

# Strength and efficiency

The hydraulic breaker is mainly used in earth-moving and mining industries, where components are subjected to high levels of stress, working mostly in difficult situations.

To make hydraulic breakers increasingly reliable and to guarantee both performance and power, Hammer has introduced the SB and FX lines, obtained thanks to in-depth R&D carried out throughout the years.

For the production of this equipment, top-quality alloy steels are used and the best heat treatment techniques developed.

The research and studies carried out have allowed us to obtain important results in terms of the technological and mechanical characteristics of the steels.

At the same time, studies were carried out in collaboration with the main producers of hydraulic seals (Trelleborg, Freudenberg, Nok).

Over the years we have therefore improved both quality and type of the materials used to reach the appropriate ratio between different speeds, pressures and temperatures, thus increasing durability.



# We're always ready for challenges

Breakers of both SB and FX series are "nitrogen" breakers. Hammer, thanks to its experience, followed this path in order to obtain high power distributed over a higher number of blows per minute, thus resisting high counterpressures (up to 30 bar).

The breaker is also very compactly structured hence reducing stress on the excavator's arm and ensure greater durability of both the breaker and its components.

- The SB and FX hydraulic breakers can work on any type of excavator and on any single-acting hydraulic system; they are also suitable for hydraulic systems with high back pressure

- Hammer Breakers are equipped with special polyurethane shock absorbers that absorb vibrations, thus protecting the arm of the excavator and also reducing noise emissions, according to the requirements of directive 2000/14 / EC

While the SB series is suitable for carriers, mini excavators, miniblades, backhoe loaders, demolition robots. etc., the FX series is suitable for crawler and wheeled excavators of medium and large size.

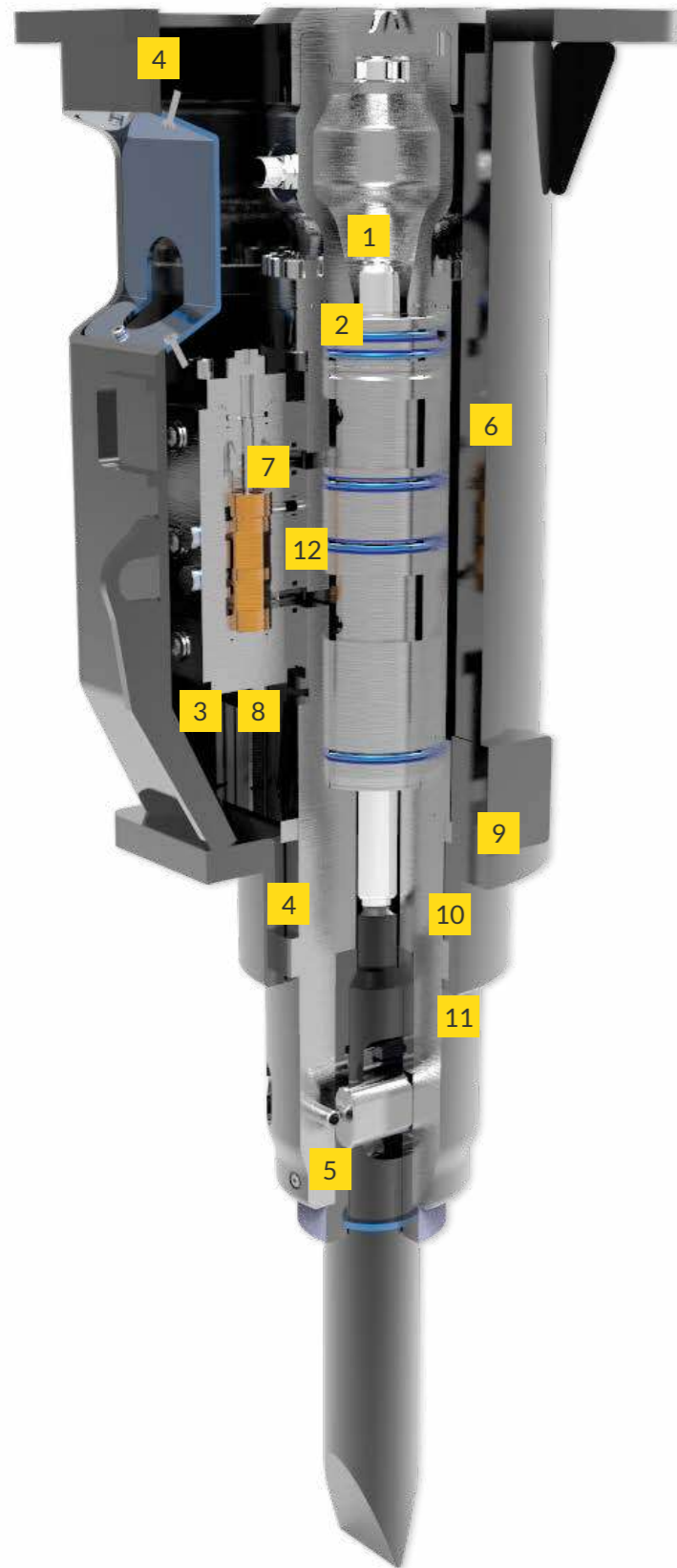
# Application overview

			SB	FX 700-1900	FX 2200-15000
<p><b>Mining &amp; Quarrying</b></p>	Preliminary works	Overburden removal	★	★	★
		Bench, road & ramp leveling	★	★	★
		Roof, face & rib scaling	★	★	★
	Secondary breaking	Boulder reduction in rock pile	★	★	★
		Removing blockages at crushing systems	★	★	★
	Primary rock breaking	Selective rock breaking	☆	★	★
		Blast-free mining	★	★	★
<p><b>Demolition &amp; Renovation</b></p>	Masonry structures	Brickwork	★	★	☆
		Natural stone	★	★	☆
		Autoclaved aerated concrete	★	★	★
	Concrete structures	Lightweight concrete	★	★	★
		Standard concrete	★	★	★
		Heavyweight concrete	☆	★	★
	Composite steel & concrete structures	Steel-reinforced concrete	★	★	★
		Prestressed concrete	★	★	★
		Fiber-reinforced concrete	★	★	★
	Pavements	Asphalt	★	★	★
		Concrete	★	★	★
		Composite surfaces	★	★	★
<p><b>Construction</b></p>	Earthworks	Trenching	★	★	★
		Pit building	★	★	★
		Ground excavation	★	★	★
	Tunneling	Tunnel driving	★	★	★
		Roof, face & rib scaling	★	★	★
		Floor leveling	★	★	★
	Dredging	Canal deepening & extension	★	★	★
	Dock deepening & extension	★	★	★	
	Gardening & Landscaping	Fencing	★	★	★
		Ground excavation	★	★	☆
		Rock breaking	★	★	★
	Foundation works	Ground leveling	☆	★	★
	Building construction	Foundation pile driving	☆	★	★
<p><b>Metallurgical Industry</b></p>	Slag recycling	Boulder reduction in slag heap	★	★	★
		Removing blockages at crushing systems	★	★	★
	Cleaning & debricking	Ladles	★	★	★
		Converter mouths	★	★	★
		Kilns	★	★	★

Optimal
 Suitable
 Unsuitable

## BREAK IN A SMART WAY

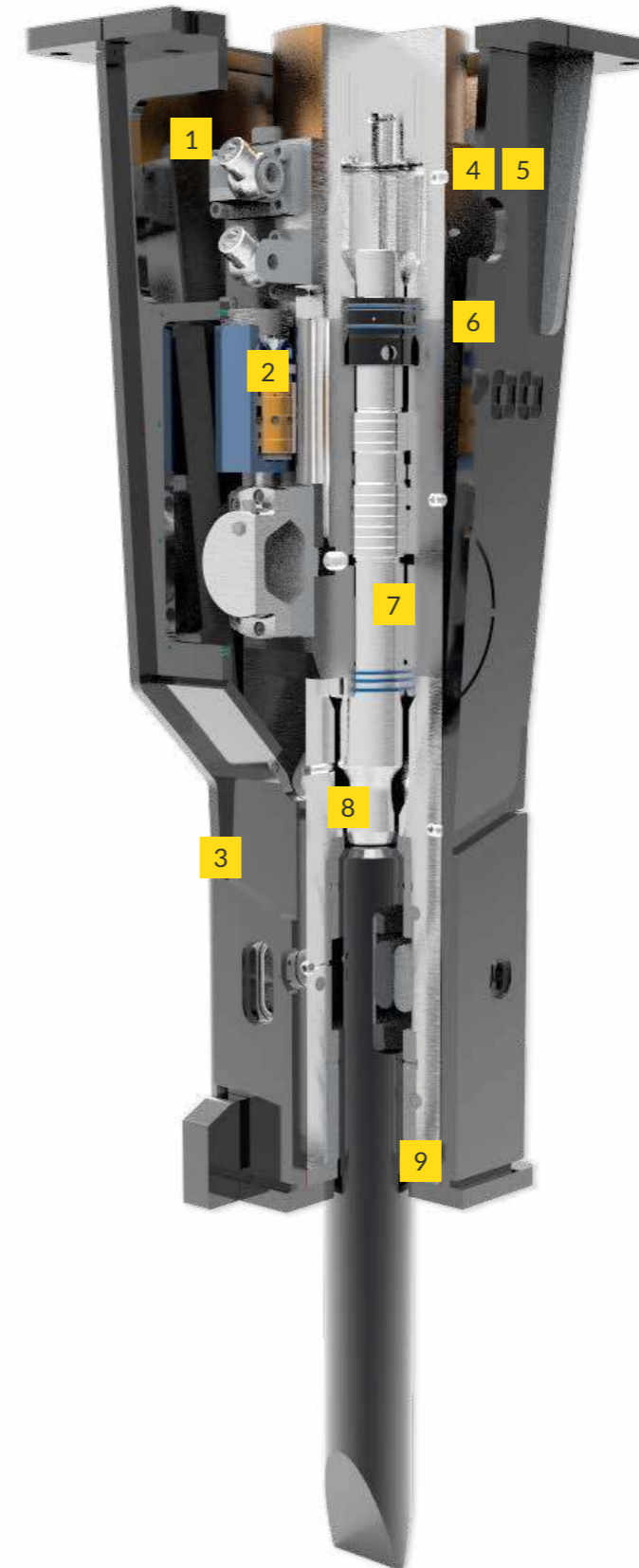
### Monobloc hydraulic breaker without tie rods and diaphragm



- 1 More power, less vibration and maintenance. The SB breakers work with inertial nitrogen energy recovery, thus obtaining more power (more than 30%) and less vibration thanks to the nitrogen chamber that reduces maintenance costs, since it has no diaphragm.
- 2 Long lasting nitrogen charge. In the past, energy recovery breakers required frequent nitrogen refills; with the new sealing system and the new compound developed by Freudenberg they are able to guarantee a gas tightness equal to 300% more than in the past.
- 3 Protected tubes. The tubes are completely protected through the casing and they're suitable for every type of excavation, especially in narrow spaces.
- 4 The particular design, with a closed box casing as well as the addition of sound-absorbing material, allowed the breaker to have very low noise levels
- 5 Double retainer pin. The tool-locking system with a double retainer pin allows adequate and uniform wear of the same and ensures longer maintenance intervals for the whole locking system.
- 6 Monobloc body without tie rods. The entire SB series benefits from the particular monoblock construction; this feature gives the structure a very high resistance to leverage, during work. The breaker is built in one only piece and it is without tie rods, thus obtaining greater production and less maintenance as a result.
- 7 Only two moving parts.
- 8 For all types of installations (pressurization). The SB series tolerates high back pressure, and it has a wide calibration range of the required oil flow, in order to make the installation easier.
- 9 The piston moves in a single interchangeable cylinder liner that keeps the main body intact and that is easy to replace in case of necessity.
- 10 The piston is built with a special geometry as to keep a constant energy of impact, and to reduce damage in any critical condition.
- 11 Visibility and versatility. The models of the SB series, with their tapered shape, provide the operator with an excellent view during the work and allow to operate close to the walls, both in narrow and wide spaces.
- 12 Hydraulic system for blank firings. The hydraulic system creates a regenerative oil circuit that preserves the breaker from blank firings when the tool is not in contact with the rock.

## EFFICIENCY BECOMES POWER

### Hammer Hydraulic Breakers



- 1 Tubes with swivels. Tubes with swivels are fully protected from any misuse and, resistant to vibrations.
- 2 Operating pressure regulation. For the FX series (FX950-15000), it is possible to adjust the working pressure with a manual valve located frontally on the distribution box.
- 3 Anti-dust and underwater work setup. You can prevent the entry of dust and water into the breaker by blowing air into the proper hole in the front part of the breaker, with a pressure of not less than 10 bar.
- 4 Automatic hydraulic greasing device (optional, mounted on the breaker). The Beka-Lube automatic lubrication system optimizes the lubrication procedure and reduces maintenance and downtimes
- 5 Automatic hydraulic greasing device with exclusive Hammer electric control (optional, mounted on the excavator). Innovative electric system with automatic grease distribution, less liable to vibration breakages thanks to its tank of grease with a capacity of 4 kg or 8 kg, making thus the system cheaper than all the other devices with single cartridges.
- 6 Manual blows adjustment. For the FX series (FX950-FX15000), the regulation of the blows is carried out manually by a valve located on the side of the breaker.
- 7 Hydraulic system for blank firings. The hydraulic system creates a regenerative oil circuit that preserves the breaker from blank firings when the tool is not in contact with the rock.
- 8 The piston is built with a special geometry as to keep a constant energy of impact, and to reduce damage in any critical condition.
- 9 Anti-dust system for tunnels (optional). The anti-dust system consists of a dustproof seal addition mounted in the lower bush to avoid the entry of impurities into the circuit. FX series breakers are suitable for secondary demolition work, excavations in quarry, work in urban areas, tunnels, pipelines, and railway tunnels and, concerning the biggest models, demolitions in open pit mining.

# HYDRAULIC BREAKERS WITHOUT TIE RODS

for excavators from 0.5 to 12.5 ton



Find out more

## Break in a smart way

- More power / less vibrations and maintenance
- Long lasting nitrogen charge
- Protected tubes
- Silenced body
- Monobloc body without tie rods
- Double retainer pin
- Only two moving parts
- For all types of installations
- Visibility and versatility



**MOIL POINT**  
Suitable for concrete, medium-hard and not layered rocks.



**BLUNT TOOL**  
Suitable for reinforced concrete and very compact rocks.



**ASPHALT CUTTER**  
Suitable for cutting asphalt.

**SB55**



**PYRAMID TOOL**  
Suitable for reinforced concrete and very compact rocks.



**CHISEL TOOL**  
Suitable for medium-hard and layered rocks.



**PILE DRIVER**  
Suitable for planting wooden or concrete poles.



**WOOD CUTTER TOOL**  
Suitable for cutting all types of wood.

## SB SERIES

### Application Fields



Mining & Quarrying



Demolition & Renovation



Construction



Metallurgical Industry



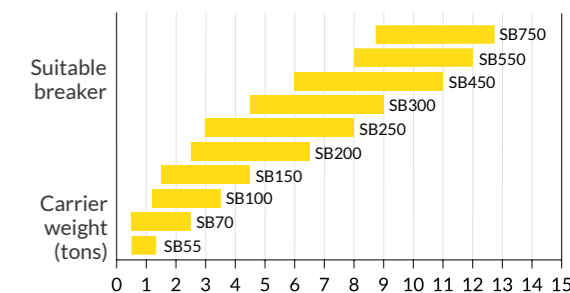
Recycling

### TECHNICAL DRAWINGS



Models	SB55	SB70	SB100	SB150	SB200	SB250	Models	SB300	NEW SB450	NEW SB550	
Carrier weight	t	0.5-1.4	0.5-1.6	1.2-2.5	1.5-3.8	2.5-5	Carrier weight	t	4.5-8.5	6-10	8-12.5
Weight	kg	60	70	100	135	190	Weight	kg	300	470	520
Body height (a)	mm	583	583	666	666	869	Body height (a)	mm	904	1135	1135
Tool height (b)	mm	200	228	255	255	275	Tool height (b)	mm	295	378	431
Tool diameter	mm	40	40	45	48	55	Tool diameter	mm	75	80	90
Required oil supply	l/min	15-20	18-23	20-30	22-40	25-55	Required oil supply	l/min	50-70	60-80	65-85
Oil hammer pressure	bar	110	110	110	110	130	Oil hammer pressure	bar	160	160	160
Blows per minute	/min	800-1700	800-1750	800-2300	800-2000	900-1900	Blows per minute	/min	600-1500	600-1300	600-1300
Energy per blow	j	250	280	400	580	750	Energy per blow	j	1200	1700	2300
Max. Back pressure	bar	30	30	30	30	30	Max. Back pressure	bar	30	30	30
Inner diam. in hose	inch	1/2"	1/2"	1/2"	1/2"	1/2"	Inner diam. in hose	inch	3/4"	3/4"	3/4"
Inner diam. out hose	inch	1/2"	1/2"	1/2"	1/2"	1/2"	Inner diam. out hose	inch	3/4"	3/4"	3/4"

### EXCAVATOR OPTIMAL RANGE



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# HAMMER HYDRAULIC BREAKERS

for excavators from 8 to 200 ton

## Efficiency becomes power

- Tubes with swivels fully protected
- Operating pressure adjustment
- Anti-dust and underwater work setup
- Automatic hydraulic greasing device
- Hydraulic system for blank firings
- Manual blow adjustment
- Anti-dust system for tunnels



Find out more



### MOIL POINT

Suitable for concrete, medium-hard and not layered rocks.



### PYRAMID TOOL

Suitable for reinforced concrete and very compact rocks.



### BLUNT TOOL

Suitable for reinforced concrete and very compact rocks.



### COBRA TOOL

Suitable for quarry works, such as primary demolition and reduction of stone blocks.



### CHISEL TOOL

Suitable for medium-hard and layered rocks.



### AUTOMATIC HYDRAULIC GREASING DEVICE

(Optional, mounted on the breaker)  
The Beka-Lube automatic lubrication system optimizes the lubrication procedure and reduces maintenance and downtimes.

## FX SERIES

### Application Fields



Mining & Quarrying



Demolition & Renovation



Construction



Metallurgical Industry



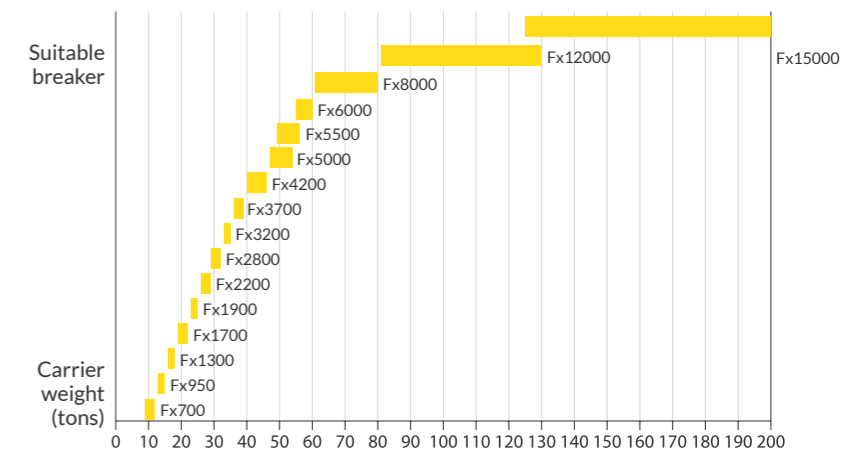
Recycling

### TECHNICAL DRAWING



Models		FX700	FX950	FX1300	FX1700	FX1900	FX2200	Models		FX2800
Carrier weight	t	8-14	10-17	13-19	18-24	22-27	23-31	Carrier weight	t	28-38
Weight	kg	700	950	1200	1650	1850	2200	Weight	kg	2900
Body height (a)	mm	1310	1390	1470	1670	1790	1840	Body height (a)	mm	2030
Tool height (b)	mm	430	550	560	620	725	720	Tool height (b)	mm	710
Tool diameter	mm	95	115	120	135	140	150	Tool diameter	mm	160
Required oil supply	l/min	70-100	90-120	110-140	130-160	140-180	165-190	Required oil supply	l/min	180-240
Oil hammer pressure	bar	160	165	170	180	180	180	Oil hammer pressure	bar	180
Blows per minute	/min	600-900	600-900	400-900	400-800	400-800	400-800	Blows per minute	/min	350-700
Energy per blow	j	2000	2600	3200	4200	4700	5400	Energy per blow	j	8500
Max. Back pressure	bar	25	25	25	25	25	25	Max. Back pressure	bar	25
Inner diam. in hose	inch	3/4"	1"	1"	1"	1"	1"	Inner diam. in hose	inch	1" 1/4
Inner diam. out hose	inch	3/4"	1"	1"	1"	1"	1"	Inner diam. out hose	inch	1" 1/4

### EXCAVATOR OPTIMAL RANGE



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# HAMMER HYDRAULIC BREAKERS

for excavators from 8 to 170 ton

## Efficiency becomes power

- Tubes with swivels fully protected
- Operating pressure adjustment
- Anti-dust and underwater work setup
- Automatic hydraulic greasing device
- Hydraulic system for blank firings
- Manual blow adjustment
- Anti-dust system for tunnels



# FX SERIES

### Application Fields



### TECHNICAL DRAWING



Models		FX3200	FX3700	FX4200	FX5000	FX5500	FX6000	Models		FX8000	FX12000
Carrier weight	t	30-40	35-50	36-55	40-55	40-65	45-75	Carrier weight	t	60-110	80-170
Weight	kg	3200	3700	4400	4800	5200	5800	Weight	kg	7800	11000
Body height (a)	mm	2030	2250	2250	2300	3000	3200	Body height (a)	mm	3700	4440
Tool height (b)	mm	710	790	790	790	700	700	Tool height (b)	mm	800	760
Tool diameter	mm	160	180	180	180	195	195	Tool diameter	mm	215	255
Required oil supply	l/min	200-260	250-300	270-320	270-320	290-350	300-380	Required oil supply	l/min	380-440	480-570
Oil hammer pressure	bar	180	180	190	190	190	190	Oil hammer pressure	bar	190	190
Blows per minute	/min	300-650	300-650	300-650	350-700	250-550	250-550	Blows per minute	/min	200-400	150-300
Energy per blow	j	9000	9500	12500	13500	16500	18500	Energy per blow	j	23000	28000
Max. Back pressure	bar	25	25	25	25	30	30	Max. Back pressure	bar	30	30
Inner diam. in hose	inch	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	Inner diam. in hose	inch	1" 1/4	1" 1/2
Inner diam. out hose	inch	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	Inner diam. out hose	inch	1" 1/4	1" 1/2



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