Green Attachments Sales File

Hopper Compactors

Hopper introduction

Hopper line compactors

Hydraulic compacting plates are designed for soil compacting especially applications where are high requirements. Typical applications are compacting of pipeline trenches and narrow locations. Available for excavators 2.0 – 40.0 ton.

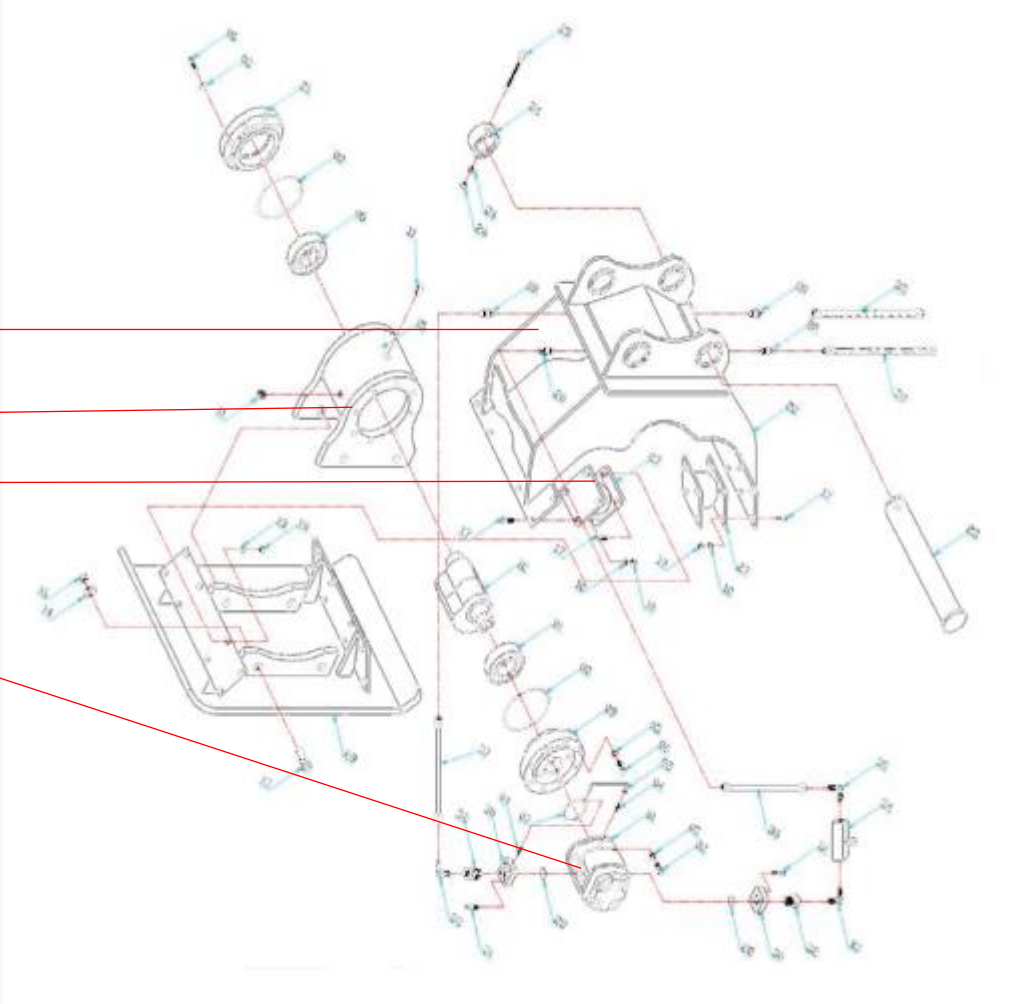
	Hopper C 020	Hopper C 040	Hopper C 060	Hopper C 080	Hopper C 100
Excavator t	2 - 3	3 - 10	8 - 16	17 - 25	20 - 40
Weight, kg	110	300	500	900	950
Frequency n/min	2000	2000	2000	2000	2000
Oil Flow, l/min	25 - 40	45 - 75	85 - 105	120 - 170	120 - 170
Pressure, bar	100 - 130	100 - 130	100 - 130	120 - 180	120 - 180
Vibrating force, kg	3 000	5 000	10 000	15 000	15 000
Bottom plate, mm	650 x 470	900 x 550	900 x 700	1100 x 900	1100 x 900

Hopper introduction

Hopper line compactors

Compactors have following main parts

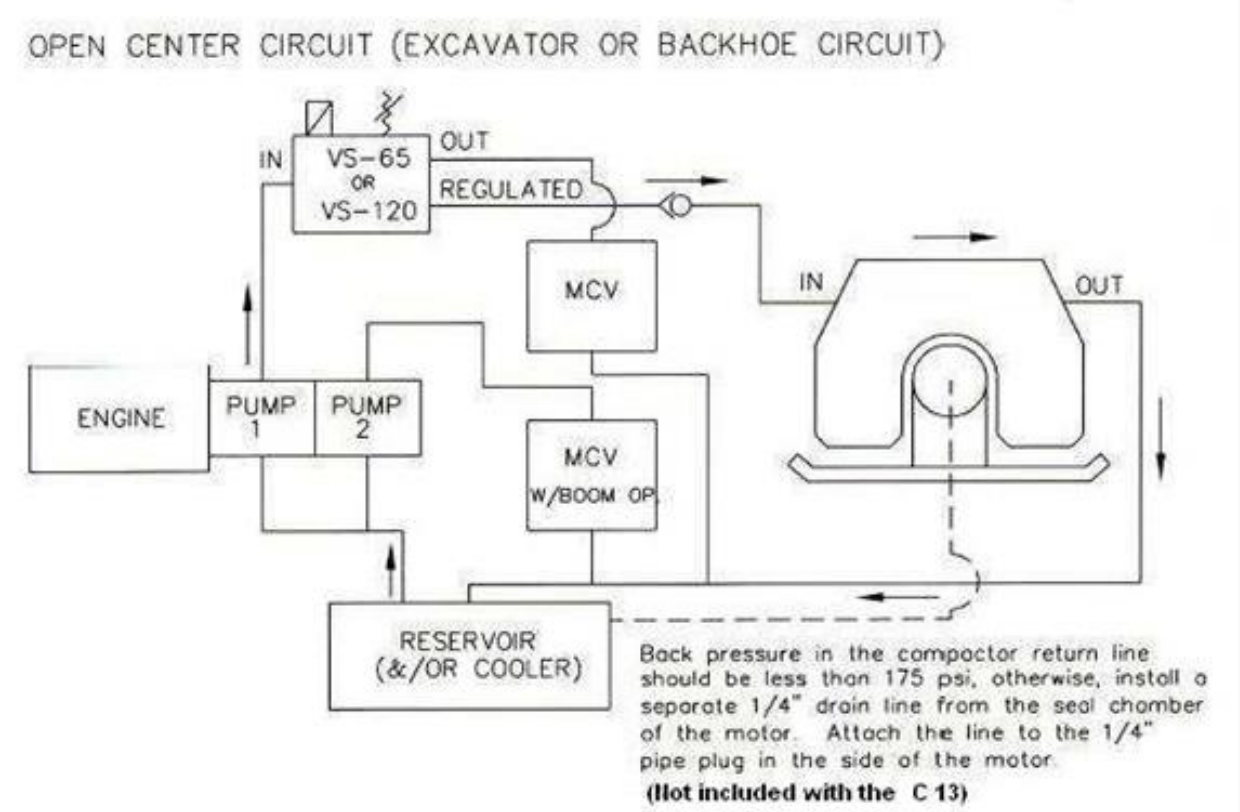
1. Frame
7. Excentric
12. Rubber mount
19. Hydraulic motor



Hopper introduction

Hydraulic scheme

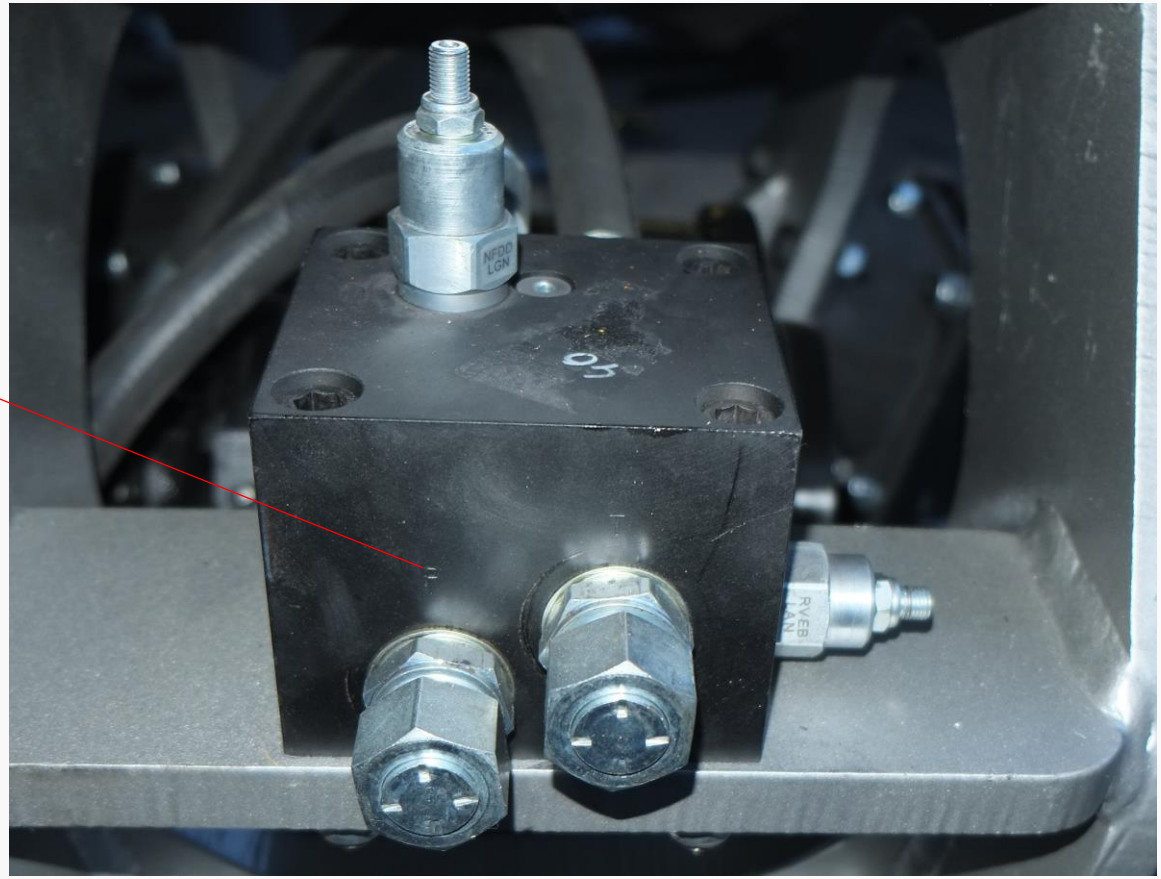
Back pressure should be lower than 12 bar. If it is higher, you must install case drain line.



Hopper introduction

Installation

Valve has P and T lines stamped as pressure and tank



Hopper introduction

Principle of this compactor

The Green Attachments Compactor is a excavator mounted compacting attachment that utilizes the hydraulic system of the base machine on which it is to be mounted.
The compactor combines high frequency vibration with high impact force to make quick work of any compacting task. The vibration from such force is utilized in the compaction of soil and granular materials. Down pressure from the base machine provides the resistance force necessary for compaction. Subject to the type of soil the compactor can be used to drive piles, fence posts, guardrail posts, sheeting, etc.

The Green Attachments Compactor consists of two major subassemblies:

Mass - The eccentric housing has two shafts (except the C-2 which only has one shaft), each with an eccentric, mounted inside the housing and each supported by two bearings. A gear type hydraulic motor is directly engaged with one of the eccentric shafts, with a gear on each eccentric shaft transferring the drive from the shaft driven by the motor to the other eccentric shaft.

Suspension - An upper frame with the rubber vibration dampeners that are attached to the mass. The upper frame is connected to the base machine via the top bracket.

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Hopper introduction

Principle of this compactor

The hydraulic motor directly drives an eccentric shaft within the eccentric housing and in turn this eccentric shaft drives the second eccentric shaft. The eccentric weights produce forced oscillation of the rubber - supported mass with a compaction force large enough to achieve compaction density of 95% proctor in lifts of 60 to 120 cm. Hydraulic pressure during the compactor operation is developed by the work resistance. The pre-set pressure relief valve in the hydraulic valve fitted on the compactor/drive should not be changed. The flow control valve in the same valve is also pre-set and should not be changed. When installing a compactor on a base machine for the first time the hydraulic flow and pressure should be no higher than the maximum limits allowed, as given in the standard specifications. The return line from the compactor should return directly to the hydraulic tank without returning through valves or obstructions. The maximum return pressure in the return line should not exceed the limits also given in the standard specifications. If the return pressure is higher than these limits the hydraulic motor shaft seal can be damaged allowing hydraulic oil to enter the gear housing.

Vibratory compactors are effective in all types of soils, specifically compaction of granular soils. For well-graded soils with the moisture close to the optimum and the max lift, the best results are usually obtained with two to four passes. Additional passes usually do not increase densities significantly.

Hopper Features

Bottom plate

Bottom plate is made of Hardox 400

Hopper features

Valve block

Flow control and relief valves are located in valve block.

Hopper Features

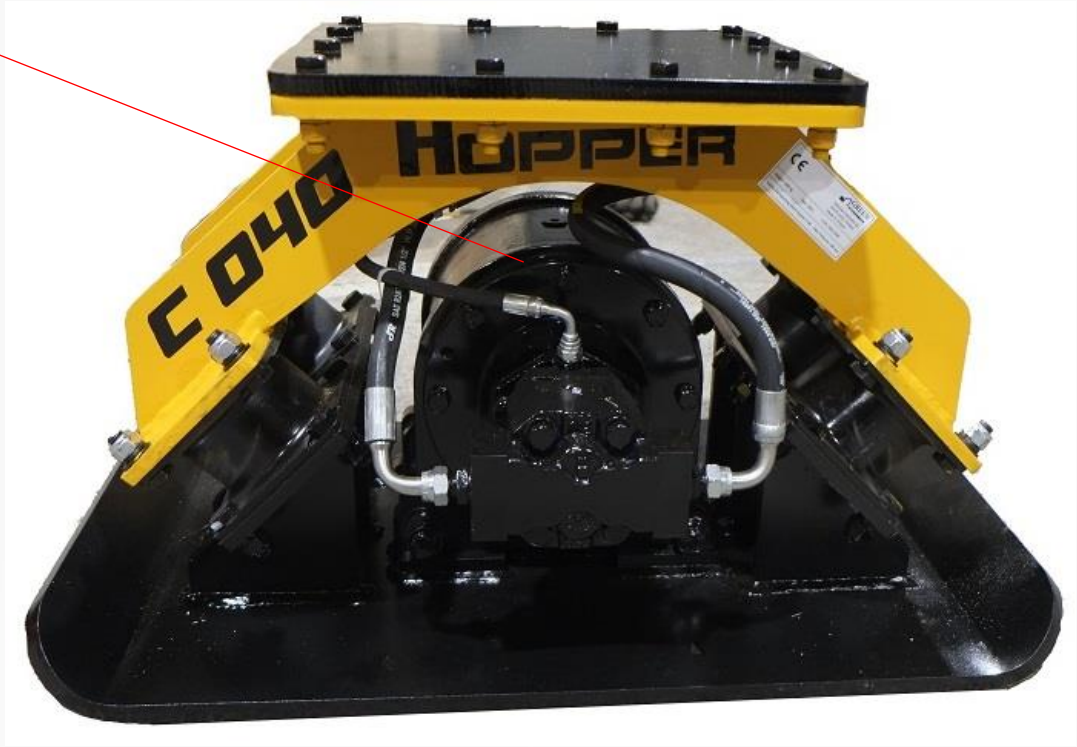
Hydraulic motor

The Permco hydraulic motor directly drives an eccentric

Hopper Features

Eccentric

The eccentric weights produce forced oscillation of the rubber supported mass with a compaction force



Hopper Features

Rubbers

Suspension rubbers in optimal angle transfer vibration to bottom plate and causes compaction