

# EXCAVATOR MOUNTED VIBRODRIVERS

For driving and extracting



# For more than 90 years PTC has been mastering vibration technology and developing innovative pile driving solutions: **THE VIBRODRIVERS**



The increasing use of hydraulic excavators in piling jobs, has motivated PTC to develop a complete range of Vibrodrivers that are specifically designed to be mounted directly on the stick of a wide range of excavators.

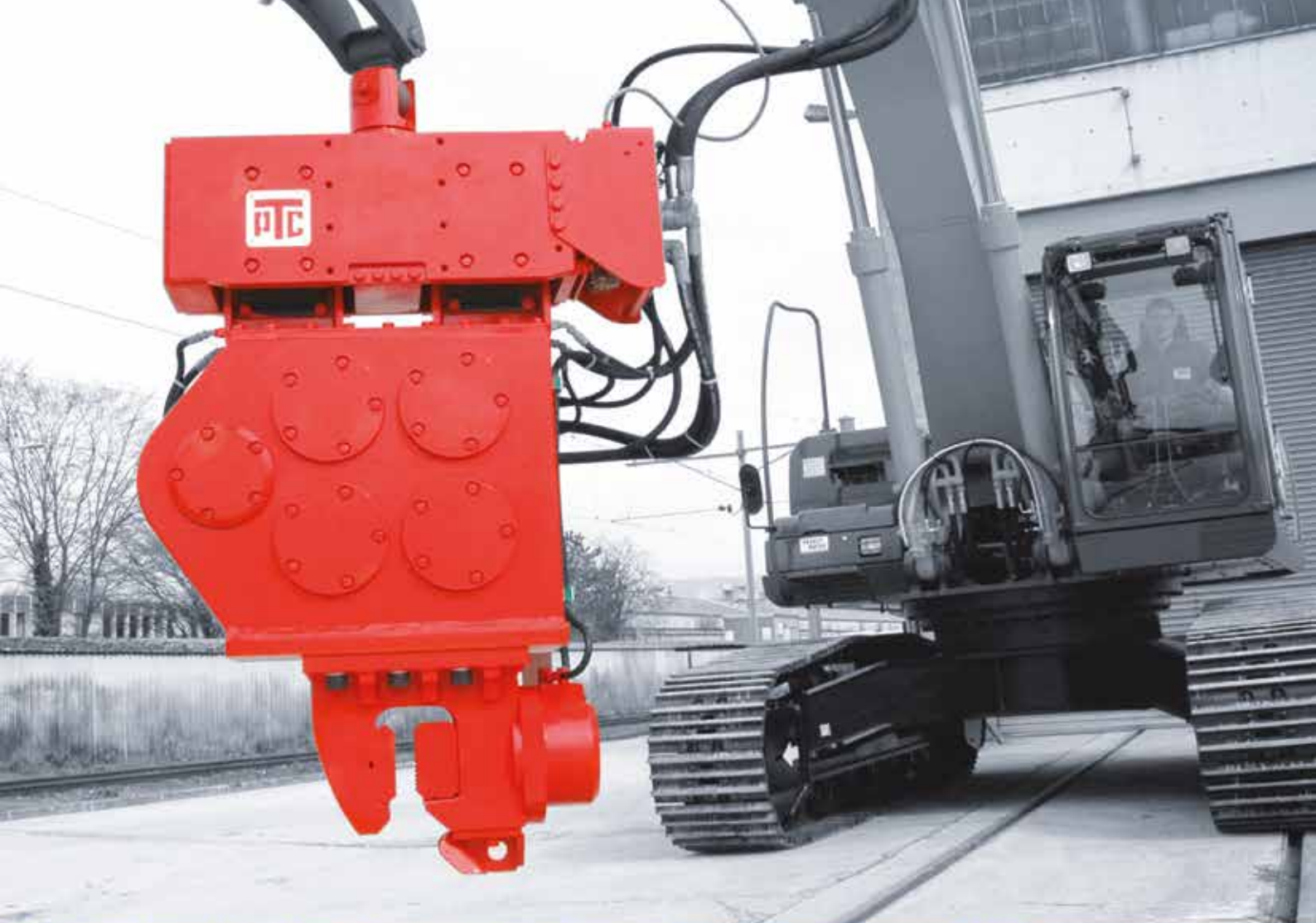
PTC excavator mounted Vibrodrivers are efficient hydraulic vibratory hammers that reduce the cohesion of the soil through vibration, allowing to easily drive or extract a variety of profiles, such as:

- Sheet piles
- H and I beams
- Casings and tubes
- Concrete piles
- Wooden piles

PTC proposes as well different clamping systems, accessories and connection options, allowing a perfect adaptation to the specificities of the job site and the excavator.







7PHFV Vibrodriver installing a 800m long sheet pile wall to reinforce the Loire river banks.



2PHFV Vibrodriver extracting 4m beams, under the strict vibratory regulations of a gas plant.



# APPLICATIONS

PTC excavator mounted Vibrodrivers are used worldwide in multiple applications.

NARROW SPACES



MAST ADAPTATION



RAILWAYS



RIVER BANKS



CITY CENTERS

URBAN AREA



REINFORCEMENT CAGES  
FOR CAST IN-SITU PILES

CUSTOMISED SOLUTION



VIBRATION-SENSITIVE  
AREAS

# EXCAVATOR MOUNTED VIBRODRIVERS

Specifically designed for piling and extraction works using excavators.

## Compact and slim

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- Ideal for piling jobs with reduced spaces and low head room, such as in city centres.
- Minimal height to drive long profiles.
- So slim that can drive in between sheet piles.

## 2 connection options

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To allow perfect adaptation to the number of circuits available on the excavator:

- Hydraulic control.
- Flow limiter.

## Resonance-free

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Vibrodrivers equipped with PTC patented Variable Moment technology can perform resonance-free piling works:

- Resonance free start-up and stop-down.
- Adjustable amplitude and driving speed.
- The variation of the moment facilitates:
  - the handling of the profile during driving operations.
  - a better control of profile verticality.

## Power and lightness

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- Vibrators with very light weight and powerful eccentric moments.
- High push/pull force.

## Simple operation

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- The Vibrodriver is powered by the excavator's hydraulic system.
- The excavator's operator controls all parameters from the cabin.

## Clamps adaptability

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- Agriplex clamps can be mounted at 90° to allow face working.
- A variety of clamps are available to adapt to any size and shape of profile.

#### EXCAVATOR CONNECTION

(Power supplied by the excavator).

#### SWIVEL

Allows Vibrodriver rotation and facilitates profile positioning.

#### YOKE

Contains high absorption elastomers, for maximum excavator protection. These elastomers are the result of PTC research in reducing vibratory emissions.

#### GEAR BOX

Contains the eccentric pairs that produce the vibration.

**PATENT**

#### VARIABLE MOMENT TECHNOLOGY (PHFV range).

#### CLAMPING HEAD

A broad range of clamping heads to allow the driving and extraction of:

- Sheet piles.
- H-beams.
- Wooden piles.
- Concrete piles.
- Small tubes.

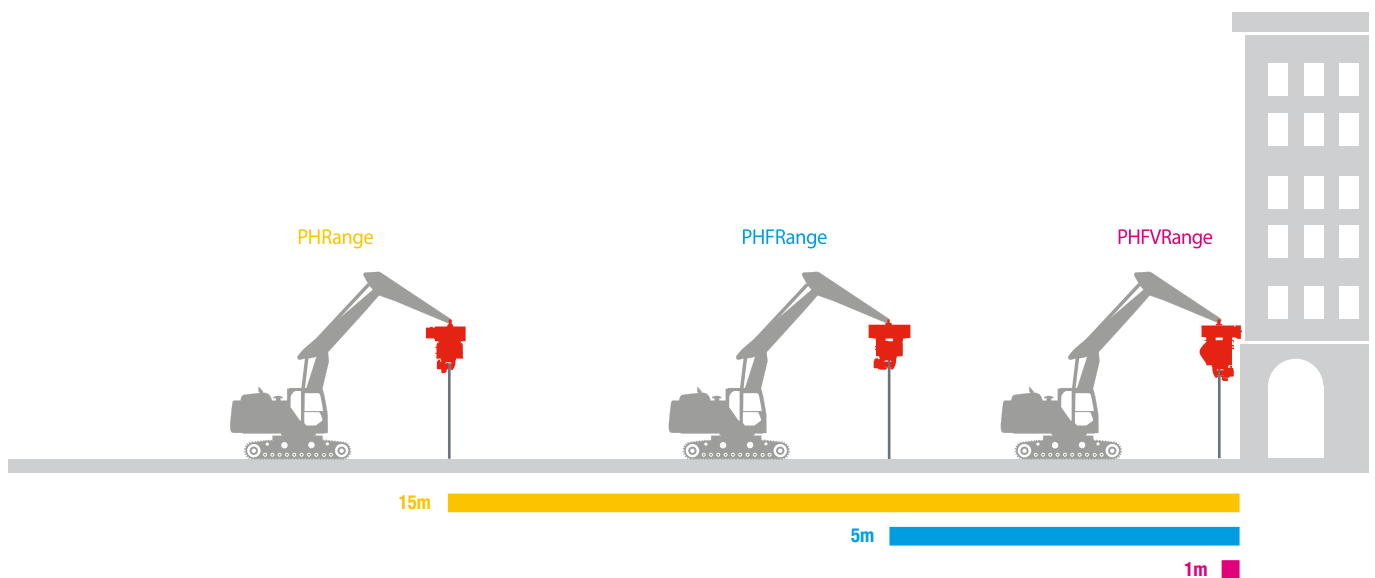
# VIBRODRIVER RANGES

For a perfect technological adaptation to your job site.

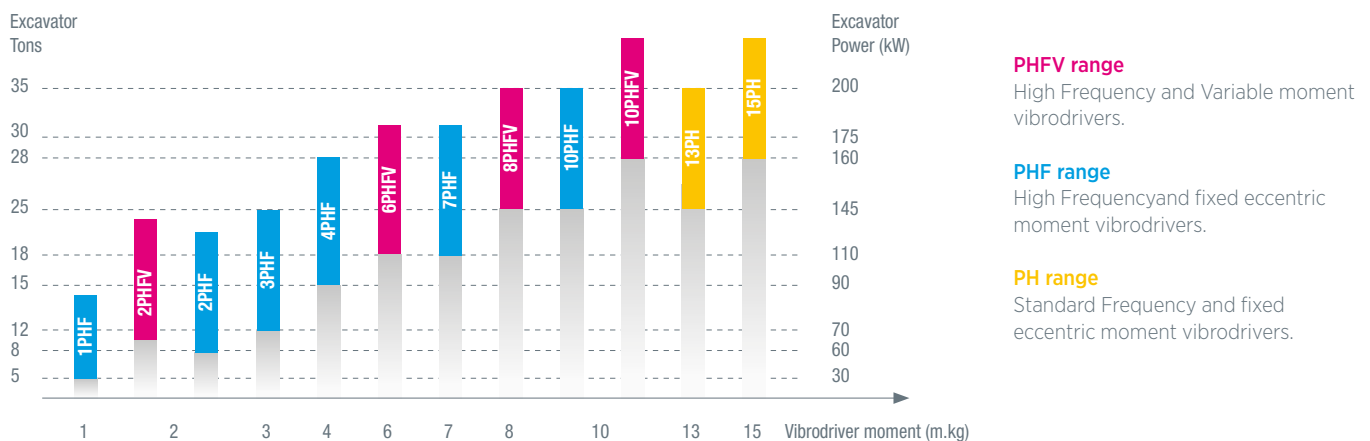
## What Vibrodriver range to use?

The Vibrodriver range that best fits your application depends on the proximity to existing vibration-sensitive structures.

If the piling works are in a city center and you want to control the vibration and the soil particle velocity, the range with variable moment technology is the best adapted (PHFV range). If you are working far from existing structures, you may use a Vibrodriver with a fixed eccentric moment (PHF and PH ranges). The type of soil and the profile parameters (height, weight, type of profile) will be key to determine the excentric moment you require to drive the profile to the desired depth.



## What Vibrodriver for your excavator ?





# VARIABLE MOMENT TECHNOLOGY

To control the vibration.

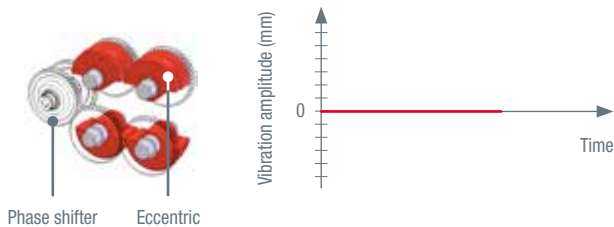


All Vibrodrivers of the PHFV range are equipped with PTC's variable moment technology.

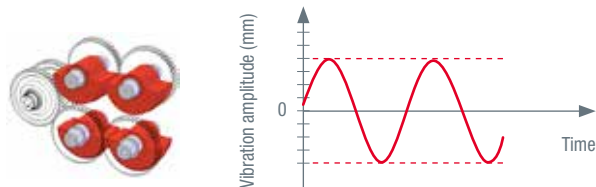
## Advantages

- Pile driving works in urban areas.
- No vibration during start-up and shut down phases.
- Vibration control.
- Control & limit the soil particle velocity (when used with Vibmaster monitoring System).

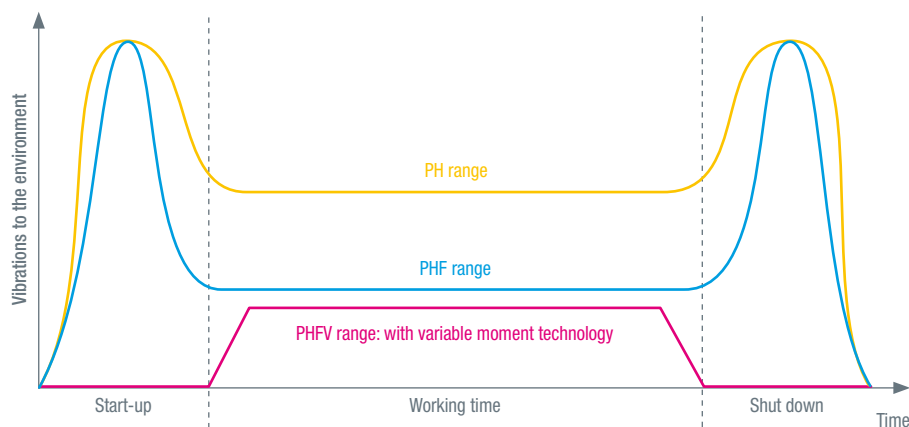
### Start-up and shut down of the vibrator



### Pile driving



## Vibratory emissions per vibrodriver range



#### PHFV range

High Frequency and Variable moment vibrodrivers.

#### PHF range

High Frequency and fixed eccentric moment vibrodrivers.

#### PH range

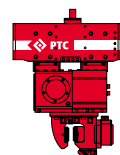
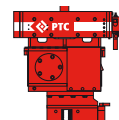
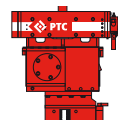
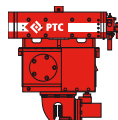
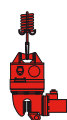
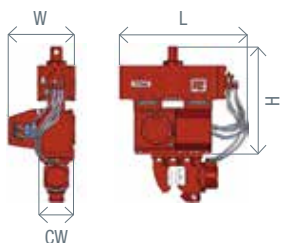
Standard Frequency and fixed eccentric moment vibrodrivers.

# PH / PHF / PHFV RANGE

## Excavator mounted Vibrodrivers.

Outstandingly compact and powerful Vibrodrivers to be mounted on hydraulic excavators. Ideal to drive sheet piles, H-beams and casings in urban projects with reduced spaces.

- **PHFV Range:** High Frequency & Variable eccentric moment
- **PHF Range:** High Frequency & Fixed eccentric moment
- **PH Range:** Standard Frequency & Fixed eccentric moment



VIBRODRIVERS		1PHF	2PHF	3PHF	4PHF	7PHF
FIXED OR VARIABLE MOMENT		FIXED ECCENTRIC MOMENT				
ECCENTRIC MOMENT	m.kg	0.7	2.1	3	4	6.5
HYDRAULIC POWER AT 350 BAR	kW / HP	21 / 29	44 / 60	54 / 74	68 / 93	85 / 115
OIL FLOW	L / min	26	76	93	117	145
MAX. WORKING PRESSURE	bar	350	350	350	350	350
MAX. FREQUENCY	Hz / rpm	50 / 3000	45 / 2700	48.3 / 2900	43.3 / 2600	38.3 / 2300
MAX. CENTRIFUGAL FORCE	kN	70	171	282	302	384
MAX. LINE PULL CAPACITY	kN	25	60	60	60	120
VIBRATING WEIGHT WITHOUT CLAMP	kg	171	475	495	510	670
TOTAL WEIGHT WITHOUT CLAMP	kg	185	710	735	780	1060
MAX. AMPLITUDE	mm	8.2	8.8	12.1	15.7	19.4
LENGTH (L)	m	0.480	1.038	1.038	1.038	1.185
MAX. WIDTH (W)	m	0.430	0.586	0.586	0.586	0.615
CENTER WIDTH (CW)	m	0.240	0.330	0.330	0.330	0.330
HEIGHT WITHOUT CLAMP (H)	m	0.450	0.800	0.800	0.800	1.080

### RECOMMENDED CLAMPING HEAD

CLAMP FOR SHEET PILES		Agriplex 22 t	Agriplex 22 t	Agriplex 40 t	Agriplex 40 t	Agriplex 60 t
CLAMP FOR SHEET PILES		-	-	-	-	Tiltex 60 t
CLAMP FOR CASINGS		-	-	-	-	Duplex 2 x 42 t
MIN. AND MAX. CASING DIAMETER	mm	-	-	-	-	190 / 1000
CLAMP FOR CONCRETE / WOODEN PILES		-	-	-	-	Multigrip 60 t

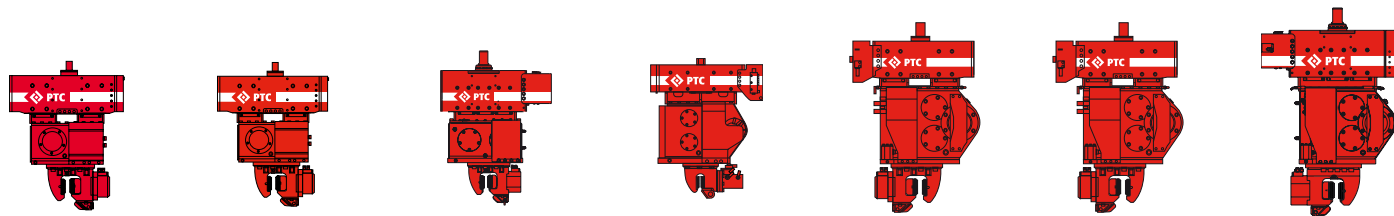
### CONTROLS EQUIPMENT AND ACCESSORIES

FLOW LIMITOR		Standard	Standard	Standard	Standard	Standard
HYDRAULIC CONTROL		-	Option	Option	Option	Option

### ACCESSOIRES

GOOSENECK STICK		-	Option	Option	Option	Option
FORK ATTACHMENT		-	Option	Option	Option	Option
STORAGE SUPPORT		Option	Option	Option	Option	Option





10PHF	13PH	15PH	2PHFV	6PHFV	8PHFV	10PHFV
	FIXED ECCENTRIC MOMENT		VARIABLE ECCENTRIC MOMENT			
10	13	15	0 - 1.9	0 - 6	0 - 8	0 - 10
110 / 150	115 / 157	123 / 166	47 / 64	86 / 117	110 / 149	121 / 164
189	198	210	81	148	188	207
350	350	350	350	350	350	350
35 / 2100	3,8 / 1850	28 / 1680	48.3 / 2900	39.2 / 2350	39.2 / 2350	38.3 / 2300
493	497	473	179	370	494	591
120	120	225	60	120	120	225
880	900	975	440	945	974	1020
1270	1290	1570	690	1382	1411	1620
22.7	28.9	30.8	8.6	12.7	16.4	19.6
0.920	0.920	1.205	1.150	1.310	1.310	1.310
0.734	0.734	0.740	0.450	0.623	0.623	0.623
0.380	0.380	0.380	0.250	0.345	0.345	0.380
1.077	1.077	1.206	0.900	1.300	1.300	1.466
Agriplex 60 t	Agriplex 60 t	Agriplex 60 t	Agriplex 22 t	Agriplex 60 t	Agriplex 60 t	Agriplex 90 t
Tiltex 60 t	Tiltex 60 t	-	-	Tiltex 60 t	Tiltex 60 t	-
Duplex 2 x 42 t	Duplex 2 x 42 t	Duplex 2 x 42 t	-	Duplex 2 x 42 t	Duplex 2 x 42 t	Duplex 2 x 42 t
190 / 1000	190 / 1000	190 / 1000	-	190 / 1000	190 / 1000	190 / 1000
Multigrip 60 t	Multigrip 60 t	Multigrip 60 t	-	Multigrip 60 t	Multigrip 60 t	Multigrip 60 t
Standard	Standard	Standard	Option	Option	Option	Option
Option	Option	Option	Option	Option	Option	Option
Option	Option	Option	Option	Option	Option	Option
Option	Option	Option	Option	Option	Option	Option
Option	Option	Option	Option	Option	Option	Option

PTC reserves the right to modify the technical data without notice

# CLAMPING HEADS

A wide range of clamping heads to match the diversity of profile forms and sizes.

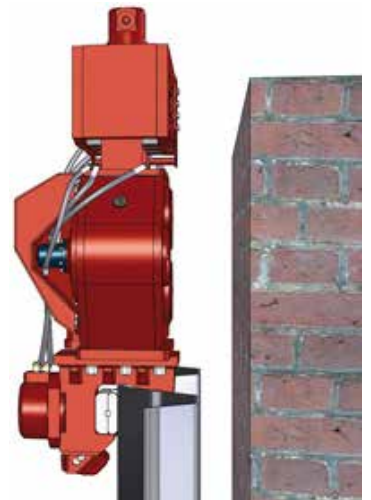


## Agriplex clamp

- Single sheet piles
- Double sheet piles
- H beams
- I beams

### 2 driving positions:

To work in reduced spaces, the Agriplex can be mounted perpendicular to the Vibro-driver in a 90° position that allows to work almost flush against a wall.



AGRIPLEX		22 t	40 t	60 t	90 t
WEIGHT	kg	85	220	264	330
FORCE	kN	220	400	600	900
WORKING PRESS URE	bar	320	320	320	320
MIN. H-BEAM SIZE	type	HEB140	HEB240	HEB320	HEB260

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AGRIPLEX	A - Length (mm)	B - Width (mm)	C - Height (mm)	D - Opening (mm)	Weight (kg)	Clamping force (kN)
22 t	487	240	307	0-20	85	220
40 t	492	250	400	0-35	220	400
60 t	619	350	479	0-40	265	600
90 t	662	350	387	0-40	330	900

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## 22 t

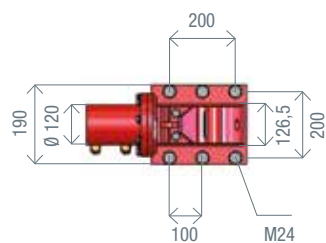
3D view



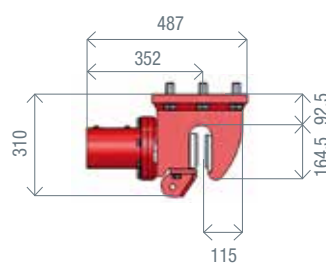
Front view



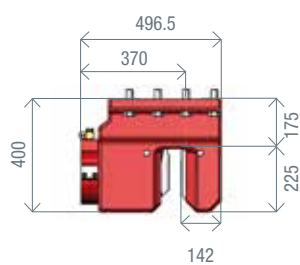
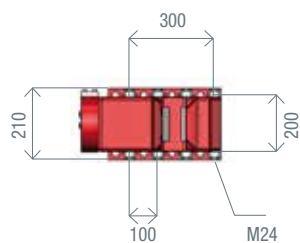
Elevation view



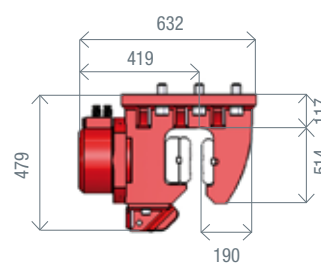
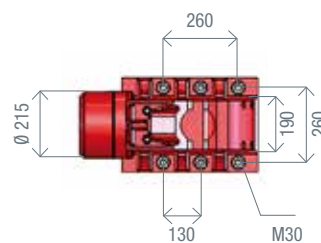
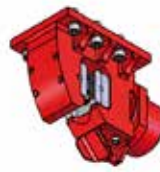
Side view



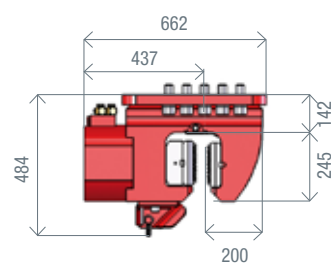
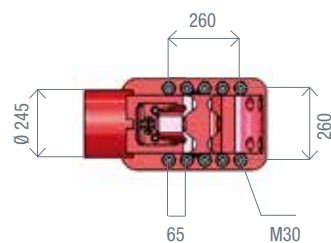
## 40 t



## 60 t



## 90 t



# CLAMPING HEADS

A wide range of clamping heads to match the diversity of profile forms and sizes.

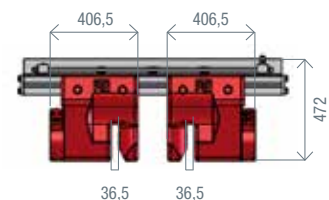
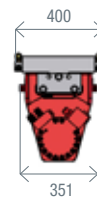


## Duplex clamp

For small casings

### 2x42t

For casings of Ø 190 to 1000 mm



*\*Dimensions are given in mm.*

DUPLEX		42 t
WEIGHT (including 1 m T-bar)	kg	678
FORCE	kN	840
WORKING PRESSURE	bar	320

*PTC reserves the right to modify the technical data without notice.*

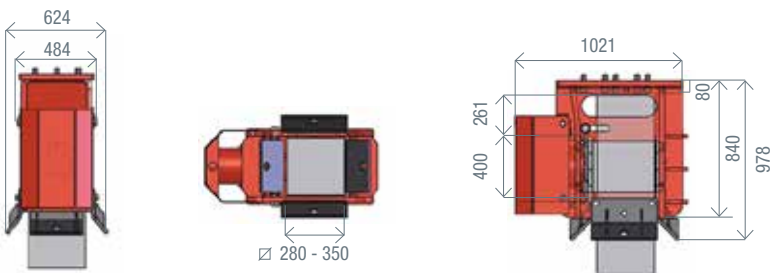




# Multigrip clamp

For concrete and wooden piles

60t

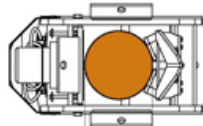
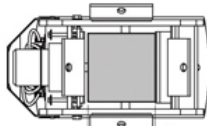


\*Dimensions are given in mm.

MULTIGRIP		60 t
WEIGHT	kg	780
FORCE	kN	600
WORKING PRESS URE	bar	320

PTC reserves the right to modify the technical data without notice.

Adapted for round or square piles



MULTIGRIP 60 t		Min. / Max.		Min. / Max.	
		☐		○	
STANDARD	mm	280	350	290	350
OPTION	mm	210	280	230	290
OPTION	mm	140	210	160	230

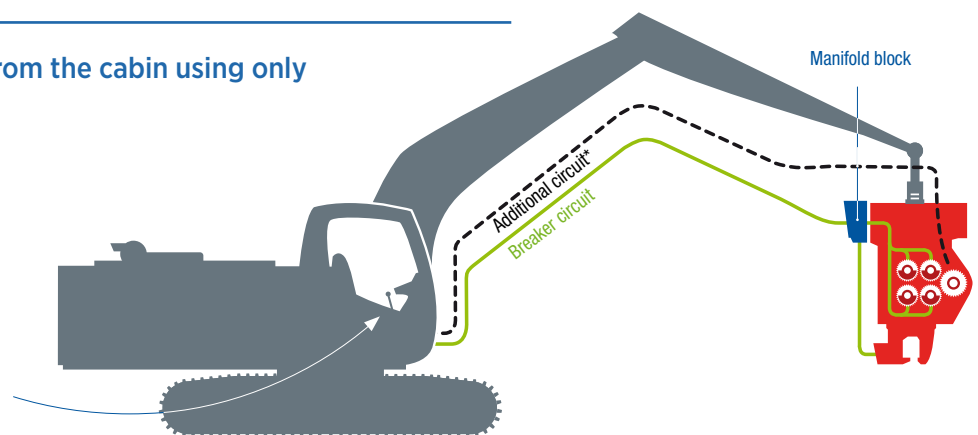
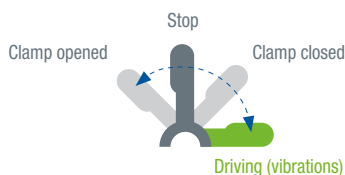
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# CONTROLS & CONNECTIONS

Two control options for perfect adaptation to the hydraulic circuits available on the excavator.

## Hydraulic control

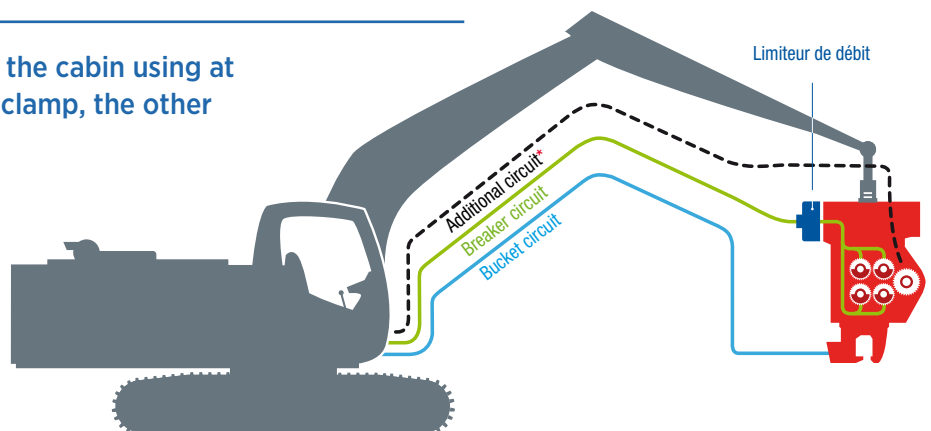
The Vibrodriver is controlled from the cabin using only one joystick.



\* Only for PHFV Vibrodrivers: Additional circuit to control the amplitude.

## Flow limiter

The Vibrodriver is controlled from the cabin using at least 2 joysticks (one controls the clamp, the other controls vibration).



\* Only for PHFV Vibrodrivers: Additional circuit to control the amplitude.



To obtain the best driving performance, it is key to choose the right excavator for the Vibrodriver (see table in page 5). You also need to be sure that your excavator is able to keep a constant flow when another excavator circuit is being used and also when pressure goes up to 300 bar.

The manifold block developed by PTC allows to control the Vibrodriver y using only one joystick (vibration and clamps). The operator starts powering the Vibrodriver by pushing forward the joystick to close the clamp. Then to start the vibration, the joystick needs to be pushed all the way. To open the clamp the operator moves the joystick backwards and reverses the flow.

**1 circuit is required to operate PHF Vibrodrivers:**

— Breaker circuit (with two-way hydraulic flow).

**2 circuits are required to operate PHFV Vibrodrivers:**

— Breaker circuit (with two-way hydraulic flow).

--- Additional circuit: for the variable moment system of the vibrator, which controls the amplitude.

The flow limiter makes sure the vibrodriver's maximum oil flow capacity is not surpassed, thus guaranteeing driving efficiency and protecting the equipment. In addition, the Vibrodriver can be mounted on excavators with different oil flow capacities, without needing special adaptation.

**2 circuits are required to operate the PHF Vibrodrivers:**

— Breaker circuit: for the Flow limiter, which controls the hydraulic motor (Vibrations).

— Bucket circuit: for the clamp.

**3 circuits are required to operate the PHFV Vibrodrivers:**

— Breaker circuit: for the Flow limiter, which controls the hydraulic motor (Vibrations).

— Bucket circuit: for the clamp.

--- Additional circuit: for the variable moment system of the vibrator, which controls the amplitude.

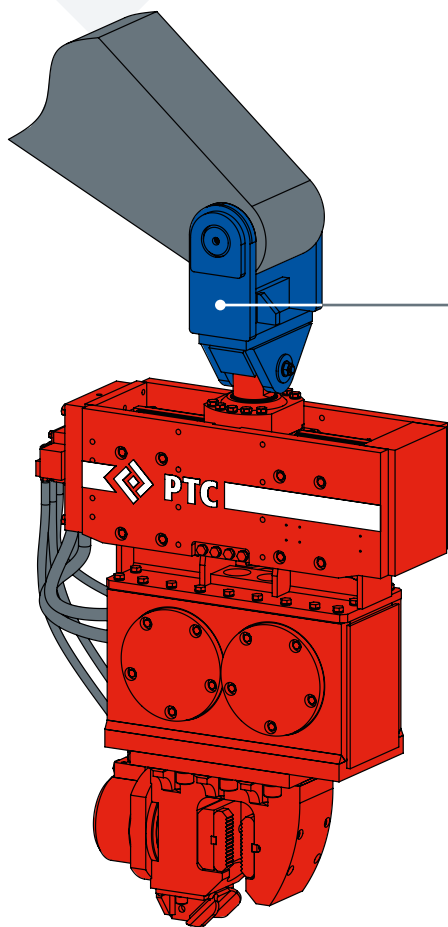


# ACCESSORIES

For a better adaptation to the excavator and the job site.

## Fork attachment

The fork attachment allows easy mounting of the Vibrodriver on the excavator boom. At customer request, PTC customizes the fork attachment to guarantee a perfect fitting. For the customization, the clients must provide the measurements of the excavator boom.



**FORK ATTACHMENT**  
Customized to excavator boom



## Chain

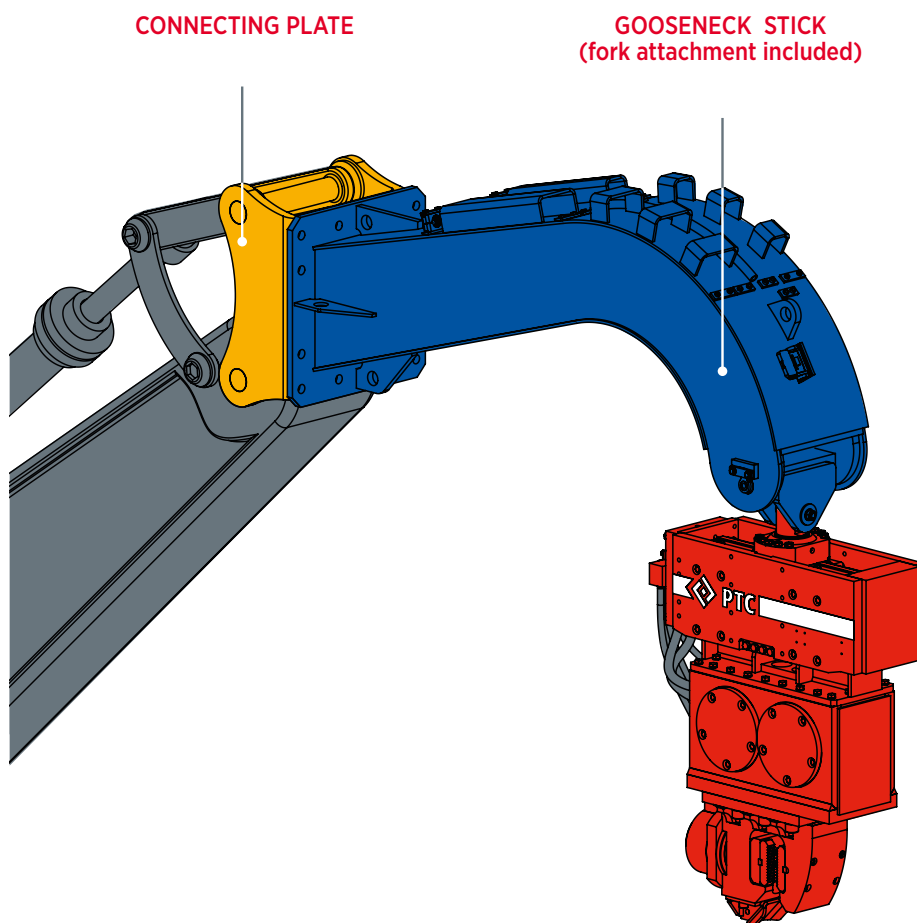
For safety reasons, a chain should be used to attach and secure the sheet pile to the vibrator. PTC supplies the chain with Vibrodrivers equipped with Agriplex clamps.





## Gooseneck stick

PTC has specially developed an extension arm for the excavator boom that increases the lifting height of the excavator by 1.5 or 2m, thus allowing the driving of higher profiles. The gooseneck stick is supplied with assembling pins and an attachment fork.



## Storage support

The storage support is a useful accessory to save floor space on the job site and to better organize the vibrators on your yard.



# WORLDWIDE NETWORK IN OVER 40 COUNTRIES



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