

WEST EUROTECH COMBAT 25

INSTRUCTIONS

West Eurotech engines are engineered to meet the requirements of sport flyers. The modern design has true ABN construction for extra long life with other advantages of improved performance like reliability and easy handling. The West Eurotech COMBAT 25 model engine you have purchased will give you dependable performance and it will be a source of satisfaction and pleasure if you follow these instructions and warnings as to its proper and safe use.

Becoming Acquainted with your West Eurotech Combat 25 Engine



Basic Needle Settings !
With Pro Synth 2000 / 10%
Idle Needle = 2 1/4 turns
High Speed Needle = 1 1/2

Safety Instructions and warnings

Please read through these instructions sheet in its entirety before attempting to operate your West Eurotech engine to familiarize yourself with operation and engine features!

Don't forget: You and you alone are responsible for the safe operation of your engine. So act sensibly and with care at all times. This engine is not a toy, but a precision built machine whose power is capable of harming you or others if abused, misused, or if you fail to observe these safety precautions.

AT ALL TIMES

- 1 Keep anybody, especially small children, who can be hurt when the engine is running, at least 20 feet away.
- 2 Mount the engine properly and securely in your airplane or on a suitable engine mount. Follow the mounting recommendations on the airplane kit.
- 3 **NEVER CLAMP THE ENGINE IN A VICE TO TEST RUN IT!!**
- 4 Use the correct size and pitch of propeller for your engine. See the Propeller size Specification in this instruction sheet, consult your model's plans, and always follow the instructions of the propeller manufacturer.
- 5 Mount the propeller with the curved side facing you. Tighten the propeller nut securely against the washer and the propeller with a correct propeller wrench. Do not use pliers.
- 6 Inspect your propeller regularly. If propeller has any nicks, scratches, cracks or any other sign of wear, discard it! **Never alter, repair, bend or shave a propeller.**
- 7 Inspect the propeller nut and spinner between each run and tighten if necessary. Engine vibration can cause loosening.
- 8 To stop engine, adjust throttle linkage to completely close and cut off air supply. You also can cut off fuel supply by pinching the fuel line or disconnecting the fuel line from the carburettor.

- 9 **In any case keep your hands away from the propeller, to start engine use only an electric starter or a "Chicken Stick"!**
- 10 Keep glow plug clip and its cord away from spinning propeller.
- 11 **To stop a running engine never use hands, fingers or any part of your body, also never throw anything into a spinning propeller to stop it.**
- 12 **Keep your face, body and any objects away from the path of the propeller while starting and running your engine. Never lean over a running engine**
- 13 Stay behind engine while performing any adjustments.
- 14 Do not run engine in an area containing loose gravel or sand, as these maybe thrown in your face, and could also weaken the propeller, causing failure.
- 15 Follow all engine fuel warnings. Keep it in a safe place, away from the danger of sparks, cigarettes, excessive heat, and anything, which could ignite the fuel. **Engine fuel is extremely flammable and must be handled with great care.**
- 16 Never run engine in enclosed area, (garage, basement, etc.) Model engines, like automobile engines, emit deadly carbon monoxide gas. Run your engine only in a well-ventilated open area.
- 17 If you carry your model while engine is running, be very cautious.
- 18 Do not fly your model under or near high-tension electrical wires.

CAUTION

- 19 Use safety glasses or a safety shield when starting or running your engine.
- 20 Do not have tight fitting cowling or oversized spinners, as they will impede airflow to engine, causing overheating and damage to the engine.
- 21 Do not allow loose clothing, (shirts, ties, etc.) to come near the propeller. Keep loose objects (pencils, screwdrivers) out of pockets to prevent them from falling into propeller.
- 22 If using a spinner of any kind, ensures that it's edges do not come in contact with the propeller blades.
- 23 Model engines create considerable heat as they run. Do not touch any part of your engine until it has cooled.

REMEMBER: You and you alone are responsible for the safe operation of your West Eurotech Combat 25 engine.

Use good safety sense at all times. If you have any questions, do not hesitate to contact your dealer or the Weston Service Centre.

Operating any model with your engine requires skill and safety precautions. A flying model can develop a great deal of power, enough to seriously injure people and do substantial property damage. **Know what you are doing** - get proper training from an experienced modeller before operating your model!

SPECIAL NOTE

When you rotate the crankshaft of the engine by hand, you may find that the movement of the crankshaft is not smooth and is somewhat hard to turn when the piston is near the top end of the cylinder liner. This is not a defect or manufacturing fault. When the engine runs, the cylinder of the engine expands due to the heat of fuel combustion. The top of the cylinder becomes much hotter than the bottom. The ABN type cylinder has been precisely machined so that when the engine is at its optimum running temperature, the sides of the cylinder are straight and the piston can travel freely up and down. When the engine is cold, the top of the cylinder becomes very tight for the piston. This is typical of most ABN engines, which have been designed properly.

ENGINE INSTALLATION TIPS

Mount your engine securely to a rigid engine mount: The top surfaces of the mount should be flat and parallel to prevent placing stress on the engine crankcase. For security, use hardened steel screws, steel hex nuts, and lock washers. To obtain the highest performance from your engine, the engine mount should be as rigid as possible. In order to reduce engine noise, flexible engine mounts are available. When using a flexible mount, you may notice a loss of performance of 100-200rpm, and the engine may vibrate to some degree on the engine mount.

FUEL TANK INSTALLATION TIPS

The fuel tank should be located close to the engine. The top surface of the fuel tank should be slightly higher than the centre line of the main spray nozzle in the carburettor. For West engines, this will be the same height as the needle valve. The size and location of the fuel tank will greatly affect the operation of the engine. When using pipe pressure, make sure to seal all joints between the cap and the fuel tank, and the cap and the fuel tubing. This will prevent fuel or pressurised gas from leaking out when the engine is running.

FUEL

We recommend to only use Liquid Gold/Pro Synth 2000 fuel in your West Eurotech Combat 25 engine, containing between 5 - 15% nitromethane. Note that even a small change (3-5%) in nitromethane will improve flexibility, making the needle valve adjustment less critical and improving throttle response.

GLOW PLUG

Type and quality of the glow plug used in your engine can have a considerable effect on performance and reliability. We recommend operating your engine with a Weston Pro Plug PP4 or PP5 long reach glow plug.

PROPS

Suggested propellers for this engine are 8 x 6 9" x 6/7", 10" x 5/6/8" and 11" x 3/4" depending on the plane being used. **It is very important to balance the prop and spinner as any imbalance at high rpm will damage the engine.**

BREAK-IN INFORMATION

We recommend using Pro Synth 2000 with 10% nitromethane. It is not necessary to give the engine a prolonged break-in. The break-in procedure should take place on the model. It is usually most convenient to mount it in the model so that the radio control unit can be used to control the throttle. **Remember: never place the engine in a vice!!**

BREAK IN

Note: All adjustments during the break-in procedure will be made to the needle valve only. See "Carburettor Illustration" in "Becoming Acquainted with your **West Eurotech Combat 25 Engine**" to identify needle valve. NOTE: Screw needle valve "in" for lean, "out" for rich.

- 1 Turn the needle valve clockwise until you feel resistance. This is the fully closed position. Do not use excessive pressure when closing the needle valve, as this may cause damage.
- 2 From the closed position, turn the high speed needle valve counter clockwise about 1 3/4 turns. This is a good setting to attempt to start your engine.
- 3 Prepare to start your engine.
 - a) Use the radio control unit to open the throttle halfway.
 - b) Making sure that **battery is not connected**, place your finger over the Carburettor throat.
 - c) Rotate the propeller counter clockwise 2-3 turns, until fuel flows through the tubing up to the Carburettor.
 - d) Remove your finger from Carburettor once you achieve fuel flow. Close throttle till slightly open.
 - e) Connect a 1.5V ignition battery to the glow plug.
- 4 Start your engine. Use an electric starter or a "Chicken Stick" to flip the propeller through the compression stroke. The engine should fire after a few flips
- 5 Carefully adjust the needle valve to attain the maximum RPM, immediately turn the needle valve 1/4 turn counter clockwise (rich), which will reduce RPM. This is the high-speed rich condition and will be used during High Speed break-in.
- 6 With the engine still running, carefully remove the battery connection from the glow plug.
- 7 For the next 15 minutes, or 6-8 ounces of fuel, break in the engine by running engine at various ranges of RPM.

IDLE SETTING

You have now completed break-in. Now it is time to set the idle. Bring RPM down to idle configuration. (See Carburettor Illustration in "Becoming Acquainted with your **West Eurotech 36 T1 engine**" for location of idle fuel adjustment screw)

Note: Try not to establish RPM below 2600, as low RPM this will aggravate fuel problems due to low engine temperature.

- 1 Pinch fuel line to stop fuel from going to the engine, and hold until significant change in engine performance occurs. See a, b and c for proper action to take pending result.
 - a) If RPM idles at 2600-2800, idle is set correctly. Allow idling for 3 minutes, then moving to step 2.
 - b) If RPM increases considerably, mixture is too rich. Carefully lean mixture, turning idle fuel adjustment screw in 30° increments. Once you have made adjustment, try acceleration, and then lower RPM. Begin step 1 again.
 - c) If engine stops, will not idle, or will not accelerate, this indicates mixture is too lean. Carefully enrich mixture, turning idle fuel adjustment screw in 30° increments. Once you have made adjustment, try acceleration, and then lower RPM. Begin Step 1 again.
- 2 Repeat the high-speed conditions, allowing the engine to run in the high-speed conditions longer each time before reducing to idle. Continue this procedure until the fuel tank is empty and the engine stops. Allow the engine to cool and refill the fuel tank.

Congratulations! Your engine should now be completely broken in. By following these tips, you now have an engine ready to go, and you've also learned how to make many necessary carburettor adjustments. Have a great day flying.

ENGINE CARE AND MAINTENANCE.

By caring for and maintaining your engine, your motor will deliver long life and peak performance. Please observe the following:

- 1 Always keep the exterior of your engine clean to prevent it from blackening. Use a clean cloth to remove the oil and dirt from the outside of the engine after each use.
- 2 Foreign matter in the fuel can cause the carburettor jet to be partially clogged. Take care to:
 - a) Use clean fuel, do not leave fuel can open unnecessarily.
 - b) Keep fuel tank clean. Rinse out the tank with methanol or fuel before installing.
 - c) Install an in-line filter in the fuel delivery tube between the fuel tank and carburettor.
 - d) Install a filter between the fuel pump and the fuel tank to keep debris from entering tank.
 - e) Check filters periodically and clean them when needed.
- 3 Do not leave raw fuel in the engine at the end of the flying session; it may cause corrosion.
 - a) Disconnect the delivery tube from the **carburettor** while engine is still running, and allow engine to burn all remaining fuel.
 - b) Drain remaining fuel from tank.
 - c) Apply after run oil to the internal parts of the engine. The use of after run oil can prevent corrosion and helps the engine from becoming gummed up during extended storage. Model engine fuels contain Methanol, which absorbs water from the air, causing the corrosion to the engine parts.
- 4 Do not dismantle the engine unnecessarily. This may upset correctly mated fittings such as the cylinder and piston, or the connecting rod and crankshaft, causing a reduction in performance and shortening the life span of the engine. If it is necessary to clean the interior of the engine (such as after a crash in a dirty- area), remove only the manifold, the carburettor (do not disassemble), and the back plate. It is possible to clean any foreign matter from the engine at this point. Further disassembly will void the manufacturers' warranty.

SERVICE

We operate a same day repair service with no labour charge - you pay only for parts. We guarantee no repair will ever cost more than 75% of the price of a new motor. All units returned for warranty service must be within the warranty terms explained on a sheet of paper included with your engine. Do not return to the place of purchase as they are not authorised or equipped to do warranty service on Weston products. When requesting any service, please observe the following:

- 1 It is recommended that you do not dismantle this engine. Always send the complete engine when service is required. Remove the engine from the model. We will not accept equipment still installed in the model.
- 2 Include a note detailing the problem, or the service you are requesting. We will not accept any equipment without this information.
- 3 If the product has been modified or serviced by anyone other than the Weston Service Centre, the warranty is voided, and you will be charged for any service.
- 4 You may request an estimate at the time you submit your equipment for service. An omission of this request implies permission for service at our discretion.
- 5 Include method of payment for any service charges, e.g. credit card details, or cheque made out to Weston UK.
- 6 Send the unit by registered post to:

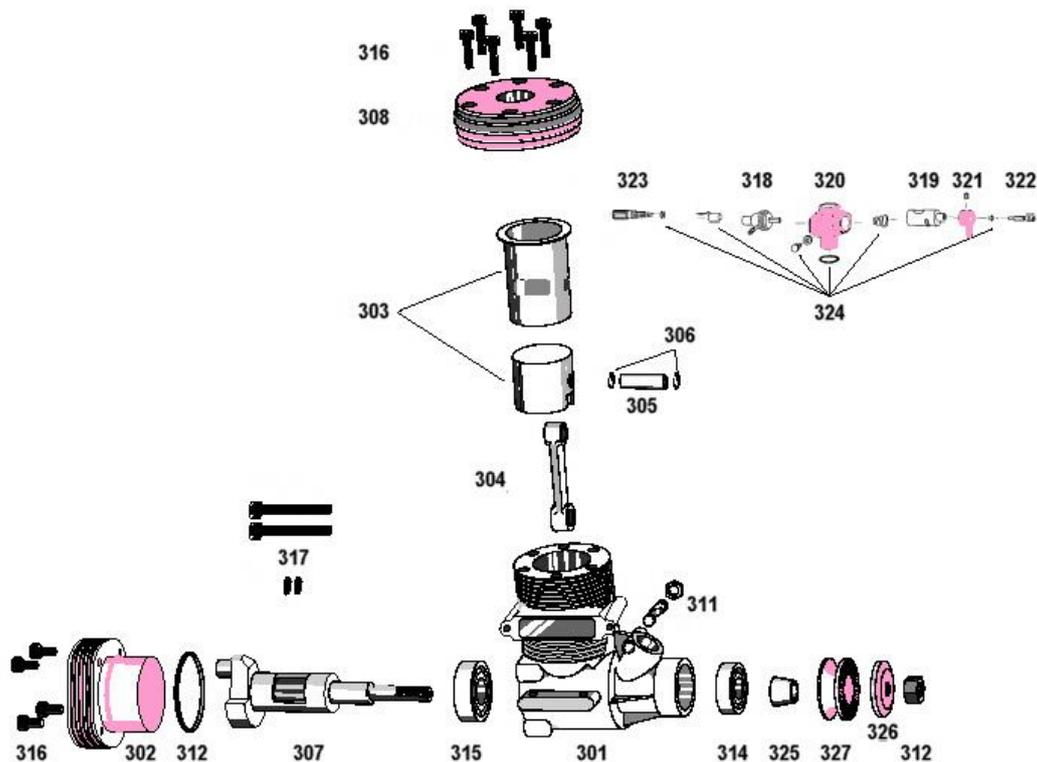


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TEAM WESTON UK

Spare Parts / Ersatzteile "WEST EUROTECH" Combat 25



Engine Part No.:	Motor Artikel Nr.:	West Eurotech Combat 25
Crankcase	Gehäuse	25 /301
Backplate-cooler	Kühl-Gehäusedeckel	25 /302
Piston Liner set (ABN)	Zyl.Garnitur (ABN)	25 /303
Connecting rod	Pleuel	25 /304
Wrist pin	Kolbenbolzen	25 /305
Circlips	Sicherungsring	25 /306
Crankshaft	Kurbelwelle	25 /307
Cylinder head	Zylinderkopf	25 /308
Cone	Konus	25 /325
Prop washer	Propellerscheibe	25 /326
Prop driver	Propellernabe	25 /327
Carburettor retainer	Klemmbolzen	25 /311
Prop nut	Propellermutter	25 /312
O Ring seal	O Ring Dichtung	25 /313
Front Ball bearing	Kugellager vorne	25 /314
Rear Ball bearing w. plastic cage	Kugellager hinten mit Kunststoffkäfig	25 /315
Screw set	Schraubensatz	25 /316
Muffler Screw set (2 x Cap screw M3 x 35 2 x Spring washer M3)	Schraubensatz-Schalldämpfer (2 x Inbusschrauben M3 x 35 2 x Sprengtring M3)	25 /317

Carburettor WEST-TN Ø 8mm 50 H Part No.:	Vergaser WEST-TN Ø 8mm 50 H Artikel Nr.:	WEST-TN
Spray bar	Düsenstock	25 /318
Throttle barrel	Drosselküken	25 /319
Carburettor body	Gehäuse	25 /320
Throttle lever	Anlenkhebel	25 /321
Idle needle	Leerlaufnadel	25 /322
High speed needle	Vollgasnadel	25 /323
Small part set	Kleinteilesatz	25 /324