

弘揚精密實業有限公司 HIACE ENGINE CO., LTD.

OWNER'S MANUAL 使用說明書

WATER PUMP 抽水機

WP-10 1" WATER PUMP

WP-15 1.5" WATER PUMP

CAUTION 注意

- Before using our products, please read this manual carefully to understand the proper use of your unit.
使用本產品之前請務必先閱讀本使用說明書。
- Keep this manual handy. 本使用說明書請妥善保管。

Contents 目錄

For safe operation 正確使用須知.....	2 ~ 3
Water Pump Principle 抽水機原理.....	3
Parts Location 各部位名稱.....	4
Set up 安裝.....	5
Fuel 燃料.....	5
Use 操作.....	6 ~ 8
Maintenance 檢修.....	9 ~ 10
Storage 存放.....	10
Disposal 廢棄處置.....	10
Specifications 產品規格.....	11

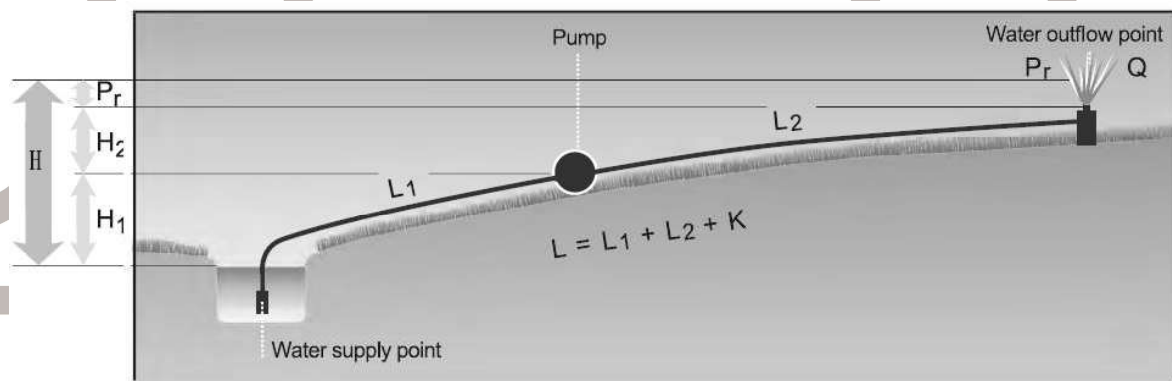
For safe operation 正確使用須知

1. Read this manual carefully until you completely understand and can follow all safety notes, precautions, and operating instructions before using of the unit.
1. 使用前請務必先認真閱讀本使用說明書，將產品的性能及使用上的注意事項理解清楚。
2. Do not operate this tool when you are tired, ill, or under the influence of alcohol, drugs, or medication.
2. 因疲勞等原因身體感到不適時，或由於服用了感冒藥或飲酒後致使判斷能力降低，難以準確進行操作時，請勿使用本產品。
3. When using the product, you should wear proper clothing and protective equipment that including Helmet, Ear protectors, Protection goggles or face protector, Thick work gloves, Non-slip-sole work boots.
3. 操作機器時請務必穿戴適當保護裝備，如頭盔、耳塞或耳罩、防塵眼鏡或臉部防護罩、手套、防護鞋...等裝備。
4. Do not wear loose clothing, jewelry, short trousers, sandals, or go barefoot. Do not wear anything which might be caught by branches or moving parts of the unit.
4. 操作時請勿穿戴首飾或穿著褲腳寬大的褲子、短褲、涼鞋、草鞋或赤腳。
5. Never start or run the engine inside a closed room or building. Exhaust gases contain dangerous carbon monoxide.
5. 引擎排出的氣體裡含有對人體有害的一氧化碳，請不要在室內，溫室內或隧道內等通風不好的地方使用本產品。
6. Before starting the engine, inspect the entire unit for loose fasteners and fuel leakage.
6. 開始作業前，務必認真檢查機體各部，在確認沒有螺絲鬆動、漏油、損傷或變形等異常情況後方可開始作業。
7. After starting the engine, check to make sure that the water pump stops working when the throttle lever is moved fully back to its original position. If it continues to work even after the throttle lever has been moved fully back, turns off the engine and takes the unit to your authorized HIACE servicing dealer for repair.
7. 引擎啟動後，如加油柄在無效位置時，泵浦仍不停止，要馬上關掉引擎，將本產品交由 HIACE 所授權之服務業者進行檢修。
8. Fuel is highly flammable. Always keep open flames and sparks away from the unit and fuel depot. Do not smoke while refueling the unit or mixing fuel.
8. 在加油和儲油地區必須嚴禁煙火。禁止叼著香煙作業、加油或混合燃料。
9. When refueling the unit, make sure to stop the engine and allow it to cool down. Wipe spilled fuel completely from the unit. Move at least 3 meters away from fueling site before starting the engine.
9. 在加油之前必須確認引擎停止並冷卻，加油後將燃料容器密封，然後要在離開燃料容器 3 米以上的地方啟動引擎。
10. This product has been designed mainly for pumping, draining, filling, lawn and garden irrigation. Please do not use it for any other purpose such as applying with muddy water, this may cause unforeseen accidents.
10. 本產品是用於一般用途的抽水、排水、及草坪和園藝灌溉，請勿用於抽取泥濘混濁的水。
11. Maintain the speed of the engine at the level required to perform pumping work, and never raise the speed of the engine above the level necessary.
11. 引擎轉速請保持在作業需要的範圍之內，勿隨意提高引擎轉速。

For safe operation 正確使用須知

12. Be sure the water pump is placed on the firm place and as near to available water source as possible.
12. 使用抽水機時，請將抽水機放置在平坦的地方，且盡可能的靠近水源處。
13. Do not allow children, animals, etc., to enter the operating area. When work is to be performed simultaneously by two or more persons, care should also be taken to constantly look around or otherwise check for the presence and locations of other people working so as to maintain a distance between each person sufficient to ensure safety.
13. 請勿讓孩童、動物等進入作業範圍區域。另外幾個人同時工作時，要不時地相互打招呼，並保持安全間隔。
14. When the engine is turned off, make sure the water pump has stopped running before moving the unit.
14. 將引擎關閉後，移動機器之前請務必確保泵浦已經完全停止。
15. Do not touch the spark plugs while the engine is running, as you may get an electric shock.
15. 引擎啟動時，請勿觸碰火星塞，以免遭受電擊。
16. In the event that any part must be replaced or any maintenance or repair work not described in this manual must be performed, please contact a representative from the store nearest HIACE authorized servicing dealer for assistance.
16. 本說明書上已記載維持產品性能所必要的檢修方法，如需要進行本說明書上未敘述之檢修時，請聯絡 HIACE 所授權之服務業者進行檢修，請勿自行拆卸機體。
17. Secure the unit before storage or transporting to prevent loss of fuel, damage or injury. Do not transport the water pump while it has fuel in the tank, as these could leak out as a result of impact during transportation.
17. 用汽車搬運時，請用繩索將機體牢固的固定在車槽內，以避免機體損壞或燃料外漏。油箱內裝有燃料時切勿搬運機體，避免燃料於運送途中漏出。
18. Use only for tasks explained in the instruction handbook.
18. 請確實依照本說明書的使用事項來操作此機器。

Water Pump Principle 抽水機原理



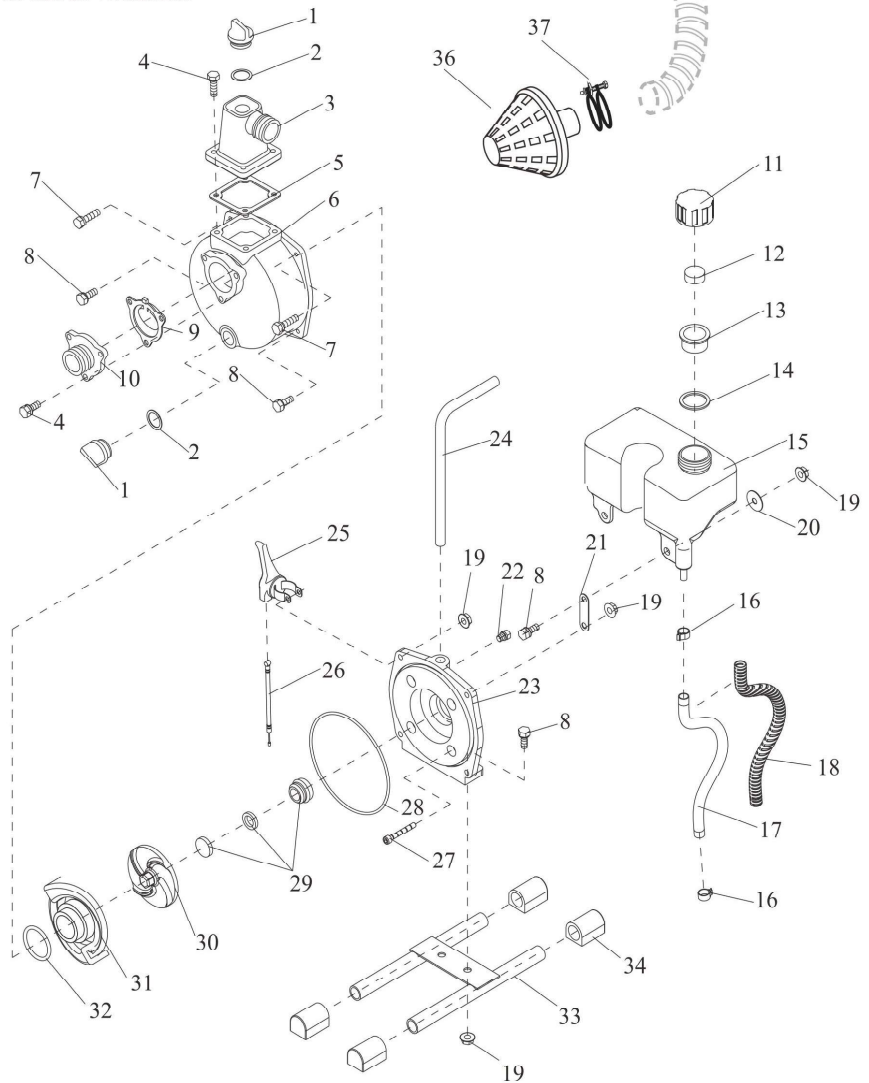
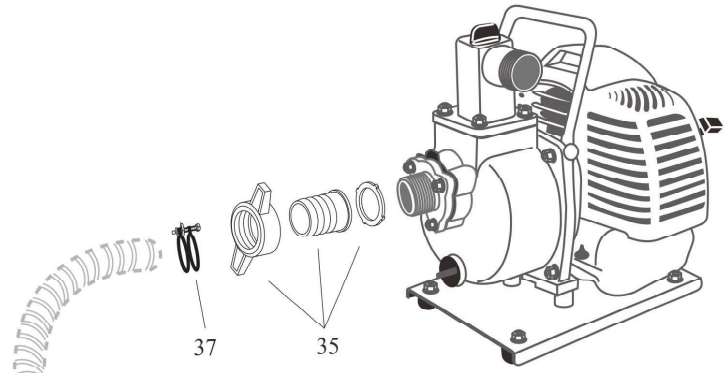
1. Calculate the equivalent length (L) of the pipeline, in meters. 以公尺/米為單位計算輸送管等量長度(L)
 $L=L_1+L_2+K$
L₁: Length of suction run from source to pump. 抽水機吸程長度(公尺/米)
L₂: Length of pipeline from pump to outflow point. 抽水機至輸出點導管長(公尺/米)
K: Pressure losses attributable to fittings. 任何因水管組裝或輸送所導致的壓力損失
2. Calculate the total head (H) in meters. 以公尺/米為單位計算總揚程(H)
 $H=H_1+H_2+Pr$
H₁: Suction lift, between water level and pump. 水平面至抽水機所在位置的垂直高度差
H₂: Discharge lift, between pump and outflow. 輸出位置與抽水機所在位置的垂直高度差
Pr: Pressure required at outflow point, expressed in meters. 以公尺/米為單位表示輸出點需求壓力(1BAR=10M)

Parts Location 各部位名稱

- 1 PLUG SET
- 2 O-RING
- 3 DELIVERY FLANGE
- 4 HEXAGON BOLT
- 5 DELIVERY FLANGE PACKING
- 6 PUMP CASING
- 7 HEXAGON BOLT
- 8 HEXAGON BOLT
- 9 CHECK VALVE
- 10 SUCTION FLANGE
- 11 CAP
- 12 SPONGE
- 13 INNER CAP
- 14 O-RING
- 15 FUEL TANK
- 16 CLIP
- 17 FUEL PIPE
- 18 FUEL PIPE PROTECTIVE COIL
- 19 FLANGE NUT
- 20 WASHER
- 21 STAY
- 22 HEXAGON BOLT
- 23 FLANGE BRACKET
- 24 HANDLE SET
- 25 THROTTLE LEVER
- 26 THROTTLE WIRE COMP.
- 27 HEXAGON SOCKETBOLT AND SEAL WASHER

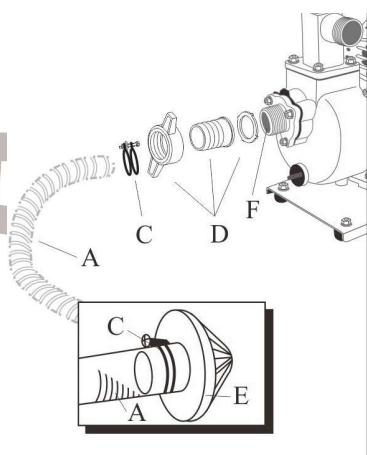
- 28 O-RING
- 29 MECHANICAL SEAL
- 30 IMPELLER
- 31 VOLUTE CASING
- 32 O-RING
- 33 H BASE
- 34 RUBBER MAT
- 35 COUPLING SET
- 36 STRAINER SET
- 37 HOSE BAND

- 1 止水栓
- 2 止水栓橡膠華司 (迫緊)
- 3 出水口
- 4 六角螺絲
- 5 出水口墊片
- 6 儲水室
- 7 六角螺絲
- 8 六角螺絲
- 9 入水口墊片
- 10 入水口
- 11 油箱外蓋
- 12 油箱蓋濾棉
- 13 油箱內蓋
- 14 油箱蓋迫緊
- 15 油箱
- 16 油管束
- 17 油管
- 18 油管護簧
- 19 凸緣螺帽
- 20 華司
- 21 油箱固定片
- 22 六角螺絲
- 23 底座
- 24 提把
- 25 加油器
- 26 加油線
- 27 內六角螺絲+止水華司
- 28 底座O型環
- 29 機械軸封
- 30 水葉
- 31 水路
- 32 水路O型環
- 33 H型腳架
- 34 腳架避震墊
- 35 接頭組
- 36 濾網組
- 37 接頭鐵束環



Set up 安裝

CONNECTING SUCTION HOSE AND DISCHARGE HOSE 連接出水管及入水管

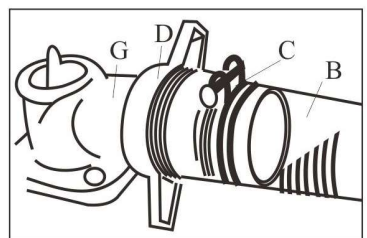


1. Assemble suction hose (A) and discharge hose (B) with Hose Band (C), coupling set (D) on the end.
2. Then assemble strainer (E) with second Hose Band (C) on the other end of suction hose (A).
3. Attach hose (A) to suction port (F) and Hode (B) to discharge port (G). Be sure the Gasket is in place.

1. 以鐵束環(C)連接並固定接頭組(D) (接頭固定栓、接頭、接頭迫緊)至入水管(A)及出水管(B)一端。
2. 於入水管(A)另一端裝上濾網組(E)並以鐵束環(C)固定。
3. 將入水管(A) 連接至入水口(F)、及出水管(B)連接至出水口(G)。請務必確認接頭迫緊已緊密固定好。

NOTE 注意

Longer 25 mm (1 inch) suction hose can be used up to a maximum length of 7.5 m (24 feet). Never exceed a suction lift (A) of 7.5 m (24 feet) or water will not flow. 直徑 25mm (1") 以上的入水管，最大使用長度可至 7.5 公尺，超長可能導致水無法順利流動。



WARNING 警告

- ◆ Make sure that all hose and pipe connections are air tight. An air leak in the suction line or suction fittings may prevent priming and will reduce the pumps capacity or efficiency.
- ◆ Always use the strainer with the suction hose. Gravel or debris sucked into the pump will cause serious impeller and housing damage.

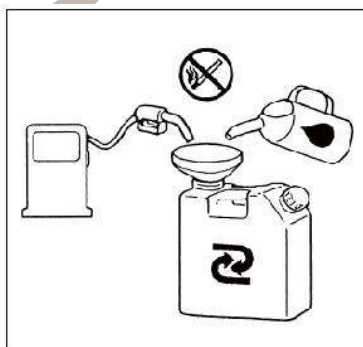
◆ Do not allow the wheel of a vehicle to run over the delivery hose. Do not close the delivery valve abruptly, because a water-hammer occur which may result in heavy damage to the pump.

◆ 開始作業前，務必確認所有水管已確實連接並緊密固定於機體上，如入水管或其接頭有漏氣情形，可能會阻礙抽水，且降低泵浦的使用效能。

◆ 入水管另一端一定要使用濾網組，如果碎石或其它雜質進入泵浦內，將導致泵浦內部嚴重損壞。

◆ 抽水作業時禁止讓車輛輾過出水管，或突然關閉輸出閥，避免產生的水錘作用導致泵浦嚴重損壞。

Fuel 燃料



WARNING 警告

- Keep open flames away from the area where fuel is handled or stored.
- Mix and store fuel only in an approved gasoline container.
- 在加油和儲油地區必須嚴禁煙火。
- 請使用適當的容器來混合或儲存燃料。

Mix a regular grade gasoline (leaded or unleaded, alcohol-free) and a quality-proven motor oil for air cooled 2-cycle gasoline engine use. (F3)

建議使用市場上銷售的無鉛汽油及 2 行程 FC 或 FD 級機油。(F3)

Recommended mixing ratio 建議汽油及機油混合比例：25: 1

Mix Chart 混合表

Gasoline (liters) 汽油(公升)	1	2	3	4	5
2-cycle oil (ml.) 二行程機油(毫升 ml.)	40	80	120	160	200

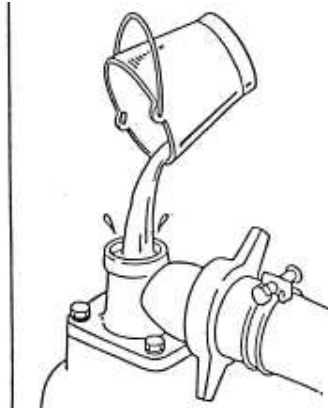
NOTE 注意

Most engine troubles are caused, directly or indirectly, by the fuel used on the machine. Take special care not to mix a motor oil for 4-cycle engine use.

不能使用 4 衝程引擎，或水冷 2 衝程引擎機油，否則會造成火星塞堵塞，排氣口不通暢，或活塞環障礙。

Use 操作

■ WATER FILLING 添加水



1. Remove priming plug and add water until pump casing is filled up with water.
2. Replace prime port plug securely, making sure the gasket is on and in good condition.

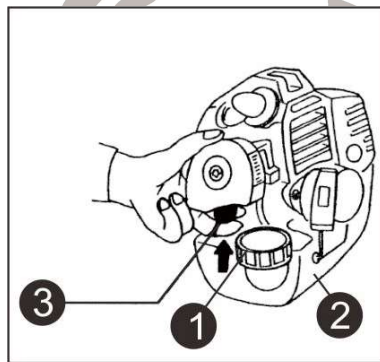
1. 卸下出水口處之止水栓，添加水至泵浦內直到儲水室充滿水。
2. 栓緊止水栓，務必與止水栓墊片密合，如止水栓墊片已變質請更換良品。

NOTE 注意

Should the pump be start without water in the casing, mechanical seal could be damaged.

當儲水室未充滿水時，切勿啟動使用抽水機，否則將導致機械軸封損壞。

■ STARTING THE ENGINE 啟動引擎



WARNING 警告

The pump will start priming upon the engine starts, ensure strainer at the end of suction hose is in water before start the engine.

啟動引擎後，泵浦會開始抽水，故啟動前請確保濾網組一端之入水管已浸入水中。

Diaphragm Engine 膜片式引擎：

1. Move the engine switch to the "ON" position.
2. Set the throttle lever at the slow speed position.
3. Push the priming button repeatedly with finger till it hits the top. (More than 10 times)

◆ Pressing the priming button is necessary to prime the fuel to facilitate the start-up. Since any excess amount of primed fuel returns to the tank, there is no problem of over-priming. Prime the fuel rather more than sufficiently to avoid starting trouble.

4. Turn the choke lever to the fully closed position.

◆ When sufficient fuel is retained and the engine is warm, set the choke lever at the fully opened position.

5. Place the water pump on an even and stable surface. While holding down the engine firmly, grasp the recoil starter grip and pull vigorously.

6. When the engine has started, return the choke lever gradually to the fully opened position. Allow the engine to run for 2 to 3 minutes to warm up.

◆ If only exploding sounds are heard but it does not start, return the choke lever to the fully closed position

1. 將引擎開關設定至"ON"位置。

2. 把油門開關設定在怠速位置。

3. 按壓化油器下方的汽油泵數次，直到汽油泵內充滿汽油。

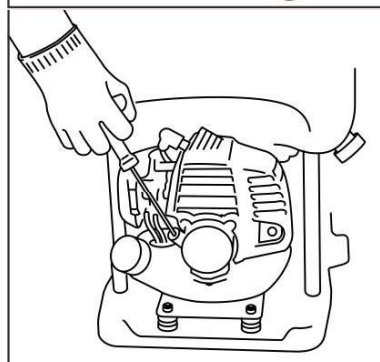
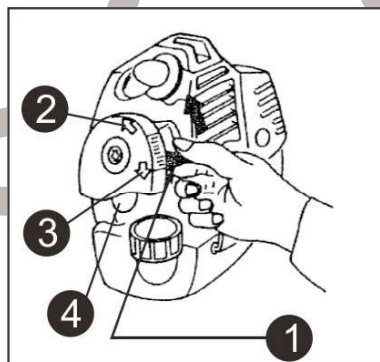
4. 把風門開關移動到關閉位置。

◆ 如果在引擎停止後不久即要再重啟動，油箱內有油且引擎仍是溫暖的，則將風門開關移到全開位置。

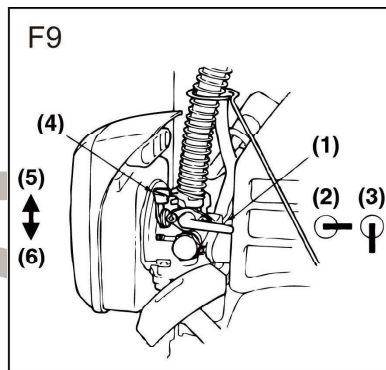
5. 將機器放置在平坦堅實的地方，確認周圍沒有任何物品。然後左手壓住水桶，用右手快速拉出啟動器拉繩。

6. 引擎啟動後，漸漸打開風門。讓引擎轉動2~3分鐘預熱後即可使用。

◆ 如只聽到爆發的聲音但引擎未啟動，將風門開關移動到關閉位置。



Use 操作



Float Engine 浮筒式引擎:

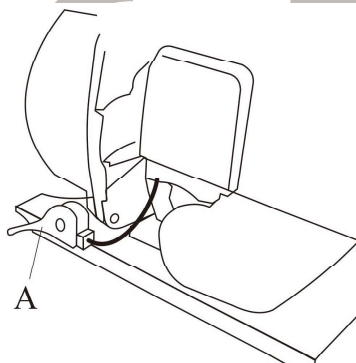
1. Open the fuel tank cock.
2. Move the choke lever to the closed position. (F8)

(1) Fuel cock 燃料開關	(4) Choke lever 阻風拉柄
(2) Close 關閉	(5) Close 關閉
(3) Open 打開	(6) Open 打開
3. Set the throttle lever to the idling position.
4. Place the water pump on an even and stable surface. While holding down the engine firmly, grasp the recoil starter grip and pull vigorously.
5. When the engine has started, return the choke lever gradually to the fully opened position. Allow the engine to run for 2 to 3 minutes to warm up.

1. 打開燃料箱開關。
2. 把風門開關移動到關閉位置。(F8)
3. 把油門開關設定在怠速位置。

4. 將機器放置在平坦堅實的地方，確認周圍沒有任何物品。然後左手壓住抽水機，用右手快速拉出啟動器拉繩。
5. 在引擎啟動後，漸漸打開風門。讓引擎轉動 2~3 分鐘預熱後即可使用。

STOPPING ENGINE 停止引擎



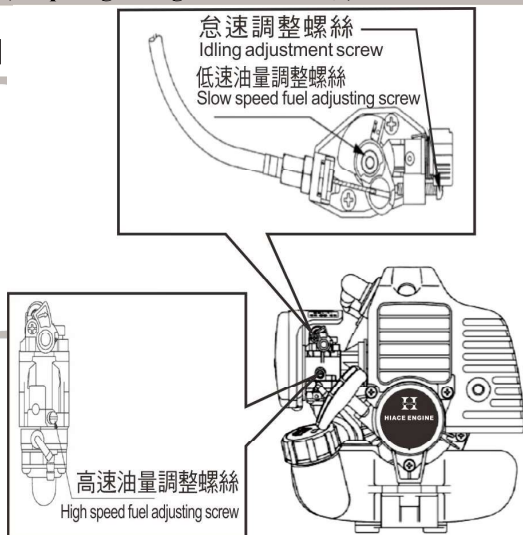
1. Lower the throttle lever (A) fully and cool the engine down for 1-2 minutes at low speed.
 2. Hold down stop switch until the engine has come to a complete stop. (Switch position may vary depending on the specifications. Refer to the instruction manual of driven equipment.)
- ◆ Replenish the fuel before using up completely. It will make easier at the next starting.
 - ◆ When there is no subsequent work, drain the fuel from the fuel tank and restart the engine to use up the fuel remaining in the carburetor.

1. 轉動加油器(A)到怠速位置上，讓引擎降溫持續 1 至 2 分鐘。
 2. 按壓抽水機之停止開關，直到引擎完全停止。關閉燃料開關。
- ◆ 為使下次啟動更容易，建議燃料使用完畢再添加新的燃料。
 - ◆ 如將有一段時間未使用到本機器，請將燃料全部洩出，再啟動引擎，直到其自然熄火停止為止。

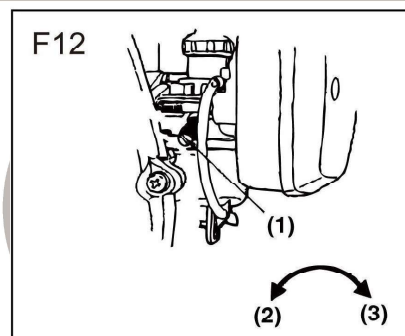
ADJUSTING IDLING SPEED 怠速調整螺絲

- It is normal that the engine keeps running when the throttle lever is released. When the engine speed is too high or too slow, readjust the idle set screw.
- 這是用來調整將加油器扳至「啟動速度」位置時引擎轉數的螺絲。向右(順時針方向)旋轉時轉速便會上升，向左(逆時針方向)旋轉時轉速便會下降。如將加油器扳至「啟動速度」位置時，引擎停止轉動，可再次調整。

(Diaphragm Engine 膜片式引擎)



(Float Engine 浮筒式引擎)

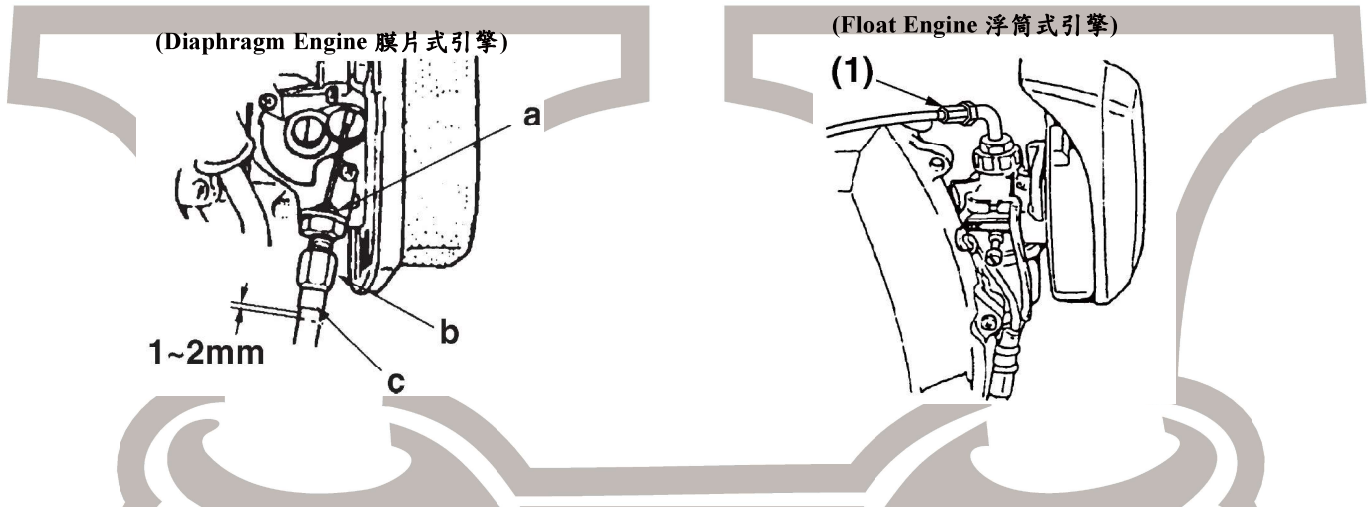


- (1) Idling adjustment screw 怠速調整螺絲
- (2) Rotation increases 轉速增加
- (3) Rotation decreases 轉速降低

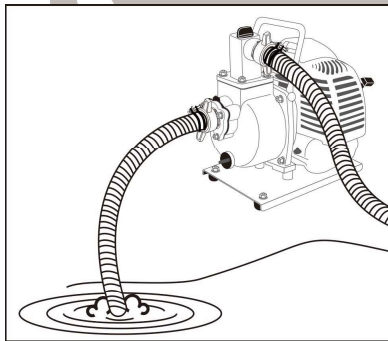
Use 操作

■ ADJUSTING THROTTLE CABLE 調整加油線

- The normal play is 1 or 2mm when measured at the carburetor side end. Readjust with the cable adjuster as required.
- 卸下加油器，拉出加油線。從化油器一端丈量的話，一般為 1~2 毫米長。如果加油線過短或過長，請視需求調整加油線長度。



■ PRIMING THE PUMP 抽水作業

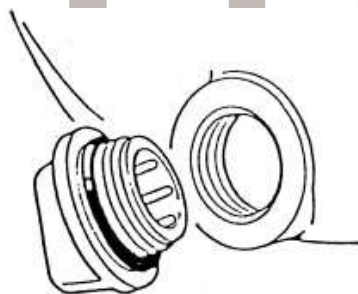


- Ensure strainer at the end of suction hose is in water.
- All HIACE pumps are self-priming centrifugal pumps. When priming the pump, adjust the position of throttle lever depends on the discharge distance.
- 抽水作業前，確保濾網端的入水管已浸入水中。
- 所有 HIACE 抽水機都是自吸式離心泵浦。進行抽水作業時，請視輸出距離調整加油器至適當位置。

WARNING 警告

- The pump will start priming upon the engine starts, water will outflow from the discharge port of pump upon discharge air inside the pump completely. Take care during this period.
- Discharge distance: The distance of lifting water from the surface of the water to the discharge hose end must not exceed 29 m (95 ft.), otherwise no water will flow.
- 啟動引擎後，泵浦會開始抽水，直到泵浦中的空氣完全排出，充滿水後才會開始由出水口排出，期間請注意安全。
- 輸出距離：從出水口排出端至水平面的距離請勿超出 29 公尺，否則可能導致水無法順利流動。

■ DRAIN WATER AFTER USE 結束抽水後之洩水作業



- Drain the water from pump completely after use.
- 每次使用後，開啟入水口下方之止水栓，徹底洩出泵浦內的水。(F14)

WARNING 警告

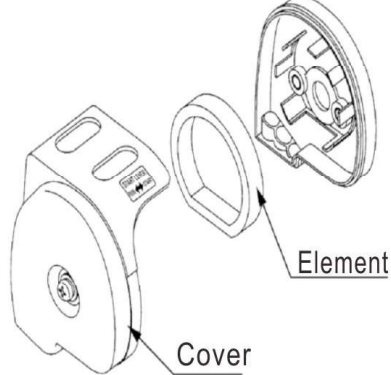
- For your health and to prevent the risk from vibration, refrain from working for a long time at the cold temperature.
- 請避免在低溫環境下長時間操作機器，以確保操作者的健康及安全。

Maintenance 檢修

WARNING 警告

Before cleaning, inspecting, or repairing the unit, make sure that the engine has stopped and is cool.
清理、檢查或修理機器前，先確認引擎已停止並冷卻。

(Diaphragm Engine 膜片式引擎)



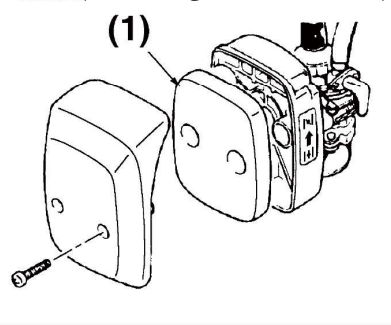
■ AIR CLEANER 空氣濾清器

- Check and clean the filter element in warm, soapy water as required. Dry completely before installing. If the element is broken or shrunk, replace with a new one. (F16 & F17)
 - 請將空氣濾清器的外殼卸下來，清除內部的塵污。濾綿過髒的時候，請用溫水加中性洗滌劑清洗乾淨，待其完全乾燥後重新安裝再用。如濾綿變形或破損，請予以換新。(F16 & F17)
- (1) Element 濾綿

IMPORTANT 重要

- A clogged air filter may increase fuel consumption while cutting down the engine power. And operate the engine without the air filter or with a deformed filter element will quickly ruin the engine.
- 如果空氣濾清器的濾氣海綿沾污過多而繼續使用時，會使引擎的機能降低。相反，如果不加墊海綿或者使用了變形或破損的海綿，會導致引擎內部異常消耗磨損。

MA1(Float Engine 浮筒式引擎)

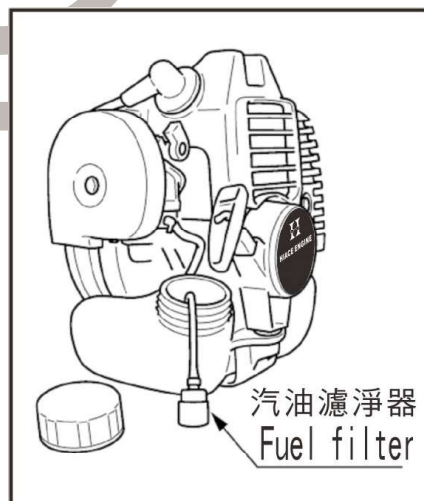


■ FUEL FILTER 汽油濾清器

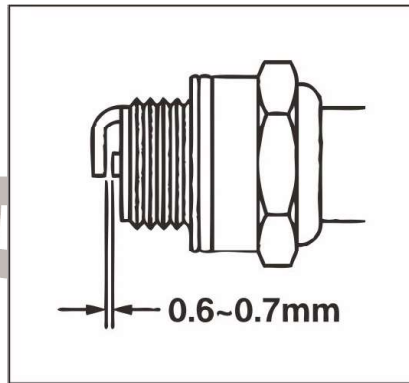
- After every 25 hours of operation, empty the fuel tank, detach the fuel filter from the tank, and remove all dirt. If the filter is too clogged, please replace it with a new one. (F18)
- 要從燃料箱的給油口對汽油濾清器進行檢查，如附污過多時，請將燃料箱的油全部倒出後，將汽油濾清器卸下並清除髒污，如汽油濾清器附污過多，請及時換新。(F18)

IMPORTANT

- A clogged fuel filter may cause poor acceleration of the engine.
- 汽油濾清器因附污過多而不暢通時，會致使引擎轉速難以上升或轉速不穩定。



Maintenance 檢修



■ SPARK PLUG 火星塞

Starting failure and mis-firing are often caused by a fouled spark plug. Periodically clean the spark plug and replace with a new one as required. The spark gap should be adjusted to 0.6 to 0.7 mm. (F19)

REPLACEMENT PLUG IS A DENSO W-20MU / NGK BM6A.

火星塞堵塞會引起引擎工作不良，請定期清理並適當更換火星塞。卸下火星塞，然後用鋼絲刷清除電極上附著的污垢。電極的間隙 0.6~0.7 mm 為妥。(F19)

更換火星塞時請使用指定產品 DENSO W-20MU / NGK BM6A。

Storage 存放

IMPORTANT 重要

■ MAINTENANCE BEFORE STORAGE 長期存放之前的檢修

Old fuel left in the carburetor may cause starting failure. 殘留使用過的燃料於化油器內可能導致無法啟動。

Diaphragm Engine 膜片式引擎:

When a series of operation finished, make sure to empty the fuel tank and run the engine until it uses all the fuel left in the fuel line and the carburetor. Store the unit indoor taking necessary measures for rust prevention.

每次完成一個階段的作業後，務必要將燃料箱裡的燃料全部倒出，並啟動引擎，直到其自然熄火停止為止。請將機體存放於室內空間並做好適當防塵措施。

Float Engine 浮筒式引擎:

When a series of operation finished, make sure to empty the fuel tank and run the engine until it uses all the fuel left in the fuel line. Store the unit indoor taking necessary measures for rust prevention.

每次完成一個階段的作業後，務必要將燃料箱裡的燃料全部倒出，並放鬆化油器的浮子室的排出螺絲或卸油閥以洩出燃料後，要啟動引擎，直到其自然熄火停止為止。請將機體存放於室內空間並做好適當防塵措施。

- Check all parts and the functions. If the failed or damaged parts have been found, replace them with new ones.
- 清潔機體的髒污，同時檢查各部位有無損傷或鬆動等。發現有異常時，應該徹底維修調整以備下次使用。

Disposal 廢棄處置

- When disposing your machine, fuel or oil for the machine, be sure to allow your local regulations.
- 丟棄機器、燃料或潤滑油時，請依據並遵守當地相關法規處理。

Specifications 產品規格

NAME 名稱		WATER PUMP 抽水機						
CONNECTION DIAMETER 口徑(mm)		1 Inch (25mm)			1.5 Inch (40mm)			
E N G I N E 引 擎	ENGINE MODEL 引擎型號	HT-328W	TB-33WLT	EC-04C-W10	HT-358W	TB-43W	TB-43WLT	EC-04C-W15
	CYLINDER DIA/STROKE 汽缸直徑/行程(mm)	36 / 30	36 / 32	40 / 32	38 / 30	40 / 34	40 / 34	40 / 32
	DISPLACEMENT 排氣量 (C.C.)	30.5	32.6	40.2	34	42.7	42.7	40.2
	MAX POWER 最大功率 (HP/7000RPM)	1.7	1.7	2.0	1.9	2.1	2.1	2.0
	FUEL TANK CAPACITY (L) 燃油箱容積 (公升)	1	1	0.88	1	1	1	0.88
	CARBURETOR TYPE 化油器型式	FLOAT TYPE / DIAPHRAGM TYPE 浮筒式 / 膜片式						
	IGNITION SYSTEM 磁電機型式	Electronic CDI 電子 CDI						
	SPARK PLUG 火星塞型號	DENSO W-20MU / NGK BM6A						
	FUEL 燃油牌號	Lubricating oil mixed gasoline 90#以上汽油						
	MIXING RATE 燃油、潤滑油容積混合比	WITH 2 STROKE OIL LEVEL FC OR FD 25 : 1 使用市場上銷售的二行程 FC 或 FD 級機油 25 : 1						
STARTER 啟動方式	STARTER RECOIL 反沖啟動式							
CLUTCH TYPE 動力傳動方式	CENTRIFUGAL TYPE 自動遠心離合器							
PUMP TYPE 泵浦形式	Self Priming 自吸式							
P U M P 泵 浦	MAX. FLOW RATE (LITER/MIN) 最大出水量(公升/分鐘)	120	150	150	240	250	240	270
	AIO CRANKSHAFT 一體成型曲軸	NO	YES	YES	NO	NO	NO	YES
	MAX. TOTAL HEAD 最大揚程	37M			40M	42M		42M