



# MAN O'WAR COMPLETE ENGINES

## Small Block Ford Specifications and Instructions

Thank you for choosing a Man O'War engine. With proper maintenance, your investment will return many years of driving pleasure. A word of caution - your Man O'War engine will meet or exceed the factory rated horsepower. These numbers are not inflated! Accordingly, your car may be a real "handful." Get used to the power before tapping its full potential. Be sure that your driveline can withstand this level of power. Have fun, enjoy, and be careful. Thanks again for your business.

### SPECIFICATIONS

CARBURETOR:	Hardcore 870 cfm 4150 style ( <i>Daily Driver, Cruiser, World Class</i> ) 1050 cfm Dominator ( <i>Hardcore, Limited Edition, and Drag Race</i> )
IGNITION:	MSD ( <i>Daily Driver, Cruiser, World Class, Hardcore, and Limited Edition</i> ) MSD lock advance magnetic ( <i>Drag Race</i> ) distributor, 8 mm ignition wires, Accel 276 (iron heads) 416 (aluminum heads) spark plugs w/ .035 gap
INTAKE MANIFOLD:	Dual plane ( <i>Daily Driver and Cruiser</i> ) Victor single plane ( <i>World Class</i> ) Man O'War Single plane ( <i>Hardcore, Limited Edition, and Drag Race</i> )
CYLINDER HEADS:	Windsor Jr. ( <i>Daily Driver and Cruiser</i> ) Windsor Sr. Iron ( <i>Cruiser, World Class,</i> ) /Man O'War 18 Deg. Aluminum ( <i>World Class, Hardcore, Limited Edition, and Drag Race</i> )
VALVES:	1.940" x 1.600" Manley ( <i>Daily Driver and Cruiser</i> ) 2.020" x 1.600" ( <i>Cruiser, World Class, Hardcore</i> ) / 2.080"x1.600" ( <i>Hardcore, Limited Edition and Drag Race</i> )
ROCKER ARMS:	Hardcore 1.6:1 ratio roller rockers ( <i>Daily Driver, Cruiser, World Class</i> ) 1.72:1 ( <i>World Class, Hardcore, Limited Edition and Drag Race</i> )
ENGINE BLOCK:	Man O'War cast iron or Man O'War aluminum 8.200" deck height ( <i>Daily Driver, Cruiser, and World Class</i> ) 9.500" deck height ( <i>Cruiser, World Class, Hardcore, Limited Edition, and Drag Race</i> )
CAMSHAFT:	Hydraulic flat tappet. Duration @ .050 250 / 256 Lift 554 / 558 Centerline 106 ( <i>Used in Daily Driver, Cruiser, and World Class small blocks</i> ) Solid flat tappet. Duration @ .050 252 / 260 Lift 578 / 597 Centerline 106 ( <i>Used in Hardcore small block</i> ) Solid roller. Duration @ .050 254 / 260 Lift 621 / 627 Centerline 106 ( <i>Used in Limited Edition small block</i> ) Drag roller. Duration @ .050 278 / 286 Lift 696 / 683 Centerline 110 ( <i>Used in Drag Race small block</i> )
BORE:	4.000" ( <i>Daily Driver, Cruiser, and World Class</i> ) / 4.125" ( <i>Cruiser, World Class, Hardcore, and Drag Race</i> ) 4.155" ( <i>Limited Edition</i> )
STROKE:	3.000" ( <i>Daily Driver</i> ) / 3.500" ( <i>Daily Driver</i> ) 3.470" ( <i>Cruiser, World Class</i> ) 4.000" ( <i>Cruiser, World Class, Hardcore, and Drag Race</i> ) / 4.250" ( <i>Limited Edition</i> )
PISTONS:	Mahle or Manley coated forged
PISTON RINGS:	Total Seal
CONNECTING RODS:	Eagle 5.400" ( <i>Daily Driver, Cruiser, World Class</i> ) 6.300" ( <i>Cruiser, World Class, Limited Edition, and Drag Race</i> )
CRANKSHAFT:	Eagle 4340 forged steel, internally balanced
BEARINGS:	Clevite H series
COMPRESSION RATIO:	9.0:1 ( <i>Daily Driver and Cruiser</i> ) / 9.5:1 ( <i>World Class</i> ) / 10:0 ( <i>Hardcore</i> ) / 10.5:1 ( <i>Limited Edition</i> ) 13.5:1 ( <i>Drag Race</i> )
EMISSIONS:	This engine was not designed to meet emission requirements.
REDLINE:	5800 (all street engines) / 6800 (race engine) rpm

### CAUTION! NO OIL IN ENGINE

YOU MUST PUT OIL IN THIS ENGINE BEFORE STARTING. We have drained all engine oil after testing because freight carriers will not ship engines filled with liquids. We supply a brand new filter. Please add the appropriate amount of oil. The capacity for Daily Driver, Cruiser and World Class is 6 qts. with filter (5 on 8.2 deck). Hardcore, Limited and Drag take up to 9 qts. with filter. You should fill the oil filter before installing it on the engine to avoid oil pressure interruption during start up.

**PCV/BREATHERS:** If you do not use our valve covers, some aftermarket valve covers may not be drilled for a PCV valve or breathers, as every application requires a different type and location. You MUST install either breathers or PCV valve before use to evacuate crankcase pressure. We strongly recommend a PCV valve over breathers to contain crankcase fumes. The 870 carburetor is equipped with vacuum fittings for vacuum advance and PCV connections.

**IGNITION TIMING:** 30 degrees total @ 3000 to 3200 rpm (with vacuum advance hose disconnected) for street engines. If any pinging or detonation occurs, retard timing by 2 degrees. Drag race engines have a locked advance and should be set to 32 degrees.

**VALVE ADJUSTMENT:** For engines equipped with a hydraulic flat tappet camshaft, adjust the valves with the engine off. Adjust poly lock to where it just touches rocker arm and locks in place with no more than 1/8" turn of preload. Due to the special Comp Cams lifters, never adjust more than 1/8" preload. This is not your typical hydraulic lifter.

**OIL:** Any high quality 15W-40 or 20W-50 for street engines and race engines.

**FUEL:** Street engines are compatible with unleaded "pump gas." Premium unleaded 93 octane fuel is recommended. Race engines use race fuel only, though we recommend VP C-14.

### **EVERY MAN O'WAR ENGINE RECEIVES FACTORY BREAK-IN AND INDIVIDUAL DYNO TESTING**

Very few enthusiasts get the opportunity to own a dyno tested engine. Even fewer individuals can claim to have a professionally built engine. You now have both. We thank you for your purchase and your confidence in us.

### **PROFESSIONAL QUALITY**

Your Man O'War has been professionally built. Assembly line crate engines cannot compare with our quality. Man O'War crate engines are prepped in our state-of-the-art machine shop and built one at a time in our engine assembly clean room.

### **BREAK-IN AND TESTING**

Before your engine is prepared for shipment, your Man O'War is broken-in and fully tested on our engine dyno. We break in the cam, and check it for ring seal and leaks. After the important break-in procedure, each and every engine is dyno-tested. Our dyno measures true SAE brake horsepower. Each engine is shipped as tested to ensure proper function of external items such as carburetor and ignition. Every engine gets multiple dyno pulls to verify power output.

### **USING THE NUMBERS**

More than just impressive peak numbers, you can use the engine power curve to fine-tune your driveline combination and driving style. Man O'War crate engines make peak power at 5600-5800 (street) / 6800-7000 (race) rpm. For best results, shift just below the peak. Peak torque is 4700-5300 (street) / 5500-6000 (race) rpm. When matching driveline components, be sure to provide this information to the transmission and/or chassis builder. Be sure that the driveline can handle upwards of 600+ lb-ft of torque. We do not recommend revving this engine beyond the stated 6000 (street) / 7000 (race) rpm redline. For more information or technical help, please call or write to us!

### **WARRANTY TERMS:**

World Products Inc. (World) manufactures parts to meet QS 9000 specifications. In addition, all parts go through several inspection procedures before shipping. However, YOU ARE THE FINAL INSPECTOR. Please note: Inspect all parts before doing any machine work or assembly. Remember the saying "measure twice and cut once." If any defects are found or suspected, call World before proceeding. World will replace or repair at its option any defective part which has not been modified or misused within one year of INVOICE purchase date. Any modification or marine use of parts will void all warranties.

WORLD MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, REGARDING PARTS. THIS WARRANTY IS EXCLUSIVE AND IT IS EXPRESSLY MADE IN LIEU OF, AND WORLD HEREBY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

World's sole and exclusive obligation and liability with respect to parts sold is expressly limited to repair or replacement, at World's option, of parts. In no event will World be liable for any claim of any kind for direct or indirect incidental, consequential or special damages, whether known or unknown, including without limitation, cost of labor, installation, disassembly, lost revenues and profits, loss of property, production, or injury to persons and/or property. The maximum liability of World for any and all damages with respect to any part is limited to an amount not to exceed the original purchase price of the part. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. DO NOT CALL THE DEALER FROM WHICH YOU PURCHASED YOUR PARTS. If you have any questions, please contact Customer Service, World Products 631-981-1918 (Fax 631-734-0467).

### **WARRANTY CLAIMS:**

Contact Customer Service to obtain a Return Material Authorization number directly from World Products for any warranty return. DO NOT CONTACT YOUR DEALER. DO NOT RETURN PARTS WITHOUT AUTHORIZATION. Returned product must be shipped prepaid. Collect shipments will be refused. Returned parts must have RMA number on the outside of the package, a copy of original bill of sale inside and a written explanation of the suspected defect. If the item is found defective, World Products will repair or replace it at its discretion and return it freight prepaid. No additional labor claims will be paid. There will be no exceptions to this rule.

---

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

**ALL SALES FOB RONKONKOMA, NEW YORK**  
WORLD PRODUCTS

51 Trade Zone Court · Ronkonkoma, NY 11779  
(631) 981-1918 · Fax (631) 981-1712  
www.worldcastings.com  
WPL-5030