

CHALLENGER 40 ARF TRAINER





Accessories, Options & Spare Parts for the VMAR Challenger 40 ARF Trainer

First Edition 1999 11 30

Please support your local Hobby Retailer



We Recommend an ENYA Engine & Airtronics Radio for your VMAR ARF



Visit us on the Web at www.richmondrc.com

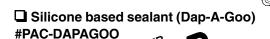
VMAR CHALLENGER 40ARF TRAINER ACCESSORY ITEMS RECOMMENDED BY RICHMOND RC SUPPLY LTD



☐ PER ASSEMBLY STEP 1.10 TOOLS AND SHOP MATERIALS NEEDED.

These tools & shop materials are not included and are required to complete & operate your Challenger & most other remote control aircraft. This list denotes part numbers of tools and shop materials distributed by Richmond RC. **Recommended items appear in bold type.**

- □ 2.5 mm ball socket screwdriver Dubro #DUB-450 or Allen wrench Dubro #DUB-2129
- □ 3.0 mm ball socket screwdriver Dubro #DUB-451 or Allen wrench Dubro #DUB-2130
- □ 4.0 mm ball socket screwdriver Dubro #DUB-452 or Allen wrench Dubro #DUB-2131
- ☐ Thin cyanoacrylate CA instant glue. #PAC-CA28





☐ 30 Minute Epoxy
Richmond RC #PAC-30ZPX

INDUSTRIAL STRENGTH BONDING FOR YOUR MODEL! USE 30 MINUTE EPOXY!



- ☐ Epoxy brushes Dubro #DUB-345
- ☐ Epoxy mixing sticks
 Richmond RC (recommended)
 #RRC-MIXSTIX, or Dubro #DUB-346

☐ Heat gun for covering (optional for covering touch up) MegaTech #MTC-HEATGN



☐ PER ASSEMBLY STEP 1.11 OTHER ITEMS NEEDED TO COMPLETE CHALLENGER.

These items are not included and are required to complete and operate your Challenger and most other remote control aircraft. This list provides part numbers of items distributed by Richmond RC. **Recommended items appear in bold type.**

RC FM radio with at least four channels of control and on a frequency appropriate for your market area.

Airtronics Brand
#AIR-VG400FM 4ch with 4 servos or
#AIR-VG600FM (6ch with 4 servos recommended)
or #AIR-RD310FM Computer Radio with 4 servos.



AIRTRONICS VG 400 4ch FM

- Universal Z Connectors work with Futaba and JR components!
- Four 94102Z servos! Micro 7ch Rx!
- Low and High Throttle End Point Adjustments!
- Servo Reversing on all channels!
- Trainer Cord Ready!



#AIR-VG600FM

#AIR-VG400FM

AIRTRONICS VG 600 6ch FM

(Recommended for use with Challenger)

- Universal Z Connectors work with Futaba and JR components!
- Four 94102Z servos! Micro 7ch Rx!
- Low and High Throttle End Point Adjustments, plus end point adjustments for Aileron, Rudder, Elevator & Flaps!
- Servo Reversing on all channels!
- Channel 5 Retracts! 3 Position Channel 6 Switch! Trainer Cord Ready!



#AIR-RD310FM

AIRTRONICS RD6000 6ch FM COMPUTER RADIO

- Universal Z Connectors work with Futaba and JR components! Four 94102 Sx! 7ch Micro Rx!
- Digital Trims! End Point Adjustments! Servo Reversing! Timer! Trainer Cord Ready!

VMAR CHALLENGER 40ARF TRAINER ACCESSORY ITEMS RECOMMENDED BY RICHMOND RC SUPPLY LTD



☐ PER ASSEMBLY STEP 1.11 OTHER ITEMS NEEDED TO COMPLETE CHALLENGER (cont'd)

Recommended items appear in bold type.

- ☐ Engine and muffler suitable for use in a remote control model aircraft. A two stroke glow fuel .40 -.53 cubic inch engine is recommended.
 - Enya Super Sport 40 #ENY-SS40TV, (recommended) or
 - Enva CX 50 #ENY-CX50TN, or
 - MegaTech 46 #MTC-4600

ENYA's Super Sport 40 offers the perfect blend of quality, power and reliability! High Power and Torque combined with excellent throttle control make this our recommended choice for use with your Challenger. FLY WITH CONFIDENCE... FLY ENYA!





ENYA's CX Series of Engine has long been the standard to which everyone aspires. This hand lapped dual ball bearing .50 powerhouse features the smooth running TN carb and the new SNV Safety Needle Valve. Features true ABC precision fit piston/cylinder. Nothing compares for power or quality!





.46 BALL BEARING ENGINE.
The MegaTech M-4600 sets new standards for value, performance and reliability. True ABC piston/cylinder assembly for maximum power and longer life, sealed twin-needle carb with nonsensitive needle valve for easy adjustment. Twin Ball Bearings! #MTC-4600.



☐ "After Run" oil for engine.

- Pacer #PAC-ARUN

Whatever your choice in engines... always use Pacer After Run oil to prevent corrosion and bearing rust out!



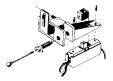
☐ Medium fuel tubing appropriate for your choice of engine and fuel. 500-750 mm (24-36 in.)

For glow engine fuel we recommend Carl Goldberg BrightLine Silicone Fuel Tubing...

- #GOL-181 Blue (36 in.) for fuel feed (#GOL-191 Blue on 50 ft roll)
- #GOL-180 Red (36 in.) for muffler pressure (#GOL-190 Red on 50 ft roll)

or use Dubro #DUB-222 (24 in.) or #DUB-197 (roll)

■ External switch actuator appropriate for radio system (optional). Dubro #DUB-207



- ☐ Propeller suitable for the engine. See the engine instruction manual recommendation for diameter and pitch.
 - #RPM-1060 Wood, #MAS-1060 or APC-10060 for Enya SS40TV and MegaTech 40
 - #MAS-1170 or APC-11070 for Enya CX50TN
- ☐ Engine glow plug (for 2-stroke engines)
 - Enya #ENY-PLUG3 (recommended), or
 - K & B RC Long #KNB-4520, or
 - K & B Hi Performance #KNB-7300
- ☐ Engine glow plug ignitor
 - Dubro #DUB-666 (recommended), or
 - Dubro #DUB-396 with Sanyo Cell #SAN-RC2000
- ☐ Engine 4-Way wrench.
 - Dubro #DUB-701 (recommended) or
 - Dubro #DUB-702 (long reach)
- ☐ Fuel for the engine. Caster/Synthetic Blend Sport Fuel
 - Omega 10% (recommended)
- ☐ Liquid thread locker. Pacer #PAC-Z42
- ☐ RC Foam sheeting for wrapping radio receiver and battery pack.
 - Carl Goldberg #GOL-481 1/4 inch or Dubro #DUB-513, and
 - Carl Goldberg #GOL-482 1/2 inch or Dubro #DUB-514





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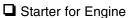
#VMA-PT109D



☐ PER ASSEMBLY STEP 1.12 OPTIONAL **EQUIPMENT & ACCESSORIES.**

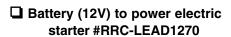
These items are not included and are not required but make the operation of your Challenger and most other remote control aircraft easier & more enjoyable. This list provides part numbers of items distributed by Richmond RC.

☐ Power Tote Deluxe field box (recommended)



- Electric starter (recommended) MegaTech #MTC-161100

- Electric starter Sullivan #SUL-601
- Chicken Stick Sullivan #SUL-245





☐ Battery charger (12V/500mAh) to charge battery- MegaTech #MTC-011180



- **☐** Power Panel to manage starter and pump if electric.
 - MegaTech #MTC-011170



- ☐ Fuel pump and connecting tubing
 - Electric 12V (recommended) MegaTech #MTC-1220
 - Hand crank MegaTech #MTC-1210
 - Bulb pump Dubro #DUB-519
 - Bulb pump with jug Dubro #DUB-520
- ☐ Fueling priming bottle
 - Richmond RC #RRC-PRIMER



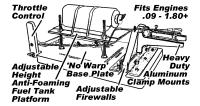
- ☐ Fueling valve
 - Dubro #DUB-334
- ☐ Stick on weights to balance aircraft - Dubro #DUB-351
- Extra Propellers
 - #RPM-1060 Wood, #MAS-1060 or APC-10060 for Enya SS40TV and MegaTech 40
 - #MAS-1170 or APC-11070 for Enya CX50TN

- ☐ Extra glow plugs (for 2-stroke engines)
 - Enya #ENY-PLUG3 (recommended), or
 - K & B RC Long #KNB-4520, or
 - K & B Hi Performance #KNB-7300



- Heavy duty landing gear to replace wire main gear
 - #RRC-MAIN40HD 4 mm Aluminum, or
 - -#RRC-MAIN40SD super duty composite main gear 3 mm Aluminum & 5/32 Wire, or
 - #RRC-MAIN40UD ultra duty Fibreglass main gear
- ☐ Engine Test Stand **#VMA-ETS120.**





- ☐ 1/4 20 NC Tap to chase wing bolt blocks
 - Dubro #DUB-364
- ☐ Extra airborne receiver battery pack for radio system.
 - Airtronics #BAT-700E48AF or

110E48AF(1100mAh)

- JR #BAT-700E48RF or 110E48RF(1100mAh)
- Futaba #BAT-700E48JF or 110E48JF (1100mAh)



- ☐ Adhesives for repairs.
 - Pacer ZAP-A-GAP 1 oz #PAC-CA+28, and
 - Pacer ZAP 1oz #PAC-CA28, and
 - Pacer Field Kit with CA and epoxy & thread Lock **#PAC-FIELDKIT**







- ☐ Exhaust deflector to route exhaust from muffler away from fuselage.
 - Dubro #DUB-697



- ☐ Misc tools
 - Prop balancer #DUB-499, or
 - Hand held balancer (recommended) Dubro #DUB-160









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POWER TOTE DELUXE



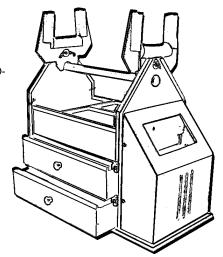
THE WORLD OF TOTE BOXES HAS JUST CHANGED AGAIN... YOU WON'T BELIEVE THE QUALITY! POWER TOTE DELUXE IS COMPLETELY ASSEMBLED WITH ARBORITE EXTERIOR!

NO ASSEMBLY, NO PAINTING!!!

POWER TOTE DELUXE BUILDS ON THE FOUNDATION OF OUR REGULAR POWER TOTE AND IMPROVES FROM THERE. FEATURES INCLUDE...

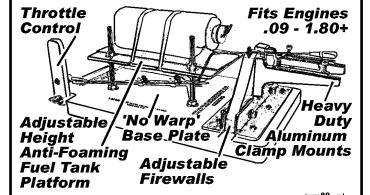
- THE MAIN HORIZONTAL, VERTICAL AND SEPARATOR COMPO-NENTS ARE MADE FROM DOUBLE THICK 8MM PLYWOOD. - ALL 8MM COMPONENTS ARE JOINED USING TONGUE AND GROOVE, GLUE AND SCREWS TO ENSURE RUGGED LONG LASTING CONSTRUCTION.

ALL 8MM COMPONENTS HAVE ARBORITE EXTERIORS! THAT'S RIGHT ARBORITE! DRAWER CONSTRUCTION HAS REINFORCING STRIPS ALONG THE BOTTOM OF ALL DRAWERS AND INTERNAL CORNER TRIANGLE STOCK REINFORCERS! MOULDED DRAWER LOCKING TABS, NO MORE VELCRO, THESE DRAWERS STAY SHUT WHEN THEY'RE SHUT AND SLIDE SMOOTHLY WHEN YOU NEED TO OPEN THEM! MOULDED DRAWER KNOBS! MOULDED FEET! EXTENSIVE USE OF HEAVY DUTY ALUMINUM EDGE TRIM! HEAVY DUTY ALUMINUM TUBE HANDLE! HEAVY DUTY BUNGEE CORD FUEL JUG RETAINER INCLUDED! POWER PANEL AND BATTERY COVER COMPLETELY DETACHABLE FOR EASIER SETUP! #VMA-PT109D





ENGINE TEST STAND



NOTHING COMES CLOSE TO THE **QUALITY AND FEATURES** INCLUDED WITH THE NEW VMAR **ENGINE TEST** STAND! **ORDER YOURS** TODAY!

#VMA-ETS120

300 355 TYPICAL AS SHOWN 180 -135 -42-70 19-64 **19**3 178 1221

HEAVIER DUTY MAIN LANDING GEARS

WHEN YOU WANT TO UPGRADE FROM THE STOCK WIRE MAIN GEAR THAT CAME WITH YOUR CHALLENGER... RELAX... WE'VE ALREADY PLANNED AHEAD WITH PRE-INSTALLED HEAVY DUTY MOUNTING BLOCKS TO Accommodate OUR SCREW ON UPGRADE MAIN GEAR! FOUR STRENGTHS TO CHOOSE FROM! TAKE YOUR PICK BUT IF YOU WANT THE BEST GO WITH THE SUPER DUTY COMPOSITE ALUMINUM & WIRE GEAR OR THE ULTRA DUTY FIBREGLASS MAIN GEAR.







ULTRA DUTY FIBREGLASS EPOXY MAIN GEAR



COMPLETE WITH AXLES

COMPLETE WITH AXLES SUPER DUTY FOR CHALLENGER ULTRA DUTY FOR CHALLENGER & MOST TRAINERS

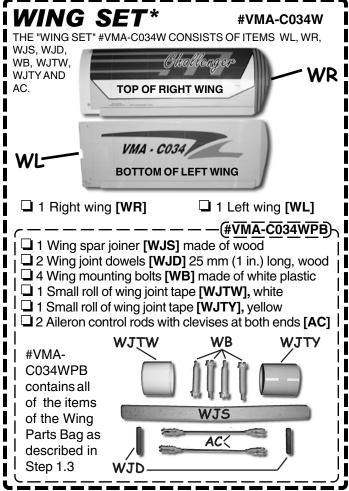
& MOST TRAINERS

UPGRADE NOW!

VMAR CHALLENGER 40ARF TRAINER REPLACEMENT PARTS RECOMMENDED BY RICHMOND RC SUPPLY LTD



PLEASE USE PART NUMBERS WHEN ORDERING. PART NUMBERS BEGIN WITH #

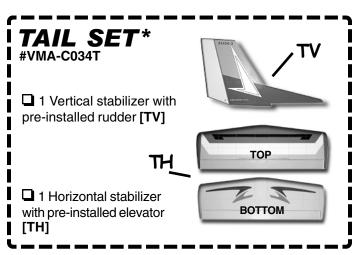




main landing gear

wires [MG] approx 275 mm (11 in.) long

#VMA-C034F FS N504C N504C N504C This elage [FS] with the following components that have been pre-installed in the fuselage: Engine mount [EM], Elevator, rudder and nose gear control rods, 2 piece throttle control rod [CRT] with collars [COL] Universal adjustable servo tray [ST], [STDS], [STSS], [STMS], [AW] 2 EZ Connectors [EZ] attached to the ends of the nose gear push rod.





VMAR CHALLENGER 40ARF TRAINER REPLACEMENT PARTS RECOMMENDED BY RICHMOND RC SUPPLY LTD



PLEASE USE PART NUMBERS WHEN ORDERING. PART NUMBERS BEGIN WITH #

CONTROL HORN SET

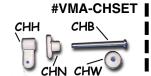
□ 1 Metal bolt [CHB] 2.5 mm x 25-30 mm

(1 to 1-3/16 in.)

☐ 1 Plastic control horn [CHH]

☐ 1 Plastic bevelled washer [CHW]

■ 1 Plastic T-nut [CHN]



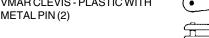
ENGINE MOUNT

(8) MACHINE SCREWS (4) WASHERS.



CLEVISES

VMAR CLEVIS - PLASTIC WITH



AFTER MARKET ALTERNATIVES...

GOLDBERG #GOL-310 (2/pkg) OR DUBRO #DUB-122 (2/pkg)

SERVO TRAY

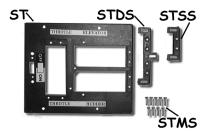
#RRC-SXTRAY

☐ Universal adjustable servo tray [ST] 2 black plastic adjustable slider plates, 1 long

[STDS],

1 short [STSS], for mounting the servos

■ Small screws [STMS] for mounting the adjustment plates & mounting the universal servo tray to the fuselage.



COVERING

FACTORY COVERING SET VMA-C034V FACTORY #VMA-PATCHPAK (6x6 in) 5 COLORSWHITE,BLACK,RED,BLUE,YELLÓW

APPROX COLOR	ULTRA COTE		ULTRA TRIM	ULTRA PAINT	ULTRA STRIPE
WHITE	GOL-870	GOL-800	GOL-80000	GOL-P80090	-
BLACK	GOL-874	GOL-804	GOL-80400	GOL-P80490	-
RED	GOL-883	GOL-813	GOL-81300	GOL-P81390	-
DK BLUE	GOL-885	GOL-815	-	GOL-P81590	-
SKY BLU	GOL-875	GOL-805	GOL-80500	GOL-P80590	-
YELLOW	GOL-872	GOL-802	GOL-80200	GOL-P80290	-
GREEN	GOL-880	GOL-810	-	-	-
GREY	PANEL LI	NES (1/16	in.) >>>>	GOL-P81190	GOL-81120

STEERING ARM

VMAR 5/32 INCH STEERING ARM FOR TRIKE KITS w/COLLAR & SET SCREW.

AFTER MARKET ALTERNATIVES. GOLDBERG#GOL-281



#VMA-CL1M

WING BOLTS

WB #VMA-WB1420

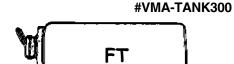
VMAR WING BOLTS - PLASTIC 1/4 X 20 x 1-1/4 in. LONG (4)

AFTER MARKET ALTERNATIVES..

GOLDBERG #GOL-585 (4/pkg) OR DUBRO #DUB-142 (4/pkg)

FUEL TANK

STOPPER **METALTUBES** AND CLUNK



WHEELS

AFTERMARKET ALTERNATIVES DUBRO TREADED (PAIRS)) REGULAR #DUB-200T LIGHTWEIGHT #DUB-200TL



#VMA-WH2716

FACTORY WHEELS ULTRALIGHT **TREADED** 60mm (2-7/16 in) DIAMETER (SINGLES)

SPINNER

AFTERMARKET **ALTERNATIVES** CARLGOLDBERG RED 2 in. #GOL-140 4 PIN SELF LOCKING



#VMA-SPIN200R

FACTORY SPINNER RED 50mm (2 in.) DIAMETER I WITHSCREWS

NEEDS NO TOOLS OR DUBRO RED 2 in. #DUB-274

MASTER BAG

#VMA-C034MB

- ☐ 1 Fuel tank [FT]
- ☐ 1 Spinner (nose cone) [SS] with screws
- ☐ 1 Wing Parts Bag ☐ 1 Misc Parts Bag
- ☐ 1 Main Gear Parts Bag ☐ 1 Nose Gear Parts Bag
- 1 Control Horn Parts Bag

WHEEL COLLARS #VMA-WC532

VMAR 5/32 INCH WHEELCOLLARS & SET SCREWS (4)



MISC AFTERMARKET HARDWARE

- NOSE GEAR WIRE WITH AXLE (SIMILAR TO LEGEND ITEM [NG]) CARL GOLDBERG #GOL-272 OR DUBRO #DUB-152

- HINGES...CARL GOLDBERG #GOL-208 15/pkg OR DUBRO #DUB-117 15/pkg
- EZ CONNECTOR (SIMILAR TO LEGEND ITEM [EZ]) DUBRO #DUB-121 (2/pkg) OR DUBRO #DUB-608 (2/pkg)

OTHER VMAR PRODUCTS



VMAR Manufacturing makes an extensive range of products including the VMAR Model Aircraft Test Stand and a full line up of Almost Ready to Fly "ARF" model aircraft that go from box to flight line in just hours. VMAR products are distributed through selected agents and hobby retailers worldwide. For further information about other VMAR products and how to purchase them in your area please visit our web site at www.richmondrc.com/vmar



BANDS

PURE RUBBER