FURUKAWA Power & Passion 150

FRD FURUKAWA

PRODUCT RANGE

WHERE EXPERIENCE COUNTS

FURUKAWA ROCK DRILL

FURUKAWA Power & Passion 150

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

FX-ALPHA SERIES

Behind their simple exterior FRD breakers hide many years of experience, careful learning and intelligent design. There are hundreds of reasons to let FRD products do your work, here are just some of them.

A B C D

A Standard frame with pin and bush connection
B Standard frame for top bracket mounting (FT)
C Silent for top bracket mounting (S)
D Extreme Silent for top bracket mounting (XS)

HIGH POWER/WEIGHT RATIO

The use of high quality materials and highest quality production process results in a Breaker body with less weight, with 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.

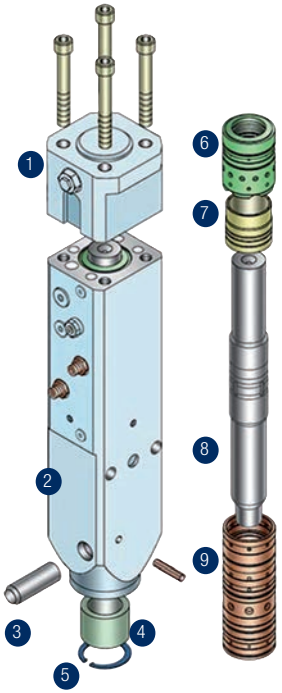
			FX15α	FX25α	FX35α	FX45α	FX55α
Operating weight[1)]	A, B	kg	69	101	146	187	245
Operating weight[1)]	C, D	kg		112	157	208	280
Height with rod	A	mm	924	1030	1172	1285	1388
Height with rod	B	mm	816	939	1060	1167	1264
Height with rod	C	mm		961	1062	1173	1276
Height with rod	D	mm		1015	1116	1227	1330
Operating pressure	min	Mpa	10	10	12	12	12
	max		14	14	16	16	16
Oil flow	min	l/min	10	18	24	30	40
	max		28	35	52	60	85
Impact rate 1/min	min	bpm	600	600	600	600	500
	max		1500	1500	1300	1100	1100
Rod diameter Ø		mm	36	45	52	60	68
Effective length Rod		mm	234	293	322	355	378
Weight Rod		kg	2,6	5	8	11	15
Hose inner dia Ø HD, ND		mm	9	12	12	12	12
Noise level guaranteed	P&B, FT	dB(A)	116	118	124	126	126
	S	dB(A)		112	119	120	119
	XS	dB(A)		110	117	117	116
Base machine weight		t	0,5 - 1,5	1,0 - 2,5	1,5 - 4,0	2,5 - 5,5	4,0 - 7,0

[1)] Operating weight with top bracket. [2)] S and XS Silent Version = Sound and vibration damping

Specifications subject to change without notice

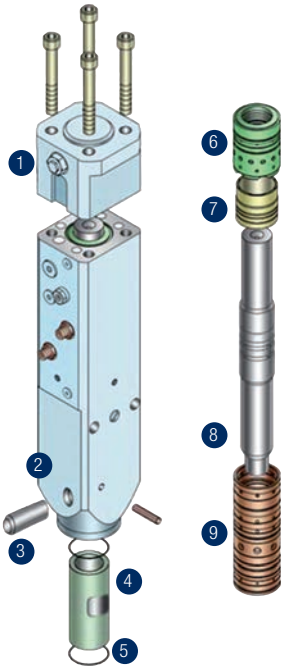
WHERE **EXPERIENCE COUNTS**

FX-ALPHA SERIES



FX-alpha 15/25/35

1.Back Head
2.Mono-Block Cylinder
3.Rod Pin
4.Front Bushing
5.Snap Ring
6.Seal Retainer
7.Valve
8.Piston
9.Cylinder Liner



FX-alpha 45/55

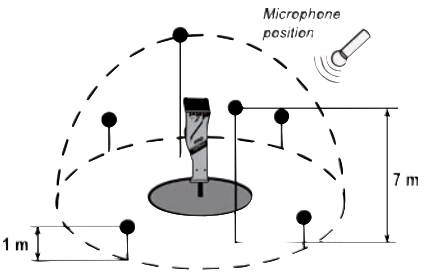
1.Back Head
2.Mono-Block Cylinder
3.Oval rod Pin
4.Front Bushing
5.Top & Bottom O-Rings
6.Seal Retainer
7.Valve
8.Piston
9.Cylinder Liner

FX-ALPHA SERIES

SOUND POWER & SOUND PRESSURE

These are two distinct and commonly confused characteristics of sound. Sound power is the acoustical energy emitted by the sound source, and is an absolute value. It is not affected by the environment. Sound pressure levels quantify in decibels the intensity of given sound sources. Sound pressure levels vary substantially with distance from the source, and also diminish as a result of intervening obstacles and barriers, air absorption, wind and other factors. Sound pressure is what our ears hear and what sound pressure level meters (SPL meters) measure.

Sound level	FX15α	FX25α	FX35α	FX45α	FX55α
PIN & BUSH (PB)	L_{WA} 116 dB	L_{WA} 118 dB	L_{WA} 124 dB	L_{WA} 126 dB	L_{WA} 126 dB
FLATTOP (FT)	L_{WA} 116 dB	L_{WA} 118 dB	L_{WA} 124 dB	L_{WA} 126 dB	L_{WA} 126 dB
SILENCE (S)	-	L_{WA} 112 dB	L_{WA} 119 dB	L_{WA} 120 dB	L_{WA} 119 dB
XTRA SILENCE (XS)	-	L_{WA} 110 dB	L_{WA} 117 dB	L_{WA} 117 dB	L_{WA} 116 dB

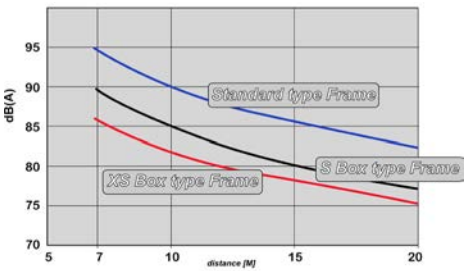


Half sphere measurement radius r = 10 m

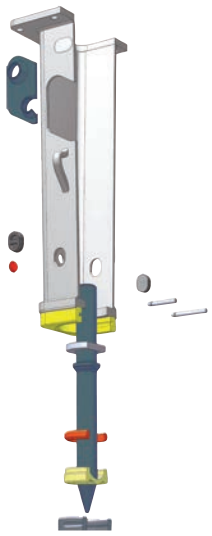
$$L_{wA,g} = L_{p'} - k_1 - k_2 + 10*\log(s/s_0) + K$$

Garantied Sound Power level
Measured Sound Pressure
Correction Excavater Noise
Correction Sound reflextion surroundings
Conversion of measure distance
Surcharge Measure assurance

Sound level FX45 [dB (A)] (SPL)



*FX45 noise level measurements at 15 meter distance
Standard type frame: 86.5 dB (A)
XS Box type frame : 78.4 dB (A)



- XS Housing
- Paented rod system
- New execution system
- depending on the version up to 7 dBA quieter than the previous model

F 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 B C D

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 body 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, [1] FT, BHL		kg	365	
Operating weight, [1] LN [2]		kg	350	535
Height with rod, FT, BHL		mm	1450	
Height with rod, LN		mm	1400	1595
Operating pressure	min	Mpa	10	12
	max		16	17
Oil flow	min	l/min	50	65
	max		90	110
Impact rate 1/min	min	bpm	650	400
	max		1600	1400
Impact energy	max	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	125
Base machine weight		t	3,5 - 10	6 - 12

[1] Operating weight with top bracket. [2] LN Silent Version = Sound and vibration damping

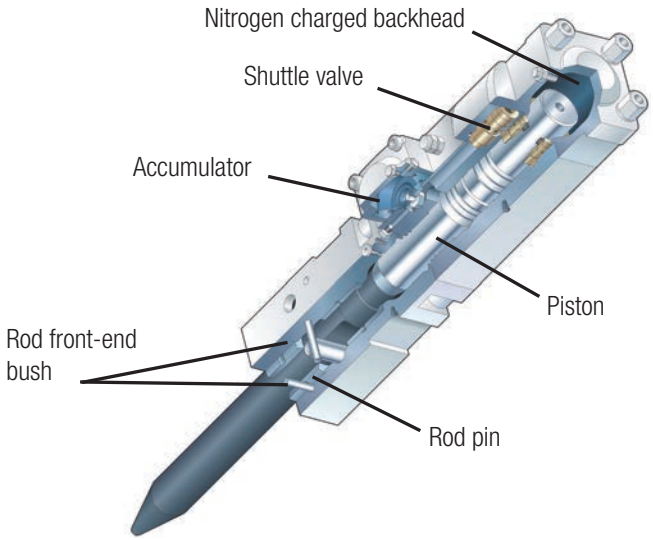
Specifications subject to change without notice

WHERE **EXPERIENCE COUNTS**

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



WHERE **EXPERIENCE COUNTS**

FXJ SERIES

TECHNOLOGY THAT MAKES A DIFFERENCE

GREAT BREAKING POWER
The u se of high quality materials and the highest quality production process results in a breaker body with less weight and higher output/performance. The impact energy is higher than ever.

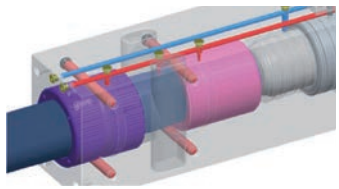
OPERATOR FRIENDLY
With the new slim design the FXJ has a better accessibility in demolition and quarry. It provides high efficiency in trench work. In addition to its slim design, there is a newly designed top damper which reduces the noise and vibration.

IMPROVED DURABILITY
The use of the best quality materials and the highest quality standard in production creates a product that will work longer and is more efficient. The new floating rod seal, minimizes dust intake and result in an extended life time.

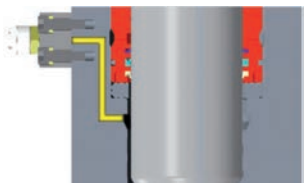
EASY SERVICE
To ease the service FRD developed the mono-block cylinder which reduced the parts. With this unique construction, there are no through bolts needed. With the new rod pin design and other improvements of the parts, the lifetime is longer and are easy to replace.

LOWEST LIFETIME COST
High quality materials give a longer lifetime to each part, which drastically reduces the total maintenance 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.

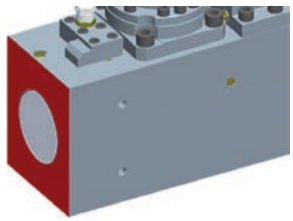
FXJ125 FXJ175 FXJ225 FXJ275 FXJ375 FXJ475



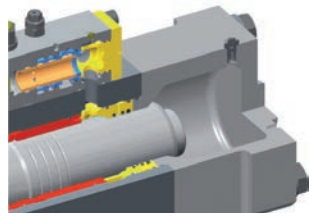
GREASING SYSTEM
Advanced greasing system that evenly distributes grease to front holder, front bushing and rod pins



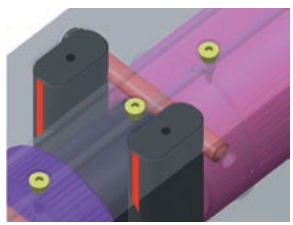
DUST CONTROL SYSTEM
2-Point Patent dust intake prevention system.
1. Clean air intake system
2. Replaceable Dust Wall



SLIM BODY DESIGN
The rectangular design allows better pressure distribution



VALVE DESIGN
Low resistance reduces hydraulic fluid temperatures which increases the efficiency



SMART DEVELOPED ROD PIN
Load is decreased by the long rod pin, which enlarge the supporting area

REDESIGNED PISTON
Increased contact area to the impact surface of the rod

WHERE **EXPERIENCE COUNTS**

FXJ SERIES

FRD's line of hydraulic breakers for excavators represents the latest in design technology. With multiple patented enhancements, the FXJ series improves day-to-day performance, offering less maintenence and downtime, smoother operation, superior strength and the highest level of reliabillity. A wider hydraulic flow range allows for use on a broad range of carriers reducing inventory while increasing utilization.

			FXJ125	FXJ175	FXJ225	FXJ275	FXJ375	FXJ475
Operating weight, [1] FXJ		kg	850	1000	1600	1800	2600	3200
Height with rod,		mm	2005	2043	2411	2468	2715	2892
Operating pressure	min	MPa	16	16	16	16	16	16
	max		18	18	18	18	18	18
Oil flow	min	l/min	70	100	125	145	170	200
	max		120	160	190	220	260	300
Impact rate	min	bpm	400	450	350	350	300	250
	max		1000	900	850	620	550	450
Impact energy (Joules)			2320	3610	4580	5120	7310	9620
Rod diameter Ø		mm	110	120	135	140	155	170
Rod effective length		mm	640	620	650	680	715	720
Rod weight		kg	69	81	120	143	167	229
Hose inner dia Ø Press/Return		mm	19	19	25	25	25	32
Sound power level		dB	125	118	120	121	121	121
Guaranteed sound power level		dB	129	120	121	122	123	124
Base machine weight		ton	9 - 16	12 - 21	16 - 24	18 - 30	25 - 42	33 - 55

[1] Operating weight with top bracket.

Specifications subject to change without notice

WHERE **EXPERIENCE COUNTS**

FXJ SERIES

As usual FRD has designed the FXJ series to offer the benefits of minimum maintenance needs and a maximum of user convenience and output assurance. Large noise reductions of some 6 dbA has been achieved against past models. Reduced vibration effects likewise make the models more friendly for users and the immediate user environment. Modern design and increased power complements a carefully thought through physical structure.

FXJ770

FXJ1070

ADVANTAGES FXJ SERIES

- High reliability
- High power and performance (adjustable blows/blow energy)
- Can work in any type of application/material
- Low maintenance design
- Minimized moving parts
- Adjustable valve for maximum performance on each type/size of excavator
- Auto grease connection
- Compressed air connection for anti dust or working underwater
- FXJ frame for low noise and vibration
- Dust suction prevent function

			FXJ770	FXJ1070
Operating weight, [1]		kg	4800	6550
Height with rod		mm	3390	3800
Operating pressure	min	Mpa	16	16
	max		18	18
Oil flow	min	l/min	250	280
	max		340	420
Impact rate 1/min	min	bpm	250	200
	max		420	375
Impact energy		joules	11850	13690
Rod diameter Ø		mm	190	210
Effective length Rod		mm	860	990
Weight Rod		kg	315	480
Hose inner dia Ø HD, ND		mm	32	32
Noise level guaranteed	XP	dB(A)	124	128
Base machine weight		t	44-75	65-100

[1] Operating weight with top bracket.

Specifications subject to change without notice

WHERE EXPERIENCE COUNTS

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 beased 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
Flat rod		Secondary breaking in quarries, boulder breaking, concrete breaking, and slab breaking
Moil point		Multi purpose applications, including breaking of extra hard rock, hard rock, hard stone, and reinforced concrete, as well as excavation of bedrock
Wedge point		Concrete breaking, excavation of bedrock, operations on the face of slope, excavation of ditches, etc.
Asphalt spading \ Wide rod		Asphalt spading: Cutting of asphalt or soft material Wide rod: Breaking of asphalt in road building, knocking out of ladles, demolition of concrete or reinforced concrete
Core rod (Ball Point Rod)		Breaking metal ores, as well as quartzite and other highly abrasive objects

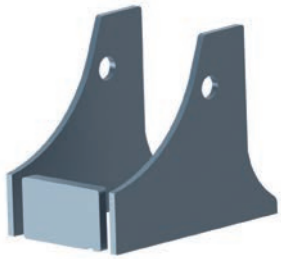
Material	Occurrence	Specification	Rod
Asphalt	Parking, Roads	soft structures	Wedge point / Wide rod
Concrete	Thin floors, walls	Reinforced	Wedge point
		not reinforced	Moil point
	Thick floors, walls	Reinforced	Wedge point
		not reinforced	Moil point
	Foundations	Reinforced	Wedge point
		not reinforced	Moil point
	Recycling		Flat rod
Sedimentary rock (limestone, sandstone, graywacke, calcareous sediment)	Trenching, foundation work, primary quarry breaking	heavily fissured	Wedge point
		lightly fissured	Moil point
		monolithic	Moil point
	Breaking oversizes		Wedge point
Crystalline rock (magma, greenstone, gabbro, granite etc.)	Trenching , foundation work, primary quarry breaking	heavily fissured	Wedge point
		lightly fissured	Flat rod
		monolithic	Flat rod
	Breaking oversizes		Flat rod

WHERE **EXPERIENCE COUNTS**

FRD SENCI LUBE & OPTIONS

Senci 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.



ARMOUR PLATES

Extra protection against wear in trenching and quarry works

SWIVELS

Extending the life of the hoses

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 (MoS2). 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.

TOOLBOX

All breakers have a toolbox with the necessary tools included.

„If a drop of oil makes 25 liters of water unusable, what will happen with grease in the ground?“

WHERE **EXPERIENCE COUNTS**

HYDRAULIC CRUSHERS

VXB - VXS SERIES

FRD PRIMARY CUTTER/CRUSHER VXB - VXS SERIES

The VXB and VXS models are designed for excavators from 1,5 to 30 ton operating weight. Compact design, large jaw opening and high crushing power are just three outstanding features of this serie. The VXB crushers have an integrated booster system, which allows smaller excavators, with limited operating pressure, to achieve extremely high crushing force.

With the VXS Crushers FRD is offering a machine with interchangeable blades, synchronic jaw-moving systen and a optimal power/weight ratio. All models are fitted with the well known FRD hydraulic rotation system for precise positioning. As in the enitre FRD crusher range, all models are made of Hardox.

VXB SERIES

VXS SERIES

		VXS2ER	VXB6ER	VXB7ER	VXB10ER	VXS20ER	VXS26ER	VXS30ER
Length	mm	892	1127	1290	1510	1896	2165	2345
Cutter length	mm	85	85	85	150	150	200	200
Jaw opening	mm	276	350	485	550	752	836	980
Width	mm	665	745	910	1075	1258	1428	1535
Oil flow rotation	l/min	8/15	5/8	5/8	5/8	5/8	10/15	10/15
Operating pressure rotation	bar	180/220	120	120	120	120	120	120
Oil flow opening/closing	l/min	20/25	50	70	90	160	180	200
Operating pressure opening/closing	bar	220	200	200	200	350	350	350
Crushing force tip	kN	200	300	350	500	550	590	700
Round material ø	mm	15	15	15	15	20	25	30
Weight	kg	185	300	440	740	1120	1727	2226
Excavator size	t	1,5-3	2-5	4-8	7-13	13-20	18-25	22-30

Specifications subject to change without notice.

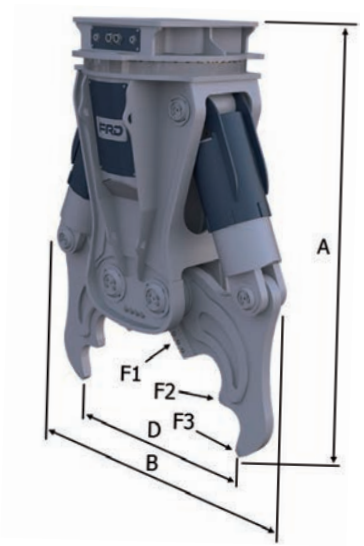
WHERE **EXPERIENCE COUNTS**

VX SERIES

FRD PRIMARY - VX SERIE -

The FRD Crusher is a primary demolition tool for cutting concrete structures and for cutting through reinforcing steel. The design of the double cylinder allows a large jaw opening for this weight class. In conjunction with the low-wear Hardox crushing jaws the maximum power is combined with a minimum of wear.

- Extremely stable housing with low weight
- Rod protection
- Feed opening with optimized shape for easy collecting and loading of reinforcing steel
- Optimal tooth geometry ensures that large concrete parts do not slip away from the crushed material.



		VX35ER	VX50ER	VX80ER	VX100ER	VX130ER
A	mm	2250	2319	2750	3085	3620
B	mm	1470	1795	2100	2640	2680
D	mm	1130	1203	1550	1850	2100
F1	kN	3200	3300	5300	7400	8100
F2	kN	1900	2000	2300	3200	3600
F3	kN	1250	1300	1350	1900	2350
Round material	mm	35	40	45	55	70
Cutter length	mm	252	300	310	310	310
Oil flow (rotation)	l/min	50	50-60	40-50	100	100
Operating pressure (rotation)	bar	190	190	120	160	160
Oil flow	l/min	250 - 300	300 - 350	350 - 500	450 - 700	600 - 1000
Operating pressure	bar	350	350	350	350	350
Operating weight	kg	2700	3400	4850	7700	11000
Base machine weight	t	27 - 35	33 - 50	45 - 70	70 - 100	80 - 150

Specifications subject to change without notice.

WHERE **EXPERIENCE COUNTS**

VS SERIES

FRD SECONDARY CRUSHER - VS SERIE -

Because of the angled shape the FRD crusher is ideal for secondary demolition and crushing reinforced concrete elements. The wide shaped jaw makes it easier to grab demolition material that has fallen on the ground. A clean separation of reinforcement steel and concrete as well as subsequent crushing of the concrete elements for crushing plants or just for filling appropriate particle size is guaranteed. With the steel cutter blade it is easy to cut the reinforcement bars to the desired length.

DESIGN FOR TASK

- Extremely stable housing with low weight
- Speed valve for quick and efficient work
- Feed opening with optimized shape for easy collecting and loading of reinforcing steel
- Optimal tooth geometry ensures that large concrete parts do not slip away from the crushed material.
- Replaceable wear parts
- Replaceable tooth plates and cutting blades

		VS9E	VS15E	VS22E	VS30E	VS40E	VS50E
A	mm	1935	2290	2410	2705	2810	3250
B	mm	710	840	905	1025	1200	1300
C	mm	850	980	1060	1200	1260	1380
D	mm	404	454	490	490	530	730
E	mm	260	290	314	314	354	470
F1	kN	1750	2000	2470	2950	3550	4500
F2	kN	1000	1300	1500	1600	1750	2400
F3	kN	650	800	900	1100	1200	1500
Round material	mm	30	40	40	40	45	45
Cutter length	mm	200	300	300	300	300	300
Oil flow	l/min	140 - 200	200 - 250	200 - 300	300 - 400	350 - 450	450-600
Operating pressure	bar	350	350	350	350	350	350
Operating weight	kg	1300	1800	2150	2580	3360	4750
Base machine weight	t	11 - 16	16 - 22	20 - 28	24 - 35	35 - 50	45 - 70

Specifications subject to change without notice.

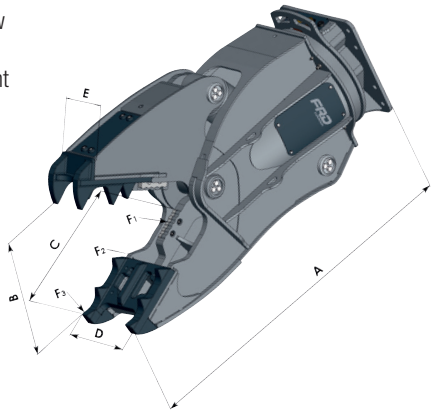
WHERE **EXPERIENCE COUNTS**

VM SERIES

FRD MULTI-PURPOSE - VM SERIE -

These are the tools for cutting concrete structures, steel profile cutting and separating reinforcing steel. The models are equipped with hydraulic rotation and can therefore be used in primary as well as in secondary demolition.

- Extremely stable housing with low weight
- Speed valve for quick and efficient work
- Feed opening with optimized shape for easy collecting and loading of reinforcing steel
- Optimal tooth geometry ensures that large concrete parts do not slip away from the crushed material
- Replaceable wear parts



		VM10ER	VM13ER	VM16ER	VM19ER	VM25ER	VM32ER	VM42ER	VM60ER	VM80ER
A	mm	1525	1880	2035	2225	2575	2734	3080	3415	3780
B	mm	550	635	680	786	930	1010	1165	1285	1520
C	mm	510	670	720	840	940	1040	1140	1280	1380
D	mm	300	404	404	454	454	490	490	540	635
E	mm	200	260	260	290	290	314	314	350	540
F1	kN	1350	1800	1950	2340	2600	3500	4200	5000	5900
F2	kN	630	1050	910	1000	1380	2750	3410	4100	4800
F3	kN	400	550	650	800	1050	1200	1460	1750	2050
Round Matterial	mm	20	30	30	35	40	40	45	45	50
Cutter length	mm	85	150	200	200	200	200	200	300	350
Oil flow (rotation)	l/min	8	30	30	30	30	50	50	50	100
Operating pressure (rotation)	bar	120	120	120	120	120	120	120	120	120
Oil flow	l/min	70 - 110	110 - 160	140 - 200	180 - 230	250 - 300	300 - 350	350 - 400	400 - 500	500 - 700
Operating pressure	bar	350	350	350	350	350	350	350	350	350
Operating weight	kg	630	1290	1630	1970	2560	3330	4400	5800	8700
Base machine weight	t	6 - 13	13 - 16	15 - 22	18 - 26	25 - 33	32 - 40	38 - 50	50 - 90	70 - 110

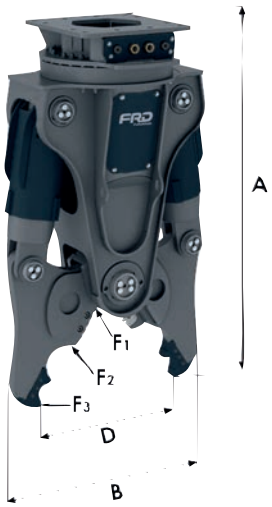
Specifications subject to change without notice.

WHERE **EXPERIENCE COUNTS**

V SERIES

FRD MULTIPLE USE CUTTER/CRUSHER - V SYSTEMS -

The FRD Multiple use cutter/crusher is the primary tool for every job. The design of the double cylinder allows a large jaw opening for this weight class. In conjunction with the low-wear Hardox crushing jaws the maximum power is combined with a minimum of wear. The base can be connected with different kind of jaws which depends on the work requirement. Thanks to the quick and easy interchangeability of the jaws it is ideal to use on construction sites where you might use more than one attachment for the demolition.



		V4-P	V6-P	V11-P	V17-P	V22-P	V26-P	V34-P	V44-P	V50-P
A	mm	1174	1385	1594	1887	2075	2260	2521	2716	2902
B	mm	770	755	910	1110	1200	1500	1700	1740	2020
D	mm	374	545	670	754	862	1130	1248	1308	1547
F1	kN	620	1000	1750	2000	2500	3350	3600	3900	4200
F2	kN	320	750	1050	1250	1500	2050	2180	2450	2650
F3	kN	250	500	700	800	1000	1300	1400	1550	1700
Cutter length	mm	84	150	150	150	200	200	300	300	300
Round material	mm	15	20	25	30	35	40	45	50	50
Oil flow (rotation)	l/min	8	8	8	30	30	30	50	50	50
Operating pressure (rotation)	bar	120	120	120	120	120	120	120	120	120
Oil flow	l/min	30-50	70-110	90-140	150-200	170-210	250-300	300-350	350-450	400-500
Operating pressure	bar	220	220-350	350	350	350	350	350	350	350
Operating weight	kg	370	645	1025	1505	1996	2548	3316	4718	5517
Base machine weight	t	3 - 6	5 - 11	10 - 15	15 - 22	21 - 28	25 - 35	33 - 50	44 - 60	50 - 70

Specifications subject to change without notice.

V SERIES JAWS

Jaw set S

- Secondary Jaw

Jaw set S		V4 S	V6 S	V11 S	V17 S	V22 S	V26 S	V34 S	V44 S	V50 S
D (Opening width)	mm		437	544	604	664	911	1042	1064	1123
Cutter length	mm		84	84	150	150	150	150	200	200
Round material	mm		20	25	30	35	40	45	50	50
F3	kN		540	740	880	1110	1400	1450	1650	2030
Operating weight	kg		657	1057	1593	2071	2693	3553	5068	5917

Jaw set M

- Combi cutter/ crusher Jaw

Jaw set M		V4 M	V6 M	V11 M	V17 M	V22 M	V26 M	V34 M	V44 M	V50 M
D (Opening width)	mm		530	640	750	860	1100	1230	1300	1380
Round material	mm		20	25	30	35	40	45	50	50
IPE-Profile	mm		100	110	150	250	300	330	400	550
H-Profile	mm		50	70	120	180	220	240	260	280
F3	kN		500	700	810	1000	1300	1400	1550	1700
Operating weight	kg		654	1059	1590	2059	2606	3465	5160	6007

Jaw set C

- Steel Cutter Jaw

Jaw set C		V4 C	V6 C	V11 C	V17 C	V22 C	V26 C	V34 C	V44 C	V50 C
D (Opening width)	mm	170	215	300	340	400	550	580	630	730
Round material	mm	30	30	35	40	50	60	65	70	80
IPE-Profile	mm		120	130	180	250	320	360	450	600
H-Profile	mm		70	100	140	200	240	260	300	320
F3	kN	290	620	850	950	1150	1500	1650	1800	2100
Operating weight	kg	375	642	1026	1549	2000	2526	3350	4864	5804

Jaw set T

- Tank Jaw

Jaw set T		V4 T	V6 T	V11 T	V17 T	V22 T	V26 T	V34 T	V44 T	V50 T
D (Opening width)	mm				240	275	340	360	410	450
Thickness	mm				10	15	20	25	30	35
F3	kN				950	1200	1600	1800	2050	2300
Operating weight	kg				1562	1905	2418	3011	4788	5222

Jaw set W

- Wood-Jaw

Jaw set W		V4 W	V6 W	V11 W	V17 W	V22 W	V26 W	V34 W	V44 W	V50 W
Opening width	mm		476	562	708	754				
Jaw depth	mm		436	436	641	641				
Round material	mm		450	550	700	750				
F3	kN		500	700	800	1000				
Operating weight	kg		661	1014	1598	2013				

Specifications subject to change without notice.

VMX SERIES

FRD MULTIPLE USE CUTTER/CRUSHER - VMX SERIES -

The VMX is a multi-purpose crusher suitable for 7t up to 50t excavators and can be used for primary, secondary and selected demolition thanks to the quick jaw-change system. The VMX is the right tool for any application. Crushing has never been so easy thanks to the possibilities of the VMX.

- International patented
- Changing jaws in less than 5 minutes
- 4 Interchangeable type of jaws for any kind of job
- Complete structure in Hardox 400

Base body		VMX10ER	VMX13ER	VMX17ER	VMX25ER	VMX30ER	VMX35ER
Body weight	kg	485	655	905	1224	1555	2090
Oil flow (rotation)	l/min	5 - 8	20 - 30	20 - 30	20 - 30	20 - 30	40 -50
Working pressure (rotation)	bar	120	120	120	120	120	120
Oil flow	l/min	70 - 90	90 - 140	110 - 160	170 - 210	200 - 250	300 - 400
Working pressure	bar	230 - 350	230 - 350	350	350	350	350
Excavator weight	t	7 - 13	10 - 1	13 - 21	18 - 27	26 - 38	35 - 50

Specifications subject to change without notice.

VMX SERIES

P Jaw		10	13	17	25	30	35
Total length	mm	1595	1785	1994	2074	2356	2555
Jaw opening	mm	520	610	717	780	865	957
Jaw depth	mm	500	580	700	760	810	910
Width upper jaw	mm	50	60	70	70	80	90
Width lower jaw	mm	190	240	240	240	270	300
Crushing force jaw	kN	450	530	650	800	1050	1200
Round Material	mm	20	25	30	35	40	50
Flat material	mm						
IPE-Profil	mm						
H-Profil	mm						
Cutter length	mm	200	200	200	200	200	200
Weight Jaw	kg	225	475	599	842	1095	1525
Operating weight	kg	710	1130	1504	2066	2650	3615

C Jaw		10	13	17	25	30	35
Total length	mm	1475	1610	1826	1853	2134	2350
Jaw opening	mm	265	335	392	392	490	555
Jaw depth	mm	335	340	493	493	600	560
Width upper jaw	mm	90	90	105	105	120	120
Width lower jaw	mm	260	260	280	300	380	415
Crushing force jaw	kN	650	700	900	1150	1400	1600
Round Material	mm	30	35	40	50	60	70
Flat material	mm	6	8	10	12	15	20
IPE-Profil	mm	120	140	180	270	330	360
H-Profil	mm			140	200	240	260
Cutter length	mm						
Weight Jaw	kg	245	430	597	803	1085	1520
Operating weight	kg	730	1085	1502	2027	2640	3610

Specifications subject to change without notice.

VMX SERIES

M Jaw		10	13	17	25	30	35
Total length	mm	1595	1785	1994	2070	2460	2555
Jaw opening	mm	530	610	717	780	861	957
Jaw depth	mm	480	580	700	760	810	910
Width upper jaw	mm	60	60	70	70	90	110
Width lower jaw	mm	230	230	260	260	340	370
Crushing force jaw	kN	450	530	650	800	1050	1200
Round Material	mm	25	30	30	35	40	50
Flat material	mm						
IPE-Profil	mm	100	120	180	240	270	330
H-Profil	mm			120	180	200	240
Cutter length	mm	280	320	340	340	430	430
Weight Jaw	kg	282	505	665	889	1217	1700
Operating weight	kg	767	1160	1570	2113	2772	3770

S Jaw		10	13	17	25	30	35
Total length	mm	1620	1780	1995	2088	2378	2585
Jaw opening	mm	535	630	720	780	890	980
Jaw depth	mm	525	630	730	780	880	930
Width upper jaw	mm	170	190	260	260	300	340
Width lower jaw	mm	290	320	380	380	420	470
Crushing force jaw	kN	450	530	650	800	1050	1200
Round Material	mm	20	25	30	35	40	50
Flat material	mm						
IPE-Profil	mm						
H-Profil	mm						
Cutter length	mm	85	150	150	200	200	200
Weight Jaw	kg	281	485	645	887	1190	1670
Operating weight	kg	766	1140	1550	2111	2745	3760

Specifications subject to change without notice.

VMX SERIES

SW Jaw		10	13	17	25	30	35
Total length	mm	1575	1730	1954	2063	2365	2590
Jaw opening	mm	350	425	620	755	843	935
Jaw depth	mm	430	510	630	677	795	870
Width upper jaw	mm	195	205	260	262	292	320
Width lower jaw	mm	300	330	350	390	440	490
Crushing force jaw	kN	600	650	750	850	1100	1200
Round Material	mm	25	25	30	35	40	50
Flat material	mm						
IPE-Profil	mm						
H-Profil	mm						
Cutter length	mm						
Weight Jaw	kg	287	495	696	956	1307	1820
Operating weight	kg	772	1135	1601	2180	2862	3910

Specifications subject to change without notice.

WHERE **EXPERIENCE COUNTS**

VR-ER SERIES

SCRAP SHEAR - VR-ER SERIE -

FRD scrap shears are used for demolition of complete steel constructions as well as for reducing on the ground in foundries, garbage dumps and waste recycling. These Hardox 400 machines are manufactured in FRD quality, which means that safety and reliability is promised in even in the toughest applications.

- Extremely stable housing with low weight
- Speed valve for quick and efficient work
- Blade with trapezoidal profile improves the cutting line
- Innovative adjuster on the jaw
- Replaceable wear parts

		VR4ER	VR7ER	VR15ER	VR18ER	VR30-3ER	VR40-3ER	VR50-3ER	VR68-3ER	VR80-3ER
Total length	mm	1855	2080	2277	2666	3227	3726	3690	4338	4450
Jaw deoth	mm	348	348	481	510	606	710	720	852	1200
Jaw opening	mm	350	415	450	480	575	670	740	830	870
Cutting force back	kN	1250	2100	2750	4000	6200	7300	8900	10000	12000
Cutting force front	kN	320	600	610	950	1460	1650	1950	2200	2400
Round material	mm	30	40	45	55	65	70	75	85	100
Square material	mm	25	30	35	40	50	55	60	70	85
Flat material	mm	6	8	10	15	20	22	25	30	35
IPE-Profile	mm	100	120	200	300	400	450	500	550	600
H-Profile	mm	70	80	140	200	260	280	320	360	400
Oil flow (rotation)	l/min	5 - 8	5 - 8	20 - 30	20 - 30	20 - 30	20 - 30	40 - 50	40 - 50	40 - 50
Operating pressure (rotation)	bar	120	120	120	120	120	120	120	120	120
Rotation		360°	360°	360°	360°	360°	360°	360°	360°	360°
Oil flow	l/min	70 - 110	90 - 140	150 - 250	200 - 300	280 - 350	300 - 450	350 - 500	400 - 600	500 - 800
Operating pressure	bar	200 - 250	280 - 320	350	350	350	350	350	350	350
Operating weight	kg	435	770	1190	2120	3260	4200	5000	6820	8100
Excavator (boom top)	t	2 - 6	5 - 8	8 - 14	14 - 20	20 - 30	25 - 40	30 - 50	40 - 60	50 - 80
Excavator (stick)	t	5 - 8	8 - 14	13 - 20	19 - 28	27 - 39	32 - 45	38 - 55	50 - 70	70 - 110

Specifications subject to change without notice..

VR-ER SERIES

		VR100-3ER	VR150-3ER	VR200-3ER
Total length	mm	5360	6200	7100
Jaw deoth	mm	1320	1600	1700
Jaw opening	mm	1004	1145	1225
Cutting force back	kN	13200	16000	17000
Cutting force front	kN	2800	3550	4600
Round material	mm	110	140	165
Square material	mm	90	120	140
Flat material	mm	40	45	50
IPE-Profile	mm	750	950	1100
H-Profile	mm	550	600	750
Oil flow (rotation)	l/min	80 - 100	80 - 100	80 - 100
Operating pressure (rotation)	bar	120	120	150
Rotation		360°	360°	360°
Oil flow	l/min	700 - 1000	900 - 1200	1000 - 1500
Operating pressure	bar	350	350	350
Operating weight	kg	10200	15100	20900
Excavator (boom top)	t	60 +	80 +	110 +
Excavator (stick)	t	85 +	120 +	170 +

AMOUNT OF OIL L/MIN	OPENING / CLOSING IN SECONDS	VR15ER	VR18ER	VR30-3ER	VR40-3ER	VR50-3ER	VR68-3ER	VR80-3ER	VR100-3ER	VR150-3ER
150		4,1/1,6								
200		3,1/1,2	2,8/2,8							
250		2,4/1,0	2,2/2,2	3,0/4,9						
300			1,8/1,8	2,5/4,1	3,1/5,1					
350				2,1/3,5	2,7/4,3	3,9/5,5				
400					2,3/3,8	3,4/4,8	4,4/6,1			
450					2,1/3,4	3,0/4,3	3,9/5,5			
500						2,7/3,8	3,5/4,9	3,9/6,0		
600							2,9/4,1	3,3/5,0		
700								2,8/4,2	3,6/5,6	
800								2,4/3,7	3,2/4,9	
900									2,8/4,3	4,4/6,0
1000									2,5/3,9	4,0/5,4
1100										3,6/4,9
1200										3,3/4,5

Specifications subject to change without notice.

RC22ER SERIES

RAIL CUTTER - RC22ER -

The European railway covers approximately 350.00 km. The construction and maintenance of railway tracks is an important market. To respond to the ever growing demand for cutting railroad tracks, FRD presents their first rail cutter model.
The RC22ER is designed for use on excavators from 21 to 35 ton operating weight.
The RC22ER is used to cut high tensile bars.

Extreme long service and maintenance intervals have been achieved. The complete body of the RC22ER is made of Hardox and has undergo a special heat treatment so that the body is produced entirely free of tension. A higher mechanical strength is ensured.

		RC22ER	RC44ER
Length	mm	2320	2320
Cutter length	mm	170	170
Jaw opening	mm	225	240
Width	mm	540	600
Oil flow rotation	l/min	25 - 35	25 - 35
Operating pressure rotation	bar	190	190
Oil flow opening/closing	l/min	200 - 300	300 - 450
Operating pressure opening/closing	bar	350	350
Weight	kg	2480	3900
Excavator size	t	21 - 35	35 - 50

Specifications subject to change without notice.

WHERE **EXPERIENCE COUNTS**

HYDRAULIC GRABS

FDG SERIES -SMALL-

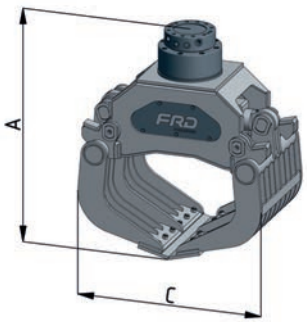
FRD DEMOLITION- AND SORTING GRAB

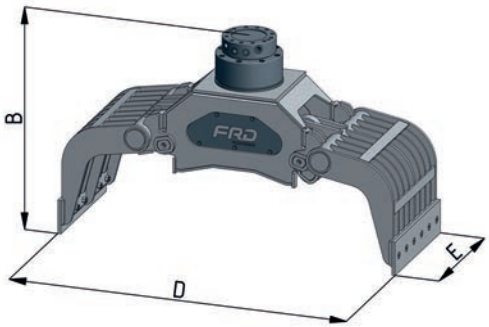
Demolition- and sorting grab for variable use and handling of different materials, as for example:

- Demolition and sorting
- Sorting and handling of construction waste
- Sorting and handling of recycling material

DESIGN FEATURES

- Hydraulic rotator unit with heavy duty axial and radial bearings with compact rotator
- Flat compact design. Hydraulic cylinders and ganging guidance cpl. protected inside the frame
- FDG20-PL and FDG30-PL cylinders with limit damping
- FDG10-PL, FDG20-PL and FDG30-PL with load holding valve at the cylinders. It prevent the unintentional opening of the grab
- Integrated mechanical opening and closing stoppers
- Shells complete of high strength fine-grain steel (400 HB)
- Bolt-on exchangeable cutting edges of high strength fine-grain steel (400 HB)
- Grab design for free oscillating use available





		FDG05-PL	FDG10-PL	FDG15-PL	FDG20-PL	FDG30-PL
Operating weight[1)]	kg	140	220	380	510	940
Capacity	l	45	80	130	200	370
Sustainability max.	t	1	1	1,5	2	4
Sust.- Rotary Engine max.	t	5	5	5	10	15
Dimension A	mm	700	820	930	1075	1205
Dimension B	mm	760	720	775	950	1070
Dimension C	mm	640	660	825	940	1170
Dimension D	mm	1000	1105	1390	1630	1925
Width E	mm	360	400	500	600	800
Closing max.	kN	19	17	23	33	51
Operating pressure max.	bar	250	250	320	300	300
Oil flow max.	l/min	22	22	32	40	60
Oper.- pressure rotator max.	bar	250	250	250	250	250
Oil flow rotator max.	l/min	20	20	20	28	48
Base machine weight	t	1 - 2	3 - 5	4 - 7	5 - 9	9 - 15

Specifications subject to change without notice. [1)] Operating Weight basic unit without turning unit and mounting plate.

WHERE EXPERIENCE COUNTS

FDG SERIES -LARGE-

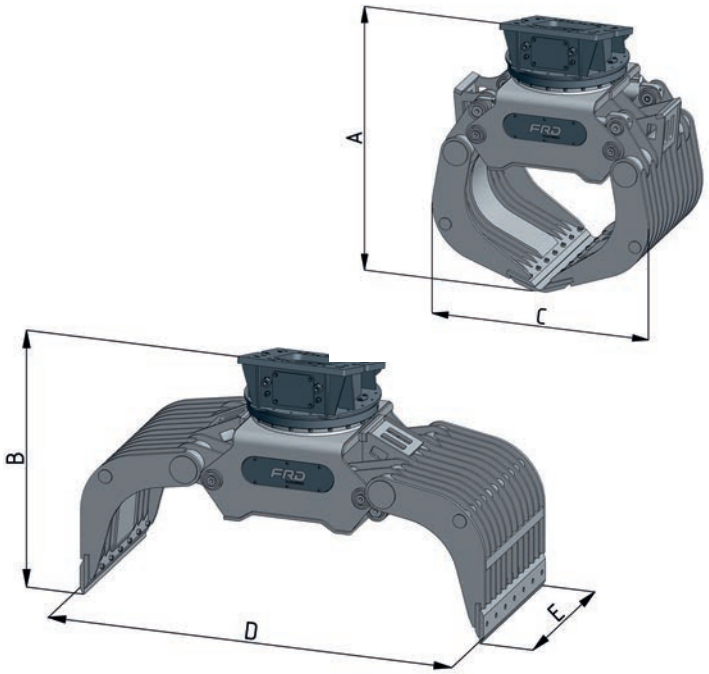
FRD DEMOLITION- AND SORTING GRAB

Demolition- and sorting grab for variable use and handling of different materials, as for example:

- Demolition and sorting
- Sorting and handling of construction waste
- Sorting and handling of recycling material

DESIGN FEATURES

- Hydraulic rotator unit with heavy duty axial and radial bearings with rotating annulus rotator
- Flat compact design. Hydraulic cylinders and ganging guidance completely protected inside the frame with limit damping
- Load holding valve at the cylinders prevent the unintentional opening of the grab
- Integrated mechanical opening and closing stoppers
- Shells complete of high strength fine-grain steel (400 HB)
- Bolt-on exchangeable cutting edges of high strength fine-grain steel (400 HB)
- Grab design for free oscillating use available



		FDG35-PL	FDG40-PL	FDG50-PL	FDG60-PL
Operating weight[1)]	kg	1080	1590	1840	2330
Capacity	l	370	650	760	925
Sustainability max.	t	4	6	6	8
Sust.- Rotary Engine max.	t	15	20	20	30
Dimension A	mm	1420	1595	1765	1800
Dimension B	mm	1285	1445	1490	1600
Dimension C	mm	1175	1415	1450	1530
Dimension D	mm	1925	2250	2450	2500
Width E	mm	800	900	1000	1230
Closing max.	kN	51	76	103	125
Operating pressure max.	Mpa	30	35	35	35
Oil flow max.	l/min	60	62	90	112
Oper.- pressure rotator max.	Mpa	14	14	14	14
Oil flow rotator max.	l/min	30	30	30	30
Base machine weight	t	15 - 20	20 - 25	25 - 30	29 - 40

Specifications subject to change without notice. [1)] Operating Weight basic unit without turning unit and mounting plate..

WHERE **EXPERIENCE COUNTS**

FMP SERIES -SMALL-

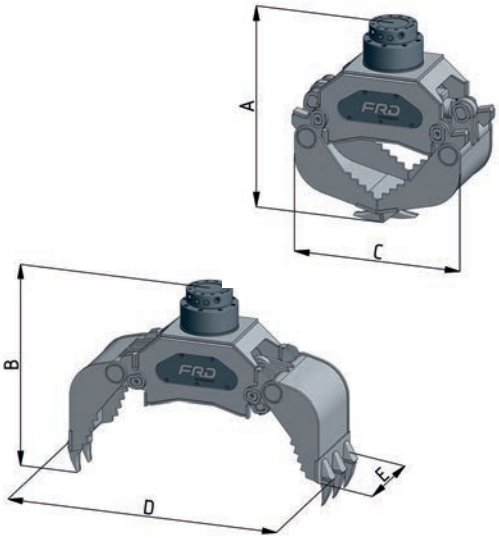
FRD MULTI-PURPOSE GRAB SMALL

Multi-purpose grab for variable use and handling of different materials, as for example:

- Stone laying
- Sorting and handling of construction waste
- Sorting and handling of recycling material
- Excavation and loading of rough bulk material
- Loading of horticulture waste

DESIGN FEATURES

- Hydraulic rotator unit with heavy duty axial and radial bearings with compact rotator
- Flat compact design. Hydraulic cylinders and ganging guidance completely protected inside the frame
- FMP20-PL and FMP30-PL cylinders with limit damping
- FMP10,FMP20-PL and FMP30-PL with load holding valve at the cylinders. It prevent the unintentional opening of the grab
- Integrated mechanical opening and closing stoppers
- Wear-resistant bottom teeth and side plates of high strength fine-grain steel (400 HB)
- FMP05-PL and FMP10-PL with bolt-on exchangeable teeth / FMP20-PL and FMP30-PL with ESCO-plug-in exchangeable teeth
- Grab design for free oscillating use available



		FMP05-PL	FMP10-PL	FMP15-PL	FMP20-PL	FMP30-PL
Operating weight[1)]	kg	152	195	320	450	830
Capacity	l	37	50	90	120	270
Sustainability max.	t	1	1	1,5	2	4
Sust.- Rot. max.	t	5	5	5	10	15
Dimension A	mm	670	705	890	1025	1210
Dimension B	mm	725	730	905	1085	1235
Dimension C	mm	610	610	800	905	1145
Dimension D	mm	900	970	1325	1530	1935
Width E	mm	360	400	450	500	660
Number of teeth	Qty	3	3	3	5	5
Closing max.	kN	19	19	28	34	56
Oper. pressure max.	Mpa	25	25	32	30	30
Oil flow max.	l/min	22	22	32	40	60
Oper. pressure max.	Mpa	25	25	25	25	25
Oil flow rotator max.	l/min	20	20	20	28	48
Base machine weight	t	1 - 2	2 - 5	4 - 7	5 - 9	9 - 15

Specifications subject to change without notice. [1)] Operating Weight basic unit without turning unit and mounting plate.

WHERE **EXPERIENCE COUNTS**

FMP SERIES -LARGE-

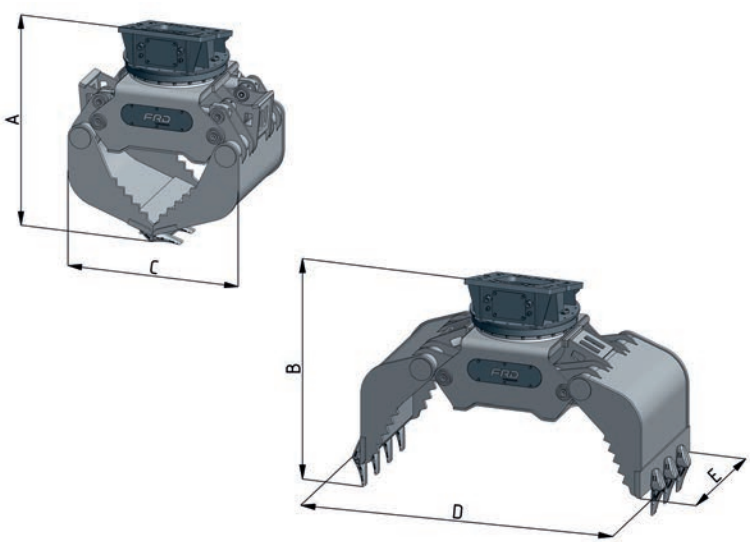
FRD MULTI-PURPOSE GRAB LARGE - FMP SERIE -

Multi-purpose grab for variable use and handling of different materials, as for example:

- Stone laying
- Sorting and handling of construction waste
- Sorting and handling of recycling material
- Excavation and loading of rough bulk material
- Loading of horticulture waste

DESIGN FEATURES

- Hydraulic rotator unit with heavy duty axial and radial bearings with rotating annulus rotator
- Flat compact design. Hydraulic cylinders and ganging guidance cpl. protected inside the frame
- Cylinders with limit damping
- Load holding valve at the cylinders prevent the unintentional opening of the grab
- Integrated mechanical opening and closing stoppers
- Wear resistant bottom teeth and side plates of high strength fine-grain steel (400 HB)
- With ESCO-plug-in exchangeable teeth
- Grab design for free oscillating use available



		FMP35-PL	FMP40-PL	FMP50-PL	FMP60-PL
Operating weight[1)]	kg	970	1665	1770	2200
Capacity	l	270	610	670	1025
Sustainability max.	t	4	6	6	8
Sust.- Rotary Engine max.	t	15	20	20	30
Dimension A	mm	1425	1630	1630	1940
Dimension B	mm	1450	1640	1640	1870
Dimension C	mm	1145	1330	1330	1500
Dimension D	mm	1935	2270	2270	2690
Width E	mm	660	940	1000	1030
Number of teeth	Stck.	5	7	7	7
Closing max.	kN	56	82	128	121
Operating pressure max.	Mpa	30	35	35	35
Oil flow max.	l/min	60	62	90	112
Operating pressure max.	Mpa	14	14	14	14
Oil flow rotator max.	l/min	30	30	30	30
Base machine weight	t	15 -20	16 - 22	23 - 30	29 - 40

Specifications subject to change without notice. [1)] Operating Weight basic unit without turning unit and mounting plate.

WHERE EXPERIENCE COUNTS

CRAWLER DRILLS

CRAWLER DRILLS

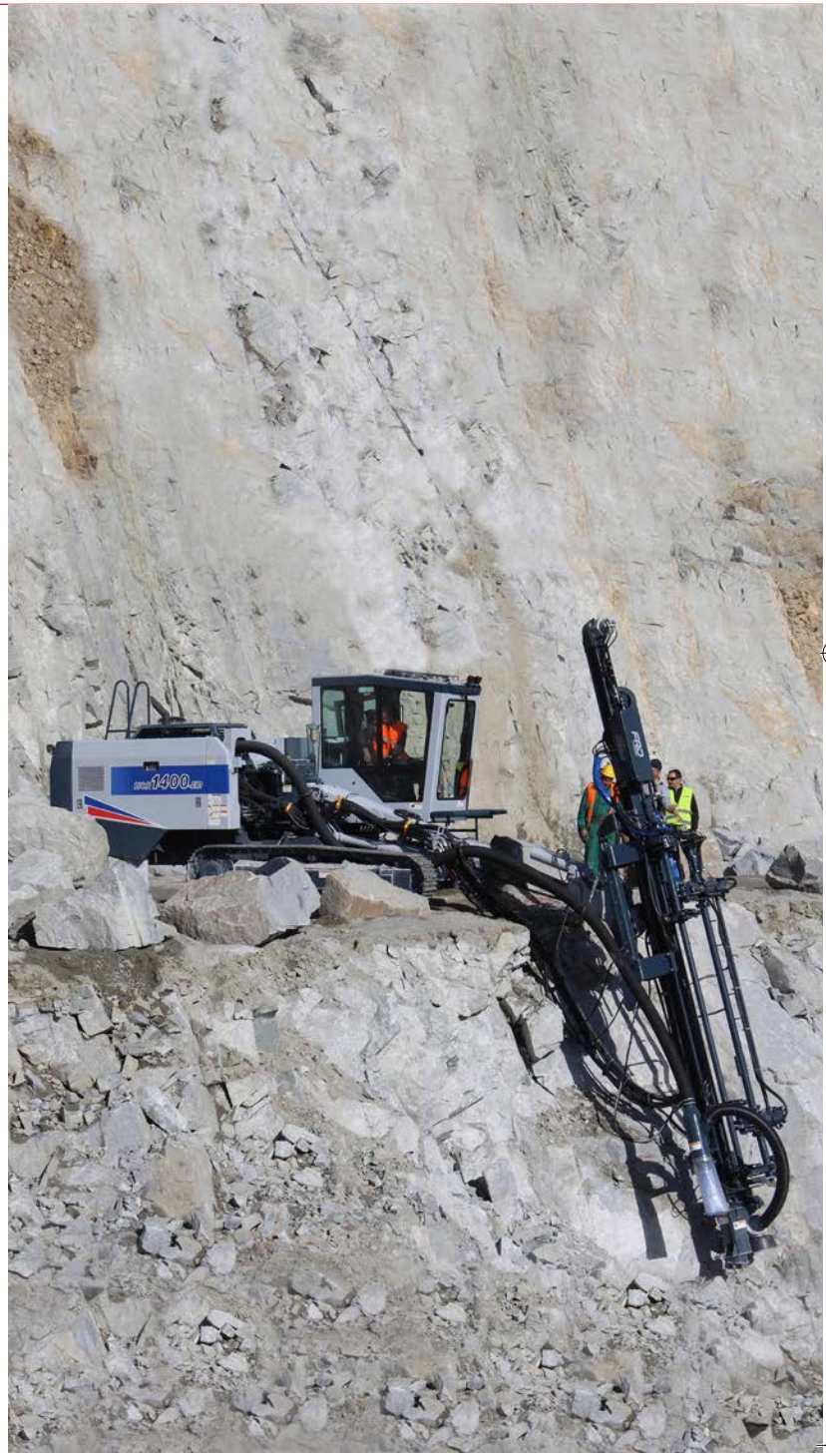
TRADITION MEETS INNOVATION

ENHANCED WORKING CONDITIONS
Power in your hands! An upgraded operator cabin where almost everything is controlled means operators are more comfortable while being productive.

PROVEN RELIABILITY AND MAINTAINABILITY
Traditional reliability with a more modern approach. A built-in diagnostic system finds faults rapidly to reduce downtime. Clever thinking and application of components all around mean improved overall system reliability.

BETTER FOR THE ENVIRONMENT
New generation engines and exhaust gas after treatment results in a lower carbon footprint. Smart application of technology means the engine only works when it's really needed.

IMPROVED DRILLING PERFORMANCE
Proven performance now with more punch! Produce more tons with a new range of high power, high frequency drifters and higher flushing air volume combined with Furukawa's famous drilling parameters control system.



CRAWLER DRILLS

COMFORT AND CONTROL

Care has been taken to ensure that the Operator has the highest levels of comfort and control. In addition to an air suspended chair with armrests, all machine and drilling controls are within easy reach and even easier to use than before.

Thanks to new materials and other external improvements, sound levels have been further reduced. Other standard features include: rear and side view cameras, radio, heating and air conditioning, 12V DC electrical outlet, cup holders and sun screens. Most fault finding is done from the touch screen display in the cabin.

FURUKAWA Power & Passion 150

Model		HCR1100-ED	HCR1100-ER	HCR1200-EDVI	HCR1450-ED	HCR1800-EDII	DCR22
Drifter model		HD828	HD822	HD822	HD826	HD828/HD836	Dowmax ME350
Drifter power	kW	18	22	22	26	26/36	4.2 kNm
Operating weight	kg	13150	12460	13680	15250	21200	26500
Engine power/speed	kW/min-1	168/2,200	168/2,200	168/2,200	194/2,500	261/2,200	328/2,000
Free air delivery	m^3/min	6,1	7,8	7,8	10	13,5	24.3 - 27
Dust collector	m^3/min	20	26	26	30	40	75
Maximum standard hole depth	m	22	22	22(t38,T45), 18(T51)	25 (33)	35	40 (5m tubes) 30 (6m tubes)
Rod/tube size		38R, 45R	38R, 45R	38R, 45R, 51R	45R, 51R	ST58, T60, GT60	76-114 (5m tubes) 76-127 (6m tubes)
Bit diameter	mm	76-115	76-115	89-140			

Specifications subject to change without notice

WHERE EXPERIENCE COUNTS

DEALER NETWORK

LOCAL SERVICE AND SUPPORT

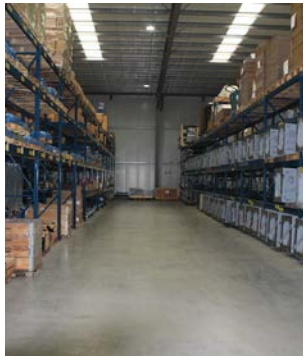
FRD seeks firstly to supply a product of undoubted integrity. Then back this up with a support network of dedicated Distributors to ensure whatever support, wherever and whenever needed. The FRD-Distributor combination has been made unbeatable.

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.



WHERE **EXPERIENCE COUNTS**

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WHERE **EXPERIENCE COUNTS**