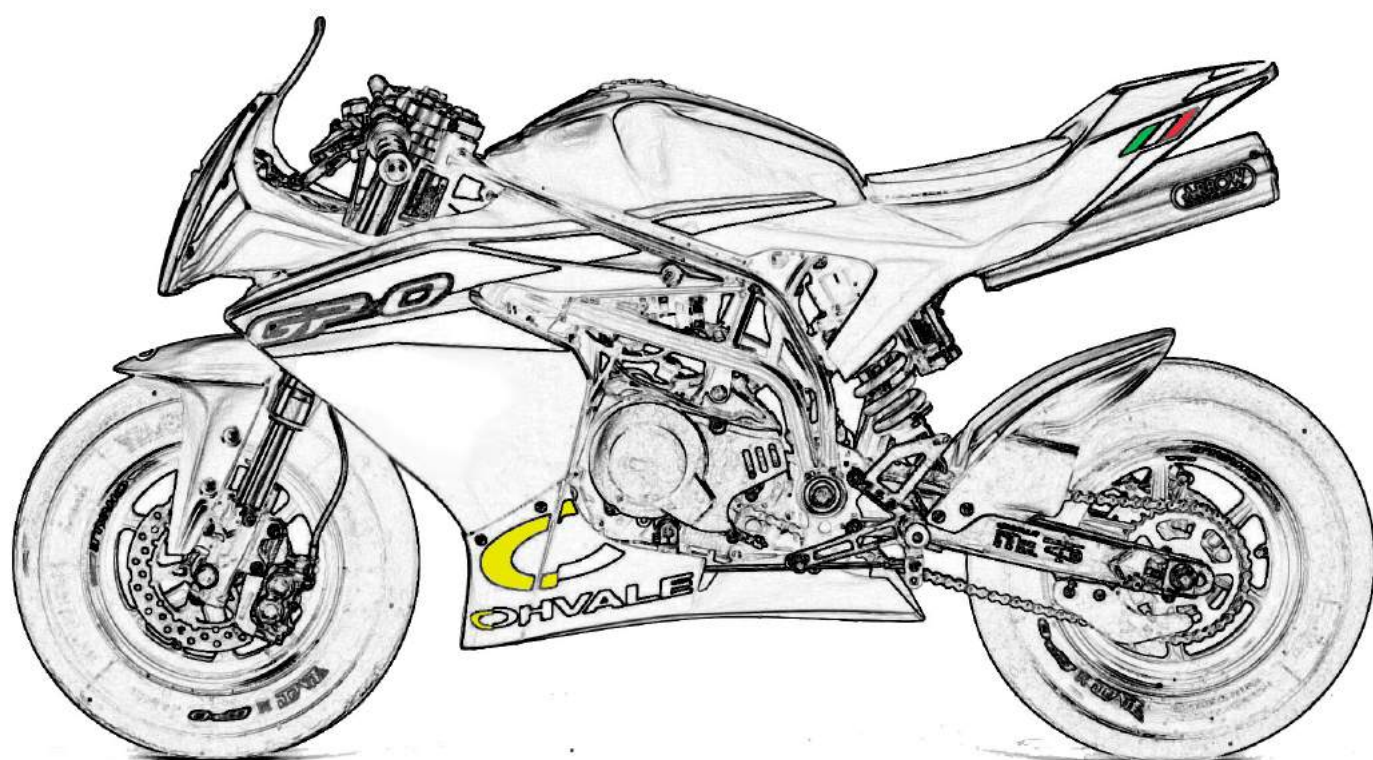




# **GETTING STARTED**

## ***Use and maintenance***



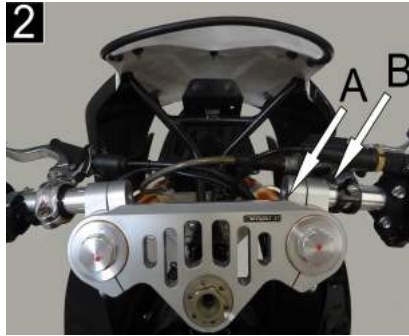
# **OHVALE**

Latest update 27/04/2017

## 1. HALF HANDLEBARS

Fixing half handlebars:

- place half handlebar close to fork upper plate ( pic. 1 )
- match the inner edge of the cuff with the edge of the top plate, (arrow A pic. 2)
- aligning the marks on the cuff and on the handlebar (arrow B, pic.2)
- tighten the fixing screw ( tightening max torque 22 Nm / 16,22 ft lb )
- Repeat in a symmetrical manner.



## 2. CHOKE - STARTING THE ENGINE

### 2.1 CHOKE - SHIFT MODELS



**110 4S**



**160 4S**



**190 Daytona**

Choke is fitted on the left side of the carburetor.

To start the engine :

- Activate the choke function. ( Only if the engine is cold )
- Shift gear to neutral.
- Push the kick starter lever until the TDC \* piston position
- Keep the lever pressed barely after the TDC \* piston position
- Press the kick starter robustly through its full range.
- Deactivate the choke function when the engine is warm

( \* Top Dead Centre )

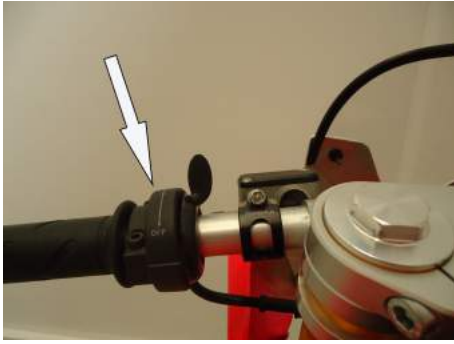
**i** **Info** If the engine is cold, the choke function must be deactivated

**Be careful to the return of the kick starter lever. If the lever doesn't return in basic position automatically , turn off the engine.**

**NOTE** *If the engine doesn't start after 10 attempts, wait few minutes before try again with choke function deactivated.*

## 2.2 CHOKE (110 A MODEL)

Choke is fitted on the left side of the handlebar.



To start the engine :

- Raise the motorcycle with rear stand
- Activate choke lever and keep it in position.
- Engine kill button must be in ON position.
- Activate rear brake firmly.
- Push the electric starter button.
- Deactivate the choke function when the engine is ON

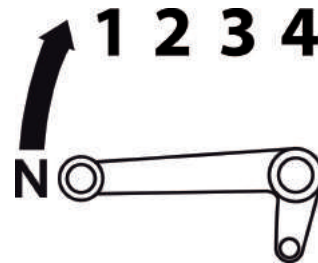
**i Info** If the engine is warm, the choke function must be deactivated.

**NOTE** *If the engine doesn't start after 5 seconds, release the electric starter button and wait at least 10 seconds before trying again.*

## 3. SHIFT LEVER



The shift lever is fitted on the left side of the engine.

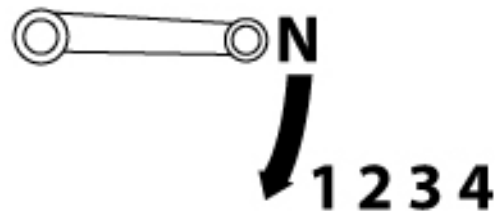


The gear position can be seen in the photograph. The neutral (N) position is between the first and second gear.

## REVERSE SHIFT LEVER



The shift lever is fitted on the left side of the engine.



The gear position can be seen in the photograph. The neutral (N) position is over the first gear

## 4. RUNNING-IN PHASE

During the first 3 / 5 operating hours, follow our instructions.

- Start the engine and let it run idle for a while before use the motorcycle.
- Avoid fully opening the throttle.
- Avoid strong braking.
- Do not exceed the specified engine speed and engine performance:

During the first 3 operating hours	< 70%
During the first 5 operating hours	<100%

**NOTE** *Avoid rev limiter and take advantage of engine torque.*

## 5. ENGINE OIL

Only use engine oil **LIQUI MOLY RACING SYNTH 4T 10W40**.

### 5.1 OIL QUANTITY (with engine completely empty )

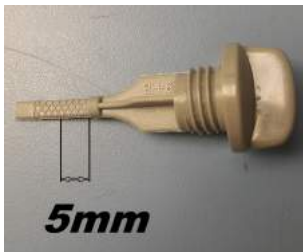
MODEL	QUANTITY ( total )
110 A	1100 cc
110 4S	850 cc
160 4S	1100 cc
190 DAYTONA	1000 cc

### 5.2 CHECKING ENGINE OIL LEVEL



#### 110 A model

- Start the engine and let it run idle for 3/5 min, then turn it off
- Place the motorcycle on a flat surface ( without stand )
- Remove the filler cap placed on the right side of the engine, clean level rod and insert it in again without screwing it
- Remove level rod and check the level ( the oil should be nearly the max marker )
- Screw the cap until is firmly closed
- If necessary add oil until you reach max marker



#### 110 4S and 160 4S models

- Start the engine and let it run idle for 3/5 min, then turn it off
- Place the motorcycle on a flat surface ( without stand )
- Remove the filler cap placed on the right side of the engine, clean level rod and insert it in again screwing it until is firmly closed
- Remove level rod and check the level ( the oil should be at 5 mm [ 0.20 in ] from max marker ) ( pic. )
- Screw the cap until is firmly closed.
- If necessary add oil.



#### 190 Daytona model

- Start the engine and let it run idle for 3/5 min, then turn it off
- Place the motorcycle on a flat surface ( without stand )
- The oil level must be barely at the top of porthole
- To restore the correct oil level, open filler cap placed on the right side of the engine and add the necessary quantity of oil.

### 5.3 VALVES FREE PLAY

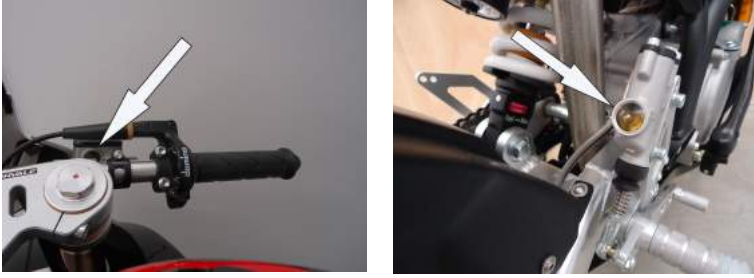
Valves free play for all the models must be between 0.08 and 0.10 mm

- Check valves free play when the engine is cold.



## 6. CHECKING BRAKE FLUID

Use only brake fluid LIQUI MOLY RACING BRAKE FLUID (DOT 4)



**i** Before riding the vehicle always check brake fluid level through the glass on brake master cylinder (look ARROWS in the pics).

**i** You have to change brake fluid every 2 years. Maintenance works must be performed only by authorized personnel .



**Avoid contact between brake fluid and painted parts. Avoid contact between brake fluid and tyres. Follow the instructions written on brake fluid bottle.**

## 7. TRANSMISSION

### 7.1 CHAIN LUBRICATION

Raise the motorcycle with rear stand, put the gear shift to neutral and with engine OFF, use the chain spray on the chain while turning the rear wheel with your hand in a fast and continuous way.

Lubricate the chain every 3 operating hours and use only **LIQUI MOLY RACING CHAIN SPRAY WHITE**.

### 7.2 CHECKING CHAIN TENSION

- Raise the motorcycle with rear stand, put the gear shift to neutral and with engine OFF.
- Check the free travel of the chain, in the middle between the pinion and the sprocket. Repeat this measurement at different chain position.

• TENSIONE CATENA A MOTOCICLO SCARICO  
CHAIN TENSION WITH NO LOAD



15 mm  
**110A e 160-4S**

CHAIN TENSION WITH NO LOAD



18mm  
**110-4S e 190 Daytona**

### 7.3 ADJUSTING CHAIN TENSION



Raise the motorcycle with rear stand, put the gear shift to neutral and with engine off.

- Loosen the rear wheel spindle and the screw register nut
- Adjust the chain tension by turning the adjusting screws left and right
- Turn adjusting screws on the left and right so that the markings on the left and right chain adjusters are in the same position relative to the reference marks. The rear wheel is correctly allineated.
- Tighten nuts of the adjusting screws
- Make sure that chain adjusters are fitted correctly on adjusting screws, then tighten the rear wheel spindle nut.

Nut, rear wheel spindle

M14 ( 60 Nm Max torque )

### 7.4 PINION / SPROCKET RATIO TABLE



RATIO		
17	23	1,35
16	23	1,44
17	25	1,47
15	23	1,53
16	25	1,56
17	27	1,59
14	23	1,64
17	28	1,65
15	25	1,67
16	27	1,69
17	29	1,71
16	28	1,75
17	30	1,76
13	23	1,77
14	25	1,79
15	27	1,80
16	29	1,81
17	31	1,82
15	28	1,87
16	30	1,88
17	32	1,88
13	25	1,92
14	27	1,93
15	29	1,93
16	31	1,94
17	33	1,94
14	28	2,00
15	30	2,00
16	32	2,00
17	34	2,00
17	35	2,06
16	33	2,06
15	31	2,07
14	29	2,07
13	27	2,08
17	36	2,12
16	34	2,13
15	32	2,13

RATIO		
14	30	2,14
13	28	2,15
17	37	2,18
16	35	2,19
15	33	2,20
14	31	2,21
13	29	2,23
17	38	2,24
16	36	2,25
15	34	2,27
14	32	2,29
17	39	2,29
13	30	2,31
16	37	2,31
15	35	2,33
14	33	2,36
16	38	2,38
13	31	2,38
15	36	2,40
14	34	2,43
16	39	2,44
13	32	2,46
15	37	2,47
14	35	2,50
15	38	2,53
13	33	2,54
14	36	2,57
15	39	2,60
13	34	2,62
14	37	2,64
13	35	2,69
14	38	2,71
13	36	2,77
14	39	2,79
13	37	2,85
13	38	2,92
13	39	3,00

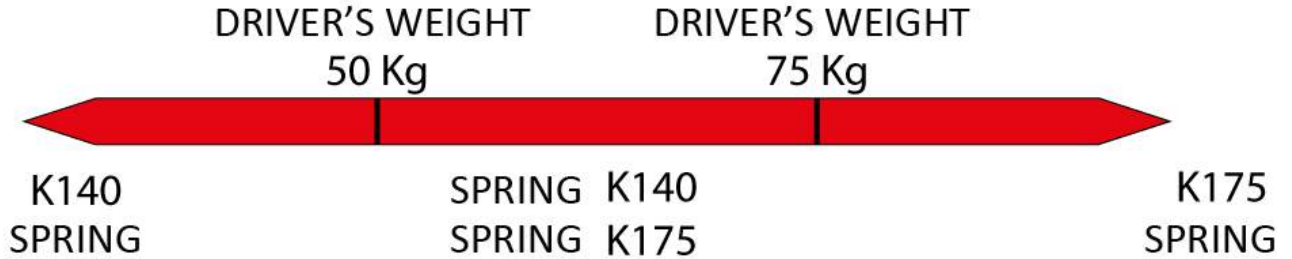
#### STOCK RATIO

110 4S	190 DAYTONA	110 A	160 4S

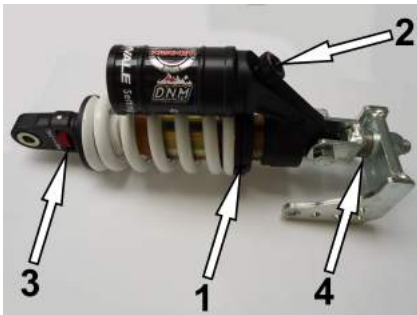
## 8. SUSPENSIONS

### 8.1 REAR SHOCK ABSORBER

The rear shock absorber is adjustable in length, spring pre-load ( K175 white color ), hydraulic in compression and extension. ( adjustable in length on the frame ).



Is available (as optional) a softer spring (K140 yellow color) recommended for drivers under 50Kg of weight.



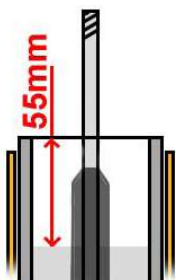
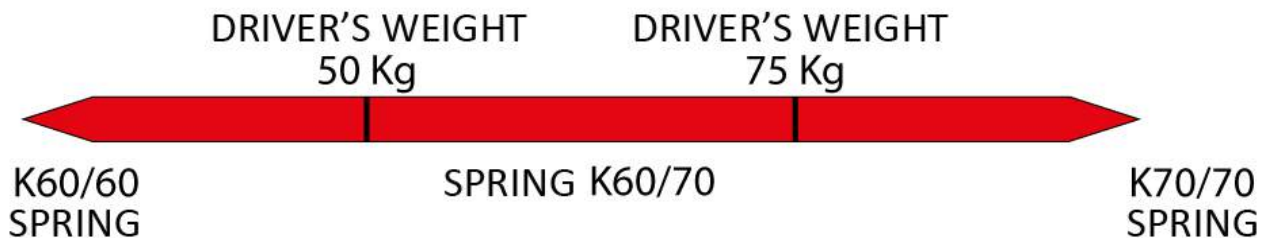
1 spring pre-load	K175: 125mm - K140: 128mm
2 Hydraulic in compression	open 6 click from closed
3 Hydraulic in extension	open 5 click from closed
4 Shock absorber length	standard 260mm

### 8.2 ADJUSTABLE SPRING PRE-LOAD KIT FOR FRONT FORK (OPTIONAL)



To adjust the spring pre-load , turn adjusting registers (clockwise to increase pre-load, counter-clockwise to decrease pre-load).  
Standard setting : 5 turns.

Is available (as optional) a softer spring (K60) recommended for drivers under 50Kg of weight. Stock spring is K70.



Before mounting new springs, you have to check fork oil level inside fork stems.  
Remove carefully the spring, then measure fork oil level (look the picture, oil level 55mm from fork stem).

If necessary add oil. **Is recommended to use only OHVALE fork oil (LIQUIMOLY FORK OIL HLP100).**

### 8.3 REAR SHOCK ABSORBER OHLINS (OPTIONAL)

The rear shock absorber is adjustable in length, spring pre-load , hydraulic in compression and extension. ( adjustable in length on the frame ).

DRIVER'S WEIGHT  
50 Kg

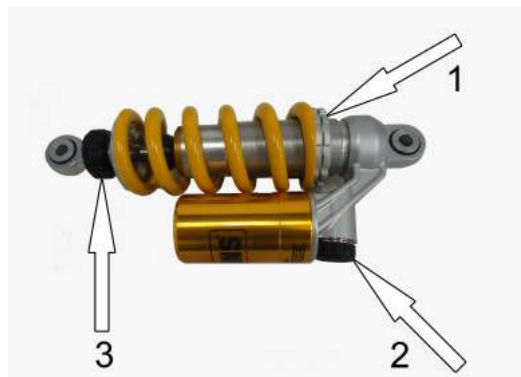
DRIVER'S WEIGHT  
75 Kg



K140  
SPRING

SPRING K140  
SPRING K160

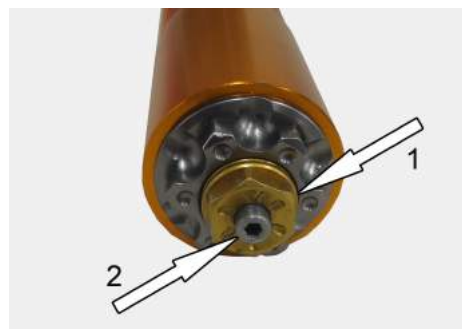
K160  
SPRING



There are two types of spring available: K160 and a softer one (K140) recommended for drivers under 50Kg of weight.

1 Spring per-load	K160: 140mm - K140: 139mm
2 Hydraulic in compression	open 8 click from closed
3 Hydraulic in extension	open 9 click from closed

### 8.4 ANDREANI FORK CARTRIDGE (optional)



To adjust the spring pre-load , turn adjusting registers (clockwise to increase pre-load, counter-clockwise to decrease pre-load).

1 Spring preload	5 turns (from opened)
2 Hydraulic in compression (C engraved on the cap)	2.5 turns (from opened)
2 Hydraulic in extension (R engraved on the cap)	2 turns (from opened)

DRIVER'S WEIGHT  
50 Kg

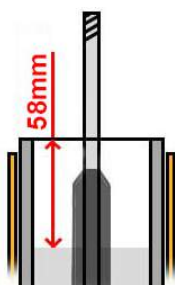
DRIVER'S WEIGHT  
75 Kg



K60/60  
SPRING

SPRING K60/70

K70/70  
SPRING



Before mounting new springs, you have to check fork oil level inside fork stems.

Remove carefully the spring, then measure fork oil level (look the picture, oil level 58 mm from fork stem).

If necessary add oil. **Is recommended to use only OHLINS fork oil (OHLINS Suspension fluid No. 5).**





## 9. PERIODIC MAINTENANCE



### PERIODIC MAINTENANCE

	After running-in	After race	Every 10 h	Every 20 h	Every 40 h	NOTES
ENGINE OIL						
Inspect		•				
Check oil level	•	•				
Replace	•		•			
ENGINE VALVES						
Check the valve clearances	•		•			The engine must be cold Check wear of valve's seats and stems
Inspect					•	
VALVE SPRINGS						
Inspect					•	Check the length
CAMSHAFTS						
Inspect					•	Inspect cam surface
SHIFT-GEARS-SHIFT FORKS-DESMO						
Inspect					•	Check the wear of gears and forks
PISTON						
Replace					•	
PISTON RINGS						
Replace					•	
PISTON PIN						
Replace					•	
TESTA						
Inspect and clean					•	Check valve seats and clean from carbon residue Replace gasket
CILINDER						
Inspect and clean					•	Inspect rifling. Check the wear
CRANKSHAFT						
Inspect					•	Check connecting-rod and bearings
CLUTCH						
Inspect	•		•			Inspect clutch bell, disks and clutch springs
TIMING CHAIN – GEARS						
Inspect				•		Check the wear of chain teeth
Replace					•	
FLYWHEEL NUT						
Check torque	•				•	Max torque 50Nm
CRANK						
Inspect					•	
CARBURETOR						
Inspect and clean			•			
SPARK PLUG						
Inspect and clean	•	•				
Replace			•			
OIL RADIATOR						
Check hoses and leakage	•	•				Check loss or wear of tubes
AIR FILTER						
Clean and lubricate			•			Use specific air filter oil
Replace				•		
OIL FILTER						
Replace			•			
INNER OIL						
Clean			•			
BRAKE FLUID						
Check	•	•	•			Check the level
BRAKE LININGS						
Check			•			Check the wear
BRAKE SYSTEM						
Check			•			Check brake disks and tubes
FIXING NUTS AND SCREWS						
Check			•			See "MAX TORQUE" table
FORK						
Check				•		Check oil loss
FUEL SYSTEM						
Check			•			Check fuel tubes, vent pipe and fuel filter
RECOVERY TANK						
Empty		•				
WHEELS AND TYRES						
Check		•				Check wear and pressure
STEERING BEARINGS						
Check	•			•		
CHAIN						
Check chain tension		•				
Lubricate		every 3 h				
PINION AND SPROCKET						
Check		•				
CLUTCH CONTROL						
Check	•	•	•			
GAS CONTROL						
Check		•	•			



## 10. MAX TORQUE TABLE

	Q.ty	Thread	Nm	Kgm	Lb ft	Notes
Rear wheel spindle	1	M14x1,5	60	6	44	
Front rear spindle	1	M12	60	6	44	
Swingarm spindle	1	M12	60	6	44	
Steering bearing lock nut	1	M25x1,5	12	1,2	9	
Screws, brake discs	6	M8	25	2,5	18,5	Medium thread locker
Screws, sprocket	3	M8	25	2,5	18,5	Strong thread locker
Screw, spindle steer	1	M16x1,5	50	5	37	
Screws, pins brake / shift lever	2	M8	15	1,5	11	Medium thread locker
Screws, footrest slider	2	M6	8	0,8	6	Medium thread locker
Screws, footrest holder	4	M8	25	2,5	18,5	Medium thread locker
Screws, front caliper holder	2	M8	25	2,5	18,5	Medium thread locker
Screws, calipers	4	M8	25	2,5	18,5	Medium thread locker
Nut, shock absorber holder	1	M14x1,5	110	11	81	
Nuts, Cylinder head holder	2	M8	25	2,5	18,5	160-4 speed
Nuts, Cylinder head holder	2	M7	16	1,6	12	110-A - 110-4s
Screw, fairings	14	M5				
Screw, fairings	9	M6				
Spark plug	1	M10x1	14	1,4	10,5	
Screw, oil drainer	1	M12x1,5	24	2,4	18	
Screw, kick lever	1	M8	29	2,9	22	

## 11. TYRES PRESSURE TABLE



DRIVER'S WEIGHT	20-50 Kg	50 - 75 Kg	75 - > Kg
BAR (front/rear)	1.30 - 1.35	1.35 - 1.40	1.40 - 1.45

## 12. FLUIDS AND LUBRICANTS



ENGINE OIL	LIQUI MOLY RACING SYNTH 4T 10W-40
FORK OIL	FORK OIL HLP100
BRAKE FLUID	LIQUI MOLY RACING BRAKE FLUID
MULTI-SPRAY	LIQUI MOLY MULTI-SPRAY
CHAIN CLEANER	LIQUI MOLY RACING CHAIN CLEANER
CHAIN SPRAY	LIQUI MOLY RACING CHAIN SPRAY WHITE



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