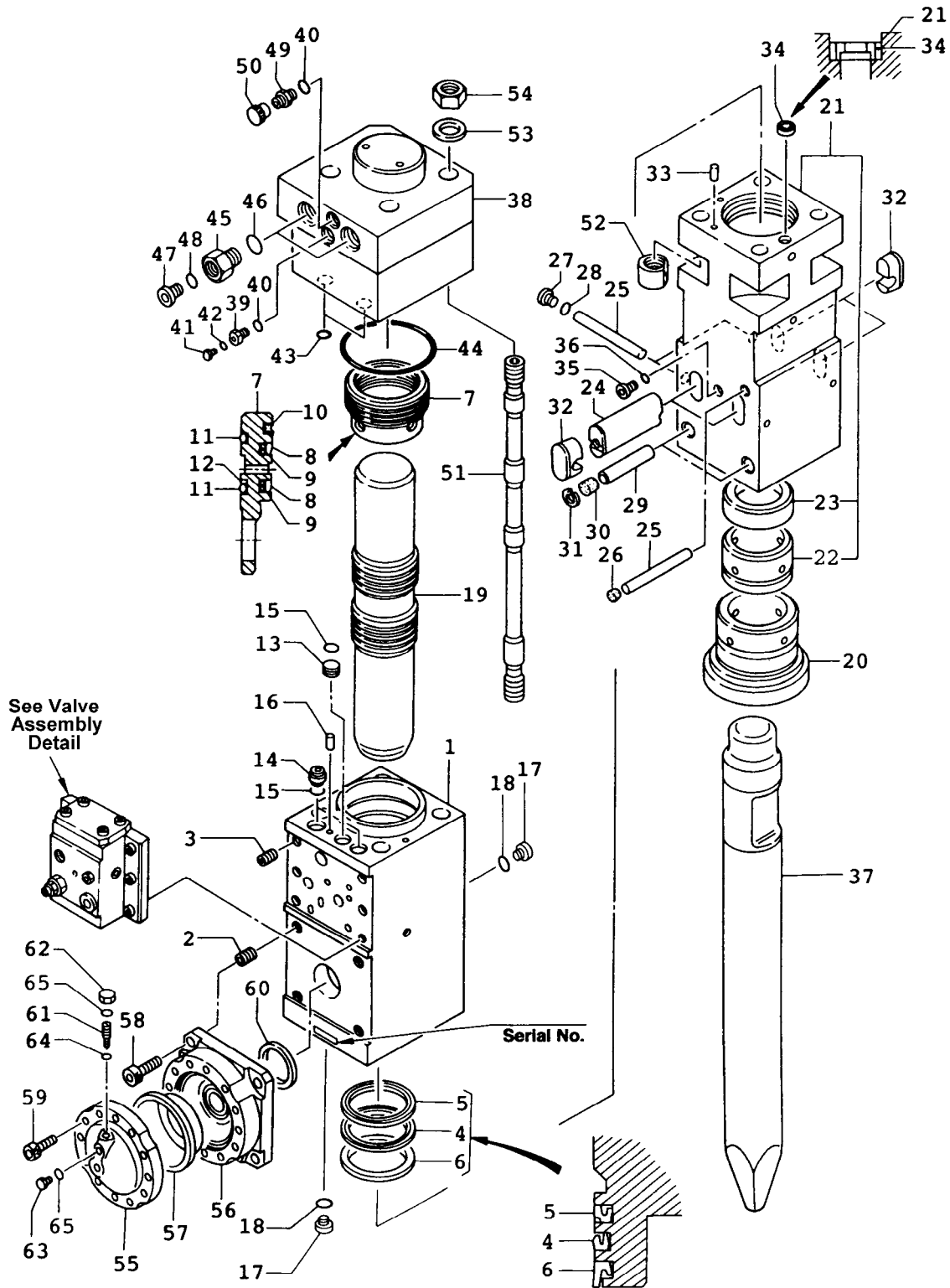


**SECTION VI**

**PARTS LIST**

# F12 HYDRARAM PARTS BREAKDOWN



# **F12 HYDRARAM** **PARTS LIST**



<u>ITEM</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1	KF12-10101	1	Cylinder	35	K084891-06000	1	GPF Plug
2	KHB15G-10104	(4)	Heli-Sert Insert	36	K160011-00024	1	O-Ring [/SB]
3	KHB20G-10105	(6)	Heli-Sert Insert	37	KF12-25211		Blunt Tip
4	KHB10G-10207	1	U-Packing [/SA]	37	KF12-25213		Moil Point
5	KF12-10108	1	Buffer Ring [/SA]	37	KF12-25214		Chisel Bit
6	KHB10G-10210	1	Dust Seal [/SA]	38	KF12-30101	1	Backhead
7	KF12-10111	1	Seal Retainer	39	KHB15G-30103	1	Charging Valve
8	KHB10G-10212	2	Slide Packing [/SA]	40	K160011-00018	1	O-Ring [/SB]
9	KHB10G-10213	(2)	O-Ring [/SA]	41	KHB20G-30109	1	Plug
10	KF12-10114	1	Seal Ring [/SA]	42	K160011-00006	1	O-Ring [/SB]
11	K161011-00130	2	O-Ring [/SA]	43	K160011-00024	2	O-Ring [/SB]
12	K262031-00130	1	Backup Ring [/SA]	44	K160021-00160	1	O-Ring [/SB]
13	KHB10G-10120	1	Plug [/SA]	45	KF12008	2	Connector
14	KHB10G-10121	2	Bushing [/SA]	46	K160011-00029	2	O-Ring [/SB]
15	K160011-00024	3	O-Ring [/SA]	47	K084891-06000	2	GPF Plug
16	KF22-10125	1	Knock Pin [/SA]	48	K160011-00024	2	O-Ring [/SB]
17	K084891-01000	2	GPF Plug	49	K084869-04000	1	Filter Connection
18	K160011-00011	2	O-Ring [/SA]	50	KF12-30113	1	Air Inlet Cap
19	KF12-11101	1	Piston	51	KF12-36101	4	Through Bolt
20	KF12-20101	1	Front Cover	52	KHB15G-36202	4	Lower Nut
21	KF12-20102	1	Fronthead	53	KF12-36105	4	Washer
22	KF12-20104	(1)	Thrust Bushing	54	KHB15G-36206	4	Hexagon Nut
23	KF12-20105	(1)	Thrust Ring		KF12-70001	1	Accumulator
24	KF12-20106	2	Rod Pin (Retainer)	55	KF12-70101	(1)	Accumulator Cap
25	KF12-20207	3	Stop Pin [/T]	56	KF12-70102	(1)	Accumulator Body
26	K001300-20112	1	Rubber Plug [/SB]	57	KHB10G-70111	(1)	Diaphragm
27	K084891-04000	2	GPF Plug [/T]	58	K10203224055	(4)	Socket Bolt, M24
28	K160011-00018	2	O-Ring [/SB] [/T]	59	K10203314040	(12)	Socket Bolt, M14
29	K001400-20106	2	Fronthead Pin	60	KHB20G-70219	(1)	Face Seal [/SC]
30	K001400-20108	2	Rubber Plug [/SB]	61	K007120-70134	(1)	Shut-Off Valve
31	K264020-00026	2	Snap Ring [/SB]	62	K007010-70029	(1)	Dust Cap
32	KHB10G-20112	4	Dust Plug [/T]	63	K007010-70030	(1)	Plug
33	KF22-10125	1	Knock Pin [/SB]	64	K160011-00005	(1)	O-Ring [/SC]
34	KF12-20121	1	Check Valve [/SB]	65	K160011-00014	(2)	O-Ring [/SC]

( ) Bracketed quantities indicate items included with the prior assembly.

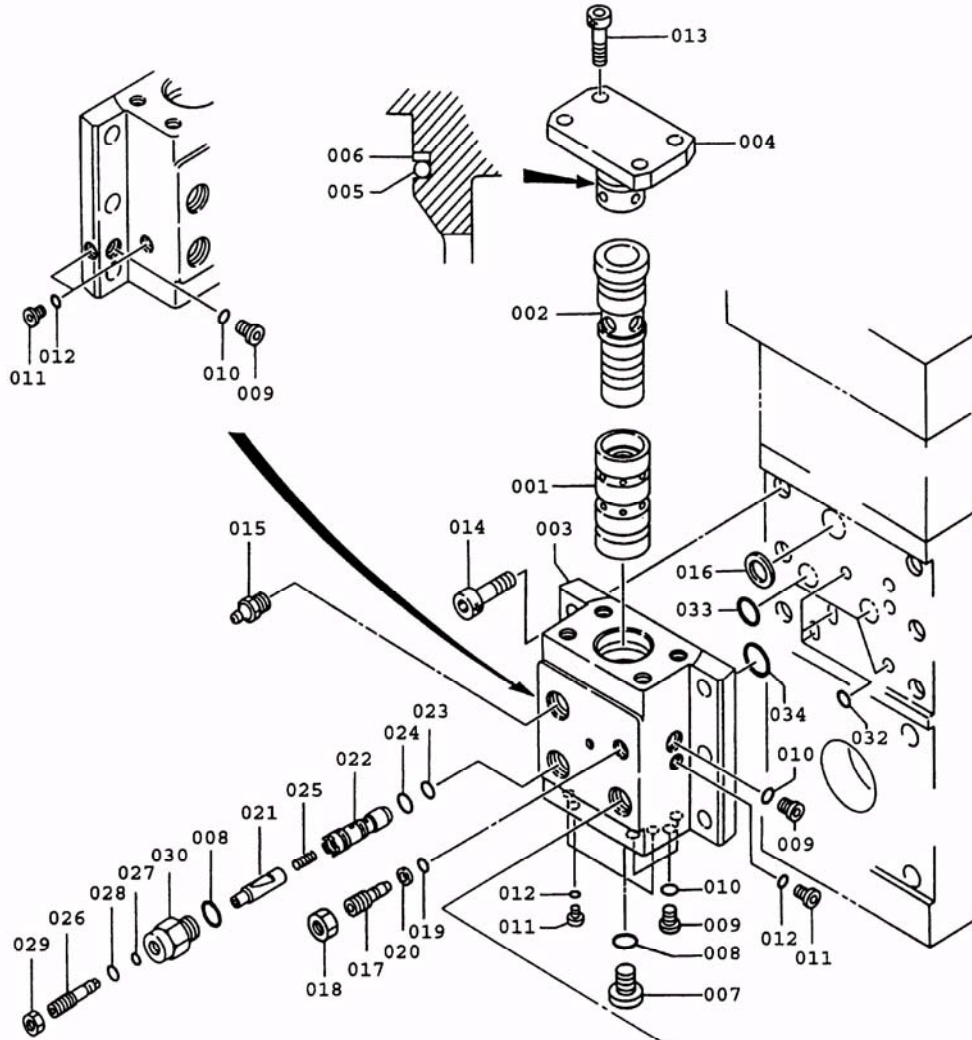
[/SA] Items marked Option /SA are included in the KF12-92021 Cylinder Seal Kit (A)

[/SB] Items marked Option /SB are included in the KF12-92032 Fronthead Seal Kit (B)

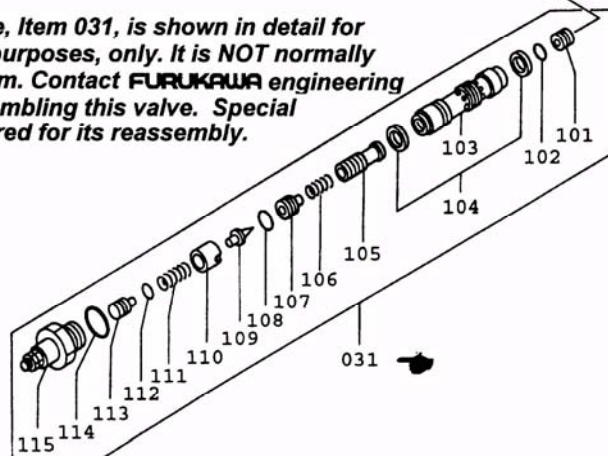
[/SC] Items marked Option /SC are included in the KF12-92023 Control Valve Seal Kit (C)

[/T] Items marked /T are NOT USED with F12Qt version in the T-Box Case

## CONTROL VALVE DETAIL F12 HYDRARAM



**➤ The Relief Valve, Item 031, is shown in detail for informational purposes, only. It is NOT normally a serviceable item. Contact FURUKAWA engineering prior to disassembling this valve. Special tools are required for its reassembly.**



## **CONTROL VALVE DETAIL** **F12 HYDRARAM**

<i>ITEM</i>	<i>PART NUMBER</i>	<i>QTY</i>	<i>DESCRIPTION</i>	<i>ITEM</i>	<i>PART NUMBER</i>	<i>QTY</i>	<i>DESCRIPTION</i>
001	KHB10G-13101	1	Valve	025	KF22-13124	1	Spring
002	KHB10G-13102	1	Valve Plug	026	KF22-13122	1	Stroke Adjuster
003	KF12-13203	1	Valve Housing	027	K160011-00009	1	O-Ring [/SC]
004	KF12-13104	1	Housing Cover	028	K262021-00009	1	Backup Ring [/SC]
005	K161025-00050	1	O-Ring [/SC]	029	K120133-16000	1	Nut
006	K262032-00070	1	Backup Ring [/SC]	030	KF22-13123	1	Stroke Plug
007	K084891-06000	1	GPF Plug	031	KF22-13330	1	Relief Valve
008	K160011-00024	3	O-Ring [/SC]	101	KF22-13337	(1)	Stopper
009	K084891-02000	1	GPF Plug [/R]	102	K161011-00010	(1)	O-Ring [/SD]
010	K160011-00011	5	O-Ring [/SC]	103	KF22-13335	(1)	Sleeve
011	K084891-01000	7	GPF Plug	104	KF22-13332	(2)	Glide Ring [/SD]
012	K160011-00008	7	O-Ring [/SC]	105	KF22-13336	(1)	Spool
013	K102033-16040	4	Fine Thread Bolt	106	KF22-13338	(1)	Spring
014	K102032-20050	6	Socket Bolt	107	KF22-13341	(1)	Valve Seat
015	K001100-20123	1	Grease Nipple	108	K161011-00012	(1)	O-Ring [/SD]
016	KHB10G-13208	1	Face Seal [/SC]	109	KF22-13343	(1)	Needle
017	KHB10G-13110	1	Valve Adjuster	110	KF22-13334	(1)	Valve Guide
018	K120133-16000	1	Fine Thread Nut	111	KF22-13339	(1)	Spring
019	K160011-00009	1	O-Ring [/SC]	112	K161011-00008	(1)	O-Ring [/SD]
020	K262021-00009	1	Backup Ring [/SC]	113	KF22-13342	(1)	Push Rod
021	KF22-13320	1	Stroke Valve	114	K161011-00024	(1)	O-Ring [/SD]
022	KF22-13220	1	Stroke Valve [/R]	115	KF22-13333	(1)	Retainer
022	KF22-13121	1	Stroke Bushing	032	K160011-00018	3	O-Ring [/SC]
023	KF22-13521	1	O-Ring [/SC]	033	K161025-00030	3	O-Ring [/SC]
024	KF22-13522	1	O-Ring [/SC]	034	K161025-00040	1	O-Ring [/SC]

( ) Bracketed quantities indicate items included with the prior assembly.

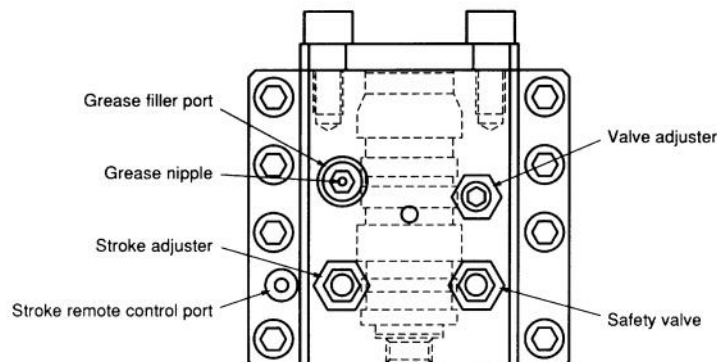
[/R] Items marked Option /R are used only with Remote Control System

[/A] Items marked Option /A are only used with Automatic Lubrication System

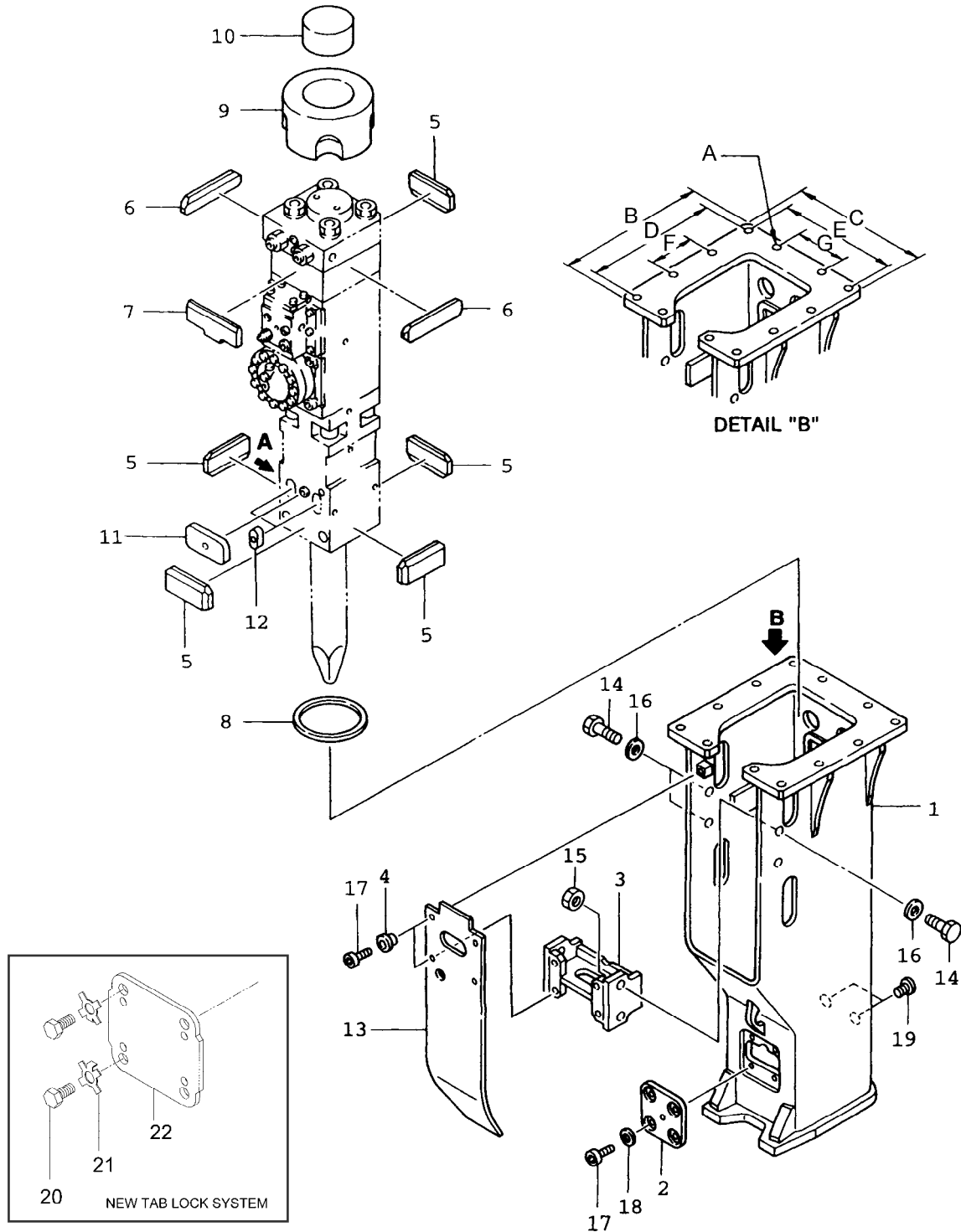
[/SC] Items marked Option /SC are included in the KF12-92023 Control Valve Seal Kit

[/SD] Items marked Option /SD are included in the KF22-92025 Safety Valve Seal Kit

(Refer to Section VII for Seal Kit Detail Lists)



## T-BOX MOUNTING F12Qt HYDRARAM



## **T-BOX MOUNTING PARTS** **F12Qt HYDRARAM**

<u>ITEM</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1	KF12-88201	1	T-Box Weldment	12	KHB10G-88229	2	Pin Plug
2	KF12-88412	1	Pin Cover *	13	KF12-88329	1	Soundproof Cover
3	KF12-88213	1	Spacer	14	K101032-27060	4	Bolt, M27
4	KF12-88114	4	Collar	15	K120132-27000	4	Hex Nut, M27
5	KF12-88121	5	Front Damper	16	K140112-27000	4	Washer
6	KF12-88323	2	Back Damper (A)	17	K102032-16025	8	Socket Bolt, M16 *
7	KF12-88224	1	Back Damper (B)	18	K140112-16000	4	Washer *
8	KF12-88125	1	Dust Ring	19	K084891-04000	2	GPF Plug
9	KF12-88326	1	Top Damper	20	KF19045	4	Cap Screw, M16 *
10	KF12-88127	1	Top Stoper	21	KF19044	4	Tab Lock Washer *
11	KF12-88128	1	Pin Damper	22	KF12100	1	Pin Cover *

\* Use either items 2, 17, and 18, or items 20, 21, and 22.  
The tab washer system replaces the socket bolt version.

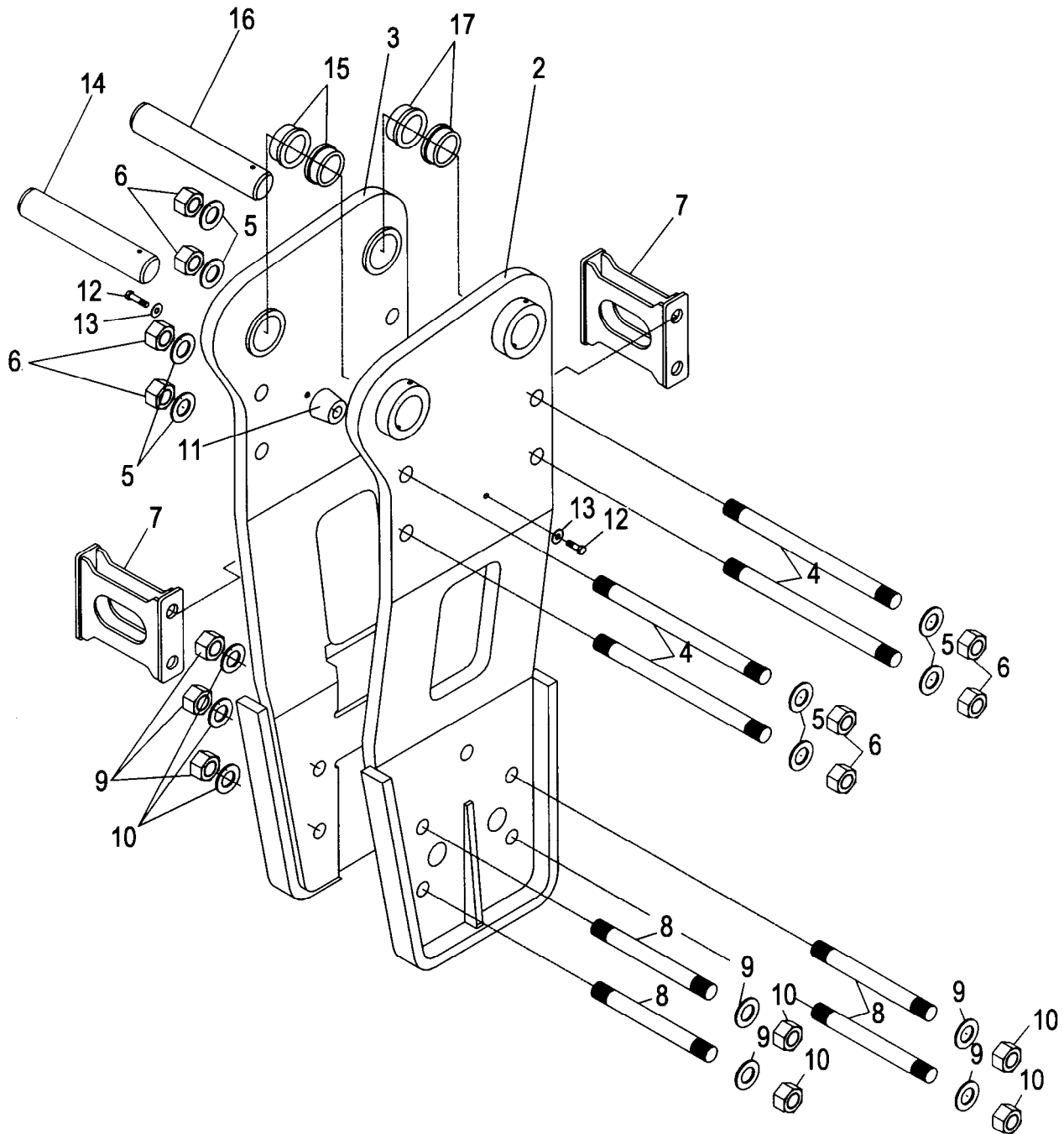
**NOTES:**

- The items marked Option /T on the main Parts Breakdown are NOT used when the hammer is mounted in the T-Box Case. Remove the stop pin, GPF plug, and dust plugs from fronthead of hammer before assembling T-Box Case.
- The F12Qt HydraRam can use either a KBM930950 Switch Hitch Universal Top Cap and F9 pins and bushings, or a KF12050 Universal Top Cap. There are also a wide variety of top caps available that match OEM specifications, and are compatible with quick-attach systems. Please consult Furukawa Rock Drill USA engineering for additional information.

	<u><b>Inch</b></u>	<u><b>Milimeter</b></u>	
A	0.866	22	Bolt Hole Diameter
B	19.685	500	Flange, Long Side
C	17.716	450	Flange, Short Side
D	17.716	450	Center to Center
E	15.748	400	Center to Center
F	6.299	160	Center to Center
G	7.086	180	Center to Center



**SIDE PLATE MOUNTING**  
**F12HD HYDRARAM**  
**Heavy Duty Version**

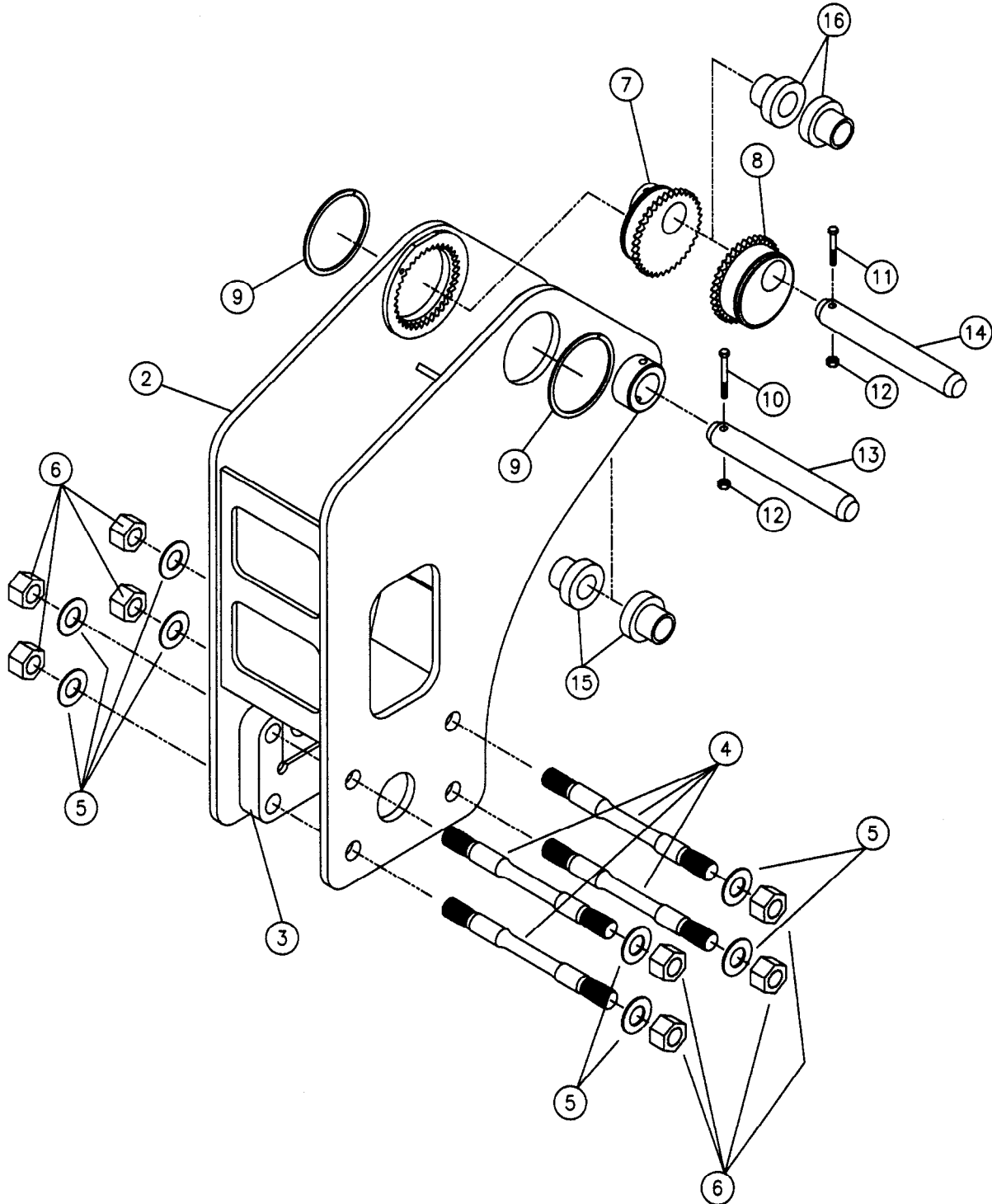




**SIDE PLATE MOUNTING PARTS LIST**  
**F12HD HYDRARAM**  
**Heavy Duty Version**

<i>ITEM</i>	<i>PART NUMBER</i>	<i>QUANTITY</i>	<i>DESCRIPTION</i>
1	F12B	-	Hydraulic Breaker, Bare
2	KF12011	1	Right-Hand Side Plate
3	KF12012	1	Left-Hand Side Plate
4	KF12016	4	1-3/4" – 8 UNC Stud x 21.00"
5	KF12021	8	1-3/4" Hardened Washer
6	KF12022	8	1-3/4" - 8 UNC Heavy Hex Nut
7	KF12013	2	Side Plate Brace
8	KF12015	4	1-3/4" – 8 UNC Stud x 14.75"
9	KF12021	8	1-3/4" Hardened Washer
10	KF12022	8	1-3/4" - 8 UNC Heavy Hex Nut
11	KF12014	2	Vibration Dampener
12	KF12020	2	½" x 2 ¾" Hex head Cap Screw
13	K06412	2	½" Lockwasher
	K12381	2	Whip Hose ( <i>Not Shown</i> )
14	<b>Refer to            Mounting            Pin Kit On            Page 12</b>	1	Mounting Pins ( <i>Specify</i> )
15		2	Spacer Bushings ( <i>Specify</i> )
16		1	Mounting Pins ( <i>Specify</i> )
17		2	Spacer Bushings ( <i>Specify</i> )

**SWITCH HITCH™ MOUNTING**  
**F12TLB HYDRARAM**  
**Tractor-Loader-Backhoe Version**



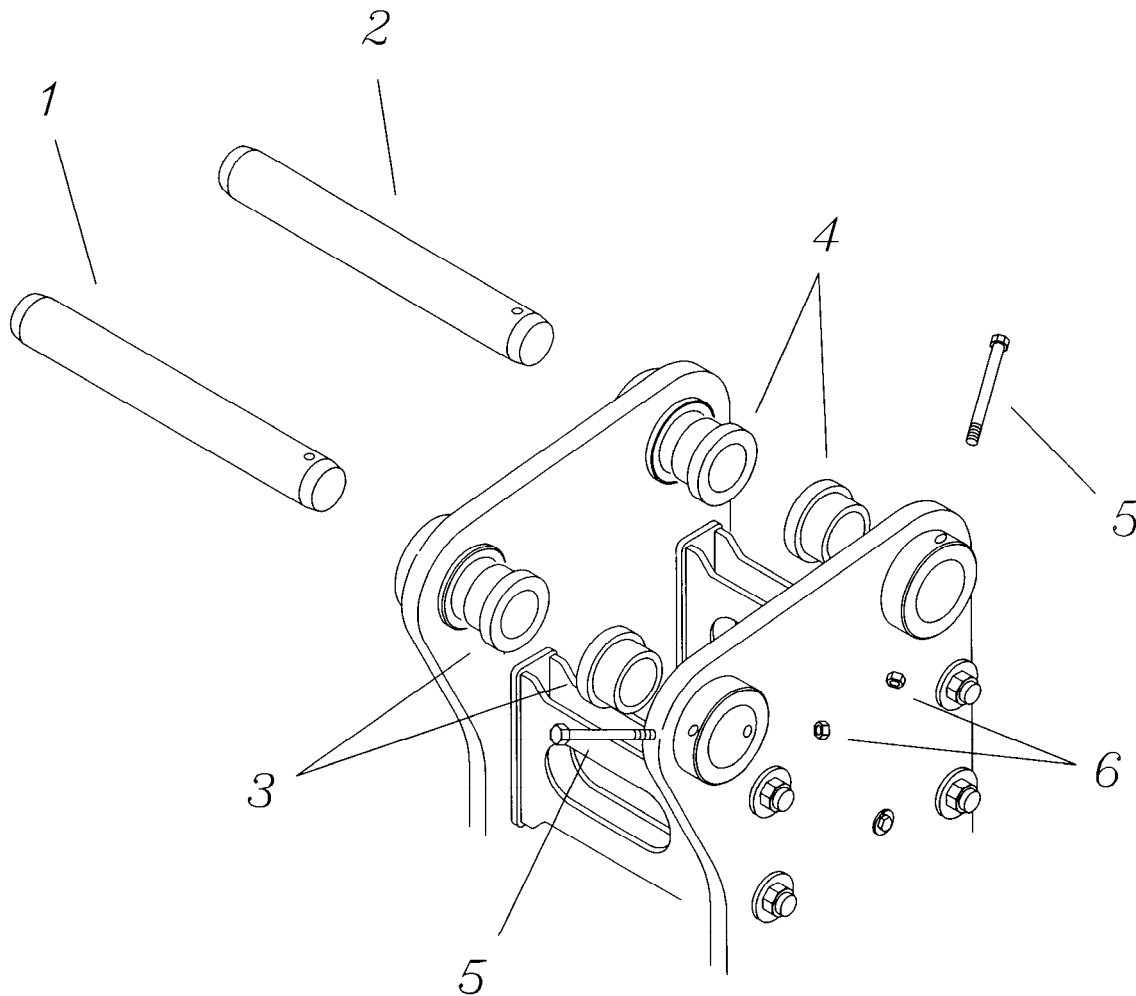
**SWITCH HITCH™ MOUNTING**  
**F12TLB HYDRARAM**  
**Tractor-Loader-Backhoe Version**

ITEM	PART NUMBER	QUANTITY	DESCRIPTION
1	F12B	1	F12 Breaker, Bare <i>(Not Shown)</i>
*	K12381	2	Whip Hose <i>(Not Shown)</i>
2	KF12044	1	Cradle Bracket with Indexing Ring
3	KF12039	2	Clamping Block
4	KF12034	4	1 ½" - 12 UNF Stud x 17 ½" Long
5	K11259	8	1 ½" Hardened Washer
6	K18472	8	1 ½" - 12 UNF Heavy Hex Nut
7	KF90039	1	Indexing Boss, Right Hand
8	KF90038	1	Indexing Boss, Left Hand
9	KF90032	2	Snap Ring, 6" Ø Spirolox®
10	K06422	2	Keeper Bolt, 1/2"-13UNC x 5"
11	K06407	2	Keeper Bolt, 1/2"-13UNC x 3.5"
12	K07228	2	1/2" Locknut
13	Refer to Mounting Pin Kit Parts List	1	Mounting Pin, Dipperstick
14		1	Mounting Pin, Curl Link
15		2	Spacer Bushing
16		2	Spacer Bushing

*NOTE: Earlier versions of the F12TLB did not have indexing ring, but used the same cross bolts, nuts, and washers, and used 5" keeper bolts in both bosses.*

Refer to Section II - Page #4 and Page # 5 for additional information on adjusting the SWITCH HITCH™.

**MOUNTING PIN KIT FOR**  
**F12HD HYDRARAM,**  
**F12TLB HYDRARAM,**  
**And F12Qt HYDRARAM with**  
**Universtal Top Cap Mounting**



**NOTE: The F12Qt HydraRam can use either a KBM930950 Switch Hitch Universal Top Cap and F9 pins and bushings or a KF12050 Universal Top Cap. Please consult Furukawa Rock Drill USA engineering for part numbers and dimensions.**

**MOUNTING PIN KIT PARTS LIST**  
**F12 HYDRARAM**

**Serial Number** \_\_\_\_\_

Base Machine Make: \_\_\_\_\_  
 Base Machine Model: \_\_\_\_\_  
 Dipperstick Pin Diameter: \_\_\_\_\_  
 Link Pin Diameter: \_\_\_\_\_  
 Dipperstick Width: \_\_\_\_\_  
 Link Pin Width: \_\_\_\_\_

**MOUNTING KIT PART NO:** \_\_\_\_\_

Consisting of the following:

<u>ITEM</u>	<u>P/N</u>	<u>QTY.</u>	<u>DESCRIPTION</u>
1	_____	1	_____ DIA. MOUNTING PIN x _____" LONG
2	_____	1	_____ DIA. MOUNTING PIN x _____" LONG
3	_____	2	_____ DIA. MOUNTING BUSHING X _____" LG.
4	_____	2	_____ DIA. MOUNTING BUSHING X _____" LG.
5	_____	2	KEEPER BOLT, _____" DIA. x _____" LONG
6	_____	2	LOCK NUT, _____

**NOTE: Due to the variety of mounting configurations, and wide range of carriers that the F12 models fit, pin length, busing size, and keeper bolts are specific to both the hammer and carrier model. Please consult Furukawa Rock Drill USA engineering for part numbers and dimensions.**

## **SERVICE TOOL KIT**

***P/N KBM1290001***

Furukawa Rock Drill USA includes a tool box with every new hydraulic breaker. This tool box contains many of the special tools and wrenches required to perform normal maintenance or repairs on the breaker. This is a basic tool box, and by no means complete or comprehensive, but does contain many specialized tools, and wrench sizes not commonly found in the field. The following illustration depicts a typical tool box and its contents:

