



ROK DVS J

**OWNER'S
MANUAL**

FOREWORD



Thank you for purchasing Vortex engines. This manual contains information on how to help you with getting the best results from your new engine. Furthermore, it will explain to you how to operate your Vortex engine safely and in a proper manner. All the information in this manual is based on the latest experience and product information available at the time of writing. Vortex reserves the right to make any kind of changes to this manual at any time without notice and without incurring in any obligation.

This manual shall be considered part of the Vortex engine.

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INDEX

1. GENERAL INFORMATION	
1.1. Symbols	3
1.2. Safety information	3
1.3. Technical Specifications	4
1.4. Special Technical Specifications for Homologated Engine	5
1.5. Packaging	5
2. ENGINE ASSEMBLING	
2.1. Tools	6
2.2. Engine Assembling Procedure	7
3. STARTING AND BRAKE-IN	17
4. SERVICING YOUR ENGINE	
4.1 Maintenance Schedule and Adjustments	18
4.2 Torque Chart	18
4.3 Maintenance	18
4.4 General Tolerances	19
4.5 Piston and Piston Rings	19
4.6 Maintenance Detail	20
4.6.1 Carburettor Cleaning	20
4.6.2 Changing Jets	21
4.6.3 Spark Plug Cleaning and Replacement	22
4.6.4 Exhaust Cleaning	22
4.6.5 Cylinder Head Cleaning	23
4.6.6 Cylinder Check and Maintenance	24
4.6.7 Piston Check and Maintenance	25
5. ENGINE EXPLODED VIEW AND PARTS LIST	26

GENERAL INFORMATION

1.1. SYMBOLS

Pay attention to the symbols of this manual. They alert you of dangerous situations for you or for your engine.



Personal Injury



Mechanical Danger



Caution



Special tools needed to perform operation.

1.2. SAFETY INFORMATION



- Do not start the engine indoors eg, garages, trailers, etc. Start the engine in a well-ventilated area only. Exhaust emissions are hazardous to your health.
- Always wear gloves and proper clothing when working on your engine.
- Use caution when handling fuel. Gasoline is flammable and explosive. Avoid any skin contact and inhaling fuel vapors.
- During operation both engine and muffler, become very hot. Do not touch them and do not place anything on them after operation.
- Do not touch the spark plug or cable. It may provoke electrical shocks.
- Understand the operation of all controls and learn how to stop the engine quickly in case of emergency.
- Do not use the engine without chain protection.

GENERAL INFORMATION

1.3 TECHNICAL SPECIFICATIONS

Engine	Original	Max	Min
Displacement	124.130cc	124.957cc	
Stroke	54.00mm	+0.2mm	-0.2mm
Connecting Rod	102.00mm	+0.2mm	-0.2mm
Bore	54.10mm	54.28mm	
Squish			0.8mm
Combustion Chamber			11cc

Intake	
Intake	Reed Valve
Carburettor Dell'orto	24mm Type: WHST 24 BS
Gas Valve	50
Conic Needle	D55
Spray Needle	AQ270
Minimum Jet	U43
Maximum Jet	100

Ignition	
PVL	Digital
Timing	3mm
Spark Plug Gap	0.7/0.8 mm

General	Specifications
Fuel Mixture	5%
Crank Case Oil	30gr W80/90 API GL5
Engine Weight	10.2Kg



All sizes and measurements in this manual are expressed in metrics and may change at any time.

For Racing purposes, ONLY the National Homologation File is to be considered the official document.

Always use original Vortex parts and proper tools when working on your engine.

Proper fuel mix is necessary for optimum engine life and performance.

GENERAL INFORMATION

1.4 SPECIAL TECHNICAL SPECIFICATIONS FOR HOMOLOGATED ENGINE



Refer to your country homologation file for eventual specific rules and/or sizes.

1.5 PACKAGING

Your engine will be packed in a sealed box with the Vortex logo printed on and a sticker with model and serial number attached. There will be a second box complete with accessories, carburetor, muffler, fuel pump, air box, etc.

ENGINE ASSEMBLING

2.1. TOOLS



In order to perform assembling or maintenance jobs, you will need the following tools:

Tipo	Misura
Allen Wrench	2.5 mm.
Allen Wrench	5 mm.
Allen Wrench	6 mm.
Fixed Wrench	10 mm.
Dynamometric Wrench	
Phillips Screwdriver	
Flat Screwdriver	
Spark Plug Wrench	
Compressed Air	
Heater	

ENGINE ASSEMBLING

2.2. ENGINE ASSEMBLING PROCEDURE



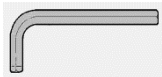
Compressed Air



Unpack the engine and remove any packaging material on it.

Use compressed air to eliminate any further packaging material.

Remove all plastic covers **AFTER** cleaning the engine.



Allen Wrench 6mm

Lay the engine on its side and attach the engine mount to the engine base with four 8x35 mm. Allen screws.



Attention: Engine Mount and screws are not with the engine. May vary according to chassis.



ENGINE ASSEMBLING



6mm Allen Wrench



Caution: Engine is supplied **WITHOUT** oil.
DO NOT start engine before oil have been added.

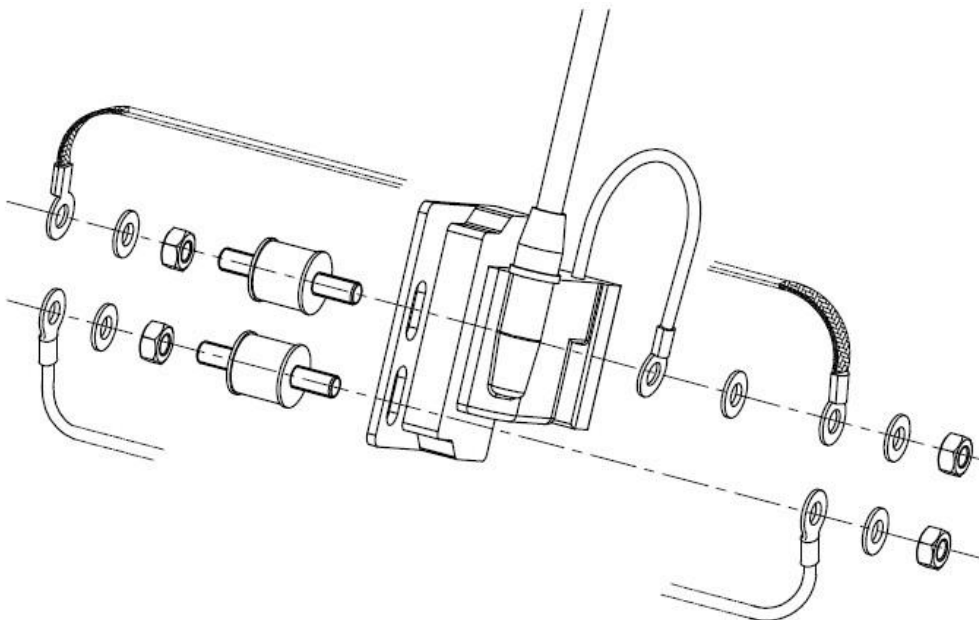
Remove the oil filler cap with a 6 mm. Allen Wrench. Fill the engine with **30gr** of W80/90 viscosity oil (International Specification: **API GL 5**). Re fit the oil filler cap.



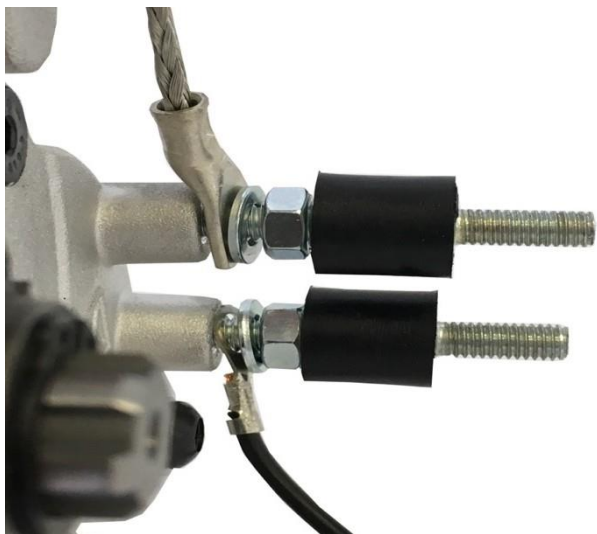
10mm Allen Wrench

Assemble coil as per diagram.

All material needed to perform this task is provided with the engine.



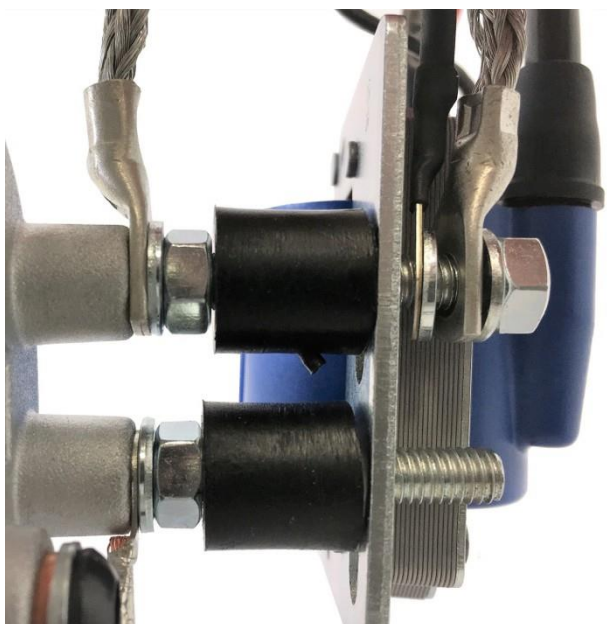
ENGINE ASSEMBLING



Fix ground cables to the engine by assembling the two silent blocks in the crankcase as per photo. Tighten both silent blocks to the crankcase.



Caution: Wrong assembling will cause coil failure.



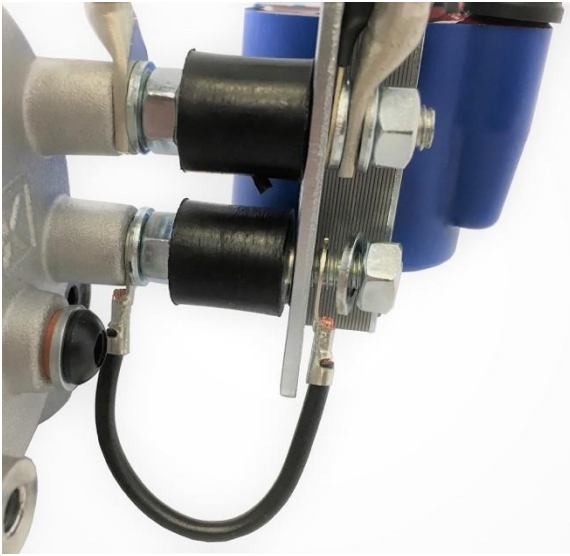
Insert now the coil in the two silent blocks.

Insert the ground cable from the coil into the upper silent block as per photo.

Insert a washer.

Insert now the ground cable previously attached to the crank case with the upper silent block and tighten with washer and nut provided as per photo.

ENGINE ASSEMBLING



Insert now the ground cable previously attached to the crank case in the bottom silent block as per photo.
Tighten with washer and nut.



Caution: One side of the ground cables may touch the crank case. The other ends may touch coil support. Please check photo to correct coil assembling.



Wrongly ground cables assembling will result in failure and coil irreversible damage.

ENGINE ASSEMBLING

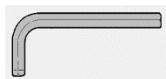
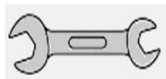


Spark Plug Wrench

Remove the plastic cap from the head of the cylinder. Manually tighten the spark plug into the cylinder head.

Lock it with the spark plug wrench. Loosen it then retighten 2/3 consecutive times; so as to allow the spark plug washer to seat properly. Now you can tighten the spark plug properly. Insert the high tension lead into the spark plug cap and tighten it. For safety, we recommend you secure the high tension lead to the spark plug cap with a cable tie.

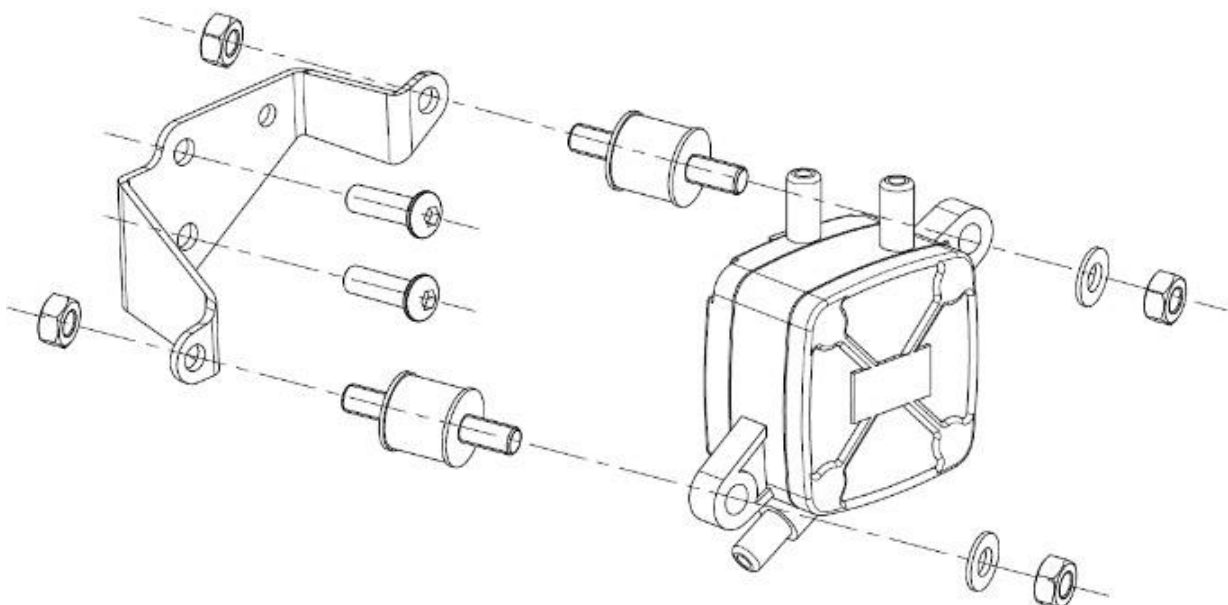
Place the spark plug cap on the spark plug and press the cap down fully.



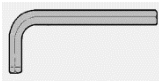
10mm Fixed Wrench

5mm Allen Wrench

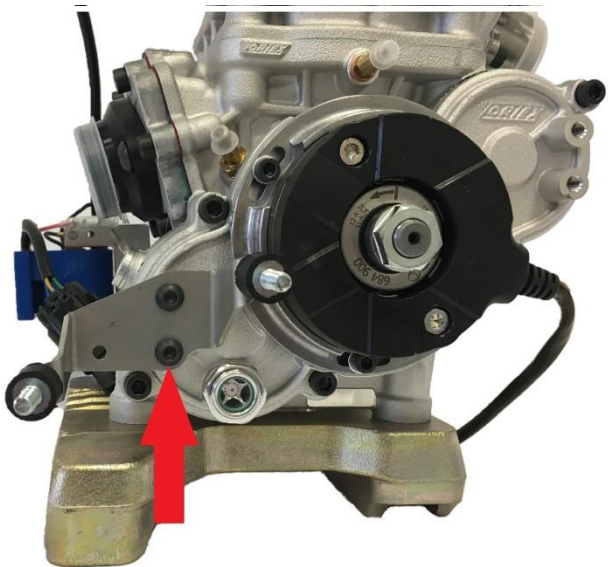
Diagram to assemble fuel pump and bracket. Proceed as explained in next page. All material needed to perform this task is provided with the engine.



ENGINE ASSEMBLING



5 mm. Allen Wrench
Part I

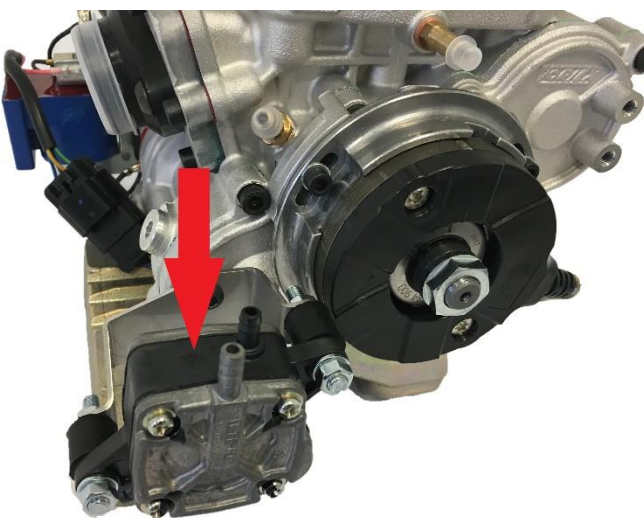


Insert and tighten the silent blocks in the designed bracket.
Attach the bracket to the engine with 6 mm screws provided. (Red arrow)



10mm Fixed Wrench

Part II

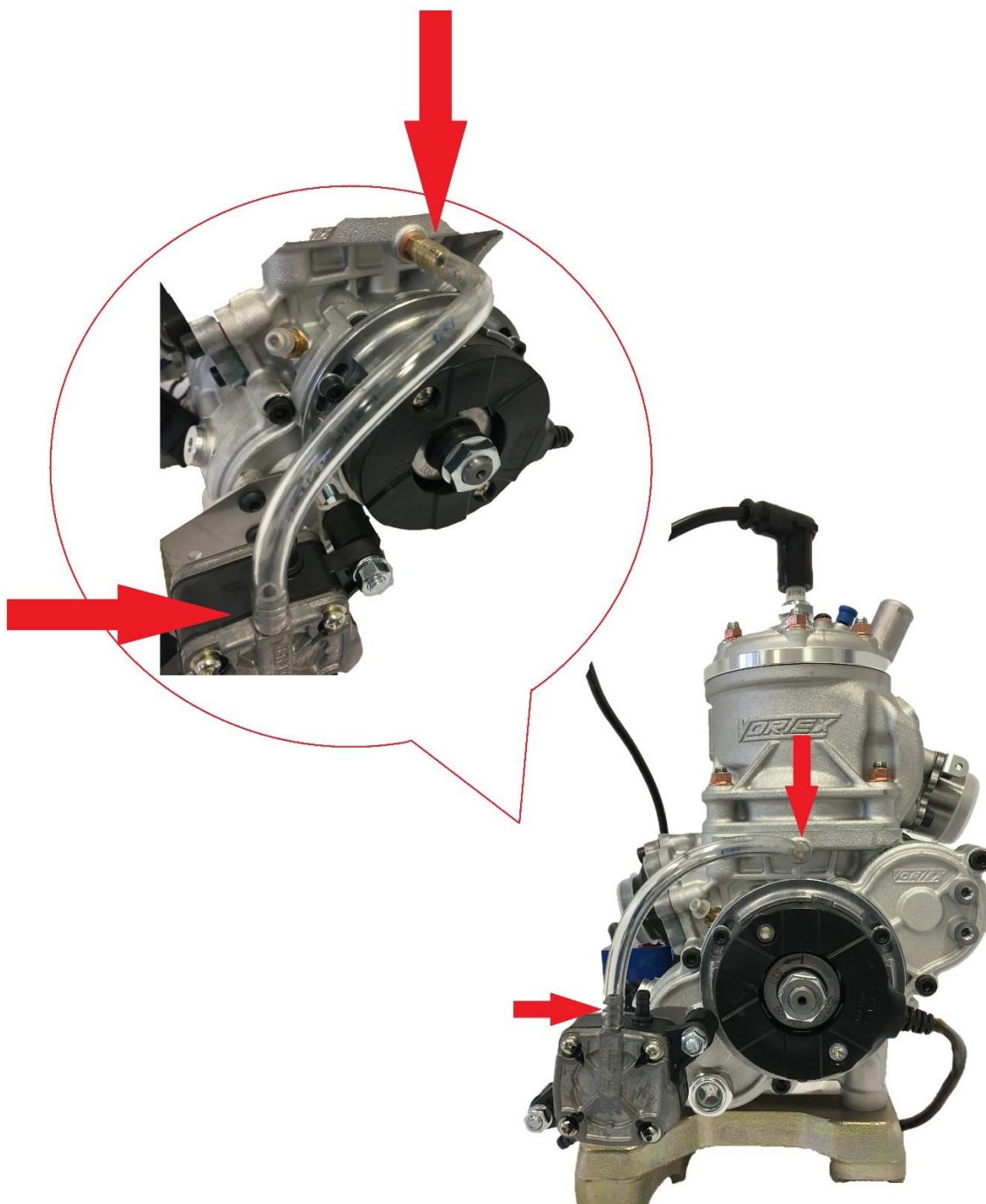


Insert the fuel pump into the silent blocks and tighten it.

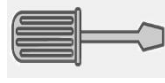
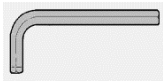
ENGINE ASSEMBLING

Part III

Insert now the vacuum tube into both, engine and fuel pump as per red arrows. Later we will insert the other 2 tubes in the fuel pump. (Page.15)



ENGINE ASSEMBLING



2.5mm Allen Wrench

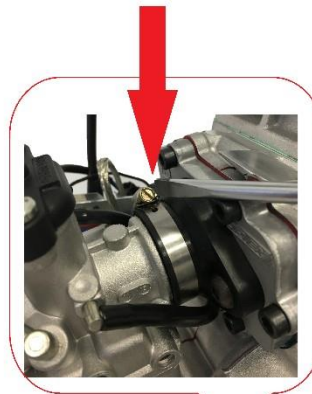
Flat Screwdriver

Now assemble the carburettor. All parts needed are in the accessory box. The standard set up in the carburettor is already to run your engine.



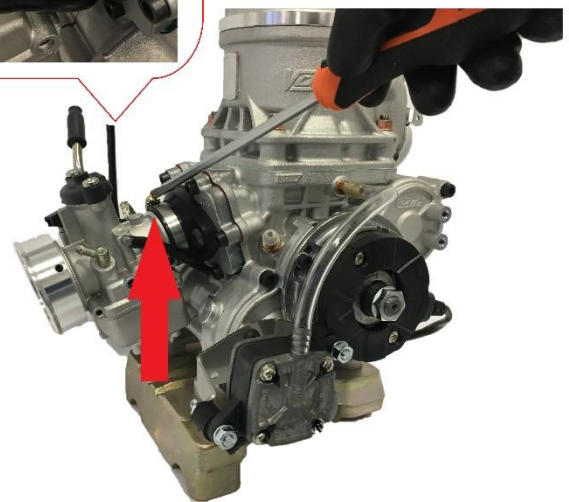
Assemble aluminium air box adapter to the carburettor.

Fit the hose clip to the rubber manifold. Insert the carburettor in the rubber manifold and tighten the hose clamp tight with the flat screwdriver.

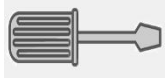


Standard Carburettor Set Up

Type	specifics
Carburettor Dell'orto	24mm WHST 24BS
Gas Valve	50
Conic Needle	D55
Spray	AQ270
Minimum Jet	U43
Maximum Jet	110



ENGINE ASSEMBLING



**Phillips
Screwdriver**

Remove the top of the carburettor by unscrewing the two screws.

Get cover, spring and slide off.

Insert the inner throttle cable into and through the elbow on top of the carburettor.



Insert the spring and then the slide.

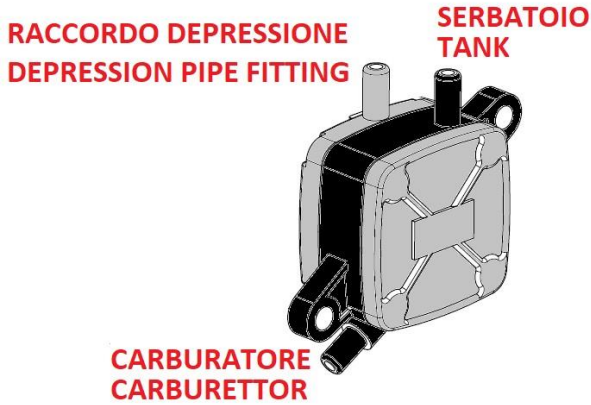
Fit the nipple on the end of the cable into the hole at centre of the slide.

Re insert the slide into the carburettor and tighten the two screws on top of it.

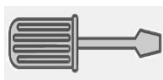
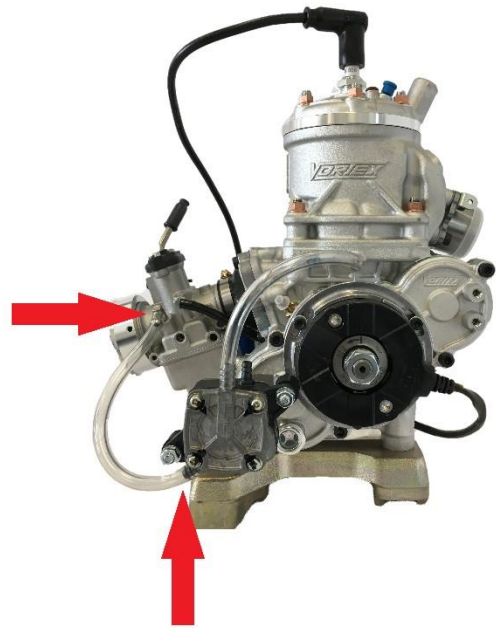


ENGINE INSTALLATION

Insert now the tube from the fuel pump to the carburettor as per red arrows. Check carefully with the attached diagram.

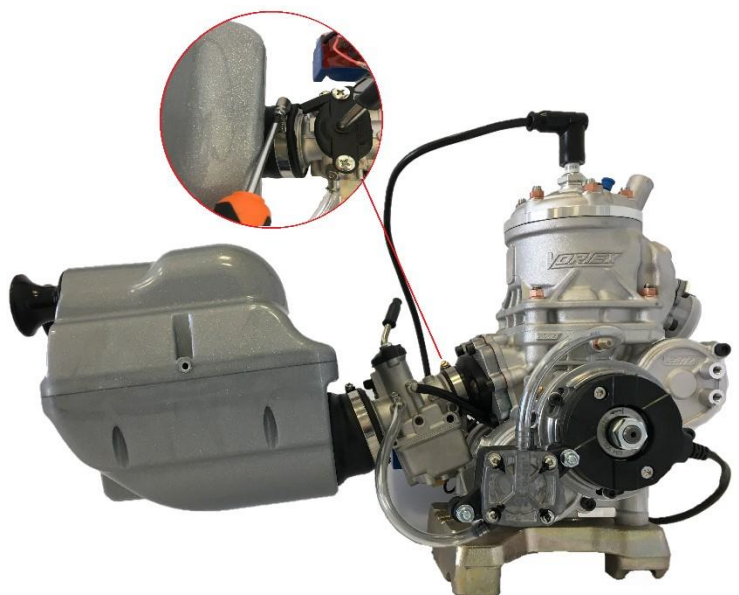


Secure the tube to the fuel pump and the carburettor by using plastic ties.



Phillips
Screwdriver

Fasten the intake silencer to the carburettor by using the specific metal clamp supplied.



ENGINE INSTALLATION

The airbox needs supporting at the front. Drill a 6mm hole through the support tab at the front of the airbox and fit a bracket, as per photo, to support the airbox.



For proper operation of the cooling system it is necessary to bleed the circuit by each air bubble. To adequately perform this operation proceed as follows:

Fill the radiator with water and raising the kart from the radiator side make the excess air come out. Now top up with more water. Spin the rear axle for a few seconds to release air from the external water pump. If necessary top up the radiator again. Do not close the radiator cap.



Now bleed the cylinder head circuit. Loosen the screw on the head (yellow arrow) and keep it open until it comes out only water. Now tighten the screw and refill the radiator with water. At this point you can close the radiator cap.



ENGINE INSTALLATION

Only a proper break-in will insure the best performance out of your engine in the future and guarantee its long and trouble-free life.

Break-in is required when an engine is new or has undergone a major service of the engine's main parts (piston, cylinder, connecting rod, etc.).

Prepare fuel. Vortex engine works with commercial gasoline, leaded or unleaded, as well as racing fuel, with minimum 95 Octane.

Mix Oil and fuel at 5% (i.e. 50cc of oil every 1.000cc of fuel).

This engine is only to be run Motul GP engine oil.

Shake the can thoroughly to mix the fuel and the oil properly. Then fill the gas tank in your kart.



A mistake in measurements could result in engine damage.

To start a cold engine, raise the choke lever positioned on the carburettor.

Once the engine starts push the choke lever down.

Warm up the engine by accelerating up and down the engine RPM alternately between RPM's. Bring the water temperature around 48-50 ° C before stopping the engine.



Do not accelerate fully but only partially.

Check that the cooling system warms up evenly; in case it warms unevenly proceed again with the bleeding of the cooling system.

Once the engine is warmed up and the cooling system works properly, proceed to the track. Run the engine by alternating RPM's a few seconds on and off the throttle at 3/4 maximum throttle.

Do not hold the throttle at a constant speed. Continue this way for 10/15 minutes and return to pits. Check everything on the kart is tightening properly.



Be careful, both engine and muffler are hot.

Return to the track and slowly increase the RPM and duration of the acceleration phase for 10/15min more. Intermittently open the throttle fully and then release it.

After 10/15 minutes of brake-in, your engine is ready for competition.



During the break-in, nuts and bolts tend to loosen. Once the engine is cold, check the torque of the exhaust, head, etc.

MAINTENANCE



Good maintenance is essential for safe, economical and trouble-free operation. Here you will find a

maintenance schedule for your engine.

Routine inspection procedures are very simple by using basic tools.

Some service tasks that are more difficult or need special tools must be performed by Vortex technicians or qualified mechanics.

Timing schedule periods are only indicative. Extreme carburation set ups highly modify timing schedule periods.

4.1 MAINTENANCE SCHEDULE GUIDE AND ADJUSTEMENTS

Part	Frequency	Operation
Carburettor	Every Race	Cleaning
Accelerator Cable	Every Race	Check
Spark Plug	Every Race	Check
Muffler	10 hours	Internal Cleaning
Cylinder	Every piston change	Check

4.2 TORQUE CHART

Part	Torque in Kgm	Notes
Cylinder/head Nuts	1.6	
Cylinder/crankcase Nuts	2.0	
Crankcase \varnothing 6 mm Screws	1.0/1.1	
Ignition Rotor Nut	2.0	
Exhaust manifold Nuts	1.0/1.1	

4.3 MAINTENANCE

Part	Hours	Operation
Piston	20	Check/Replace
Spark Plug	30	Replace
Piston Pin	20	Check/Replace
Piston Pin Roller Cage	20	Check/Replace
Connecting Rod	100	Substitution
Crank Shaft Pin	50	Check/Replace
Silver Washers	50	Check/Replace
Crank Shaft Roller Cage	50	Check/Replace
Oil Seals	50 / or every crank case opening	Check/Replace
Bearings	When needed	Substitution

MAINTENANCE

4.4 GENERAL TOLERANCES

Part	Type	Measure	Operation
Cylinder	Ovalization	0.02	Honing
Piston/cylinder	--	0.12	--

4.5 PISTON AND PISTON RINGS

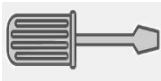
Part Number	Piston Size	Piston Ring	Piston Ring Size
W10140/RKF	54.00	W260/SA10	54.10
W10141/RKF	54.01	W260/SA12	54.12
W10142/RKF	54.02	W260/SA12	54.12
W10143/RKF	54.03	W260/SA15	54.15
W10144/RKF	54.04	W260/SA15	54.15
W10145/RKF	54.05	W260/SA15	54.15
W10146/RKF	54.06	W260/SA15	54.15
W10147/RKF	54.07	W260/SA15	54.15
W10148/RKF	54.08	W260/SA20	54.20
W10149/RKF	54.09	W260/SA20	54.20
W10150/RKF	54.10	W260/SA20	54.20
W10151/RKF	54.11	W260/SA20	54.20
W10152/RKF	54.12	W260/SA25	54.25
W10153/RKF	54.13	W260/SA25	54.25
W10154/RKF	54.14	W260/SA25	54.25
W10155/RKF	54.15	W260/SA25	54.25
W10140/RKFVP	54.00	W260/SA10	54.10
W10141/RKFVP	54.01	W260/SA12	54.12
W10142/RKFVP	54.02	W260/SA12	54.12
W10143/RKFVP	54.03	W260/SA15	54.15
W10144/RKFVP	54.04	W260/SA15	54.15
W10145/RKFVP	54.05	W260/SA15	54.15
W10146/RKFVP	54.06	W260/SA15	54.15
W10147/RKFVP	54.07	W260/SA15	54.15
W10148/RKFVP	54.08	W260/SA20	54.20
W10149/RKFVP	54.09	W260/SA20	54.20
W10150/RKFVP	54.10	W260/SA20	54.20
W10151/RKFVP	54.11	W260/SA20	54.20
W10152/RKFVP	54.12	W260/SA25	54.25
W10153/RKFVP	54.13	W260/SA25	54.25
W10154/RKFVP	54.14	W260/SA25	54.25
W10155/RKFVP	54.15	W260/SA25	54.25

MAINTENANCE

4.6 MAINTENANCE DETAIL

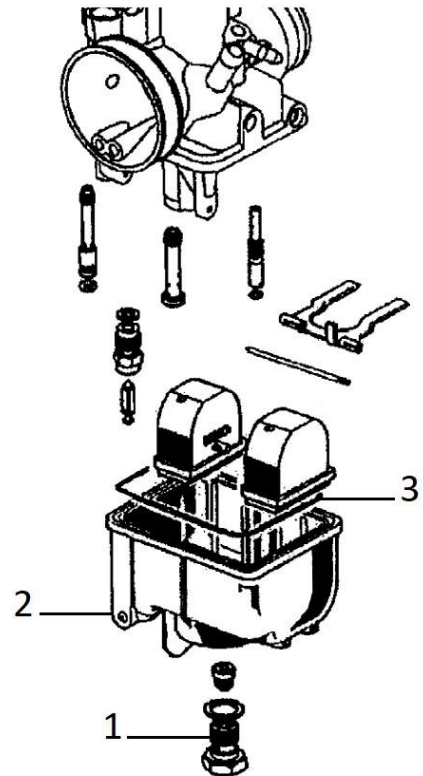
In the following section, you will find a detailed most important maintenance jobs to be performed.

4.6.1 CARBURATTOR CLEANING



Flat Screwdriver

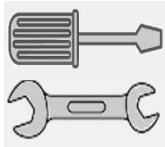
1. Take the intake silencer off the carburettor by unscrewing the clamp.
2. Disconnect the throttle cable from the carburettor together with the spring and the guillotine slide.
3. Take the carburettor off the engine and open the floating chamber by unscrewing the special cap in the middle of the chamber. Clean the parts, openings and passages with compressed air.
4. Unscrew the main jet by means of a flat screw driver. Replace it with another calibrated differently. Be careful, the washer must be installed in one position only. A wrong assembly may cause the carburettor complete malfunction.
5. Check the plug gasket of the floating chamber is still intact and if damaged, replace it.
6. Close the floating chamber by securing the special cap and mount the carburettor on the engine.
7. Clean the inside of the intake silencer.
8. Mount the intake silencer on the carburettor flange.
9. Tighten it with the specific clamp.



Wrong assembly will cause the loss of the intake silencer.

MAINTENANCE

4.6.2 CHANGING JETS



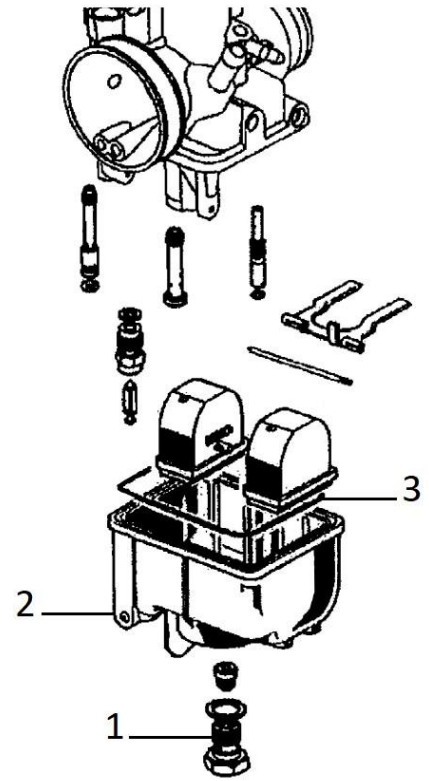
Flat Screwdriver

22mm Fixed Wrench



Wrong carburation set up could cause sever engine damage.

1. Take the intake silencer off the carburettor by unscrewing the clamp.
2. Disconnect the throttle cable from the carburettor together with the spring and the guillotine slide.
3. Take the carburettor off the engine and open the floating chamber by unscrewing the special cap in the middle of the chamber. Clean the parts, openings and passages with compressed air.
4. Unscrew the main jet by means of a flat plier. Replace it with another calibrated differently. Be careful, the washer must be installed in one position only. A wrong assembly may cause the carburettor complete malfunction.
5. Check the plug gasket of the floating chamber is still intact and if damaged, replace it.
6. Close the floating chamber by securing the special cap and mount the carburettor on the engine.
7. Clean the inside of the intake silencer.
8. Mount the intake silencer on the carburettor flange.
9. Tighten it with the specific clamp.



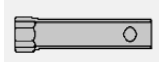
Wrong carburettor assembling may cause engine malfunction and damage.



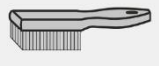
Wrong assembly will cause the loss of the intake silencer.

MAINTENANCE

4.6.3 SPARK PLUG CLEANING AND REPLACEMENT



Spark Plug Wrench



Metal Brush



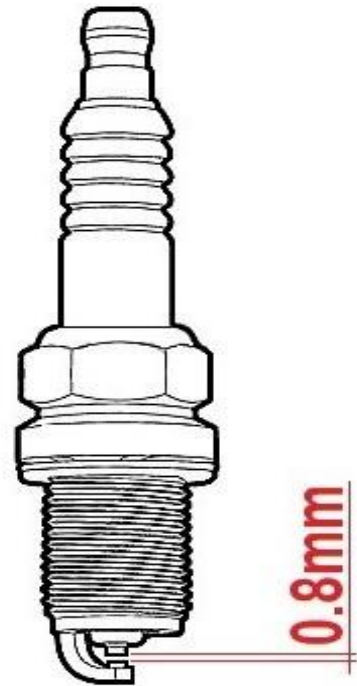
Risk of burning: Perform this task **ONLY** when engine is cool.

Oils produce carbon deposits or residues that make necessary the spark plug to be checked and cleaned, at least every 5 hours. Remove the spark plug and clean it by using a brass metal brush.

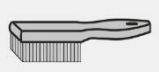
Use a specific spark plug gap gauge to set up correct gap.

Correct gap: **0,8 mm**.

Every 30 hours is highly recommended to change spark plug.



4.6.4 EXHAUST CLEANING



Metal Brush



Heater

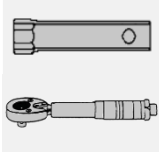
Oils produce carbon deposits or residues that make necessary the exhaust to be checked and cleaned, at least every 10 hours.

Disassemble the exhaust from the engine by removing the two springs and check the exhaust carefully.

Heat the exhaust with a heater and remove all carbon deposits with a metal brush.

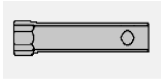
MAINTENANCE

4.6.5 CYLINDER HEAD CLEANING



10mm Tube Wrench

Torque Wrench



Spark Plug Wrench



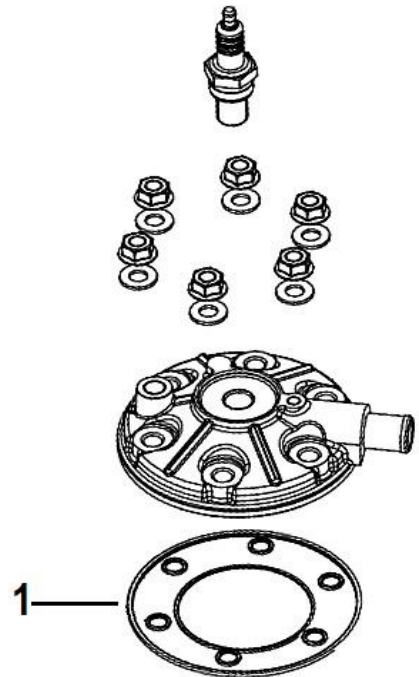
Be aware, cylinder head combustion chamber volume may vary during the race. Carbon deposits may cause variations in cylinder head volume.

Remove spark plug. Remove the six head nuts and relative washers.

Remove cylinder head by pulling it up carefully.



Use rubber gloves.



After cleaning the combustion chamber with fuel, reassemble cylinder head.

Insert carefully the head on to the studs and check all o-rings are fitted in the right place. If any is damage, change it.

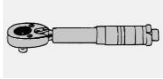
Insert washers and nuts in the studs and tight them manually. Now, by using a torque wrench tighten them alternatively at 1,2 Kgm.

MAINTENANCE

4.6.6 CYLINDER CHECK AND MAINTENANCE



10mm Tube Wrench



Torque Wrench



To avoid engine damage, a Vortex qualified mechanic must perform inspection and honing.



Remove exhaust.

Remove spark plug. Remove the six head nuts and relative washers.

Remove cylinder head by pulling it up carefully.

Remove the cylinder from the crankcase slowly. Once cylinder is separate from crankcase, hold the connecting rod with the other hand and pull the cylinder out totally by pulling it up carefully.

Every time cylinder is removed we recommend changing cylinder gasket.



Cylinder must be honed when cylinder/piston clearance is more than 0.12mm or when ovalization is more than 0.02 mm.

Change piston (see 4.6.7)

New piston cylinder/piston clearance must be 0.12mm.

REASSEMBLING

Insert a new gasket on to the studs carefully and place it on the crankcase surface flat.

Insert now the cylinder in the studs very carefully. With the other hand close piston ring and inset the piston into the

cylinder. If piston ring is not closed totally, risk of damaging the cylinder and piston ring is very high. Push the cylinder down firmly. Tight four cylinder nuts with torque wrench at 20Nm.

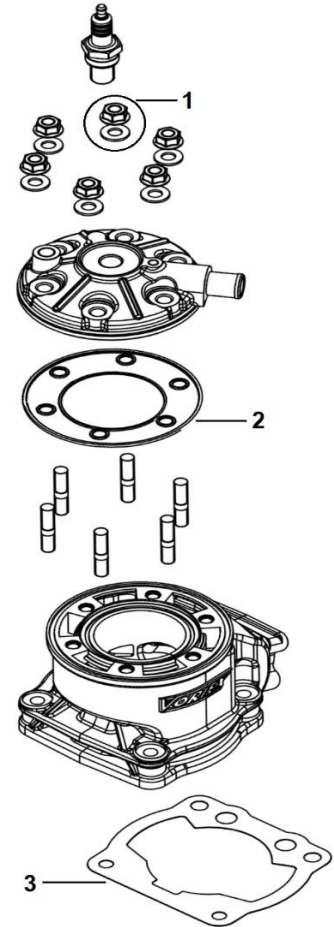
Insert cooper washer.

Install, carefully, the head onto the studs and check all o-rings are fitted in the right place. If any is damaged, change it.

Install washers and nuts onto the studs and tight them manually. Now, by using a torque wrench tighten them alternatively at 1,6 kgm.

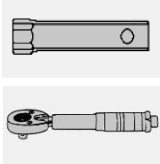


Every time cylinder is honed or piston changed, the engine break-in procedure must be performed.



MAINTENANCE

4.6.7 PISTON CHECK AND MAINTENANCE



10mm Tube Wrench

Torque Wrench



To avoid engine damage, a Vortex qualified mechanic must perform inspection and honing.



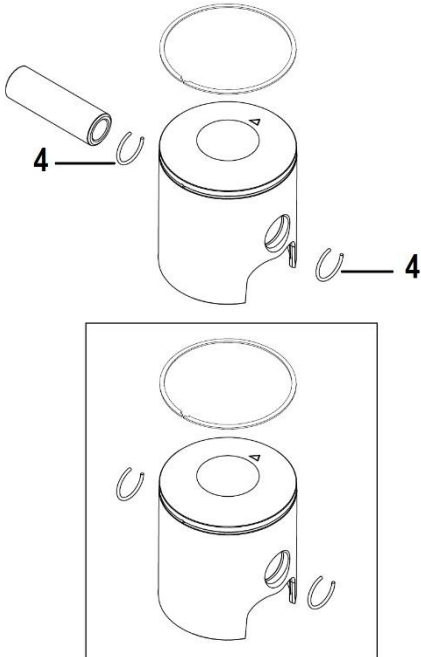
Remove exhaust.

Remove spark plug. Remove the six head nuts and relative washers.

Remove cylinder head by pulling it up carefully.

Once cylinder is separate from crankcase, hold the connecting rod with the other hand and pull the cylinder out totally by pulling it up carefully.

Every time cylinder is removed we recommend changing cylinder gasket. (3)



Remove the circlips from the piston pin. Push the pin out of the piston. (4)



Before assembling a new piston check

dimensional sizes. Correct cylinder/piston clearance is 0.12mm.

ASSEMBLING

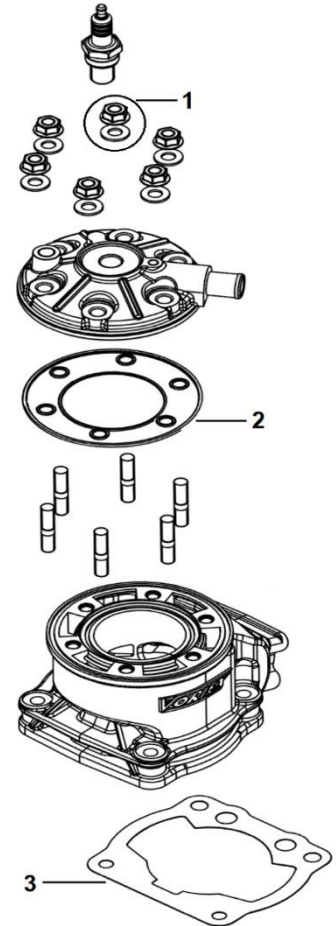
Oil and insert the roller cage in the connecting rod.

Install the new piston in the connecting rod by placing the arrow stamped in the head of the piston facing the exhaust port.

Insert now the piston pin and secure it with the circlips.



Attention, wrong circlips assembling may cause serious damage.



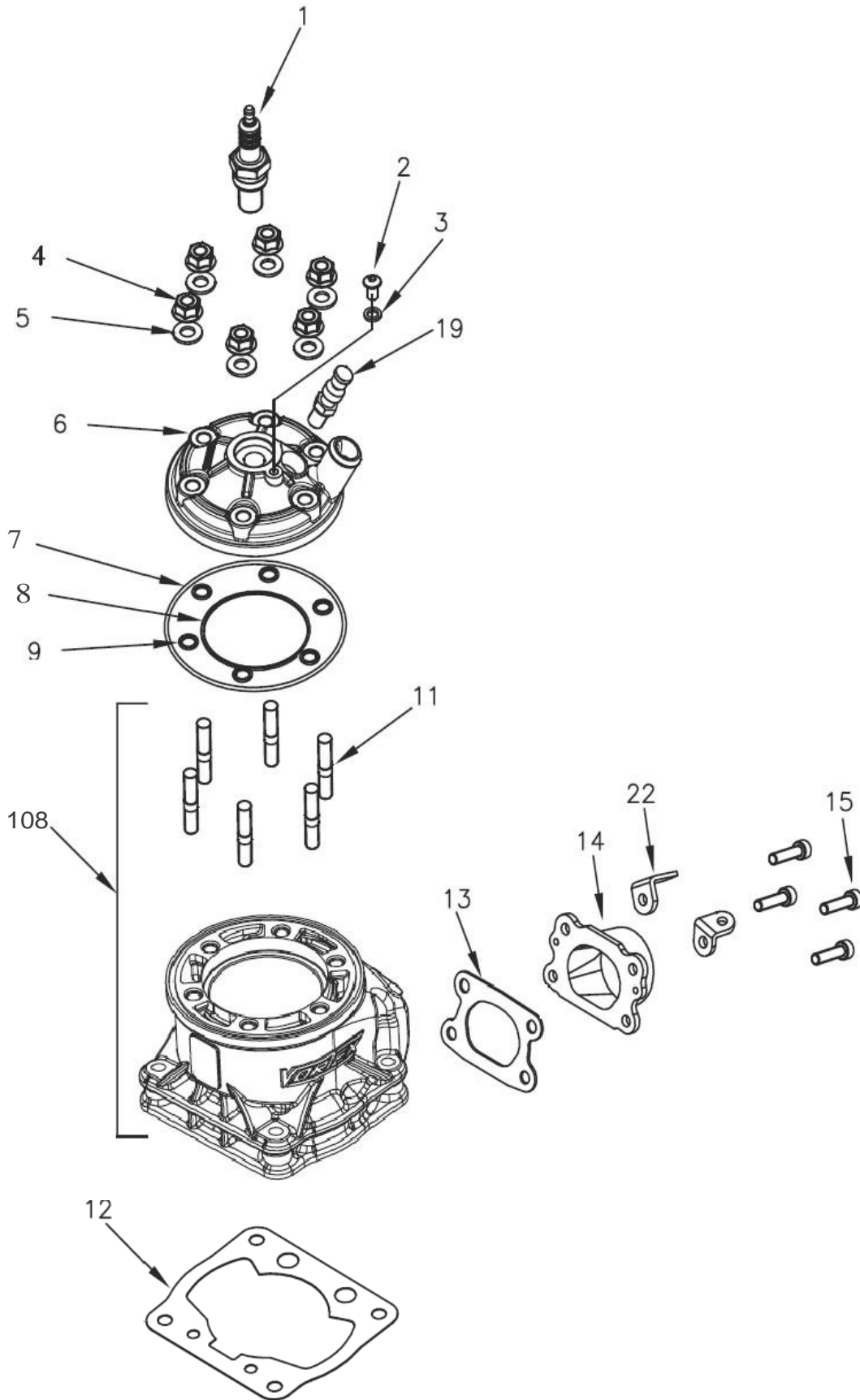
Insert the piston ring in the piston carefully. Check both ends of the piston ring when totally closed have a gap of 0,30/0,35 mm.

Now you are ready to assemble cylinder and cylinder head as per 4.6.6



Engine needs a brake-in session when a new piston has been placed.

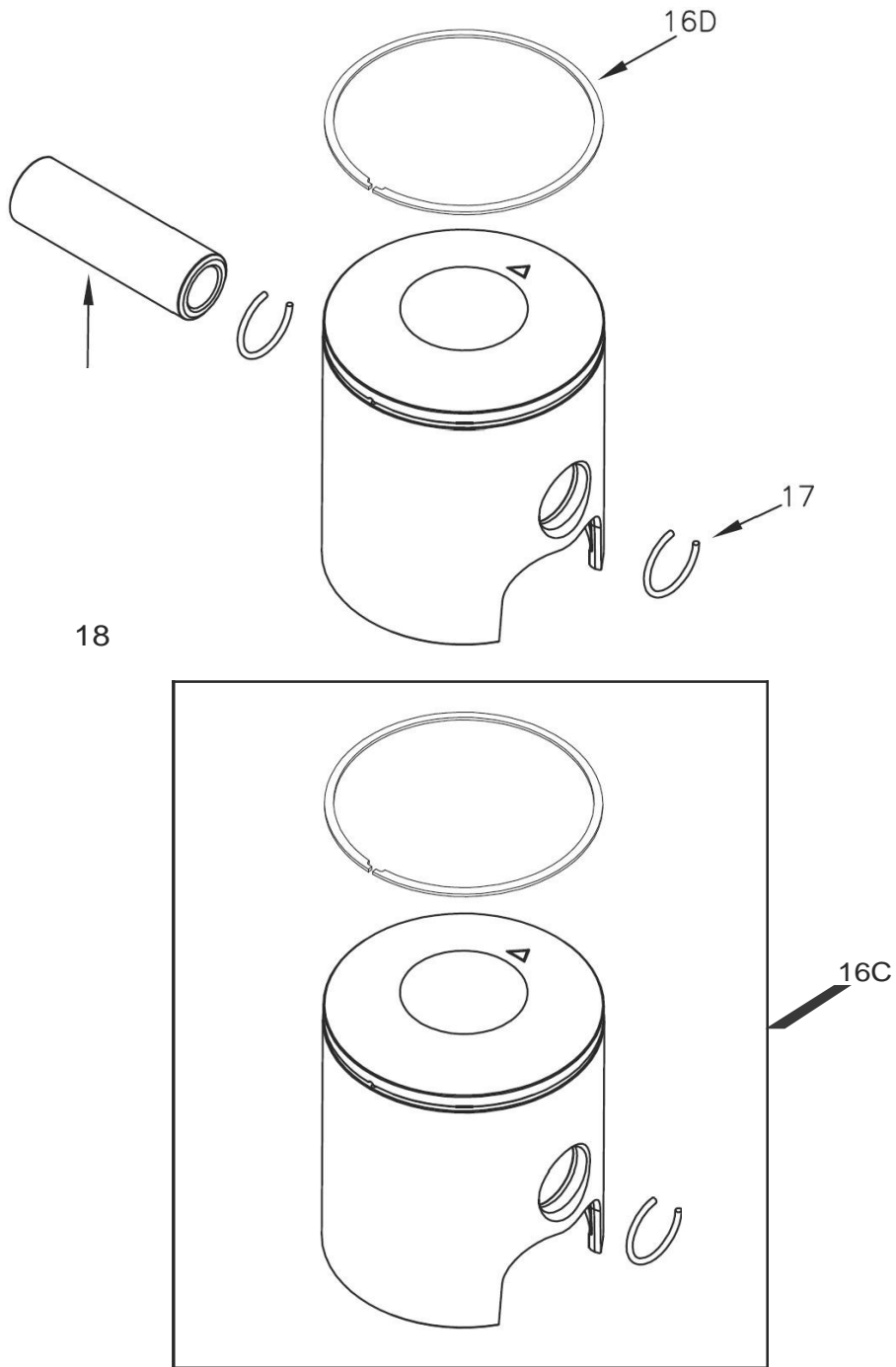
DVS-Junior



PARTS

1	W003	Candela NGK b10 eg	Spark plug NGK b10 eg	1
2	W511/10	Vite TBCE M6x10	Roundhead screw M6x10	10
3	W10662	Guarnizione rame 6x10x1,5	Copper gasket 6x10x1,5	10
4	W530/10FL	Dado M8 chiave 10 flangiato	Nut M8x10	10
5	W560/17	Rondella 8,4x17x1,6 ZNB	Washer 8,4x17x1,6 ZNB	10
6	W10010/DVSJ	Testa motore DVS JUNIOR	Engine head DVS JUNIOR	1
--	W630/005KF	Guarnizione testa ottone crudo 0,05	Brass head gasket 0,05	1
--	W630/10KF	Guarnizione testa ottone crudo 0,10	Brass head gasket 0,10	1
--	W630/20KF	Guarnizione testa ottone crudo 0,20	Brass head gasket 0,20	1
--	W630/30KF	Guarnizione testa ottone crudo 0,30	Brass head gasket 0,30	1
7	W629	O-ring 3400 testa/cilindro NBR	O-ring cylinder/head 3400 NBR	1
8	W620	O-ring testa 2237 viton	O-ring head 2237 viton	1
9	W627	O-ring prigionieri 2031	O-ring stud bolt 2031	10
10B	W10021/KF3C	Cilindro motore DVS J con prigionieri	Complete cylinder DVS J with studbolt	1
11	W10043/RVZ	Prigionieri testa/cilindro M8x56	Cylinder head studbolt M8x56	1
12	W10104/KF1	Guarnizione base cilindro spessore 0.1	Cylinder basis gasket 0,1	1
12	W10104/KF2	Guarnizione base cilindro spessore 0.2	Cylinder basis gasket 0,2	1
12	W10104/KF3	Guarnizione base cilindro spessore 0.3	Cylinder basis gasket 0,3	1
12	W10104/KF4	Guarnizione base cilindro spessore 0.4	Cylinder basis gasket 0,4	1
12	W10104/KF5	Guarnizione base cilindro spessore 0.5	Cylinder basis gasket 0,5	1
13	W670/RKF	Guarnizione scarico	Exhaust gasket engine	1
14	W10930/DDJ	Collettore scarico	Exhaust manifold	1
15	W510/14	Vite brugola M6x14 8.8	Socket-head screw M6x14 8,8	10
19	W10012/DVS	Valvola decompressione	Decompression valve	1
22	W10928/DDS	Orecchietta attacco molla collettore di scarico	Ear connector for the spring exhaust manifold	1

PARTS

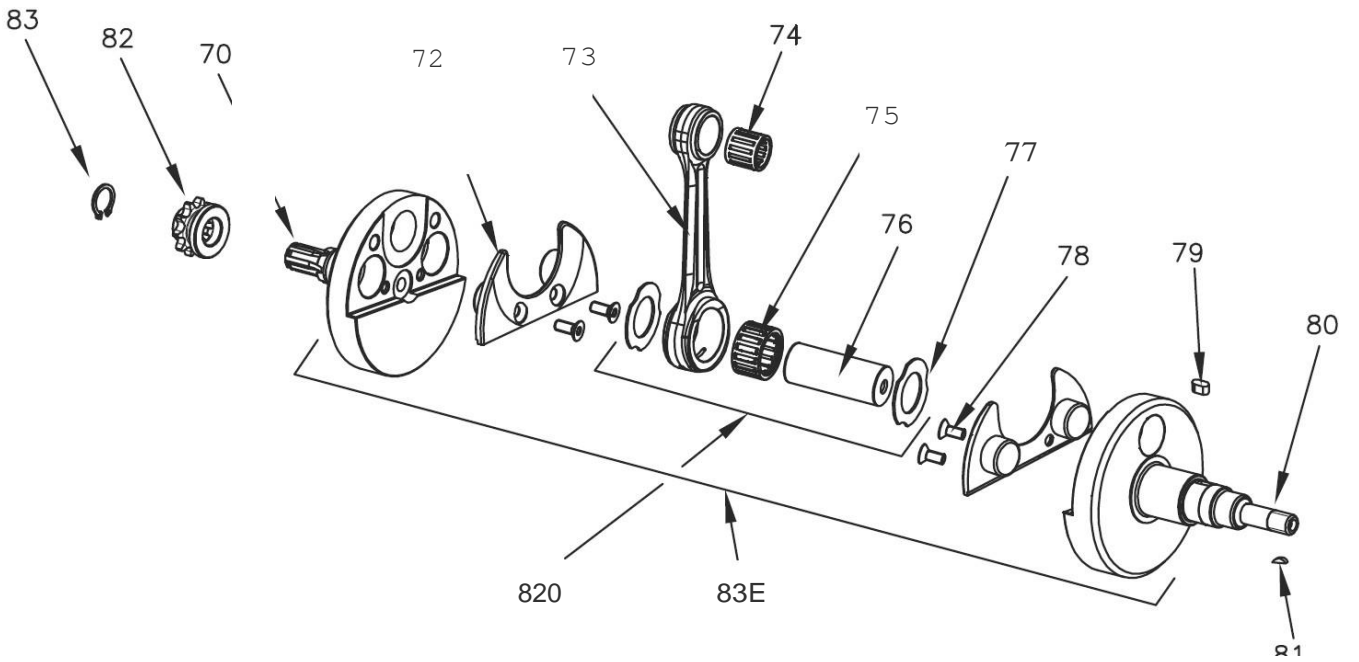
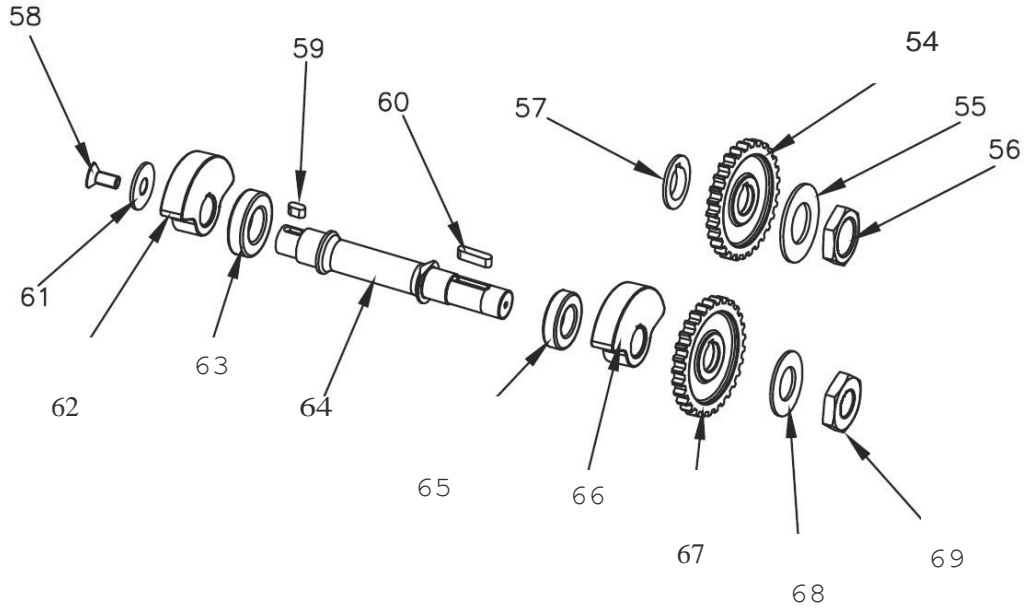


160		
SEGMENTO	DALLA SELEZIONE	ALLA SELEZIONE
PISTON RING	FROM SEIECTION	TO SELECTION
SA 10	54.00	
SA 12	54.01	54.02
SA 15	54.03	54.07
SA 20	54.08	54.11
SA 25	54.12	54.15

PARTS

16C	W10140/RKF	Pistone completo A.P. RKF 54.00	Complete piston A.P. RKF 54.00	1
16C	W10141/RKF	Pistone completo A.P. RKF 54.01	Complete piston A.P. RKF 54.01	1
16C	W10142/RKF	Pistone completo A.P. RKF 54.02	Complete piston A.P. RKF 54.02	1
16C	W10143/RKF	Pistone completo A.P. RKF 54.03	Complete piston A.P. RKF 54.03	1
16C	W10144/RKF	Pistone completo A.P. RKF 54.04	Complete piston A.P. RKF 54.04	1
16C	W10145/RKF	Pistone completo A.P. RKF 54.05	Complete piston A.P. RKF 54.05	1
16C	W10146/RKF	Pistone completo A.P. RKF 54.06	Complete piston A.P. RKF 54.06	1
16C	W10147/RKF	Pistone completo A.P. RKF 54.07	Complete piston A.P. RKF 54.07	1
16C	W10148/RKF	Pistone completo A.P. RKF 54.08	Complete piston A.P. RKF 54.08	1
16C	W10149/RKF	Pistone completo A.P. RKF 54.09	Complete piston A.P. RKF 54.09	1
16C	W10150/RKF	Pistone completo A.P. RKF 54.10	Complete piston A.P. RKF 54.10	1
16C	W10151/RKF	Pistone completo A.P. RKF 54.11	Complete piston A.P. RKF 54.11	1
16C	W10152/RKF	Pistone completo A.P. RKF 54.12	Complete piston A.P. RKF 54.12	1
16C	W10153/RKF	Pistone completo A.P. RKF 54.13	Complete piston A.P. RKF 54.13	1
16C	W10154/RKF	Pistone completo A.P. RKF 54.14	Complete piston A.P. RKF 54.14	1
16C	W10155/RKF	Pistone completo A.P. RKF 54.15	Complete piston A.P. RKF 54.15	1
16C	W10140/RKFVP	Pistone completo V.P. RKF 54.00	Complete piston V.P. RKF 54.00	1
16C	W10141/RKFVP	Pistone completo V.P. RKF 54.01	Complete piston V.P. RKF 54.01	1
16C	W10142/RKFVP	Pistone completo V.P. RKF 54.02	Complete piston V.P. RKF 54.02	1
16C	W10143/RKFVP	Pistone completo V.P. RKF 54.03	Complete piston V.P. RKF 54.03	1
16C	W10144/RKFVP	Pistone completo V.P. RKF 54.04	Complete piston V.P. RKF 54.04	1
16C	W10145/RKFVP	Pistone completo V.P. RKF 54.05	Complete piston V.P. RKF 54.05	1
16C	W10146/RKFVP	Pistone completo V.P. RKF 54.06	Complete piston V.P. RKF 54.06	1
16C	W10147/RKFVP	Pistone completo V.P. RKF 54.07	Complete piston V.P. RKF 54.07	1
16C	W10148/RKFVP	Pistone completo V.P. RKF 54.08	Complete piston V.P. RKF 54.08	1
16C	W10149/RKFVP	Pistone completo V.P. RKF 54.09	Complete piston V.P. RKF 54.09	1
16C	W10150/RKFVP	Pistone completo V.P. RKF 54.10	Complete piston V.P. RKF 54.10	1
16C	W10151/RKFVP	Pistone completo V.P. RKF 54.11	Complete piston V.P. RKF 54.11	1
16C	W10152/RKFVP	Pistone completo V.P. RKF 54.12	Complete piston V.P. RKF 54.12	1
16C	W10153/RKFVP	Pistone completo V.P. RKF 54.13	Complete piston V.P. RKF 54.13	1
16C	W10154/RKFVP	Pistone completo V.P. RKF 54.14	Complete piston V.P. RKF 54.14	1
16C	W10155/RKFVP	Pistone completo V.P. RKF 54.15	Complete piston V.P. RKF 54.15	1
16D	W260/SA10	Fascia elastica 54,10x1,5	Piston ring 54,10x1,5	1
16D	W260/SA15	Fascia elastica 54,15x1,5	Piston ring 54,15x1,5	1
16D	W260/SA20	Fascia elastica 54,20x1,5	Piston ring 54,20x1,5	1
16D	W260/SA25	Fascia elastica 54,25x1,5	Piston ring 54,15x1,5	1
17	W10081	Anellino fermo spinotto d.15	Piston circlip d.15	10
18	W10082	Spinotto pistone d.15	Piston pin d.15	1

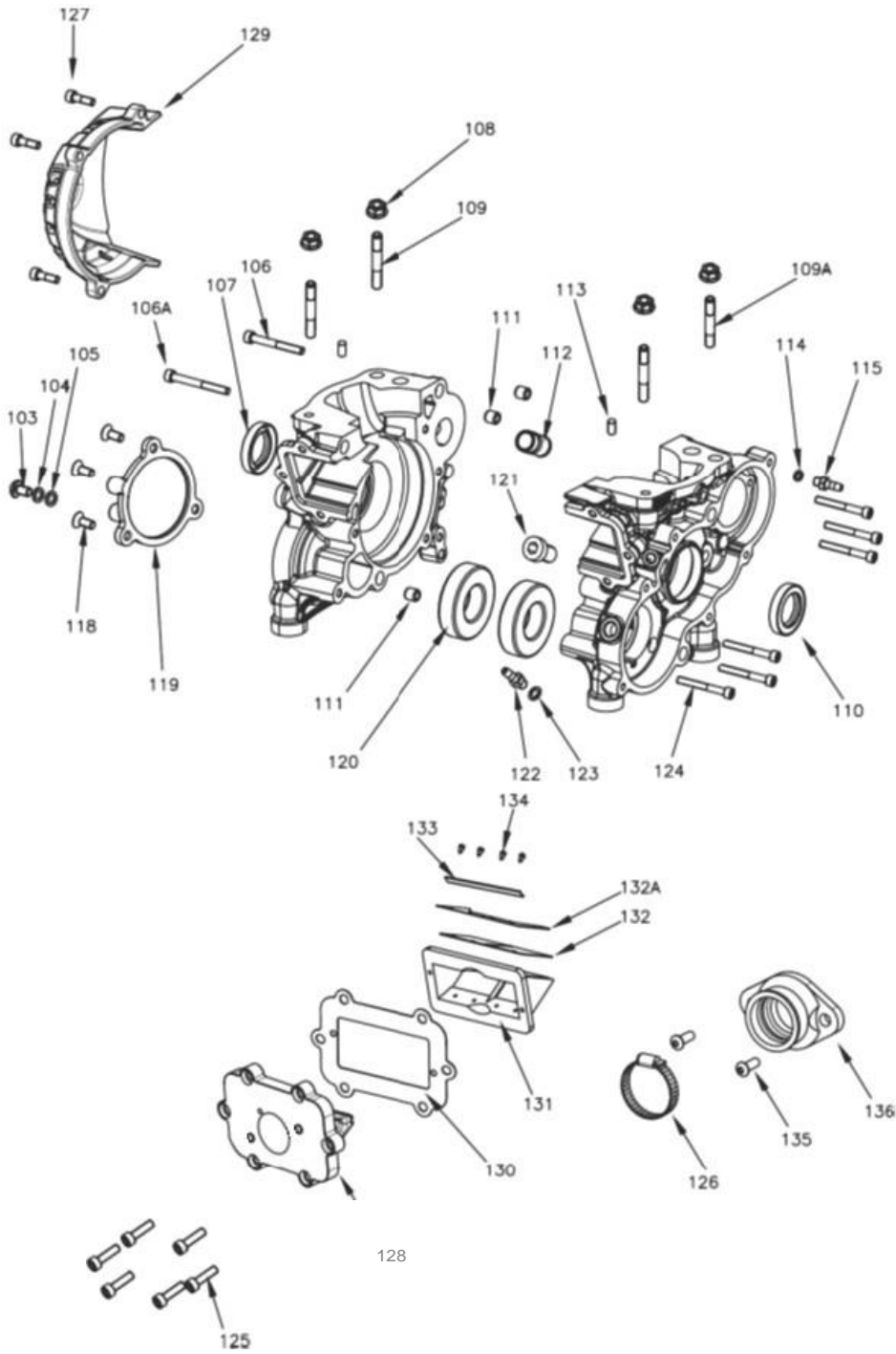
PARTS



PARTS

54	W2004/KF	Ingranaggio contralbero su albero	Balancer shaft gear on shaft	1
55	W1767/1ROK	Molla a tazza 20,4x32,5x1,5	Belleville washer 20,4x32,5x1,5	1
56	W1765/KF	Dado M20x1 SP.5	Nut M20x1 TH.5	1
57	W2000/DVS	Distanziale pompa acqua DVS	Water pump spacer DVS	1
58	W502/16T	Vite TSCE M8x16 tornita	Flathed screw M8x16 turned	1
59	W124	Chiavetta 4x4x10	Key 4x4x10	1
60	W126	Chiavetta 4x4x20	Key 4x4x20	1
61	W2016/KF	Ralla massetta contralbero	Counterweight washer balancer shaft	1
62	W2014/KF	Massetta lato trasmissione contralbero	Counterweight drive side balancer shaft	1
63	W302/KF	Cuscinetto a rulli nu203 ECPC3	Insert nu203 ECPC3	1
64	W2012/KF	Albero contralbero	Shaft balancer shaft	1
65	W301/ROK	Cuscinetto 6302 tn9 c4	Insert 6302 tn9 c4	1
66	W2013/KF	Massetta contralbero lato accensione	Counterweight balancer shaft ignition side	1
67	W2003/KF	Ingranaggio contralbero su contralbero	Balancer shaft gear on balancer shaft	1
68	W1764/KF	Ralla a tazza 14,3x23,7x0,4	Washer 14,3x23,7x0,4	10
69	W1768/KF	Dado contralbero M14x1 filetto sx	Balancer shaft nut M14x1 left	1
70	W150/DVS	Semialbero lato trazione DDS/DDJ/DVS	Drive side half crankshaft DDS/DDJ/DVS	1
72	W160/KF	Guancetta nylon	Nylon crankshaft stuffer	1
73	W230/RKF	Biella nuda DVS/DVSI/DDJ	Bare conrod DVS/DVSI/DDJ	1
74	W10085	Gabbia piede biella 15x19x20 B2	Small end needle cage 15x19x20 B2	1
74	W10085/B4	Gabbia piede biella 15x19x20 B4	Small end needle cage 15x19x20 B4	1
75	W10320	Gabbia argentata iko 20x26x15 B2	Silver plated cage iko 20x26x15 B2	1
75	W10320/B4	Gabbia argentata iko 20x26x15 B4	Silver plated cage iko 20x26x15 B4	1
75	W10320/B6	Gabbia argentata iko 20x26x15 B6	Silver - plated cage iko 20x2x15 B6	1
76	W200/KF	Asse accoppiamento albero	Crankshaft crankpin	1
77	W10310/KF	Ralla argentata d.20.1 a stella	Silver-plated shim d.20,1	1
78	W522/12	Vite TSCE M5x12	Flathead screw M5x12	10
79	W124	Chiavetta 4x4x10	Key 4x4x10	1
80	W140/KF	Semialbero lato accensione DDS/DDJ/DVS PVL	Magneto side half crankshaft DDS/DDJ/DVS PVL	1
81	W122	Chiavetta lato accensione 2,5x3,7x10	Key 2,5x3,7x10	1
82	W690/3VLR	Pignone z-10	Sprocket z-10	1
82	W690/3VLR11	Pignone z-11	Sprocket z-11	1
82	W690/3VLR12	Pignone z-12	Sprocket z-12	1
82	W690/3VLR13	Pignone z-13	Sprocket z-13	1
83	W693/VLR	Seeger pignone	Sprocket circlip	10
82D	W190/RKF	Biella completa DDJ/DVS	Complete conrod DDJ/DVS	1
83E	W130/DDJ	Albero motore completo DDJ/DVS PVL	Complete crankshaft DDJ/DVS PVL	1

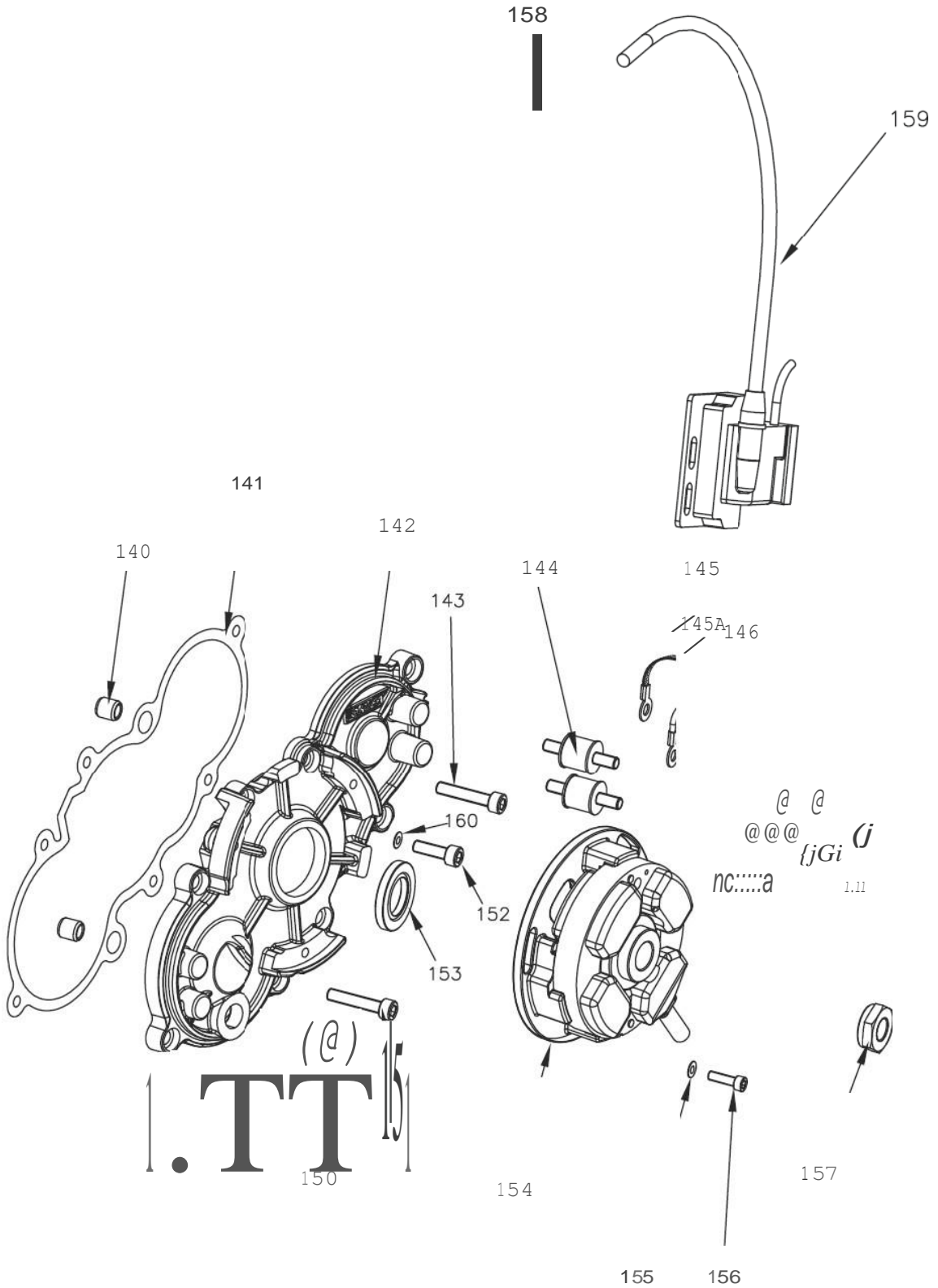
PARTS



PARTS

103	W511/10	Vite TBCE M6x10	Roundhead screw M6x10	10
104	W570/12	Rondella piana 6x12x1.5 ZNB	Flat washer 6x12x1.5 ZNB	10
105	W10662	Guarnizione rame 6x10x1,5	Copper gasket 6x10x1,5	10
106	V.TCE6X40	Vite brugola M6x40	Socket-head screw M6x40	10
106A	V.TCE6X45	Vite brugola M6x45	Socket-head screw M6x45	10
107	W310	Paraolio FPJ 20x35x7 doppio labbro	Oilseal FPJ 20x35x7 double lips	1
108	W530/10FL	Dado m8 chiave 10 flangiato	Nut m8x10	10
109	W10042/1	Prigioniero base cilindro M8x55	Cylinder studbolt M8x55	1
109A	W10042/KF	Prigioniero base cilindro M8x49	Cylinder studbolt M8x49	1
110	W10552	Paraolio pignone 25x40x7	Sprocket seal 25x40x7	1
111	W075/1	Bussola carter 10x10,5x6,5	Crankcase dowel 10x10,5x6,5	1
112	W015	Raccordo acqua testa/cilindro	Water head pipe fitting	1
113	W1766/1ROK	Spina cilindrica 6x12	Cylindrical pin 6x12	1
114	W10662	Guarnizione rame 6x10x1,5	Copper gasket 6x10x1,5	10
115	W800/ROK	Raccordo presa depressione	Depression pipe fitting	1
118	W512/14	Vite TSCE M5x14	Flathead screw M5x14	10
119	W2017/DDS	Coperchio contralbero DDS/DDJ	DDS/DDJ Balancer shaft cover	1
120	W300/A4	Cuscinetto banco 6205 c4	Insert crankcase 6205 c4	1
121	W10252	Tappo olio TCEM1M12x1.5 completo	Complete oil plug TCEM1M12x1,5	1
122	W800	Raccordo depressione M8 esagonale	Depression pipe fitting M8 hexagonal	1
123	W10267	Guarnizione rame 8x12x1	Copper gasket 8x12x1	10
124	V.TCE6X50	Vite brugola M6x50	Socket-head screw M6x50	10
125	V.TCE6X16	Vite brugola M6x16	Socket-head screw M6x16	10
126	W10277	Fascetta carburatore	Carburettor clamp	1
127	V.TCE6X20	Vite brugola M6x20	Socket-head screw M6x20	10
127	W510/14	Vite brugola M6x14 8.8	Socket-head screw M6x14 8,8	10
128	W350/ACADEMY	Convogliatore pacco lamellare DDJ academy	Reed valve pyramid conveyor academy	1
129	W740/MR	Coperchio carter frizione	Clutch guard cover	1
130	W351/RKF	Guarnizione convogliatore pacco lamellare	Conveyor reed valve pyramid gasket	1
131	W362/DVS	Pacco lamellare DDS/DDJ/DVS con balestrini	Reed pyram. DDS/DDJ/DVS with stiffener	1
132	W393/1KF30	Petalo carbonio spessore 0,30	Carbon petal thickness 0,30	1
132A	W399/KF	Balestrino carbonio 9/12	Carbon Flow deviat.9/12	1
133	W389	Piastrina lunga pacco maggiorato	Enlarged pyramid long plate	1
134	W380	Viti fissaggio lamelle M3x5	Reeds fixing screws M3x5	10
135	W501/18	Vite TBCE M8x18 10.9	Roundhead screw M8x18 10.9	10
136	W2050/DDJ24	Collettore carburatore 24mm	Inlet manifold 24mm	12

PARTS

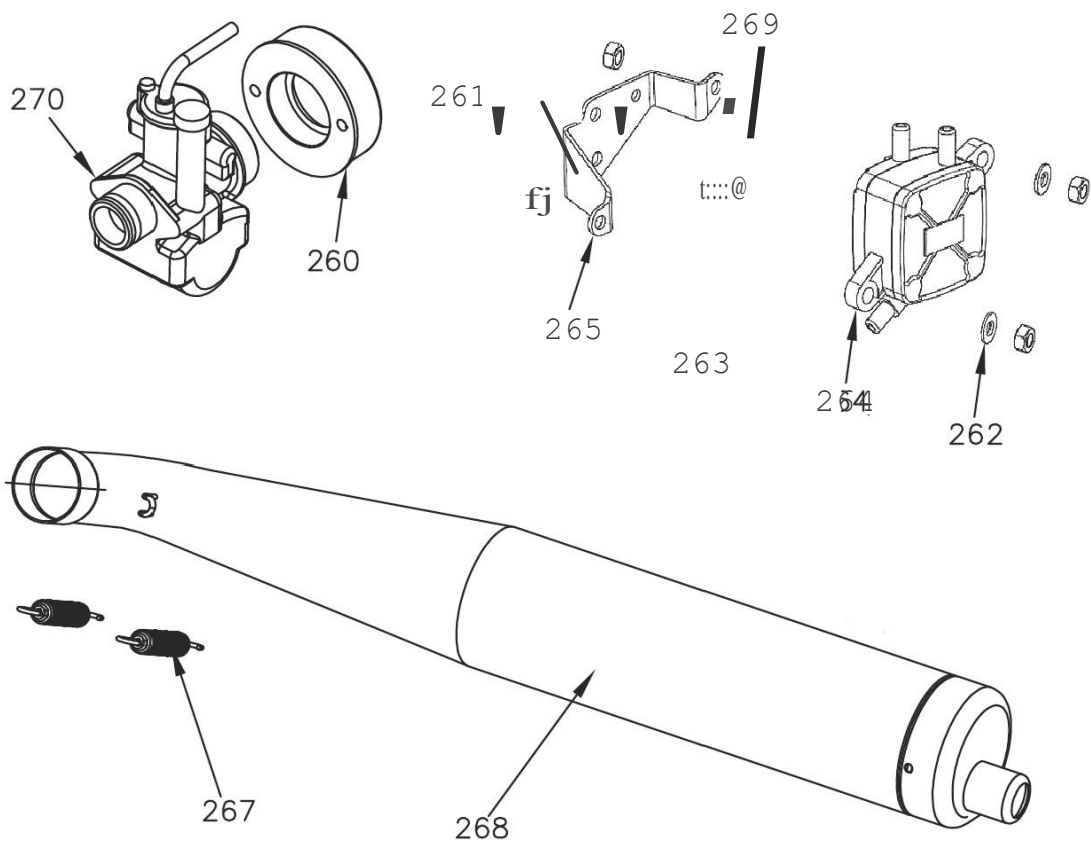




PARTS

140	W075/1	Bussola carter 10x10,5x6,5	Crankcase dowel 10x10,5x6,5	1
141	W066/KF	Guarnizione coperchio ingranaggi	Gears cover gasket	1
142	W065/DDSP	Coperchio ingranaggi completo PVL	Gear cover PVL complete	1
143	V.TCE6X25	Vite brugola M6x25	Socket-head screw M6x25	10
144	W440	Silent-block fissaggio bobina	Coil fixing silent-block	1
145	W430/1	Cavetto massa in treccia	Ground stranded cable	1
145A	W430	Cavetto massa	Ground cable	1
146	R.P.6X18	Rondella piana 6x18x1	Flat washer 6x18x1	10
147	R.P.6X12	Rondella piana 6.3x12,5x1	Plain washer 6.3x12,5x1	10
148	W531/06	Dado esagonale M6x1	Hexagonal nut M6x1	10
149	V.TCE6X20	Vite brugola M6x20	Socket-head screw M6x20	10
150	W2036/ROK	Livello olio TLA2- M16x1,5	Oil level TLA2 M16x1,5	1
151	V.TCE6X25	Vite brugola M6x25	Socket-head screw M6x25	10
152	W524/14	Vite brugola ribassata M5x14	Socket-head screw M5x14	10
153	W320/1	Paraolio FPJ 17x28x7 doppio labbro	Oil seal FPJ 17x28x7 double lip	1
154	W7002203000100	Accensione completa	Bare Ignition	1
155	W580/11	Rondella piana 11,5x5,3x1	Flat washer 11,5x5,3x1	10
156	V.TCE5X18	Vite brugola M5x18	Socket-head screw M5x18	10
157	W695/1ROK	Dado accensione M12x1 ZNB	Ignition nut M12x1 ZNB	1
158	W420/2	Pipetta candela per accensione digitale	Spark cap for digital ignition	1
159	W7002244000200	Bobina accensione DVS JUNIOR	Coil DVS JUNIOR	1

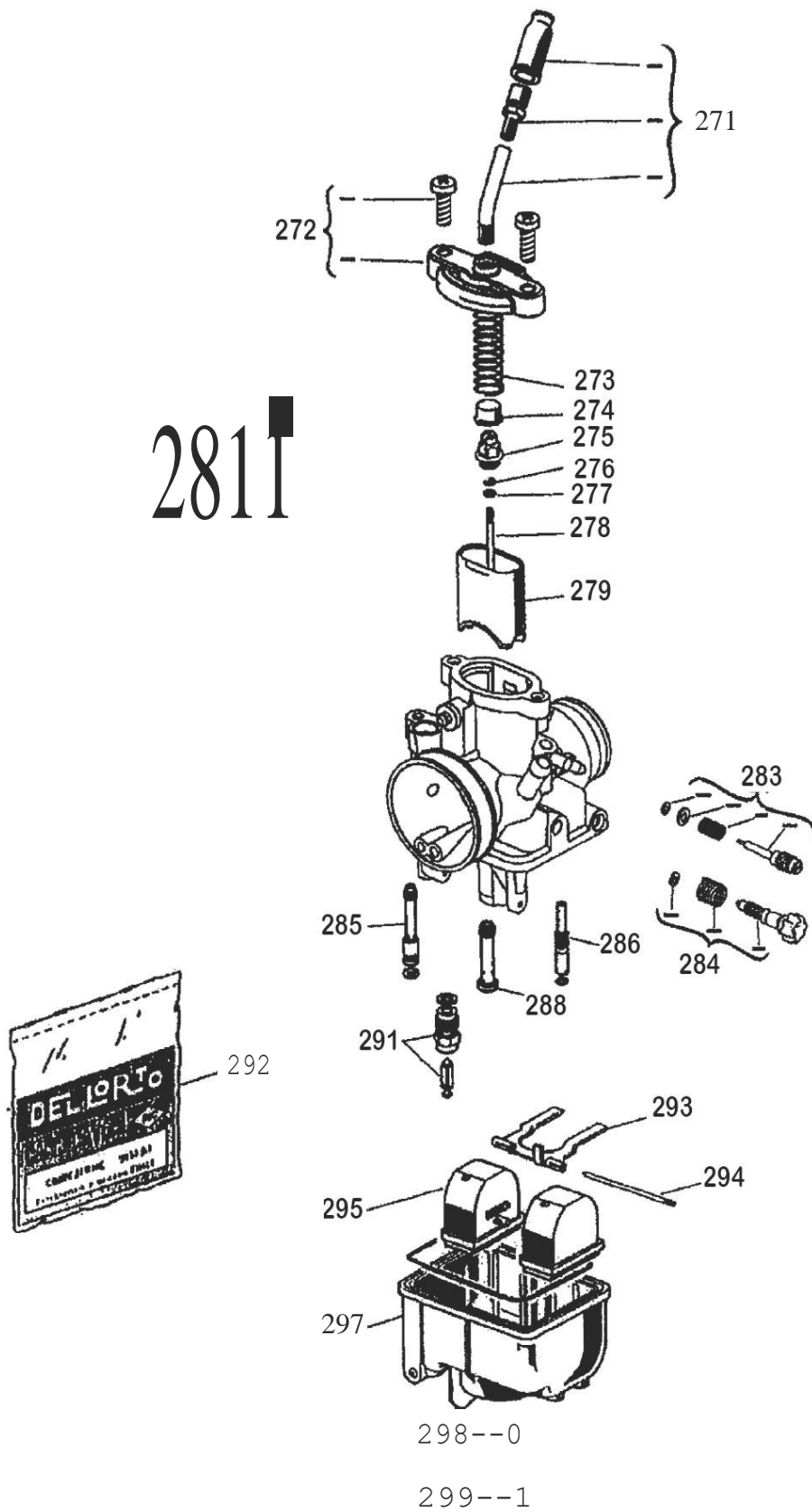
PARTS



PARTS

260	W849/ACADEMY	Flangia carburatore academy	Academy carburettor flange	1
261	W531/06	Dado esagonale M6x1	Hexagonal nut M6x1	10
262	W570/12	Rondella piana 6x12x1.5 ZNB	Flat washer 6x12x1.5 ZNB	10
263	W440	Silent-block fissaggio bobina	Coil fixing silent-block	1
264	W11023	Pompa depressione Dell'orto	Vacuum pump Dell'orto	1
265	W10052/RVX	Supporto pompa benzina	Vacuum support pump	1
267	W10925/DDS	Molla scarico DDJ	Muffler spring DDJ	1
268	W10901/DDJ	Marmitta DDJ	Muffler DDJ	1
270	W10810/ACADEMY	Carburatore Dell'orto WHST 24 BS	Dell'orto carburettor WHST 24 BS	1

PARTS



PARTS

270	W10810/ACADEMY	Carburatore Dell'orto WHST 24 BS	Dell'orto carburettor WHST 24 BS	1
271	W702280000900	Kit tubetto	Tube kit	1
272	W7022800001000	Kit coperchio camera miscela	Chamber mixture cover kit	1
273	W7022800001100	Molla richiamo valvola gas	Gas valve spring	1
274	W14416	Fondello guida molla	Spring bottom	1
275	W16663-04	Nipplo valvola gas	Nipple gas valve	1
276	W9596211	Fermaglio spillo	Needle fastener	1
277	W10825231	Rondella piana	Flat washer	1
278	W70228000020A	Spillo conico	Conical needle	1
279	W702280000010A	Valvola gas	Gas valve	1
280	W7022800001200	Vite fissaggio dispositivo avviamento	Starting device fixing screw	1
281	W7022800001300	Dispositivo avviamento	Starting device	1
283	W7022800001400	Kit vite regolazione miscela minimo	Adjustment minimum screw kit	1
284	W7022800001500	Kit vite regolazione valvola gas	Adjustment gas valve screw kit	1
285	W702280000070A	Getto avviamento	Starting jet	1
286	W702280002100A	Getto emulsionatore minimo	Diffuser jet jet min.	1
288	W702280000030A	Polverizzatore	Spray nozzle	1
291	W702280000040A	Valvola a spillo	Needle valve	1
292	W7022800001600	Busta guarnizioni carburatore	Carburettor gaskets kit	1
293	W7022800001700	Bilanciere galleggiante	Float balancer	1
294	W7022800001800	Perno galleggiante	Float peg	1
295	W1576003	Galleggiante gr. 4	Float gr.4	1
297	W7028000001900	Vaschetta	Float chamber	1
298	W6413110	Getto massimo	Jet max.	1
300	W7022800002000	Tappo vaschetta	Float chamber plug	1