



MANNESMANN
DEMAG

Baumaschinen

Top Efficiency in Quarries

Demag Hydraulic Excavators



Demag Has the Right Hydraulic Excavator for Ever



It takes a sturdily built undercarriage with track components from wear-resisting material to withstand the stresses and strains of operating on rough ground and loading blasted rock from a quarry face.



Stone has been extracted from quarries for thousands of years. As quarrying methods and equipment improved in the course of time, modern hydraulic excavators have meanwhile proved their worth as profitable and reliable excavating and loading units in quarries around the world.

Demag Hydraulic Excavators are designed and built specifically to meet today's quarrying and open-cast mining requirements.

Quarrying Job



The cab guard of rugged frame construction meets all safety requirements and makes Demag Hydraulic Excavators safe to operate.



Demag Hydraulic Excavators permit users to select

- the power,
- the attachment combination, and
- the bucket or tool that suit their specific needs.

Demag Hydraulic Excavators develop high crowding forces; therefore, the favourably shaped buckets are loaded fast and full.



Demag Hydraulic Excavators have generously sized engines that give full power for every operation and an ample reserve for heavy-duty work.



Demag Hydraulic Excavators are setting new standards of

- performance and availability,
- quality and longevity,
- operation and serviceability.

Demag Hydraulic Excavators, due to their

- pace-setting design,
- and the
- exemplary service support they enjoy,

give quarrying companies the confidence and security they need in order to succeed.

Demag H 121 digging gneiss and glacial soil.

Single Engine Drive: Performance-Proved and

The Demag Line of Hydraulic Excavators for the Quarry Industry



**H 121 with 7.5 m³ (10 cu.yd.) Bucket
Loading 50–85 ton Dumpers.
Production: 1200 Mp/h (1330 sh t/h)**

Type of Bucket	Loose Weight		Bullclam		Backhoe	
	Mp/m ³	lbs/cu.yd.	m ³	cu.yd.	m ³	cu.yd.
General Purpose	1.8	3000	7.5	10	7.5	10
Heavy-Duty	2.4	4060	5.5	7	5	6.5

Power Unit	
Rating at 2100 rpm	522 kW 710 HP
Rating at 1900 rpm	496 kW 675 HP
Weight	
	115 Mp 254 000 lbs



profitable

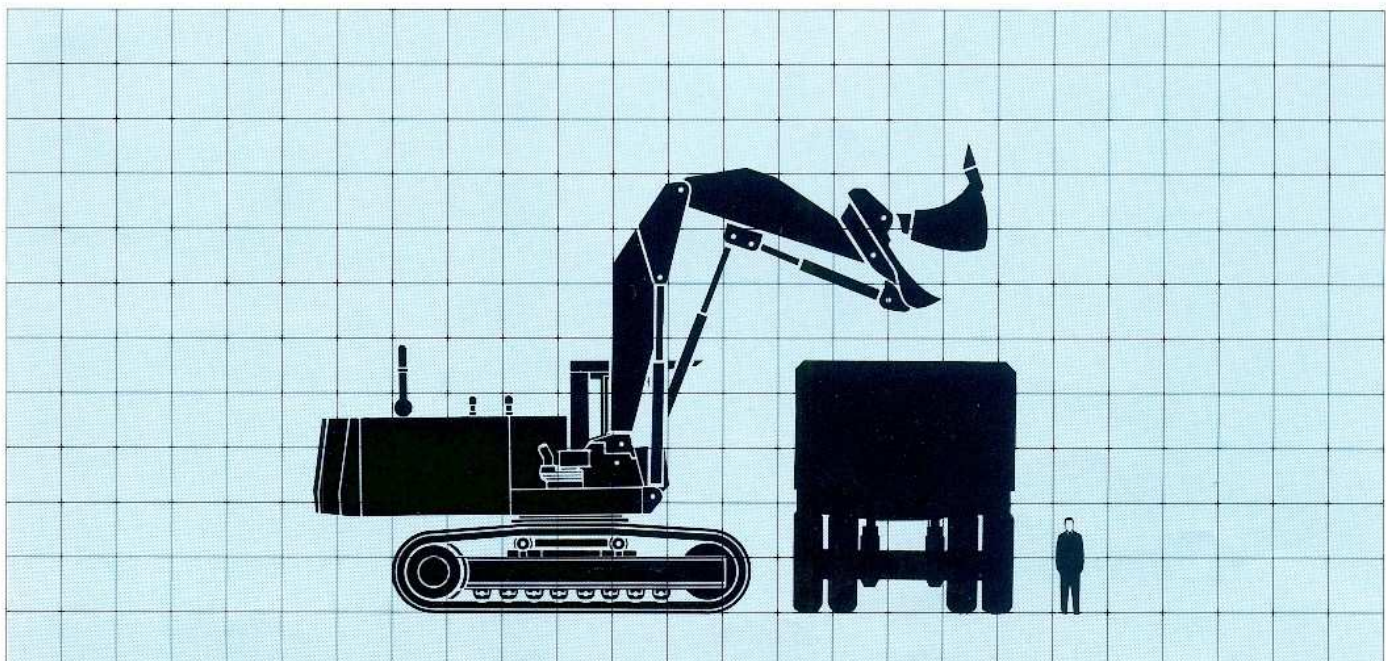


**H 85 with 5.5 m³ (7 cu.yd.) Bucket
Loading 40–60 ton Dumpers.
Production: 800 Mp/h (900 sh t/h)**

Type of Bucket	Loose Weight		Bulldozer		Backhoe	
	Mp/m ³	lbs/cu.yd.	m ³	cu.yd.	m ³	cu.yd.
General Purpose	1.8	3000	5.5	7	5.0	6.5
Heavy-Duty	2.4	4060	4.2	5.5	4.0*	5.3

Power Unit	
Rating at 2100 rpm	335 kW 456 HP
Rating at 1900 rpm	328 kW 446 HP
Weight	85 Mp 188000 lbs

* Only up to a bulk material weight of 2.25 Mp/m³

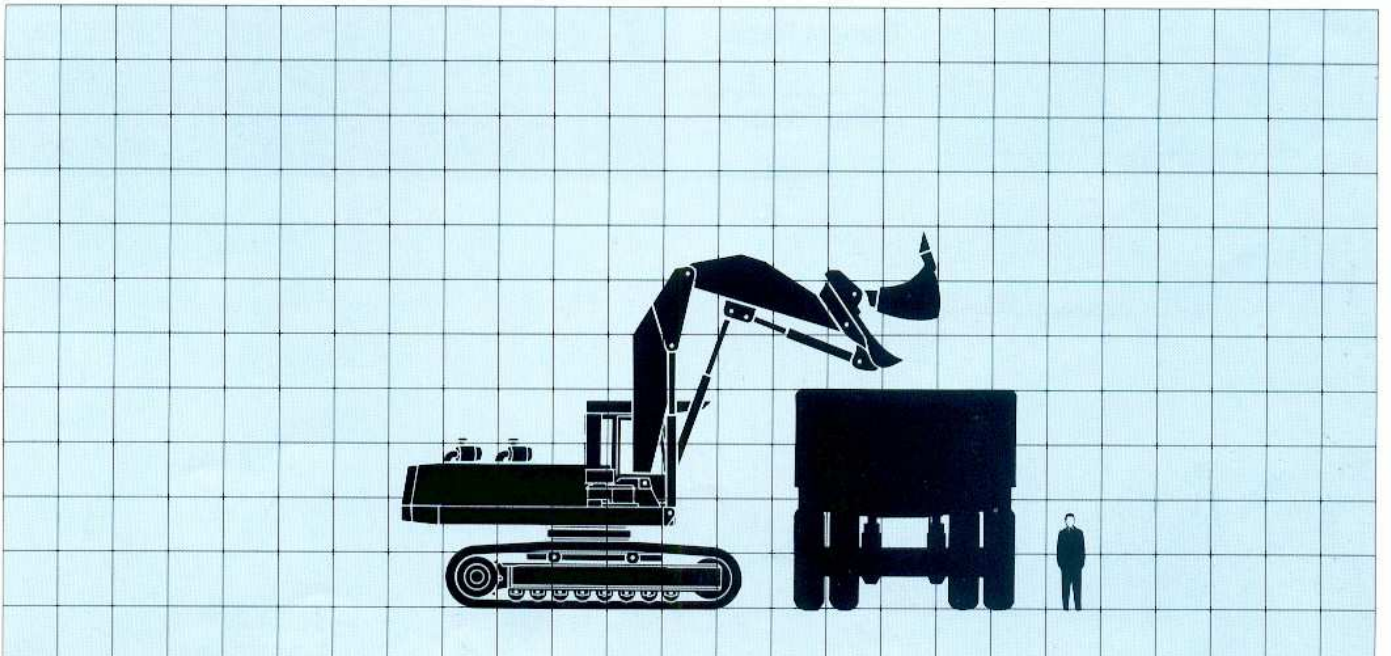




H 55 with 3.3 m³ (4.3 cu.yd.) Bucket Loading 30–40 ton Dumpers. Production: 400 Mp/h (440 sh t/h)

Type of Bucket	Loose Weight		Bullclam		Backhoe	
	Mp/m ³	lbs/cu.yd.	m ³	cu.yd.	m ³	cu.yd.
General Purpose	1.8	3000	3.3	4.3	3.0	3.9
Heavy-Duty	2.4	4060	2.7	3.5	2.5	2.6

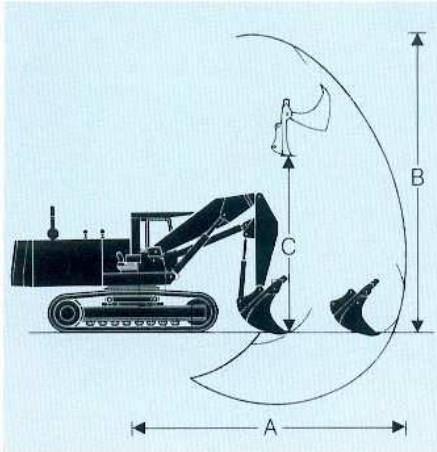
Power Unit	
Rating at 2300 rpm	216 kW 294 HP
Rating at 2150 rpm	188 kW 256 HP
Weight	55 Mp 120 600 lbs



The Right Bucket and Attachment for the Toughest Jobs

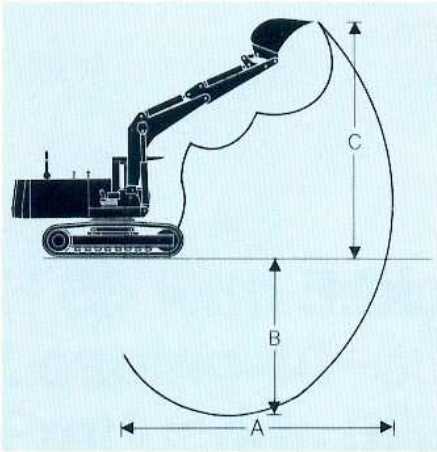


Front-End Options



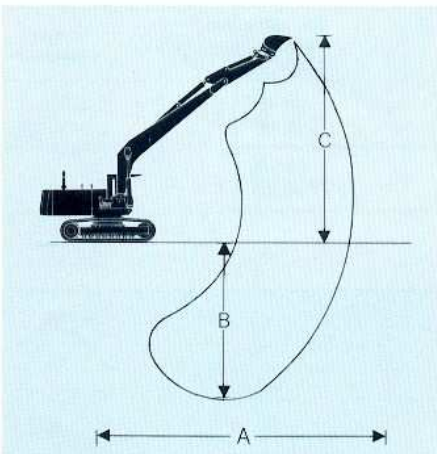
Bullclam

Max. Digging Radius	A	38 ft. 11.6 m	32 ft. 9 in. 10 m	29 ft. 10 in. 9.1 m
Max. Digging Height	B	42 ft. 7 in. 13 m	36 ft. 5 in. 11.1 m	32 ft. 2 in. 9.8 m
Dumping Height	C	27 ft. 11 in. 8.5 m	26 ft. 3 in. 8 m	22 ft. 11 in. 7 m
Crowd Thrust		108 030 lbf. 49 Mp	92 595 lbf. 42 Mp	12 750 lbf. 33 Mp
Prying Force		103 618 lbf. 47 Mp	88 185 lbf. 40 Mp	69 450 lbf. 31.5 Mp



General-Purpose Backhoe

Max. Digging Radius	A	45 ft. 3 in. 13.8 m	39 ft. 4 in. 12 m	35 ft. 1 in. 10.7 m
Digging Depth	B	26 ft. 11 in. 8.2 m	22 ft. 11 in. 7 m	22 ft. 6.7 m
Max. Digging Height	C	41 ft. 12.5 m	34 ft. 5 in. 10.5 m	27 ft. 3 in. 8.3 m
Tear-out Force		101 400 lbf. 46 Mp	68 350 lbf. 31 Mp	46 300 lbf. 21 Mp
Prying Force		110 230 lbf. 50 Mp	68 350 lbf. 31 Mp	48 500 lbf. 22 Mp



Extra-Long Backhoe

Max. Digging Radius	A	67 ft. 3 in. 20.5 m	62 ft. 8 in. 19.1 m	49 ft. 3 in. 15 m
Digging Depth	B	49 ft. 6 in. 15.1 m	44 ft. 3 in. 13.5 m	35 ft. 5 in. 10.8 m
Max. Digging Height	C	49 ft. 3 in. 15 m	42 ft. 8 in. 13 m	35 ft. 5 in. 10.8 m
Tear-out Force		48 500 lbf. 22 Mp	37 500 lbf. 17 Mp	30 900 lbf. 14 Mp
Prying Force		68 350 lbf. 31 Mp	48 500 lbf. 22 Mp	27 500 lbf. 12.5 Mp

Digging and Loading Methods



1. Bullclam

Excavator and dumper stand at the foot of the face. This is the usual way of loading preblasted material.



2. Backhoe

The excavator, working downwards from the top of the bank, loads dumpers spotted on the quarry floor below. Due to the shorter angle of swing, cycle speed is high, and so is the loading production where this method can be used.



3. Backhoe

The backhoe may be used to load dumpers standing at the excavator's own level when it is difficult or impossible for hauling units to operate on the quarry floor below.

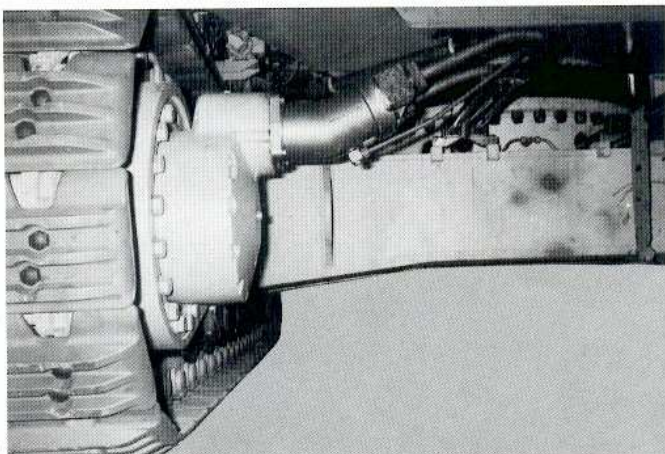
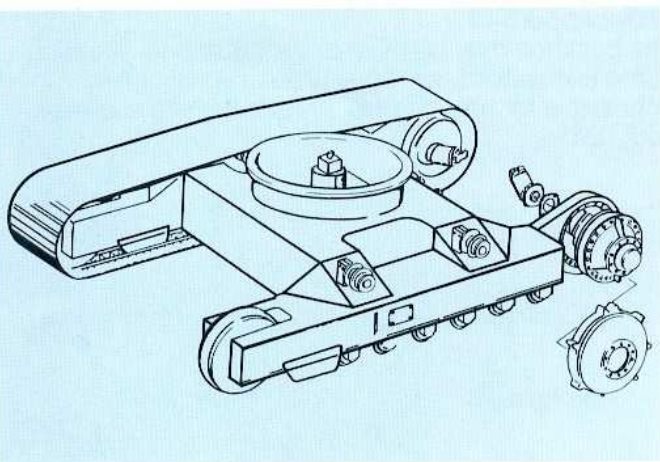
Engineering Leadership Thanks to a Long Success

Demag Hydraulic Excavator Concept

Demag Hydraulic Excavators are designed and built to stand the hardest punishment of rock. They originate from an understanding of present-day's quarrying techniques. Here is what Demag Hydraulic Excavators offer:

- The strength and rigidity necessary to perform under extreme conditions.
- The use of wear-resisting high-strength material for all vital stress-bearing components.
- Finest quality and workmanship.
- Simple, effortless operation.
- Easy access to main machinery to facilitate service and maintenance.

The high cab gives the operator full view of his work and places him in the best possible position for gently dumping the bucket load.



The Undercarriage

Demag Hydraulic Excavators have a sturdily built, highly efficient crawler unit of ingenious design, featuring among others:

- Ample ground clearance, allowing the machine to move from one work area to another without difficulty, even in rough terrain.
- Outstanding gradeability up to 80%.
- Travel speeds up to 2.6 km/h.
- External-tooth swing gear which is readily accessible for servicing and inspection.
- Easy-to-service slack-adjusters to keep the tracks at proper tension.
- Several track-shoe widths to meet all conditions of work and terrain.

Demag Hydraulic Excavators have the rugged strength, working stability, and manoeuvrability that are essential for a quarrying machine.



The Superstructure

Demag Hydraulic Excavators offer these outstanding superstructure features:

- Extremely torsion-resisting upper frame.
- Rugged box-section design of all weldments.
- Fine workmanship and rigid quality control covering even the smallest weld.
- Unit assemblies, designed for easy replacement, to minimize downtime.
- Outstanding maintenance accessibility.

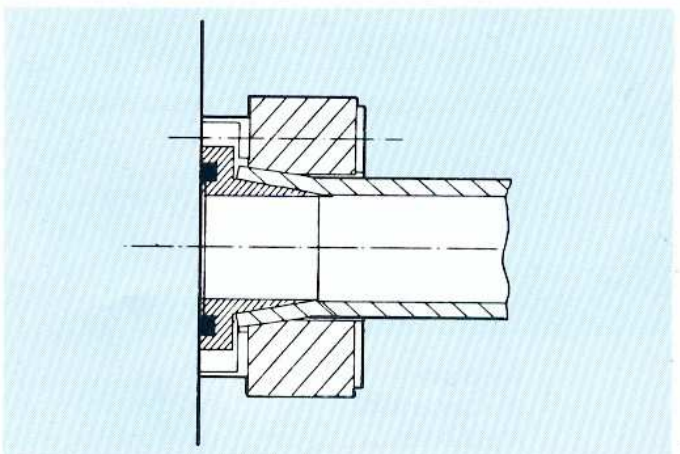
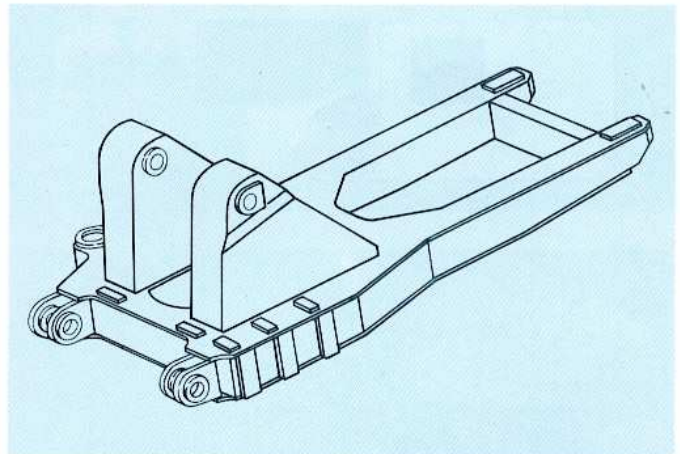
The Hydraulic Tubing

Tubing connections are the weakest points in a hydraulic line. That is why Demag uses flanged joints wherever tube sizes are 25 mm and over. Short, straight tubing runs reduce power losses due to friction, for higher efficiency. Easy accessibility for servicing and quick replacement minimize equipment downtime.



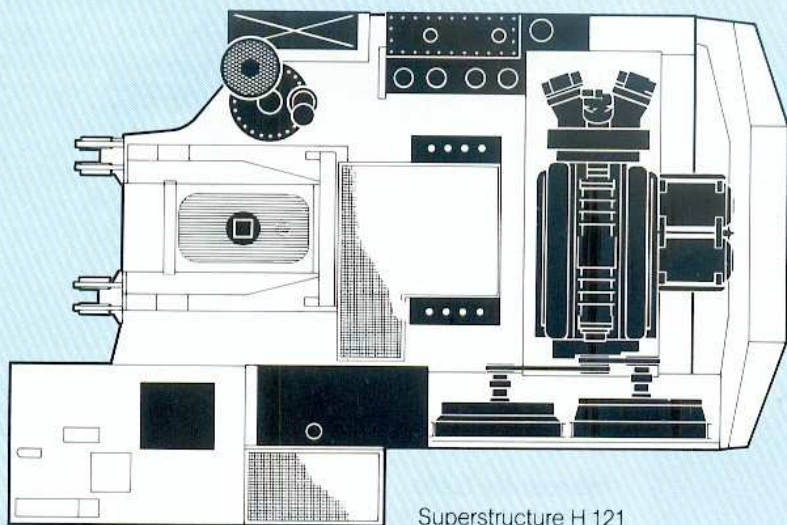
Inherently Safe

Special consideration has been given to the safety aspect in the design of Demag's hydraulic excavators. The cab guard of rugged frame construction, meeting all safety requirements, is only one of the many important safety features of these machines.



Pace-Setting Technology

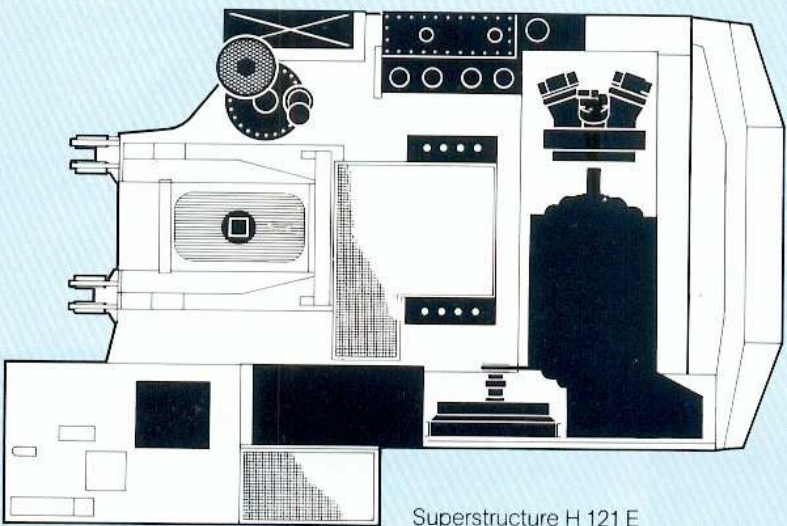
Power Options



Diesel Engine

Demag Hydraulic Excavators are years ahead of any other machine of its class due to their highly efficient power train, which offers these profit-making features:

- Single-engine drive
- Low operating costs
- Clear machinery layout
- Ample space for servicing
- Low spare-parts inventory



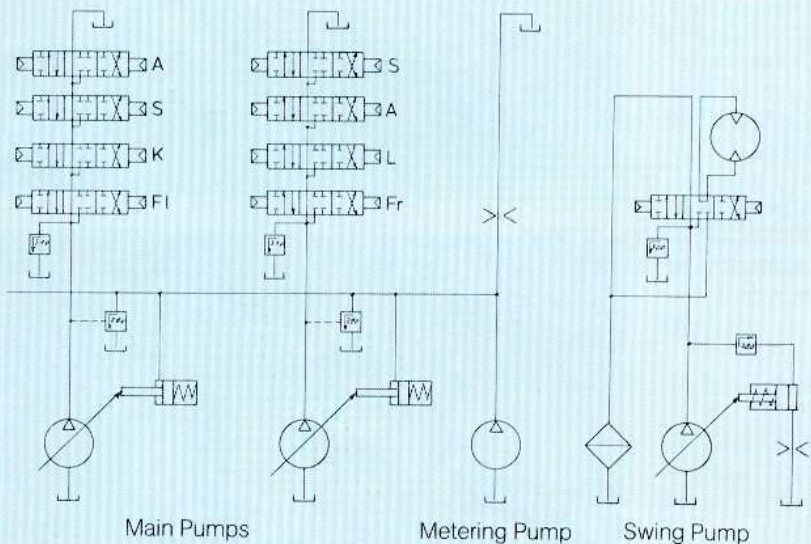
Electric Motor

Electric motor drive can be provided for quarries where electricity is available. Further "plus" advantages of the electric drive are:

- Single motor drive
- Long equipment life
- Low operating costs
- Ecologically beneficial operation

Demag has a worldwide experience in the application of electric drive to hydraulic excavators, in

- Europe
- Africa
- North America
- South America



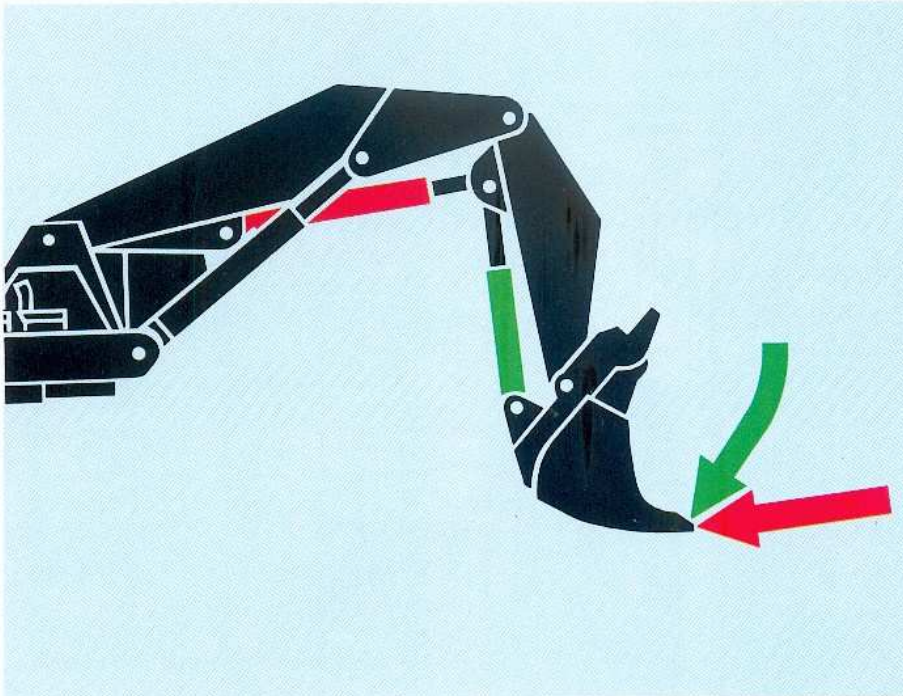
A = Boom
S = Dipper Stick
K = Bullclam

L = Bucket
Fl = L.H. Crawler
Fr = R.H. Crawler

Hydraulic System

Demag Hydraulic Excavators are setting new standards of performance due to:

- Three-circuit hydraulics
- Variable-displacement axial-piston pumps
- Highly effective power control with summation capability
- High-pressure filter in pressure line behind each main pump
- Chip indicators



High loading production due to

- favourable kinematics
- purpose-designed buckets
- high crowding, prying, and tear-out forces



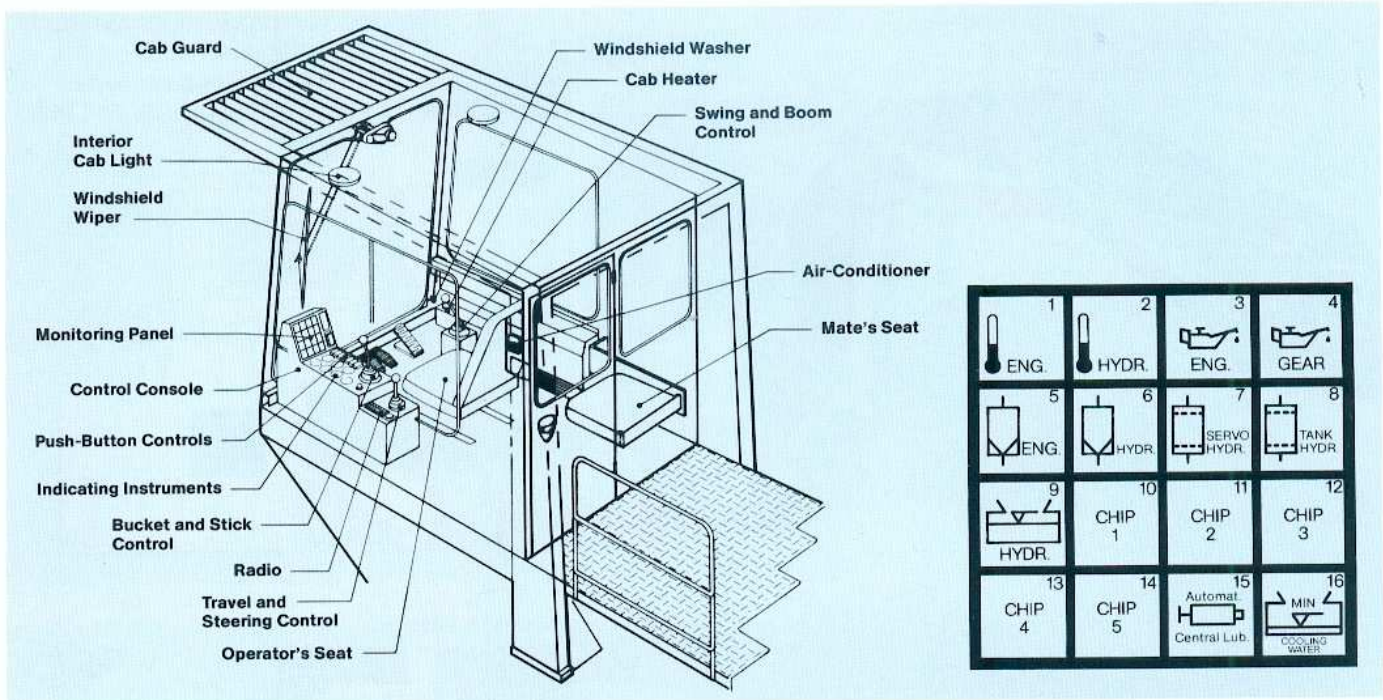
Demag-built special-purpose buckets, engineered to perform under extreme conditions, for instance:

- hard-faced buckets
- central ripper tooth
- purpose-designed tooth systems



Outstanding in Terms of Control...

Cab and Controls



Cab and Controls

Ergonomy was a major design objective, and this has successfully been combined with a functional arrangement of all controls. The Demag cab design offers these features:

- Padded, body-engineered seat for comfort and efficiency.
- Mate's seat.
- Functionally arranged instrument panel.
- Hydraulic servo controls.
- Two joy-stick levers to control all working motions.

- Single-lever joy-stick travel-motion control.
- Rubber-mounting and extensive sound-proofing to reduce noise level and vibration.
- Radio.
- Air-conditioner supplying cab with filtered fresh air (optional).

Monitoring Panel

1. Engine Temperature
2. Hydraulic-Oil Temperature
3. Engine-Oil Pressure
4. Transmission-Oil Pressure

5. Air-Cleaner Restriction
6. Oil-Tank-Breather Restriction
7. Control-Oil Filter Restriction
8. a) Return-Oil Filter Restriction
b) Main-Pump Lubrication Filter Restriction
9. Hydraulic-Oil Level
10. to 14.
 - a) No. 1 to 5 Main Pump Chip Indicators
 - b) No. 1 to 5 High-Pressure Filters
15. Central Lubrication System
16. Engine-Coolant Level



... and Equipment

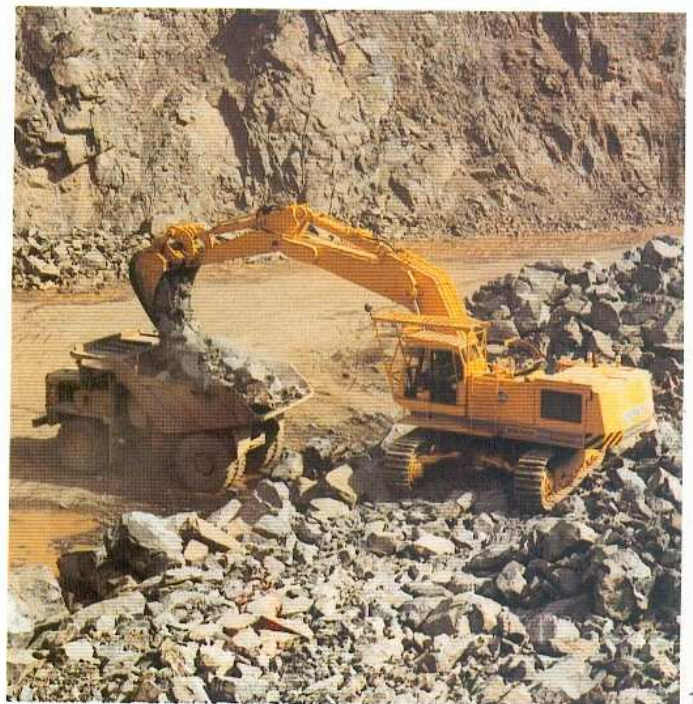


Demag Hydraulic Excavator with rock breaker; makes secondary blasting unnecessary.



The optimal multi-tine grapple for boulders and other large objects.

Angles of swing are short and loading production is high where this loading method is feasible for the backhoe.

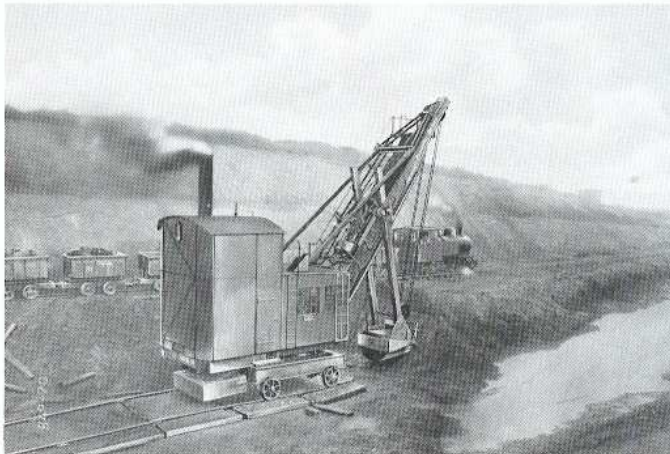


From History . . . Into the Future

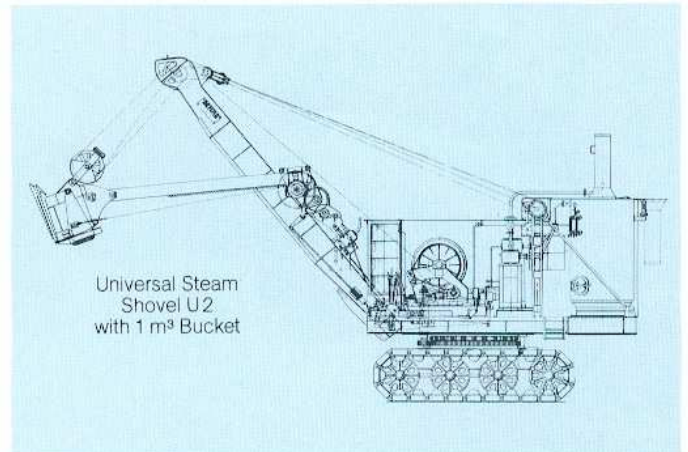
Experience

Demag's entry into the excavator field dates from 1920; in 1954, Demag built the first all-hydraulic excavator of the world, and today, the large Demag Hydraulic Excavators are the pace-setters in quarrying.

So it is not without reason that an ever increasing number of progressive quarrying companies decide in favour of the large Demag Hydraulic Excavators.



1920



Universal Steam Shovel U2 with 1 m³ Bucket

1929



1952



1954



1975



1978

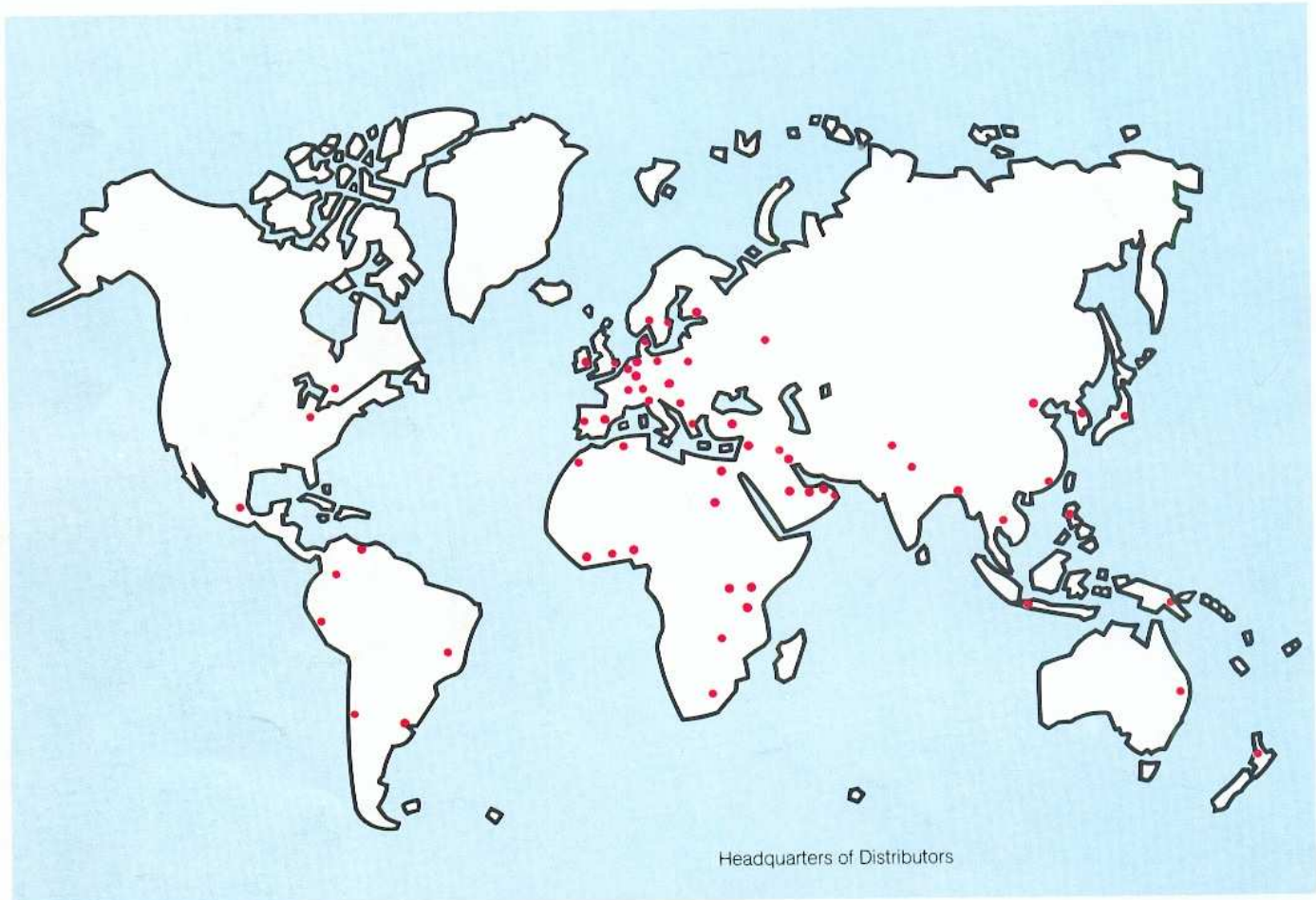


Worldwide Service and Spare-Parts Support

The success or failure of a quarry decidedly depends on the "availability" of the equipment. That is why each Demag hydraulic excavator in the field is backed by the reliable spare-parts and after sales service of both the factory and the distributors, worldwide, offering:

- A spare-parts supply which will never leave you in the lurch.

- Mobile service teams with Demag-trained mechanics.
- Training courses to familiarize your personnel with the technology of the modern Demag Hydraulic Excavators in quarrying.
- A containerized stock of emergency parts based at the site.



Mannesmann Demag Baumaschinen

Postfach 18 03 61, Buscherhofstraße 10
D-4000 Düsseldorf 13
Phone (211) 7109-1 · Telex 8 582 703

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