

## Introduction

Congratulations on your purchase of a *Revolution* Motor (**RM**) for the Bolex camera. The *Revolution* uses advanced motor driving techniques to minimize vibration for single-frame, time-lapse and sync filming.

When shooting single-frames, the motor is accelerated from the stopped position for least stress on the cameras.

Sync capable models ramp the motor speed to the target sync speed, then decelerate to a stop.

This manual covers installation of the *Revolution* motor on the Bolex. For filming, refer to the “Operating Instructions.”

## The Models

There are two models available, a time-lapse only version, and a combination unit that does both time-lapse and sync-speed running. Note that the Bolex and motor is much too loud for sync-*sound* filming.

Time-lapse only models will run at slow (1-6fps) sync-speeds.

## Overview

The RM consists of the motor unit, which mounts with the camera, and the control box.

The motor unit consists of the base plate, upon which is mounted the motor pod and the motor driver box. Power is supplied to the motor driver box via a standard 4-pin XLR connector. Pin 1 is ground, pin 4 is positive. Input voltage can be from 12V up to 24V. For sync running at high speed, 24V is recommended.

The base plate of the motor unit mounts between the tripod and Bolex.

The control box is connected to the motor unit via a 6-pin RJ-12 jack. Two cables are included—a short one when the control box is attached to the base plate, and a longer one that lets you use the control box remotely.

With the motor unit mounted on the camera, the control box plugs into the jack closest to you.

The control box will not be damaged if you plug (or unplug) it from the motor unit while power is applied.

## Installation

It is generally easiest to mount the Bolex to the base plate and then attach the motor pod.

You can either use the included 3/8” bolt to attach camera and base plate or you can use your tripod plate.

If you have a flat-base Bolex, you can use the 3/8” bolt in the front tripod hole, and use your tripod plate at the back tripod hole. This will keep the base plate in alignment. For round-base Bolexes, make sure the rear of the Bolex presses against the alignment post. When the motor is attached, it must be at a right-angle to the camera.

Push the internal motor switch on the Bolex to ‘0’ position (you might have to push forward on the single-release button to get it to go), then push the side-release button back so it locks.

Also, **set the speed dial to the fastest setting.** This is very important, as otherwise the internal governor will not allow the external motor to drive the camera.

You can now attach the motor pod to the right-angle support. Unscrew the knurled thumbscrew, align the hole in the pod with the bolt in the right-angle support, and tighten with the thumbscrew. If the thumbscrew loosens while filming, a strip of gaffer tape can be used to lock it in place. Note that the knurled side of the thumbscrew is what you turn to screw it on. The non-knurled side goes against the pod.

The motor pod will flex to push and hold the coupler into the 8:1 shaft onto the Bolex. Make sure the coupler seats properly in the Bolex. You might have to turn it with your fingers to align the notches with the internal pin on the shaft.

The right-angle support can be shifted back and forth by loosening the two screws on the bottom. Also, the coupler can be moved in and out on the motor shaft by loosening the setscrew.

The control box can be used remotely from the main unit or can be attached to the base plate using two thumbscrews

## Shutter Alignment [0:nn]

To align the shutter (important for correct time-lapse and single-frame exposures), turn the thumbwheels to 0:40 and hold down the pushbutton. The motor will slowly turn the shutter. Release the pushbutton when the shutter is covering the film and the shutter edge is down by the bottom of the frame.

Turn the thumbwheels to 0:02. Now when you push the pushbutton, the motor will revolve 2/8 of a frame. Press the pushbutton. The shutter should be closed now.

To check that alignment is correct, turn the thumbwheels to 0:04, for a 4/8 of a frame rotation.

When you push and release the button, the shutter will turn one-half frame. Confirm that the shutter is fully open. Press again and the shutter will close.

If you have a non-reflex camera with no prism in the way, you can mark the surface of the shutter to make aligning it easier. A pencil mark is visible, but a little dab of white paint will make shutter alignment very easy, even at night.

## Motor Test

Before filming, it is a good idea to do a little test with a roll of scrap film.

Load the film (you can use the slow sync setting of 6:06 for loading) and align the shutter.

Then expose a few hundred frames with the camera open.

The film should be drawn smoothly through the camera and the shutter should spin around and lands in the same spot. Change the shutter speeds (using 2:01 to 2:04) to verify correct operation at the fast and slower shutter speeds.

Leave it running until it automatically stops. Make sure the shutter has ended up in the closed position.

## RJ-12 Output Jack

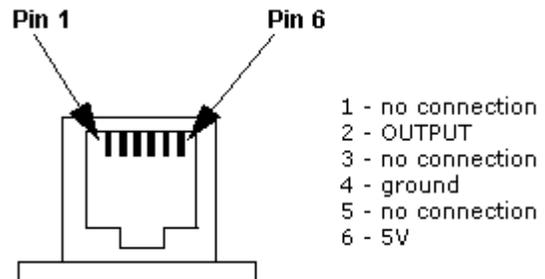
The *Revolution Bolex* has an output jack for control of external lights or other equipment. The voltage on pin 2 will be +5V when the motor is exposing a frame. This can be used to turn on/off a relay as desired (use a transistor to drive the relay ☺).

The output jack is the jack closest to the camera (to the right of the control box jack when looking at the front of the camera). If you plug the control box into the output jack the motor will not turn (but no damage will be done).

## Power Input/Output Jack

If there is a jack on the front of your *Revolution Bolex* it is either a power input or magazine motor output.

Unless you've ordered the motor with the magazine output, it's probably a power input. The center pin is positive and it is protected against reverse polarity. A power supply of 12-24V can be used.



## Backwards Running

Some units are capable of running in reverse. Turn the thumbwheels to 5:02 and press the pushbutton to have the motor turn in reverse. Turn the thumbwheels to 5:01 and press the pushbutton to restore normal running.

On these cameras the output signal on pin 2 is not available.