

## MANUFACTURER CALIBRATION REPORT

	MAIN INFORMATIONS	
1	Racing Class :	WSSP 300
2	Manufacturer :	Yamaha
3	Bike Model and Year :	R3 Euro 5
4	Engine Specs :	R3 Euro 5 GYTR Engine kit (GYTR3EU5KIT0)
5	Release Date :	2024/09/04
6	Released By :	Christian Moretti - Yamaha Motor Europe Motorsport Division
7	Approved By :	Mectronik
	CALIBRATION ID	
8	Map Name :	YR3_E511
9	Map Checksum :	0x540C7518
	TEST CONDITIONS	
10	Firmware Version :	1.20.x
11	Base Map Name :	YR3_E510
12	Base Map Checksum :	0x991E06A8
13	Air Temperature :	18 [°C]
14	Air Pressure :	1020 [mBar]
15	Fuel :	Panta E40 - FIM WSSP300 fuel homologated
16	Air Filter :	BMC (FM528/20-01)
17	Exhaust Pipe :	Akrapovic GYTR (907983220300)
18	Trumpets :	GYTR (B7PE3750RC00)
19	Restrictors:	-
20	RPM Limit :	13.300 ( pre limit 100 )
21	Drop Off Strategy :	IMU
22	Changes to Injection :	INJ=f(BAP) → no correction
23	Changes to Ignition :	-
24	Other Changes :	Fuel pressure 2.4 Bar BAP update at engine off only
25	Installation Notes :	1. TPS minimum stop screw must be set to 4.5 % (Look at TPS value online on DASHBOARD) 2. YR3EU4_2 map, must be used for STD displacement (321 cm3) ONLY.



**Eligible Parts for Competition  
2024**

Please contact: [sbk.technical.director@fim.ch](mailto:sbk.technical.director@fim.ch) to arrange where samples should be delivered

gen-24

**World Supersport 300 Permitted Modifications - Yamaha YZF-R3 Euro 5**

**Yamaha R3 Euro 5**

Airbox air filter cover (1WD-E4422-00) may be modified  
Airbox intake tube (BR5-E4437-00) may be removed  
Cylinder base gasket may be omitted  
Cylinder NiCasil coating is allowed  
With GYTR Kit, the optional Gear position sensor can be used

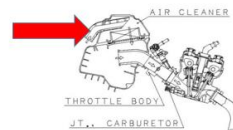
Airbox air filter cover (1WD-E4422-00) may be modified as such:



**Euro 5 GYTR Kit:**

Part Number	Part Name	Qty.	Comment
GYTRR3CAM100	Shaft, Cam 1 Intake	1	New design and material for racing
GYTRR3CAM200	Shaft, Cam 2 Exhaust	1	New design and material for racing
B7PE2176RC00	Cam Sprocket	2	Design with slotted holes for timing
GYTRR3PIST00	Piston	2	New design for racing
B7PE1351RC00	Gasket 2, cylinder	1	Thickness 0.1 mm
B7PE3750RC00	Air Funnels	2	New design CNC machined
B7PE2160RC00	Seat valve spring Intake & Exhaust	8	Thickness increased by 0.8 mm vs STD
GYTR3EUSKIT0	Full Engine kit YZF-R3 '22	1	Kit Available for EURO 5 model

Airbox intake tube (BR5-E4437-00) may be removed:





YZF R3 WSSP 300 EURO 5  
GYTR ENGINE KIT MANUAL

**SUPERSPORT300**   
FIM WORLD CHAMPIONSHIP

December 2023

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# 1 General information

## 1.1 How to use this manual

This manual is intended for people with knowledge and experience in the assembly of motorcycle engines. For information on the assembly and maintenance of parts not mentioned in this manual, refer to the YZF-R3 service manual (cod: B2X-F8197-H0) and to the YZF-R3 parts catalogue (cod: 1YB2X-300E1) published by YAMAHA MOTOR CO.

The design of the YZF-R3 engine upgrade kit is based on the YZF-R3, according to the FIM WSBK competition technical regulations, but this does not mean that the kit complies with other competition technical rules. When used in different competitions other than WSSP 300, teams use the kit parts at their own responsibility after checking the specific competition regulations issued.

## 1.2 Disclaimer of warranty

PLEASE NOTE THAT THESE PARTS ARE COVERED BY STANDARD GYTR WARRANTY.

THE MANUFACTURER ASSUMES NO RESPONSIBILITY FOR ANY PROBLEMS CAUSED BY THESE PARTS AFTER ASSEMBLY.

## 1.3 Technical disclaimer

These parts of the kit are intended exclusively for competition use. It is strongly requested not to use the mentioned kit on public roads.

Technical data, methods of use of these kit's parts and contents of this manual are subject to change without notice for improvement of performance.



## 1.4 Engine Specifications

Year		<b>2022 (EURO 5)</b>	2022 (EURO 5)
Spec		<b>WSSP 300 / FIM-SBK rules</b>	YZF R3 / B2X
Displacement		<b>321 cm<sup>3</sup></b>	321 cm <sup>3</sup>
Bore X Stroke		<b>68.0 X 44.1</b>	68.0 X 44.1
Maximum engine speed (limiter controlled speed)		<b>13.300 rpm</b>	12200 rpm
Recommended compression ratio (Depends on head surface grinding)		<b>12.1-12.3:1 *</b>	11.2:1
Valve timing (event angle)	IN	<b>112*</b>	-
	EX	<b>114*</b>	-
Valve - piston clearance	IN	<b>0.90 mm * @ 10°</b>	-
	EX	<b>1.5 mm * @ 10°</b>	-
Valve (tappet) clearance	IN	<b>0.13 – 0.15 mm</b>	0.11 - 0.18 mm
	EX	<b>0.15 – 0.20 mm</b>	0.29 - 0.36 mm

### NOTICE

\*The data are indicative and detected with the new engine

## 2 Engine kit part list

Part Number	Part Name	Qty.	Comment
GYTRR3CAM100	Shaft, Cam 1 Intake	1	New design and material for racing
GYTRR3CAM200	Shaft, Cam 2 Exhaust	1	New design and material for racing
B7PE2176RC00	Cam Sprocket	2	Design with slotted holes for timing
GYTRR3PIST00	Piston	2	New design for racing
B7PE1351RC00	Gasket 2, cylinder	1	Thickness 0.1 mm
B7PE3750RC00	Air Funnels	2	New design CNC machined
B7PE2160RC00	Seat valve spring Intake & Exhaust	8	Thickness increased by 0.8 mm vs STD
<b>GYTR3EU5KIT0</b>	<b>Full Engine kit YZF-R3 '22</b>	<b>1</b>	<b>Kit Available for EURO 5 model</b>

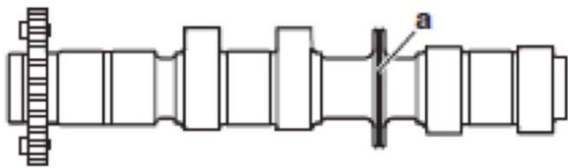
## 2.1 Camshafts and cam sprockets

New intake and exhaust camshafts with an increase in maximum lift of 1.3 mm and 0.8 mm respectively compared with the OEM parts. The presence of slotted holes in cam sprockets allows timing adjusting.

Part Number	Part Name	Qty	Comment
GYTRR3CAM100	Shaft, Cam 1 Intake	1	New design and material
GYTRR3CAM200	Shaft, Cam 2 Exhaust	1	New design and material
B7PE2176RC00	Cam Sprocket	2	Design with slotted holes for timing

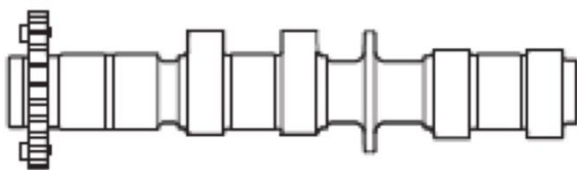


### 2.1.1 Exhaust



Shaft, Cam 2 Exhaust GYTRR3CAM200 – Cam Sprocket B7PE2176RC00

### 2.1.2 Intake



Shaft, Cam 1 Intake GYTRR3CAM100 – Cam Sprocket B7PE2176RC00

### 2.1.3 Assembly

#### **Assembly Procedure different from the OEM.**

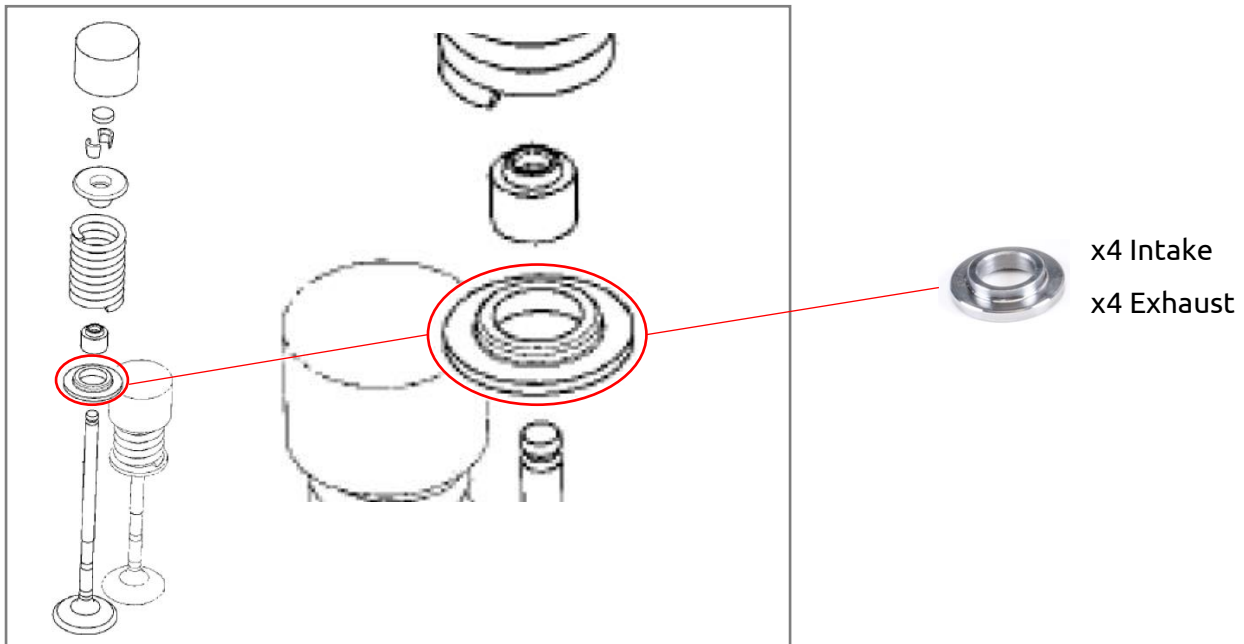
Fit the cams following the standard procedure. Check and adjust the timing to the correct values with new cams sprockets. Then, lock the bolts applying a torque of 20 Nm (2.0 Kg $\cdot$ m – 15lbft) using a torque wrench.

For all the rest, please refer to B2X-F8197-H0 service manual.

## 2.2 Seat valve spring

New seat valve for both intake and exhaust springs that allow an increase of 0.8 mm in spring preload compared with the OEM parts. Please, keep under control the positive/negative spring damping.

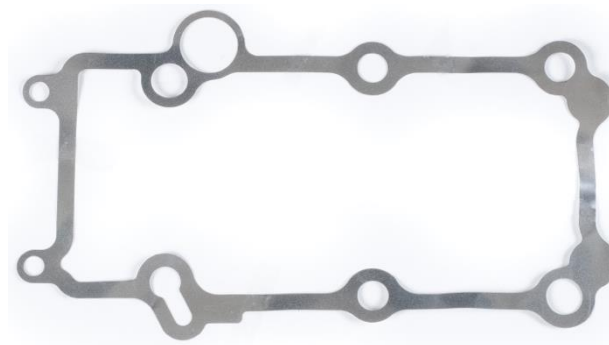
Part Number	Part Name	Qty	Comment
B7PE2160RC00	Seat valve spring Intake & Exhaust	8	Thickness increased by 0.8 mm vs STD



## 2.3 Cylinder base gasket

New cylinder base gasket with a thickness of 0.1 mm.

Part Number	Part Name	Qty	Comment
B7PE1351RC00	Gasket 2, cylinder	1	Thickness 0.1 mm





## 2.4 Piston

New forged piston with anti-friction material. Assembly with STD pistons ring set (BR5-E1603-00) and pin piston (1WD-E1603-00) as well. Circlips are delivered together with the piston.

Part Number	Part Name	Qty	Comment
GYTRR3PIST00	Piston	2	New design for racing



### 2.4.1 Assembly

Attention, check the following tolerance during assy:

Cylinder - Piston tolerance	0,035<0,055 mm	
Valve - piston clearance	IN	0.90 mm * @10°
	EX	1.5 mm * @10°

## 2.5 Air Funnels

New air funnels specifically designed for racing and CNC manufactured in aluminium.

Part Number	Part Name	Qty	Comment
B7PE3750RC00	Air Funnel	2	New design CNC machined



### 2.5.1 Assembly

Before assembling the new air funnels B7PE3750RC00, please cut the OEM funnels B2X-E4469-00 and B2X-E446C-00 at the base of the throttle body following the instructions of the first photo. After that, insert the new aluminum part with interference till the stopper. Once the assembly is finished, please check that the aluminium air funnels do not move and they are fixed as in the third photo.



## 3 Break-in

**Please, it is recommended to follow the next points for break-in after the assembly of the kit:**

- Travel distance during break-in: 250 km
- RPM and throttle position: 50 Km < 6.000 rpm / throttle 40% – 100 km < 8.000 rpm / throttle 50% – 70 km < 10.000 rpm / throttle 60% – 30 km < 11.500 rpm / throttle 75%.
- Keep varying throttle and RPM during the break-in process.
- Before starting the process be sure that water temperature is at least 70°
- Keep STD thermostat valve mounted.

## 4 Hint / Note

Take care the break-in for the engine in order to have a best and safe set up.

Valve piston clearance according to the data.

Kit has been tested with WSSP300 ECU kit system.

Kit has been developed with the exhaust system Akrapovic V-VZOREC Racing Line WSSP300.

During the engine assembly, it is recommended to keep everything clear and tidy.

To avoid making mistakes it is advisable to keep the replaced parts separate from the parts of the kit. Keep a note of mounted components and record everything including the mileage of each part.

When parts are reused, please firstly clean and check for damage, deterioration or excessive wear.

Thanks for your attention, get all the best in your racing season.

Kits and Spare Parts will be available by Yamaha Motor Europe

Parts & Accessory division : [P&ACustomerSupport@YAMAHA-MOTOR.NL](mailto:P&ACustomerSupport@YAMAHA-MOTOR.NL)