



# HYDRAULIC BREAKERS



WHERE **EXPERIENCE COUNTS**

# FURUKAWA ROCK DRILL



## TRADITION AND HIGH-TECH FROM ONE COUNTRY

Japan, country of old traditions, has proven its high technical performances in many different ways. Already many years ago Japanese electronic equipment contributed highly to the possibility to reach the moon and other planets. In almost every computer, telephone or any other kind of electronic equipment we can find some Japanese components. In the car industry Japanese engineers have achieved high performances in order to produce cars more efficient and economical. Car tests in different countries have often concluded that Japanese cars are the most reliable and with a minimum of maintenance cost. Also Furukawa is one of those traditional concerns, that could show continuous growth through their on going product improvement and development.

Everything started in 1875, when Furukawa opened their Kusakura Copper Mine. The mining job always required new and specific solutions to improve our production. For this reason Furukawa started in 1900 to produce their own mining equipment, which led to higher production levels of the mine. With this step Furukawa unintentionally created the base for a new, high technology concern. The better results with their custom made machinery soon created a demand for similar machines in other mines. To be able to fulfill these requirements, Furukawa started to separate their activities in different divisions.

In 1918 Furukawa Mining Co. Ltd was found and in 1920 Furukawa Electric Co. Ltd. Later in 1961 the start of Furukawa Rock Drill Co. Ltd was an answer to the demand to be able to sell worldwide, the machines, that initially were meant only for their own use.

In 1971 Furukawa established a new factory in Yoshii for the production of crawler drills and demolition equipment. The demand for those products was so large, that in 1976 a second production unit was established in Takasaki. Since then from these two factories more than 100.000 hydraulic breakers were delivered all over the world. In the meantime Furukawa Rock Drill division has built an international sales and service network, which secures an optimum after sales service for all equipment. Our slogan **WHERE EXPERIENCE COUNTS** we take as serious as other Japanese traditions and we hope you will approach us with your specific demands. We and our Distributor network are ready to help you.

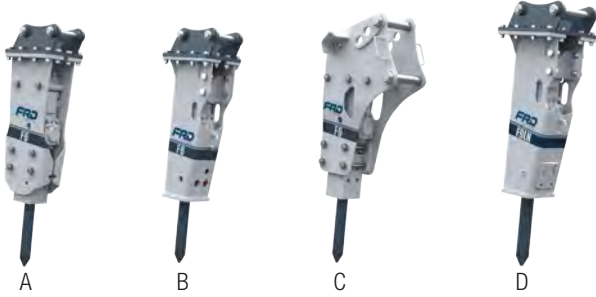


# FX-ALPHA SERIES



# F SERIES

The F6 and F9 breaker are specialized for the midi excavators and backhoe loaders. For each request, FRD provides the optimum breaker frame.



- A Standard frame for top bracket mounting (FT) F6
- B Low Noise for top bracket mounting (LN) F6
- C Special frame for backhoe loader mounting (BHL) F6
- D Low Noise for top bracket mounting (LN) F9

## HIGH POWER/WEIGHT RATIO

The use of high quality materials and highest quality production process results in a breaker with less weight and higher output/performance.

## MINIMUM MOVING PARTS

The fewer parts move, the fewer parts will wear. This reduces maintenance cost and downtime.

## ADJUSTABLE VALVE

The breaker can be adjusted to any specification of the carrying excavator and to each required optimal working condition.

## HIGH RELIABILITY

The use of the best quality materials and the highest quality standard in production securely creates a product that will work longer and is more efficient.

## LOW MAINTENANCE

High quality materials give longer lifetime to each part, which drastically reduce the total maintenance cost.

## LOWEST LIFETIME COST

Over long periods the advantages of less downtime and fewer parts to replace, results in a cost per year, which are the lowest in the market.



		F6	F9
Operating weight, <sup>1)</sup> FT, BHL	kg	365	
Operating weight, <sup>1)</sup> LN <sup>2)</sup>	kg	350	535
Height with rod, FT, BHL	mm	1450	
Height with rod, LN	mm	1400	1595
Operating pressure	min	Mpa	10
	max		16
Oil flow	min	l/min	50
	max		90
Impact rate 1/min	min	bpm	650
	max		1600
Impact energy	joules	884	1305
Rod diameter Ø	mm	75	90
Effective length Rod	mm	450	500
Weight Rod	kg	21,5	35,5
Hose inner dia Ø HD, ND	mm	12	19
Noise level guaranteed	FT / BHL	dB(A)	129
	LN	dB(A)	125
Base machine weight	t	3,5 - 10	6 - 12

<sup>1)</sup> Operating weight with top bracket. <sup>2)</sup> LN Silent Version = Sound and vibration damping

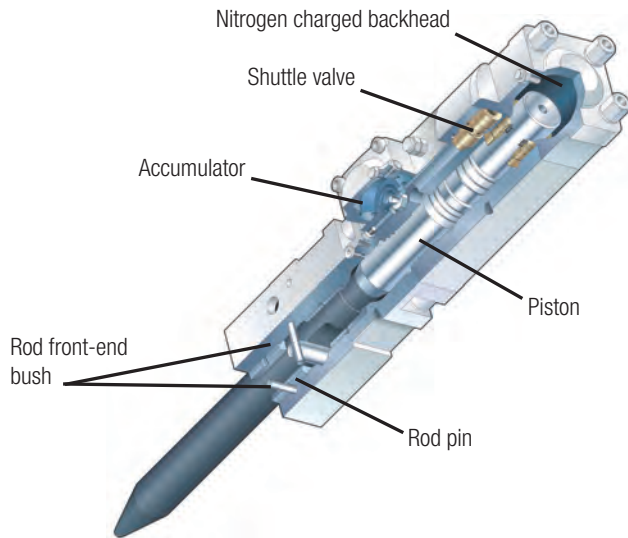
Specifications subject to change without notice

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# F SERIES

## Features and Benefits:

- Nitrogen charged back head for superior energy transfer
- Large diameter piston for increase in impact energy
- CD designed threads on through-bolt provide even load distribution and greater surface contact between the nut and bolt
- New front head design includes replaceable thrust bushing for added service life



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# TYPE OF ROD

FRD is a recognized manufacturer of hydraulic breakers thanks to her experience. This experience is also used in the manufacture of rods. The FRD rod are based on the in-house experience in the heat treatment of steel, the design of the breaker and the demands placed upon our customers made.



Type of rods	Shape	Major applications	Material	Occurrence	Specification	Rod
Flat rod		Secondary breaking in quarries, boulder breaking, concrete breaking, and slab breaking	Asphalt	Parking, Roads	soft structures	Wedge point / Wide rod
Moil point		Multi purpose applications, including breaking of extra hard rock, hard rock, hard stone, and reinforced concrete, as well as excavation of bedrock	Concrete	Thin floors, walls	Reinforced not reinforced	Wedge point Moil point
Wedge point		Concrete breaking, excavation of bedrock, operations on the face of slope, excavation of ditches, etc.		Thick floors, walls	Reinforced not reinforced	Wedge point Moil point
Asphalt spading Wide rod		<u>Asphalt spading:</u> Cutting of asphalt or soft material <u>Wide rod:</u> Breaking of asphalt in road building, knocking out of ladles, demolition of concrete or reinforced concrete		Foundations	Reinforced not reinforced	Wedge point Moil point
Core rod (Ball Point Rod)		Breaking metal ores, as well as quartzite and other highly abrasive objects		Recycling		Flat rod
			Sedimentary rock (limestone, sandstone, graywacke, calcareous sediment)	Trenching, foundation work, primary quarry breaking	heavily fissured lightly fissured monolithic	Wedge point Moil point Moil point
				Breaking oversizes		Wedge point
			Crystalline rock (magma, greenstone, gabbro, granite etc.)	Trenching, foundation work, primary quarry breaking	heavily fissured lightly fissured monolithic	Wedge point Flat rod Flat rod
				Breaking oversizes		Flat rod

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# FRD SENCI LUBE & OPTIONS

## Sencio Lube

The FRD Central lubrication concept eliminates the regular manual greasing intervals during operation and provides an optimum level of lubrication. This FRD designed automatic lubrication system is directly breaker frame mounted without external hose guiding and provides continuous adjustable greasing of the working tool guiding area. The filling level of the transparent screw cartridge can be easily monitored from the excavator cabin and if required exchanged within minutes.

## Sencio-Rod grease is characterized by:

- High load carrying capacity
- Good corrosion protection
- Good water resistance
- Good separation efficiency
- Wear reduction
- Oxidation resistance



## Sencio Blue

**Rod grease** is a lithium-complex soap grease based on mineral oil, molybdenum disulphide (MoS<sub>2</sub>). It has good separation efficiency and reduces wear at high surface loads and temperatures up to 1100 °C

## Sencio White

**BIO-Rod grease** based on selected, rapidly biodegradable, synthetic esters, which give a very stable lithium saponified grease. Sencio-BIO-Rod grease has been awarded the European Ecolabel, registration no. DE/027/089.



## ARMOUR PLATES

Extra protection against wear in trenching and quarry works



## SWIVELS

Extending the life of the hoses



## TOOLBOX

All breakers have a toolbox with the necessary tools included.

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# DEALER NETWORK

## LOCAL SERVICE AND SUPPORT

FRD seeks firstly to supply a product of undoubted integrity. Then back this up with a support network of dedicated Distributors to ensure whatever support, wherever and whenever needed. The FRD-Distributor combination has been made unbeatable.

FRD Distributors have been selected for their professional competence, their market coverage, their dedication to quality and their willingness to work. They receive intense training on all machines and systems and every support that a committed manufacturer can give them. They actively exchange experience between each other to ensure their clients get the latest lessons from the market. They are a skilled and fast team of professionals.

## VALUE FOR MONEY

Buying FRD products is a smart investment. Top quality for a reasonable price, with long lifetime, with low maintenance and less break-down-time. In the long term this choice makes financially better results.

Next steps? FRD Europe and its Distributors have a vast resource of information beyond what can be mentioned here. Do not hesitate to get in touch for more detail and an unbeatable quote.



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**Authorized distributor:**



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