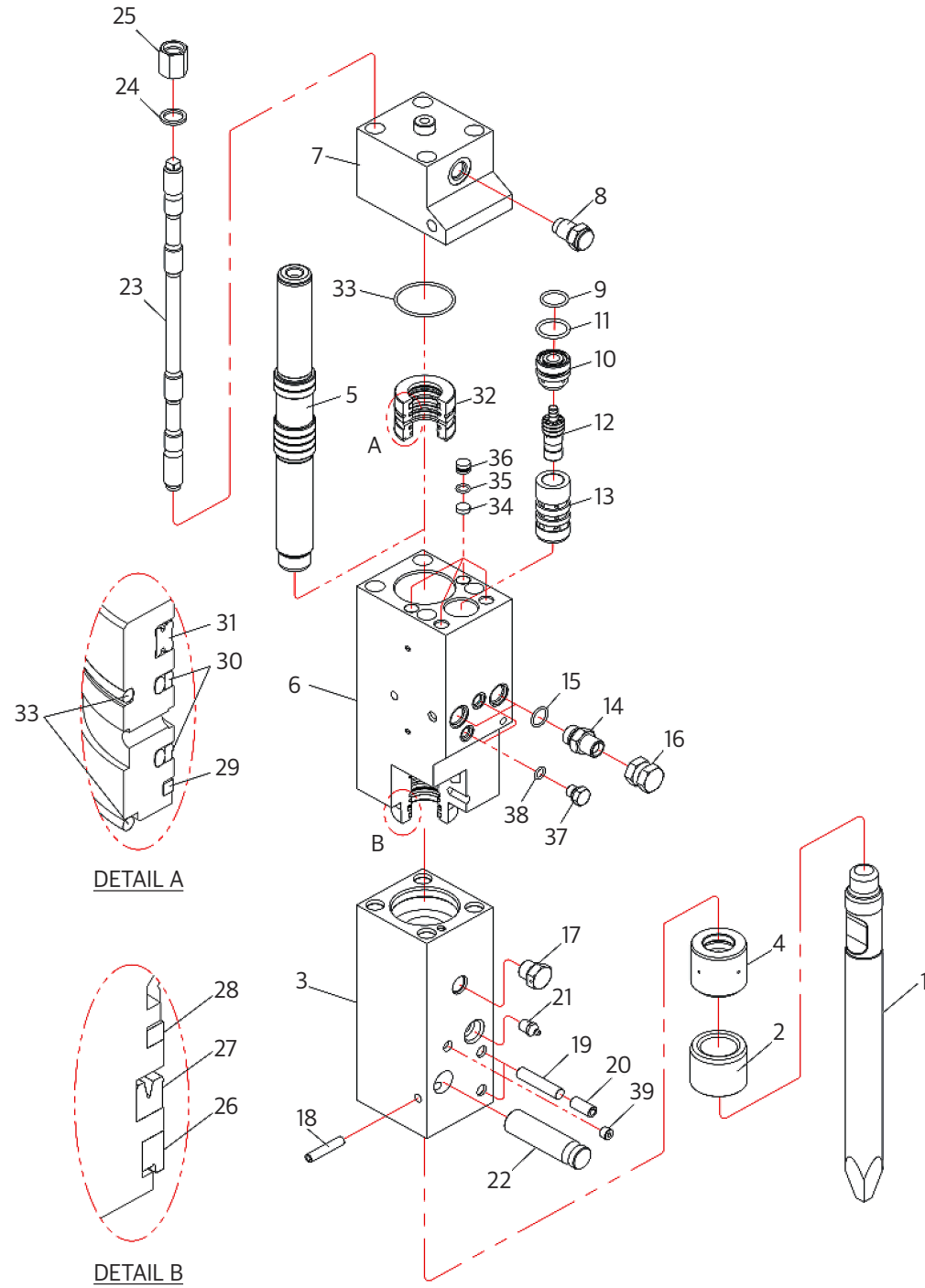
Take notice that SOOSAN won't guarantee the defects which may occur by using different parts from SOOSAN genuine parts.

☞ For the contents of this parts list, alteration is reserved without prior notice for the future improvement.

SOOSAN HEAVY INDUSTRIES CO., LTD.

01. Main Body

• SQ10,20,30

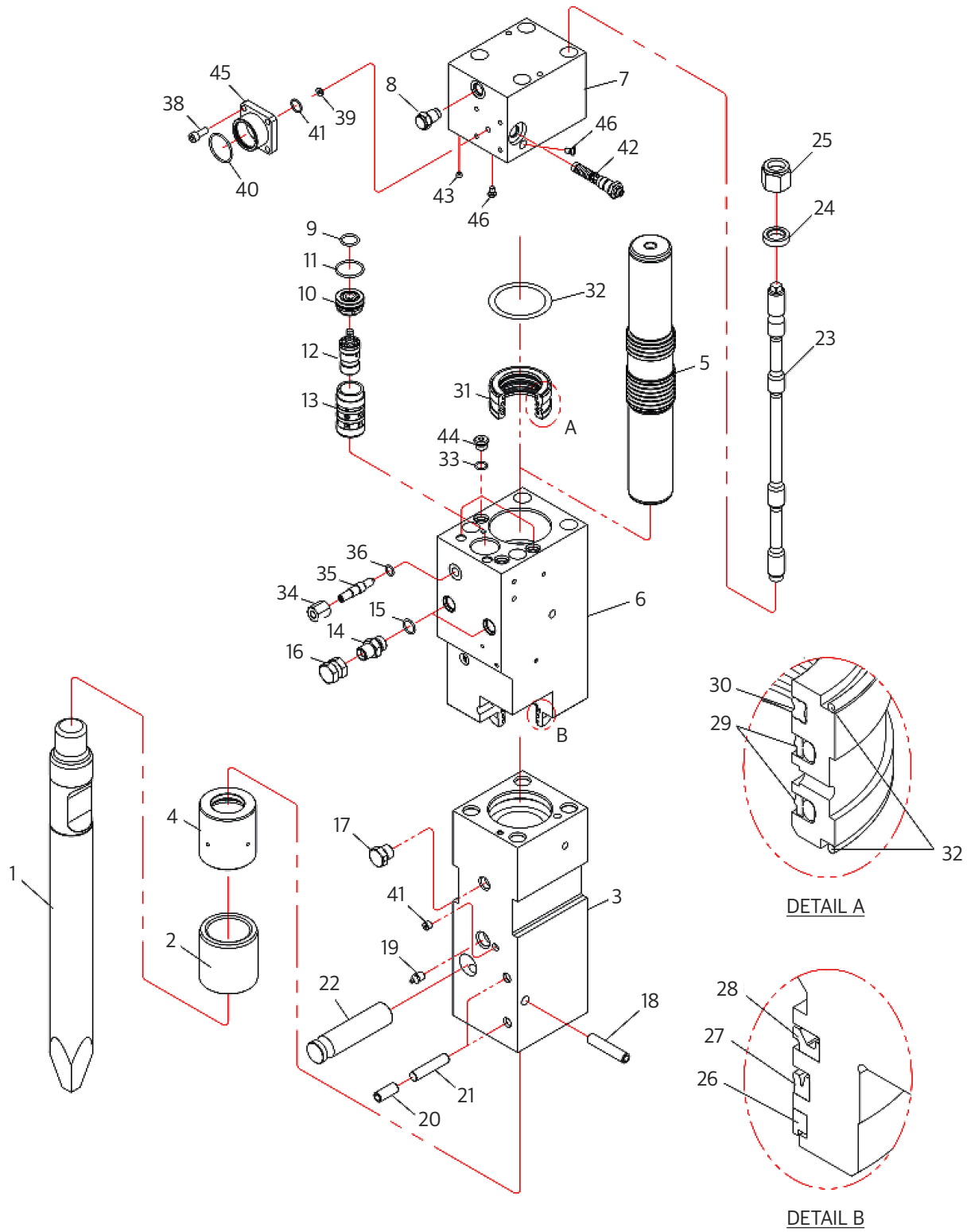


※ Item no. 14, 16 : section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body_SQ10, SQ20, SQ30

NO	SQ10		SQ20		SQ30		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
1	B0005491	1Set	B0005490	1Set	B0005489	1Set	MAIN BODY ASSEMBLY	
2	SSE81141	1	SSF01156	1	SSE71160	1	ROD (LONG MOIL POINT)	
3	E81137	1	F01154	1	E71159	1	THRUST BUSH	
4	B0001163	1	B0000901	1	B0001933	1	FRONT HEAD	
5	E81138	1	F01153	1	E71157	1	RING BUSH	
6	E81179	1	F01184	1	E71187	1	PISTON	
7	B0005403	1	B0005405	1	B0005412	1	CYLINDER	
8	E81104	1	F01108	1	E71134	1	BACK HEAD	
9	C51191	1	C51191	1	C51191	1	CHARGING VALVE	
10	2851201	1	2851201	1	2851201	1	O-RING	
11	F01106	1	F01106	1	E71140	1	VALVE PLUG	
12	2851030	1	2851030	1	2851033	1	O-RING	
13	F01104	1	F01104	1	E71105	1	VALVE	
14	F01105	1	F01105	1	E71139	1	VALVE SLEEVE	
14	C01201	2	C01201	2	C01201	2	H/ADAPTER #4(US etc)	See the manual
14	C91120	2	C91120	2	C91120	2	H/ADAPTER #5	See the manual
15	2851018	2	2851018	2	2851018	2	O-RING	
16	C01202	2	C01202	2	C01202	2	UNION CAP #4(US etc)	See the manual
16	2715002	2	2715002	2	2715002	2	UNION CAP #5	See the manual
17	C01162	1	C01162	1	C01162	1	AIR CHECK VALVE	
18	4300132	1	4300132	1	4300132	1	SPRING PIN	
19	E81140	2	F81135	2	F81135	2	STOP PIN	
20	4300141	2	4300143	2	4300143	2	SPRING PIN	
21	2700411	1	2700411	1	2700411	1	GREASE NIPPLE	
22	E81139	1	F01155	1	E71158	1	ROD PIN	
23	E81118	4	F01114	4	E71114	4	THROUGH BOLT	
24	E81120	4	F01115	4	E71116	4	WASHER	
25	E81119	4	F01116	4	E71115	4	NUT	
26	2831057	1	2831058	1	2831013	1	DUST SEAL	~2020.09
26	B0006703	1	B0006706	1	B0006633	1	DUST SEAL	2020.10~
27	2811055	1	2811056	1	2811010	1	U-PACKING	~2020.09
27	B0006701	1	B0006704	1	B0006634	1	U-PACKING	2020.10~
28	2819062	1	2819060	1	2819058	1	BUFFER RING	
29	2819063	1	2819061	1	2819059	1	BUFFER RING	
30	2811044	2	2811017	2	2811018	2	STEP SEAL	
31	2835035	1	2835036	1	2835037	1	GAS SEAL	
32	E81109	1	F01110	1	E71138	1	SEAL RETAINER	
33	2851208	3	2851209	3	2851210	3	O-RING	
34	F01128	4	F01128	4	F01128	4	COVER PLATE	
35	2850010	4	2850010	4	2850010	4	O-RING	
36	F01129	4	F01129	4	F01129	4	PLUG	
37	Q11191	2	Q11191	2	Q11191	2	HEX HEAD PLUG	
38	2851010	2	2851010	2	2851010	2	O-RING	
39	2702221	1	2702221	1	2702221	1	HOLLOW HEX PLUG	

• SQ35 AutoLube

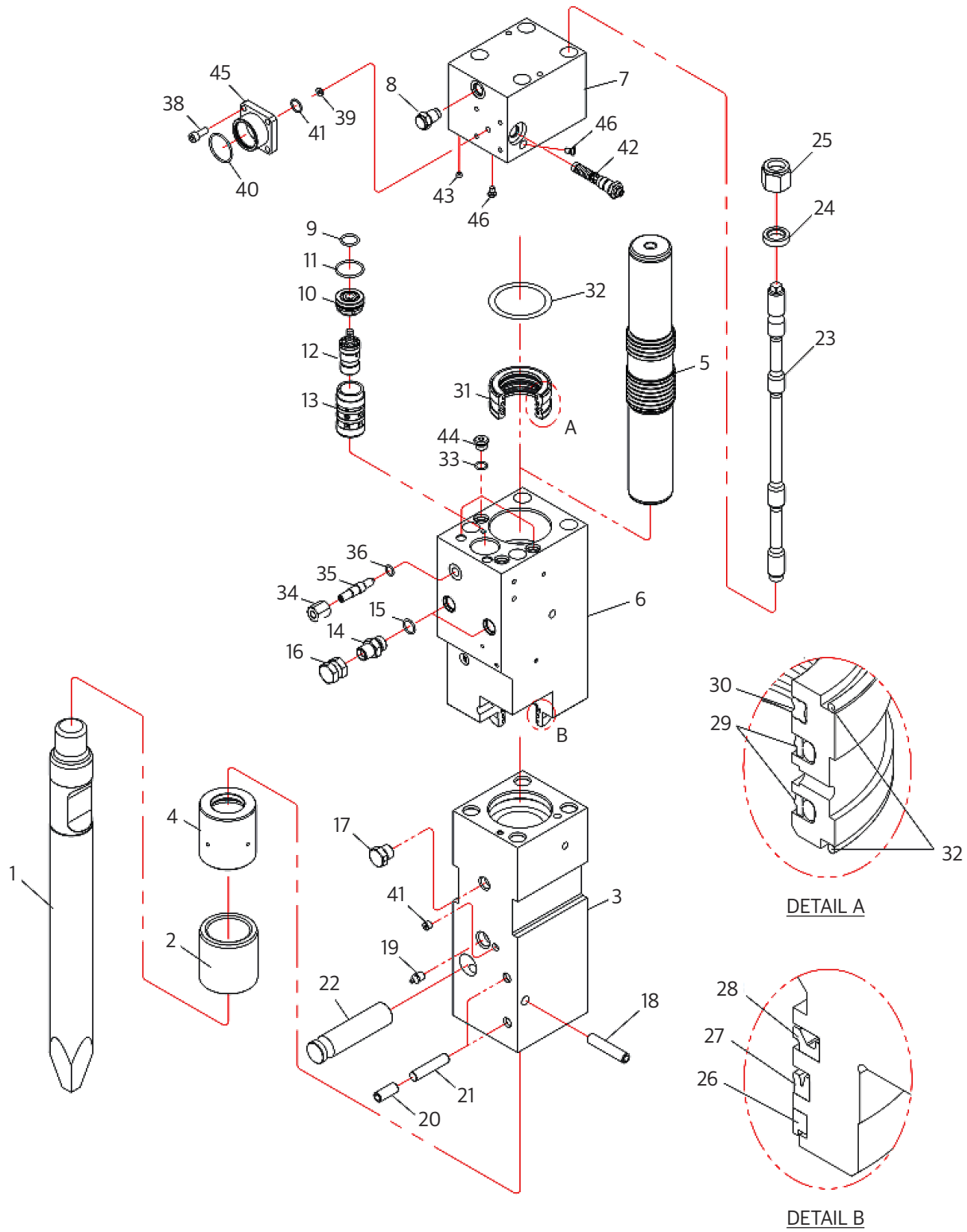


※ Item no. 14, 16 : section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _SQ35 AutoLube

NO	SQ35 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
1	B0009571	1Set	MAIN BODY ASSEMBLY	
1	SSF81136	1	ROD (LONG MOIL POINT)	
2	F81111	1	THRUST BUSH	
3	B0000905	1	FRONT HEAD	
4	F81133	1	RING BUSH	
5	F81167	1	PISTON	
6	B0009574	1	CYLINDER PLUG ASSEMBLY	
7	B0009572	1	BACK HEAD	
8	C51191	1	CHARGING VALVE	
9	2851201	1	O-RING	
10	E71140	1	VALVE PLUG	
11	2851033	1	O-RING	
12	E71105	1	VALVE	
13	E71139	1	VALVE SLEEVE	
14	C01201	2	H/ADAPTER #4(US etc)	See the manual
14	C91120	2	H/ADAPTER #5	See the manual
15	2851018	2	O-RING	
15	C01202	2	UNION CAP #4(US etc)	See the manual
16	2715002	2	UNION CAP #5	See the manual
17	C01162	1	AIR CHECK VALVE	
18	4300150	1	SPRING PIN	
19	2700411	1	GREASE NIPPLE	
20	4300143	2	SPRING PIN	
21	F81135	2	STOP PIN	
22	F81134	1	ROD PIN	
23	F81112	4	THROUGH BOLT	
24	E71116	4	WASHER	
25	E71115	4	NUT	
26	B0006708	1	DUST SEAL	
27	B0006707	1	U-PACKING	
28	2833011	1	BUFFER SEAL	
29	2811045	2	STEP SEAL	
30	2835038	1	GAS SEAL	
31	F81109	1	SEAL RETAINER	
32	2851214	3	O-RING	
33	2851010	4	O-RING	
34	B0000456	1	ADJUSTER HEX NUT	
35	B0000838	1	ADJUSTER,STROKE	
36	Q11191	1	O-RING	
37	2851010	1	PLUG,HOLLOW HEX	
38	B0000456	4	SOCKET BOLT	
39	B0000838	1	PACKING,AG	
40	2850206	1	O-RING	

• SQ35 AutoLube

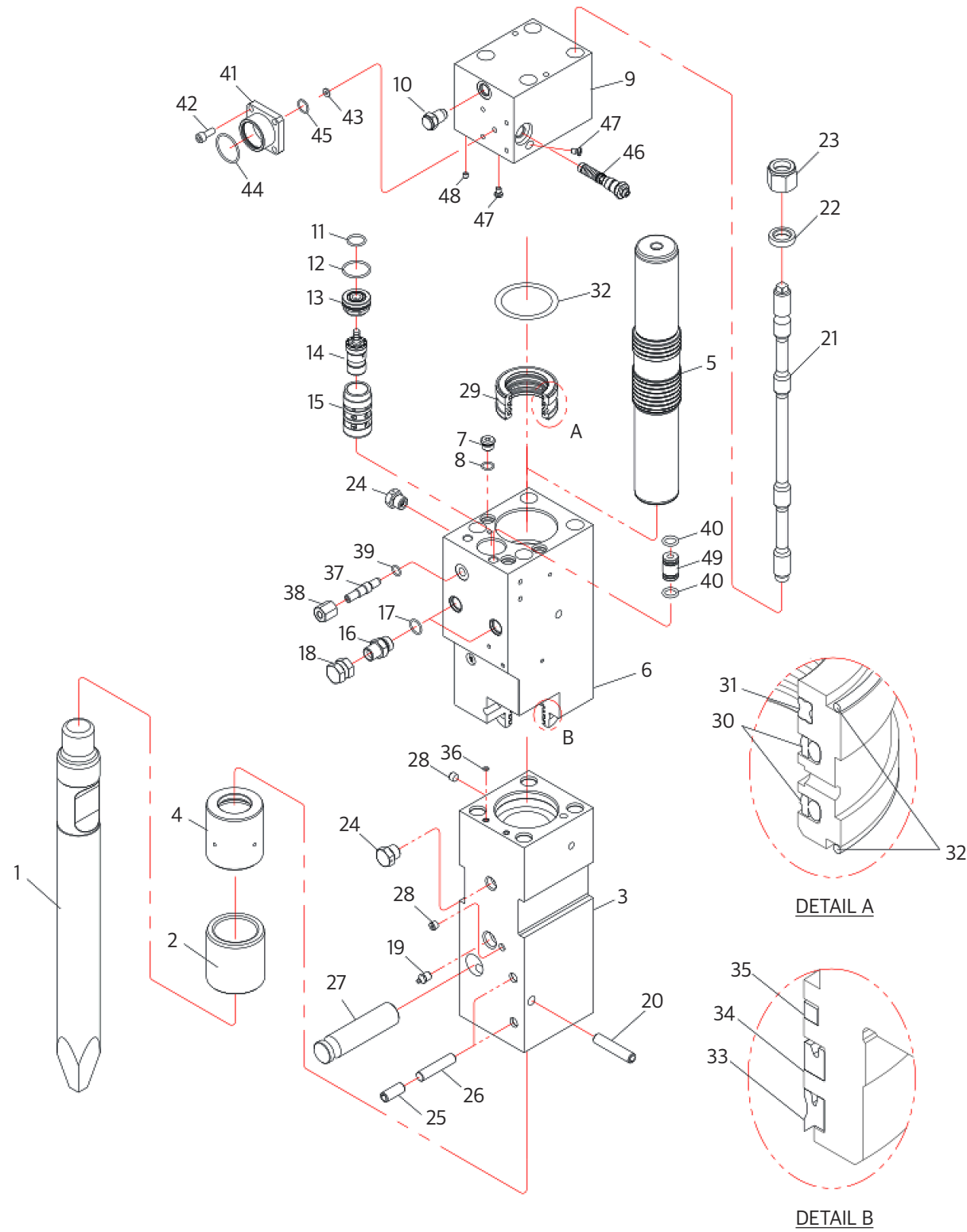


※ Item no. 14, 16 : section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _SQ35 AutoLube

NO	SQ35 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0009571	1Set	MAIN BODY ASSEMBLY	
41	2850019	1	O-RING	
42	B0007130	1	AUTO GREASE CATRIDGE	
43	B0007067	1	PLUG,HOLLOW HEX,ORIFICE	
44	B0007041	2	PTFE TUBE	
45	B0008547	1	HOLDER,AG	
46	2727750	2	PLUG,BLACK	

• SQ40 AutoLube

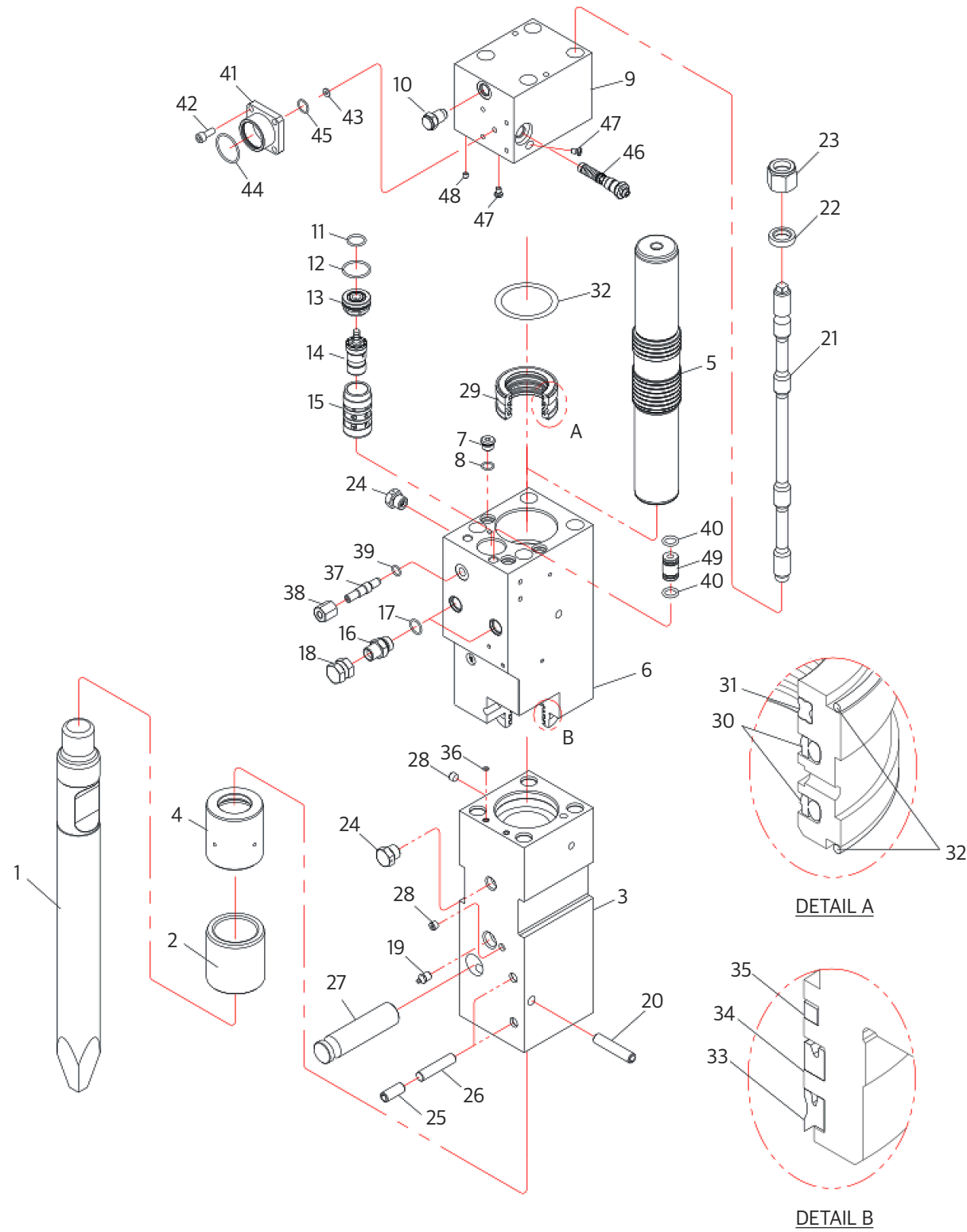


※ Item no. 16, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ40 AutoLube

NO	SQ40 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0007031	1Set	MAIN BODY ASSEMBLY	
1	SSC01220	1	ROD (LONG MOIL POINT)	
2	C01218	1	THRUST BUSH	
3	B0000842	1	FRONT HEAD	
4	C01217	1	RING BUSH	
5	C01235	1	PISTON	
6	B0007122	1	CYLINDER ASSEMBLY	
7	C91124	3	SOCKET PLUG	
8	2850016	3	O-RING	
9	B0007021	1	BACK HEAD	
10	C51191	1	CHARGING VALVE	
11	2851201	1	O-RING	
12	2851204	1	O-RING	
13	C01188	1	VALVE PLUG	
14	C01127	1	VALVE	
15	C01193	1	VALVE SLEEVE	
16	C01201	2	H/ADAPTER #4(US etc)	See the manual
16	C91120	2	H/ADAPTER #5	See the manual
17	2851018	2	O-RING	
18	C01202	2	UNION CAP #4(US etc)	See the manual
18	2715002	2	UNION CAP #5	See the manual
19	2700411	1	GREASE NIPPLE	
20	C91151	1	SPRING PIN	
21	C01145	4	THROUGH BOLT	
22	C01144	4	WASHER	
23	C01143	4	NUT	
24	C01162	1	AIR CHECK VALVE	
25	C91110	2	SPRING PIN	
26	C01131	2	STOP PIN	
27	C01219	1	ROD PIN	
28	2702221	2	HOLLOW HEX PLUG	
29	C91125	1	SEAL RETAINER	
30	2811046	2	STEP SEAL	
31	2835039	1	GAS SEAL	
32	2856012	3	O-RING	
33	B0006635	1	DUST SEAL	
34	B0006636	1	U-PACKING	
35	2819056	1	BUFFER SEAL	
36	2850005	1	O-RING	
37	B0000838	1	VALVE ADJUSTER	
38	B0000456	1	ADJUSTER HEX NUT	
39	2851014	1	O-RING	
40	2851010	2	O-RING	

• SQ40 AutoLube

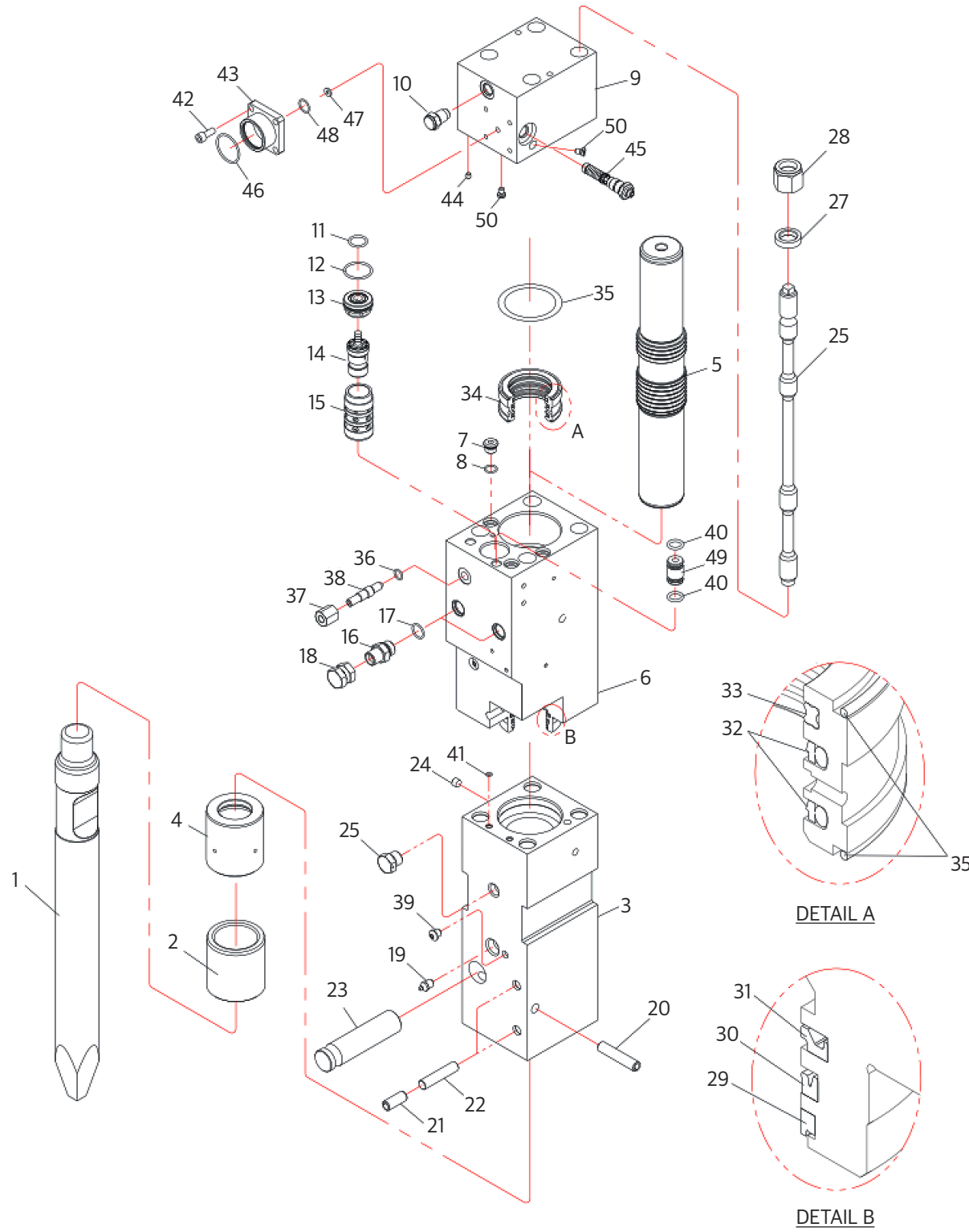


※ Item no. 16, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ40 AutoLube

NO	SQ40 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0007031	1Set	MAIN BODY ASSEMBLY	
41	B0008547	1	HOLDER,AUTO GREASING	
42	4010561	4	SOCKET BOLT	
43	B0007052	1	PACKING,AUTO GREASING	
44	2850206	1	O-RING	
45	2850019	1	O-RING	
46	B0007130	1	AUTO GREASE CATRIDGE	
47	2727750	2	PLUG,BLACK	
48	B0007067	1	PLUG,HOLLOW HEX,ORIFICE	
49	B0007041	2	PTFE TUBE	

• SQ43 AutoLube

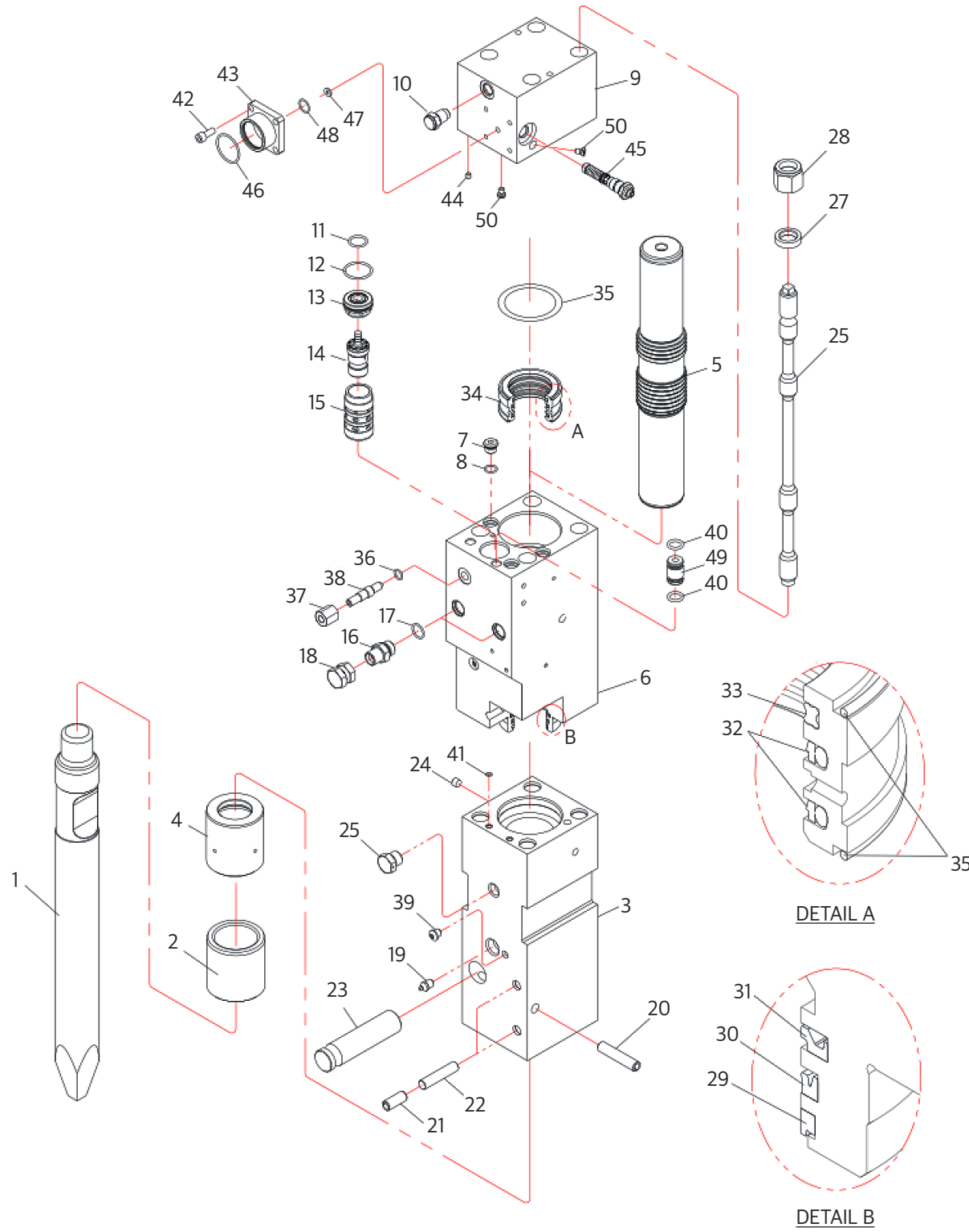


※ Item no. 16, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ43 AutoLube

NO	SQ43 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
1	B0007054	1	MAIN BODY ASSEMBLY	
1	SSF91144	1	ROD (LONG MOIL POINT)	
2	F91111	1	THRUST BUSH	
3	B0001225	1	FRONT HEAD	
4	F91110	1	RING BUSH	
5	F91186	1	PISTON	
6	B0007056	1	CYLINDER ASSEMBLY	
7	C91124	3	SOCKET PLUG	
8	2850016	3	O-RING	
9	B0007058	1	BACK HEAD	
10	C51191	1	CHARGING VALVE	
11	2851201	1	O-RING	
12	2851204	1	O-RING	
13	F91108	1	VALVE PLUG	
14	F91106	1	VALVE	
15	F91107	1	VALVE SLEEVE	
16	C01201	2	H/ADAPTER #4(US etc)	See the manual
16	C91120	2	H/ADAPTER #5	See the manual
17	2851018	2	O-RING	
18	C01202	2	UNION CAP #4(US etc)	See the manual
18	2715002	2	UNION CAP #5	See the manual
19	2700411	1	GREASE NIPPLE	
20	C91151	1	SPRING PIN	
21	C91110	2	SPRING PIN	
22	F91121	2	STOP PIN	
23	F91143	1	ROD PIN	
24	2702221	1	HOLLOW HEX PLUG	
25	C01162	1	AIR CHECK VALVE	
26	F91112	4	THROUGH BOLT	
27	F91114	4	WASHER	
28	F91113	4	NUT	
29	B0006711	1	DUST SEAL	
30	B0006710	1	U-PACKING	
31	2833012	1	BUFFER SEAL	
32	2811047	2	STEP SEAL	
33	2835040	1	GAS SEAL	
34	F91109	1	SEAL RETAINER	
35	2851216	3	O-RING	
36	2851014	1	O-RING	
37	B0000456	1	ADJUSTER HEX NUT	
38	B0000838	1	VALVE ADJUSTER	
39	N57100	1	BLANK PLUG	
40	2851010	4	O-RING	

• SQ43 AutoLube

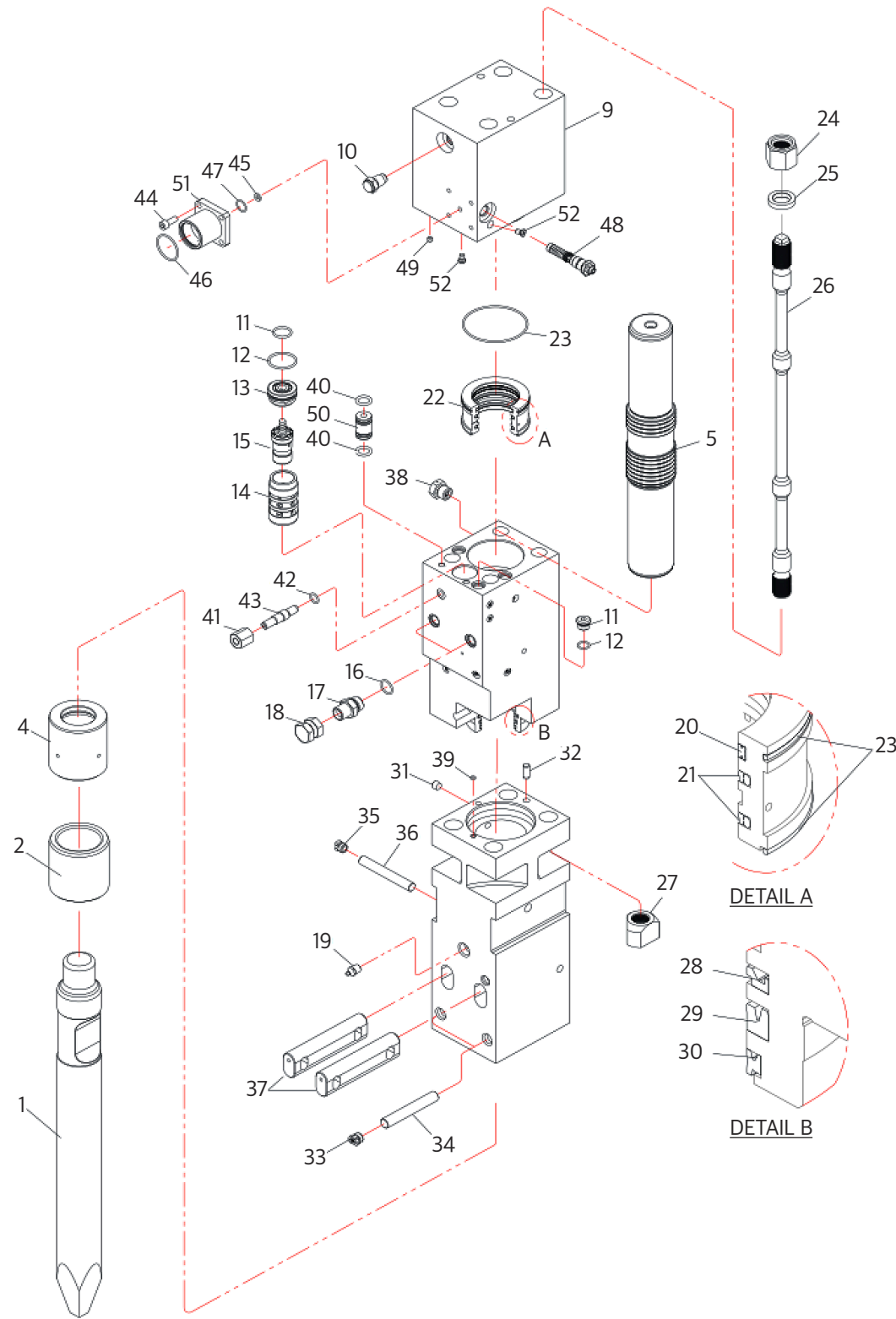


※ Item no. 16, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ43 AutoLube

NO	SQ43 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0007054	1	MAIN BODY ASSEMBLY	
41	2850005	1	O-RING	
42	4010561	4	SOCKET BOLT	
43	B0008547	1	HOLDER,AG	
44	B0007067	1	PLUG,HOLLOW HEX,ORIFICE	
45	B0007130	1	AUTO GREASE CATRIDGE	
46	2850206	1	O-RING	
47	B0007052	1	PACKING,AG	
48	2850019	1	O-RING	
49	B0007041	2	PTFE TUBE	
50	2727750	2	PLUG,BLACK	

• SQ45 AutoLube

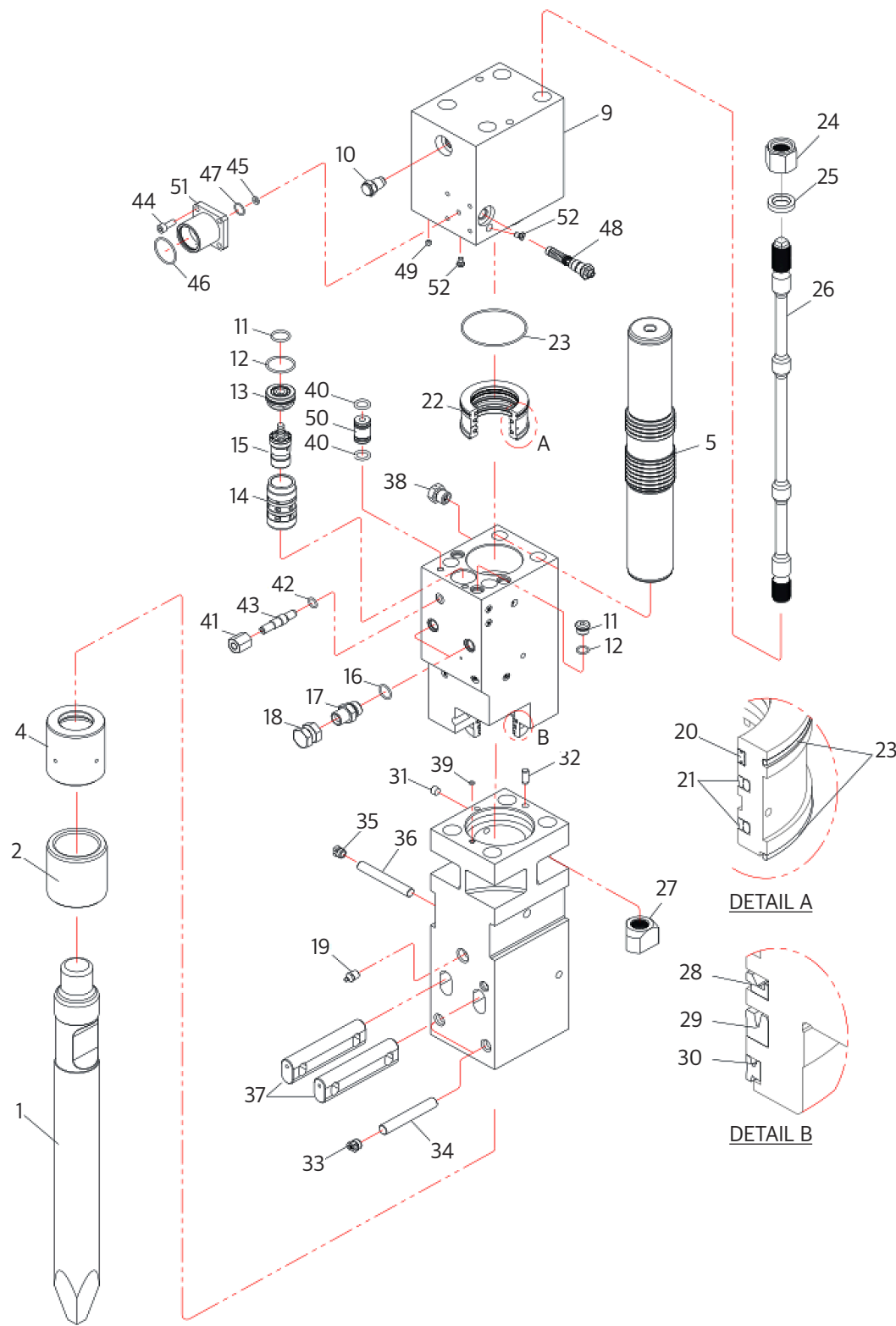


※ Item no. 17, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ45 AutoLube

NO	SQ45 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0008123	1	MAIN BODY ASSEMBLY	
1	SSD41101	1	ROD (LONG MOIL POINT)	
2	D41142	1	FRONT COVER	
3	B0001268	1	FRONT HEAD	
4	D41141	1	RING BUSH	
5	B0008124	1	CYLINDER,AG	
6	D41190	1	PISTON	
7	D41109	3	M20 SOCKET PLUG	
8	2850017	3	O-RING	
9	B0008127	1	BACK HEAD,AG	
10	C51191	1	CHARGING VALVE ASSY	
11	2851202	1	O-RING	
12	2851205	1	O-RING	
13	D41111	1	VALVE PLUG	
14	D41112	1	VALVE SLEEVE	
15	D41113	1	VALVE	
16	2851022	2	O-RING	
17	C11121	2	H/ADAPTER #4(US etc)	See the manual
17	2710311	2	H/ADAPTER #5	See the manual
17	C11149	2	UNION CAP #4(US etc)	See the manual
18	2715003	2	UNION CAP #5	See the manual
19	2700411	1	NIPPLE,GREASE	
20	2835041	1	SEAL,GAS	
21	2811048	2	SEAL,STEP	
22	D41108	1	SEAL RETAINER	
23	2851219	3	O-RING	
24	D41161	4	HEX NUT	
25	D41115	4	TB WASHER	
26	D41160	4	THROUGH BOLT	
27	D41162	4	ROUND NUT	
28	2833001	1	RING,BUFFER	
29	2811064	1	PACKING,U	
30	2831068	1	SEAL,DUST	
31	2702221	1	PLUG,HOLLOW HEX	
32	U81278	1	KNOCK PIN	
33	C31246	2	PLUG,RUBBER	
34	D41118	2	FRONT HEAD PIN	
35	D81151	2	PLUG,RUBBER	
36	D41119	2	STOP PIN	
37	D41147	2	ROD PIN	
38	C01162	1	VALVE,AIR CHECK	
39	2850005	1	O-RING	
40	2851010	4	O-RING	

• SQ45 AutoLube

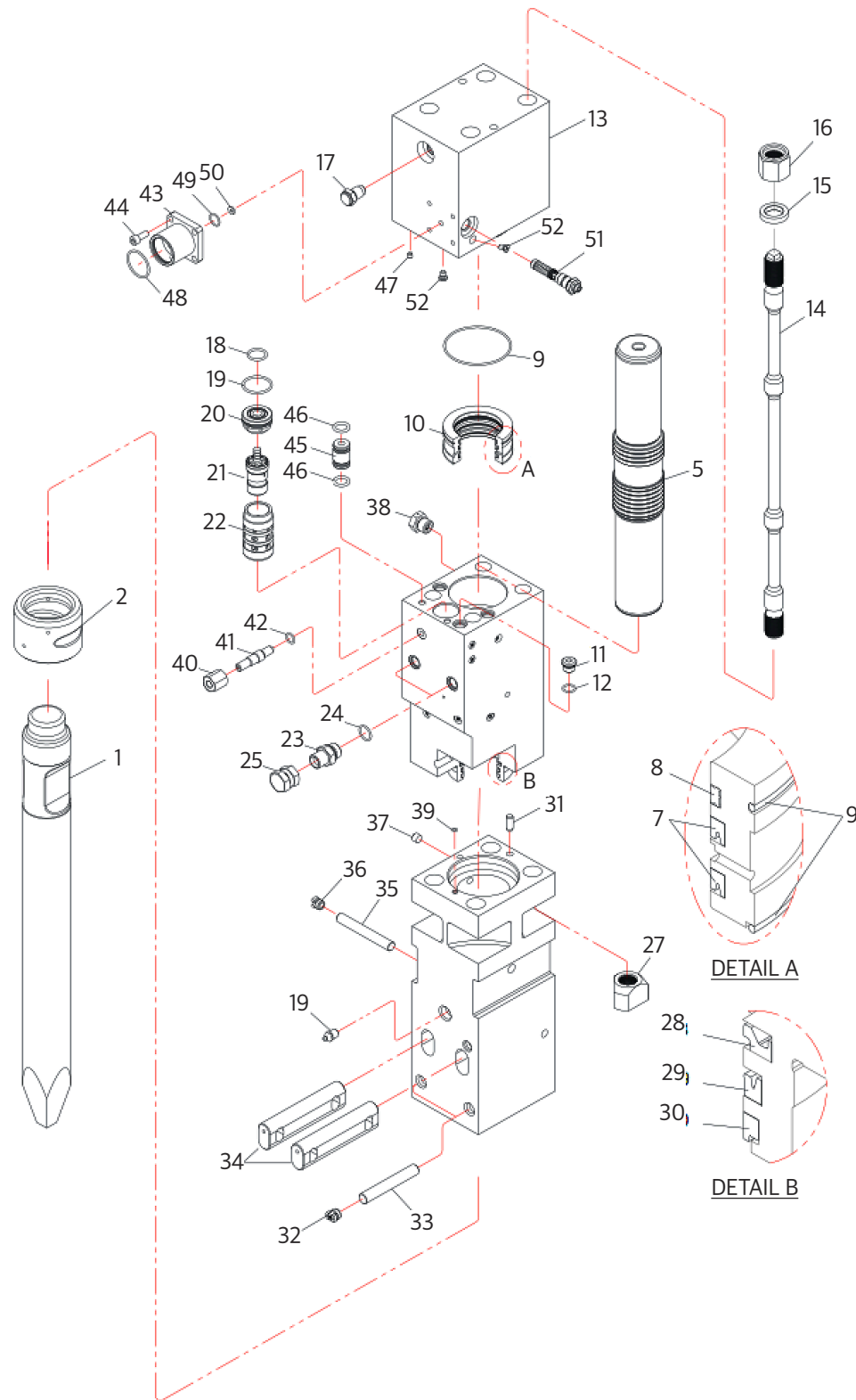


※ Item no. 17, 18 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ45 AutoLube

NO	SQ45 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0008123	1	MAIN BODY ASSEMBLY	
41	B0000456	1	ADJUSTER HEX NUT	
42	2851014	1	O-RING	
43	B0000838	1	ADJUSTER,STROKE	
44	4010561	4	SOCKET BOLT	
45	B0007052	1	PACKING,AG	
46	2850206	1	O-RING	
47	2850019	1	O-RING	
48	B0007130	1	AUTO GREASE CATRIDGE	
49	B0007067	1	PLUG,HOLLOW HEX,ORIFICE	
50	B0007041	2	PTFE TUBE	
51	B0008151	1	HOLDER,AG	
52	2727750	2	PLUG,BLACK	

• SQ50 AutoLube

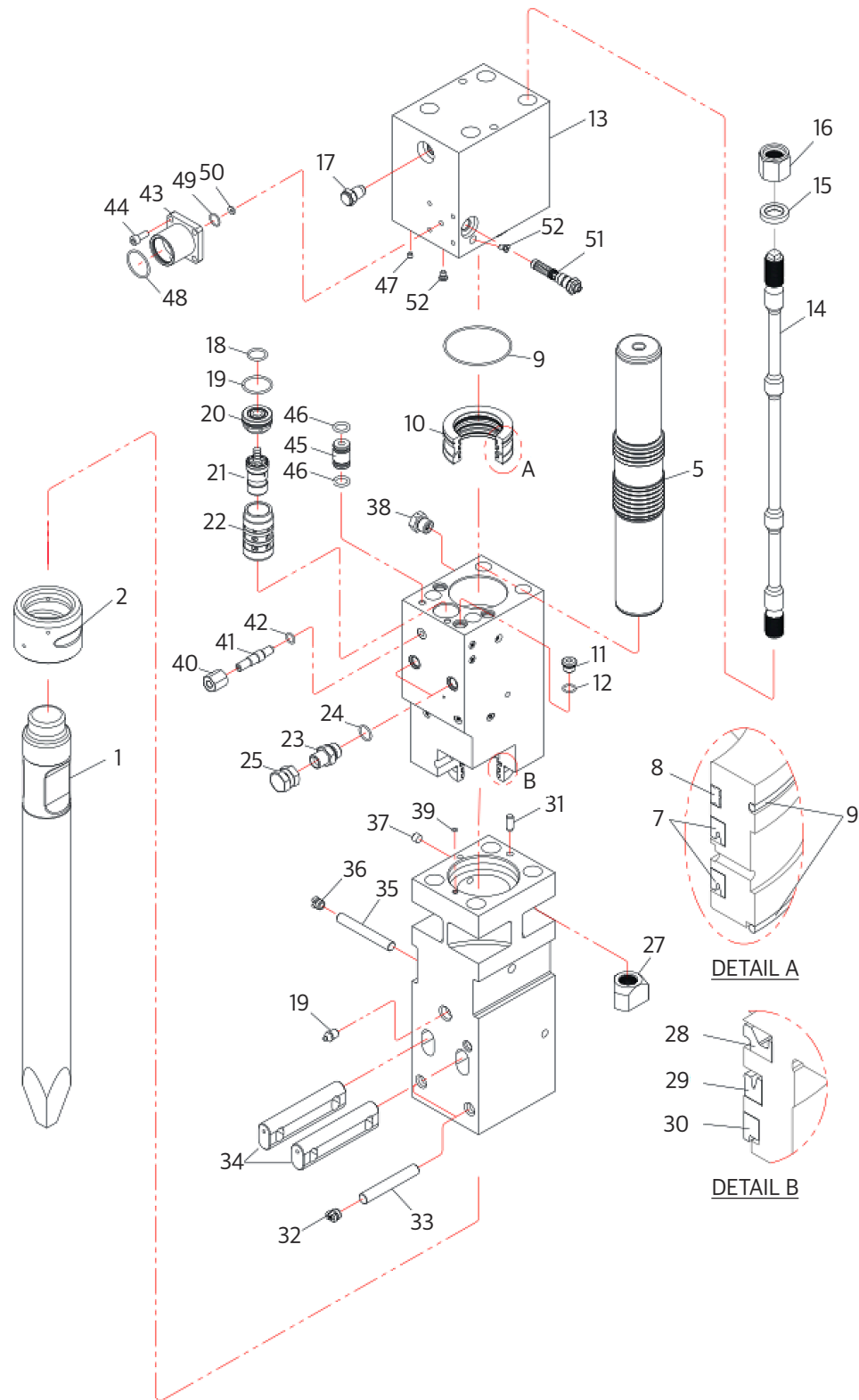


* Item no. 23, 25 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ50 AutoLube

NO	SQ50 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0008112	1Set	MAIN BODY ASSEMBLY	
1	SSC11195	1	ROD (LONG MOIL POINT)	
2	C11181	1	FRONT COVER(SILENCED)	
3	B0002957	1	FRONT HEAD	
4	C11182	1	RING BUSH	
5	C11284	1	PISTON	
6	B0008114	1	CYLINDER	
7	2811067	2	PACKING,U	
8	2835042	1	SEAL,GAS	
9	2851223	3	O-RING	
10	C11119	1	SEAL RETAINER	
11	C11120	3	SOCKET PLUG	
12	2850020	3	O-RING	
13	B0008111	1	BACK HEAD,AG	
14	C11220	4	THROUGH BOLT	
15	C11141	4	THROUGH BOLT WASHER	
16	C11221	4	HEX NUT	
17	C51191	1	CHARGING VALVE ASSY	
18	2851203	1	O-RING	
19	2851051	1	O-RING	
20	C11184	1	VALVE PLUG	
21	C11123	1	VALVE	
22	C11183	1	VALVE SLEEVE	
23	C11121	2	H/ADAPTER #4(US etc)	See the manual
23	2710311	2	H/ADAPTER #5	See the manual
24	2851022	2	O-RING	
25	C11149	2	UNION CAP #4(US etc)	See the manual
25	2715003	2	UNION CAP #5	See the manual
26	2700411	1	NIPPLE,GREASE	
27	C11222	4	ROUND NUT	
28	2833015	1	SEAL,BUFFER	
29	B0006638	1	PACKING,U	
30	B0006637	1	SEAL,DUST	
31	U81278	1	KNOCK PIN	
32	D81150	2	PLUG,RUBBER	
33	C11128	2	FRONT HEAD PIN	
34	C11186	2	ROD PIN	
35	C11131	2	STOP PIN	
36	D81151	2	PLUG,RUBBER	
37	2702221	1	PLUG,HOLLOW HEX	
38	C01162	1	VALVE,AIR CHECK	
39	2851012	1	O-RING	
40	B0000456	1	ADJUSTER HEX NUT	

• SQ50 AutoLube

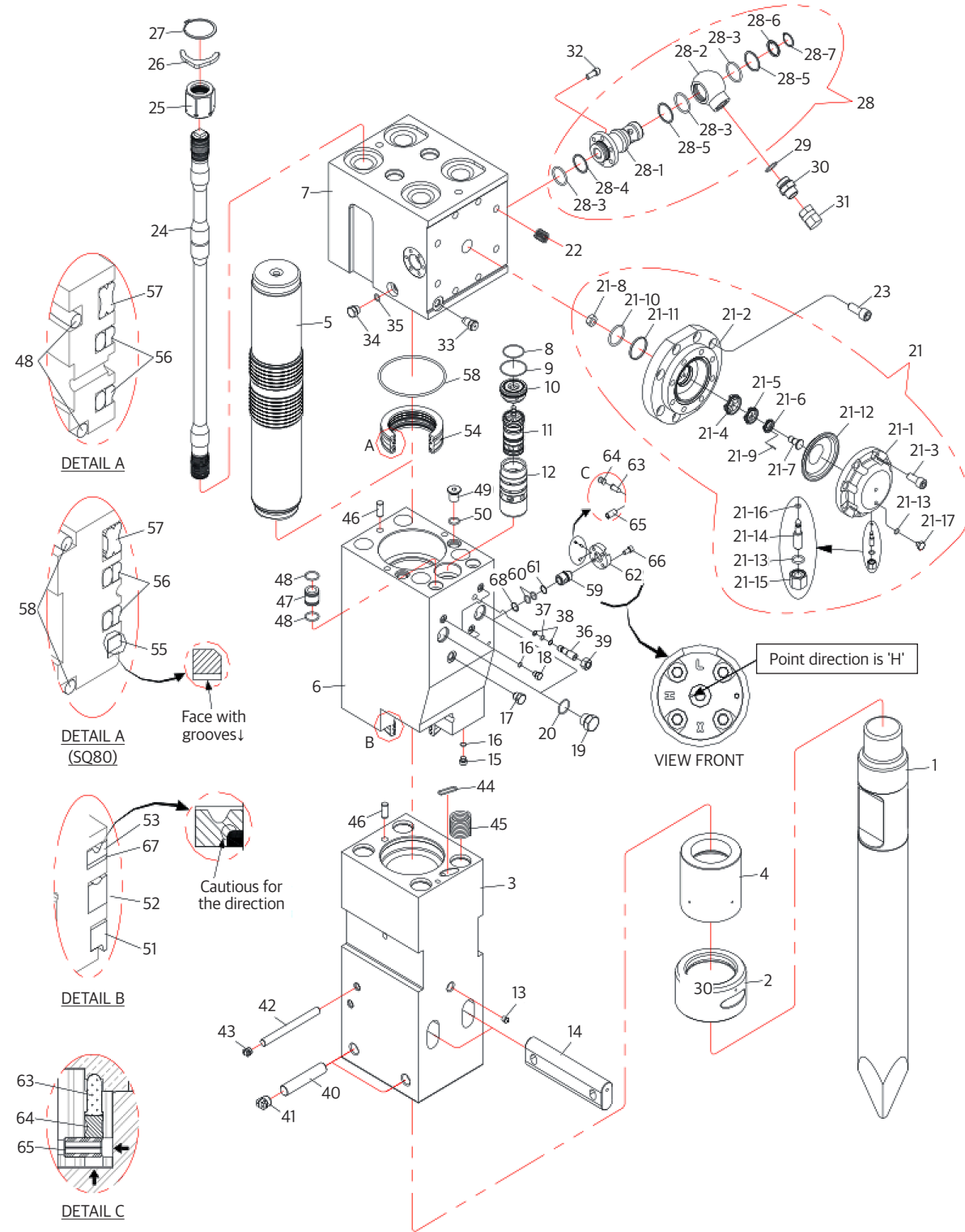


* Item no. 23, 25 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body _ SQ50 AutoLube

NO	SQ50 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0008112	1Set	MAIN BODY ASSEMBLY	
41	B0000838	1	ADJUSTER,STROKE	
42	2851014	1	O-RING	
43	B0008151	1	HOLDER,AG	
44	4010561	4	SOCKET BOLT	
45	B0007041	2	PTFE TUBE	
46	2851010	4	O-RING	
47	B0007067	1	PLUG,HOLLOW HEX,ORIFICE	
48	2850206	1	O-RING	
49	2850019	1	O-RING	
50	B0007052	1	PACKING,AG	
51	B0007130	1	AUTO GREASE CATRIDGE	
52	2727750	2	PLUG,BLACK	

• SQ60,70,80

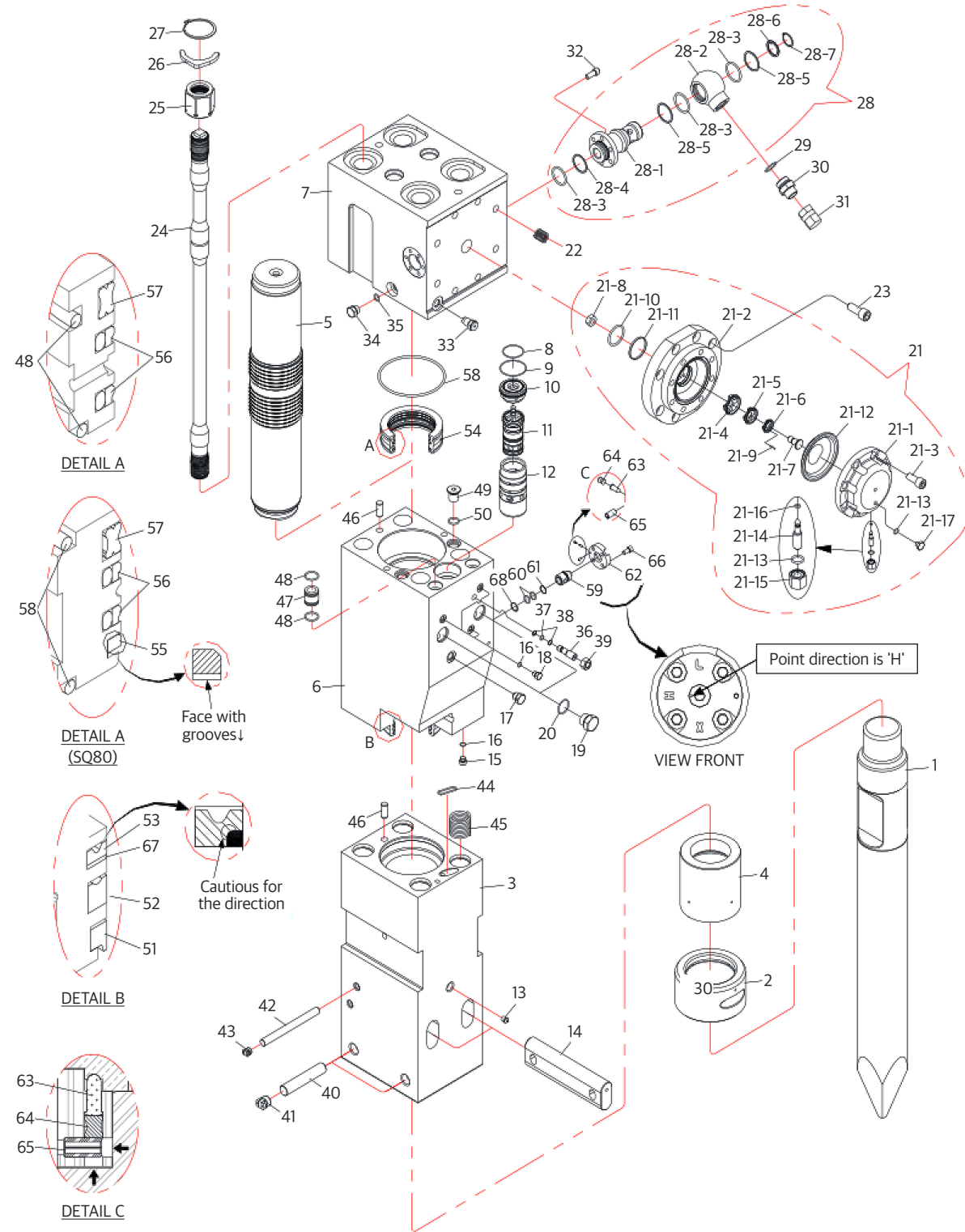


※ Item no. 30, 31 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ60,70,80)

NO	SQ60		SQ70		SQ80		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
1	Q51001	1Set	Q61001	1Set	Q21001	1Set	MAIN BODY ASSEMBLY	
2	SSC21114	1	SSL01118	1	SSC31211	1	ROD (MOIL TYPE)	
3	SSC21146	1	SSL01123	1	SSC31185	1	FRONT COVER	
4	Q51102	1	Q61102	1	Q21102	1	FRONT HEAD	
5	SSC21151	1	SSL01110	1	SSC31225	1	RING BUSH	
6	C21172	1	L01146	1	Q21105	1	PISTON	
7	Q51101	1	Q61101	1	Q21101	1	CYLINDER	
8	Q51103	1	Q61103	1	Q21103	1	BACK HEAD	
9	2851205	1	2851206	1	2851207	1	O - RING	
10	2851208	1	2851209	1	2851210	1	O - RING	
11	C21107	1	L01108	1	C31172	1	VALVE PLUG	
12	C21108	1	L01106	1	C31171	1	VALVE	
13	C21109	1	L01107	1	C31173	1	VALVE SLEEVE	
14	2700411	1	2700411	1	2700411	1	GREASE NIPPLE	
15	C21153	2	L01116	2	C31226	2	ROD PIN	
16	U81307	1	U81307	1	U81307	1	SOCKET PLUG	
17	2851010	4	2851010	5	2851010	5	O - RING	
18	C01162	1	C01162	1	C01162	1	AIR CHECK VALVE	
19	Q11191	3	Q11191	3	Q11191	3	HEX HEAD PLUG	
20	2702195	2	2702195	2	2702196	2	HEX HEAD PLUG - 01	
21	2851028	4	2851028	4	2851038	2	O - RING	
21	Q61105	1	Q61105	1	Q71107	1	ACCUMULATOR	
- 1	Q61107	1	Q61107	1	C31154	1	ACCUMULATOR COVER	
- 2	Q61106	1	Q61106	1	Q71108	1	ACCUMULATOR BODY	
- 3	4011366	8	4011366	8	4011366	12	SOCKET BOLT	
- 4	C61141	1	C61141	1	C61141	1	HOLDER A	
- 5	C61142	1	C61142	1	C61142	1	HOLDER B	
- 6	C61143	1	C61143	1	C61143	1	HOLDER C	
- 7	C61144	1	C61144	1	C61144	1	HOLDER PIN	
- 8	U81338	1	U81338	1	U81338	1	HOLDER NUT	
- 9	C61145	1	C61145	1	C61145	1	CENTER PIN	
- 10	2851051	1	2851051	1	2851051	1	O - RING	
- 11	2844901	1	2844901	1	2844901	1	BACK - UP RING	
- 12	C11226	1	C11226	1	U81253	1	DIAPHRAGM	
- 13	2850014	2	2850014	2	2850014	2	O - RING	
- 14	U81266	1	U81266	1	U81266	1	CHARGING VALVE	
- 15	U81275	1	U81275	1	U81275	1	O - RING CAP	
- 16	2850003	1	2850003	1	2850003	1	O - RING	
- 17	U81276	1	U81276	1	U81276	1	O - RING PLUG	
22	4130039	8	4130039	8	4130039	8	HELISERT COIL	
23	4011147	8	4011147	8	4011147	8	SOCKET BOLT	
24	Q51105	4	Q61108	4	Q21106	4	THROUGH BOLT	
25	Q51106	4	Q61109	4	Q21107	4	HEX NUT	
26	Q51107	4	Q61110	4	Q41107	4	STOPPER	
27	4400041	4	4400043	4	4400045	4	SNAP RING	

• SQ60,70,80



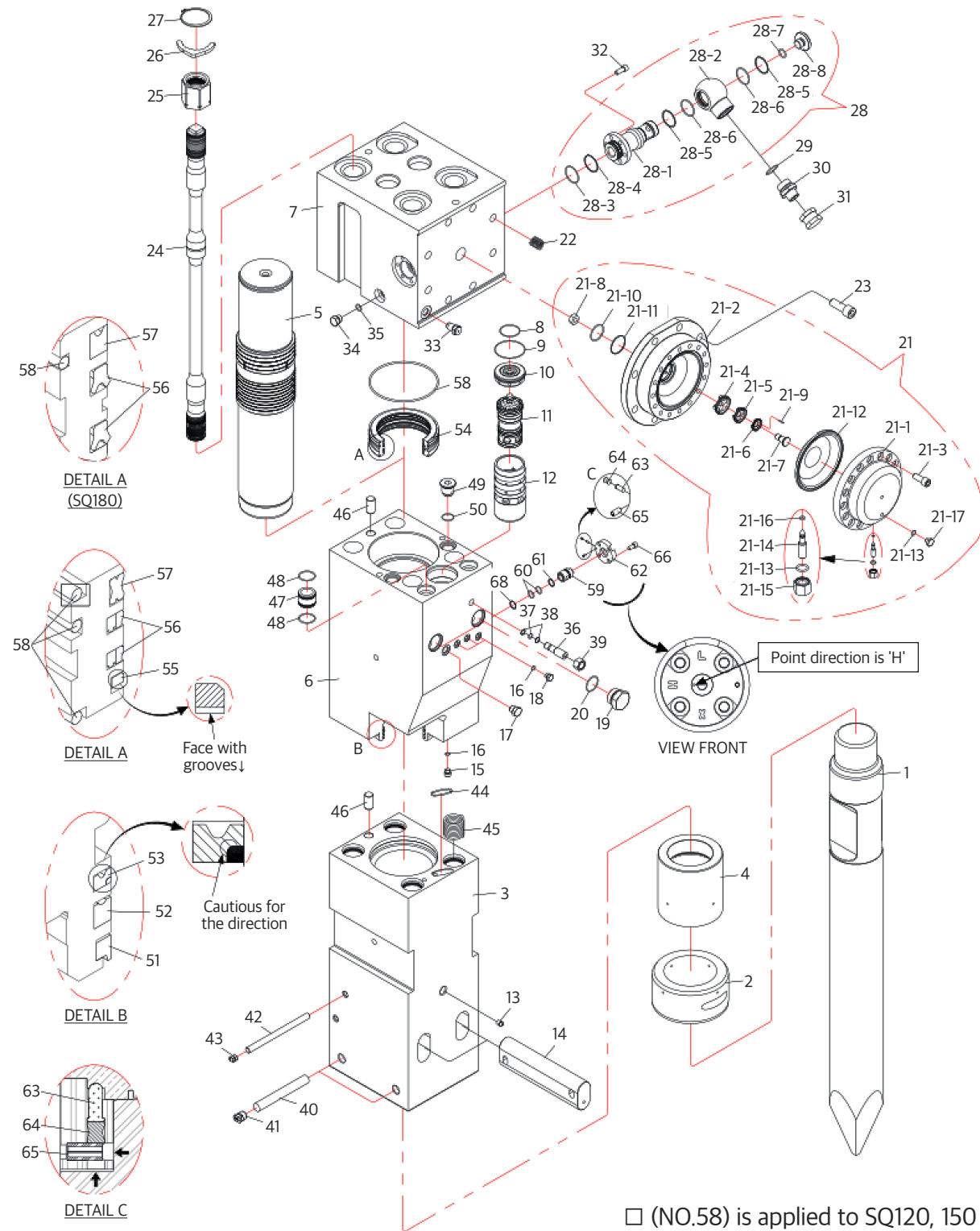
※ Item no. 30, 31 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ60,70,80)

NO	SQ60		SQ70		SQ80		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
	Q51001	1Set	Q61001	1Set	Q21001	1Set	MAIN BODY ASSEMBLY	
28	Q21108	2	Q21108	2	Q21108	2	SWIVEL ADAPTER	
- 1	Q21109	1	Q21109	1	Q21109	1	SHAFT	
- 2	Q21110	1	Q21110	1	Q21110	1	HOUSING	
- 3	2851040	6	2851040	6	2851040	6	O - RING	
- 4	2841228	2	2841228	2	2841228	2	BACK - UP RING	
- 5	2841315	4	2841315	4	2841315	4	BACK - UP RING	
- 6	Q21111	1	Q21111	1	Q21111	1	SWIVEL WASHER	
- 7	4400023	1	4400023	1	4400023	1	C TYPE STOP RING	
29	★ A(2851028)	(2)	A(2851028)	(2)	2851028	2	O - RING	
30	C21124	2	C21124	2	C21124	2	H/ADAPTER #3	See the manual
30	C21131	2	C21131	2	C21131	2	H/ADAPTER #4(US etc)	See the manual
30	2710315	2	2710315	2	2710315	2	H/ADAPTER #5	See the manual
31	2715063	2	2715063	2	2715063	2	UNION CAP #3	See the manual
31	C21132	2	C21132	2	C21132	2	UNION CAP #4(US etc)	See the manual
31	2715004	2	2715004		2715004	2	UNION CAP #5	See the manual
32	4011074	12	4011074	12	4011074	12	SOCKET BOLT	
33	C51191	1	C51191	1	C51191	1	CHARGING VALVE	
34	2702193	1	2702193	1	2702193	1	HEX HEAD PLUG - 01	
35	2851017	1	2851017	1	2851017	1	O - RING	
36	C21149	1	C31210	1	C31210	1	VALVE ADJUSTER	
37	★ 2851007	1	B(2851010)	(1)	B(2851010)	(1)	O - RING	
38	2841218	2	2841217	2	2841217	2	BACK - UP RING	
39	4101305	1	4101306	1	4101306	1	HEX NUT	
40	C11128	2	C11128	2	Q21114	2	FRONT HEAD PIN	
41	D81150	2	D81150	2	C31247	2	RUBBER PLUG	
42	C21115	1	C21115	1	C31127	1	STOP PIN	
43	D81151	1	D81151	1	C31246	1	RUBBER PLUG	
44	2851204	1	2851204	1	2851204	1	O - RING	
45	Q51108	4	Q61111	4	Q21112	4	HELISERT COIL	
46	C21173	2	C21173	2	C21173	2	KNOCK PIN	
47	Q61112	2	Q61112	2	Q21113	2	PTFE TUBE	~17.09
47	B0000612	2	B0000612	2	B0000615	2	PTFE TUBE	17.10~
48	2851027	4	2851027	4	2851034	4	O - RING	
49	C21106	2	C21106	2	C31123	2	SOCKET PLUG	
50	2850021	2	2850021	2	2850024	2	O - RING	
51	2831073	1	2831040	1	2831041	1	DUST SEAL	
52	2811007	1	2811089	1	2811090	1	U - PACKING	
53	2833019	1	2833013	1	2811093	1	BUFFER SEAL(U - PACKING)	
54	C21104	1	L01109	1	C31111	1	SEAL RETAINER	
55	-	-	-	-	2819051	1	BUFFER SEAL	
56	2811049	2	2811066	2	2811076	2	STEP SEAL	
57	2835043	1	2835034	1	2835044	1	GAS SEAL	
58	2851226	3	2851229	3	2851232	3	O - RING	
59	Q31111	1	Q31111	1	Q31111	1	SELECT VALVE	~17.09
59	C71309	1	C71309	1	C71309	1	SELECT VALVE	17.10~
60	2851201	2	2851201	2	2851201	2	O - RING	
61	2842201	1	2842201	1	2842201	1	BACK UP RING	
62	Q31110	1	Q31110	1	Q31110	1	VALVE COVER	
63	Q31112	1	Q31112	1	Q31112	1	SELECT PIN	
64	Q31113	1	Q31113	1	Q31113	1	RUBBER SPRING	
65	4300080	1	4300080	1	4300080	1	SPRING PIN	
66	4010058	4	4010058	4	4010058	4	SOCKET BOLT	
67	-	-	-	-	2843035	1	BACK-UP RING	
68	2842331	1	2842331	1	2842331	1	BACK-UP RING	17.10~

★ Part No. A() is same with No.20 / Part No. B() is same with No.16 [※ The quantity() is included in No.20, No.16]

• SQ100,120,130,140,150

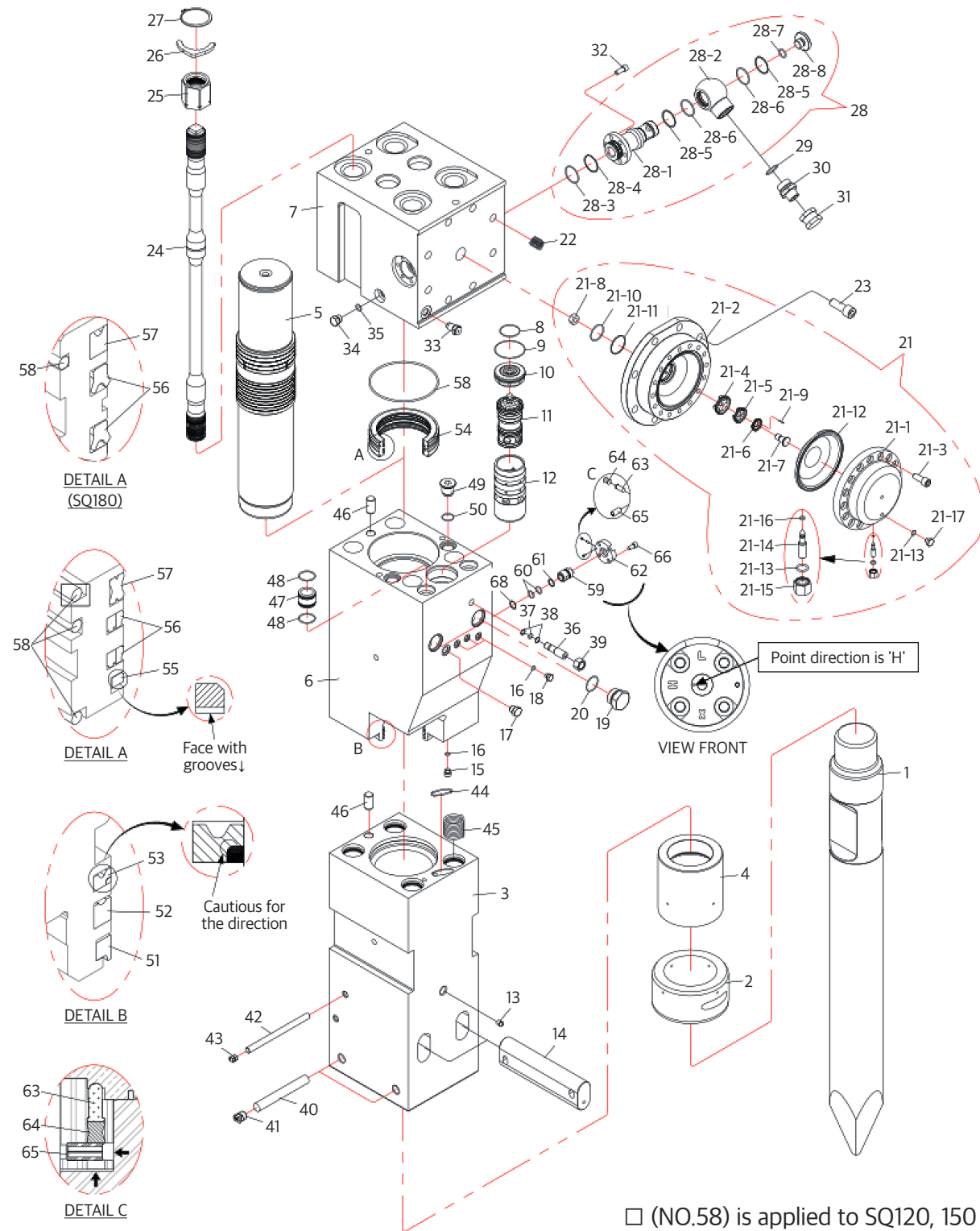


※ Item no. 30, 31 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ100 ~ SQ150)

NO	SQ100		SQ120		SQ130		SQ140		SQ150		PARTS NAME
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	
1	Q71001	1Set	Q81001	1Set	Q41001	1Set	Q01002	1Set	Q31001	1Set	MAIN BODY
2	SSE91113	1	SSC61227	1	SSD81115	1	SSD81115	1	SSC71157	1	ROD (MOIL TYPE)
3	SSE91122	1	SSC61213	1	SSD81125	1	SSD81125	1	SSC71169	1	FRONT COVER
4	Q71102	1	Q81102	1	Q41102	1	Q01152	1	Q31124	1	FRONT HEAD
5	SSE91111	1	SSC61241	1	SSD81124	1	SSD81124	1	SSC71167	1	RING BUSH
6	E91136	1	C61277	1	D81174	1	L21119	1	C71199	1	PISTON
7	Q71101	1	Q81101	1	Q41101	1	Q01151	1	Q31122	1	CYLINDER
8	Q71103	1	Q81103	1	Q41103	1	Q01153	1	Q31103	1	BACK HEAD
9	2851207	1	2851207	1	2851207	1	2851209	1	2851212	1	O - RING
10	2851210	1	2851213	1	2851212	1	2851215	1	2851216	1	O - RING
11	E91109	1	C61110	1	D81112	1	L21108	1	C71204	1	VALVE PLUG
12	E91107	1	C61112	1	D81111	1	L21106	1	C71202	1	VALVE
13	E91108	1	C61111	1	D81113	1	L21107	1	C71203	1	VALVE SLEEVE
14	2700411	1	2700411	1	2700411	1	2700411	1	2700411	1	GREASE NIPPLE
15	E91119	2	C61252	2	C61252	2	L21116	2	C71177	2	ROD PIN
16	U81307	1	U81307	1	U81307	1	U81307	1	U81307	1	SOCKET PLUG
17	2851010	5	2851010	4	2851010	4	2851010	4	2851010	4	O - RING
18	C01162	1	C01162	1	C01162	1	C01162	1	C01162	1	AIR CHECK VALVE
19	Q11191	3	Q11191	3	Q11191	3	Q11191	3	Q11191	3	HEX HEAD PLUG
20	2702196	2	2702197	2	2702197	2	2702197	2	2702197	2	HEX HEAD PLUG - 01
21	2851038	4	2851043	6	2851043	6	2851043	6	2851043	6	O - RING
22	Q71107	1	Q41108	1	Q41108	1	Q41108	1	Q31107	1	ACCUMULATOR
- 1	C31154	1	C61140	1	C61140	1	C61140	1	C71112	1	ACCUMULATOR COVER
- 2	Q71108	1	Q41109	1	Q41109	1	Q41109	1	Q31108	1	ACCUMULATOR BODY
- 3	4011366	12	4011108	16	4011108	16	4011108	16	4011147	16	SOCKET BOLT
- 4	C61141	1	C61141	1	C61141	1	C61141	1	C71115	1	HOLDER A
- 5	C61142	1	C61142	1	C61142	1	C61142	1	C71116	1	HOLDER B
- 6	C61143	1	C61143	1	C61143	1	C61143	1	C71117	1	HOLDER C
- 7	C61144	1	C61144	1	C61144	1	C61144	1	C71118	1	HOLDER PIN
- 8	U81338	1	U81338	1	U81338	1	U81338	1	U81338	1	HOLDER NUT
- 9	C61145	1	C61145	1	C61145	1	C61145	1	C71114	1	CENTER PIN
- 10	2851051	1	2851051	1	2851051	1	2851051	1	2851059	1	O - RING
- 11	2844901	1	2844901	1	2844901	1	2844901	1	2841005	1	BACK - UP RING
- 12	U81253	1	C61139	1	C61139	1	C61139	1	C71113	1	DIAPHRAGM
- 13	2850014	2	2850014	2	2850014	2	2850014	2	2850014	2	O - RING
- 14	U81266	1	U81266	1	U81266	1	U81266	1	U81266	1	CHARGING VALVE
- 15	U81275	1	U81275	1	U81275	1	U81275	1	U81275	1	O - RING CAP
- 16	2850003	1	2850003	1	2850003	1	2850003	1	2850003	1	O - RING
- 17	U81276	1	U81276	1	U81276	1	U81276	1	U81276	1	O - RING PLUG
22	4130039	8	4130026	8	4130026	8	4130026	8	4130041	8	HELISERT COIL
23	4011147	8	4011167	8	4011167	8	4011167	8	4011186	8	SOCKET BOLT
24	Q71105	4	Q81105	4	Q41105	4	Q01155	4	Q31105	4	THROUGH BOLT
25	Q41106	4	Q41106	4	Q41106	4	Q31106	4	Q31106	4	HEX NUT
26	Q41107	4	Q41107	4	Q41107	4	Q31109	4	Q31109	4	STOPPER
27	4400045	4	4400045	4	4400045	4	4400048	4	4400048	4	SNAP RING

• SQ100,120,130,140,150

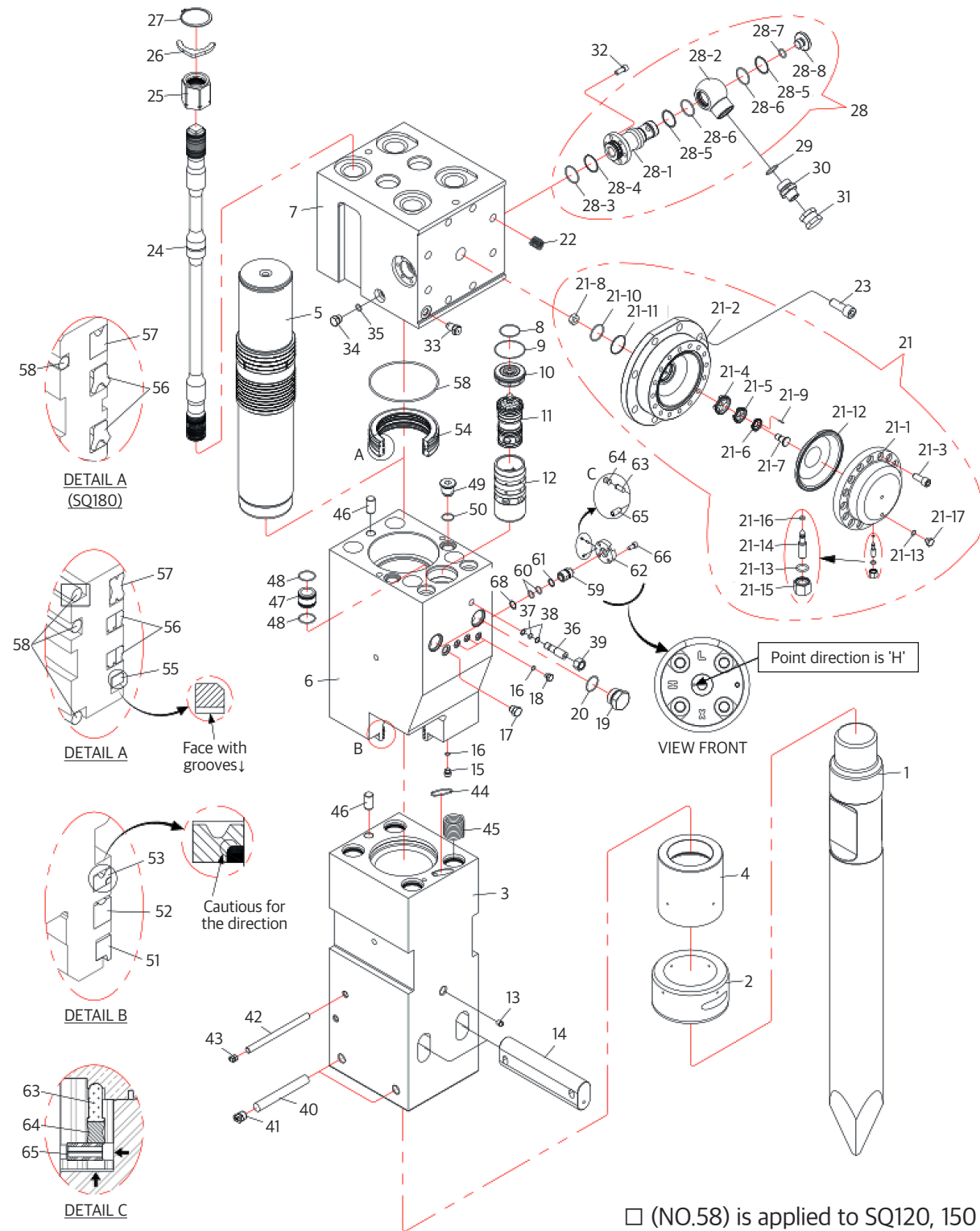


※ Item no. 30, 31 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ100 ~ SQ150)

NO	SQ100		SQ120		SQ130		SQ140		SQ150		PARTS NAME
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	
	Q71001	1Set	Q81001	1Set	Q41001	1Set	Q01002	1Set	Q31001	1Set	MAIN BODY
28	Q31119	2	Q31119	2	Q31119	2	Q31119	2	Q31119	2	SWIVEL ADAPTER
- 1	Q31120	1	Q31120	1	Q31120	1	Q31120	1	Q31120	1	SHAFT
- 2	Q31116	1	Q31116	1	Q31116	1	Q31116	1	Q31116	1	HOUSING
- 3	2851047	2	2851047	2	2851047	2	2851047	2	2851047	2	O - RING
- 4	2841225	2	2841225	2	2841225	2	2841225	2	2841225	2	BACK - UP RING
- 5	2841314	4	2841314	4	2841314	4	2841314	4	2841314	4	BACK - UP RING
- 6	2851046	4	2851046	4	2851046	4	2851046	4	2851046	4	O - RING
- 7	2851022	2	2851022	2	2851022	2	2851022	2	2851022	2	O - RING
- 8	Q31121	1	Q31121	1	Q31121	1	Q31121	1	Q31121	1	PLUG
29	★ A(2851038)	(2)	2851038	2	2851038	2	2851038	2	2851038	2	O - RING
30	C31115	2	B0003996	2	B0003996	2	B0003996	2	B0003996	2	H/ADAPTER #3
30	C31201	2	C31117	2	C31117	2	C31117	2	C31117	2	H/ADAPTER #4(US etc)
30	C31193	2	27110318	2	27110318	2	27110318	2	27110318	2	H/ADAPTER #5
31	2715064	2	2715064	2	2715064	2	2715064	2	2715064	2	UNION CAP #3
31	C31175	2	C31175	2	C31175	2	C31175	2	C31175	2	UNION CAP #4(US etc)
31	2715004	2	2715005	2	2715005	2	2715005	2	2715005	2	UNION CAP #5
32	4011074	12	4011074	12	4011074	12	4011074	12	4011074	12	SOCKET BOLT
33	C51191	1	C51191	1	C51191	1	C51191	1	C51191	1	CHARGING VALVE
34	2702193	1	2702193	1	2702193	1	2702193	1	2702193	1	HEX HEAD PLUG - 01
35	2850017	1	2850017	1	2850017	1	2850017	1	2850017	1	O - RING
36	C31210	1	C61233	1	C61233	1	C71162	1	C71162	1	VALVE ADJUSTER
37	★ B(2851010)	(1)	2851014	1	2851014	1	2850015	1	2850015	1	O - RING
38	2841217	2	2841202	2	2841202	2	2841216	2	2841216	2	BACK - UP RING
39	4101306	1	4101308	1	4101308	1	4101309	1	4101309	1	HEX NUT
40	E91120	2	E91120	2	E91120	2	E91120	2	Q31118	2	FRONT HEAD PIN
41	D81150	2	D81150	2	D81150	2	D81150	2	C71194	2	RUBBER PLUG
42	E91121	1	C61169	1	C61169	1	C61169	1	C61168	1	STOP PIN
43	D81151	1	D81151	1	D81151	1	D81151	1	D81150	1	RUBBER PLUG
44	2851204	1	2851205	1	2851205	1	2851204	1	2851205	1	O - RING
45	Q41110	4	Q41110	4	Q41110	4	Q01115	4	Q01115	4	HELISERT COIL
46	Q11124	2	Q11124	2	Q11124	2	Q11124	2	Q11124	2	KNOCK PIN
47	Q21113	2	Q11131	2	Q11131	2	Q11131	2	Q11131	2	PTFE TUBE (~'17.09)
47	B0000615	2	B0000614	2	B0000614	2	B0000614	2	B0000614	2	PTFE TUBE ('17.10~)
48	★ 2851034	4	A(2851043)	(4)	A(2851043)	(4)	A(2851043)	(4)	A(2851043)	(4)	O - RING
49	C31123	2	C61146	2	C61146	2	C61146	2	C71121	2	SOCKET PLUG
50	2850024	2	2850033	2	2850033	2	2850033	2	2850035	2	O - RING
51	2831042	1	2831043	1	2831044	1	2831039	1	2831045	1	DUST SEAL
52	2811086	1	2811087	1	2811088	1	2811085	1	2811091	1	U - PACKING
53	2833010	1	2833004	1	2833020	1	2833021	1	2833017	1	BUFFER SEAL
54	E91110	1	C61131	1	D81110	1	Q01128	1	C71109	1	SEAL RETAINER
55	2819052	1	2819053	1	2819054	1	2819071	1	2819055	1	BUFFER SEAL
56	2811077	2	2811078	2	2811040	2	2811079	2	2811080	2	STEP SEAL
57	2835045	1	2835046	1	2835047	1	2835050	1	2835048	1	GAS SEAL
58	2851234	3	2851235	4	2851237	3	2851237	3	2851237	4	O - RING

• SQ100,120,130,140,150



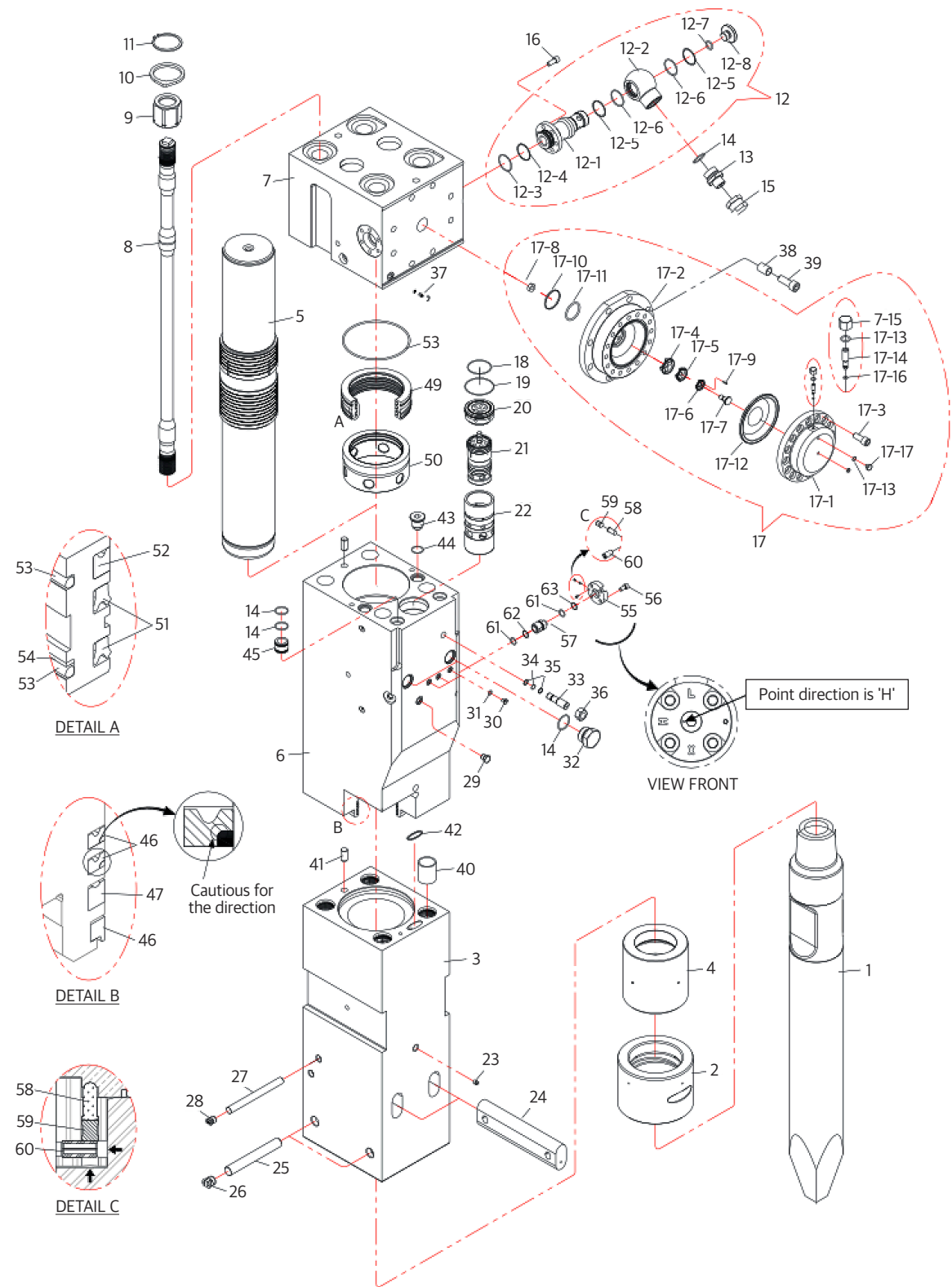
※ Item no. 30, 31 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ100 ~ SQ150)

NO	SQ100		SQ120		SQ130		SQ140		SQ150		PARTS NAME
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	
59	Q31111	1	Q31111	1	Q31111	1	Q31111	1	Q31111	1	SELECT VALVE (~17.09)
59	C71309	1	C71309	1	C71309	1	C71309	1	C71309	1	SELECT VALVE (17.10~)
60	2851201	2	2851201	2	2851201	1	2851201	2	2851201	2	O - RING
61	2842201	1	2842201	1	2842201	1	2842201	1	2842201	1	BACK UP RING
62	Q31110	1	Q31110	1	Q31110	1	Q31110	1	Q31110	1	VALVE COVER
63	Q31112	1	Q31112	1	Q31112	1	Q31112	1	Q31112	1	SELECT PIN
64	Q31113	1	Q31113	1	Q31113	1	Q31113	1	Q31113	1	RUBBER SPRING
65	4300080	1	4300080	1	4300080	1	4300080	1	4300080	1	SPRING PIN
66	4011058	4	4011058	4	4011058	4	4011058	4	4011058	4	SOCKET BOLT
67	2842331	1	2842331	1	2842331	1	2842331	1	2842331	1	BACK UP RING (17.10~)

★ Part No. A() is same with No.20 / Part No. B() is same with No.16 / Part No. C() is same with No.35 [※ The quantity() is included in No.20, No.16, No.35]

• SQ181

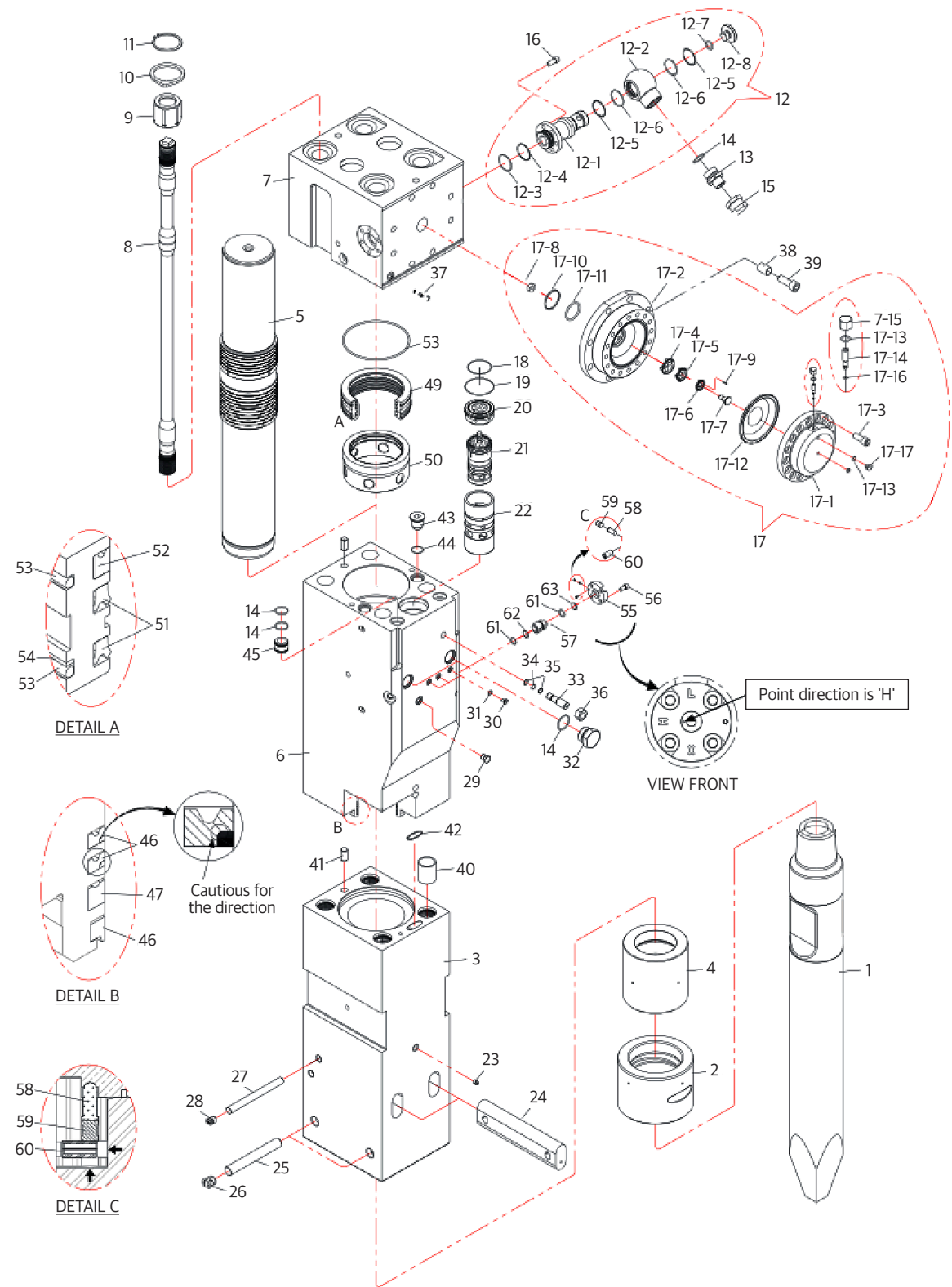


※ Item no. 13, 15 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ181)

NO	SQ181 ('15.03~'19.01)		SQ181 ('19.02~)		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
1	Q11003	1Set	B0005782	1Set	MAIN BODY ASSEMBLY	
2	SSQ11216	1	SSQ11216	1	ROD (MOIL TYPE)	
3	SSQ11208	1	SSQ11208	1	FRONT COVER	
4	Q11200	1	Q11200	1	FRONT HEAD	
5	SSQ11212	1	SSQ11212	1	RING BUSH	
6	Q11201	1	Q11201	1	PISTON	
7	Q11198	1	Q11198	1	CYLINDER PLUG ASSY	
8	Q11153	1	Q11153	1	BACK HEAD	
9	Q11202	4	Q11202	4	THROUGH BOLT	
10	Q11161	4	Q11161	4	HEXAGON NUT	
11	Q11165	4	Q11165	4	STOPPER	
12	4400050	4	4400050	4	SNAP RING	
12	Q11162	2	Q11162	2	SWIVEL ADAPTER	
- 1	Q11163	1	Q11163	1	SHAFT	
- 2	Q11164	1	Q11164	1	HOUSING	
- 3	2851056	1	2851056	1	O - RING	
- 4	2841227	1	2841227	1	BACK - UP RING	
- 5	2841313	2	2841313	2	BACK - UP RING	
- 6	2851059	2	2851059	2	O - RING	
- 7	2851028	1	2851028	1	O - RING	
- 8	Q11167	1	Q11167	1	PLUG	
13	C61150	2	C61150	2	H/ADAPTER #3	See the manual
13	C61152	2	C61152	2	H/ADAPTER #4(US etc)	See the manual
13	2710319	2	2710319	2	H/ADAPTER #5	See the manual
14	2851043	8	2851043	8	O-RING	
15	2715064	2	2715064	2	UNION CAP #3	See the manual
15	C31175	2	C31175	2	UNION CAP #4(US etc)	See the manual
15	2715005	2	2715005	2	UNION CAP #5	See the manual
16	4011108	12	4011108	12	SOCKET BOLT	
17	Q31107	1	Q31107	1	ACCUMULATOR	
- 1	C71112	1	C71112	1	ACCUMULATOR COVER	
- 2	Q31108	1	Q31108	1	ACCUMULATOR BODY	
- 3	4011147	16	4011147	16	SOCKET BOLT	
- 4	C71115	1	C71115	1	HOLDER A	
- 5	C71116	1	C71116	1	HOLDER B	
- 6	C71117	1	C71117	1	HOLDER C	
- 7	C71118	1	C71118	1	HOLDER PIN	
- 8	U81338	1	U81338	1	HOLDER NUT	
- 9	C71114	1	C71114	1	CENTER PIN	
- 10	2851059	1	2851059	1	O - RING	
- 11	2841005	1	2841005	1	BACK - UP RING	
- 12	C71113	1	C71113	1	DIAPHRAGM	
- 13	2850014	2	2850014	2	O - RING	
- 14	U81266	1	U81266	1	CHARGING VALVE	
- 15	U81275	1	U81275	1	O - RING CAP	
- 16	2850003	1	2850003	1	O - RING	
- 17	U81276	1	U81276	1	O - RING PLUG	
18	2851213	1	2851213	1	O-RING	
19	2851217	1	2851217	1	O-RING	
20	Q11107	1	Q11107	1	VALVE PLUG	

• SQ181



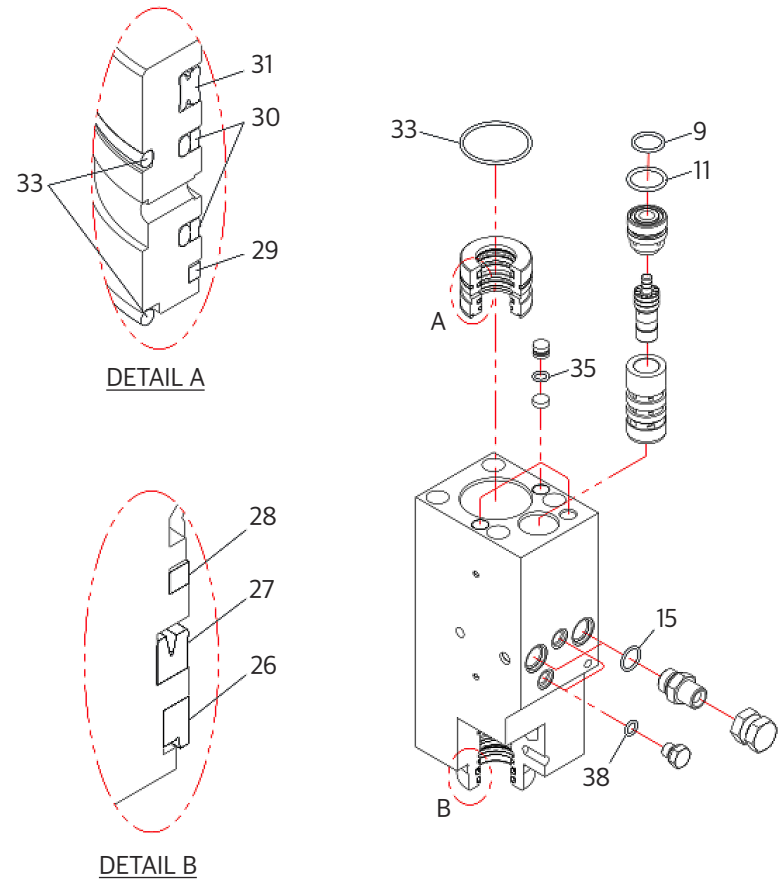
※ Item no. 13, 15 : See the manual section 4.2 "Installation and Removal".
The fitting types commonly used vary depending on the country and carrier.

• Main Body (SQ181)

NO	SQ181 ('15.03~'19.01)		SQ181 ('19.02~)		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
	Q11 003	1Set	Q11 003	1Set	MAIN BODY ASSEMBLY	
21	Q11105	1	Q11105	1	VALVE	
22	Q11106	1	Q11106	1	VALVE SLEEVE	
23	2700411	1	2700411	1	GREASE NIPPLE	
24	Q11 120	2	Q11 120	2	ROD PIN	
25	C71 120	2	C71 120	2	FRONT HEAD PIN	
26	C71 194	2	C71 194	2	RUBBER PLUG	
27	Q11 123	2	Q11 123	2	STOP PIN	
28	D81 150	2	D81 150	2	RUBBER PLUG	
29	C01 162	1	C01 162	1	AIR CHECK VALVE	
30	Q11 191	3	Q11 191	3	HEX HEAD PLUG	
31	2851010	3	2851010	3	O-RING	
32	2702197	2	2702197	2	HEX HEAD PLUG	
33	Q11 121	1	Q11 121	1	VALVE ADJUSTER	
34	2851017	1	2851017	1	O-RING	
35	2841212	1	2841212	1	BACK-UP RING	
36	4101310	1	4101310	1	HEXAGON NUT	
37	C51 191	2	C51 191	2	CHARGING VALVE	
38	4130041	8	4130041	8	HELISERT COIL	
39	4011186	8	4011186	8	SOCKET BOLT	
40	Q11 114	4	Q11 114	4	HELISERT COIL	
41	Q11 124	2	Q11 124	2	KNOCK PIN	
42	2851206	1	2851206	1	O-RING	
43	C71 121	2	C71 121	2	SOCKET PLUG	
44	2850035	2	2850035	2	O-RING	
45	Q11 131	2	-	-	PTFE TUBE	'15.03 ~ '17.09
45	B0000614	2	B0000614	2	PTFE TUBE	'17.10 ~
46	2831934	1	2831934	1	DUST SEAL	
47	2819114	1	2819114	1	U-PACKING	
48	2819110	2	2819110	2	U-PACKING	
49	Q11 203	1	B000610	1	UPPER SEAL RETAINER	
50	Q11 204	1	Q11 204	1	UPPER BRASS RETAINER	
51	2829001	2	2819120	2	U-PACKING	
52	2809011	1	2819119	1	U-PACKING	
53	2851241	3	2851241	3	O-RING	
54	2843062	1	2843062	1	BACK-UP RING	
55	Q31 110	1	Q31 110	1	VALVE COVER	
56	4011058	4	4011058	4	SOCKET BOLT	
57	C71 309	1	C71 309	1	SELECT VALVE	
58	Q31 112	1	Q31 112	1	SELECT PIN	
59	Q31 113	1	Q31 113	1	RUBBER SPRING	
60	4300080	1	4300080	1	SPRING PIN	
61	2851201	2	2851201	2	O-RING	
62	2842201	1	2842201	1	BACK-UP RING	
63	2842331	1	2842331	1	BACK-UP RING	

2. Seal Kit

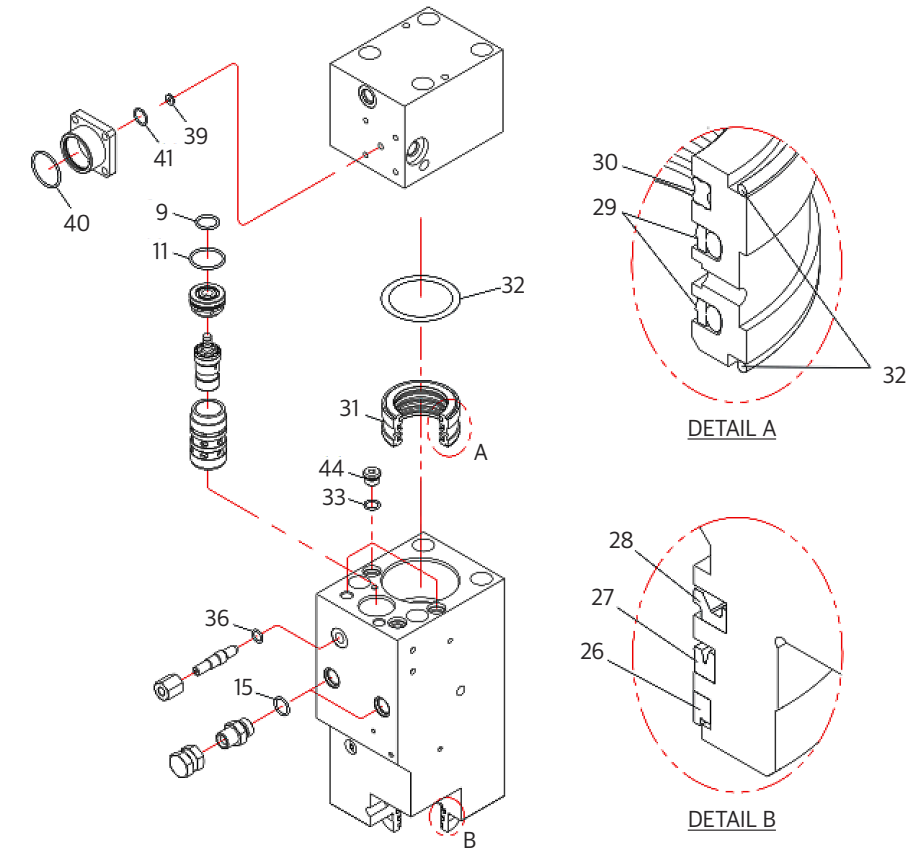
• SQ10,20,30



• Seal Kit (SQ10~30)

NO	SQ10		SQ20		SQ30		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
	B0007278	1Set	B0007279	1Set	B0007280	1Set	SEAL KIT	
9	2851201	1	2851201	1	2851201	1	O-RING	
11	2851030	1	2851030	1	2851033	1	O-RING	
15	2851018	2	2851018	2	2851018	2	O-RING	
26	B0006703	1	B0006706	1	B0006633	1	DUST SEAL	
27	B0006701	1	B0006704	1	B0006634	1	U-PACKING	
28	2819062	1	2819060	1	2819058	1	BUFFER RING	
29	2819063	1	2819061	1	2819059	1	BUFFER RING	
30	2811044	2	2811017	2	2811018	2	STEP SEAL	
31	2835035	1	2835036	1	2835037	1	GAS SEAL	
33	2851208	3	2851209	3	2851210	3	O-RING	
35	2850010	4	2850010	4	2850010	4	O-RING	
38	2851010	2	2851010	2	2851010	2	O-RING	

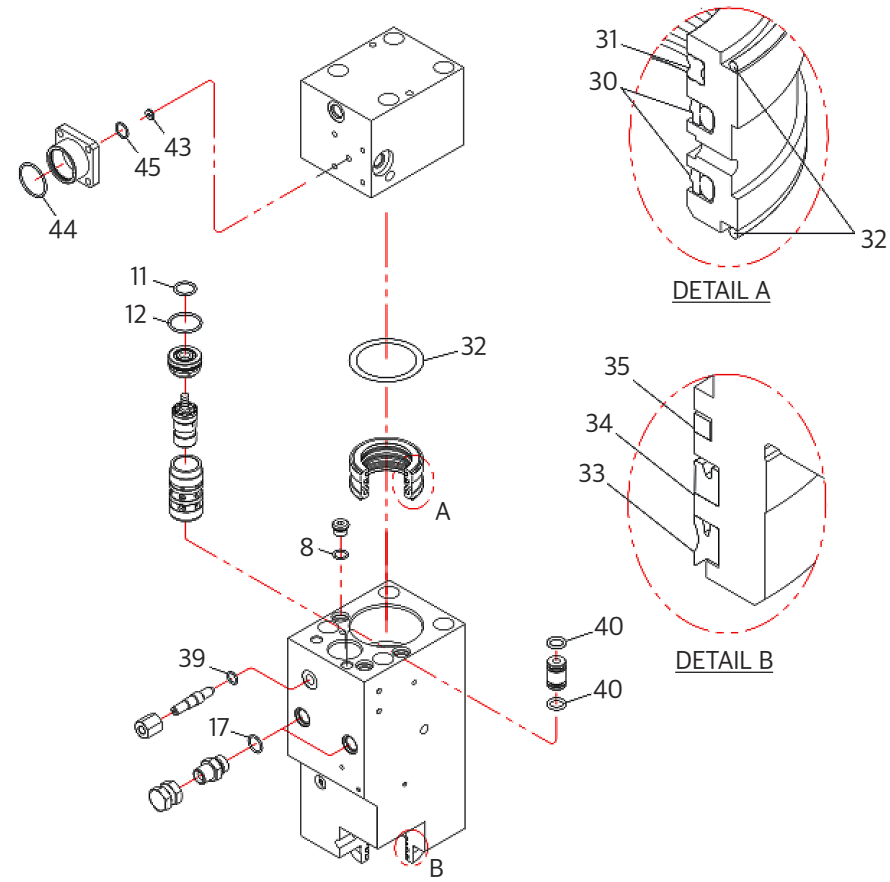
• SQ35 AutoLube



• Seal Kit (SQ35 AutoLube)

NO	SQ35 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
	B0009550	1Set	SEAL KIT	
9	2851201	1	O-RING	
11	2851033	1	O-RING	
15	2851018	2	O-RING	
26	B0006708	1	DUST SEAL	
27	B0006707	1	U-PACKING	
28	2833011	1	BUFFER SEAL	
29	2811045	2	STEP SEAL	
30	2835038	1	GAS SEAL	
32	2851214	3	O-RING	
33	2851010	4	O-RING	
36	Q11191	1	O-RING	
39	B0007052	1	PACKING,AUTO GREASING	
40	2850206	1	O-RING	
41	2850019	1	O-RING	

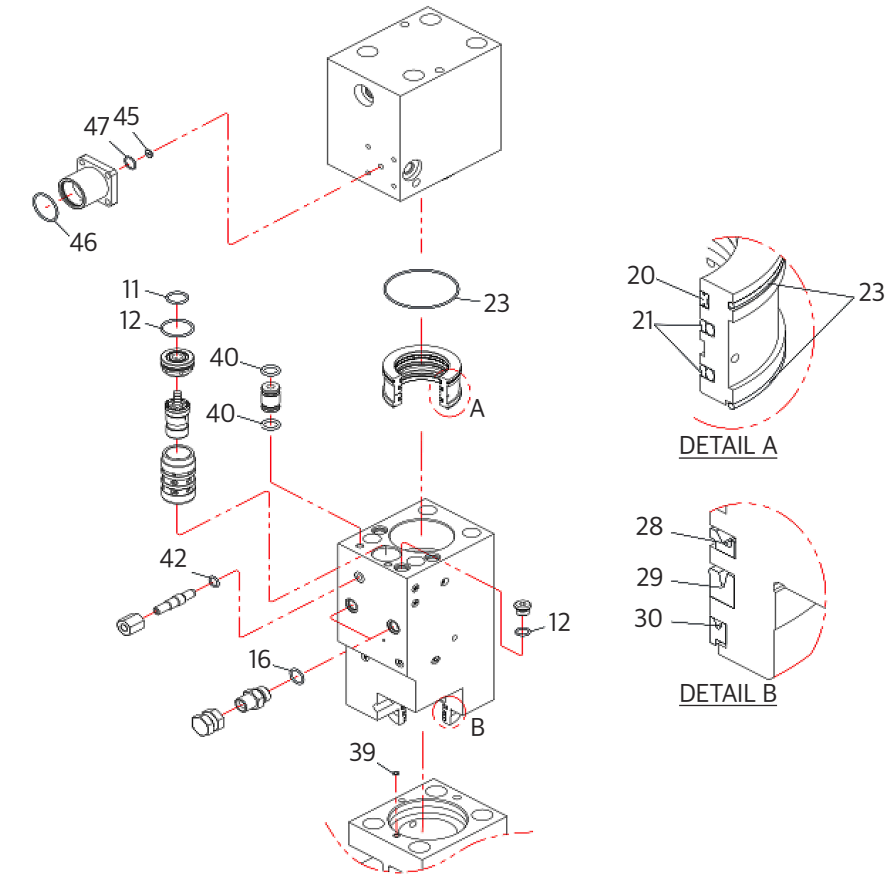
• SQ40,43 AutoLube



• Seal Kit (SQ40,43 AutoLube)

NO	SQ40 AutoLube		SQ43 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
	B0008609	1Set	B0008612	1Set	SEAL KIT	
8	2850016	3	2850016	3	O-RING	
11	2851201	1	2851201	1	O-RING	
12	2851204	1	2851204	1	O-RING	
17	2851018	2	2851018	2	O-RING	
30	2811046	2	2811047	2	STEP SEAL	
31	2835039	1	2835040	1	GAS SEAL	
32	2856012	3	2851216	3	O-RING	
33	B0006635	1	B0006711	1	DUST SEAL	
34	B0006636	1	B0006710	1	U-PACKING	
35	2819056	1	2833012	1	BUFFER SEAL	
36	2850005	1	2850005	1	O-RING	
39	2851014	1	2851014	1	O-RING	
40	2851010	2	2851010	2	O-RING	
43	B0007052	1	B0007052	1	PACKING, AUTO GREASE	
44	2850206	1	2850206	1	O-RING	
45	2850019	1	2850019	1	O-RING	

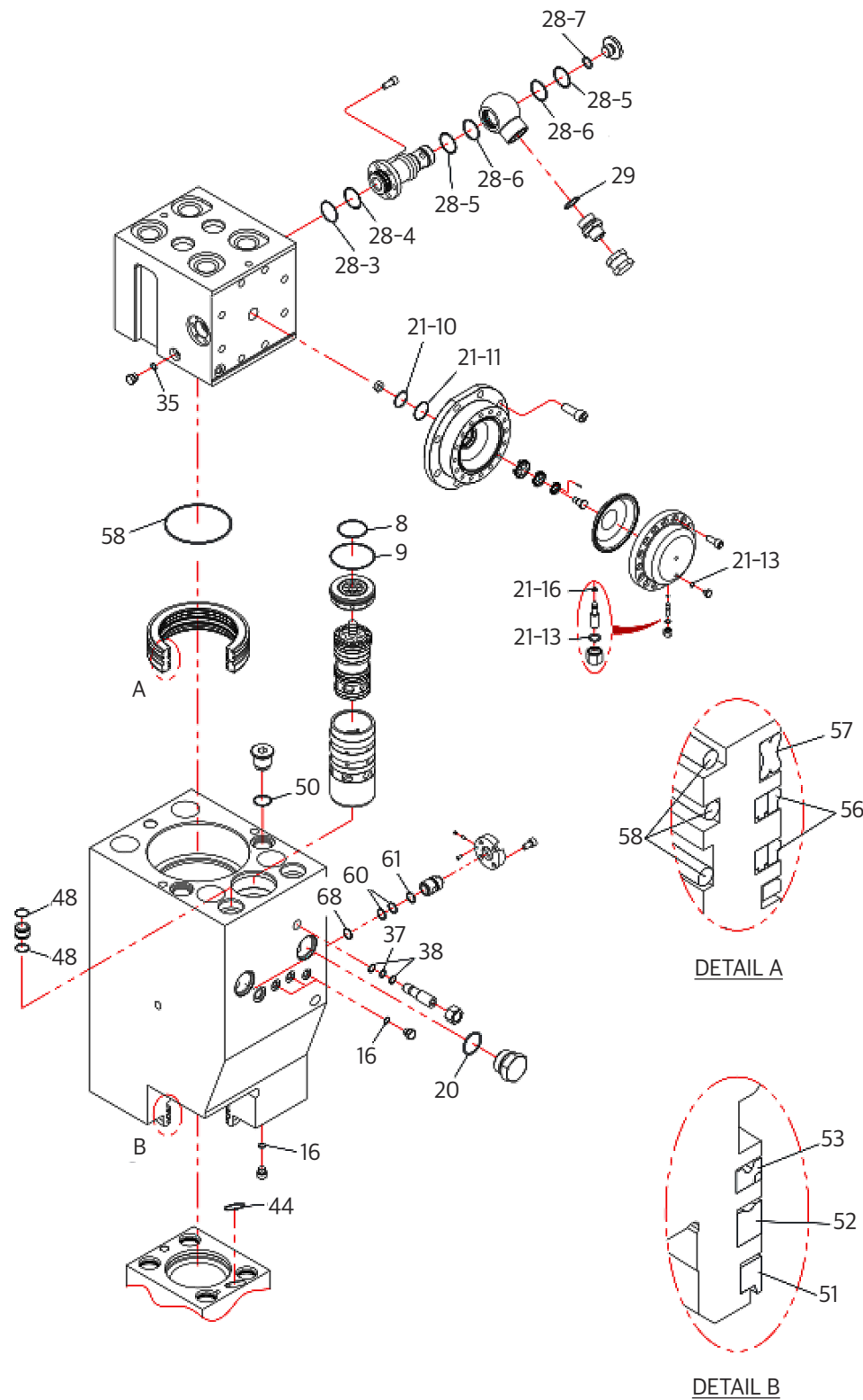
• SQ45,50 AutoLube



• Seal Kit (SQ45,50 AutoLube)

NO	SQ45 AutoLube		SQ50 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
	B0008567	1Set	B0008605	1Set	SEAL KIT	
8	2850017	3	2850016	3	O-RING	
11	2851202	1	2851203	1	O-RING	
12	2851205	1	2851051	1	O-RING	
16	2851022	2	2851022	2	O-RING	
20	2835041	1	2835042	1	SEAL,GAS	
21	2811048	2	2811067	2	SEAL,STEP	
23	2851219	3	2851223	3	O-RING	
28	2833001	1	2833015	1	RING,BUFFER	
29	2811064	1	B0006638	1	PACKING,U	
30	2831068	1	B0006637	1	SEAL,DUST	
39	2850005	1	2851012	1	O-RING	
40	2851010	4	2851010	4	O-RING	
42	2851014	1	2851014	1	O-RING	
45	B0007052	1	B0007052	1	PACKING, AUTO GREASE	
46	2850206	1	2850206	1	O-RING	
47	2850019	1	2850019	1	O-RING	

• SQ60,70,80

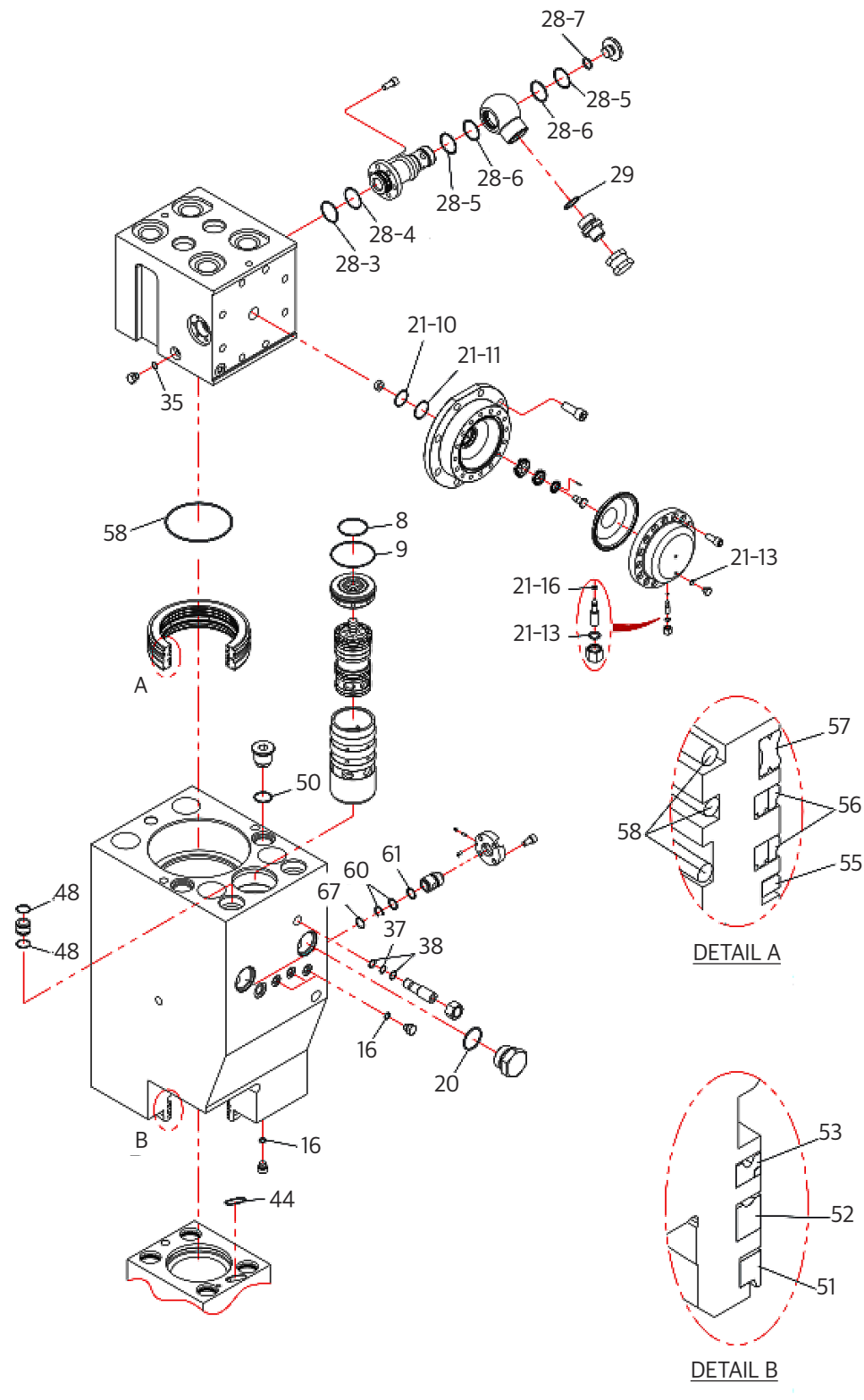


• Seal Kit (SQ60 ~ 80)

NO	SQ60			SQ70			SQ80			PARTS NAME
	P/N		Q'ty	P/N		Q'ty	P/N		Q'ty	
	Q51011 (~ '17.09)	Q51051 ('17.10 ~)	1Set	Q61012 (~ '17.09)	Q61051 ('17.10 ~)	1Set	Q21012 (~ '17.09)	Q21051 ('17.10 ~)	1Set	SEAL KIT
8	2851205	2851205	1	2851206	2851206	1	2851207	2851207	1	O - RING
9	2851208	2851208	1	2851209	2851209	1	2851210	2851210	1	O - RING
16	2851010	2851010	4	2851010	2851010	5	2851010	2851010	5	O - RING
20	2851028	2851028	4	2851028	2851028	4	2851038	2851038	2	O - RING
21- 10	2851051	2851051	1	2851051	2851051	1	2851051	2851051	1	O - RING
- 11	2844901	2844901	1	2844901	2844901	1	2844901	2844901	1	BACK UP RING
- 13	2850014	2850014	2	2850014	2850014	2	2850014	2850014	2	O - RING
- 16	2850003	2850003	1	2850003	2850003	1	2850003	2850003	1	O - RING
28- 3	2851040	2851040	3	2851040	2851040	3	2851040	2851040	3	O - RING
- 4	2841228	2841228	1	2841228	2841228	1	2841228	2841228	1	BACK UP RING
- 5	2841315	2841315	2	2841315	2841315	2	2841315	2841315	2	BACK UP RING
29 ★	A(2851028)	A(2851028)	-2	A(2851028)	A(2851028)	-2	2851028	2851028	2	O - RING
35	2851017	2851017	1	2851017	2851017	1	2851017	2851017	1	O - RING
37 ★	2851007	2851007	1	B(2851010)	B(2851010)	-1	B(2851010)	B(2851010)	-1	O - RING
38	2841218	2841218	2	2841217	2841217	2	2841217	2841217	2	BACK UP RING
44	2851204	2851204	1	2851204	2851204	1	2851204	2851204	1	O - RING
48	2851027	2851027	4	2851027	2851027	4	2851034	2851034	4	O - RING
50	2850021	2850021	2	2850021	2850021	2	2850024	2850024	2	O - RING
51	2831073	2831073	1	2831040	2831040	1	2831041	2831041	1	DUST SEAL
52	2811007	2811007	1	2811089	2811089	1	2811090	2811090	1	U - PACKING
53	2833019	2833019	1	2833013	2833013	1	2811093	2811093	1	BUFFER SEAL
55	-	-	-	-	-	-	2819051	2819051	1	BUFFER SEAL
56	2811049	2811049	2	2811066	2811066	2	2811076	2811076	2	STEP SEAL
57	2835043	2835043	1	2835034	2835034	1	2835044	2835044	1	GAS SEAL
58	2851226	2851226	3	2851229	2851229	3	2851232	2851232	3	O - RING
60	2851201	2851201	2	2851201	2851201	2	2851201	2851201	2	O - RING
61	2842201	2842201	1	2842201	2842201	1	2842201	2842201	1	BACK UP RING
68	-	2842331	1	-	2842331	1	-	2842331	1	BACK UP RING

★ Part No. A() is same with No.20 / Part No. B() is same with No.16 [※ The quantity() is included in No.20, No.16]

• SQ100,120

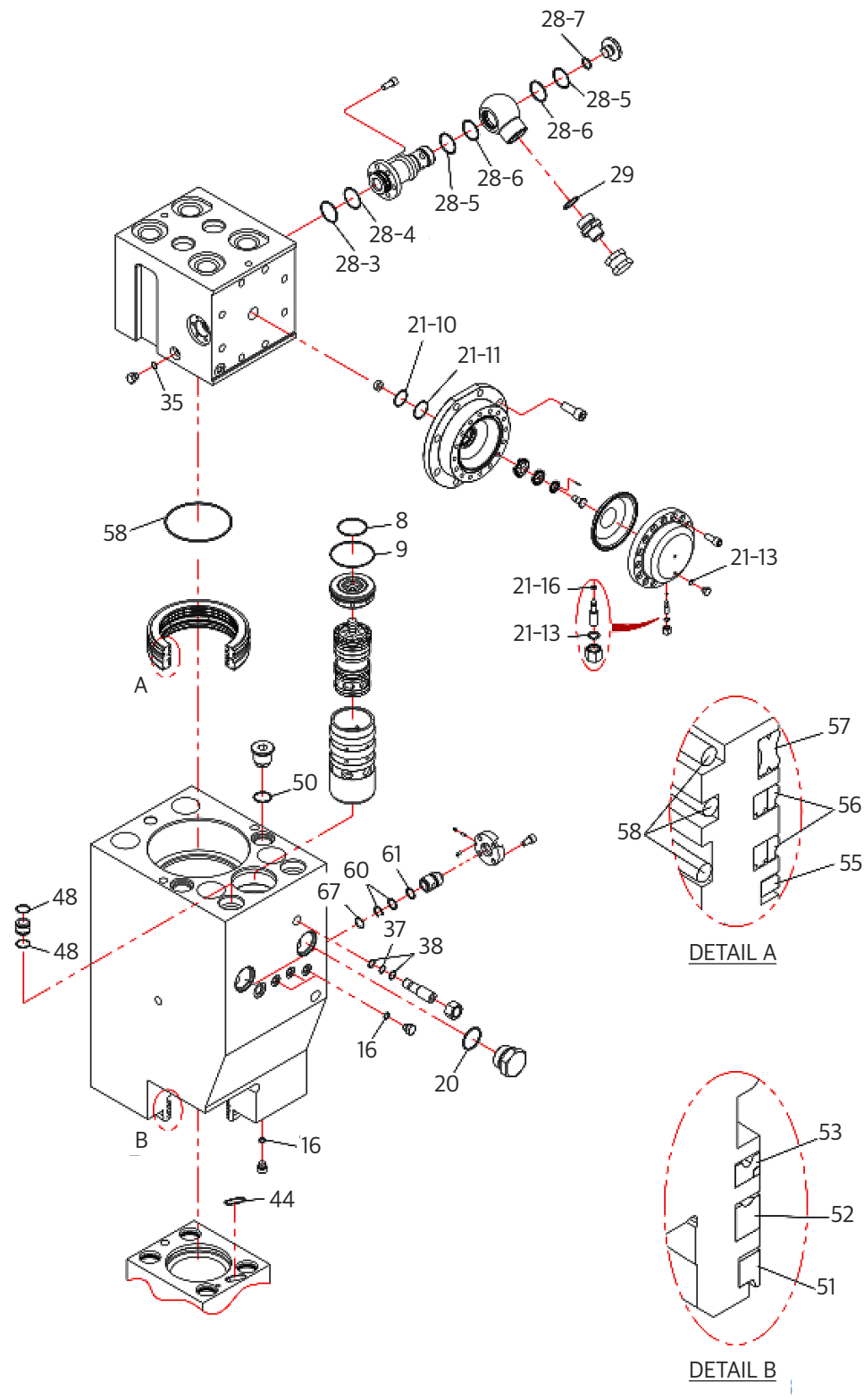


• Seal Kit (SQ100 ~ 120)

NO	SQ100			SQ120			PARTS NAME
	P/N	P/N	Q'ty	P/N	P/N	Q'ty	
	Q71 012 (~ '17.09)	Q71 051 ('17.10 ~)	1Set	Q81 012 (~ '17.09)	Q81 051 ('17.10 ~)	1Set	SEAL KIT
8	2851207	2851207	1	2851207	2851207	1	O - RING
9	2851210	2851210	1	2851213	2851213	1	O - RING
16	2851010	2851010	5	2851010	2851010	4	O - RING
20	2851038	2851038	4	2851043	2851043	6	O - RING
21- 10	2851051	2851051	1	2851051	2851051	1	O - RING
- 11	2844901	2844901	1	2844901	2844901	1	BACK UP RING
- 13	2850014	2850014	2	2850014	2850014	2	O - RING
- 16	2850003	2850003	1	2850003	2850003	1	O - RING
28 3	2851047	2851047	1	2851047	2851047	1	O - RING
- 4	2841225	2841225	1	2841225	2841225	1	BACK UP RING
- 5	2841314	2841314	2	2841314	2841314	2	BACK UP RING
- 6	2851046	2851046	2	2851046	2851046	2	O - RING
- 7	2851022	2851022	1	2851022	2851022	1	O - RING
29 ★	A(2851038)	A(2851038)	-2	2851038	2851038	2	O - RING
35	2850017	2850017	1	2850017	2850017	1	O - RING
37 ★	B(2851010)	B(2851010)	-1	2851014	2851014	1	O - RING
38	2841217	2841217	2	2841202	2841202	2	BACK UP RING
44	2851204	2851204	1	2851205	2851205	1	O - RING
48 ★	2851034	2851034	4	A(2851043)	A(2851043)	-4	O - RING
50	2850024	2850024	2	2850033	2850033	2	O - RING
51	2831042	2831042	1	2831043	2831043	1	DUST SEAL
52	2811086	2811086	1	2811087	2811087	1	U - PACKING
53	2833010	2833010	1	2833004	2833004	1	BUFFER SEAL
55	2819052	2819052	1	2819053	2819053	1	BUFFER SEAL
56	2811077	2811077	2	2811078	2811078	2	STEP SEAL
57	2835045	2835045	1	2835046	2835046	1	GAS SEAL
58	2851234	2851234	3	2851235	2851235	4	O - RING
60	2851201	2851201	2	2851201	2851201	2	O - RING
61	2842201	2842201	1	2842201	2842201	1	BACK UP RING
67	-	2842331	1	-	2842331	1	BACK UP RING

★ Part No. A() is same with No.20 / Part No. B() is same with No.16 / Part No. C() is same with No.35
 [* The quantity() is included in No.20, No.16, No.35]

• SQ130,140,150

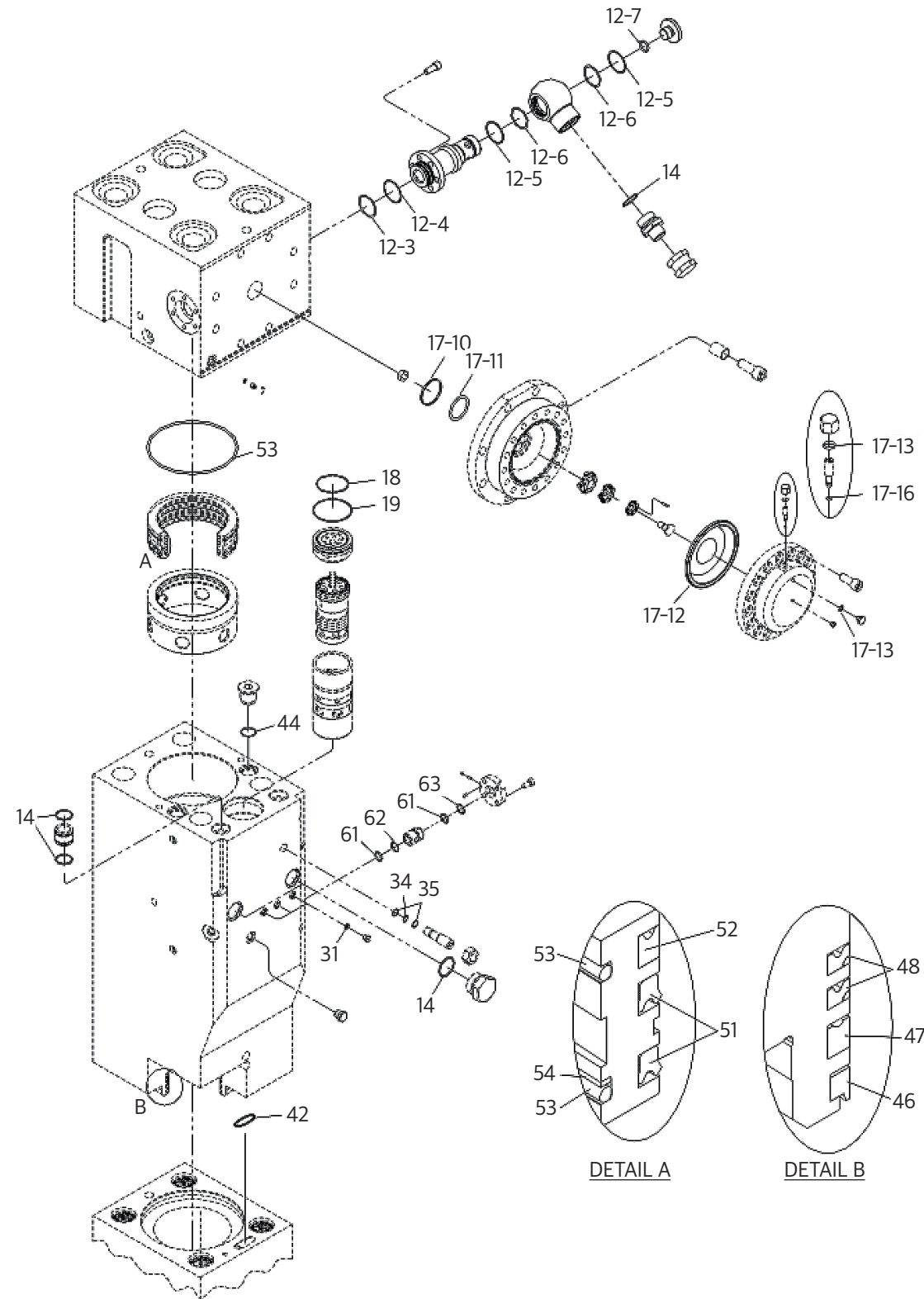


• Seal Kit (SQ130 ~ 150)

NO	SQ130			SQ140			SQ150			PARTS NAME
	P/N	Q'ty		P/N	Q'ty		P/N	Q'ty		
	Q41 012 (~ '17.09)	Q41 051 ('17.10 ~)	1Set	Q01 013 (~ '17.09)	Q01 051 ('17.10 ~)	1Set	Q31 012 (~ '17.09)	Q31 051 ('17.10 ~)	1Set	SEAL KIT
8	2851207	2851207	1	2851209	2851209	1	2851212	2851212	1	O - RING
9	2851212	2851212	1	2851215	2851215	1	2851216	2851216	1	O - RING
16	2851010	2851010	4	2851010	2851010	4	2851010	2851010	4	O - RING
20	2851043	2851043	6	2851043	2851043	6	2851043	2851043	6	O - RING
21- 10	2851051	2851051	1	2851051	2851051	1	2851059	2851059	1	O - RING
- 11	2844901	2844901	1	2844901	2844901	1	2841005	2841005	1	BACK UP RING
- 13	2850014	2850014	2	2850014	2850014	2	2850014	2850014	2	O - RING
- 16	2850003	2850003	1	2850003	2850003	1	2850003	2850003	1	O - RING
28 3	2851047	2851047	1	2851047	2851047	1	2851047	2851047	1	O - RING
- 4	2841225	2841225	1	2841225	2841225	1	2841225	2841225	1	BACK UP RING
- 5	2841314	2841314	2	2841314	2841314	2	2841314	2841314	2	BACK UP RING
- 6	2851046	2851046	2	2851046	2851046	2	2851046	2851046	2	O - RING
- 7	2851022	2851022	1	2851022	2851022	1	2851022	2851022	1	O - RING
29 ★	2851038	2851038	2	2851038	2851038	2	2851038	2851038	2	O - RING
35	2850017	2850017	1	2850017	2850017	1	2850017	2850017	1	O - RING
37 ★	2851014	2851014	1	2850015	2850015	1	2850015	2850015	1	O - RING
38	2841202	2841202	2	2841216	2841216	2	2841216	2841216	2	BACK UP RING
44	2851205	2851205	1	2851204	2851204	1	2851205	2851205	1	O - RING
48 ★	A(2851043)	A(2851043)	-4	A(2851043)	A(2851043)	-4	A(2851043)	A(2851043)	-4	O - RING
50	2850033	2850033	2	2850033	2850033	2	2850035	2850035	2	O - RING
51	2831044	2831044	1	2831039	2831039	1	2831045	2831045	1	DUST SEAL
52	2811088	2811088	1	2811085	2811085	1	2811091	2811091	1	U - PACKING
53	2833020	2833020	1	2833021	2833021	1	2833017	2833017	1	BUFFER SEAL
55	2819054	2819054	1	2819071	2819071	1	2819055	2819055	1	BUFFER SEAL
56	2811040	2811040	2	2811079	2811079	2	2811080	2811080	2	STEP SEAL
57	2835047	2835047	1	2835050	2835050	1	2835048	2835048	1	GAS SEAL
58	2851237	2851237	3	2851237	2851237	3	2851237	2851237	4	O - RING
60	2851201	2851201	2	2851201	2851201	2	2851201	2851201	2	O - RING
61	2842201	2842201	1	2842201	2842201	1	2842201	2842201	1	BACK UP RING
67	-	2842331	1	-	2842331	1	-	2842331	1	BACK UP RING

★ Part No. A() is same with No.20 / Part No. B() is same with No.16 / Part No. C() is same with No.35
 [* The quantity() is included in No.20, No.16, No.35]

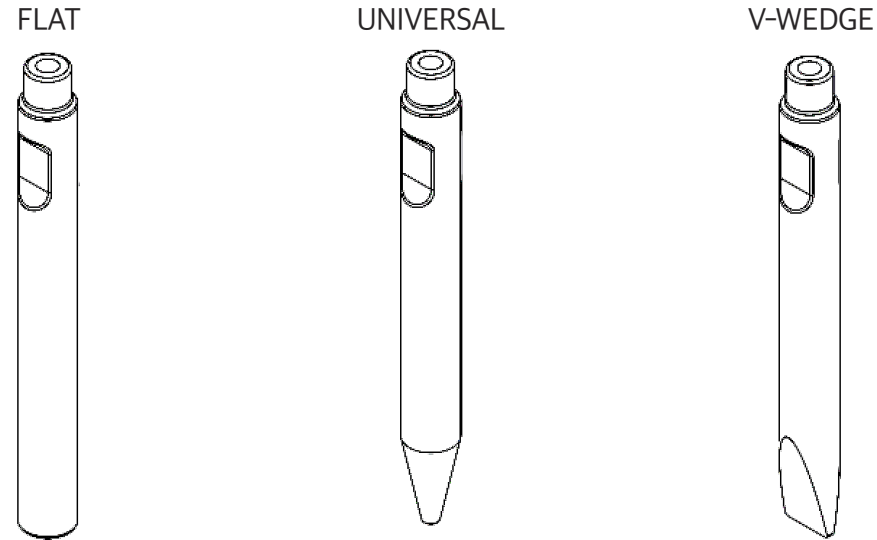
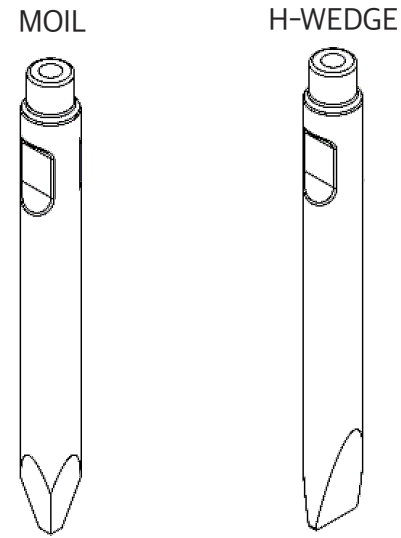
• SQ181



• Seal Kit (SQ181)

NO	SQ181 ('15.03~'19.01)		SQ181 ('19.02~)		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
	Q11 234	1Set	Q11 238	1Set	SEAL KIT	
12 -1	Q11 163	1	Q11 163	1	SHAFT	
-3	2851056	1	2851056	1	O - RING	
-4	2841227	1	2841227	1	BACK - UP RING	
-5	2841313	2	2841313	2	BACK - UP RING	
-6	2851059	2	2851059	2	O - RING	
-7	2851028	1	2851028	1	O - RING	
-8	Q11 167	1	Q11 167	1	PLUG	
14	2851043	8	2851043	8	O-RING	
17 -10	2851059	1	2851059	1	O - RING	
-11	2841005	1	2841005	1	BACK - UP RING	
-12	C71 113	1	C71 113	1	DIAPHRAGM	
-13	2850014	2	2850014	2	O - RING	
-16	2850003	1	2850003	1	O - RING	
18	2851213	1	2851213	1	O-RING	
19	2851217	1	2851217	1	O-RING	
31	2851010	3	2851010	3	O-RING	
34	2851017	1	2851017	1	O-RING	
35	2841212	1	2841212	1	BACK-UP RING	
42	2851206	1	2851206	1	O-RING	
44	2850035	2	2850035	2	O-RING	
46	2831934	1	2831934	1	DUST SEAL	
47	2819114	1	2819114	1	U-PACKING	
48	2819110	2	2819110	2	U-PACKING	
51	2829001	2	2819120	2	U-PACKING	
52	2809011	1	2819119	1	U-PACKING	
53	2851241	3	2851241	3	O-RING	
54	2843062	1	2843062	1	BACK-UP RING	
61	2851201	2	2851201	2	O-RING	
62	2842201	1	2842201	1	BACK-UP RING	
63	2842331	1	2842331	1	BACK-UP RING	

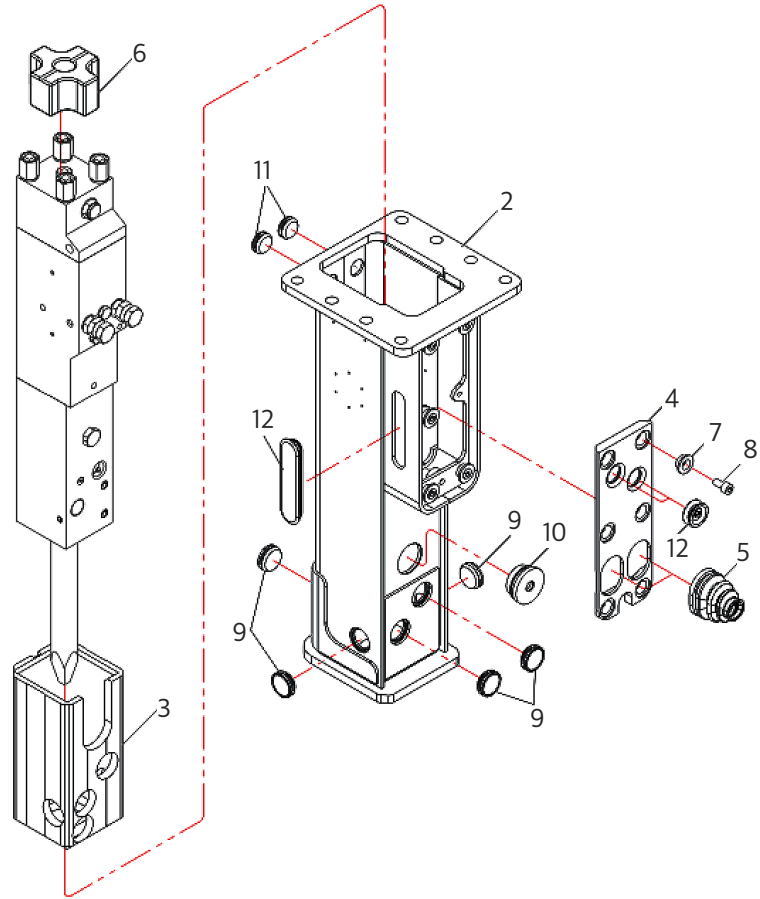
3. Rod Type



MODEL	TYPE	SIZE	PARTS NO.				
			MOIL	UNIVERSAL	V-WEDGE	H-WEDGE	FLAT
SQ10	LONG	D40 x L450	SSE81141	SSE81142	SSE81143	SSE81144	SSE81145
	SHORT	D40 x L400	SSE81146	SSE81147	SSE81148	SSE81149	SSE81150
SQ20	LONG	D45 x L500	SSF01156	SSF01157	SSF01158	SSF01159	SSF01160
	SHORT	D45 x L450	SSF01161	SSF01162	SSF01163	SSF01164	SSF01165
SQ30	LONG	D53 x L550	SSE71160	SSE71161	SSE71162	SSE71163	SSE71164
	SHORT	D53 x L500	SSE71165	SSE71166	SSE71167	SSE71168	SSE71169
SQ35 AutoLube	LONG	D60 x L600	SSF81136	SSF81137	SSF81138	SSF81139	SSF81140
	SHORT	D60 x L550	SSF81141	SSF81142	SSF81143	SSF81144	SSF81145
SQ40 AutoLube	LONG	D68 x L700	SSC01220	SSC01221	SSC01222	SSC01223	SSC01224
	SHORT	D68 x L600	SSC01225	SSC01226	SSC01227	SSC01228	SSC01229
SQ43 AutoLube	LONG	D75 x L800	SSF91144	SSF91145	SSF91146	SSF91147	SSF91148
	SHORT	D75 x L700	SSF91159	SSF91160	SSF91161	SSF91162	SSF91163
SQ45 AutoLube	LONG	D85 x L900	SSD41101	SSD41122	SSD41123	SSD41124	SSD41125
	SHORT	D85 x L800	SSD41155	SSD41156	SSD41158	SSD41159	SSD41157
SQ50 AutoLube	LONG	D100 x L1000	SSC11195	SSC11196	SSC11198	SSC11199	SSC11197
	SHORT	D100 x L900	SSC11205	SSC11206	SSC11208	SSC11209	SSC11207
SQ60	LONG	D125 x L1100	SSC21114	SSC21127	SSC21129	SSC21128	SSC21130
	SHORT	D125 x L1000	SSC21163	SSC21164	SSC21166	SSC21167	SSC21165
SQ70	LONG	D135 x L1200	SSL01118	SSL01119	SSL01121	SSL01122	SSL01120
	SHORT	D135 x L1100	SSL01124	SSL01125	SSL01127	SSL01128	SSL01126
SQ80	LONG	D140 x L1300	SSC31211	SSC31212	SSC31214	SSC31213	SSC31215
	SHORT	D140 x L1200	SSC31241	SSC31242	SSC31244	SSC31245	SSC31243
SQ100	LONG	D150 x L1400	SSE91113	SSE91114	SSE91115	SSE91116	SSE91117
	SHORT	D150 x L1300	SSE91129	SSE91130	SSE91132	SSE91133	SSE91131
SQ120	LONG	D155 x L1500	SSC61227	SSC61228	SSC61230	SSC61229	SSC61231
	SHORT	D155 x L1400	SSC61268	SSC61269	SSC61271	SSC61272	SSC61270
SQ130	LONG	D165 x L1600	SSD81115	SSD81118	SSD81117	SSD81116	SSD81119
	SHORT	D165 x L1500	SSD81152	SSD81153	SSD81155	SSD81156	SSD81154
SQ140	LONG	D165 x L1600	SSD81115	SSD81118	SSD81117	SSD81116	SSD81119
	SHORT	D165 x L1500	SSD81152	SSD81153	SSD81155	SSD81156	SSD81154
SQ150	LONG	D175 x L1600	SSC71157	SSC71158	SSC71160	SSC71159	SSC71161
	SHORT	D175 x L1500	SSC71189	SSC71190	SSC71192	SSC71193	SSC71191
SQ181	LONG	D200 x L1700	SSQ11216	SSQ11219	SSQ11228	SSQ11225	SSQ11222
	SHORT	D200 x L1600	SSQ11217	SSQ11220	SSQ11229	SSQ11226	SSQ11223

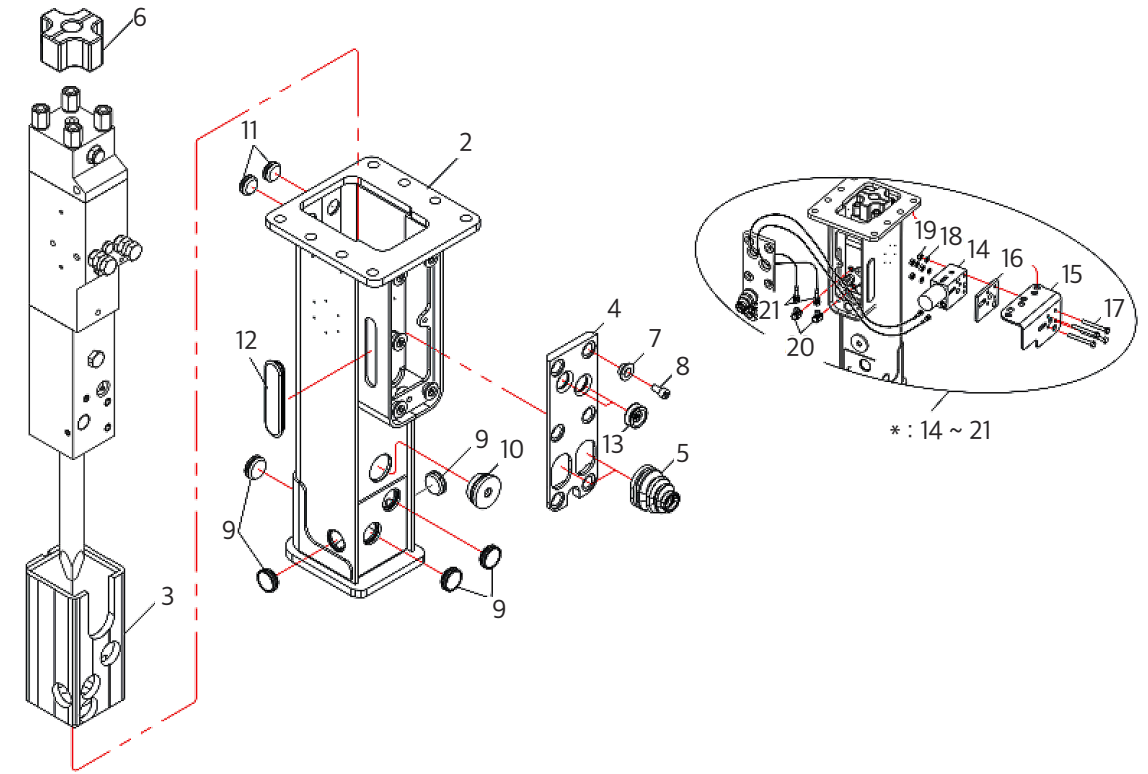
4. Frame Assembly

• SQ10, 20



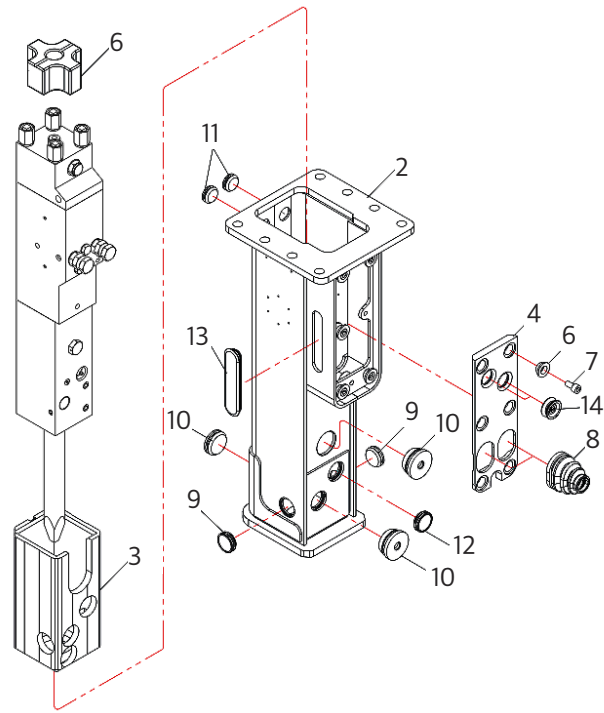
NO	SQ10		SQ20		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
	B0004138	1Set	B0004140	1Set	FRAME ASSEMBLY	
2	B0005096	1	B0005099	1	BRACKET	
3	E83125	1	F03115	1	DOWN CUSHION	
4	B0004139	1	B0001441	1	WINDOW COVER	
5	C03295	2	C03295	2	HOSE COVER	
6	F03116	1	F03116	1	UPPER CUSHION	
7	C03282	6	C03282	6	WASHER	
8	4010060	6	4010060	6	BOLT, SOCKET, M10X1.5X20	
9	E73116	5	E73116	5	PLUG, SOUND	
10	C03228	3	C03228	3	PLUG, SOUND	
11	E83165	2	E83165	2	PLUG, SOUND	
12	B0005123	-	B005123	2	PLUG, SOUND	
13	C23324	-	C23324	2	PLUG, WINDOW	

• SQ10, SQ20 (Auto Greasing)



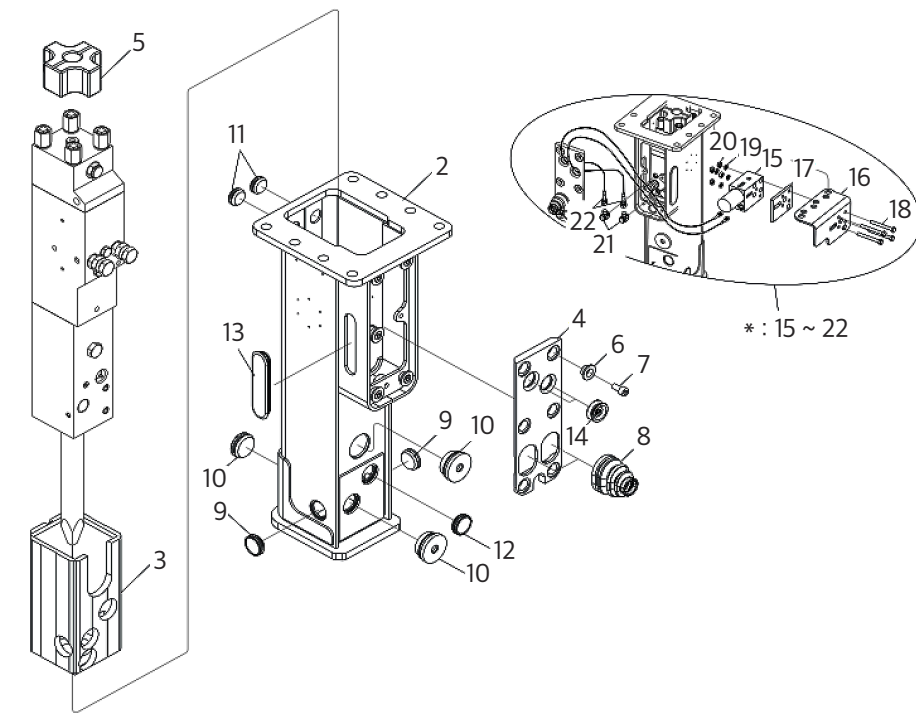
NO	SQ10		SQ20		PARTS NAME
	P/N	Q'ty	P/N	Q'ty	
-	B0005289	1Set	B0005290	1Set	BRACKET ASSEMBLY, AUTO GREASING
2	B0005096	1	B0005099	1	BRACKET
3	E83125	1	F03115	1	DOWN CUSHION
4	B0004139	1	B0004141	1	WINDOW COVER
5	C03295	2	C03295	2	HOSE COVER
6	F03116	1	F03116	1	UPPER CUSHION
7	C03282	6	C03282	6	WASHER
8	4010060	6	4010060	6	BOLT, SOCKET, M10X1.5X20
9	E73116	5	E73116	5	PLUG, SOUND
10	C03228	1	C03228	1	PLUG, SOUND
11	E83165	2	E83165	2	PLUG, SOUND
12	B0005123	2	B0005123	2	PLUG, SOUND
13	C23324	2	C23324	2	PLUG, WINDOW
14	B0003269	1	B0003269	1	AUTO GREASING PUMP
15	B0005188	1	B0005188	1	PLATE
16	B0005198	1	B0005198	1	SPACER
17	4002192	4	4002192	4	BOLT, HEX, M10X1.5X90
18	4210011	4	4210011	4	WASHER, SPRING, M10
19	4101212	4	4101212	4	NUT, HEX, M10X1.5
20	Q15004	2	Q15004	2	ADAPTER
21	Q15023	2	Q15023	2	HOSE
*	B0005890	*	B0005890	1	AUTO GREASING SET

• SQ30



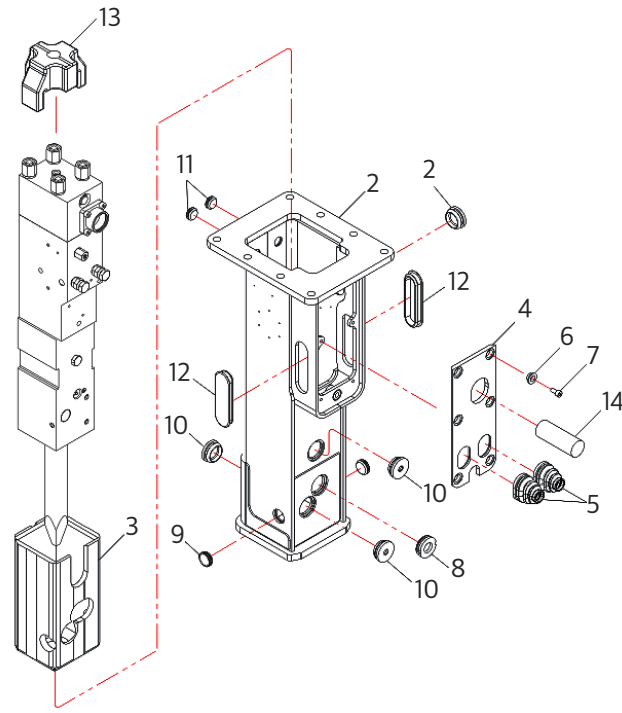
NO	SQ30		PARTS NAME	REMARK
	P/N	Q'ty		
-	B0004142	1Set	FRAME ASSEMBLY	
2	B0005102	1	BRACKET	
3	E73202	1	DOWN CUSHION	
4	B0004143	1	WINDOW COVER	
5	E73114	2	UPPER CUSHION	
6	C03282	6	WASHER	
7	4010060	6	BOLT, SOCKET, M10X1.5X20	
8	C03295	2	HOSE COVER	
9	E73116	2	PLUG, SOUND	
10	C03228	3	PLUG, SOUND	
11	E83165	2	PLUG, SOUND	
12	C03360	1	PLUG, SOUND	
13	B0005123	2	PLUG, SOUND	
14	C23324	2	PLUG, WINDOW	

• SQ30 (Auto Greasing)



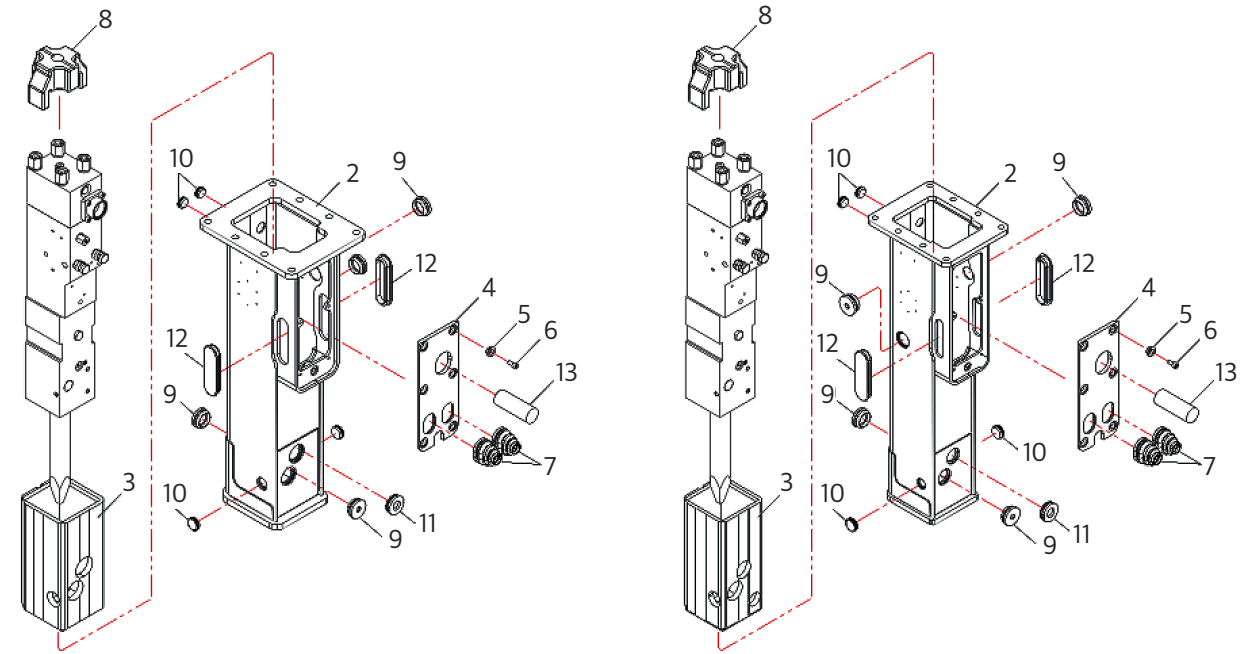
NO	SQ30		PARTS NAME
	P/N	Q'ty	
-	B0005291	1Set	BRACKET ASSEMBLY
2	B0005102	1	BRACKET
3	E73202	1	DOWN CUSHION
4	B0004143	1	WINDOW COVER
5	E73114	2	UPPER CUSHION
6	C03282	6	WASHER
7	4010060	6	BOLT, SOCKET, M10X1.5X20
8	C03295	2	HOSE COVER
9	E73116	2	PLUG, SOUND
10	C03228	3	PLUG, SOUND
11	E83165	2	PLUG, SOUND
12	C03360	1	PLUG, SOUND
13	B0005123	2	PLUG, SOUND
14	C23324	2	PLUG, WINDOW
15	B0003269	1	AUTO GREASING PUMP
16	B0005188	1	PLATE
17	B0005198	1	SPACER
18	4002192	4	BOLT, HEX, M10X1.5X90
19	4210011	4	WASHER, SPRING, M10
20	4101212	4	NUT, HEX, M10X1.5
21	Q15004	2	ADAPTER
22	Q15023	2	HOSE
*	B0005891	1	AUTO GREASING SET

• SQ35 AutoLube



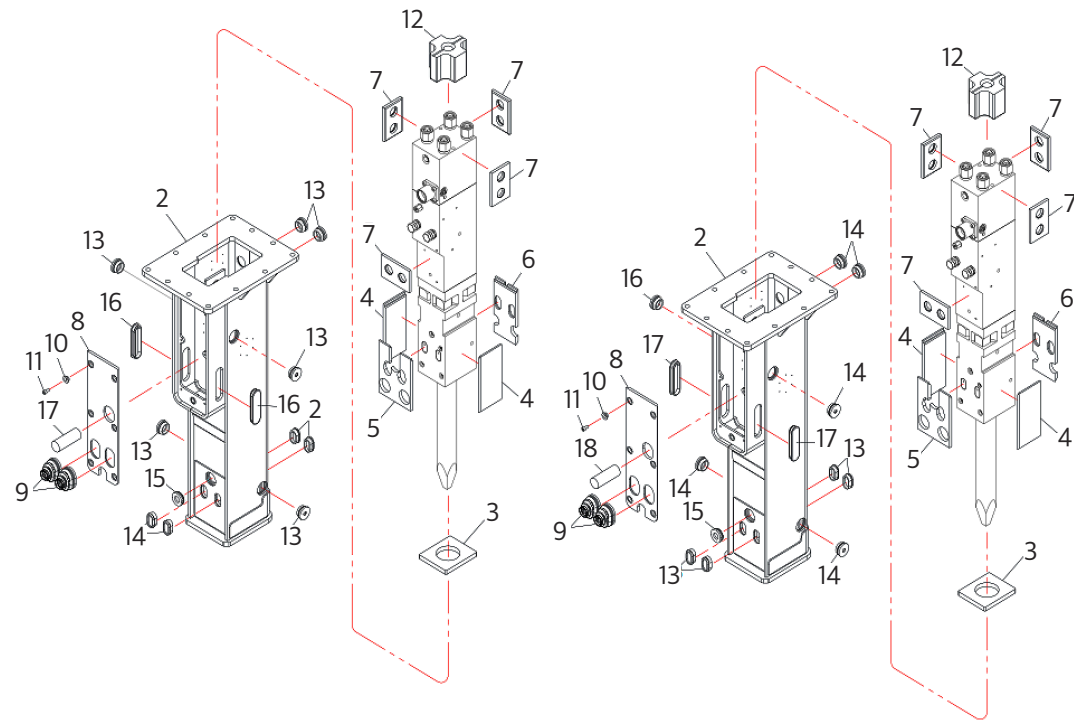
NO	SQ35 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		
-	B0009557	1Set	FRAME ASSEMBLY	
2	B0009558	1	FRAME	
3	B0003343	1	DOWN CUSHION	
4	B0009575	1	WINDOW COVER	
5	C03295	2	COVER,HOSE	
6	C03282	6	WASHER	
7	4010060	6	BOLT, SOCKET, M10xP1.5xL20	
8	C03360	1	PLUG,SOUND	
9	E73116	2	PLUG,SOUND	
10	C03228	4	PLUG,SOUND	
11	E83165	2	SOUND PLUG	
12	F93156	2	PLUG,SOUND	
13	B0009597	1	CUSHION,UPPER	
14	B0008548	1	CARTRIDGE	

• SQ40, SQ43 AutoLube



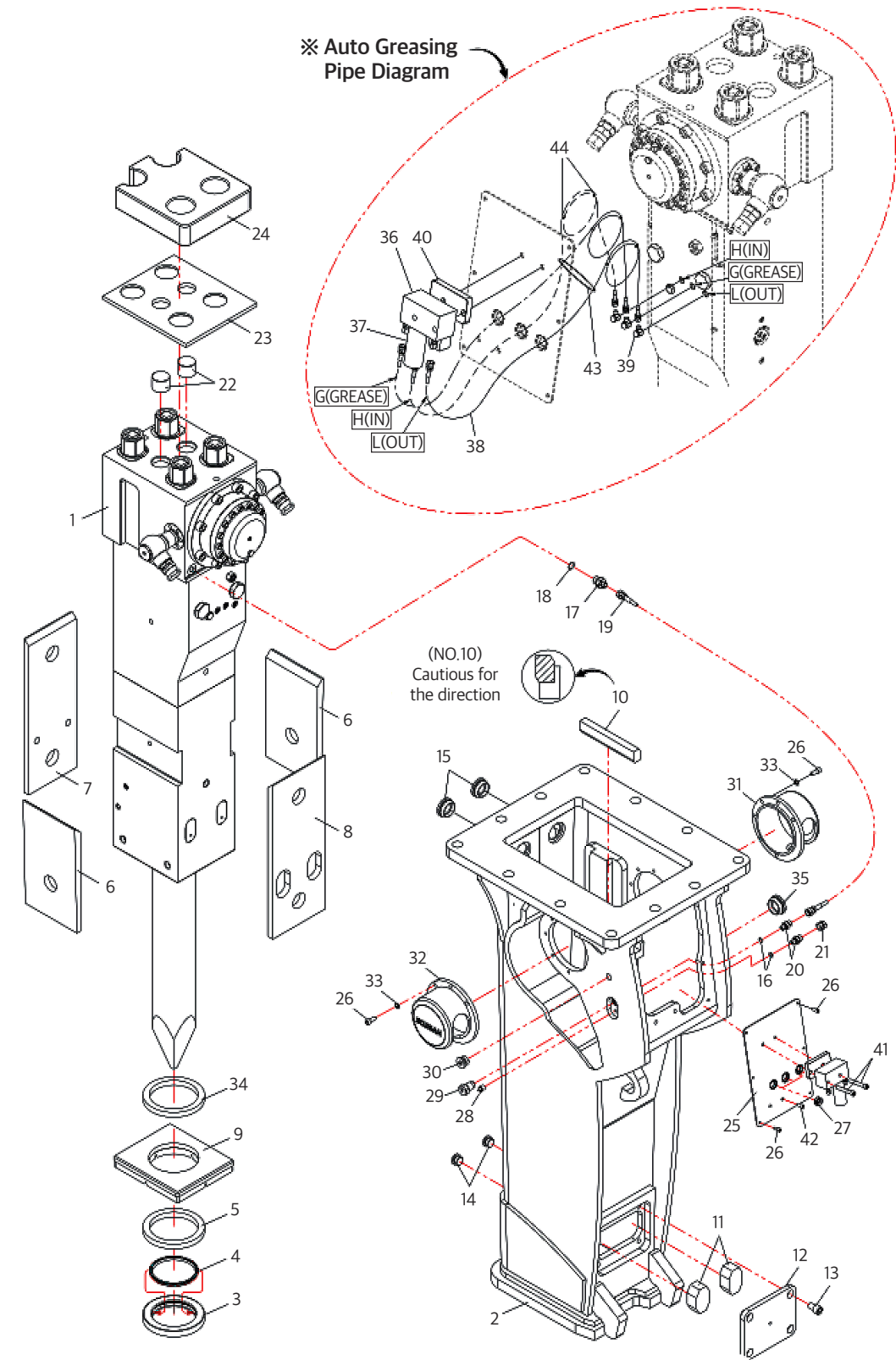
NO	SQ40 AutoLube		SQ43 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty		
-	B0007043	1Set	B0007053	1Set	FRAME ASSEMBLY	
2	B0007048	1	B0007061	1	FRAME	
3	B0003435	1	F93115	1	DOWN CUSHION	
4	B0007044	1	B0007060	1	WINDOW COVER	
5	C03282	6	C03282	6	WASHER	
6	4010060	6	4010060	6	BOLT, SOCKET, M10xP1.5xL20	
7	C03295	2	C03295	2	COVER,HOSE	
8	B0008594	1	B0008603	1	CUSHION,UPPER	
9	C03228	4	C03228	4	PLUG,SOUND	
10	E73116	4	E73116	4	PLUG,SOUND	
11	C03360	1	C03360	1	PLUG,SOUND	
12	F93156	2	F93156	2	PLUG,SOUND	
13	B0008548	1	B0008548	1	CARTRIDGE	

• SQ45, SQ50 AutoLube



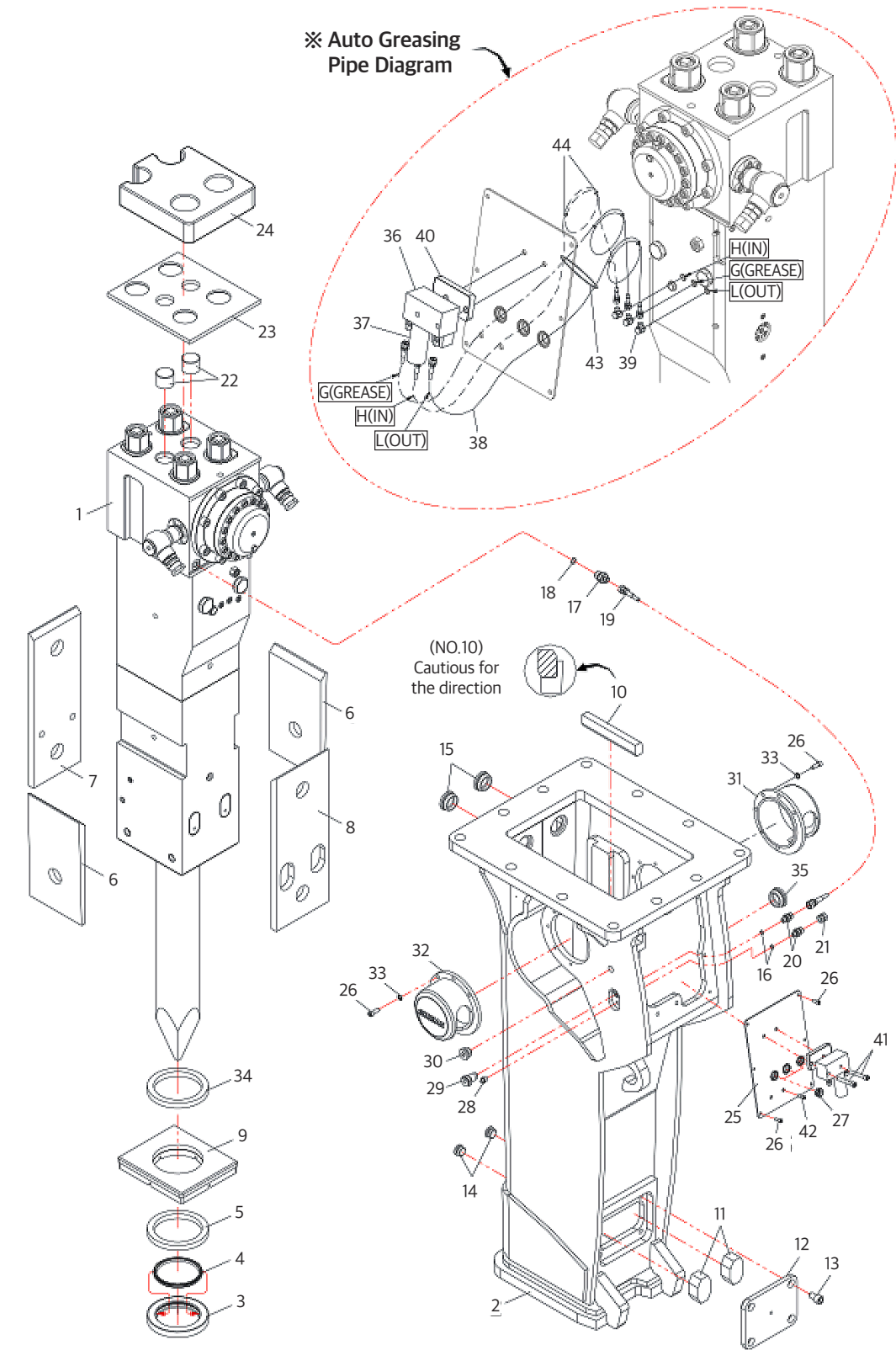
NO	SQ45 AutoLube		PARTS NAME	SQ50 AutoLube		PARTS NAME	REMARK
	P/N	Q'ty		P/N	Q'ty		
-	B0008174	1Set	FRAME ASSEMBLY	B0008128	1Set	FRAME ASSEMBLY	
2	B0008175	1	FRAME,AG	B0008129	1	FRAME,AG	
3	D43292	1	DOWN CUSHION	C13331	1	DOWN CUSHION	
4	D43245	2	WEAR PLATE	C13267	2	WEAR PLATE	
5	B0003342	1	WEAR PLATE	C13268	1	WEAR PLATE	
6	D43247	1	WEAR PLATE	C13269	1	WEAR PLATE	
7	C13270	4	WEAR PLATE	C13270	4	WEAR PLATE	
8	B0008196	1	WINDOW COVER,AG	B0008149	1	WINDOW COVER,AG	
9	C13261	2	HOSE COVER	C13261	2	HOSE COVER	
10	C03282	6	WASHER	C03282	6	WASHER	
11	4010060	6	BOLT, SOCKET, M10xP1.5xL20	4010060	6	BOLT, SOCKET, M10xP1.5xL20	
12	D43153	1	UPPER CUSHION	C13204	1	UPPER CUSHION	
13	C03228	6	PLUG,SOUND	C13196	4	SOUND PLUG	
14	D43249	4	SOUND PLUG	C03228	5	PLUG,SOUND	
15	C03360	1	PLUG,SOUND	C03360	1	PLUG,SOUND	
16	C13318	2	SOUND PLUG	C23219	1	PLUG,CHECK	
17	B0008548	1	CARTRIDGE,AG	C13318	2	SOUND PLUG	
18	-	-	-	B0008548	1	CARTRIDGE,AG	

• SQ60~100 (Auto Greasing-BEKA)



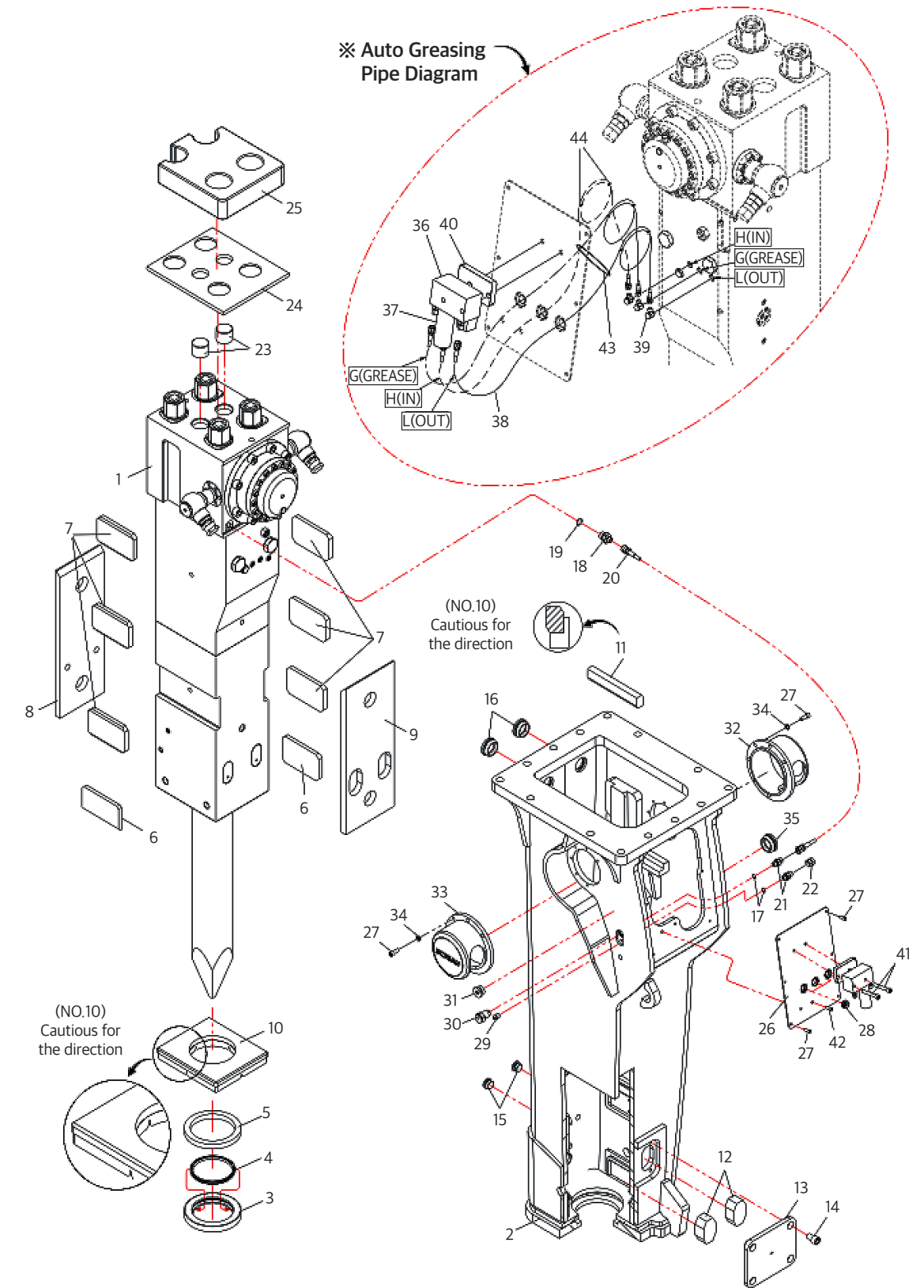
NO	SQ60		SQ70		SQ80		SQ100		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
1	Q53005	1Set	Q63005	1Set	Q23005	1Set	Q73005	1Set	FRAME ASSEMBLY	
2	Q51001	1	Q61001	1	Q21001	1	Q71001	1	MAIN BODY	
3	Q53100	1	Q63100	1	Q23100	1	Q73100	1	FRAME	
4	Q53115	1	Q63119	1	Q23122	1	Q73123	1	DUST SEAL RETAINER	
5	Q53116	1	Q63120	1	Q23123	1	Q73124	1	DUST SEAL	
6	Q53117	1	Q63121	1	Q23124	1	Q73125	1	RETAINER GUIDE	
7	Q53118	2	Q63122	2	Q23125	2	Q73126	2	SIDE WEAR PLATE	
8	Q53119	1	Q63123	1	Q23126	1	Q73127	1	REAR WEAR PLATE	
9	Q53120	1	Q63124	1	Q23127	1	Q73128	1	FRONT WEAR PLATE	
10	C23556	1	L03308	1	C33872	1	E93420	1	DOWN CUSHION	
11	Q23128	2	Q23128	2	Q23128	2	Q73129	2	SIDE CUSHION	
12	Q53121	2	Q63125	2	Q23129	2	Q73130	2	ROD PIN CUSHION	
13	Q53122	1	Q63126	1	Q23130	1	Q73131	1	ROD PIN COVER	
14	4011105	4	4011105	4	4011105	4	4011105	4	SOCKET BOLT	
15	2702315	2	2702315	2	2702315	2	2702315	2	SOCKET HEAD PLUG	
16	C23219	2	C23219	2	C23219	2	C23219	2	SOUND PLUG	
17	2851010	2	2851010	2	2851010	2	2851010	2	O-RING	
18	€75111	†	€75111	†	€75111	†	€75111	†	ADAPTER	'16.08~'17.06
19	2851017	1	2851017	1	2851017	1	2851017	1	O-RING	
20	E93369	†	E93369	†	E93369	†	E93369	†	HOSE	'16.08~'17.06
21	C75107	2	C75107	2	C75107	2	C75107	2	ADAPTER	
22	Q13157	1	Q13157	1	Q13157	1	Q13157	1	UNION CAP	
23	Q23131	2	Q23131	2	Q23131	2	Q73132	2	UPPER CUSHION HOLDER	
24	Q53123	1	Q63127	1	Q23132	1	Q73133	1	UPPER CUSHION GUIDE	
25	Q53124	1	Q63128	1	Q23133	1	Q73134	1	UPPER CUSHION	
26	Q63143	1	Q63143	1	Q23146	1	Q73146	1	WINDOW COVER	
27	4011074	18	4011074	18	4011074	18	4011074	18	SOCKET BOLT	
28	C23324	3	C23324	3	C23324	3	C23324	3	PLUG	
29	2700411	1	2700411	1	2700411	1	2700411	1	GREASE NIPPLE	
30	€51191	†	€51191	†	€51191	†	€51191	†	CHARGING VALVE	'16.08~'17.06
31	2702313	1	2702313	1	2702313	1	2702313	1	SOCKET HEAD PLUG	'17.06 ~
32	2702314	1	2702314	1	2702314	1	2702314	1	SOCKET HEAD PLUG	
33	Q23135	1	Q23135	1	Q23135	1	Q33136	1	PROTECTOR-R	
34	Q23136	1	Q23136	1	Q23136	1	Q33137	1	PROTECTOR-L	
35	4211012	12	4211012	12	4211012	12	4211012	12	SPRING WASHER	
36	Q53142	1	Q63142	1	Q23145	1	Q73144	1	SPACER	
37	C73217	1	C73217	1	C73217	1	C73217	1	SOUND PLUG	
38	Q15002	1	Q15002	1	Q15002	1	Q15002	1	AUTO GREASING PUMP	
39	Q15003	1	Q15003	1	Q15003	1	Q15003	1	CARTRIDGE	
40	Q15010	3	Q15010	3	Q15011	3	Q15011	3	OIL HOSE	
41	Q15004	3	Q15004	3	Q15004	3	Q15004	3	BANJO ADAPTOR	
42	Q15015	1	Q15015	1	Q15015	1	Q15015	1	FIXED MC PLATE	
43	4011120	2	4011120	2	4011120	2	4011120	2	SOCKET BOLT	
44	4010108	2	4010108	2	4010108	2	4010108	2	SOCKET BOLT	
45	7101018	2	7101018	2	7101018	2	7101018	2	CABLE TIE	
46	7101011	6	7101011	6	7101011	6	7101011	6	CABLE TIE	

• SQ120~150 (Auto Greasing-BEKA)



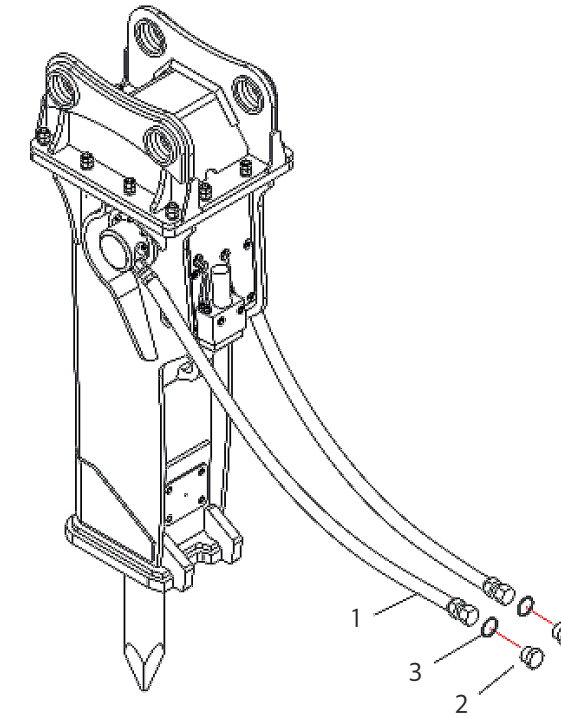
NO	SQ120		SQ130		SQ140		SQ150		PARTS NAME	REMARK
	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty	P/N	Q'ty		
1	Q83005	1Set	Q43005	1Set	Q03005	1Set	Q33005	1Set	FRAME ASSEMBLY	
2	Q81001	1	Q41001	1	Q01002	1	Q31001	1	MAIN BODY	
3	Q83100	1	Q43100	1	Q43100	1	Q33100	1	FRAME	
4	Q83121	1	Q43130	1	Q03130	1	Q33124	1	DUST SEAL RETAINER	
5	Q83122	1	Q43133	1	Q43133	1	Q33125	1	DUST SEAL	
6	Q83123	1	Q43129	1	Q43129	1	Q33126	1	RETAINER GUIDE	
7	Q83124	2	Q33123	2	Q33123	2	Q33123	1	SIDE WEAR PLATE	
8	Q83125	1	Q43123	1	Q03122	1	Q33127	2	REAR WEAR PLATE	
9	Q83126	1	Q43126	1	Q43126	1	Q33128	1	FRONT WEAR PLATE	
10	C63550	1	D83441	1	L23274	1	C73546	1	DOWN CUSHION	
11	Q83127	2	Q43128	2	Q43128	2	Q33129	1	SIDE CUSHION	
12	Q43131	2	Q43131	2	Q43131	2	Q33130	2	ROD PIN CUSHION	
13	Q83128	1	Q43122	1	Q43122	1	Q33131	2	ROD PIN COVER	
14	4011143	4	4011143	4	4011143	4	4011143	1	SOCKET BOLT	
15	2702315	2	2702315	2	2702315	2	2702315	4	SOCKET HEAD PLUG	
16	C23219	2	C23219	2	C23219	2	C23219	2	SOUND PLUG	
17	2851010	1	2851010	1	2851010	1	2851010	1	O-RING	
18	€75111	†	€75111	†	€75111	†	€75111	†	ADAPTER	'16.08~'17.06
19	E933369	†	E933370	†	E933370	†	E933370	†	HOSE	'16.08~'17.06
20	C75107	1	C75107	1	C75107	1	C75107	1	ADAPTER	
21	Q13157	1	Q13157	1	Q13157	1	Q13157	2	UNION CAP	
22	Q73132	2	Q43132	2	Q33133	2	Q33133	1	UPPER CUSHION HOLDER	
23	Q83129	1	Q43134	1	Q03121	1	Q33132	2	UPPER CUSHION GUIDE	
24	Q83130	1	Q43135	1	Q03120	1	Q33134	1	UPPER CUSHION	
25	Q83141	1	Q43148	1	Q03177	1	Q33148	1	WINDOW COVER	
26	4011074	18	4011074	18	4011074	18	4011074	1	SOCKET BOLT	
27	C23324	3	C23324	3	C23324	3	C23324	18	PLUG	
28	2700411	1	2700411	1	2700411	1	2700411	3	GREASE NIPPLE	
29	C51191	1	C51191	1	C51191	1	C51191	1	CHARGING VALVE	'16.08~'17.06
30	2702313	†	2702313	†	2702313	†	2702313	†	SOCKET HEAD PLUG	'17.06 ~
31	2702314	1	2702314	1	2702314	1	2702314	1	SOCKET HEAD PLUG	
32	Q33136	1	Q33136	1	Q33136	1	Q33136	1	PROTECTOR-R	
33	Q33137	1	Q33137	1	Q33137	1	Q33137	1	PROTECTOR-L	
34	4211012	12	4211012	12	4211012	12	4211012	12	SPRING WASHER	
35	Q83140	1	Q43124	1	Q43124	1	Q33147	1	SPACER	
36	C73217	1	C73217	1	C73217	1	C73217	1	SOUND PLUG	
37	Q15002	1	Q15002	1	Q15002	1	Q15002	1	AUTO GREASING PUMP	
38	Q15003	1	Q15003	1	Q15003	1	Q15003	1	CARTRIDGE	
39	Q15013	3	Q15013	3	Q15013	3	Q15013	3	OIL HOSE	
40	Q15004	3	Q15004	3	Q15004	3	Q15004	3	BANJO ADAPTOR	
41	Q15015	1	Q15015	1	Q15015	1	Q15015	1	FIXED MC PLATE	
42	4011120	2	4011120	2	4011120	2	4011120	2	SOCKET BOLT	
43	4010108	2	4010108	2	4010108	2	4010108	2	SOCKET BOLT	
44	7101018	2	7101018	2	7101018	2	7101018	2	CABLE TIE	
45	7101011	6	7101011	6	7101011	6	7101011	6	CABLE TIE	

• SQ181 (Auto Greasing-BEKA)



NO	SQ181		PARTS NAME	REMARK
	P/N	Q'ty		
	Q13009	1Set	FRAME ASSEMBLY	
1	Q11003	1	MAIN BODY	
2	Q13178	1	FRAME	
3	Q13214	1	DUST SEAL RETAINER	
4	Q13213	1	DUST SEAL	
5	Q13142	1	RETAINER GUIDE	
6	E93437	2	WEAR PLATE(DC)	
7	C73313	6	WEAR PLATE	
8	Q13129	1	REAR WEAR PLATE	
9	Q13130	1	FRONT WEAR PLATE	
10	Q13131	1	DOWN CUSHION	
11	Q13137	2	SIDE CUSHION	
12	Q13132	2	ROD PIN CUSHION	
13	Q13135	1	ROD PIN COVER	
14	4011143	4	SOCKET BOLT	
15	2702315	2	SOCKET HEAD PLUG	
16	C23219	2	SOUND PLUG	
17	2851010	1	O-RING	'16.06 ~ '17.06
18	E75111	1	ADAPTER	
19	2851017	1	O-RING	
20	E93370	1	OIL HOSE	'16.06 ~ '17.06
21	C75107	1	ADAPTER	
22	Q13157	1	UNION CAP	
23	Q13134	2	UPPER CUSHION HOLDER	
24	Q13133	1	UPPER CUSHION GUIDE	
25	Q13143	1	UPPER CUSHION	
26	Q13216	1	WINDOW COVER	
27	4011074	18	SOCKET BOLT	
28	C23324	3	PLUG	
29	2700411	1	GREASE NIPPLE	
30	E51191	1	CHARGING VALVE	'16.06 ~ '17.06
30	2702313	1	SOCKET HEAD PLUG	'17.06 ~
31	2702314	1	SOCKET HEAD PLUG	
32	Q33136	1	PROTECTOR-R	
33	Q33137	1	PROTECTOR-L	
34	4211012	12	SPRING WASHER	
35	C73217	1	SOUND PLUG	
36	Q15002	1	AUTO GREASING PUMP	
37	Q15003	1	CARTRIDGE	
38	Q15013	3	OIL HOSE	
39	Q15004	3	BANJO ADAPTER	
40	Q15015	1	FIXED MC PLATE	
41	4011120	2	SOCKET BOLT	
42	4010108	2	SOCKET BOLT	
43	7101018	2	CABLE TIE	
44	7101011	6	CABLE TIE	

5. Oil Hose



NO	PARTS NAME	SQ10	SQ20	SQ30	SQ35	SQ40	SQ43	SQ45	SQ50	Q'ty
		PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	
1	SPRING HOSE	2614146	2614246	2614246	2614250	2614250	2614252	2611352	2611360	2
2	HOSE PLUG	2715306	2715306	2715306	2715306	2715306	2715306	2715306	2715307	1
3	O-RING	-	-	-	-	-	2856003	2856003	2856003	2

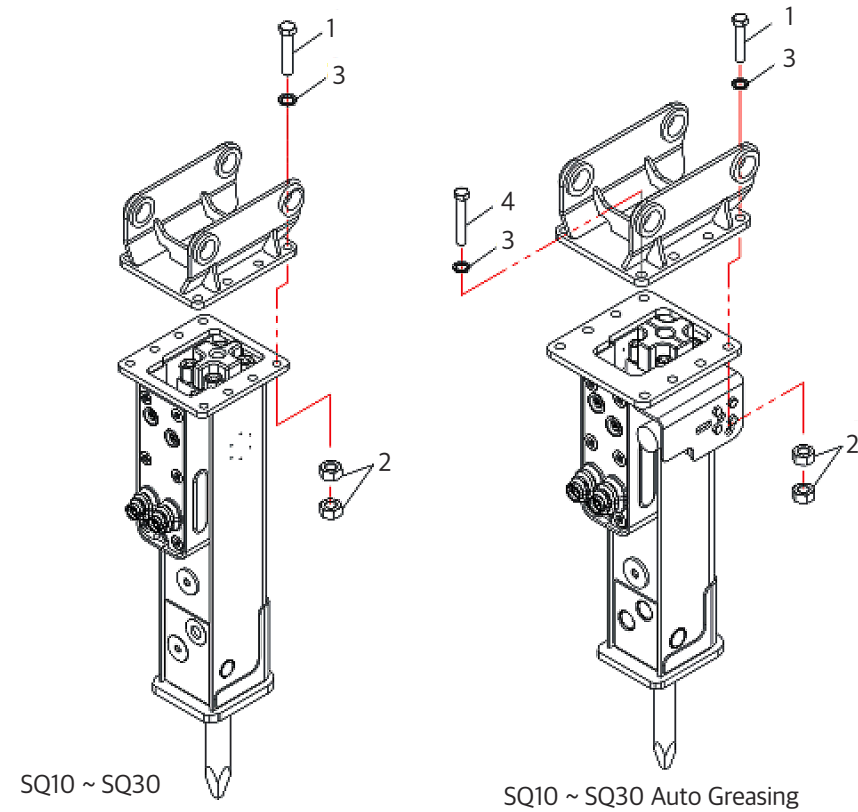
NO	PARTS NAME	SQ60	SQ70	SQ80	SQ100	SQ120	SQ130	SQ140	SQ150	SQ181	Q'ty
		PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	PARTS NO.	
1	SPRING HOSE	2610466	2610466	2610466	2610470	2610571	2610571	2610571	2610571	2610571	2
2	HOSE PLUG	2715300	2715300	2715300	2715300	2715301	2715301	2715301	2715301	2715301	1
3	O-RING	2856004	2856004	2856004	2856004	2856005	2856005	2856005	2856005	2856005	2

※ Oil hose and hose plug above may vary depending on the length, fitting type, carriers and/or countries, please contact to Soosan before purchasing.

6. Cap Bolt

• Top Cap Type (SQ10 ~ SQ30)

No	Parts Name	SQ10	SQ20	SQ30	Q'ty	SQ10 Auto Greasing	SQ20 Auto Greasing	SQ30 Auto Greasing	Q'ty
		Parts No.	Parts No.	Parts No.		Parts No.	Parts No.	Parts No.	
1	HEX BOLT	4003148	4003148	4003148	8	4003148	4003148	4003148	5
2	HEX NUT	4101306	4101306	4101306	16	4101306	4101306	4101306	16
3	SPRING WASHER	4211015	4211015	4211015	8	4211015	4211015	4211015	8
4	HEX BOLT	-	-	-	-	4003149	4003149	4003149	3

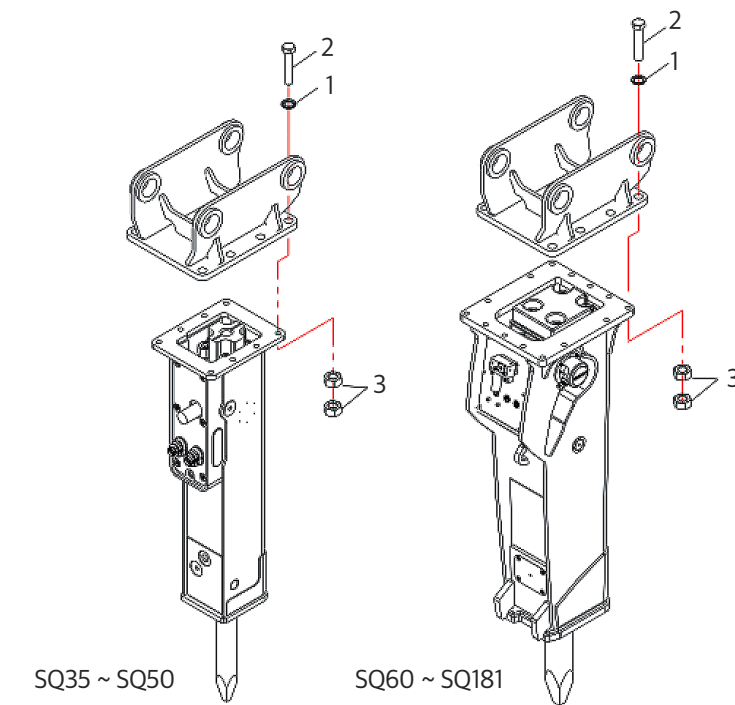


• Top Cap Type (SQ35 AutoLube ~ SQ50 AutoLube)

No	Parts Name	SQ35 AutoLube	SQ40 AutoLube	SQ43 AutoLube	Q'ty	SQ45 AutoLube	SQ50 AutoLube	Q'ty
		Parts No.	Parts No.	Parts No.		Parts No.	Parts No.	
1	Hex Bolt	4003181	4003181	4003181	8	4003182	4003182	12
2	Hex Nut	4101307	4101307	4101307	16	4101306	4101306	24
3	Spring Washer	4211016	4211016	4211016	8	4211016	4211016	12

• Top Cap Type (SQ60~ SQ181)

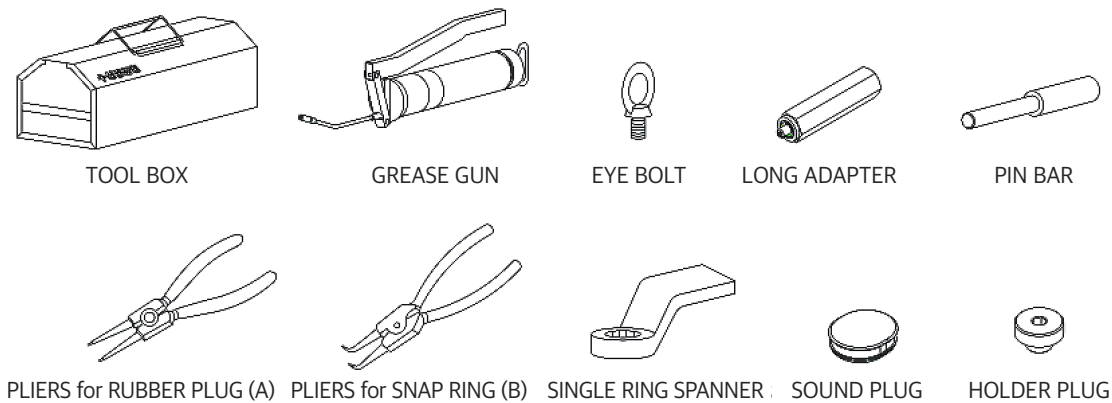
No	Parts Name	SQ60	SQ70	SQ80	SQ100	SQ120	SQ130	SQ140	SQ150	SQ181	Q'ty
		Parts No.	Parts No.	Parts No.	Parts No.	Parts No.	Parts No.	Parts No.	Parts No.	Parts No.	
1	Hex Bolt	4005249	4005249	4003181	4003182	4003182	4005249	4005249	4005249	4005249	12
2	Hex Nut	4101309	4101309	4101307	4101306	4101306	4101309	4101309	4101309	4101309	24
3	Spring Washer	4211018	4211018	4211016	4211016	4211016	4211018	4211018	4211018	4211018	12



7. Tool set (Option)

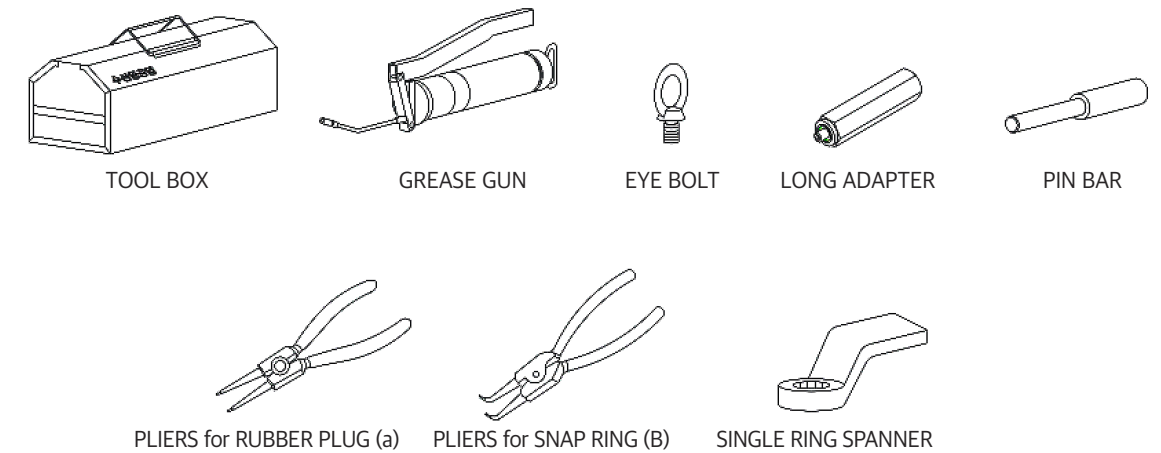
• Tool Set (SQ10 ~ SQ50)

PARTS NAME	PARTS NO	SQ10	SQ20	SQ30	SQ35	SQ40	SQ43	SQ45	SQ50
		B0010096	B0010097	B0010098	AutoLube B0010105	AutoLube B0010106	AutoLube B0010107	AutoLube B0010108	AutoLube B0010109
TOOL BOX MEDIUM	8290002	1	1	1	1	1	1	1	1
EYE BOLT,M8	4020001	-	-	-	-	-	-	1	1
EYE BOLT,M12	4020003	2	2	2	-	-	-	-	-
EYE BOLT,M16	4020004	1	1	1	2	2	2	2	2
EYE BOLT,M20	4020005	-	-	-	-	-	-	1	1
GREASE GUN,300cc	8214002	1	1	1	1	1	1	1	1
LONG ADAPTER	F01137	1	1	1	1	1	1	1	1
PIN BAR	E71124	1	1	1	1	-	-	-	-
PIN BAR,D13	F81131	-	-	-	1	-	-	-	-
PIN BAR	C01147	-	-	-	-	1	1	1	1
SINGLE RING SPANNER,50mm	C11154	-	-	-	-	-	-	1	-
SINGLE RING SPANNER,55mm	C11155	-	-	-	-	-	-	-	1
PLIERS for rubber plug (A)	8204024	-	-	-	-	-	-	1	1
SOUND PLUG	B0008607	-	-	-	1	1	1	1	1
HOLDER PLUG	B0008646	-	-	-	1	1	1	1	1



• Tool Set(SQ60 ~ SQ181)

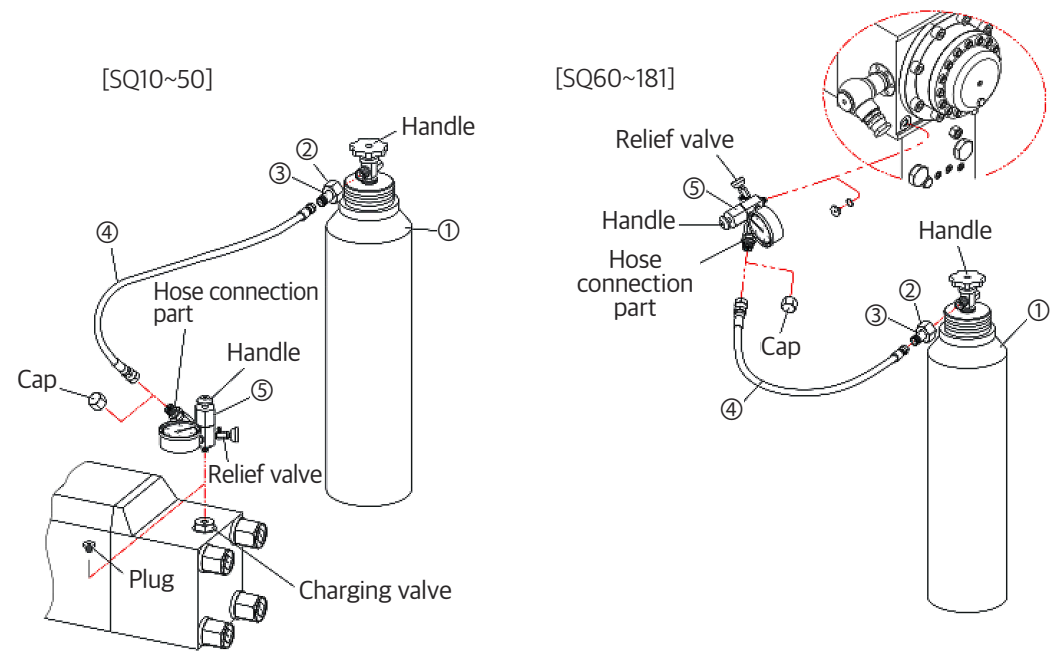
PARTS NAME	PARTS NO	SQ60	SQ70	SQ80	SQ100	SQ120	SQ130	SQ140	SQ150	SQ181
		B0010119	B0010120	B0010121	B0010122	B0010123	B0010124	B0010125	B0010126	B0010127
TOOL BOX, LARGE	8290003	1	1	1	1	1	1	1	1	1
EYE BOLT,M8	4020001	1	-	-	-	-	-	-	-	-
EYE BOLT,M10	4020002	1	1	1	1	1	1	1	1	1
EYE BOLT,M12	4020003	-	-	-	1	1	1	1	1	1
EYE BOLT,M16	4020004	2	-	-	-	-	-	-	-	-
EYE BOLT,M20	4020005	-	2	2	2	2	2	2	2	-
EYE BOLT,M24	4020006	1	1	1	1	1	1	1	1	2
EYE BOLT,M30	4020007	-	-	-	-	-	-	-	-	1
GREASE GUN,300cc	8214002	1	1	1	1	1	1	1	1	1
LONG ADAPTER	F01137	1	1	1	1	1	1	1	1	1
PIN BAR	C01147	1	1	1	1	1	1	1	1	1
PLIERS for rubber plug (A)	8204024	1	1	1	1	1	1	1	1	1
PLIERS for snap ring (B)	8204019	1	1	1	1	1	1	1	1	1
SINGLE RING SPANNER,65mm	C11157	1	-	-	-	-	-	-	-	-
SINGLE RING SPANNER,70mm	C11158	-	1	-	-	-	-	-	-	-
SINGLE RING SPANNER,75mm	C11159	-	-	1	1	1	1	-	-	-
SINGLE RING SPANNER,85mm	C11161	-	-	-	-	-	-	1	1	-
SINGLE RING SPANNER,95mm	C11304	-	-	-	-	-	-	-	-	1



8. Back head gas charging kit (Option)

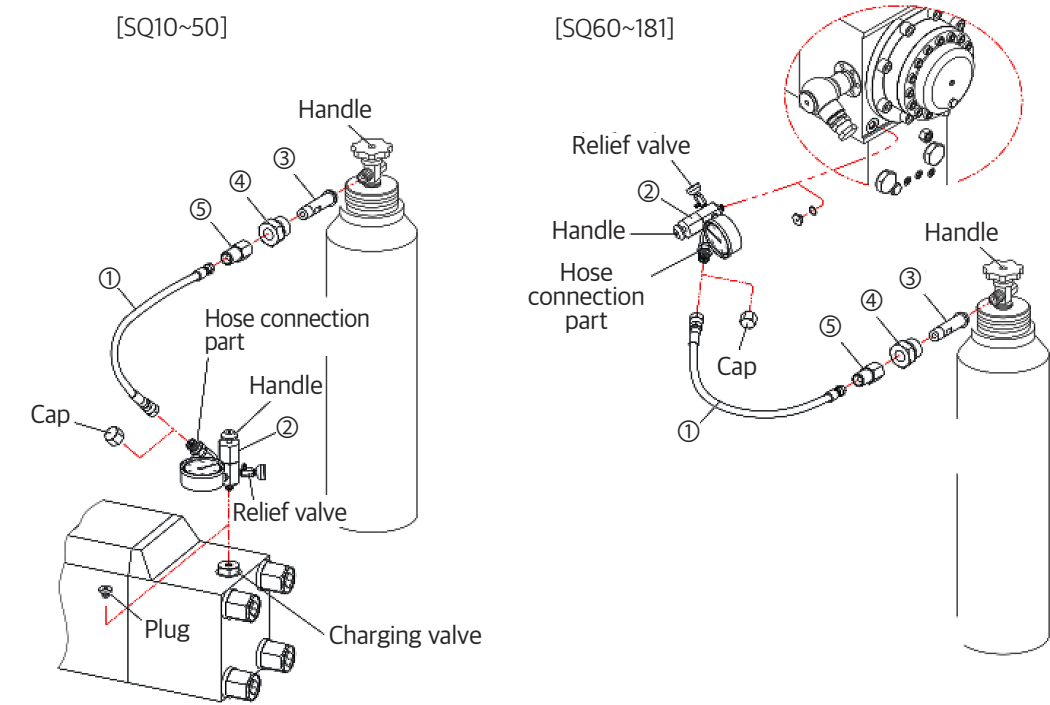
• N₂ Gas charging tools to Back Head

ITEM	PART No.	Q'ty	PART NAME
ASSY	C61204	1 SET	N ₂ Gas Charging Set
1	2900004	1	N ₂ Gas Cylinder
2	C91121	1	Bombe Adapter Nut
3	C91122	1	Bombe Adapter
4	2651001	1	Synflex Hose
5	C01244	1	B-3way Valve Assembly



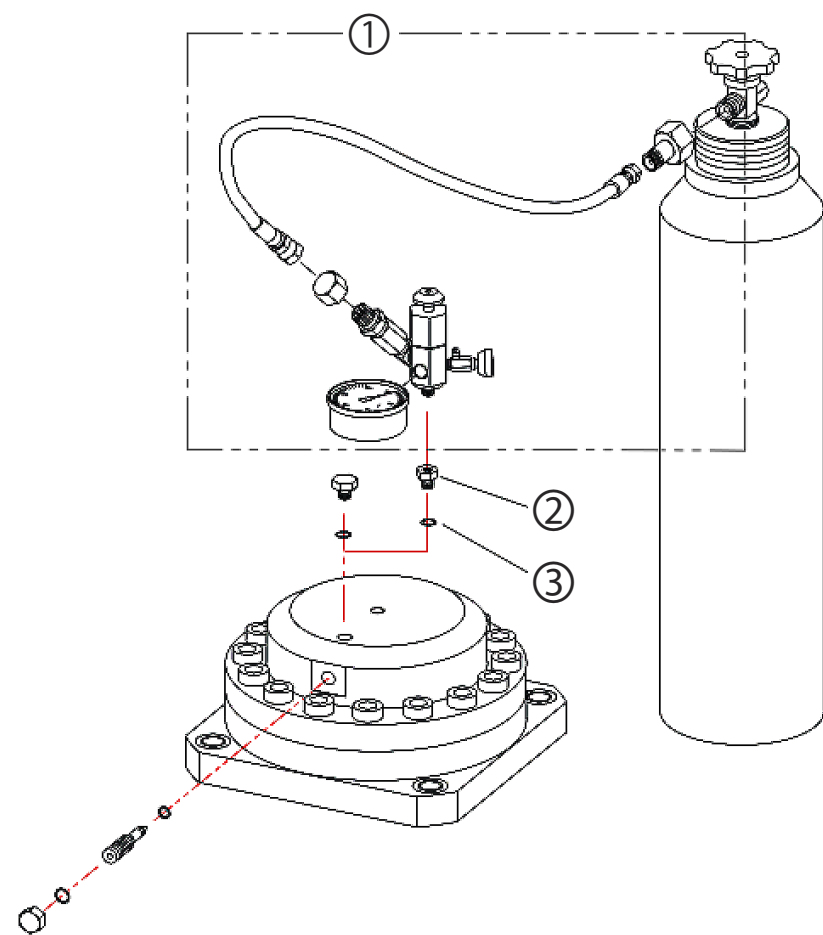
• N₂ Gas charging tools to Back Head (Option - USA)

ITEM	PART No.	Q'ty	PART NAME
ASSY	B0006847	1 SET	N ₂ Gas Charging Set
1	2651001	1	Synflex Hose
2	C01244	1	B-3way Valve Assembly
3	B0006842	1	Bombe Adapter
4	B0006843	1	Bombe Adapter plug
5	B0006844	1	Bombe Adapter bushing



9. Accumulator charging Tool set (Option)

NO	PARTS No.	Q'ty	PARTS NAME
	-	1Set	Accumulator Gas Charging Set
1	C61 204	1Set	N ₂ Gas Charging Set
2	U81 414	1	Hex Bushing
3	2850014	1	O-Ring



Product Recording

Record information about your product in this page.

Breaker Model :

Serial Number :

Date of Delivery :

Dealer :

Address :

Phone No :

FAX No :

Notes

SOOSAN
수산중공업