



VIBRODRIVERS

FOR PILE DRIVING AND DEEP FOUNDATIONS



WHATEVER YOU NEED, WE HAVE THE SOLUTION.

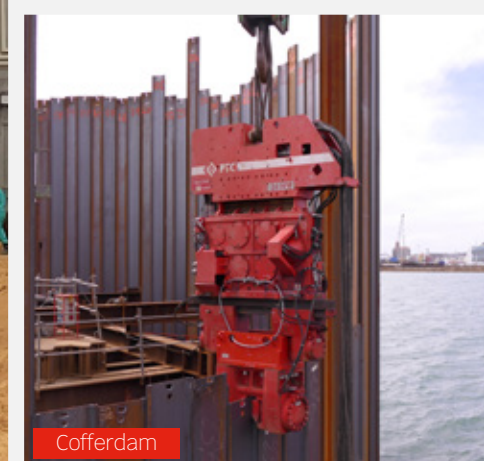
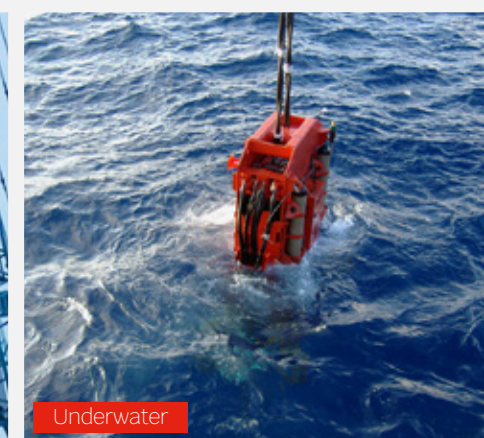
PTC is a Fayat Group international company specialised in the design and manufacturing of pile driving and soil improvement equipment. PTC provides vibrodrivers for deep foundation works and vibrolances for vibrocompaction and stone column works. Our wide range of products and services allows us to answer any customer's need, no matter the company size or its location.

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VIBRODRIVERS

For more than 90 years, PTC has been mastering vibration technology and developing innovative pile driving solutions that are used worldwide for multiple applications:

- First hydraulic vibrodriver? PTC.
- First high-frequency vibrodriver? PTC.
- First Variable Moment vibrodriver? PTC.



JOB DEFINITION

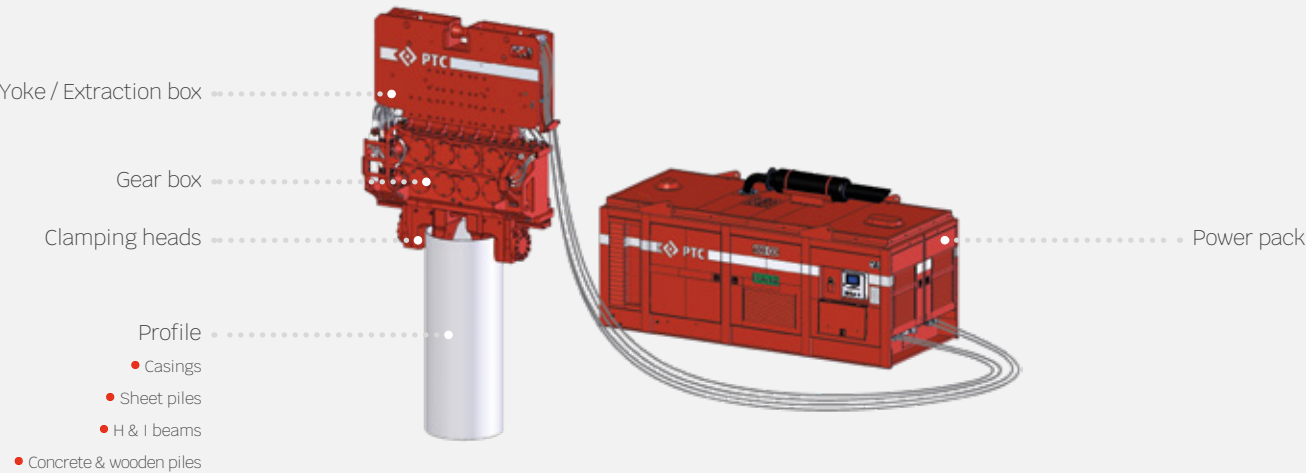
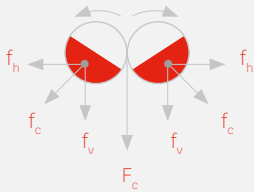
A job in threefold: a vibrodriver, a profile and soil configuration.

VIBRODRIVER

VIBRODRIVER PRINCIPLE: VIBRATORY PILE DRIVING REDUCES THE COHESION OF THE SOIL THROUGH VIBRATION.

The vibration of a profile causes the adjacent ground to shift and reduces the friction, between the soil and the profile. Thus allowing to easily drive or extract the profile by using either the mass of the equipment or the crane force.

In the gearbox, each eccentric pair turns at the same angular velocity but in opposite directions, producing a vertical vibration. Each eccentric generates a centrifugal force f_c . The horizontal components f_h are offset at the same time that the vertical components f_v are added, resulting in a total centrifugal force F_c . The yoke located above the gearbox prevents the transmission of vibrations to the crane, thanks to specially designed shock absorbers.



PROFILE

Our vibrodrivers work free-hanging on crawler cranes and mobile cranes with telescopic booms and can be used to drive a great variety of piles: sheet piles, H and I beams, casings and tubes, wooden and concrete piles.



Sheet piles



H & I beams



Casings & tubes



Wooden piles



Concrete piles

SOIL CONFIGURATION

We are at your disposal and have the expertise to support you for any soil investigation you might need. We will help and assist you to select the best equipment in order to best match your work configuration by studying soil technical data and the type of profile to be driven.

Important soil data are:



Cohesive or non-cohesive soil



Soil properties



Soil layers diversity



Depth needed

KEY ADVANTAGES

Our vibrodrivers have qualities that guarantee the success of any job.

VARIABLE MOMENT TECHNOLOGY

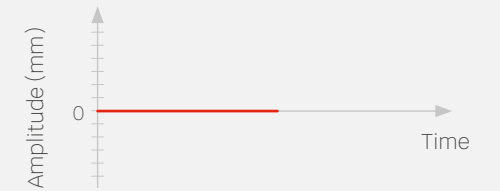
THIS TECHNOLOGY ALLOWS DRIVING WITH ADJUSTABLE AMPLITUDE THANKS TO THE VARIATION OF THE ECCENTRIC'S RELATIVE POSITIONS.

ADVANTAGES OF THE TECHNOLOGY:

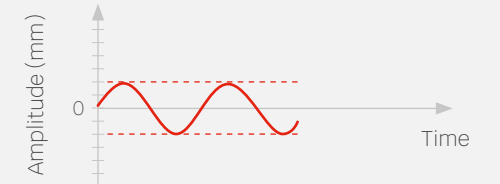
- Resonance-free start up and stop down.
- Suitable for telescopic booms.
- Amplitude adjustment at any time thanks to a continuous variation of the moment.
- The variation of the moment facilitates the positioning of the profile during driving operations:
 - Better control of the profile verticality.
 - Helps to precisely attain the desired driving depth.
 - Possibility of adjusting driving velocity.



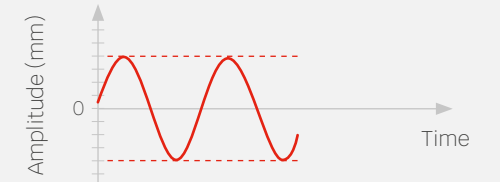
Start of vibration



Turned 60°



Turned 180°



COMPACTNESS

We have always paid particular attention to the design of our vibrodrivers when it comes to the compactness and machine's footprint on the job. We have spent years developing the most compact vibrodrivers on the market, that will allow our clients to work easily and comfortably no matter the configuration of their jobsite.

This compactness is achieved without any compromise on the machine's hard-wearing or temperature maintenance (effective oil cooling circuit), allowing our clients to couple ease of working and extreme conditions.



VERSATILITY



In 1992, PTC invented the variable moment technology adapted to vibration-sensitive jobsites, which completed our vibrodrivers ranges by providing our clients a driving solution for city centers and near-sensitive-structures jobsites. This technology has since benefited from a continuous improvement process aiming at increasing its performance.

Our vibrodrivers are also able to function in extreme conditions, from arctic cold to desert heat, thanks to all our years of experience put in their design and thanks to the hard-wearing of parts and quality materials used.

OUR VIBRODRIVER RANGES

Urban, suburban or heavy duty: we have the vibrodriver you require.

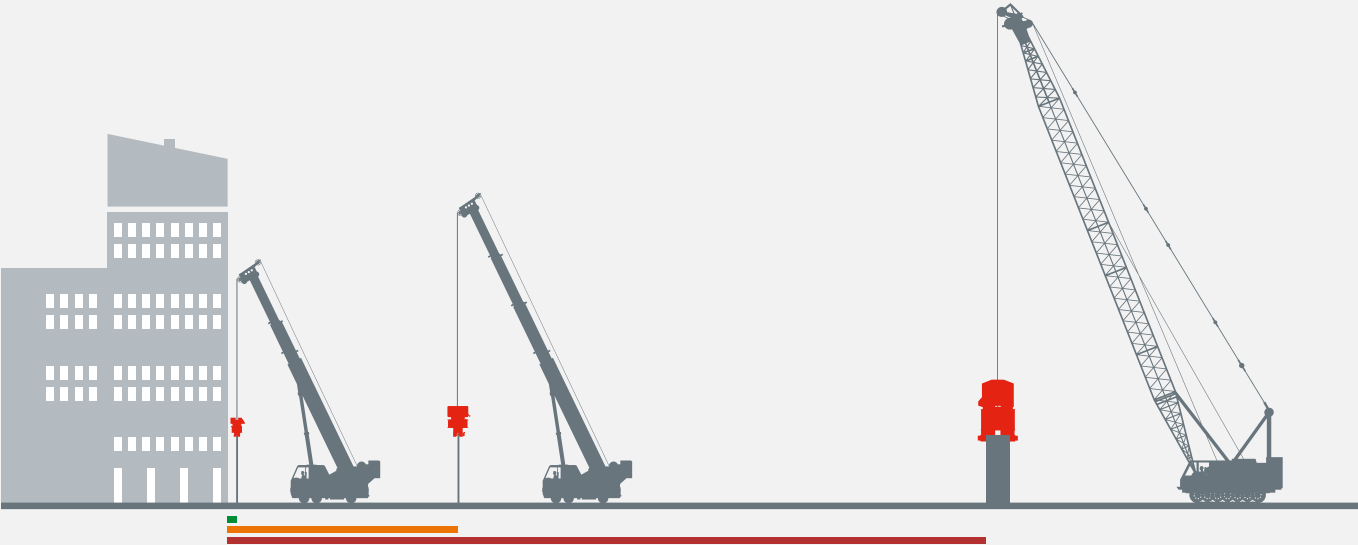
PTC pile driving know-how has produced innovative piling technologies, which have been integrated into the different ranges of PTC Vibrodrivers to offer the most performant pile driving solution for each application.

WHICH VIBRODRIVER RANGE?

The Vibrodriver range that best fits your application depends on the proximity of the piling job to existing vibration-sensitive structures. If the piling works are done in a vibration-sensitive area (in a city center next to buildings), you will need to control your amplitude and the particle velocity, thus you need a Vibrodriver with Variable moment technology (PTC Patent). If you are in an open area, far from other structures you may use a Vibrodriver with a fixed eccentric moment.

Once you know which Vibrodriver range is the most adapted for your application, the type of soil and the profile parameters (height, weight, type of profile) are key to determine within that range, what is the eccentric moment and the centrifugal force you require to drive the profile to the desired depth.

RECOMMENDED RANGE ACCORDING TO THE PROXIMITY OF A VIBRATION-SENSITIVE STRUCTURE



URBAN RANGE: HFV	SUBURBAN RANGE: HV	HEAVY DUTY RANGE: H / HD
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HFV: High Frequency Vibrodrivers with PTC Patented Variable moment Technology

HV: Medium Frequency Vibrodrivers with PTC Patented Variable moment Technology

H/HD: Medium Frequency Vibrodrivers with Fixed eccentric moment





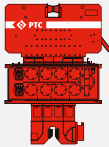
URBAN RANGE: HFV

High-frequency vibrodrivers with PTC patented Variable Moment technology.

HFV RANGE

HIGH-FREQUENCY AND VARIABLE MOMENT TECHNOLOGY

The HFV range allows to adjust the amplitude at any time, thus it is highly recommended for “vibration-sensitive” applications: city centers, or near existing structures (bridges, railways, old houses, gas pipelines, etc.). The HFV Vibrodrivers are suitable for telescopic cranes thanks to their resonance-free start-up and shut down. The VIBMASTER® monitoring system is highly recommended.



Concentrate of technologies



Compact



Adapted to vibration-sensitive areas



Up to 2,785 kN centrifugal force



Variable Moment technology

		10HFV	16HFV	24HFV	32HFV	40HFV	48HFV
ECCENTRIC MOMENT	m.kg	0 - 10	0 - 16	0 - 24	0 - 32	0 - 40	0 - 48
MAX. CENTRIFUGAL FORCE	kN	580	928	1,392	1,856	2,320	2,785
MAX. HYDRAULIC POWER	kW / HP	168 / 228	223 / 303	359 / 488	373 / 507	498 / 677	629 / 856
MAX. ECCENTRIC ROTATION VELOCITY	rpm / Hz	2,300 / 38	2,300 / 38	2,300 / 38	2,300 / 38	2,300 / 38	2,300 / 38
MAX. AMPLITUDE WITHOUT CLAMP	mm	20	13	19	16	19	23
MAX. LINE PULL CAPACITY	kN	225	300	375	600	750	750
VIBRATING WEIGHT WITHOUT CLAMP	kg	1,015	2,488	2,588	3,920	4,125	4,235
TOTAL WEIGHT WITHOUT CLAMP	kg	1,990	3,679	3,772	6,300	6,975	7,085
RAKED PILE DRIVING CAPACITY		•	•	•	•	•	•
FORCED AND COOLED LUBRICATION		•	•	•	•	•	•

• Standard





SUBURBAN RANGE: HV

Standard-frequency vibrodrivers with PTC Patented Variable Moment technology.

HV RANGE

MEDIUM FREQUENCY AND VARIABLE MOMENT TECHNOLOGY

The HV range offers the comfort and the advantages of the variable moment technology while working at standard frequency. Therefore, it requires less powerful power packs than High Frequency Vibrodrivers. These Vibrodrivers are suitable for telescopic cranes thanks to their resonance-free start-up and shut down. The VIBMASTER® monitoring system can take advantage of this range and is greatly recommended.

Our HV vibrodrivers do not need high speed (high centrifugal force) to work effectively. They harness the full potential of the H / HD vibrodrivers with all the technicity of the variable moment technology.



Unique in the world



Variable Moment technology



Compact



Adapted to both urban and rural zones



Up to 1,826 kN centrifugal force

		24HV	30HV	48HV	60HV
ECCENTRIC MOMENT	m.kg	0 - 24	0 - 27	0 - 48	0 - 55
MAX. CENTRIFUGAL FORCE	kN	674	934	1,348	1,826
MAX. HYDRAULIC POWER	kW / HP	140 / 190	218 / 296	297 / 403	377 / 512
MAX. ECCENTRIC ROTATION VELOCITY	rpm / Hz	1,600 / 27	1,760 / 29	1,600 / 27	1,740 / 29
MAX. AMPLITUDE WITHOUT CLAMP	mm	19	21	24	27
MAX. LINE PULL CAPACITY	kN	250	313	625	625
VIBRATING WEIGHT WITHOUT CLAMP	kg	2,588	2,614	4,075	4,140
TOTAL WEIGHT WITHOUT CLAMP	kg	3,900	3,970	6,500	6,750
RAKED PILE DRIVING CAPACITY		•	◦	◦	◦
FORCED AND COOLED LUBRICATION		•	◦	◦	◦

- Standard
- In option





HEAVY DUTY RANGE: H / HD

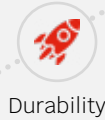
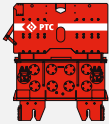
Standard-frequency vibrodrivers with fixed eccentric moment.

H / HD RANGE

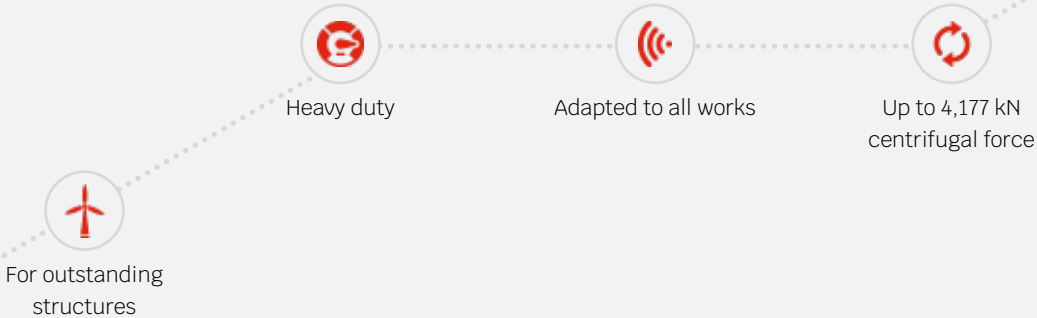
MEDIUM FREQUENCY AND FIXED ECCENTRIC MOMENT

The most famous range of « Heavy Duty » vibrodrivers in the world, known for their endless lifespan. This range is designed with hard-wearing materials and inside reinforcement for mechanically ultra-resistant vibrodrivers. In spite of all this robustness, H / HD vibrodrivers have high-filtering capacities to absorb vibrations in order to protect cranes and booms.

This range adapts to applications needing to drive sheet piles and casings with total weights exceeding 100 tons.

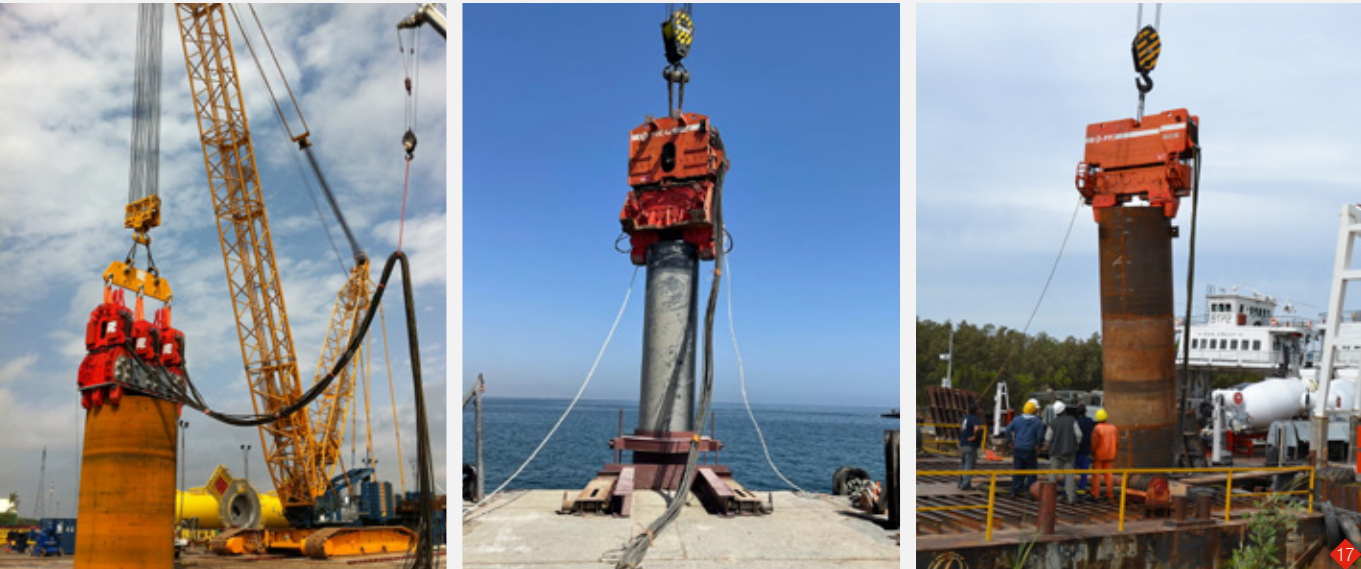


Durability



		1HF	15H	30H	50HD	65HD	75HD	120HD	200HD
ECCENTRIC MOMENT	m.kg	0,7	15	30	50	65	75	120	200
MAX. CENTRIFUGAL FORCE	kN	69	464	929	1,234	1,735	1,851	2,506	4,177
MAX. HYDRAULIC POWER	kW / HP	15 / 20	123 / 167	202 / 275	296 / 402	348 / 473	514 / 699	468 / 636	389 / 937
MAX. ECCENTRIC ROTATION VELOCITY	rpm / Hz	3,000 / 50	1,680 / 28	1,680 / 28	1,500 / 25	1,560 / 26	1,500 / 25	1,380 / 23	1,380 / 23
MAX. AMPLITUDE WITHOUT CLAMP	mm	8	31	27	33	28	31	29	28
MAX. LINE PULL CAPACITY	kN	25	225	400	625	600	1,000	1,200	1,800
VIBRATING WEIGHT WITHOUT CLAMP	kg	171	925	2,260 – 2,400	3,060	4,700	4,845	8,200	14,200
TOTAL WEIGHT WITHOUT CLAMP	kg	185	1,880	4,070 – 4,400	5,800	6,550	10,610	13,300	20,600
RAKED PILE DRIVING CAPACITY		–	–	–	◦	◦	◦	◦	●
FORCED AND COOLED LUBRICATION		–	–	◦ (H2)	◦	◦	◦	◦	◦

- Standard
- In option





POWER PACKS

A wide range of power packs complying to the most recent environmental regulations and emission standards

POWER PACKS

PTC offers "multi-purpose" powerpacks that feature state-of-the-art automation and a screen for work ergonomics and easy transfert from one machine to another , as well as an open loop circuit, which allows the power pack to supply power to multiple equipment:



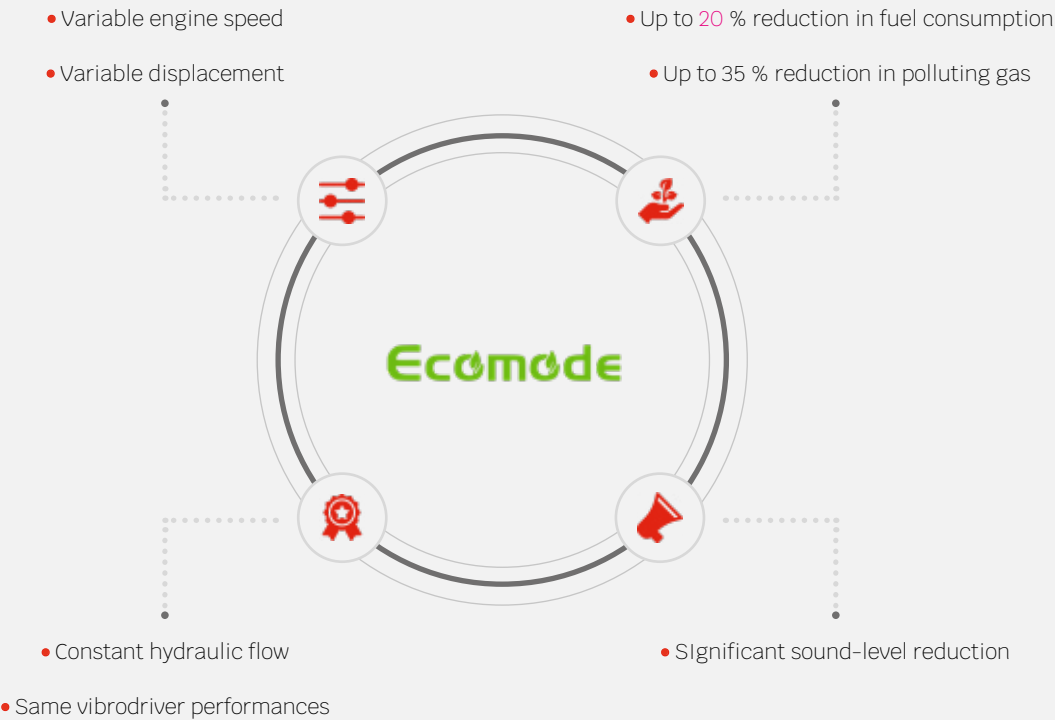
Vibrodrivers, hydraulic hammers, vibrolances, waterpumps and more.

		36B0	240VO	400VO	400CO	500VO	650VO	650CO	900VO	900CO	1200VO
OPEN LOOP CIRCUIT		•	•	•	•	•	•	•	•	•	•
STAGE V ENGINE		-	TAD 582 VE	TAD 883 VE	C9.3B	-	TAD 1385 VE	(*)	TWD 1683 VE 585kW	-	(*)
STAGE IV Final ENGINE		-	TAD 572 VE	TAD 873 VE	C9.3B	-	TAD 1375 VE	(*)	TWD 1683 VE 585kW	-	-
STAGE IIIA ENGINE		KUBOTA D1105	TAD 552 VE	TAD 853 VE	C9.3B LRC	TAD 1353 VE	TAD 1650 VE	C15	-	-	2x TAD 1651 VE
STAGE II ENGINE		-	-	-	-	-	-	-	TAD 1643 VE 565kW	C18	-
MAX. ENGINE POWER	kW / HP	19 / 26	160 / 217	235 / 319	250 / 340	345 / 469	405 / 550	403 / 548	585 / 795	571 / 776	900 / 1,223
MAX. ROTATION SPEED	rpm	3,000	2,000	1,800 - 2,200	1,900 - 2,200	1,900	1,900	2,100	1,900	2,100	1,900
NOMINAL OIL FLOW	LPM	36	240	380	380	510	650	650	900	900	1200
MAX. PRESSURE	bar	250	350	350	350	350	350	350	350	350	350

• Standard
(*) Ongoing development

ECOMODE

The Ecomode is included in PTC powerpacks. It reduces fuel consumption up to 20%, polluting emissions and noise. It automatically adjusts the speed of the diesel engine to only supply the power that is needed according to the soil conditions.

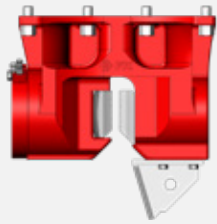


CLAMPING HEADS DIVERSITY

A wide range to match the variety of profile type and sizes.

AGRIPLEX

A fixed clamp for sheet piles or H beams.



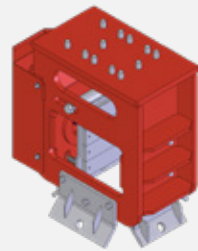
DUPLEX

Two clamps for tubes, caissons, and double sheet piles, which can slide on T-bars.



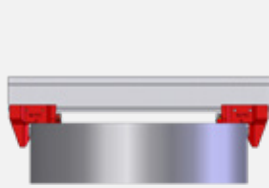
MULTIGRIP

A helmet clamp for concrete or wooden piles (round or square).



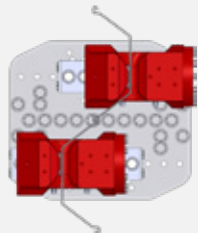
CUSTOMIZED INTERMEDIATE PLATES

To adapt the clamping system to the specific needs of the job site.



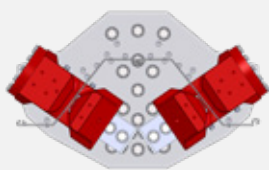
DUPLEX WITH STRAIGHT BEAM

to drive large tubes (mostly used with Duplex clamp)



DUPLEX WITH INTERMEDIATE PLATE

for double U sheet piles



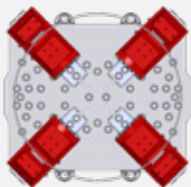
DUPLEX WITH INTERMEDIATE PLATE

for double Z sheet piles



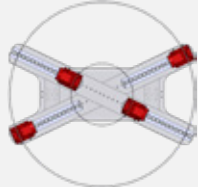
QUADRIPLEX WITH INTERMEDIATE SQUARE PLATE

for small and medium tubes on large vibrodrivers



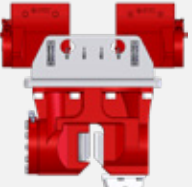
QUADRIPLEX WITH SPREADER BEAM

for large and heavy tubes



COMBINED CLAMP SYSTEM

For a fast switch of clamp (Agriplex – Duplex) when driving sheet piles and tubes



VIBMASTER

Monitoring and amplitude regulation according to soil velocity.

MONITORING

SOIL VELOCITY VIBMASTER

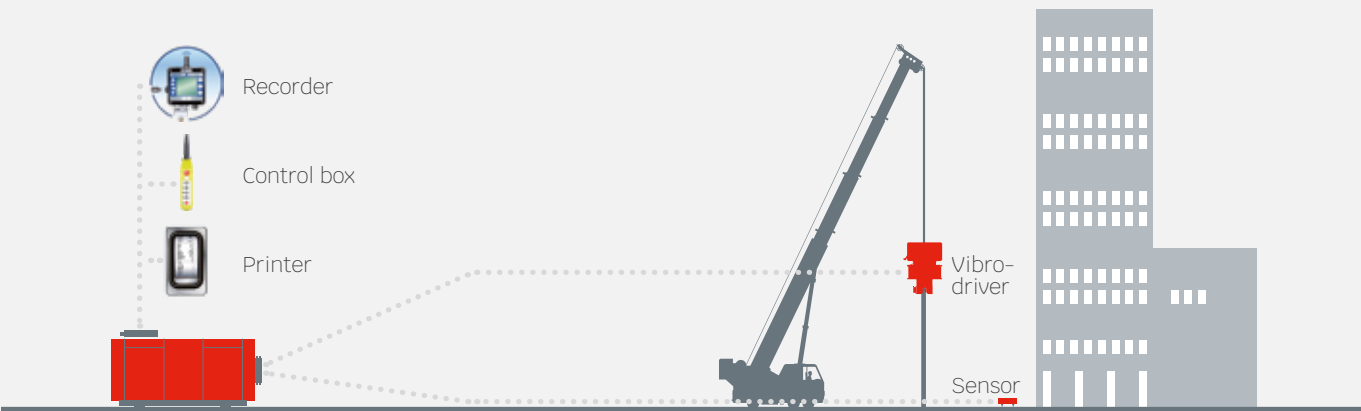
Vibmaster® is the monitoring system for PTC Vibrodriver applications. It allows to continuously control the driving of piles and sheet piles through the reading of the following parameters:

- The pressure of the Vibrodriver, to display the power supplied.
- The soil particle Velocity (in mm/s), to control the vibration transmitted to the ground.

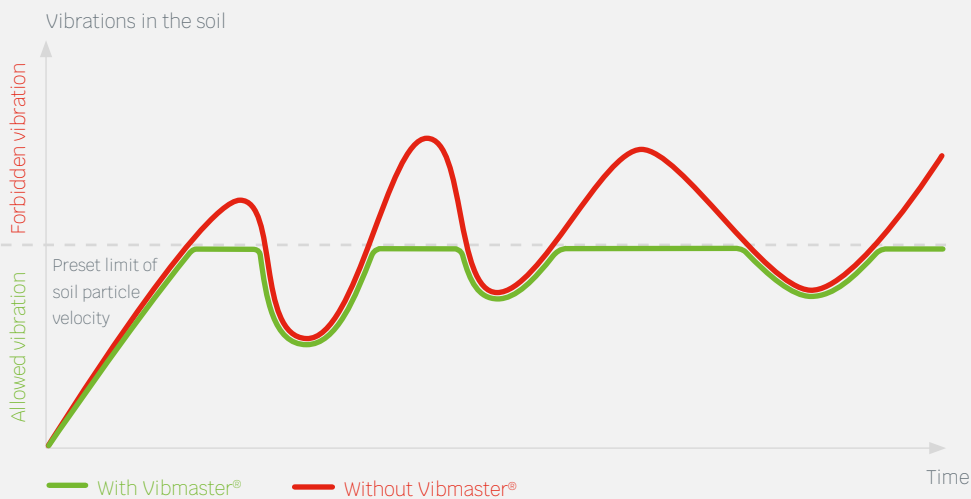
The following parameters are optional:

- Vibrodriver's vibration frequency and amplitude.
- Verticality.
- Depth of penetration (in meters).

The Vibmaster® working with HFV and HV Vibrodrivers enables to set a limit to the soil particle velocity that will not be exceeded. This system is required in sensitive and restricted areas such as, city centres, job sites near buildings, or job sites next to railways.



COMPARISON OF SOIL VIBRATIONS WITH / WITHOUT VIBMASTER® MONITORING SYSTEM



Vibmaster® monitoring system to connect to your PTC powerpack, all you need is to install a junction box inside the power pack and then connect it to all the components: the remote control box, the sensors and the monitoring panel, which displays the measurements in real time.

Monitor in real time a variety of working parameters to be sure to comply with the job site requirements. In addition, you can get a copy of the data on a USB key or store the data on your computer, to analyse the work data and prepare better for the next jobsite or to show it to a certification body.

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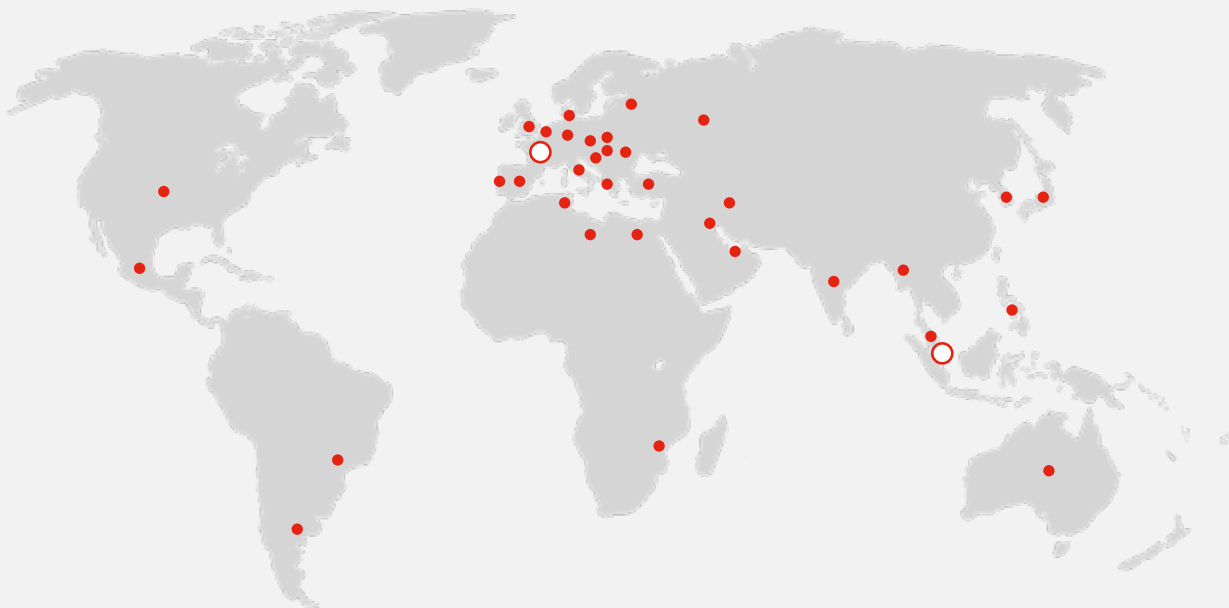
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Non contractual document due to the constant improvement policy of PTC (04/2021)