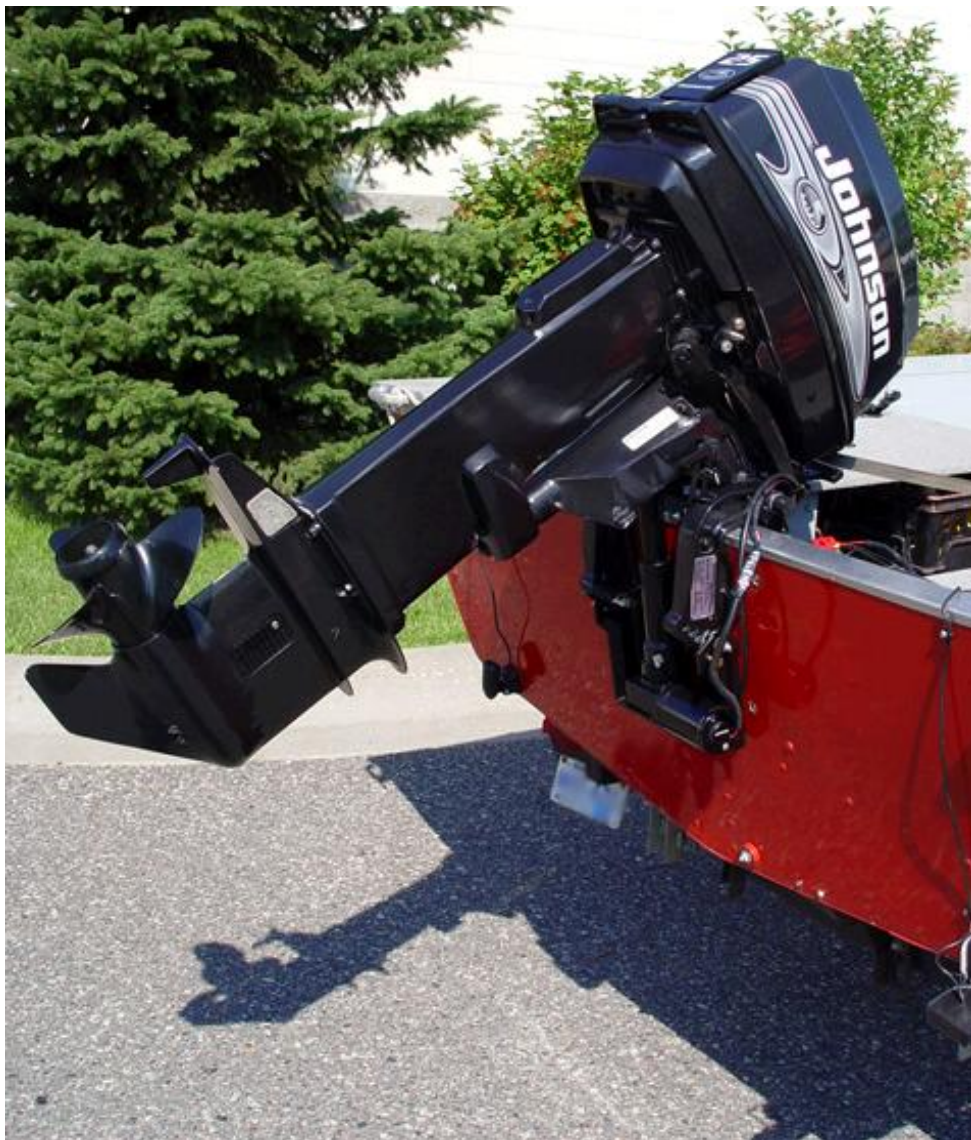




## Panther Integral Trim & Tilt Model 55-0025

Designed to Fit Johnson & Evinrude 2-Stroke 2-Cylinder Motors, 1976 – 2004, 20HP – 35HP  
Installation Instructions



[www.marinetechproducts.com](http://www.marinetechproducts.com)

## Which Motors will work with the Panther Integral Trim & Tilt Model 55-0025?

- The Panther Integral Trim & Tilt, Model 55-0025, will work with Johnson & Evinrude Two-Stroke outboards.
- Fits motors made from 1976 to 2004.
- Designed for the 20, 25, 28, 30, and 35 horse power two cylinder motors.
- Programmed Shallow Water Drive (flip switch) must be on the side of the motor, not the front. \*see illustration.



Not Compatible  
Flip Switch on Front.



Compatible  
Flip Switch on Side.

### Tools Required:

- Screwdriver; Flat Head.
- 9/16 inch Open end wrench.
- 5/16 inch Allen wrench.
- 3/16 inch pin punch.



## Step 1

Remove the lower cross bar from the clamp screw assemblies.



## Step 2

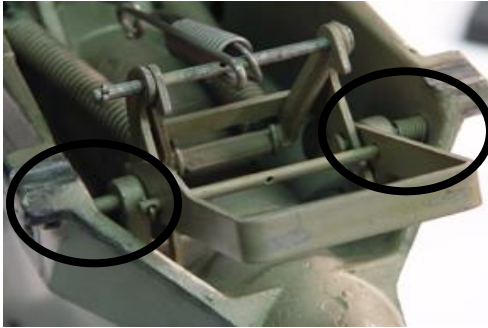
Remove the outboard motor tilt pin.



### Step 3

**Remove the reverse locking mechanism from the center clamp housing on the outboard.**

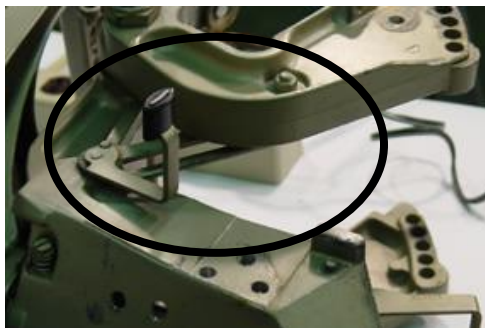
1. Remove the cotter pins and the washers from the link pins on the port and starboard sides of the center clamp housing.
2. Using a pin punch tool remove the link pins. Take note on which direction the pins were installed. Save the link pins, cotter pins and washers for reuse on the Panther Integral Tilt & Trim.



3. When the pins are removed, then all of the parts of the reverse locking mechanism can be removed from the center clamp housing.



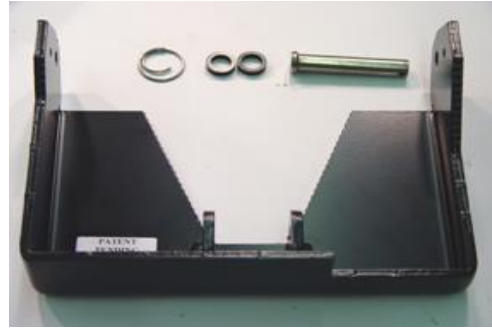
4. None of these parts will be reused, except for the link pins and the associated cotter pins and washers.
5. **Special Note: Do not remove the port and starboard tilt locking bars or the locking lever and shaft.**



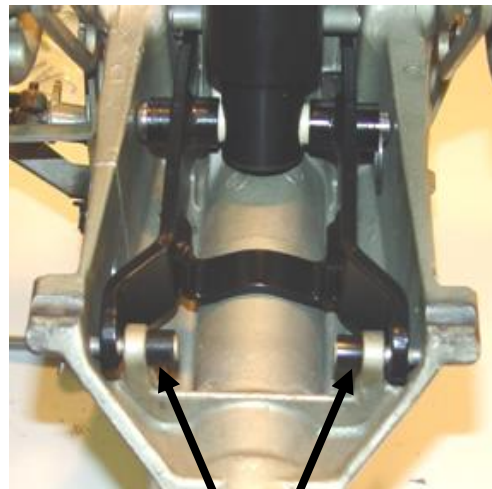
## Step 4

### Installing the Yoke and Actuator Assembly.

1. The Integral Trim & Tilt is shipped completely assembled. To install the yoke and actuator assembly, it is best to remove the lower frame by removing the circle cotter pin and clevis pin on the electric motor end of the actuator.



2. The yoke will fit up and under the outboard's locking levers shaft. The two  $\frac{1}{4}$  inch holes on the other end of the yoke assembly will then line up with the two  $\frac{1}{4}$  inch holes in the lower section of the outboard's clamp bracket center housing. Using the two link pins which were removed from the outboard's reverse locking mechanism, insert the pins from the same direction that they were originally removed, (as noted in Step 3). Then install the two  $\frac{1}{4}$  inch plastic spacers (supplied) before reinstalling the washers and cotter pins that were removed with the link pins.



Spacers.

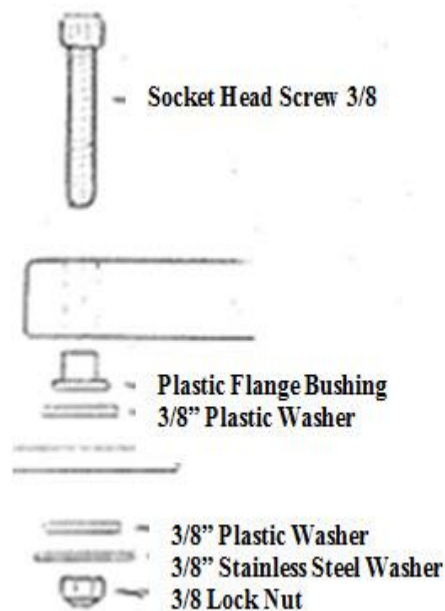
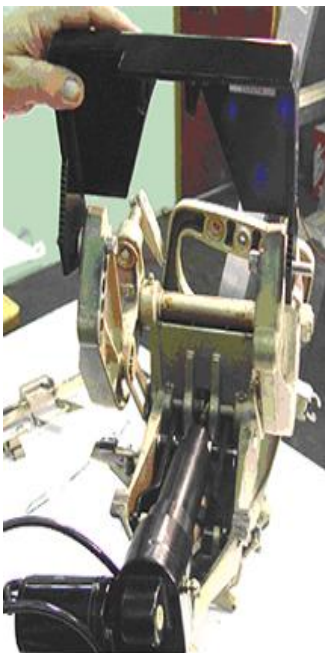
## Step 5

### Installing the lower frame.

1. After the yoke and actuator assembly has been installed, carefully tap the two flange bushings into the outboard's lower outside tilt pin holes, on both clamp screw brackets.



2. While holding the lower frame in place, insert the two socket head screws from the inside. Use the plastic washers as needed to eliminate end play.
3. Special Note: Do not over tighten the lock nuts, the lower frame must be allowed to pivot freely.



## Step 6

### Reattach the actuator to the lower frame.

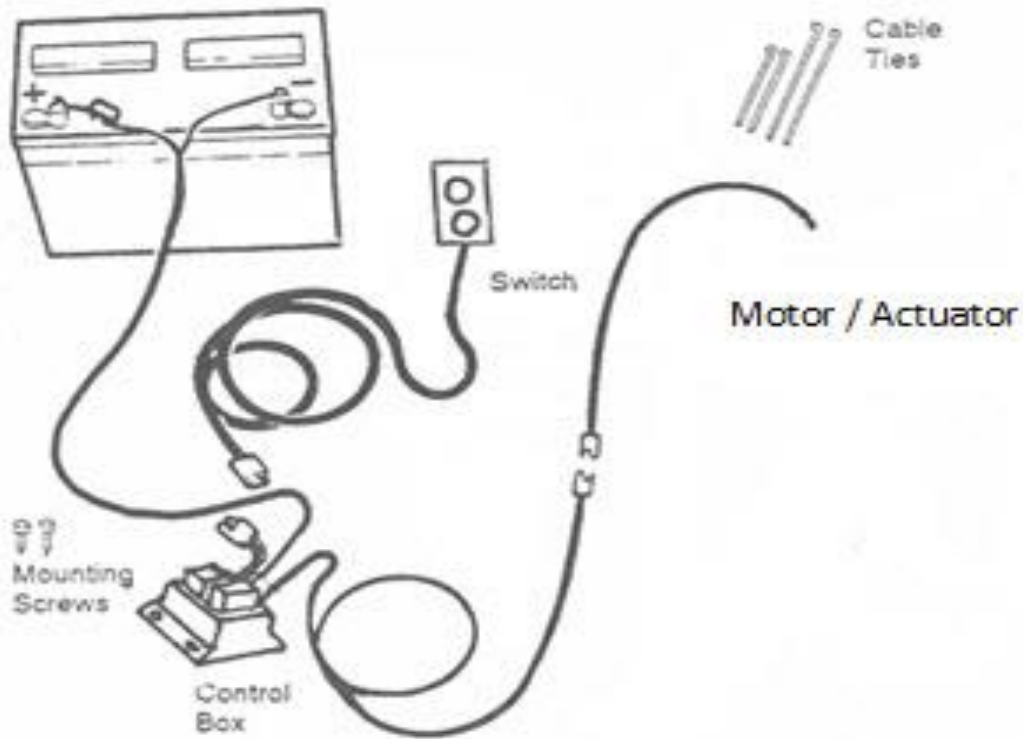
1. Using the circle cotter pin and clevis pin that was removed in Step 4, reconnect the electric motor end of the actuator to the lower frame assembly.
2. To make it easier to connect the actuator to the lower frame, you can connect the relay control and switch to a 12 volt battery and the actuator to adjust the length of the actuator.



## Step 7

### Test the operation of the Panther Integral Tilt & Trim.

1. Connect the relay control and switch to the actuator motor, and a 12 volt battery.
2. Slowly run to full tilt and back, checking for any interference or binding.

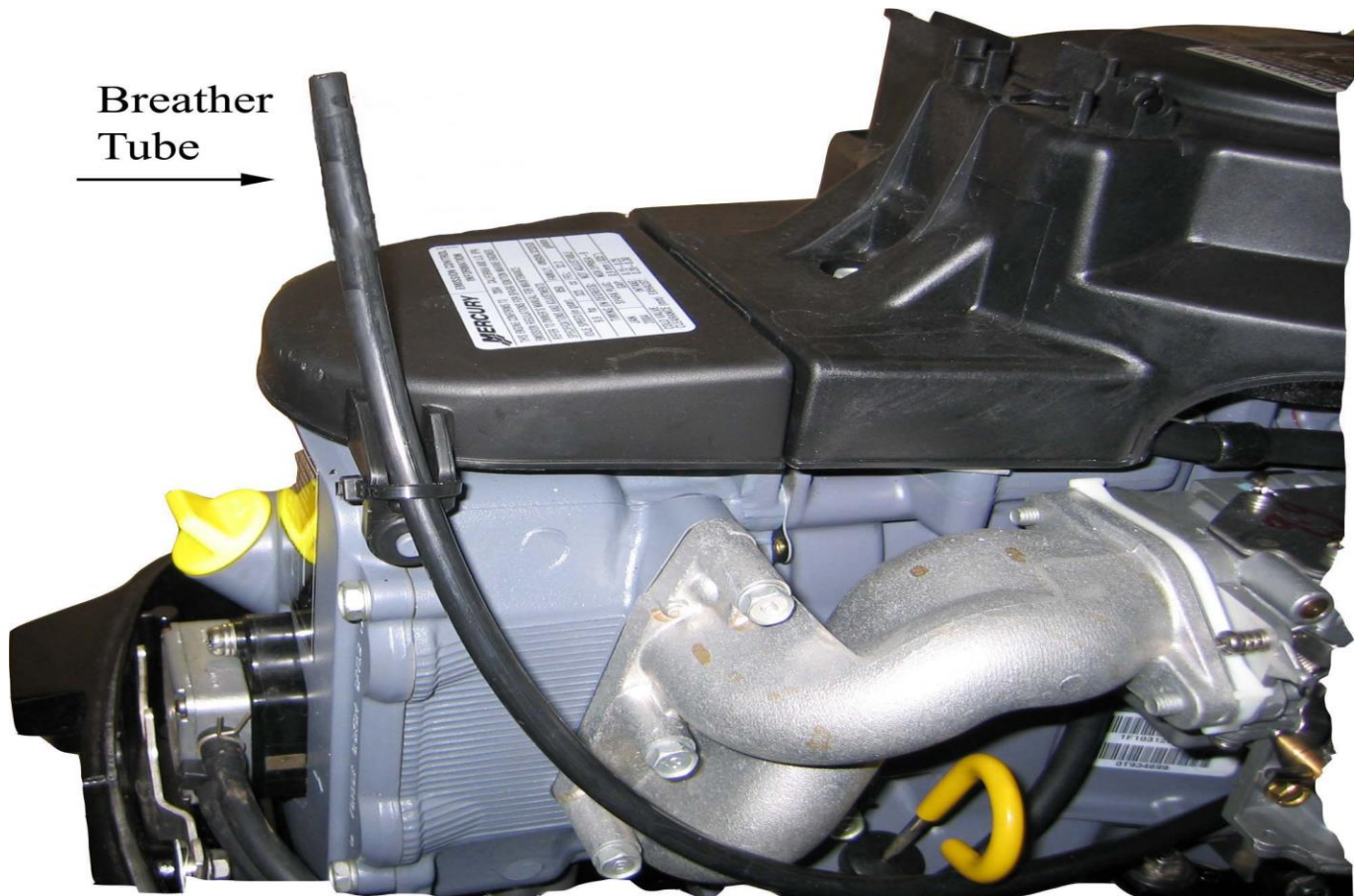




## Step 8

# THE BREATHER TUBE

The actuator to your motor lift is designed for safe boating use. However, because of its precision design, it is equipped with a “breather tube” to allow the actuator to have full up and down function. The breather tube **MUST** be mounted in a way to prevent water intake. The best location for this is under the hood of the motor.



1. Remove the cover from the outboard motor
2. Thread the breather tube through an existing opening in the base of the motor, or if necessary, drill a 3/8 inch hole for access.
3. Making sure there is plenty of slack in the tube to allow for full movement of the motor, attach the breather tube inside the motor compartment in a location that will not be affected by moving engine parts. Use cable ties to insure that the end of the tube stays high up in the compartment to prevent accidental water intake. The tube **MUST** be installed so that no water can get inside the breather tube.

## Step 9

### Install the shear bolts into the lower frame assembly.

1. The lower frame is designed to kick up in the event the outboard hits any underwater objects. To avoid the motor kicking up when driven hard in reverse, insert the brass ¼ inch #20 shear bolts from the outside and through the threaded holes in the lower frame assembly.
2. This will prevent nuisance tilt ups when running the outboard in reverse, yet will allow a shear break to protect the outboard when impacting any underwater objects.

## OPERATING TIPS

With proper care and usage, your Motor Lift unit will provide you with years of trouble-free use. There are two main causes of premature failure where precaution is required.

### 1. Trailering

The actuator used in your motor lift is a precision engineered electro-mechanical device that can deliver up to 5,000 lbs of force for high speed trimming. Through a unique linear ball screw gear mechanism, the actuator is designed to “park” where you put it and it should never settle.

However, as with original equipment trim and tilts, the unit is not designed to support your motor when trailering. Trailering can exert significant forces on your outboard that can cause damage to the motor lift mechanism and to the outboard itself. Therefore when trailering, **always trailer with the motor in the fully lowered position** or use a transom support bracket. (Panther offers the 55-1900 or the 55-2100. 55-2100 shown below).



### 2. Water Intrusion

As described on the preceding page, the breather tube must be secured inside the motor hood to prevent accidental water intrusion. Water intrusion will cause actuator failure. Periodically check the actuator tube to make sure it stays secure in a dry location.

## **Actuator Maintenance**

- 1. At the beginning and end of each season, grease the actuator with a good grade of marine grease. Depending on usage, it may be necessary to add 3-4 pumps of grease in mid-season. DO NOT PUT MORE THAN FOUR PUMPS OF GREASE IN AT ANY TIME.**
- 2. At the end of the season, remove the breather tube fitting from the actuator and spray fogging oil into the cylinder. It may be necessary to apply heat to the breather tube to remove it from the fitting. Replace the fitting by applying RTV sealant (Room Temperature Vulcanizing) to the threads and tighten securely.**

## **REPLACEMENT PARTS AND/OR ACCESSORIES**

**Many parts and accessories can be purchased on the MarineTech website [www.marinetechproducts.com](http://www.marinetechproducts.com)**

**You can also call customer service at 651-486-2010 for parts not shown on the website**

# **TROUBLESHOOTING**

The following are some procedures to follow before calling in for service or warranty work:

## **UNIT DOES NOT RUN**

1. Check battery & connections.
2. Check electric motor.  
Use a double lead jumper and connect the motor's two prong plug directly to a battery.
3. If the motor still does not work, disconnect the motor from the actuator (held on by two small nuts) and plug directly to the battery.
4. If the motor works when it is disconnected from the actuator, the actuator/motor assembly needs replaced.
5. If the motor does not work when disconnected from the actuator, the motor needs replaced.
6. Check Relay Control & Push Button Switch.  
Unplug the three prong connector at the relay control and jumper between the red and the green wires to go down and between the red and blue wires to go up.  
If the unit does not run, the problem is the relay control.  
If it does work, then the problem is the Push Button Switch.

## **UNIT RUNS IN ONE DIRECTION ONLY**

1. Check relay control & push button switch  
Unplug the three prong connector at the relay control and jumper between the red and the green wires to go down and between the red and blue wires to go up.  
If the unit does not run, the problem is the relay control.  
If it does work then the problem is the push button switch.

## **UNIT RUNS BUT MAKES A GRINDING NOISE AND HAS LOW POWER**

1. Gear case low on grease. Add three to four pumps of marine grade grease.

## **UNIT RUNS BUT DOES NOT MOVE**

1. Return or replace actuator.

## **UNIT RUNS BUT MAKES CLICKING NOISE OR JUMPS**

1. Return or replace actuator.

## **UNIT STARTS AND RUNS ON ITS OWN**

1. Replace relay control.

## **DETERMINE IF WATER IS IN ELECTRIC MOTOR**

1. Remove through bolt that is closest to the wires and look for an indication of rust on the bolt. If so there is water inside of the motor housing.



## SERVICE AND WARRANTY

Should your unit ever require service, *please do not return the product to your dealer*. Please call the number below for special instructions on shipping and handling. Please call between 9:00 am - 3:00 pm (Central Standard Time) Monday through Friday. If service is required and covered by warranty, it will be repaired or replaced as described below. If service is required and not covered by warranty, (such as damage caused from improper trailering or from water intrusion through the breather tube), replacement parts are available for purchase and may be paid for by Visa or MasterCard.

### The warranty coverage on this equipment is limited to the terms set forth below:

MarineTech Products, Inc. warrants this product to be free of defects in material and workmanship for a period of ONE (1) YEAR from the date of original retail purchase. **Positive proof of date of purchase is required for warranty service.** If service is required and covered by warranty, the unit will be repaired or replaced with new or factory rebuilt parts at no charge. The defective components must be returned to the address specified, with shipping charges prepaid. Be sure to include your name, address, telephone number and a copy of the sales receipt showing the date of original retail purchase. All sales receipts are subject to verification.

This warranty does not apply if the unit has been damaged by accident, abuse, misuse, poor installation or misapplication, or if it has been modified from its original condition, or if any serial number has been removed or defaced or altered. **This warranty does not cover any expense to remove or reinstall the unit or any of its components.** If a returned unit is not covered by warranty, the sender will be notified and given an estimate of the charges to repair or replace the unit, together with the return shipping charges.

THIS WARRANTY DOES NOT COVER SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO DAMAGE TO OR REPLACEMENT OF OTHER EQUIPMENT AND PROPERTY. THE WARRANTY AND REMEDIES SET FORTH ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. DUE TO THE SPECIAL AND UNIQUE CONDITIONS THAT MAY EXIST IN EACH APPLICATION, THE MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO DEALER, AGENT OR EMPLOYEE IS AUTHORIZED TO MAKE ANY MODIFICATION, EXTENSION OR ADDITION TO THIS WARRANTY.

Some states do not allow exclusion of incidental or consequential damages, so the above exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other legal rights, which may vary from state to state.

### FOR SERVICE

**send an email to - [info@marinetechproducts.com](mailto:info@marinetechproducts.com)**

**or call 651.486.2010**

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