

PneuVibe ***Compaction***



Operating Instructions Manual

PNEUVIBE

CP Series Compactor Plates

INTRODUCTION

Thank you for purchasing PneuVibe Compaction Equipment.

The following Instructions will enable Safe and Efficient use of this equipment. Properly Installed, it will prove Reliable and Productive.

PLEASE READ THESE INSTRUCTIONS THOROUGHLY AND ENSURE ALL PERSONS HANDLING THIS EQUIPMENT ARE AWARE OF THE OPERATION AND SAFETY REQUIREMENTS.

SAFETY EQUIPMENT

- Ensure all Personnel using, installing, maintaining or repairing this equipment have the following safety equipment.
- SAFETY HELMETS
- SAFETY FOOTWEAR
- SAFETY GLASSES
- REFLECTIVE SAFETY VEST
- HEARING / EAR PROTECTION

Ensure all operators of this equipment are trained in the use of the excavator, the use of the compaction equipment, and are aware of the safety requirements and accident prevention requirements on individual sites.

- **PNEUVIBE Boom Mounted Hydraulic Compactor Plates** complement and extend the versatility of your excavator. This latest design offers the most advanced developments in excavator compaction plates with angled vibration isolations. This design converts vibration mounting from a shear to compression force, diverting all of the impulse force into the soil, not returning up the boom.
- A wide range of sizes is available, to fit a mini excavator through to a large crawler excavator, for compacting small deep trenches, slope compaction, and large back fill operations.
- **PNEUVIBE** compactor plates are supplied with a flat top plate to accommodate quick hitch systems for rapid changing of attachments. Swivelling top mounting brackets are available for difficult positioning of excavator.
- The force is of a hydraulically driven, rotating eccentric, producing vibration and high impulse force. This, combined with boom down pressure and exclusive design of vibration mounts, produces energy to compact large areas of soil quickly and efficiently.
- The compacting plate operates directly off your machine's hydraulic system. The hydraulic system of the compactor plate is compatible to the hydraulic system for hammers. No extra valving is required as the compactor plate is fitted with its own priority system to correct oil flow to motor. This device permits usage with any hydraulic system of different makes of hammers and excavators with complete protection for hydraulic motor and vibrator.
- **PNEUVIBE Models 15/30/51/100 Compaction Plate.** These are suitable for small to medium rubber tyred back hoes or loaders. They are capable of compacting soil in depths of 60-120 cms at a rate of 30-40 cubic metres per hour.
- **PNEUVIBE Model 201/250 Compaction Plate.** This is best suited for excavators in the 15-20 tonne class. It is capable of compacting soil in lifts of 90-120 cms depending on the soil conditions at a rate of 70-80 cubic metres per hour.
- **PNEUVIBE Model 301 Compaction Plate.** This is suited to the larger machines ie. 20+ tonnes. It will compact soil 120-180 cms in depth, at 150+ cubic metres per hour. This is ideal for post driving.
- **PNEUVIBE Model 400T Compactor Plate.** Twin Rotor Vibrator for extra heavy duty Pile/Sheet and Post driving. Adaptable Clamp and Post Holder available.
- All **PNEUVIBE** compaction plates are versatile alternatives for all applications with movement as far as the boom will reach.
- It increases safety for workers in deep trenches, eliminating problems with exhaust fumes from hand held compactors. It eliminates problems associated with combustion engines when working with gas pipelines, and reduces cost by reducing quantity of trench shoring required.

PNEUVIBE Compactor Plates

Soil Compaction.

Soil is compacted by the force and frequency of the vibrator that is mounted on compactor base plate. With the help of the excavator boom the compactor plate can be placed conveniently in different areas and inclined angular positions.

The compaction plate is designed to place on the soil, vibrate, lift, reposition then revibrate.

The amount of down pressure is important as excessive down pressure will not improve compaction rate only decrease the life of the rubber elastomers. To establish the amount of down pressure required the easiest method recommended is by the sound of the compactor in operation.

Operating Procedure.

Ensure all hoses are correctly fitted, (pressure and return lines) and any ball valves are fully open.

Select compactor operating mode if applicable.

Place the compactor on the area required for compaction.

Apply slight down pressure.

Start the compactor and listen to the sound of the compactor, if a “rattling” sound from the quick hitch bracket or pins is heard, apply more down pressure until the rattling stops, then you will hear a continuous “hum” from the vibrator, this amount of pressure is all that is required.

Apply this down pressure for 10 – 20 seconds, stop the compactor, lift and relocate, apply down pressure and restart compactor. When the area is compacted to the required density with either one or two passes and if a smooth surface finish is required, slightly lift the front edge of the compactor with the bucket ram, move the dipper arm causing the compactor to slide forward, watching not to over stretch the elastomers. If damage to the stop plates (CP20055) occurs this is a sign of excessive down or side pressure. The compactor plate design is that if the top plate is pressed down squarely on all four vibration mounts equally, the mounts will not over stretch as they will lock completely compressed without damage.

Post Driving

The same amount of pressure is required for post or sheet piling as the weight and force of the base plate assembly is doing the Impact driving action. For post driving, varying the flow rate which changes the speed of the vibrator will help in difficult soil conditions.

Suitable holding attachments are required for post/sheet driving.

Do not run the compactor unless placed on the ground with some down pressure.

On completion of use do not place boom load on the mounts, turn compactor on the side.

Compaction rates.

To obtain high compaction levels, air and water need to be pressed out of the granular materials.

The level of compaction depends on the type of backfill, moisture content, and depth of layers.

Granular material can be compacted in lifts of ½ - 1 meter and less with clay material, higher results are obtained with two passes.

IMPORTANT NOTICE.

- PneuVibe Compactor Plate hydraulic system is designed for standard hammer system with a one-way control.
- When used with a Bi-Directional hydraulic system, as with shears, auger or grab, **it is imperative that the protection of a 3-way valve on the return line** is used. This will eliminate rapid reverse of vibrator and build up of pressure in return line. For models CP201, CP301 and CP400T, PneuVibe offer an optional valve block for this purpose.
- Models CP15, CP30, CP51 and CP100 are all fitted with the optional valve block as standard. This block has internal check valve on return line, and internal loop for over run.
- This valve block includes an internal loop and internal check valve to enable these units to be used on equipment with a Bi-Directional flow, without the need for any modification to the excavator.
- Also included with models CP15, CP30 and CP400T is a motor case drain return port. It is **IMPORTANT** that this is used to eliminate excess pressure in the return line.

PNEUVIBE

Compactor Plates

INSTALLATION.

MUST BE CARRIED OUT BY PERSONS QUALIFIED IN HYDRAULIC INSTALLATION

- Attach the compactor plate to excavator with the appropriate mounting bracket.

The next procedure is to connect the pressure and return hoses to the valve block. The pressure line is the smaller nipple ie:

	Nipple Size- Pressure	Nipple Size- Return
CP15	1/2”BSP	3/4”BSP
CP30	1/2”BSP	3/4”BSP
CP51	1/2”BSP	3/4”BSP
CP100	3/4”BSP	1” BSP
CP201	1” BSP	1 1/4” BSP
CP201 option	1” BSP	1 1/4” BSP
CP301 / CP400T	1” BSP	1 1/4” BSP

- It is most important that the return hoses from the plate via any ball or quick connect coupling are **fully open** before starting Compactor plate. **Failure to do so will damage the motor seals.** We do not recommend quick connect couplings.
- To ensure that the correct flow rates to motor via priority valve are achieved and excessive back pressure avoided, we recommend the following maximum oil delivery from excavator to valve block. If computer setting is available, set the flow at the excavator to 10% higher than the minimum flow required.

CP15	35-75 Ltr/Min
CP15 option	20-50 Ltr/min
CP30	35-75 Ltr/Min
CP30 option	20-50 Ltr/min
CP51	45-80 Ltr/Min
CP100	65-120 Ltr/Min
CP201	150-210 Ltr/Min
CP201 option	95-150 Ltr/Min
CP301	150-210 Ltr/Min
CP400T	190 – 250 Ltr/Min

Continued next page...../

INSTALLATION continued

What must be understood is that the higher the flow rate from the excavator, the greater the diverted flow through valve block. This increases the back pressure in return line.

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- Compactor plates are fitted with a priority valve system which will require setting at installation.
 - A) Disconnect hoses at motor and replace with flow meter.
 - B) Apply slight down pressure to boom.
 - C) Start oil flow through flow meter and adjust priority valve screw to recommended flow rates, ie.

CP15	35 Ltr/Min
CP15 option	20 Ltr/Min
CP30	35 Ltr/Min
CP30 option	20 Ltr/Min
CP51	45 Ltr/Min
CP100	65 Ltr/Min
CP201	150 Ltr/Min
CP201 option	95 Ltr Min
CP301	150 Ltr/Min
CP400T	190 Ltr / Min

*These flow rates give recommended speed.

D) Check back pressure at the same time. 2 - 10 Bar recommended. 15 Bar being the maximum allowable for CP51 - CP301 .

If this back pressure cannot be obtained to model specification , a reduction of oil flow from the excavator is necessary via spool valve on the main hydraulic system. It is also recommended that the return oil is direct to tank. **Excessive back pressure will result in motor seal failure.**

- If all of the above check out, start the excavator and stretch out boom to ensure that the hoses will not pinch or be restricted. Place Compactor plate on ground surface with light down pressure and turn on oil flow to Compactor plate.

PNEUVIBE Compactor plates

OPERATION.

TO BE OPERATED ONLY BY QUALIFIED PERSONS, AFTER ALL SAFETY INSTRUCTIONS HAVE BEEN READ AND FULLY UNDERSTOOD.

- Ensure all hoses are correctly fitted and tightened and that return lines are **fully open**.
- Turn Compactor plate on. Place on the material to be compacted and apply down pressure for a period of 10-20 secs. This time will vary slightly depending on the type of material being compacted.
- Best results are obtained with two passes; the first with lighter down pressure and the following with heavier down pressure. **Do not over-vibrate.**

Granular material can be compacted in 1/2 to 1 metre lifts and less with clay material. Moisture content is an important factor when compacting soil.

A system for backfill that has achieved wide acceptance is the **Slope Technique**. The material is backfilled in one area and allowed to seek its angle of response. Compaction is started on this angle, near, but above the pipe. All material is backfilled to this angle and the Compaction plate is worked up and down the angle of response. In this way the backfill and compaction can be kept close to the crew. Resurfacing can be done very shortly after the pipe is placed.

Always operate the Compactor plate with outriggers firmly on surface. The plate weighs more than the standard bucket.

On completion of daily work, do not place boom load onto vibration mounts overnight. Turn Compactor plate on side or end to store.

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Compactor plates

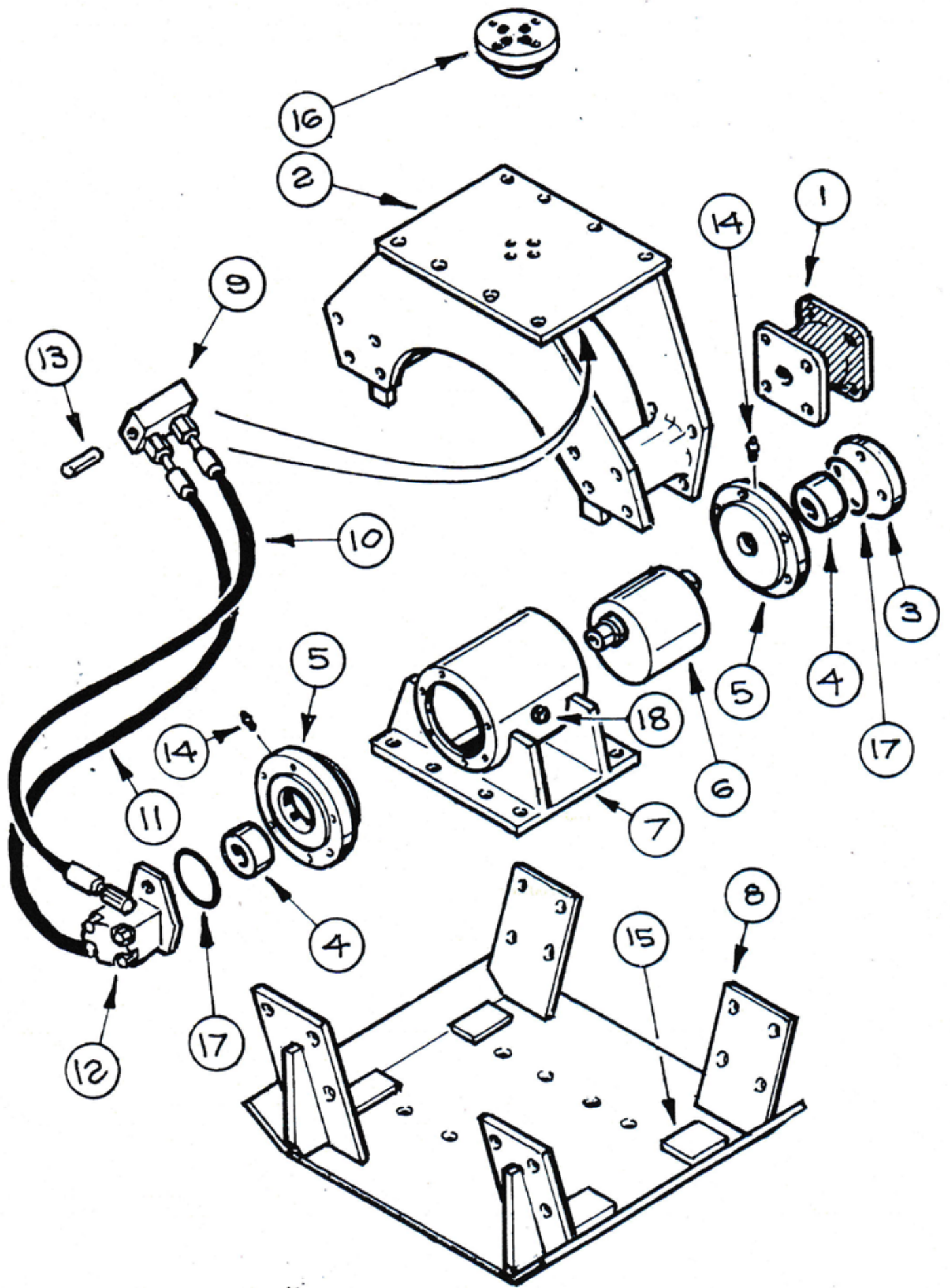
SERVICE

- Lubricate bearings every 20-30 hours. (2 shots Mobil XHP222)
Bearings should be inspected every 400 hours.
- **NB:** For continuous Pile / Post driving applications, **DAILY** lubrication is advised.
- **Re-tighten all fasteners after first 4 hours of use**, then periodical checks are most important to ensure maximum performance.

SIZE	TORQUE
10MM	44 NM
12MM	77 NM
16MM	190 NM
20MM	350 NM

* All fasteners are High Tensile Grade 8.

- Extended life of vibration mounts is possible by rotating 180 degrees periodically.
- When replacing bearings use only original spare parts as these are specially selected. Replacement bearing must be pressed into end plate by outer shell only, to avoid damage to bearing. Replace in pairs.
- For hydraulic motor repairs, refer manufacturer's catalogue.
- **Please Note:** For continuous Pile/Post driving **DAILY** lubrication is advised.
- **CP400T** Vibrator is Oil Lubricated, requiring 8 ltr of Mobil XP600-150. To be changed 6 monthly.



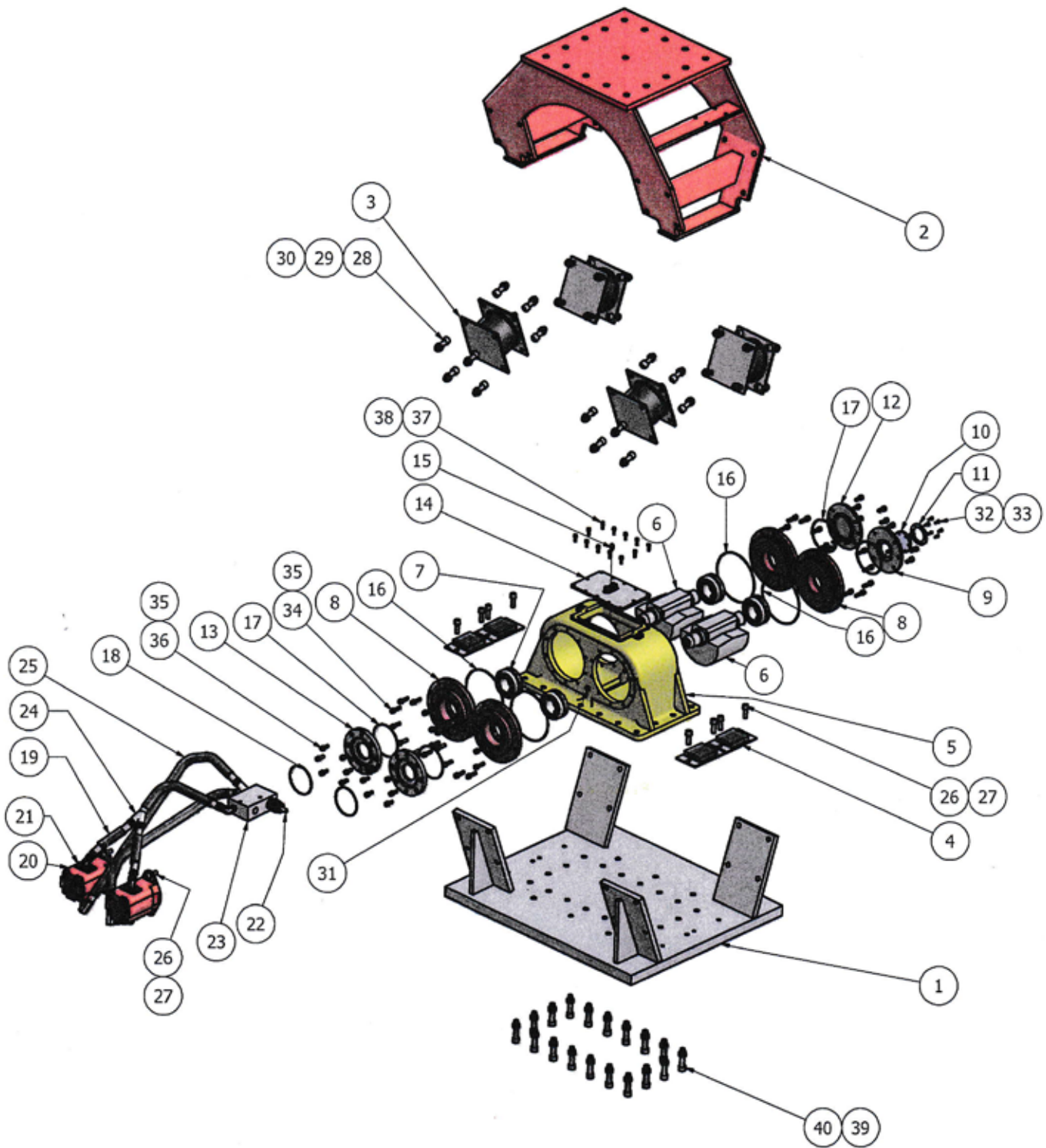
PNEUVIBE COMPACTOR PLATE - SPARE PARTS LIST -											* Serial no. MUST be supplied				Jan-06	
Ref.	Description	CP15	Qty	CP30	Qty	CP51	Qty	CP100	Qty	CP201	Qty	CP250	Qty	CP301	Qty	
1	Vibration Mounts	CP1528	4	CP2528	4	CP5028	4	CP20018	4	CP20018	4	CP30018	4	CP30018	4	
2	Top Assembly	CP1524	1	CP2524	1	CP5024	1	CP10006	1	CP20024	1	CP25024	1	CP30024	1	
3	Cover	CP2501	1	CP2501	1	CP10035	1	CP10035	1	CP20001	1	CP20001	1	CP20001	1	
4	Bearing	CP2514	2	CP2514	2	CP10020	2	CP10020	2	CP20014	2	CP20014	2	CP20014	2	
5	End Plate	CP1512	2	CP2512*	2	CP5137*	2	CP5137*	2	CP20163*	2	CP20163	2	CP20163*	2	
6	Eccentric Weight	CP1527	1	CP2527	1	CP5127	1	CP10008	1	CP20167	1	CP20167	1	CP30167	1	
7	Housing	CP1526	1	CP2526*	1	CP5126*	1	CP10005*	1	CP20166*	1	CP20166	1	CP30166*	1	
8	Base Assembly	CP1525	1	CP2525*	1	CP5025	1	CP10007	1	CP20125	1	CP25025	1	CP30125	1	
9	Valve Block	CP3054	1	CP3054	1	CP3054	1	CP20154	1	CP30054	1	CP30054	1	CP30054	1	
10	Inlet Hose	CP1516	1	CP2516	1	CP5016	1	CP10011	1	CP20016	1	CP30016	1	CP30016	1	
11	Return Hose	CP1517	1	CP2517	1	CP5017	1	CP10012	1	CP20017	1	CP20017	1	CP30017	1	
12	Motor	CP2515/35 *	1	CP2515/35 *	1	CP5015	1	CP10029	1	CP30015	1	CP30015	1	CP30015	1	
12A	Motor	CP2515/20*	1	CP2515/20*	1	N/A	1	N/A	1	CP20015/95	1	CP20015/95	1	N/A	1	
13	Flow Cartridge	CP2547	1	CP2547	1	CP5047	1	CP10047	1	CP30047	1	CP30047	1	CP30047	1	
14	Grease Nipple	CP2536	2	CP2536 (1/4"unf)	2	CP2536 (1/4"unf)	2	CP2536 (1/4"unf)	2	CP20056 (8mm)	2	CP20056	2	CP20056 (8mm)	2	
15	Buffer Pads									CP20055	4	CP20055	4	CP20055	4	
16	Swivel Boss	CP1549		CP2549		CP10050		CP10050		CP20049		CP20049		CP30049		
17	Housing 'O' rings	CP2530	2	CP2530	2	CP10049	2	CP10049	2	CP20046	2	CP20046	2	CP20046	2	
18	Housing Breather	81542649	1	81542649	1	81542649	1	81542649	1	81542649	1	81542649	1	81542649	1	
19	Bolt	CP20034 (M16x50)	4	CP5029 (M16x65)	4	CP5029 (M16x65)	4	CP10003 (M20x80)	6	CP20019 (M20x90)	10	CP20019 (M20x90)	10	CP20019 (M20x90)	10	
20	Bolt	CP2520 (M10x35)	32	CP2520 (M10x35)	32	CP5020 (M12x40)	32	CP20020 (M12x45)	32	CP20020 (M12x45)	32	CP30020	32	CP30020 (M20x60)	32	
21	Bolt	CP2533 (M10x40)	2	CP2533 (M10x40)	2	CP10045 (M12x40)	2	CP10045 (M12x40)	2	CP20035 (M16x50)	2	CP20034	2	CP20035 (M16x50)	2	
22	Bolt	CP2534 (M10x25)	4	CP2534 (M10x25)	4	CP10048 (M12x25)	4	CP10048 (M12x25)	4	CP20034 (M16x30)	4	CP20034	4	CP20034 (M16x30)	4	
23	Bolt	CP2535 (M10x30)	12	CP2535 (M10x30)	12	CP10045 (M12x40)	16	CP10045 (M12x40)	16	CP20020 (M12x45)	16	CP0020	16	CP20020 (M12x45)	16	
24	Bolt									CP20043 (M16x25)	8	CP20043	8	CP20043 (M16x25)	8	
25	Nordlock	CP2504	8	CP2504 (M16)	8	CP2504 (M16)	16	CP20028 (M20)	12	CP20028 (M20)	20	CP20028	20	CP20028 (M20)	20	
26	Nyloc Nut	CP2518 (M10)	32	CP2518 (M10)	32	CP20029 (M12)	32	CP20029 (M12)	32	CP20029 (M12)	32	CP30028	32	CP30028 (M20)	32	
27	Spring Washer	CP2531 (M10)	12	CP2531 (M10)	18	CP10054 (M12)	18	CP10054 (M12)	18	CP20030 (M12)	16	CP20030	16	CP20030 (M12)	16	
28	Washer	CP2550 (M10)	32	CP2550 (M10)	32	CP20030 (M12)	32	CP20030 (M12)	32	CP20030 (M12)	32	CP30030	32	CP30030 (M20)	32	
29	Motor Seal Kit	CP3050/CP3051 **		CP3050/CP3051 **		CP10052		CP10052		CP20050		CP20050		CP20050		
* Serial number MUST be supplied for all Models: CP3050 before s/n 1098 - CP3051 after s/n 1098 CP3052 after **2771																
For Model CP400T - refer following page																

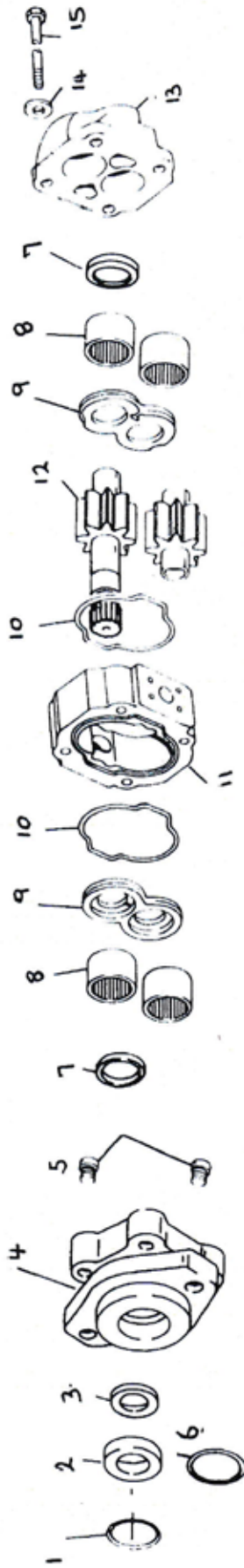
PARTS LIST CP400T

Ref	Part No:	Qty
1	CP40025	1
2	CP40024	1
3	CP30018	4
4	CP20055	4
5	CP40008	1
6	CP40007	2
7	CP40009	4
8	CP40002	4
9	CP40018	1
10	CP40019	1
11	CP40026	1
12	CP40004	1
13	CP40003	2
14	CP40016	1
15	CP40014	1
16	CP40001	4
17	CP40027	4
18	CP20046	2
19	CP40032	1
20	CP20015/95	2
21	CP40041	2
22	CP40029	1
23	CP30054/CP30154	1
24	CP40036	2
25	CP40038	1
26	CP20035	4
27	CP2504	4
28	CP30020	32
29	CP30028	32
30	CP30030	32
31	CP40012	1
32	CP40039	6
33	CP40040	6
34	CP40021	40
35	CP40013	64
36	CP40020	24
37	CP40028	10
38	CP40022	10
39	CP20019	18
40	CP20028	36
41	CP40042	1
42	CP40043	1
43	CP40044	1

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CP400T Compactor Plate





MOTOR SPARE PARTS LIST - PERMCO PART NO'S			
Ref	CP51	CP100	CP201/95Ltr / CP400T
1	W023206	W023206	W023283
2	55800498SR	55800498SR	96100504
3	W62499	W62499	W62498
4	CA05743SPL	CA05743SPL	KA05747
5	L0280K	L0280K	L0280K
6	N/A	N/A	K2995164
7	KA05581XS	KA05581XS	MA05581XS
8	X0921	X0921	R0921
9	ZZ0947TC	ZZ0947TC	X0947TC
10	TA2995242	TA2995242	TA2995244
11	QZ057707	QZ05771033	LZ05771533
12	AC0024L407	AC0024L410	OC0024L215
13	WZ0592	WZ0592	YZ0592
14	W0332	W0332	W0332
15	W113	W158	W114
16	M3000S	M3000S	M5000S
* Seal kit contains refs 3,6,10			

Pneuvibe

Warranty Terms for Pnevibe Products.

Standard Warranty.

- **Pnevibe** compaction equipment is warranted against defects arising from faulty workmanship and/or materials for a period of 12 months to the original purchaser, with conditions.
- **Pnevibe** will fulfill its obligations in the event of a claim provided the equipment is installed by an authorized **Pnevibe** representative and registration is completed.
- The registration card (which is supplied with installation/spare parts literature) is to be completed by an authorized representative and returned to **Pnevibe** within 7 days of commissioning signed by the purchaser and installer.
- If the attachment is installed on equipment other than the make or model of that mentioned in the registration card further registration of the equipment must be referred to **Pnevibe**.
- **Pnevibe**'s liability is limited to defects arising from faulty workmanship and/or materials occurring in conditions for which the product is designed and providing that the product has been used and maintained according to operating and servicing instructions.
- This warranty is void if any modifications are performed on the product without prior consent from **Pnevibe**.
- **Pnevibe**'s responsibility in the case of warranty is that the product will be repaired at the authorized dealer's main office. Transport costs will be at the purchaser's expense.
- **Pnevibe** reserves the right to inspect the defective parts prior to warranty.
- The entire scope of **Pnevibe**'s obligations and liabilities after the commissioning of the attachment and regarding the same is set forth in this warranty. **Pnevibe** shall in no case be subject to any other liabilities with respect to products manufactured by **Pnevibe**, or any acts or omissions relating to. Under no circumstances shall **Pnevibe** be liable for any special, indirect, incidental or consequential damages, expenses, losses or delays, howsoever caused.



AGENTS COPY (FAX COPY TO PNEUVIBE)

Warranty Registration Card

58 De Havilland Rd,
Mordialloc Vic 3195
AUSTRALIA
Tel: +613 9580 9501
Fax: +613 9580 5694
Email: sales@pneuvibe.com.au

Product: _____

Serial No: _____

Dealer:

Company: _____ Delivery Date: _____

City: _____ Country: _____

Customer:

Company Name: _____

Address: _____

Contact: _____ Phone: _____

Email: _____

Installation Inspection:

Made By: _____ Company: _____

Excavator Make: _____ Model: _____

Year of Manufacture: _____

Serial No: _____

Max total output of the pumps supplying attachment: _____ L/min

Measured relief valve setting in attachment line: _____ Bar

Measured oil flow into valve block: _____ L/min

Measured return line back pressure at motor _____ Bar

Measured oil flow at motor _____ L/min

Oil cooler in carriers circuit ? Yes No

Oil cooler in attachment line? Yes No

Installation Inspection Completed: _____

Guarantee Begins: _____ Expires: _____

Delivery Accepted By Customer: Signature _____

Print name _____

Copy A must be returned to the address above immediately after the installation inspection is carried out and the card is filled out with corresponding information. No warranty claims concerning this machine will be handled until this is done

If the carrier is replaced with another during warranty period time, the installation to the new excavator must be inspected and approved along with corresponding information must be sent to the factory.



CUSTOMERS' COPY

Warranty Registration Card

58 De Havilland Rd,
 Mordialloc Vic 3195
 AUSTRALIA
 Tel: +613 9580 9501
 Fax: +613 9580 5694
 Email: sales@pneuvibe.com.au

Product: _____

Serial No: _____

Dealer:

Company: _____ Delivery Date: _____
 City: _____ Country: _____

Customer:

Company Name: _____
 Address: _____
 Contact: _____ Phone: _____
 Email: _____

Installation Inspection:

Made By: _____ Company: _____
 Excavator Make: _____ Model: _____
 Year of Manufacture: _____
 Serial No: _____

Max total output of the pumps supplying attachment: _____ L/min
 Measured relief valve setting in attachment line: _____ Bar
 Measured oil flow into valve block: _____ L/min
 Measured return line back pressure at motor _____ Bar
 Measured oil flow at motor _____ L/min

Oil cooler in carriers circuit ? Yes No
 Oil cooler in attachment line? Yes No

Installation Inspection Completed: _____
 Guarantee Begins: _____ Expires: _____

Delivery Accepted By Customer: Signature _____
 Print name _____

<p>Copy A must be returned to the address above immediately after the installation inspection is carried out and the card is filled out with corresponding information. No warranty claims concerning this machine will be handled until this is done</p>	<p>If the carrier is replaced with another during warranty period time, the installation to the new excavator must be inspected and approved along with corresponding information must be sent to the factory.</p>
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