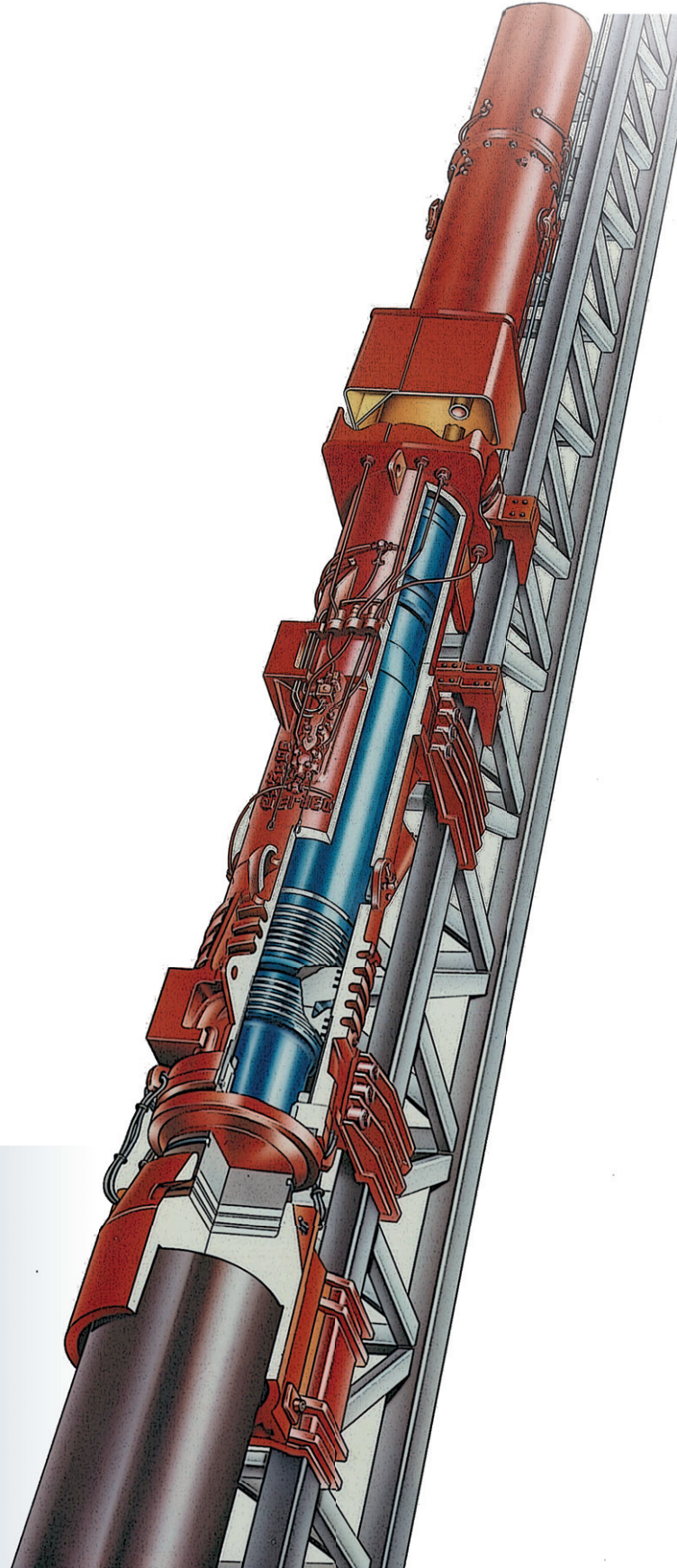




DELMAG

Pile Driving Equipment



DELMAG Diesel Pile Hammers

How the diesel pile hammer works?

1. Lifting of the piston (starting)

To start the diesel pile hammer the piston is lifted by means of a mechanical or hydraulic tripping device and is automatically released at a given height.

2. Injection of diesel fuel and compression

While dropping, the piston actuates the pump lever, so that a certain quantity of diesel fuel is sprayed on top of the impact block. After passing the exhaust ports, the piston starts compressing the air in the combustion chamber.

3. Impact and Combustion

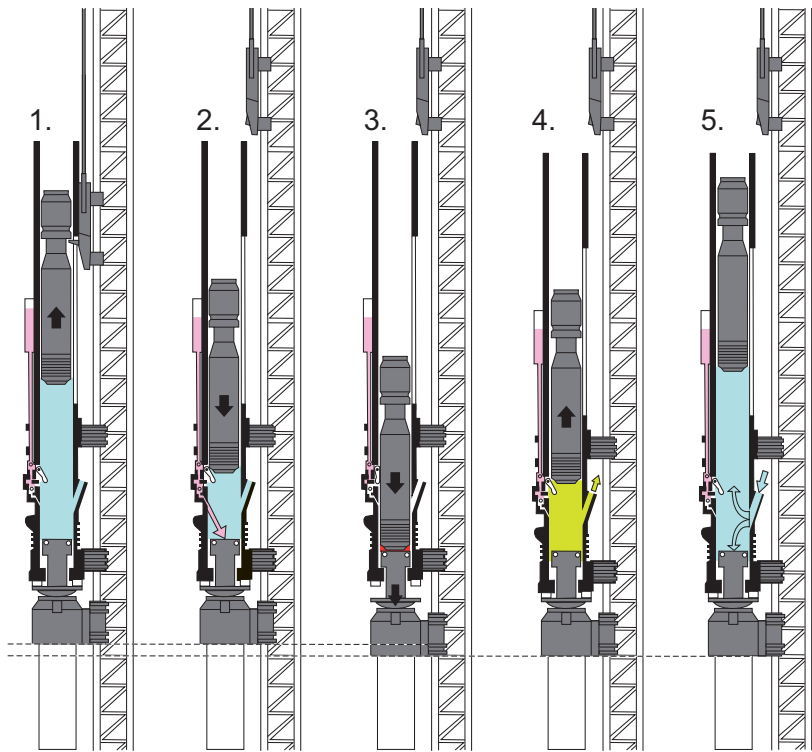
The impact of the piston on the impact block atomizes the diesel fuel in the combustion chamber. The atomized fuel ignites in the highly compressed air. The combustion energy moves the piston upwards.

4. Exhaust

While moving upwards, the piston passes and thus opens the exhaust ports. The exhaust gases escape and the pressure in the cylinder is equalized with the atmosphere.

5. Flushing

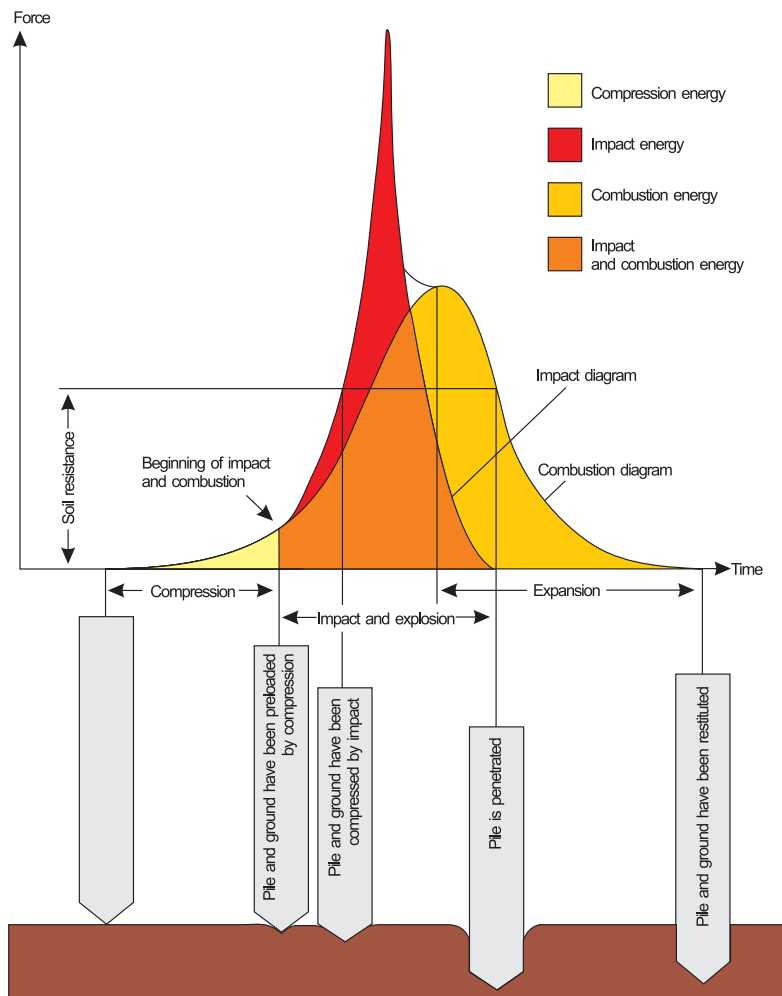
As the piston continues to move upwards, fresh air is drawn through the exhaust/intake ports for flushing the cylinder while also releasing the pump lever. The pump lever returns to its starting position and the pump is charged with fuel again.



Delmag diesel pile hammers operate on the principle of impact atomization. Three different energies are acting on the pile:

Compression + Impact + Combustion

which are united to an effective cumulative energy. The compression energy will force the impact block with the helmet tightly against the butt of the pile. The next blow will then encounter a preloaded pile. Thus the pile head is protected and the impact energy is effectively transmitted onto the entire pile. On piles sensitive to stress, the risk of cracks will be reduced, since the tension imposed on the pile relaxes in upward direction and is retarded by the pressure of the expanding gases.



Hanging Leads

		MH 30102	MH 32103	MH 35104	MH 37107	MH 41109
Suitable diesel pile hammer (max. size)		D12-42	D30-32	D62-22	D80-23	D100-13
Max. length of the lead system	m	20	30	36	42	48
Max. usable length (with max. size hammer)	m	14	24	30	36	40
Weight cpl. *	kg	3000	8000	10000	26000	30000
Recommended carrier (lifting capacity)	t	40	60	100	130	300

* at max. length, without hammer and without slewing device and a lowering system



DELMAG hanging leads can easily be attached to the boom point of crawler cranes. Usually a spotter, which connects the lower part of the lead with the upper carriage of the crane, is used to control the mast inclinations to the front, rear or side. Optionally a hydraulic mast slewing device and a hydraulic mast lowering system are available.

Hanging lead MH 35104 with diesel pile hammer D25-32 at the Dortmund-Ems channel in Germany

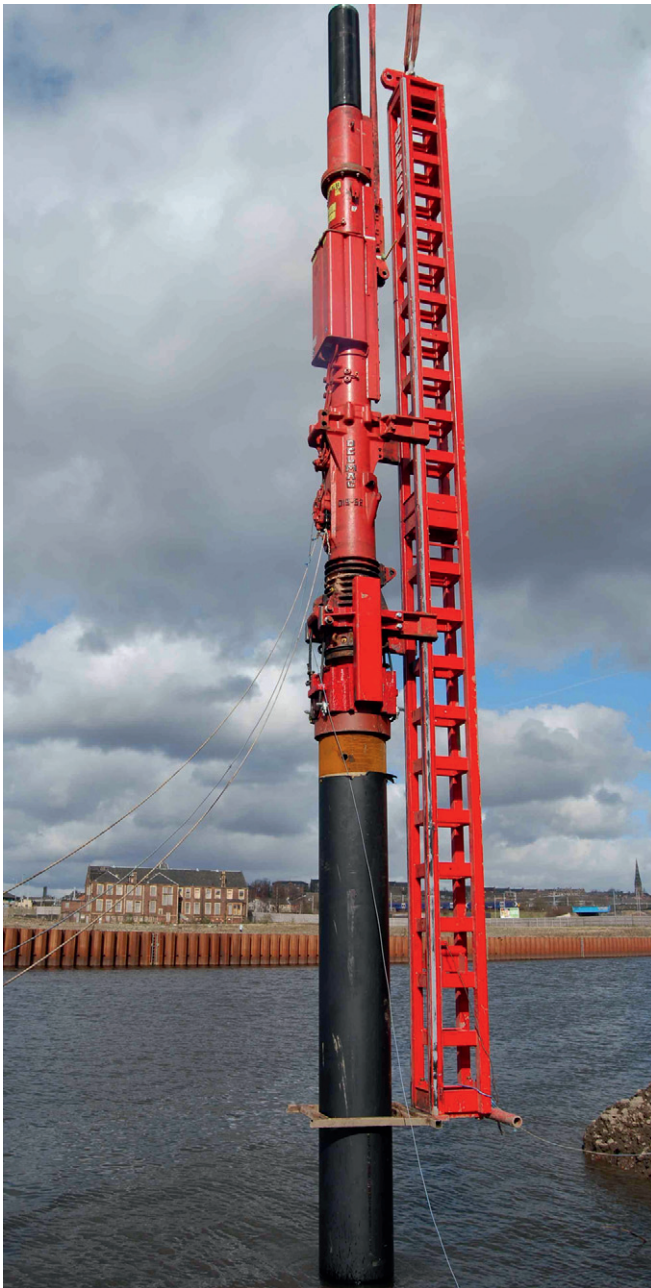
Pile Driving Equipment

Swinging Leads

		MS 30102	MS 32103	MS 35104
Suitable diesel pile hammer (max. size)		D12-42	D30-32	D62-22
Length of the lead system	m	8 - 20	8 - 28	10 - 30
Usable length (with max. size hammer)	m	2 - 14	2 - 22	4 - 24
Weight of lead system at max. length, without hammer	kg	2000	4000	5500

DELMAG swinging leads can be attached to any model of crane with the proper capacity. Since the Lead is not connected to the crane's upper carriage, it can be rotated 360° around its vertical axis.

DELMAG „MS-type“ swinging leads are mainly used for „back-driving“ of interlocking sheet piles and single piles.



Diesel pile hammer D19-52 with swinging lead MS 30102



Diesel pile hammer D30-52 with swinging lead MS 32103

Rope Suspended Leads - MAR Type

		MAR 30-30	MAR 62-48	MAR 100-60	MAR 200-72	MAR 300-84
Suitable diesel pile hammer (max. size)		D30-32	D62-22	D100-13	D200-42	D300-42
Max. pile diameter	mm	762	1220	1525	1830	2135
Weight of lead system at max. length, without hammer	kg	7000	8500	11000	48000	48000



Diesel pile hammer D30-32 with rope suspended lead MAR 30-30

DELMAG MAR-type rope suspended leads are mainly used to drive pre-set pipe piles in marine and offshore projects. The lead, together with the hammer, is positioned onto the pile by a crane. During operation the complete weight of hammer and lead are supported by the pile. The crane cable remains slack. The MAR-type lead can accommodate hammers with conventional mechanical start or with hydraulic starting system. For piling under inclination, a hydraulic starting system is required. In combination with a DELMAG hydraulic power unit, additional safety features like an "automatic hammer stop feature" are available.



Diesel pile hammer D100-13 with rope suspended lead MAR 100-60

Pile Driving Equipment

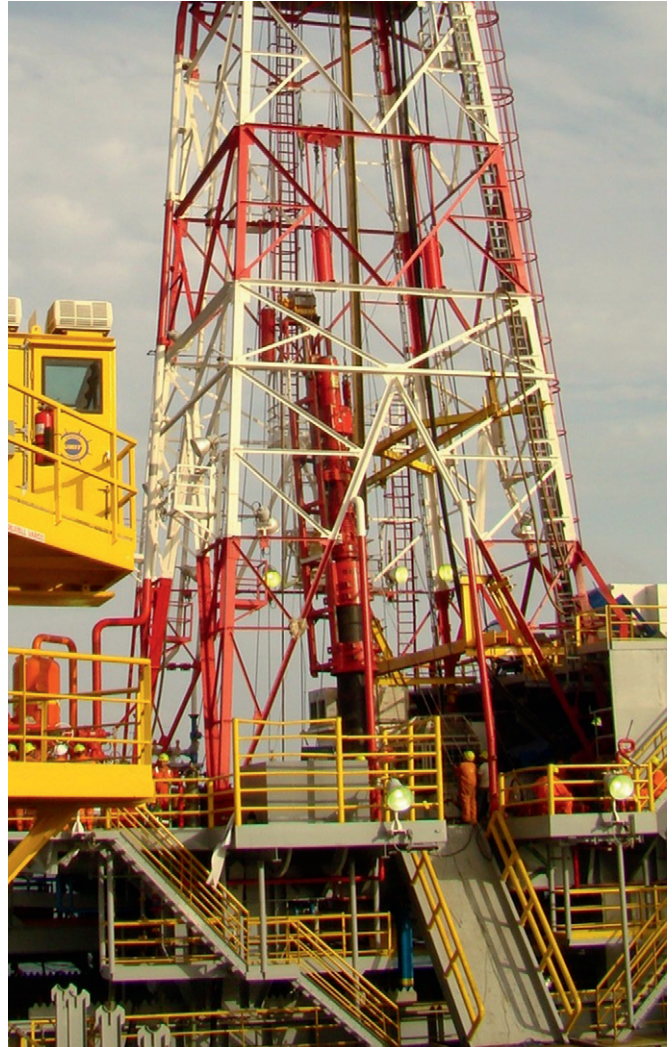
Rope Suspended Leads - MBR Type

		MBR 30-30	MBR 46-36
Suitable diesel pile hammer (max. size)		D30-32	D46-32
Max. pile diameter	mm	762	915
Weight of lead system at max. length, without hammer	kg	5000	4800

DELMAG MBR-type rope suspended leads are mainly used to drive vertical conductor piles in the Oil- and Gas Industry. Their design meets especially the needs of operators that use our diesel hammers in combination with a drilling rig.



Diesel pile hammer D62-22 with rope suspended lead MBR 62-48



Diesel pile hammer D46-32 with rope suspended lead MBR 46-36

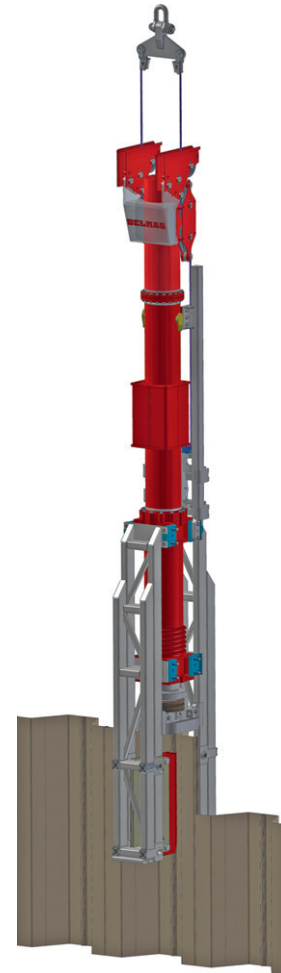
Rope Suspended Leads - MAS Type

		MAS 3000	MAS 4600	MAS 6200
Suitable diesel pile hammer (max. size)		D30-32	D46-32	D62-22
Max. pile diameter	mm	820	1067	1420
Weight of lead system at max. length, without hammer	kg	4400	4600	6000

DELMAG „MAS-type“ rope suspended leads are designed to drive various types of vertical piles, such as interlocking sheet piles and single piles.



Rope suspended lead MAS 3000 with diesel pile hammer D25-32 in Russia



Diesel pile hammer D30-32SR with universal sheet pile adapter

The SR-series of rope suspended hammers is built to back-drive pre-installed piles to final depth. It can be used without a lead system and without a conventional pile helmet. Lifting, positioning and starting of the hammer are done with a single crane cable („SR“ stands for single rope). Part of this design is a „universal pile adapter“ that is installed below the hammer. This pile adapter can be outfitted with sheet pile inserts to drive the majority of the common double sheet pile sections on the market. Further there are inserts for pipe piles and H-beams available.

Rope Suspended Hammers

		D12-42SR	D19-42SR	D30-32SR	D46-32SR
Max. pile diameter	mm	410	510	762	1067
Max. sheet pile weight	kg	1500	2200	3500	5000
Weight of hammer cpl.	kg	4500	6500	9000	13500



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