

DY41/42



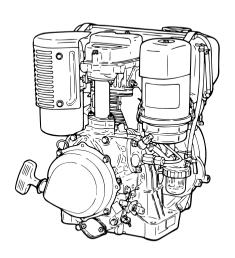
Original

(EN) INSTRUCTIONS FOR USE

FR MANUEL D'UTILISATION

DE BEDIENUNGSANLEITUNG

(NL) GEBRUIKSAANWIJZING



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Diesel Engines

FOREWORD

Thank you very much for purchasing a ROBIN ENGINE.



Your ROBIN ENGINE can supply the power to operate various sorts of machines and equipment.

Please take a moment to familiarize yourself with the proper operation and maintenance procedures in order to maximize the safe and efficient use of this product.

Due to constant efforts to improve our products, certain procedures and specifications are subjected to change without notice.

When ordering spare parts, always give us the MODEL, SPECIFICATION and SERIAL NUMBER of your engine.

Please fill in the following blanks after checking the specification number on your engine.

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SPEC. NO.	יטו	· T ·		 		 	 . 1
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SYMBOLS

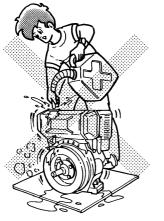
Read manual.		Shutt off fuel valve when the engine is not in use.
Stay clear of the hot surface.		Check for leakage from hose and fittings.
Exhaust gas is poisonous. Do not operate in an unventilated room or enclosed area.		Fire, open flame and smoking prohibited.
Stop the engine before refueling.	X	HOT, avoid touching the hot area.

	On (Run)	<u></u>	Engine start (Electric start)		Fuel (gasoline)
0	Off (Stop)	STOP	Engine stop	副	Fuel (diesel)
T.	Engine oil		Cold engine	图	Fuel shut-off
	Add oil	1	Warm engine	<u>[]</u>	Fuel system failure / malfunction
==	Battery	6	Electrical preheat (Low tem-perature start aid)	X	Choke
4	Fast	₫	Run position	+	Plus ; positive polarity
-	Slow	₩	Stop position		Minus ; negative polarity
*+	Primer	<u>"=][q</u>	Push primer	®	Do not push primer
2X	Two times				

1. SAFETY PRECAUTIONS

Please make sure you review each precaution carefully.







EXHAUST PRECAUTIONS

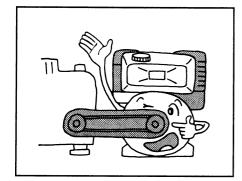
- Never inhale exhaust gasses. They contain carbon monoxide, a colorless, odorless and extremely dangerous gas which can cause unconsciousness or death.
- Never operate the engine indoors or in a poorly ventilated area, such as tunnel, cave, etc.
- Exercise extreme care when operating the engine near people or animals.
- Keep the exhaust pipe free of foreign objects.

REFUELING PRECAUTIONS

- Be sure to stop the engine prior to refueling.
- Do not overfill the fuel tank.
- If fuel is spilt, wipe it away carefully and wait until the fuel has dried before starting the engine.
- After refueling, make sure that the fuel cap is secured to prevent spillage.

FIRE PREVENTION

- Do not operate while smoking or near an open flame.
- Do not use around dry brush, twigs, cloth rags, or other flammable materials.
- Keep the engine at least 3 feet (1 meter) away from buildings or other structures.
- Keep the engine away from flammables and other hazardous materials (trash, rags, lubricants, explosives).



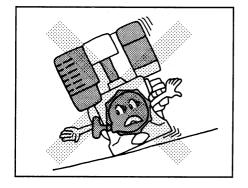


 Place the protective covers over the rotating parts.

If rotating parts such as the drive shaft, pulley, belt, etc. are left exposed, they are potentially hazardous. To prevent injury, equip them with protective covers or shrouds.

Be careful of hot parts.

The muffler and other engine parts become very hot while the engine is running or just after it has stopped. Operate the engine in a safe area and keep children away from the running engine.



SURROUNDINGS

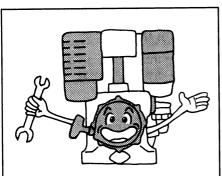
- Operate the engine on a stable, level surface free of small rocks, loose gravel, etc.
- Operate the engine on a level surface.

If the engine is tilted, fuel spillage may result.

NOTE:

Operating the engine at a steep incline may cause seizure due to improper lubrication even with a maximum oil level.





 Be careful of fuel spillage when transporting the engine.

Tighten the fuel tank cap securely and close the fuel strainer cock before transport.

- Do not move the engine while in operation when it has been removed from the equipment.
- When the engine is transported over a long distance or on rough roads, drain fuel from fuel tank to prevent fuel leakage.

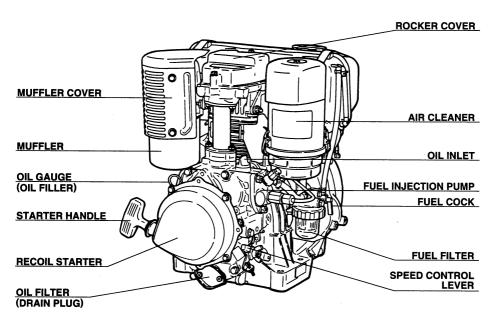
PRE-OPERATION CHECKS

- Carefully check fuel pipes and joints for looseness and fuel leakage.
 Leaked fuel creates a potentially dangerous situation.
- Check bolts and nuts for looseness.
 A loose bolt or nut may cause serious engine trouble.
- Check the engine oil and refill if necessary.
- Check the fuel level and refill if necessary.

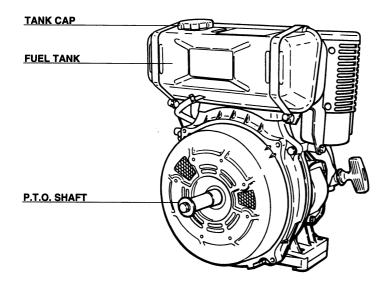
Take care not to overfill the tank.

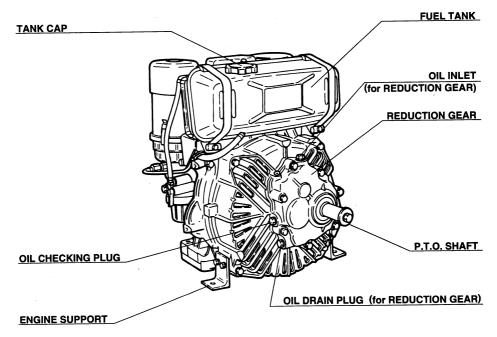
 Wear snug fitting working clothes when operating the engine. Loose aprons, towels, belt, etc., may be caught in the engine or drive train, causing a dangerous situation.

2. COMPONENTS



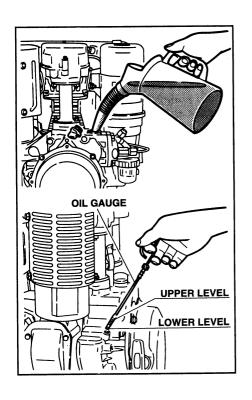
This illustration shows D type.





This illustration shows B type.

3. PRE-OPERATION CHECKS



FILLING ENGINE OIL

Place the engine horizontally and pour oil up to the upper level of the oil gauge (approx. 1 liter).

• Use diesel engine oil with a viscosity

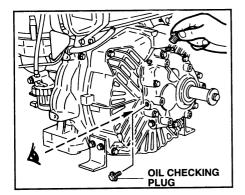
SEASON or TEMPERATURE	GRADE OF OIL
Spring or Summer or Autumn +104°F (40°C) to +50°F (10°C)	SAE30
+68°F (20 °C) to +14°F (−10 °C)	SAE10W-30

Oil grades of "CC" or "CD" (API classification) are recommended. Inferior quality engine oil and/or lack of oil may cause a piston seizure.



A CAUTION

Do not use gasoline engine oil. Use diesel engine oil only.

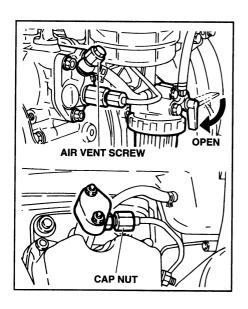


CHECKING ENGINE OIL FOR REDUCTION TYPE

Place the engine horizontally.

Remove the plug for oil checking hole and check the oil level. If the oil is about to flow over the hole, it is sufficient for the quantity specified (approx. 220cc).

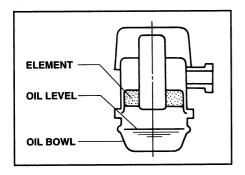
- Overfilling may cause oil spouting out of the breather.
- Use diesel engine oil specified in the above table.





FILLING FUEL IN FUEL TANK AND DISCHARGE AIR FROM FUEL SYSTEM

- Use light automobile diese fuel.
- Fuel should be clean and fresh. Fuel around the bottom of drum contains dirt, impurities and water. If contaminated fuel is used, the fuel injection pump and nozzle may be clogged.
- Fuel tank capacity is 4,5 liters.
 If the fuel is spilt while refilling, wipe off thoroughly.
- When starting the engine in the following conditions, air venting from fuel line is required.
- 1. Starting the brand new engine for the first time.
- 2. Restarting the engine after the engine has stopped due to fuel shortage.
- 3. Starting the engine after fuel filter cleaning.
- Air venting procedure
- 1. Open the fuel cock.
- 2. Loosen the air vent screw of the fuel injection pump and let fuel flow out until air bubbles no longer appear.
- 3. After completing the above work, retighten the air vent screw.
- 4. Set the speed control lever at the "high" speed position and loosen the cap nut on the side of the nozzle and pull the recoil starter handle slowly until sufficient fuel has been injected.
- 5. Retighten the cap nut.
- Stop the engine first, then refill fuel.



FILLING ENGINE OIL IN OIL BATH AIR CLEANER

• Pour in engine oil up to the specified level in the oil bowl.

NOTE:

Oil bath air cleaner is not available for DY42D/B.

4. ELECTRIC STARTER MODELS

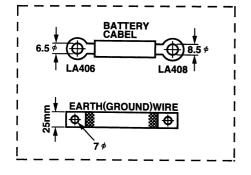


1. PREPARE THE FOLLOWING

- (1) Battery with a capacity of 12V-35AH or larger.
- (2) Lead wires for connecting battery, starter switch and atarting motor.

a) BATTERY CABLE

CABLE	CABLE	WIRE GAUGE				
LENGTH	DIA.	AWG(BS) BWG	SAE	JIS		
Less than 1.5m	7.3mm	1	6	AV15		
1.5m to 2.5m	8.5mm	Ö	4	AV20		
2.5m to 4m	10.8mm	3/0	2	AV30		



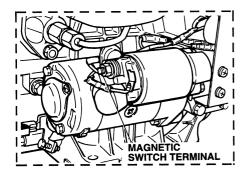
b) SWITCH CABLE

When remote key switch is used, select wires of proper gauge to connect key switch and magnetic switch on the engine.

CABLE			WIRE GAUGE			
LENGTH	DIA.	AWG(BS) BWG	SAE	JIS		
Less than 1.5m	1.5mm	14	16	AV1.25		
1.5m ~ 3.5m	1.9mm	12	14	AV2		
3m ~ 5m	2.4mm	10	13	AV3		

c) GROUND WIRE

Use a flat braided wire of 0.03 sq. in. (20mm^2) or larger sectional area.



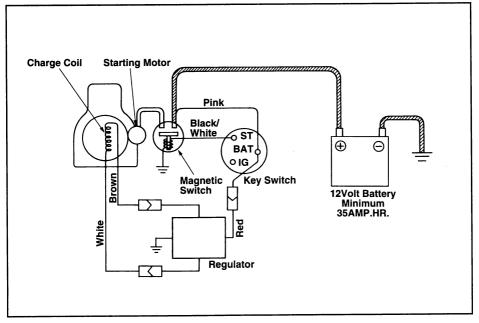
2. WIRING

- 1. Connect (+) terminal of the battery and magnetic switch terminal with a battery cable.
- 2. Connect (–) terminal of the battery to a grounded part of the engine or the equipment with a ground wire.

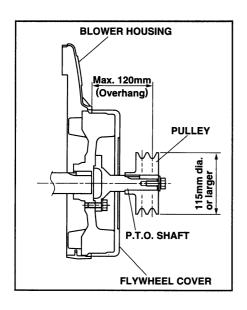
NOTE:

Tighten bolts and nuts on terminals securely so that they would not be loosened by vibration.

WIRING DIAGRAM



5. ADVICE ON BELT DRIVING



When your engine is used for powering the equipment by a belt drive system, be sure to observe the following recommendations in order to use the engine efficiently, safely and comfortably for a long time.

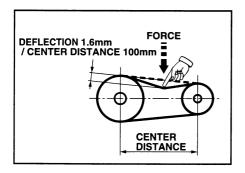
1. PULLEY SIZE AND INSTAL-LATION

- (1) Use a double groove V-pulley with 115 mm diameter or larger for the drive pulley. Smaller pulley will cause belt slipping.
- (2) The overhang distance between the blower housing and the center of the outer groove of the drive pully must be less than 120 mm.

If this overhang distance is larger, the engine runs a risk of getting heavy damage such as breakage of crankshaft or main bearings.



Belt	V-belt type "B"
Numbers	2 (Use in double)



3. TENSION FOR BELT

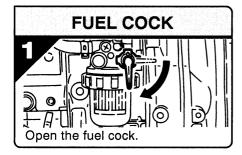
Adjust the belt tension so as that the belt allows 1.6 mm deflection per 100 mm center distance between drive and driven pulleys when the middle of the belt is depressed with a finger. For example, when the center distance of pullyes is 500 mm, proper tension is to allow deflection by 8 mm.

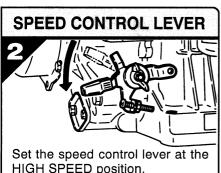
$$\left(1.6\,\text{mm} \times \frac{500}{100} = 8\,\text{mm}\right)$$

Too much tension will cause heavy starting and breakage of crankshaft and bearings.

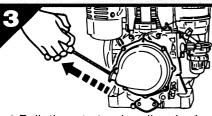
6. OPERATING YOUR ENGINE

STARTING



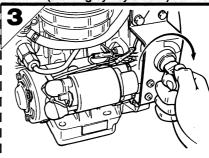


RECOIL STARTER



- Pull the starter handle slowly until resistance is felt. This is the "compression" point. Return the starter handle to its original position and repull swiftly.
- Do not pull out the rope all the way.
- After starting the engine, allow the starter handle to return to its original position while still holding the handle.

KEY SWITCH (Electric Starter) (Starting by key switch)



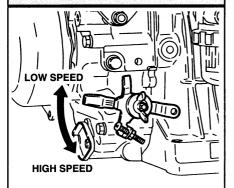


Insert the key into the key slot and turn it to the RUN (I) position. Turn it to the right (START position) to start the engine.

- Do not operate the electric I starter continuously for more I than 5 seconds, even if the I engine does not start.
- If the engine failed to start, set the key to the RUN (I) position and wait for about 10 seconds before retrying.
- Never turn the key switch to the position START while the engine is running.

RUNNING

SPEED CONTROL LEVER



After the engine started, set the speed control lever at the LOW speed position and warm it up without a load for a few minutes.

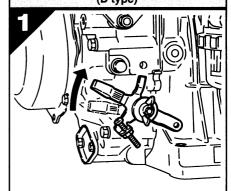
Gradually move the speed control lever toward the HIGH speed position and set it at the required engine speed.

NOTE:

Whenever high speed operation is not required, slow the engine speed down (idle) by moving the speed control lever to save the fuel and extend the engine life.

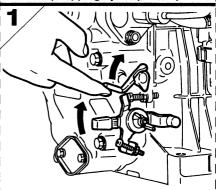
STOPPING

SPEED CONTROL LEVER (D type)

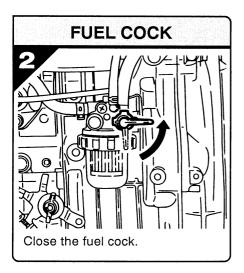


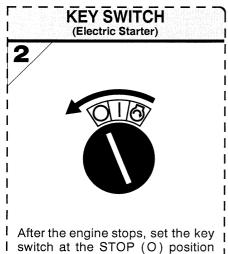
Set the speed control lever at the low speed position and allow the engine to run at low speed for 2 or 3 minutes before stopping. Set the speed control lever to "STOP" position to stop engine.

STOP LEVER (B type) (Stopping by Stop Lever)



Run the engine at idle speed for a few minutes to cool down, and pull up the stop lever until the engine stops.





NOTE:

and remove the key.

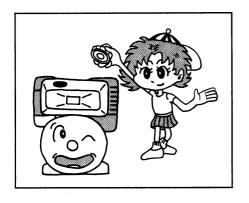
Note that when the key is either at the STOP position or is being pulled out of the key switch while engine is running, the battery is not being charged.

7. EASY TROUBLESHOOTING



WHEN ENGINE DOES NOT START!

- Perform the following checks before you take the engine to your Robin dealer.
- If you still have trouble after completing the checks, take the engine to your nearest dealer.



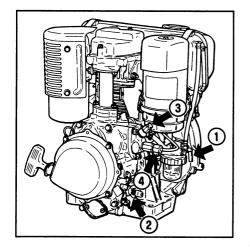
Are foreign substances contained in the fuel?

- Drain all the fuel from the fuel tank and check that no foreign substances and/or water are contained in the fuel
- 2. Clean the fuel filter.



Is your battery well charged?

- If the battery for the electric starter is discharged, the engine does not start. Change the battery then try starting again.
- 2. Check wiring, especially connectors for tightness.



Is fuel being injected?

- 1. Check that the fuel cock is open.
- 2. Check that the speed control lever is in the "HIGH SPEED" position.
- Loosen the air vent screw of the injection pump and let the air out of the pump.
- 4. Disconnect the high pressure pipe on the side of the injection pump, and set the speed control lever to the "HIGH SPEED" position.

Turn the engine over manually and check if fuel is injected. If the fuel is not being injected, the dealer or service shop should repair the unit.

Is there enough compression?

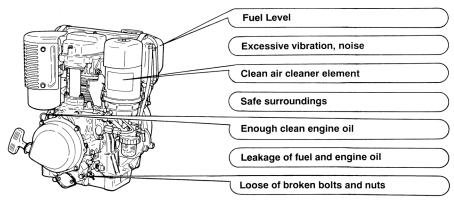
 If compression is not sufficient, check the mounting of the injection nozzle.
 If the mounting nuts are loose, tighten them.

8. MAINTENANCE SCHEDULE

DAILY INSPECTION

Before running the engine, check the following service items.

If you notice any trouble during operation, stop the engine immdrately and cansull your dealer.



PERIODIC INSPECTION

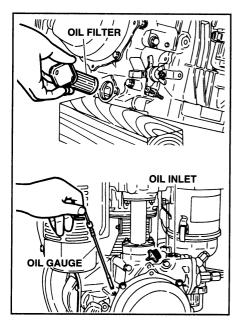
Periodic maintenance is vital to the safe and efficient operation of your engine. Check the table below for periodic maintenance intervals.

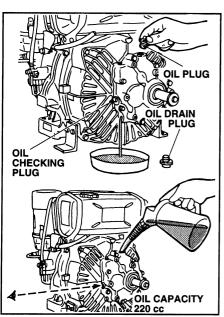
The following chart is based on the normal engine operation schedule.

• This mark indicates that special tools and skills are required. Consult your dealer.

Operating hours	8 hours (daily)	50 hours	100 hours	500 hours	1000 hours
Check for oil and fuel leakage	0				
Check bolts and nuts for tightness	0				
Chack engine oil	Refill eve	ryday up to up	per level.		
Replace engine oil	O Initially 25 hrs.	(ever	/ 50 hrs.)		
Clean air cleaner and add oil			0		
Check and adjust valve clearance				•	
Clean fuel filter (Remove contaminants and water)				(300 hrs.)	○ Replace
Replace or clean oil filtr			0		
Check nozzle and clean				•	
Check valve seat					•
Reduction oil change (B type)				(300 hrs.)	
Check battery electrolyte level			(monthly)		

9. "HOW-TO" MAINTENANCE





ENGINE OIL CHANGE AND OIL FILTER CLEANING

- Initial oil change
 - After 25 hours of operation
- Thereafter
 - Every 50 hours of operation
- 1. While the engine is still warm, remove the oil filter.
- 2. Assemble oil filter after drain engine oil.
- 3. Pour the engine oil up to upper level of the gauge and run engine for several minutes. Then, stop engine and let it stand for about 10 minutes. Check the oil level again and add if necessary. (Capacity: approx 1 liter)
- 4. When changing oil, clean the oil filter with diesel fuel.

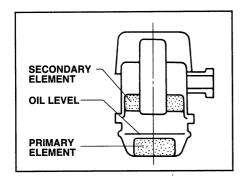
OIL CHANGE FOR REDUCTION GEAR BOX



A CAUTION

Overfilling may cause oil to spout out of the breather. So, be careful.

- Use diesel engine oil for reduction gear oil.
- Period of oil change. . . . Every 300 hours of operation
- 1. While the engine is warm, remove the drain plug.
 - For quick draining, remove the plug of the oil inlet.
- 2. When filling up the oil, first tighten the drain plug firmly, and remove the oil checking plug. Place the engine on a level surface and pour the oil in until it overflows from the oil checking plug.





OIL BATH AIR CLEANER

If the air cleaner is dirty, the engine will perform poorly due to fresh air intake resistance. Always keep the air filter clean.

- 1. After every 100 hours of operation, disassemble and clean the primary and secondary elements with diesel fuel. After cleaning, coat the secondary element with engine oil.
- 2. Replenish engine oil up to oil level.
- When operating the engine under extremely dusty conditions, clean the air filter every 30~50 hours of operation depending on the operating conditions.



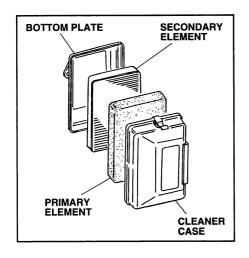


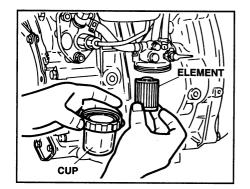
CAUTION

Do not wash elements with kerosene, gasoline or oil.

If the air cleaner is dirty, the engine will perform poorly due to air intake resistance. Always keep the air cleaner elements clean.

- After every 100 hours of operation, dissemble and clean the primary and secondary elements with detergent.
 After cleaning, dry them and attach.
- When operating the engine under extremely dusty conditions, clean the air cleaner elements every 30 to 50 hours of operation depending on the operating conditions.

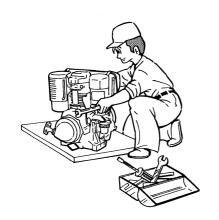




CLEANING FUEL FILTER

Fuel injection pump is a very precise mechanism. If dust or water is contained in the fuel, the plunger may be damaged or seized up. Therefore, clean the fuel filter element and cup very carefully.

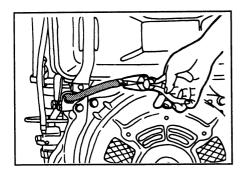
- If and when water and/or foreign substances are found in the fuel filter cup, remove the cup and clean it.
- 2. After every 200 hours of operation, clean the fuel filter and after every 500 hours of operation, replace the elements with new ones.
- Close the fuel cock before cleaning.
- After cleaning bleed the air out of the fuel system. (Refer to page 7.)



CHECKING BOLTS, NUTS AND SCREWS

- Retighten loose bolts and nuts.
- Check for fuel and oil leaks.
- Replace damaged parts with new ones.

Keep safety on your mind.



FUEL PIPE REPLACEMENT

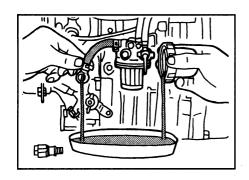
Replace the fuel pipe every 2 years. When fuel leak is found, replace it immediately.



CHECK BATTERY

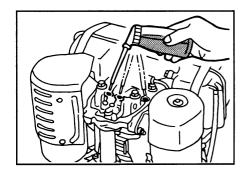
If the electrolyte is below the level line, refill with distilled water to the upper level line.

10. PREPARATIONS FOR STORAGE



DISCHARGE FUEL (NO SMOKING!)

- Remove the injection pump bolt and discharge the fuel from the fuel tank.
- Remove the fuel filter cup and discharge fuel from the fuel filter.
- After discharging the fuel, clean the fuel filter element.



ENGINE LUBRICATING OIL

- Exchange the old engine oil with fresh oil.
- Remove the rocker cover, and lubricate rocker arm and valves.
 Lubricate hole on the side of the cleaner. Gently rotate the engine for two or three times, and tighten the rocker cover.



CLEAN AND STORE

- Pull the starter handle slowly until resistancce is felt and leave it in that position.
- Disconnect the battery and charge it.
- Wipe the engine thoroughly with an oiled cloth, put the cover on, and store the engine indoors in a well-ventilated, low humidity area.

BATTERY CHARGING

 The battery discharges itself even when not connected, therefore it is necessary to recharge it once a month.

11. SPECIFICATIONS

MODEL			DY41D	DY41DS	DY41B	DY41BS	
Тур	oe		Air-cooled, 4-Cycle, Vertical, Overhead Valve, Single Cylinder Diesel Engine				
Dis	placement	mL	412				
DIN	DIN6270NA kW/min-1			3000 3000)		1450 1450)	
	10270IVA	(HP/min-1)		3600 3600)		1750 1750)	
DIN	16270NB	kW/min-1		3600 3000)		1450 1450)	
	10270110	(HP/min ⁻¹)	6.3/3600 (8.5/3600)		6.3/1750 (8.5/1750)		
Dire	ection of Rotation		Counterclockwise as viewed from P.T.O shaft side				
Lub	pricant		Diesel Engine Lubricating Oil API classification "CC" or "CD" grade				
Fue	el			Automotive	Diesel Fuel		
Fue	el tank capacity	L		Appro	x. 4.5		
Ligi	hting capacity	V-W/rpm	_	12-29/3000 12-31/3600	_	12-29/1450 12-31/1750	
Sta	rting system		Recoil starter	Electric starter	Recoil starter	Electric starter	
Dry	weight	kg	46	53	50	57	
ion	Length	mm	436	436	497	447	
Dimension	Width	mm	370	408	370	408	
Dir	Height	mm	478	478	478	478	

Specifications are subject to change without notice.

OPTIONAL PARTS

P.T.O. shaft and adapter for generator

P.T.O. shaft and adapter for pump

Throttle wire bracket

One touch speed control lever (Dust-proof cover is also available).

Updraft(Downdraft) muffler with tail pipe Large capacity fuel tank (15L)

Lighting coil

MODEL			DY42D	DY42DS	DY42B	DY42BS	
Тур	е		Air-cooled, 4-Cycle, Vertical, Overhead Valve, Single Cylinder Diesel Engine				
Dis	placement	mL	412				
DIN	DIN6270NA kW/min-1			3000 3000)	5.7/1450 (7.6/1450)		
	10270111	(HP/min-1)		6.3/3600 (8.5/3600)		1750 1750)	
DIN	I6270NB	kW/min-1		3000 3000)		1450 1450)	
Diiv	10270ND	(HP/min-1)	7.0/3600 (9.4/3600)		7.0/1750 (9.4/1750)		
Dire	ection of Rotation		Counterclockwise as viewed from P.T.O shaft side				
Lub	pricant		Diesel Engine Lubricating Oil API classification "CC" or "CD" grade				
Fue	el			Automotive	Diesel Fuel		
Fue	el tank capacity	L		Appro	x. 4.5		
LigI	nting capacity	V-W/rpm	_			12-29/1450 12-31/1750	
Sta	rting system		Recoil starter	Electric starter	Recoil starter	Electric starter	
Dry	Dry weight kg		47	47 54		58	
ion	Length	mm	436	436	497	447	
Dimension	Width	mm	394	408	394	408	
Dir	Height	mm	478	478	478	478	

Specifications are subject to change without notice.

(EN) [appendix]

Instructions for treatment as waste

When disposing this product ,make sure that the fuel and oil should be drained from the engine ,and submit to local regulations.

(FR) [Annexe]

Instructions pour le traitement des déchets

Quand ce produit doit être mis au rebut, s'assurer que le carburant et l'huile ont été vidangés correctement à partir du moteur, et que les règlements locaux sont bien observés.

(DE) [Anhang]

Anweisungen für die Behandlung als Abfall

Bei der Entsorgung dieses Produkts sicherstellen, dass der Kraftstoff und das Öl aus dem Motor abgelassen wird und unter Befolgung aller örtlich gültigen Bestimmungen entsorgt wird.

(NL) [aanhangsel]

Instructies voor afvalverwerking

Wanneer u dit product weggooit, moet u ervoor zorgen dat alle brandstof en olie uit de motor verwijderd is en dient u zich te houden aan de ter plaatse geldende regelgeving.

(ES) [anexo]

Instrucciones para el tratamiento de los residuos

Cuando este producto debe ponerse al rechazo, asegurarse de que el combustible y el aceite se purgaron correctamente a partir del motor, y que se observan bien los reglamentos locales.

(IT) [appendix]

Istruzioni per lo smaltimento

Per lo smaltimento di questo prodotto, assicurarsi di aspirare il carburante e l'olio dal motore, in conformità con le regolamentazioni locali.

PT [apêndice]

Instruções para tratamento como resíduo

Quando eliminar este produto, assegure-se de que o combustível e o óleo são escoados do motor e suieitos às regulamentações locais.

GR [Προσάρτημα]

Οδηνίες για επεξεργασία ως απόβλητα

Όταν απορρίπτετε αυτό το προϊόν, βεβαιωθείτε ότι τα καύσιμα και τα λιπαντικά έχουν αδειάσει από τη μηχανή και τηρήστε τους τοπικούς κανονισμούς.

NO [vedlegg]

Instruksjoner for behandling av avfall

Når dette produktet kasseres, må man påse at drivstoffet og oljen tømmes fra motoren og behandles ifølge lokale renovasjonsforskrifter.

SE [appendix]

Anvisningar för avfallshantering

När denna produkt ska kasseras, se då till att bränslet och oljan töms ur motorn, och att lokala bestämmelser efterföljs.

(FI) [LIITE]

Ohjeita jätteiden käsittelemisestä

Hävittäessäsi tätä tuotetta muista, että polttoaine ja öljy täytyy tyhjentää moottorista. Muista myös noudattaa paikallisia säädöksiä.

(DK) [tillæg]

Anvisninger for behanling af affald

Når du bortskaffer dette produkt, bedes du sikre dig, at motoren tømmes for brændstof og olie og afhændes i henhold til lokale regler.

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