

DEMOLITION TOOLS



**Brunner
& Lay**

"Quality First" since 1882.

Brunner & Lay

"Quality First" since 1882

In 2011, Brunner & Lay, Inc. celebrated one hundred and twenty nine years of continuous operations under the ownership and control of the founding family. The original products manufactured by this enterprise were those used in the sculpturing of stone, production of monuments, building stones, and "objects d' art".

From a very inauspicious beginning in a small blacksmith shop originally started in 1882 by Edward Brunner and Severin Lay, Brunner & Lay, Inc. and its affiliated companies have become recognized as the quality

leaders, as well as the world's largest manufacturer of paving breaker tools. Today, using the latest state of the art equipment in its facilities throughout the world, Brunner & Lay, Inc.'s entire output is devoted to the manufacture of pneumatic and hydraulic tool accessories for the construction, mining, and demolition industries.



Circa 1910 - Polk Street Plant - Chicago, IL

Family to oversee operations.

Brunner & Lay products are divided into three major categories: tools used for the demolition or cutting of concrete and stone, drill steels and carbide tipped bits which are used to drill blast holes in quarries, mines, and construction projects, and small chipping and electric hammer tools which are used by the general construction trade.

It is with great pride that the Brunner & Lay organization can point to the many wonderful highways, dams, airfields, mines & quarries, and national monuments it has shaped. These include, but are not limited to Mt. Rushmore, Hoover Dam, the Chunnel connecting England and France, the Eisenhower Tunnel in Colorado, and Olympic venues worldwide.

These accomplishments could not have been achieved without the extended efforts of long time dedicated employees and the many fine distributors who have provided loyal support over these years. Brunner & Lay extends its very sincere thanks to these employees and distributors.

Brunner & Lay is confident that its products will contribute to worldwide health, growth, and prosperity far into the future.



Circa 2011 - Old Missouri Road Plant - Springdale, AR

Introduction

Thank you for selecting Brunner & Lay for your Boom Mounted Demolition tools. We manufacture a wide range of high quality tools for pneumatic and hydraulic breaker machines currently in use worldwide.

All Brunner & Lay tools are manufactured and processed within the Company's modern factory, utilizing the latest machinery and technology to ensure that the finished products comply with the high standards of quality our customers expect.

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If the hammer type you are using does not appear on this page, please contact our customer service representatives for assistance.

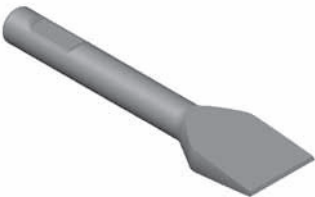
1-(800)-872-6899

Warranty

Brunner & Lay tools are guaranteed against defects in raw material and manufacture. No other warranty is implied or expressed. The Company's liability in respect of any warranty claims is limited to replacement and does not extend to any other expenditure incurred or to any consequential damage. Warranty claims are subject to immediate notification of any problems and return of the goods to Brunner & Lay under their Returned Goods Policy. See our Warranty Guide on page 58 and 59.

Tool Selection

Correct selection of tools is the first step in obtaining maximum life from the product.

	Conical Point For general demolition work where penetrative breaking is required.		Wide Chisel For increased productivity in softer materials.
	Pyramid Point For use where increased break-out forces are required.		Blunt For impact breaking, secondary breaking and also scaling in mines and tunnels..
	X Type Point For use in soft or high dust operations.		Super Blunt Blunt with increased diameter at working end to give increased life and wear resistance.
	Chisel Same as points, but also where a cutting action is required, eg. benching and trenching.		Driving Tool For driving in posts, pipes etc.
	Grooved Chisel For use in soft or high dust applications.		Detachable Shanks and Pads For compacting loose ground.

Care and Use

Working Angle

Critical to tool life is using the tool at the correct working angle of 90° to the working surface. Failure to do this will result in high contact pressure between the tool and the bushings and the likelihood of galling between the surfaces. In turn this can lead to premature failure of the tool plus damage and rapid wear to the bushings. Worn bushings can allow the tool to be angled over to a position where the striking face is hit at an angle by the piston.

Lubrication

Lubrication of the tool/bushing with the correct quality high temperature/high pressure grease at regular intervals is essential. Such greases are best able to cope with the extreme contact pressures generated by an incorrect working angle, leverage and excessive bending etc.

USE OF CHEAP SUBSTITUTES (OR NO GREASE AT ALL) IS A MISTAKE AND WILL RESULT IN PREMATURE TOOL FAILURE.

Blank Firing

Continuing to use the hammer when the tool is not or only partially in contact with the work surface will result in the tool being fired down on the retainer pin. This will cause heavy wear and damage to the upper retainer flat radius area and the retaining pin itself.

Tools should be examined regularly, eg. every 40 hours for damage in this area which should then be ground out.

At the same time as the tool is examined the time should be taken to check the tool bushings for wear and damage, looking to replace or repair as necessary.

Overheating

Avoid continuous working in one position. Do not strike in one spot for more than 10-15 seconds before changing the tool to another position. Failure to do this can lead to excessive heat build-up at the working end with 'mushrooming' as a consequence.

Leverage/Bending

Using the tool as a lever to help break the ground is a common tool breaker. Avoid leverage and excessive bending at all times.

Loose Running

Keep the boom and hammer feed sufficient to ensure that the tool is held against the hammer shoulder stop at all times when working.

Tool Reconditioning

Under most normal conditions the tool will not need reconditioning. However tools that have lost their shape on the working end can cause high stresses throughout the tool and hammer. Reconditioning by milling or turning is recommended. Welding or flame cutting is not recommended as the heat generated could cause structural changes within the material which in turn can lead to premature failure or rapid wear.

Catalog Numbering System

F A 02 * 24

Tool Manufacturer Tool Model

Another letter and two-digit number which is the Brunner & Lay designation for the hammer type, eg. FA02P24.

Demolition Tool

All demolition tool part numbers start with the letter 'F'.

Over all Length

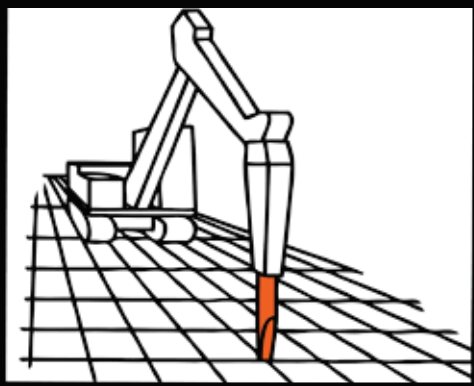
The number represents the over-all length of the tool in inches.

Working End Type

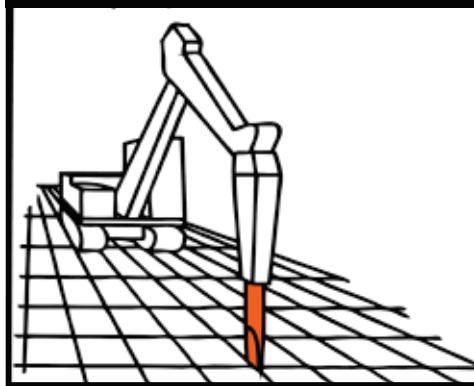
The letter (*) represents the type of working end on the tool, Replace * with one of the letters below.

- 'P' = Point
- 'C' = In-Line Chisel
- 'B' = Blunt
- 'X' = Cross-Cut Chisel
- 'A' = Asphalt Cutter
- 'S' = Super Blunt
- 'D' = Detachable Shanks
- 'PD' = Pin and Pipe Driver
- 'W' = Wide Chisel

Cross Cut has the blade of the tool transverse to the axis of the carrier boom when mounted.

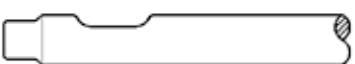
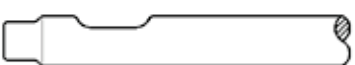
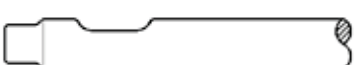
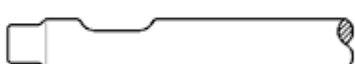
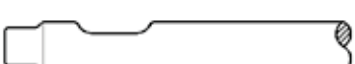
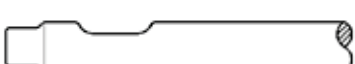


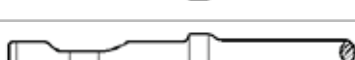
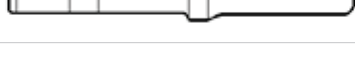
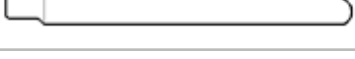
Inline has the chisel tool blade "In-Line" to the axis of the carrier boom.

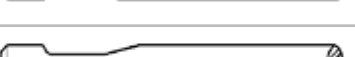
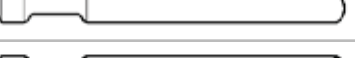


If the tool type you are using does not appear on this page, please contact our customer service representatives for assistance.

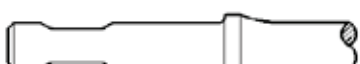
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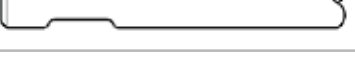
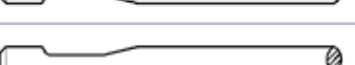
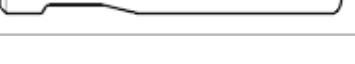
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
ALLIED - Krupp					
	FA11*18	HYRAM700/HM50	1.77	18	12
	FA13*18	HYRAM710/710B/711/HM60	2.16	18	19
	FA13*24	HYRAM710/710B/711/HM60	2.16	24	25
	FA21*24	HYRAM711B/HM85	2.43	24	28
	FA02*24	RAPID RAM33	2.50	24	33
	FA19*28	HYRAM715/HM130/HM135	2.55	28	36
	FA19*32	HYRAM715/HM130/HM135	2.55	32	42
	FA12*24	HYRAM720/HM110	2.56	24	35
	FA25*32	HYRAM725/HM185	2.94	32	55
	FA25*36	HYRAM725/HM185	2.94	36	62
	FA03*30	HYRAM65/75	3.13	30	59
	FA04*32	HYRAM77/HM200	3.13	32	70
	FA04*37	HYRAM77/HM200	3.13	37	81
	FA22*32	HYRAM730/HM300/HM301	3.13	32	63
	FA22*36	HYRAM730/HM300/HM301	3.13	36	71
	FA26*31	HORAM300	3.50	31	76

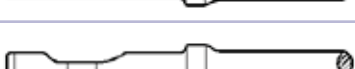
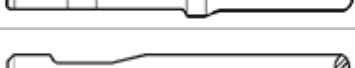
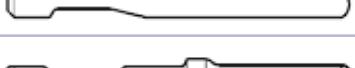
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	FA35*35	HYRAM735CS/HM350	3.54	35	88
	FA08*32	HORAM250	3.50	32	81
	FA18*29	HORAM7000	3.93	29	100
	FA18*35	HORAM7000	3.93	35	120
	FA20*29	HORAM7000B	3.93	29	100
	FA20*36	HORAM7000B	3.93	36	124
	FA06*33	HYRAM88/HM600/HM601	3.93	33	113
	FA06*39	HYRAM88/HM600/HM601	3.93	39	134
	FA24*33	HYRAM740/HM550/HM560	3.93	33	102
	FA24*39	HYRAM740/HM550/HM560	3.93	39	121
	FA45*39	HYRAM745CS/HM580	3.94	39	124
	FA15*39	HYRAM750B/750CS/HM710/HM720	4.48	39	156
	FA15*45	HYRAM750B/750CS/HM710/HM720	4.48	45	182
	FA14*39	HYRAM750/HM700/HM701	4.50	39	158
	FA14*45	HYRAM750/HM700/HM701	4.50	45	183
	FA55*45	HYRAM755CS/HM780	4.70	45	199
	FA55*47	HYRAM755CS/HM780	4.70	47	208
	FA16*44	HYRAM770/HM900	5.27	44	245

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FA16*49	HYRAM770/HM900	5.27	49	273
	FA17*44	HYRAM770CS/HM950/HM960	5.28	44	246
	FA17*49	HYRAM770CS/HM950/HM960	5.28	49	274
	FA10*46	HYRAM99	5.29	46	257
	FA31*47	HYRAM775CS/HM1000MV	5.48	47	283
	FA28*46	HYRAM780/HM1300	5.86	46	316
	FA28*52	HYRAM780/HM1300	5.86	52	358
	FA75*52	HYRAM785CS/HM1500	5.86	52	358
	FA29*55	HYRAM790/795/HM1800/HM2000	6.26	55	430
	FA29*72	HYRAM790/795/HM1800/HM2000	6.25	72	563
	FA79*59	HYRAM797CS/HM2100/HM2300	6.45	59	492
	FA59*59	HYRAM800/805/HM2500MV/HM2600	7.05	59	588
	FA59*72	HYRAM800/805/HM2500MV/HM2600	7.05	72	717
	FA90*71	HYRAM905/HM4000	8.27	71	970
	FA48*20	AR48	1.89	20	14
	FA62*24	AR62	2.41	24	31
	FA70*27	AR70B	2.77	27	43
	FA85*31	AR85	3.35	31	74

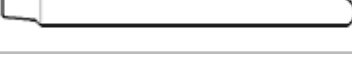
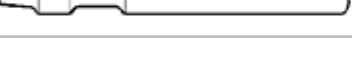
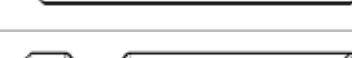
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	FA95*36	AR95	3.74	36	108
	FA110*42	AR110B	4.33	42	168
	FA300*41	HR300	4.53	41	168
	FA63*43	AR130B	5.12	43	242
	FA63*47	AR130B	5.12	47	264
	FA50*48	HR500	5.30	48	270
	FA140*47	AR140	5.51	47	291
	FA56*55	AR160C	6.30	55	500
	FA170*57	AR170C	6.70	57	540
	FA34*19	AS342	1.65	19	11
	FA52*24	AS352	2.05	24	21
	FA36*28	AS362	2.44	28	34
	FA37*32	AS370	2.76	32	53
	FA38*37	AS380	3.15	37	81

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
ATLAS COPCO					
	FT65*18	TEX30H/SBC60/SB50	1.25	18	5.7
	FT80*22	TEX75H/80H/100H/SBC100/115/SB100	1.75	22	15
	FT80*28	TEX75H/80H/100H/SBC100/115/SB100	1.75	28	19
	FT55*22	TEX110H/SBC255/SB150	1.94	22	17
	FT18*24	TEX180H/SBC410/SB200	2.54	24	31
	FT61*32	SBC610/650/SB300	3.13	32	63
	FT25*32	TEX250H	3.13	32	78
	FT26B32	TEX250HS1 (Blunt only)	3.13	32	70
	FT40*33	TEX400H/450/SBC800/SB450/SBC850	3.71	33	91
	FT52*39	SB552	3.91	39	129
	FT60*36	TEX600/700/900H/HBC1100/1700	4.10	36	121
	FT60*43	TEX600/700/900H/HBC1100/1700	4.10	43	145
	FT14*39	TEX1400H/HBC2500	4.89	39	187
	FT58*43	TEX1800/2000H/HBC4000	5.28	43	266
	FT90*59	HBC6000	6.70	59	527
	FA34*19	PB110	1.65	19	11
	FA52*24	PB160	2.05	24	19

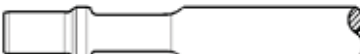
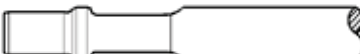
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	FA36*28	PB210	2.44	28	32
	FA37*32	PB310	2.76	32	53
	FA38*37	PB420	3.15	37	81
	FA35*35	MB500	3.54	35	88
	FA45*39	MB700/800	3.94	39	124
	FT10*43	MB1000	4.30	43	183
	FA55*45	MB1200	4.70	45	199
	FA150*46	HB1500	5.39	46	270
	FA31*47	MB1700	5.48	47	283
	FA75*52	HB2200	5.90	52	358
	FT75*53	HB2500	6.10	53	450
	FA79*59	HB3000	6.45	59	492
	FA59*59	HB4200	7.05	59	588
	FA58*67	HB5800	7.87	67	782
	FA90*71	HB7000	8.27	71	970

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
BOBCAT					
	FC280*18	HB280	1.45	18	9
	FC38*18	HB380	1.7	18	12
	FC58*19	HB580	1.85	19	10
	FC15*20	B700	1.96	20	15
	FC68*23	HB680	2.12	23	24
	FC88*24	HB880	2.43	24	33
	FC07*24	B850/950	2.44	24	29
	FC98*25	HB980	2.71	25	42
	FC09*28	B1400	2.90	28	47
	FC63*32	HB2380	3.73	32	89

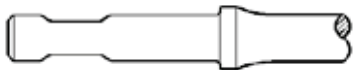
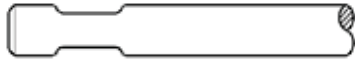
BREAKER TECHNOLOGY

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
BREAKER TECHNOLOGY - Teledyne - Toku					
	FQ50*51	VZ50	5.22	51	302
	FQ85*52	VZ85	6.05	52	419
	FQ30*32	BT410/BT1000/BT1000B	3.04	32	82
	FQ81*46	BT810/BT3500/BT3500B	4.68	46	201
	FQ91*44	BT910/BT4000	5.25	44	159
	FQ10*19	TB100	1.77	19	12
	FQ12*20	TB120/125/135	1.95	20	15
	FE16*22	TR100	2.08	22	19
	FQ18*24	TB180/225/235	2.28	24	25
	FQ24*24	TB245	2.26	24	25
	FQ19*25	TB275	2.50	25	31
	FE02*29	TR200/200X	2.82	29	46
	FQ22*26	TB220/325/335	2.95	26	45
	FQ22*30	TB220/325/335	2.95	30	52
	FE04*33	TR400/400X	3.51	33	81
	FQ40*32	TB400/400X/425/425X /625	3.75	32	90
	FE06*36	TR602M/602X	3.92	36	111

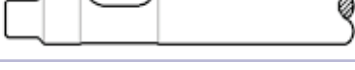
BREAKER TECHNOLOGY

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FE08*36	TR700/700X	4.31	36	134
	FQ72*36	TB700/700X/725/725X/825	4.51	36	147
	FQ72*42	TB700/700X725/725X/825	4.51	42	171
	FQ70*36	TB705/730X/830X	4.51	36	147
	FQ90*46	TB900/925/950X/975X/1025X	5.30	46	259
	FQ90*52	TB900/925/950X/975X/1025X	5.30	52	293
	FQ98*46	TB905/930/955/980/1030	5.30	46	259
	FQ28*47	TB1280	5.50	47	285
	FQ130*48	TB1300/1425/1625/1625X/1675	5.75	48	318
	FQ16*48	TB1305/1430/1630/1680	5.75	48	318
	FQ80*55	TB1710/BT800	5.90	55	383
	FQ20*60	TB1825/2075X	6.28	60	474
	FQ48*60	TB2080	6.28	60	474
	FQ26*62	TB2225X/2575	6.98	62	605
	FQ25*62	TB2580	6.98	62	605

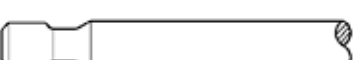
BROKK

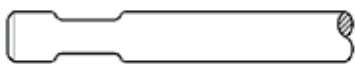
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
BROKK					
	FT64*18	40/SB50/SBC60/TEX30H	1.25	18	4
	FT55*22	90/SB150/SBC255/TEX110H	1.75	22	15
	FT18*24	180/SB200/SBC410/TEX180H	2.54	24	31
	FT40*33	330/SB450/SBC800/TEX400H	3.71	33	91

CAL

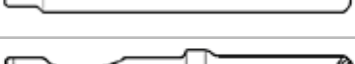
CONSTRUCTION ATTACHMENTS LTD					
	FG45*24	CAL450	2.23	24	27
	FG75*27	CAL550/750	2.76	27	46
	FG450*47	CAL4500	5.31	47	295

CASE

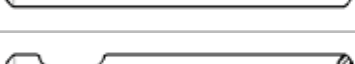
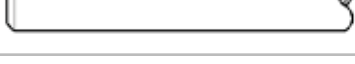
CASE	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FS21*19	CB140	1.76	19	12
	FS22*21	CB45/CB200	1.96	21	16
	FS23*26	CB65/CB370	2.47	26	32
	FS25*29	CB85/CB620	2.74	29	44
	FS27*33	CB735	3.30	33	72
	FS29*36	CB150/CB1150	3.75	36	101
	FS64*41	CB1450	4.17	41	142
	FS66*41	CB2850	4.52	41	168
	FS68*43	CB3750	5.08	43	222
	FS80*47	CB400/CB4000	5.50	47	285
	FS90*52	CB550/5200	6.23	52	404

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
CATERPILLAR - Balderson					
	FS18*16	H30	1.6	16	9
	FS21*19	H45	1.76	19	12
	FS22*21	H50	1.96	21	16
	FS55*22	H55DS	2.2	22	21
	FS23*26	H63/B63	2.47	26	32
	FS25*29	H70/E70B	2.74	29	44
	FS27*33	H90/90C	3.30	33	35
	FS29*36	H100/B100	3.75	36	101
	FS64*41	H115S	4.17	41	143
	FS66*41	H120CS	4.52	41	168
	FS68*43	H130CS	5.08	43	222
	FS80*47	H140CS	5.50	47	285
	FS83*47	H140	5.50	47	285
	FS84*52	H160	6.30	52	413
	FS90*52	H160CS	6.23	52	404
	FS10*57	H180S	6.64	57	504
	FS12*67	H195	7.63	67	782

CONTECH

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
CONTECH					
	FF06*27	HD-3	2.50	27	38
	FF02*24	MINI RAM 125	2.35	24	27
	FF10*27	125 MINI RAM	2.51	27	34
	FF04*36	BIG RAM 200	3.00	36	65
	FF08*32	HD-6	3.50	32	87

CHICAGO PNEUMATIC

	FA34*19	CP100	1.65	19	11
	FA52*24	CP150	2.05	24	19
	FA36*28	CP200	2.44	28	35
	FA37*32	CP300	2.76	32	53
	FA38*37	CP400/550	3.15	37	81
	FA45*39	CP750	3.94	39	124
	FA15*39	CP1150	4.48	39	156
	FA17*44	CP1650	5.28	44	246
	FA75*52	CP2250	5.90	52	358
	FA79*59	CP3050	6.45	59	492
	FA59*72	CP4250	7.05	72	717

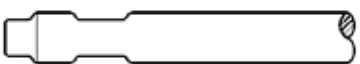
DYNATECH

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
DYNATECH					
	FD20*30	TB280D	2.75	30	45
	FD58*28	TB580D	2.90	28	47
	FD30*38	655	3.30	38	83
	FD21*53	EX216	5.29	53	297

ESCO

ESCO					
	FR14*20	ES14	2.22	20	22
	FR18*23	ES18/20	2.48	23	32
	FR18*28	ES30	2.48	28	38
	FR35*29	ES35	2.88	29	54
	FR80*44	ES80	5.12	44	255

GORILLA

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
GORILLA					
	FY30*48	GBH3T	2.93	48	55
	FY85*33	GBH85	3.32	33	728
	FY114*35	GBH114	4.48	35	141
	FY150*45	GBH150	5.89	45	311
	FY16*55	GBH155	6.05	55	419
	FY37*57	GBH170B	6.59	57	602
	FY27*57	GBH170A	6.63	57	602
	FY17*60	GBH175	6.84	60	591

HAMMEROC

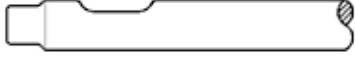
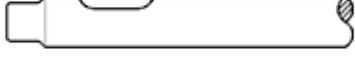
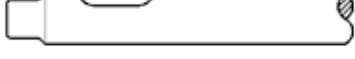
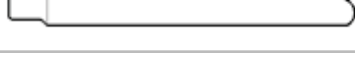
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HAMMEROC					
	FA48*20	HR20	1.89	20	14
	FA85*30	HR90P	3.35	31	71
	FA95*36	HR150P	3.74	36	108
	FA63*47	HR250	5.12	47	264
	FA140*47	HR300	5.51	47	307
	FA56*55	HR350	6.30	55	500

HANWOO

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
HANWOO - Magnum					
	FW29*19	RHB301-V	1.77	19	13
	FW02*20	RHB302/303-V	1.97	20	17
	FW03*20	RHB303	2.17	20	21
	FW05*30	RHB305-V	2.68	30	43
	FW30*19	RHB306	3.13	34	67
	FW08*36	RHB308-2/309	3.35	36	85
	FW31*41	RHB313-V	5.10	41	139
	FW33*47	RHB322-2/325	5.30	47	276
	FW32*57	RHB328-2/330	5.86	57	392
	FW34*57	RHB340	6.46	57	535

HUGHES

HUGHES					
	FG02*20	1000	1.88	20	14
	FG31*20	310	2.63	20	28
	FG31*22	310	2.63	22	30

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
HUSKIE - Izumi					
	FY11*16	HH100	1.69	16	11
	FY15*20	HH150/JB-1	1.97	20	16
	FY30*24	HH300/JB-3	2.36	24	27
	FY50*24	HH500	2.56	24	32
	FY52*24	HH500-2	2.56	24	32
	FY75*30	HH750/JB-6	2.95	30	52
	FY10*34	HH1000/JB-10	3.54	34	85
	FY51*36	HH1500/JB-12	3.95	36	114
	FY20*42	HH2000/JB-15	4.50	42	172
	FY36*46	HH3600/JB-21	5.31	46	276
	FY45*48	HH4500/JB-27	5.70	48	312
	FY80*52	HH8000/JB-40	6.38	52	413

HYDRO KAHN

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
HYDRO KAHN					
	FR33*60	SG3300	6.20	60	465
	FR50*59	SG5000	7.04	59	690

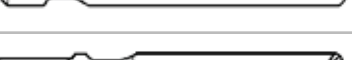
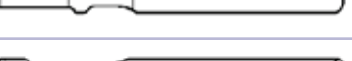
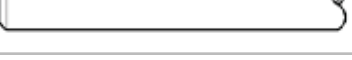
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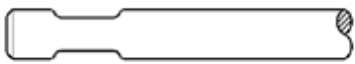
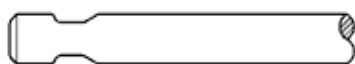
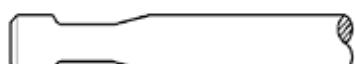
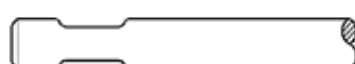
IMPULSE					
	FR02*23	360V	2.50	23	32
	FR02*28	360V	2.50	28	39

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
INDECO					
	FU10*18	MES121/150/HP200	1.75	18	12
	FU18*22	MES180/181/200/HP350	1.86	22	17
	FU03*23	MES300/301/350/351/HP500	2.16	23	24
	FU05*26	HB5/MES452/462/521/550/HP750	2.53	26	33
	FU55*27	MES553/523/HP1000	2.90	27	46
	FU62*26	MES601/621/650/HP1100	3.11	26	54
	FU62*32	MES601/621/650/HP1100	3.11	32	66
	FU08*28	HB8	3.12	28	55
	FU12*30	HB12/MES1200/HP1200	3.50	30	74
	FU15*36	HB19/MES1500/HP180	4.28	36	132
	FU17*39	MES1750/1800/HP2000	4.47	39	156
	FU20*46	MES2000/HP27/HP3000	4.67	46	201
	FU25*42	MES2500/HP4000	5.11	42	220
	FU30*43	MES3000/HP5000	5.50	43	261
	FU35*46	MES3500/HP5500	5.64	46	293
	FU40*49	MES4000/HP7500	5.90	49	381
	FU50*52	MES5000/HP8000	6.22	52	403

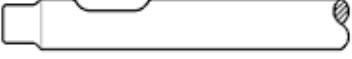
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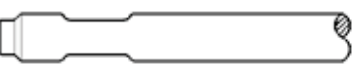
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INDECO					
	FU70*57	MES7000/HP10000	7.08	57	572
	FU85*60	MES8500/HP12000	7.66	60	705
	FU120*62	MES12000	8.46	62	889
	FU250*71	HP25000	9.90	71	1232

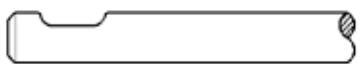
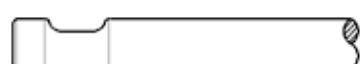
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
J C B - Hammermaster					
	FS21*19	JCB160/HM160	1.76	19	12
	FS23*26	JCB260/HM260	2.47	26	32
	FS25*29	JCB360/HM360	2.74	29	44
	FC06*32	JCB380	3.13	32	63
	FS26*33	JCB460	3.50	33	81
	FC08*39	JCB480	3.71	39	108
	FS64*41	JCB1050/HM1050	4.17	41	142
	FS54*41	JCB560	4.51	41	167
	FS66*41	JCB660/HM1350	4.52	41	215
	FC11*50	JCB630	4.63	50	215
	FC20*43	JCB690	4.78	43	197
	FS80*47	JCB2350/HM2350	5.08	43	285
	FS56*41	JCB760	5.12	41	215
	FS83*47	JCB860	5.50	47	285
	FS84*52	JCB960	6.30	52	413
	FT55*22	HM165	1.94	22	17
	FT18*24	HM265	2.54	24	31

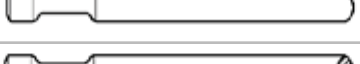
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
J C B - Hammermaster					
	FT61*32	HM385	3.13	32	63
	FT40*33	HM495	3.71	33	91
	FS27*33	HM550	3.30	33	72
	FS29*36	HM580	3.73	36	101
	FA45*39	HM860	3.94	39	124
	FA15*39	HM1260	4.48	39	156
	FA17*44	HM1560	5.28	44	246
	FS68*43	HM1750	5.09	43	404
	FA31*47	HM1760	5.48	47	283
	FA75*52	HM2460	5.86	52	358
	FS90*52	HM2950	6.23	52	404
	FA79*59	HM3060	6.45	59	492
	FS10*57	HM3850	6.64	57	504
	FS11*57	HM3950	6.84	57	539
	FA59*59	HM4160	7.05	59	588

JOHN DEERE

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
JOHN DEERE	(HUSKIE)				
	FY15*20	HB15	1.97	20	16
	FY30*24	HB30	2.36	24	27
	FY50*24	HB50	2.56	24	32
	FY75*30	HB75	2.95	30	52

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
JRB - Toyo - Takahouchi- CXI					
	FV81*14	JKHB31/THBB31	1.18	14	4
	FV41*16	JKHB51/THBB51	1.65	16	9
	FV71*18	JKHB71/THBB71	1.77	18	11
	FV01*22	JKHB101/THBB101	2.25	22	22
	FV31*30	JKHB301/THBB301	2.74	30	45
	FV40*35	JKHB401/THBB401	3.13	35	68
	FV80*38	JKHB801/THBB801	3.90	38	116
	FV11*41	JKHB1101/THBB1101	4.72	41	183
	FV14*42	JKHB1401/THBB1401	5.12	42	221
	FV15*44	JKHB1500/THBB1600	5.36	44	253
	FV20*49	JKHB2000/THBB2000	5.90	49	342
	FV30*55	JKHB3000/THBB3000	6.28	55	435

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
KENT - Furukawa					
	FB02*30	KB555 (2.1/2" DIA.)	2.50	30	38
	FB02*36	KB555 (2.1/2" DIA.)	2.50	36	45
	FB04*30	KB555 (3" DIA.)	3.00	30	54
	FB06*30	KB999	3.48	30	73
	FB06*36	KB999	3.48	36	87
	FB06*48	KB999	3.48	48	116
	FB08*48	KB2000/2600	5.21	48	261
	FB53*21	KF3	2.02	21	17
	FB54*22	KF4	2.35	22	24
	FB55*24	KF5	2.66	24	34
	FB60*29	KF6	2.93	29	50
	FB09*30	KF9	3.50	30	74
	FB09*34	KF9	3.50	34	83
	FB09*72	KF9	3.50	72	177
	FB52*43	KF12	4.11	43	145
	FB19*48	KF19	4.70	48	212
	FB22*49	KF22	5.28	49	274

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FB27*51	KF27	5.49	51	308
	FB85*55	KF35	5.87	55	380
	FB95*60	KF45	6.48	60	505
	FB70*65	KF70	7.10	65	626
	FB100*75	KF100	8.27	75	1083
	FB10*19	KHB100	2.14	19	17
	FB12*24	KHB200	2.74	24	36
	FB14*32	KHB400	3.71	32	88
	FB16*36	KHB700	4.12	36	122
	FB18*47	KHB1100/1300	5.09	47	244
	FB20*48	KHB1200/1500	5.47	48	288
	FB01*16	KHB1G/KF1	1.42	16	6
	FB23*18	KHB2G/KF2	1.77	18	11
	FB25*23	KHB3G	2.35	23	25
	FB30*25	KHB5G	2.93	25	43
	FB35*29	KHB8G	3.52	29	72
	FB38*40	KHB10G	4.11	40	135
	FB40*43	KHB15G	4.68	43	189

KENT

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
KENT - Furukawa					
	FB45*48	KHB20G	5.28	48	268
	FB31*51	KHB30G	5.87	51	352
	FB41*55	KHB40G	6.28	55	434
	FB50*60	KHB50G	7.06	60	599

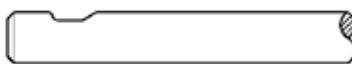
KOMAC

KOMAC					
	FK20*20	KB200	2.08	20	21
	FK30*25	KB300	2.66	25	36
	FK35*28	KB350	2.93	28	48

KOMATSU

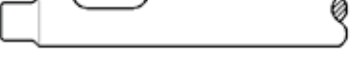
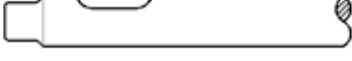
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	FV03*24	PC03/PC09	1.37	24	9

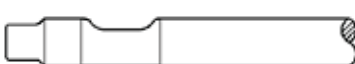
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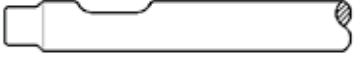
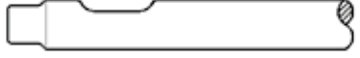
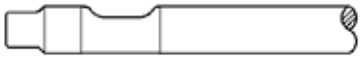
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
KUBOTA					
	FS18*16	KXB300/350	1.6	16	9
	FS21*19	KXB400	1.76	19	12
	FS22*21	KXB450	1.96	21	16
	FS23*26	KXB500	2.47	26	32
	FS25*29	KXB600	2.74	29	44

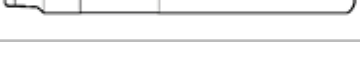
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
MKB					
	FW25*54	MKB2500V	6.25	54	431
	FW300*60	MKB3000V	6.44	60	503

MSB-HYUP SUNG

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
MSB-HYUP SUNG					
	FA70*27	MS200	2.77	27	44
	FA85*31	MS300	3.35	31	74
	FA95*36	MS400	3.74	36	108
	FA63*47	MS600	5.12	47	264
	FA140*47	MS700	5.51	47	307
	FA56*55	MS800	6.30	55	500
	FA170*57	MS900	6.70	57	540
	FA48*20	SAGA1000	1.89	20	14
	FA62*24	SAGA1500	2.41	24	31

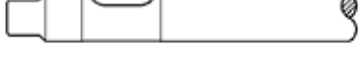
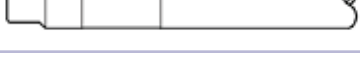
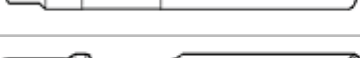
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N.P.K.					
	FM02*19	H06X	1.52	19	9
	FM03*19	H08XA	1.77	19	12
	FM04*23	H1XA	2.22	23	23
	FM06*30	H2XA/H2XE	2.54	30	39
	FM08*28	H3XA/H3XE	2.93	28	48
	FM10*30	H4XA/H4XE/H4XL	3.50	30	74
	FM11*36	H6X	3.75	36	101
	FM15*36	H6XA	3.75	36	101
	FM12*36	H7X	4.14	36	124
	FM14*38	H8XA	4.54	38	157
	FM16*43	H10XB/H10XE	4.93	43	209
	FM16*47	H10XB/H10XE	4.93	47	229
	FM16*50	H10XB/H10XE	4.93	50	243
	FM18*47	H12X/H12XE	5.32	47	266
	FM22*50	H14X/H14XA	5.45	50	297
	FM20*51	H16X/H16XE	5.71	51	333
	FM28*52	H20X/H20XE	6.09	52	386

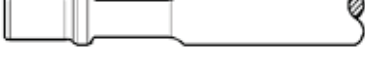
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	FM30*61	H30X	6.86	61	574
	FM82*16	E102	1.26	16	5
	FM85*16	E106	1.62	16	9
	FM70*20	E200	1.65	20	11
	FM71*22	E201	1.85	22	15
	FM72*26	E202	2.25	26	27
	FM73*28	E203	2.6	28	42
	FM34*30	E204	3	30	54
	FM05*34	E205	3.36	34	85
	FM36*37	E206	3.78	37	110
	FM07*48	E207	4.15	48	182
	FM09*42	E208	4.57	42	186
	FM19*47	E12X	4.94	47	230
	FM51*47	E210A	4.95	46	226
	FM21*47	E213	5.32	47	267
	FM26*51	E216	5.70	51	332
	FM32*53	E220	6.10	53	395
	FM24*53	E24X/E224	6.12	53	398

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FM52*60	E225	6.47	60	503
	FM52*71	E225	6.47	71	595
	FM44*70	E240A	7.21	70	729
	FM29*51	E255EX	6.30	51	405
	FM54*36	GH4	3.37	36	91
	FM59*49	GH9	4.90	49	249
	FM40*47	GH10	5.35	47	266
	FM62*52	GH12	5.70	52	340
	FM65*57	GH15	6.10	57	442
	FM68*64	GH18	6.45	64	557

NEW HOLLAND

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
NEW HOLLAND					
	FY15*20	HH155	1.97	20	16
	FY30*24	HH305	2.36	24	27
	FYF50*24	HH505	2.56	24	31
	FY75*30	HH755	2.95	30	52
	FY10*34	HH1005	3.54	34	85

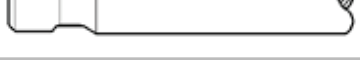
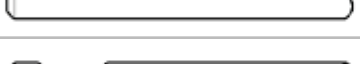
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OKADA					
	FP02*21	UB2	2.16	21	20
	FP04*28	UB4	2.67	28	40
	FP06*31	UB5	3.14	31	61
	FP08*35	UB8	3.84	35	103
	FP10*44	UB11	4.81	44	204
	FP12*47	UB14	5.34	47	268
	FP14*48	UB17	5.42	48	282
	FP21*20	UB301/TOP25	1.97	20	16
	FP40*22	UB301SL	2.16	22	23
	FP22*22	UB302	2.40	22	25
	FP41*24	UB302A/TOP30/TOP35	2.40	24	28
	FP23*28	UB303A/UB303B/TOP45	2.67	28	40
	FP24*28	UB304	2.91	28	47
	FP34*30	UB304B	2.91	30	51
	FP25*36	UB305/TOP60/TOP60B	3.32	36	79
	FP26*32	UB306	3.34	32	71
	FP28*39	UB308/TOP100	4.33	39	146

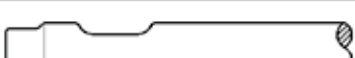
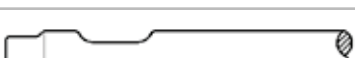
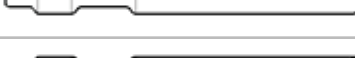
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	FP30*43	UB310	4.80	43	198
	FP32*45	UB312/UB312B	5.11	45	235
	FP33*52	UB312A	5.10	52	272
	FP36*51	UB316	5.50	51	309
	FP38*52	UB318	5.90	52	363
	FP44*63	UB324	6.50	63	558
	FP45*45	TOP200	4.90	45	215
	FP05*45	TOP205/TOP210	5.30	45	252
	FP93*55	TOP300	5.97	55	482

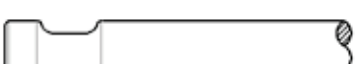
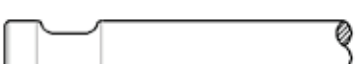
RAMMER

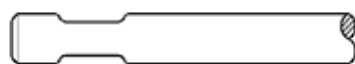
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RAMMER					
	FS63*39	E63	4.53	39	162
	FS64*41	E64	4.17	41	142
	FS65*42	E65	4.56	41	168
	FS66*41	E66/S55	4.52	41	168
	FS68*43	E68	5.08	43	222
	FS80*47	G80	5.50	47	285
	FS90*52	G90	6.23	52	404
	FS10*57	G100	6.64	57	504
	FS11*57	G110	6.87	57	539
	FS12*61	G120	7.63	61	750
	FS12*67	G120	7.63	67	781
	FS13*61	G130	8.00	61	813
	FS13*67	G130	8.00	67	899
	FS18*16	S18	1.60	16	9
	FS21*19	S21	1.76	19	12
	FS21*22	S21	1.76	22	14
	FS22*21	S22	1.96	21	16

RAMMER

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FS20*21	S20	2.08	21	18
	FS23*26	S23	2.47	26	32
	FS25*29	S25	2.74	29	44
	FS24*29	S24	2.83	29	46
	FS27*33	S27	3.30	33	72
	FS26*33	S26	3.50	33	81
	FS29*36	S29	3.75	36	101
	FS52*36	S52	4.31	36	134
	FS54*41	S54/S700	4.51	41	167
	FS56*41	S56	5.09	41	213
	FS82*47	S82/S1400	5.50	47	285
	FS83*40	S83	5.50	40	242
	FS83*47	S83	5.50	47	285
	FS84*52	S84	6.30	52	413
	FS86*52	S86/S2000	6.65	52	460
	FS14*43	M14	4.92	43	210
	FS88*47	M18	5.50	47	341

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
SOOSAN					
	FN20*18	SB10	1.57	18	9
	FN22*20	SB20	1.77	20	13
	FN23*23	SB30	2.08	23	21
	FN40*28	SB40	2.67	28	40
	FN43*32	SB43	2.95	32	60
	FN45*34	SB45	3.32	34	75
	FN30*40	SB50	3.91	40	122
	FN60*41	SB60	4.90	41	197
	FN100*51	SB100	5.90	51	396
	FN70*59	SB121	6.07	59	435
	FN130*55	SB130/SB140	6.50	55	512
	FN11*63	SB151	6.85	63	592
	FN80*47	SB80/SB81	5.50	47	285

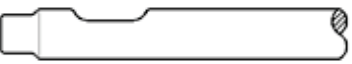
	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
STANLEY - Melroe					
	FN45*34	MB15EX/MB20EX	3.32	34	75
	FN30*40	MB30EX	3.91	40	122
	FN41*46	MB40EX	4.88	46	219
	FN50*51	MB50EX	5.50	51	309
	FN100*51	MB60EX	5.90	51	352
	FN70*59	MB70EX	6.07	59	435
	FN130*55	MB80EX	6.50	55	197
	FN11*63	MB100EX	6.85	63	592
	FN01*17	MB125/MB1250/MB105	1.75	17	10
	FN16*17	MB1560	1.75	17	10
	FL02*22	MB250/256/257/350/356	2.50	22	28
	FL02*31	MB250/256/257/350/356	2.50	31	39
	FL02*39	MB250/256/257/350/356	2.50	39	49
	FN40*28	MB506	2.67	28	40
	FL04*28	MB550/556/5500	2.75	28	42
	FN07*28	MB656/675/695	2.99	28	50
	FC68*23	680 Sliverclip	2.09	23	24

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FC88*24	850 Sliverclip	2.40	24	33
	FN28*30	MB800/875	3.12	30	58
	FC98*36	880 Sliverclip	2.40	24	33
	FN95*30	MB956	3.12	30	58
	FC98*25	980 Sliverclip	2.71	25	42
	FN05*32	MB1050	3.32	32	71
	FN08*36	MB1200	3.98	36	114
	FN09*36	MB1500/1550	3.98	36	114
	FN19*41	MB1950/1975	4.50	41	166
	FN10*41	MB1850	4.51	41	167
	FN12*41	MB2850/2875	5.11	41	214
	FN14*41	MB2950/2975	5.11	41	214
	FN14*43	MB2950/2975	5.11	43	225
	FN15*55	MB3700	5.50	55	344
	FN18*49	MB3900/3950	5.50	49	297
	FN49*53	MB4900	6.30	53	421

TERMINATOR

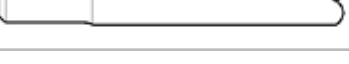
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TERMINATOR					
	FO15B29	TX150	4.00	29	103
	FO20B31	T2000	5.87	31	214
	FO75*33	TX750	7.55	53	605

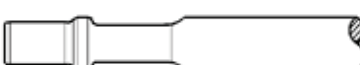
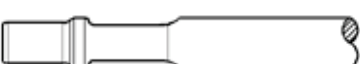
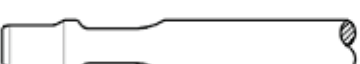
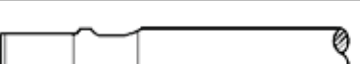
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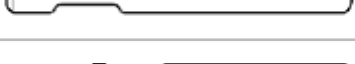
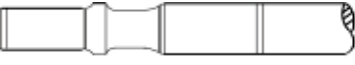
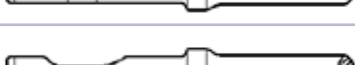
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	FY30*24	HH3000	2.36	24	27

TORO DINGO

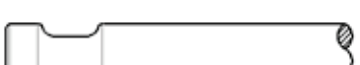
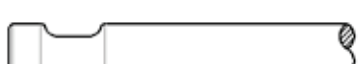
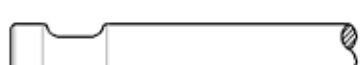
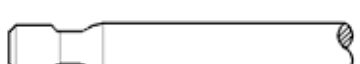
TORO DINGO					
	FN16*17	MB1560	1.75	17	10

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
TRAMAC - Montabert					
	FC30*16	BRP30	1.57	16	8
	FC04*20	BRH40	1.79	20	13
	FC05*17	BRP45/50	1.96	17	13
	FC05*25	BRP45/50	1.96	25	19
	FC15*20	BRP60/70	1.96	20	15
	FC07*24	BRP85/90/95/100	2.44	24	29
	FC07*32	BRP85/90/95/100	2.44	32	38
	FC09*28	BRP130/140/150	2.90	28	47
	FC09*38	BRP130/140/150	2.90	38	64
	FC02*28	Z96	2.34	28	31
	FC02*36	Z96	2.34	36	40
	FC16*23	BRH75/76/90/91	2.36	23	26
	FC16*32	BRH75/76/90/91	2.36	32	38
	FC06*26	BRH125	3.13	26	51
	FC06*32	BRH125	3.13	32	63
	FC06*37	BRH125	3.13	37	73
	FC06*48	BRH125	3.13	48	94

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FC08*34	BRH250/270/400/450	3.72	34	94
	FC08*39	BRH250/270/400/450	3.72	39	108
	FC08*47	BRH250/270/400/450	3.72	47	130
	FC10*39	BRH501/570	4.47	39	156
	FC10*50	BRH501/570	4.47	50	200
	FC18*39	BRH620	4.52	39	159
	FC11*39	BRH625/900	4.63	39	167
	FC11*50	BRH625/900	4.63	50	215
	FC12*44	BRH750	4.70	44	195
	FC12*50	BRH750	4.70	50	221
	FC14*52	BRH1100	5.5	52	314
	FC63*32	BRM300	3.73	32	89
	FC63*34	BRM300	3.73	34	95
	FC63*37	BRM300	3.73	37	103
	FC60*36	BRM600	4.12	36	112
	FC60*40	BRM600	4.12	40	136
	FC70*37	BRM 700	4.4	37	142
	FC20*43	BRV32/950/1200	4.78	43	197

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FC20*50	BRV32/950/1200	4.78	50	229
	FC43*49	BRV42/43	5.89	49	340
	FC22*52	BRV52	6.36	52	421
	FC23*49	BRV53	6.68	49	438
	FC23*59	BRV53	6.68	59	527
	FC26*47	V1600	5.50	47	346
	FC28*52	V1800	5.50	52	383
	FC45*49	V45/V46	6.00	49	426
	FC55*59	V55/56	6.75	59	644
	FC65*71	V65	7.95	71	1076
	FC38*18	SC08	1.7	18	12.3
	FC58*19	SC12	1.85	19	10
	FC68*23	SC16	2.09	23	24
	FC88*24	SC22	2.4	24	33
	FC98*25	SC28	2.71	25	42
	FC36*28	SC36	3.03	28	51
	FC42*31	SC42	3.34	31	69
	FC63*32	SC50	3.73	34	95

UB EQUIPMENT

UB-EQUIPMENT	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
	FP90*32	CMB20G	1.75	32	22
	FP83*25	CMB30G	2.15	25	23
	FP60*29	CMB50G	2.66	29	42
	FP70*30	CMB70G	2.93	30	51
	FP80*33	CMB80G	3.12	33	64
	FP50*20	CMB100	1.88	20	14
	FP11*46	CMB112	5.28	46	257
	FP13*52	CMB113 / 313	5.47	52	312
	FP63*24	CMB103 / 203	2.70	24	38
	FP20*30	CMB205	3.34	30	67
	FP46*36	CMB206	3.73	36	100
	FP72*38	CMB210	4.30	38	141
	FP61*48	CMB213	5.75	48	288
	FP81*46	CMB312	5.29	46	260
	FP35*52	CMB313	5.50	52	618

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
VOLVO					
	FS18*16	HB80	1.60	16	9
	FS21*19	HB130	1.76	19	12
	FS22*21	HB200	1.96	21	16
	FS23*26	HB300	2.47	26	32
	FS25*29	HB440	2.74	29	44
	FS27*33	HB600	3.30	33	72
	FS29*36	HB800	3.75	36	101
	FS63*39	HB1100	4.53	39	162
	FS68*43	HB1700	5.08	43	222
	FS80*47	HB2400	5.50	47	285
	FS90*52	HB3200	6.23	52	404
	FS11*57	HB3800	6.87	57	539

WIMMER

	PART #	HAMMER MODEL	DIAMETER	LENGTH	WEIGHT
WIMMER					
	FA70*27	W220	2.77	27	44
	FA85*31	W330	3.35	31	74
	FA95*36	W440	3.74	36	108
	FA63*47	W660	5.12	47	264
	FA140*47	W770	5.51	47	307
	FA56*55	W880	6.30	55	500

ZAMO

ZAMO					
	FZ80*20	ZAMO 80	1.88	20	15

Warranty Guide

The purpose of this guide is to provide advice on the correct application of Brunner & Lay Demolition Tools and assist in analyzing and resolving any complaints immediately.

Cause and Effect of Fatigue Failures

The continuous cycle of compressive and tensile stresses in a Demolition Tool, even under correct operating conditions, creates fatigue stress in the tool which can lead to fatigue failure of the tool before it is worn out. Anything which interferes with the normal operational cycle of compressive and tensile stresses will increase the level of fatigue stress being applied to the tool, increasing the risk of early fatigue failure.

1. Leverage/Bending

The main cause of increased fatigue stress in a demolition tool is any form of side pressure during service which creates bending. Utilizing the tool as a lever, using the incorrect driving angle or attempting to break ground using the “pull” of the machine are all detrimental to the life of a demolition tool and are to be avoided (see Figure 1).

2. “Free Running”/“Blank Firing”

This can arise in any situation where the working end is not in proper contact with the material to be broken. This includes jobs where the tool slides off the work and also when break-through of thin concrete slabs or boulders occurs. It is essential that the tool is applied at a right-angle to the working surface at all times.

3. Lubrication

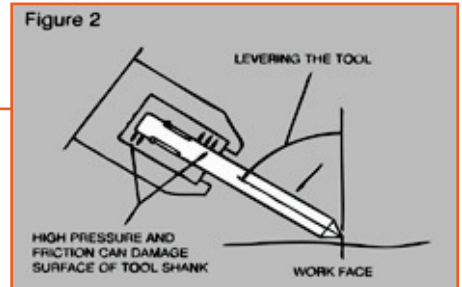
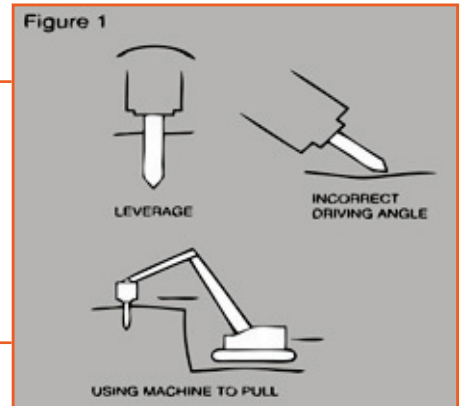
Regular lubrication is essential. Any form of damage to the surface of a demolition tool renders it more liable to suffer fatigue failure. Care must be taken to prevent accidental gouging or contact welding (“galling” or “pickup”) due to contact between the tool and chuck bushings either through lack of lubrication or excessive leverage (see Figure 2).

4. Cold/Corrosion

Low temperature causes a Demolition Tool to be more susceptible to fatigue failure. Tools should be kept sheltered from the weather when not in use. A rusty Demolition Tool is more likely to suffer fatigue failure, so tools should be kept well greased.

5. Worn Internal Hammer Parts

Worn hammer parts can cause the tool to be held too “loosely”. This can create surfacedamage on the tool, which can lead to fatigue failure of the tool. Worn parts can also cause uneven striking on the tool, which may lead to fatigue failure of the tool and damage to the piston.



continued on next page

6. Typical Failures

(Guide to Warranty Claims)

B & L Tools are manufactured from first class materials and then heat-treated to produce tools with optimum fatigue and wear resistance. When a tool has apparently failed to give satisfactory service life, a brief visual inspection can often give a quick indication of the cause.

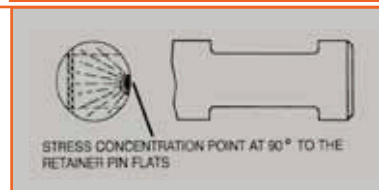
a. Typical fractures caused by excessive bending/leverage of the demolition tool. Warranty claims rejected.



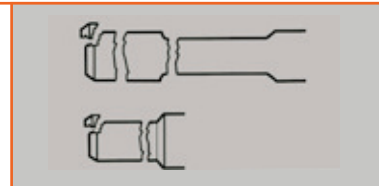
b. Typical of high stress fracture, usually caused by using the tool as an anchor to "pull" the machine. Warranty claims rejected.



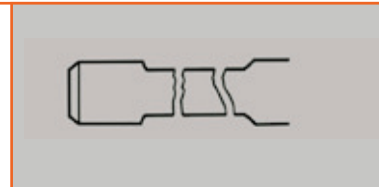
c. Typical fracture caused by levering tool while buried in the burden. Warranty claims rejected.



d. Typical fractures caused by blank firing and/or excessive chuck bush wear/damage. Warranty claims rejected.



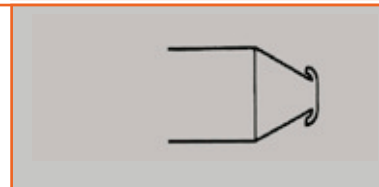
e. Typical fractures caused by blank firing and/or twisting of the tool due to worn/damaged retainer pin. Warranty claims rejected.



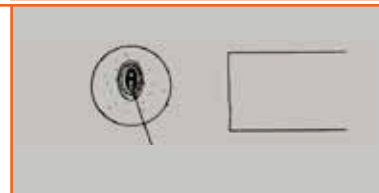
f. Typical fracture caused by lack of lubrication and/or chuck bush wear/damage. Warranty claims rejected.



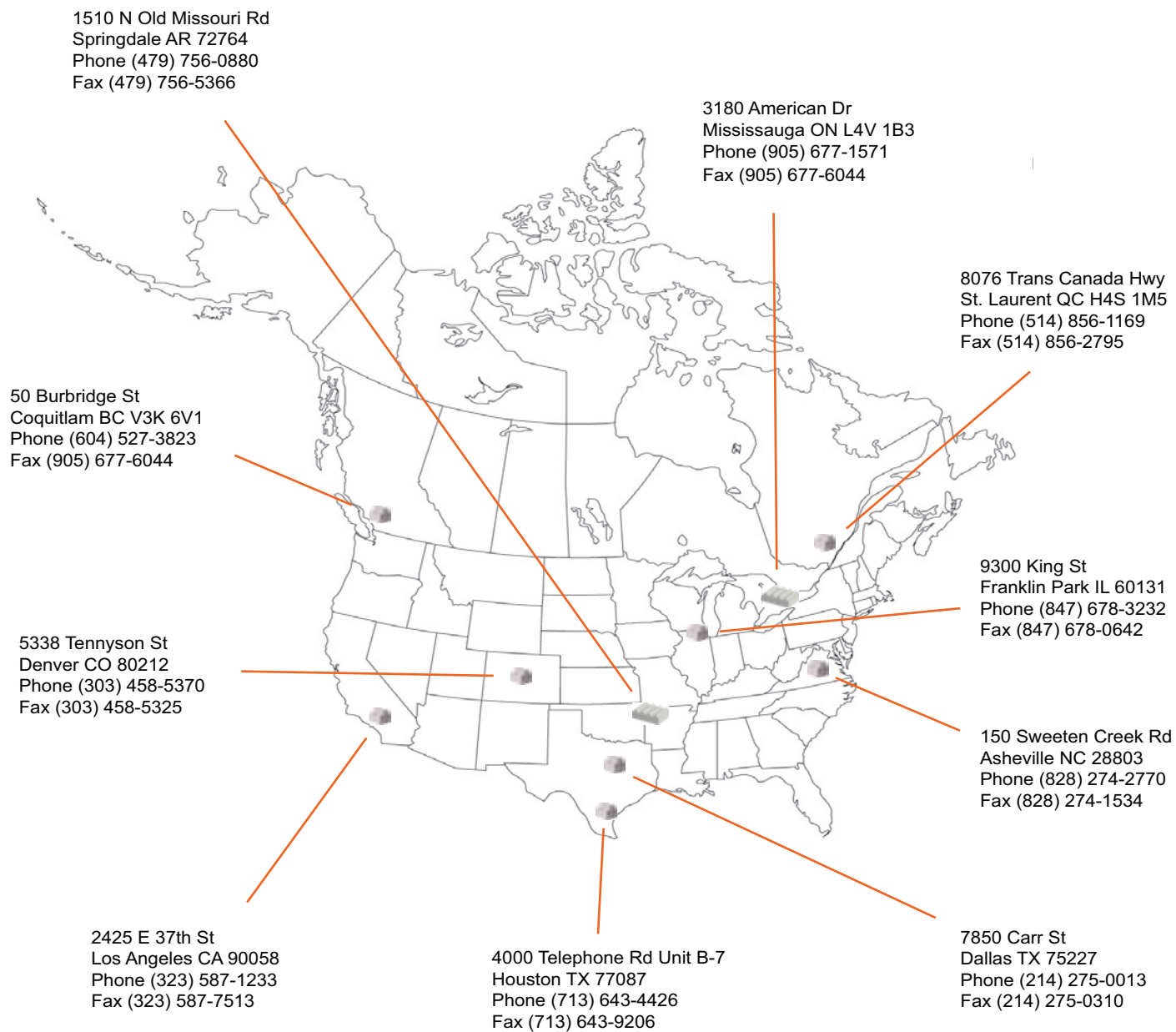
g. Mushrooming: this is caused by driving the chisel or point into hard dense material for too long a period of time without penetration. This generates intense heat, softening the point and causing it to "mushroom". This is not a manufacturing fault. Warranty claims rejected.



h. Note fatigue lines originate from the internal point, not outer diameter. Very rare failure type due to steel defect. 100% warranty accepted.



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