

BOLEX QUICK REFERENCE SHEET

*NEVER RUN THE CAMERA AT 48 FPS OR 64 FPS WITHOUT FILM!!! This holds true for any camera unless specifically mentioned otherwise--as in cameras that are designed specifically for high speed use.

*Don't swap lenses or take lenses off. These lenses were recently collimated specifically for each camera. If they are swapped you're footage and everyone's thereafter may not be in focus.

*Remember to unlock the turret before rotating to another lens. And likewise, lock the turret before shooting.

*Winding the spring motor is a counterclockwise action.

*If you're shooting a scene without using the eyepiece, make sure to close it by turning the lever on the side of the eyepiece to the vertical position.

*Nothing on a Bolex needs force. If you find that something is not turning or going into position, don't force it, retrace your steps and make sure you're doing it correctly. If you can't figure it out, ask for help.

Loading:

When checking out and in the Bolex from the Media Center, open the lid and make sure there is an empty daylight spool. Even though it's a daylight spool, load in subdued light--try not to load in full sun or with a flashlight.

1-Check the pressure plate, make sure it is in place and can't open.

2-Wind the spring motor--you'll need to run film to load. (For our animation Bolex, make sure the motor is plugged in.)

3-Load the unexposed film in the top spindle (use the arrows in the camera for directional help--film loads in "9P" formation) and take out the empty take-up spool. Use the spool ejector if necessary.

4-Using the film knife, cut off the end of the film between perfs. Take out the the piece of film you just cut off--otherwise it'll scratch your film and jam the camera.

5-Close the loop former by moving the control lever parallel to the pressure plate.

6-Run the camera while pushing the end of the film against the upper sprockets. The film should automatically thread into the camera and out the bottom sprocket. Run a few feet of film.

IF IT JAMS AT THIS POINT:

*Release the loop former by pressing the button on the lever

*If the film has gone through the pressure plate, open that by pulling the locking pin skyward and to the right (shouldn't need force)

*Release the film from the sprocket by pressing down the pin attached to the sprocket holder and removing film.

*Repeat steps 4 - 6

7-Take the end of the film and insert it in the slot of the take-up spool and wind around at least once.

8-Place the take-up spool in the bottom spindle and wind it by hand until the slack is somewhat taught.

9-Release the loop former by pressing the button on the lever.

10-Run a few more feet of film to make sure it is not jamming.

11-Close the cover and run film until the footage counter reads 0.

Exposure:

The Quick Bolex Bottom Line:

If you set your light meter to the manufacturer's ASA/ISO rating and to the 24 fps markings, you have to open up 2/3 of a stop to compensate. This is a significant amount when shooting reversal film.

The Not-Quick Bolex Bottom Line:

There are two variables involved in determining exposure with a Bolex:

1-The shutter on a Bolex is 130° (this is for our Bolexes in circulation--older Bolexes have 145° shutters). The standard for most cameras is 180° shutter (such as our Arri S, SB and SR). The equation for determining exposure as related to shutter is

$$\text{Exposure Time} = (\text{fps} \times 360) / (\text{Shutter Opening})$$

For 180° shutter, the Exposure Time is 48 or 1/48th of a second

For 130° shutter, the Exposure Time is 65 or 1/65th of a second

1/65th of a second is roughly 1/3 of a stop open from 1/48th of a second

Why should you care? Because if you have a light meter that has a designated 24 fps cine mark, it is marked for 180° shutter. Your exposure will be wrong if you begin your Bolex beam splitting compensation outlined in step 2 with that mark.

2-As light enters the lens about 1/3 of the beam is split up to the viewfinder and 2/3 of it goes directly to the film. Because of this Bolex design, you need to compensate exposure. So... as per the manual:

Exposure times (in fractions of a second)

Filming speed	Shutter open Lever up		Shutter ¾ closed Lever on ½		Shutter ½ closed Lever on 1	
	Real	Adapted	Real	Adapted	Real	Adapted
12 f.p.s.	1/33	1/40	1/45	1/55	1/75	1/94
16 f.p.s.	1/45	1/55	1/60	1/75	1/100	1/125
18 f.p.s.	1/50	1/60	1/70	1/87	1/110	1/137
24 f.p.s.	1/65	1/80	1/90	1/112	1/150	1/188
32 f.p.s.	1/90	1/110	1/120	1/150	1/200	1/225
48 f.p.s.	1/130	1/160	1/180	1/225	1/300	1/375
64 f.p.s.	1/180	1/220	1/240	1/300	1/400	1/500
Speed control knob on 18-64 f.p.s.	Single-frame exposure		(selector in position T)			
	1/30	1/40	—	—	—	—

Single frame shooting: (on a regular Bolex, our animation Bolex has separate instructions)

1-I/T switch set to "I" (instantaneous) opens the shutter at an equivalent to a "Bolex" 12 fps.

One stop compensation if reading a light meter at "Bolex" 24 fps.

2-I/T switch set to "T" (timed) opens the shutter for as long as switch is held open. Compensate as you see fit.

Variable shutter:

(See chart above for accurate exposure times). With the lever at the top RED line, the shutter is all the way open to 130°. With the lever at 1/2, the shutter is 1/4 closed and you must compensate by opening up 1/2 a stop. With the lever at 1, the shutter is 1/2 closed and you must compensate by opening up 1 stop. With the lever at the bottom line, the shutter is fully closed--film is not being exposed.

Using rewind crank:

- 1-Take out a crank from the Media Center--it doesn't come in the Bolex package.
- 2-Close the shutter.
- 3-Simultaneously turn the spring-engaging lever from MOT to O and the run switch from STOP to M.
- 4-Insert the little, *easy-to-lose-but-I-know-you-won't-cause-it's-expensive* rewind crank to the 8:1 drive shaft--it's the one with a directional arrow by it.
- 5-Wind the crank in the direction of the arrow to desired spot.
- 6-Remove crank and store somewhere it won't get lost.
- 7-Release the run switch back to STOP.
- 8-Turn the spring-engaging lever back to MOT.
- 9-Open the shutter