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Cut-Off Saws

BTS 930-8340
BTS 935-8341
BTS 1030-8339
BTS 1035-7975

REPAIR MANUAL

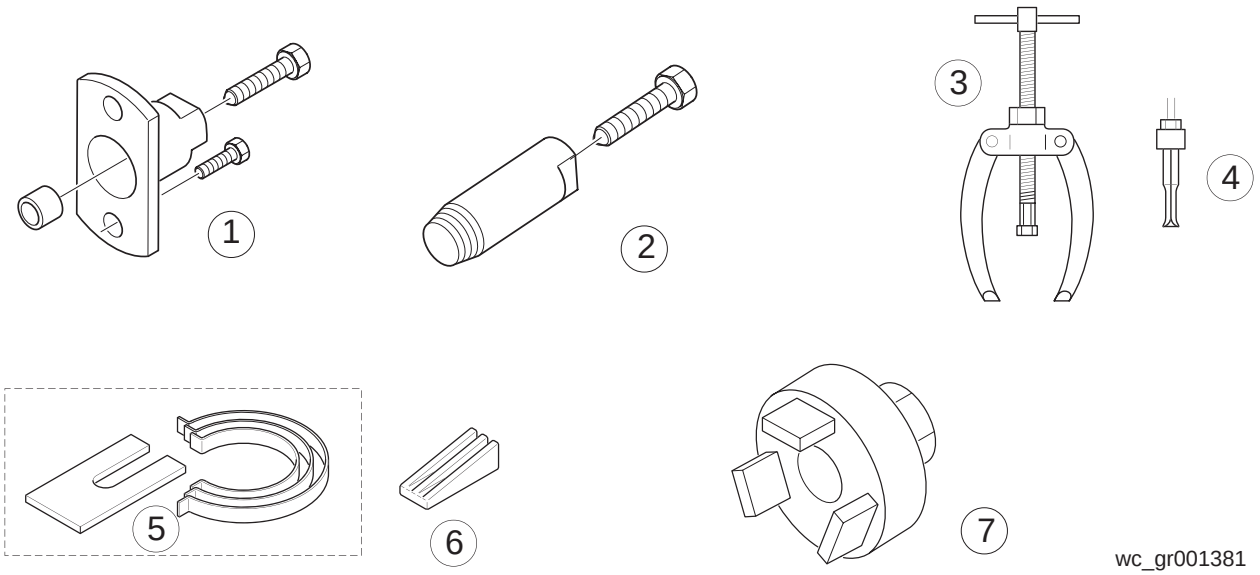
1. Technical Data

1.1 BTS 930 / BTS 935 / BTS 1030 / BTS 1035

Item No.		BTS 930 0008340	BTS 935 0008341	BTS 1030 0008339	BTS 1035 0007975
Saw					
Displacement	cm^3 (in^3)	62		73	
Bore	mm (in.)	47 (1.8)		50 (2.0)	
Stroke	mm (in.)	37 (1.5)		37 (1.5)	
Max. Power	kW (Hp)	3.3 (4.4)		4.2 (5.5)	
Max. Torque	Nm	4.0		5.0	
Idling Speed	rpm	2500		2500	
Clutch engagement speed	rpm	3800		3800	
Engine speed limitation	rpm	9350		9350	
Max. spindle speed	rpm	4300		4300	
Carburetor (diaphragm)	type	Tillotson HS-273 A			
Ignition system (with speed limitation)	type	electronic			
Spark plug	type	NGK BPMR 7A / BOSCH WSR 6F / CHAMPION RCJ 6Y			
Electrode gap	mm (in.)	0.5 (0.020)			
Fuel consumption[1)]	l/h (qts./h)	1.85 (2)		2.36 (2.5)	
Specific consumption[1)]	g/kWh	500		500	
Fuel tank capacity	l (qts.)	1.1 (1.2)		1.1 (1.2)	
Mixture ratio (fuel/two-stroke oil)		50:1		50:1	
Cutting disc for 80 m/sec. [2)] (DSA approved)	mm [3)]	300/20.0/5	350/24.5/5	300/20.0/5	350/24.5/5
Arbor diameter	mm	20.0	25.4	20.0	25.4
V-belt		AVX 838 LA		AVX 838 LA	
Overall weight [4)]	kg (lbs.)	9.7 (21)	9.9 (22)	9.8 (21)	10 (22)

1) At max. load per ISO 8893
2) Circumferance speed at max. engine speed
3) Outside diameter / arbor hole / thickness
4) tanks empty, without cutting disc.

2. Special Tools



Ref.	Part Number	Description
1.	0068900	Puller for flywheel
2.	0117570	Puller for oil seals
3.	0117573	Puller for ball bearing counter support
4.	0117569	Puller for ball bearing inside puller
5.	0117575	Set of piston ring tenson belt
6.	0117571	Piston stop wedge
7.	0117574	Mounting tool for clutch hub

3. Clutch

3.1 Dismantling the clutch/drum

See Graphic: wc_gr001384 and wc_gr001385

3.1.1 To dismantle the clutch and drum, remove the cutting device **(1),** strut **(2)** and V-belt cover **(3)**.

3.1.2 To remove the cutting device, loosen the fixing screws **(4)**. Remove screw **(5)** to the point where the end of the screw projects from the cover (arrow).

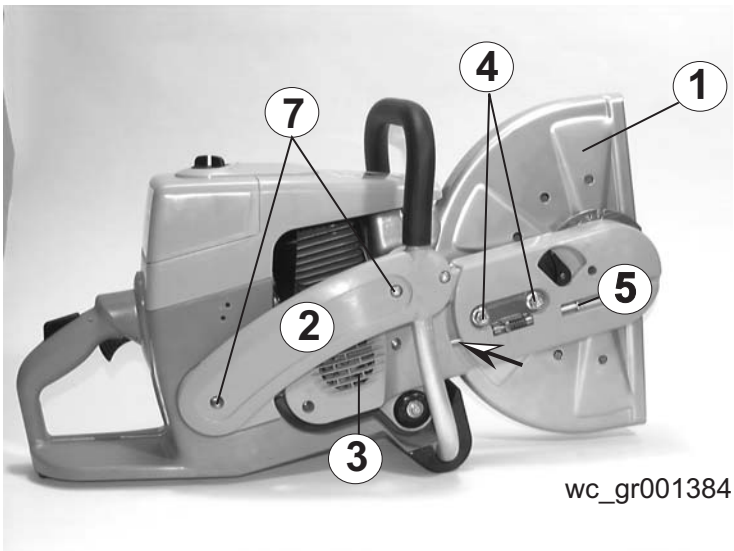
3.1.3 The side strut is fixed with 3 screws **(7)** to the tank and the collector for the right upper damper device.

3.1.4 The cover for the V-belt is fixed to the crankcase with 3 screws **(8)**.

3.1.5 To remove the clutch and drum, the piston must be blocked. To do this, unscrew the 3 screws **(9)** fixing the muffler **(10)** and insert the piston stop wedge (0117571) into the exhaust port of the cylinder **(11)**.

3.1.6 Unscrew the clutch with the special tool (0117574) and a 19mm wrench **(a).**

Note: *left-handed thread.*



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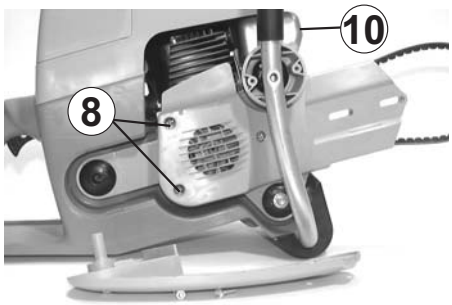
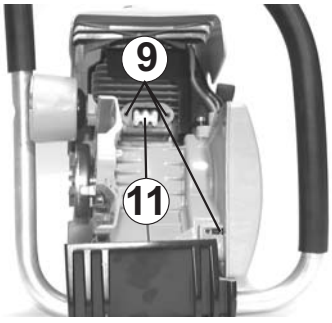
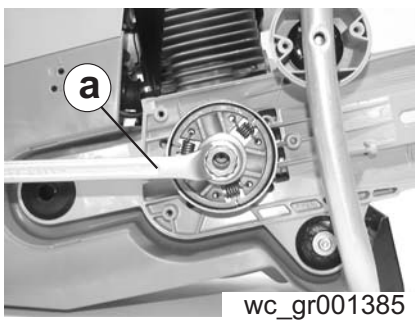






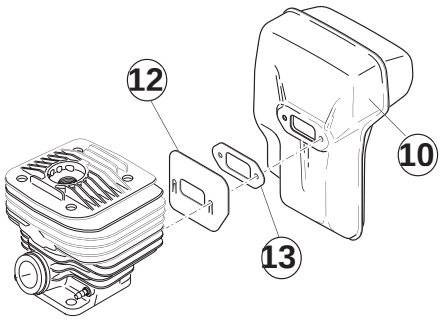
wc_gr001385

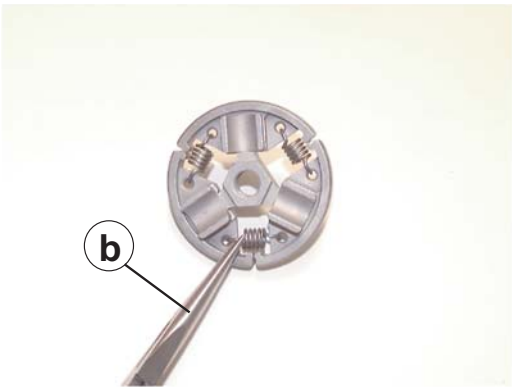
3.2 Mounting muffler and heat plate

See Graphic: wc_gr001386

When mounting the muffler **(10)** ensure that the heat plate **(12)** is installed correctly.

Note: *The heat plate goes directly onto the cylinder, then the gasket **(13)** and muffler.*





wc_gr001386

3.3 Repairing the clutch

See Graphic: wc_gr001386

3.3.1 The tension springs of the clutch can be removed/ replaced with pointed pliers **(b)**. If spares are required, the 3 tension springs are only available as individual parts.

3.3.2 The tension springs should only be replaced as a set if replacement is required.

3.3.3 If the hub / flyweight is defective, the complete clutch must be replaced.

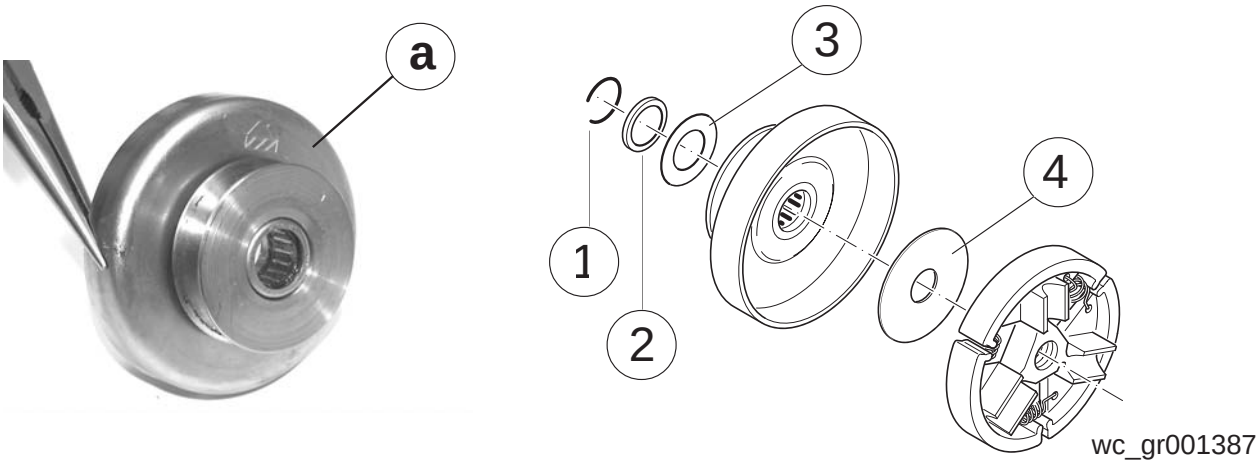
3.4 Mounting the clutch/drum

See Graphic: wc_gr001387

3.4.1 Before installing the clutch drum, the needle bearing that is pressed in must be greased. (Alvania #2)

3.4.2 When mounting the drum and the clutch, be careful to mount the washers in the right order.

- **(1)** Ring (sits in the groove of the crankshaft)
- **(2)** End collar (with recess towards ring)
- **(3)** Guide washer
- **(4)** Clutch guide washer, before assembly.
  Press into the support on the back of the clutch hub.



wc_gr001387

4. Ignition System

4.1 Checking the spark plug

See Graphic: wc_gr001388

4.1.1 Remove filter hood.

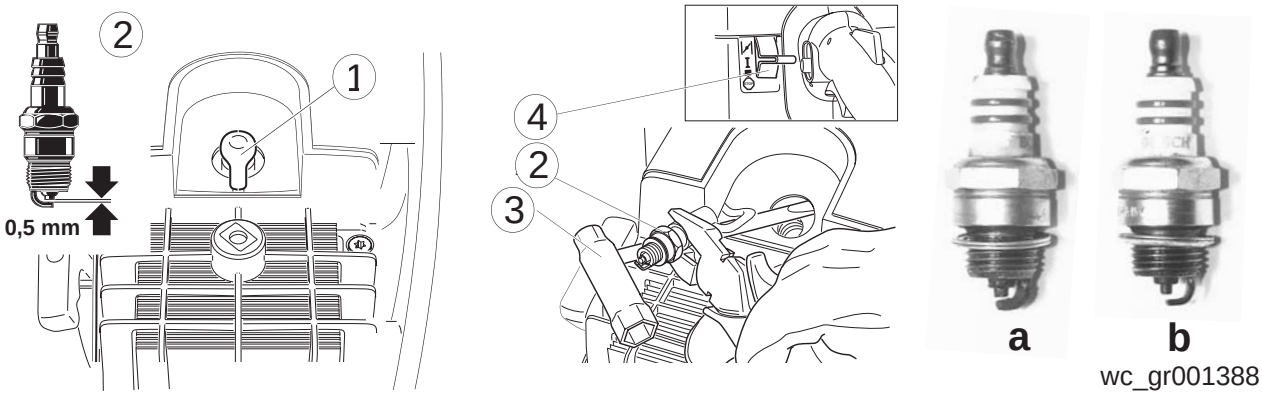
4.1.2 Pull spark plug socket **(1)** off the spark plug and remove spark plug **(2)**.

4.1.3 Connect spark plug **(2)** with plug socket and hold to ground **(3)**. Pull out starter cable. If no spark is produced, repeat procedure with new spark plug.

Note: *Switch **(4)** must be in position "I".*

4.1.4 Combustion and motor performance will be improved if the spark plugs function properly. Dirty or faulty spark plugs should therefore be cleaned or replaced.

- The spark plug pictured **(a)** has serious oil carbon deposits. Clean or replace spark plug.
- This spark plug **(b)** is showing signs of wear (burning off) on the middle electrode. Spark plug must be replaced.



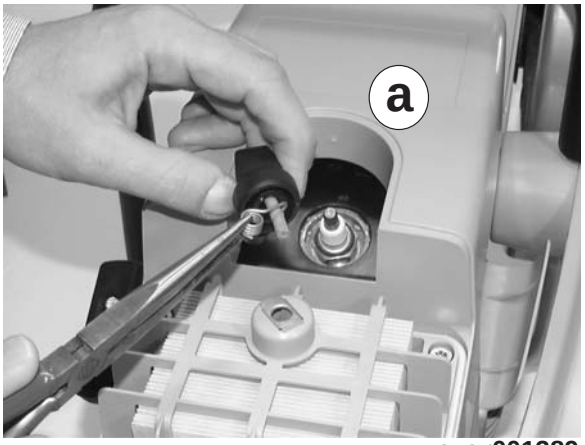
wc_gr001388

4.2 Replacing the plug connector

See Graphic: wc_gr001389

Hold the plug connector spring using pointed pliers and push the rubber cap backwards over the ignition cable.

Note: *Grease the ignition cable slightly beforehand*.



wc_gr001389

4.3 Removing/assembling the ignition / short circuit cable

See Graphic: wc_gr001390, wc_g001391, wc_gr001392 and wc_gr001393

Removing

4.3.1 Unscrew the starter device that is fixed with 4 screws **(a)**.

4.3.2 Unscrew filter hood.

4.3.3 Remove ignition and short circuit cable from the guide **(1)** of the hood.

4.3.4 Remove hood - to do this, unscrew the 3 screws **(2)**.

4.3.5 The screw **(2a)** also holds the grounding wire.

4.3.6 Unscrew ignition from the ignition armature.

4.3.7 Loosen short circuit cable from the socket connection **(b)**.

4.3.8 Loosen the hose clamp **(3)** of the intake hose.

4.3.9 Pull the suction hose **(4)** off the cylinder.

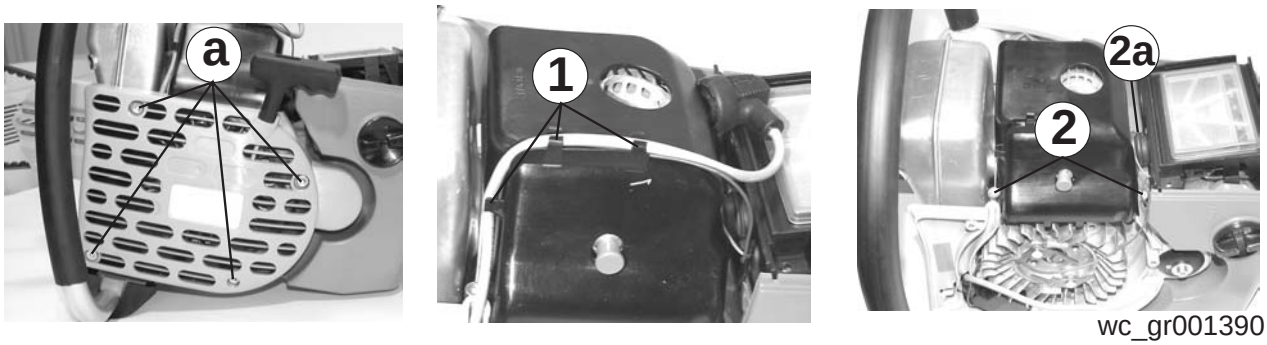
4.3.10 Loosen the locking device of the intake elbow from the tank housing. To do this, push both levers inwards (arrows) and lift the intake elbow slightly.

4.3.11 Push throttle control rod towards the cylinder using pointed pliers, pulling upwards out of the guide of the gas grip **(c)**.

4.3.12 Remove intake elbow with carburetor and choke shaft from the tank housing **(d)**.

4.3.13 Pull short circuit cable **(5)** from its place in the choke shaft **(6)**.

4.3.14 Loosen grounding wire **(7)** from the socket connection of the contact spring.



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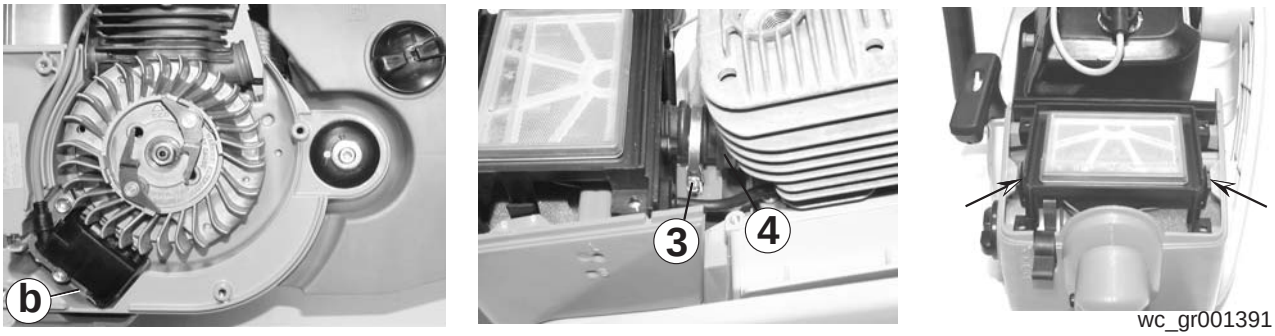

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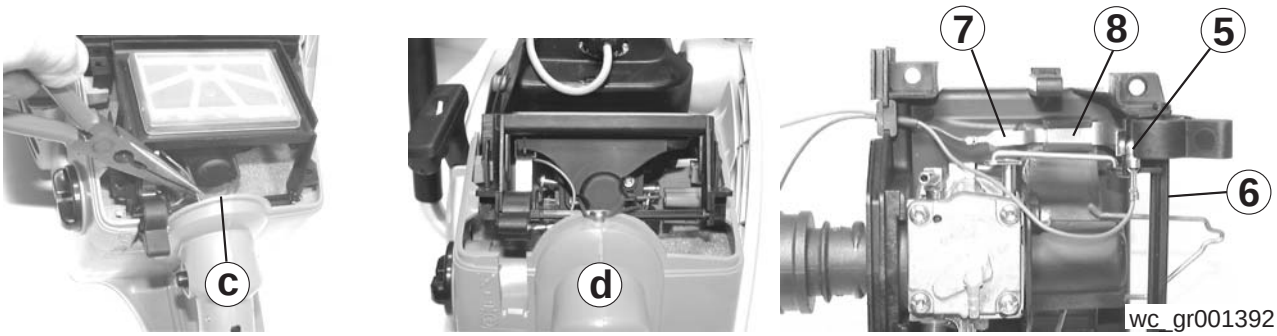


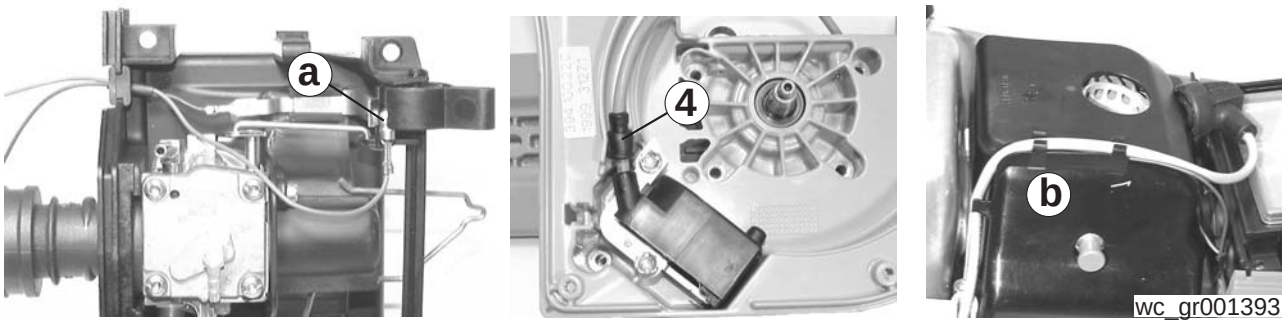
Assembling

4.3.1 When mounting the short circuit cable, make sure that the connection between the connector lug of the short circuit cable and the contact spring is in order **(a)**.

4.3.2 Twist ignition cable into the ignition armature.

Note: *To prevent moisture leaking in, fill protective cap **(4)** with silicone before replacing.*

4.3.3 As a safety measure, lay the short circuit cable in the brackets underneath the ignition cable during assembly **(b)**.



4.4 Removing/checking/mounting the ignition armature

See Graphic: wc_gr001394

Removing

4.4.1 Unscrew starting device.

4.4.2 Remove the two screws **(1)** of the ignition armature. Clip off ignition and short circuit cable.

Checking

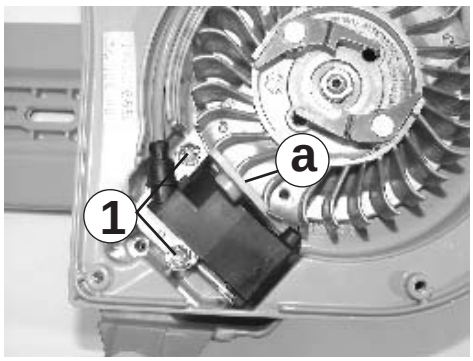
4.4.1 In the event of a fault, first check the ignition ground connection.
To do this, loosen and then tighten the screws **(1)** a few times, then check ignition once again.

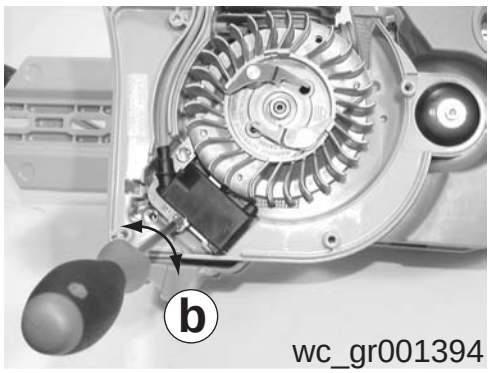
Mounting

4.4.1 Connect ignition and short circuit cable.

4.4.2 Position with 0.012" – 0.016" (0.3 mm – 0.4 mm) **(a)** between ignition device and magnet on the flywheel.

4.4.3 Press ignition device firmly whilst at the same time tightening the screws evenly.





4.5 Removing/mounting the flywheel

See Graphic: wc_gr001395

Removing

4.5.1 Block the piston using the piston stop wedge.

4.5.2 Unscrew bolt **(2)** and remove washer **(3)**.

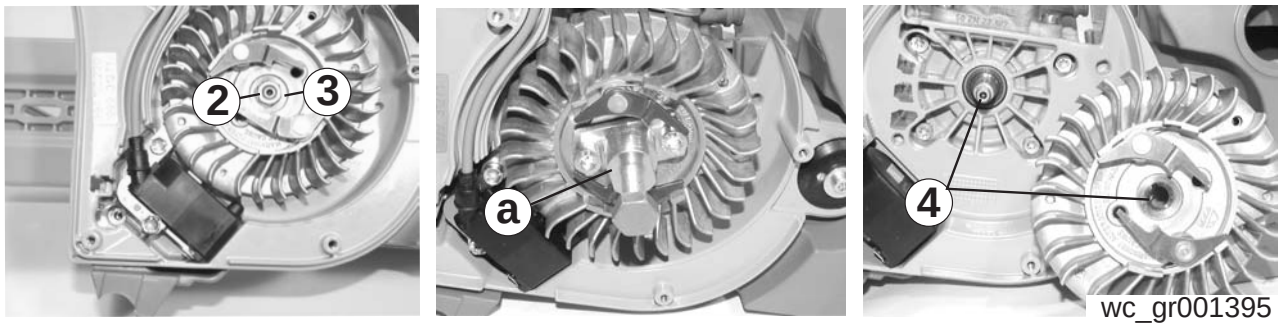
4.5.3 Remove flywheel with pulling device 0037576 **(a)**.

CAUTION: To avoid damage to the crankshaft, always use the protective cap included with the pulling device.

Mounting

4.5.1 Before mounting the flywheel, the cone seat and the crankshaft **(4)** must be cleaned.

4.5.2 The flywheel is tightened with a torque of 23 ft.lbs. (30 Nm).



wc_gr001395

5. Starting System

5.1 Removing/mounting the starter / return spring

See Graphic: wc_gr001396

Removing the starter

5.1.1 Remove air duct **(1)**.

5.1.2 Relieve the tension on the return spring by pulling out the starter cable **(2)** slightly.

5.1.3 Hold cable drum and remove cable from rope drum. Let drum spool back slowly.

Removing the return spring

5.1.1 To remove the return spring, remove the circlip ring **(3)**; the return spring **(4)** is in a cartridge which is fixed to the fan housing with three screws **(5)**.

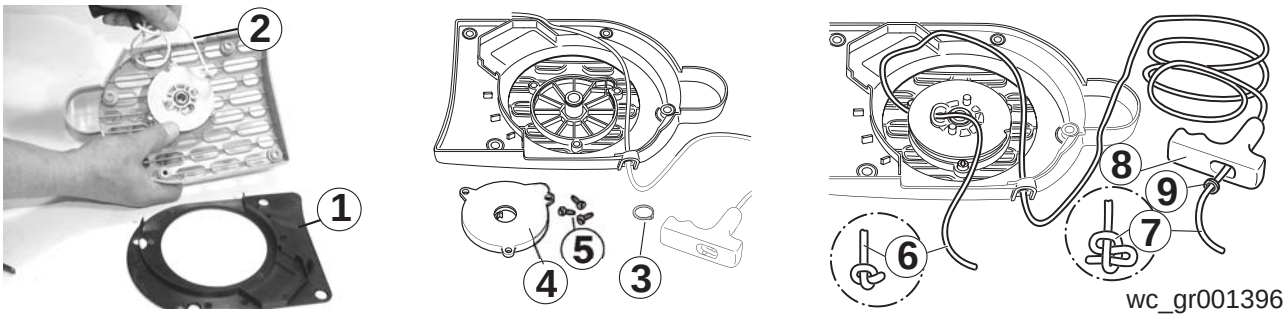
Note: *Lightly grease new spring*.

Mounting the return spring /starter cable

5.1.1 Thread cable through, knotting **(6)** into the cable drum and knotting **(7)** into the starter grip **(8)**.

5.1.2 The washer **(9)** is mounted between the starter grip and the knot.

Note: *Melt cable ends*.



wc_gr001396

5.2 Pretensioning/checking the return spring

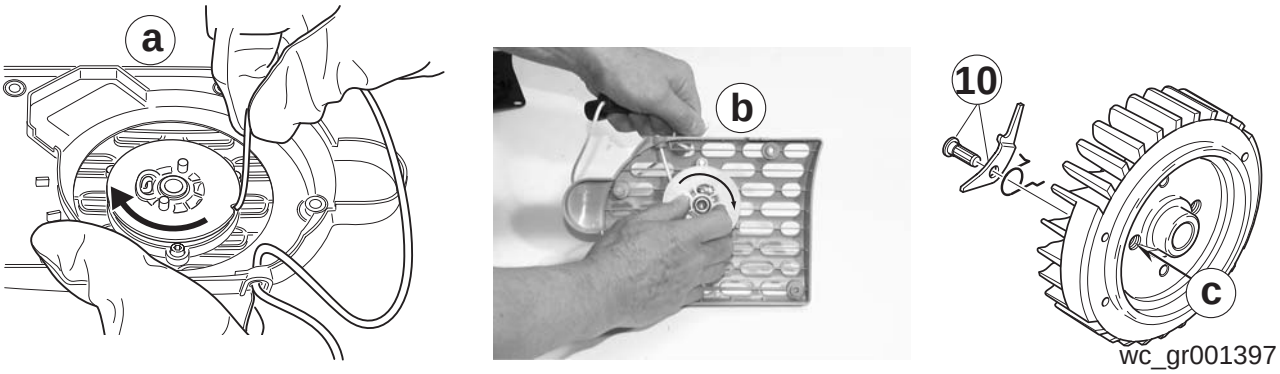
See Graphic: wc_gr001367

Pretensioning the return spring

Wrap the starter cable as far as possible around the drum. Hold cable tight and turn the drum with the cable 2-3 times to pretension **(a)**.

Checking the return spring

When the starter cable is fully extended, the rope drum must still turn at least half a turn **(b)**.



wc_gr001397

5.3 Replacing the starter ratchet

See Graphic: wc_gr001367

5.3.1 Knock out the bolts with a punch **(c)**.

5.3.2 To assemble, push the punch in so far that there is only 0.06"–0.07" (0.15 mm–0.2 mm) between the ratchet and the bolt **(10)**.

6. Carburetor

6.1 Setting the carburetor

See Graphic: wc_gr001398

Set Idling Nozzle “L” at 1 3/8 (-1/16) turn

For the basic setting, turn in the idling nozzle “L” carefully as far as it will go. Then back off “L” nozzle 1 3/8 turn.

For fine tuning, the “L” nozzle only needs to be changed by max.
- 1/16 of a turn.

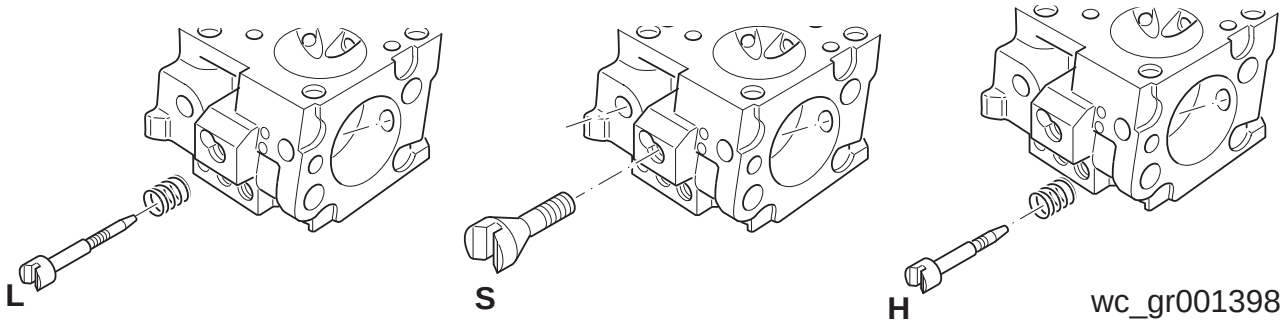
“S” Idling Screw

When during idling the engine speed is too high (moving of cutting disc) or too low (engine stalls), correct the the setting of idling screw “S” (speed) accordingly.

“H” Main Nozzle

BTS 930/935: The main nozzle “H” is set at the factory to 6/8 of a turn.

BTS 1030/1035: The main nozzle “H” is set at the factory to 7/8 of a turn except for machines built in 2002 (S/Ns 5289575 to 5355979) which were set at the factory to 6/8 of a turn.



wc_gr001398

6.2 Removing the carburetor and intake hose

See Graphic: wc_gr001399

Removing the carburetor

6.2.1 Remove intake elbow with carburetor.

6.2.2 Remove choke shaft **(1)**, choke rod **(2)** and throttle control rod **(3)**. Unscrew the two fixing screws **(4)**.

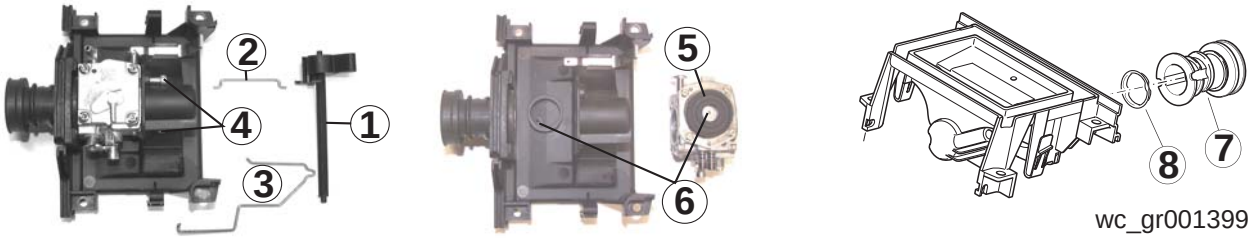
6.2.3 Remove the carburetor from the intake elbow.

6.2.4 The seal **(5)** must not block the bore **(6)** for ventilating the control side of the carburetor (compensation system).

Intake hose

6.2.1 Pull the intake hose **(7)** out of the intake elbow and check for damage.

6.2.2 Replace the insert **(8)** in the intake hose again before assembling the carburetor.



wc_gr001399

6.3 Carburetor - dismantling/testing the control side

See Graphic: wc_gr001400

Dismantling the control side

6.3.1 Unscrew cover **(1)**. Carefully remove the seal **(2)** and diaphragm **(3)** from the control lever **(4)**.

6.3.2 Remove control lever, spring **(5)** and inlet needle **(6)** from the carburetor.

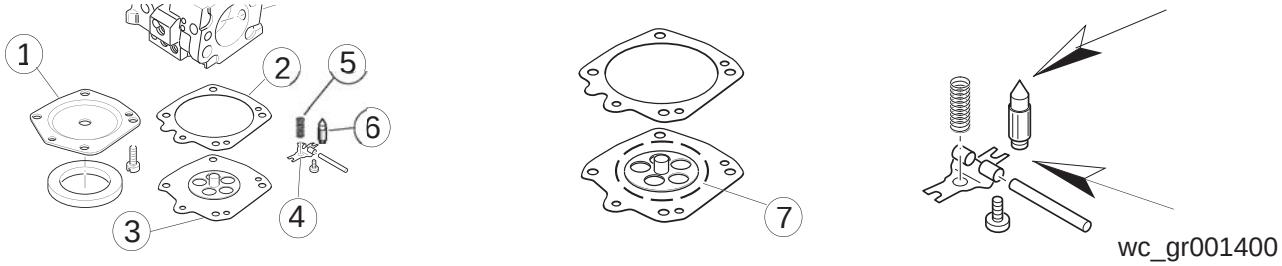
Testing the control membrane

6.3.1 After removing the control diaphragm, it must remain flat. The rim around the stiffening plate **(7)** must be even. Faulty diaphragm must be replaced immediately.

Testing the control unit

6.3.1 After removing the control diaphragm, remove the intake pin with valve rocker and spring.

Note: *If there is visible wear (arrows), the control unit must be replaced.*



wc_gr001400

6.4 Carburetor - dismantling/testing the pump side

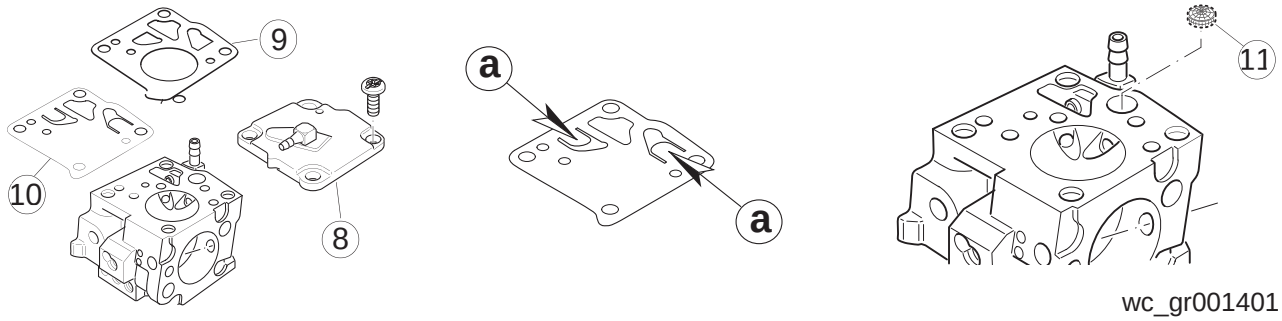
See Graphic: wc_gr001401

Dismantling the pump side

Unscrew cover **(8)**. Remove seal **(9)** and diaphragm **(10)** from the carburetor.

Testing the pump membrane

The two valve flaps (arrow) must rest flat on the body of the carburetor. Damaged diaphragms must be replaced immediately, as starting and running problems may otherwise occur.



wc_gr001401

6.5 Carburetor - Cleaning the fuel filter

See Graphic: wc_gr001401

The fuel filter **(11)** may be carefully removed from the carburetor body for cleaning with a pointed object. After cleaning replace the fuel filter with a pin.

7. Hood System / Air Filter / Winter Operation

7.1 Air Filter

See Graphic: wc_gr001402

Only well-maintained filters will guarantee efficient engine performance and a long working life. Damaged or worn filters must therefore be replaced.

Removing the air filter

7.1.1 Remover filter hood **(5)**, unscrew cover hood **(4)**.

7.1.2 Filter system consists of the pre-filter **(1)**, the paper cartridge **(2)** and the inside filter **(3)**.

Cleaning the pre-filter

7.1.1 Clean the pre-filter **(a)** in lukewarm soapy water using normal liquid detergent. Dry before replacing.

Note: *If the inserts are extremely dusty, the pre-filter may need to be oiled slightly.*

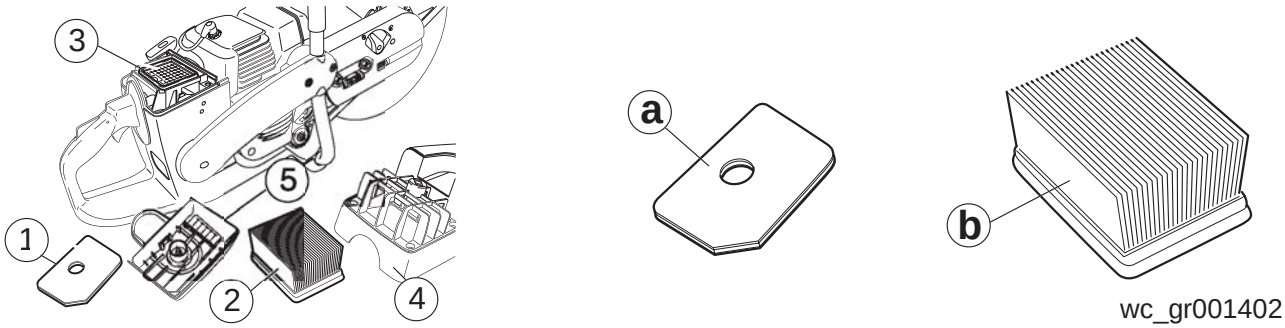
Cleaning the paper cartridge

7.1.1 Unscrew the 4 screws on the cover hood **(4)**. To clean, fan the paper cartridge **(b)** out slightly and tap gently.

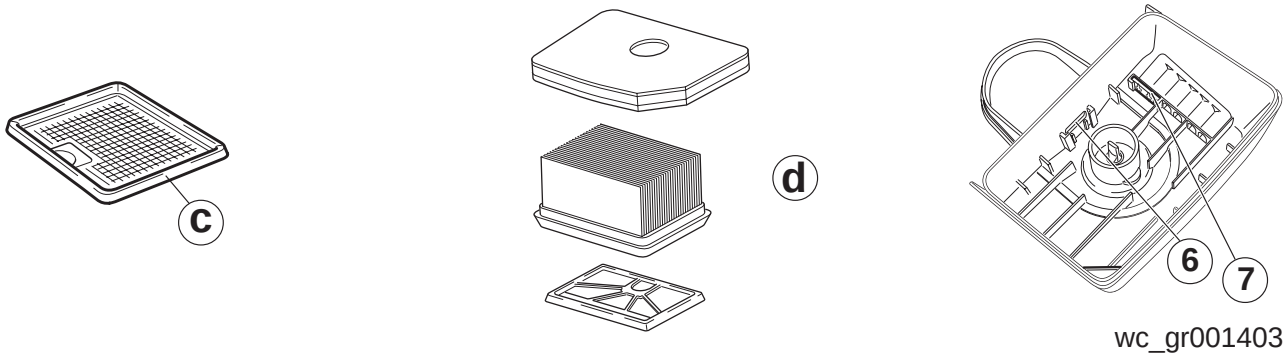
Note: *Never wash the paper cartridge to clean it.*

Clean inside filter

7.1.1 The inside filter **(c)** should also be washed out in lukewarm soapy water.



wc_gr001402



wc_gr001403

7.2 Winter Operation

See Graphic: wc_gr001403

Temperatures below zero may cause the filter/ carburetor to freeze.

Remove summer-winter insert from summer mode **(6)** and insert in winter mode **(7)** as shown.

Return to summer mode when temperature is above 32°F (0°C).

8. Front Handle / Vibration Absorbers

8.1 Removing and replacing the bracket handle

See Graphic: wc_gr001404

To dismantle the front handle, the strut **(1)** with 3 screws and the foot **(2)** with 2 screws must be unscrewed.

wc_gr001404

8.2 Replacing the vibration absorbers

See Graphic: wc_gr001405

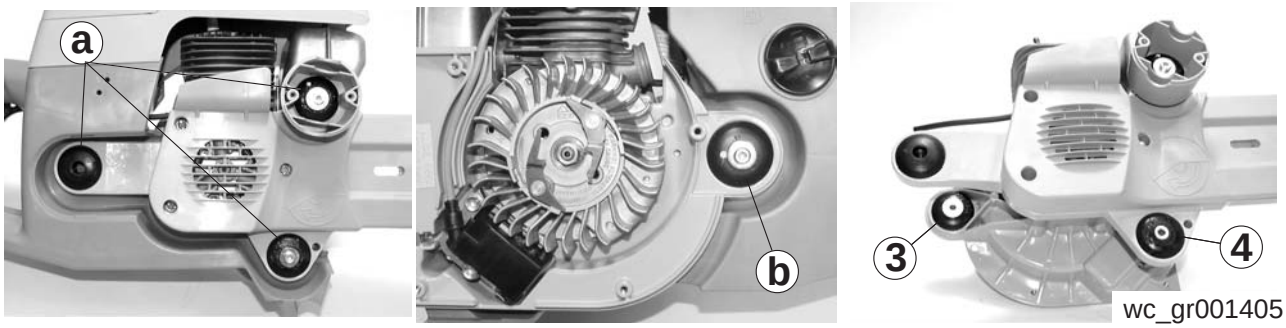
The system consists of 4 vibration absorbers, 3 of which are on the clutch side.

8.2.1 To dismantle them, the front handle, filter system and tank must be removed.

8.2.2 The fourth vibration absorber is on the flywheel side. To dismantle it, the starter device must be removed.

8.2.3 The vibration absorbers are slotted into the housing. Mount the sleeves (3+4) with the collars inwards.

8.2.4 Lightly grease vibration absorbers.



wc_gr001405

9. Fuel Tank / Fuel Filter

9.1 Removing/inserting the ventilation valve

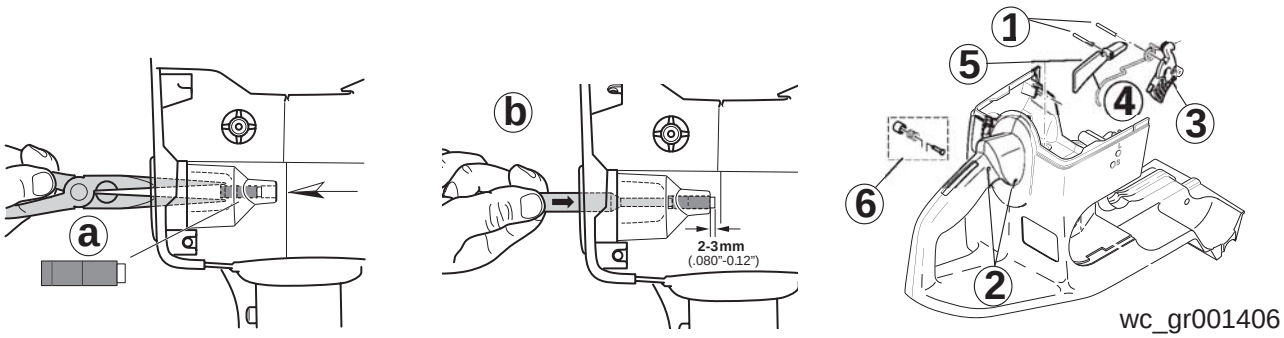
See Graphic: wc_gr001406

Removing

Push the ventilation valve with a pin into the tank (arrow) and remove with pointed pliers through the filler opening **(a)**.

Inserting

Press the new ventilation valve with a pin into the housing until the white sinter plastic projects about 2–3 mm beyond the tank **(b)**.



wc_gr001406

9.2 Replacing the throttle lever mechanism

See Graphic: wc_gr001406

Push the two cylindrical pins **(1)** out of the handle dish **(2)**.

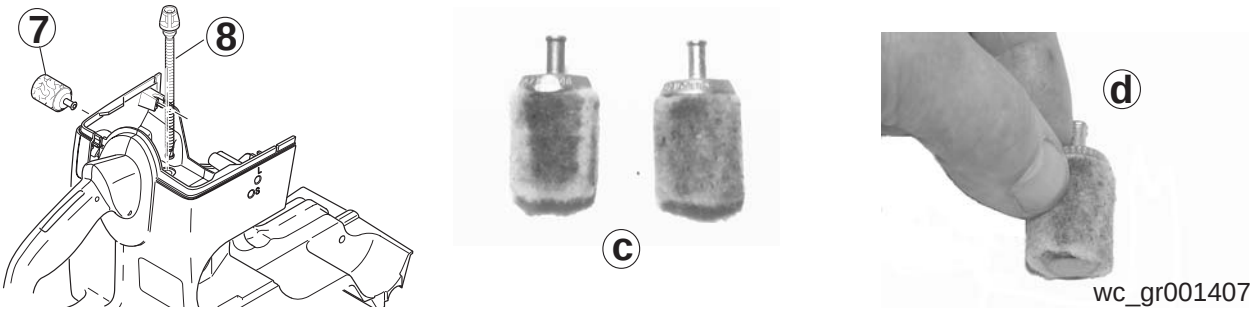
The throttle lever **(3)**, spring **(4)** and throttle lock **(5)** may now be removed.

The throttle lock pin **(6)** for half throttle can also now be replaced.

9.3 Replacing the fuel pipe

See Graphic: wc_gr001407

Unscrew tank cap, remove suction head **(7)** from tank and pull off the suction pipe **(8)**. Pull suction pipe upwards out of the tank.



wc_gr001407

9.4 Testing the fuel filter

See Graphic: wc_gr001407

Dirty felt filters or filters which have become hardened/blocked with fuel will lead to leaning of the fuel/air mix and will damage the engine **(c).**

Note: *The fuel filter must therefore be checked/replaced regularly*.

A fingernail test can be used to check whether the filter is blocked **(d)**.

- Easy to push in = filter OK
- Cannot be pushed in = replace

10. Cylinder / Piston / Decompression Valve

10.1 Dismantling/mounting the cylinder / piston

See Graphic: wc_gr001408 and wc_gr001409

Dismantling the cylinder

10.1.1 To dismantle the cylinder, unscrew the 4 screws **(1)** from the cylinder foot.

10.1.2 Pull cylinder off crankcase and piston.

Dismantling the cylinder - piston

10.1.1 Remove piston pin securing ring **(2)** from the annular slot in the piston using pointed pliers. Push piston pin out.

Note: *During assembly, make sure the securing ring clicks completely into the groove.*

Mounting the cylinder - piston

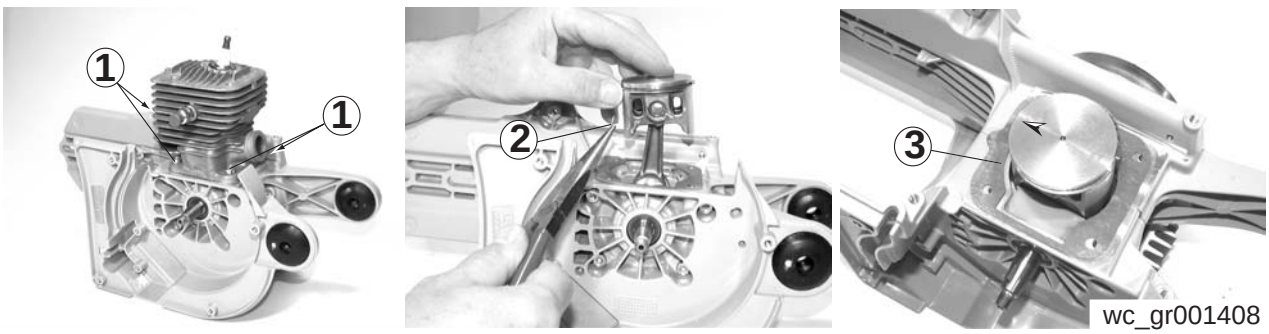
10.1.1 When mounting piston, the arrow on top of the piston has to point in direction of muffler.

Note: *Before assembling the piston ensure that the cylinder base gasket **(3)** is fitted correctly.*

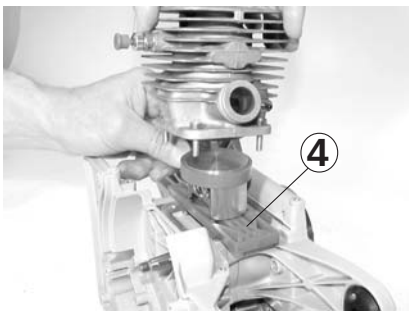
Mounting the cylinder

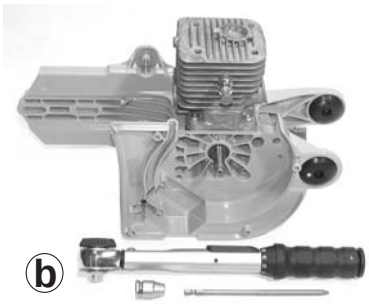
10.1.1 Position the fork **(4)** of the piston ring tightening device (0117575) onto the crankcase. Press the piston ring together using the ring clamp. When positioning the cylinder, push the ring clamp away downwards.

10.1.2 After positioning the cylinder, tighten fixing screw with a torque of 10 ft.lbs. (14 Nm) **(b)**.



wc_gr001408





10.2 Testing the decompression valve

See Graphic: wc_gr001409

Unscrew valve and check valve seating **(a)** and the hole in the cylinder for dirt.

Replace valve if dirty. Clean hole carefully.

11. Crankcase / Crankshaft

11.1 Crankcase / crankshaft

See Graphic: wc_gr001410 and wc_gr001411

Complete crankcase

The complete crankcase is divided into the crankcase magnet side **(2)** “MS”, and the crankcase clutch side **(1)** “KS”.

Removing the crankcase “MS”

To dismantle the magnet side (MS), unscrew the 4 fixing screws **(3)** and the left lower screw **(4)**.

Dismantling the crankcase

After removing the 5 fixing screws, separate the crankcase carefully by tapping with a plastic hammer **(a)**.

Replacing the crankshaft / bearing

First push bearing onto the crankshaft, then insert crankshaft with bearing **(5)** into the case, “KS”. Place gasket on centering pins.

Note: *To dismantle or assemble the bearings, heat the crankcase to 212–248°F (100–120°C).*

Mounting the bearing / crankcase

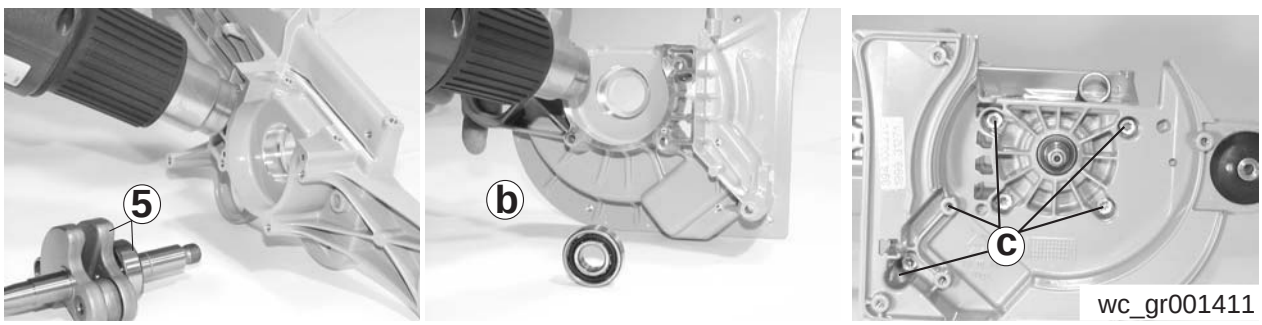
Heat the crankcase “MS” and fit bearing into the case **(b)**.

Note: *The bearing faces with its open side to the crankshaft. Before installation moisten the outside of the bearing with “Loctite 601”.*

Mounting the crankcase

Tighten the 5 fixing screws with a torque of 7 ft.lbs. (10 Nm) **(c)**.

wc_gr001410



wc_gr001411

12. Cutting Attachment

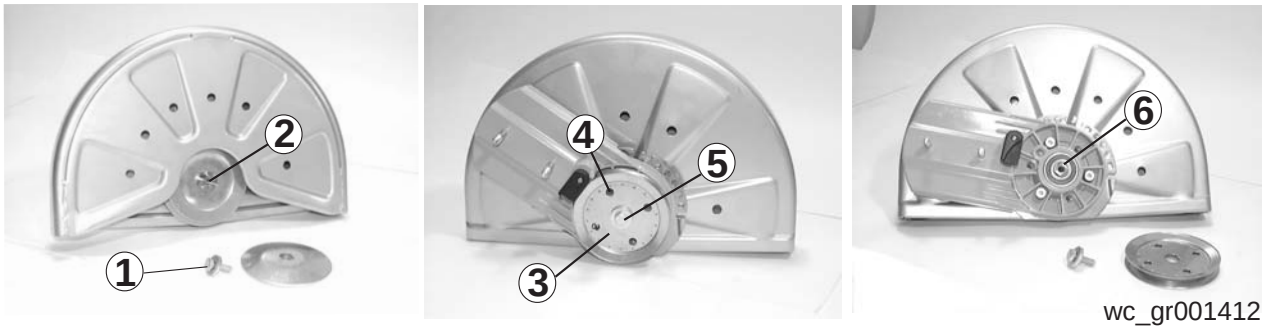
12.1 Replacing the pressure disc

See Graphic: wc_gr001412

12.1.1 Undo screw **(1)** and remove pressure disc.

Note: *With the 25.4 mm (1") axle, the inner flange is located behind the recess of the axle **(2)**.*

12.1.2 Remove axle and flange together.



wc_gr001412

12.2 Removing / mounting the V-belt pulley

See Graphic: wc_gr001412

Removing

Block the V-belt pulley **(3)**. To do this, push a pin through the hole **(4)** in the V-belt pulley into the housing. Remove screw **(5)**.

Mounting

When mounting the pulley, make sure that the shim 0108152 **(6)** is mounted between the V-belt pulley and the ball bearing.

Note: *The V-belt pulley is only fixed in place when the cutting disk is mounted.*

12.3 Replacing the drive axle

See Graphic: wc_gr001413

To remove the axle **(7)**, the pressure disk **(8)** and the V-belt pulley must be dismantled.

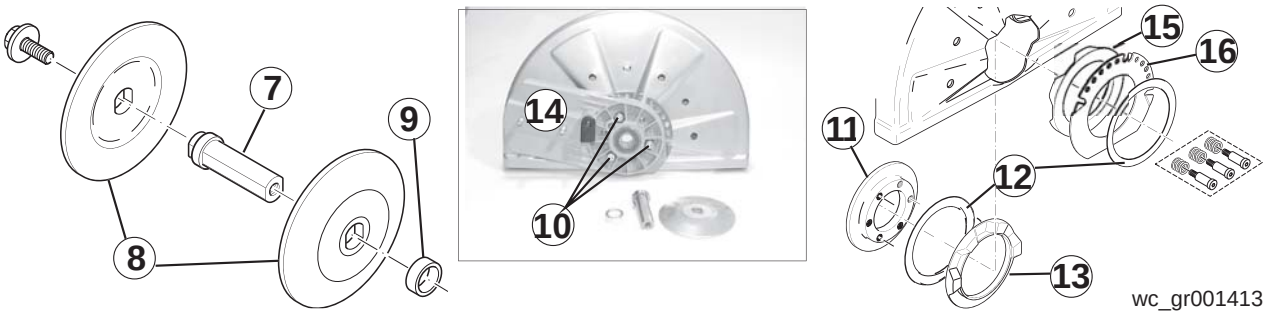
Note: *When mounting the inner flange disk, make sure that the spacer sleeve **(9)** 0108151 is mounted.*

12.4 Removing the complete pressure ring

See Graphic: wc_gr001413

Unscrew the 3 screws with springs **(10)**, the housing **(14)** and the pressure ring **(11)**.

Note: *The screws **(10)** have to be fitted at angles of 120° and are tightened to 7.3 ft.lbs. (10 Nm).*



12.5 Cutter guard holding attachments

See Graphic: wc_gr001413

When mounting, place as follows:

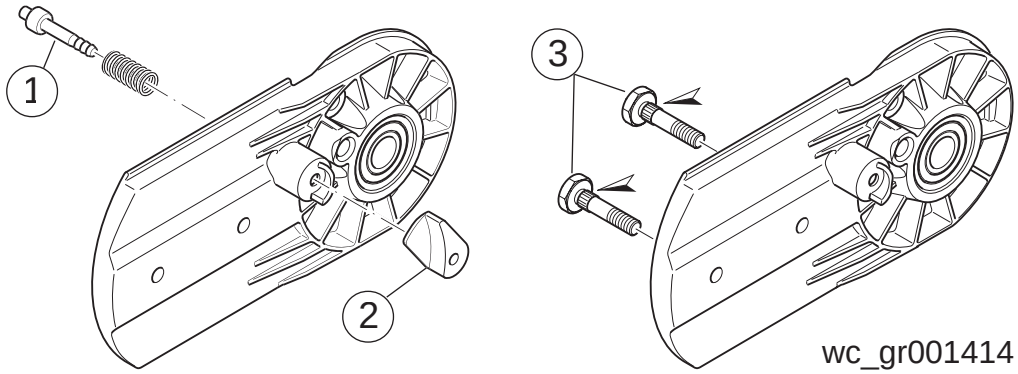
Inside		Outside	
11	Pressure ring	14	Housing
12	Teflon ring	12	Teflon ring
13	Rubber part	16	Locking plate
-		15	Rubber part

12.6 Replacing the guard stop

See Graphic: wc_gr001414

Knock the shaft **(1)** with a pin out of the handle **(2)**.

To assemble, push the new handle onto the shaft until the shaft is flush with the outside edge of the handle.



wc_gr001414

12.7 Replacing the fixing screw

See Graphic: wc_gr001414

Push the screws **(3)** out of the housing.

Before inserting, wet the stop area (arrow) on the screws with “Loctite 609”.

12.8 Removing / mounting the cutting device bearings

See Graphic: wc_gr001415

Removing

12.8.1 Warm housing, remove ball bearings, spacer sleeve and snap rings from the housing.

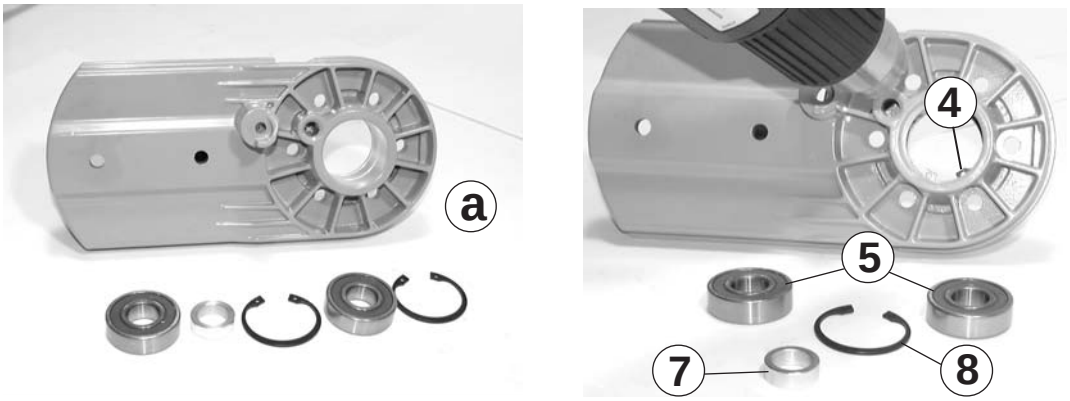
Mounting

12.8.1 Heat housing up to approx. 212°F (100°C).

12.8.2 Mount external snap ring **(4)**.

12.8.3 Push ball bearing **(5)** up against the ring.

12.8.4 Insert middle ring **(6)** and spacer sleeve **(7)**, then push second ball bearing up to ring.



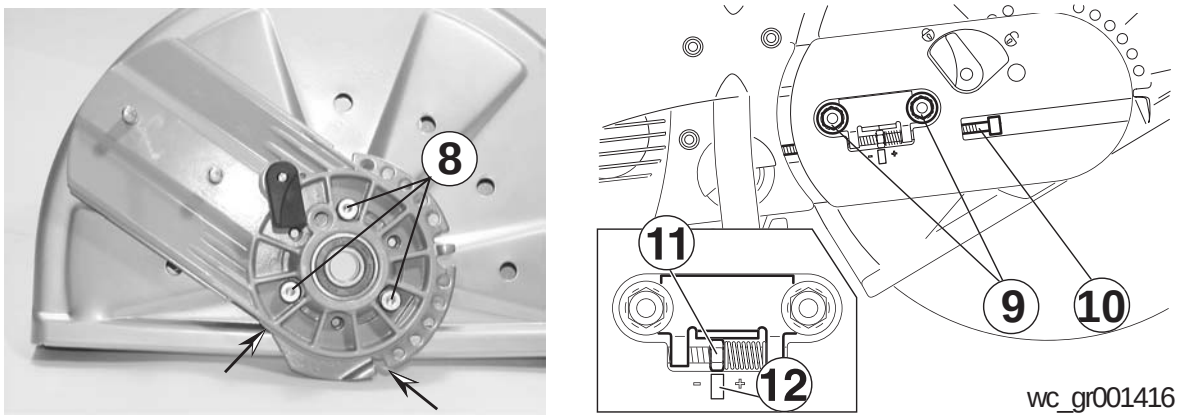
wc_gr001415

12.9 Adjusting the cutter guard holding attachment

See Graphic: wc_gr001416

If the guard is subjected to high stresses, the holding attachment and the guard may no longer be aligned (arrows).

For correction, loosen screws **(8)** and adjust holding attachment.



12.10 Tensioning the V-belt

See Graphic: wc_gr001416

12.10.1 After mounting the cutting device, tighten the nuts **(9)** by hand.

12.10.2 Turn the screw **(10)** until the square nut **(11)** is aligned with the marking **(12)** on the hood.

12.10.3 Tighten the nuts **(9)** to 14 ft.lbs. (20 Nm).

13. Torques

13.1 BTS 930 / BTS 935 / BTS 1030 / BTS 1035

Assembly set	Nm (ft.lbs.)
Muffler	10 + 1 (7) **
Crankcase	10 + 1 (7) **
Cylinder	14 + 1 (10) **
Ignition coil	6 + 1 **(53 in.lbs.)** **
Front handle	7 ± 0.5 **(60 in.lbs.)**
Rubber mounts	7 ± 0.5 **(60 in.lbs.)**
Carburetor	1.5 ± 0.5 **(13 in.lbs.)**
Clutch	55 ± 0.2 (40)
Flywheel	30 ± 2.5 (22)
Spark plug	25 ± 2.5 (19)
V-belt pulley	25 + 5 (19)

** Screws with locking serration

Threadlockers and Sealants

Threadlocking adhesives and sealants are specified throughout this manual by a notation of “S” plus a number (S#) and should be used where indicated. Threadlocking compounds normally break down at temperatures above 175°C (350°F). If a screw or bolt is hard to remove, heat it using a small propane torch to break down the sealant. When applying sealants, follow instructions on container. The sealants listed below are recommended for use on Wacker equipment.

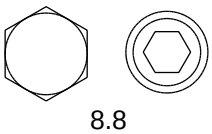
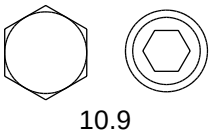
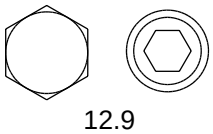
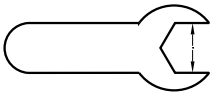
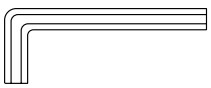
TYPE ( ) = Europe	COLOR	USAGE	PART NO. - SIZE
Loctite 222 Hernon 420 Omnifit 1150 (50M)	Purple	Low strength, for locking threads smaller than 6 mm (1/4"). Hand tool removable. Temp. range, -54 to 149 ° C (-65 to 300 ° F)	73287 - 10 ml
Hernon 423 Omnifit 1350 (100M)	Blue	Medium strength, for locking threads larger than 6 mm (1/4"). Hand tool removable. Temp. range, -54 to 149 ° C (-65 to 300 ° F)	29311 - .5 ml 17380 - 50 ml
Loctite 271/277 Hernon 427 Omnifit 1550 (220M)	Red	High strength, for all threads up to 25 mm (1”). Heat parts before disassembly. Temp. range, -54 to 149 ° C (-65 to 300 ° F)	29312 - .5 ml 26685 - 10 ml 73285 - 50 ml
Loctite 290 Hernon 431 Omnifit 1710 (230LL)	Green	Medium to high strength, for locking preassembled threads and for sealing weld porosity (wicking). Gaps up to 0.13 mm (0.005") Temp. range, -54 to 149 ° C (-65 to 300 ° F)	28824 - .5 ml 25316 - 10 ml
Loctite 609 Hernon 822 Omnifit 1730 (230L)	Green	Medium strength retaining compound for slip or press fit of shafts, bearings, gears, pulleys, etc. Gaps up to 0.13 mm (0.005") Temp. range, -54 to 149 ° C (-65 to 300 ° F)	29314 - .5 ml
Loctite 545 Hernon 947 Omnifit 1150 (50M)	Brown	Hydraulic sealant Temp. range, -54 to 149 ° C (-65 to 300 ° F)	79356 - 50 ml
Loctite 592 Hernon 920 Omnifit 790	White	Pipe sealant with Teflon for moderate pressures. Temp. range, -54 to 149 ° C (-65 to 300 ° F)	26695 - 6 ml 73289 - 50 ml
Loctite 515 Hernon 910 Omnifit 10	Purple	Form-in-place gasket for flexible joints. Fills gaps up to 1.3 mm (0.05") Temp. range, -54 to 149 ° C (-65 to 300 ° F)	70735 - 50 ml
Loctite 496 Hernon 110 Omnifit Sicomet 7000	Clear	Instant adhesive for bonding rubber, metal and plastics; general purpose. For gaps up to 0.15 mm (0.006") Read caution instructions before using. Temp. range, -54 to 82 ° C (-65 to 180 ° F)	52676 - 1 oz.

Threadlockers and Sealants

TYPE ( ) = Europe	COLOR	USAGE	PART NO. - SIZE
Loctite Primer T Hernon Primer 10 Omnifit VC Activator	Aerosol Spray	Fast curing primer for threadlocking, retaining and sealing compounds. Must be used with stainless steel hardware. Recommended for use with gasket sealants.	2006124 - 6 oz.

Torque Values

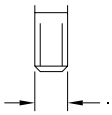
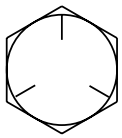
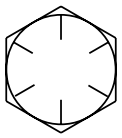
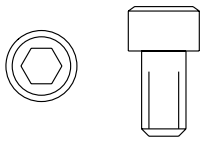
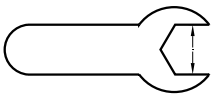
Metric Fasteners (DIN)

	TORQUE VALUES (Based on Bolt Size and Hardness)						**WRENCH SIZE**			
	 8.8		 10.9		 12.9					
Size	**ft.lb.**	**Nm**	**ft.lb.**	**Nm**	**ft.lb.**	**Nm**	**Inch**	**Metric**	**Inch**	**Metric**
M3	*11	1.2	*14	1.6	*19	2.1	7/32	5.5	-	2.5
M4	*26	2.9	*36	4.1	*43	4.9	9/32	7	-	3
M5	*53	6.0	6	8.5	7	10	5/16	8	-	4
M6	7	10	10	14	13	17	-	10	-	5
M8	18	25	26	35	30	41	1/2	13	-	6
M10	36	49	51	69	61	83	11/16	17	-	8
M12	63	86	88	120	107	145	3/4	19	-	10
M14	99	135	140	190	169	230	7/8	22	-	12
M16	155	210	217	295	262	355	15/16	24	-	14
M18	214	290	298	405	357	485	1-1/16	27	-	14
M20	302	410	427	580	508	690	1-1/4	30	-	17

1 **ft.lb.** = 1.357 Nm. * = in.lb. 1 Inch = 25.4 mm

Torque Values

Inch Fasteners (SAE)

	 SAE 5		 SAE 8							
Size	**ft.lb.**	**Nm**	**ft.lb.**	**Nm**	**ft.lb.**	**Nm**	**Inch**	**Metric**	**Inch**	**Metric**
No.4	*6	0.7	*14	1.0	*12	1.4	1/4	5.5	3/32	-
No.6	*12	1.4	*17	1.9	*21	2.4	5/16	8	7/64	-
No.8	*22	2.5	*31	3.5	*42	4.7	11/32	9	9/64	-
No.10	*32	3.6	*45	5.1	*60	6.8	3/8	-	5/32	-
1/4	6	8.1	9	12	12	16	7/16	-	3/32	-
5/16	13	18	19	26	24	33	1/2	13	1/4	-
3/8	23	31	33	45	43	58	9/16	-	5/16	-
7/16	37	50	52	71	69	94	5/8	16	3/8	-
1/2	57	77	80	109	105	142	3/4	19	3/8	-
9/16	82	111	115	156	158	214	13/16	-	-	-
5/8	112	152	159	216	195	265	15/16	24	1/2	-
3/4	200	271	282	383	353	479	1-1/8	-	5/8	-

1 ft.lb. = 1.357 Nm. * = in.lb. 1 Inch = 25.4 mm

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