



MISSION BRIEFING

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12 Handcrafted and about

BLADE SPEC.
DIAMETER: 3,050 mm
BLADES: 3
PITCH (75%): 28°
MATERIAL: ALUMINUM
WEIGHT: 42.6 kg

PITCH ANGLE

28°
18°
8°

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m
AREA: 16.87 m²

06 EJECTION SEAT
MA-2

1
3
4

510

470

3,620

3 COMBUSTOR

4 TURBINE

5 EXHAUST

1 CLEVIS

2 PISTON ROD

3 CYLINDER

4 TRUNNION

02 LANDING GEAR

MAIN GEAR ASSEMBLY

(1) UPPER TRUNNION
(2) DRAG STRUT
(3) SHOCK STRUT
(4) TORQUE LINK
(5) AXLE
(6) WHEEL ASSEMBLY

1,250

Ø 660

03 WING SECTION

CA 23012

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



01 Overview

Built around the largest official VForce 86BLF04 motor kit, the Monster Rhino is designed for demanding flight simulation enthusiasts seeking uncompromising force feedback, exceptional rigidity, and long-term reliability.

Unlike mass-produced consumer hardware, every Monster Rhino is built to order, individually assembled, inspected, and tested before shipment. Every unit is carefully prepared by hand to ensure consistent quality and reliable performance.

The platform is available in three configurations, allowing users to choose the solution that best matches their intended application—from compact desktop setups to extended helicopter cyclics and long joystick extensions.

Designed with serviceability, structural integrity, and future upgrades in mind, the Monster Rhino combines proven engineering principles with premium manufacturing methods, including FDM PETG, MJF PA12, and precision-machined aluminum components.

ENGINEERING NOTE

The Monster Rhino is a kitbase, specifically designed for the official VForce 86BLF04 motor kit. Motors are not included and must be purchased separately directly from VForce.



02 Available Variants

The Monster Rhino is available in **three carefully engineered configurations**, each designed to meet different performance requirements while maintaining the same core design philosophy and overall build quality.

All variants share the same **solid FDM PETG housing**, identical electronics, cooling system, belt drive, and grip connector. The primary differences lie in the gimbal construction, manufacturing method, and intended application.

Whether you're building a compact desktop setup, flying with long stick extensions, or operating a helicopter cyclic, there's a Monster Rhino configuration optimized for your mission profile.

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MATERIAL: ALUMINUM
WEIGHT: 42.6 kg

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28°
18°
8°

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m

solid FDM

SECTION A-A

Ø 660

Ø 660

1
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4

510

470

3,620

Ø 920

3 COMBUSTOR

4 TURBINE

5 EXHAUST

08 FLAP ACTUATOR
HYDRAULIC

780

1

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3

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1 CLEVIS

2 PISTON ROD

3 CYLINDER

4 TRUNNION

02 LANDING GEAR
MAIN GEAR ASSEMBLY

- 1 UPPER TRUNNION
- 2 DRAG STRUT
- 3 SHOCK STRUT
- 4 TORQUE LINK
- 5 AXLE
- 6 WHEEL ASSEMBLY

1,250

Ø 660

03 WING SECTION
NACA 23012

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



02 Available Variants

STANDARD

STANDARD 550 € ex. VAT + Shipping

The Standard version features a **solid FDM PETG gimbal**, making it an excellent choice for desktop configurations and stick extensions up to 20 cm.

It offers exceptional rigidity and outstanding value while retaining the same electronics and core architecture as the higher-end variants.

Recommended for

- Desktop setups
- Extensions up to 20 cm

Construction

- Housing: Solid FDM PETG
- Gimbal: Solid FDM PETG
- Grip Connector: MJF PA12

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WEIGHT: 42.6 kg

PITCH ANGLE

28°

18°

8°

3,620

3 COMBUSTOR

4 TURBINE

5 EXHAUST

APPROXIMATE
VALUES

02

1

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02

03

03

03

03

WHEEL ASSEMBLY

180

AXLE

TORQUE LINK

DRAG STRUT

UPPER TRUNNION

LANDING GEAR

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08 FLAP ACTUATOR
HYDRAULIC

2) PISTON ROD

3) CYLINDER

4) TRUNNION

290

03 WING SECTION
NACA 23012

1,250

240

Ø 660

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



02 Available Variants

PREMIUM DUO CORE

PREMIUM DUO CORE 700 € ex. VAT + Shipping

Developed as a cost-effective alternative to the Premium version, the Duo Core combines precision-machined aluminum gimbal arms with a MJF PA12 center core, internally reinforced by a 10 mm aluminum tube.

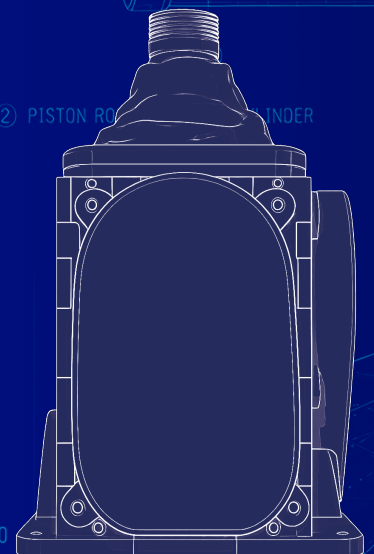
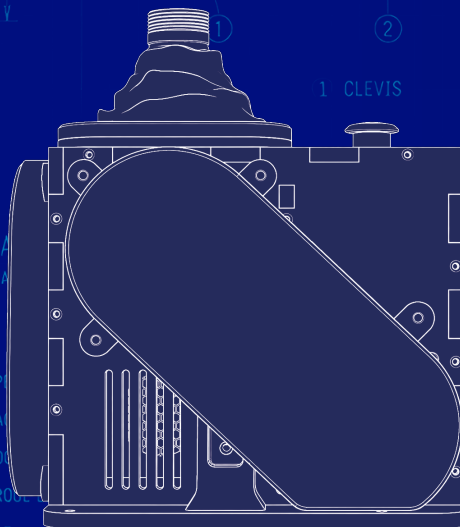
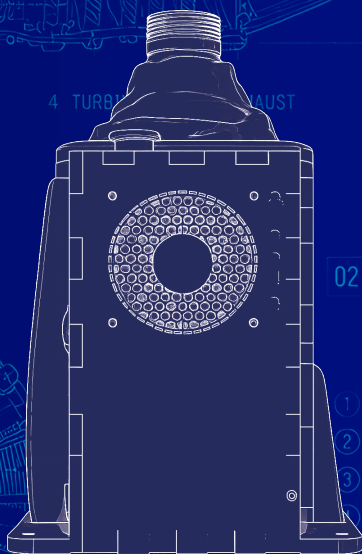
This hybrid construction delivers near-Premium rigidity while significantly reducing manufacturing costs, making it the ideal choice for users requiring maximum stiffness at a more accessible price point.

Recommended for

- Desktop setups
- Extensions up to 30 cm

Construction

- Housing: Solid FDM PETG
- Gimbal: Solid FDM PETG
- Grip Connector: MJF PA12





02 Available Variants

PREMIUM

PREMIUM 800 € ex. VAT + Shipping

The Premium version features a fully MJF-manufactured PA12 gimbal, providing the highest dimensional accuracy, excellent surface quality, and outstanding long-term durability.

Designed for enthusiasts seeking the most refined and technically advanced Monster Rhino configuration.

Recommended for

- Extensions over 30 cm
- Helicopter goosenecks
- Professional simulator installations
- Construction
- Housing: Solid FDM PETG
- Gimbal: Full MJF PA12
- Grip Connector: MJF PA12

Construction

- Housing: Solid FDM PETG
- Gimbal: Full MJF PA12
- Grip Connector: MJF PA12

ENGINEERING NOTE

All three variants share the same electronics, firmware compatibility, cooling system, housing, and overall geometry. Only the gimbal construction differs



03 Whats included

Every Monster Rhino is delivered as a **95% pre-assembled kitbase**, allowing you to focus on the final assembly of the official VForce 86BLF04 motor kit rather than spending countless hours building the entire platform from scratch.

All mechanical components are professionally assembled, aligned, and tested before shipment, significantly reducing build time while maintaining the flexibility of a DIY platform.

Recommended for

- 95% pre-assembled Monster Rhino Kitbase
- Pre-crimped power wiring harness (Power Connector to Emergency Stop to Mainboard)
- Integrated intake & exhaust cooling system
- Protective belt safety covers
- Official VForce 10% discount voucher for the VForce 86BLF04 Motor Kit

Preassembled for you

- ✓ Fully assembled mechanically
- ✓ Cooling system installed
- ✓ Wiring prepared and pre-crimped
- ✓ Mechanical function tested
- ✓ Carefully packaged for worldwide shipping

ENGINEERING NOTE

The Monster Rhino combines the convenience of a nearly fully assembled product with the flexibility of a DIY platform. By eliminating the most time-consuming mechanical assembly steps, builders can complete their setup considerably faster while retaining full control over the final configuration.



04 Required Components

applies for all Variants

To complete your Monster Rhino, a few additional components are required. These items are intentionally not included, allowing you to configure your system according to your individual preferences and existing hardware.

Required components

- Official VPFforce 86BLF04x2+USB Motor Kit
- Joystick Grip (TM/VPC compatible)
- 24 V Power Supply (Meanwell LRS 350/24 is recommended)
- USB Cable
- Mounting Hardware (depending on your simulator setup)
- Power Wire with XT60 connector (can be purchased separately for upcharge)

Why aren't these components included?

Many flight simulation enthusiasts already own compatible grips, power supplies, or have specific hardware preferences.

Keeping these components separate allows maximum flexibility while avoiding unnecessary costs for parts you may already have.

ENGINEERING NOTE

The Monster Rhino is exclusively designed for the official VPFforce 86BLF04 motor kit. The motor kit, grip, and power supply are intentionally not supplied and need to be purchased separately to provide maximum flexibility and simplify worldwide shipping.



05 VPForce Motor Kit

The Monster Rhino has been engineered specifically for the official **VPForce 86BLF04 Motor Kit**. By focusing on the largest officially supported VPForce motor platform, the Monster Rhino delivers exceptional rigidity, reliability, and force feedback performance while remaining fully compatible with the VPForce ecosystem.

The VPForce Motor Kit is not included and must be purchased separately directly from VPForce.

Official partner benefit

Every Monster Rhino includes an **official 10% discount voucher** for the VPForce 86BLF04 Motor Kit.

To prevent misuse, **the voucher is issued after full payment for your Monster Rhino has been received.**

Why purchase the motor kit separately?

Purchasing the motor kit directly from VPForce ensures that you receive:

- The latest official hardware revision
- Direct manufacturer support and warranty to your name
- Official firmware compatibility
- Full access to VPForce software updates

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28°
18°
8°

3,620

3 COMBUSTOR

4 TURBINE

(1) UPPER TRUNNION

(2) DRAG STRUT

(3) SHOCK STRUT

(4) TORQUE LINK

(5) AXLE

(6) WHEEL ASSEMBLY

06 EJECTION SEAT

3

4

08 FLAP ACTUATOR
HYDRAULIC

03 WING SECTION
NACA 23012

SECTION A-A

1,250

Ø 660

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



06 Order information

Every Monster Rhino is **built exclusively to order.**

No inventory is kept. Each unit is individually manufactured, assembled, and tested specifically for the customer.

This approach allows continuous product improvements while ensuring that every customer receives a freshly manufactured kitbase built to the latest design revision.

LEAD TIME

Production times vary depending on current order volume and manufacturing capacity.

For the latest estimated lead time, please feel free to contact me before placing your order.

PAYMENT

Standard edition

For the Standard version, payment is only required once your Monster Rhino has been completed and is ready for shipment.

Premium & Premium Duo Core

Due to the significantly higher production costs of the Premium and Premium Duo Core variants, a down payment is required before production begins.

The down payment reserves your production slot and covers part of the investment in materials and manufacturing.

If the order is cancelled after production has started, the down payment will be retained to cover the costs already incurred.

The remaining balance is only due once your Monster Rhino has been completed and is ready for shipment.



07 Warranty & Return

Every Monster Rhino is individually manufactured specifically for each customer.

Due to the custom-built nature of the product, **returns, cancellations, or refunds are not possible once production has started.**

Should your Monster Rhino arrive damaged or exhibit a manufacturing defect, please contact me directly. I will always do my best to find a fair and practical solution.

ENGINEERING NOTE

If you have any questions before placing your order, please don't hesitate to get in touch. I'm happy to help you choose the right configuration before production begins.

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BLADES: 3
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MATERIAL: ALUMINUM
WEIGHT: 42.6 kg

PITCH ANGLE

28°
18°
8°

3,620

3 COMBUSTOR 4 TURBINE 5 EXHAUST

08 FLAP ACTUATOR
HYDRAULIC

780

1 CLEVIS 2 PISTON ROD 3 CYLINDER 4 TRUNNION

02 LANDING GEAR
MAIN GEAR ASSEMBLY

(1) UPPER TRUNNION
(2) DRAG STRUT
(3) SHOCK STRUT
(4) TORQUE LINK
(5) AXLE
(6) WHEEL ASSEMBLY

1,250

03 WING SECTION
NACA 23012

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



08 Disclaimer

03 WING SECTION
NACA 23012

The Monster Rhino is an independently manufactured force feedback kitbase.

The original Rhino concept was developed by members of the VPForce community and has been further iterated and refined by Winger with the kind permission of the original designer.

Monster Rhino is **not affiliated with or endorsed by VPForce or any flight simulator developer or publisher.**

All product names, company names, and trademarks mentioned in this document remain the property of their respective owners and are used for identification purposes only.

ENGINEERING NOTE

Monster Rhino is designed for enthusiasts who appreciate high-quality, handcrafted hardware built in small quantities.

BLADE SPEC.
DIAMETER: 3,050 mm
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WEIGHT: 42.6 kg

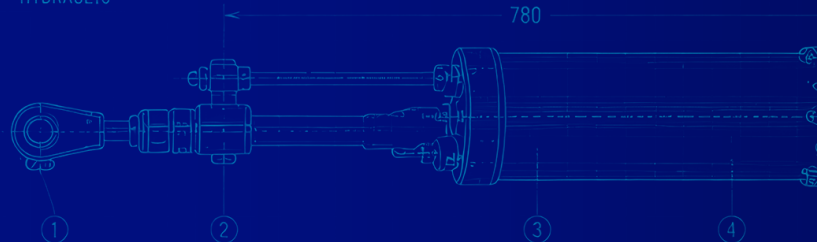
PITCH ANGLE

28°

18°

8°

08 FLAP ACTUATOR HYDRAULIC



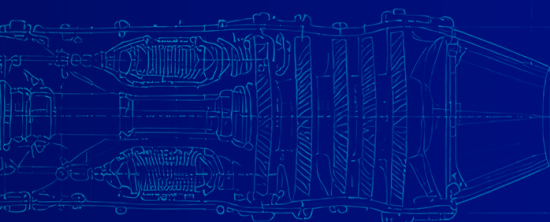
1 CLEVIS

2 PISTON ROD

3 CYLINDER

4 TRUNNION

3,620



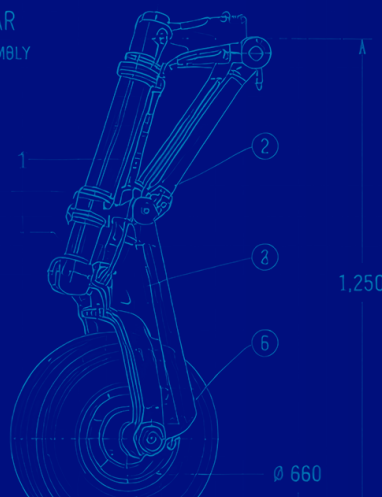
3 COMBUSTOR

4 TURBINE

5 EXHAUST

02 LANDING GEAR MAIN GEAR ASSEMBLY

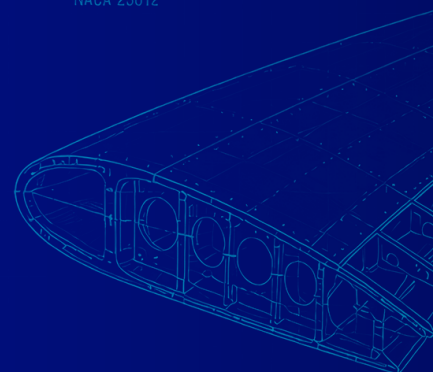
- 1 UPPER TRUNNION
- 2 DRAG STRUT
- 3 SHOCK STRUT
- 4 TORQUE LINK
- 5 AXLE
- 6 WHEEL ASSEMBLY



1,250

Ø 660

03 WING SECTION NACA 23012



SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



09 Liability

03 WING SECTION
NACA 23012

The Monster Rhino is intended for experienced users familiar with the assembly and operation of DIY force feedback hardware.

Assembly, installation, and operation are entirely at the user's own risk.

Winger accepts no liability for damage resulting from improper assembly, incorrect installation, incompatible components, modifications, or misuse of the product.

ENGINEERING NOTE

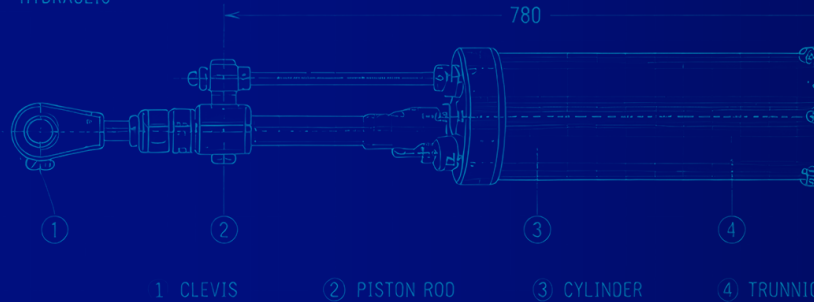
Please follow the supplied assembly instructions carefully and ensure that all electrical connections are made correctly before powering the system.

BLADE SPEC.
DIAMETER: 3,050 mm
BLADES: 3
PITCH (75%): 28°
MATERIAL: ALUMINUM
WEIGHT: 42.6 kg

PITCH ANGLE

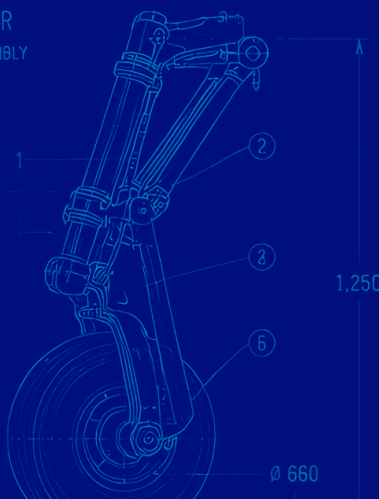
28°
18°
8°

08 FLAP ACTUATOR HYDRAULIC



02 LANDING GEAR MAIN GEAR ASSEMBLY

- 1 UPPER TRUNNION
- 2 DRAG STRUT
- 3 SHOCK STRUT
- 4 TORQUE LINK
- 5 AXLE
- 6 WHEEL ASSEMBLY



03 WING SECTION NACA 23012

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



10 Shipping

Monster Rhino is shipped **worldwide**, subject to applicable export regulations and shipping restrictions.

Every unit is securely packaged to protect precision components during international transport and is shipped with **tracking information**.

Shipments to countries **outside the European Union** are supplied under **DAP (Delivered At Place)** Incoterms.

Any import duties, customs fees, VAT, or other local taxes are the responsibility of the buyer.

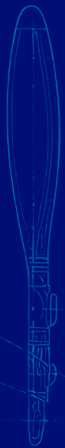
ENGINEERING NOTE

Shipping may not be available to certain countries or regions due to export regulations, sanctions, carrier restrictions, or local import laws. Please contact me if you are unsure whether shipping to your destination is possible.

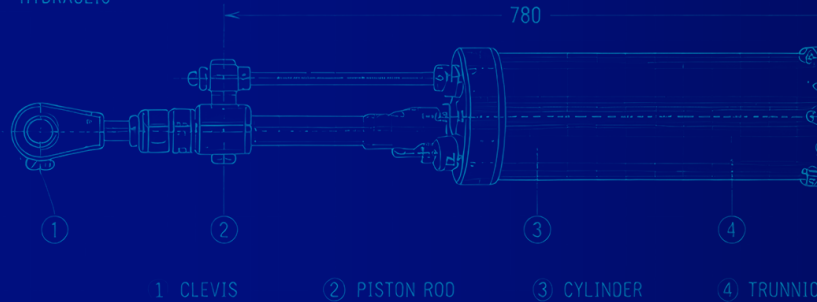
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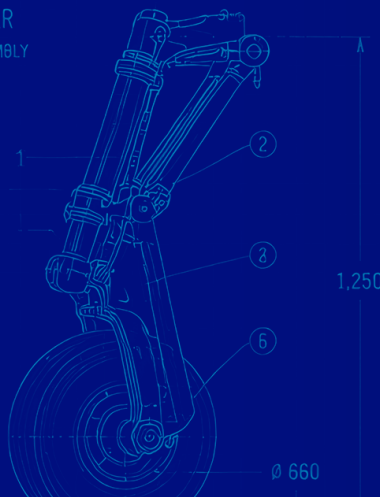


08 FLAP ACTUATOR HYDRAULIC



02 LANDING GEAR MAIN GEAR ASSEMBLY

- 1 UPPER TRUNNION
- 2 DRAG STRUT
- 3 SHOCK STRUT
- 4 TORQUE LINK
- 5 AXLE
- 6 WHEEL ASSEMBLY



03 WING SECTION NACA 23012

SPAN (TOTAL): 11.20 m
CHORD (ROOT): 2.10 m
CHORD (TIP): 0.85 m



11 Software compatibility

VPForce ecosystem

The Monster Rhino is **fully compatible with the VPForce software ecosystem** and can therefore be used with virtually all major PC flight simulators supporting VPForce force feedback.

Officially supported

- DCS World (Native Force Feedback + VPForce TelemFFB enhancements)
- Microsoft Flight Simulator 2020
- Microsoft Flight Simulator 2024
- X-Plane 11
- X-Plane 12
- IL-2 Great Battles

Additional simulators may also be compatible through future VPForce software updates.

FORWARD COMPATIBILITY

The Monster Rhino is **fully compatible with existing OG Rhino TelemFFB and Configurator profiles**.

When upgrading from an original Rhino to a Monster Rhino, **existing profiles can generally be used without modification**.

If your Monster Rhino is configured with a different power supply specification than your previous Rhino, the corresponding voltage and amperage settings might need adjustment. Please refer to official VPForce Specifications for 86BLF04 DIY Motor Kit specifications.



12 Handcrafted and about built to order

Every Monster Rhino is **individually manufactured to order**, with a strong focus on quality, precision, and long-term reliability.

Rather than producing units for inventory, each kitbase is assembled, inspected, tested, and prepared specifically for its future owner.

This approach allows continuous refinement, careful attention to detail, and the flexibility to incorporate improvements whenever appropriate.

Every Monster Rhino reflects countless hours of engineering, practical experience, and valuable feedback from the flight simulation community.

ENGINEERING NOTE

Every Monster Rhino is built to order and personally assembled, inspected, tested, and packaged by Winger before shipment.



ABOUT WINGER.

Flight and motion sim enthusiast Designer.

Probably pilot in the next life.

Winger





13 DIY Service Scope

Monster Rhino is not offered as a mass-produced consumer product or plug-and-play end device. It is a personal DIY/kitbase service for experienced flight simulation and DIY users.

WHAT THE SERVICE COVERS

- sourcing selected mechanical parts and materials for the agreed build,
- 3D printing and mechanical preparation of kitbase components,
- partial mechanical assembly, inspection and practical build support,
- direct communication before production starts. There is no automated checkout.

OPEN PROJECT BASIS

The underlying project data, BOMs and STL files are publicly available. Customers may source parts and build the project independently without support from Monster Rhino.

NOT INCLUDED

- Motors, mainboard and core force-feedback electronics are not supplied by Monster Rhino.
- These components must be ordered directly from VPForce or the respective provider.
- Certificates, conformity documentation and safety information for those components are provided by the respective manufacturer or supplier.

ENGINEERING NOTE

Every build starts with direct contact, scope clarification and a shared understanding of what is included before production begins.



14 Safety Notes

Monster Rhino is intended for experienced simulation and DIY users who understand mechanical assembly, safe mounting and the risks of moving force-feedback hardware.

CUSTOMER RESPONSIBILITIES

- final assembly, electrical integration, configuration and commissioning,
- stable mounting to a suitable cockpit, rig or desk structure,
- checking screws, belts, cables and mounting points before each use,
- following all instructions and warnings from VPForce and other component suppliers.

SAFETY AND USE

- Not a toy. Not intended for children.
- Disconnect power before mechanical or electrical work.
- Moving parts can create crushing or injury hazards.
- Do not operate if unusual noise, smell, heat or damage occurs.

CERTIFICATION AND RETURNS

No separate certification of a complete Monster Rhino end device is provided for the DIY/kitbase service. The kitbase is prepared individually for each customer. Due to the custom-built nature of the service, returns, cancellations or refunds are generally not intended once production has started. Statutory rights in case of defects remain unaffected.

C O N T A C T

Questions about scope, safe use, defects or transport damage:
david_1@gmx.de