

ROTORWAY
INTERNATIONAL

Dear Customer,

Congratulations on what is likely to be the most rewarding project you have ever embarked upon – the building of your own ROTORWAY helicopter.

We at Rotorway have done our utmost to provide the best service possible from the first day we had contact with you, and you can be assured we will continue to do so.

These manuals represent the most comprehensive builder documentation RotorWay has provided to date. Please study them very carefully; it will save you hours of construction time if you understand what each step entails prior to beginning construction.

If you have any problems or questions please do not hesitate to contact RotorWay. The staff here is always ready to be of service.

So from all of us here at RotorWay – ENJOY and have fun! We look forward to seeing you at our flight and maintenance training school.

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WARNING

The construction and operation of "Home-Built Aircraft" of this type is demanding and could inflict serious injury and possible death. No such operation, construction or undertaking should be initiated unless thorough and complete knowledge, preparation and instruction are available and utilized. The seller (and its agents, servants, employees, contractors, successors, and assigns) makes no warranties express or implied regarding the clarity or correctness of the plans, ease of construction or operation nor the safety of this aircraft or any part thereof. Furthermore, buyer (and his heirs, administrators and assigns) releases and holds said seller (and its agents, servants, employees, contractors, successors, and assigns) harmless from any and all liability, damages, and causes of action which may be incurred by buyer or any third party as a result of the purchase, use, construction and/or operation of said aircraft (or any part thereof) or plans for same. Buyer assumes all risk and responsibility relative to the construction and/or operation of said aircraft. Seller admits no liability by publication of this warning.

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2. AIRFRAME	Airframe Battery box Landing gear Skids Steps End plugs
3. ENGINE MOUNT	Engine mount Engine mount support ring Engine mount rubber Shims
4. GROUND HANDLING WHEELS	Assemble
5. DISASSEMBLE PAINT REASSEMBLE	Airframe Landing gear Engine mount Ground handling wheels
6. TAIL BOOM	Tail boom fixture Bulkhead skeleton Roll tail boom Mount tail boom Horizontal trim fins Vertical trim fin Tail rotor assembly Tail rotor sliders

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18. COOLING SYSTEM	Radiator Fan shroud Overflow tank Oil cooler Oil hoses & filter Oil sump Standpipe Fresh air collector
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INTRODUCTION

The documentation for building the RotorWay International "EXEC 90" helicopter is divided into five sections:

1. See-Do Manuals
2. Construction Prints
3. Templates
4. Operations Manuals
5. Exec 90 Parts List

1. The See-Do manuals consist of 26 sections, utilizing a sequence of photos and text that walks the builder through each step of construction.

2. There are presently 25 Construction Prints providing details and measurements from which the various components are fabricated or assembled.

3. Templates are provided for parts that require fabrication from raw materials.

4. Three operations manuals are provided: an R.I. 162 cu. in. Power Plant manual, a Maintenance manual and a Flight Operations manual.

5. An Exec 90 parts list is provided which contains a listing of every part required for completion of the helicopter.

EXEC 90 NUMBERING SYSTEM

A numbering system has been used for every individual part and group of parts in the helicopter. The helicopter has been divided into 31 component sections. Each component has an identification number of seven characters. An example is E09-2000 Tail Boom. The first three characters of the number (E09) indicates that this part is in the tail boom component, and the last four numbers identify a specific part within that component. For example, part number E09-3004 is the tail boom skin.

The exception to this rule is that all hardware in the helicopter has been given an E00- part number. Any E00- numbered hardware could be used in various places within the helicopter. An example is E00-2300 which is an AN3-4A (3/16" X 1/2") bolt.

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RECOMMENDED BUILDING SEQUENCE

The first thing each builder should do upon receipt of their EXEC 90 is to conduct a complete physical inventory of all parts shipped, compared against the EXEC 90 parts list provided with the shipment. If we have back ordered a part it should be noted on the parts list as B.O. and it should not be in the shipment.

If you find a part missing that we have not indicated as back ordered you need to contact the factory immediately so we can update our records. We request that this process be done within the first fifteen days from receiving the shipment. This time frame allows for discrepancies to be corrected while they are still fresh in everyone's mind. This process will also provide the builder with a thorough understanding of what all the parts look like as they review each section prior to construction.

Next we recommend you take time to open all the construction plans and templates to familiarize yourself with them as you read through the See-Do photo manuals. By taking the time to review all the documentation before you start on the actual construction, you will have a better understanding for the relationship of the individual components you construct, relative to their function in the completed helicopter.

You will notice that we have some documentation in section 1 pertaining to Standard Construction Procedures that should be utilized during the construction of an aircraft. Builders should take time to review these procedures and ensure they are followed throughout the fabricating and assembling of the helicopter.

After you have completed your inventory of parts and familiarized yourself with all the documentation, you are ready to begin construction of your EXEC 90. If you require assistance with anything regarding building, please call our customer service department. If you require any additional parts due to construction error, please call our parts department. When ordering parts, we request that you always identify the part you want by its specific PART NUMBER and not just the description. This will help ensure that you get the correct part that you ordered.

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COMPONENT NUMBERING SYSTEM

<u>COMPONENT NUMBER</u>	<u>DESCRIPTION</u>
E09-2000	TAIL BOOM
E10-2000	AIRFRAME
E11-2000	LANDING GEAR
E12-2000	AIRFRAME BRACKETS
E13-2000	LOWER ENGINE MOUNT
E14-2000	CYCLIC CONTROL
E15-2000	COLLECTIVE CONTROL
E16-2000	DIRECTIONAL CONTROL
E17-2000	TAIL ROTOR
E18-2000	TAIL ROTOR DRIVE
E20-2000	MAIN ROTOR BLADES
E22-2000	BALLAST WEIGHT
E23-2000	SECONDARY DRIVE
E24-2000	ENGINE
E25-2000	FUEL SYSTEM
E27-2000	CLUTCH AND TORQUE LINK
E28-2000	OIL SYSTEM
E29-2000	WATER PUMP
E30-2000	RADIATOR AND FAN SHROUD
E31-2000	FAN DRIVE
E32-2000	BODY, SEATS, FLOOR PAN
E33-2000	OIL BATH
E34-2000	STANDPIPE
E35-2000	WIRING
E36-2000	INSTRUMENTS
E37-2000	GROUND HANDLING WHEELS
E41-2000	DOORS
E42-2000	ALTERNATOR
E45-2000	SKID PANTS
E49-2000	ROTOR SYSTEM
E54-2000	CABIN COMFORT SYSTEM

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CONSTRUCTION PRINTS LIST

<u>PRINT NUMBER</u>	<u>DESCRIPTION</u>
E09-2000	TAIL BOOM
E09-2001	TRIM FINS
E10-2000	AIRFRAME, LANDING GEAR
E13-2000	ENGINE MOUNT
E14-2000	CYCLIC CONTROL
E15-2000	COLLECTIVE CONTROL
E16-2000	DIRECTIONAL CONTROL
E17-2000	TAIL ROTOR
E17-2001	TAIL ROTOR DETAILS
E20-2000	MAIN ROTOR BLADES
E22-2000	BALLAST WEIGHT
E23-2000	SECONDARY DRIVE BACKING PLATE, ETC.
E25-2000	FUEL TANK AND MUFFLER MOUNTING
E27-2000	ENGINE CLUTCH, TORQUE LINK, ETC.
E30-2000	RADIATOR, OIL, COOLER, ETC.
E31-2000	FAN DRIVE COUNTERSHAFT, ALTERNATOR, WATER PUMP
E32-2000	BODY DETAILS
E33-2000	OIL BATH
E35-2000	WIRING HARNESS
E35-2001	WIRING DIAGRAM
E37-2000	GROUND HANDLING WHEELS, ETC.
E41-2000	DOORS
E49-2000	ROTOR HUB
E49-2001	MAIN SHAFT
E49-2002	SWASH PLATE

NOTE: Drawings that have been revised are designated with a dash followed by the revision number. An example of this would be E49-2001-1, the -1 indicating the first revision of that drawing.

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EXEC 90 HELICOPTER****TEMPLATE LIST**

<u>NUMBER</u>	<u>TEMPLATE</u> <u>QTY</u>	<u>NUMBER</u>	<u>PART</u> <u>PART NAME</u>
E09-1	1 EACH	E09-3252	Vertical trim fin bracket
E09-2	2 EACH	E09-3280	Horizontal trim fin bracket
E09-3	2 EACH	E09-3330	Horizontal trim fin end plates
E09-4	2 EACH	E09-7130	Vertical trim fin stiffener
E13-1	1 EACH	E13-3190	Lower engine mount shim
E14-1	1 EACH	E14-3220	Fore/aft cyclic cable bracket
	1 EACH	E14-3231	Lateral cyclic cable bracket
	1 EACH	E14-3251	Fore/aft cyclic stop bracket
E14-2	4 EACH	E14-6120	Cyclic control cable "T"
E14-3	2 EACH	E14-6202	Cyclic handle covers
E15-1	1 EACH	E15-3140	Throttle stop
E16-1	1 EACH	E16-3120	Scissor beam (pilot)
E16-2	1 EACH	E16-3150	Scissor beam (passenger)
E17-1	8 EACH	E17-1360	Bearing mounting plate slider strap
E17-2	2 EACH	E17-3100	Bearing mounting plate
E17-3	2 EACH	E17-3120	Pitch actuator arm
E17-4	1 EACH	E17-3130	Tail rotor cable mount bracket
E18-1	4 EACH	E18-6130	Idler pulley mounting scissors
E22-1	1 EACH	E22-1020	#1 bulkhead end plate
	1 EACH	E22-1030	#2 bulkhead end plate
	1 EACH	E22-1040	Mount attachment plate
E23-1	1 EACH	E23-6190	Secondary sprocket retainer plate
E24-1 (LARGE)	1 EACH	E24-9780	Exhaust heat shield top (passenger)
	1 EACH	E24-9781	Exhaust heat shield top (pilot)
	1 EACH	E24-9790	Exhaust heat shield (rear)
	1 EACH	E24-9820	Exhaust heat shield side (pilot)
	1 EACH	E24-9821	Exhaust heat shield side (passenger)
	1 EACH	E24-9830	Upper heat shield (pilot)
	1 EACH	E24-9831	Upper heat shield (passenger)
E25-1	1 EACH	E25-3140	Fuel block mounting bracket
E30-1	1 EACH	E30-1230	Radiator rear shield bracket
	6 EACH	E30-3190	Shroud mounting bracket
	2 EACH	E30-3170	Radiator rear shield mounting strap

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<u>TEMPLATE NUMBER</u>	<u>QTY</u>	<u>PART NUMBER</u>	<u>PART NAME</u>
E30-2 (LARGE)	1 EACH	E30-3160	Radiator rear shield
	1 EACH	E24-3201	Muffler heat shield
	1 EACH	E54-3020	Radiator collector
	1 EACH	E54-3030	Collector collar
E32-1 (LARGE)	1 EACH	E32-3120	Heel skid plate (passenger)
	1 EACH	E32-3121	Heel skid plate (pilot)
	1 EACH	E32-3160	Ignition mounting/seat back panel
	1 EACH	E32-6120	Seat bottom/battery access panel
	1 EACH	E32-6150	Seat back access panel (passenger)
	1 EACH	E32-6160	Seat back access panel (pilot)
E32-2 (LARGE)	1 EACH	E32-3110	Instrument panel
	1 EACH	E35-3010	Overhead switch panel
E33-1	1 EACH	E33-1150	Master link insertion plate
E33-2	1 EACH	E33-3000	Rain shield
E41-1	4 EACH	E41-3110	Door hinge
	1 EACH	E41-3120	Body hinge
E41-2	3 EACH	E41-1170	Door latch (left)
	3 EACH	E41-1180	Door latch (right)
E49-1	1 EACH	E49-1700	Lower bearing backing plate

NOTE: The size of the templates may vary slightly because of the process used to print them. To compensate for this, some templates have been marked with dimensions. Observe these dimensions when cutting and drilling the parts to ensure the proper fit.

Occasionally, the material itself may be slightly smaller than the template. In such cases, it is acceptable to cut out the part according to the amount of material available.