



OPERATIONS - PARTS MANUAL



APC140H / APC160H / APC210H Vibratory Plate Compactor

allen
ENGINEERING
CORPORATION
819 South 5th Street
Paragould, AR 72450

Plate Compactor

OPERATIONS - PARTS

MANUAL

This manual covers the products listed below:

<u>Part No.</u>	<u>Description</u>
061620	APC140H, VIBRATORY PLATE COMPACTOR (550 - 600 m ² /h) GX120
061630	APC160H, VIBRATORY PLATE COMPACTOR (580 - 650 m ² /h) GX160
061640	APC210H, VIBRATORY PLATE COMPACTOR (620 - 700 m ² /h) GX160

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Allen Products are covered under one or more of the following patent numbers:

U.S. Design Patents: 344,736; 400,542; 400,544; 402,998; 402,999; 403,332; 404,041; 404,042; 410,931; 413,127; 416,564; 465,897; 466,909; 474,203.

U.S. Utility Patents: 5,108,220; 5,238,323; 5,328,295; 5,352,063; 5,405,216; 5,476,342; 5,480,257; 5,480,258; 5,533,831; 5,562,361; 5,567,075; 5,613,801; 5,658,089; 5,685,667; 5,803,658; 5,816,739; 5,816,740; 5,890,833; 5,934,823; 5,967,696; 5,988,938; 5,988,939; 6,019,433; 6,019,545; 6,048,130; 6,053,660; 6,089,786; 6,106,193; 6,857,815; 5,288,166; 6,582,153 B1, 7,108,449; 7,114,876; 7,316,523; 7,690,864 B2

Canadian Patents: 2,039,893.

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Limited Warranty

Allen Engineering Corporation ("Allen") warrants its products to be free of defects in material or workmanship for:

TWO YEARS FROM END USER'S DATE OF PURCHASE

Warranty period begins on the date of purchase by the End User of the product. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of implied warranties and consequential damages.

1. Allen's obligation and liability under this warranty is limited to repairing or replacing parts if, after Allen's inspection, there is determined to be a defect in material or workmanship. Allen reserves the choice to repair or replace.
2. If Allen chooses to replace the part, it will be at no cost to the customer and will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.
3. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.
4. Allen does not warranty engines or batteries. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer. Batteries are not warranted due to unknown treatment during transport, etc, and any battery claims should be directed to the battery manufacturer.
5. Allen's warranty does not cover the normal maintenance of products or its components (such as engine tuneups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).
6. Allen's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Allen. Allen specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors.
7. Impact damage to gear boxes is not covered under the Allen warranty and is deemed customer abuse.
8. Allen will pay shop labor on warranty items at the Allen Shop Labor Rate in existence on the date of the warranty claim. An Allen labor chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
9. Allen will pay freight on warranty replacement parts at worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Allen. Allen only pays outbound freight charges when sending warranty replacement parts to the customer via ground service. Allen does not pay any inbound freight. However, if Allen determines this to be a warranted item, only then will Allen reimburse the customer for inbound freight at standard ground rates.
10. ALLEN ENGINEERING CORPORATION'S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES; SHOP SUPPLIES; ENVIRONMENTAL SURCHARGES; AIR FREIGHT; TRAVEL TIME; LOSS OF TIME; INCONVENIENCE; LOSS OF RENTAL REVENUE; RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE PRODUCT BEING REPAIRED; LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
11. ALLEN ENGINEERING CORPORATION MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THIS LIMITED WARRANTY IS IN LIEU OF THE WARRANTY OF MERCHANTABILITY AND FITNESS. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.
12. No Allen employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Allen Engineering Corporation.

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Information Contained in this Manual



This manual provides information and procedures to safely operate and maintain the Allen Machine.

For your own safety and protection from personal injury, carefully read, understand, and observe the safety instructions described in this manual. Keep this manual or a copy of it with the machine at all times.

Always operate this machine in accordance with the instructions described in this manual. A well maintained piece of equipment will provide many years of trouble free operation.

This manual is divided into the following sections:

**SECTION 1
SAFETY**

**SECTION 2
OPERATIONS**

**SECTION 3
SERVICE**

**SECTION 4
PARTS**

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the manual box located on the operator's control panel.

Your engine is not manufactured by Allen Engineering Corporation, Inc, and therefore is not covered under Allen Engineering Corporation, Inc warranty.

Your engine manufacturer should be contacted if you wish to purchase a parts manual or a repair manual for your engine.

Refer to enclosed owners engine manual for complete O&M instructions. See your battery manufacturer for battery warranty.

Dealer Information

Your Dealer has Allen Engineering Corporation trained mechanics and original Allen replacement parts. Always contact the Allen Dealer who sold you this machine for Allen Certified repairs and replacement parts.

Place Allen Dealer information below for future reference.

Dealer Name: _____

Phone #: (____) - ____ - _____

Address: _____

City: _____ State: _____ Zip: _____

Salesman: _____ Mobile Phone _____

Additional Comments: _____



Ordering Parts

Section 4 contains illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include correct description and part number from the "PARTS" section of this manual.
3. Specify exact shipping instructions, including the preferred routing and complete destination address.
4. DO NOT return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.
5. When placing an order, please contact the AEC dealer nearest you.

NOTE

All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.

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SECTION 1 SAFETY

Safety Information



This CAUTION sign indicates a potential hazard, which if ignored could result in injuries to the operator and/or those close by, as well as damaging the machine.



This WARNING sign indicates a potential hazard, which if ignored could result in the DEATH of the operator and/or those close by.

For your own personal protection and for the safety of those around you, please read and ensure you fully understand the following safety information. It is the responsibility of the operator to ensure that he/she fully understands how to operate this equipment safely. If you are unsure about the safe and correct use of the Vibratory Plate Compactor, consult your supervisor or ALLEN.



Improper maintenance can be hazardous. Read and understand this section before you perform any maintenance, service or repairs.

General Safety

- The owner of this machine must observe, and also train the user of the machine to observe the effective labour protection laws in the country of application.
- Use suitable lifting equipment to lift the machine.
- This machine is to be used for its intended application only.
- This machine must only be operated by well-trained personnel.
- Personal Protective Equipment (PPE) must be worn by the operator whenever the equipment is being used.
- The machine must be operated on ground where stability is guaranteed. When working near the rim of excavated trenches, keep a sensible distance from the edge so that there is no danger of the machine falling down or the trench collapsing.
- Cordon off the work area and keep members of the public and unauthorised personnel at a safe distance.
- Make sure you know how to safely switch this machine OFF before you switch it ON in case you run into any difficulties.
- ALWAYS switch OFF the engine before servicing it.
- During use, the engine becomes very hot. ALWAYS allow the engine to cool down before touching it.
- NEVER leave the engine running and unattended.
- NEVER remove or tamper with any fitted guards; they are there for your own protection. If they are damaged or missing, DO NOT USE THE MACHINE until the guard has been replaced or repaired.
- ALWAYS switch OFF the engine before transporting it, moving it around site or servicing it.
- Do not operate the machine when you are ill, feeling tired or when under the influence of alcohol or drugs.
- If the surface to be compacted is on a slope, take great care when controlling the Plate Compactor's direction of travel. Always work up and down a slope; not across.

- This machine is designed to eliminate the possible risks arising from the use of it. However, risks DO reside, and these residual risks are not clearly recognisable and may cause personal injury or property damage, and possibly death. If such unpredictable and unrecognisable risks become apparent, the machine must be stopped immediately, and operator or his supervisor must take appropriate measure to eliminate such risks. It is sometimes necessary that the manufacturer must be informed of such event for future counter measuring.

Fuel Safety



Fuel is flammable. It may cause injury and property damage. Shut down the engine, extinguish all open flames and do not smoke while filling the fuel tank. Always wipe up any spilled fuel.

- Before re-fuelling, switch off the engine and allow it to cool.
- When re-fuelling, use a proper funnel, and avoid spilling over the engine.
- When re-fuelling, DO NOT smoke or allow naked flames in the area.
- Spilt fuel must be made safe immediately by using sand. If fuel is spilt on your clothes, change them.
- Store fuel in an approved, purpose made container away from heat and sources of ignition.

Health & Safety

Vibration

Some vibration from the compacting operation is transmitted through the handle to the operator's hands. Ensure operator rotation and do not exceed the maximum recommended usage times.

Dust

The compaction process can produce dust, which may be hazardous to your health. Always wear a mask that is suited to the type of dust being produced.

Fuel

Do not ingest fuel or inhale fuel vapors and avoid contact with your skin. Wash fuel splashes immediately. If you get fuel in your eyes, irrigate with copious amounts of water and seek medical attention as soon as possible.



The exhaust fumes produced by this machine are highly toxic and can kill!

Exhaust Fumes

Do not operate the Vibratory Plate Compactor indoors or in confined spaces. Make sure the work area is adequately ventilated.

SECTION 2 OPERATIONS

Operations

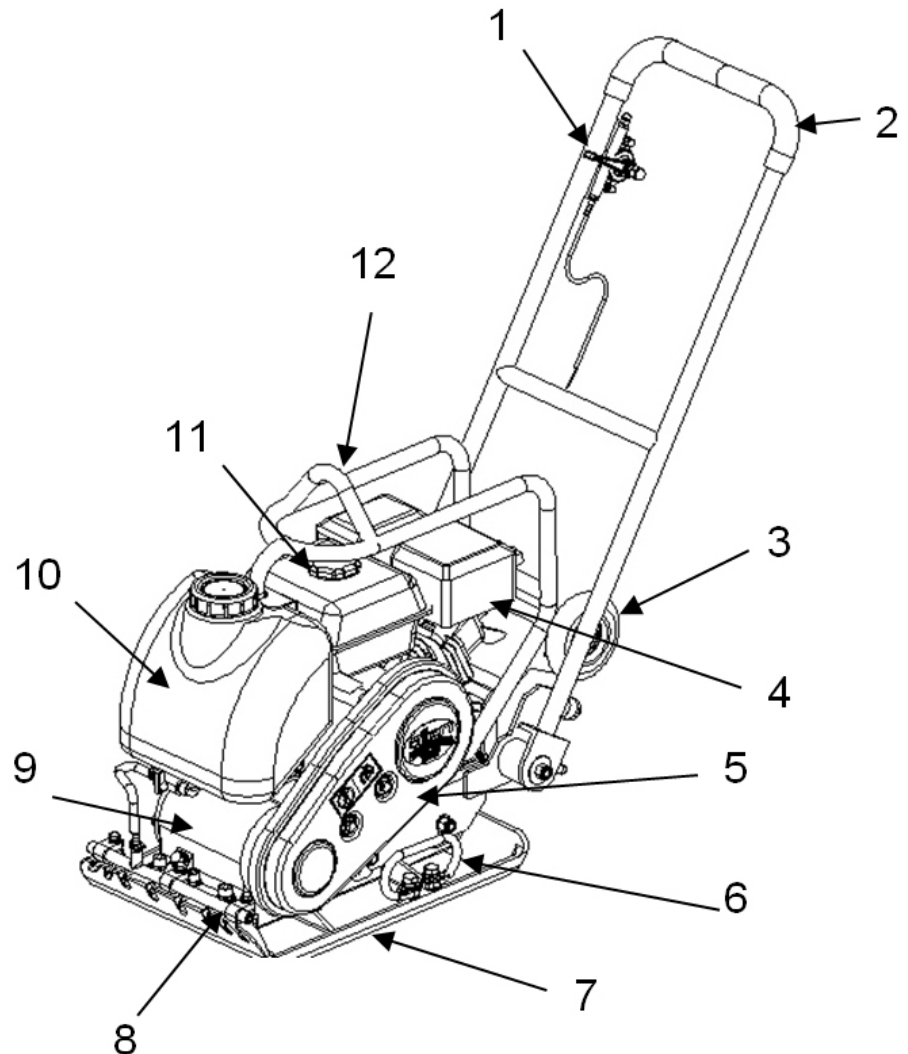
Machine Description

Intended Use

The Vibratory Plate Compactor is designed for compacting loose, granular soils, gravel, paving stones and asphalt. It is intended to be used in confined areas and areas next to structures such as walls, curbs, and foundations. Plate Compactors with water tanks can be used for compacting asphalt. The Plate Compactor is not recommended for the compaction of cohesive soils with heavy clay content. For cohesive soil, use a Tamping Rammer.

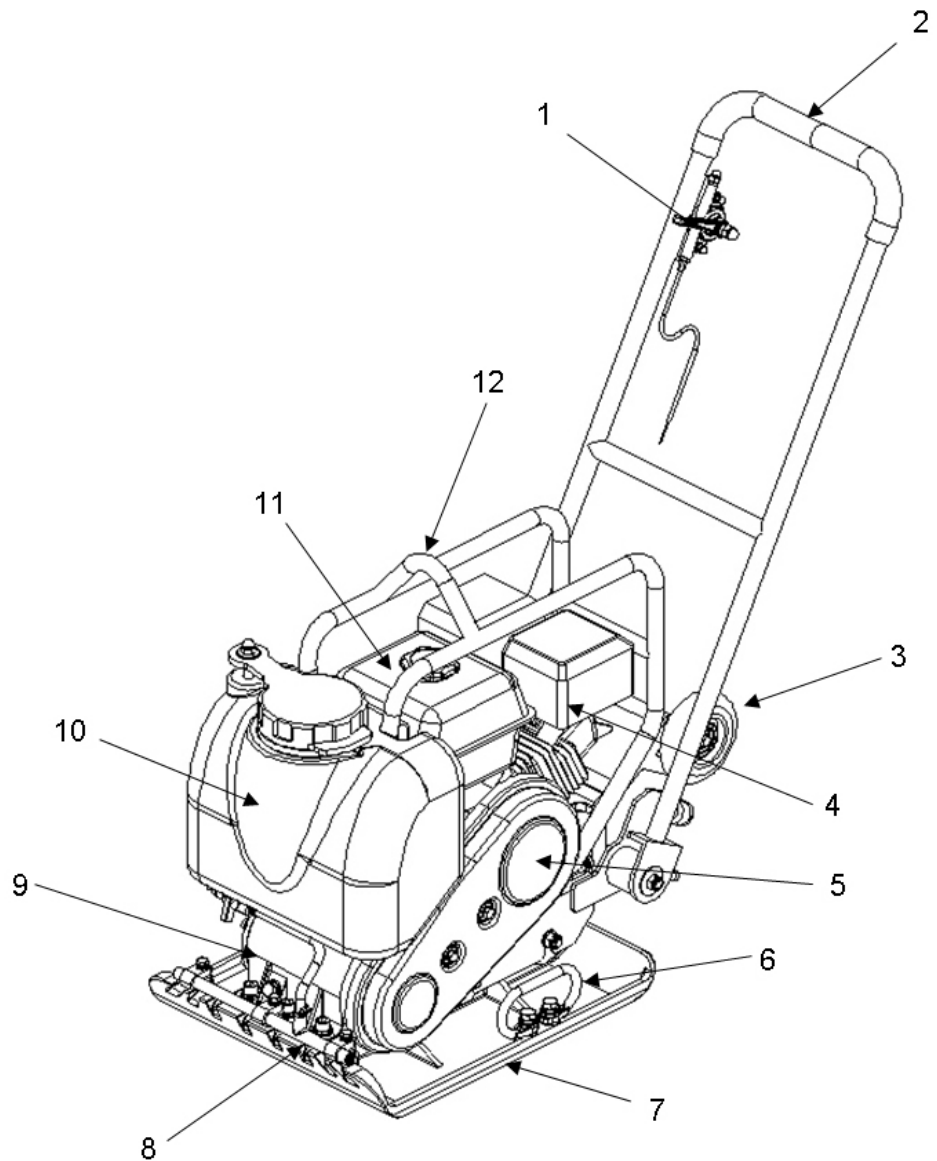
APC140H

1. Throttle
2. Operating Handle
3. Wheels
4. Engine
5. Belt Guard
6. Lifting Handle
7. Base Plate
8. Water Sprinkler
9. Exciter Housing
10. Water tank
11. Fuel Tank
12. Lifting Hook



APC160H

- 1. Throttle
- 2. Operating Handle
- 3. Wheels
- 4. Engine
- 5. Belt Guard
- 6. Lifting Handle
- 7. Base Plate
- 8. Water Sprinkler
- 9. Exciter Housing
- 10. Water tank
- 11. Fuel Tank
- 12. Lifting Hook

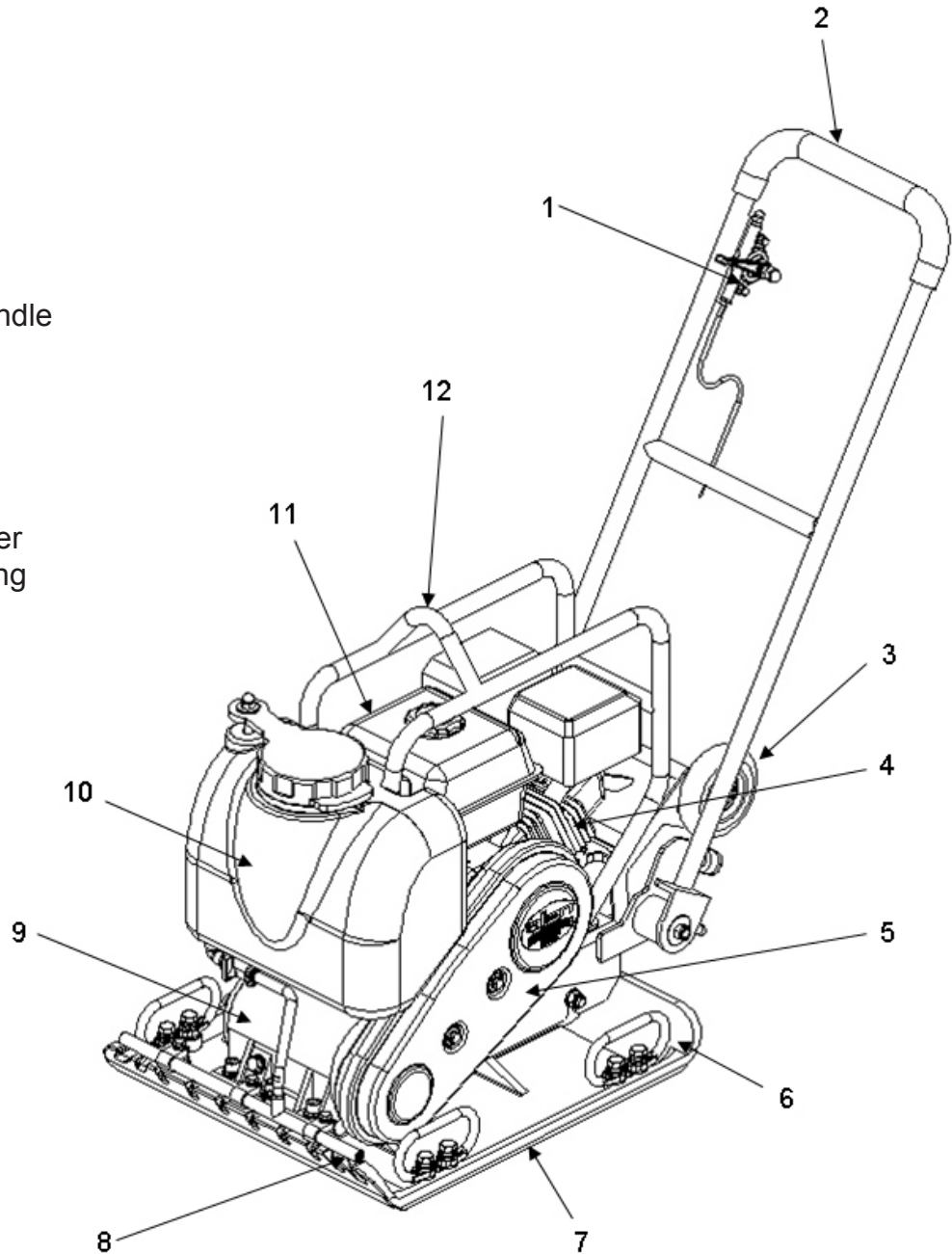


SECTION 2 OPERATIONS

Operations (cont'd)

APC210H

1. Throttle
2. Operating Handle
3. Wheels
4. Engine
5. Belt Guard
6. Lifting Handle
7. Base Plate
8. Water Sprinkler
9. Exciter Housing
10. Water tank
11. Fuel Tank
12. Lifting Hook



Pre-start Checks

The following pre-start checks must be performed before the start of each work session or after every four hours of use, whichever is first. Please refer to the Service and Maintenance section for detailed guidance. If any fault is discovered, the Plate Compactor must not be used until the fault is rectified.

1. Thoroughly inspect the machine for signs of damage, Make sure all guards are in place and secured.
2. Check hoses, filler openings, drain plugs and other areas for signs of leakage. Fix any leaks before operating.
3. Check the engine oil level and top up as necessary. Use proper engine oil with the proper viscosity (SAE 10W-30 is recommended).
4. Check the engine fuel level and top us as necessary. Use clean fuel. The use of contaminated fuel may damage the fuel system.
5. Check the air filter is clean. Excessive dirt/dust accumulation within the filter element will cause erratic engine operation. Clean the air filter element when it is contaminated (refer to the Service and Maintenance section).
6. Check for fuel and oil leaks.

Start/Stop Procedure

Before starting the engine, make sure that the Safety Switch is in the ON position and the Throttle Lever is set to the idle position.

1. Take the Plate Compactor to where it is required. Use suitable lifting equipment to position the Plate Compactor where it is necessary. Make sure the lifting equipment has a WLL (Working Load Limit) suitable for the Plate Compactor weight. Attach suitable slings or chains only to the lifting point.
2. Never leave the engine running during transporting, even if it is for a short period of time.
3. Having carried out the checks listed in the 'pre-start' section, you may start the engine. ALLEN Plate Compactors are fitted with a centrifugal clutch which allows the engine to run at idle speed without driving the Plate Compactor. Centrifugal clutch will be engaged as the speed of engine is increased. For correct operation, the engine speed should be set to maximum.

Before Starting Gasoline Engine

4. Check the oil in the engine crankcase. Be sure to maintain the proper level per the engine manufacturer specifications. If the oil is dirty and in need of changing, follow the Engine User Manual instructions.
5. Check the fuel supply. Refer to Engine User Manual.

SECTION 2 OPERATIONS

Operations (cont'd)

Operation

1. Run the engine at full throttle and allow the Plate Compactor to pull itself along at its normal speed.
2. When operating on an incline it may be necessary to assist the Plate Compactor by pushing it forward slightly.
3. When operating downhill hold the Plate Compactor back slightly, if it begins to pick up speed.
4. Depending on the material being compacted, 3 or 4 passes are recommended to achieve the best compaction.
5. While a certain amount of moisture in the soil is necessary, excessive moisture may cause soil particles to stick together and prevent good compaction.
6. If soil is extremely wet, allow it to dry somewhat before compacting.
7. If soil is so dry as to create dust clouds while operating Plate Compactor, some moisture should be added to the ground material to improve compaction. This will also reduce service to the air filter.
8. When using the Plate Compactor on paving stones, attach a pad to the bottom of the plate to prevent chipping or grinding surface of stones.



Do not operate the plate on concrete or on extremely hard, dry, compacted surfaces. The plate will jump rather than vibrate and could damage both the plate and the engine.



Service and Maintenance

The ALLEN Vibratory Plate Compactors are designed to give many years of trouble free operation. It is, however, important that the simple regular maintenance listed in this section is carried out. It is recommended that an approved ALLEN dealer carry out all major maintenance and repairs. Always use genuine ALLEN replacement parts, the use of spurious parts may void your warranty. Before any maintenance is carried out on the machine, switch off the engine and disconnect the HT lead from the spark plug. Always set the machine on level ground to ensure any fluid levels will be correctly read. Only use recommended oils.

Routine Maintenance	Daily before starting	After first 20 hours	Every 2 weeks or 50 hours	Every month or 100 hours	Every year or 300 hours
Check Fuel Level	◆				
Check Engine Oil Level	◆				
Inspect Fuel Lines	◆				
Inspect Air Filter. Replace as needed.	◆				
Check and Tighten External Hardware	◆				
Check and Adjust Drive Belt		◆	◆		
Clean Air Cleaner Element			◆		
Inspect Shock Mounts for Damage			◆		
Check Exciter Oil Level			◆		
Change Engine Oil		◆		◆	
Clean Sprinkler System				◆	
Check and Clean Spark Plug				◆	
Clean Sediment Cup				◆	
Check and Adjust Valve Clearance					◆
Change Exciter Oil					◆

SECTION 3 SERVICE

Service (cont'd)

Air Cleaner

The engine is equipped with a dual element air cleaner. Air cleaner must be serviced regularly to prevent carburetor failure.



Never run the engine without the air cleaner. Severe engine damage will occur.

To Service (Figure 1):

- i. Remove air cleaner cover (a). Remove both elements and inspect them for holes or tears. Replace damaged elements.
- ii. Wash foam element (b) in solution of mild detergent and warm water. Rinse thoroughly in clean water. Allow element to dry thoroughly. Soak element in clean engine oil and squeeze out excess oil.
- iii. Tap paper element (c) lightly to remove excess dirt. Replace paper element if it appears heavily soiled.

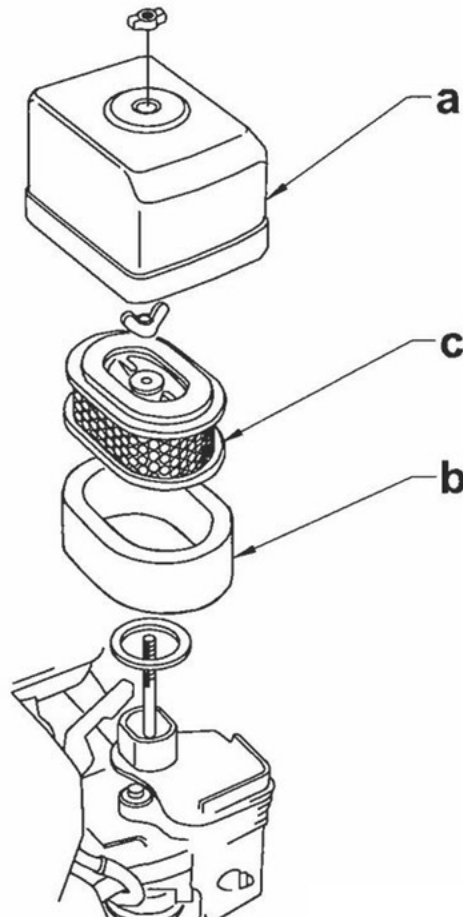


Figure 1

Engine Oil (Figure 2)

1. Drain oil while engine is still warm.
2. Remove the oil fill plug (a) and drain plug (b) to drain oil.
Note: In the interests of environmental protection, place a plastic sheet and a container under the machine to collect any liquid which drains off. Dispose of this liquid in accordance with environmental protection legislation.
3. Install drain plug.
4. Fill the engine crankcase with recommended oil up to the level of the plug opening (c). See engine user manual for oil type and quantity.
5. Refit the oil filler plug.

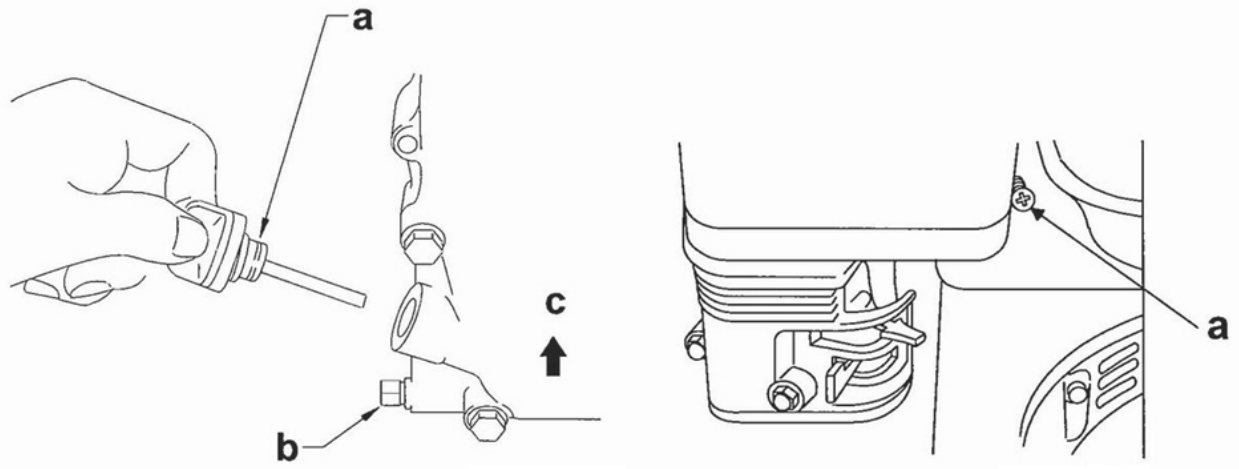


Figure 2

SECTION 3 SERVICE

Service (cont'd)

Carburetor Adjustment (Figure 3)

1. Start the engine and allow it to warm up to operating temperature.
2. Set the pilot screw (a) 2 turns out. See note.
3. With the engine idling, turn the pilot screw (a) in or out to the setting that produces the highest rpm.
4. After the pilot screw is adjusted, turn the throttle stop screw (b) to obtain the standard idle speed.

Note: On some engines the pilot screw is fitted with a limiter cap (c) to prevent excessive enrichment of the air-fuel mixture in order to comply with emissions regulations. The mixture is set at the factory and no adjustments should be necessary. Do not attempt to remove the limiter cap. The limiter cap cannot be removed without breaking pilot screw.

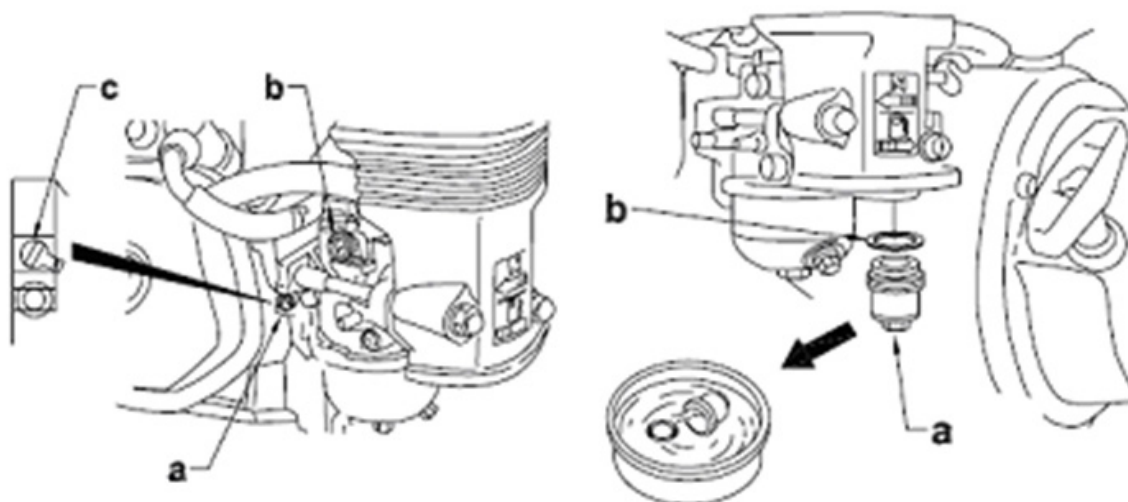


Figure 3

Drive Belt

On new machines or after installing a new belt, check the belt tension after first 20 hours of operation. Check and adjust the belt every 50 hours thereafter.

To adjust the belt:

1. Loosen the 2 screws on the belt guard (4 screws on box type), then remove the belt guard, keeping the screw assemblies captured on the belt guard.
2. Loosen the 4 nuts which hold the engine to the engine mounting plate and the belt screw.
3. Slide the engine backward (towards the handle) to tighten the belt, forward to loosen the belt.
4. Adjust the belt so that it deflects 10 – 15mm when pressed midway between the belt pulleys.
5. Then tighten the belt screw which prevents the engine from sliding forward.
6. Make sure the clutch pulley and the exciter pulley are in alignment. Place a straight edge against the exciter pulley and move the engine so that the two pulleys are parallel.
7. Retighten all nuts and screws to secure.

Exciter Lubrication

The bearings in the exciter assembly are splash lubricated and rotate at very high speed. It is crucial to maintain the exciter oil at the correct level and change it regularly. Check exciter oil level every 50 hours of operation. (Use SAE-30W)

To check oil level:

1. Place plate on a flat level surface.
2. Remove the Oil Filler Plug.

Cleaning the Plate Compactor

Clean plate after use to remove dirt, stones, and mud caught under the engine console. If plate is being used in a dusty area, check engine cylinder cooling fins for heavy dirt accumulation. Keep engine cylinder fins clean to prevent engine from overheating. You may use an air gun to blow away excessive dirt

Transportation and Storage

For long-term storage, empty the fuel in the carburetor by running the engine with the fuel tap being closed.

The chemical composition of the fuel will deteriorate after prolonged storage. When the machine needs to be stored for a long time, remove all the fuel from the fuel tank and the water from the water tank. Also remove the fuel from the float chamber of the carburetor by draining the fuel out from the drain plug.

Clean excessive dirt accumulated on the Plate Compactor. Cover the machine and store it in a dry place.

SECTION 3 SERVICE

Troubleshooting

Problems	Possible Causes	Countermeasures
Engine will not start.	a. No fuel getting to engine.	a. Open fuel tap. Fill fuel tank.
	b. Engine switched off.	b. Switch engine on.
	c. Spark plug fouled.	c. Clean, check and reset plug gap.
	d. Engine cold.	d. Close choke.
	e. Engine flooded.	e. Open choke, fully open throttle, pull recoil starter until engine fires.
Unit will not vibrate.	a. Engine speed too slow.	a. Set throttle speed to fast.
	b. Drive belt tension loose.	b. Adjust belt tension.
	c. Air Filter Blocked.	c. Clean or change air filter.
	d. Drive Failure.	d. Contact agent or ALLEN.
	e. Exciter Failure.	e. Contact agent or ALLEN.
Asphalt adhering to plate.	Lack of lubrication.	Use water.
Bituminous surface flaking (laminating).	Over compaction.	Remove and relay.
Low travel speed.	a. Layer thickness too deep.	a. Remove some of the material.
	b. Moisture content too high or too low.	b. Remove material and adjust.
Plate jumps or compacts unevenly.	a. Ground surface too hard.	a. Stop compaction immediately.
	b. Shock mounts loose or damaged.	b. Tighten or replace shock mounts.

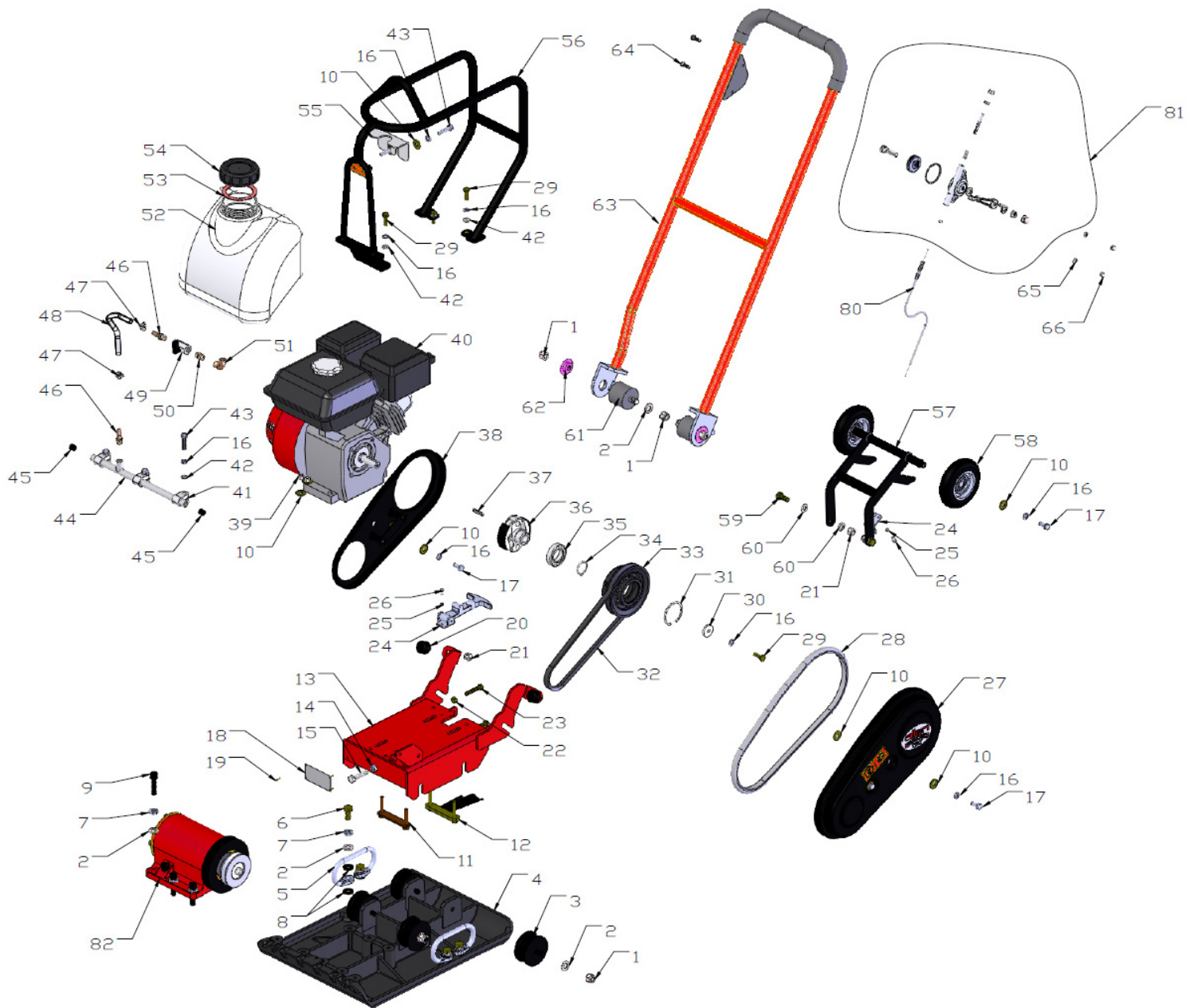
Technical Data

SECTION 3 SERVICE

MODEL	APC140H	APC160H	APC210H
Dimension (LxWxH) - mm	970×360×1,050	970x 420x 1,050	1100×500×993
Operating Weight - kg	67	74	95
Plate Size (LxW) - mm	510 x 360	510 x 420	590 x 500
Working Speed - km/h	1.2 - 1.5 (0.75 - 0.93)	1.2 - 1.4 (0.75 - 0.87)	1.2 -1.5 (0.75 - 0.93)
Vibration Frequency - Hz (vpm)	94 (5,640)	94 (5,640)	94 (5,640)
Centrifugal Force - kgf (KN)	1,070(10.5)	1,260 (12.4)	1,570 (15.4)
Compacted Area - m ² /h	550 - 600	580 - 650	620 - 700
Compaction Depth (depending on soil) - mm	200	300	350
Max. Gradeability - °	20°		
Engine	HONDA-GX120	HONDA-GX160	HONDA-GX160
Engine Type	4 - Stroke Gasoline		
Max. Power Output - Hp (kW)	3.5HP(2.6KW)	4.8HP(3.6KW)	4.8HP(3.6KW)
Max. Engine Speed - rpm	Honda@ 3,600		

SECTION 4 PARTS

APC140H Assembly Illustration



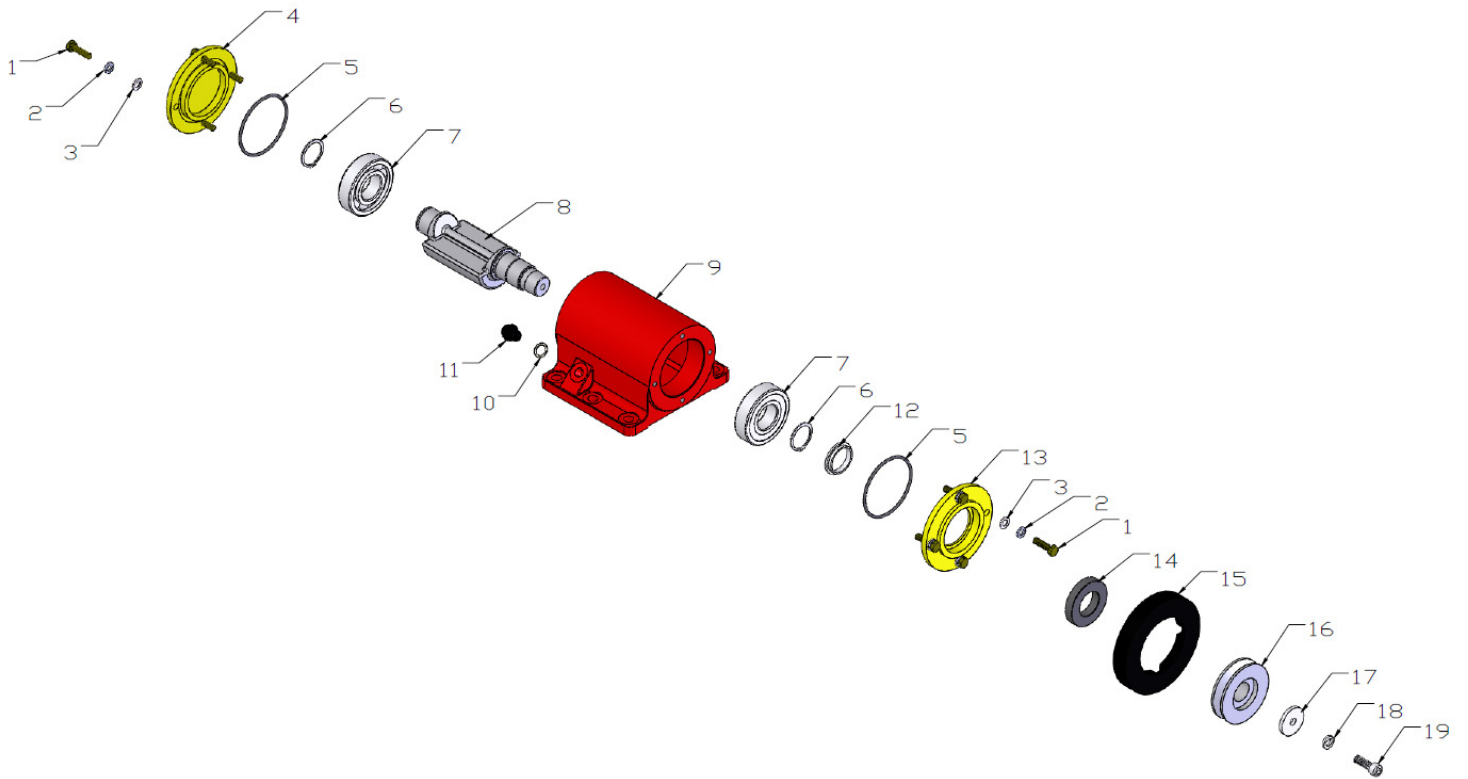
APC140H Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
01-1	062642	FSTN, LOCK NUT M12-DIN-1	8
01-2	062643	FSTN, FW W12-DIN-1	16
01-3	062644	CUSHION	4
01-4	062645	BASE PLATE	1
01-5	062646	HANDLE	2
01-6	062647	FSTN, HHCS M12x25-8.8-DIN-1	4
01-7	062648	FSTN, LW W12-DIN-1	10
01-8	062649	RUBBER WASHER	8
01-9	062650	FSTN, SCREW M12x45-12.9-GB-3	6
01-10	062651	FSTN, FW W8-GB-1	14
01-11	062652	FSTN, BOLT 060200	1
01-12	062653	FIX ENGINE BOLT	1
01-13	062654	ENGINE BASE	1
01-14	062655	FSTN, HEX NUT M10-DIN-1	1
01-15	062656	FSTN, HHCS M10x45-8.8-DIN-1	1
01-16	062657	FSTN, LW W8-DIN-1	16
01-17	062658	FSTN, HHCS M8x20-8.8-DIN-1	6
01-18	062659	NAMEPLATE	1
01-19	062660	RIVET	4
01-20	062661	CUSHION	2
01-21	062662	FSTN, LOCK NUT M10-DIN-1	4
01-22	062663	FSTN, HEX NUT M8-DIN-1	2
01-23	062664	FSTN, HHCS M8x45-8.8-DIN-1	2
01-24	062665	BUCKLE	1
01-25	062666	FSTN, LW W5-DIN-1	4
01-26	062667	FSTN, HHCS M5x10-8.8-DIN-1	4
01-27	062668	OUTER BELT GUARD	1
01-28	062669	SEAL	1
01-29	062670	FSTN, HHCS M8x25-8.8-DIN-1	5
01-30	062671	FSTN, WASHER 80-0319	1
01-31	062672	INTERNAL CIRCLIP, CH.RG55	1
01-32	062673	V-BELT	1
01-33	062674	CLUTCH PULLEY	1
01-34	062675	EXTERNAL CIRCLIP, CS.RG30	1
01-35	062676	BEARING	1
01-36	062677	CENTRIFUGAL CLUTCH	1
01-37	062678	KEY, 5x5x32	1
01-38	062679	INNER BELT GUARD	1
01-39	062680	FSTN, LOCK NUT M8-DIN-1	4
01-40	062681	ENGINE, W05-GX120	1
01-41	062682	HOOP	3
01-42	062683	FSTN, FW W8-DIN-1	7
01-43	062684	FSTN, HHCS M8x35-8.8-DIN-1	5
01-44	062685	SPRINKLING PIPE	1
01-45	062686	HEXAGONAL SOCKET HEAD PLUG	2
01-46	062687	HOSE NIPPLE	2
01-47	062688	HOSE CLAMP	2
01-48	062689	HOSE, 60W-010700	1
01-49	062690	VALVE	1
01-50	062691	JOINT	1
01-51	062692	90° ELBOW	1
01-52	062693	WATER TANK	1
01-53	062694	SEAL, WATER TANK COVER	1
01-54	062695	WATER TANK CAP	1
01-55	062696	WATER TANK CLIP	1
01-56	062697	WATER TANK FRAME	1
01-57	062698	WHEEL FRAME	1
01-58	062699	WHEEL	2
01-59	062700	FSTN, HHCS M10x25-8.8-DIN-1	2
01-60	062701	FSTN, FW W10-DIN-1	4
01-61	062702	HAND RAIL ABSORBER	2
01-62	062703	FSTN, NYLON WASHER 60W-010300.3	2
01-63	062704	HAND RAIL	1
01-64	062705	FSTN, M6x20-8.8-DIN-2	2
01-65	062706	FSTN, LW W6-DIN-2	2
01-66	062707	FSTN, CAP NUT M6-DIN-2	2
01-80	062721	THROTTLE CABLE	1
01-81	062722	THROTTLE LEVER ASSY	1
01-82	062723	EXCITER HOUSING ASSY	1

SECTION 4 PARTS

APC140H Exciter Housing Assembly Illustration



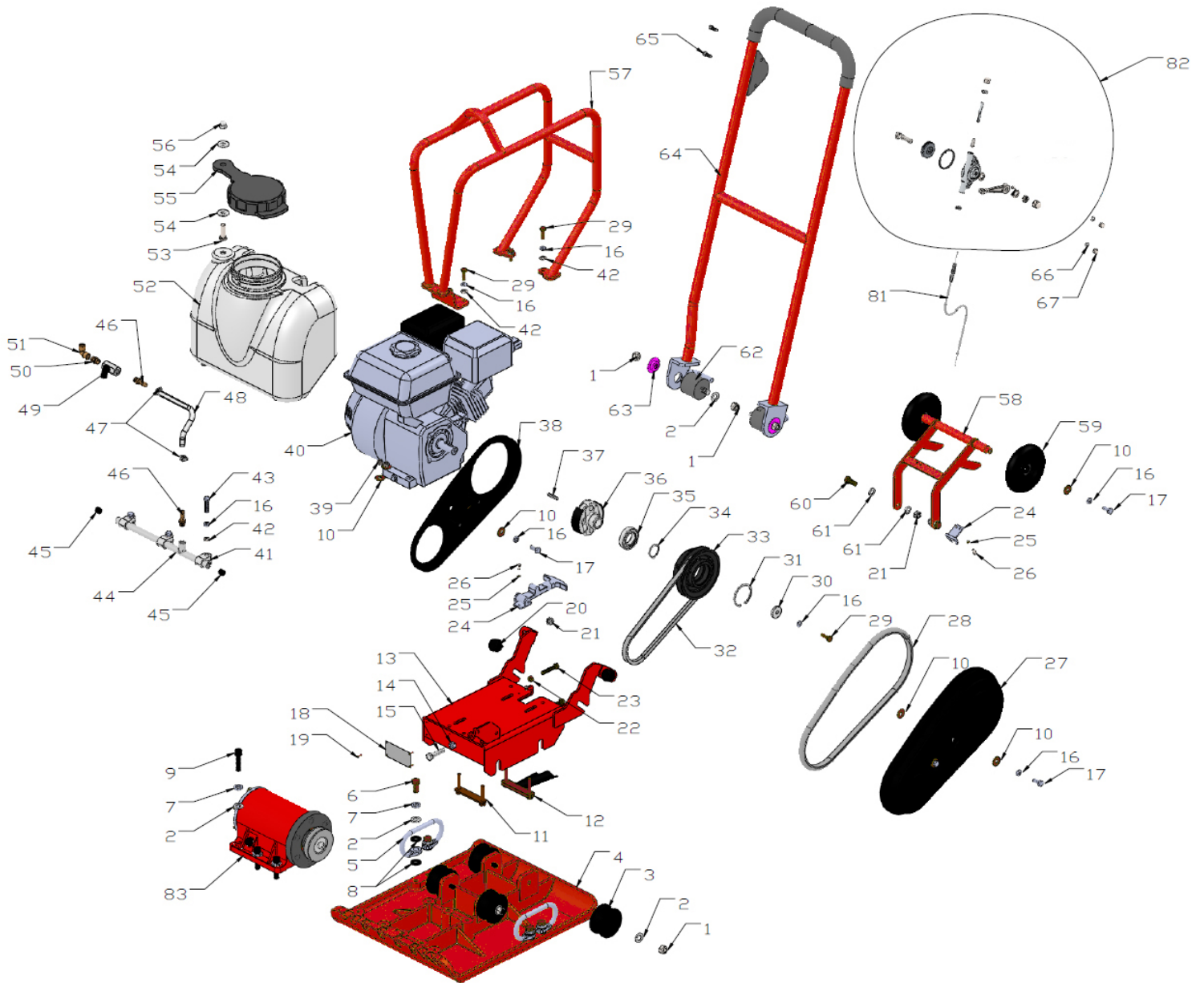
APC140H Exciter Housing Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
02-1	062724	FSTN, HHCS M8x30-8.8-DIN-1	8
02-2	062725	FSTN, LW W8-DIN-1	8
02-3	062726	FSTN, FW W8-DIN-1	8
02-4	062727	CLOSE COVER	1
02-5	062728	O-RING, W04-80x3.5	2
02-6	062729	EXTERNAL CIRCLIP, CS.RG35	2
02-7	062730	BEARING	2
02-8	062731	EXCITER SHAFT	1
02-9	062732	EXCITER HOUSING	1
02-10	062733	FSTN, WASHER GB97.1-M14	1
02-11	062734	HEXAGON HEAD PLUG	1
02-12	062735	BUSHING	1
02-13	062736	COVER	1
02-14	062737	OIL SEAL, W03-65x35x12	1
02-15	062738	COVER GUARD	1
02-16	062739	EXCITER PULLEY	1
02-17	062740	FSTN, WASHER 60-060301	1
02-18	062741	FSTN, LW W10-DIN-1	1
02-19	062742	VENT SCREW	1

SECTION 4 PARTS

APC160H Assembly Illustration



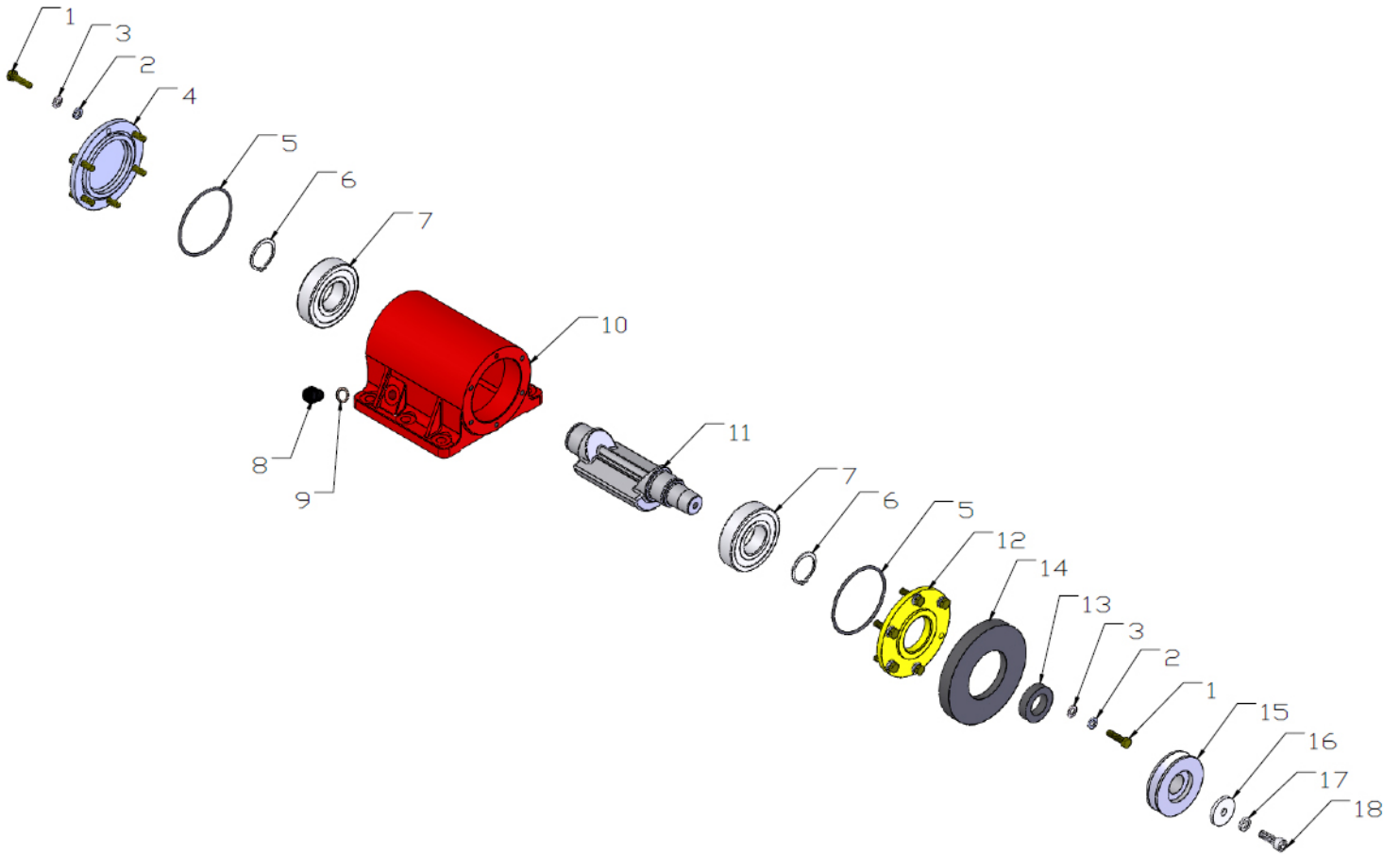
APC160H Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
01-1	062642	FSTN, LOCK NUT M12-DIN-1	8
01-2	062643	FSTN, FW W12-DIN-1	16
01-3	062644	CUSHION	4
01-4	062746	BASE PLATE	1
01-5	062646	HANDLE	2
01-6	062647	FSTN, HHCS M12x25-8.8-DIN-1	4
01-7	062648	FSTN, LW W12-DIN-1	10
01-8	062649	RUBBER WASHER	8
01-9	062650	FSTN, SCREW M12x45-12.9-GB-3	6
01-10	062651	FSTN, FW W8-GB-1	12
01-11	062652	FSTN, BOLT 060200	1
01-12	062653	FIX ENGINE BOLT	1
01-13	062654	ENGINE BASE	1
01-14	062655	FSTN, HEX NUT M10-DIN-1	1
01-15	062656	FSTN, HHCS M10x45-8.8-DIN-1	1
01-16	062657	FSTN, LW W8-DIN-1	22
01-17	062658	FSTN, HHCS M8x20-8.8-DIN-1	6
01-18	062659	NAMEPLATE	1
01-19	062660	RIVET	4
01-20	062661	CUSHION	2
01-21	062662	FSTN, LOCK NUT M10-DIN-1	4
01-22	062663	FSTN, HEX NUT M8-DIN-1	2
01-23	062664	FSTN, HHCS M8x45-8.8-DIN-1	2
01-24	062665	BUCKLE	1
01-25	062666	FSTN, LW W5-DIN-1	4
01-26	062667	FSTN, HHCS M5x10-8.8-DIN-1	4
01-27	062668	OUTER BELT GUARD	1
01-28	062669	SEAL	1
01-29	062670	FSTN, HHCS M8x25-8.8-DIN-1	5
01-30	062671	FSTN, WASHER 80-0319	1
01-31	062672	INTERNAL CIRCLIP, CH.RG55	1
01-32	062774	V-BELT	1
01-33	062674	CLUTCH PULLEY	1
01-34	062675	EXTERNAL CIRCLIP, CS.RG30	1
01-35	062676	BEARING	1
01-36	062778	CENTRIFUGAL CLUTCH	1
01-37	062678	KEY, 5x5x32	1
01-38	062679	INNER BELT GUARD	1
01-39	062680	FSTN, LOCK NUT M8-DIN-1	4
01-40	062782	ENGINE	1
01-41	062682	HOOP	3
01-42	062683	FSTN, FW W8-DIN-1	15
01-43	062684	FSTN, HHCS M8x35-8.8-DIN-1	5
01-44	062685	SPRINKLING PIPE	1
01-45	062686	HEXAGONAL SOCKET HEAD PLUG	2
01-46	062687	HOSE NIPPLE	2
01-47	062688	HOSE CLAMP	2
01-48	062689	HOSE, 60W-010700	1
01-49	062690	VALVE	1
01-50	062691	JOINT	1
01-51	062692	90° ELBOW	1
01-52	062794	WATER TANK	1
01-53	062795	FSTN, HHCS M10x35-8.8-DIN-1	1
01-54	062796	FSTN, FW W10-GB-1	2
01-55	062797	WATER TANK CAP	1
01-56	062798	FSTN, CAP NUT M10-DIN-1	1
01-57	062799	WATER TANK FRAME	1
01-58	062698	WHEEL FRAME	1
01-59	062699	WHEEL	2
01-60	062700	FSTN, HHCS M10x25-8.8-DIN-1	2
01-61	062701	FSTN, FW W10-DIN-1	4
01-62	062702	HAND RAIL ABSORBER	2
01-63	062703	FSTN, NYLON WASHER 60W-010300.3	2
01-64	062704	HAND RAIL	1
01-65	062705	FSTN, HHCS M6x20-8.8-DIN-2	2
01-66	062706	FSTN, LW W6-DIN-2	2
01-67	062707	FSTN, CAP NUT M6-DIN-2	2
01-81	062721	THROTTLE CABLE	1
01-82	062722	THROTTLE LEVER ASSY	1
01-83	062825	EXCITER HOUSING ASSY	1

SECTION 4 PARTS

APC160H Exciter Housing Assembly Illustration



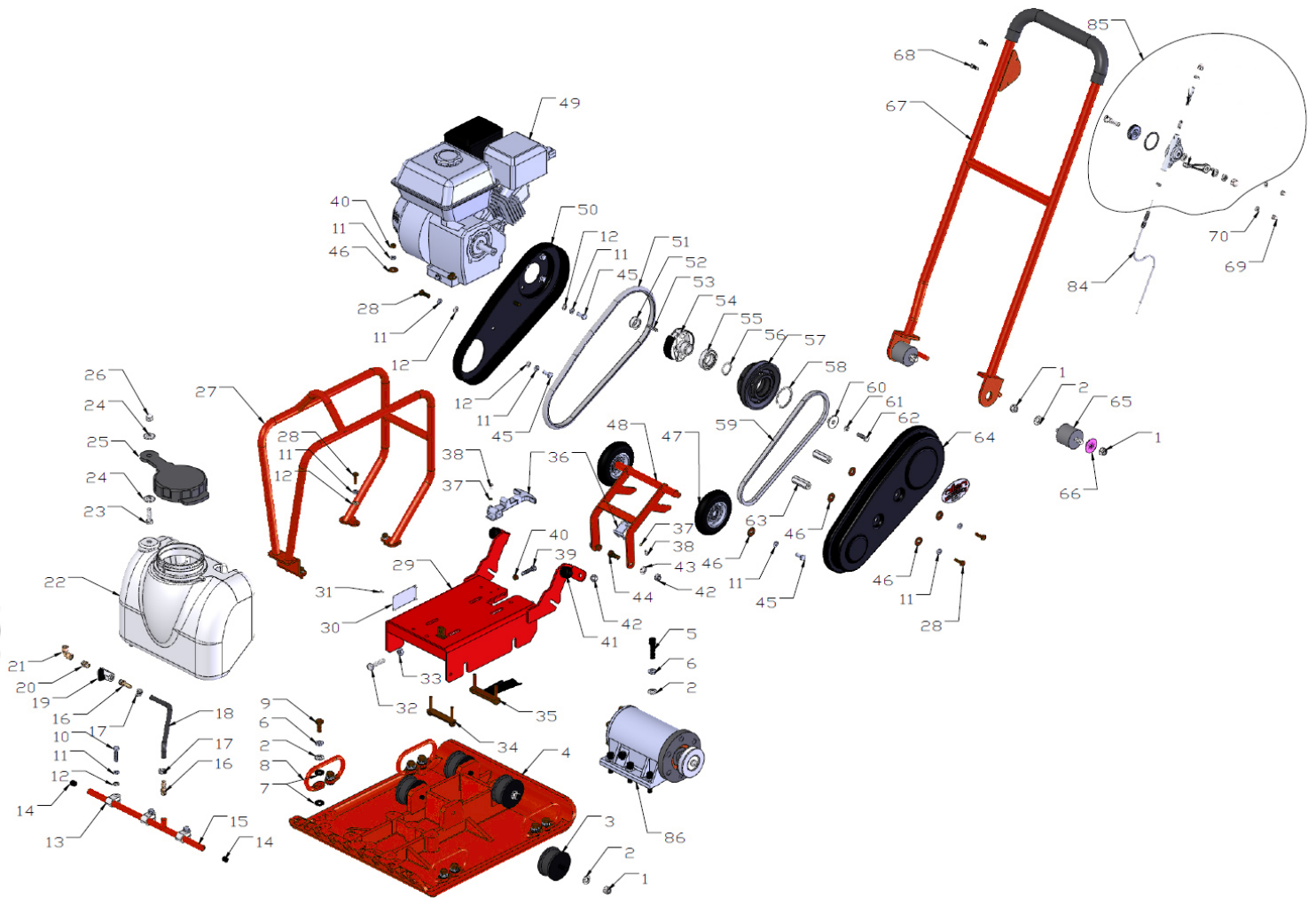
APC160H Exciter Housing Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
02-1	062724	FSTN, HHCS M8x30-8.8-DIN-1	8
02-2	062725	FSTN, LW W8-DIN-1	8
02-3	062726	FSTN, FW W8-DIN-1	8
02-4	062727	CLOSE COVER	1
02-5	062728	O-RING, W04-80x3.5	2
02-6	062729	EXTERNAL CIRCLIP, CS.RG35	2
02-7	062730	BEARING	2
02-8	062731	EXCITER SHAFT	1
02-9	062732	EXCITER HOUSING	1
02-10	062733	FSTN, WASHER GB97.1-M14	1
02-11	062734	HEXAGON HEAD PLUG	1
02-12	062735	BUSHING	1
02-13	062736	COVER	1
02-14	062737	OIL SEAL, W03-65x35x12	1
02-15	062738	COVER GUARD	1
02-16	062739	EXCITER PULLEY	1
02-17	062740	FSTN, WASHER 60-060301	1
02-18	062741	FSTN, LW W10-DIN-1	1
02-19	062742	VENT SCREW	1

SECTION 4 PARTS

APC210H Assembly Illustration



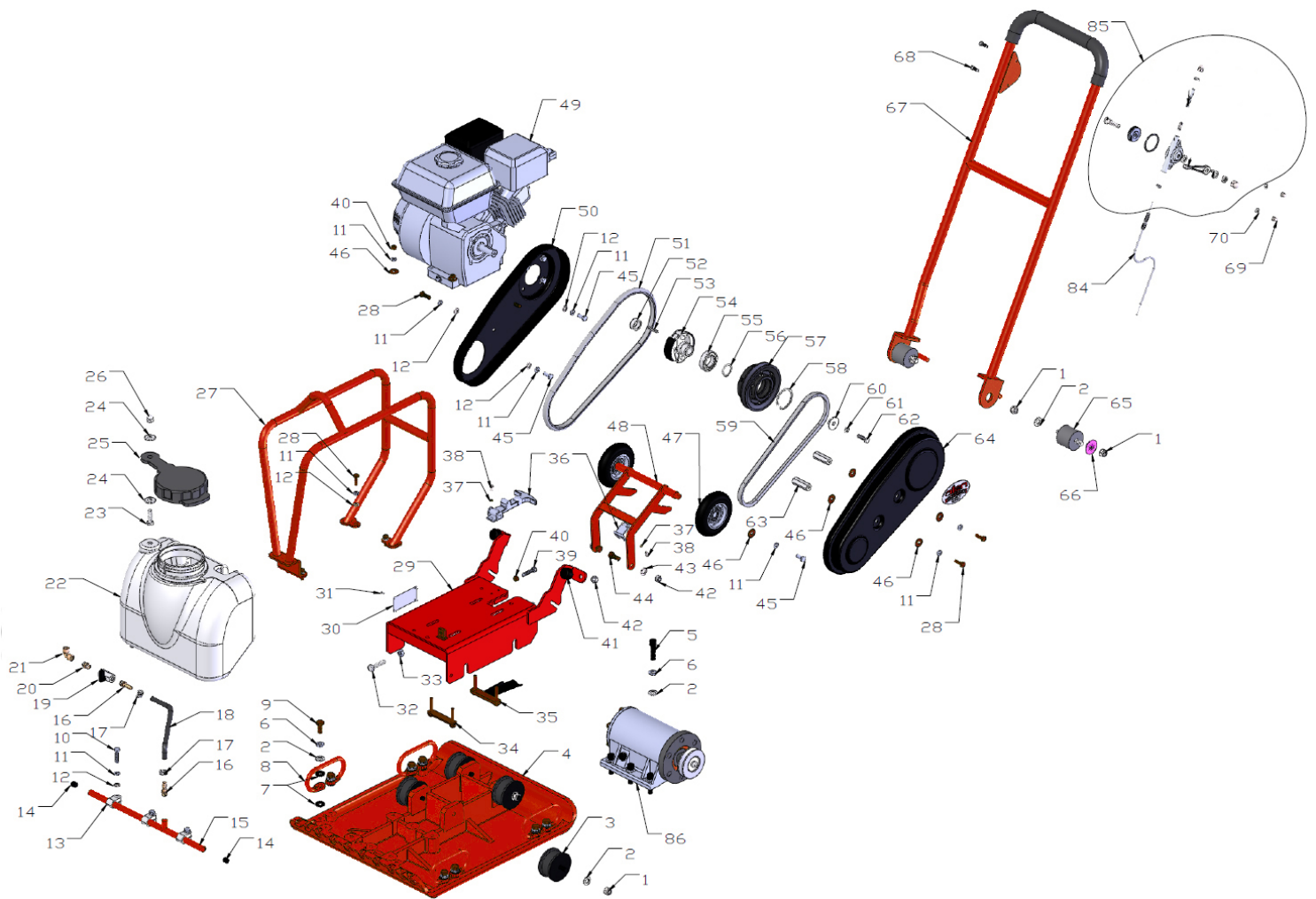
APC210H Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
01-1	062642	FSTN, LOCK NUT M12-DIN-1	8
01-2	062643	FSTN, FW W12-DIN-1	20
01-3	062540	SHOCK ABSORBER	4
01-4	062541	BASE PLATE	1
01-5	062650	FSTN, SCREW M12x45-12.9-GB-3	6
01-6	062648	FSTN, LW W12-DIN-1	14
01-7	062649	RUBBER WASHER	16
01-8	062545	HANDLE	4
01-9	062647	FSTN, HHCS M12x25-8.8-DIN-1	8
01-10	062684	FSTN, HHCS M8x35-8.8-DIN-1	3
01-11	062657	FSTN, LW W8-DIN-1	22
01-12	062651	FSTN, FW W8-GB-1	14
01-13	062682	HOOP	3
01-14	062686	HEXAGONAL SOCKET HEAD PLUG	2
01-15	062685	SPRINKLING PIPE	1
01-16	062687	HOSE NIPPLE	2
01-17	062688	HOSE CLAMP	2
01-18	062689	HOSE, 60W-010700	1
01-19	062690	VALVE	1
01-20	062691	JOINT	1
01-21	062692	90° ELBOW	1
01-22	062794	WATER TANK	1
01-23	062795	FSTN, HHCS M10x35-8.8-DIN-1	1
01-24	062796	FSTN, FW W10-GB-1	2
01-25	062797	WATER TANK CAP	1
01-26	062798	FSTN, CAP NUT M10-DIN-1	1
01-27	062564	WATER TANK FRAME	1
01-28	062670	FSTN, HHCS M8x25-8.8-DIN-1	8
01-29	062566	ENGINE BASE	1
01-30	062659	NAMEPLATE	1
01-31	062660	RIVET	4
01-32	062656	FSTN, HHCS M10x45-8.8-DIN-1	1
01-33	062655	FSTN, HEX NUT M10-DIN-1	1
01-34	062652	FSTN, BOLT 060200	1
01-35	062653	FIX ENGINE BOLT	1
01-36	062665	BUCKLE	1SET
01-37	062666	FSTN, LW W5-DIN-1	4
01-38	062667	FSTN, HHCS M5x10-8.8-DIN-1	4
01-39	062576	FSTN, HHCS M8x40-8.8-DIN-1	2
01-40	062663	FSTN, HEX NUT M8-DIN-1	6
01-41	062661	CUSHION	2
01-42	062662	FSTN, LOCK NUT M10-DIN-1	4
01-43	062701	FSTN, FW W10-DIN-1	2
01-44	062581	FSTN, HHCS M10x25-8.8-DIN-1	2
01-45	062658	FSTN, HHCS M8x20-8.8-DIN-1	7
01-46	062683	FSTN, FW W8-DIN-1	10
01-47	062699	WHEEL	2
01-48	062698	WHEEL FRAME	1
01-49	062782	ENGINE	1
01-50	062587	INNER BELT GUARD	1
01-51	062588	SEAL	1
01-52	062589	SPACER	1
01-53	062590	KEY, 5x5x36	1
01-54	062778	CENTRIFUGAL CLUTCH	1
01-55	062676	BEARING	1
01-56	062675	EXTERNAL CIRCLIP, CS.RG30	1
01-57	062674	CLUTCH PULLEY	1
01-58	062672	INTERNAL CIRCLIP, CH.RG55	1
01-59	062596	V-BELT	1
01-60	062597	FSTN, WASHER W02-A33	1
01-61	062657	FSTN, LW W8-DIN-1	1
01-62	062724	FSTN, HHCS M8x30-8.8-DIN-1	1
01-63	062600	CONNECTION POLE	2
01-64	062601	OUTER BELT GUARD	1
01-65	062702	HAND RAIL ABSORBER	2
01-66	062703	FSTN, NYLON WASHER 60W-010300.3	2
01-67	062604	HANDRAIL	1
01-68	062705	FSTN, HHCS M6x20-8.8-DIN-2	2
01-69	062707	FSTN, CAP NUT M6-DIN-2	2
01-70	062706	FSTN, LW W6-DIN-2	2
01-84	062721	THROTTLE CABLE	1
01-85	062722	THROTTLE LEVER ASSY	1
01-86	062623	EXCITER HOUSING ASSY	1SET

SECTION 4 PARTS

APC210H Assembly (cont'd) Illustration



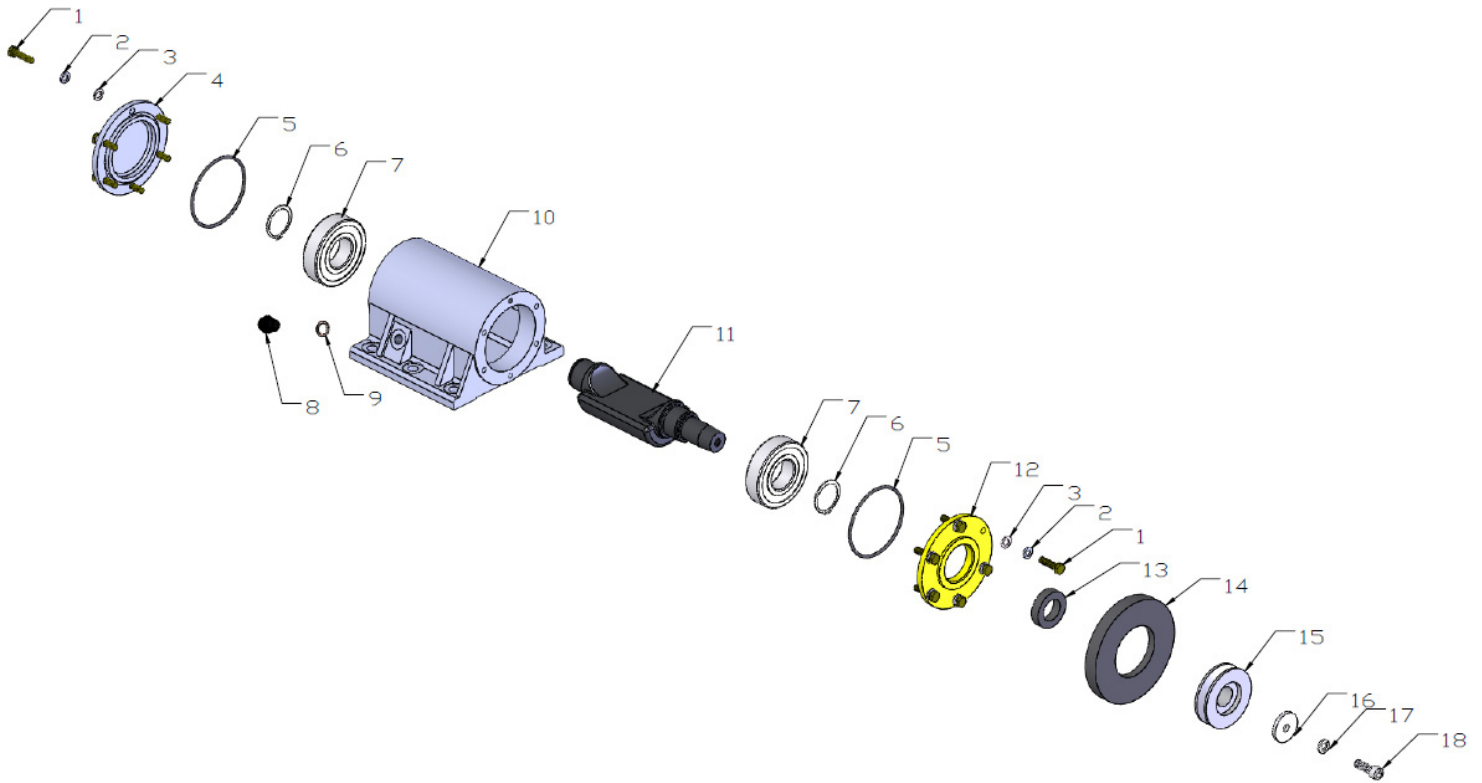
APC210H Assembly (cont'd) Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
01-1	062642	FSTN, LOCK NUT M12-DIN-1	8
01-2	062643	FSTN, FW W12-DIN-1	20
01-3	062540	SHOCK ABSORBER	4
01-4	062541	BASE PLATE	1
01-5	062650	FSTN, SCREW M12x45-12.9-GB-3	6
01-6	062648	FSTN, LW W12-DIN-1	14
01-7	062649	RUBBER WASHER	16
01-8	062545	HANDLE	4
01-9	062647	FSTN, HHCS M12x25-8.8-DIN-1	8
01-10	062684	FSTN, HHCS M8x35-8.8-DIN-1	3
01-11	062657	FSTN, LW W8-DIN-1	22
01-12	062651	FSTN, FW W8-GB-1	14
01-13	062682	HOOP	3
01-14	062686	HEXAGONAL SOCKET HEAD PLUG	2
01-15	062685	SPRINKLING PIPE	1
01-16	062687	HOSE NIPPLE	2
01-17	062688	HOSE CLAMP	2
01-18	062689	HOSE, 60W-010700	1
01-19	062690	VALVE	1
01-20	062691	JOINT	1
01-21	062692	90° ELBOW	1
01-22	062794	WATER TANK	1
01-23	062795	FSTN, HHCS M10x35-8.8-DIN-1	1
01-24	062796	FSTN, FW W10-GB-1	2
01-25	062797	WATER TANK CAP	1
01-26	062798	FSTN, CAP NUT M10-DIN-1	1
01-27	062564	WATER TANK FRAME	1
01-28	062670	FSTN, HHCS M8x25-8.8-DIN-1	8
01-29	062566	ENGINE BASE	1
01-30	062659	NAMEPLATE	1
01-31	062660	RIVET	4
01-32	062656	FSTN, HHCS M10x45-8.8-DIN-1	1
01-33	062655	FSTN, HEX NUT M10-DIN-1	1
01-34	062652	FSTN, BOLT 060200	1
01-35	062653	FIX ENGINE BOLT	1
01-36	062665	BUCKLE	1SET
01-37	062666	FSTN, LW W5-DIN-1	4
01-38	062667	FSTN, HHCS M5x10-8.8-DIN-1	4
01-39	062576	FSTN, HHCS M8x40-8.8-DIN-1	2
01-40	062663	FSTN, HEX NUT M8-DIN-1	6
01-41	062661	CUSHION	2
01-42	062662	FSTN, LOCK NUT M10-DIN-1	4
01-43	062701	FSTN, FW W10-DIN-1	2
01-44	062581	FSTN, HHCS M10x25-8.8-DIN-1	2
01-45	062658	FSTN, HHCS M8x20-8.8-DIN-1	7
01-46	062683	FSTN, FW W8-DIN-1	10
01-47	062699	WHEEL	2
01-48	062698	WHEEL FRAME	1
01-49	062782	ENGINE	1
01-50	062587	INNER BELT GUARD	1
01-51	062588	SEAL	1
01-52	062589	SPACER	1
01-53	062590	KEY, 5x5x36	1
01-54	062778	CENTRIFUGAL CLUTCH	1
01-55	062676	BEARING	1
01-56	062675	EXTERNAL CIRCLIP, CS.RG30	1
01-57	062674	CLUTCH PULLEY	1
01-58	062672	INTERNAL CIRCLIP, CH.RG55	1
01-59	062596	V-BELT	1
01-60	062597	FSTN, WASHER W02-A33	1
01-61	062657	FSTN, LW W8-DIN-1	1
01-62	062724	FSTN, HHCS M8x30-8.8-DIN-1	1
01-63	062600	CONNECTION POLE	2
01-64	062601	OUTER BELT GUARD	1
01-65	062702	HAND RAIL ABSORBER	2
01-66	062703	FSTN, NYLON WASHER 60W-010300.3	2
01-67	062604	HANDRAIL	1
01-68	062705	FSTN, HHCS M6x20-8.8-DIN-2	2
01-69	062707	FSTN, CAP NUT M6-DIN-2	2
01-70	062706	FSTN, LW W6-DIN-2	2
01-84	062721	THROTTLE CABLE	1
01-85	062722	THROTTLE LEVER ASSY	1
01-86	062623	EXCITER HOUSING ASSY	1SET

SECTION 4 PARTS

APC210H Exciter Housing Assembly Illustration

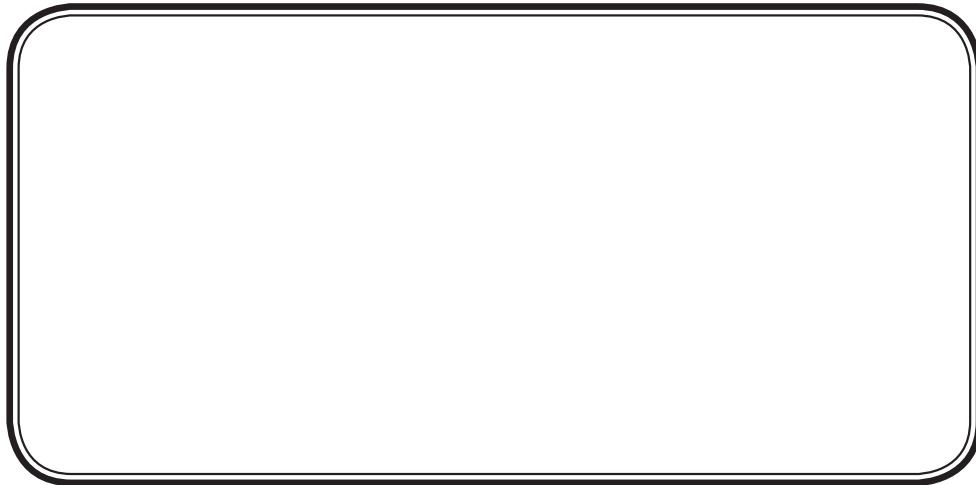


APC210H Exciter Housing Assembly Parts List

SECTION 4 PARTS

NO.	PART NO.	PART DESCRIPTION	QTY
02-1	062724	FSTN, HHCS M8x30-8.8-DIN-1	12
02-2	062725	FSTN, LW W8-DIN-1	12
02-3	062726	FSTN, FW W8-DIN-1	12
02-4	062829	CLOSE COVER	1
02-5	062830	O-RING, W04-90x3.5	2
02-6	062831	EXTERNAL CIRCLIP, CS.RG40	2
02-7	062832	BEARING	2
02-8	062734	HEXAGON HEAD PLUG	1
02-9	062632	CUPRUM WASHER	1
02-10	062633	EXCITER HOUSING	1
02-11	062634	EXCITER SHAFT	1
02-12	062837	COVER	1
02-13	062838	OIL SEAL, W03-50x30x12	1
02-14	062839	COVER GUARD	1
02-15	062638	EXCITER PULLEY	1
02-16	062841	PULLEY WASHER	1
02-17	062741	FSTN, LW W10-DIN-1	1
02-18	062742	VENT SCREW	1

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