

# DF 55 Electrical Ducted Fan

## Operating Instruction

### INTRODUCTION

Thank you for choosing the "DF 55" ducted fan unit. This ducted fan is designed by a group of professional jet engine engineers. Through conscientiously computational fluid dynamics (CFD) simulation and experiment testing, we assure that the performance of this ducted fan may perform better than other same class products under same test condition.

Before you start assembling and operating the fan, please carefully read through the following instructions.

### SPECIFICATION

Ducted Outer/Inner Diameter : 58\56mm  
 Rotor : 7 Blades  
 Weight : 25 g (without intake ring)

### KIT CONTENTS

Name	Qty
● Rotor	1
● Intake Ring	1
● Duct	1
● Adapter assembly	
Adapter	1
M3 Set Screw	2
M3 Flat Head Screw (Rotor)	1
M2.6 Screw (Motor)	2
Hex Wrench	1

### SAFETY INSTRUCTIONS

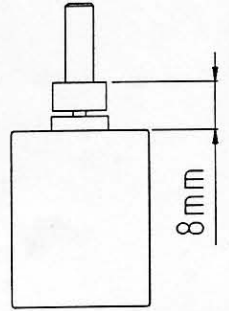
1. Assure all parts are secured before start operating.
2. Do not operate the fan unit by holding in your hands.
3. Do not stand in front of the fan while it is operating.
4. Due to the strong suction force of the fan unit, keep all loosen items away from the intake ring.
5. After the intake ring has already been used. Due to the strong suction force of the fan unit, please fix the intake ring to the duct using glue or tape for avoiding it fall out.
6. Before flying, always check the duct. The duct should be clear of all obstructions in order to avoid rotor's damage.

### MOTOR SUGGESTION

The ducted fan unit has been designed for the Graupner "Speed 300" or similar motor. The suitable motor diameter is up to 24.5mm. In order to elaborate the maximum potential of the fan unit completely. We strongly recommend by using brushless motor, for example, Hacker B20-15L... etc. The rpm/v vale of the brushless motor that we recommend is recommended in range of 3700 ~ 4200.

### FAN ASSEMBLY

1. Assemble the adapter on the motor shaft. Secure two M3 set screws with hex wrench. Assure that the distance between the adapter and motor is as shown:
2. Install the adapter-motor assembly into the motor tube of the duct. Secure the motor with M3 or M2.6 screws.
3. Install the rotor into adapter. Secure the rotor with M3 flat head screw. Ensure that the rotor must be concentric to the duct. If not, please repeat 2<sup>nd</sup> step to readjust the motor's position.
4. Run the ducted fan unit from low to high power carefully.



### Intake Ring

According to the computational fluid dynamics simulations and experiments, the intake ring provides 20~30% of the total static thrust of the ducted fan unit.

If your airplane is alike a jetfighter, for example, F16-style, then the intake ring may not necessary to be used. You are suggested to refer the area and shape of the intake ring that we provided to form the intake lip of your jet.

### PERFORMANCE LIST

RPM	Thrust (Grams)	Thrust (Ounces)
18000	101	3.56
21000	140	4.94
24000	184	6.49
27000	235	8.29
30000	292	10.3
32000	334	11.78

We suggest that the customer use the ducted fan in the range of the above-mentioned specification, even through the rotor can operate in excess of the specification.

### REPLACEMENT PARTS

The replacement parts which listed below are available for the ducted fan unit. You can order directly from your local dealer

Name	Part number
The ducted Unit-complete(Φ2.0mm)	111101
The ducted Unit-complete(Φ2.3mm)	111102
Rotor	111103
Duct	111104
Adapter assembly(Φ2.0mm)	111105
Adapter assembly(Φ2.3mm)	111106

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# DF 70 Electrical Ducted Fan

## Operating Instruction

### INTRODUCTION

Thank you for choosing the "DF 70" ducted fan unit. This ducted fan is designed by a group of professional jet engine engineers. Through conscientiously computational fluid dynamics (CFD) simulation and experiment testing, we assure that the performance of this ducted fan may perform better than other same class products under same test condition.

Before you start assembling and operating the fan, please carefully read through the following instructions.

### SPECIFICATION

Ducted Outer\Inner Diameter : 72\69mm  
 Rotor : 8 Blades  
 Weight : 47 g (without intake ring)

### KIT CONTENTS

Name	Qty
● Rotor	1
● Spinner	1
● Intake Ring	1
● Duct	1
● Adapter assembly	
Adapter	1
M6 Nut	1
M3 Set Screw	2
M3 Flat Head Screw (Spinner)	1
M3 Screw (Motor)	2
Hex Wrench	1

### SAFETY INSTRUCTIONS

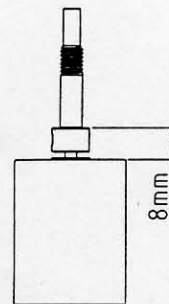
1. Assure all parts are secured before start operating.
2. Do not operate the fan unit by holding in your hands.
3. Do not stand in front of the fan while it is operating.
4. Due to the strong suction force of the fan unit, keep all loosen items away from the intake ring.
5. After the intake ring has already been used. Due to the strong suction force of the fan unit, please fix the intake ring to the duct using glue or tape for avoiding it fall out.
6. Before flying, always check the duct. The duct should be clear of all obstructions in order to avoid rotor's damage.

### MOTOR SUGGESTION

The ducted fan unit has been designed for the Graupner "Speed 480" or similar motor. The suitable motor diameter is up to 29mm. In order to elaborate the maximum potential of the fan unit completely, we strongly recommend by using brushless motor, for example, MEGA 16/15/2 or 16/15/3 · Hacker B40-14S · Hacker B20-15L ... etc. The rpm/V vale of the brushless motor is recommended in range of 2800 ~ 3700.

### FAN ASSEMBLY

1. Assemble the adapter on the motor shaft. Secure two M3 set screws with wrench. Assure that the distance between the adapter and motor is as shown:
2. Install the adapter-motor assembly into the motor tube of the duct. Secure the motor with M3 screws.
3. Install the rotor into adapter. Secure the rotor with M6 nut. Ensure that the rotor must be concentric to the duct. If not, please repeat 2<sup>nd</sup> step to readjust the motor's position.
4. Mount the spinner on the rotor. Secure the spinner with M3 flat head screw. Don't tight the screw too much.
5. Run the ducted fan unit from low to high power carefully. Meanwhile, check the rotor is rotating without vibration. Otherwise, please turn the spinner 45°, then check it again until it rotates smoothly.



### Intake Ring

According to the computational fluid dynamics simulations and experiments, the intake ring provides 20~30% of the total static thrust of the ducted fan unit.

If your airplane is alike a jetfighter, for example, F16-style, then the intake ring may not necessary to be used. You are suggested to refer the area and shape of the intake ring that we provided to form the intake lip of your jet.

### PERFORMANCE LIST

RPM	Thrust (Grams)	Thrust (Ounces)
18000	211	7.44
21000	291	10.26
24000	384	13.55
27000	491	17.32
30000	612	21.59
31000	655	23.1

We suggest that the customer use the ducted fan in the range of the above-mentioned specification, even through the rotor can operate in excess of the specification.

### REPLACEMENT PARTS

The replacement parts which listed below are available for the ducted fan unit. You can order directly from your local dealer.

Name	Part number
The ducted Unit-complete(Φ3.17mm)	112100
Rotor	112102
Duct	112103
Adapter assembly(Φ3.17mm)	112104

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# DF 90 Electrical Ducted Fan Operating Instruction

## INTRODUCTION

Thank you for choosing the "DF 90" ducted fan unit. This ducted fan is designed by a group of professional jet engine engineers. Through conscientiously computational fluid dynamics (CFD) simulation and experiment testing, we assure that the performance of this ducted fan may perform better than other same class products under same test condition.

Before you start assembling and operating the fan, please carefully read through the following instructions.

## SPECIFICATION

Ducted Outer/Inner Diameter : 93.4/90mm  
 Rotor : 8 Blades  
 Weight : 83 g (without intake ring)

## KIT CONTENTS

Name	Qty
● Rotor	1
● Spinner	1
● Intake Ring	1
● Duct	1
● Adapter assembly	
Adapter	1
M6 Nut	1
M3 Set Screw	2
M3 Flat Head Screw (Spinner)	1
M3 Screw (Motor)	2
Hex Wrench	1

## SAFETY INSTRUCTIONS

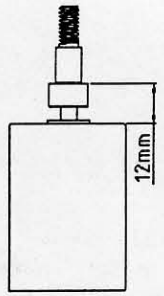
1. Assure all parts are secured before start operating.
2. Do not operate the fan unit by holding in your hands.
3. Do not stand in front of the fan while it is operating.
4. Due to the strong suction force of the fan unit, keep all loosen items away from the intake ring.
5. After the intake ring has already been used. Due to the strong suction force of the fan unit, please fix the intake ring to the duct using glue or tape for avoiding it fall out.
6. Before flying, always check the duct. The duct should be clear of all obstructions in order to avoid rotor's damage.

## MOTOR SUGGESTION

The ducted fan unit has been developed for the Graupner "Speed 600" or similar motor. The suitable motor diameter is up to 36.5 mm. In order to elaborate the maximum potential of the fan unit completely. We recommend you to use brushless motor strongly, for example, MEGA 22/20 or 22/30 · Hacker B50-18S or B50-14L ... etc. The rpm/v vale of the brushless motor that we recommend is about 1000 ~ 1500.

## FAN ASSEMBLY

1. Assemble the adapter onto the motor shaft. Secure two M3 set screws using wrench. Be sure that the distance between the adapter and motor is as show:
2. Install the adapter-motor assembly into the motor tube of the duct. Secure the motor with M3 screws.
3. Install the rotor into adapter. Secure the rotor with M6 nut. Ensure that the rotor must be in the center of the duct. If not, please repeat 2st step to adjust the motor's position.
4. Mount the spinner onto rotor. Secure the spinner with M3 flat head screw. Don't tight the screw too much.
5. Run the ducted fan unit from low to high power carefully. At the same time, check the rotor whether it rotates without vibration. If not, please turn the spinner 45°, then check it again until it rotate smoothly.



## Intake Ring

According to the computational fluid dynamics simulations and experiments, the intake ring provides 20~30% of the total static thrust of the ducted fan unit.

If your airplane is like a jetfighter, for example, F16-style, the intake ring that we provided is not necessary to be used. We suggest that you can refer to the area and cross-section of the intake ring that we provided to form the intake lip of your jet.

## PERFORMANCE LIST

RPM	Thrust (Grams)	Thrust (Ounces)
15000	551	19.44
18000	781	27.55
21000	1050	37.04
24000	1360	47.97
27000	1701	60

We suggest that the customer use the ducted fan in the range of the above-mentioned specification, even through the rotor can operate in excess of the specification.

## REPLACEMENT PARTS

Listed below are the replacement parts that are available for the ducted fan unit. We suggest ordering directly from your local dealer.

Name	Part number
The ducted Unit-complete	113100
Rotor	113101
Duct	113102
Adapter assembly(Φ5mm)	113103

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Landings !***