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Harrier 48

CODES

490E	491E
Auto Drive (Variable Speed)	Auto Drive (Variable Speed) (Electric Start)

OWNER'S HANDBOOK

(English Version)

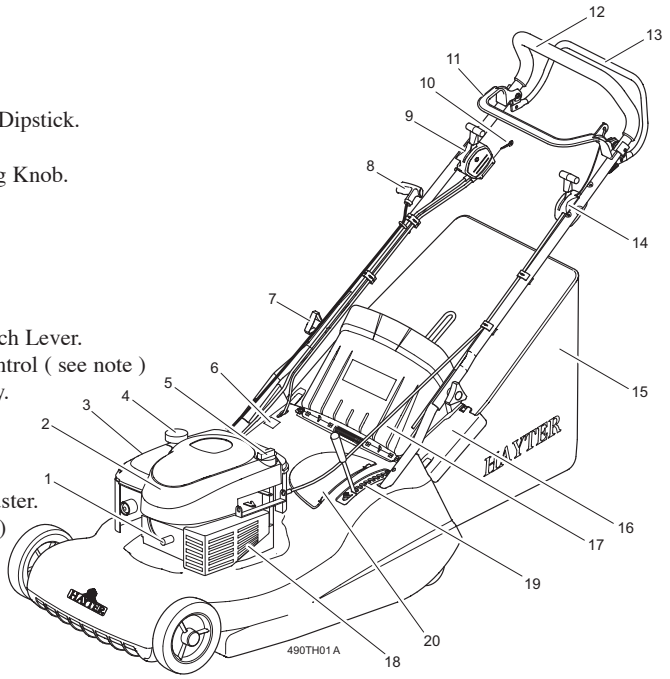
CODE	FROM SERIAL NO:
490E	270000001
491E	270000001
ISSUE	04.06.07

PART NUMBER: 111-1087 (B)

MAIN FEATURES /SPECIFICATIONS

Main Features

1. Spark Plug Lead.
2. Engine Cover.
3. Air Cleaner.
4. Fuel Filler Cap.
5. Oil Filler Cap and Dipstick.
6. Serial No.Label.
7. Handlebar Securing Knob.
8. Engine Start-Grip.
9. Throttle Control
10. Key (491 only)
11. Engine Stop Lever.
12. Handlebar.
13. Ground Drive Clutch Lever.
14. Variable Speed Control (see note)
15. Grassbag Assembly.
16. Grassbag Cover.
17. Deflector.
18. Exhaust Guard
19. Height of Cut Adjuster.
20. Battery (491 only)



Note: Item 14 should only be operated whilst the engine is running or the cable will be damaged.

Specifications

Code	**490**	**491**
Engine	Briggs & Stratton Quantum	Briggs & Stratton Quantum
Engine type	12F801788B1	12F8071787B1
Fuel type	Unleaded petrol	Unleaded petrol
Fuel capacity	1.5 litres	1.5 litres
Oil type	SAE 30 engine oil	SAE 30 engine oil
Oil sump capacity	0.6 litres	0.6 litres
Cutting width	480mm	480mm
Cutting height	13 - 60mm	13 - 60mm
Overall dimensions	1,510 x 507 x 1080mm	1,510 x 507 x 1080mm
Dry Weight	46.5 Kg	49 Kg

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HAYTER
MAKERS OF THE FINEST MOWERS

1ST Year (12 months)

We certify that this service has been carried out by an Authorised Hayter Service Dealer

Date: _____

DEALER STAMP

HAYTER
MAKERS OF THE FINEST MOWERS

1ST Year (12 months)

Owner's Name: _____

Serial Number: _____

Date: _____

DEALER STAMP

Note for dealer: Please retain this voucher for your records.

HAYTER
MAKERS OF THE FINEST MOWERS

2nd Year (24 months)

We certify that this service has been carried out by an Authorised Hayter Service Dealer

Date: _____

DEALER STAMP

HAYTER
MAKERS OF THE FINEST MOWERS

2nd Year (24 months)

Owner's Name: _____

Serial Number: _____

Date: _____

DEALER STAMP

Note for dealer: Please retain this voucher for your records.

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INTRODUCTION

Thank you for purchasing a **Hayter** mower. The following pages are designed to help you gain safe and efficient service from your machine.

IMPORTANT: This 'Owners Handbook' should be regarded as part of the mower as it gives essential information regarding mower safety, operation, maintenance and specifications. Read and understand this handbook prior to operating your mower for the first time. Make sure you are familiar with all the controls and points of regular maintenance. If you have any doubts, consult your local **Hayter** authorised dealer who will be pleased to give you assistance.

IMPORTANT: This mower is designed solely for use in a domestic grass cutting environment. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation, service and repair as specified in this handbook also constitute essential elements of the intended use.
This mower should be operated, serviced and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.

The safety precautions listed in this handbook and all other generally recognised regulations on safety must be observed at all times.
Any arbitrary modifications carried out to this machine may relieve Hayter Limited of liability for any resulting damage or injury.

Hayter mowers are robustly constructed and designed for efficient economical performance under normal mowing conditions. Correct operation and maintenance will ensure a long and satisfactory service life. Prior to despatch from our factory every effort is made to ensure that your mower is delivered in perfect condition.

Throughout this handbook all references to **left** and **right** are as viewed from behind the handlebar, in the direction of forward travel.

This handbook is based on information available at the time of publication.

HAYTER LIMITED reserve the right to amend product specifications without prior notification.

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WARRANTY

LIMITED WARRANTY

Hayter Limited warrants to the original user/purchaser that this unit shall be free from defects in material and workmanship under normal use and service for a period of **three years** from the date of purchase. The manufacturer of major proprietry components ie. engines, gearbox / transaxle (where applicable) furnish their own warranty and services are provided through their authorised network. To qualify for the full benefit of the warranty, the warranty registration card **must** be returned within **14 days** of purchase. Subject to the conditions and exclusions noted in this limited warranty, we shall at our option, repair or replace any warranted part during the applicable period. If you are in doubt or experience any difficulty, please consult a Hayter Authorised Service Dealer for clarification.

To qualify for the extended warranty (second and third year) of the **three year limited warranty** the machine **must** have annual services carried out by an Authorised Hayter Service Dealer. These chargeable services should be carried out within 12 and 24 months of the date of purchase.

Excluded from the extended warranty period are those items which are subject to normal wear and tear e.g. tyres, wheels, cutterblades, belts, cables, grassbags, sweeper/brushes, batteries and other consumable wearing parts.

All consumer machines which are fitted with a **genuine** Hayter friction disc as original equipment before use, are covered by a **Lifetime Warranty** against the engine crankshaft bending. **Note:** friction washers, blade brake clutch (B.B.C) units and other such devices are not applicable. Only machines fitted with a **genuine** Hayter friction disc, which are used in accordance with the recommended operating and maintenance procedures, are covered.

This warranty does not apply to any unit that has been tampered with, altered, misused, abused or used for hire, and will become invalid if non genuine Hayter parts are fitted. This warranty does not cover minor mechanical adjustments unless they are due to defective material or workmanship. Consult the Owner's Handbook or a Hayter Authorised Service Dealer for assistance when making these adjustments.

A warranty period of 90 days applies to machines used for commercial purposes.

To make a warranty claim, return the unit to a Hayter authorised dealer along with proof of purchase stating the machine serial number and date of purchase. The service receipt(s) or this Owners Handbook with the 1st/2nd year service boxes fully completed, must be produced as proof of entitlement to the extended warranty period. Subject to the conditions and exclusions in this limited warranty, the authorised dealer will, at our option, repair or replace any warranted part within the duration of the warranty period.

This limited warranty gives you specific legal rights and is in addition to any statutory rights to which you may be entitled and your statutory rights are not affected by this warranty. If you need additional information concerning this written warranty, or assistance in obtaining services, please write to : **HAYTER LIMITED, Service Department, Spellbrook, Bishop's Stortford, Hertfordshire CM23 4BU**

Issue: 05.09.03

UK ONLY: Details of your local **Hayter** authorised dealer are contained in Yellow Pages and the Hayter website www.hayter.co.uk or contact contact:- Freephone 0800 616298.

SAFETY PRECAUTIONS

Safety Alert Symbol



This safety alert symbol indicates important safety messages. When you see this symbol be alert to the possibility of injury. Carefully read the following and inform others.

Your mower is perfectly safe if used correctly. Failure to observe the following precautions may result in serious injury.

Training



Before using the mower read the owners handbook carefully. Pay particular attention to the safety precautions. Ensure that you are familiar with the controls and the proper use of the equipment. Learn how to stop the mower quickly in an emergency.

Never allow children or people unfamiliar with these instructions to use the mower.

Never mow while people, especially children, or pets are nearby.

Keep in mind that the user is responsible for accidents or hazards occurring to other people or their property.

Preparation



While mowing, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing sandals.

Thoroughly inspect the area where the mower is to be used and remove all objects which may be thrown by the machine.

WARNING: Petrol is highly flammable.

- Store fuel in containers specifically designed for this purpose.
- Before starting the engine add fuel outdoors only. Never remove the cap from the fuel tank or add petrol while the engine is running or when the engine is hot. Allow the engine to cool for at least two minutes before refuelling. Do not smoke while refueling.
- Do not attempt to start the engine if petrol is spilled or a smell of petrol is present. Move the mower away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated.
- Replace faulty silencers.

SAFETY PRECAUTIONS

Preparation



- Always use fresh fuel. Stale fuel can block the carburettor and cause leakage.
- Replace fuel tank and oil tank caps securely.

A damaged cutterblade or loose fixing bolt are major hazards. Before use, always visually inspect the cutting mechanism to ensure that it is in good condition. A damaged cutterblade must be replaced immediately with a genuine Hayter replacement part

Operation



Do not operate the engine in a confined space where exhaust fumes (carbon monoxide) can collect. Refuel outdoors only and do not smoke while refuelling.

Always pull the starter cord slowly until resistance is felt. Then pull the cord rapidly to avoid kickback and prevent hand or arm injury.

Mow only in daylight or good artificial light.

Avoid using the mower on wet grass, where feasible.

Always be sure of your footing on slopes.

Walk, never run.

Mow across the face of slopes, never up and down.

Exercise extreme caution when changing direction on slopes.

Do not mow excessively steep slopes of more than 20 degrees.

Use extreme caution when reversing or pulling the mower towards you.

Stop the engine before moving the mower across areas other than grass.

Never operate the mower unless the guards are securely in position and in good condition.

Do not change the engine governor settings or overspeed the engine.

Disengage the rear roller drive clutch before starting the engine.

Start the engine carefully, with feet well away from the cutterblade.

SAFETY PRECAUTIONS

Operation



Do not tilt the mower when starting the engine.

Do not put hands or feet near or under rotating parts.

Never pick up or carry the mower while the engine is running.

Never lift the rear deflector while the engine is running.

Never touch the exhaust/exhaust guard or cooling fins when the engine is hot.

Stop the engine and disconnect the spark plug lead:

- Before clearing blockages or unclogging the discharge chute.
- Before cleaning/checking or working on the mower.
- After striking a foreign object. Inspect the mower for damage and ensure necessary repairs are made before re-starting.
- If the mower starts to vibrate abnormally (check immediately).

Stop the engine:

- Whenever you leave the mower.
- Before refuelling.
- Reduce throttle control setting during engine shutdown.

Maintenance & Storage



Keep all nuts, bolts and screws tight to ensure that the equipment is in safe operating condition.

Frequently check fuel lines and fittings for cracks or leaks and replace if necessary.

Never check for a spark when the spark plug is removed. (Use approved tester)

Inspect the exhaust periodically and replace if worn or leaking.

Never crank the engine with the spark plug removed.

Never start the engine with the air-cleaner or air-cleaner cover removed.

Never store the mower with petrol in the tank within an enclosed area where fumes may reach an open flame or spark.

Caution: Use extreme care when removing spring loaded components, Height of Cut Adjuster Mechanism, Two Piece Connecting Rod.

SAFETY PRECAUTIONS

Maintenance & Storage



Allow the engine to cool before storing in any enclosure. To reduce the fire hazard, keep the engine and the surrounding deck area free of grass, leaves, or excessive grease.

Check the rear deflector and grassbag frequently for wear or deterioration. Replace worn or damaged parts for safety.

If the fuel tank has to be drained, this should be done outdoors and when the engine is cool.

Wear strong work gloves when removing and reassembling the cutterblade.

Always replace worn or faulty parts with genuine Hayter parts.

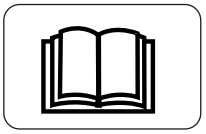
This machine contains spring loaded assemblies which could cause a hazard when disassembled and reassembled. Maintenance should only be carried out by a Hayter authorised dealer.

Safety Symbols

Safety Alert - Be aware to the possibility of injury.



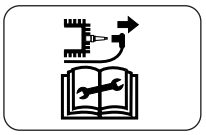
Carefully read the Owners Handbook before using the machine.



Danger of severing toes or fingers in cutting mechanism.



Stop engine and remove spark plug lead before working on the mower.



Danger of being hit by thrown objects.

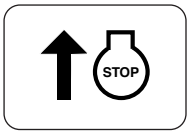


Keep bystanders at a safe distance from the mower.

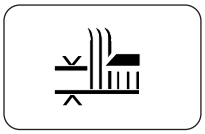


Information Symbols

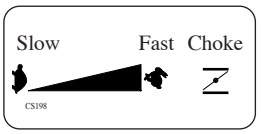
Engine Stop (Symbol)



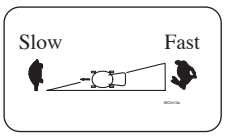
Height of Cut Adjustment (Symbol)



Throttle Control (Symbols)

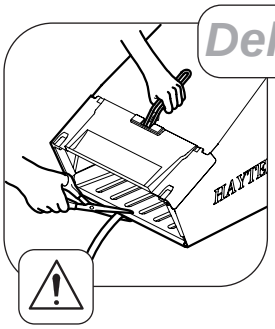


Variable Speed Control (Symbol)



ASSEMBLING THE MOWER

Delivery Checklist

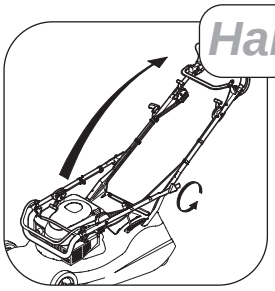


Remove the mower from the packaging and check that the following items have been supplied correctly. If any items are missing contact, your local Hayter dealer.

1. Engine Handbook.
2. Grassbag.
3. Charger (491)
4. Ignition Key (491)

To prevent accidents cut off the long ribbon attached to the grassbag and discard.
(491 Only) **Note:** Prior to first use please fully charge the battery for 14 hours. (Refer to battery charging)

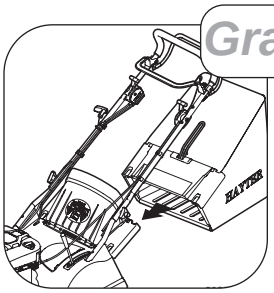
Handlebar



Unscrew the handlebar securing knobs sufficiently to allow the handlebar to pivot. Hold the engine stop lever in towards the handlebar and unfold the handlebar to the operating position, before releasing. Tighten both handlebar knobs to secure in position.

Take care to ensure that the control cables do not become snagged at the pivot point.

Grassbag Attachment



Raise the rear deflector, lower the grassbag and hook in position. Lower the deflector to rest on the grassbag.

BEFORE STARTING THE MOWER

Prevent Engine Damage

To prevent engine damage the engine is shipped without oil or petrol. The engine must be filled with the correct grade of oil and petrol before starting the engine.



Oil Type

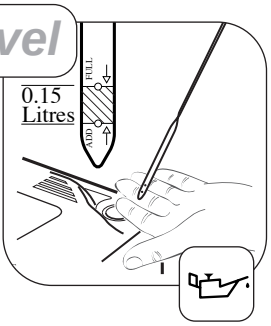
Always use high quality detergent oil classified SAE 30 oil. Never use additives with recommended oil.
To prolong the life of your engine it is important that the oil is changed after the first 5 hours of use - refer to 'Maintenance Schedule'.



Check Oil Level

Clean around the oil filler cap before removing. With the mower on a level surface, unscrew and remove the oil filler - dipstick. Wipe oil from it with a clean cloth. Screw the oil filler - dipstick back in place, then unscrew and remove it to check the oil level.

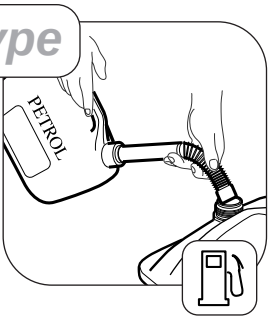
The oil level is correct when it is at the **full** mark on the dipstick.
DO NOT OVERFILL.



Fuel Type

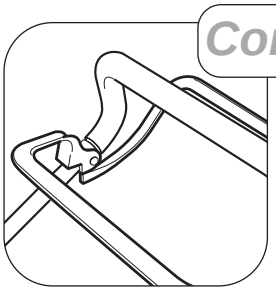
Always use clean, fresh unleaded petrol. Purchase fuel in quantities that can be used within 30 days. Never mix oil with petrol. For added engine protection Briggs & Stratton recommend the use of their fuel additive which is available from an authorised Briggs & Stratton service dealer.

Fill to base of neck to allow for fuel expansion. Do not overfill the fuel tank.



OPERATING THE MOWER

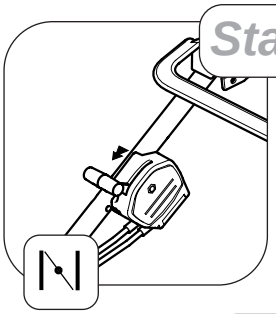
Controls



Operate all control levers several times and ensure that the cables move freely. Check that the engine stop and ground drive clutch levers return freely to their rest position when released.
Whilst operating the engine throttle mechanism slight resistance should be felt when moving the lever to the '**choke**' position.

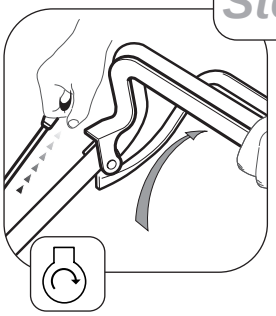
IMPORTANT: To avoid damage to the cable the Variable speed Control should only be operated whilst the engine is running.

Starting - Step 1



Move the throttle control lever to the '**choke**' position before starting a cold engine. Move the throttle control lever to the **'fast'** position before starting a warm engine.

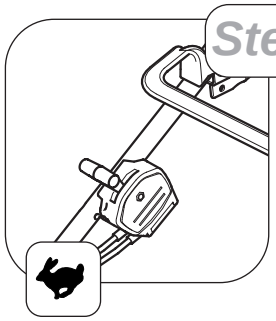
Step 2



Stand behind the mower and hold the handlebar together with the engine stop lever with your left hand. With your right hand hold the engine start - grip and pull slowly until resistance is felt, then pull rapidly to crank the engine. Carefully return the start grip to the storage position when the engine starts.
If the engine does not start after 5 attempts **-** refer to "Trouble Shooting".

The engine stop lever must be held firmly against the handlebar to start and keep the engine running. If the engine stop lever is released the engine will stop.

Step 3

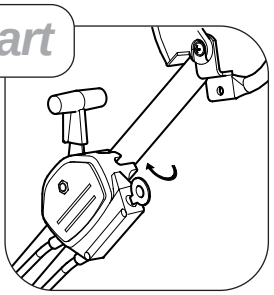


Allow the engine to warm up and move the throttle lever to the '**fast**' position after starting a cold engine.

To prevent damage never pull the engine start grip when the engine is running.

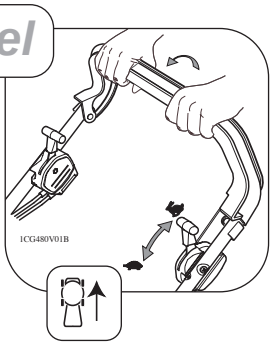
OPERATING THE MOWER

Electric Start



(Electric start Only)
Stand behind the mower and hold the handlebar together with the engine stop lever. Turn the ignition key in a clockwise direction and hold in position to crank the engine. When the engine starts release the key and move the throttle to the fast position after starting a cold engine.
Note: Cranking the engine for more than 15 seconds in any one minute can damage the starter motor.
If necessary the engine can be started manually without using the ignition switch.
To prevent engine damage do not operate the ignition key when the engine is running.

Forward Travel



Hold the handlebar and operate the ground drive clutch lever to power the mower in a forward direction.

When the ground drive clutch lever is disengaged the mower may be pushed. This feature is useful when mowing in confined areas.

Ground speed may be adjusted by operating the variable speed control. Push forward to slow down and pull back to speed up. Only operate the lever with the engine running to prevent damage.

If the engine stop lever is released the engine will stop.

Reverse Travel

(490 Only)
Hold and pull against the handlebar with both hands to reverse the mower.

(491 Only)
Release the ground drive clutch lever. Hold and pull against the handlebar with both hands to reverse the mower towards you.

OPERATING THE MOWER

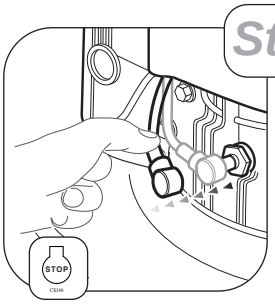
Turning



To make a wide turn steer the mower with the handlebar in the direction required.
To make a tight turn release the ground drive clutch lever, apply downward pressure on the handlebar to raise the front wheels just above ground level and steer in the required direction.

To prevent accidents do not raise the front of the mower excessively when making a turn. Never raise the rear of the mower when the engine is running.

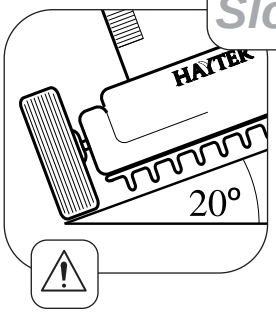
Stopping



Release the ground drive clutch lever, reduce the throttle setting and release the engine stop lever.

Emergency stop: Release both ground drive clutch lever and engine stop lever together.
If the engine fails to stop, move the throttle lever to the 'slow' position and disconnect the spark plug lead.

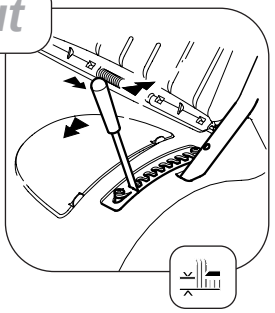
Slopes



To prevent engine damage do not use the mower on slopes greater than 20 degrees.

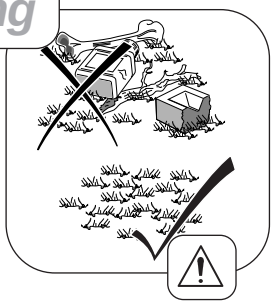
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Height of Cut



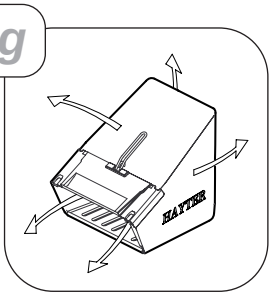
To adjust the height of cut: Grip the lever and pull sideways to disengage it from the locking notch, then push forwards to lower or pull backwards to raise the height of cut. Finally release the lever at the required position and ensure it locks firmly into one of the eight setting notches.
Always select a height of cut to suit operating conditions. Aim to prevent engine overloading and blockages by avoiding low cuts in long grass conditions. Be prepared to make two cuts when the grass is long.

Before Mowing



To prevent accidents, thoroughly inspect the area and remove all objects which when contacted by the mower cutterblade could become dangerous projectiles. Inspect the area for hidden obstructions which when contacted by the cutterblade could risk health and safety or result in damage to the mower. Remember the location of these obstructions and ensure that you mow around them.

Grassbag

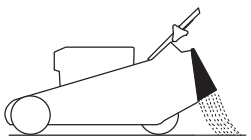


Raise the rear deflector and lift the grassbag and lower the rear deflector to rest against the rear of the mower.

To empty the grassbag, pour out the grass clippings and shake the grassbag vigorously to clean the airways. Good grass collection depends on good air flow through the grassbag. When collecting grass clippings it is important that the grassbag is emptied regularly to prevent blockages and engine overloading.

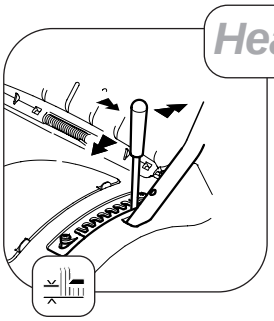
OPERATING THE MOWER

Without Grass Collection



Remove the grassbag and operate the mower with the rear deflector in the closed position.

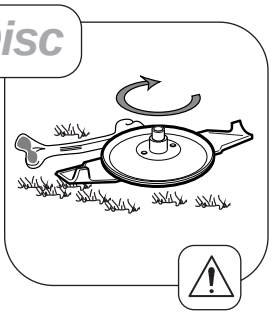
Heavy Growth



Areas of heavy growth should be mown without collecting the clippings. If collection is required, first mow the area without the grassbag at the maximum height of cut setting. Allow the grass clippings to dry out and then mow the area at the maximum height of cut setting with the grassbag fitted. Reduce the height of cut and mow the area again as necessary until the required finish is obtained.

To prevent damage to your lawn do not remove more than one third of grass height in one cut.

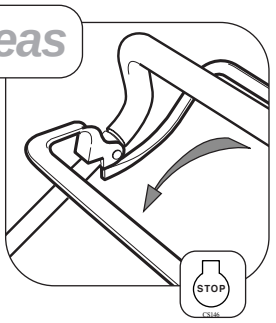
Friction Disc



The cutterblade is driven by the engine via a friction disc to help prevent damage occurring to the engine crankshaft and cutting mechanism when a hidden obstruction or overload is encountered.

Always stop the engine when a hidden obstruction or excessive vibration is encountered. Disconnect the spark plug lead and examine the cutting mechanism. ALWAYS replace a damaged cutterblade - refer to "Maintenance".

Non-Grassed Areas



When moving the mower across non-grassed areas, stop the engine and set the mower to the maximum height of cut to protect the cutting mechanism.

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LAWN CARE CALENDAR

To be used as a guide only.

January

There is very little work to do this month apart from brushing away leaves. Keep off the grass if frozen or waterlogged.

February

Rake the grass thoroughly. Spike the lawn to aerate and stimulate soil organisms and root growth and apply lawn sand if necessary.

March

The yearly lawn work programme really starts this month. As soon as the ground conditions are suitable, the first cut can be made. The first cut should merely "top" the grass as close cutting at this stage could result in severe yellowing or browning. Two cuts are generally sufficient this month.

April

Mow often enough to stop grass growing away. Dig out patches of coarse grass or resistant weed. Re-seed bare patches.

May

Keep mowing increasing the frequency as required. Treat with selective weed killers or combined weed/feed preparations if you did not feed the lawn in April.

June

Summer mowing should now be under way. It should be necessary to mow the lawn twice a week. Raking before mowing is important this month as the combined action keeps runners of clover under control. Water the grass if necessary, and remember to soak thoroughly.

July

Treat the grass with the second application of fertiliser or weed killer/fertiliser. Water when necessary and rake occasionally. As a general rule the grass clippings should be removed each time you mow. If weather conditions are dry and hot and the grass is weed free, leave the clippings on the lawn to help maintain ground moisture.

LAWN CARE CALENDAR

August

Keep mowing regularly and watering as necessary. Fill any cracks caused by drought with a mixture of sharp sand and soil. In dry weather conditions leave the grass longer to help retain ground moisture.

September

Raise the height of cut to allow the grass to thicken and protect the roots from the winter frost and snow.

October

Rake out the thatch from the turf and spike the lawn to assist in drainage. Brush in peat and sharp sand.

November

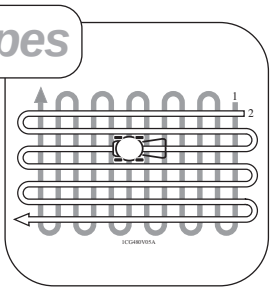
Use a stiff broom to disperse worm casts before mowing. Keep turf free from leaves.

December

Apart from brushing away leaves, December is a slack end of a busy year. Keep off the lawn if it is very wet or frozen.

Lawn Stripes

The way to achieve a neat striped effect is for the lawn being cut in parallel stripes, alternate stripes being mown in opposite directions. A much more important routine is to cut at right angles to the line of the previous mowing. If the work has been carried in a north-south line, then the next cutting should be in an east-west direction. The cross-cutting keeps down the coarse weed grasses.



To prevent grass damage do not remove more than one third of the grass height in one cut.

MAINTENANCE SCHEDULE

Follow the hourly or calendar intervals, whichever occurs first. More frequent service will be required if working for prolonged periods under dusty, dry conditions, or when airborne debris is present or after extensive operation cutting tall, dry grass.

First 5Hrs

- After the very first five hours change the engine oil
- Adjust the autodrive clutch cable (See 1.26 & 1.34 Item 7)

Daily

- Check the oil level
- Remove grass debris from around the engine, exhaust/exhaust guard, air ways in the top cowl and underside of the deck housing.
- Remove grass debris from the grassbag and check for signs of damage.
- Check the condition of guards and safety devices.
- Check condition of cutterblade.

25Hrs or Every Season

- Change the engine oil if continuously operating under heavy load or high ambient temperature.
- Service the air cleaner.
- Lubricate wheels, pivot points and linkages and grease the inner control cables at point of entry and exit from their outer casing.
- Check the clutch cable adjustment.
- Sharpen the cutterblade.

50Hrs or Every Season

- Change the engine oil.

100Hrs or Every Season

- Clean the engine cooling system. Clean more often under dusty conditions or when airborne debris is present or after prolonged operation whilst cutting tall, dry grass.
- Replace the spark plug.

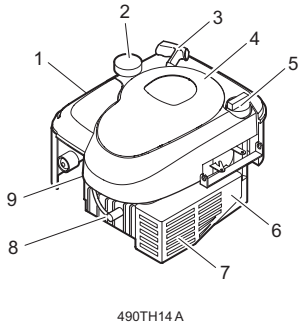
MOWER MAINTENANCE

To prevent accidents stop the engine and disconnect the spark plug lead before attempting to carry out maintenance procedures on the mower.



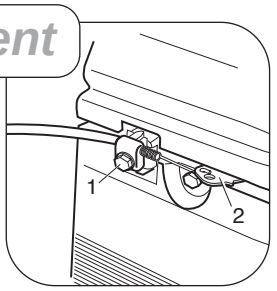
Engine

1. Air Cleaner
2. Fuel Cap
3. Start Grip
4. Cover
5. Oil fill/Dipstick
6. Exhaust Guard
7. Exhaust
8. Spark Plug / Lead
9. Carburettor



Throttle Cable Adjustment

Loosen casing clamp screw (1) and move the governor lever (2) in the direction of screw (1) as far as possible. Move the throttle control to the choke position. Tighten casing clamp screw.

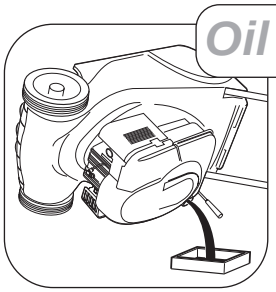


Carburettor Adjustments

Should only be made by an authorised Briggs & Stratton dealer. Under no circumstances should the engine be adjusted to run at a speed in excess of that shown on the Declaration of Conformity.

MOWER MAINTENANCE

Oil Service

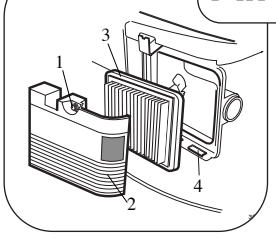


Check the oil level daily before starting the engine and ensure that the correct oil level is maintained. Refer to-'Before Starting the Mower' for oil checking and filling instructions.

Change the engine oil after the first 5 hours of operation and thereafter according to the 'Maintenance Schedule':-

1. Drain fuel by running the engine until the fuel tank is empty.
2. Remove the spark plug lead.
3. Allow the engine to cool.
4. Drain the oil while the engine is warm (not hot).
5. Tip the mower over on to its left hand side thus ensuring that the air cleaner is kept uppermost **to prevent engine damage.**
6. Remove the oil filler dipstick and drain the oil into a suitable container.
7. Refill with new oil of the recommended SAE viscosity grade. (Refer to-'Before Starting the Mower')

Air Cleaner Service



To service the air cleaner, loosen screw (1) and remove cover (2).

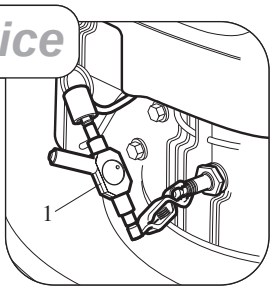
Remove cartridge (3) and clean by tapping gently on a flat surface. If very dirty, replace.

- Do not use petroleum solvents.
- Do not use pressurised air.
- Do not oil the cartridge.

After servicing, install the cartridge into the cover. Insert the tabs on the bottom of the cover into the slots in the bottom of the base (4). Tilt the cover upwards and securely tighten the screw to the base.

MOWER MAINTENANCE

Spark Plug Service



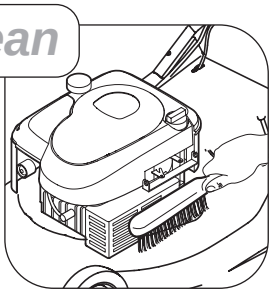
Use only Briggs & Stratton spark tester (1) to check for a spark as shown in the diagram.

Replace the spark plug every 100 hours or every season, whichever occurs first. A spark plug wrench is available from any authorised Briggs & Stratton service dealer.



Check the spark plug gap with a feeler gauge and set at 0.50mm.

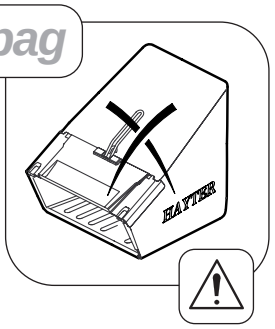
Keeping Engine Clean



Remove all grass and debris from the engine including the exhaust/exhaust guard, the air ways in the top cowl and the surrounding deck areas on a daily basis after use. Never spray the engine with water during cleaning. Water can contaminate the fuel. Always clean with a brush or compressed air.

Grass and debris may clog the engine's air cooling system especially after prolonged operation while cutting tall, dry grass. The internal cooling fins and surfaces may require cleaning to prevent overheating and engine damage. We recommended that this service be carried out by an authorised Hayter Service dealer.

Grassbag

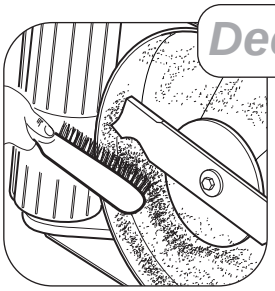


Remove grass debris from the grassbag immediately after use and check its condition for signs of damage.

To prevent accidents replace a damaged grassbag immediately.

MOWER MAINTENANCE

Deck Housing



Remove grass debris from the top and underside of the deck housing immediately after use.

Fertilisers and top dressings are particularly corrosive. Thoroughly clean the mower deck immediately after use on treated grass and store well away from corrosive materials.

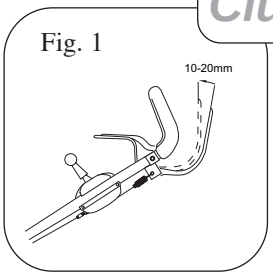
Securing Nuts & Bolts



Regularly check that all securing nuts and bolts are tight. Replace missing or damaged items immediately.

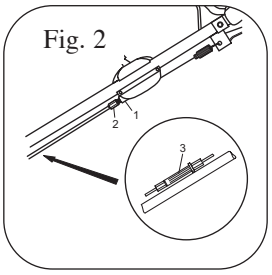
Clutch Cable Adjustment

Fig. 1



First slowly pull the mower backwards whilst doing this, gently start to move the clutch lever towards the handlebar by 10 - 20mm. If no resistance can be felt.

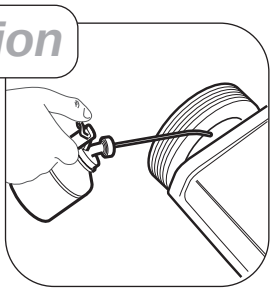
Fig. 2



Unscrew the middle section of the black adjuster until the clutch lever is set correctly.

MOWER MAINTENANCE

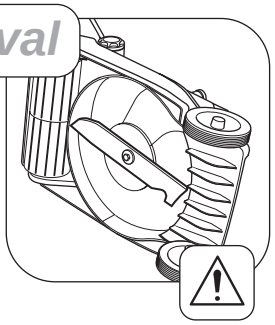
Lubrication



Lubricate the wheels, pivot points and linkages with engine oil every 25 operating hours.

Apply a good quality medium grease to the inner control cables at the point of entry and exit from their outer casing.

Cutterblade Removal



Drain the fuel by running the engine until the fuel tank is empty and the engine stops. **Remove the spark plug lead** and allow the engine to cool. Turn the mower on its left hand side and ensure that the air cleaner side of the engine is uppermost.
Firmly grip the end of the cutterblade with the gloved hand and remove the bolt, spring washer and distance piece securing the cutterblade with a 9/16" A/F spanner.

To prevent accidents never work on the cutterblade unless the spark plug lead has been removed. The cutterblade has sharp edges. ALWAYS wear strong gloves to protect your hands when working on the cutterblade. DO NOT rotate tools towards the cutting edges to avoid the risk of injury should the tool slip. ALWAYS use genuine Hayter replacement parts.

The condition of the cutterblade and its mounting arrangement should be checked regularly for signs of wear or damage. Ensure that the cutterblade is not bent or cracked.

A damaged cutterblade that is out of balance will vibrate excessively and may break. DO NOT use an unbalanced cutterblade.

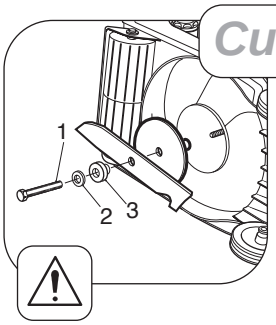
Regularly check that the bolt securing the cutterblade is tightened to the specified torque of 54Nm.

Replace the cutterblade every 2 years of sooner if excessively worn or damaged.

To prevent injury it is wise to seek assistance when turning the mower on its side.

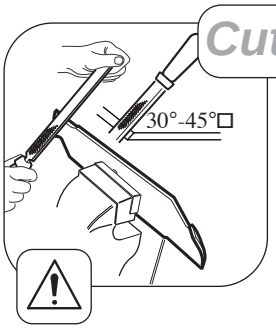
MOWER MAINTENANCE

Cutterblade Assembly



Assemble the cutterblade with the turned up edges facing towards the engine. Secure the cutterblade using the bolt (1), spring washer (2), and distance piece (3) and tighten to a torque of 54Nm

Cutterblade Sharpening



A slightly worn cutterblade may be re-sharpened. Both blade edges must be sharpened equally to ensure balance. Sharpen the cutterblade every 25 mowing hours or more frequently if conditions require. Remove the cutterblade from the mower and clean using a brush and water. Inspect the cutterblade for signs of damage.
Sharpen both cutting edges with a flat file to restore performance.

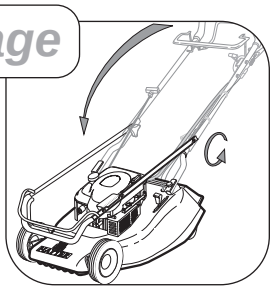


Ensure that the cutterblade is balanced. Use a screw driver with a round shaft to support the cutterblade through its centre hole. Hold the cutterblade horizontal and then release. A balanced cutterblade will remain horizontal.



If the cutterblade is not balanced the heavy end will rotate downwards. Sharpen the heavy end until the cutterblade is correctly balanced.

Storage



To store the handlebar unscrew the 2 small securing knobs sufficiently to allow it to be pivoted forwards to rest against the mower. Take care to ensure that the control cables do not become snagged at the pivot point and depress the engine stop lever to prevent it being damaged through contact with the engine.

Engines stored in excess of 30 days need to be protected with Briggs & Stratton fuel additive or drained of fuel to prevent gum from forming in the fuel system or on essential carburettor parts. To ensure your mower is maintained in good working order it is important that the following procedure is adopted. Refer to the Maintenance section as necessary.

Drain fuel from the engine by operating the engine until it stops.

Disconnect the spark plug lead.

Change the engine oil.

Remove the engine spark plug and pour 15ml of engine oil into the engine cylinder and replace the spark plug. Do not exceed the stated volume of oil as engine damage may occur on re-starting. **Do not replace the spark plug lead**. Slowly pull the engine start - grip once to crank the engine. This will distribute the oil and help prevent engine corrosion.

Clean grass and debris from the engine cylinder, cylinder head cooling fins, under top cowl, and around and behind exhaust/exhaust guard.

Clean all other areas of the mower and ensure that the grassbag is clean.

Lubricate the mower.

Treat metal parts with a water repellent anti-corrosion product.

Cover the mower with a protective sheet and store it in a dry, ventilated area.

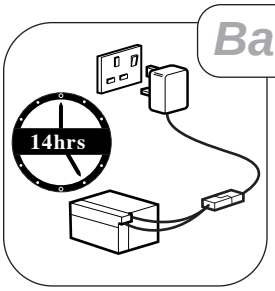
(Electric Start Only)

Charge the battery

Disconnect the battery leads

MOWER MAINTENANCE

Battery charging



(491 only) - PREVENT ACCIDENTS: ALWAYS charge the battery in a well ventilated area.

NEVER charge the battery near naked flames or direct heat.

ALWAYS switch off the mains electricity supply before disconnecting the charger from the battery.

ALWAYS use the battery charger supplied with the mower.

Battery charging should not be necessary during normal use. The engine operation will automatically charge the battery. If the mower is stored for a long period recharging the battery may be necessary to permit electric starting.

Charge the battery only when necessary.

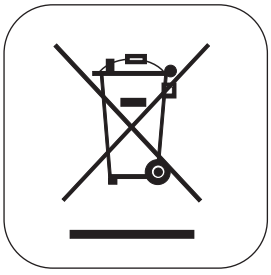
To recharge the battery:
Disconnect the battery lead from the mower lead and then connect the battery lead to the charger.

Connect the charger plug to the mains electricity supply and switch on to charge the battery for a fourteen hour period.

Switch off the mains electricity supply and disconnect the charger plug.

Disconnect the battery lead from the charger and then connect the battery lead to the mower lead.

IMPORTANT - PREVENT DAMAGE: NEVER connect the battery charger to the engine lead as this will cause the charger to be permanently damaged. Chargers damaged in this manner will not be replaced under warranty.



CAUTION - PREVENT ENVIRONMENTAL DAMAGE: The battery and charger have a separate collection mark. This indicates that for disposal of the battery and battery charger they must be taken to an authorised disposal site. They must not be disposed of with general waste.

EU Directive 2002/96/EC classifies this product as an electrical or electronic equipment.
(a) These products should not be disposed of as unsorted municipal waste.
(b) They should be taken to a designated collection point or recycling centre and handled according to national laws in the area.
(c) The consumer has a critical role in returning waste electronic/electrical equipment for recycling and disposal.
(d) Recycling keeps these products out of the municipal waste stream.
(e) The crossed-out bin symbol is a reminder to follow these points.
(f) Please contact your local authority or local dealer and ask for further etails regarding the correct method of disposal.

TROUBLE SHOOTING

PROBLEM	POSSIBLE FAULT	REMEDY
Engine will not turn over	Engine stop lever released.	Operate engine stop lever.
	Incorrect oil level.	Check oil level.
	Obstruction under deck.	Remove obstruction.
	Battery discharged (491 Only)	Charge battery
Engine smokes	Excess oil level.	Check oil level.
	Air cleaner cartridge oil soaked or blocked.	Service air cleaner.
Engine runs then stops	Fuel starvation.	Fill fuel tank.
	Fuel cap vent blocked.	Clean fuel cap vent.
Engine will not start	Engine under load.	Raise height of cut.
	Fuel starvation.	Fill fuel tank.
	Engine cold.	Set throttle to 'choke' position.
	Incorrect/contaminated fuel.	Drain fuel tank and fill with correct fuel.
	Spark plug lead disconnected.	Connect spark plug lead.
	Throttle setting incorrect.	Set throttle to 'fast' position.
	Engine brake not released.	Operate engine brake lever.
	Faulty spark plug.	Clean and adjust gap or replace.
	Battery discharged (491 Only)	Charge battery
	Wiring fault.	Check wiring.
Engine runs rough	Spark plug lead becoming disconnected in use.	Connect spark plug lead.
	Faulty spark plug.	Clean and adjust gap or replace.
	Air cleaner blocked.	Service air cleaner.
	Incorrect/contaminated fuel.	Drain tank and fill with correct fuel.

TROUBLE SHOOTING

PROBLEM	POSSIBLE FAULT	REMEDY
Engine vibrates excessively	Mounting bolts loose.	Tighten bolts
	Cutterblade bolt loose.	Tighten bolt
	Cutterblade out of balance.	Balance cutterblade
	Bent crankshaft.	Consult your dealer
Uneven cut	Undulating ground conditions	Change direction of travel
	Cutterblade worn	Sharpen the cutterblade
	Cutterblade out of balance	Balance the cutterblade
	Wheels / roller damaged	Inspect and replace as necessary
Discharge chute blocks	Grass is wet	Mow dry grass
	Cut height too low	Increase cut height
	Grassbag full	Empty grassbag
	Airflow through the grassbag is restricted	Clean the grassbag
	Engine speed too slow	Set throttle to fast position
Mower is hard to push	Cut height too low	Increase cut height
	Wheels / roller damaged	Inspect and replace as necessary
Mower will not self propel	Clutch out of adjustment	Adjust clutch cable
	Drive belt damaged	Replace drive belt
Poor grass collection	Airflow through the grassbag is restricted	Clean the grassbag
	Discharge chute blocked	Remove blockage
	Wet grass	Mow in dryer conditions
	Grassbag full	Empty grassbag
	Engine speed too slow	Set throttle to fast position

DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY

Manufacturer: HAYTER LIMITED,
Address: Spellbrook, Bishop's Stortford, Herts. CM23 4BU. ENGLAND

declare that the lawnmower:

CE

Model name:	Harrier 48 Autodrive	Harrier 48 Autodrive E/S
Type:	Pedestrian rotary	Pedestrian rotary
Model No:	CODE 490E	CODE 491E
Cutting width:	48 cm	48 cm
Speed of rotation of the cutting device:	2800 rpm	2800 rpm
Engine manufacturer:	Briggs and Stratton	Briggs and Stratton
Speed of rotation of engine:	2800 rpm	2800 rpm

Complies with the provisions of Directive: 98/37/EC Essential Health & Safety Requirements Relating to the Design & Construction of Machinery and Safety Components, as amended and the regulations transposed into national law.

Also Directive 89/336/EEC Electromagnetic Compatibility, as amended and the regulations transposed into national law.

Also Directive 2000/14/EC Noise emission in the environment by equipment for use outdoors and the regulations transposed into national law.
Procedure applied for the conformity assessment: ANNEX VI, procedure 1.

Notified Body: Sound Research Laboratories Ltd. Holbrook House, Little Waldingfield, Sudbury, Suffolk. CO10 0TH. ENGLAND
Notified body identification No: 1088

Measured sound power level:	95 dB(A)	95 dB(A)
Guaranteed sound power level:	96 dB(A)	96 dB(A)

Complies with harmonized standards: EN 292, EN 836 and EN ISO 14982

Signed



S.A Maryniak
(Technical Director)

Date: March 2006
Declaration done and technical documentation kept at:
HAYTER LIMITED
Spellbrook, Bishop's Stortford,
Herts. CM23 4BU ENGLAND

VIBRATION INFORMATION

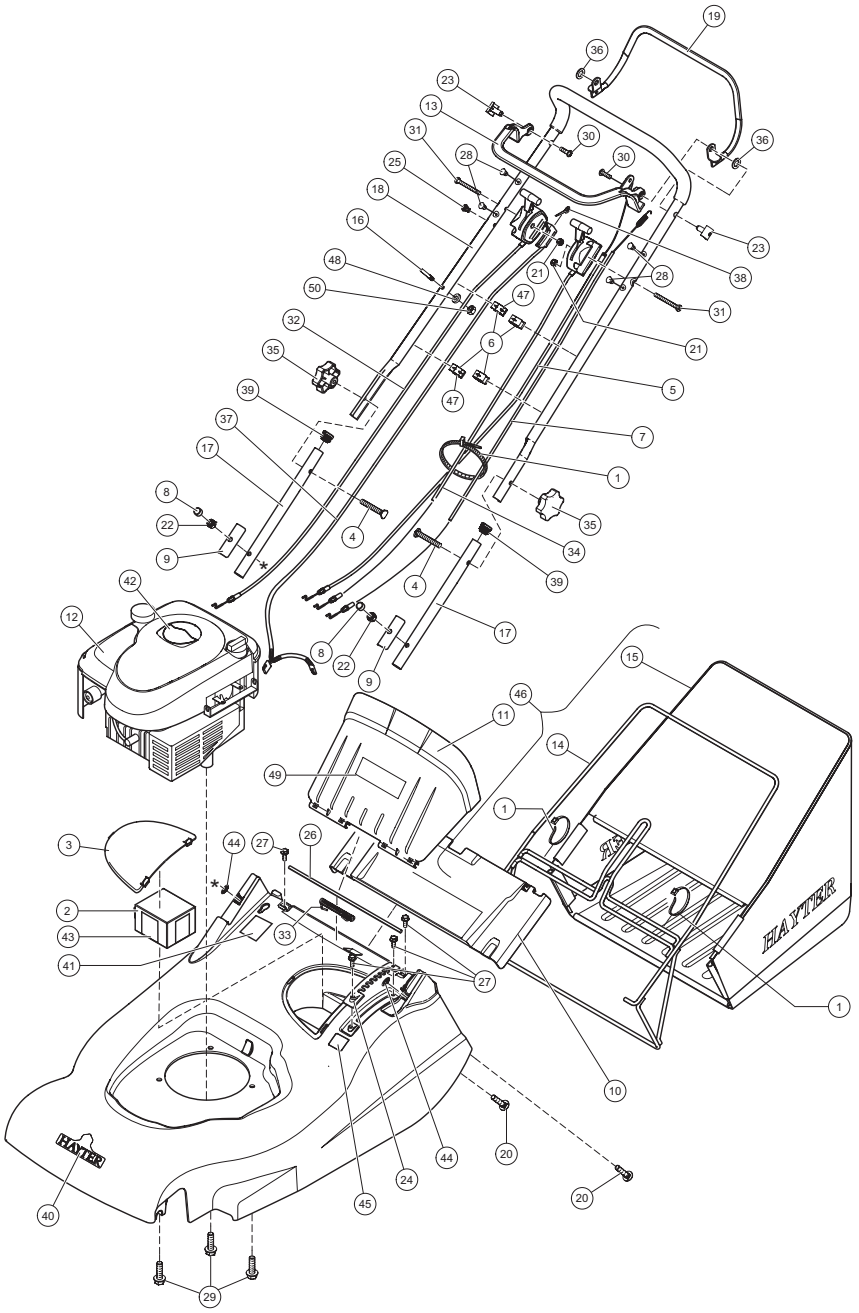
The vibration level at the operator contact positions, measured in accordance with European Standard EN 836

CODE490E - 5ms^{-2} CODE491E - 5ms^{-2}

UPPER MAINFRAME PARTS LIST

Item No.	Description	Part No.	Qty 490	Qty 491	Item Note
1	CABLE TIE	HY3966	3	3	
2	BATTERY 12V	HY412009	0	1	
3	BATTERY COVER	111-0595	1	1	
4	BOLT HANDLEBAR	HY226024	2	2	
5	CABLE ENGINE BRAKE	111-0998	1	1	
6	CABLE GUIDE V/S	410037	4	2	
7	CABLE_CLUTCH	111-1083	0	1	
8	CAP FOR M8 NUT BLACK	HY234051	2	2	
9	HANDLEBAR CLAMP PLATE	340028	2	2	
10	FLAP_GRASSBAG	111-0196	1	1	
11	DEFLECTOR	111-0633	1	1	
12	ENGINE XTS50 DUAL A/C B&S	111-0999	1	0	
	ENGINE XTS50 DUAL A/C E/S B&S	111-1001	0	1	
13	ENGINE STOP LEVER	340179	1	1	
14	FRAME_GRASSBAG	111-0194-03	1	1	
15	GRASSBAG	111-0952	1	1	
16	GUIDE_ROPE	305093	1	1	
17	HANDLEBAR LOWER	410034W	2	2	
18	HANDLEBAR UPPER MOULDED	341029	1	1	
19	LEVER CLUTCH	306094W	1	1	
20	BOLT COACH M8 x 40 GRADE 8.8	09379	2	2	
21	NUT M6 NYLOC 'T' TYPE	09438	2	2	
22	NUT M8 NYL INSERT T TYPE	09441	2	2	
23	PIN PIVOT	340182	2	2	
24	RATCHET PLATE HOC	111-0201	1	1	
25	FASTENER DRIVE 6.5	341033	1	1	
26	ROD DEFLECTOR	560017	1	1	
27	SCREW TAPTITE M6*16	09365	4	4	
28	FASTENER DRIVE	300144	4	4	
29	SCREW TAPTITE UNC 3/8"*1 1/4"	09349	3	3	
30	SCREW 06*20 PT PAN FLANGE	09687	2	2	
31	SETSCREW M6x55 POSI PAN Z&P	09780	2	2	
32	CONTROL THROTTLE	410035	1	1	
33	SPRING DEFLECTOR	410030	1	1	
34	CABLE VARIATOR	111-0702	1	1	
35	KNOB M8 HANDWHEEL	480088	2	2	
36	WASHER NYLON 19*11*1.6	09688	2	2	
37	SWITCH AND LOOM ASSEMBLY E/S	561003	0	1	
38	KEY ELECTRIC START	HY6426	0	1	
39	PLUG TUBE 7/8*16G	300160	2	2	
40	DECAL HAYTER ROYAL WARRANT	410087	1	1	
41	DECAL SERIAL NUMBER	--------	1	1	
42	DECAL ENGINE HARRIER 48	111-0759	1	1	
43	FOAM PAD TOP	HY412012	0	2	
44	GRIP FIX EXT 5/16	04020	2	2	
45	DECAL HEIGHT OF CUT	320006	1	1	
46	GRASSBAG ASSEMBLY	111-0764	1	1	INCLUDES 1,10,14,15
47	CABLE GUIDE	HY412008	0	2	
48	WASHER PLAIN M6*12*1.6	09472	1	1	
49	DECAL CAUTION	111-0083	1	1	
50	NUT M6 NYLOC P TYPE	09544	1	1	

UPPER MAINFRAME PARTS LIST



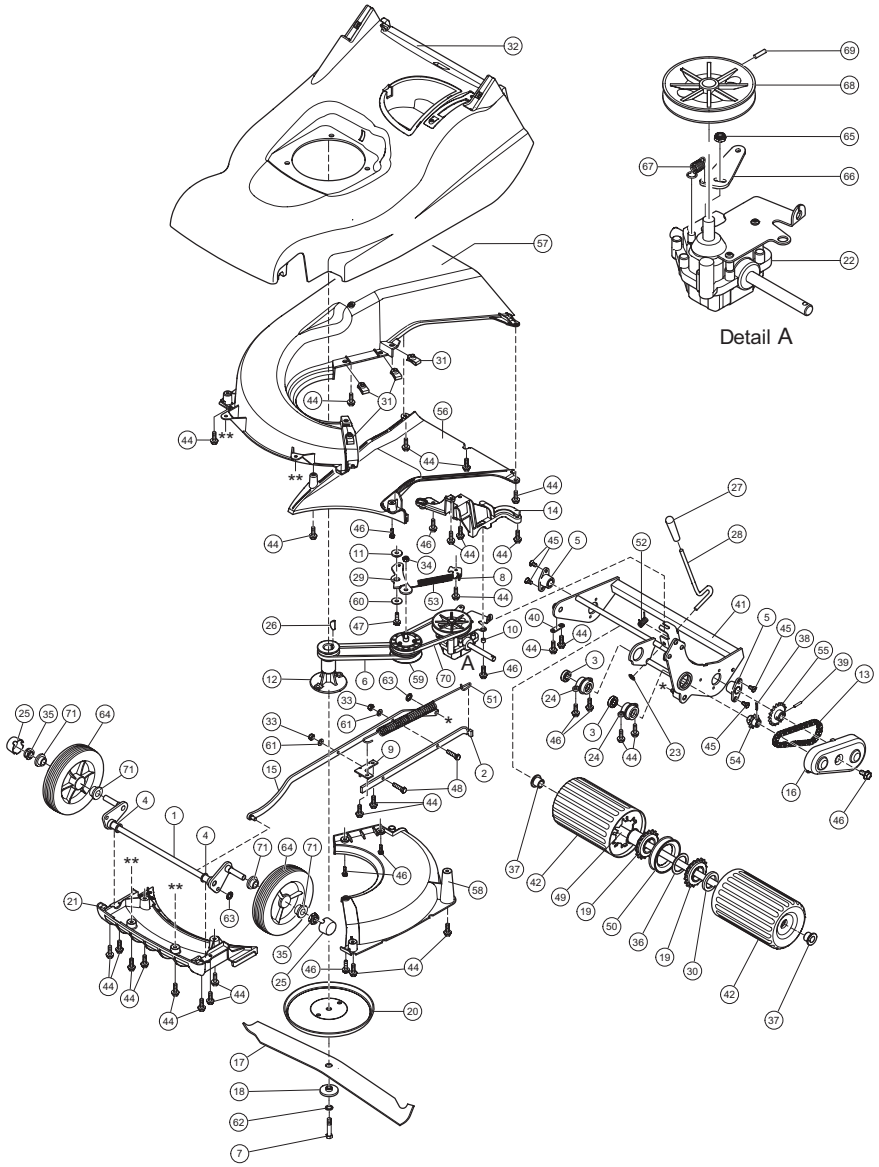
LOWER MAINFRAME PARTS LIST

Item No.	Description	Part No.	Qty 490	Qty 491	Item Note
1	AXLE FRONT WELD ASSY	111-0588	1	1	
2	BAR SPRING TENSION	111-0672	1	1	
3	BEARING 6001-2RS	411027	2	2	
4	BEARING FRONT AXLE	410069	2	2	
5	BEARING HOUSING	219102	2	2	
6	BELT VARIATOR 536	111-0771	1	1	
7	BOLT UNF 3/8 x 3 1/4	09788	1	1	
8	BRACKET CABLE	HY412003	1	1	
9	BRACKET CONN ROD	111-0699	1	1	
10	BUSH	340154	1	1	
11	BUSH PIVOT	411031	1	1	
12	CARRIER BLADE BOSS	410078	1	1	
13	CHAIN 40 PITCHES 3/8" INC LINK"	411016	1	1	
14	SUPPORT BRACKET REAR PIVOT	111-0426	1	1	
15	ROD-CONNECTING	111-0202	1	1	
16	COVER DRIVE	411013	1	1	
17	CUTTER BLADE	480149	1	1	
18	DISTANCE PIECE	HY4014	1	1	
19	FREEWHEEL	340150	2	2	
20	FRICTION DISC	410057W	1	1	
21	FRONT_FINS	111-0594	1	1	
22	GEARBOX	411002	1	1	
23	GRIP FIX EXT 5/16"	04020	1	1	
24	HOUSING PIVOT BEARING - REAR AXLE	410048	2	2	
25	HUB CAP	111-1251	2	2	
26	KEY WOODRUFF No 505	1662	1	1	
27	KNOB HOC	480134	1	1	
28	LEVER HOC	480128	1	1	
29	LEVER VARIABLE PULLEY	411014	1	1	
30	LOCKNUT	340163	1	1	
31	NUT M6 LUG	410076	4	4	
32	MAINFRAME	111-0548-08	1	1	
33	NUT M6	09544	2	2	
34	NUT M8 NYL INSERT T TYPE	09441	1	1	
35	NUT UNF 1/2" NYLOC EXT THIN5/16"	HY4486	2	2	
36	SPACER	340157	1	1	
37	OILITE BUSH ROLLER	340129	2	2	
38	PIN ROLL	03997	1	1	
39	PIN SELLOC SPRING	HY03354	1	1	
40	PLATE SECURING	219037	1	1	
41	ROLLER FRAME WELD ASSY	111-0585-03	1	1	
42	ROLLER SHELL ASSEMBLY	111-0592-03	2	2	
43	CHARGER	HY412010	0	1	NOT ILLUSTRATED
44	SCREW TAPTITE M6*16	09365	26	26	
45	SCREW TAPTITE M6*16 C/SK POZI	09545	4	4	
46	SCREW TAPTITE M6*20 W/HD	09575	9	9	
47	SCREW TAPTITE M8*25 HEX W/HD	09787	1	1	
48	SETSCREW M6*25	09364	2	2	

LOWER MAINFRAME PARTS LIST

Item No.	Description	Part No.	Qty 490	Qty 491	Item Note
49	SHAFT ROLLER WELDED	111-0589	1	1	
50	SHROUD-FREEWHEEL	340168	1	1	
51	SPRING COUNTER BALANCE	410050	1	1	
52	SPRING TORSION HOC	480132	1	1	
53	SPRING VARIATOR	HY412004	1	1	
54	SPROCKET 10T	411011	1	1	
55	SPROCKET 18T	411010	1	1	
56	THROWPLATE	111-0218	1	1	
57	UNDERDECK CHUTE	111-0131	1	1	
58	UNDERDECK COVER	111-0133	1	1	
59	PULLEY VARIATOR ASSY	411001	1	1	
60	WASHER PLAIN 5/16x1x16G	09270	1	1	
61	WASHER PLAIN M6	09472	2	2	
62	WASHER SPRING 3/8" SC	09273	1	1	
63	WASHER STARLOCK 5/16"	0201086	2	2	
64	WHEEL WITH BEARINGS	111-1250	2	2	
65	NUT M6 NYLOC	ZNN1J000U	1	1	
66	CLUTCH LEVER	411020	1	1	
67	SPRING	411021	1	1	
68	PULLEY	411019	1	1	
69	PIN	411023	1	1	
70	BELT VARIATOR 450	411025	1	1	
71	BEARINGS	111-1252	4	4	

LOWER MAINFRAME PARTS LIST



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NOTES

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CUSTOMER INFORMATION /NOTES

Serial No:

Engine Type:- 12F801788B1 (490E) **Engine:-** Briggs & Stratton
Engine Type:- 12F8071787B1 (491E) **Engine:-** Briggs & Stratton

Date of Sale:- _____

Your Local Dealer:-

DEALER STAMP

Notes:-