



SHREDDER ZEPHIR

ORIGINAL USE AND MAINTENANCE INSTRUCTIONS



NOTE

This manual is an integral part of the machine

Must always stay with the machine and shall be kept on hand with Use and maintenance manual of the engine. (Only for ZEPHIR HONDA engine version).

The attachments are an integral part of this manual.

Manual purpose

This manual gives the information for a safety and correct use of the machine.

Read carefully this manual before machine use.

User responsibility

In the event of non-compliance with the instruction of this manual the user is responsible for damage to property and person. The manufacturer is relieved of any responsibility in case of:

- Improper use of the shredder.
- A different use from those shown on this manual.
- Failed or poor maintenance.
- Modifications not authorized by the manufacturer.
- Use of not original spare parts.

CE CONFORMITY

The shredder type “ZEPHIR” complies with the safety and health protection requirement of machinery directive **2006/42/CE** and of Electromagnetic Compatibility Directive **2004/108/CE**.

To verify the conformity to the above mentioned directive, have been consulted the harmonized standards **UNI EN ISO 12100:2010; 13857:2008; 13683:2011**.

On the machine is fixed a “CE” plate that shows model, year of production and serial number. Always communicate serial number in case of spare parts order or warranty claims.

Within the machine we supply the **Certificate of Conformity CE**, kept it carefully in a safety place.



Declarazione CE di conformità ai sensi della Direttiva Macchine 2006/42/CE

CE declaration of conformity under the Machinery Directive 2006/42/CE

Déclaration CE de conformité conforme à la Directive Machine 2006/42/CE

Eg konformitetsbeholdning en Sinne der Eg. Forskrift Macchine 2006/42/CE

DEL MORINO S.R.L.*
 - Via Caroni di Sotto n. 19 -
 - 52033 CAPRESE MICHELANGELO (AREZZO) ITALIA

Dichiaro sotto la propria responsabilità che la macchina "BIOTRITURATORE" è conforme ai requisiti di sicurezza e di tutela della salute di cui alla Direttiva Macchine 2006/42/CE, alla Direttiva Compatibilità Magnetica 2004/108/CE e alla Direttiva Rumore 2000/14/CE come recepita in Italia dal D. Lgs. 262/2002.

Alimentazione elettrica potenza motore: KW; Dedicazione n. 30 Allegato I, procedura Allegato V

Livello di potenza acustica misurato: dB (A); Livello di potenza acustica garantito: dB (A)

Per la verifica della conformità alle direttive sopramenzionate sono state consultate le norme armonizzate UNI EN ISO 12100:2010, 13857:2008, 13683:2011.

Under its own responsibility I declare that the machine "SHREDDER" complies to the safety and health protection requirement of Machinery Directive 2006/42/CE, to the Electromagnetic Compatibility Directive 2004/108/CE, to the Noise Directive 2000/14/CE as implemented in Italy by D.Lgs. 262/2002.

To verify the conformity to the above mentioned directive, have been consulted the harmonized standards UNI EN ISO 12100:2010, 13857:2008, 13683:2011.

Déclaration sous notre responsabilité que la machine "BIO-BROYEUR" est conforme aux prescriptions en matière de sécurité et de santé stipulées dans la Directive Machine 2006/42/CE, dans la Directive sur la Compatibilité Electromagnétique 2004/108/CE, dans la Directive sur le Bruit 2000/14/CE telle que transposée en Italie par D. Lgs. 262/2002.

Pour la conformité des directives citées ont été consultées les normes harmonisées UNI EN ISO 12100:2010, 13857:2008, 13683:2011.

Erkläre hiermit in eigener Verantwortung dass die Maschine "BIO-SHREDDER" Die Schutzanforderungen und den Gesundheitsanforderungen, gemäß der 2006/42/CE enthält, und den Richtlinien über die elektromagnetische Verträglichkeit 2004/108/CE und den Lärmrichtlinien 2000/14/CE wie in Italien umgesetzt durch D. Lgs. 262/2002.

Für Überprüfung der Konformität der oben genannten Vorschriften wurden Vorschriften konsultiert UNI EN ISO 12100:2010, 13857:2008, 13683:2011.

BIOTRITURATORE - BIO-SHREDDER - BIO-BROYEUR - BIO-SHREDDER

TYPE	MODEL					
	BGS	PTD	GR18	GR26	GR27	GR28
GRASS						
SLASH						
SCULUM						
PLUG						

Matr. n°: _____ Caprese Michelangelo II _____




Custode del Fascicolo Tecnico: Dott. A. Del Morino, Via Caroni di Sotto 19, 52033 Caprese Michelangelo Arezzo Italy
 Keeper of the technical folder: Dott. A. Del Morino, Via Caroni di Sotto 19, 52033 Caprese Michelangelo Arezzo Italy
 Dépositaire du dossier technique: Dott. A. Del Morino, Via Caroni di Sotto 19, 52033 Caprese Michelangelo Arezzo Italy
 Wewahler der technischer Unterlagen: Dott. A. Del Morino, Via Caroni di Sotto 19, 52033 Caprese Michelangelo Arezzo Italy



Del Morino

Via Caroni di sotto, 19
52033 Caprese Michelangelo (AR) - Italy



MODEL

CONFIG

SERIAL nr

KG

YEAR

RPM

TECHNICAL SPECIFICATIONS

Model	Version	Hp	Max ø of cutting		Knife n°	Blades n°	Weight	
			cm	Inch			Kg	Lbs
ZEPHIR	HONDA GP 160	5,5	4-5	1,6-2	1	6	75	125
	HONDA GP 200	6,5	4-5	1,6-2	1	6	75	125
	PTO TRATTORE	10-25	4-5	1,6-2	1	6	80	142

NOTE : the maximum cutting diameter depends from the characteristics of the wood to be shredded, for wet wood 2 inches, for dry wood 1,6 inches.

REQUIREMENTS FOR MACHINE USE

- The machine is designed to shred vegetables, leaves and wood with the maximum dimensions showed in the technical specifications. Never slot inside the machine plastic, glass, stones or iron material.
- Before to slot material inside the charge hopper make sure it does not contain foreign objects.
- The machine rests on the ground with two rubber wheels and two silent-blocks which absorb the vibrations, however we suggest to use the machine on firm, flat and horizontal ground.
- The machine must be used by only one user each time.
- Before to leave the machine unattended, be sure that the engine should be off or, in case of PTO version, that the tractor engine should be off and the ignition key should be disengaged.

GENERAL REGULATIONS

- ❑ This manual is an integral part of the machine; in case of loss request immediately a copy to DEL MORINO.
- ❑ The safety protections are an integral part of the machine: always work with all the safety protections correctly assembled.
- ❑ Work only during the day or with proper artificial lighting.
- ❑ Work only dressing protection glasses and gloves.
- ❑ Don't dress rings, necklaces, scarves or any object that can catch with the material to be shredded.
- ❑ **Attention** : never use the machine in closed or unventilated places, both the machine engine and the tractor engine produce exhaust gas with a high concentration of carbon monoxide
- ❑ **Attention**: use the machine only on flat, firm and horizontal ground.
- ❑ Before to leave the machine unattended, be sure that the engine should be off or the tractor PTO disengaged.
- ❑ Stop immediately the machine in case of vibrations or if you hear strange noises.
- ❑ Replace immediately broken parts using only original spare parts.

LOCAL REQUIREMENTS

- ❑ Children and people who are not trained with these instructions must not use the machine.
- ❑ Local regulations can restrict the use of the machine in accordance to the age.

ATTENTION

- ❑ During operation never stay in front of charge hopper or discharge window. Warning, danger of launch objects at high speed.
- ❑ During operation never look directly inside charge hopper.
- ❑ To operate stay on one side of charge hopper.

SAFETY LABELS

In this section we show and explain the safety labels on the machine.



1. To operate dress protective clothing.
2. To operate dress gloves.
3. To operate dress hearing protection
4. To operate dress glasses.
5. To operate dress sturdy shoes
6. Read carefully this manual.
7. Maximum cutting diameter: 2 inches.
8. Attention: never operate the machine without the safety protection correctly installed.

The safety labels must be clearly readable.

1. In case of damage immediately replace safety labels.
2. In case of replacement of parts with safety labels, replace also the labels.

Supply of new safety labels and instructions to apply them.

1. To get new safety labels with instructions on application, contact your dealer.

MACHINE ASSEMBLING – HONDA VERSION



1. Take out from the cartoon box the machine “MAH”, the hopper “TR” and use and maintenance manual of machine and engine.
2. Full unscrew the 5 nuts “1” and the nut “2”, remove the 6 washers.
3. Assemble the hopper “TR” on the front flange of the machine “MAH” matching the 6 stud bolts with the 6 holes on hopper flange.
4. Insert the 6 washers, screw the 5 nuts “1” and the nut “2”.
5. Be sure to screw and lock all the nuts.
6. Fill oil inside the engine. For instructions to fill oil, type and quantity of oil refer to engine “Use and maintenance manual”.

ATTENTION : ENGINE WITHOUT OIL

MACHINE ASSEMBLING – PTO VERSION



1. Take out from the carton box the machine “MAT”, the hopper “TR”, the III° point bracket “SU”, the III° point “TI”, the safety plastic cover “CU” and Use and maintenance manual of machine.
2. Full unscrew the 5 nuts “1” and the nut “2”, remove the 6 washers.
3. Assemble the hopper “TR” on the front flange of the machine “MAH” matching the 6 stud bolts with the 6 holes on hopper flange.
4. Insert the 6 washers, screw the 5 nuts “1” and the nut “2”.
5. Assemble the plastic safety cover “CU” on the multiplier using the supplied 2 screws M8x16.
6. Assemble the III° point bracket “SU” on the rear side of the machine frame using the supplied 5 bolts M12x35.
7. Assemble the III° point “TI” on the bracket “SU” using the supplied 2 bolts M16x140.
8. Be sure to screw and lock all the nuts.
9. Check oil level inside the multiplier. For instructions see page 12 point 1.

INSTRUCTIONS FOR USE – HONDA VERSION

Place the machine on firm, flat and horizontal ground. Never use the machine in closed or unventilated places.

CHECKS

1. Check engine oil level. (Refer to engine Use and maintenance manual)
2. Check fuel level inside engine tank. (Refer to engine Use and maintenance manual)
3. Check the presence of foreign objects inside the charge hopper, in case remove them.
4. Inspect what you plan to shred and remove foreign objects. (Stones, plastic, tissue, iron material)

ENGINE START

1. The machine must be operate by one user each time.
2. Start the engine. For engine start instruction refer to engine Use and maintenance manual.
3. Gradually throttle the engine till to maximum Rpm. For a proper use during operation the engine must stay at maximum Rpm.

SHREDDING

1. Put the thickest end of the branch inside the charge hopper, side branches must be bent to fit or lopped off to prevent jam.
2. Put the branches making a light pressure, the machine automatically suck the branches inside the hopper. An excessive pressure overcharges the machine. Never hold the branches to prevent hands injury.
3. If the engine Rpm decreases it means that the machine is flooded. In this case stop to put branches inside the charge hopper and wait that the exceeding material should be disposed of.

END OF WORK

1. Before to shut down the engine, leave the machine running for some minutes so all the material should be ejected from inside.
2. ATTENTION: after engine shut down the rotor may rotate by inertia for a few time. Wait the full stop of the rotor before any operation.

INSTRUCTIONS FOR USE – PTO VERSION

1. **ATTENTION:** the machine is designed to be used with a tractor with a 540 Rpm clockwise PTO.
2. Hook the machine to the rear hydraulic lifter of the tractor.
3. Connect the machine to the tractor with the PTO shaft. Be sure that the two ant rotation safety chains should be fixed respectively to the tractor and to the machine. Be sure about presence and efficiency of protection on both PTO sides.
4. Place the machine on firm and flat soil. Never use the machine in closed or unventilated places.

CHECKS

1. Check oil level inside multiplier. For instructions see page 12 point 1.
2. Check the presence of foreign objects inside the charge hopper, in case remove them.
3. Inspect what you plan to shred and remove foreign objects. (Stones, plastic, tissue, iron material)

ENGINE START

1. The machine must be operate by one user each time.
2. Start the tractor engine and at minimum throttle engage PTO.
3. Gradually throttle the engine till to maximum Rpm. For a proper use during operation the engine must stay at maximum Rpm.

SHREDDING

1. Put the thickest end of the branch inside the charge hopper, side branches must be bent to fit or lopped off to prevent jam.
2. Put the branches making a light pressure, the machine automatically suck the branches inside the hopper. An excessive pressure overcharges the machine. Never hold the branches to prevent hands injury.
3. If the engine Rpm decreases it means that the machine is flooded. In this case stop to put branches inside the charge hopper and wait that the exceeding material should be disposed of.

END OF WORK

1. Before to disengage the tractor PTO, leave the machine running for some minutes so all the material should be ejected from inside.
2. **ATTENTION:** after PTO disengage the rotor may rotate by inertia for a few time. Wait the full stop of the rotor before any operation.

MAINTENANCE

SCHEDULED MAINTENANCE

CHECK	HONDA version			PTO version		
	START WORK	START SEASON	END SEASON	START WORK	START SEASON	END SEASON
CHECK ENGINE OIL LEVEL	X					
CHECK MULTIPLIER OIL LEVEL				X		
CHECK BOLTS	X	X		X	X	
CHECK V-BELT TENSION	X	X		X	X	
CHECK KNIFE WEAR	X		X	X		X
CHECK STATIONARY KNIFE WEAR	X		X	X		X
CHECK BLADES WEAR	X		X	X		X
CHECK HOPPER RUBBER PROTECTION	X	X	X	X	X	X
CHECH HUB BEARINGS	X		X	X		X
CLENING	X		X	X		X

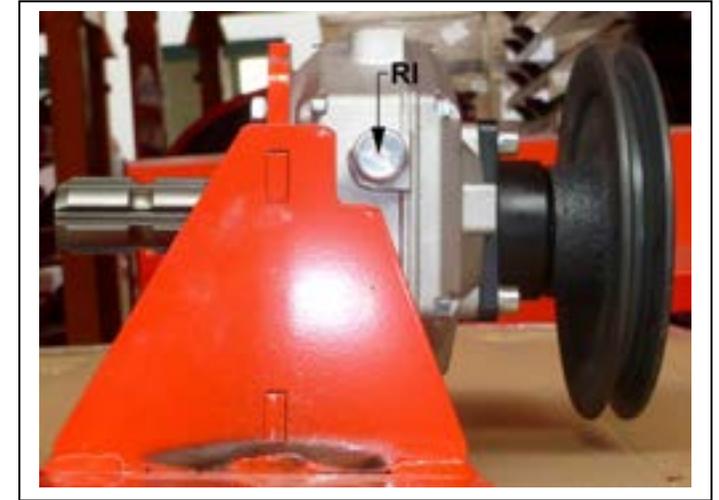
- The warranty expire when the maintenance operations has not been correctly done.
- For any maintenance operation on the engine refer to engine Use and maintenance manual.
- Before to make any maintenance operation shut off the engine or disengage the PTO, be sure that the rotor should be stopped.
- Stop immediately the machine in case of vibrations or if you hear strange noise and contact your dealer.

1. MULTIPLIER : OIL LEVEL CHECK

1. To refill use only OIL SAE 140 EP. Multiplier capacity : L 0,28.
2. Check oil level through “LV”.
3. If level is low unscrew plug “RI” then fill correct type of oil.
4. When level is ok screw again plug “RI”.

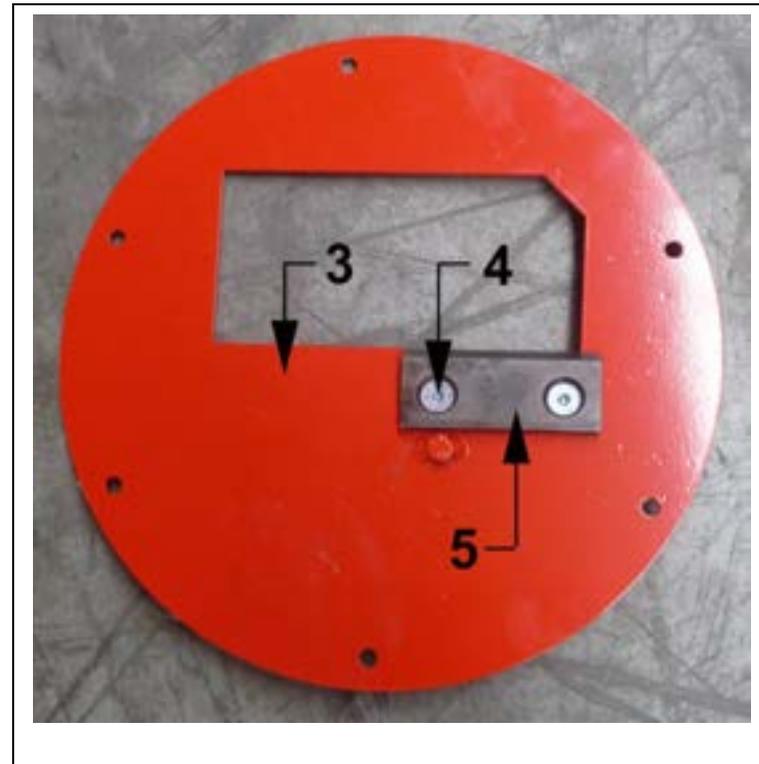
2. MULTIPLIER : OIL CHANGE

1. To replace use only OIL SAE 140 EP. Multiplier capacity: L 0,28. Replace oil at the beginning of each season.
2. With the machine on level unscrew the plug “SV” and discharge all exhaust oil.
3. Screw again plug “SV”.
4. Unscrew the plug “RI” then fill correct type and quantity of oil.
5. When level is ok screw again plug “RI”.



3. HONDA ENGINE : OIL LEVEL CHECK AND OIL CHANGE

1. For instructions to fill or check oil level and type and quantity of oil, refer to engine “Use and maintenance manual”.



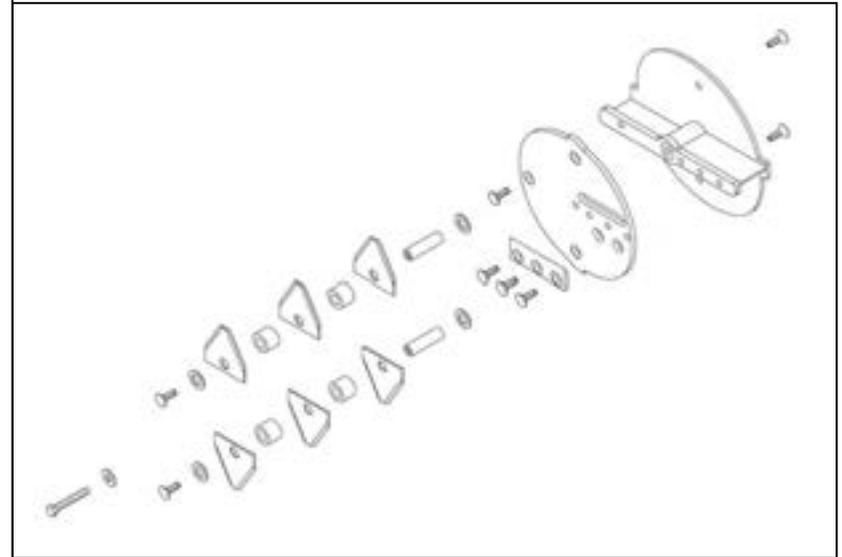
4. STATIONARY KNIFE REPLACEMENT

1. Disassemble the charge hopper unscrewing the 5 nuts “1” and the nut “2”.
2. Unscrew the nut “X” then disassemble the flange “3”.
3. Unscrew the 2 screws “4” then remove the knife “5”.
4. Replace the wear knife with a new **ORIGINAL** one.
5. Operate in opposite way the points from 3 to 1.



5. KNIFE REPLACEMENT

1. Disassemble the charge hopper unscrewing the 5 nuts "1" and the nut "2".
2. Unscrew the nut "X" then disassemble the flange "3".
3. Unscrew the 3 screws "4" then remove the knife "5".
4. Replace the wear knife with a new **ORIGINAL** one.
5. Operate in opposite the points from 3 to 1.



6. BLADES REPLACEMENT

1. Disassemble the charge hopper unscrewing the 5 nuts "1" and the nut "2".
2. Unscrew the nut "X" then disassemble the flange "3".
3. Unscrew the 3 screws "4", the 3 screws "7" and the screw "6" then disassemble the flange "8".
4. Replace the 6 wear blades "9" with new **ORIGINAL** one. **ATTENTION** : strictly respect the position of the spacers and washers.
5. Operate in opposite way the points from 3 to 1.



P.T.O. VERSION



HONDA ENGINE VERSION

7. BELT ADJUSTING AND REPLACEMENT

1. Unscrew the 4 screws "2" and remove protection "1".
2. Unlock the 4 nuts "3".
3. To replace the V-belt full unscrew the screw "4".
4. Replace the wear V-belt with a new one.
5. Screw the screw "4" until reach the correct tension.
6. To operate only the adjustment of the V-belt tension skip points "3" and "4".
7. Screw and lock the 4 nuts "3".
8. Assemble the protection "1" then screw the screws "2".

PROBLEMS SOLVING

TROUBLES	CAUSES AND SOLUTIONS
Vibrations.	<ul style="list-style-type: none"> -Wear knife-Check the knife and eventually replace it. -Wear stationary knife- Check the knife and eventually replace it. -Wear blades- Check the blades and eventually replace them. -Flooding machine-Clean the shredding chamber.
Reduction of output flow.	<ul style="list-style-type: none"> -Wear knife-Check the knife and eventually replace it. -Wear stationary knife- Check the knife and eventually replace it. -Wear blades- Check the blades and eventually replace them. -Clogged screen-Clean it. -Wear V-belt-Check and eventually replace it.
Difficult start or power loss. (HONDA version)	<ul style="list-style-type: none"> -Check the engine- Refer to engine Use and maintenance manual.
Material rejected or accepted with difficulty by the charge hopper.	<ul style="list-style-type: none"> -Wear knife-Check the knife and eventually replace it. -Wear stationary knife- Check the knife and eventually replace it. -Wear blades- Check the blades and eventually replace them. -Clogged screen-Clean it.

TRASPORT – PTO VERSION

Except when working, moving the machine takes place when the machine is standing still and the transmission is disconnected.

<Important>: keep speed low avoiding holes and ground roughness.

<Important>: Before begin the movements always make sure that the safety hooks be in position.

<Note when on the road, obey existing traffic laws. Exhibit the signal signs on the rear ends. Respect any local laws there may be.

STORAGE

Store the machine in a dry place that isn't dusty.

INFORMATION ON DEMOLITION



At the end of its working life, the machine must be sent to be demolished and that can only be done by an authorized authority, in accordance with the national laws in force for the environment. Therefore it is necessary to get information from the qualified local authorities on the procedure to follow. The machine is mainly composed of: iron materials and paints.

WARRANTY

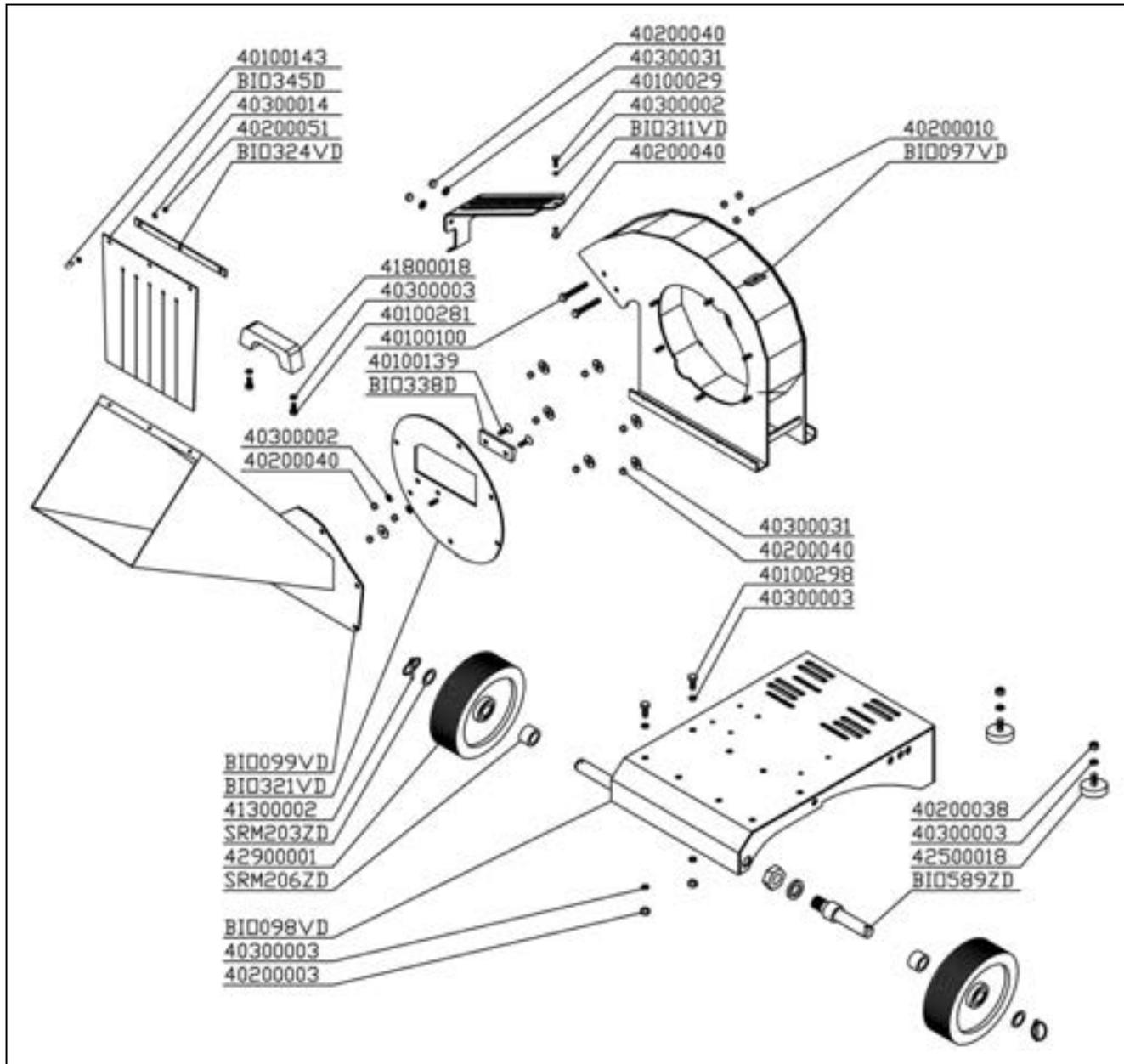
The machine is covered by the manufacturer warranty for a period of 24 months.

The warranty expires when:

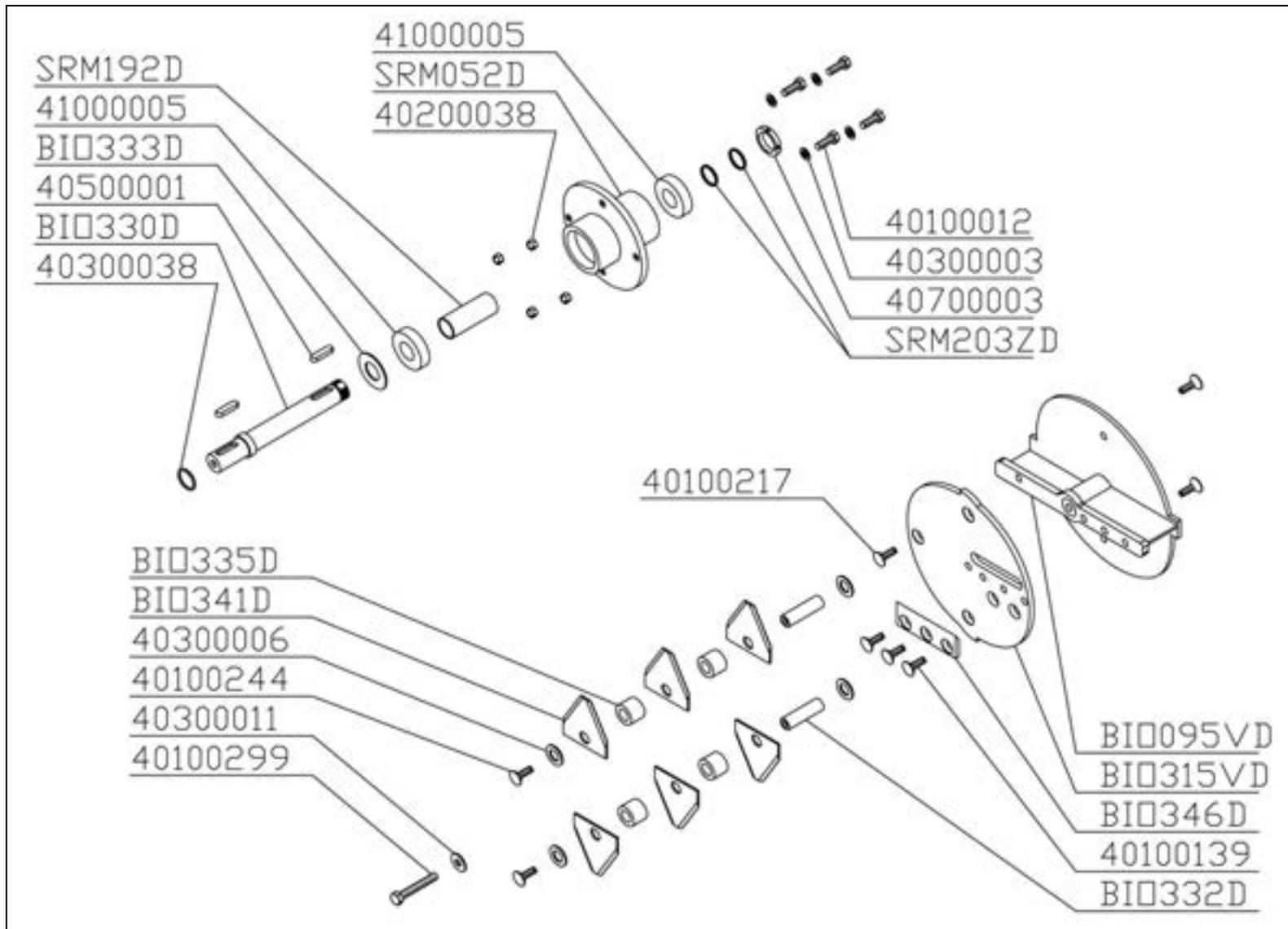
- a) The maintenance operations have not been correctly done.
- b) The machine has been used out of its own service.
- c) The machine has been transformed or modified without the manufacturer's written authorization.

SPARE PARTS & ACCESSORIES

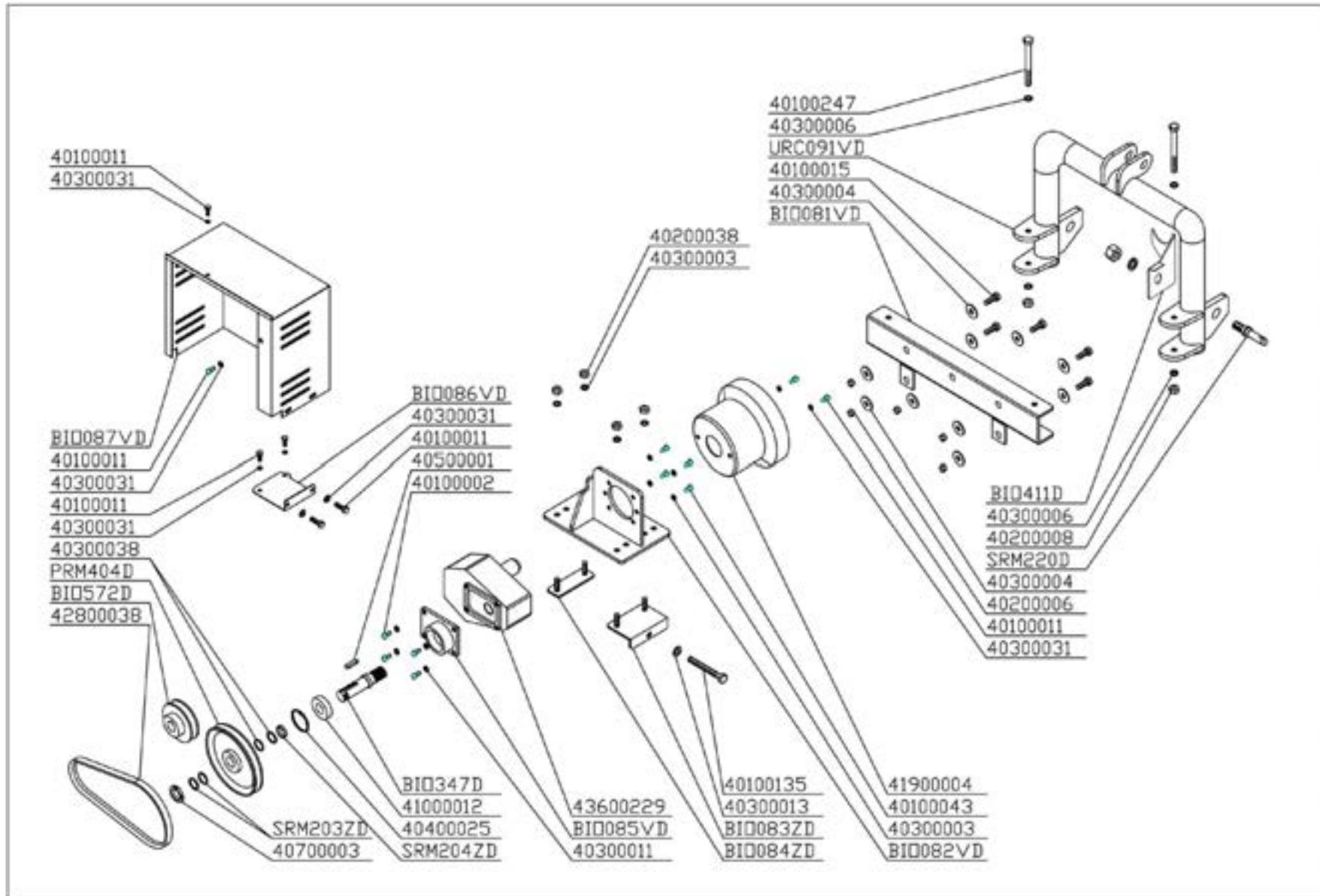
FRAME



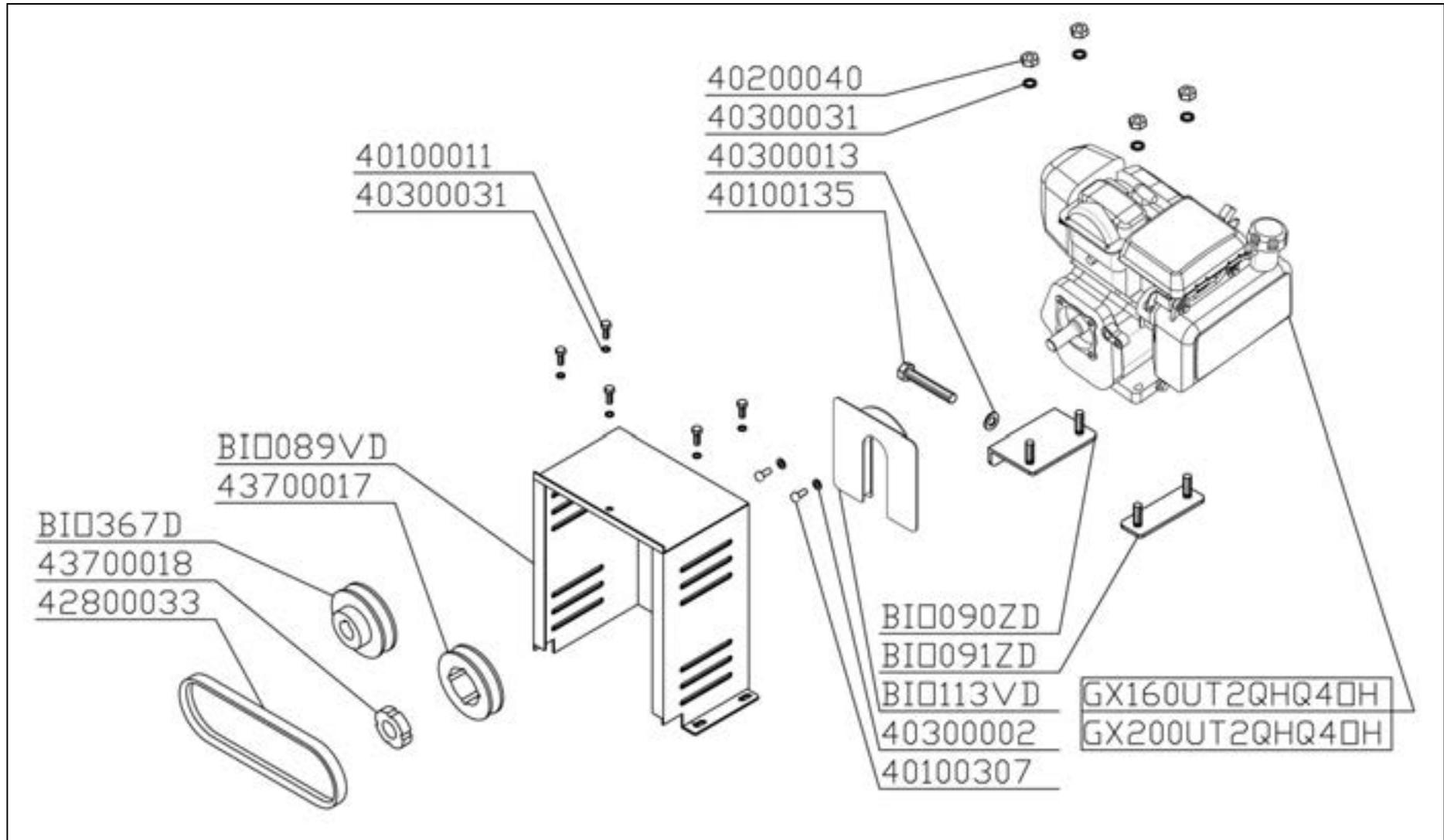
HUB & ROTOR



P.T.O. KIT



HONDA ENGINE KIT



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